ARCHTHEO '21

XV. INTERNATIONAL THEORY AND HISTORY OF ARCHITECTURE CONFERENCE

DAKAM

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CONFERENCE PROCEEDINGS

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THE NEW EUROPEAN BAUHAUS — A FATAL AFFAIR?

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ABSTRACT

One hundred years after the Bauhaus was founded in Weimar, we are facing new global challenges: climate change, the digital revolution, and demographic explosion. These developments go hand in hand with a seemingly limitless economic growth at the expense of our well-being and limited natural resources. The New European Bauhaus (NEB) initiative announced by European Commission President von der Leyen in January 2021 may be viewed as a cultural expression of the 'European Green Deal'. It is being proposed as an idea that will bring together nature, society and architecture, and is expected to reshape Europe into a cleaner and fairer tomorrow. The intention is laudable, but many questions do arise. A comparison of the NEB with the OMA/AMO's Roadmap 2050 on the basis of Laclau and Mouffe's theory of hegemony reveals that central narrative chains are repeated without changing the leading strategy in political discourse. At their heart stands the oxymoron 'ecological modernisation', which invalidates the recently established thesis of the necessity for a post-growth economy. In this context, the New European Bauhaus becomes a magic formula that cannot initiate the promised environmental policy, but de-politicises the ecological and culturalises the political. In any case, in the liaison between architecture and politics, one should read the fine print before signing the marriage contract.

KEYWORDS: New European Bauhaus, Green Deal, ecological modernisation, culturalisation

FORM FOLLOWS PLANET — DESIGN FOR A BETTER WORLD

In her Opening Statement at the European Parliament's Plenary Session, European Commission President Ursula von der Leyen strongly advocated a new reform initiative to find a way out of the multiple crises faced by the European Union. Von der Leyen called for architects, artists, students, scientists, engineers and designers 'to support ecological change through a combination of sustainability and aesthetics' in the next few years. The Commission launched an ambitious initiative — the 'European Green Deal' — to fund innovative scientific and artistic endeavours seeking to abate climate change and allow Europe to meet its goal of zero net carbon emissions by 2050 (Bason et al 2021). Indeed, there remains no alternative to green change for the survival of Planet Earth, just as there is no alternative to unification for Europe's political project. To achieve this, von der Leyen is playing a trump card: 'The European Green Deal must also — and especially — be a new cultural project for Europe. [...] And this systemic change needs its own aesthetics — blending design and sustainability' (von der Leyen 2021). Tackling climate change is this generation's defining task. By being placed at the heart of the Green Deal, the 'New European Bauhaus' (NEB) is being given cultural expression. What are the intentions behind this?

The traditional Bauhaus is already anchored in the collective imagination as a cultural institution. It implies the ideas of awakening, renewal and change, which are so attractive because taking the initiative, assuming responsibility and creating places where change can happen is all contained in the promise of the Bauhaus. After the Second World War, Robert Schuman called for a broad-based cultural initiative to rebuild Europe. Back then, it was already true that growth and hard economic factors had to be linked up with culture and emotion in order to reach people. 'The new European Bauhaus will show that even the necessary can be beautiful', von der Leyen explained (von der Leyen 2020). Never before had the European Commission placed beauty so high on its policy agenda. The Bauhaus stands for the belief in this beauty, in design for a better world, and the conviction that design is fundamentally political. Nonetheless, we will not be able to design our way out of a climate crisis by simply quoting a historical formula. What we need is a transformation of our ethics of life. Culture can set the stage to bring about these changes, but only if we begin from a recognition of what is wrong with what we have inherited. The Bauhaus propagated the industrialisation of design. With the creation of the International Style, Bauhaus utilitarianism was brought to full fruition. It resulted in an architecture and design that was co-opted by big business and became the corporate language of power. We continue to live with its consequences today (Khalidi and Vázquez 2021). Unsurprisingly, when the NEB was presented to the public, it was not only cultural actors who applauded it, but the entire construction industry, which is looking forward to the subsidy funds promised by the wave of renovation that probably the initiative will primarily entail.

Figure 1. European Commission President Ursula von der Leyen presenting the NEB, © Creative Commons.

EUROPE'S NEW 'SUPREME FICTION'?

A name includes or excludes histories. The act of naming is a tool deployed to control the collective imaginaries of societies. Thus, the 'New European Bauhaus' appends itself to a problematic modernist legacy: it is a powerful image of the paradoxes and limits of modernism and its objective to design a better world. 'Naming a new European cultural Green Deal after the Bauhaus School is not only non-inclusive and Eurocentric, it goes against the very core of what climate thinking should be about' (Khalidi and Vàzquez 2021). Doesn't invoking a movement from the early twentieth century reflect the very inadequacies of modernity — the very inequalities that a green transition is supposed to address?

Europe's problem with its 'self-image' stems from the fact that it found its unity in an era during which the iconic had fallen into disrepute (Metahaven 2020:97). Can we imagine Europe's identity outside of classical symbols such as flags, anthems or monuments? To remedy 'Europe's iconographic deficit', Rem Koolhaas, together with OMA/AMO, developed amongst other things the 'barcode' and proposed it as a new flag and new symbol of the European Union (EU). As a symbol of integration into a greater whole, the barcode, according to this reading, stands for the partial loss of nation-state sovereignty that is associated with entry into the EU (De Graaf and Koolhaas 2005:153). This proposal was not the only metaphor launched to point out Europe's core meaning. The special feature of metaphors is that they do not necessarily highlight the primary aspect of the area from which they were projected but, rather, particularly emphasise the periphery surrounding the focal point. For example, depicting Europe as a 'construction site' does not move its material characteristics to the fore, but rather points to ascriptions such as Europe's 'open character', or its 'constant reconstruction' along the lines of Jacques Delors' famous analogy — European progress is like a bicycle: allow it to stop moving and it falls. In addition to the common 'house' and 'roof', that is often invoked, the 'door' and the 'bridge' are amongst the central motifs, not least on banknotes (Uhl 2004:38–39).

The NEB thus follows a long tradition of metaphors intended to enable European citizens to identify with the common project. Europe's identity, on Derrida's reading, is always at war with itself, never capable of resolving its inner tensions and contradictions. This identity is, then, never fully present in the (sovereign) claim that it has arrived or been achieved. It is in this sense that European identity, as well as democracy, is always 'to come' (Derrida 1992). The 'to come' in Derrida's formulation, then, points to a transformative and disruptive potential at the heart of Europe. 'Europe's strength and weakness is that it is a power based on procedures. A very clear decision was made not to give Europe an iconic or symbolic charge. Accepting un-representability would mean recognizing the inherent plurality' (Metahaven 2020:99).

ROADMAP 2050 AND THE NEW EUROPEAN BAUHAUS

At the beginning of European unification, key energy sources were already the focus of attention. Today, the issue of the environment and energy has become one of the most dynamic fields. About ten years ago, a number of 'roadmaps' were commissioned by European institutions in order to find solutions to reduce greenhouse gases. What these projects have in common is the attempt to link the energy issue with political unification. Amongst architects, OMA/AMO's Roadmap 2050 is probably the best known (OMA 2009). It provided another 'grand narrative' but unfortunately not a proposal for radical change: 'Even though it will be a drastic revolution, the way the world will be perceived [in 2050] changes very little because the changes are largely invisible. Architects won't have to think about design differently, they'll just have to use the right materials and technologies' (Baird 2009:27). The Roadmap 2050 can be summarised in the following way: continue as before, technology will do the rest!

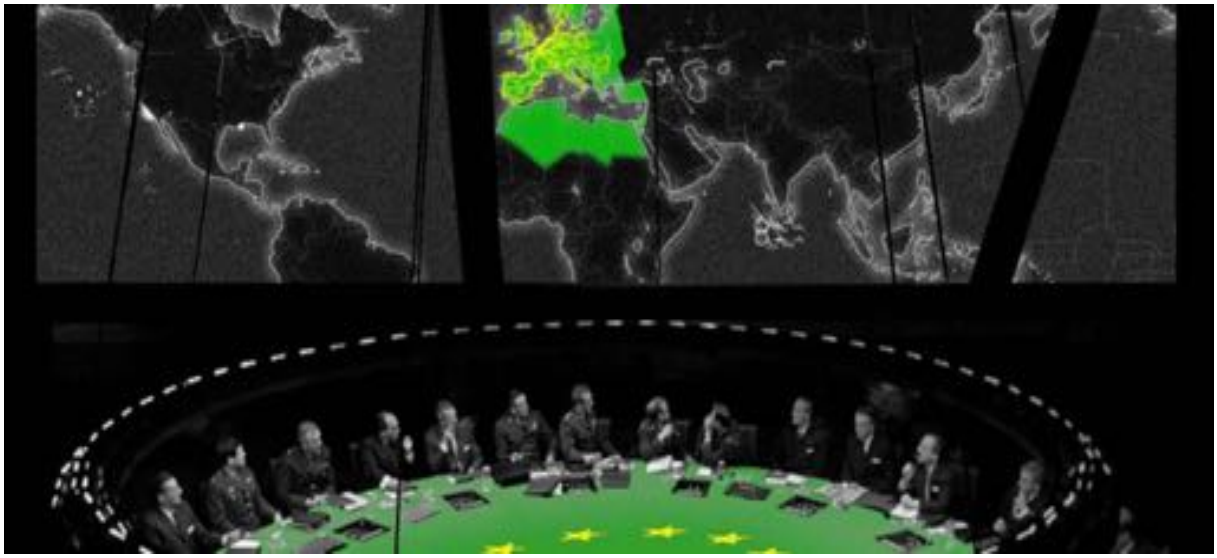

Figure 2. OMA/AMO: Roadmap 2050, © OMA

OMA/AMO adhere to an approach that may be called 'modernisation', through which it deals with contemporary challenges: climate change, technology, migration, etc. But this is exactly where the problem lies. In one illustration of the Roadmap 2050, OMA/AMO divided the European continent into energy regions (e.g. 'Solaria', 'Geothermalia', 'Island of the Wind', etc.), using a physical map to represent Europe and give it the name 'Eneropia'. In this way, they cleverly circumvented the obstacle

of Europe's political fragmentation and provided a new basis for unification. A super-infrastructure would ensure the free flow of energy across national borders, making it the only source of unification ('Energy Union'). This implies that political collectivity is the result of technical connectivity, but 'The Roadmap suffers from a fatal weakness: the lack of a strategy for social and cultural transformation. It assumes that the same growth-at-all costs global economy that caused today's environmental crisis can be the engine for its resolution' (Thackara 2011:268).

'GREEN ECONOMY' — A NEW OXYMORON?

All efforts to pull Europe out of the crisis mode (financial crisis, migration crisis or pandemic) have to perform a balancing act between climate protection and growth. For instance, in the midst of the pandemic crisis, the 'EU agricultural reform' was celebrated as an ecological breakthrough. However, environmental activists pointed out that ecology had merely been 'hijacked' (Bradley 2020). The discourse on a new conception of ecology cuts across a wide range of disciplines and has been developing along their boundaries, with the term 'ecology' remaining very unclear. Since the 'green economy' debate of the 1980s, there has been constant talk about 'economic growth with a green veneer', the 'new oxymoron' (Brand 2012a) or 'green modernisation'. Both the Roadmap 2050 and the New European Bauhaus recommend the use of innovative technologies to turn the components of prosperity, safety, health and sustainability into an 'eco-modern project'. What role can ecology play in this at all? Is ecology an appropriate instrument for transforming power asymmetries (which real change would require), or does it only contribute to masking them? The European Green Deal thrives on the notion that growth and environmental protection can be reconciled under the buzzword 'green modernisation'.

In contrast to the notion of 'sustainable development', it seems that 'green economy' is attractive for many relevant socioeconomic actors. But it only works because the NEB and its innovative power are used to emphasise structural change without having to sacrifice the principles of competition and production. Two initially contradictory moments represent the (imaginary) whole which, at the same time, is desirable. The fact is that 'sustainable growth' is a contradiction in terms, just like the well-known 'black mold'. The European Green Deal and its cultural counterpart, the NEB, exhibit a lack of reflection on alternative forms of the economy; indeed, neither the arguments in favour of a post-growth economy nor the transition from an 'economy of extraction' (or extractive economy) to an 'economy of restoration' (or restorative economy) have been taken into account. John Tackahara rightly pointed out the weak point of the Roadmap 2050. And what about the NEB? The basic assumption is that economic growth and environmental protection are compatible. Indeed, green technology can even be seen as an economic engine (the NEB was explicitly described as an 'engine') and driving force for change. Ulrich Brand, a German political scientist, makes an etymological distinction in green economy projects between 'transformation' (to shape, change) and 'transition' (to transcend). It should be clear that the Green Deal (or the energy transition) is regarded as a 'test and proving ground' for or against social change. What we need is a form of renewal that is more than techno-economic innovation (Brand 2012b).

Figure 3. Koichi Takada: Sunflower Houses, © Koichi Takada Architects 2021.

THE POLITICS OF THE 'EMPTY SIGNIFIER'

With their theory of hegemony, Chantal Mouffe and Ernesto Laclau addressed the question of how certain projects become hegemonic (Laclau and Mouffe 2012). If we follow their approach, 'green modernisation' generates two 'chains of equivalence': the 'Green Economy' and 'European Unification'. Both intersect at one point that may be named: 'Green Energy Union'. While the Roadmap 2050 addresses the political dimension of unification directly, the New European Bauhaus speaks of 'political fora'. As a signifier, this node must carry the meaning of 'green', 'technology' and 'Europe' in order to position itself in relation to the outside. However, the signifier 'Green Energy Union' does not carry anything substantial that would give it a privileged status. Thus, the 'empty signifier' finds itself in an ambivalent role: on the one hand, it represents a chain of dispersed elements; on the other hand, the signifier itself becomes largely meaningless. In other words, the universality of Europe can never be represented directly. Therefore, the 'empty signifier' as something particular takes over the role of universality in discourse. From the populists' point of view, 'Europe' is an empty signifier for the very reason that it is absent from people's everyday lives. This absence is seen as the main cause of conflict which, according to Mouffe and Laclau's theory, cannot be pacified. That is the reason why the European Commission is doing everything to bring the NEB into people's everyday lives.

In order to clarify under which conditions the 'Green Deal' could become hegemonic, it is necessary to identify EU discourses organised around the signifier 'nature'. What role can nature play for the European project? Nature is an empty signifier that can be filled with meanings at will yet, at the same time, it is the core of the project. The meaning of nature is only revealed by referring to common signifiers such as 'tree', 'virus', 'mountain', etc. This is important because the signifier that is deemed to represent the community must be largely emptied of its specific meaning. In this way, 'green' for instance has come to represent a whole range of initially unrelated particular interests (environmental, feminist, pacifist, etc.), ranging from new technologies of energy production to socio-political projects. From a certain point on, the empty signifier becomes positively charged. Only an empty signifier is able to represent conceptions such as 'zero growth', 'subsistence economy' and an alternative conception

of development, such as the 'green economy', simultaneously as being positive and generally desirable. Thus, the 'Green Deal' presents at the same time various particular moments, such as the 'economy', 'environmental protection', 'technology', and 'progress', as what is generally advocated. It becomes open to interpretation, standing at the same time for climate protection, economic success, and the pioneering role of Europe (as the *avant-garde* of green thinking).

The Roadmap 2050 and the New European Bauhaus must generate strategic chains of meaning ('chains of equivalence'). Their ability to successfully articulate environmental technology as a technology that has positive effects on people and society is a crucial prerequisite for the hegemonisation of this technology. Only in this way can 'green technology' be equated with the general interest. Both projects generate chains of equivalence of 'modernisation' in the form of innovative technologisation. In the case of the Roadmap, these are, for example, 'solar power', 'wind power', 'geothermal', 'coal-oil-gas' (CCS), or 'nuclear power'. In the case of the NEB, however, it must be noted that although it emerged from a fusion of sustainability, design and digitalisation, it is intended to be 'more than a school of architecture that uses new technologies and techniques' (OMA 2009).

THE DEPOLITICISATION OF THE ECOLOGICAL

In the official presentation of the NEB, nature is represented in phrases like 'natural building materials' or 'building industry in harmony with nature'. At the same time, the NEB is based on fundamental assumptions about social relations to nature. Indeed, every ecological crisis is at the same time a social crisis. Despite this, the real political issue — the socio-ecological crisis — has been shifted to a terrain outside the debate (Swyngedouw 2011:61). However, the disappearance of the political **is** a post-political arrangement fought **for** by experts, consultants or economists. Post-politics removes the conflictual from institutionalised politics and turns nature into a task for experts. 'The sequence of the depolitization of Nature placed under the banner of "the environmental crisis", and re-assembled post-politically under the sign of "sustainability" corrals a series of interconnected processes' (Swyngedouw 2010:217). This is why von der Leyen called for a 'committee of experts' to collect ideas on how to shape the new 'movement'. Slavoj Žižek criticises ideological ecology, arguing that ecology takes real problems and mystifies them. He contends that ideologies provide an escape from real societal challenges and are a hindrance to true social progress. As a society, we have failed (or subconsciously chosen not) to see that radical social change was a prerequisite for a globally impactful mitigation of environmental problems. According to Žižek, ecology itself shies away from great change and aims to 'prevent all changes on the globe so that its ecosystem remains more or less unchanged [...] For this reason, although ecologists demand all the time that we should radically change our way of life, something else underlies this demand: [... the] post-political distrust of large, collective acts' (Žižek 2010:85). Right after 1989, politics benefited from a prevailing optimism that global problems could be solved cooperatively, but in the current crisis mode there is nothing left of this attitude.

There is a lot of talk about sustainability in connection with the NEB. However, this term refers to everything and nothing. Those who speak of 'sustainable development' usually avoid the sensitive question of what socio-ecological structures would have to be established or rebuilt to achieve it. The NEB stands for innovative environmental technology: '[W]e have to change radically, but within the contours of the existing state of the situation' (Swyngedouw 2015:4). What the President of the European Commission must fight against on her way towards a green Europe is general scepticism towards large projects. She must show that are not only possible under dictatorships. The NEB cannot abandon the emancipatory preconditions of modernity by conducting a radical ecosocial restructuring, but must 'transform' them.

Critics assume that the European Green Deal ignores alternative solutions. They argue that the ecology issue does not transform society; rather, the ecological gives way to the idea 'that one can maintain a welfare state within the system' [Görg 2003:140]. Discursively successful narratives can even prevent the emergence of a far-reaching political effect. Thanks to its reflexive (critical) character, the ecomodern hegemonic project has already replaced the former hegemonic project of modernisation. Instead of 'progressive', development has become 'sustainable'. Thus, the immanent language of progress can be recycled into a 'Green Recovery' programme for Europe. Susan Baker suspects that the EU is in fact engaged in 'ecological modernisation' but has settled on the term 'sustainable development' because actors very quickly abandon the framing of 'ecological modernisation' as soon as negative effects are brought into the political debate. On the one hand, ecology is thus de-politicised, on the other hand, the 'ongoing economic crisis' is (hegemonically) naturalised. According to Žižek, '[T]he establishment proposes a de-politicized naturalization of the crisis' (ibid. Žižek 2010).

Are the Roadmap 2050 and the New European Bauhaus progressive political ideas? Do they require a fundamental transformation? Do they risk losing themselves? No, neither project sets up a new reality! Neither project refuses to leave the world as it is. They do not suspend the existing political model either, nor do they insist on the 'possibility of the impossible' (Derrida), which would manifest itself in an 'entirely different future', in an 'event that ruptures the horizon of expectation' (Badiou). Both projects position themselves as part of the panorama of established European values and interests. It is not the fundamental transformation of society, but efficiency and the securing of location that justify the EU's steering optimism. Because both projects manage the *status quo*, they are not really political at all, because political would mean the 'affirmation of the impossible' (Steinweg). A project must be able to answer the question of how we want to live in the future, while acknowledging unpredictability. What could in principle be different is called 'contingent'. It is not enough to think about new technologies; alternative models of society behind them must be considered, and the 'vast reservoir of positive social energy' must be taken into account.

Figure 4. New European Bauhaus, © European Commission.

STRIVING FOR HEGEMONY AND THE CULTURALISATION OF POLITICS

Certain hegemonic projects dominate international climate policy and are proving relatively stable in the face of the ecological crisis. These projects use narratives that belong to the meta-discourse of 'ecological modernisation', can be concatenated, and thus prove to be consistent with each other. All these projects include narratives such as the 'integrated approach' or a 'win-win situation' reconciling ecological and economic goals, or the 'increased innovative power' that helps reduce ecological repair costs and enables 'ecological growth'. The NEB's central narrative is that environmental problems can best be solved through science, new technologies, or innovative design and the transfer of responsibility to decentralised stakeholders. The really new approach, however, is that this venture brings culture into the field (Reckwitz 2012). For several months, the European Commission has been working on nothing less than a new cultural movement. The original Bauhaus did not drive the project of modernity alone, nor did it embody only the heroic urge to improve the world. Eurocentrism, growth logic and gender discrimination are part of its history. The invoked past in the shape of the 'Bauhaus' is partly a fiction. If one follows the interpretation of the artist group Metahaven, then the Bauhaus is an 'Un (!) corporate identity' (Metahaben 2020:94), a brand that hides a void or an abstraction, but which as such has a life of its own and can become part of a culturally driven identity politics. The NEB would then be a way of managing this abstraction. In the New European Bauhaus, different strands of culturalised discourse converge, in which the striving for hegemony and the critical connection between aesthetics, ecology and politics become evident.

My assumption is that the Bauhaus formula does not mean anything primarily historical. The German Bauhaus also laid the foundations for information technology and sensory perception, which through big data, has led to the crisis of privacy and data sovereignty that we face today. The NEB refers to the 'cultural and creative industries' of our present day. The discourse on 'creative industries' has reached the level of international organisations, which are jumping on the current 'bandwagon' of culture. The cultural and creative industries are the bearers of diverse economic and socio-political hopes, ranging from the creation of economic growth and jobs to the moderation of social conflicts and the upgrading of entire regions. Along with digital technology, the 'culturalised economy' is one of the most dynamic fields of modern societies; it is the third largest employer in the EU and thus one of the main players in the EU economy. Thus, thanks to the NEB a new 'creativity regime' can be installed. However, applying the notion of 'governance' to the field of operation of the creative industries requires an explanation. If we look at the hegemonic discursive construction of the European Union, we cannot overlook the fact that this is the culturalisation of a systemic crisis that goes back to the 1970s. The 'aesthetic offensive' is part of the Green Deal; in principle, relevant discourses on connections between the environment and power can thus be displaced thanks to culturalisation, including debates on 'political ecology' or, in a global perspective, 'climate justice'. At the same time, this opens up the perspective of social struggles and disputes, which will certainly produce contradictions and conflicts. According to its initiators, the New European Bauhaus should be an impulse for participatory and innovative processes (Holl 2021).

Since the new Bauhaus is a top-down project, scepticism about the elites remains. In appealing to culture, political power no longer makes the mistake of Roadmap 2050, which reinforced the image of the EU as a technocratic monster. The Roadmap exhausted itself in the prognostic extrapolation of technological developments and the prediction of their consequences, and did not take into account the fact that the interplay between economic and cultural transformation was producing a new design paradigm. The infrastructure of the New European Bauhaus therefore complements the strand of the 'built environment' with that of 'culture' and expects a 'living transnational sphere' as a result. In this way, it succeeds in connecting directly to initiatives of the European Cultural Foundation (ECF), such as the 'European Pavilion', or the 'Homes of Commons Certificate'. The storyline about the role of

science and the arts is sometimes closely linked to the storyline 'Europe as a pioneer' and 'first climate-neutral continent'. Like its historical predecessor, the NEB stands for a cultural *avant-garde*, it is intended to be a guiding idea and to find imitators, and seeks to be a 'worldwide prototype'. The construction of a storyline linked to the *avant-garde* generates meanings that arise in the field of tension between political sovereignty and aesthetic representation. The Fukushima nuclear disaster ten years ago has had a profound impact on the global power sector, but no country outside Japan saw greater changes to its energy laws, infrastructure and utility landscape than Germany. Thus, it seems that the NEB does not merely translate a domestic German debate on the energy issue across to the European level. Such a storyline hides all the social and economic problems caused by an unfair and inequitable distribution of the planet's wealth and resources. Indeed, European energy networks reach far into Africa. Unfortunately, they are used to externalise European problems, because Europe would otherwise have to solve its environmental problems at home (Lessenich 2015).

It is characteristic of the discourse on political unity and of the 'economised' view of the project that in both cases the focus is on enforcing an (economically) successful political system and its identity. The ECF and the European Commission, in order to avoid the accusation of economisation, are looking for a vehicle based on culture. But even the New European Bauhaus does not really explore the potential of culture: it reduces it to colouring beautifully what is necessary. Culture is projected onto the market, the very foundation of the European integration project. It would be possible to speak of culture if it were possible to think the unthinkable: are there any infrastructures that would make a different coexistence between society and nature possible, or are they limited to using speculation as a mere instrument for exploring the future? In contrast to economics and futurology, which confront non-knowledge with strategies of risk management, the arts and architecture open up spaces of possibility beyond solid experience and prognostic value. They are committed to the uncertain — that is, to what we do not (yet) know, but about which we can speculate.

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RE-NARRATION OF THE CITY ON A TEXTUAL LEVEL: *THE MANHATTAN TRANSCRIPTS* BY BERNARD TSCHUMI

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ABSTRACT

Architecture is fundamentally about constructing spaces and orchestrating user' experiences following the designers' vision and narration. Due to the formal aesthetics and end-product-focused methods prevalent in the contemporary world, architectural experience and space may be reduced to a simple set of codes (i.e., order and integrity) thereby, resulting in the loss of active interaction with programs, narrative, and users. Consequently, an alternative attentiveness may be necessary to emphasize the designer's active involvement in generating radical proposals and the critical role of space. As with architecture, literary works operate in tandem with the experiences of fictional characters in fabricated settings through the authors' vision and narration, without being constrained by economic, social, or practical concerns, thereby enriching the details and entertaining additional possibilities. Bernard Tschumi, as a theorist and architect, has regularly incorporated writing into his design process. Particularly in his iconic literary work, the *Manhattan Transcripts* (1976–1981), the New York locale is re-narrated through the triple notations of "movement," "space," and "event," with imaginary events in four chapters. This study investigates the potential of re-narrating the spaces of the modern city on a textual level using the ternary notation systems in *the Manhattan Transcripts* by Tschumi to generate alternative visions and solutions for the architectural experience and space. This research reveals that, together with the more liberating nature of writing, these three notations offer further interference and investigation on a textual level for the different approaches happening in the city and metropolitan experience through contextual, fractured, and multifaceted layers to enhance the details. Thus, it is possible to create new design concepts, intricate experience and space to inhabit, interact, and evoke specific experiences for representation and inquiry through literary works utilizing triple notations. This interdisciplinary relationship can pave the way for direct participation in education, theory, criticism, and practice.

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THE ORIGIN OF *THE MANHATTAN TRANSCRIPT*

Books of architecture, as opposed to books about architecture, develop their own existence and logic. They are not directed at illustrating buildings or cities, but at searching for the ideas that underlie them. Inevitably, their content is given rhythm by the turning of the pages, by the time and motion this suggests (Tschumi, 1994, p. 6).

Since the emergence of end-product-oriented methods and formal aesthetics in the modern world, there has been a danger of space and architectural experience being simplified to a basic set of principles (i.e., integrity and order). However, several scholars and architects opposed multimedia and integration from other disciplines (i.e., film, dance, literature, photography, and art) to architecture in the twentieth century (Mosley & Sara, 2013). To function properly, architecture needs to employ a variety of interdisciplinary media to introduce and extend the definition of new design concepts, all while organizing user experiences and creating spaces in line with the narrative and vision of the designer. As a result, a new level of emphasis may be necessary to indicate the designer's active involvement in the development of radical ideas and the significance of space. Writing or language has a unique affinity with architecture among all disciplines due to its enormous potential for alternative experiences and space. According to Patrizia Lombardo (2003) in *Cities, words and images: From Poe to Scorsese*, writing or language has figure-based qualities that are rooted in both film and photography by establishing a fiction line that connects the image to symbols and reality. Apart from what Lombardo suggested, textual works include aspects in conjunction with the experiences of imaginary characters in fictional settings similar to architecture, although they do not confine themselves to social, feasible or practical concerns. As a consequence, more intriguing and enriching possibilities could emerge with textual works.

Indeed, the potential of textual works was realized by different figures in the mid-twentieth century. In the 1960s, French philosophers such as Louis Althusser, Jacques Derrida, and Roland Barthes established a new paradigm for reading and writing which centered on the idea that reading and writing are fundamentally considered to be creations in their own right (Speaks, 1993). Derrida's noteworthy argument that nothing beyond the text indicates all forms of textual productions, including economy, literature, architecture, and, film share a similar "intertextual space" (Speaks, 1993). In fact, without regard for economic, social, or practical considerations, textual creations, such as architecture, enhance and extend the complexities of fictional characters' lives in fabricated settings that conform to the author's vision and narrative. In the 1970s-80s, this new paradigm became ingrained in architectural tradition, mainly owing to several renowned architects, Bernard Tschumi and Peter Eisenman (Speaks, 1993). Before speculating about the unique affinity Bernard Tschumi has with the textual works, it is important to stress that, for Tschumi, various creative endeavors at the limits (i.e., theater, music, literature) prove their necessity through the accumulation of essential information, and production of insight to architecture juxtaposed with the social, philosophical, and cultural demands that have evolved gradually over the centuries (Tschumi, 1996).

As both theoretician and architect Tschumi encouraged both himself and his students to delve deeply into the sensual and destabilizing elements of architecture, although, it should be stress that Tschumi achieved this primarily through his writings and well-executed drawings (Kaji-O'Grady, 2008). In an exchange with students and faculty at the Knowlton School of Architecture, in the period between 1999 and 2002, Tschumi talked about his intellectual reflections on architecture in detail, and stated that "for me, building and writing are very similar acts—both are methods of organizing thoughts in time and space." (Tschumi et al., 2003, p. 16) In addition to this, he shared his unique interest in works incorporating writing principles in architecture in *Architecture and Disjunction* "If writers could manipulate the structure of stories in the same way as they twist vocabulary and grammar, couldn't architects do the same, organizing the programme in a similar objective, detached, or imaginative

way?"(Tschumi, 1996, p. 146) Thus, having realized the importance of writing, Tschumi attempted to transform text theory concepts into architectural language in 1974, focusing on four fundamental tenets: intertextuality, use of pleasure to resist modernity, the sign problem, and the limits of exploration (Martin, 1990). Tschumi later started to concentrate on establishing a new, more straightforward theory of architecture in the late 1970s with *the Screenplay* (1977), a series of collage-based images (Costanzo, 2009). This approach extended *the Manhattan Transcripts* (1976–1981)(Costanzo, 2009). As Tschumi stated when proving the importance of new language discovered in this work, "The themes developed in *the Manhattan Transcripts* have informed much of our subsequent work. Neither the Parc de la Villette nor Le Fresnoy could have existed without the Transcripts." (Tschumi, 1994, p. XXX)

Tschumi (1996) regarded the technique in his book as a "model" that might be modified or applied in the same way James Joyce transformed Homer's *Odyssey* into *Ulysses*. With that aim, his first notion was to adapt certain architectural precedents (such as Central Park) to a specific site or program (akin to a movie version of a book) in order to establish a "hypothesis" for the present "hypertext" of Central Park (Tschumi, 1996). In this work, Tschumi showed that architecture occurs at the intersection of three notational systems: space (the production of real spaces), movement (body movement), and event (program). The three notation systems depend on the context, so that making the layers shift meaning with each reading. This research explores the possibility of re-narrating the spaces of the contemporary city on a textual level to propose alternative architectural experiences and spaces through the use of Tschumi's ternary notation systems. This study demonstrates that trio notations and the more liberating nature of writing allow for additional interference and inquiry on a textual level for diverse approaches to the city and metropolitan experience through fragmented, contextual and multidimensional layers which accentuate the details. Thus, through literary works using triple notations, it is possible to generate new design ideas, complex experiences, and space to dwell, engage with, and elicit particular experiences for representation and inquiry.

THE MANHATTAN TRANSCRIPTS AND THE TRIPLE NOTATIONS

Before delving into the details regarding the triple notation, it would be judicious to summarize *the Manhattan Transcripts*. The book is structured in four chapters around hypothetical events occurring in New York locales. The first part, The Park (MT 1), details a murder in Central Park. The Street-Border Crossing (MT 2) discusses a chain of events and investigates the street in the second half. The third part, The Tower-the Fall (MT 3), depicts a person falling from a skyscraper in Manhattan. The Block (MT 4) concludes with five unexpected incidents. At this point, one may wonder why Tschumi required them in the first place to reimagine and portray the city of Manhattan in his work. In these four chapters, Tschumi used various graphic representations of varying degrees throughout his work to express three notations (movement, event and space).

In addition to Tschumi's explanations, various figures have voiced their opinions on this work, including the issues surrounding the function of the three notational systems. These topics were covered in an article by Vincenzo Bagnolo and Andrea Manca (2019), "Image Beyond the Form. Representing Perception of Urban Environment," as the ternary form of the notation system being the guiding character of the perception of the urban environment. Bagnolo and Manca (2019) believe that Tschumi's ideas on the three notational systems are relevant when analyzing the mapping and illumination of the three systems as separate and successive systems. In addition to this, in *Cine-scapes: Cinematic Spaces in Architecture and Cities*, Richard Koeck (2013) explains that Tschumi's architecture is created by a dynamic driven by changes in the movements, events, and spaces introduced in the sequences of notations.

Koeck's opinions are also in line with what Tschumi (1994) describes as the primary function of the triple notation form which is to bring time order (sequences, intervals, and moments) into the experience of the city, thus inevitably disturbing the comprehension of the city. The gaps or "intervals" in this work prevent episodes from constructing a completely cohesive narrative. The narrative is influenced by the determination of the moments and sequence of events through the movement diagrams, sections, choreographies, photographs, and plans in the ternary forms of notation. Tschumi intentionally inserts gaps in this book because reliance on photography, section, or plan alone would preclude flexibility, subjectivity, interweaving, and multifacetedness in this work. Bagnolo and Manca's comments (as the plot's guide), Koeck's earlier comments on the dynamic connection (as the generator of the dynamic link), and Tschumi's explanations (as the moderator of intervals, experience, and moments) all point to the ternary form of notation as having a role to play in Tschumi's architecture in this work. All of the preceding remarks emphasize how the three notational systems direct the frames to elicit various experiences while re-narrating a new city through textual works.

According to David Nicholas Buck's (2017) *A Musicology for Landscape*, Tschumi views his notations as reproductions meant to rewrite the architectural perception of reality. Indeed, Tschumi integrates the alteration of many components into his re-narrating, simulating the experiences inherent in real life, such as the passage of time. In their book, *Interdisciplinary Handbook of Trauma and Culture*, Yochai Ataria and David Gurevitz (2016) discuss one of the ways Tschumi's approach achieves the passage of time through the ternary forms of the notational system. They assert that the notational system begins the traumatic experience that eventually manifests as the expression of the inherent violence in the drawing (Ataria et al., 2016). As physical and abstract issues become entwined, the distinction between real and manufactured space becomes hazy, culminating in a state of transition (Ataria et al., 2016). Tschumi (1994) also states that his book starts with a particular discrepancy between form, usage, and societal ideals, and Tschumi asserts that when this scenario escalates into an architectural conflict, a new link between violence and pleasure is unavoidable. In other words, stimulating various sensations while re-narrating produces a sense of transience between the frames, mimicking the passage of time. Through transience, this whole scenario allows *the Manhattan Transcripts* to imitate real life.

In conclusion, *the Manhattan Transcripts*, with their triple notations, reflect the complex, fragmented, and fluid layers of the urban environment and metropolitan life (event, movement, and space). The components of *the Manhattan Transcripts* (three notational systems) work in tandem to reproduce the meaning of spatiality, narrative, and program. Despite the destruction, the ternary notation system connects all these unrelated components by altering, and integrating the frames in the episodes, resulting in an architectural text that can be read as a single work through the re-narration of the city on a textual level. Thus, *the Manhattan Transcripts* brings significantly the modern city closer to being perceived as a continuous text.

ON THE EPISODES IN *THE MANHATTAN TRANSCRIPT*

These triple notations referred to as layers are interpretive and may take on a new meaning depending on the reader's assessment. Thus, *the Manhattan Transcripts* may take on new significance depending on how the viewer understands this subjective and fractured material. Therefore, the flexibility of this work, challenges the rigidity of conventional architectural writing. At the start of *the Manhattan Transcripts*, an assemblage of layers reveals a murder, with diagrams, plans, and photographs that collectively illustrate the space-event in New York's Central Park and the narrative characteristics of the crime. The first episode of *the Manhattan Transcripts*, MT 1 or the Park, comprises 24 triple notations detailing murder and a pursuit (See Figure 1). The images of running human figures,

silhouettes, fingerprints, and building facades utilized in the opening frame of MT 1 represent the ever-changing sequence of events surrounding the murder. The progression of these photographs creates the necessary sequence for reading this fictitious story of murder in New York-Central Park as a text.

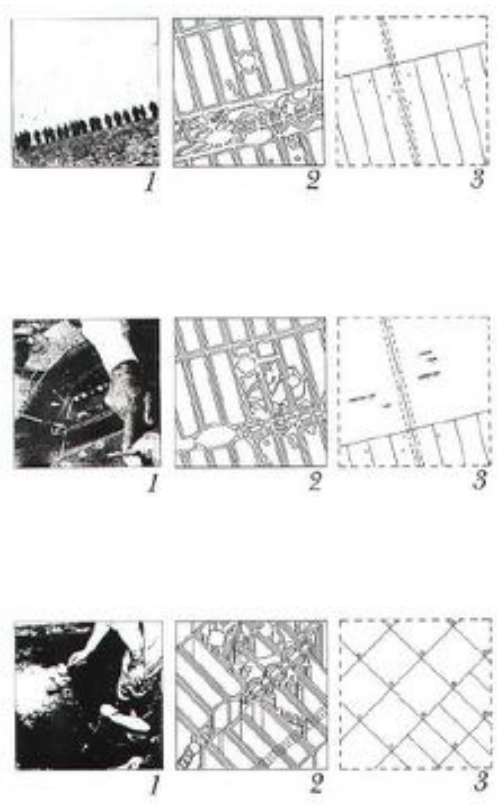

Figure 1. The readers' imaginations construct a cohesive story from the glimpses of the event. From: (Tschumi, 1994, p. 21).

In MT 2, a triple reality system is overlaid on the street, relating the love story of someone just released from prison (See Figure 2). According to the mapping system, this is the structure beneath 42nd Street extending from the East River to the Hudson. A triple notation system is also utilized here, and movement diagrams, photographs, cuts, and plans are used to establish a connection between place and event. Nonetheless, unlike in the previous MT, the ternary notations here successfully convey information. There is no actual narrative, just as there was no true narrative in MT 1. As with MT 1, dashed motion diagrams and dispersed data such as street names and plans are used in MT 2. Through the use of spatial indicators, these scattered data provide insight into how the story unfolds.

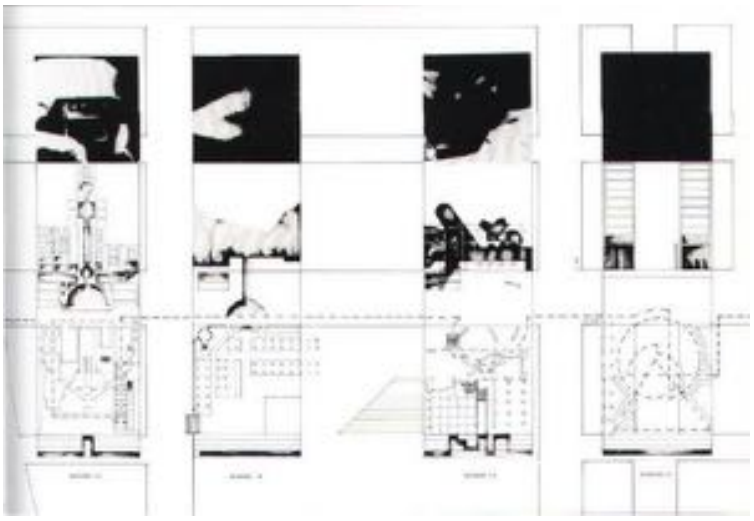

Figure 2. The dashed lines reflect the movement patterns of the different choreographies, which cut the space from inside. From: (Tschumi, 1994, p. 29).

In MT 3, the transcript comprises primarily two scenes. Tschumi shows five separate rooms, each with its characteristic variant, along a corridor in the first scene (See Figure 3). The second scene details the escape and subsequent fall of the protagonist. The layers are joined vertically to track a person's motion projection to represent the second scene of falling due to gravity. In the concluding scene of the MT 3, this projection transcends frame boundaries and merges the top and bottom frames.

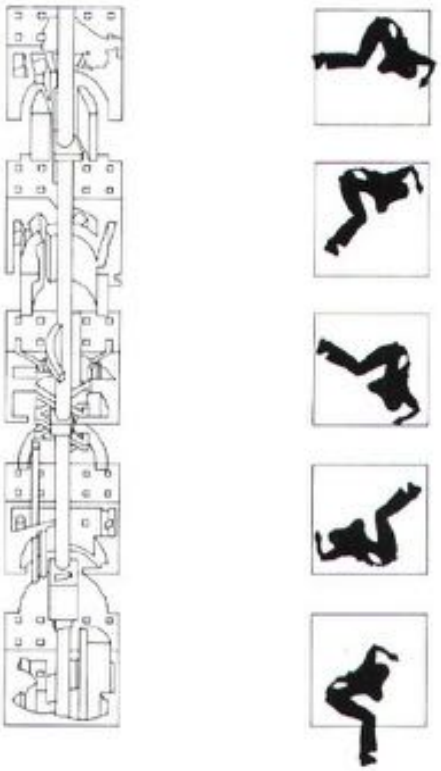

Figure 3. Vertical layers resembling a person falling due to gravity. From: (Tschumi, 1994, p. 43).

A succession of isolated frames from five different real-world events, architectural layouts, and movements, comprise MT 4, which starts with a series of spatial re-narration. In the last part of the book, Tschumi uses the choreographies of acrobats, soldiers, ice skaters, and football players to illustrate separation, conflict, and contradiction (See Figure 4). A movement diagram depicting the actuality of the triple permutation is used in the diagrams.

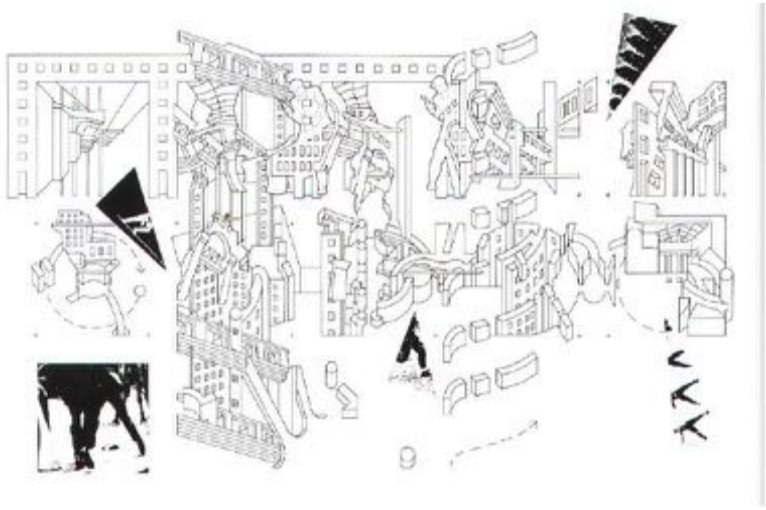

Figure 4. The dashed lines reflect the movement patterns of the different choreographies, which cut the space from inside. From: (Tschumi, 1994, p. 56).

RE-NARRATING THE CITY TEXTUALLY

As previously stated, in *the Manhattan Transcripts* Tschumi re-narrates the Manhattan experience through a combination of literary and architectural language, thus capturing the fragmented, and chaotic texture of the modern city on a textual level through triple notations. The fundamental sense of direction, passage of time, orientation, and movement is now realized due to the new inscription of the city. By deviating from a holistic narrative while re-narrating the city, ternary notation systems create a temporal sequence of frames that approximates the experiences of the metropolis on a textual level. When re-narrating the city, this interference serves as a representation of the spatial-temporal sense of the metropolis. By conveying and conjuring abstract ideas such as love, hate, and anger, *the Manhattan Transcripts* bring more concrete ideas, such as architecture and the city to life for the reader as a sequence of linked dynamic experiences.

This section will look at primarily MT 2 and MT 4, where re-narrations of the city on a textual level are clearest to develop additional alternatives and entertain more possibilities. Firstly, to develop the notation systems for MT 2, Tschumi uses either photos overlapping sections or maps. The different frame configurations and the relatively large gap make it easy to differentiate between the three notational systems (See Figure 5).

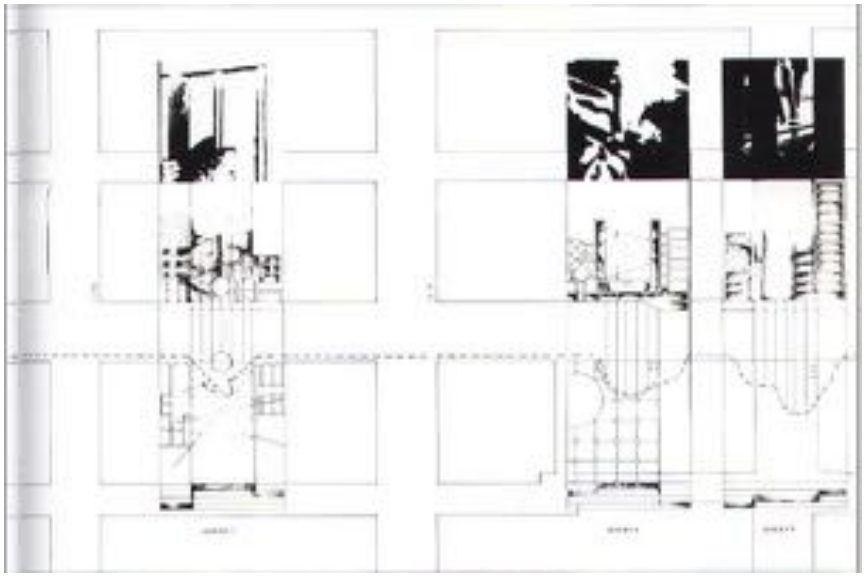

Figure 5. The juxtaposition of spaces, programs, and movement is all still traceable and distinct from one another. From: (Tschumi, 1994, p. 27).

Furthermore, narrativity is conveyed through spatial implications in MT 2, such as the dispersed data of street names and plans that merge into one another. The superimposition of photo and section becomes increasingly pronounced as the plot of MT 2 develops. The superimposition of the triple notations can be seen in the projections of the parts in the center frame. These projections reach down to the plans of the bottom frame, physically connecting them. Regardless of the protagonists' actions, the dotted line of movement penetrates the facades of the buildings around the midpoint. The abrupt darkening and gradual illumination of the frames in the MT2 creates a visual narrative of the city. The reader fills in the blanks and constructs their own version of *the Manhattan Transcripts*, although there is no apparent logical or chronological relationship between them. Last but not least, MT 2 retains a traceable storyline despite the increasing superimposition throughout the episode, blurring the boundary between plan, movement diagram, and section.

In MT 4, the transition between frames may be logical or irrational and contradictory. By transforming and altering any component deemed incompatible with the others, Tschumi has changed and modified the meaning and significance of events in *the Manhattan Transcripts*. Tschumi's classification of ice skating into three categories based on the event, space, and movement might be helpful to explain how transitions in triple notations work:

"(a) the reciprocal relation, for example, to skate on the skating rink; (b) the indifferent relation, for example, to skate in the schoolyard; and (c) the conflictual relation, for example, to skate in the chapel, to skate on the tightrope" (Tschumi, 1996, p. 186).

Tschumi pays close attention to the details of the permutations in *the Manhattan Transcripts*, as demonstrated in the ice rink example since the permutations increase the transitions in *the Manhattan Transcripts*. To be more specific, the transitions, when combined with the permutations, enhance the characteristics of the book to entertain additional possibilities (See Figure 6). Tschumi (1996) exemplifies this situation by stating that it is critical to demolish architectural norms to rebuild architecture along many axes. Thus, the program becomes an integral part of the architecture, and each

program component is permutable. Tschumi does not attempt to construct a coherent and cohesive narrative in his book, but rather, he re-narrates the city using methods not often associated with writing. Tschumi (1996, p. 165) argues in *Architecture and Disjunction* that, "Not all architecture is linear, and not all architecture is made up of spatial additions, detachable components, and clearly defined entities." Thus, rather than seeking ultimate integration, Tschumi concentrates on the details to enrich the architectural experience and expand its definition beyond the conventionally accepted standards. With the passage of time and transition, the spatial findings of the event are resurrected in the reader's mind. At the same time, the occurrences in *the Manhattan Transcripts* create a visual narrative that encapsulates illogical or inconsistent alternatives.

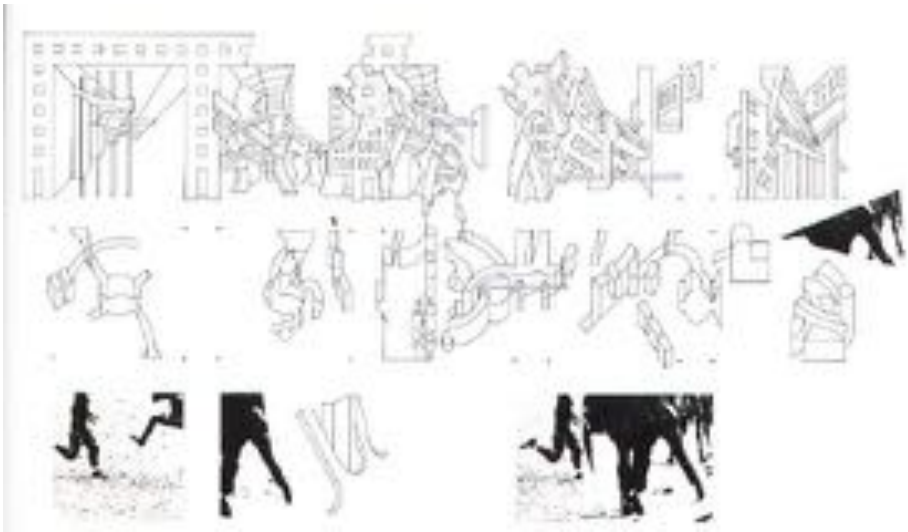

Figure 6. The juxtaposition of spaces, programs, and movement is all still traceable and distinct from one another. From: (Tschumi, 1994, p. 57).

CONCLUSION

The Manhattan Transcripts, with their triple notations and literary methods, never attempted to adhere to architectural principles of order and integrity from the outset. The new re-narration, which approaches the city as a book, combines the fundamental senses of movement, event, and space into a complex urban experience. The narrative abruptly changes into a sequence of images portraying Manhattan, replete with a homicide, chase, and capture. In this rich manner, the inscription is rendered on a textual level through the triple notations and developed into a critical analysis, interpretation, representation, and observation. Its unusual combination of notational systems with representations of incongruous connections such as skating in a chapel and skating on a tightrope challenges conventional ideas of usage and form.

In contrast to traditional representation techniques (plans, sections, or elevations), interference occurs by re-narrating the city using triple notations, leading to a more expansive definition of the city. As a consequence, each of *the Manhattan Transcripts*' components is simultaneously rebuilt and destroyed. The differences between the various media (i.e., architectural language, traditional representation techniques, and literary techniques) become blurred, and they collaborate to generate new opportunities. The approach may significantly affect how architects and designers construct events and programs in their projects in each case. To elaborate, they would be more inclined to inhabit and cooperate with space as active participants rather than passive orchestrators if they included

literary techniques as radical as triple notations, rather than concentrating only on end-products. This scenario is similar to the design, planning, and construction of an architectural project, which requires a sequential development of spaces open to the user to elicit specific feelings. It offers the ability to provide novel architectural and planning solutions without turning to expensive and time-consuming methods.

Similar methods have also been investigated to enable additions, changes, or exclusions to the integrated experience of many proposed projects. The subjects covered in this research may be expanded in the future to include a broader context and additional examples. To be clear, the connection between architecture and writing may not be exclusively representational and analytical. In reality, it may be converted immediately into alternative contexts for active participation in projects, education, or design. As a result, this whole process can enhance practice, theory, criticism, and education.

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REPETITION AND PARTITION IN SPACE: SPATIAL GRIDS AS DISPOSITIFS

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ABSTRACT

This paper discusses how and through which technologies grid becomes an apparatus for forming and disciplining architectural thinking and its praxis. As a part of its methodology, this study suggests evaluating grids as dispositifs of disciplinary power/knowledge. Dwelling on the concept of quadrillage (gridding) by Michel Foucault, the practice of gridding will be discussed at length. The normativity and the determination of the norm in architecture will be evaluated as outcomes of grids-as-dispositifs.

GRID TRANSLATIONS

The grid, as a net thrown into the space, a veil drawn over the sight, a procedure coded into the mind, is in a constant state of reproduction, in a scale that is certainly not limited to the field of architecture. It is a tool for design as well as being a designed tool. It is the first act in rationalising spaces. Sometimes, grids are invisible; other times, they conquer design by captivating the whole image and order. What is a grid? The response will be ever-changing if one thinks about grille, gridiron, quadrille, checkerboard, net, network, frame, lattice, moire, checkered, squared, griddle, or gridlock. How the word "grid" is used depends on its domain; thus, its referents would be different in both kind and degree: Based on a symbolic approach, and by an analogy, its visual resemblance with the basic utensil grill is evident. From a material perspective, the word is associated with –ore stem of iron, forming the word gridiron.

Quantitatively, its derivatives obtain numeric references, such as French catre means "four", stemming from Latin word quattuor and quadr-. The Proto-Indo-European root of four is kwetwer. It is the antecedent of the quadr, forming all or part of many words; such as cadre, cadrage, cahier, quadrant, quadrilateral, quadrille, quadrillage, quaderno, quarantine, quarter, quartet, squad, squared, tessellated and tetrarch. Apart from its etymological trajectory, grids are associated with numerous qualities and sometimes referred to in contradictory ways; as seen in Figure 1, there is a multiplicity of visual and readable qualities. They had been studied for their abstract expressions in arts, their calculability capacities of spatial modulation, their diagrammatic and symbolic references in various fields. It's not only grids repeating in space; their histories, architectures, and tales about the villains and heroes who craft them, could also be found highly repetitive in spatial discourses. Their historical constructions are repeatedly referred to represent or substitute, mask or enhance a quality outside of themselves, tied to discourses of larger frameworks.

Scholars are affiliating grids with concepts like idealness, modernity, neutrality, universality, rationality, and timelessness (Krauss, 1979 and 1994; Maitland, 1979; Sennett, 1992; Williamson, 1986). Some theorists and thinkers acknowledge grids as a diagram, a machine for thinking (Vidler, 2000 and 2006; Pai, 2006 and 2011; Love, 2013); others study grids as field conditions (Allen, 1999; Lynn, 1998) or render them as deep structures (Wittkower, 1949; Rowe, 1976). Hilberseimer, Le Corbusier, Mies, Wright, Gordon Bunschaft, Albert Kahn are cherished and considered the pioneers of the modern module grids.

Grids' abstract or physical existence reflects itself onto the tectonics of built works, whether they are designed by software or rigid manual rules of modulations. These manifestations sometimes happen at the expense of handling the total imagery over a gridded rationale's domination. They are both abstract and physical; in some cases, they are primers for developing design ideas, whereas, in others, they are potential outcomes of designed artefacts. They are unceasingly deployed in the production of both the novel and the banal, formulaic spaces. If there is one thing to be said about grids is that they are not passé at all.

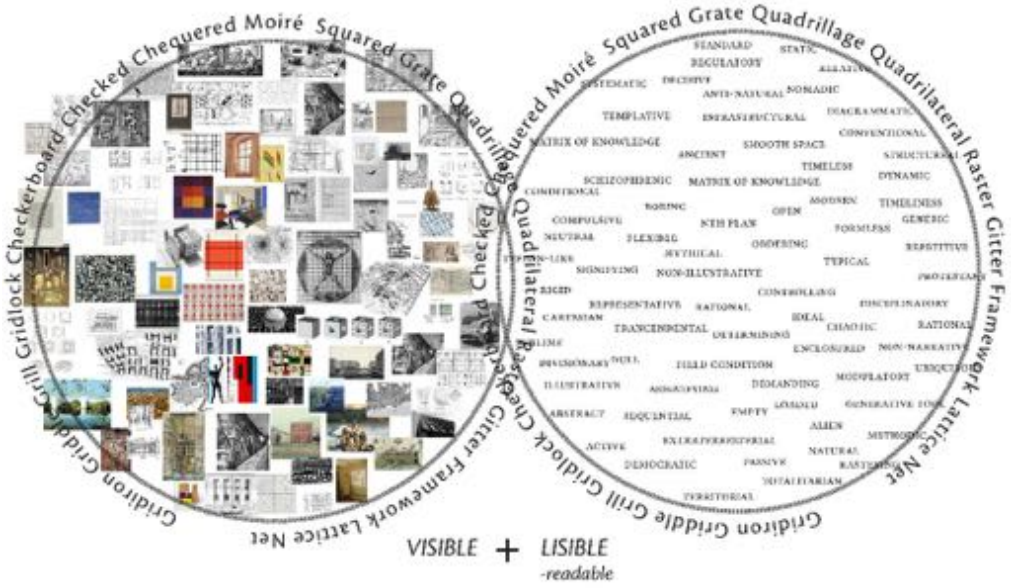

Figure 1. The diagram of grid translations

GRIDS AS DISPOSITIFS

At the cost of aggravating this rather long and repetitive history of spatial grids, this paper attempts to shake, if not dismantle, the architectural rhetoric that spares modern grids as a natural consequence of enlightened rationality, a neutered symbol of modernity. Here, I suggest reading grids' spatial performances not in isolation reserved for an individual architect's will or genius but at the centre of knowledge-power structures. I'd rather like to take grids as a problem of segmentation, a spatial problem of the modern disciplinary society, came up by the shift in the power structure and all-encompassing institutionalisation. Here, I'd like to discuss "this grid", called as *quadrillage*. I claim grid as quadrillage performs as a dispositif in transforming human beings and space into subjects and objects of power relations. Taking my cue from Michel Foucault's (1975) seminal work "Discipline and Punish: The Birth of the Prison", I'll examine quadrillage as a historical formation of grids in the context of disciplinary power/knowledge. At this point, I would like to construct my thesis based on the definitions of what a dispositif is and on how grids perform as one. The terminology I borrow here belongs to Michel Foucault, then expanded further by Michel De Certeau and Giorgio Agamben, and reviewed by Gilles Deleuze. Foucault (1982), revisiting his oeuvre and talking about how his life-long analyses on "the practices of self", states:

"In the second part of my work, I have studied the objectivizing of the subject in what I shall call "dividing practices." The subject is either divided inside himself or divided from others. This process objectivizes him. Examples are the mad and the sane, the sick and the healthy, the criminals and the good boys."(1982, pp777-78).

Dividing is practised by but not limited to penal, medical, educational, military and industrial institutions. However, instead of focusing on the minute description of the histories of institutions, Foucault concentrates on the "micro-physics of power", that how the essential techniques of these practices spread throughout society in its capillaries, in small, often unnoticed ways (1995, p139). These techniques in Foucault's (1980) terminology are then to be called *dispositif*s.

They are made of elements as "…a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions - in short, the said as much as the unsaid" (1980, p194). For that, the dispositif itself is the system of relations that can be established between these elements. Dispositifs, for Foucault, are like formations: Setting up models as a norm; "their principal function at a given historical moment is to respond to an urgent need"(ibid, p195). That need is about performing conduct -of a state, a society, a territory, the self-; therefore, it is actualised in discursive and non-discursive practices within power/knowledge regimes. "They are strategically elaborated as subjects and technologies of governing practices in different ways; always inscribed in a play of power they are to be found linked to certain coordinates of knowledge which issue from them but, to an equal degree, condition them" (ibid. p194). De Certeau traces this terminology of Discipline and Punish, and states, "…while Foucault studies of the organisation of the "procedures" of penitential, educational, and medical control at the beginning of the nineteenth century, he offers a variety of synonyms, words that dance about and successively approach an impossible proper name: "apparatuses" (dispositifs"), "instrumentalities", "techniques", "mechanisms," "machineries", etc. (1984, p45). He then accurately notes these procedures organise and create "the space that makes possible a rational order; rather it is the minuscule and ubiquitously reproduced move of 'gridding' (quadriller) a visible space in such a way as to make its occupants available for observation and information."(ibid, pp46-47). Gridding, as a dispositif, conditions architecture and the bodies in which they distributed, not just for their formal qualities but also for their informative contents.

For Agamben (2009), the scope of apparatuses are even broader: Further expanding the already large sum of Foucauldian dispositifs, Agamben calls an apparatus, anything that has in some way the capacity to capture, orient, determine, intercept, model, control, or secure the gestures, behaviours, opinions, or discourses of living beings. Agamben expands its embodiment from the institutional bodies to the minute details of everyday life:

"Not only, therefore, prisons, madhouses, the panopticon, schools, confession, factories, disciplines, judicial measures, and so forth (whose connection with power is in a certain sense evident), but the pen, writing, literature, philosophy, agriculture, cigarettes, navigation, computers, cellular telephones and—why not—language itself, which is perhaps most ancient of apparatuses—one in which thousands and thousands of years ago a primate inadvertently let himself be captured, probably without realising consequences that he was about to face." (2009, 2).

Both Foucault's and Agamben's definitions of apparatus/dispositif provide a trajectory for my comparative reading. Grids take their parts as causes and the effects of existing conditions of spatiality, urbanity and governing mentality. In that sense, any given historical or theoretical definition of grids should not be taken as plainly neutral or just objectively descriptive. My ultimate goal is to present evidential examples of how and through which technologies grids passes beyond a mere geometrical template and embodies a disciplinary power upon architectural form and discourse. I continue by commenting on Foucault's analysis of the quadrillage, on how grids prove valuable and effective apparatuses in forming a disciplinary power regime.

"A" GRID DISPOSITIF: QUADRILLAGE

Quadrillage according to Larousse Dictionary:

- Layout in contiguous squares; a set of lines that divide an area into squares.
- Division of a country, a city, etc., into sectors determined from the point of view of the establishment of shops, industries, etc.: Hospital grid.

- Operation intended to ensure the control of an area of inhabited territory, by dividing it into sectors, entrusted to military or police units.

- System of straight rectangular lines, regularly spaced, reported on the maps, used to specify the position of the points on the map relative to the origin of the coordinates of the projection used.

- Set of two families of horizontal and vertical lines of a plane, one particular horizontal and one vertical being graduated and such that all the lines of the other family pass through all their points of entire abscissa. (The grid is a "rough" means of locating points on the plane.)

- In town planning, synonymous with checkerboard.

These lexical meanings allow us to see how comprehensive the word's conceptual responses are; however, the importance of the grid is very much embedded or coded in the milieu, and we can frame it as the formation of modernity in Western culture. Borrowing from Foucault's (1975) Discipline and Punish: The Birth of the Prison, I first define the grid problem as quadrillage. Quadrillage is a concept for Foucault that is indispensable in understanding how the discipline works. Foucault defines disciplinary power as a combination of the practical and theoretical attempts to make the body both docile and more functional. Modern discipline involves controlling, classifying, and regulating space, time and human development. It is not a centralised or top-down control system, as sovereignty; it works through a decentralised capillary network of multiple small nodes, each contributing to the subordination. Although these aspects have already long existed, he finds the discipline became a general form of domination in the seventeenth and eighteenth centuries, in Western Europe. The "Enlightenment," which discovered the liberties, also invented the disciplines. At this historical threshold, following the increase in populations and the growth in the productive apparatus, establishing and securing the operativeness of institutions became vital. Foucault discerns, "The disciplines create complex spaces that are at once architectural, functional, and hierarchical" (1995, p148). Here I will further examine that these disciplinary spaces are equipped with all-encompassing grids, operating at both physical and abstract realms.

The first spatial feature of this disciplinary form of power is "the art of distributions", the organisation and fixing of "individuals in closed-off spaces" (1995, p141). The spatial model of which is the monastic cell; and enclosing aims to prevent rebellion while mastering the placement of the labour force and fixing it to desirable places. Secondly, these enclosed spaces are partitioned (gridded) into smaller and smaller units. Partition makes for an "analytical space" that allows better supervision. Thirdly, these spaces should also be functional sites that individuals become economically "useful". Functional space is made legible by charting it out on a two-dimensional table or grid graph. Through spatial division and individualising fragmentation of labour-power, Foucault refers to the Taylorist division of labour and the emergence of large scale industrial production. Last, following a hierarchy, these spaces must be ranked and divided into interchangeable units. The division, segmentation of spaces, and organising them in hierarchical orders are not new inventions; in fact, they are primarily Roman traditions unveiled by the Enlightenment. Foucault reminds, "…the Roman model, at the Enlightenment, played a dual role: in its republican aspect, it was the embodiment of liberty; in its military aspect, it was the ideal schema of discipline'. (1995, p146). One must recognise and remember that the township of colonial settlements is modelled after Roman camps. In both, the grid division was also aiming for a division of functions in the city. The grid of divided functional sites is not a foreign concept to Modern city planning, and CIAM grille is the case in point.

Further interpretation from Gilles Deleuze (1985) proves helpful in contextualising how these changes after the Enlightenment, in power mechanisms, hence in the role and spaces of gridding became effective. He is much more generous than Foucault himself in using the verb "quadriller" every so often. He claims the eighteenth century,

"…is no longer the regime of sovereignty, but it's a regime of organisation or gridding. Power, just as it no longer deducts, but organises and compels production and multiplies what is produced through its gridding, its organisation; power no longer makes die, it takes as its aim the management and control of life" (1985).

He further explains the need of a new relation with the space:

"The disciplinary power works the distributions of individuals in detail, no longer manages only groups but is directly interested in the spatial positions of the bodies, considering them as so many parts of a mechanism that it is a question of making function of optimally… For this homogenisation to be possible, a new relationship to space and position must be developed." (ibid).

Deleuze continues by explaining the role of the grid, and for him, it manifests itself in two ways:

"The internal grid aims at functionality. We organise cells to do this on the panoptic model, and we seek a homogenisation of space through rank and series. The role of this grid is to distribute individuals according to complex spaces, which are architectural, functional or hierarchical. Thus, the grid allows, on the one hand, the fixing, and on the other hand, ensure circulation. It, therefore, has a double objective, which is first cell segmentation. The management of the differences between the segments, that is, takes care of combining them with each other for the best possible functionality. As a result, the segmentation of space does not create a rupture but on the contrary homogenises by squaring, by bringing discipline into the smallest details, in the finest spaces."(ibid).

Gridding is not only applied to the spaces, to architecture; it is also imprinted onto time. Deleuze continues,

"This organisation of space is extended by time management. With "timetable" temporality is segmented and takes the line as a model, while space was thought of in relation to the surface, to the cell. Space and time are therefore both conceptualised according to a geometric scheme." (ibid.)

Indeed, Foucault finds the "tables" as one of the significant problems of the eighteenth century's scientific, political and economic technology, as they were "both a technique of power and a procedure of knowledge". (1995, p148) Gridding of the time, by the twin operations of distribution and analysis, forms "the cellular power", or the power comes from creating spaces in cells. The numerical organisation of time is similar to how a geometric table organises space; it is constantly supervised to constitute "a totally useful time" (ibid. p150). The time is organised by dividing it into successive segments. These segments are put into an analytical plan where one follows the other in increasing difficulty or complexity. Each segment marks an end by an examination to differentiate, rank and classify. This sort of "analytical pedagogy" is also to be found in Froebel's kindergarten education, which is based on solving successive tasks by assembling abstract geometrical shapes on a gridded plane. One needs to remember that kindergarten schooling was influential on the primary level education of the masses. Researches prove that Frank Lyold Wright, Mies van der Rohe, Le Corbusier and Walter Gropius had once been schooled according to this Fröebel tradition when they were just kids (Vale and Vale 2013; Zinguer 2006; Rogers 2016, Vogt 2000). In the next part, I will further discuss and show a few examples of how gridding of space and time gained dominance in the formation of modern architectural thinking.

DISCIPLINING ARCHITECTURE: A GRIDDED FORMATION

Rabinow (1984) notes that for Foucault, "…once established, grid permits the sure distribution of the individuals who are to be disciplined and supervised. In a factory, the procedure facilitates productivity; in a school, it assures orderly behaviour; in a town, it reduces the risk of dangerous crowds, wandering vagabonds, or epidemic diseases" (p.17). In this sense, Deleuze finds "the general hospital and the prison are only secondarily places of confinement. They are primarily spaces of visibility. That is spaces of visual gridding (quadriller)". It is essential to understand here that gridding is not just a segmentation drafted in the space. Its role is much more intriguing once it's taken as a dispositif of the disciplinary power. Its spatial and temporal order epitomises the discourse of the discipline, produces knowledge and shapes its forms and contents. It is therefore, the architectural machinery for surveillence and control. They function to control the gaze, to standardize design methods, train and tame the body by providing the necessary aptitudes and talents. Finding grids' roles in what is being said and unsaid will help to relocate their perseverance in accomplishing tasks in different forms, mediums and procedures of designing: The ubiquity of gridded papers, building blocks, template-based design exercises, technical and professional formations and guidebook strategies; technologies that exercise on bodies providing minute details of its parts, planning of labour force, workflows and timetables, allocation and distribution of spatial resources; in construction technologies, module-based standard productions. It is no coincidence that its instrumentalisation and ubiquitous availability is emerged towards the end of 18th century. This is the period where architects and engineers approached each other in terms of their tools, operational methods and design processes; and their common ground had been the gridded paper. This is not a symbolic conversion, indeed it marks a highly important transformation of the institutions and the pedagogy of teaching spatial practices. The global effect of this change displaced the physico-social relations in favour of physico-matematical conditions, and this process of abstracted construction of spatial grids paved the way for pre-printed gridded templates. They had started to be widely institutionalised in the dissemination and representation of spatial knowledge, in the period between the late 18th and early 19th-century. This new medium, the squared paper as it's called in Britain, or graph paper in US, with the increased supply and the gradual fall on their prices had accelerated a change in pedagogy and the curricula of teaching, in maths and sciences, as well as in the education of engineers. Evidently, study of architecture had its share of this convenience, both by including these commercially available sheets of paper in design process, and adopting as a way of thinking at the initiation of the drawing operation. Gridded paper brings a certain discipline to the position of the hand, it has a corrective role, while determining the norm of writing. In France, gridded notebooks are adopted as a general standard in schools, patented by Jean-Alexandre Seyès (bookseller-stationer in Pontoise) in 1892. Quadrille Seyès is still used by the French school stationery (Buffoni, 2017).

When grid performs as a dispositif, the body, like space, is considered an object of analysis and can be divided. It can be measured and quantified over movements, gestures, agility, reaction times, in terms of the coordination parts rather than as a whole. For this taming, all its movements should be predictable and calculable. (Foucault 1979, 137). In the Taylorist analyses of Frank and Lillian Gilbrecht in US, Aleksei Gastev in USSR, and the Fordist structures of Albert Kahn, it is possible to see the translations of the grid into process and space designs as the mechanism by which this rationality is operated. The goal of segmenting flows in factories into smaller, more efficient, steps to create greater divisions of labour.

This mentality is also found in the layout designs of office structures, where architecture is stripped of all qualities; only the grid remains. Rem Koolhaas (1995) notes that the "Typical Plan is to the office population what graph paper is to a mathematical curve. Its neutrality records performance, event, flow, change, accumulation, deduction, disappearance, mutation, fluctuation, failure, oscillation,

deformation." The bodies populating these spaces "can only 'be' in Typical plans, and not to eat, sleep, make love." (1995, 338). Long before Koolhaas, Colin Rowe (1986) observed the disciplinary order of the grid, in Chicago's "frames", stating,

"Apparently the neutral grid of space which is enclosed by the skeleton structure supplies us with some particular cogent and convincing symbol, and for this reason the frame has established the relationships, defined a discipline, and generated form… it prescribes a system to which all parts are subordinated" (1986, p90).

The grid is registered in a network of standards, norms and regulations, in the non-discursive part of the disciplinary power/knowledge. Standardisation of the grid is studied and established by national and extra-state institutions such as AFNOR, DIN, BS, ASA, ISO, OEEC, IMG. Modular coordination grids of the Netherlands (NEN), France (ACC), Finland (BES) are still in use and shaping buildings, sites, urban plans, as well as the standards of the industry (Şener, 2015). In modulation, design decisions are bounded, standardised and subordinated by the grid. Grid is the determinator of building economy, design strategy, and it works like a uniforming order of all possible gestures expressed in material, plan organisation and even to a degree that itself becomes the designed outcome. Out of iteration on this module-based approach a certain genre emerges as a consensus on model-grid. Taking out the marginal qualities, it is the multiplication and invasion of the grids in design processes.

IN LIEU OF CONCLUSION

Disciplinary power is the power of normalization and the formation of knowledge in modern society. Grids' ability to devise disciplinary power onto subjects deserves more attention in producing spatial, thus architectural knowledge. The "normal" architecture establishes its discipline on the basis of grid, ruling the design of public buildings such as hospitals, prisons, schools, which are institutions of "normation". Through discursive and non-discursive production, grids effectively contribute to this process of normation; actively produce discourses of normativity. Discussing the role of spatial grids and their deployments on the body, population and territory urge architects to become more critical of such taken-for-granted practices contingently produced by gridding. Grids operating as/within apparatuses reciprocally produce new rationalities, new spatial orders of the world and exercise different modes of power in conducting and designing spaces, even sometimes to the degree of self-exploitation.

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A NEW WAY FOR UNDERSTANDING AND INTERPRETING ARCHITECTURAL PRACTICE: STRUCTURE AND FRAGMENT RELATIONSHIP

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ABSTRACT

Design practice has actual and intellectual processes that connect and construct the past and present experiences of perception. As representations, images are the outputs of these processes. In other words, we think through images and perceive things other than the physical. This study argues that representations occur in four levels; physical representations, visual representations, textual representations, and phenomenological representations which are mental representations. These images are fragmented in the mind and fragments are restructured through a rhizomatic relation. As a product of these processes, completely different representations are structured at every time. The relationship between fragments and structures on which this article focuses is not a dialogue in which the components protect themselves while communicating or not a partial-whole relationship. Instead, it focuses on the intellectual outputs of fragments and structures that continuously reconstruct themselves. Considering the rhizomatic relation between structure and fragment, this study offers a new way for understanding and interpreting today's architectural practice. In this context, examples from Mimar Sinan Grand Award-winning architects in Turkey are presented as case studies to discuss the fragment-structure relationship of the images of architects and their practices. It is possible to say that the award itself is a representation. As determined by the common feeling and decision of a jury with different members every two years, this award presents us with an image of the award-winning architect as perceived by the selection committee. In other words, the award makes visible the fragments and structures of the architects and their practices. Within the scope of this article, photographs, interviews, and videos related to the Mimar Sinan Grand Award and award-winner architects are investigated to examine the structure and fragment relationship of architectural practices. A rhizome map of fragments and structures has been produced for each architect. This is an ongoing project; Rhizome maps are the first results of this study. In further stages, these maps will be further examined, and qualitative analysis will be made.

KEYWORDS: Architectural Practice, Fragments, Structure, Image, Mimar Sinan Grand Award

PROLOGUE

Architectural practice encompasses more than just design and construction; it includes everything from criticism to theory to history to pedagogy to architectural education. This study argues that architectural practice has actual and intellectual processes. As practices have diversified, processes have become more complicated. The linear process that started with an idea and ended with a product has disappeared. Accordingly, the process became more critical than the final products. Focusing on the processes of design practices rather than buildings themselves reveals the fragments and structures on which the architect constructs his own image. This study researches an alternative way of understanding the processes and outcomes of architectural practice.

IMAGES/REPRESENTATIONS

Design practice has actual and intellectual processes that connect and construct the past and present experiences of perception. As representations, images are the outputs of these processes. In other words, we think through images and perceive things other than the physical. Daryush Shayegan (2014, p.21) argues that perception occurs through active imagination and an image provides representation. In other words, we think through images and perceive the world of beings outside of us, both with what exists and not. Ron Burnett explains in his book 'How Images Think': *"Images talk to people because seeing is being inside and outside the body." (*2004, p.20-21). In other words, as soon as the eye sees an image in the external environment, the mind begins to communicate with it. Similarly, Juhani Pallasmaa (2005, p.13) argues that environmental perception transforms retinal gestalt into spatial and bodily experience. In addition, he adds that the act of seeing integrates the perceiver with space and at the same time pushes him out of space. In this way, the perceiver becomes the observer. The act of perception includes different levels. The relationship between the object and the environment in which they are created; It includes textual, visual, and physical levels. In addition to these levels, perception also includes the fourth level, the mental level, which is more hidden than the other levels. A phenomenological approach is needed to reveal this level. These perception levels also constitute representations. Accordingly, this article states that the representation of practices has four levels. These are physical representations, visual representations, textual representations, and phenomenological representations. This article points out that representations are disintegrated in the mind and these fragments are restructured with a rhizomatic relationship.

THE RELATIONSHIP OF STRUCTURE AND FRAGMENT

This study proposes that the concepts of structure and fragment are neither similar nor opposite but contain/extend/form each other. Referring to Gilles Deleuze and Félix Guattari, this study argues that the concept of rhizome describes the relationship between fragments and structures that seem unrelated to each other. Therefore, the term refers to a network of thoughts, experiences, practices, images, which separate, transform, spread, develop, grow, merge, and overlap through time (Deleuze and Guattari, 2005, p.5). As a product of these processes, different representations (images) are formed in each rhizomatic connection. Because the processes of this phenomenon are mostly random, unplanned, and unpredictable, it can be defined as chaotic. Deleuze and Guattari define chaos as a state that encompasses all possibilities. In this regard, the mind can be thought of as a medium in a state of chaos (1994, p.118). Therefore, a mind can construct images as a result of its perception of objects, as well as their fragmentation and structuration. Life experiences shaped by architecture pile up piece by piece in the chaotic environment of the mind as images of our houses lived in, the schools we attended, the offices we occupied, the streets we walked, neighborhoods and cities we lived in, places we visited. By referring to and connecting to our past experiences, we name and comprehend things. As an

example, for someone looking at Ronchamp Chapel for the first time, it is difficult to guess that it is a church. The image of this structure leaves someone with a lasting impression. It is unlikely that one will ever forget it, and then its image fragments and becomes associated with other fragments and structures from his or her past. The subjectively experienced world (phenomenological experience) consists of parts that are constantly transformed and distorted, and the relationships between them are random, nonlinear, and unpredictable (Deleuze and Guattari, 2005, p.7). The relationship between the structure and the fragment is an open-ended process that forms the design language of an architect. As a result, actions do not follow a linear path with clear beginnings and endings. As Alvaro Siza states that, the point zero will never actually be a zero point and it would not be wrong to say that there will be no end point. This structural construct also includes a kind of reverse perspective, repetition. But *"repetition is never a repetition."* (2015, p. 21).

Therefore, every piece is a whole, and each piece contributes to the whole. Umberto Eco, quoting Luigi Pareyson in *Open Work* (1989, p. 21), states that a work of art has infinite aspects because each fragment refers to the whole and reveals its essence in a particular way. Accordingly, the fragment-structure relationship that this article focuses on is not a type of dialogue in which the components protect themselves while communicating or are in a partial-whole relationship. Instead, it focuses on the intellectual outputs/potentials of transforming fragments and structures that construct themselves.

POTENTIALS OF THE RELATIONSHIP OF STRUCTURE AND FRAGMENT

Architectural awards provide recognition, appreciation for architects and their works. Aside from bringing attention to certain issues, awards also encourage and stimulate tendencies and sensibilities in architectural practices. As Nur Çağlar (2013, pp. 4-8) states, *"[r]eading the architectural competition proposals simultaneously (synchronously) provides an understanding of the architectural language in a certain time period."* The mentioned architectural language is interpreted as an image (representation) within the scope of this article. These awards also define notable architecture and change the architectural understanding of the built environment and society. Architecture, as an action that includes both mental and physical processes, interferes with the relationship between people and their environment. This action, which has continued from the existence of human to the present, has been shaped by being influenced by the development and change in the social field. Therefore, architecture is a structure that reflects the political, economic, and socio-cultural environment of a society and changes over time, and the architecture of a certain period is associated with the social components of that period (Karaibrahimoğlu, Usta, 2020). Aydan Balamir (2000, pp.108-116) discusses that periodic awards draw the attention of experts and the public in general to notable figures in the field. This study proposes a method for understanding the contemporary architecture that has been formed by and revealed changing-transforming dynamics affecting architectural practices. Through an examination of structure-fragment relationships of architectural awards, we can better understand and interpret architectural practice in the present day. Within the scope of this study, the architects who received the Mimar Sinan Grand Award are examined as case studies, because it is the most prestigious architectural award of Turkey. Mimar Sinan Grand Award and award-winner architects are investigated to examine the structure and fragment relationship in the contemporary architectural practices in Turkey. A rhizome map of fragments and structures has been produced for each architect. [Table 1]

The Mimar Sinan Grand Award is part of the National Architecture Exhibition and Awards program, initiated in 1987 by the Chamber of Architects. It is awarded every two years. Each time, different jury evaluate the candidates. The award was first given to Sedad Hakkı Eldem in 1988. So far, 17 awards

have been granted, and the awarded architects are shown in the figure [Fig.1]. The Mimar Sinan Grand Award is given to an architect or collaborating architects for the contributions they have made to the field of architecture throughout their careers. It is possible to say that the award itself is a representation. This study argues that the Mimar Sinan Grand Award is a representation of a certain environment in a certain period. This award, which is determined by the common feeling and decision of the selection committee, where different architects come together each time, presents us the image and fragments perceived by the audience (the selection committee) every two years. In other words, the award makes visible the fragments and structures of the architects and their practices. The award is also a structure that consists of fragments.

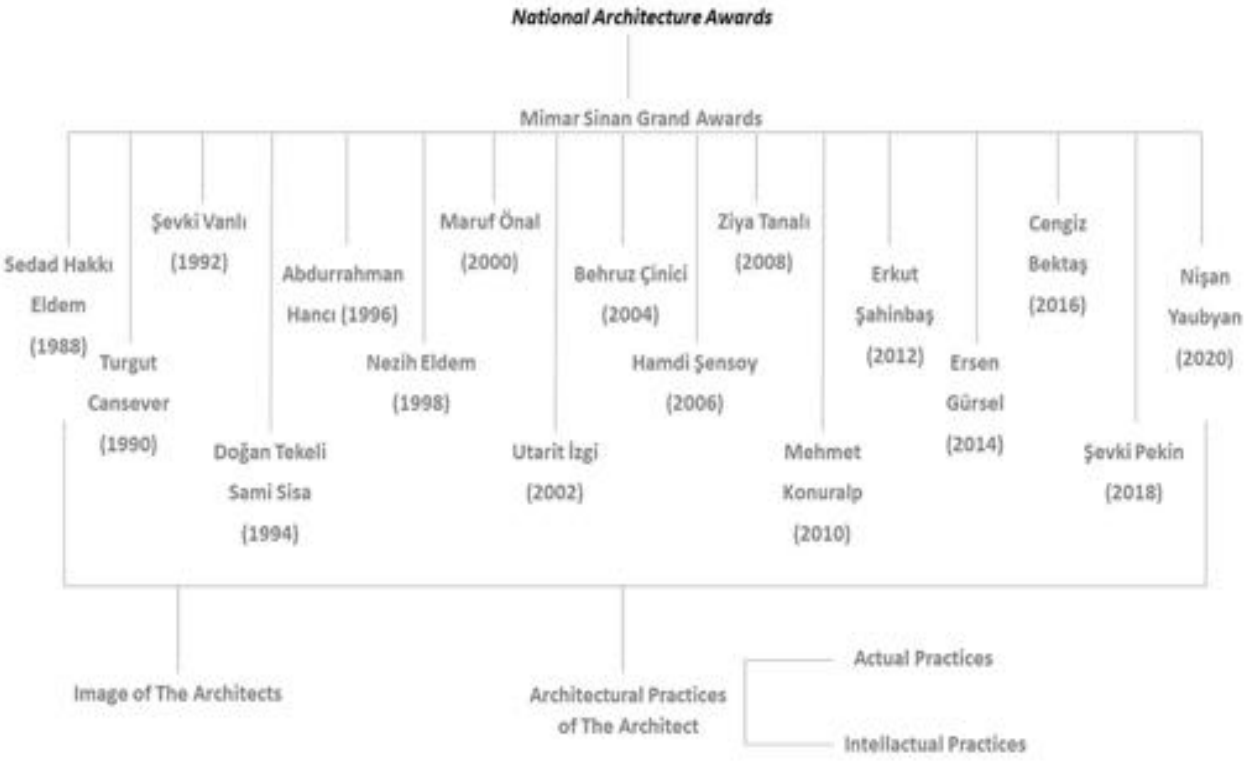

Figure 1. Awarded Architects' Graph

To analyze fragments of the award, the texts available on the website of the Chamber of Architects National Architecture Exhibition are investigated. These texts reveal representations of the award and the award-winning architects perceived by the selection committee. In this way, the texts present the fragments of the award. In this study, The Chamber of Architects website was used as the main source of information in the review of awarded architects within the framework of structure-fragment relationships; sources also included architectural websites, social platforms, and archives. Photographs, interviews, and videos related to the Mimar Sinan Grand Award are investigated to map the structure and fragment relationship of their images as the Mimar Sinan Grand Award-winning architect. This rhizomatic mapping provides a draft analysis of the text prepared to understand architectural practices within the framework of this relationship. It is out of scope for this paper to include all these texts prepared as a result of the research, but the rhizome maps of the award-winning architects are presented.

The Fragments of the Award and the Architectural Practices

Examining the award-winning architects presents us with fragments of architects' own image, fragments of the image of the architect that the selection committee seeks, and fragments of the Mimar Sinan Grand Award itself. The relationships among these fragments are rhizomatic, as previously discussed. The Graph Commons was used to map these rhizomatic relations, the QR Codes and the links are presented in the table.

The List of Awarded Architects:				
No	**Year**	**Name- Surname**	**Graph Common Study Links**	**QR Code**
1	**2020**	**Nişan Yaubyan**	https://graphcommons.com/graphs/1104cfd6-158c-4d7a-9c9b-6cca8ad3bfb0	
2	**2018**	**Şevki Pekin**	https://graphcommons.com/graphs/28449a82-c4d7-402b-9a54-a0297b89a96c	
3	**2016**	**Cengiz Bektaş**	https://graphcommons.com/graphs/04394b04-b90c-40a5-8ab8-9f9264fff118	
4	**2014**	**Ersen Gürsel**	https://graphcommons.com/graphs/2cd5a6cd-89f7-4971-8748-6cba9bbdbf10	
5	**2012**	**Erkut Şahinbaş**	https://graphcommons.com/graphs/cb9cf805-1598-4dee-a985-26d8a0ae64ae	
6	**2010**	**Mehmet Konuralp**	https://graphcommons.com/graphs/b1a24e0a-d068-4546-9fdb-48da56b0f4c2	

7	**2008**	**Ziya Tanalı**	https://graphcommons.com/graphs/0b759cc8-8c0e-4a7e-a57d-05c712ba4521	
8	**2006**	**Hamdi Şensoy**	https://graphcommons.com/graphs/3c3a59ea-b481-466a-84a0-bd682b13f417	
9	**2004**	**Behruz Çinici**	https://graphcommons.com/graphs/91382612-10e1-470a-b422-69aafcfdded9	
10	**2002**	**Utarit İzgi**	https://graphcommons.com/graphs/c0984d3f-ffac-4a4c-a033-c6d7ca304a48	
11	**2000**	**Maruf Önal**	https://graphcommons.com/graphs/de6ecc86-7fa2-4c98-87ce-98c8ea0f542d	
12	**1998**	**Nezih Eldem**	https://graphcommons.com/graphs/b91af198-7399-48e4-bd0b-0d7360117170	
13	**1996**	**Abdurrahman Hancı**	https://graphcommons.com/graphs/0c8865e9-d973-4b49-bb5b-6e227660a9ed	

14	**1994**	**Doğan Tekeli – Sami Sisa**	https://graphcommons.com/graphs/46926c85-6ffa-49c7-997b-fda3fe66849a	
15	**1992**	**Şevki Vanlı**	https://graphcommons.com/graphs/c892faae-d08d-4f58-9c0d-8cf3cb54fc4d	
16	**1990**	**Turgut Cansever**	https://graphcommons.com/graphs/17e1ecad-f078-4eb0-8b24-3a821438d0a1	
17	**1988**	**Sedad Hakkı Eldem**	https://graphcommons.com/graphs/de7faef5-329b-45d2-ac77-e217623df672	

Table 1. List of Awarded Architects

As a result of the research for each award-winning architect, a rhizomatic map consisting of fragments was created. They also show the observability of a rhizomatic relationship between fragments that make up the architectural language of practices. Due to their open-ended character, these maps can be developed and open up new discussions. The data collected and their analyses are presented here as an open system to lead the way to further investigations and understandings. Regarding the potential of rhizomatic maps, Ela Alanyalı Aral (2018) states: *"As a rhizomatic activity, mapping allows for the establishment of new and open-ended relationships through techniques that are both inclusive and pluralistic, and flexible."* Another important point about mapping as a rhizomatic activity is what Deleuze and Guattari call the plane of coherence. According to Deleuze and Guattari, this concept, which has a very rich and complex meaning, can be summarized as follows in the context of mapping: the plane of coherence, a surface that both incorporates and structures a new and open-ended series of relations (Kozar, 2009). Of course, if the surface is one that both incorporates and constructs, then the forms and techniques of representation must be both versatile and flexible. Within the scope of this study, the rhizomatic mapping study is an open-ended study, and it guides the master's thesis titled 'Structure and Fragment in Architectural Practice' carried out in TOBB ETU Architecture Department. Besides, it will also provide a guide for the fragments created by new interactions for the changing architectural environment for the future. A base was created so that it could be articulated. Each year, the awarded architects were examined separately. Actual and intellectual practices were investigated. Looking at these maps, it is possible to notice both the common fragments and the fragments that change from year to year. For example, the titles under the actual and intellectual

practices in these maps show the diversity of the practices. Examining the maps of all awarded architects reveals the diversity of fragments. All the awarded architects practice multidimensionally. In addition to design, they have also been involved in a variety of activities, including education, writing, research, and management. Besides, it can be observed that the multicultural environment is one of the main fragments of the award and their practices. All award-winning architects must either have worked or studied abroad or be part of a multinational or multi-cultural educational environment in Turkey. Life experiences, partnerships and masters affect their perception and practices at a phenomenological level. Therefore, rhizomatic maps contain a fragment of information about their hometowns, their birthplaces, their nationalities, their schools, and their families. It is impossible to discover all the fragments that belong to the architects, therefore, the rhizomatic maps in this study are open-ended maps. Their articulation is aimed at enhancing their future potential.

EPILOGUE

Briefly, this study suggests a method/way to understand today's architecture through the relationship between the image (structure) and its fragments. Exploring the fragment structure relationship considers the fragment as a defining and descriptive concept in contemporary architectural practices. Like rhizomes, fragments and structures are formed and transformed by coincidence and by different and unpredictable coalescence in the designer's mind, like the soil's roots. Based on the examples presented, in today's architectural practice, it is observed that the different productions of an architect share some common elements and sensitivities and thus have a common language. However, this study does not claim that the relations defined here can be generalized to reveal all architectural practice's structure fragment relation. In order to understand constructing relations between fragments-structure, this study explores a way among many possible ones. This study does not claim that it is possible to analyze, interpret, and evaluate architectural practices in all their aspects using this method. The rhizomatic maps can be extended by adding other fragments. Drawings that represent buildings architecturally can be diversified, as well as fragments and criteria related to the structure can vary, change, or transform over time or in relation to the subject the researcher focuses on. Therefore, the method presents the opportunity to be developed and adapted to the solution of different problems depending on the objective criteria and techniques to be applied by the researcher.

ENDNOTE

This paper is based on the master thesis by İlkiz Atabek Çelikli, co-advisor Asst. Prof. Dr. Sibel Acar and advisor Prof. Dr. Nur Çağlar at the TOBB-ETU Graduate School of Engineering and Science, Department of Architecture.

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INFLUENCE OF ARTIFICIAL INTELLIGENCE ON ALIENATION AND ITS AFFECT ON DESIGN

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ABSTRACT

Throughout the history of humanity, design has been revealed with different methods and different information references in different ages. By the 2000s, the supporter of this production was Artificial Intelligence (AI). This support has been realized with the development of design assistive interfaces with the development of technology. Two and three dimensional software developed with technology supports the designer's process. Over time, the development of technology has increased the performance of computers. These softwares, in addition to supporting artificial intelligence created as technology develops, have become the design itself with algorithms. The use of AI in the design process is currently within the scope of machine learning.Computers analyse datasets created by designers and learn from them. Deep learning, on the other hand, is more up-to-date for the field of design, and it is a field that has question marks about how it will develop. How these AI systems affect or will affect design processes has also become a current debate. When the process itself, together with the end products and the designer, is considered, the alienation effect of the machine eye has become a suitable subject to be examined.In this sense,alienation in the design process will be discussed from a Marxist standpoint.The major differences between alienation at post-industrial and hypermodern times must be taken into consideration the place where technology is today and it's role in the contemporary design world. Besides Marxist perspective, the coupled effect of Technology and Metropolitan life must be also discussed. Although today's modern societies draw an image independent from the material world, they become dependent on it day by day in the paradox capitalist order. With the accelerating capitalist and neoliberalist policies in recent years, the theory of "constructing a second nature"caused by this has begun to be discussed under the roof of construction and design. The fact that everything is consumed more quickly in the fast modernist and capitalist world pushes artists and architects to practical tools in the design process where they can get fast results. With AI, designers experience a tension within design and rapid results paradigms, which affects both themselves and the final product. AI tools, as machine eyes used in the design process, distance designers from their design and turn them into a "hegemonic eye", so that the final product becomes a singular object disconnected from both mental and social connections. Design remains a hedonistic and meaningless visual journey in "innovative" design methods, where various parameters are entered into the program and the result is obtained. For example, in the architectural context, it becomes meaningless to design a living space for human beings coming from nature with this unnatural machine eye, and as a result, an intricate situation arises in which both the architect is alienated from his own design and the human is alienated from nature. Palasmaa defines this situation as an "intellectual art game" detached from mental and social connections, and this examines the state of architecture becoming a "plastic art". AI-oriented design methods such as parametric design, which have become quite widespread recently, have led to the increase of building types that do not satisfy people psychologically and physiologically. As a result,

designs cause alienation by moving away from the natural with the machine eye, and the architecture becomes unable to fulfill even its basic functions. In the light of this, the alienation effect of artificial intelligence in the design process on architecture and industrial design disciplines are exemplified comparatively in this paper.

KEYWORDS: Artificial Intelligence,Architecture,Industrial Design,Alienation, Design Thinking

INTRODUCTION

The aspect of this paper can be understood better with some preliminary definitions. John McCarthy defines artificial intelligence (AI) as creating smart systems and in particular intelligent computer softwares, using engineering and science.(McCarthy,2004,pp. 2) In this paper, the term artificial intelligence is used for defining the mimicking behaviour of human intelligence by machines, especially by the computer systems. It is accepted that AI can be used as a tool in a virtual environment where 2 and 3 dimensional representations are created.

Artificial intelligence is a concept that includes machine learning and deep learning processes. This concept started in 1950 by testing how smart a machine can be with the Turing Test. With the advancements in computer technology, narrow artificial intelligence has been replaced by general artificial intelligence and super intelligence. The emergence of machine learning, a sub branch of artificial intelligence, dates back to the 1980s.(IBM,2020,URL-1) *"Machine learning is an application of AI that includes algorithms that parse data, learn from that data, and then apply what they learn to make informed decisions."*(Grossfeld,2020) The biggest factor in the development of machine learning is the increase in data sets and the ways of accessing them, as well as the developments in computer and chip technologies. Deep learning is a sub branch of machine learning. This term first used in the 2000s. Deep learning can be defined as the advanced form of machine learning with its simplest explanation. This development is not only that the machines analyse and produce the presented data sets through algorithms, but also that the machine becomes self-learning through layered algorithms.(IBM,2020,URL-1) "*In deep learning, a layered algorithm structure called 'Artificial Neural Network' is used. As a result of the in-depth configuration of algorithms in these layers, artificial intelligence networks that can make and implement smart decisions on their own are created.*" (Şapçı, Pektaş, 2021).

"*Design practice, which is an intuitive process, takes on a new meaning with the involvement of computer-based technologies. This new meaning includes the design of the entire process as a whole. 'Design of the design process' realized through computer-based technologies offers designers a computational environment in which many alternatives are tested in a multidisciplinary environment, new techniques and production forms that respond to previously taken decisions and the final product are created.*" (Özcan,2014) Artificial intelligence has enabled the processing of shared data sets in these environments with the increase in the use of the internet. As an example of AI usage, some algorithms use multiple image synthesis to obtain a single final image. (e.g. Google Photos, Photoshop) Data sets have been transformed into digital images with the technological developments experienced called image processing. "*Image processing enables images to be interpreted, manipulated and new images to be obtained by transforming them into digital data and performing operations on them.*" (Balcı, Terzi, Balaban, 2020).

Artificial intelligence and designers are involved in the design process as new participants.Understanding the phases of Design Thinking and Machine Learning is the first step towards understanding the relationship between this innovative methodology and artificial intelligence which is shown in Figure 1. The design thinking process begins with questioning the starting point. After establishing a narrower definition of the problem, the needs of the end user are tried to be determined. Stakeholders with different perspectives can come together at this stage. Marketers, developers, managers, designers, etc. they can all help improve the solution with ideas to help understand the problem. (Tapan Vora,2019,Url2)

Figure 1. AI from the lens of design thinking (Tapan Vora,2019,URL-2)

First step of the Design Thinking process is empathy which is *"deliberate effort to understand people's thoughts and desires about how they live, work, and thrive."(*Nguyen,2019) Searching basic human needs and motivations and solutions to meet those needs is the core of this stage. The ability of AI to create input to the designer can be more helpful in the field of empathy. (Tapan Vora,2019,URL-2) Media and literature search, creating data about the product and understanding the user is very important in the stage of understanding the experience. Large companies have a lot of data waiting to be analyzed. How do they analyze the data? How do we convert it to technical specifications? Just like hiring a new employee, large firms can hire AI. AI can be successful with the help and nurturing of the organization, and it should be recognized that AI is a learning tool that gets better over time with the help of new data. Examining data is very important in user research or data collection projects. Similarly, AI's data collection process starts with examining large volumes of structured or unstructured data.With the review of data, key features are gathered and new insights can be obtained. Without empathy, features can be missed and solutions can be limited to providing only expected solutions.

Second step in the design thinking process is the definition phase. In the definition phase, all the information collected in the empathy phase is analysed using data analysis tools and synthesized to identify a fundamental problem that needs to be addressed. Designers ask functional and human-centered questions during the design process. In the meantime, they do not just define the problem, but consider the problem from a multi-faceted perspective. Designers do not solve problems, instead they become engaged in a process of interpreting, framing and making meaning out of the design situation (Ylirisku, S., Halttunen, V., Nuojua, J., & Juustila, A. 2009). Design problems are multi-component irrational problems. The problem has a degree of wickedness. It's more of a blur on something we don't know. Can the degree of bad definition be reduced with the help of AI? How long does the problem remain a design problem when paired with AI, given that it defines the brief? Where does creativity begin? It is often not clear what the problem is in a design project; Cross says that the problem may be roughly defined by clients, that many constraints and requirements may not be defined in the process, or stakeholders of the project may think that objectives may be redefined during the project. In the design process, problems are often defined only in relation to ideas for solutions, and designers often do not try to define their problems clearly at the beginning of the design process. Thus, designers' cognitive strategies are based on their need to solve ill-defined

problems.(Cross, 2006, pp. 78) Designers can overcome some of its inherent challenges by formulating design problems in well-defined ways with the help of AI. To what extent senior designers are motivated by this assistance is questionable. As mentioned earlier, according to Thomas and Carroll, "*Design is a type of problem solving in which the problem solver sees the problem or pretends that there are some misidentifications in goals, initial conditions or allowable transformations.*"(Thomas, Carroll,1979, pp. 5-11) It was also noted by Akin in his protocol work on architects as a characteristic of designer's behaviour: *"One of the unique aspects of design behaviour is the constant creation of new task goals and redefinition of task constraints."* (Akin,1979,pp.pp.115–119) Can only AI's determination of problem definitions negatively affect creativity? Could the designer have moved away from the process? The AI may be asked to display the previously collected data during the identification phase. Labelled data sets make the process easier. Identification begins with an organization's existing data. Extracting data that AI can use can be the hardest part of using AI. Choosing the data of which AI will use can also challenge the AI designer. A company's best kept secret is optimisation, which comes from knowing the specifics of the business area. In the define phase, designers shape the problem and design brief with user insights, user needs, and user feelings. The design process cannot begin without defining expectations, limits, and mechanical infrastructure of the project. With the library of user needs created, AI can assist us. For example, the AI system can provide pros/cons breakdowns for each option, so that for example when elder people are the target users of an user interface design, font combinations and sizes that are more comfortable for them can be suggested. Or, when designing a seat for the elderly, it can offer designers ergonomic dimensions for ease of use. Maybe the role of AI can be defined as a constraint manager in a design process. When AI is used as a way to power design, it can help designers realize concepts they might not have imagined otherwise. AI can do the mind map or brainstorming phases for designers. Doesn't such a dominant use of AI in the design process limit the freedom of designers? Could this even be alienating designers from the process?

Although artificial intelligence has many positive features in the design process, its negative effects on designers and final products are worth investigating. Therefore,this study tries to answer the following basic questions; what is the influence of artificial intelligence on alienation and how does it affect designers and design itself? Regarding these questions, the following sections will first define alienation, and then this notion will be associated with the process of industrial design and architectural discipline.

THEORY OF ALIENATION

Theory of alienation by Karl Marx and Simmel's book "The Metropolis and Mental Life" are the main sources to define alienation. From Marx's point of view, the history of mankind had two factors: "*increasing development of man over nature" and "increasing alienation of man".* Coser described alienation as *"a condition in which men are dominated by forces of their own creation, which confront them as alien powers."* (Coser, 1977: 50-53) The biggest of these alien powers is money and Marx grounds his philosophy to this extreme power. This power governs all contents of human life and causes 4 main aspects of alienation,

- Alienation of man from the product he produces
- Alienation of man from the process of production
- Alienation of man from himself and each other
- Alienation of man from nature

Although there are four distinct headings, all of them are inseparably connected. Thus, they were taken into consideration all together in this paper.

There is a contradiction between the worker's devotion to his job and the power he obtains because the more he consumes himself for his work the more powerful material objects become thereby the capitalist order. This capitalist order causes alienation to the product and to the process of production. With alienation from the material he created, man is alienated from himself because he cannot fulfil himself with his job in which the material that he created is used . Alienation from himself causes disjointed social life and causes the man to alienate from each other and nature. This situation changes and adapts to present time and finds different mediums with the help of technology. (Coser, L. A.,1977) Another perspective in alienation is the basis of Metropolitan life. After the Industrial Revolution, towns evolved into the 'Metropolitan Cities' and the foremost driving force of this transformation was technology. In metropolitan order, people lie on their logical sides completely because the economy dominates the metropolis and there is a strong connection between these two, says Georg Simmel. It causes a lack of empathy between people and becomes the initial condition of alienation. Then comes the next step with the origination of 'Blase characters'. These characters are unresponsive against the elements of metropolitan life like promptitude and computability and these people see the world around them in grey-scale. They become dull and solitary individuals that form the alienated crowds in metropolitan cities. After this step of fraction, massive urge of self expression dominates the society. (Simmel,1988) This is a significant starting point for virtual representation environments and social media. With these mediums technology takes over its alienated work again. Moreover, especially with hypermodernity, people are constantly in a hurry to catch up with the speed of the world in metropol life and the time they spend in a certain place is considerably reduced. This also causes them to lose their sense of belonging and eventually to alienate them.

MODERN ALIENATION AND CRITICISM OF ITS FACILITIES

Modern day technology, compared to the post industrial revolution era, affects people's lives much more dominantly and faster. Alienation, which starts with the industrial revolution, spreads at its fastest in the capitalist world which gets more and more dependent on material components. Besides that with the developing technology, individuals diverge from the material world into the virtual world. Especially with the accelerating capitalist and neo-liberalist policies in recent years, the theory of "constructing a second nature" has begun to be discussed under the roof of architecture and design. The tendency to try to get fast results, which has risen with these policies and hypermodernity, pushes designers to make maximum use of AI. As an example for "construction of a second nature", Donna Haraway mentions in her essay "Cyborg Manifesto", the next step for humankind is a wiped out line between physical and non-physical worlds. (Haraway,D.,A.,1984) Despite Donna Haraway arguing that the world will become a place without marginalization, this thought can't prevent alienation of society and developed technologies and artificial worlds keep mankind discrete. The major difference of modern day alienation is that it comes with an imaginary feeling of freedom. To make it clear, Justin Clark's article "Get a Life" could be cited as an example. The main idea behind that article is, through the virtual representation environment and limited design tools which are given to players of the Second Life game, causes them to have an imaginary feeling of freedom but in reality, that players are alienated from real life. (Clark,J.,2005) As an example, the game pushes players to follow their desires that they cannot fulfil in real life, thus players are alienated from both material and self existence. Players design objects and environments that they cannot afford in real life. Similarly, Facebook is the most popular free virtual representation of the identity environment. Facebook profiles are our identities' representation. While creating a Facebook profile, people are able to express themselves within predefined templates in certain formats. As Baudrillard mentioned in his book "Simulacra and

Simulation" in virtual environments, individuals internalise their avatars and detach from reality and that causes alienation to nature. (Baudrillard J.,1994). Besides the general public, industrial designers and architects are also affected by alienation.

IMPACT OF AI ON DESIGNERS AND THE FINAL PRODUCT

Virtual representation environments and AI are used mostly in video games and entertainment, but what about the product designing and architecture? Industrial product designers and architects are exposed to artificial intelligence applications more than other members of the society due to the relationship of their profession with technology. The widespread use of computers and the rapid development of the internet caused designers to access a wider variety of information items. Also, computational designs became easier to do with the help of computer programs. As Moles highlights in his paper, "*The design activity itself is changing because the designers' tools are becoming immaterial*."(Moles,1988) These immaterial mediums are called CAD programs which are used by designers and engineers for creating two and three-dimensional models of physical components. There are several opinions about the CAD systems usage. Whitefield states that with the help of 3D virtual representations of the object made by CAD systems, designers can achieve proper and desired representations of the design.(Whitefield,1986) On the other hand, *"the complexity of the CAD systems do not allow designers to focus on the design task." (*McCullough, 1996) To be more detailed in relation between Marxist theory and designer's alienation by AI, 4 main aspects of alienation created by the capitalist market must be examined in terms of designers. From Marx's point of view, designers become one of the working spins and become alienated to themselves, to their own interests, to their associations, to the world and to life. They undertake product development throughout the day. Instead of anxiety about designing useful products for society, they tend to meet the demands of the employer.

The first aspect of alienation is the alienation of the designer from the product he designs. Designers design products that they do not touch, that they do not see in real time. Some processes of design have turned into representation by rendering produced by artificial intelligence programs instead of the work done by the designer. The one bright side of these programs is that these programs provide flexibility in the forming phase of a geometry. As Lin mentioned in his article ; *"using physical materials, a designer can handle direct carving, piling and modelling and forms can be developed easily."* When producing freeforms, designers may encounter material constraints during the process in real world. They should also be aware of the difficulty of production and the time that physical actions will take.(Lin,2000) Existing CAD programs such as Rhino, Max, include a variety of functions and high computing power capabilities. Designers who have difficulties in creating forms with traditional methods, overcome this difficulty with computer programs. (Moles, 1988, pp.25-32) With AI, it becomes more possible to create forms more freely. Besides this flexibility, AI programs are much more economical compared to conventional design methods. This feature of AI programs made it preferable for capitalist economies which try to maximize profit for all circumstances. However, these AI programs split designers from both material and process of production and alienate them from the process of design. Since the operation of the graphical user interface is performed with mouse, keyboard and screen, the real sense of space is lost. This situation causes difficulties in adapting to the alienated new systems. (Mandel,1973) The Spacemaker platform shown in Figure 2 can be given as an example of generative design with AI in architecture.On this platform, artificial intelligence presents different architectural solutions for a specific area to the designer at the beginning of the process. In addition, a platform called Artbreeder which helps industrial designers ideation process with AI is shown in Figure 3. The basic image that defines the product to be designed with Artbreeder is selected

as base image and manipulated with other images. Thus, new images can be obtained by manipulating multiple related or unrelated images with artificial intelligence. (URL-7)

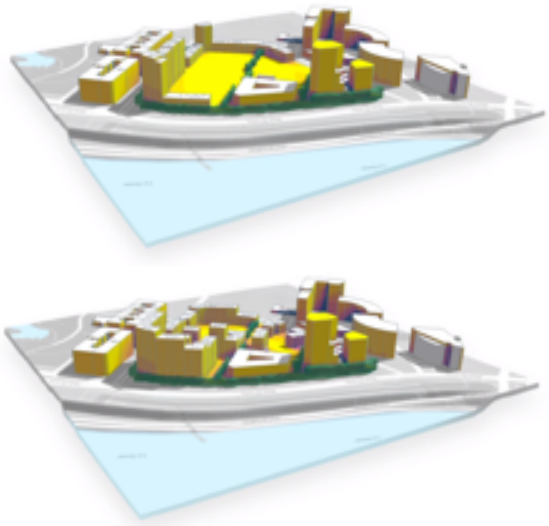

Figure 2. Generative design on architecture,SpaceMakar (URL-6)

Figure 3. Generative Design on Industrial Design, shoe design (URL-7)

On the other hand, AI-based programs, which are thought in common to "liberate" the designer, actually cause fixation at one point and eventually cause a decrease in their creativity. The designer who accepts the alternatives offered by artificial intelligence is deprived of thinking about new possibilities. In this perspective, these AI softwares offer a limited freedom and blunt the imagination of the designer. Also, it could use inadequate designs which don't satisfy the designer and alienate them from the product. For example, the smell and reactions of the leather material in the real world can not be perceived in virtual representation environments. Designers are using a lot of CAD programs to visualize their products in a virtual environment, so; they begin to alienate from products while using these programs. One of the most used programs is Keyshot in which a render; virtual representation of a product can be produced. With the help of the mouse click ,the material for the product can be

defined in Keyshot. Round icons on the screen become the designer's material. It is difficult to perceive the product size at the border of the screen. Render is actually not the product itself, but the thing represents the product. In the pixel world, a 3D object becomes an entity in itself. When people interact (touch, smell, sound) with a real product, they feel closer to the product and emotional relation is occured between product and consumer-designer.

The other important aspect of alienation is the alienation of designer from the process of production which is related to alienation from product. Production accelerated with the help of technology. This results in a faster product design process via AI programs and production can not be followed by designers. It causes loss of designers' knowledge of materials and production. Concerns restrict designers' creativity to design the product according to the constraints of the AI program.Different virtual representation web sites are used to show product before production. Also, As Papanek has pointed out, *"When everything becomes possible, when all the limitations are gone, design and art can easily become a never-ending search for novelty, until newness-for-the- sake-of-newness becomes the only measure."* (Papanek, 1984, pp.18) So, the designer may become alienated from society and the functional complex in the process.

Third aspect of alienation is alienation of designer from himself and each other. People in different stages of the design process can exchange ideas and incorporate processes more quickly with AI. Alongside with the co-design concept, the designers work freelance and individuality, this breeds metropolitan loneliness and alienates designers from each other. On the other hand, they can work more comfortably in environments where they can establish social relations and criticise one another.

Marx's theory about how people are alienated from the nature is the last aspect and it is in the sense of establishing a second nature in the cultural and social field sociologically explains the desire of people about designing a product which they wish to own in real life on a virtually represented environment to symbolize their own identities. This "construction of a second nature" matter can be observed very clearly in architectural discipline. AI tools, as machine eyes used in the design process, distance the architect from his design and turn him into a "hegemonic eye", so that the final product becomes a singular object disconnected from mental and social connections. This situation, which can be called quite nihilistic and narcissistic, turns architecture into an intellectual art game (Pallasmaa, 2012 pp.22) and distances the architect themself from their design. When it comes to the buildings themselves, whether they can adapt to nature is the number one criticism. However, it is absurd to expect this "naturalness" feature from a structure that was designed with a machine eye and which didn't receive input from a human being from nature. Hence, it is nearly impossible to fully serve the body that comes from nature itself. The result product remains a visual journey and the architect themself begins to transform into a "doing" subject rather than being an architect. As a result, an intricate situation arises where both the architect is alienated from their own design and the human being alienated from nature. The definition of an "intellectual art game", which is disconnected from the mental and social connections Pallasmaa mentioned, begins to make sense here, and the state of architecture becoming a "plastic art" becomes open to criticism. (Pallasmaa, 2012 pp.22) With the accelerated hyper modernization, AI-oriented design methods such as parametric and generative design, which have become quite widespread in the last period, have caused the proliferation of building types that do not satisfy the human being psychologically and physiologically, by putting the body itself and its spaces in the background. Instead of corroborating the body-centered experience, the architectural practice, which becomes hedonistic with the design methods that isolates the body itself, turns away from the collectivity into a singular plastic object and takes a position that alienates itself from the natural instead of being in flux with it. The recent evolution of design perceptions into shallow thoughts, such as the adequacy of appealing to the eye and intelligence, causes the focus on only the positive aspects of AI inputs in the process. Putting the user experience into the background,

considers architecture as an abstract geometry rather than a living space and turns its back on the bodily movements or human activities that come with human nature. These programs, which reduce architectural appreciation to the idea that it consists of taking a "set of retinal images", (Pallasmaa, 2012 pp.63) push the building to be designed primarily to be seen rather than occupied, and create the stigma that the structure will be aesthetically pleasing when experienced visually, not with the moving body. While these complex structures, designed by emphasizing the sculptural form, manage to appeal to the eye with their formal "difficulty", they cannot provide comfortable sheltering, which is the most basic function of architecture. (Robinson, 2012 pp. 339) When the parametric design examples, which are the reflection of AI in architecture, are examined, the structures designed with mixed grid systems both make the user experience difficult and the existence of structural elements that divide the experience area or restrict its use draws attention. Forgetting the fact that the main function of the building is to be designed for human beings begins to alienate them, who spend more than half of their lives in buildings, so that architecture begins to lose its main function. Designing an architecture to be inhabited or lived in is essential, and adequate aesthetic appreciation of a building requires more than just visual awareness of it. To communicate with architecture, it is not enough to think about it, all the extensions of the body must participate in this experience. Otherwise, the building ceases to be a living natural thing and turns into an abstract geometry. In situations in which bodily movements or human activities that come with human nature are ignored, people begin to become alienated from nature because of the "geometry" they live in. Zaha Hadid's Riverside Museum in Glasgow which is shown in figure 5, for example, described as "*an isolated and expensive monument that accommodates its intended use awkwardly and is hard to adapt. Nor are they always easy to navigate."* (URL-5)

Figure 5. Zaha Hadid's Riverside Museum in Glasgow (URL-5)

On the other hand, it is also worth discussing how these types of design deal with local culture or are sensitive to contextual issues. In this context, Zaha Hadid Architects' Lei Zheng's words are noteworthy: *"Parametricism has no sympathy to local culture until the local culture becomes part of the parametric system. It is a product of the global economy and negotiates specific boundary parameters resulting in new opportunities, gentrification and reformation."* (Moore, 2016) AI-based design types such as parametric design or generative design, which try to optimize patterns rather than socio-material phenomena by their formations, follow a techno-utilitarian method instead of taking the cultural as an input. The techno-utilitarian method they follow is mainly due to their reliance on the global economy. In this sense, being a product of this global economy is also remarkable in terms of resource use and ecology. The use of special production and custom-made parts instead of the existing

tape production with complex forms and construction methods increases the waste of resources. Thus, no matter how "ecological" or “natural” a design is, it eventually becomes one of the wheels of capitalism, together with inefficient production methods and becomes inevitably tied to the discussion of creating a “second nature''.

Design is an iterative process, problem analysis is done over and over again. According to Schön's Reflective Practice perspective, (Schön,1983) the designer is a person who has passive knowledge, reflects the process and learns as they do. While designing, the designer evokes something he has not seen or thought about before and creates another new information. Artificial intelligence can make association easier than a designer; because it can reach a lot of data quickly. The designer has his own culture and knowledge. Artificial intelligence can reach different cultures and knowledge easily and fastly. So it can act as an assistant to designers. Basically, it copies and models the human thinking system. Thus, just like our natural world, a secondary nature begins to be created as an artificial world. It is observed that what is “known” has also changed.

Computational design applications take special advantage of the unifying capacity of computation to create designs, enumerate libraries of potential components, and support the evaluation of design options at a speed not possible with human designers manually manipulating geometry. John Culkin said that; *“we shape our tools and then our tools shape us.”* (Culkin,1967) It shows the importance of giving the right data to AI to learn. AI designers (engineers) create frameworks and guidelines as needed to ensure safe use of AI. In order to speed up our design process, how should we define the artificial intelligence that we want to design for us? There is a two-way learning process here. Philipp Schmitt designed seating units based on four different elements; wood, steel, thread, data shown in Figure 6. Although the designs created by artificial intelligence can be defined as chairs, they cannot fulfil the sitting function. Designers are always trying to make a design different from the existing one; While AI is getting different, it moves away from the sitting unit brief. How to define the design of the sitting unit can be guided by the brief given? With AI competitor analytics, it can manage dense data and catch patterns. Artificial intelligence can create a pattern from benchmarks and use that pattern for design. AI can present designers with a list of suggestions before the idea development stage. This list may contain dimensions, trend material and texture information.

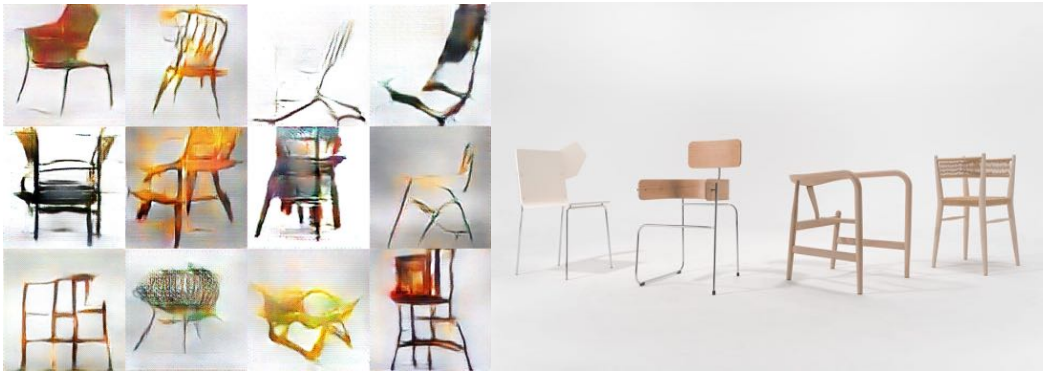

Figure 6. Seating units designed by AI and scaled models (Philipp Schmitt,URL-3)

The materials and production methods used by the designers have become more diverse, but the human still has a creative role in the design process, while the machine is in charge of production.(Schmitt,2018) Schmitt used AI as an early step in the design process to spark imagination. Often machine learning is used to create prompts and to create “augmented imagination”. At this point, it is open to debate whether this situation increases imagination or alienation.

CONCLUSION

Various AI software, which has been rapidly developing in recent years, has deeply affected disciplines that use various computer programs in their processes such as architecture and industrial design. These programs, which provided input to the design only as assistive elements at the beginning, have become the design itself with various algorithms with the dynamic change of technology. AI, which shows itself as machine learning in design, continues its development by evolving into deep learning. Along with deep learning systems, how AI technologies affect or will affect design processes has also become a current discussion. When the process itself is considered together with the final products and the designer, the alienation effect of the machine eye was found suitable to be studied. In this sense, alienation in the design process was examined in 4 sub-categories from a Marxist perspective and the negative effects of artificial intelligence software in these two disciplines were opened to discussion. In the result of this study; it has been revealed that designers are alienated from the product they produce, alienated during the production process, alienated from themselves and each other, and as a result, alienated from nature.

Although artificial intelligence is thought to have a negative effect on alienation, its positive features should also be acknowledged.Artificial intelligence can be used as a database that assists the designer in the design thinking process. At the empathy stage, it can become a platform where user needs and insights are collected. Thus, it takes on the role of user experience researcher and helps to understand users. During the AI definition phase, it can offer designers more defined and clear briefs. It can quickly collect products on the market for the designer, and also it can create a design guide for junior designers. This guide may contain material, texture, trend, technology and ergonomics measurement information. However, the situations discussed in this study show that artificial intelligence technologies have become the process itself rather than an assistant in the design process, and reveal that this dominance negatively affects the designer and the design itself.

Since architects and industrial designers perform similar design processes with similar computer programs, their interactions with artificial intelligence are also similar. For the past decade technology, alienation and AI concepts influenced both the design world and society together. A major development for communication device technologies was achieved in the last decade also but technological progress caused vast communication gaps between society. It seems that alienation caused by technology will grow continuously, especially in the design field. In the near future, VR technology can take the place of designing the product on the computer screen entirely with AI. It may not be necessary to make a virtual representation in various CAD software. The brain waves that designers think will be transformed into design representations thanks to the analysis of AI. Moreover, designers could hand the design process over to artificially intelligent computer systems. It will be encoded whether a product is proper to be produced or not by these systems. A process that takes place under the control of the designer can also take place under the control of the machine with artificial intelligence in certain parts of the design process. Even with self-learning , artificial intelligence can design simple designs on its own. Or could there be a new collaboration system between AI and designers? The relationship between human beings, nature and technological tools can be differentiated and alienation may increase.

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ANTI-SEISMIC CONSTRUCTION STRATEGIES OF TRADITIONAL COURTYARD BUILDINGS IN WESTERN YUNNAN, CHINA

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ABSTRACT

Jianchuan is a county in Dali, Yunnan, which is famous for its abundance of carpenters. The Jianchuan Carpenter Group is active in western Yunnan, with its influence reaching Tengchong in the west and Kunming in the east. In the traditional courtyard buildings built by the Jianchuan Carpenter Group, there is a common phenomenon of stacking components. Given this phenomenon, this paper analyzes the intention of construction from a tectonic perspective and contends that the motivation for such phenomenon lies in resistance against earthquakes. Western Yunnan is located in the Himalaya-West Yunnan seismic zone, which is one of the most active seismic zone in China. Since the 20th century, earthquakes of magnitude 6 or so have occurred on average once every one to two years. This paper also elucidates the mechanism between motivation and phenomenon and explicates that stacking components in the transverse and longitudinal frames demonstrate different seismic resistance strategies respectively. Furthermore, seismic resistance is manifested in the reinforcement of joints when both frames are integrated, which cast an impact on the setting of details of the overall building.

KEYWORDS: Tectonic; Jianchuan Carpenter Group; Wooden structure; Seismic resistance

Figure 1. Structure in Suhe, Lijiang

The Jianchuan Han-style courtyard building structure often superimposes several layers of components on each other. This unique structure also appears in Lijiang, Jianshui, Yunnan. From a tectonic perspective, it may be possible to clarify the real intention of construction behind the phenomenon.Tectonic is a concept from Western architectural theory. In the article "*Structure, Construction, Tectonics*", Edward Sekler tries to define these three concepts: "*Structure refers to a system or principle of arrangement destined to cope with forces at work in a building*" "*As far as construction is concerned there are all the questions of selecting and handling materials, of process and technique*" "*Structure is realized through construction and given visual expression through tectonics*" (Edward Sekler, 1965pp.101-102). Projecting these three concepts into modern architectural creation, tectonic, structure, and construction correspond to the three divisions of work: architect, engineer, and builder. Interestingly, when these concepts are transplanted into the traditional Chinese wooden structure system, especially in folk construction activities, the master has three responsibilities at the same time. Thus his thinking covers the interrelation of the links from the preparation of the material to the erection, without the discontinuity created by the occupation differentiation. On this premise, starting from the feature of the structure, and then exposing the intention of the construction hidden beneath the feature, it is the process of retrospective how tectonic has been established: with structure and construction logic at its core, and ultimately resorting to visual representation.

1.FOCUS: EXTRACT: STACKING TECTONICS IN JIANCHUAN STRUCTURES

Borrowing from existing classifications of structures helps us to have a basic understanding of the

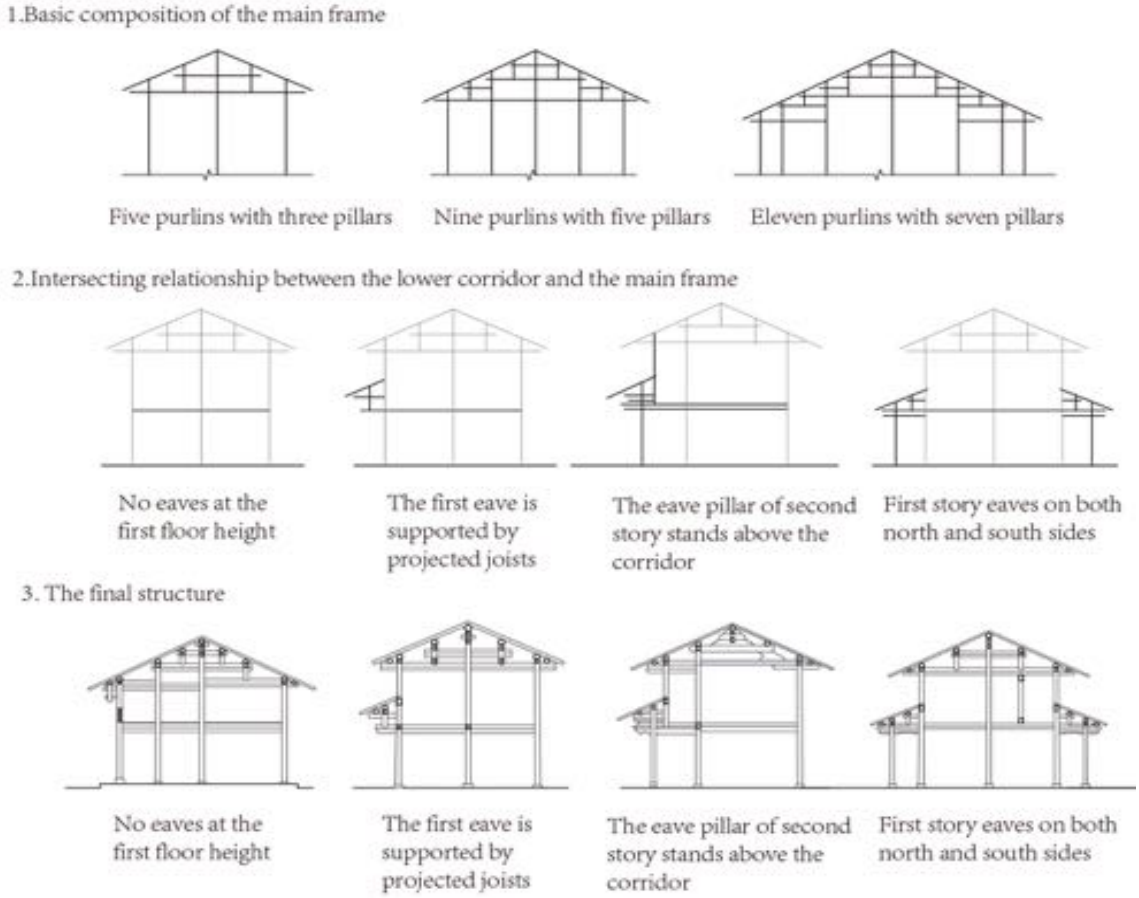


Figure 2. Jianchuan's existing structural classification

structures commonly used by Jianchuan carpenters. According to the difference in scale, a building can be divided into "*five purlins with three pillars*" "*nine purlins with five pillars*" and "*eleven purlins with seven pillars*" etc (Bin Huizhong, 2011pp.48). This step determines the basic composition of the main transverse frame. Later, according to the difference of the corridor under the eaves of the first floor, a two-story dwelling can be constructed in the following structural form: "*no eaves at the first-floor height*" "*the first eaves is supported by projected joists*" "*the eaves pillar of second-story stands above the corridor*" "*first story eaves on both north and south sides*". What is identified here is the intersecting relationship between the lower corridor and the main structure. Then the structure of the building is finally determined, after which the carpenter will apply different layouts according to the base of the courtyard.

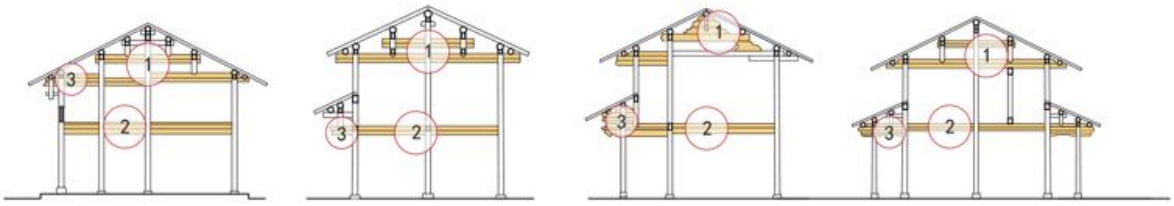
The above classification stands in the position of the Jianchuan carpenters reflecting the various choices they may have encountered during the actual construction process - each choice resulted in a different structural form. Unfortunately, scholars tend to notice only the changes caused by the individual options and often overlook the stable tectonic that underpin the changes - the core of which contains the organization of components and the application of joints. For the carpenters, the conventional tectonics have been incorporated into their subconscious and even transformed into an unconsious instinct, needless to say. And scholars are unfamiliar with this because they have no

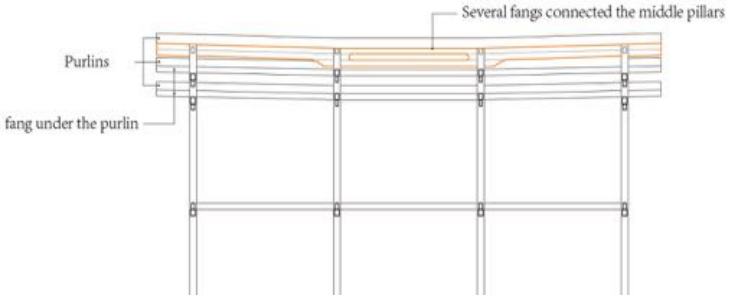
practical training. Structure is always the result of the intersection of type choice and tectonic methods, which are like the relationship between skeleton and ligament, and together determine the external image of structure. However, as seen in the figure, the phenomenon of stacking does not disappear with the change of type, but is a common feature of many structural patterns, proving that its source is mainly conveyed by the tectonic, not the arrangement of the skeleton.

The expressiveness of the tectonic is limited by the construction process, and the choice of materials, technical routes, and the order of installation all influence the final visual expression of the tectonic, and the Jianchuan is no exception. Like most of the folk construction processes in South China, the Jianchuan carpenters follow the order of assembling the transverse frame first and then installing the longitudinal members when frames are erected. Therefore, the stacking in the Jianchuan structure is fundamentally different from the stacking in the northern official buildings: the former is distributed in the transverse and longitudinal frame, relatively independent; the latter is stacked up and down, as a whole.

The stacking tectonic in the transverse frame are concentrated in three parts. First of all, in the roof structure, beam stacks above Fang, or *tuodun* stacks on the lower beam and supports the upper beam. Secondly, at the second-floor height, joist and Fang are combined to support the upper story. Finally, under the eaves, not only do the joist and Fang extend beyond the eaves pillar, but there are also several layers of short beams above them to support the overhanging eaves purlin.

The stacking in the longitudinal frame is relatively simple, mainly occurs in the head of the pillar. Although longitudinal Fang placing under each purlin is no lack of cases in other areas, the real special is at the head of the ridge pillar, in addition to the purlin and longitudinal Fang under the purlin, there are two layers of Fang stacking above each other.





Intention: Jianchuan stacking tectonic in response to earthquake-resistant demand

Yunnan is an active area with high frequency and intensity of earthquakes in southwest China. Since 964, there have been more than 700 recorded earthquakes, and since the 20th century, earthquakes of magnitude 6 or so have occurred once or twice a year on average (Wang Shengyue, 2002pp.42). The Jianchuan carpenter's main construction activities are in Dali and Lijiang, Baoshan and Tengchong. These cities are located in the western Yunnan earthquake zone, which is one of the eight major seismic zones in China, and even in the center of the seismic zone - Zhongdian, Jianchuan and Xiaguan (Department of History and Geography of Kunming Normal University ed, 1978.pp.27). The collapse of houses caused by severe earthquakes has undoubtedly posed a great threat to the safety of people's lives and property. To adapt to this unfavorable geographical environment, strengthening the seismic resistance of the house has become an important means of defense against natural disasters, which inevitably puts forward higher requirements for the overall structural strength and technical stability of the construction, the stacking tectonic method is catalyzed by this internal drive.

2.1 Stack tectonics in the transverse frame: the repeated use of two seismic strategies

Stacking tectonics, scattered over three parts of the transverse frame, can be divided into two modes according to its form and function: one is beam and Fang of equal length, arranged side by side, and the other is a combination of beam and *tuodun*, with *tuodun* being the support point between the two upper and lower beam. The former is the mainstream in contemporary Bai residences, while the latter is more common in the structure of Naxi residences.

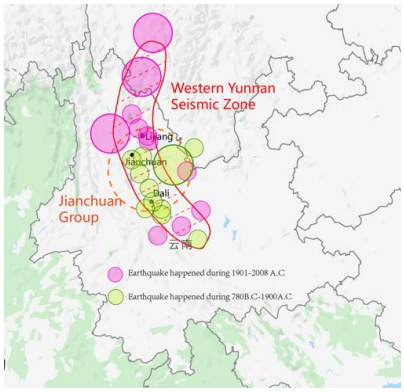
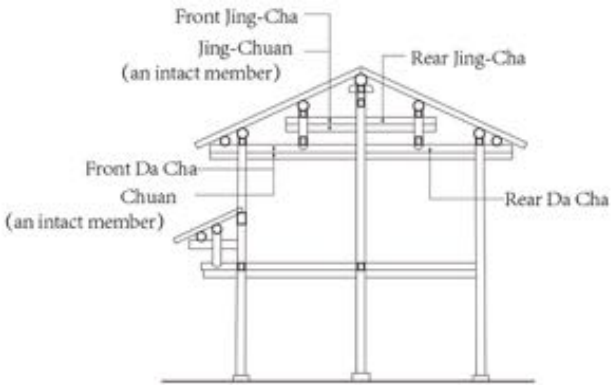


Figure 4. Jianchuan construction activities are located on the

Interestingly, in the terminology of Jianchuan Bai carpenters, the word "beam" is used to describe purlin. The beams in the pattern of equal length of beams in the Bai house are called "*Cha*" (insertion) because they are connected to the central pillar. Correspondingly, the *Cha* inserted on the *Jing Pillar* is called "*Jing Cha*" and the one inserted on the eave pillar is called "*Da Cha*" and then the front and back are distinguished according to the relative position of the center pillar. The component under the *Cha* is "*Chuan*" or "*Hedi*". *Chuan* refers to the entire component that passes through several pillars. *Hedi* also inserts the center pillar as the *Cha* does.

The beam in Naxi house is called "*Guoliang*". It refers to the beam that straddles the pillars, and it is divided to the *First Guoliang*,

Bai



Naxi

Second Guoliang and the *Third Guoliang* from bottom to top according to its length. *Tuodun* is also called "pearl" by the Naxi carpenter.

Thus, it is possible to further describe these two stacking tectonic modes in the language of Jianchuan's carpenters: in the first mode, *Cha* and *Chuan* or *Hedi* always stack together; in the second mode, *Guoliang* and *Tuodun* stack together. Then, why these two modes are formed?

Figure 6. Erdengsun

As mentioned above, although the *Da Cha* are at the same height, they are really two members. The front and rear *Da Cha* are inserted in to the center pillar with "*Erdengsun*". The *Erdengsun* can be regarded as a variant of the dovetail tenon. Such a tenon with varying width can only be installed by up and down, which is suitable for use on the head of pillar. If it is to be used in the middle of the pillar, it must have an adjacent mortise with the same width as the larger end of the *Erdengsun*. The special installation conditions determine that the component used *Erdengsun* must be superimposed on the top and bottom of the component. This component can be *Hedi*, which fill the mortise by straight tenon, or it can be *Chuan*, which passes through the mortise directly.

The *Hedi* or *Chuan* is not just to find installation space for the *Erdengsun*, although the straight tenon used for *Cha* seems to be useless against pulling. The combination of *Hedi* and *Cha* plays a role of 1+1>2. Compared with the dovetail tenon, the *Erdengsun* increases the tenon length, and the joint bending resistance has been improved. After the *Cha* installed, the *Hedi* or *Chuan* underneath needs to be struck

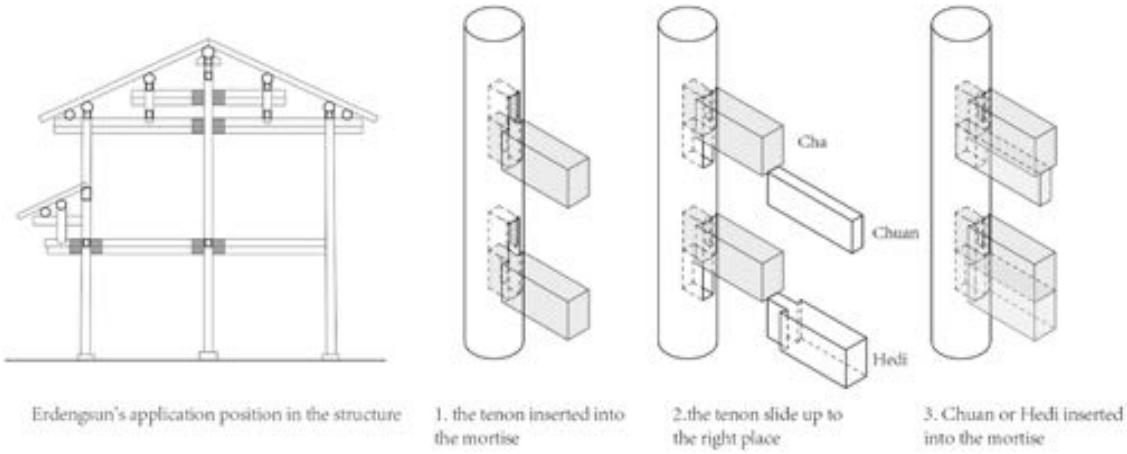


Figure 7. Diagram of the installation steps of the Erdengsun

strongly with a wooden hammer to install, which is bound to help eliminate the gap between the tenon and the mortise. Only after the mortise and tenon squeeze produces a restrained bending moment, the joint has bending rigidity, and the hinge turns into a semi-rigid connection. Due to the limitation of wood expansion and contraction, it is difficult for a single joint to achieve a tight fit. Generally, it is converted into a semi-rigid joint after being bent to form a certain corner under the action of external load. The initial bending moment provided by the combination of *Erdengsun* and straight tenon makes the structure tight at all times, in case of emergency.

The *Chuan* is an upgraded version of the *Hedi*. In addition to squeezing the joints, the advantage of the *Chuan* is that it is long and can connect the pillars into a plane system to keep the geometric shape of

the frame unchanged. Each pillar passing through is a rigid joint, which complements the *Erdengsun* and improves the overall rigidity of the frame.

In addition, laminated components have another purpose. The seismic resistance of tenon-and-mortise joints has been proved by a large number of experimental studies. "Under the action of horizontal repeated loads, the semi-rigid tenon-and-mortise joints will produce certain compression deformation due to the slippage and limited rotation between the tenon and the joints. It has obvious hysteretic energy dissipation and shock absorption effect" (Li Zhijun, Wang Hairong, 2018pp.3). The combination of *Cha* and *Hedi* or *Cha* and *Chuan* is to create another joint to share the joint pressure of the connection between a single member and the pillar. Earthquakes are a huge test for the tenon-and-mortise joints of components. The elastic deformation and small-scale repeated displacements of the joints are effective ways to counteract seismic shock waves. The more joints there are, the less load a single joint bears. Generally, there are two types of seismic shock waves. Longitudinal waves cause up and down turbulence, and transverse waves cause the ground to sway from side to side. The *Chuan* is

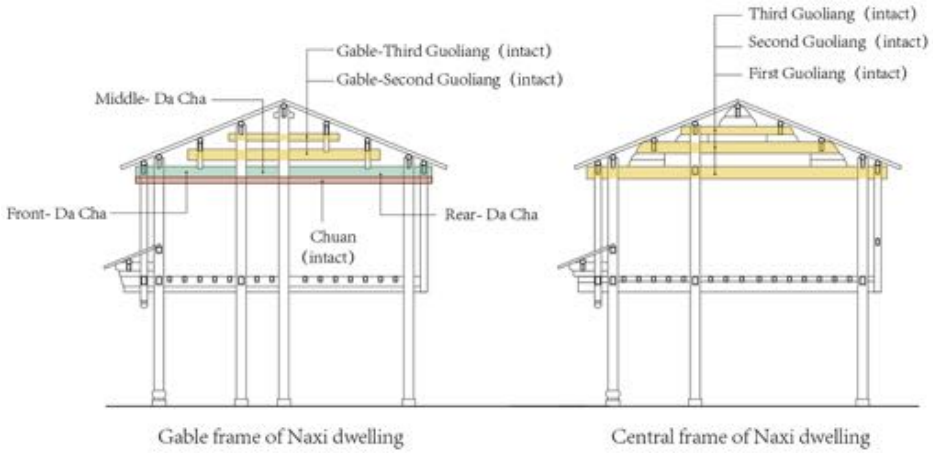


Figure 8. The component composition of the residential structure of the Naxi nationality in Lijiang

to strengthen the integrity of the frame to resist the transverse wave, and the juxtaposition of the *Cha* and *Chuan* or *Cha* and *Hedi* can all reduce the pressure on the joints due to the vertical wave movement of the component.

The combination of *Cha* and *Chuan* is also evident in Naxi People's dwellings—although most of Naxi structure is a combination of *Guoliang* and *Tuodun,* as we will discuss later. In the gable frame, the *First Guoliang* is split into three components (Wu Yuchen, 2016pp.29), underneath which we can still see

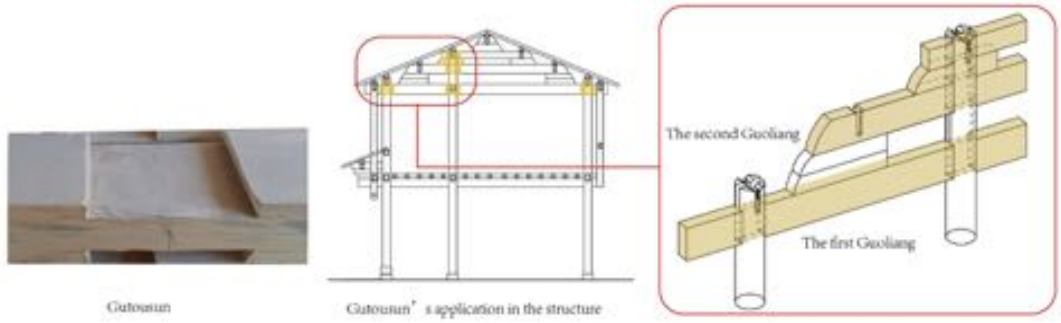


Figure 9. Application situation of *Gutousun* in the frame

the slender *Chuan* through the pillars. In contrast, the *Second Guoliang* and *Third Guoliang* in the gable frame, as well as each *Guoliang* in the central frame, do not require *Chuan* to support. Those that can be called *Guoliang* are usually thick beams. Even if a *Guoliang* has a pillar in the middle, it is joined by *Gutousun*. The unbroken wood has the function of *Chuan*, and the *Gutousun* is a kind of joint that can resist pulling force effectively, it can be said that *Guoliang* itself has the effect of *Cha* and *Chuan* combination, so that there is no longer need an extra *Chuan*. However, a short block placed under the *Guoliang* should be intended to share the swaying load of joint, as in the case of *Hedi*. Unfortunately, this small wood is often omitted recently.

Compared to the Bai dwellings, the Naxi dwelling is more commonly seen in *Guoliang-Tuodun* mode. According to its position, *Tuodun* can be divided into two types: one is not connected to the pillar, and the other is inserted into the pillar.

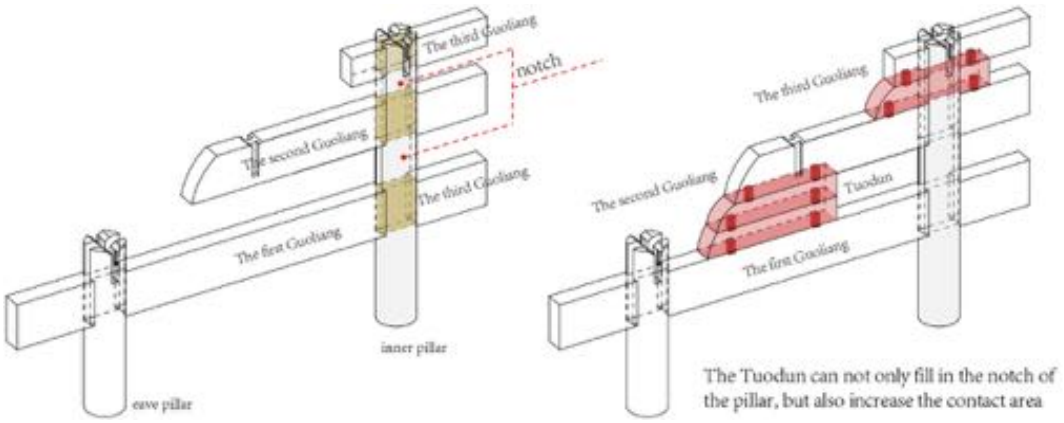


Figure 10. The purpose of *Tuodun* in Naxi folk houses

In the first case, the purpose of using *Tuodun* is to increase the contact area with the *Guoliang*, especially in case of an earthquake, for the horizontal component can better damp the vertical and horizontal shock waves. But the stacked form is not optimal, and it is less stable than a single piece of wood. If the carpenter wants to keep the contact area and at the same time increase the height of *Tuodun*, the required timber is quite large, thus taking into account the economy of the wood, *Tuodun* is stacked in several layers and linked each other with dowels.

In the second case, as *tuodun* is inserted into the pillar, it can not be replaced. It comes from the fact that several layers of *Guoliang* are always joined to the pillar with *Gutousun*, so the groove runs from the head of the pillar to the bottom of *Guoliang*. When the upper *Guoliang* is only slightly pass through the pillar, it lacks support on the through side. Inserting a *Tuodun* can fill the gap between the two layers of the *Guoliang*, and also reduce the stress of the joints.

2.2 Stack tectonics in the longitudinal frame: two evolutions of a seismic strategy

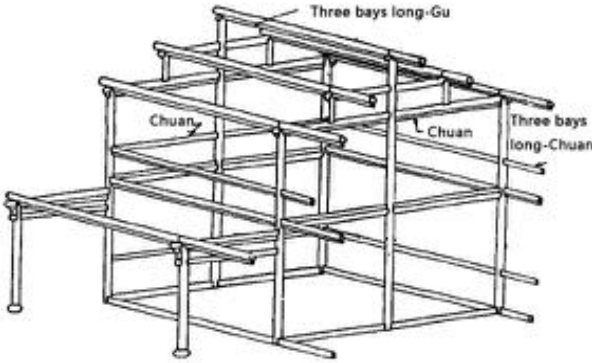


Figure 11. The *long-Gu* and *long-Chuan* in the study of Residential houses in the 1960s

Even if we compare only the period from the mid-1960s to the mid-2000s, we can see that how the tectonic in the longitudinal frame has changed significantly over the decades and that the stacking tectonic of the longitudinal frame comes from the logical evolution of the construction during this period.

In the 1960s, Yunnan authorities surveyed ethnic minority buildings, which showed that apart from purlin and Fang, more important longitudinal linking elements were the "*Three bays long-Chuan*"(The following will be abbreviated as *long-Chuan*) and "*Three bays long-Gu*"(Abbreviated as *long-Gu*) (Minority dwellings investigation group in Design institute of Yunnan Province Construction Engineering Department(ed), 1963pp.8). *Long-Chuan* is connected to the eaves pillars, and *long-Gu* is located at the head of the middle pillar. Their name has two purposes, one is to illustrate that it is a through-length component, and the other is to indicate the way it is jointed. In the early 1990s, the study of the seismic resistance of Naxi dwellings provided us with a real sense of the "*Long-Gu*" diagram (Mu Gengxi, 1991pp.204), the joints not only used *Gutousun*, but also a composite of dovetail and *Gutousun*, linking the pillars into a longitudinal frame. Long-*Chuan* and *Long-Gu* have good seismic resistance capacity, but also have high requirements on timber, such as straight, high strength, etc.

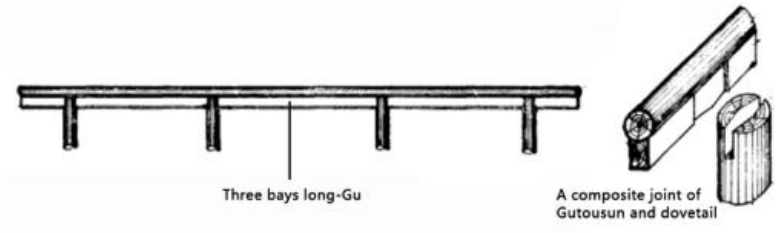


Figure 12. Diagram of the joints of the *Long-Gu* in the study of residential buildings in the 1990s

Because of the difficulty in selecting timbers and processing, the changes in the tectonic of the Jianchuan longitudinal frames were mainly based on the *Long-Chuan* and *Long-Gu*. The investigation in the 1960s noted that "because of the length, only three components were used per house (two *long-Chuan* at front and rear eaves and one *long-Gu*), and the rest of the longitudinal frame was made of segmented *Gua-fang*". *Gua-fang* is also named for the way the

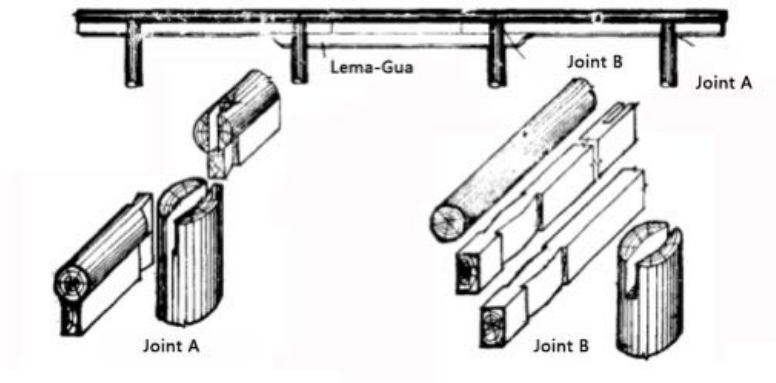


Figure 13. Another kind of "*Long-Gu*" in the study of residential buildings in the 1990s-*Le Ma Gua*

joints are jointed, with segmented and the use of dovetails as clear features. At this time, the use of *Llong-Chuan* and *long-Gu* was ensured in the longitudinal frame, and the preciousness of the long straight wood gave important status to these three components. In the 1980s, the publication of Yunnan Dwellings, which collated and revised the results of a survey conducted 20 years earlier, mentioned that "*Long-Chuan and long-Gu do have good seismic resistance. It's a pity that there are not many houses with these members…*"(Yunnan Design Institute(ed), 1986pp.45) indicating that other practices already exist. Still, in the Naxi dwellings earthquake resistance research in the early 1990s, we can see the new construction method alongside the *Long-Gu*: Fangs under the purlins are arranged up and down in two bays next to each other. Generally, the Fang in the central bay is located on the lower level, also named as "*Lema-Gua*". Instead of four *Gutousun*s carved into one long member, the "*Three bays long-Gu*" became "*Three bays-Gu*" - a segmented member was used to hook the two adjacent pillars in each bay. The reason the *Lema-Gua* below is that because the *Gutousun* goes through the head of the pillar, another *Gutousun* cannot pass through the head at the same height. So there is no such thing as "adding a *Lema-Gua*", because these components combined to form a complete hook system, to a certain extent to achieve the effect of the *long-Gu*, meanwhile the disadvantage of high cost of long straight timber was also overcome. Later, the "*Three bays-Gu*" were gradually replaced *Long-Gu*, while forming the impression of stacking in the longitudinal frame.

3. Response: The impact of seismic resistance on the overall structure

The demand for seismic resistance is not only satisfied with the stacking design of the transverse and longitudinal frame respectively, but also involves the strengthening of the joints when the longitudinal and transverse frames are connected into the overall structure, and some significant details are derived from this.

3.1 Crossing of transverse and longitudinal joints: *Liangmao* and beams are at different height in different frames

The synergistic effect of longitudinal and transverse members which are inserted into the pillar further enhances the seismic resistance of the overall structure.

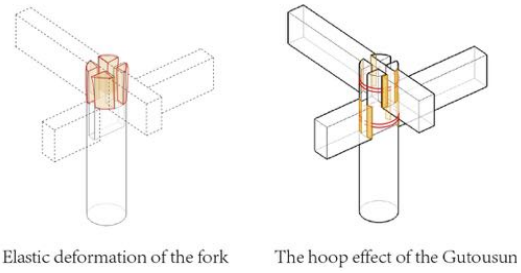


Figure 14. The combined effect of the hoop in the crosswise and longitudinal directions

The most important part of the synergistic effect is the combination of *Gutousun* in two directions. In the front eaves pillar of the gable frame, a transverse beam (no matter *Cha* or *Guoliang*) and longitudinal Fang are inserted in the head of the pillar with *Gutousun* at the same time, thus the pillar has a slot in the shape of crossed fork. It may seem rather damaging to the strength of the pillar, but in reality, this forked shape is more suitable to the elasticity of the wood than the intact wood. Especially when an earthquake occurs, the elasticity of wood is a particularly important physical property. Whether this double-edged sword can be used well depends on how well the disadvantage is overcome—preventing the pillar from splitting along the groove when the shake load happens. In this case, since both the transverse beam and longitudinal Fang are inserted into the pillar at 90°, when

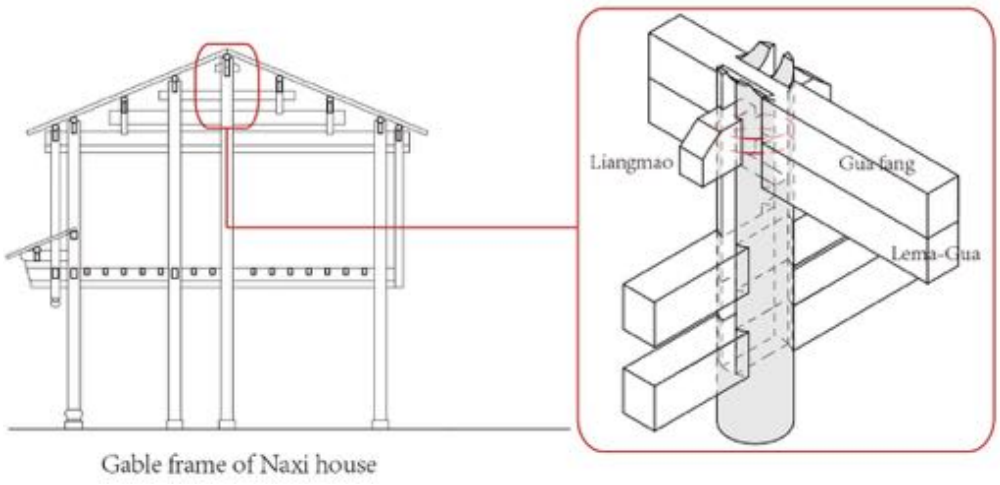


Figure 15. The joint where the *Liangmao* and *Gua fang* cross with *Gutousun*

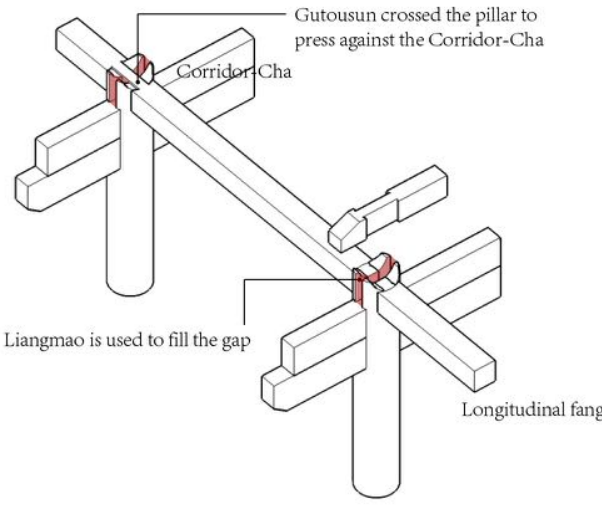


Figure 16. The reason why the *Liangmao* of corridor pillar is only used for the central frame

the beam is twisted, the longitudinal Fang on the upper level prevents the pillar from blowing outwards. The *Gutousun* not only has the capacity of resisting pulling force but also used to bind the forked pillar through the round shoulder.

The *Liangmao* that is set at the head of the middle pillar in the gable frame is a member added on this principle. *Liangmao* is always inserted into the pillar with a *Gutousun*. It is not for decoration but works with longitudinal Fang to form a combination of *Gutousun*, which makes up for the disadvantage that the *Third Guoliang* is too far away to suppress the deformation of the pillar.

However, the specific function of the *Liangmao* set at the corridor pillar and the middle pillar in the central frame has changed again, and this change is related to the conversion of the joints applied in the longitudinal Fang: from a *Gutousun* to a *Erdengsun*. When the longitudinal Fang is used with a *Erdengsun*, the length of the tenon is the pillar diameter minus the thickness of *Gutousun* of the transverse beam, and the beam still has room to move up after the longitudinal Fang is installed. Normally, this beam won't go upward due to its gravity and load force, but when an earthquake occurs, the shake wave may be from a different direction, so add a Liangmao to press the beam firmly is necessary. This consideration is also consistent with the meaning of the word.

After understanding the combination of these two joints, it is easier to understand why the carpenters have arranged the beam at two heights in the central frame and gable frame. The transverse beam and longitudinal Fang are inserted into the pillar with *Gutousun*, and the carpenter seldom crossed these two members with a notch, which is generally kept up and down relationship. Joints start to change in the central frame. If there is *Guoliang-Tuodun* tectonic mode in the transverse frame, the longitudinal *Fang* has no pillar support, so it must be connected to the beam with a dovetail joint rather than just

put on the beam. If there is *Cha-Chuan* tectonic mode since the longitudinal Fang is inserted into the pillar with a *Erjiandengsun*, the gap between the left and right Fang is filled directly by the *Cha*, which can save a *Liangmao*, thus the transverse beam and the longitudinal *Fang* become the same height relationship.

3.2 Reinforcement of the longitudinal joint: the emergence of the Tuoxie and Pingpan

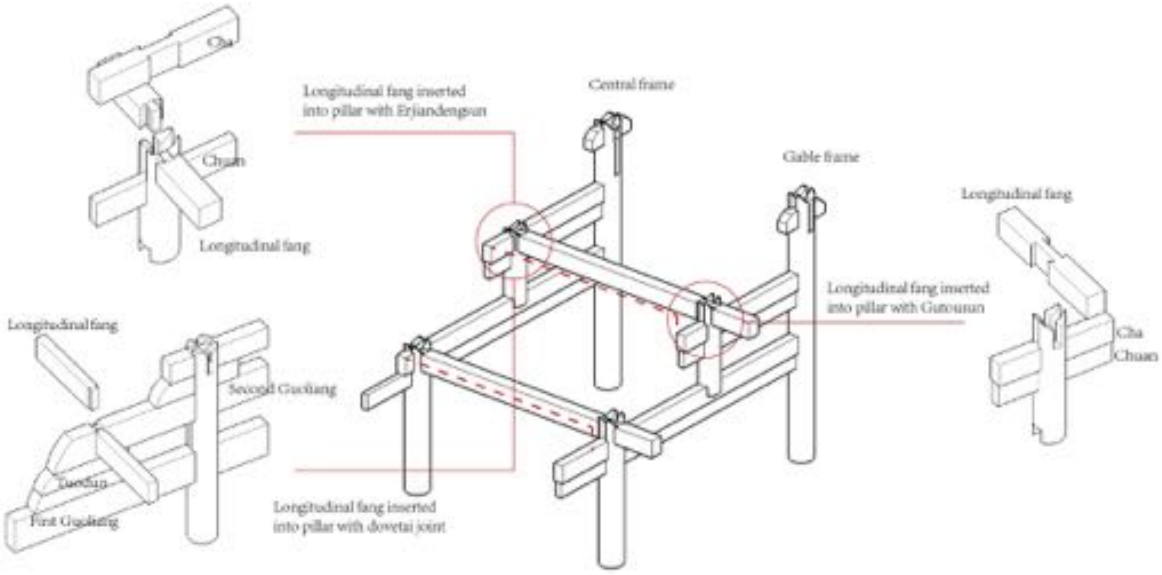


Figure 17. The reason why *Cha* is different in height between the central frame and the gable frame

When the pillar is absent, the longitudinal member is supported by the transverse member, usually with a dovetail joint. The fulcrum is only the tenon. For fear of preventing pulling out the tenon, the tenon is also made in the form of a large head and a thin root and the length of the tenon is about the same as the width of the head, so as not to damage the supporting member too much. The shear force is acted on the root of the tenon attached to the member—the most vulnerable part due to the reduced cross-section. If an earthquake occurs, the shaking wave will undoubtedly injury the fragile tenon root. What's more, as the length of the tenon is short, this joint is susceptible to shear cracking. To solve this weakness, Jianchuan carpenters add a small block named *Tuoxie* under the longitudinal member to expand the support area and move the shear force to the full-size section of the member.

When these joints are close enough and in the same straight line, it becomes time-consuming and laborious to use individual *Tuoxie* under each joint. An example is several joists intersecting the *Koucheng*. A flat and wide Fang is added under the *Koucheng,* which named "*Pingpan*". The objective is to increase the area of support under the joists to avoid the collapse caused by pressure.

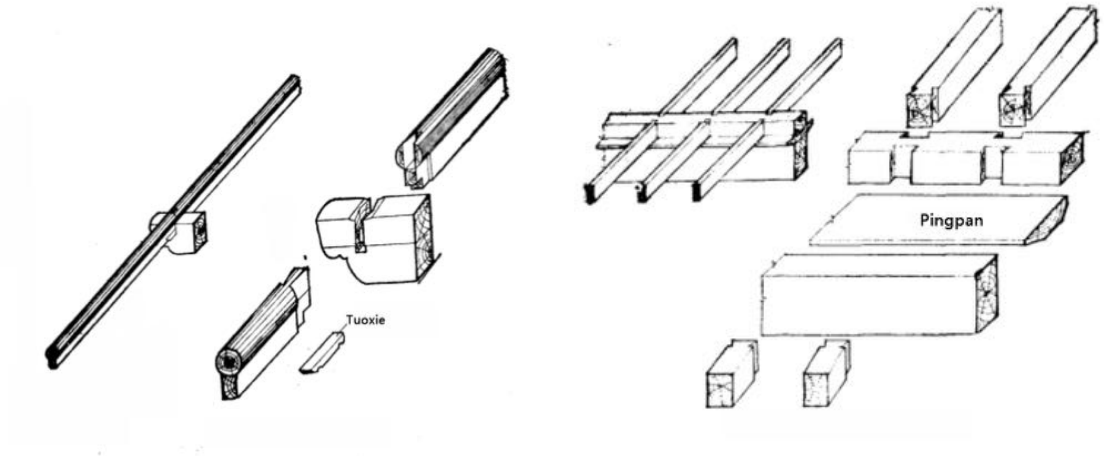


Figure 18. *Tuoxie* and *Pingpan*--Set up to expand the supporting area of the tenon

Conclusion

From the research of Jianchuan tectonic, we may have an answer to the question of why the structure of Han-style courtyard buildings in Yunnan is stacked. In Jianchuan, to be better resist the destructive power of the earthquake, the transverse frame is built with two strategies-- increasing the number of joints and increasing the contact area, forming two tectonic modes—*Cha-Chuan* and *Guoliang-Tuodun*. These two modes are repeated in the roof, floor, and eaves structure, deepening the impression of stacking. The stacking tectonic in the longitudinal frame is developed in recent decades. Due to the limited materials, carpenters replaced the intact *long-Gu*, which was originally earthquake-resistant, with several layers of *Gu*. On further observation, the determination of the carpenters to resist earthquakes is not only shown by the reinforcement of stacking structures, but also by the cooperation and strengthening of joints, which also explains the increase and asymmetry of some components of the overall structure beyond the longitudinal and transverse frame. The diversity of folk traditional architecture is essentially the evolution of various features in the process of gradually adapting to the native environment, which includes both the natural and the social environment. The diversity of folk traditional architecture is essentially the evolution of various features in the process of gradually adapting to the native environment, which includes both the natural and the social environment. From this perspective, although the study focuses on Jianchuan, it has a universal resonance with the Han-style Courtyard dwellings throughout Yunnan, which has a similar natural environment.

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REVIVING THE HISTORICAL SIGNIFICANCE OF A HISTORICAL MANSION: ŞEYHOĞLU KONAĞI

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ABSTRACT

The traditional architecture of the southeastern region of Turkey has always been an outstanding example with its rich architectural heritage. Due to the richness caused by different construction techniques, material characteristics, and spatial features, traditional structures of Diyarbakır stand out in the region.

As the historic center of Diyarbakır, Suriçi comprises traditional housing units and more complex mansions of various sizes and typologies. The historical city encircled with city walls was inscribed in the UNESCO's World Heritage List in 2015 as The Diyarbakır Fortress and Hevsel Gardens Cultural Landscape. Although the urban renewal projects began before the nomination of Diyarbakır, the rehabilitation attempts in Suriçi have accelerated in recent years. Traditional residential buildings are either restored or reconstructed, and unregistered structures are demolished. Especially in the northeastern section of Suriçi, many unlisted buildings were destroyed, while the empty plots were introduced with new buildings designed similar to that of traditional Diyarbakır. Şeyhoğlu Konağı is one of the mansions in the northeastern area of Suriçi, where the transformation of the built environment is evident. The historical building complex, which narrates the lifestyle and reflects the rich cultural identity of the city, became derelict. Besides, the additional structures around the mansion introduced in recent years obstruct the perception of the traditional building and alienate it from its context.

This study aims to highlight and incorporate the distinction, importance, and architectural characteristics of Şeyhoğlu Konağı by evaluating it in terms of the current context of Suriçi. For the mansion's significance to be revealed, the typology of Suriçi's traditional mansions is studied. In addition to the comparative studies, neighboring traditional structures and the vernacular tissue are examined to monitor the relations with its vicinage. The paper proceeds with information on the mansion's architectural characteristics obtained through site observations, investigations of old photographs, and literary sources. Eventually, the study seeks to revive the significance of an unremarked historic building in a complex and fluxional environment.

HISTORICAL, GEOGRAPHICAL, AND ARCHITECTURAL FEATURES OF DIYARBAKIR

The city lies between highlands on the north and desert-like plains on the south. A fortress encircles the old city of Diyarbakır that is 100-meters elevated from the terrain of Tigris River (Dalkılıç & Aksulu, 2001 pp.53-69). The city walls in the form of a turbot enclose the small Hurrian town, also known as "Amida." This outer wall with two layers, where the inner one is higher, was constructed in the 4th century C.E. and ultimately finished in two centuries under Byzantine rule. The ancient city of Diyarbakır welcomes visitors with four major gates at the end of two main intersecting streets in north-south and east-west directions.

On the northeast edge of the city walls, the acropolis is confined with an inner fortress in the pre-Roman period. It is located on a mound believed to be the first inhabited area of Diyarbakır. Several empires, principalities, states ruled the city throughout history. Multiple inscriptions on the walls depict construction-renovation dates of various hegemonies of the fortresses that witnessed the political history of Diyarbakır. Based on the construction techniques and data gathered from the inscriptions, southwestern city walls are thought to be constructed under Great Seljuk and Artuqids (Parla, 2005 pp. 57-84). After the 15th century, new neighborhoods were established in the city, and by the 16th century, monumental structures became integrated with residential architecture. The enclosed medieval city conserved its characteristics until the second half of the 19th century until the expansion outwards of the city walls began. Modern city planning ideas of the 1920s affected Diyarbakır. In this period, attitudes for destroying the city walls developed and realized in 1932 (Kejanlı&Dinçer, 2011 pp. 95-108). Thanks to Albert Gabriel's attempts, the destruction was prevented. The only other deliberative destruction of the city walls occurred during the Timurids (Parla, 2005 pp.57-84).

The Diyarbakır Fortress and Hevsel Gardens Cultural Landscape was registered in the UNESCO's World Heritage List in 2015 due to its universal and historical values (World Heritage Centre, n.d.). The conflicts in recent years both affected the new and registered historic structures. In the aftermath of the conflict, new edifices in the city walls were demolished, and new constructions were inserted in line with the traditional tissue of vernacular Diyarbakır architecture. Restoration and reconstruction projects are held in the historic site. One of the characteristic elements of the city, narrow streets, are also affected by the transformations in the urban pattern. As a result, the traditional tissue of Suriçi is altered to a great extent.

The architecture of the city is developed within the context of Sur. The enclosed city enlarged within the city walls and resulted in a unique urban pattern with narrow streets (Figure1). Due to privacy issues, streets are separated from the daily life of the vernacular architecture (Yıldız, 2016 pp. 125). However, the privacy-oriented design approach is lost outside the city walls. The architectural typology, known as Köşk, is divided into vineyards and summer villas used during the hot season by wealthy families. Summer villas are located on an inclined altitude faced towards Hevsel Gardens and the Tigris River. This type of vernacular architecture is lost to a great extent in time (Baran & Yılmaz, 2009 pp. 395-407).

Figure 1. City map of Albert Gabriel. Narrow streets, encircling city walls, and old fortresses on the north are visible. Şeyhoğlu mansion and Fatih Paşa Mosque are also indicated. The vast block where the mansion is located is larger than the contemporary block (Güneli, 2009 pp. 410).

Plan typology in the city walls resembles that of the southeastern region of Turkey. Though construction material and climate-based layout and distinguishes Diyarbakır houses in the region (Dalkılıç & Aksulu, 2001 pp.53-69). According to İrfan Yıldız, socio-cultural features, such as Islamic convenience, also determined the vernacular architecture in Diyarbakır (Yıldız, 2016 pp. 124). However, Neslihan Dalkılıç and Ayhan Bekleyen opposed the integration of religious motives in characterizing the plan of the structures. Since houses of Christian families have the same architectural pattern as that of the Muslims, the introverted lifestyle can be a factor of privacy in the historic city center.

The functional architecture of traditional Diyarbakır houses is based on a patriarchal family structure. The head of the family welcomes his guests in the main room, *Başoda*, which is elaborately adorned (Dalkılıç & Bekleyen, 2011 pp. 429-46). The enclosed plan ensured privacy from the public, while privacy within the residence is achieved by space division in prosperous families. A separate structure for women, *harem*, and a smaller but decorated unit for men and their guests, *selamlık* that co-operate the daily life are found in large mansions (Yıldız, 2016 pp. 124). Housing units are built around a courtyard that can have a rectangular, quadratic, or elliptic form.

The plan typology of traditional Diyarbakır houses includes three categories: central courtyard, outer courtyard, and inner courtyard. In the outer courtyard type, the structure can have a U-shaped, L-shaped, or a combination of both forms. Dwellings are composed of one or more wings in one or two-story height, surrounding the courtyard. Wings have semi-closed and closed spaces. A characteristic element of Suriçi houses is iwan, a semi-open space with arcades enclosed on three sides. The indoor areas are rooms and service spaces as kitchen, cellar, storage, bathroom, and toilet (Dalkılıç & Aksulu, 2001 pp.55-58).

Climate affects both the design and function of the residential units. The summer section of Diyarbakır houses is on the residences' south wings where iwans face towards north while thick stone masonry walls block the heat. Water elements are also practical solutions for hot weather conditions. Wealthier dwellings have a colder room, *serdap*, located in the basement or a few steps under the courtyard level, cooled with a pool. Closed areas such as rooms and kitchens are positioned on the north wing to obtain minimum temperature during the hot season (Dalkılıç & Aksulu, 2001 pp.53-69).

The exterior street façade is modest compared to the courtyard façade. A modest entrance door with an entablature and a cantilever known as *cumba* are on the outer walls of the dwelling. On occasion, a room of the house in the upper level covers the street, kabaltı, leaving a passage underneath to provide shade to the street. Entrance to the units is accessed via narrow corridors known as *aralık* or directly to the courtyard with a hidden passage. Walls facing the courtyard are in contrast with the exterior façade; limestone, adornments, frames in various sizes, high arched iwans, white-painted joints, and different types of arches provide richness to the dark stone façades (Dalkılıç & Aksulu, 2001 pp. 57-66).

Courtyards are common areas hosting several social activities where ornamental pools, wells, water channels, and gardens are situated (Dalkılıç & Bekleyen, 2011 pp. 424-25). The basement floor is used for cellar and storage purposes, while the ground floor consists of service areas, rooms, and iwans with or without an ornamental pool. The upper level has a similar layout, including rooms and iwans (Dalkılıç & Aksulu, 2001 pp.57). One or more arches face the courtyard façade of iwans. Besides, the number of arches is related to the prosperity of the household (Yıldız, 2016). A staircase provides access to upper floors from the dwelling or the courtyard. *Gezemek*, the staircase's landing is constructed with rectangular slate stone slabs on stone bracings known as *bingi*, that projects on the façade (Dalkılıç & Aksulu, 2001 pp.60-69).

Black basalt stone is the primary construction material, while white adornments on the surfaces break the monotonous pattern of ashlar masonry blocks of basalt stone. The white adornments are also named as cıs or cas, a local mortar composed of a mixture of burnt lime and egg white. The ornaments are formed geometrically, or in some instances, vegetal patterns can be seen (Yıldız, 2016).

Vertical construction elements are stone masonry load-bearing walls facing the exterior and thinner stone walls or mudbrick-filled timber frames as partitions. On the other hand, the horizontal construction elements are timber beamed ceilings covered with a flat earth roof. Although the earth is used as a flooring material, large pieces of stone are preferred for the ground of iwans. Also courtyards have basalt stone floors (Dalkılıç & Bekleyen, 2011 pp. 417-462).

TRADITIONAL MANSION ARCHITECTURE IN DIYARBAKIR

Şeyhoğlu mansion is an example that stands out in traditional Diyarbakır architecture; however, its dereliction over time caused the loss of its values. In order to analyze the lost architectural features of this building and better understand its importance, renowned traditional Diyarbakır mansions and undervalued or destroyed mansions were examined based on Orhan Cezmi Tuncer's book on Diyarbakır Houses and the inventory of cultural assets of Diyarbakır (Soyukaya et al., 2011). Accordingly, fifteen mansions were examined. The construction dates of the mansions, their architectural features, dimensions, and connections with the street constitute the focal point of the study. A typology is created based on the differences and similarities of these studied structures.

The mansions are larger structures compared to the traditional Diyarbakır houses. Dimensions of the property have a substantial impact on the design of the mansions. Accordingly, the dimensions of the buildings vary between 200 and 4000 m^2. The construction date is another factor for the analysis of architectural features. The studied structures were constructed between the 16th and 19th centuries.

The entrance to the building is one of the parameters of the typology. The entrance to the mansions is either through an *aralık,* a passage between the street and the courtyard or directly to the courtyard. Besides, large structures have multiple entrances. Some buildings have distinct units that are separated according to their function, such as *harem* and *selamlık*. Their existence depends directly on the dimensions of the mansion.

The mansion typology is divided into two categories. Type-A refers to more miniature mansions, while Type-B refers to larger mansions. The classification is done according to the dimensions of the lots where the mansions are located. The mansions in the Type-A category have an average area of 550 m^2, while Type-B has an average area of 1300 m^2. The significant difference in dimensions between the two types also affects the architectural features. Accordingly, smaller mansions' architectural features can be considered similar to that of traditional residential architecture in Diyarbakır. On the other hand, the mansions over a specific dimension have unique architectural characteristics in construction technique and plan types. Therefore, the categorization is done based on the predominant influence on the architectural features, the dimensions. The entrance to the mansions is also examined in the typology; however, it is not considered the main determining factor that shapes the architectural design. The entrance to type-A mansions is often via *aralık* due to the dimensions, while in larger Type-B mansions, the entrance is via *aralık*, via courtyard, or both are seen. The existence of *selamlık*, *harem,* and later constructions are also indicated in the typology.

Type-A includes the renowned Behram Pasha Mansion, Cahit Sıtkı Tarancı Museum, Ziya Gökalp Museum, Esma Ocak House, Dengbej House, Mansion 1, 2, 3 and 4. Mansion 4 is a significant example since it is the only example in type-A that contains a *selamlık* (Tuncer, 1999 pp. 198).

Type-B includes six mansions; Mansion 5, Şeyhoğlu Mansion, İskender Pasha Mansion, Şehzadeler Mansion, Sait Pasha Mansion, and Cemil Pasha Mansion. Sait Pasha and Cemil Pasha Mansions have entrances both by *aralık* and directly to the courtyard. Access to İskender Pasha and Şehzadeler Mansion are both provided directly through the courtyard. Şeyhoğlu Mansion and Mansion 5 have entrances via *aralık*. These structures are highly altered; therefore, *selamlık* does not exist in their current condition. Rest of the mansions in type B have *selamlık*.

Sait Pasha Mansion consists of three units, harem, selamlık, and service space. Decorated iwans on both stories demonstrate the richness of the household (Tuncer, 1999 pp. 173). A private bathroom, iwans on each wing, a hidden stone staircase, differences in construction techniques demonstrate the uniqueness of Cemil Pasha Mansion (Tuncer, 1999 pp. 291). İskender Pasha Mansion is another significant example that includes three brick domes and vaulted structures at the east edge of the south wing. The relationship between the open and built spaces and a large courtyard with green elements characterize the structure as an example of 16th-century Ottoman architecture (Tuncer, 1999 pp. 529). Another outstanding example is the Şehzadeler Mansion, with two domed structures over a rectangular plan. The western dome is an elliptical structure with muqarnas as a transition element. On the other hand, the dome on the east is placed on pendentives. The structure constitutes the south wing of a larger complex. The north wing of the larger complex is destroyed during the construction of a town square and a vehicular road (Tuncer, 1999 pp. 388). This early Ottoman architecture's reversed T planned structure distinguishes within the entire Diyarbakır traditional mansion plan typology since Şeyhoğlu, and Şehzadeler Mansions are only two examples of reversed T plan structure in Diyarbakır. (Tuncer, 1999 pp. 388). Besides, Iskender Pasha, Şehzadeler, and Şeyhoğlu Mansions stand out among the other mansions with distinctive elements such as domes and baths, which are uncommon features.

Şeyhoğlu Mansion is described in detail in the next chapter.

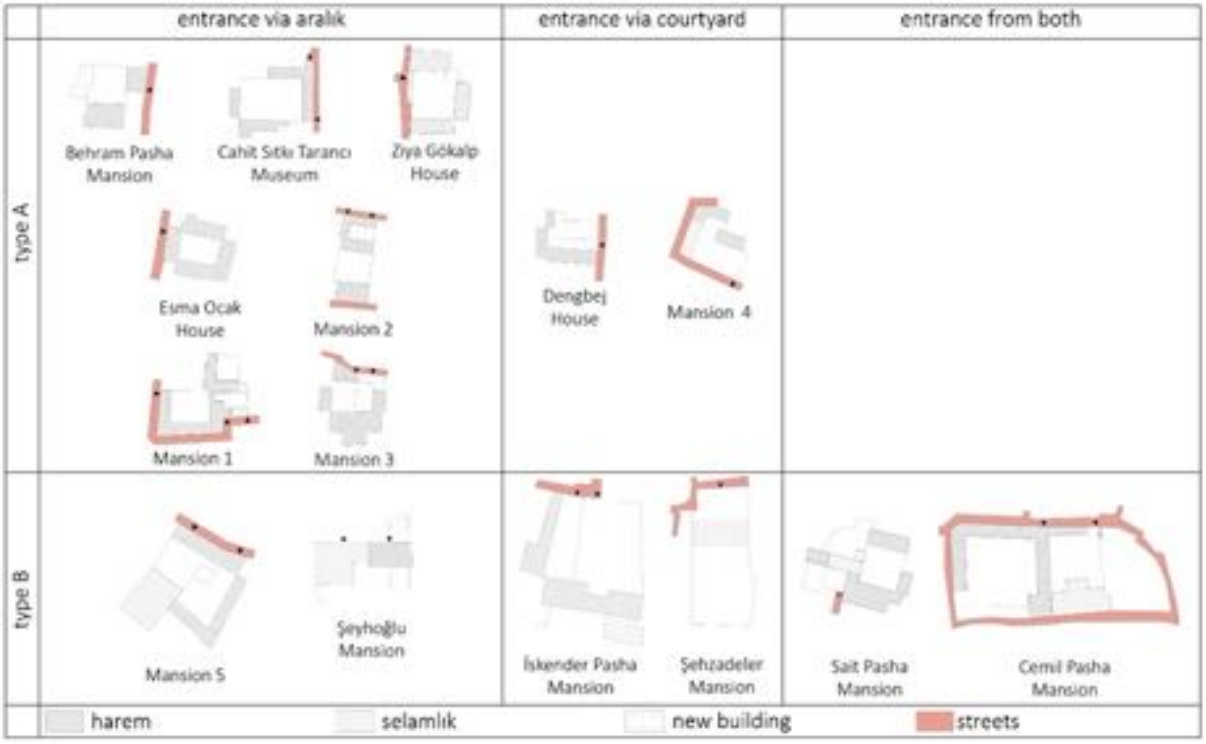

Table 1. Table showing the classification of mansions according to the dimensions of the mansion. The location of the entrance is also indicated.

NEIGHBORING STRUCTURES OF ŞEYHOĞLU MANSION

In the block where Şeyhoğlu Mansion is situated, several residential units are similar to traditional mansion typology. Şehzadeler Mansion is also located in the same block as Şeyhoğlu. Unlike other building blocks in Diyarbakır, the block includes multiple large registered lots and rich vernacular structures. These registered structures encircle Şeyhoğlu and Şehzadeler Mansions on the west and south. The building adjacent to the west border of Şehzadeler Mansion is a unique example in Diyarbakır with a large double-arched iwan. The building on the south of this double-arched structure has two wide courtyards separated with a passageway, *kabaltı,* within the structure. According to Tuncer, the registered lots on the south of Şeyhoğlu Mansion are filled with reinforced concrete new constructions. The absence of the traditional building in this area can indicate the presence of a large courtyard on the south of the Şeyhoğlu mansion in the past. Two ornate and rich registered structures at the southeast end of Şeyhoğlu Mansion divide the block from Kurşunlu Mosque. There are also two small registered lots with traditional architectural features situated south of the block.

Uğurlu square borders the north of the block. Şeyhoğlu mansion has direct connection with the square. The opposite block on the north of Şeyhoğlu Mansion is nearly as large as the block on which Şeyhoğlu mansion sits. The opposite block has an extensive single lot before the mansion and there is no registered units in the opposite block. These two blocks are presented as a single block in Albert Gabriel's plan of Diyarbakır.

Şeyhoğlu Mansion consists of three lots, according to Tuncer. However, based on the architectural traces and a mansion's architectural requirements, its potential borders are thought to be wider. No registered structure on the opposite block and current slum buildings on the south of the mansion might indicate a larger building with courtyards on the north and south sides.

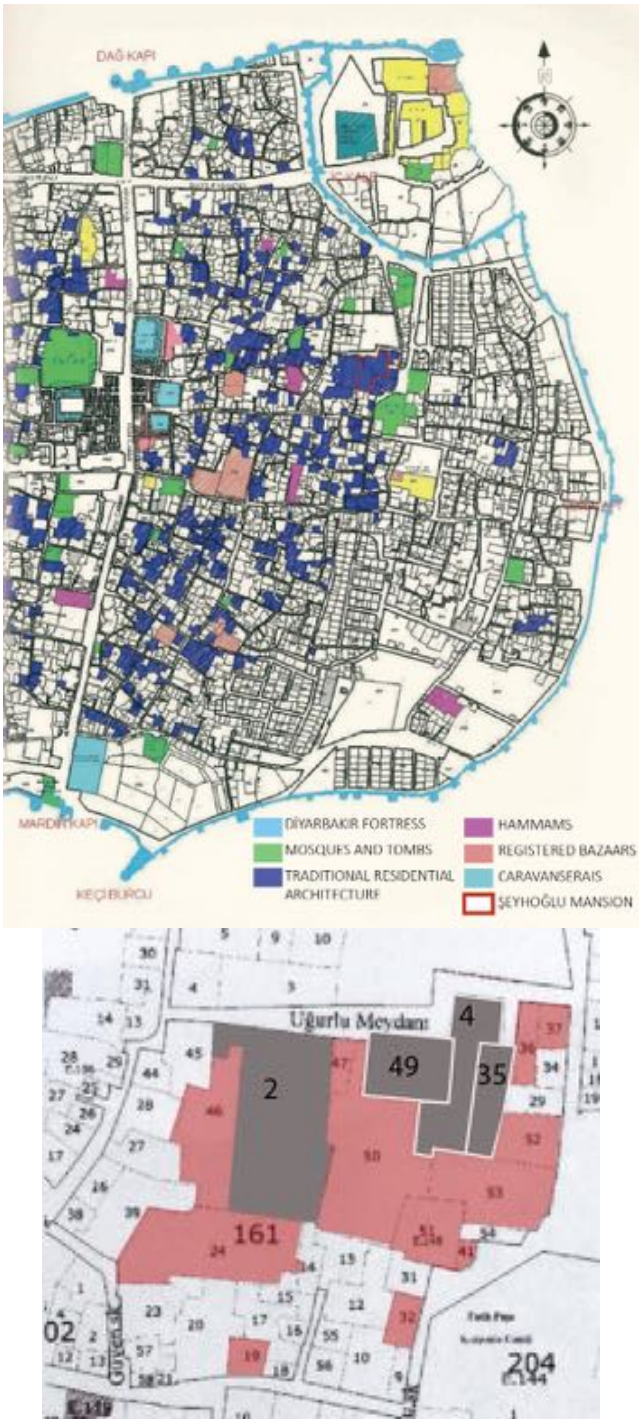

Figure 2, 3. Registered lots are indicated (left) (Soyukaya et al., 2011 pp. 3), block 161 with registered lots, Şehzadeler (lot 2), Şeyhoğlu Mansion (lot 49, 4, 35) and Uğurlu square are demonstrated (right) (Soyukaya et al., 2011).

ÖZDEMIROĞLU OSMAN PAŞA - ŞEYHOĞLU MANSION

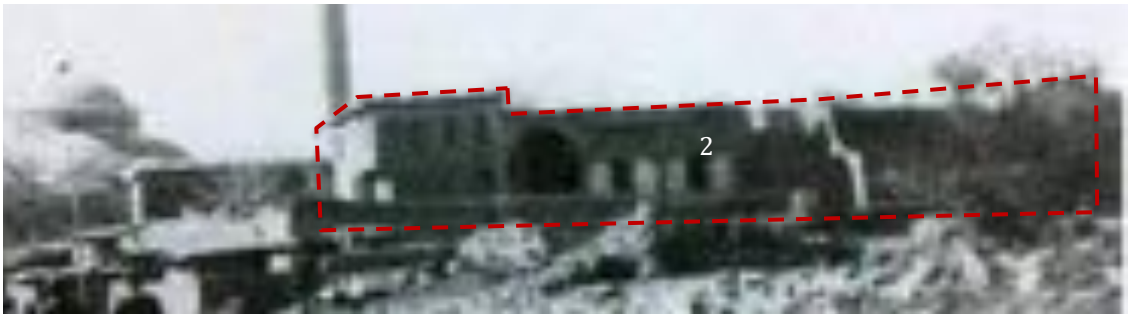

Figure 4. Fatih Paşa mosque on the left and Şeyhoğlu mansion around the 1940s. The three-arched iwan with two walled-up arches on the west is seen (Diyarbakır'dan Kareler, 2019).

Figure 5. Fatih Paşa mosque, the structure on lot 53 and Şeyhoğlu mansion (Diyarbakır'dan Kareler, 2020).

The historical identity of the household of the mansion, literature research, visual sources, and architectural features of the structure is presented in this chapter. While gathering the architectural data, on-site observations with information in Tuncer's book on Diyarbakır houses and the inventory of cultural assets of Diyarbakır (Soyukaya et al., 2011) are used.

The name "Şeyhoğulları" dates to the 9th century; Arabic tribes, descendants of Bekr bin Vail whose ancestor is prophet Abraham according to Kenan Haspolat (2009, pp. 254), known as Şeybaniler or Şeyhoğulları, established an emirate in Diyarbakır between 869-899. The relation between this household and the mansion's owners is uncertain. In the 19th century, the name "Şeyhzade" emerged in the literature. According to Rıfkı Arslan, the kin of Şeyhzade had religious and economic domination in the city. Also, to possess administrative power, between 1808-1819, they caused a social disturbance that caused urban ravage, famine, and immigration. During the events, the massive mansion and housing units in the vicinage of Fatih Pasha Mosque, which was constructed in the 18th century by Özdemiroğlu, were destroyed. The mansion was later retained by Şeyhoğlu (Arslan, 1999 pp. 92).

The mansion is elaborately described in endowments dating to 1810 belongs to İbrahim Pasha. The text does not directly address the spatial orientation, dimensions, and exact location of the mentioned

rooms. However, it is a significant source for understanding its architectural value. A part of the endowment is translated as follows:

"... Three rooms on the downstairs and cooking space are under a treasure room near a large room and a room directing to the harem. An open space directing to a mübeyyin room –could be an open space, at the interior above a room, an ornamental pool, an arched iwan, and a room above storage and passageway near the kitchen and storage space in it. Above them is a summer room, yazlık, and across it, there are two rooms at the top of a room. Near which a warehouse, a mağaza, an aralık is located below a yazlık and an iwan with fifteen arches. An ornamental pool with flowing water from a kale (fort) enclosed the courtyard includes three walls covered with tree domes and an auditorium used for assemblage on the right side. An ornamental pool in the middle of the space, a large ornamental pool in which flowing water comes from a kale via a tube, is at the courtyard. Behind the domes, a fruit garden and a small courtyard including the hypocaust of bath, a kitchen, a gathering place adjacent to the bath and storage is located behind the garden. Another meeting place in an arched iwan near a warehouse adjacent to a small gathering place at the upper story..." (Yılmazçelik, 1999 pp. 204).

According to the 19th-century endowment, the mansion is a vast complex with a three-domed structure, multiple rooms, service areas, and iwans with fifteen arches. However, the old photographs 20th century do not display the large iwans; however, they indicate a three-pointed arched iwan on the upper floor and a slightly higher structure on the east edge of the iwan. Different information in the literature and visual sources gives rise to thought the exact meaning of "fifteen arches", whether it refers to the number of arches of the iwan, including the windows, or an indication of a massive iwan. The data regarding the subject remains uncertain.

The mansion was examined in Tuncer's book on Diyarbakır houses. However, the study does not include the whole structure. Solely structures on lots 49, 4, and 35 are examined by Tuncer. The description of the structure starts with particular emphasis on the location of the Şeyhoğlu Mansion and its history. On the south of Uğurlu square and west of Bıyıklı Mehmet Pasha Mosque also known as Kurşunlu or Fatih Pasha, lot 161 is situated. The mansion on the northeast end of the lot belongs to the Diyarbakır governor Özdemiroğlu Osman Pasha, Diyarbakır, known as beylerbeyi, between 1571-1575, whose tomb is in the mentioned mosque. The reversed T planned mansion was also known as Şeyhoğulları Mansion. It is located in Uğurlu square and on lot 161/49-4-35. The mansion is considered as one of the three unique examples in Diyarbakır mansion typology substantially belonging to 16th-century early Ottoman architecture. The domed structure is the selamlık of the mansion and connects to harem via a door on the east wall of *selamlık*. A two-story unit on the east is a harem. An inscription is located on the south door of the harem. The inscription is believed to be the last renovation date corresponding to the late 19th - early 20th century. Based on two-rowed bingi traces, it is understood that a long gezemek is located on the north façade of the structure. Also, another trace of a lost architectural element is visible on the north façade. Accordingly, the arch traces on the first floor on the north façade indicates the façade faces towards the courtyard but not the street. Additional wings and courtyards on the north and integrative structures on the south might have existed. Therefore an extra acre of land is necessary for them. Besides, the wall thickness varies from 1,16 to 1,30 meters (Tuncer, 1999 pp. 383).

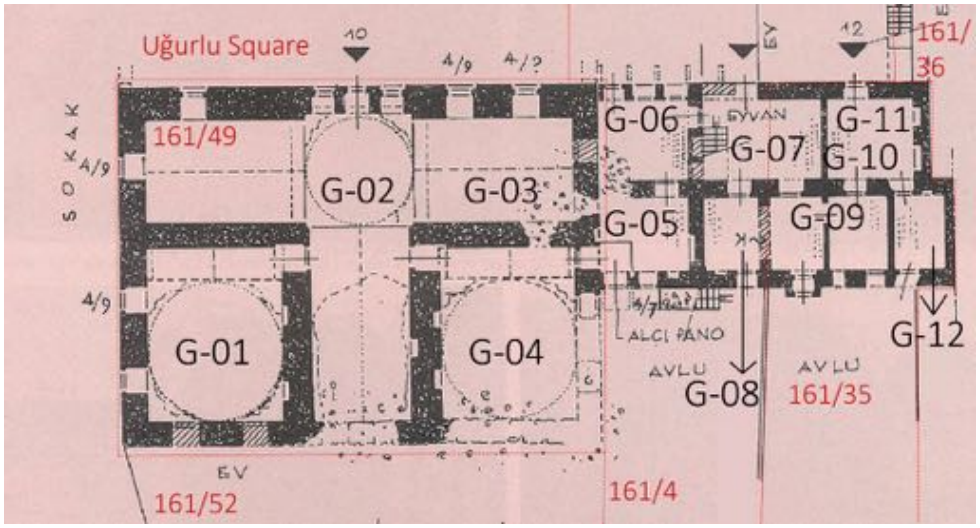

Figure 6. The plan drawing of Tuncer where the room and lot numbers are indicated (1999, pp. 385).

Şeyhoğlu Mansion is also examined according to on-site observations. Within the scope of the study, each space on the lots of 49, 4, and 35 are labeled and explained in terms of space articulation, architectural elements, construction system, structural condition, building traces.

The most distinctive structure of the mansion is located in lot 49. The rectangular-shaped building is divided into three barrel-vaulted halls, which crates the reversed T plan. The building is entered through a door on the north façade, directly from Uğurlu square. As the square is a later addition, the original entrance to the mansion is unknown (Tuncer, 1999 pp. 388). The T-shaped space is divided into an L-shape with an incomplete rubble stone masonry wall constructed on the east side of the entrance, below the end of the vaulted space of G-03 (Figure 7). The flooring of the whole structure is earth and filled with debris. L-shaped G-02 connects G-01 and G-04. On the other hand, G-01 has two window openings on the south side. The rubble stone masonry partition wall between the G-02 is partly demolished. The ceiling is also demolished, but the ruins of pendentives are visible. According to Tuncer's drawing, the presence of a dome is shown. On the inner façade of the south wall of G-02, two niches are on the partition walls between G-01 and G-04, and a door and walled-up window connect the space to the courtyard. A triple niche, two smaller niches on the sides, and one larger at the middle are located on the west partition wall between G-01 and G-02. The edges of the L-shaped G-02 are barrel-vaulted. Although the vaults are demolished, their ruins are still visible. According to Tuncer (1999), a dome was present at the center of G-02, where the entrance is located. Based on the site observations, the ruins of the pendentives support the idea.

The partly demolished east wall of G-03 is adjacent to lot 4, where a niche, two window openings are positioned. Two niches are also visible on the south wall. The outer wall of G-04 is destroyed, while only the partition wall of G-02 with two niches is visible. A later walled-up door directs to the structure in lot 4 on the space's east wall. The ceiling is also demolished, and yet, traces of the pendentives can be observed. On the east wall of G-04 adjacent to G-05, a round-arched is located. The north façade facing the Uğurlu square has six three-pointed arched windows, walled-up rectangular openings between the arched windows, and the entrance door later filled with debris. At the west corner of the north façade, a trace of an arch is also visible (Figure 8). West façade has several windows that are not in order. The construction technique is rubble stone masonry with ashlar masonry around the openings, while pendentives, vaults, and domes are constructed with brick. Today the selamlık is in severe structural condition in addition to material loss.

Figure 7, 8. Arch of vaulted room G-03 and demolished room G-02 (left) (Tuncer, 1999 pp. 386) and north façade of Şeyhoğlu mansion with trace of arch and Uğurlu square (right) (Diyarbakır'dan Kareler, 2013).

Lot 4 consists of a rectangular traditional residential building adjacent to the selamlık, a reinforced concrete unit at the northeast corner of the lot, a courtyard at the south, and reinforced concrete annexes beyond the courtyard. On the north façade, a segmental arch filled with rubble stone constitutes the building's entrance (Figure 9). A pointed arch on the top of the other is also filled with rubble stone. On the ground floor, three rectangular windows with large top windows are located. The façade has alternating rows of black and white stone to create articulation as visible in the traditional residential architecture of Diyarbakır. The south façade has a segmental stone arched door and four rectangular window openings with large top windows on the ground level (Figure 10). The inscription panel described by Tuncer is considered to be placed on this door; however, it is currently lost. Two bingi on different levels over the door and another door at the upper level suggest the presence of a staircase. Small square windows on both sides of the door and two large rectangular windows are visible on the upper level. A rubble stone masonry partition wall separates the courtyard from the adjacent lot. The reinforced concrete unit on the north encloses Uğurlu square. The entrance door is on the north façade placed in a later walled-up arch and connects to G-07. G-07 provides access to the upper floor, G-08, and G-06.

Another space, G-05, is located on the southwest corner of the *harem*. The room has two windows and a door on the south, where two niches are situated. The later walled-up door of lot 49 is connected to this room. Also, another walled-up door connects the space with G-06, which currently has a concrete floor. This space is the only concrete floor in the mansion since others still contain their earth flooring.

G-06 has three windows on the north façade, and one of them is walled up. Also, there is another walled-up window and a niche on the partition wall of G-07.

G-08 is the aralık towards the south courtyard. A later added wall divides G-08 into three spaces, the corridor and two storage. A walled-up window and door in one of the storages, to G-05 space. All rooms have timber beamed ceilings, in which the construction technique is rubble and stone masonry. Today the structure is derelict, where material decay, vegetation, and structural damage can be seen.

The traditional structure on lot 35 does not face the street. A courtyard enclosed with brick walls creates an entrance to the structure. The longitudinal courtyard has a later added annex structure used as the bathroom, a well, and a reinforced concrete staircase. A door provides entrance to the building via G-11, which used to be a larger room together with G-10 but divided later with a brick wall. G-11 directs to G-12, which is considered part of a larger room together with G-09. All rooms in this lot have concrete floors and timber beamed ceilings. G-09 has two windows facing the south courtyard, a walled-up elaborated door, and three niches. Another room is G-12 which has a window towards the same courtyard. On the stone partition wall, niches, windows, and an elaborated door are located. On the west wall, the opening connecting lot 4 is observed. G-10 and G-11 are relatively less prosperous; however, there are three closed passages on the east wall towards lot 36. On the south courtyard, vegetation and a brick partition wall dividing the lots are visible. The upper floor has the same space articulation as the ground. The staircase reaches a semi-open area, iwan, with two walled-up windows and a walled-up door on the east wall connecting to lot 36. The iwan is separated with a timber partition wall from the room at the south, which has windows and niches on the south and north walls. Besides, the west wall of the iwan is known to be a later addition. The construction technique is rubble stone masonry with ashlar masonry.

Figure 9, 10. Demolished G-04 room with south façade of the structures on lot 4, 35, and 36 (left) (Google Maps), north façade of Şeyhoğlu mansion with a trace of walled-up arches (right) (Tuncer, 1999 pp. 387)

Tuncer (1999) does not present the adjacent lot on the east, lot 36, but the inventory of cultural assets of Diyarbakır briefly describes the structure together with lot 37 (Soyukaya et al., 2011). The highly altered structure of two-story in height, located in lot 36, has a street entrance that directs to a courtyard. A concrete staircase connects the courtyard with a space that used to be an iwan; however, its architectural features are lost over time. The east wall of the iwan has a segmental and cas ornamented door and window that connects the building to the structure on lot 37. A segmental-arched entrance with an authentic door connects that lost iwan space to the room in the back, where an arched trefoil niche and several more small niches are located. The south façade of the

ground floor has a later walled-up door and an arch on the west face, connecting with lot 35 (Soyukaya et al., 2011 pp. 188).

The structure on lot 36 is adjacent to lot 34, which is not registered. In lot 36, there are two entrances to the traditional structure; one with a segmental-arched door directing to a long small room with a concrete floor. It has a walled-up arch on the east wall directing to lot 34. The room reached by this entrance has a square plan, and brick pendentive ruins on the encircling rubble masonry wall. This potential domed space on the ground level might indicate the existence of a bath in the mansion complex. A later walled-up opening on the east wall of this structure indicates a connection between lot 34. The other entrance is another small room with a ceramic floor and a window facing the inner courtyard. On the north façade, the traditional structure ruins of stone steps of a traditional staircase are visible. However, the traditional staircase is demolished, and a concrete staircase leads to the upper level. The construction technique of the structure is rubble stone masonry with ashlar masonry.

Lot 37 is also examined since it is a registered building adjacent to the lots of the mansion; however, it is highly articulated. Besides, the original architectural features are not visible in the current condition. Lot 34, which the mansion might also be connected to based on traces seen on the eastern wall, is wholly lost.

The studies on Şeyhoğlu Mansion focused on answering the connections of the lots, architectural features, façade features, and open and built-up relationships of the mansion. As a result, the mansion is thought to be more longitudinal than Tuncer's observations (1999). The prosperous mansion consists of lots 49, 4, 35, 36, and 34. The current entrance to the mansion is directly through the Uğurlu square without a semi-public area, unlike the other studied examples. According to the mansion typology, all entrances are provided either by an *aralık* or directly to the courtyard or both. Due to this data, the entrance to the Şeyhoğlu Mansion is thought to be provided from the north courtyard. As the building block on the north of the mansion currently has no registered structure, one might consider the possibility of an enormous courtyard extending along the north. Furthermore, the arch traces on the north façade of lot 49 indicates the ruined structures belonging to the Şeyhoğlu complex in the north on Uğurlu square. The south of the mansion consists of a large lot which has no traditional structure in it. Ergo, the lot must have been without any structure and act as a courtyard. For these reasons, it is understood that the mansion used to locate between its south and north courtyards.

Figure 11. Şeyhoğlu mansion among the registered buildings; Şehzadeler Mansion and Şeyhoğlu Mansion, Fatih Paşa Mosque on the southeast of the mansions and newly added structures on the north (Google earth)

Figure 12. South façade of Şeyhoğlu mansion and new reconstructions at the back (Google Earth)

CONCLUSION

The ancient city of Diyarbakır, with universally attributed values, possesses outstanding vernacular architecture in the region. As the constant changes in the city walls, the alteration in the urban pattern proceeds. New constructions within the traditional structures, changes in the function of residential units to the commercial areas, ongoing restoration projects, and reconstruction of the demolished traditional tissue with contemporary techniques in recent years make Diyarbakır more critical. Among different mansion types, a unique example of Şeyhoğlu Mansion is studied in detail within the scope of this paper. The characteristics of the structure were lost due to its dereliction, the neighboring illegal housing units, and the transformations in the traditional urban tissue. Reconstructions on the north and deconstructions in the block disengage the mansion from its context. Nevertheless, Şeyhoğlu is a significant example of mansion typology as an indicator of its historical characteristics. Although the building has lost its authentic features and structural stability to a great extent, its uniqueness can still be observed.

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CONSIDERATION ON THE TIANQIAO HISTORICAL BRIDGE IN BEIJING, CHINA FROM THE PERSPECTIVE OF SOCIOLOGY AND URBAN SPATIAL MORPHOLOGY

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ABSTRACT

This study aims to propose a research strategy, which is to enrich the value of the architectural heritage that is located on the pivotal position of the city from the perspective of sociology and urban spatial morphology. It can be used as a fundamental step toward protecting the architectural heritage and the surrounding environment.

The word "Tianqiao" refers to a bridge built on the Temple River in the southern suburb of Beijing in the 15th century. In 1553, it became the geographical center of the outer city of Beijing which was built for military defense, and it gradually became a special bridge for the emperor's sacrificial temple. After the mid-19th century, the bridge was opened to the ordinary citizen again with the decline of imperial power. Taking the bridge as the center, a cultural landscape integrating commerce, and folk culture have been formed. It contributed greatly to the cultural development of Beijing in history until it disappeared in the urban renewal after the 1950s. Nevertheless, the current protection of “Tianqiao” is committed to the reconstruction of the bridge, while ignoring the related intangible cultural heritage and the geographical advantages of the area where the bridge is located.

This article firstly presents a review of the evolutionary history of “Tianqiao” and then analyzes the source, connotation, and features of its sociology value based on the history and development of heritage affairs. In addition, its impact on urban space will also be analyzed to get inspiration for the bridge heritage protection. Entering into the study of this field entails working not only on the crafts and materials that have constructed the bridge but also on the people who used them. The specific suggestions given in this study will contribute to the reconstruction and upgrading of the “Tianiao” without failing to recognize its uniqueness and cultural activities.

KEYWORDS: Beijing, Tianqiao historical bridge, heritage protection, sociology value, urban space

1 TIANQIAO IS ABOUT THE RITUAL SYSTEM OF ANCIENT CHINESE CAPITAL AND ITS URBAN SPATIAL MORPHOLOGY

1.1 The generation of the Tianqiao under the rituals of the capital city of the Outskirts Sacrifice Ceremony

In ancient China, the rituals of the capital city have included a tradition of worshipping the gods of heaven in the southern suburbs since 3000 years ago. The relationship between the Beijing Sky Bridge and this capital ritual system is the most fundamental and important. On the one hand, it was the precondition for the emergence of the bridge, and on the other it was the reason why the bridge became important. Firstly, there is no clear record of the construction of this bridge, but the river under the bridge was dug for drainage in the 18th year of Yongle period in Ming Dynasty (1420) when the Temple of Heaven and the Temple of Mountain and River were built. [1] By the ninth year of the Xuande period in Ming Dynasty(1426), the river that drained the water from the southern city trenches was extended southwards to connect with the Jiaotan river, which is the predecessor of the Tianqiao river. [2] After the connection, the Jiaotan river was full of water, and the width of the river channel should have been wider at the time. As a result, a series of bridges, including the later 'Tianqiao', appeared one after another on the Jiaotan river in order to meet the passage out of the Zhengyang Gate to the south.

More than that, the expansion of the Temple of Heaven in the 32th year of Jiajing period in Ming Dynasty (1553) gave this bridge a special meaning. The two altar temples in the southern suburbs did not form a relatively neat and symmetrical relationship before. After this expansion and restructuring, "The Temple of Heaven has the west gate as its main entrance, and it needs to be facing the main street to the west, facing the Temple of Xiannong across the street, in order to be spectacular." [3] As a result, the road in between has become the only way for sacrifices, and the "Tianqiao" is a bridge that connects the passage to Zhengyang Gate across the river. So far, it has become the only way for the royal guard of honor to go to the suburban altar to make sacrifices.

1.2 Tianqiao as the geographic center of Beijing's Outer City

Not only did form of temples changed, the urban space was also extended at the same time. In the 32th year of Jiajing period in Ming Dynasty (1553), for military defense, the government planned to build another city wall around the original capital. However, due to the lack of financial support during the construction process, it was finally decided to build a city wall only in the southern suburbs to enclose the more populous southern suburbs into the city. [4]As a result, the plane of Beijing City formed a convex layout, which is the intuitive impression of Beijing, the capital of China, during the four hundred years from the mid-16th century to the mid-20th century.

Regarding the determination of the location of the Yongding Gate and the southern wall of the outer city, the current research only points out its positional relationship with the southern wall of the Temple of Heaven. "Enclose the Temple of Heaven in it." However, regardless of whether the relationship with this bridge was considered during the construction of the city, the result of the expansion of the outer city is that the bridge is located in the center of the entire outer city. For a capital

city established with the idea of choosing the "center", [5] its location itself is of unique significance (Fig1).

Figure 1. Tianqiao under the evolution of Beijing urban space and its Temple during Ming and Qing Dynasty (1400s-1900s)

1.3 Strengthening of Beijing City Axis and the upgrading of Tianqiao

The road from Zhengyang Gate to Yongding Gate in the outer space of Beijing is an integral part of the central axis of Beijing. According to the definition: the road that the emperor walked is the imperial road, then this road is undoubtedly one of the important imperial roads in Beijing. According to the local chronicles: "The emperor in the 7th year of Yongzheng issued an order: There is low-lying water on the way from Zhengyangmen's Tianqiao to Yongdingmen. This road is a thoroughfare between horses and horses. If it is not repaired, it will be difficult to walk in heavy rain. Therefore, the emperor ordered Tianqiao to reach The roads along the suspension bridge outside Yongdingmen should be changed to stone roads.

In addition, according to the local chronicles, "From the Tianqiao to the corridor of Yongdingmen, the padding was repaired by order in the 7th year of Yongzheng period in Qing Dynasty (1729), and stones were used for paving, which can accommodate two cars." [6]After 1729, among the several avenues connecting the city gates in the outer city, the Zhengyang Street and the Yongding Street were the only streets paved with slabs. Therefore, the strengthening of the road marks the central axis of the outer city on the material level, and also makes the position of Tianqiao more important.

More importantly, the sky bridge is the only building entity with the central axis of Beijing between Zhengyang Gate and Yongding Gate. The so-called "axis" of the Chinese capital , its biggest feature is not the road space, but the building entities arranged in a linear manner, which corresponds to the "order" culture. The neat and orderly, high and low material form representation is the most prominent feature of this axis. From the Bell Tower to the Yongding Gate, there is a total of 7.8 kilometers of Beijing's urban axis. With Zhengyangmen as the boundary, there are many buildings to the north, and there are no large buildings on the axis between Zhengyangmen and Yongdingmen to the south. Only an Tianqiao divides the road into two sections,the north and the south part.

In the Qing Dynasty, Emperor Qianlong personally ordered the addition of two imperial steles on the south side of the bridge and the construction of pavilions for them. This greatly improves the status of the flyover in the urban space. The stele bodies of the two steles are square pillars, about 8 meters high, and 1.45 meters wide on each side. The building scale of the stele pavilion is even larger. This kind of building volume is very eye-catching in the Tianqiao area during the Qianlong period of the Qing

Dynasty (1790s) . The construction of two imperial steles to the south of the Tianqiao makes it a symbol of the national gate of welcoming guests. [7]

2 TIANQIAO AND THE SOCIAL CULTURE OF BEIJING'S OUTER CITY

2.1 Impact of transportation needs and demographic changes in outer cities on Tianqiao

The area where Tianqiao is located was far from the capital before the Ming Dynasty. The main traffic of this area was the oblique traffic between the old city in the southwest and the new city in the northeast. Since the early Ming Dynasty, the southward movement of the capital made it the southern suburb of the city and its commercial activities have been frequent. Moreover, many officials who came to Beijing have passed here. It began to become an area with the most frequent population movement in Beijing. In the Jiajing period of Ming Dynasty, the city walls were built for the purpose of military defense, turning this area into an Outer City. This has provided conditions for the emergence of guild halls for officials and businessmen to live with. This area has become a distribution center for officials and businessmen from all over the south to Beijing, and the north-south traffic demand in the outer city is gradually increasing. As one of the important bridges connecting north and South transportation, the traffic function of Tianqiao has become more and more significant. It is the most important one that located on the axis, facing the Yongding gate, the South Gate of the capital.

In the Qing Dynasty, the population and stratum of the outer city have undergone a fundamental change. The Manchus who rose in Northeast China entered Beijing, gained the rule of the Chinese Empire, and implemented a series of preferential policies for Manchus to consolidate their tribal regime. Among them, it is a representative measure to rush the Han dignitaries who originally lived in the inner city of Beijing to live in the outer city, and make the inner city a special urban space for Manchu people. The direct result of this policy is the increase of the population in outer cities. Not only the population movement was frequent, but also the settled population was increasing, and the stratum was diverse. This extended the activities and living range of foreign adults from Zhushikou in the Ming Dynasty to the Tianqiao. People began to gather around it with cars like flowing water and horses like dragons. Transportation needs and population growth support pursuing a more prosperous environment of Tianqiao.

2.2 The royal ceremony of the Qing Dynasty endowed Tianqiao with sacred significance

As mentioned above, the passage of the royal honor guard in the ceremony through this bridge has begun since the Jiajing period of the Ming Dynasty at the latest. However, it is worth emphasizing that, according to the literature records, the emperor scarecely attend the heaven worship ceremony in person after the Jiajing period of the Ming Dynasty. Among the four Ming emperors after the Jiajing period, Emperor Wanli did not offer sacrifices in person, [8] Emperor Taichang had been in power for less than a year and had no time to offer sacrifices to heaven, Emperor Tianqi also abandoned the government, and there was no record of offering sacrifices to heaven in historical materials. Although the last emperor Chongzhen held a few sacrificial ceremonies, it was difficult to have the ability and willingness to improve the system of facilities along the way due to the war and deficit of the national treasury in the late Ming Dynasty. This explains why the word "Tianqiao" never appeared in the historical materials of the Ming Dynasty. By the Qing Dynasty, the situation was different. The Manchu emperor made great efforts to rule the country and did not dare to slack off on the important " Outskirts Sacrifice Ceremony ". Especially in the early Qing Dynasty, the four emperors of Shunzhi, Kangxi, Yongzheng and Qianlong not only offered sacrifices much more frequently than in the Ming

Dynasty, but also the sacrificial ceremony was more grand, and the authority of imperial power was more prominent. As an important bridge on the suburban sacrifice route, its status should be improved.

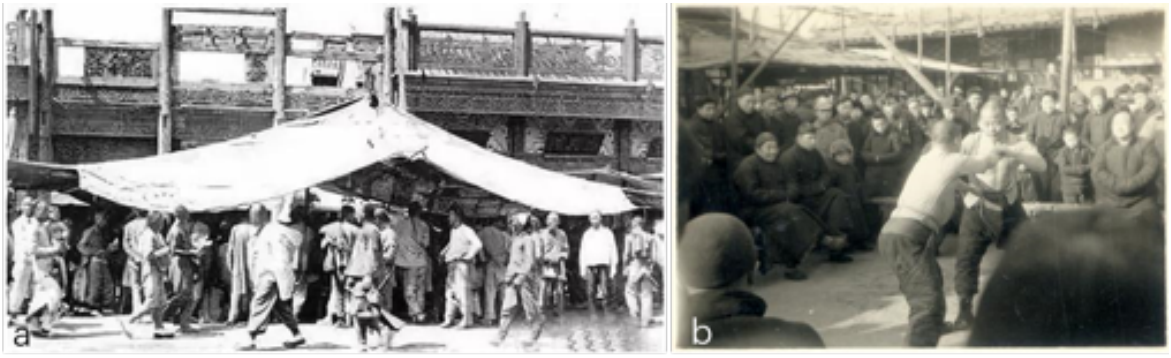

Fig 3 The civilian recreational activities around Tianqiao in 1900s: a) Storytelling performance, b) wrestling competition

Moreover, several southern tours by Emperor Kangxi and Emperor Qianlong also improved the status of Tianqiao. The return route of the emperor's southern tour entered the city from Yongding gate to Zhengyang gate many times. Therefore, the buildings on the center axis of outer city, including Yongding gate, Tianqiao and Zhengyang gate, were improved in the Qing Dynasty. The form of Tianqiao was improved as well, and two imperial monuments with stele pavilion were erected in the south of the bridge (Fig2). At this time, Tianqiao is closed. Only the Royal Guard of honor can pass through during the Outskirts Sacrifice Ceremony. Usually, people have to bypass the bridges on both sides to cross the river.

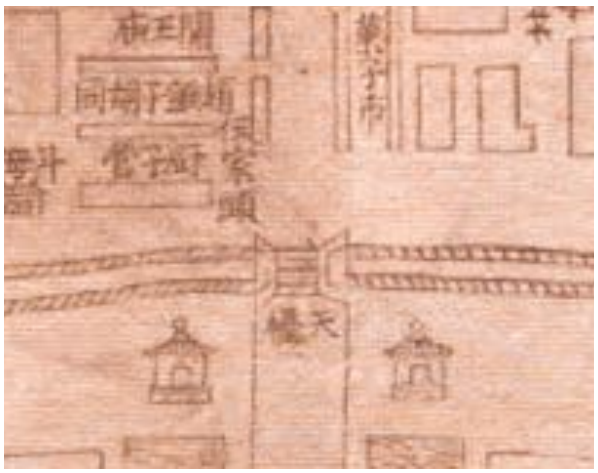

Fig 2 Tianqiao and two imperial monuments with stele pavilion in Map of Beijing 1870

2.3 The development of entertainment industry in outer cities and the folk culture of Tianqiao

The social production and operation mechanism of outer cities in the Qing Dynasty changed significantly. Since the Manchu Han division system was implemented in the inner and outer cities of Beijing, the Manchu rulers strictly prohibited the opening of theatrical gardens and other entertainment places in the inner city in order to ensure that the Manchu people always maintain the tradition of diligence and martial arts. This has led to the concentration of entertainment places in the outer city of Beijing. Not only the theater, but also the actors live in the west of Dashilan area in the outer city, which makes every family in the streets can hear the sound of musical instruments. During the Qianlong period of the Qing Dynasty, there were records of investigating and punishing Manchu officials who changed their clothes and went to the theater, but this phenomenon continued despite repeated prohibitions. The entertainment industry in the outer city has everything from high-end

theatrical gardens to teahouse folk arts, and then to outdoor entertainment places. In this context, an open-air entertainment venue centered on the Tianqiao has gradually become the entertainment center of civilians in the outer city. Since the mid Qing Dynasty, vendors and jugglers have gathered here one after another.

At the same time, with the failure of the first Opium War in 1840, China became a semi feudal and semi colonial society, and the imperial power was weakened. From this period to the late Qing Dynasty, the Royal atmosphere of Tianqiao was gradually replaced by the folk culture (Fig3). Tianqiao is no longer closed. People can walk on it on weekdays. At the beginning of the 20th century, in order to meet the needs of modern traffic, the slope of the bridge was even reduced to a flat bridge. It can be seen from the above that social environment of the outer city provides Tianqiao with both the symbolism of imperial power and the Folk Culture

3 PROTECTION OF THE HISTORICAL BRIDGE FROM THE PERSPECTIVE OF URBAN URBAN SPATIAL MORPHOLOGY AND SOCIOLOGY

The above analysis of Tianqiao from the perspective of the evolution of urban space and social environment shows that the value of Tianqiao is not "long history" (it began to enter the official vision and become important in the Qing Dynasty.)Its unique value lies in its important position in urban spatial morphology and the mapping of the evolution of Tianqiao's form to the transformation between royal literature and market folk customs in the outer city in the Qing Dynasty. This once again verifies the concept in <what is ouv?>, that is, the value of non-material elements related to heritage entities is also of great significance to the witness of human civilization. [9] Based on the above cognition, this study puts forward the following suggestions for the protection of Tianqiao:

3.1 Tianqiao protection that meets the needs of the times

In history, the form of Tianqiao is a constantly changing process. The development of urban space and the evolution of social background have an impact on it. According to the historical image and literature records, the changes of Tianqiao in each period are combed and restored as a reference for ontology protection.

The earliest image of Tianqiao is the picture of Kangxi's southern tour drawn by Wanghui and Yangjin in 1691. At that time, the bridge deck was wide and flat, which could accommodate several people riding at the same time, which met the needs of Tianqiao as a north-south traffic in that period. The style of the bridge and the breast board is simple. To Tianqiao rebuilt during the period of Emperor Qianlong of Qing Dynasty, the map of Beijing in 1870 depicts the relationship between Tianqiao and its two imperial stele pavilions in the south. In addition, the images drawn by the preussische around 1864 show the facade of Tianqiao after reconstruction in the Qianlong period. [10] At this time, the bridge deck of Tianqiao is about 12 meters wide. Although the span of the bridge is not verified, it can be roughly judged from the changes of the water system under Tianqiao that the span of the bridge should be reduced compared with the Kangxi period. At the same time, it can also be seen that the bridge deck is arched about 3 meters high. The bridge deck is paved with long stones, and the stone

Fig 4 The form of Tianqiao in different periods: a) Kangxi period(1700s), b) Qianlong period(1790s),c) 1900s

railings are richly decorated. At this time, Tianqiao was used for the emperor's suburban sacrifice and was closed on weekdays. Therefore, the practicability of transportation was not considered, but the improvement of hierarchy was more considered. This should be the bridge form of the most symbolic period of imperial power (Fig4).

Referring to the historical experience, the protection of Tianqiao historical urban core should also consider the significance of Tianqiao in today's urban space and the refinement of the core values of contemporary society, so that its image can not only come from history, but also highlight the spirit of the times of the capital today.

3.2 Restoring the echo pattern of Tianqiao and temples

From the transformation of the status of Tianqiao in history, it is not only a bridge, but also a historical urban core. The historical value of Tianqiao is mostly presented through an area centered on it. Therefore, compared with the protection of the bridge, the continuation of the relationship between the bridge and the external environment and urban space is more valuable. In terms of the external environment of Tianqiao, the most important thing to be paid attention to is the line of sight relationship between Tianqiao and the suburban altar. The appearance and development of temples and Tianqiao are inseparable. At the same time, temples, the so-called important symbol of ancient Chinese capital, echoes with Tianqiao once symbolizing imperial power in urban space. This pattern is the important value of it.

This pattern has experienced changes in history. In the Ming Dynasty, the residential land in the outer city came to Zhushikou generation, and there was a suburb around Tianqiao. During the Qianlong period of the Qing Dynasty, due to the increase of population, residential land approached Tianqiao. At the same time, the environment around this area once deteriorated due to the blockage of rivers and canals. To beautify the surrounding landscape environment, the environmental renovation during the Qianlong period of the Qing Dynasty piled mountains, planted trees and created landscapes. However, it failed in the Jiaqing period. The mountain was filled up and the viewing gallery was reopened on the grounds that it hindered the viewing gallery between Tianqiao and the temple. After that, the south of Tianqiao has always maintained a broad vision, echoing not only the temple, but also the southernmost water system in the outer city. During the Daoguang period of the Qing Dynasty, poems were describing the scenery of Tianqiao as blue as water in the southwest of the Outer City. [11]

Therefore, from the perspective of the principle of environmental improvement around Tianqiao in history, the sight of Tianqiao and the temple in the southern suburb can best reflect the national great power. Neither the mountain piling in the Qianlong period nor the expression form of the central axis of "row of trees " should destroy this visual corridor, which is today's urban planners need to learn from.

3.3 Identifying the transition point of the urban space and the cultural atmosphere

Even though there is no river pass through Tianqiao area, and Tianqiao has no actual traffic demand, the value and significance of Tianqiao has never changed from the perspective of urban space due to its critical location. It is still of great significance to the identification of the urban pattern. Historically, the area around Tianqiao is an important transformation point of the spatial structure of the old city of Beijing in the Qing Dynasty. It marked the construction land and rural land of the outer city space. To the north of Tianqiao, life was boiling. To the south of Tianqiao, it had a wide field of vision and unlimited natural scenery, echoing the suburban altar.

In addition, Tianqiao area is also the boundary of elegant and popular culture in Beijing's outer city society. Compared with the official and commercial activities and theater entertainment along Zhengyangmen street, the relatively open space around Tianqiao has naturally become the first choice for civilian secular culture. According to the records in local chronicles, “On the north and south sides

of Tianqiao, the space is vast, and small vendors gather here every day with complete department stores. At the same time, acrobatic performances and storytelling performances are often performed here." This noisy atmosphere developed further after entering the Republic of China. Tianqiao market in the 1940s included Xiannong market, Chengnan shopping mall, Tiannong shopping mall, Triangle market and fair market, where we can see the social customs of Beijing. It can be seen that the transformation of the urban space and the social culture atmosphere is the inherent tradition of Tianqiao area. In today's protection work of Tianqiao, it is worth thinking about how to inherit its feature as a transformation point of Beijing.

4 CONCLUSION

This work presents a relevant perspective on the relationship between heritage and city. It provides both an accurate interpretation of the heritage and better understanding of the urban evolution and social culture of Beijing. Within the framework of the urban spaces and from the metropolitan society perspective of the Chinese city in Beijing, this study rejects the previous perception of the 'historic' value of the Tianqiao and suggest that it became important during the 'Qing Dynasty'. On this basis, the transformation of Tianqiao's status during the Qing dynasty has been sorted out. The research findings shifts the perspective of the study of the heritage of Tianqiao from its historical origins to its complexity, whose constant role reversal epitomizes the capital city society of a Chinese civilization dominated by Confucianism. Moreover, the research findings changed our perception that Tianqiao's value does not lie in its long history, but in its complexity. Its constant role transformation is the epitome of Chinese civilized capital society dominated by Confucian culture.

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A RESEARCH FOR IDENTITY OF PLACE IN A TRANSFORMING HISTORICAL URBAN ENVIRONMENT: DİYARBAKIR SURİÇİ

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ABSTRACT

Since the beginning of their formation, cities have been subject to transformations. Factors including natural conditions, demographical changes, financial pressures, political interventions result in the modification of the physical configuration of urban environments. As a result of rapid globalization and extensive growth, transformations become inevitable. Such changes are more critical in historic urban environments, which reflect the city's identity and bear the traces of culture. Therefore, the consideration in heritage conservation becomes crucial for maintaining the identity of a place.

Diyarbakır has been a multicultural context throughout history, where cultural richness can be observed through the built heritage. However, Suriçi underwent drastic transformations in terms of its physical and social structure. By the 1990s, the deterioration in the traditional tissue is accelerated due to unregulated constructions. As a result of the conflicts that started in 2015, most of the remaining historical structures were damaged or destroyed, leading to the physical and intangible deprivation of Suriçi. On the other hand, in 2015, Diyarbakır Fortress and Hevsel Gardens Cultural Landscape was inscribed in UNESCO's World Heritage List. Therefore, the historic urban site of Suriçi attracted notice in the context of cultural heritage conservation. By means of the inscription, Suriçi was declared an urban conservation site. Besides, the ongoing urban renewal project that began in 2008 proposes reconstructions, restorations, new developments, and demolitions, causing a significant shift in the traditional tissue.

The study aims to define the identity of Suriçi as a transformed historic urban environment and contribute to the continuum of place identity in the transforming city. The study focuses on the northeast of Suriçi, around Kurşunlu Mosque, where the transformation of the built environment is the most apparent. Within the scope of the research, modifications in Suriçi's spatial identity caused by the previously mentioned interventions until the present day are examined. In this context, the spatial analysis of the traditional tissue surrounding the Kurşunlu Mosque is realized through the mapping of literature research, photographs, and physical site observations. Hence, the relationship between the changes in the urban structure and place identity will be questioned.

Introduction

Place identity is a complex notion that has been discussed in many fields. In order to discuss place identity, concepts of place and identity should be examined. In comparison to the strict geometrical meaning of the word "space" that refers to an empty area (Lefebvre, 1991 pp.1), the concept of "place" attributes a sensory implication to space. Places are a synthesis of natural and human-made components, activities, and meanings. Accordingly, the notion that distinguishes a place from a physical location is the process of human experience. (Relph, 1976 pp.141) A place is not a sole physical environment comprising material assets but a whole formed by physical configurations together with human interactions. The form of physical place can impact the social composition, while the social formation can shape the physical environment. (Uçar, 2015 pp.50) In other words, the place is the coalescence of the reciprocal relationship between the environment and humans.

The word "identity" is defined as "the distinguishing character or personality of an individual" in the dictionary of Meriam Webster. Parallel to this definition, the identity of a place can be explained as features that assure the distinctiveness and continuation of the place in time. (Lewicka, 2008 pp.211) From an architectural point of view, what differentiates a place from another or what makes a place significant is the physical elements of the environment. On the other hand, the concept of place identity cannot be reduced to physical attributes. Given that the place comprises of the mutual relationship between humans and the environment, the notion of place identity must include social components. The lifestyle, culture, customs, traditions are the factors that contribute to the significance of a place as well as the topography, nature, fabric, and form.

Following the 1960s, the concept of identity began to be discussed in urban studies. (Rifaioğlu & Şahin Güçhan, 2013, pp.140) Based on Kevin Lynch's definition, the city's image is comprised of three elements: identity, structure, and meaning. Accordingly, identity is defined as the identification of a physical asset, which indicates its distinction from other things and its recognition as a separate entity. (Lynch, 1960 pp.8) Lynch's description of identity can be considered the "noticeable features of the city" in terms of architecture. (Rifaioğlu & Şahin Güçhan, 2013 pp.140) In a similar vein, John Montgomery considers identity as an objective notion; on the other hand, the image has subjective connotations related to the perception and cognition of the individual. In other words, the image is how the identity is perceived. (Montgomery, 1998 p. 98-100) On the contrary to Montgomery's theorization based on the objectivity of identity, place identity can also be considered a subjective concept derived from individuals' perceptions of the environment. Accordingly, place identity is a substructure of self-identity and is composed of cognitions regarding the context. (Proshansky et.al., 1983 pp.60)

Place identity is also associated with the spirit of place, an essential concept in heritage studies. In this context, Quebec Declaration theorizes the conservation of cultural heritage based on the spirit of place. According to the declaration, the combination of tangible and intangible assets that define a particular place constitutes cultural heritage. (Quebec Declaration, 2008 pp.1) Like Lynch's association of identity with the significance of a specific object, Burra Charter of the Australian ICOMOS considers that the aim of conservation of cultural heritage is to retain the significance of the place. The document defines cultural significance as "aesthetic, historic, scientific, social or spiritual value for the past, present tor future generations." As a national charter dwelling upon Australian heritage, it underlines that the places that bear cultural significance reflect who the Australian communities are. (Burra Charter, 1999 pp.1-2) Therefore it can be inferred that whats makes a place significant is the elements that constitute its identity.

Considering that the conservation of cultural heritage dwells on the preservation of urban identity, changes in the historic tissue become a critical issue. Parallel to the changes in the lifestyle, the shift in

the spatial requirements results in the alteration of the historic fabric. Within the perspective of heritage conservation, physical and intangible features as indicators of cultural identity should be maintained as a whole.

Within the scope of the study, the historic urban center of Diyarbakır, the Suriçi neighborhood, is analyzed in terms of the modifications in the traditional fabric. The effects of various interventions on the urban space, on the identity of the place will be discussed. The concept of place identity is not investigated in terms of the psychological effects on the individuals within the context of this research.

Brief History of Diyarbakır

Diyarbakır is situated in the southeast of Turkey, on the western shore of the Upper Tigris River Basin. As part of the region known for abundant agricultural production, the Fertile Crescent, Diyarbakır has been one of the strategic points where commercial transactions took place. Therefore the city has been home to numerous civilizations throughout history. (Arslan, 1999 pp.82)

The urban fabric of the historical settlement of Diyarbakır was formed with the contributions of various societies. Besides, the fortification walls have played a crucial role in the preservation of the fortified city' form and the maintenance of its identity. (Kejanlı & Dinçer, 2011 pp.95) The fortified city includes the inner castle (İç Kale) and the enclosing fortifications (Dış Kale). (Figure 1) According to Albert Gabriel, the area's first settlers are known to be the Hurrians, who inhabited the inner castle. The beginning of the construction of the city walls corresponds to the Hurrian period, around 2000 B.C. (Gabriel, 1940 pp.40). Following the Hurrians, the city was referred to as "Amidi" or "Amedi" during the Assyrian and Urartian rule (1260-653 B.C.). (Beysanoğlu, 1999 pp.41) The Assyrian and Urartian domination in the city was followed respectively by Persians, Macedonians, Seleucid Kingdom, Parthians, Tigranes the Great, and Romans. (Arslan, 1999 pp.82)

In the city, which often falls under the rule of different civilizations, each ruler was primarily interested in repairing the fortification walls. (Parla, 2005 pp.64) During the Roman reign that began in 69 B.C., the city walls were repaired besides expanded towards the east and West. Moreover, the settlement area of the historic city and the fortifications reached their present form. (Arslan, 1999 pp.83) The Roman urban planning elements can still be observed through the two central axes of the settlement, the vertically intersecting Cardo and Decumanus, which function as the main commercial roads of the historic area.

During the Roman period, with the spread of Christianity in the region, many monasteries, churches, libraries were introduced to the city. (Arslan, 1999 pp.83) With the Arab invasions in the XVII century, Islam became one of the area's dominant religions. Thus, the dominance of Islamic states led to the implementation of Islamic monuments in the city. At the same time, these structures began to differentiate the city's fabric and contributed to its multicultural identity. (Yılmazçelik, 1999 pp.472) Following the Arab rule, Buyid Dynasty, Marwanids, Seljuk Empire, Artuqids, Ayyubids, Rum Seljuk Sultanate, Ilkhanate, Ak Koyunlu Empire, and the Ottomans respectively established domination over the city. (Arslan, 1999 pp.85)

During the Ottoman rule between 1515 and 1920, the city showed a formation in accordance with the general characteristics of Ottoman cities. The monumental structures built in the XVII century, along with the monuments of the previous periods, have spread to the urban texture and have integrated with the residential structures that form the identity of Diyarbakır. (Kejanlı & Dinçer, 2011 pp.956)

A distinctive cultural landscape element of Diyarbakır is the Hevsel Gardens, located between the fortress and Tigris River. The area is known to be a cultivable land from the 12th century until today.

(Tuncer, 1999 pp.10) The Diyarbakır Fortress and Hevel Gardens Cultural Landscape were inscribed in the UNESCO's World Heritage List in 2015.

The historic city of Diyarbakır underwent drastic transformations in terms of its physical and social structure. The following section aims to define the characteristics of the urban area before the alterations occurred in the physical and social fabric of the city. The streets, squares, and public buildings as places of collective practices have a central role in the formation of place identity. The elements that contribute to the identity of the city are narrated in the next chapter.

Figure 1. Location of Diyarbakır (Maps Stamen).

Figure 2. Map of Suriçi prepared by Albert Gabriel (1930).

FORMATION OF THE IDENTITY OF SURIÇI

Historic cities are shaped by the influence of many factors such as natural resources, topography, climate, accumulated knowledge, lifestyle, and culture. The combination of these factors shapes the identity of the city. One of the factors that constitute the city's identity is the use of black basalt as a building material. Like the fortification walls surrounding Suriçi, the structures that make up the urban texture are black basalt stone. Therefore, the district is known to be referred to as *Kara Amid* (Black Amid) due to the dark color of its buildings. (Arslan, 1999 pp.81) Besides its distinct visual properties, the building material abundant in the region also provides climatic comfort for hot-arid climates similar to that of Diyarbakır. Another result of climatic concerns is the narrow street pattern. The two-

story residential structures defining the narrow alleys are also designed in deference to climatic conditions. The closed and semi-open parts of the house are organized around spacious courtyards. The courtyard necessarily includes an ornamental pool as a cooling element of water.

In addition to climatic factors, the introverted lifestyle of the inhabitants was also reflected in the architecture. Due to placing a considerable emphasis on privacy, the space organization is isolated from the street. Hence, the facades facing the street are modest and impermeable; however, the courtyard facades are considerably permeable and well decorated. A vivid life is offered inside the courtyard walls, in contrast to the dark narrow streets defined by black basalt stone walls.

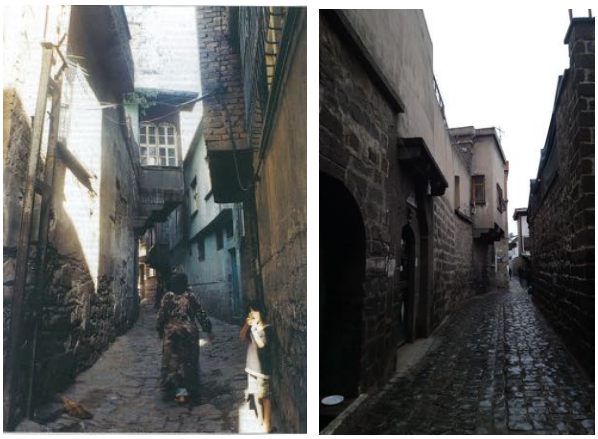

Figure 3: Traditional street pattern (left) (Tuncer, 1999 pp. 16),a well-preserved street in Suriçi (right) (Author, 2020).

Traditional Diyarbakır houses are one or two-story buildings adjacent to the neighboring lot. The parts of the traditional house centered around a courtyard, usually composed of two main sections for the summer and winter. Spaces designed for summer habitation occupy the south of the plot to face north and prevent sunlight from other directions. On the other hand, winter spaces are intended to benefit from the sunlight while facing the south. The ground level consists of a kitchen, rooms, and iwan, a semi-open area characterized by arcades. The stairs in the courtyard provide access to the upper level, including rooms, balconies, and iwans.

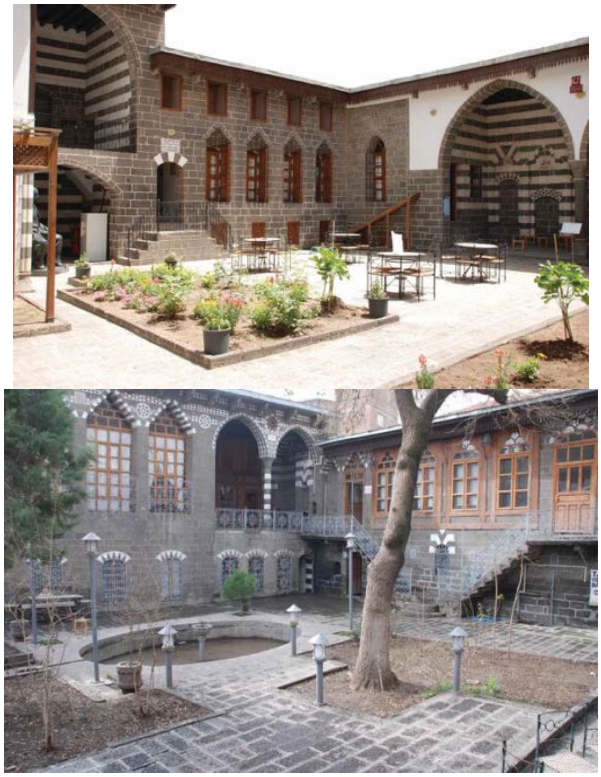

Figure 4. Ziya Gökalp house (left), Cahit Sıtkı Tarancı house (right). (Dalkılıç & Bekleyen, 2011 pp.427).

The traditional street texture of Suriçi consists of curvilinear and narrow streets. The streets narrow and widen in places, forming curvilinear passages due to the trapezoidal plot formations. (Tuncer, 1999) Another distinctive element of the urban pattern is the dead-end streets. The irregular configuration of alleys, lots, and buildings contribute to the significance of the historic city.

A distinctive element that adds three-dimensionality to the street tissue is *Kabaltı*, which is basically a room over the street. *Kabaltı* is a local solution created to meet the need for hot climatic conditions in the area to provide shade in the summer. The element that provides a visual relationship with the alley is a room and an integral part of the street tissue. (Tuncer, 1999) Like other traditional settlements in Anatolia, *şahnişin* or *cumba* are characteristic elements of the urban tissue. *Şahinişin* can be defined as the projections over the ground floor to enlarge the room in the upper level. Due to privacy concerns, *şahnişin* does not have openings through the street.

Figure 5. Traditional street tissue with kabaltı (left) and şahnişin (right). (Tuncer, 1999 pp. 309-436).

Diyarbakır has been a multicultural setting until the Republican period. The traces of the multicultural identity where members of different ethnicities and religions co-existed can be observed within the traditional city. The city's cultural richness is reflected through various public buildings, including mosques, churches, *hamams*, *medrese*, libraries, *hans*, and bazaars. The northeast Suriçi consists of several neighborhoods included Christian and Muslim communities. (Yılmazçelik, 1999) The next chapter aims to identify the transformations that affect the spatial identity of Suriçi.

REPUBLICAN PERIOD

With the proclamation of the republic in 1923, the effort to create a modern city image has prevailed in Diyarbakır as in other cities in Turkey. Within this period, attempts for a planned development for Diyarbakır are seen. (Kejanlı, 2009 pp.13) A significant transformation in the built environment is demolishing the fortification walls enclosing the city in 1931 to provide airflow to the traditional settlement. Consequently, as a crucial element of the urban identity that bears the traces of various civilizations, the city walls took severe damages. French archeologist Albert Gabriel prevented the destruction of the remaining walls by presenting a detailed report to the Ministry of Education, which was responsible for the monuments at that period. As a result, the destruction of the fortifications was limited around Dağkapı, the northern walls, which were later repaired in 1942. (Parla, 2005 pp.75-76)

Starting at an incredible pace after the republic, the purpose of the reconstruction activities was to expand the city of Diyarbakir compressed within the fortifications and construct a new city. (Kejanlı, 2009 pp.14) With the introduction of new residential areas, the owners of houses in Suriçi began to leave the traditional settlement. (Arslan, 1999 pp.97) At the same time, Suriçi is deprived of its local settlers, thus, its multicultural identity to a great extent.

Figure 6. A photograph of Suriçi from 1930s (Kenan Özhal archive).

Diyarbakır faced a significant population growth after the 1950's. The population of Suriçi increased from 45,000 to 200,000, and ill-conceived constructions occurred instead of traditional residences. (Dağ & Kart, 1998 pp.67) In the process, traditional houses changed owners and new settlers with lower incomes began to create slum areas around the fortifications. Besides the extensive population growth, the implementation of Law No. 6217 in 1954, allowing flat ownership resulted in the demolition of the 1-2 story courtyard houses and the construction of multi-story units. (Kejanlı, 2009 pp.15) By the 1960s, it is possible to mention three types of buildings in Suriçi: traditional courtyard houses made of black basalt stone, squatter houses of adobe, and reinforced concrete structures. (Arslan, 1999 pp.97)

In 1959, the master development plan of Suriçi was introduced. One of the plan's primary goals was to connect the existing roads of Suriçi to the new settlement areas. Another serious concern was preventing the squatting adjacent to the city walls. (Kejanlı, 2009 pp.15) One of the significant changes during this period is the expansion of Melek Ahmet, Gazi, and İzzet Paşa streets, as the commercial centers of the city that provide integrity with the surrounding traditional residential tissue. For this reason, many historic structures have been damaged. (Arslan, 1999 pp.98) A new implementary development plan for Suriçi and the settlement area outside the fortifications was introduced in 1965. The plan allowed the construction of multi-story reinforced concrete buildings around the commercial axis, leading to the deterioration of the traditional fabric.

The 1970s can be considered significant for Diyarbakır for the efforts to preserve the historic settlement. However, the conservation decisions were limited with single buildings, including monumental and civil structures, while a holistic approach to urban-scale conservation was lacking. (Kejanlı, 2009 pp.18) In 1984 and 1985, a master plan and an implementary development plan were introduced. However, no decisions regarding the traditional tissue of Suriçi were taken and, construction in accordance with the 1965 plan has continued. These implementations were insufficient to regulate the illegal housing in Suriçi due to the ongoing population increase. Therefore the deteriorations in the historic fabric have increased.

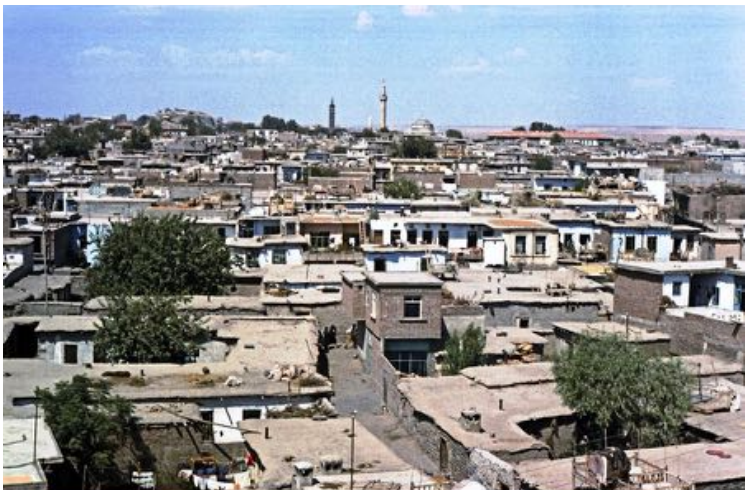

Figure 7. A Photograph taken in 1973, showing the deteriorated tissue (Kenan Özhal archive).

In the 1990s, Suriçi continued to be the commercial center and focal point of the city. (Kejanlı, 2009 pp.20) One of the most critical decisions for the historic tissue is the declaration of Suriçi as an urban conservation area in 1988. The immediate action within this period is the conservation of the fortifications while preventing illegal constructions. Another critical event in the 90s was the migration from the provinces in the Southeastern Anatolia Region to Diyarbakır due to political and economic circumstances, leading to the population densification within the historic settlement.

As spatial consequences of the changing lifestyle, alterations in the historic structures prevailed. Parallel to the increasing population and density, courtyard houses were divided into several flats to accommodate multiple families. As a result, ill-conceived constructions in the traditional houses, such as enclosing semi-open iwans, construction of additional floors over the existing structures, and erection of new buildings in the courtyard, occurred. Besides, due to the changes in the open and built areas within the courtyards, gardens, and green areas, which occupied an important place in the life of the locals, also lost their essence.

Water has been an essential element that contributes to the character of the city. The Tigris River and neighboring Hevsel Gardens, *hamams*, and ornamental pools within the courtyards occupied an important place in the collective memory of the locals. Another consequence of the changing pattern of living, the water elements also lost their significance. Due to the uncontrolled constructions within the courtyards, ornamental pools are lost their function as a central element of the traditional houses.

The conservation development plan was enacted in 1990 to provide solutions for the spatial problems in the city. Accordingly, decisions regarding the new constructions were taken to ensure the preservation of the historic fabric. However, these decisions increased the density and multi-story buildings around the commercial axis of the city. (Kejanlı, 2009 pp.20) The plan was revised in 2012 due to the insufficiency of the 1990 plan and to provide solutions to spatial problems and preserve the historic fabric. The 2012 plan, which envisages eliminating incompatible structures with the traditional tissue, was revised in 2013. Law No. 6306 for the transformation of areas under disaster risk, enacted in 2012, provided the legal basis for land expropriations in the area. Shortly after the enaction of the law, Suriçi was designated as an “area under risk” and an “urban transformation area.”

According to the conservation development plan of 2013, structures incompatible with the tissue were planned to be demolished. Correspondingly, the buildings declared “risky” are considered to be destroyed. Instead of the destroyed properties, two-story adjacent structures with courtyards are

scheduled to be constructed. The primary solution for the rehabilitation of the deteriorated tissue is not based on the improvement of the existing, but rather the demolishment. Additionally, the decisions regarding the functional changes in the evicted lots were tourism-oriented. Given all this, demolishing the existing while producing a new texture in a rich cultural heritage site as Diyarbakır is controversial from the perspective of urban conservation principles. Following the 2013 plan, The Diyarbakır Fortress and Hevsel Gardens Site Management Plan, prepared in 2014, provides o holistic strategy to the cultural heritage site. The plan aimed to preserve the natural and built tissue of the area as well as its social characteristics.

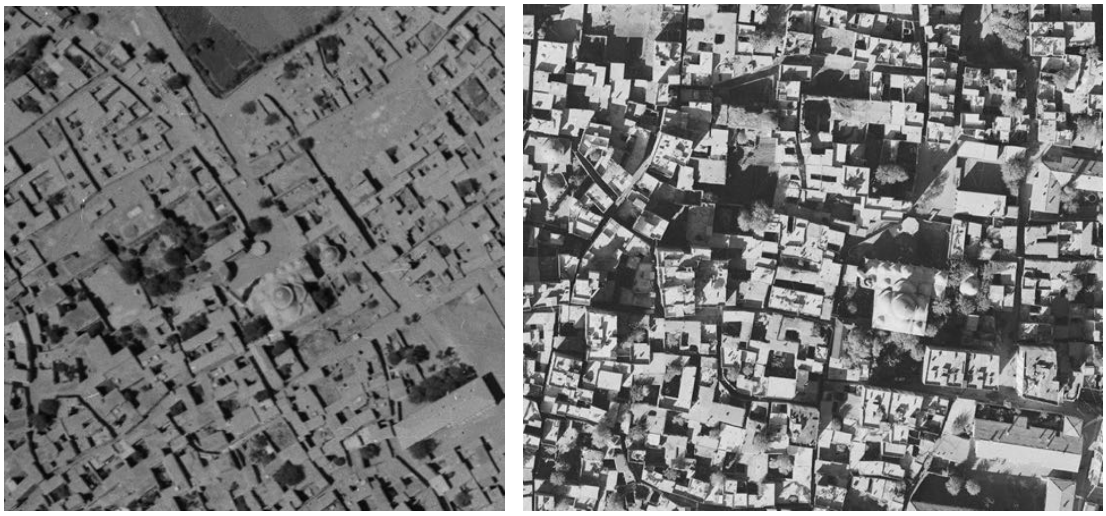

Figure 8. Aerial photographs of northeast Suriçi provided from the General Directorate of Mapping 1958 (left), 1997 (right).

Figure 9. The altered street pattern (Google Maps, 2014)

PERIOD OF DESTRUCTION

The Diyarbakır Fortress and Hevsel Gardens Cultural Landscape was inscribed in the UNESCO World Heritage List as an indicator of the culture of multiple societies within different historical periods. Following this significant development, in 2015, armed conflicts within the historic site began. The city

underwent severe traumas in terms of both social and physical fabric. As a result of the conflicts, 1519 buildings were utterly destroyed while around 500 structures took severe damages. (Soyukaya, 2017 pp.12) According to the report of the Union of Chambers of Turkish Engineers and Architects (TMMOB Diyarbakır İl Koordinasyon Kurulu, 2017), many registered historic buildings were demolished, including Zincir Kıran Tomb in northeast Diyarbakır. Besides, Nasuh Paşa, Kurşunlu, Hacı Hamit, Şeyh Muttahar Mosques, Four-Legged Minaret, Mar Petyun Keldani Church, and Surp Giragos Armenian Church were among the damaged buildings due to the heavy conflicts. The damages are not limited to single buildings. The urban tissue, street pattern, open and built-up areas within the east Suriçi became almost imperceivable. On the other hand, the remaining structures took extensive damages and lost their facade features and formal characteristics. Therefore the traces of the rich cultural heritage of Diyarbakır were obliterated.

During the conflicts, the Ministry of Environment and Urbanization determined the immediate expropriation of properties located within the risky area in 2016. At the same time, residents of Suriçi were urged to leave their dwellings, which also led to another transformation in terms of social characteristics. Besides, the conservation development plan prepared in 2012 was decided to be revised. The revision included neighborhoods of Cevat Paşa, Dabanoğlu, Fatih Paşa, and Savaş in the northeast of the settlement that took severe damages. Decisions in the context of urban texture included the widening of traditional narrow streets for security reasons. Another critical decision was the suggestion of security nodes in the eastern Suriçi. Accordingly, 976 structures, including registered ones, were planned to be demolished to implement the plan. (TMMOB Diyarbakır İl Koordinasyon Kurulu, 2017)

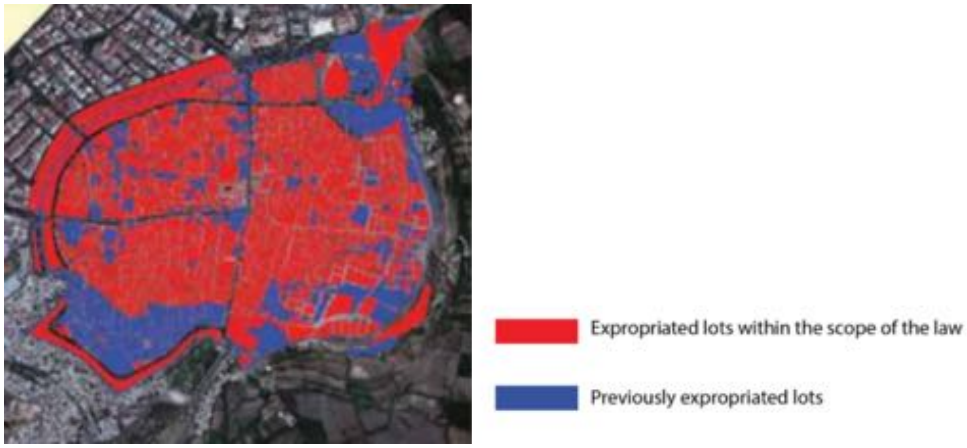

Figure 10. Land subdivision after the immediate expropriation decision of the Council of Ministers dated 21.03.2016 No. 2016/8659 (on TMMOB Diyarbakır İl Koordinasyon Kurulu, 2017).

Figure 11. Aerial photographs of 2015 (left) and 2017, in the aftermath of the conflicts (right) (Google Maps).

PERIOD OF RECONSTRUCTION

In 2017, an urban design project was developed for Suriçi. The project's aims have been stated as making Suriçi a competitive and brand city where social and cultural heritage is preserved while enhancing its potential of faith and cultural tourism. (T.C. Çevre ve Şehircilik Bakanlığı, 2017) Although planning similar to the traditional urban texture is envisaged in the north-eastern Suriçi, the land use map shows a trade and tourism-oriented re-functioning.

Within this period, typologies of the elements of traditional Suriçi houses were developed to provide guidelines for reconstructions. However, due to the lack of documentation regarding the historic structures in Suriçi, ill-conceived restoration and reconstruction projects have developed. In contrast to the rich, authentic fabric, standardized structures designed according to certain types with preset architectural elements occurred.

The transformation of the land use pattern in the area also stands out as one of the crucial problems. Within the demolished traditional residential texture, boutique hotels, cafes, restaurants, and shops are planned. The new functional configuration requiring the widening of streets is incompatible with the historical pattern of Diyarbakir. The existing urban pattern comprising narrow, curvilinear, and dead-end streets is lost due to the sequence of events. Another spatial reflection of this change is the alteration of facade organization. Unlike the introverted lifestyle within the traditional houses characterized by blind exterior walls, buildings with notably transparent street facades have emerged. On the other hand, the significant elements of Suriçi's urban identity, such as *şahnişin,* no longer exist.

The transformation of the property ownership pattern is another major factor that affects the identity of the settlement. As a result of the eviction of the inhabitants following the conflicts, Suriçi underwent another social transformation process. It is seen that the decisions regarding the conservation of the existing fabric and new developments are not concerned with the social attributes of the place. Suriçi is not only a physical setting to be preserved due to its built heritage but also a whole with its tangible and intangible values. On the other hand, the lack of place and community-oriented decisions during the planning process is reflected in the spatial and socio-cultural characteristics. Therefore the transformations resulted in the production of replicas rather than narrating the fundamental aspects of the place.

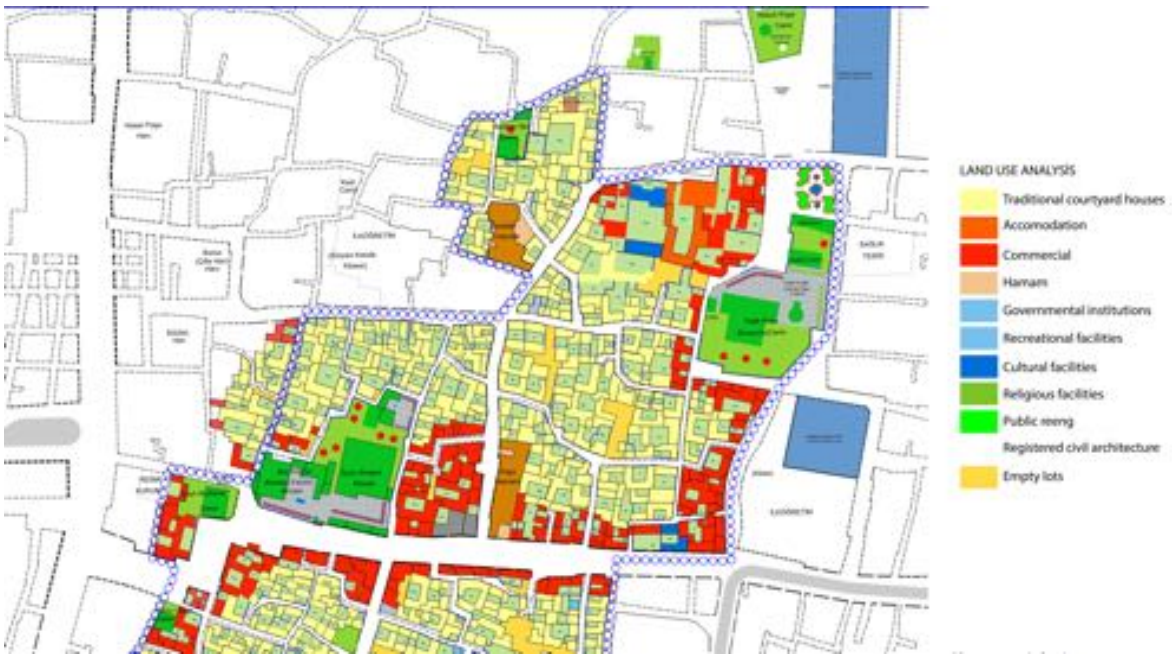

Figure 12. Land use pattern designated in the 2017 urban design project (on T.C. Çevre ve Şehircilik Bakanlığı, 2017).

Figure 13. The area demolished in the aftermath of the conflicts (left), new constructions within the study area (right) (Author, 2020).

Figure 14. Aerial photograph of 2021 (right) (Google Maps), new constructions in the northeast Suriçi (Bozarslan, 2020)

CONCLUSION

This paper aims to understand how the identity of place is formed and analyze the factors that shape its identity. The historical layers of Diyarbakır are briefly presented to understand the formation process of the cultural heritage site. Then, characteristics of the built environment are analyzed to understand the significance of Suriçi. The decisions that result in the transformation of the spatial identity of Suriçi are discussed within the perspective of urban conservation.

To understand the city, its historical layers, and their development, it is vital to be concerned with the notion of place identity. The identity of an urban area is what makes that place significant; therefore, what makes it valuable to be preserved for future generations. Place identity can be considered a combination of intangible and tangible dynamics. The place in the context of urban conservation is shaped through the combination of cultural and natural values within historical periods. Therefore, the concept cannot be reduced to physical affiliations. The relationship between the place and its users is an integral component of the identity that requires holistic planning decisions. As in the case of Suriçi that underwent severe destructions in terms of both physical and socio-cultural features, rather than

ready-made design interventions that do not contribute to the identity and memory of the place, continuity of the socio-cultural Dynamics as well as the physical characteristics should be provided. For this reason, the determination of the features that constitute the identity should be studied to develop accurate solutions for the continuity of the historical tissue.

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THE IDEA OF MONUMENTALITY IN NINETEENTH-CENTURY GERMAN NEOCLASSICAL ARCHITECTURE

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ABSTRACT

The concepts of monument and monumentality have often been subjects of debate in art and architectural history. The etymological root of the word ''monument'' refers to memory, and this signifies its relationship with time and history. With their material, visual and representational qualities, monuments also symbolize and remind certain events, figures, or ideas. In architectural history, the conception of monument has generally been associated with antiquity; therefore, the idea of monumentality has often played a fundamental role in how Classical architecture is perceived and studied. Alongside order, it has been widely used to understand and examine the historical and theoretical background of the design concerns for classical buildings. For instance, Roman architecture is known to be monumental. The idea of order gained importance together with reason during the Enlightenment, and they both contributed to the development of several scientific disciplines, including archaeology. Such a rational way of thought also paved the way for a revival of Classicism, which would later be labeled as Neoclassicism. From the architectural perspective, this referred to incorporating classical architectural elements into the contemporary styles of the period. In Nineteenth-Century Germany, the increasing interest in archaeology as a result of the Enlightenment eased the growth and spread of this approach. Meanwhile, leading archaeologists like Johann Joachim Winckelmann and Heinrich Schliemann produced influential works in archaeology based on their studies of ancient Greeks and Romans. Their views, together with the general archaeological activities and increasing body of knowledge in the field, became a source of inspiration for architects such as Karl Friedrich Schinkel and Gottfried Semper. These significant figures benefitted from archaeology in shaping their architectural approaches regarding both theory and practice. Monumentality emerged as an important idea for them concerning their interest in Classicism. This paper seeks to investigate how Nineteenth-Century German Neoclassical Architecture shares the idea of monumentality with classical architecture based on the scholarly and built works of Schinkel and Semper.

1. INTRODUCTION

Monumentality has been a fundamental concept in how Classical architecture has been perceived in architectural history. Alongside order, it has been widely used to understand and examine the essence of the production and theoretical background of the latter. With the emergence of the Enlightenment in the seventeenth and eighteenth centuries, the concepts of reason and order acquired particular importance for various research fields. Furthermore, as means of transportation developed, travel became easier, and it was possible to reach faraway lands from Europe, the West, to the East. This paved the way for Orientalism and Orientalist approaches. Orientalist ideas were closely associated with the newly emerging discipline of archaeology in the nineteenth century. Unlike Britain and France, where Orientalist approaches had more social and political tendencies, German Orientalism revolved around academic studies. Especially with the works of Johann Joachim Winckelmann (1717-68) on ancient Rome and Heinrich Schliemann on ancient Greece, archaeology and the interpretation of antiquity became a source of inspiration for architecture on German soil. As nationality and patriotism also gained ascendance in nineteenth-century Europe, the search for origins acquired importance in relation to archaeological research as well. In architecture, French Marc-Antoine Laugier (1713-69) came up with his interpretation of the primitive hut as an attempt to indicate an origin for architecture. Such a view paved the way for Neoclassicism, which was based on using classical elements and styles together with the concepts of reason and order. This rational approach referred to the revival of classicism by using classical elements in the contemporary styles of the period.

In Nineteenth-Century Germany, a debate on style emerged, and it was enhanced by the book titled *In Welchem Stil Sollen Wir Bauen? (In what style should we build?)* in 1828 by Heinrich Hübsch (1795-1863). His primary concern was to form a German national style, corresponding to the nationalistic tendencies of the century. Inspired by such ideas, Karl Friedrich Schinkel (1781-1841) and Gottfried Semper (1803-1879) became the leading figures who benefitted from contemporary archaeological activities for their architectural approaches, both in theory and practice. Monumentality emerged as an important idea for them regarding their interest in classicism. Among Schinkel's theoretical work and built projects, the *Schauspielhaus* (Playhouse) and the *Altes Museum* (Old Museum) stand out with their monumental design approach. Furthermore, Semper's different conception of the primitive hut than Laugier and defining monumentality as an essential part of architecture are significant for understanding Neoclassicism in Nineteenth-Century German architecture. This essay aims to investigate how Nineteenth-Century German architecture shares the idea of monumentality with classical architecture based on the scholarly and built works of Schinkel and Semper.

2. THE CONCEPT OF MONUMENT AND MONUMENTALITY

The concepts of monument and monumentality have often been objects of debate in art and architectural history. Françoise Choay explained that the word ''monument'' in French comes from the Latin monumentum, derived from monere (to warn, to recall), which, in turn, refers to the idea of memory. (Choay, 2001, p.6) Monuments bring the concept of heritage to our mind, where historic heritage refers both to an institution and a mentality (Choay, 2001, p.1), whereas monuments are parts of the built heritage. (Choay, 2001, p.2) The concept of monument often refers to something old, not modern. In this regard, Lewis Mumford stated that ''if it is a monument, it cannot be modern, and if it is modern, it cannot be a monument.'' (Mumford, 1938 p.433)

Choay argued that in our times, the meaning of ''monument'' has changed. The excitement of seeing the beauty of an architectural edifice has turned into a modern version of the colossal, and Hegel considered this as the beginning of art in the works of people from early antiquity. (Choay, 2001, p.8) In this case, the concept of monument is associated with antiquity. Choay also indicated a

differentiation between what she called ‘‘historic’’ monument and monument. Historic monument was, in fact, an invention of the Western canon, which appeared with modernity. (Choay, 2001, p.12)

Indeed, the nineteenth and twentieth centuries, when modernity reached its peak, became important in terms of how monuments were perceived and interpreted. Aloïs Riegl is one of the most significant figures who wrote on monuments in relation to how they were conceived in the nineteenth century and at the beginning of the twentieth century. His article ‘‘Modern Cult of Monument: Its Character and Its Origin’’ *(Der Moderne Denkmalkultus: Sein Wesen und Seine Entstehung)* was published in 1903 in Vienna; however, it began to play a crucial role in current debates on how to preserve historical monuments only in the 1980s with the rise of postmodernism to a peak and became a cult in determining the value of historical monuments today and the preservation of cultural heritage. (Ceylan, 2015, p.7) This may also be regarded as a paradigm shift from the historicist approach of the nineteenth century that emphasized restoration to the modernist approach of the twentieth century that favored preservation. (Ceylan, 2015, p.8)

Riegl interpreted ‘‘monument’’ as ‘‘a work of men erected for the specific purpose of keeping particular human deeds or destinies (or a complex accumulation thereof) alive and present in the consciousness of future generations.’’ He also suggested two types of monuments as artistic and historical. (Riegl, 2015, p.49) Mentioning artistic and historical value, he argued that every monument of art was actually a historical monument that represents a particular phase in the development of fine arts that could not be replaced by another entity and every historical monument was artistic as it involved artistic elements that were separate from their historical values. These artistic elements involved ideal and formal elements together with features related to colour. (Riegl, 2015, pp.50-1) Riegl also mentioned the commemorative value of monuments pertaining to age, history, and deliberate commemoration. (Riegl, 2015, pp.67-84)

Monuments reflect the idea of monumentality. In architecture, the idea of monumentality is two-fold: the creation of an architectural edifice that will lead feelings with its permanent status in relation to its purpose and the creation of idealized architectural form that will represent an abstract of architectural style. In this case, the first is valid for all architectural monuments, whereas the second associates a monument with the architecture of its period. (Elliott, 1964, p.52)

The concept of monumentality is important in understanding and interpreting Classical architecture, especially Roman architecture, which is usually considered to be monumental and ‘‘perfect.’’ (Jones, 2003) For instance, although the architects of most Roman buildings are unknown, Mark Wilson Jones called them unsung heroes. (Jones, 2003, p.19) Furthermore, Roman buildings have usually been analyzed in terms of monumentality based on their formal qualities. In the Renaissance period, there was an attempt to show them as perfect in the paper restorations despite sufficient evidence. Such survey drawings aimed to ‘‘correct’’ assumed ‘‘mistakes’’ in terms of expected alignments and symmetry since architectural design during the Renaissance was based on the arithmetical proportion from which the idea of beauty came. Then, in the eighteenth century, ideas about beauty and mathematics changed. (Jones, 2003, p.2) The Romantic movement was more interested in what was irrational, imaginative, and visionary. (Jones, 2003 p.3) Later in the nineteenth century, geometrical theories became popular and influential until the twentieth century. (Jones, 2003, pp.3-4) In this case, there were no consistent and widely accepted theories clearly explaining how Romans built. Romans’ design approach was not very strict as it was about applying principles instead of certain rules and methods. (Jones, 2003, p.9) Therefore, it is possible to claim that how they are perceived as monumental goes beyond their formal qualities.

Politics play a fundamental role in understanding the monumentality of Roman architecture. According to Edmund Thomas, buildings had political meanings for Romans. Constructing a building

was a political and public activity as it was very visible and required much manpower. Architecture was a means for conveying political messages for Romans. For instance, public spaces such as the Fora of Augustus and Trajan are the results of this approach. Roman buildings were never totally isolated from politics for some recent architectural theorists. Indeed, they have been interpreted in a political way by historians since they have been regarded as cultural monuments. (Thomas, 2007, p.107) In addition to buildings, the freestanding column was also a form of a monument that represented the achievement of a victory for Romans. Such columns were used as place markers or memorials to indicate where the divinity or the deceased was located. The column of Trajan in Rome is an example of this type of usage. (Arslan, 2016, p.128)

Figure 1. The Column of Trajan (Source: Jones, 2003, p.160.)

Like columns, inscriptions were also important in terms of monumentality for political purposes in Roman architecture. For instance, from the early times of the Roman empire, a sense of monumentality was apparent in the use of inscriptions in the public fora. (Thomas, 2007 p.118) Among such inscriptions, the Res Gestae of Augustus was one of the best known. As a testimony of contemporary history written by Augustus, it addressed Roman people. By reaching Galatia, a distant province of the Roman Empire in Anatolia, it became a representation of power and a textual monument

demonstrating the ideology of the empire. (Güven, 1998, p.30) In these ways, Roman identity was also promoted. (Elsner, 1998, p.118)

The concept of identity should also be considered to understand the monumentality of Roman architecture. Especially as a tool during ''Romanization,'' which referred to the transformation of the identities of people who lived in the newly conquered regions of the empire and was operated by integrating Roman social structures to local communities, especially to the upper classes. (Elsner, 1998 p.118) Involving such privileged families in spreading new ideals and erecting public buildings were significant parts of this process applicable both in rural parts of Italy and Asia Minor. (Yegül, 2000, p.137) Yet, especially in formerly Greek regions, there were denial and acceptance together with resistance and affirmation during the process of integrating Roman identity to the existing local traditions. (Elsner, 1998, p.120) However, it turned into an advantage, and the unique character of Roman architecture came from the need to construct a collective identity in cities and towns. (MacDonald, 1986, p.253) The citizens of the Roman empire adopted their Roman identities more easily with the help of architecture and the sense of monumentality.

The concept of identity became important in the following centuries again. In fact, Romans' idea of collective identity in their giant empire turned into the idea of national identity of the states in the nineteenth century through major developments and changes in world history.

3. NINETEENTH-CENTURY GERMANY, NEOCLASSICISM, AND ARCHITECTURE

In many respects, the Nineteenth Century was a period of important changes in the world, especially in Europe. The appearance of nation-states played a vital role in the shaping of this new world as the organizer of experience together with identity. Furthermore, the Enlightenment *(die Aufklärung)* in philosophy and science led to the rise of secular human reason *(die Vernunft),* scientific observation, and experimentation. (Bergdoll, 2000, p.2)

Different from Britain and France, the Enlightenment of Germans developed in academic institutions and churches in the second half of the eighteenth century. (Blackbourn, 2003, p.26) Germans also made a smaller participation in the discovery expeditions in this period. (Blackbourn, 2003, p.31) With such activities fed by the curiosity about the East, Orientalism emerged. Germans' understanding of Orientalism had rather a cultural dimension and resulted in interpreting classical antiquity as the source of new universal standards. (Marchand, 2001, p.465)

Germans' interest in classical antiquity led to the emergence of German Philhellenism. With the rise of Philhellenism, archaeology as a new discipline acquired importance. It also challenged the hegemony of philology as it became a means to read objects rather than texts. In this regard, although archaeology deals with the ancient, it had its origins in modern institutional and intellectual contexts. (Marchand, 2003, p.xx)

Johann Joachim Winckelmann is known as the founder of modern methodologies in archaeology and art history. He made a considerable number of studies on classical Greek architecture and attempted to analyze classic works of art and architecture by identifying styles. (Carter, 2013, p.1) Furthermore, he was one of the first scholars to make detailed empirical examinations of archaeological artifacts and present theories about ancient societies and their cultures. (Boorstin, 1983, p.584)

Gesichte der Kunst der Altertums (History of the Art of Antiquity) by Winckelmann (1764) became the primary source on neoclassical theory. (Mallgrave, 2005, p.28) This work consisted of two parts. The first dealt with the ''essential'' (*Wesentliche*), while the second was about the ''decorative'' (*Zierlichkeit*). Under the first heading, Winckelmann talked about construction materials and methods, the overall form a building, and its necessary elements together with its proportions. (Mallgrave, 2005, p.30)

Actually, this contributed to architectural theory in two ways. (Mallgrave, 2005, p.28) First, by making antiquarian and philological research, Winckelmann was able to define Greek art as the embodiment of sensibilities. Second, he suggested a system for the rise and fall of Greek art and for the art of antiquity as a whole. This system was specific in formal, creative, and temporal stages and included his own views. (Mallgrave, 2005, pp.28-9) For Winckelmann, ''good taste, which is spreading more and more throughout the world, first started to develop in the climate of Greece.'' (Winckelmann, 2013, p.31)

Apart from Winckelmann, the archaeologist Heinrich Schliemann (1822-1890) was also influential with his work in relation to archaeology. He discovered the walls of Troy in Hisarlık, modern Turkey. (Allen, 1999, p.1) In his letters that he wrote during his stay there, he described his work, observations, and thoughts. (Dyck, 1990, pp.329-337) These letters were also significant as they reflected how the archaeological work was conducted during those times.

The emergence of archaeology as a discipline paved the way for Neoclassicism, which was enhanced by the desire to formulate fundamental and universal laws for interpreting architecture. (Bergdoll, 2000, p.3) Neoclassicism was a revival and based on architectural form and meaning. For instance, the search for origins became common in this period in relation to the emerging discipline of archaeology. (Bergdoll, 2000, p.9) In France, Laugier included his interpretation of the primitive hut in his Essay on Architecture (1753) as an attempt to indicate an origin for architecture. He argued that ''architecture owes all that is perfect to the Greeks, a nation privileged to have known everything regarding science and to have intended everything connected with the arts.'' (Laugier, 1977, p.8)

Nineteenth-Century German Architecture can be understood and interpreted from a Neoclassicist perspective. In this case, Winckelmann and his writings had been effective, although he did not have too much focus on architecture. According to his ideas, Greek Antiquity was perceived as the absolute model for the present. For instance, Christian Ludwig Stieglitz (1756-1836) benefitted from Winckelmann's ideas about cultural history and supported ''the study of the Ancients' as the only way ''to achieve greatness'' (*um groß zu warden*), as it is in Winckelmann's *Gedanken über die Nachahmung der griechischen Werke in der Malerei und Bildhauerkunst (Reflections on the Imitation of Greek Works in Painting and Sculpture)* of 1755. However, there was also a tendency towards the Gothic style, which was a result of the Romantic revolution. This was regarded as a German national style. (Kruft, 1994, p.290) Therefore, it is possible to claim that there was a debate on style in German architecture in the nineteenth century.

While Neoclassicism was widely promoted in the academia of Nineteenth-Century Germany, the question *''In Welchem Stil Sollen Wir Bauen?''* (In what style should we build?) would be considered irrelevant. However, Hübsch's book, with its choice of title in 1828, offered a different perspective for what was happening with reference to eclecticism and historicism. It also highlighted the importance of style and how it can be formed. In fact, Hübsch himself was ambiguous, and he suggested that only one style could demonstrate the needs of society. His historical approach was analytical, and he argued that a new style could derive from the past, as essential for the forthcoming architectural theories in the nineteenth century. (Bergdoll, 1983, p.3) Such views like Hübsch's influenced certain German architects in the following years. Although the latter were conflicting with each other in other issues, they uniformly believed that antiquity is the source of architecture, and the current style of architecture should derive from it. It was through the premise that the concept of monumentality became a significant inspiration for architects like Karl Friedrich Schinkel and Gottfried Semper.

4. MONUMENTALITY IN THE NINETEENTH-CENTURY GERMAN NEOCLASSICAL ARCHITECTURE

Monumentality became an important concept in Nineteenth-Century German Neoclassical architecture. Fueled by the interest in archaeology together with antiquity, German architects became interested in the question of how monumentality could be achieved. In this case, Karl Friedrich Schinkel and Gottfried Semper stand out with their approaches both in theory and practice.

Karl Friedrich Schinkel is generally known as the most important architect of the nineteenth century. After he graduated from the *Bauakademie* in 1803 (Mallgrave, 2005, p.95), he took a trip to Italy and France between 1803 and 1805. Despite his classicist education which revolved around Winckelmann's ideas, he wanted to experience landscapes, monuments, and cultures in a different way. In one of his letters, he wrote that ''for the most part, the monuments of antiquity offer nothing new, for one is acquainted with them from childhood.'' However, he became interested in observing architectural monuments in their natural settings. (Bergdoll, 1994, p.19)

During his career as an architect, Schinkel both worked theoretically and practiced on both building and urban scale. Designing buildings in a wide range of typologies including, museum, play theater, and church, together with several monuments, he significantly contributed to Nineteenth-Century German Architecture in different parts of the country. In terms of monumentality, the *Schauspielhaus* and the *Altes Museum*, which were both built in Berlin, stand out.

Built in 1818-21, *Schauspielhaus* (1818-21) (Figure 2) is known as one of Schinkel's masterpieces as it indicates an urban, functional, and design unity. With a classicist approach, Schinkel arranged multiple functions of the building with modern requirements. (Schinkel, 2008, p.32) The two-storied concert and festival hall is surrounded by narrow galleries located in the left wing. (Schinkel, 2008, p.33) The right wing includes the entire theater spaces with administrative offices, rehearsal rooms, the costume department, storage areas, and workshops (Figure 3.) The central part consists of the foyer, auditorium, and stage (Figure 4.)

Figure 2. Schauspielhaus, view from the east, present condition (Source: https://upload.wikimedia.org/wikipedia/commons/thumb/a/ae/150418_Konzerthaus_Berlin.jpg/1200px-150418_Konzerthaus_Berlin.jpg)

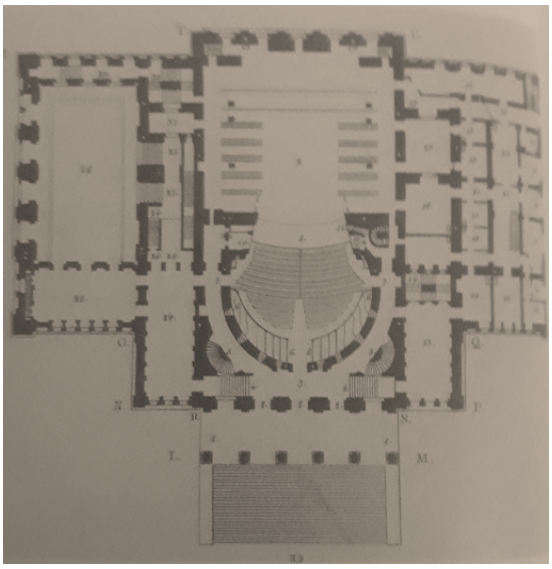

Figure 3. Schauspielhaus, grand floor plan
(Source: Sammlung Architeknonischer Entwürfe, 1821, Schinkel, 2008, p.34.)

Figure 4. Schauspielhaus, auditorium
(Source: Sammlung Architeknonischer Entwürfe, 1826, in Schinkel, 2008, p.35.)

The *Altes Museum* (1823-41) (Figure 5) is another example of Schinkel's architectural approach that included monumentality. It was the first art museum of Berlin, and like the playhouse, it is a monument that reflects the high cultural aspirations of the young state. With its colonnade on the front and central pantheon, it certainly looks classical. (Mallgrave, 2005, p.101) Schinkel considered the building to be monumental as it faced the larger Schloss (Castle.) The row of high Ionic columns separates the building from the outside and attracts visitors at the same time. (Watkin, 1987 p.96) The ground floor plan of the building demonstrates a simple organism. The rectangular four-winged arrangement surrounds two inner courtyards and the central structure. (Schinkel, 2008, p.49) (Figure 6.) These created the monumental effect of the building.

Figure 5. Altes Museum
(Source: http://www.smb.museum/fileadmin/_processed_/1/0/csm_01_Profil_f9c23ca7f5.jpg)

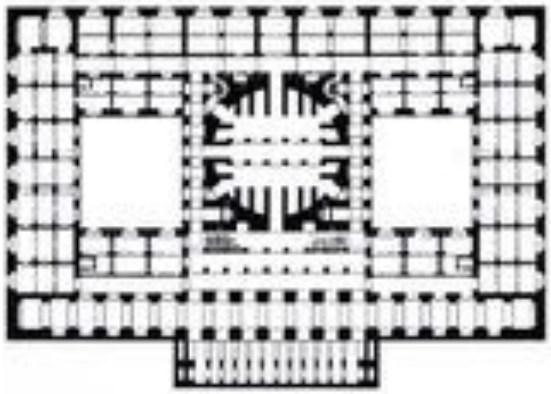

Figure 6. Altes Museum, ground floor plan
(Source: https://www.researchgate.net/profile/Lejla_Odobasic/publication/320035538/figure/fig4/AS:542884229115904@1506445094708/Fig-4-Floor-Plan-of-Altes-Museum-source-httpswwwmuseumsinsel-berlinde.jpg)

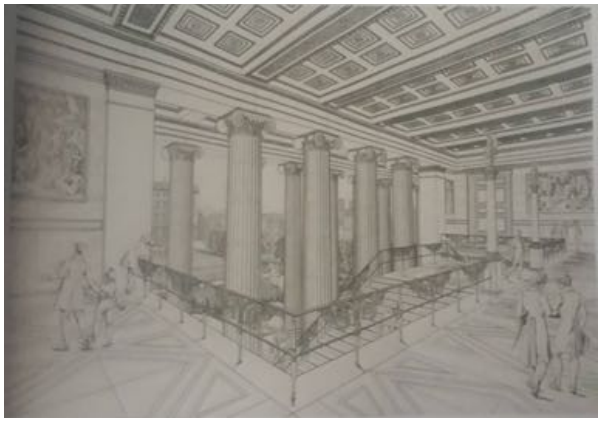

Figure 7. Altes Museum, interior
(Source: Sammlung Architeknonischer Entwürfe, 1831, Schinkel, 2008, p.53.)
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Monumentality was also central to Semper's architectural approach. He was interested in the search for origins and the concept of the primitive hut like Laugier. However, unlike Laugier, who focused on

structure in terms of the origin of architecture, Semper believed that ‘‘the symbolic or representational role of architectural forms’’ was in the core of architecture, and these forms originated from the primary social practices of human beings, regardless of how they had changed in time. (Bergdoll, 2000, p.234)

Semper’s conception of the primitive hut included four elements, namely, the hearth, the roof, the mound, and the enclosure (*Bekleidung*.) (Semper, 1989, p.102) For the primitive hut idea, the Great Exhibition of 1851 in London became an important experience in his mind. Since he was commissioned for designing the exhibits of the Ottoman Empire, Denmark, Sweden, and Canada, he had the opportunity to observe the exhibition closely. (Mallgrave 1983, p.25) Most importantly, he was able to verify his four-motive theory in the ‘‘Caribbean’’ hut from Trinidad. (Mallgrave, 2005, p.134) (Figure 8)

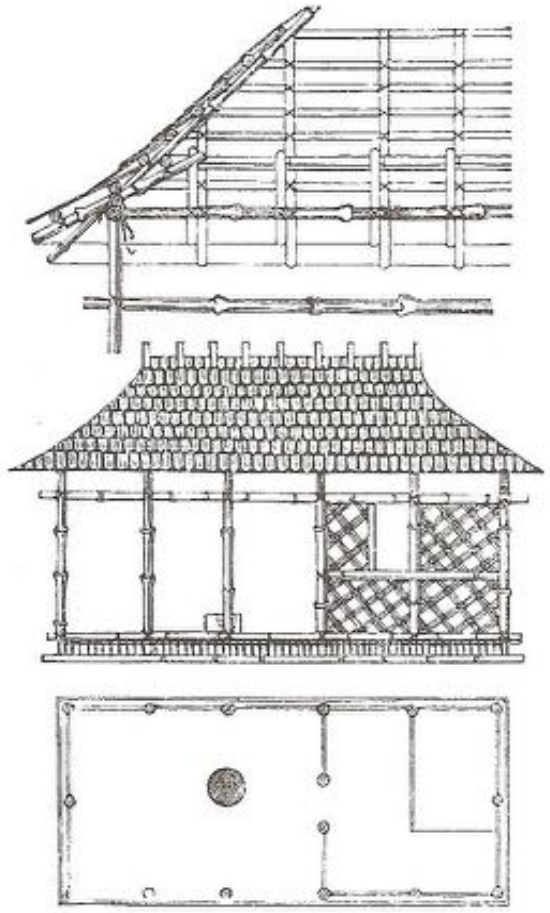

Figure 8. The Caribbean Hut
(Source: Semper, 2004, p.666.)

Semper associated the enclosure with textile. For him, textile was a ‘‘mask’’ that hid the structure behind, instead of exposing it. In his mind, the ‘‘masking’’ of the structure was the origin of architecture. (Wigley 1995, p.12) Semper thought that masking derived from the ‘‘commemorative, provisional stage and theatrical performance, where the masking or denial of reality is fundamental to the religious or secular event.’’ (Mallgrave, 1989, p.40) Regarding festivals as the sources of monumental art,

Semper also believed that dressing and masking made the appearance of monumentality in art possible:

''I think that the dressing and the mask are as old as human civilization and the joy in both is identical to the joy in those things that led men to be sculptors, painters, architects, poets, musicians, dramatists—in short, artists. Every artistic creation, every artistic pleasure, presumes a certain carnival spirit, or to express it in a modern way, the haze of carnival candles is the true atmosphere of art. The destruction of reality, of the material, is necessary if form is to emerge as a meaningful symbol, as an autonomous human creation.'' (Semper, 2004, pp.438-9)

5. CONCLUSION

In conclusion, monumentality appears as a major element in understanding and interpreting Classical architecture. With the investigation of antiquity as a result of the Enlightenment in the seventeenth and eighteenth centuries, the concepts of reason and order also became important. Archaeology emerged as a new discipline in the nineteenth century, and antiquity became an area of attraction in many fields, including architecture. Greatly increased opportunities of travel facilitated reaching the East for the West, and Orientalism and Orientalist approaches appeared, also in relation to the results of archaeological research. With the rise of archaeology, the search for origins, including architecture, became more common, even urgent. German Orientalism emerged in academia. Unlike Britain and France, where Orientalist approaches were primarily politically oriented. The archaeological works of Johann Joachim Winckelmann on ancient Romans and Heinrich Schliemann on ancient Greeks and their interpretations of antiquity constituted a new source of inspiration for architects who were in search of a national style in the nationalist tendencies of the century.

Karl Friedrich Schinkel and Gottfried Semper were among the leading figures inspired by archaeological activities and knowledge for their architectural approaches, both in theory and practice. Monumentality became an important concept for them in relation to classicism. Schinkel's *Schauspielhaus* and *Altes* Museum can be regarded to have a monumental design approach, and Semper attempted to indicate an origin for architecture using the conception of the primitive hut. For him, monumentality was an essential part of architecture. The works of these two leading architects are important for understanding and interpreting the effects of Neoclassicism in Nineteenth-Century German Architecture in terms of the idea of monumentality with reference to Classical architecture.

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ANALYSIS OF THE LAND-SAVING WISDOM OF CHINESE ANCIENTS' TRADITIONAL SETTLEMENT CONSTRUCTION

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ABSTRACT

In ancient China, as a country whose economic development was based on farming, it has always been of great concern about the relationship between people and land. Based on the textual research of ancient books, the study examines the wisdom of ancients on land saving in production and living from three levels: ideological development, regulatory changes and practical responses. Through analysis of GIS data, Fujian and Guangdong regions are selected as typical cases. It is concluded that the wisdom of the ancients in land saving lies in four aspects: appropriateness as the guiding ideology, scale control as the guaranteed premise, rational utilization as effective measures, and pioneering and innovative as the spirit of the times, to achieve effective land saving in production and living.

KEYWORDS:

Land Saving, Traditional Settlement Construction, Chinese Ancients, Moderate Degree

1. INTRODUCTION

Land-saving is opposite to “waste of land”, which refers to the reduction and restriction of land use in terms of quantity, so that the minimum amount of land can be used to meet people’s production and living needs. Land-saving in the modern sense has a broader connotation, including the improvement of land use efficiency in various construction and production fields through comprehensive measures such as legal, administrative, economic and technical measures, to obtain the maximum economic and social benefits with the least amount of land resources and guarantee sustainable economic and social development.(Dai Birong, 2010, pp119) According to China's notice ([2008] No. 3) on the promotion of land conservation and intensification, there are five specific requirements for land saving, including the adoption of reasonable spatial layout, land use structure, functional layout and transportation organization to achieve the purpose of controlling the scale of urban land, improving land use efficiency and reducing land use waste.(Yan Aiqiong, 2011, pp8)

Since ancient times, as a country whose economic development is based on farming, China has paid a great deal of attention on land use. As early as the Spring and Autumn and Warring States Periods, the germ of land-saving had emerged in the regulatory management and ideological aspects of settlement development. In the Ming and Qing dynasties, due to the growth of population, the contradiction between human and land use was sharpened, and the problem of land-saving gradually appeared in the development of practice. Based on the textual research of ancient documents and local chronicles, the study examines the wisdom of ancients on land saving in production and living from three levels: ideological development, changes in regulations and practical responses. GIS is used to assist in the area selection of practical cases, Fujian and Guangdong regions are selected. Through comparing the actual measures in the development of current settlements, sum up the effective land saving wisdom.

2. MODERATE AND SUITABLE LAND SAVING IDEAS

In ancient China, the concept of land saving existed both in building a city and building a house.

2.1 Building a city

About the idea of building a city, it is stated in the book "Guan Zi" of the Spring and Autumn and Warring States Periods that “If the city walls are extensive and the farmland around the city is small and not fertile, the farmland is not enough to feed the people of the city. If the city covers a large area and the inhabitants are few, the inhabitants cannot defend the city.” It is also said in the “Li Ji Zuan Yan" in Yuan Dynasty that “When resettling people, the size of the city or town must be determined according to the size of the land. The number of people to be resettled should be determined according to the size of the land, so that the size of the land, the size of the town, and the number of people to be resettled all fit together properly. In this way, there would be no vacant land, no unemployed people, frugal food and drink, and all the work would be carried out in an orderly manner. The people would live and work in peace and happiness, respect the empire and love the officials, and then schools could be established.” As can be seen from the above two, it is not the pursuit of the bigger the better during the construction of the city. The size of the city needs to be determined according to the actual population and needs. The measurement of land and people should be commensurate, and the principle of moderation should be emphasized.

It is said in “The Book of Han · Chao Cuo Biography” that “I heard that when the ancients migrated to the distant land to expand the barren land, they must first look at the yin and yang of the land, taste the water here, and examine whether the land here is suitable and whether the vegetation is prosperous. Then start to set up cities, manage cities, set up neighborhoods, and divide homesteads.”

“I also heard that in order to guard against the enemy, the ancient system of border counties had five families in the army with a head. There are soldiers in the top ten. So on and so forth. These counties will choose talented sages to protect the land. These people are familiar with the terrain and know the people's sentiments. In daily life, they teach people how to practice shooting at home, when fighting, they could teach people how to defend the enemy.” As a country with a strict feudal hierarchical system in ancient China, the construction of cities also had its own regulations that needed to be followed. It can be seen from the urban construction regulations that we must first observe the land and select the site, then build the town and the city, and finally make the block and the house. The residence of the common people, as the last step in the construction of the city system, invariably limited the small size of the available residential base for the people's residence. It is good enough for each house to have one hall and two inner rooms. Even sometimes, due to the large population, more houses need to be built on the same residential area. As for dividing the people into a small team for every five households, and ten five for one mile. It also reflects that this method of reorganizing the house is not only a social organization, but also a military management method. When ancient monarchs built cities, they naturally did not allow their residences to be scattered in order to facilitate the control of the people. Although the common people were forced to gather in the city, it had the effect of saving land to a certain extent, and it contained the primary concept of urban spatial organization.

2.2 Building a house

About the idea of building a house, it is stated in the book “Zhai Jing” of the Northern and Southern Dynasties that” There are five empty places in the house, which would make people impoverished. Five substantial places can make people rich. The first emptiness is that the house is large and the inhabitants are few. The second emptiness is that the gate of the house is large and the inner courtyard is small. The third emptiness is the incomplete courtyard wall. The fourth is incomplete wells and stoves. The fifth is that the homestead is large but there are few houses, and the courtyard is too wide. The first enrichment is that the house is small and the residents are crowded. The second is that the residence is large and the door is small. The third is the integrity of the courtyard wall. The fourth is that the house is small but there are many livestock. The fifth is that the house's water ditch flows to the southeast.” According to the book "Xian Qing Ou Ji" in Qing Dynasty, “I hope that the noble houses will not be too high and wide. The house and the people should be commensurate.” It can be seen from this, if a house is too large and there are few people living in it, the lack of yang energy is empty; on the contrary, only a small house with a large number of people can make people rich and prosperous. Li Yu advocates that the size of the house should ideally match the occupants. Both of these imply the idea of land saving from the perspective of the suitability of the user and the house, which is similar to the principle of moderation in city construction.

About the construction of the house, in the "Lu Ban Jing" of the Ming Dynasty, it was recorded in the "Theory of good fortune and bad luck for building house " that the foundation of the house is shallow in prosperous places. Some are wide outside and narrow inside, some are wide inside but need to pass through a narrow space outside. All of them can only build houses follow the shape of the foundation. It can be seen that, after the population grew so much, the foundations of houses in the city could only be built in accordance with the terrain, indirectly causing the demand for land saving.

From the regulation of the city to the consideration of the reality and fictitiousness of housing purchases, the construction thoughts of the ancients all reflected the concept of land saving that emphasizes moderate sustainable development.

HIERARCHICAL LAND SAVING REGULATIONS

In addition to the idea of land saving contained in building cities, purchasing houses, and philosophers, the ancient government also responded to land saving at the level of regulation and policy. This section will sort out its development from two aspects: field control and residential level.

3.1 Field control

It is said in “Meng Zi” during the Spring and Autumn and Warring States Periods that “There is a well in the middle of one mile square, and the well can irrigate 900 acres of land. In the middle is the public field, surrounded by eight private fields of their own, and everyone works together to maintain the public field.” At this time, one hundred acres of land was cultivated together by monogamy, which is called "well field system". The description of fields and houses in the "Law of the Second Year" in the Western Han Dynasty is “There is one hectare each for public servants, soldiers, and common people, and fifty acres for judicial directors and hidden officials. ... the house is generous and 30 steps... the public servants, soldiers, and common people have a house, the judicial director and the hidden official have a half house.”(Liu Yuting, 2010, pp118) At this time, the allocation unit of field is hectares, one hectare is one hundred acres, and one house is nine hundred square steps. The common people can get one hundred acres of land and nine hundred square steps for the house. It is said in “Book of Jin·Shihuo Zhi” that “A man occupies 70 acres of land and a woman 30 acres. In addition, his adult son occupies 50 acres and his adult daughter occupies 20 acres. The second son halved the amount of land occupied, and the second daughter did not have land.” At this time, if monogamous farming together, the number of fields available is about 100 acres. According to “Jun Tian Shu” written by Li Anshi during Northern Wei Dynasty, “In the open field, men can get 40 acres and women 20 acres. For open-air fields, men can get 40 acres and women can get 20 acres. For hemp fields, man can get 10 acres and woman can get 5 acres. All fields must be returned when the owner is dead and cannot be freely traded.”(Encyclopedia of China, 1988, pp1303) The number of fields available per capita has decreased compared with previous dynasties. It is said in “Tong Dian” during Tang Dynasty that “ For those who should be allocated the garden and homestead. Good people with less than three persons, one acre of land will be given, and one acre of land will be added for every additional three persons. Five untouchables give one acre of land, and for every five people increase, one acre of land is added. The state no longer grants land.” After the Song Dynasty, the field control system of one man occupying 50 acres of land was implemented.

In the course of the development of field control, the number of fields allocated to each household by the government is gradually decreasing over time. The distribution method has changed from using the family as a unit at first, to treating men and women differently, and finally dividing the fields with males as the main labor force. Actually, the per capita number of fields available for use is gradually decreasing. It can be seen that even though the farming society has continued to cultivate wasteland throughout ages, the issue of land saving eventually evolved from an ideal level to a practical demand with the increase of the population.

3.2 Residential level

House regulations organized according to the "Ji Gu Ding Zhi" of the Ming Dynasty, “In the Tang Dynasty, from royal family to common people's residences, they could not build pavilions facing other people's homes. When the common people build houses, they could not exceed three-bay four-beam frames, only one door house with two frames, and no decorations were allowed. In the Song Dynasty, for common people's homes, they cannot use heavy arch algate and five-color patterns as decorations,

and four eaves are still not allowed. For civilian houses, five doors and two buildings are allowed. In the Ming Dynasty, the houses for common people cannot exceed three rooms and five frames, and the use of arches and colored decorations is not allowed. Although there can be ten or twenty other attached houses, built according to the need, but the regulations cannot exceed three rooms." (Liu Yuting, 2010, pp181)

In the construction of common people's houses, the size allowed to be built according to the scale of the class is very small, and the roof truss frame are restricted. The official level control has resulted in the actual construction of land saving effects.

LAND SAVING PRACTICE

With the population growth in successive dynasties, when the contradiction between man and land developed into a practical construction problem, how did the ancients deal with it? In the following, typical cases will be selected for discussion and research.

4.1 Case selection

China has a vast territory and a long history. In the case study of land saving issues, it is necessary to use data analysis to select the most representative regions for discussion. GIS software was used to study the number and distribution of the four-level settlements of "prefecture-level cities, counties, towns, and villages" in each province in China in 2012, and the density distribution map of each level of settlements in each province was obtained. Among them, the settlement density of prefecture-level cities in the Yangtze River Delta and the Pearl River Delta is the highest in China. The density of county-level settlements in the Yangtze River Delta and the Bohai Bay Rim Regions is relatively high. The density of towns in the eastern region is generally higher than that in the western region. The areas with the highest village density are concentrated in the areas of Anhui, Hubei, Hunan and Chongqing. In general, the distribution of settlement density conforms to the law of economic development. The more developed the economy, the higher the density of settlements at all levels. Among them, the southeast coastal areas represented by the Yangtze River Delta and the Pearl River Delta are most prominent. (Table 1)

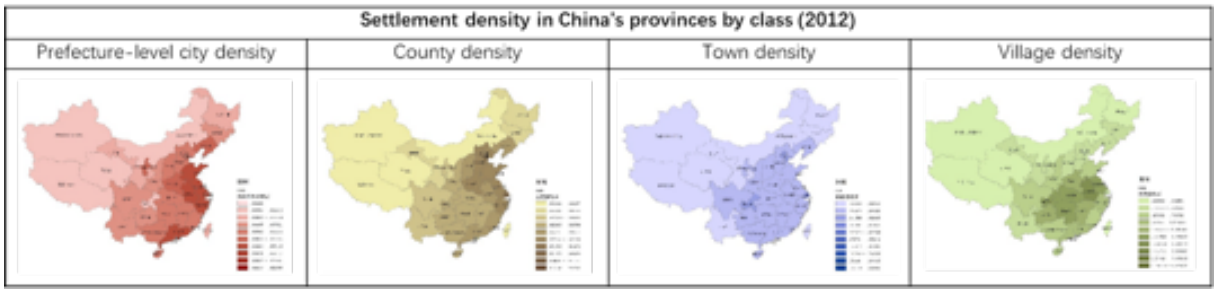

Table 1. Settlement density in China's provinces by class (2012)

Combining the mountain topography, distribution of water systems, and settlement density at all levels in various provinces in China, it can be seen that the southeast coastal area with higher settlement density has higher water system density. The topography of the Yangtze River Delta is dominated by plains, and the Pearl River Delta has more mountains in Fujian and Guangdong. Thus, the Fujian-Guangdong region has many mountains and watertight areas where there are relatively fewer suitable areas for settlement development, and it can be studied as a typical area where settlements are concentrated. Moreover, Fujian Province has the characteristics of low density of settlements with

more mountains and less water, so it should be studied as a special case for areas that are not suitable for settlement distribution but have better economic development. (Table 2)

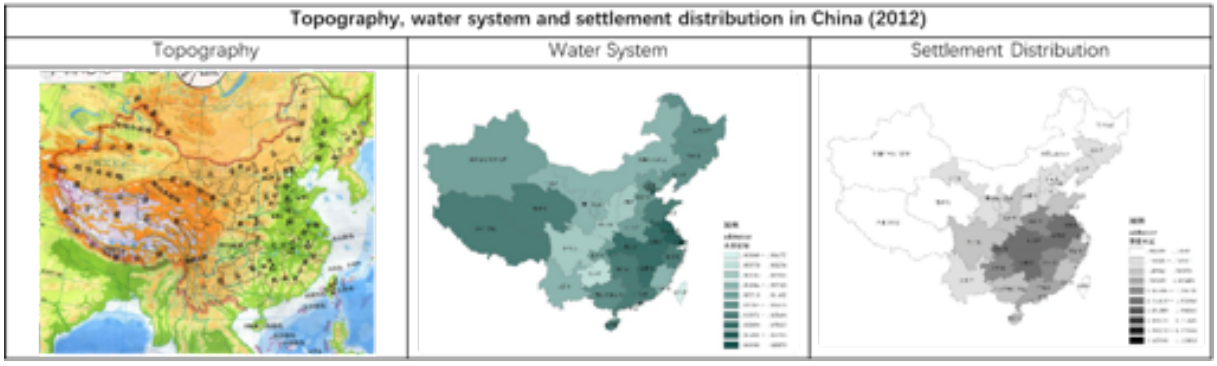

Table 2. Topography, water system and settlement distribution in China (2012)

4.2 Background of the Case

Fujian and Guangdong are located in the southeast coast of China, geographically surrounded by mountains and the sea. There are many mountains and hills in the region. It is known as "eight mountains, one river and one field". There are towering peaks and ridges and rolling hills in the territory. The terrain is generally higher in the northwest and southeast, presenting a situation of southeast surrounded by the sea, with many mountains in the northwest. There are more mountains and less land. As a relatively affluent province in the south, Guangdong Province was not highly developed before the Ming Dynasty, and so was Fujian Province. In the 14th year of Ming Hongwu (1381), the population of Guangdong was 705,632 households with 3,171,950 people; the population of Fujian Province was 811,369 households with 3,840,250 people.(Liang Fangzhong, 1980, pp202) Although the number of households and populations in the two provinces are comparable, Fujian Province is only half the size of Guangdong Province, and there are many mountains in the territory, which shows that its population density is higher. Comparing the number of acres per capita in the Ming and Qing Dynasties and the population density of the Qing Dynasty: The change trend of the number of acres per capita in Guangdong province is close to the national level, and the number is slightly lower than the national level, which can reflect the general trend to a certain extent. The population density has been lower than the national average from the beginning. The level increased to higher than that, and the rapid growth period was from the 32nd year of Qianlong to the 51st year of Qianlong. The per capita number of land in Fujian Province has been lower than the national average throughout the year, while the population density has always been higher than the national level, and has increased significantly after the Qianlong period. (Figure 1&2)

It can be seen that the research and analysis of ancient documents in Fujian and Guangdong province during the Ming and Qing dynasties, especially the records of local chronicles after the Qianlong period, will help to study how the region effectively saved land and developed such a large population using fields that were less than the average number of the national per capita arable land.

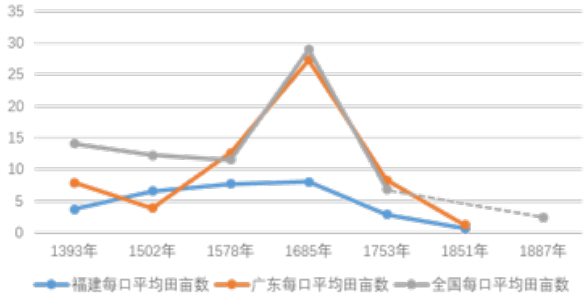

Figure 1. Number of acres per capita in the Ming and Qing Dynasties in China/Fujian/Guangdong

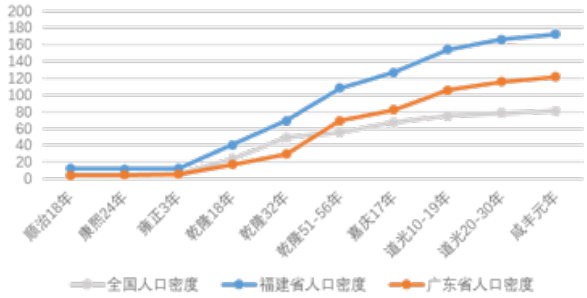

Figure 2. Population density of the whole country/Fujian/Guangdong province in Qing Dynasty

Zheng Xiao of the Ming Dynasty said in the book “Geographical Narrative": "Fujian, the sea embraces the southeast, the mountains surround the northwest, the heavy pavilion within the obstrution, and the streams flow. Although the land is restricted and the mountains and rivers are beautiful, Fuzhou is its provincial capital." In the fourth year of Jiaqing period, Wang Zhiyi once said in his petition to discuss the situation in Haikou that “Fujian Province, backed by mountains and surrounded by the sea, has a narrow land and a large population. The four cities of Yan, Jian, Shao and Ting are located in the upper reaches of the province, with more mountains and fewer fields. The five prefectures of Fu, Xing, Ning, Quan, and Zhang are located by the sea. The land is barren and the people are poor. Zhangzhou and Quanzhou are especially serious.” The "Ba Min Tong Zhi" states that "Fujian is backed by mountains and facing the sea. There is little flat and fertile land, while much of the land is rugged and infertile.” By the middle and late Ming Dynasty, the following phenomenon appeared: "The three places of Jiangsu, Zhejiang, and Fujian provinces have narrow land and large populations. The total area is less than the land area of a province in the Central Plains. Therefore, people who do not have the skills can not lived. If someone can’t go out to earn a living, even if he have skills still could not be sold.” It can be seen that there are many mountains and few fields in Fuzhou, and there are few plains for farming, which is not conducive to the needs of the farming society in the feudal period. Commander Li Guoyao once said: "There are people in Fujian who can be cultivated, but there is no land to be cultivated." The area is facing a serious problem of small land and large population in its development. This problem is clearly reflected in Fuzhou whole map in Qianlong dynasty.(Figure 3)

At the same time, the situation of people and land in Guangdong Province is not optimistic. In the "Book on Nanyang Matters", Lan Dingyuan stated that "Fujian and Guangzhou have a large population but lack land, and the land is not satisfied with farming. Fifty to sixty percent of inhabitants rely on the sea to make a living." The Guangzhou Fu Zhi in the Guangxu period stated that “the emperor took into account the hardships of the people in the mountains and fields of eastern Guangdong, so he used

fishing as a plan to support them". These narratives show that there was insufficient farming in Fujian and Guangdong in the late Ming and Qing Dynasties, and they could only go fishing at sea or seek other ways of survival. This point is also intuitively reflected in the general map of Guangzhou.(Figure 4)

Figure 3. Fuzhou whole map *Figure 4. general map of Guangzhou*

4.3 Response measures

By sorting out the relevant content of land saving in Fujian and Guangdong in the literature of the Ming and Qing Dynasties, it is concluded that the settlement measures in this area can be divided into the following four aspects: spatial layout, industrial development, management system and house construction.

4.4. Spatial Layout

Governor Jia Gaozhuo of Zhejiang and Fujian once told the emperor: "The five prefectures of Fu, Xing, Zhang, Quan, and Zhou are narrow and densely populated. Since Taiwan was pacified, the population has increased. The land in the mountain, forests and saline-alkali land has all completed villages. There is no land to cultivate. It is inevitable for the people to become refugees and thieves." It shows that in the Qing Dynasty, most of the villages in the five prefectures of Fujian Province were already built on salt and bittern land. Even so, there was still very few fertile land reserved for farming.

In addition to living in areas with poor geological conditions such as salt and bittern, residents in Guangdong Province also use tidal flats to reclaim land. It is recorded in Guangzhou Fuzhi that “In Shunde Xiangshan, the people mostly competed for Shatian. Shatian is land that floats up from the sea. There was no taxation or coursework originally. As the saying goes, if a rabbit is in the wild, everyone will chase it together. Many rabbits are in the market, and people pass by without asking the price. This is the difference between having an owner and not having an occupant. Shatian is like a hare. Competing for Shatian is like chasing a hare. Anyone who occupies Shatian will be judged based on the result of their registration. Those who have registered for tax returns will be given to him, and those who have not been registered will be confiscated.” The Shatian dispute, in addition to opening up cultivated land, was that there is no need to pay taxes, so it has become a form of land for the people to actively cultivate and expand.

Shaowu prefectures in Fujian Province "has many mountains and few plains in its territory, so people plant their fields according to the high and low mountains. The fields at high places are not afraid of flooding, and those at low places are not afraid of drought, so there are few years of great famine." It is recorded in the book “Min Xiao Ji” that “There are few small fields in central Fujian, and the foothills are all treated as fields, which is what people call terraces.” These two records both reflect that the cultivation of the fields needs to conform to the heights of the mountains, in turn, to a certain extent to help people avoid droughts and floods and not famine.

4.5. Industrial Development

The governor of Guangdong and Guangxi, Tan Zhonglin, once said: "Guangdong has three sides of the coast, narrow land and densely population, and there is no idle land. The weather is mild, and the harvest of a year is tea, mulberry, and fruit trees. There are forests everywhere. Many people do not have land to cultivate. There is no land in the wild that is not cultivated. The only way is to order the local people to gradually obtain some small benefits from a variety of tea mulberries. This is the basic situation of agricultural affairs there." It can be seen that due to the mild climate of the area, trees can easily grow into forests, so small profits can be obtained by planting trees such as tea and mulberry in the mountainous areas. In addition to planting rice, Guangdong province also attaches importance to the cultivation of tea, mulberry and fruit trees in the development of agricultural economy. At the same time, "(Guangxu) Guangzhou Fuzhi" quoted in "Pan Yu Zhi", "Due to the narrow fields, fruit trees are planted in the mountains, among which bayberry and lychee are abundant." It is recorded in "(Daoguang) Guangdong General Records" quoted from "Lianping Zhouzhi" that “Because of the scarcity of fields, they continue to grow rape and barley after two crops a year, and open up barren hills, plant indigo and spices, women weave, and the poor people cut firewood. They all make a living where there are few fields and many people, reducing the dependence of land crops is also another way to save land.” The Records of "Da Pu County Chronicles" quoted in "(Daoguang) Guangdong General History" that “Crops planted in addition to potato, taro, melon, and vegetables, there are also tobacco, grass, oil, and tea. Increase the variety of crops as much as possible to save and use mountainous land.” It is also pointed out here that due to the lack of land, residents are competing for business in order to change the path of industrial development.

In the fifth year of Yongzheng (1727) Gao Qizhuo (1676-1738), the governor of Zhejiang and Fujian Province, requested lifting of the sea ban. He reconsidered that the only way to earn a living is to expand the livelihood of local residents. If the sea ban can be lifted, let the wealthy people be the shipowners and merchants, the poor people as rudders and sailors, a boat can accommodate nearly a hundred people. It does not eat local food, but also earns profits to go home to support family members. Since there is no land to cultivate locally, the opening of maritime trade to allow residents to sail for

business can not only save local rice and grain, but also make a profit to support their families. This is an effective way to save cultivated land in the later development of the agricultural era. In the Twenty-fourth Year of Guangxu (1898) Tan Zhonglin (1822-1905), the governor of Guangdong and Guangxi, also said about Guangdong province that the unsuitable terrain caused the industrial and commercial development of Guangdong Province to be more prosperous than other provinces. In the Qing Dynasty, the number of industrial and commercial workers who went abroad was the largest in Guangdong province.

In Ming Dynasty, Yang Shouqin complied with "The Complete Works of Ning Dan Zhai" quoted in the "Order of Sun Guozhen, the magistrate of Houguan County, Fuzhou Prefecture, Fujian Province" that Fujian is very narrow and densely populated, and there are few ways to maintain a livelihood. It is also inevitable to rely on the sea for profit. In the "Da Qing Hui Dian" the emperor approved the permission: Guangdong was a narrow area with a dense population, and permission was granted to trade in the South Asia Sea according to the example of Fujian. This shows that Fujian Province's profit from the sea is forced by the situation, and the opening of South Asian maritime trade should be taken as a precedent before Guangdong Province.

4.6 Management System

The problem of the conflict between people and land of Fujian and Guangdong province not only affects the layout of residential villages and the way of industrial development, but also leads to strict institutional control over the funerals of the residents here after death. Ruilin (1809-1874), governor of Guangdong and Guangxi, once wrote in the memorial that investigating Zhangguanshan tombs in Guangdong Province is restricted to two feet, and it has been a long time. This time Luo Bingzhang's investigation is specifically for those who have no power to promote to a larger tomb, and it is intended to leave little room for the poor. There is no such thing as a narrow area in Guangdong, and the graves are combed. If rules are established to restrict each other, I am afraid that the people will have no place to open the cave and turn out to be trouble. Discovered by examining the people's sentiments and comprehensive case studies. All official mountain graves without the ability to ascend the subject, should continue to follow the Tongzhi five years Ministry proposal with a horizontal straight two feet for the limit. Those who have the ability to ascend to the section, that is, according to the established practice, civilian cemeteries nine steps to dig the heart, 18 steps as the standard. Although there is room, it shall not exceed the regulations. He handled it in less than nine steps. The changes are made uniformly.

The narrow land and densely population of Guangdong Province has led to row upon row of tombs. If land saving measures are not taken, the common people may not even find the funeral place and cause serious trouble. Therefore, the region has introduced a system of restricting the scale of tombs in order to save land, which is indeed a helpless move under the influence of land saving.

4.7 House Construction

Regarding the construction form of houses in Fujian and Guangdong, Ye Changchi (1849-1917) in the Qing Dynasty once recorded that "I arrived in Hong Kong on the 15th, on the fourth floor of the Tailai Inn. Hong Kong is a place where ships from all over the world come and go. It has a narrow land and densely populated people. Houses are built on the hills and climbed up to the hillside. It looks like a honeycomb from a distance. Entering it, the spiral curve rises like a steep ascending a slope. On the sixteenth day of the eve of the security ferry to Guangzhou, 15:00 p.m. arrived at the port. The Yingxiang Tailai Hotel on Youlanmenwai Street is also a layer house.

From this description, Hong Kong and Guangzhou are mostly mountainous areas, with high-rise buildings built on the hillside, which look like beehives from a distance.

5. Conclusion: Land Saving Approach

The wisdom of land-saving embodied in the production and life by the ancients from the three levels of ideological development, regulatory changes, and practical response includes four points: moderate development, regulatory management, rational utilization, and pioneering innovation, which are reasonably evidenced in the planning and practice of settlements today.

5.1 Moderate Development

Although the issue of land saving appeared relatively late in the actual construction of settlements, the ideological concept about moderate development arose earlier in ancient China. As early as in the "Guan Zi" and " Book of Rites" in the Spring and Autumn Period, there have been discussions that the size of the city should be commensurate with the population. Realizing the finite and non-renewable nature of land resources, the ancients advocated that the scale of cities and houses should be commensurate with people, and the issue of land saving should be considered in every development of cities and villages. Moderate development instead of wasting land, pay attention to the centralized layout of development sites, settlements should be developed in a reasonable size of small groups and should not be expanded outwards blindly. This also reveals the importance of per capita land area limitation in urban and rural planning. If urban and rural development is not restricted in this way and blindly expand land for economic growth, while aggravating urban diseases and various problems, they will eventually fall into the dilemma of having no land available and being forced to save land.

As a millennium plan, the plan outline of Beijing Xiong'an New District proposes that it is necessary to adhere to the rigid constraints of resource and environmental carrying capacity and form a new pattern of urban and rural development with moderate scale, orderly space, and economical and intensive land use. In the management of incremental land use in the Changsha-Xiangtan-Zhuzhou urban agglomeration, by controlling the scale of project land, resolutely reducing the exceeding standards, and non-supply of land that does not meet the land supply catalogue and the criteria for economical and intensive land use. Changsha City has reduced about 400 hectares of unreasonable land every year. (Peng Xiaoyun, 2014, pp3) In this way, the boundaries of urban growth can be controlled, the existing stock of land can be revitalized, and small groups, centralized, and moderately suitable land-saving development can be realized.

5.2 Regulatory Management

There was a strict hierarchy in all Chinese dynasties, with regulations governing the number of fields and residential frames that people of different classes could occupy, thus limiting the scale of land use from the early stages of development. The distribution of land has shifted from a balanced household to a focus on labor measurement. The gradual decrease in per capita arable land also shows that the issue of land saving has moved from theory to practice. As for the control of funeral tombs in Fujian and Guangdong province, it also reflects the need for the government to regulate and manage from top to bottom.

Today's urban and rural planning limits the per capita construction land indicators for different levels of settlements, and the delineation of basic farmland and ecological red lines, indicating that strict management of the scale system is not only a mandatory guarantee for settlements and land saving,

but also a sustainable development way to safeguard the development rights of future generations. The planning outline of the Xiong'an New District clearly proposes to strictly protect the permanent basic farmland. Cultivated land accounts for about 18% of the total area of the new district, of which permanent basic farmland accounts for 10%. Strictly control the development intensity, the long-term development intensity of the new area is controlled at 30%, and the total scale of construction land is about 530 square kilometers. In recent years, China has also issued a series of land-saving policies and formulated standards for the intensive use of construction land, reflecting the urgent need for the government to control land-saving issues in practice.

5.3 Rational Utilization

In the actual development process of Fujian and Guangdong province during the Ming and Qing Dynasties, due to the actual situation of many mountains, few fields and dense population, there should be some reference in the rational layout and use of land. In ancient Chinese farming society, cultivated land was the primary condition for survival. The fertile land in the plains is firstly reserved for arable use. Secondly, if the land between the mountains can be cultivated, it can also be cultivated according to the height of the mountain. And the seaside mudflats can also be reclaimed and developed into fields. As for the residential villages, they are mainly laid out in salt and bittern land or mountainous land that is not suitable for cultivation. This coincides with the policy of protecting basic farmland in the development of China today. China has a large population and limited land resources. In this case, basic farmland is a very important resource for food production and needs priority protection. While the construction of cities and villages can be improved by relying on technical means or other methods, they should try not to occupy basic farmland, and try to choose sites on unsuitable land for cultivation to balance the spatial layout.

In today's planning practice, "urban agriculture" that can compensate for land and produce grain has become the first choice for land-saving utilization. In 2012, several major proposals of the "Grand Paris Planning Consultation" have adopted the planning ideas of urban agriculture. The theme of the 2015 Expo Milano, "Feeding the Planet, Energy for Life" is also a powerful example of promoting urban agriculture and saving land. (Zhang Yukun, 2019, pp81) In order to guide the development of industrial agglomeration and promote the intensive use of industrial land, the "Guangzhou City's Trial Measures for Improving the Efficiency of Industrial Land Utilization" implemented in April 2015 set a clear lower limit for the floor area ratio of industrial land and advocated the development of underground space. In this way, the efficiency of land use can be improved. Satisfying the production and living needs of more local residents on the limited land resources reflects the land-saving wisdom of rational use of natural conditions. (Zheng Jiaxin, 2015, pp23)

5.4 Pioneering Innovation: Industrial Transformation

While rationally arranging the land for production and living, the Chinese ancients also creatively expanded the number of coastal fields through using tidal flats to reclaim land and developed terracing technology to solve the problem of cultivation in the mountains. At the same time, change the development ideas to reduce the dependence on land cultivation through woodcutting in the mountains and doing business in the sea. As for the opening of the sea ban in the late Ming and Qing dynasties, national capitalism has begun to sprout, and the residents of the region have turned to the development of industry and commerce and South Asian Sea trade in accordance with the development of the times.

This pioneering and innovative spirit of the ancients in response to the development of the times is an important inspiration for today's era of Internet development, where the transformation of the institutional structure of the urban and rural economy is a major initiative to cope with the land-saving. Nowadays, with the development of science and technology and network means, the information industries and tertiary industries with small footprint and high additional production value will become the top priority for development in the coming period. By improving the efficiency of land use and maximizing economic and social benefits with the least land resources, sustainable economic and social development can be guaranteed.

The plan of the Xiong'an New District proposes to undertake the deconstruction of Beijing's non-capital functions in line with the positioning of the new district, accelerate the transformation of traditional industries, and build a modern industrial system with the coordinated development of the real economy, technological innovation, modern finance, and human resources. Focusing on the development of next-generation communication networks, Internet of Things, big data, cloud computing, artificial intelligence, industrial Internet and other information technology industries is the best embodiment of industrial transformation and upgrading, pioneering and innovation. Relying on the development of network technology and virtual economy technology, the transformation and upgrading of urban and rural enterprises is more conducive to the land-saving response in the city.

Although the word "land saving" does not clearly appear in the ancient literature, the development and practice of the idea of land saving is always traceable. This study examines the land-saving wisdom of the ancient Chinese in the construction of traditional settlements from three levels of ideological development, regulatory changes and practical responses. Including appropriateness as the guiding ideology, scale control as the guaranteed premise, rational utilization as effective measures, and pioneering and innovative as the spirit of the times, to achieve effective land saving in production and life. By comparing today's planning practice, it can be seen that the above four points still have practical and effective guiding significance for settlement construction and deserve the attention and promotion of architects and planners in future urban construction. Land saving is not only a long-established ideological inheritance that has existed in ancient China, but also an unchanging practical response nowadays.

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CLIMBING INTO THE PAVILION：STUDY ON THE CORRELATION BETWEEN THE CONSTRUCTION OF PAVILION AND ROCKERY IN CLASSICAL CHINESE PRIVATE GARDENS

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ABSTRACT

Rockeries and pavilions are indispensable elements in classical Chinese gardens. The construction techniques and art of man-made rockeries are topics that have received more attention in the study of gardening, while not enough attention has been focused on the correlation between rockeries and pavilions. Especially in private gardens with limited land, how to closely integrate rockeries with garden pavilions to achieve the effect of creating natural gardens that Chinese classical gardens have pursued since ancient times. Based on historical records and case studies of classical Chinese private gardens, this study finds that there is a long historical tradition of *"climbing into the pavilion"*, and the combination of pavilions and rockeries constitutes a specific set of historical imagery.The rockery serves as a stepping stone to the pavilion, creating the experience of climbing a natural mountain and providing a unique path to the pavilion. The connection between the pavilion and the rockery also achieves a balance between "*natural*" and "*artificial*" gardening. In the practice of Chinese private gardens, the correlation between the pavilion and the rockery has varied depending on the garden environment, from creating a continuous rockery to creating a partial rockery, which reflects the diverse techniques and wisdom of the builders of private gardens in dealing with the specific garden environment.

PREFACE

Traditional Chinese gardens have always pursued "A*lthough they are made by humans, they are open to nature*", which has formed a certain consensus in contemporary garden research. In order to create the natural atmosphere of the garden, it is an everlasting theme to shape the "*mountain*" of nature through the technique of stacking stones. The rockery has also become an indispensable part of the composition of gardens throughout the ages. In the Song Dynasty, Guo Xi once said when he talked about landscape paintings, "*there are viable and promising landscapes, it is better to have those who can travel, and those who can live in*", meaning that it is better to enjoy the landscape than to see the landscape.Rockery and stacked stones are not only important structures of the garden, but also part of the dynamic experience of the garden.

Rockery and stacked stones are often used as the foundation of pavilions in the gardens of the Ming and Qing Dynasties in the south of the Yangtze River. The rockery and pavilions in the garden seem to form a closer relationship. For example, the rockery is the foundation of the pavilions. Scholars such as Gu Kai also pointed out that *"Pavilion on the top of the mountain"* is an extremely common phenomenon in the gardening trend in the Ming and Qing Dynasties(Gu kai,2016). The book *"Yuan Ye"*, which has always been regarded as a theoretical gardening guide, also mentioned the relationship between rockery and specific Pavilion types. *"Yuan Ye"* by Ji Cheng wrote, *"The pavilions are suitable for the side of the mountain, and they can be climbed up and down, so no need to use stairs"*. The content of *"Yuan Ye"* was reflected in the private gardens in the south of the Yangtze River during the Ming and Qing Dynasties, which proved that the close connection between the rockery and the pavilion had formed a formality. This kind of constructive connection is abundantly embodied in concrete garden examples, and it is worth further exploring the characteristics and significance of constructing.

THE GARDEN HISTORY OF MOUNTAIN STACKING AND CLIMBING

Since the Ming Dynasty, gardening has become more popular, and there are also many documents.Here are two famous private gardens in the late Ming Dynasty. One is the Yushan Garden built by Qi Biaojia, a famous mountain garden in Shaoxing in the late Ming Dynasty. Yushan, located twenty miles southwest of Shaoxing City, is a small hill next to Qi Biaojia's house. In the eighth year of Chongzhen (1635), Qi Biaojia used Yushan as a site to plan the layout of the garden and began to put it into practice. The garden was built in stages. In the first year, Qi Biaojia worked hard to build pavilions, pavilions, and pavilions along the foothills until *"the top of the mountain was completely carved out."* From the layout point of view, the pavilion named *"Yuan Ge"* is based on the highest of the mountain, occupying a relatively high terrain, and it also has a two-story building structure. The pavilion is named after it is suitable for looking far away. *"The name of the pavilion is far away, not because of the scenery. The pavilion can see all the mountains and rivers in the mountains"* ,from the topographical point of view, the *"Yuan Ge"* is always located at the commanding heights in the park and is a very important building.At the same time, the real role of *"Yuan Ge"* is to stand on the top of the mountain and look forward. From the site selection to the construction of *"Yuan Ge"* , it is very close to the image described in *"Yuan Ye"* that *"the mountain pavilion is far from the distance, wherever you look at it".*

Figure 1. "Yuan Ge" in the Yushan garden

Another case is Wang Shizhen's Yanshan Garden, which was a very famous private garden in the late Ming Dynasty. It is famous for the three huge and "giant" rockery in the garden. The name of the garden is *"Yanshan"*, borrowing the historical allusions of Yanzhou, to create the legendary *"Xianshan Qiongyu"* realm. The landscape pattern of "*one pond and three mountains"* in the garden is the skeleton of the garden, which shows the subjectivity and importance of mountains in the garden. It is worth noting that there are several pavilions on the top of the three rockeries, which means that if you want to climb the pavilion, you have to experience a period of climbing . Among them, *"Zhong Yan"* is the first completed rockery, located in the center of the garden, forming the main landscape in the middle. There is a *"Hu Gong Lou"* on the mountain. The front of the pavilion and the west wall are surrounded by peaks and rocks. Not only can you see the mountains on both sides of the pavilion, you can also look far away from the windows on the north side of the pavilion. There is pond separation between *"Zhong Yan"* and*"Xi Yan". "Xi Yan"* is the highest mountain, with many groups of strange rocks on the mountain, and the creation of caves, ridges, streams, cliffs and other rich and peculiar mountain shapes. The *"Piao Miao Lou"* is placed on top of the stone cave. The rocks are stacked next to the building to form a rock cliff. There is a flat ground in front of the building. It not only contains a complete and continuous mountain tour, but also is based on the stop of the building on the mountain. Where, encountering unexpected scenery, get a sudden psychological feeling. However, it is worth mentioning that even though Wang Shizhe tried his best to describe an experience similar to traveling through a real mountain, the artificial hills and real mountains are still incomparable. He knows that the artificially stacked rockery is completely different from the real mountain in terms of scale. However, through careful layout and construction, Feelings and experiences in the mountains can produce the illusion of *"you are in a real mountain"*.

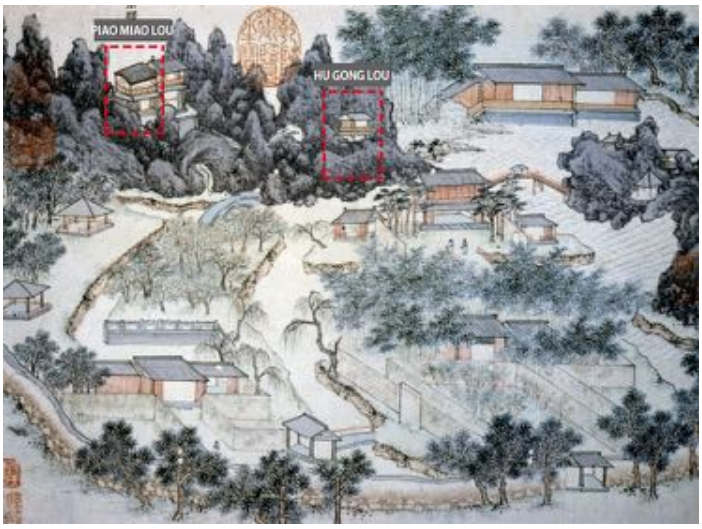

Figure 2. pavilion and rockery in Yanshan garden

As scholars of gardening studies have noticed, since the Ming Dynasty, the pursuit of dynamic viewing experience influenced gardening(Gu kai,2016). As the outstanding pursuit in the dynamic tour experience, *"touring in the real mountain"* is also an extremely prominent gardening feature in the construction of gardens. The formation of this dynamic experience benefits from the exquisite layout of the gardens. The rockery is placed on top of pavilions, and a dwelling place is added as a transformation of the spatial experience, adding to the climbing path. A *"scenery"* enriches the experience of traveling in the mountains, and thus jointly participates in the formation of the layout of the rockery.

THE CONSTRUCTION OF PAVILION AND ROCKERY IN CLASSICAL CHINESE PRIVATE GARDENS DURING THE MING AND QING DYNASTIES

This kind of mountaineering experience is also common in the private gardens of the Ming and Qing Dynasties. During the Ming and Qing dynasties, private gardens varied in scale, and most of them occupies a relatively limited area. Nevertheless, the connection between rockery and pavilion is not limited by the size of the land, but there are actually a variety of types.

Pavilions and ,terraces based on rockery

Local rockery and pavilion is a combination method when the space is relatively cramped. For example, the *"Lengquan Pavilion"* in the corner of the courtyard in the Garden of the Master of the Nets covers an area of less than one acre. The *"Lengquan Pavilion"* is located in the west of the courtyard, facing west to the east, and the platform of the pavilion falls on a set of gentle rockery. The rockery starts from the northwest of the courtyard and gradually rises. The rockery at the foot of the pavilion is relatively low, and the ground of the pavilion is slightly higher than the ground of the courtyard. You can climb to the*"Lengquan Pavilion"* through two stone steps of the rockery. From the south side of the pavilion, you can set foot on the rockery. Several stone steps connect the rockery that extends eastward. The partial rockery stacked under the base of the cold spring pavilion makes the pavilion seem to be based on a mountain, and the pavilion and the mountain form a kind of *"mountain pavilion"* imagery. To climb the pavilion, you must first set foot on the stone steps, and the physical behavior implies the spatial experience of *"climbing into the pavilion".*

Figure 4."Lengquan Pavilion" in the Garden of the Master of the Nets

The *"climbing gallery"* in private gardens in the Ming and Qing dynasties is another type of construction method. For example, the climbing gallery in the middle of Suzhou Humble Administrator's Garden, the climbing gallery on the north side of Suzhou Lingering Garden, and the climbing gallery in the middle of Suzhou Canglang Pavilion. The gallery is based on a rockery, which undulates with the changes of the mountain, and twists and turns to be natural. The climbing gallery cleverly integrates the highly variable structure of the corridor with the rockery and stacked rocks, forming the meaning of the building surrounded by mountains. And traveling through the corridor also has a feeling of climbing a hillside.

There is also a very special type of *"mountain pavilion".* The independent stone house is used as the base of a pavilion, and is prominently represented by the*"Kanshan Lou" i*n Suzhou Canglang Pavilion Garden. "*Kanshan Lou"* is built by the Yellowstone to form the *" Stone House"* at the bottom, and two more pavilions are built on the mountain. With the rockery as the base, the pavilion is even more lofty; the stone house inside the rockery becomes a part of the pavilion, and the building and the mountain are integrated into a whole. The Yellowstone is stacked into winding stone steps, and you can climb up along it, you can enter the platform of the mountain tower, stop here, and have a wide view around it, which is quite an experience of climbing to the mountain.

Figure 5.The "climbing gallery" in Suzhou Canglang Pavilion Garden

Figure 6.The "Kanshan Lou" in Suzhou Canglang Pavilion Garden

Stone stairs and pavilions

The staircase composed of rockery and stacked stones is a kind of staircase with a natural atmosphere. In the existing private gardens in the south of the Yangtze River, the rockery is connected with the pavilions in this way.

The private gardens in Yangzhou can be said to be a characteristic example. The *"Baoshan Lou"* in Yangzhou Ge Garden has a lake rockery at the west end and a yellowstone rockery at the east end. There is a rock ladder in each of the two rockeries, and the*"Baoshan Lou"* is clamped by two ladders. The stairs and pavilions form a coherent path, which not only realizes *"climbing into the pavilion"*, but also *"climbing from the pavilion".* Another example is the pavilion in Heyuan, Yangzhou. If you want to enter into the pavilion, you must step under the rockery in the north, climb the three-step road, and then turn west for more than ten steps to reach the corridor on the second floor of the pavilion. You can also climb the building from the middle part of the rockery in the east of the ship hall, follow the mountain trail to the pavilion on the top of the mountain, and then follow the stepping road from the pavilion to the west, first descend half a level of the mountain and then climb the climb to the upper floor.

There are many ways to build stone stairs in Suzhou Lingering Garden. One is the rockery *"a ladder of clouds"* next to *"Mingse Lou"* which is a good example of going upstairs through a partial mountain stone ladder. *"Mingse Lou"* is located at the southern end of the western pond of the Lingering Garden, and is connected to the Hanbi Mountain House to the west. In the gap between the south side of the building and the courtyard wall, there is a rocky hill stacked with a rockery winding upwards to the second floor door of the pavilion. The second floor of *"Mingse Lou"* can only be climbed by pedaling. The rockery is combined in the form of a ramp and Shifeng. The ramp is hidden behind Shifeng and is relatively hidden. Looking to the south from the first floor of *"Mingse Lou",* the stone scene partially surrounding here is displayed more comprehensively. It can be described as a very flexible arrangement to create a part of a rockery, creating a mountainous atmosphere. The consideration of this layout is quite close to the "mountain pavilion" mentioned before.

Second, *"Xi Lou"* is another pavilions in the Lingering Garden. "*Xi Lou"* faces east to the courtyard behind *"Wufengxian Pavilion"*. At the southern end of the courtyard, facing the "*Wufengxian Pavilion"* is a group of relatively complete rockery. The rockery has a built-in mountain road, which is connected to the east gate of the *"Xi Lou"* at the west end.Third, the corner space formed by the east side of *"Guanyun Lou"*and the east side of the building is equipped with a rocky cloud ladder, forming a tortuous S-shaped path to the second floor of *"Guanyun Lou"*.

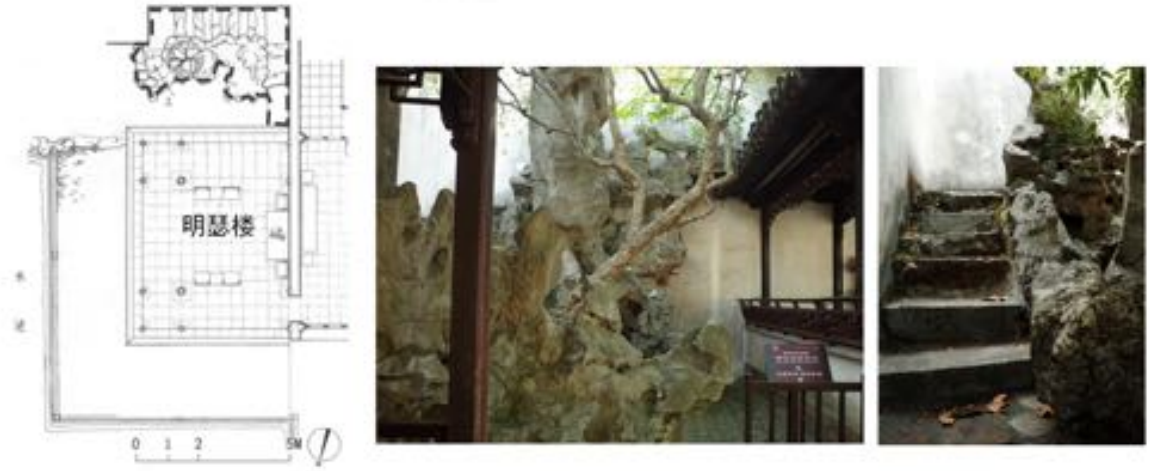

Figure 7."a ladder of clouds" next to "Mingse Lou"

Figure 8. mountain road connected "Xi Lou"
Figure 9."a ladder of clouds" next to "Guanyun Lou"

The construction of the *"climbing into the pavilion"* of the Jiangnan private gardens in the Ming and Qing dynasties unified the pavilions and pavilions with the rockery as the base, or conformed to the trend of the rockery to connect the stairs and the pavilion. The design method is flexible and the construction method is eclectic.

THE SIGNIFICANCE OF "CLIMBING INTO THE PAVILION"

1.Mindfulness and dynamic appreciation

Rockery and stacked stones have always been regarded as a prominent element of the landscape of gardens. In the historical retrospect of the garden stacking mountains, the pursuit of *"touring in the real mountain"* is obvious. The *"tour"* of the rockery is the necessary content of the construction of the rockery, and the "climbing into the pavilion" creates a stop for the dynamic tour process. The space and the place of situational transformation. In the past, the history of gardens and garden construction research paid more attention to the construction of garden visual scenes. The *"climbing into the pavilion",* the spatial feature of physical experience, reflects the closer relationship between the construction of gardens, rockeries and pavilions. The construction design means that dynamic viewing

and physical perception are always an important angle for understanding Chinese traditional gardens. From this perspective, the hidden *"climbing into the pavilion"* path construction is worthy of further exploration.

2.REALITY AND CREATION

Traditional Chinese gardens have always embodied the care of the combination of physical and mental experience and intention, and have been implemented in the construction of reality(Tong Ming,2016). Jicheng's so-called *"mountain pavilion"* literally means that in the natural environment of the mountain, the pavilion overlook the mountains, gaining a broad view and feeling the distant artistic conception. This is not only about construction techniques, but also points to the realm of gardening.

Although most of the private gardens in Jiangnan in the Ming and Qing Dynasties were urban gardens , they lacked the natural environment of mountain. However, through the construction of the relationship between rockery and pavilions, a path of *"climbing into the pavilion"* is created. Through the rotation and climbing of the body, the viewer's body is involved, creating an experience similar to that in a mountain. The tension between the experience of *"climbing into the pavilion"* and the reality of the garden has actually created a variety of changes in the gardening techniques of private gardens in response to different environments, reflecting the superb ability of landscape architects to create the environment through specific construction. This kind of construction technique and experience is still worth learning from in contemporary gardening practice.

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A STUDY OF ONE KIND OF PICTORIAL IDEAS OF CHINESE CLASSICAL GARDENS IN LATE MING DYNASTY (1573-1664)

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Abstract: Ji Cheng, as one of the most significant names in the history of Chinese classical gardens, was especially famous for his writing of the book of *Yuanye*(*The Craft of gardens,* originally published around 1631). This paper, based on the research of the cognition mode of the ancient Chinese landscape painting style of 'Jing & Guan' in late Ming Dynasty, reveals the relationship between this pictorial style and Ji Cheng's garden theory and practice from three aspects: the first concerns his intention of constructing professional characters of garden designers in traditional China; the second reflects the appreciation mode for the ancient painting style used by Chinese traditional scholars including Ji Cheng—a kind of collective imagination upon a common system of art knowledge; the third is about Ji Cheng's application of this painting style to the construction of real three-dimensional space by physical materials in garden making, taking Wu Garden as an example.

Keywords: Chinese Classical Gardens, Late Ming Dynasty, Ji Cheng, pictorial style of 'Jing & Guan', Wu Garden

Ji Cheng（1582-?）has always been concerned as the key garden maker who pursuit the painterly effects in Chinese classical gardens in late Ming Dynasty. Some researchers have pointed out that, 'directing the construction of artificial mountain and the whole garden with the principles of painting was the fundamental method of Ji Cheng'[1]. This, can also be proved by Ji Cheng's own famous writing of *Yuanye(The Craft of Gardens)*, in whose preface we can find such statements by the author, 'As a young man I was known as a painter. I was by nature interested in seeking out the unusual; since I derived most pleasure from the brushes of Guan Tong and Jing Hao, I paid homage to their style in all my work(不佞少以绘名，性好搜奇，最喜关仝、荆浩笔意，每宗之)'[2]. After the completing of Wu Garden in Yizheng for Wang Shiheng, one famous scholar Cao Yuanfu(?-1642) came to visit this garden. Ji Cheng recorded this visit in his book, 'On his travels, Mr. Cao Yuanfu of Gushu came to visit Secretary Wang´s garden, the owner and I accompanied him on a stroll through the garden, where he was invited to stay for a couple of days. Mr. Cao praised it over again, saying it was just like a painting by Jing Hao or Guan Tong(姑孰曹元甫先生游于兹，主人偕予盘桓信宿。先生称赞不已，以为荆关之绘也)'[3]. Another poem for this visit could be found in Yuanfu's own book, *Bo wang shanren gao*(博望山人稿). 'choose the site beside the river & sea, create the painting of Jing & Guan(选将江海为邻地，摹出荆关得意图)'[4]. A strong tendency could be stressed from these texts above that Ji Cheng's garden design not only followed the general painting principles, but also was in chasing for some specific painter styles, especially the ancient masters of Jing Hao and Guan Tong in period of Five Dynasties (907-960).

THE LOST ORIGINAL WORKS OF JING & GUAN

In the period of Late Ming, however, the works of Jing Hao and Guan Tong had been very rare. Dong Qichang（1555-1636）, the most famous master in that time, once announced in a letter to his friend Chen Jiru（1558-1639）that, 'the masters I want to study are Jing (Hao), Guan (Tong), Dong (Yuan), Ju (Ran) and Li Cheng. But it is precisely these five whose original works are extremely scarce (所欲学者，荆关、董巨、李成。此五家画尤少真迹) .'[5] Dong Qichang then asked his friend help to search these works for him in southern China. Another famous painter in that time, Lan Ying（1585-1664）, also emphasized that 'the brushes of Jing & Guan are extremely tough, with no possibility to change anything after the completion. And since their original works are so rare, how could we learn anything from them today ? (于荆关笔劲，点画一成，不能加以增减。后学未能多见其真迹，焉可尊师范日夕之参也)'[6] Under the circumstance of rare genuine works of Jing & Guan, it would be hard to understand the real style of these two ancient masters, which means studying from their brushes should be nearly impossible around Ji Cheng's time. One century later, the problem seemed to become more serious. As among the huge collection of Qianlong Emperor(1711-1799), there were only four pieces of painting attributed to Jing Hao or Guan Tong recorded in the first version of *Shi Qu Bao Ji* (the royal collection directory) in 1745. Qianlong Emperor even made a poem on one of these counterfeits, which he believed to be the real Guan Tong, 'the original works of Guan Tong were rare around the world, there would be at least nine fake styles in ten paintings attributed to him (关仝真迹天下少，十人规橅九背驰) .'[7] But unfortunately, the four paintings were actually all fakes created between Song and Ming Dynasty according to modern appraisal. This reveals that, because of the lost original works of Guan Tong or Jing Hao, the works claimed to be in their manners or styles were actually in chaos.

The massive works titled in 'Jing & Guan' style with different formal characteristics in Late Ming also proved this. [fig. 1]

[Fig.1]: The massive works titled in 'Jing & Guan' style with different formal characteristics in Late MingARCHTHEO '21
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Moreover, those most reliable works by Jing Hao and Guan Tong survived to today were mostly kept by the royal or the official in northern China around Late Ming according to their inscriptions and seals, which means these masterpieces were nearly inaccessible to ordinary people including Ji Cheng. One painting attributed to Guan Tong named *Da Ling Qing Yun*（大岭晴云图） was once kept by the famous collector Xiang Yuanbian(1525—1590)who lived in Jiaxin, Zhejiang Province in southern China. But Ji Cheng was only 8 years old when Xiang Yuanbian died in 1590. Also, no record could be found yet to prove that Ji Cheng had ever any friendship with Xiang's family. So, in terms of Ji Cheng's experience and social status, it was almost impossible for him to see any reliable works of Guan Tong and Jing Hao, especially in his young period of learning painting. Then more questions would be raised as follows, why Ji Cheng claimed to be in favor of the style of 'Jing & Guan' which he could possibly never seen? Where could he studied these two artists' brushes? What were exactly the formal characteristics of Ji Cheng's 'Jing & Guan' style and the most importantly, how did he apply this painting style into his making of gardens?

THE SYMBOLIC MEANING OF 'BRUSHES OF JING & GUAN'

Surprisingly, as the Cao Yuanfu's poem quoted above, the painterly effects of 'Jing & Guan' created by Ji Cheng in Wu Garden was certificated by other scholars. Yuanfu, earned his title of *Jingshi* (进士, the highest degree in traditional China) in 1616, was one of the leading elites in southeastern China. He actually had no reason to pretend to appreciate the Ji Cheng's work, even concerning his friendship with the garden owner Wang Shiheng. In fact, Yuanfu has made another poem with the name of o*n the painting of Jingshan pavilion in Wang's Garden*(题汪园荆山亭图), 'Yellow rocks splitted into the mountain, dangerous pass(or valley) arranged along the spring. Here rised the question to Hongguzi(Jing Hao) in *Xijing*, how such a painting could come into truth?(斧开黄石负成山，就水盘溪置险关。借问西京洪谷子，此图何以落人寰?)'[8]. The first two sentences described the scenery of

artificial mountain made of yellow rocks and winding streams created by Ji Cheng, the last two confirmed again the similarity between the garden's landscape and the painting of Jing Hao. This shows, despite the fact that original works of Jing Hao and Guan Tong were in extremely rare and their imitated works were also in chaos, the scholar leader Cao Yuanfu and the garden maker Ji Cheng could still reach a consensus on the style of 'Jing & Guan', which at least proved that, to Ji Cheng, the choice of this vague painting style as a core principle for garden making could be nothing accidental.

[Fig.2]: Ni Zan (1301-1374), The Lion Forest Garden illustration(狮子林图), 1373.

In fact, the style of 'Jing & Guan' has a special symbolic meaning among the scholars in Late Ming period. This meaning came from the master painter of Yuan Dynasty, Ni Zan(1301-1374) and his masterpiece of the *The Lion Forest Garden illustration*(狮子林图)[Fig. 2]. In 1373, the year before his death, Ni Zan completed this painting by collaboration with another Suzhou painter Zhao Yuan(active in late Yuan Dynasty). On the painting, Ni Zan wrote down: 'I have discussed the idea of this painting of Lion Forest Garden with Mr. Zhao Yuan. The brushes inherited from Jing & Guan, gained by this work, could never be dreamed of by Wang Meng(余与赵君善长以意商榷，作狮子林图，真得荆关遗意，非王蒙所梦见也).' This statement, made by 72-year-old Ni Zan to his friend, another master painter, 65-year-old Wang Meng(1308-1385) , along with Ni Zan's unique style of landscape painting gradually became a kind of allusion among Chinese scholars afterwards.

Ni Zan was progressively modelled as a maverick reformer among the Four Masters of the Yuan Dynasty [9]. He Liangjun(1506-1573), a scholar active in Jiajing period(1522-1566), once noted: 'Huang Gongwang, Wang Meng, Wu Zhen all followed Dong & Ju, only Ni Zan learned from Jing & Guan(盖子久、叔明、仲圭皆宗董巨，而云林专学荆关) .'[10] Though Liangjun still recognized them all as the best masters, only with different painting characteristics. Yet, with the pushing from leading scholars, such as Mo Shilong(1537-1587) and Dong Qichang, the reputation of Ni Zan soon surpassed the other three masters in Late Ming. In Mo Shilong's book of painting theory, *Huashuo*(画说), he wrote:

Zhang Boyu（Zhang Yu, *zi* Boyu, 1283-1350）wrote on Ni Zan's painting that Ni has no old painting convention of art history. And according to the inscription on the *The Lion Forest Garden illustration* , Ni Zan was speaking of himself so highly, that he claimed his brushes were inherited from 'Jing & Guan', which could never be dreamed of by Wang Meng. Gu Hanzhong also once said that at the very beginning of Ni Zan's painting career, he learned a lot from Dong Yuan. But when he got older, his paintings

became more subtle, while his calligraphy lost the exquisite. In my opinion, the calligraphy of Ni Zan's old age was no longer exquisite just because of his concentration on painting. He changed the traditional way of painting. The older he was, the more skilled he became in chasing for the naive and the peaceful. But this state would not be easily reached without his early learning from Dong Yuan. The old painting convention was never gotten rid of even by Huang Gongwang, and in the terms of the artistic value of naive and peaceful, Ni Zan was better than Zhao Mengfu. They true difference between them was the breadth of mind.（张伯雨题倪迂画云："无画史纵横习气。"予家有此帧。又其自题《师子林图》云："予此画真得关遗意，非王蒙辈所能梦见也。"其高自标置如此。又顾汉中题迂画云："初以董源为宗，及乎晚年，画益精诣，而书法漫矣。"盖迂书绝工致，晚年乃失之而聚精于画，一变古法，以天真幽淡为宗，要亦所谓渐老渐熟者；若不从董北苑筑基不容易到耳。纵横习气，即黄子久未断，幽淡两言，则赵吴兴犹逊迂翁，其胸次自别也。）[11]

The first thing we can learn from Mo Shilong's comment was the negligence of the contribution of Zhao Yuan, which was also adopted by many other comments in that time. Ni Zan alone was shaped and believed to be such a kind of master, who gained the legitimism by learning from Dong Yuan in his first period as a painter, then tried to make a revolution against the old convention by studying the 'brushes of Jing & Guan'. In Mo's judgment, Ni Zan's achievement thus should be overweigh the Huang Gongwang, or even Zhao Mengfu(1254-1322), who was mostly regarded as the best master in Yuan Dynasty.

The almost same comment could also be found in Dong Qichang's *Hua chan shi sui bi*(collections of his essays) [12]. In fact, along the whole life of Dong, he kept discussing and studying Ni Zan's *The Lion Forest Garden illustration* and the 'brushes of Jing & Guan', both in his essays and paintings. In one of Dong's works that claimed to follow the style of Ni Zan, he wrote: 'Among the four masters in Late Yuan Dynasty, the character of Ni Zan was the best. He firstly learned from Dong Yuan, then formed his own style of naive and peaceful in his late period. I once had the opportunity to see his masterpiece *The Lion Forest Garden illustration*, on which, Ni Zan himself claimed his brushes, inheriting from 'Jing & Guan', could never be dreamed of by Wang Meng. Ni praised himself so highly, I can't help to think that if I could also reach this high status 300 years later?(元季四大家，独倪云林品格尤超。早年学董源，晚乃自成一家，以简淡为之。余尝见其自题狮子林图曰：此卷深得荆关遗意，非王蒙诸人所梦见也。其高自标许如此。岂意三百年后，有余旦暮遇之乎?) [13]. In Dong Qichang's discussion, not only was Ni Zan's story of 'brushes of Jing & Guan' reinterpreted, but his strongly admiration toward Ni Zan was reveled, which can be easily captured from the last sentence. Hence, as a result of the efforts of leading scholars such as Mo Shilong and Dong Qichang, Ni Zan and his 'brushes of Jing & Guan' were gradually attached with the symbolic meaning of 'maverick' in Late Ming period.

Therefore, Ji's emphasis that he derived most pleasure from the 'brushes of Jing & Guan', might just because of his recognition for this symbolic meaning, what also could reflect, at least, the Ji Cheng's acquaintance with scholar's discourse. However, regarding the prosperity in publishing industry in Late Ming, Ji Cheng should not be the only one who grasped scholar knowledge as a craftsman in that time. In fact, his particularity lay in the efforts that he made to use the knowledge to construct his professional character as a 'garden designer', or 'garden master(主人, 能主之人)', if we use Ji Cheng's

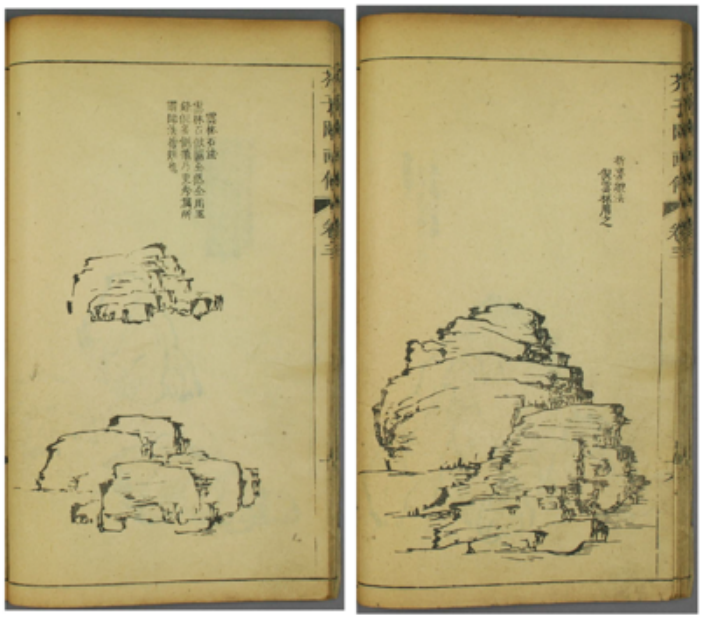
term in *Yuanye.* The ordinary craftsman was 'merely mechanic', while the master's craftsmanship should be 'shown in the design of something appropriate and fitting to the site, so he cannot stick too closely to convention(能妙于得体合宜，未可拘率)' [14].Interestingly, the character of 'garden master' mentioned in *Yuanye* was nearly the same as the symbolic meaning attached with Ni Zan and the 'brushes of Jing & Guan'. In this sense, Ji Cheng's emphasis on his affection for 'Jing & Guan' probably just showed such an intention on seeking the legality from scholar's discourse for his professional constitution as a 'master' or 'garden designer', the significance of which, had never been addressed in the numerous essays about Ji Cheng so far.

It's still worth noting that Cao Yuanfu was also a landscape painter, who especially admired the art practice and theory of his friend Dong Qichang[15]. In the record of *Ming hua lu* (Painters in Ming Dynasty, published around Early Qing), Cao Yuanfu was described as a scholar artist, whose 'calligraphy had a style from Jin and Tang Dynasty, his landscape paintings followed Ni Zan's manner, with concise brushes'[16], which means, Yuanfu should be very familiar with the special meaning of master Ni Zan and the 'brushes of Jing & Guan'. Thus, on the one hand we may reasonably suspect that his recognition of Ji Cheng's similar artistic declaration would have been affected by some personal emotion. But on the other hand, this also implies that the 'brushes of Jing & Guan' recreated by Ji Cheng in his garden making, especially the Wu Garden, should still hold enough formal resemblance to, at least, pass the examination of an expert at Ni Zan. Thus, the questions are still remained to us that where did Ji Cheng study the formal characteristics of 'Jing & Guan', since he had no opportunity to see any of the reliable works of these two ancient masters? And, to what extent could this kind of painterly effects be transferred to a real garden construction?

The Representation of the Style of 'Jing & Guan'

Around Late Ming dynasty, it was possible for Ji Cheng to learn the formal characteristics of the styles of 'Jing & Guan' from two sources: the first was the recognized imitation works. Based on what we have discussed above, the paintings of Ni Zan undoubtedly became the base of imagination of 'brushes of Jing & Guan' in that time.

As Dong Qichang once noted, 'the paintings of Guan Tong were supposed to be the teacher of Ni Zan. I once saw a Zhao Mengfu's painting claimed to be in the manner of Guan Tong, the horizontal brushstrokes were just like the overlaid Chinese traditional cakes, from which I actually saw the origin of Ni Zan's brushes(关仝画为倪迂之宗，余尝见赵文敏扣角图仿关仝笔，皆用横皴如叠糕坡，乃知倪所自出也).'[17] The horizontal brushes described here were very similar with Ni Zan's representative 'Zhedai cun (brushstrokes like iron bands)' [fig. 3]. In fact, through Dong Qichang's own painting



[Fig.3]: Ni Zan's 'Zhedai cun' presented in a wooden cut printed book, *Manual of the Mustard Seed Garden*(芥子园画传), published in 1679.

practice, he intended to recreate the style of 'Jing & Guan' by using the manner of Ni Zan, and by blurring the difference of these two. On one of his paintings named *Imitation of brushes of Guan Tong*(仿关仝笔意图), Dong Qichang's own inscription said: 'Ni Zan once claimed on the masterpiece of *The Lion Forest Garden illustration* that his brushes were inherited directly from Jing & Guan , so I deliberately painted the mountains in Ni Zan's style by using the brushes of Guan Tong. How regretful would be the ancient masters for not ever meeting me! (倪元镇有《狮子林图》，自言得荆关遗意，余故以关家笔写元镇山，恨古人不见我耳)' .While according to Bian Yongyu(1645-1712), this painting 'used the dried ink to create a row of sharp cliffs(用焦墨作列嶂横塞幅间)'[18], which was definitely not a composition style of Ni Zan. More possibly, Dong Qichang applied the brushes of Ni Zan to recreate his imagination of Guan Tong's landscape painting. Though this piece of painting went lost in history, from another Dong's work, now collected in The Palace Museum (Beijing), could we see the same characteristic. [fig. 4]It was the fourth of a set of landscape paintings with corresponding calligraphy on opposite. Dong Qichang wrote that:'this is an imitation after Guan Tong, someone might identify it as Ni Zan's style. However, Ni's works actually also followed Guan Tong, just a little bit more glamorous(此尔仿关仝，人以为倪元镇，倪亦出于关，第少加妩媚耳). ' As a result of prestigious Dong Qichang's efforts, the paintings of Ni Zan were becoming more and more important basis for imagination of the 'brushes of Jing & Guan' in Ji Cheng's time.

[Fig.4]: Dong Qichang, Imitation of Jing Hao(仿关仝), the fourth of a collection of landscape calligraphy and paintings.

A strong side evidence comes from a painting ascribed to Guan Tong, *Evening Colors over Autumn Mountains*(秋山晚翠轴), collected now in National Palace Museum(Taipei). In 1649, the connoisseur Wang Duo(1592-1652) wrote an inscription on this hanging scroll:

This must be the true brush traces of Guan Tong, the composition was deep and strong, the brush was thin and tough, vivid and powerful atmosphere was pervaded beyond the ink. This was what a true master's work should be. Those paintings of Ni Zan, weak and superficial, composing a landscape just with two trees , one rock and one beach, were totally different from the magnificent works of Jing & Guan, or Li & Fan.（此关仝真笔也，结构深峭，骨苍力厚，婉转关生，又细又老，磅礴之气，行于笔墨外，大家体度固如此，彼倪瓚一流，竟为薄浅习气，至于二树一石一沙滩，便称曰山水山水。荆关李范，大开门壁，笼罩三极，然欤非欤）[19]

However, it needs to point out here, just as the discussions showed above, to Dong Qichang, the resemblance between the paintings of Ni Zan and those of 'Jing & Guan' laid mostly on their style of brushes, especially the horizontal brushstrokes called 'Zhedai cun', rather than composition of mountains. But what Wang Duo did- leaving a sharp critique towards Ni Zan on a painting of Guan Tong- strongly suggested that the connection between the styles of Ni Zan and 'Jing & Guan' had been widely accepted during the period of Late Ming and Early Qing. From his many contemporary painters who claimed to follow the manner of Ni Zan, such as Cao Yuanfu, Ji Cheng was entirely able to study the painting styles of Ni Zan and to imagine the ancient 'brushes of Jing & Guan', furtherly.

The second possible source for Ji Cheng to approach the style of 'Jing & Guan' might be the massive printed books about painting knowledge in Ming Dynasty. A plenty of text records of Jing Hao and Guan Tong, dated from the ancient Five Dynasties to Ming, had been collected and published in Ji Cheng's time. From which, those texts directly related to the formal characteristics of 'Jing & Guan' were selected as follows [table 1]：

Jing Hao 荆浩

Make one peak to be the dominant, so as to get a magnificent arrangement of mountains.

Choose the host/dominant peak among other guest peaks, make waters have the flows coming and going)

From probably Jing Hao, in the Five Dynasties, *Shanshui jie yao* (山水节要）**and *Hua shan shui fu*(**画山水赋）

He excelled in painting mountain tops among clouds, with steep and thick rocks in four sides.

From Mi Fu(1051-1107),*Hua Shi* (画史**); Quoted by Xia Wenyan, Tu hui Bao jian (**图绘宝鉴**, Preface dated 1365);**

Under his brushes, the cold trees were bare, the wild clouds with faint ink were light. Slim springs bubbled out of rocks

From Liu Daochun（active around 1057）, *Wu dai ming hua bu yi*(五代名画补遗**)**

Guan Tong 关仝

Rendering rocks as solid, forests as dense, pavilions as ancient, and figures as leisurely

From Guo Ruoxu, *Tu hua jian wen zhi* (图画见闻志**, finished 1074)**

The mountains in Guan Tong's painting were rough. He was good at creating imposing valleys and rivers. His peaks lacked exquisiteness.

From Mi Fu(1051-1107),*Hua Shi* (画史**)**

There were sharp and lofty mountains and below them open valleys. He selected the most sheer precipices and rendered them with a single stroke of the brush. His forms were carefully selected and bubbled out under his brush

From Liu Daochun（active around 1057）, *Wu dai ming hua bu yi*(五代名画补遗**), translated by Osvald Siren, 1956.**

He was most skiful in painting the mountains of autumn with bare trees, and rustic hamlets and dangerous fords; hermits and retired scholars, fishermen and mountain couriers. Those who looked

at his pictures felt as if suddenly transported to Pa Bridge in wind and snow, or to the Three Gorges, where the gibbons may be heard crying, and then they wished no more to return to the dust and the crowds of the market-places and the courts）。

From *Xuanhe Huapu*（宣和画谱，probably compiled about 1120, translated by Osvald Siren, 1956.）

The rocks and trees were tough and simple

From Xia Wenyan, *Tu hui Bao jian* (图绘宝鉴, Preface dated 1365)

The paintings of Jing & Guan were mostly about autumn and winter scenery. The branches in their works were tough but thick, disorderly but integral, simple but interesting)

From Tang Zhiqi(1579-1651), *Hui shi wei yan*(绘事微言, first published 1626)

The brushes of Jing & Guan were extremely tough, with no possibility to change anything after the completion

From Lan Ying(1585-1664), *Die sou ti shanshui hua*(蝶叟题山水画).

[table 1]：Historic texts on the painting style of Jing Hao and GuanTong in and before Ming Dynasty

Firstly, from the literary records presented above, we could see the tendency that Jing Hao and Guan Tong were gradually regarded under one common style in Late Ming period. Though in before, quite a lot of texts all made the special mentions about Guan Tong's beginning of his career as a pupil of Jing Hao, these two masters were always described as independent painters with both similarities and differences in styles. However, it was in Ming Dynasty, did the term 'brushes of Jing & Guan' begin to be used as a common idea widely .

Secondly, regarding the specific formal characteristics of these two painters, it was very frequently that the subsequent records just made from early texts. Hence, we could just summarize all the synonyms from these literary sources to conclude the very meaning of 'brushes of Jing & Guan' in Late Ming: the paintings should be mainly about the autumn or winter scenery with tough brush traces. The compositions were always under careful balance between host and guest mountains, the peaks should be sharp and lofty among clouds, with steep and thick rocks in four sides. Trees were cold and bare, with simple and tough branches. Besides, there would also be some embellished architectural elements such as hidden pavilions, rustic hamlets and dangerous fords. These formal characteristics recorded in historic texts were mostly about the themes and compositions of the paintings of Jing Hao and Guan Tong, which would exactly be complementary to the first source, the works of Ni Zan. From these two sources, an integrated picture of 'Jing & Guan' could be possibly imagined and studied by Ji Cheng and others in Late Ming.

It should be worth referring here one book, *Gu shi hua pu*(Mater Gu's Pictorial Album), consists of printed illustrations of paintings of 106 famous masters in different dynasties. The book was firstly published in Hangzhou in 1603, when Ji Cheng was in his 21 years old, though we had no evidence to

prove that Ji Cheng might have ever read this book. In fact, by examining *Gu shi hua pu*'s mode of producing images and meanings, we may, to a certain extent, finally understand the Ji Cheng's creation of 'brushes of Jing & Guan'.

The author of *Gu shi hua pu*, Gu Bing, was selected for service as a painter in royal court in 1599. Besides that, very little is known about his life including his birth and death date. In the preface, Quan Tianxu explained Gu's intention of editing this book: '(nowdays) as beginners in painting, they seldom had the opportunity to study the genuine works of ancient masters, as a result of which, they were misled to a wrong way. So, my friend Gu Bing made his efforts to edit this book with the purpose to safeguard the unwary against forgeries, to set up good examples and typical principles(画家初学者，益鲜窥古作者之真，而日堕恶道，于是焉有复古救时之虑者,为之象其模范而设其典刑,此吾友顾炳氏画谱所由辑也).' [20] This reveals that this book was purposed to provide some kind of authorized ancient examples for those painting beginners. In chronological order, the album presented totally 106 masters, from Gu Kaizhi（348?-405）in Eastern Jin Dynasty to the author's contemporaries, such as Dong Qichang. There was one image and one biographical text for each painter, including the illustrations of Jing Hao, Guan Tong and Ni Zan[fig 5].

Yet, the striking feature of this book was that, actually all its texts referred to pre-Ming painters were copied from another book by Xia Wenyan in Yuan Dynasty, the *Tu hui bao jian* (The Precious Mirror of Painting, preface dated 1365). And most images in *Gu shi hua pu* , actually unlike what was emphasized in its preface, were represented upon no recognized original paintings. Since very few of these claimed rigorous copies of famous masters carried inscriptions, seals or signatures, which always should be fundamental to examine the authenticity of Chinese traditional paintings. Besides, just like what we have discussed at the beginning of this paper, the genuine works of Gu Kaizhi, Lu Tanwei (d.c.485), including Jing Hao and Guan Tong were extremely inaccessible (or even not survived already) in Late Ming period. This urges us to suspect, what Gu Bing really did, recreating kind of disappeared paintings of ancient artists, could be really similar to that of Ji Cheng's.

[Fig.5]: The image and biographical text for Jing Hao(left) and Guan Tong (right) in *Gu shi hua pu.*

Considering the widely existed painting practice by imitating after ancient styles in that time, the difference between these activities and that of Gu Bing's should be especially emphasized here. In fact,

for the former, what they did was still a kind of artistic creation, even though they studied the styles of famous masters carefully, they wouldn't obey them completely, just as the features showed in the illustrations of [fig. 1]and [fig. 4]. While the core of Gu's intention was to make his represented images, without the help of inscriptions and seals, more easily recognized and believed by readers. In this sense, comparing to other painters' imitations for 'Jing & Guan', the intentions and manners of making illustrations in *Gu shi hua pu* should be much more closely to Ji Cheng's way.

Actually, the formal characteristics of the illustrations of Jing Hao and Guan Tong in *Gu shi hua pu* could be corresponded to, not only the album's texts quoted from *Tu hui bao jian*, but also to the numerous literary records from ancient dynasties to Late Ming, as those texts collected in [table. 1]. Take the Jing Hao's image for example[fig. 5], in which the host peak was quite sharp and lofty comparing to the guest peak, and in order to respond to the 'steep and thick rocks in four sides', a huge mass of rock was deliberately overhanging on the hilltop, with clouds floating between the mountains, pavilions hidden among cold pine trees… As we can see from this picture, what Gu Bing really did was to illustrate and highlight those most representative formal features recorded in historic texts which also should have been very familiar to Ji cheng and traditional scholars.

However, just like what we discussed above, the main concern of these historic texts was on the painting themes and compositions, and regarding the limits of wooden cut prints, the specific brushstrokes represented in this book were not so accurate. Such as the brushstroke in Jing Hao's illustration was more close to the 'Yundian cun'(雨点皴, brushstrokes like raindrops) attributed to Fan Kuan(950-1027), that of Ni Zan's was more similar with the 'Pima cun'(披麻皴 brushstrokes like twigs) attributed to Huang Gongwang. In fact, realizing this would make us full of expectations for Ji Cheng's representation of the painterly effects of 'Jing & Guan' through garden making. We can't help asking that, compared with the media of wooden print, to what extent can a painting style be projected into an actual three-dimensional garden?

While before we go on to search for an answer to this question, we shouldn't forget that Ji Cheng was also a painter(at least as he claimed so).The poem named *on the painting of Jingshan pavilion in Wang's Garden*, by Cao Yuanfu, was believed to be written on a landscape painting of the Wu Garden's scenery in the style of Jing Hao. According to Cao Xun's research, this painting, 'should be drawn by Ji Cheng, and was also one of the design drawings for Wang's garden' [21]. Interestingly, this poem by Cao Yuanfu on Ji Cheng's painting, *Split yellow rock to form the mountain, Set dangerous pass(or valley) along the spring*, could be also finely corresponded to the illustration of Jing Hao *in Gu shi hua pu*[fig. 5]. But this is not to say that Ji Cheng might have read or studied Gu Bing's book. Conversely, the more the independent of these two, the resemblance of their recreated images could be more convincing as a proof, that in the period of Late Ming, Ji Cheng, Cao Yuanfu, Gu Bing, Quan Tianxu and so on, shared one common system of knowledge about the formal styles of ancient painters, such as Jing Hao and Guan Tong. This shared knowledge would enable them to evoke a common imagination on the style of one specific master, even though the master's original paintings have already been lost or not reliable(without inscriptions or seals). Then, could this mode of pictorial representation be equally effective in gardens?

The possibility of the painterly effects of 'Jing & Guan' in Wu Garden

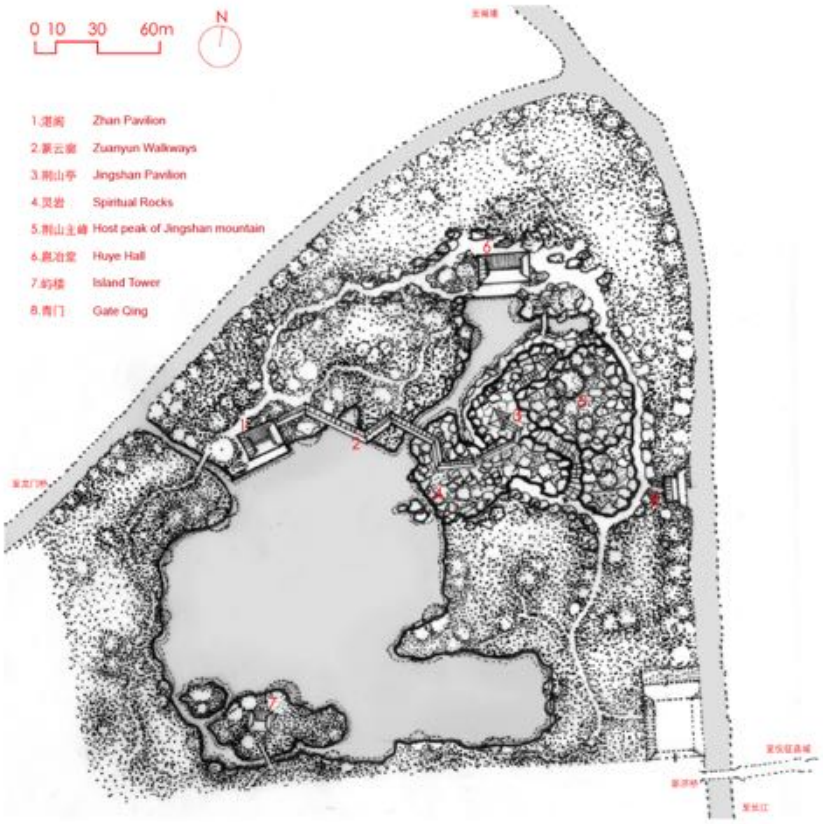
According to Ji Cheng and Cao Yuanfu, the Wu Garden would be the perfect case in discussing the application of pictorial style of 'Jing & Guan' in garden making. But unfortunately, this famous garden in Late Ming period didn't exist anymore, neither did any drawings or paintings. Based on the previous studies and a newly discovered aerial photo in 1960s, we could roughly confirm an area as the probable historic site of Wu Garden in the southwest of Yizhen old city [fig. 6]. However, without any further archeological information, we could only discuss the possibility of Wu garden's pictorial use of 'Jing & Guan' upon some restoration imagination based on the historic texts and several existing Chinses classical gardens [fig. 7].

Interestingly, if the representation mode of the painting style of 'Jing & Guan' we discussed above was convincing, then there might be some other styles besides the 'brushes of Jing & Guan' applied in Wu Garden's design. According to totally 12 poems concerning Wu Garden by Ruan Dacheng(1587-1646)[22], the sponsor of the publishing of *Yuanye* and also a friend of Wang Shiheng, we know the Zhan Pavilion was one of the main buildings in Wu Garden. After the death of Wang Shiheng, Ruan wrote two poems named *Mourning Wang Shiheng in Zhan Pavilion*(坐湛阁感忆汪士衡中翰), including sentences as, 'Wild goose lined on the sunny riverside, dark crows stopped on the frozen branches. How could I control my emotion of sadness? To step into the crowds of reeds. (晴浦列遥雁，霜枝领暮鸦。寒情何可束，开步入蒹葭)', and 'From the spring lake's thousand feet deep water, I saw your heart with a pure spirit (千尺春潭水，于君见素心……何堪沙浦上，啧啧听寒禽) .' These poems described the environment around Zhan pavilion as a wide open lake[23], what was quite different from the typical formal

[Fig.6]: The probable historic site of Wu Garden in city of Yizheng.

characteristics of 'Jing & Guan' lofty peaks with winding waters. This furtherly, revealed that the scenery of the style of 'Jing & Guan' was just a part of the garden, most probably around the area with

artificial mountains. At least one another kind of style was applied to the area with Zhan pavilion and a big lake. Though we didn't know if this sort of 'collection of styles' was a common phenomenon in



Late Ming's garden making, at least, the Wu Garden should not be an isolated case.

[Fig.7]: The restorative imagination of the plan of Wu Garden

Considering the principal differences between painting and garden, the following discussion will focus on two aspects: the physical material and the three-dimensional construction, to examine the possibility of the application of artistic style of 'Jing & Guan' in Wu garden, especially in the artificial mountains.

Firstly concerning the material, the artificial mountain in Wu garden was made of yellow rocks, as Cao Yuanfu's poem had revealed. Ji Cheng expressed a special affection of yellow rocks in *Yuanye*. 'Yellow rocks are obtainable all over the place. Their texture is firm and does not admit the adze or chisel, and the striations in the stone are rough and coarse, …Vulgar people are aware only of their hefty appearance but not their subtle attraction(石是处皆产，其质坚，不入斧凿，其文古拙。……俗人只知顽夯，而不知奇妙也).'[24] In Ji's opinion, the yellow rock was a kind of economic material for raising mountains, what was produced almost all regions along the Yangzi River. He believed the yellow rocks with rough texture, which made them unpopular in the garden making during his time, actually had the 'subtle attraction'. In another statement, Ji pointed out the exact meaning of 'subtle attraction' was the yellow rocks' adaptation for achieving painterly effects. 'From ancient times, the rocks from the Lake Tai have been most famous; other than these, amateurs of landscape only knew

the name of the 'patterned rocks.' Nowdays people simply choose rocks from paintings, what does the ignorant multitude know of the beauty of yellow rocks mountain? Which could imitate the work of Ni Zan in the small-scale, or honor the style of Huang Gongwang in the large-scale(古胜太湖，好事只知花石；时遵图画，匪人焉识黄山。小仿云林，大宗子久。块虽顽夯，峻更嶙峋，是石堪堆，便山可采).'[25] Obviously, to Ji Cheng, the characteristics of yellow rocks- firm, rough and coarse, along with his attitude against the old tradition of the use of 'patterned rocks', remind us strongly of the scholar meaning and formal style of Ni Zan's 'brushes of Jing & Guan'.

In fact, the edges and texture of yellow rocks was quite similar to Ni Zan's representative 'Zhedai cun', as showed in '*The Lion Forest Garden illustration*' [fig 3][fig 8]. This pushed us to believe that Ji Cheng's choice of yellow rocks as the fundamental elements for mountains in 'Jing & Guan' style was a result of thoroughly consideration, which means in the process of the selection of rocks, the physical material had already been attached with meaning of specific artistic style. 'Raising mountains by rocks should follow the style of brushstrokes(依皴合掇)', which means the specific painter's style should not only be decided before raising mountains, but also be kept and stressed through the whole construction. Apparently, to Ji Cheng, what the style of yellow rocks corresponding to was that of Ni Zan, and the 'brushes of Jing & Guan'.

As to the second aspect concerning the three-dimensional construction of artificial mountains, it would be more about the themes and compositions, rather than brushstrokes of 'Jing & Guan'. We can try to imagine those specific characteristics that can recall the style of 'Jing & Guan' among scholars, such as 'careful balance between host and guest peaks', 'steep and thick rocks on the top of mountains' ,'cold and bare trees' and so on. But as one kind of space construction related to painterly effects, a more significant question would be that, just as the picturesque idea in Western tradition, did a specific viewpoint needed to be arranged at the same time? Thus, some other perspectives that didn't have so much artistic feelings would be excluded by the limitation of sight, which could be achieved by using a window as the painting frame, or a wall as the background paper. Practically, these two approaches were both mentioned in *Yuanye*,

[Fig 8]:The artificial mountains made of yellow rocks in Ou Garden, Suzhou

Shadowy temples should appear through round window, like a painting by Xiao Li(Li Zhaodao). Lofty summits should be heaped up from rocks cut to look as if they were painted with slash strokes, uneven like the paintings of Da Chi(Huang Gongwang) on the half of a wall(刹宇隐环窗，彷佛片图小李；岩峦堆劈石，参差半壁大痴). [26]

What are known as precipitous mountains are built up against walls, so that the white washed surface acts as paper and the rock as the painting upon it. The designer should follow the natural cracks in the stone, imitating the brushwork of the old masters. The rocks should be planted with pines from

Huangshan, ancient plum trees and fine bamboo. Looking at this scene through a round window is just like seeing scenery reflected in a mirror(峭壁山者，靠壁理也。借以粉壁为纸，以石为绘也。理者相石皴纹，仿古人笔意，植黄山松柏、古梅、美竹，收之圆窗，宛然镜游也). [27]

These were the most direct discussions on the relationship between painting and garden making by Ji Cheng, in which the window and the wall played as principal roles in the pictorial construction. This, undoubtedly, should be quite popular in garden practice with painterly-idea pursuit around Late Ming.

However, as a way to limit the viewer's perception in real space, making the three- dimensional scene collapsed into a two-dimensional painting, would also be a way that only suitable for a static formal appreciation. While the artificial mountain in Wu Garden was complicated with walkways(named Zuanyun) to climb through, with a pavilion(named Jingshan) on top to stay in, and with caves and springs to experience. Just as the poem by Ruan Dacheng -'from the corner of Gate Qing to look for poetic scenery, dark cliffs and winding streams appear one after another(因寻胜概青门隈，阴厓曲沼参差开) ' [28], which evoked the question that would it be possible to capture and hold the artistic appreciation of the painting style of 'Jing & Guan', throughout the dynamic and plentiful experience of this artificial mountain?

In the circumstance of no survival of Wu garden, any answer to this question should be inaccurate. Yet if we consider the artificial mountain in gardens as one kind of media capable of delivering special artistic meanings, just like the medias of painting or wooden cut prints, we may be able to examine its possibility and capability by some necessary restoration and imagination of the Jingshan mountain in Wu Garden.

Our imagination of Jingshan mountain could start from the *Painting of Jingshan pavilion in Wang's Garden*[fig. 9], based on the historic records of 'Jing & Guan' and illustrations from *Gu shi hua pu*. And this artificial mountain, according to what had been discussed above and some survived garden mountains made of yellow rocks, should at least have theses formal elements as *peaks, overhanging cliffs*, *caves* and *mountain torrents*[fig. 10]. There would be several different routes for experiencing this mountain. From south meandering through the cliffs, as Ji Cheng said in *Yuanye*, 'caves and fissures may be concealed within the mountain, you can run right through the cliffs or lead down to the water(洞穴潜藏，穿岩径水)'[29]. Or you can start from Zhan pavilion to east, along the Zuanyun walkways to arrive at half of the mountain, then across the cliff to get to the Jingshan pavilion, where you may see 'the shimmering mountain tops let the moonlight gather through the clouds(峰峦飘渺)'[30]. Yet from a distance, enjoying the scenery of 'spiritual rocks dazing alongside peaceful water(灵岩傍水含) '[31], as described in a poem by Li Zhan of Yi Zhen in Late Ming period, is also a good choice.

Frankly speaking, if we just pass through the mountain in one time, it will be quite difficult to appreciate the pictorial effects of 'Jing & Guan', which may also be the reason for Ruan Dacheng's silence in Ji Cheng's painterly pursuit in Wu garden. However, just as we have discussed above, the appreciation and imagination of some kind of ancient painting styles rely on the art knowledges shared

among scholars, in which process no exact unique illustration actually exist. So, although it would be quite easier to recall the imagination of painting by setting the scenery like a stage, there also should be possible that, in the dynamic experience of the artificial mountain, some formal characteristics were captured and recognized one by one, as the yellow rocks may remind us of the works in Ni Zan's manner. Then at some special point, these accumulated perceptions just strongly stimulate your imagination of a specific painter's style or the special kind of symbolic meaning behind it. This is what Ji Cheng said around the end of *Yuanye*, 'Your thoughts will travel beyond the confines of this word of dust, and you will feel as though you were wandering within a painting(顿开尘外想，拟入画中行)'[32]. We have to admit that obtaining this imagination would be indeed a very personal experience, but if what you got in thought could be recognized by others through the common system of knowledge of art history, the construction of the pictorial effects in gardens, like the style of 'Jing & Guan' in Wu garden's artificial mountain, should be considered as a success.

Furtherly, we can summarize that the appreciation of painterly style and the dynamic traveling of gardens have actually merged into one. The artistic experience of a garden as a mix of the real objects and the caused imaginations, finally becomes quite comparable to the traditional scholar's artistic appreciation of poems and paintings. So, by examining Ji Cheng's representation mode of the style of 'Jing & Guan' in Wu garden, in the background of a common emphasis on the application of painterly style in Late Ming gardens, it reveals such a strong tendency to turn the appreciation and making of 'gardens' into one kind of decent scholar art.

(Left)[Fig.9]: The restorative imagination of *The Painting of Jingshan Pavilion* in Wang's Garden(Wu Garden).

(Right)[Fig.10]: The restorative imagination of the artificial mountain in Wu Garden

Conclusion

In conclusion if necessary, to Ji Cheng, there have been three meanings of the pictorial effects of 'Jing & Guan' in his practice in Wu garden. The first concerns one special scholar meaning, such as 'flexible, and maverick', formed by the practices and interpretations of 'brushes of Jing & Guan' from Ni Zan , Dong Qichang and so on. Ji Cheng borrowed this meaning to constitute the professional characters of a 'master' or 'garden designer' (different from normal craftsman) in his time. Secondly, as one lost painting style, appreciation for the 'Jing & Guan' was kind of collective imagination based on literati knowledges shared among scholars in Late Ming period. In which process, the most principle thing was to highlight the recognized formal characteristics of 'Jing & Guan', such as the brushstroke, compositions or themes, rather than providing relevant inscriptions or seals. Last but not the least, when this representation mode was applied into garden making by Ji Cheng, the yellow rocks were chosen as the physical material, because their edges and texture were quite similar to the painters' brushstroke style, which should be kept and stressed through the construction of raising mountains. Furtherly, as a kind of three-dimensional space construction, the painterly pursuit of artificial mountain in Wu Garden was not only a static stage-set scenery, but also a dynamic experience, in which, with the formal characteristics appeared gradually, the imagination of 'wandering within a painting', the appreciation of the specific style and the meaning of 'Jing & Guan' were strongly stimulated at some point.

Finally, research on the painterly effects of 'Jing & Guan' in Ji Cheng's garden theory and practice, has showed us a new perspective on the significance of the 16th garden book, *Yuan ye*, which was not only a summary of the garden practices in Late Ming, but also a strong expression of Ji Cheng's own theoretical intention— he tried to constitute the professional characters of 'gardening' and 'garden designer', and he also dedicated his efforts to build a connection between the knowledge of 'garden' and 'scholar arts'. So, to a certain degree, we could regard Ji Cheng and his *Yuanye* not just as a 'result' of the development of scholar gardens in Late Ming, but also as an 'outset' for garden as one kind of scholar art in traditional China.

NOTES：

[1].Gu Kai.Study on Gardens of Jiangnan Area in Ming Dynasty: Garden Idea and Gardening Practice. Jiangsu:Southeast University, 2008: 283.

[2].Ji Cheng; annotated by Cheng Zhi.Yuanye Zhushi 2nd Edition. Beijing : China Architecture Publishing & Media Co., Ltd. 1988：2. For a complete translation, see Cheng, J., A. Hardie, Z. Ming and M. Keswick. The Craft of Gardens: The Classic Chinese Text on Garden Design: Shanghai Press, 2012.

[3]. Ibid.

[4]. Cao Lvji，Bo Wang Shan Ren Gao，Vol. 4

[5]. Besides Jing Hao and Guan Tong in five dynasties, Dong Yuan and Ju Ran were also painters in this period. Li Cheng（919-967?）was active in the early Song Dynasty. See Dong Qichang. Hua Chan Shi Suibi. Vol. 2.page 12. Qin Ding Si Ku Quan Shu· Zi Bu.

[6]. Lan Ying， Diesou Ti Shanshui Hua, in Yu Jianhua ed.Zhongguo Gudai Hualun Leibian .Beijing：Renming meishu chubanshe.2004：780.

[7]. Zhang Zhao ed.Shi Qu Bao Ji. Vol. 38. Qinding Siku Quanshu. Zi bu.

[8]. Cao Lvji, Bo Wang Shan Ren Gao, Vol. 6.

[9]. The Four Masters of the Yuan Dynasty usually include Huang Gongwang(1269-1354), Wu Zhen(1280-1354), Ni Zan(1301-1374), Wang Meng(1308-1385).

[10]. He Liangjun. Si You Zhai Congshuo. Beijing：Zhonghua Book Company，1959：263.

[11]. Mo's comments was cited by Bao Yan Tang Miji, Chen Jiru ed.，published firstly in 1606.

[12]. Dong Qichang. Hua Chan Shi Suibi. Vol. 2. Qin Ding Si Ku Quan Shu·Zi Bu.

[13].Ibid

[14]. Ji Cheng ； annotated by Cheng Zhi.Yuanye Zhushi 2nd Edition.Beijing：China Architecture Publishing & Media Co., Ltd.1988：47.

[15]. Several letters, such as 'reply to Dong Qichang'、'to Chen Meigong', all suggested a close connection between Cao Yuanfu and Dong Qichang. See Cao Lvji，Bo Wang Shan Ren Gao，Vol. 18。

[16]. Xu Qin ed. Ming Hua Lu.Beijing：Zhonghua Book Company.1985: 41.

[17]. Bian Yongyu，Shuhua Hui Kao，Vol. 31，page 42. Qin Ding Si Ku Quan Shu, Zi Bu.

[18]. Bian Yongyu，Shuhua Hui Kao，Vol. 61，page 11。Qin Ding Si Ku Quan Shu, Zi Bu.

[19]. Gu Gong Shuhua Tulu, 2nd edition, Taibei：National Palace Museum, 1997: 58.

[20]. Gu Bin, Gu Shi Hua Pu. Beijing: Wenwu Chubanshe. 1983.

[21]. Cao Xun, Ji Cheng Yanjiu——Wei Jinian Ji Cheng dansheng sibai zhounian er zuo. The Architect. 1982(12).1-16.

[22]. See Ruan Dacheng，Yonghuaitang Shiji. Published by National Central University, 1928.

[23]. There even was an island in this lake before Zhan Pavilion. See Ruan Dacheng, Yonghuaitang Shiji. Published by National Central University, 1928.

[24]. Ji Cheng ； annotated by Cheng Zhi.Yuanye Zhushi 2nd Edition. Beijing: China Architecture Publishing & Media Co., Ltd. 1988：237.

[25]. Ibid. 223.

[26]. Ibid. 51.

[27]. Ibid. 213.

[28]. The poem named 'Meeting with Li Yanke, Zhou Gongmu, Liu Erjin, Zhang Sunzhi, Ye Rutao, Liu Huiyu,Zong Bai in Wu Garden during Late Autumn'， See Ruan Dacheng，Yonghuaitang Shiji. Vol.2, Published by National Central University, 1928.

[29]. Ji Cheng ； annotated by Cheng Zhi. Yuanye Zhushi 2nd Edition. Beijing：China Architecture Publishing & Media Co., Ltd.1988：212.

[30]. Ibid.

[31]. See Hu Chonglun, ed. Kangxi YiZhen Xian Zhi. 1668.

[32]. Ji Cheng ； annotated by Cheng Zhi. Yuanye Zhushi. 2nd Edition. Beijing：China Architecture Publishing & Media Co., Ltd.1988: 243.

URBAN PLANNING AND URBAN STRUCTURE IN LATE OTTOMAN PALESTINE

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ABSTRACT

The Ottomans stayed in Palestine around 400 years characterized by great changes and developments. They significantly impinged the life of the Palestinians with numerous effects from language to the urban style and architecture. The Ottoman government controls depended upon the Islamic law and included several regulations for the built environment and the urban structure. The main government systems that included such laws and regulations are the administrative, judicial and land systems. This article depends on historical research to dig through these systems in order to explore the different controls they used over the Palestinian urban structures and to what extent did they established a comprehensive framework for the control and management of urban structures in Palestine. It was discovered that these systems did not establish such a framework which also did not exist outside the Ottoman Empire. Never the less, the dependance of these systems on Islamic laws provided them a unique and distinguished mechanisms that did not exist in other non-Ottoman systems. They also are considered significant developments in Islamic government systems and contributed positively to the development of Palestinian urban structures.

KEYWORDS: Urban Planning, System, Urban Structure, Ottoman, Palestine

INTRODUCTION

This research aims at exploring the Ottoman urban planning system in Palestine from the late 19th century to 1918 and its effects on the urban structure in Palestine which includes the structures of Palestinian cities, towns and villages. Since a comprehensive urban planning system did not exist in Ottoman Palestine, the concern here is to explore the different means by which the Ottoman authorities influenced the development and growth of the Palestinian urban structure. These means were mainly included in the Ottoman municipal and statutory regulations which exerted some control over the construction and alignment of buildings and roads (Goadby and Daukhan, 1991). Since 1877, some Palestinian municipalities had some powers to control the construction of buildings and streets, and to expropriate land for public use. There also were several special regulations for the construction and alignment of roads like those of 1868 and 1891 (Goadby and Daukhan, 1991). Some scholars pretends that such regulations never existed (Biger., 1984). Others argue that several systems were affecting the development of the Palestinian urban structure (El –Nahal, 1979). These systems were the administrative, judicial and fiscal systems. Within the interrelationships between these three systems, the land system had special importance (Biger., 1984).

This article uses historical research in an attempt to understand the general systems of the Ottoman Empire which had affected the Palestinian urban structures. The administrative system maintained the Ottoman supremacy over their territories. The main feature of this control which had direct relevance to the control of the Palestinian urban structure was the administrative hierarchy. At the same time the, Ottoman judicial system dealt with all aspects of everyday life of the community including the mediation of the urban change and resolving the conflicts over the use of land. The Ottoman Civil Code was one of the most important judicial tools affected all aspects of the everyday life in the Palestine including land use and development.

The Ottoman land system, on the other hand, constituted a very important factor of control and change in the Palestinian cities, towns and villages (Granott, 1952; Arraf, 1986).

OTTOMAN ADMINISTRATIVE SYSTEM

By the mid nineteenth century the Ottoman provincial administration system was in effect in Palestine (Figure 1), and it consisted of the following elements (Turkish terms are used in *Italic*. Arabic terms are used in *Italic* between [ ] for first time only and if they are different than the Turkish terms. Chicago transliteration style is followed):

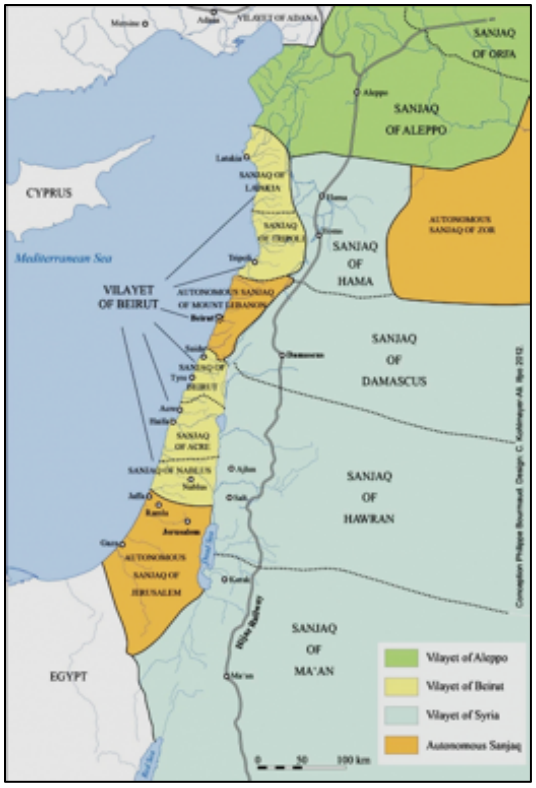

Figure 1: *Ottoman administrative division in 1914*
Source: *Neveu, 2013.*

Vilayet or Eyalet [wilayah] **(province)**

A basic administrative division in Ottoman Empire since 1861. It was governed by a *Vali [wali]* (general governor)

The *Vali* who directly subordinated the Minister of the Interior in Istanbul, and he was empowered to appoint several officers and to establish a Provincial Administrative Council (Al-Dabbag, 1982).

Vilayet Meclis i Umumi [Majlis al-wilayah al-omomi] **(Provincial General Assembly)**

The provincial Administration Law, 1871 introduced the establishment of Provincial General Assemblies in the provinces (Al-Nimir, 1975). The Provincial General Assembly met in the provincial center every year to discuss a wide range of issues including plans for development projects such as roads and public buildings, ways of developing trade, industry, agriculture, education, the purchase of land for public use and any other issues suggested by the General Governor or the Sublime Porte (Findley, 1986).

Sancak [Liwa] **(county)**

Each province was divided into counties. Each county was governed by a *Mutasarrif* (Lieutenant governor) who subordinated the General Governor of his province (Al-Nimir, 1975).

Kaza [Kada] **(district)**

Counties consisted of districts with a *Kaimakam* (Lieutenant colonel) governing each district. The *Kaimakam* subordinated the *Mutasarrif* yet there was no administrative council in the district (Findley, 1986).

Nahiye [Nahiyah] **(subdistrict)**

The district was divided into subdistricts each was governed by a *Müdür [Modir]* (director) who was normally appointed by the *Kaimakam*. He was responsible for observing order and security in his sub-district, looking into the needs of the population, safeguarding tax collection and keeping roads safe and convenient (Findley, 1986).

***Belediye [Baladiyah]* (municipality)**

The provincial Administration Law, 1867 introduced the establishment of municipal councils in the main towns. A municipal council was established in Nablus in 1868 (Al-Nimir, 1975). The municipalities were separate and independent judicial bodies which were considered one of the revolutionary developments within the traditional system of the Ottoman administration.

***Köy [Karyah]* (village)**

The sub-districts were divided into smaller echelons of administrative divisions. These were villages, hamlets and farms. Each was governed by its own chief. To control these chiefs, the Ottoman authorities appointed a government-supervisor called *Muhtar [Mukhtar]* (Gerber, 1986).

***Mahalle [Mahallah]* (quarter or neighborhood)**

The Provincial Administration Law, 1887 divided towns and cities into neighborhoods. The neighborhood should contain at least fifty houses and it had the administrative level of a village (Findley, 1986). Each neighborhood had its own *Muhtar* or chief and its own services like small shops, a mosque and a bath (El –Nahal, 1979).

The administration of Palestinian towns and villages continued to develop on its own path until the provincial administration law of 1913 which altered some of the above regulations. It insisted that all public projects like roads, drainage works, irrigation canals, tram and bus lanes in the towns and cities should be the responsibility of the *Vali*. This responsibility also included lighting and water projects, the development of agriculture, trade and industry, and the establishment of public institutions (Findley , 1986).

OTTOMAN ADMINISTRATIVE SYSTEM AND THE PALESTINIAN URBAN STRUCTURE

The provincial administration was influential through the building of government buildings, mosques, clocktowers, public parks and fountains (Kark, 1986). Although the Ottoman administrative system has its own hierarchy, it did not form any hierarchical institutional framework for the control and management of the urban structures in Palestine. The different components of this system provided general and indirect tools that helped the development of the Palestinian towns and cities in a non-systematic way. The municipality was the only institution directly linked to the control and management of urban change in terms of municipal services but without any pre-determined plans. One example is the dvelopment of Jerusalem from a small town at the turn of the 18th century to a large provincial center by the end of the 19th century. This came as a result of the continuous Ottoman administration decisions and the transformation of it into an independent district (mutaṣṣarıflık) in 1872–74 (Dimitriadis, 2018). During this period, many development plans were prepared as project plans without any comprehensive planning framework. One example is the tram projects proposed for Jaffa and Jerusalem but were excuted (Figure 2).

Figure 2: *Tram project for the suburbs of Jerusalem.*
Source: *Dimitriadis, 2018.*

Another example is the dvelopment of te Bosian quarter in the town of Caesarea at the mediterrainian shores north of Palestine. The central government in Istanbul ordered the allotment of the land and the building of the quarter and its services like a mosque, caravansary and the house of the Bosnian governor. A plan was prepared in 1888 for it (Figure 3).

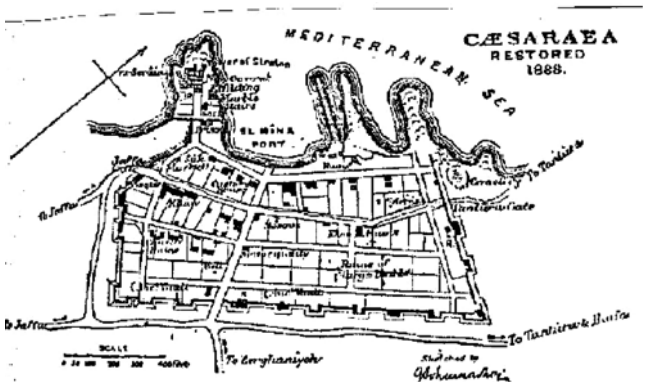

Figure 3: *Ottoman administrative division in 1914*
Source: *Bıger, 2013.*

Ottoman judicial system

The Ottoman Empire was an Islamic Caliphate where the whole system of the Empire was based on the *Şeriat (*Eisenman, 1979). During the second half of the 19th century and with the growth of the reform movement, the kanun increasingly began to play a more important role. *Nizamiye mahkemeleri [Mahakim nithamiyah]* (civil courts) were introduced in 1864 and the *Mecelle-i Ahkâm-ı Adliyye [Majallato al-ahkam al-adliyah]* (the Ottoman Civil Code) appeared afterwards (Findley, 1986).

Mecelle-i Ahkâm-ı Adliyye [Majallato al-ahkam al-adliyah] (Ottoman Civil Code- Mecelle hereinafter)

Although the Islamic legislations concerning the built environment are numerous, they are still generally distributed within the books of *Şeriat*. A good account of this legislation is provided by Hakim (1986) and Salagoor (1990). The first attempt to codify the *Şeriat* was the *Mecelle* which appeared in 1869 as a response to the establishment of civil courts. It was intended to be a reference for the judges of these courts who had less knowledge of the Islamic *Şeriat* and Arabic language. The *Mecelle* is

considered “a legislative milestone” which was the first to undertake the codifying of pure Islamic law (Eisenman, 1986).

The *Mecelle* as an instrument for control and development of Palestinian urban structure:

The main book of the *Mecelle* relating to the built environment is the book of *Şirket Ortaklık Kitabı [Kitabo al-sherikat]* (Company Partnership Book) (Salagoor., 1990). The built environment was included within the division of partnerships because the building process was seen as a partnership between people in light, air and land. The main concepts of *Şeriat* relating to the built environment and considered by articles of the *Mecelle* are briefly listed below (Salagoor., 1990).

***The harm**:* The concept of not to cause harm nor to reciprocate harm is a fundamental rule of Şeriat which aims at maintaining the satisfaction and justice within the Moslem community (art. 19). In the built environment, this rule means that no private or public development should cause harm, either to public or private interests and if any harm results in, it should be removed (art. 20).

The Old: In the built environment, this concept means that existing conditions should be left unchanged unless they cause harm (arts. 6 and 7).

Ownership: Every owner of a property also owns what is above and beneath it, and he has the right to act freely in his property. Yet this action should not cause any harm to others, either on the property or adjacent to it. If any harm is caused, the owner should resolve any disputes with the parties (private or public) which are affected. If no agreement is reached, either the harm should be removed or the action should be prevented (arts. 1192, 1194, 1197).

Neighboring rights: Observing the rights of neighbors is an important Islamic conduct. Although the general rule of harm governs the behavior towards neighbors, the Mecelle allocates several points which control neighboring behavior affecting the built environment.

These points include:

Height of development: Every person has the right to raise his building and a wall around or on the top of a building according to his needs as far as no harm will be inflicted on the neighbors.

Usage of development: Every person has the right to use his development in the way which satisfies his needs. However, he could be prevented from so doing if an enormous harm affects the privacy of others, the safety of the building or quality of the surrounding environment.

Private and public roads: The *Mecelle* differentiated between public roads which are thoroughfare roads and private roads which are cul-de-sac lanes or alleyways serving certain groups of people and houses. The private cul-de-sac road is a joint property of the people who live around it. No one can construct anything in it without the permission of other holders. Yet closing the mouth of such a road is prohibited even if all the holders agree upon it. The person who has a wall on a private road but not the right to pass through it has no right to open a door onto the road (arts. 1119-1120). Every person has the right to use the public road as long as he does not cause harm to others. Yet certain uses like opening a door onto the public road or selling and purchasing in it need the permission of the governor.

From the above articles of the *Mecelle*, it is obvious that they are much more general guidelines than detailed and definite rules. The *Mecelle* did not form a special comprehensive tool of urban planning. It did not connect to a hierarchical institutional framework that has its own regulations and rules. Nor did it formulate any ordained system of regulations for the control of urban change. This does not overlook its importance for the judicial system in Palestine in general and the different general contributions it had for the control of Palestinian urban structure.

OTTOMAN LAND SYSTEM

The Land system which mainly refers to land tenure and distribution is considered one of the main factors affecting urban structure. Granott (1952) denotes that land in the Islamic world has, more than any other place on the earth, attained the situation of a strong conservative religious institution which gave all regulations and laws of land a theocratic form. Land ownership in Islam is part of the general ownership which is "the legal rule established by the lawgiver (Allah) who confirms the ways of acquiring ownership" (Salagoor, 1990). Depending on the general rules of land ownership in Islam, the Ottomans issued in 1856 a special code to regulate for land ownership and development in the Empire.

1858 Osmanlı Arazi Kanunnâmesi [Kanon al-aradi al-othmani 1858] (Ottoman Land Code, 1856)

The Land Code aimed at reorganizing the ownership of Land and redistributing it in order to produce more effective use and better revenues. The Land Code classified land ownership into several types, the main of which are the following five types (Stein, 1984):

Mulk Arazi [Aradi mulk] (freehold ownership land)

This type mainly existed in the built-up areas and the green land on their fringes. After the Land Code, the Ottomans began to give title deeds of full freehold ownership for this type of land.

Mîri Arazi [Aradi amiriyah] (Government ownership land)

This land was not owned by a title deed but rather by a usufruct which enabled the holder to use the land and benefit from it while its ownership was retained by the state. The holder was to pay for the title of this land but at the same time, he was prevented from using the soils of such land for non-agricultural purposes. *Miri* land mostly constituted the open agricultural land beyond the fringes of the villages and towns. The Land Code aimed at preserving the agricultural land and maintaining its produce.

Vakif Arazi [Aradi wakf] (Endowment land)

This type refers to "an estate donated to provide revenues for a beneficent or pious purpose within the Moslem community and aside perpetuity (usually for a family and its heirs) which was regarded as inalienable " (Khalidi., 1992).

Mevat Arazi [Aradi mawat] (dead land)

This land represented those parts of *miri* land which were unsettled, unused and had no title deeds. It was possible to give such land a title (e.g., to make it *mulk* land) by paying its existing value. This provided for the expansion of many villages and towns either in their built-up areas or agricultural land.

Metruk Arazi [Aradi matrokah] (derelict land)

This land mainly constituted lands which were left for public use like roads, public spaces, worship areas, common pasture lands and common woodlands. The ownership of such land was only in the hands of the state which prevented the transfer of ownership of such land.

Ottoman Land Code as an instrument for the control of Palestinian urban structure

Several points in the Land Code generally referred to the control of the built environment. They are explored down here in order to understand the effects of this code on Palestinian urban structure (Makam, 2021).

Art. 12 insisted that nobody could use the soil of his land for making bricks and tiles without the consent of the land's *Memur [Mamor]* (director of land).

Art. 28 prohibited the cutting of natural trees in any land.

Art 31 prevented the construction of any new buildings on meri land without the consent of the *Memur* who could order the demolition of the buildings which did not have permission.

Art. 32 determined the nature of the buildings which could be erected on meri land. These buildings included mills, stores, stables and the like for agricultural uses.

Art. 93 insisted that no one could erect any buildings or plant any trees in a public road. If he did, these had to be removed immediately.

Art. 94 insisted that no building could be constructed, nor any trees planted in the open public spaces and outdoor prayer spaces. These spaces together with the public roads were not available for sale or purchase.

Arts. 95, 96 and 97 gave the position described above for the markets, threshing floors and pastures.

Art. 103 restricted the revivification of *Mevat* land for agricultural uses, yet it was ruled out in 1911 that the construction of buildings was also a revival for *Mevat* land. Supervision of the *Memur* was the only means to control this development.

Art. 132 prevented the filling with earth of any part of the sea without the consent of the Sultan.

OTTOMAN LAND SYSTEM AND THE URBAN STRUCTURE OF PALESTINIAN CITIES

Since the mid-19th century, the Ottoman land system was the main factor shaping the urban structure of Palestinian cities, towns and villages (Granott, 1952). Boundaries of the urban structures became identifiable with their urban spatial layouts. By encouraging the people to register their holdings, the individual holdings increased and the general space of the settlement became more divided (Solomonovich and Kark, 2015), (Figure 4).

Adding the inheritance effect to this factor, parcels continued to be divided producing a mosaic like structure.

The Ottoman land system was the only system in Palestine which differentiated between the open land beyond the fringe of the city and other elements of its physical built up areas. It differentiated between *mulk* and miri land. The open land beyond the fringe of the city was classified miri while other elements of the built-up areas occupied *mulk* land.

Although the construction of buildings on miri land was prohibited, the increase in the individual holdings encouraged the expansion of the built-up areas providing more dispersed patterns of the built-up areas (Grossman, 1980). The Ottoman land system in Palestine was the first to recognize the official reservation of roads, open spaces and public squares for the benefit of the public.

Vakif land institution became one of the important tools to supplement the Palestinian urban structure with many building types from mosques to clinics, schools and shelters. It also provided vast green agricultural land the revenue of which is directed to cover the running costs and maintenance of those buildings. In addition, it provided a family represented a family protection tool through the endowment of its land to the benefit of its generation and protecting it from being sliced among them (Dumper, 1992).

Figure 4: *Land divisions in Jaffa in 1878.*
Source: *Solomonovich and Kark, 2015.*

CONCLUSION

the urban planning system in Ottoman Palestine worked through several institutions within the general system of the Ottoman administration. An influential institution which directly related to the urban structures in Palestine was the municipality. Other institutions, from the Sublime Porte to the *muhtar* of the village, influenced the Palestinian urban structure. At the same time, several tools in the form of laws and regulations related indirectly to the control and management of urban change and development in Palestinian cities, towns and villages. The municipal law for example was strongly affecting the Palestinian urban structures. Unfortunately, other tools in the form of maps and plans were not commonly used by the Ottoman administration in Palestine. One important finding shows that the Ottoman systems referred significantly to several elements of the urban spatial structure. Moreover, the neighborhoods were represented in the administrative system as separate independent identities. the roads, built up areas, fringes and open land beyond the fringe all were also recognized by the Ottoman land system. However, these systems could not create a formidable and coherent urban planning framework for control and management of urban change and development in Palestinian urban structures. Finally, these systems provided unique and distinguished urban management and control frameworks that were significantly advanced and theoretically efficient compared with the general trends and attitudes available outside the Ottoman Empire at that time.

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DESIGN TECHNIQUES FOR SCALING DOWN THE VIRTUAL LANDSCAPE OF THE CITY: TOM CLANCY'S THE DIVISION

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ABSTRACT

Most virtual landscape designers try to design vast environments to convey the large-scaled environment's sense to the players; however, designated spaces are more than the players' need. This inefficiency causes spending more time and cost for the digital games' productions. Therefore, this study aims to uncover the used techniques of artists and designers in the game industry. *Tom Clancy's The Division (2016)* is an online multiplayer open-world game metaphor for New York City that the designers tried to invent creative methods to downgrade the urban scale. This research compares the in-game map with the real world's map by using reverse engineering methodology and tries to figure out how designers invented creative methods to downgrade the urban scales. The designers used four techniques in the game to have a smaller environment; deleting specific buildings and streets, merging streets, and using the same building models for various places. Along with this research, virtual landscape designers can develop smaller spaces to seem more extensive, resulting in saving in time and cost. Eventually, with the use of these methods, designers can generate more expressive and impressive virtual landscapes.

KEYWORDS: Virtual landscape design, Level design, Game design, Design techniques

INTRODUCTION

Digital games contain artistic values (Danilo Di Mascio 2021) and have received increasing attention from fields such as architecture and landscape architecture. Several theories, tools, and design techniques have been used to create digital games like Half-Life2 (Valve 2004). However, the field primarily receives technological attention; therefore, it presents a vast research opportunity in design aspects. The design of virtual environments, called level design, is the most significant part of a digital games' creation (Kim, Ikhwan 2018), and many advanced technologies and digital tools help designers develop complex environments similar to the natural environments (Danilo Di Mascio 2021). As a result, the designers spend much time and effort forming the digital games' design part (Danilo Di Mascio 2021). As the topic is vast, this study deals with the 3D representation of the cities in digital games and the techniques used to maximize the efficiency of commercial games for the designers and players. *Tom Clancy's The Division* is a digital game sample that proves how architecture and landscape become significant in the digital game industry. Despite this game's complexity in terms of design and art has not been investigated; therefore, this paper presents a preliminary analysis of the architecture, streetscape, and intersection within New York City. Also, this research topic could help level designers and education because it reveals the techniques for representing the cities in virtual environments that some seniors use as their expertise, and the companies do not expose them to the community.

THE CURRENT LEVEL OF DESIGN IN THE INDUSTRY

In various fields such as painting and cinema, 3D cities have been visualized, and today we can see plenty of virtual cities in digital games (Morris and Hartas 2004). At the same time, due to the player's interaction with the virtual environment and forming emotional bonds, this media's experience is far from other types (Zarzycki, A. 2016). For instance, 3D cities in digital games visualize the architectural and spatial properties close to real-world architecture. Mentioned similarity gives the ability to explore in the virtual environment, stop and look at the details of the environment for as much as the time they desire. Although the goal of each digital game is different, their main goal is to convey joy to the players and immerse them. This issue leads the industry to grow the level of design and increase the virtual landscapes' complexity. However, most of their effort is technologic, such as more realistic graphics and higher fidelity without regard to the artistic part (Kim, Ikhwan 2018). In addition, finding the right balance between learnability and efficiency is crucial; a more realistic representation makes the learning of metaphors easier; however, it prevents efficiency (Dieberger, A., A. U. Frank 1998). This inefficiency in the design part caused the designers to spend much time designing enormous virtual landscapes, leading to increased time and cost-efficiency. Therefore, the industry needs to focus on the intersection between architecture and interaction within the virtual environment (Di Mascio D. 2021).

Currently, the industry's state-of-the-art of level design is limited. Designing a well-developed virtual environment requires much time and effort, and generally, it is considered as a time-consuming task for game designers. Unlike other tasks in digital game design such as user interface design, game rules, sound design, and character design, designing a virtual environment requires careful considerations (Kim, Ikhwan 2018). Although some virtual landscapes in digital games are designed adeptly, they are the outcome of practice and through the experience of many years. So why let game designers practice hard through vast experience? As Kim (2018) mentioned, various techniques in textbooks have been proposed to design virtual landscapes for digital games; however, they mainly focus on technical parts and do not provide practical design techniques to the designers. For instance, Huijser et al. presented a method for designing a natural landscape in a virtual environment; however, it only covers specific types of landforms while early games were small worlds (Darken and Sibert 1993), current games

include large 3D social environments. Since the scientific articles and textbooks cover all aspects of digital game design, the approaches to environmental design are insufficient (Kim, Ikhwan 2018).

Moreover, some researchers such as Danilo Di Mascio analyzed the architectural part and historical aspects of the digital games; however, those researches introduce general information to the designers but not any design techniques. Two factors led to this restriction; firstly, most companies do not have precise techniques and methods, and some seniors use them as their expertise. Secondly, if the company has a specific method or technique, they protect it. Companies do not expose those approaches since they are industrial secrets; therefore, it is tough to collect any helpful reference to this topic.

Due to the mentioned limitations, virtual environment designers use the same techniques as architectural designers due to the close relationship among them (Rotzetter 2019). In *AAA* game companies (is a type of game company with higher-budget digital games produced by a mid-sized or major publisher), designers use real-world techniques and try to copy all aspects of reality (Rotzetter 2019). All the virtual cities in the games contain urban patterns, architectural styles, landmarks, and atmospheres (Di Mascio D. 2017). *The Information City* is a kind of metaphor based on real cities structures' (W. Kuhn & A. U. Frank 1991). As cities are rich environments with which humans have many experiences, it is an excellent source for metaphors. In the real world, architects and landscape architects use spatial properties to make a space seem more extensive than the original scale (Friedman A. 2021). For instance, using well-proportioned street width, the appropriate setback of buildings, the height of buildings, trees, street lamps, and other design features to make vistas and manipulate the peoples' sense of scale (Friedman A. 2021). However, applying all those techniques for developing virtual landscapes need much time and effort, and it does not fulfill the players' needs. Rob Shield (Shields R. 2002) mentioned that using the 'virtual' term represents a changing sensibility. Cognitively we are more comfortable with abstraction, so making subtle changes to the real world and model metaphors makes our use of virtual environments more comfortable (Shields, Rob 2002). Therefore, making shortcuts in the virtual environments makes the spatial organization effective. Dieberger, A. (1998) called these shortcuts magic features. In this regard, the research hypothesize downgrading real-world cities environment for metaphors increases the efficiency of the designers. This statement allows us to investigate how the game designers and artists tried to abstract their designed environment.

H: Using abstraction techniques for designing metaphors increases the efficiency of virtual landscape designers.

TOM CLANCY'S THE DIVISION

Ubisoft published *Tom Clancy's The Division* in 2016. This game was a commercial success, and the reviews for this digital game were positive. Ubisoft stated that the game broke the company's record for the highest number of first-day sales (Ubisoft, 2016). With Kim's methodology, this game can classify and label as an MR33FP game (Kim, Ikhwan 2018). The game has been studied and analyzed by several scholars who have focused on some technical parts and cultural effects; however, none of the researches focused on the design part. The game has an open world; this means the player can freely explore Manhattan and do various actions such as walking, jumping, and fighting. The user can play the game from a third-person perspective, meaning the avatar is visible (Arthur Gies 2015). The designers tried to develop a virtual reconstruction of an urban landscape for this digital game. Ubisoft's game designers tried to model a small part of Brooklyn and nearly one-third of Manhattan's area, which means over 113 square kilometers. Players can explore the different areas in the game in an

immersive environment. Chelsea, Garment District, Pennsylvania Plaza, Hudson Yards, Clinton, Times Square, Hell's Kitchen, Flatiron District, Gramercy, Stuyvesant, Kips Bay, Murray Hill, Turtle Bay, Midtown East, and West Side Pier. Due to the time restrictions, the research analyzed Chelsea (the first zone of the game).

METHODOLOGY

Reverse engineering plays a dominant role in uncovering digital games' development techniques (Linhoff, 2004). The research started by searching for scholars about Tom Clancy's The Division and the used techniques for downgrading the environments. However, there was no relevant scholar, but some users in the game forums identified what portion of New York was deleted, which was not valid. In this regard, research started by overlaying the in-game map with New York city's map to find how much has been deleted. Since the game gives measurements information, it is evident that the whole map is 2 kilometers across the length and 2.8 kilometers across the width (Figure2).

Moreover, since for studying a book, it is necessary to read it; in order to understand and analyze a digital game, it is necessary to play it (Di Mascio D. 2017). In this regard, first five levels of the game have been played to access Chelsea map, and the below methodology is designed (Figure1). Due to the time restriction, the research was not able to play and analyze the whole game. Streets and buildings are the major elements of a street, so these two components were analyzed. Since the study deals with the 3D representation of the cities in the digital games, the streets, and the buildings of Chelsea compared with Google Street View map and all of the details written in an Excel spreadsheet file. To collect the exact shape of the environment in the game's production period, 2016-year photos of the Google Street View map have been chosen for the analyses, which the screenshots and the files are available in the personal archive of the author. According to Lynch's theories, streets and buildings are the main elements of a city, so just those elements are analyzed. After analyzing, it was relevant to know how Ubisoft's designers approached the challenge of reconstructing a large environment as small as possible, and it is clear which part of massive New York was tried to recreate as a metaphor.

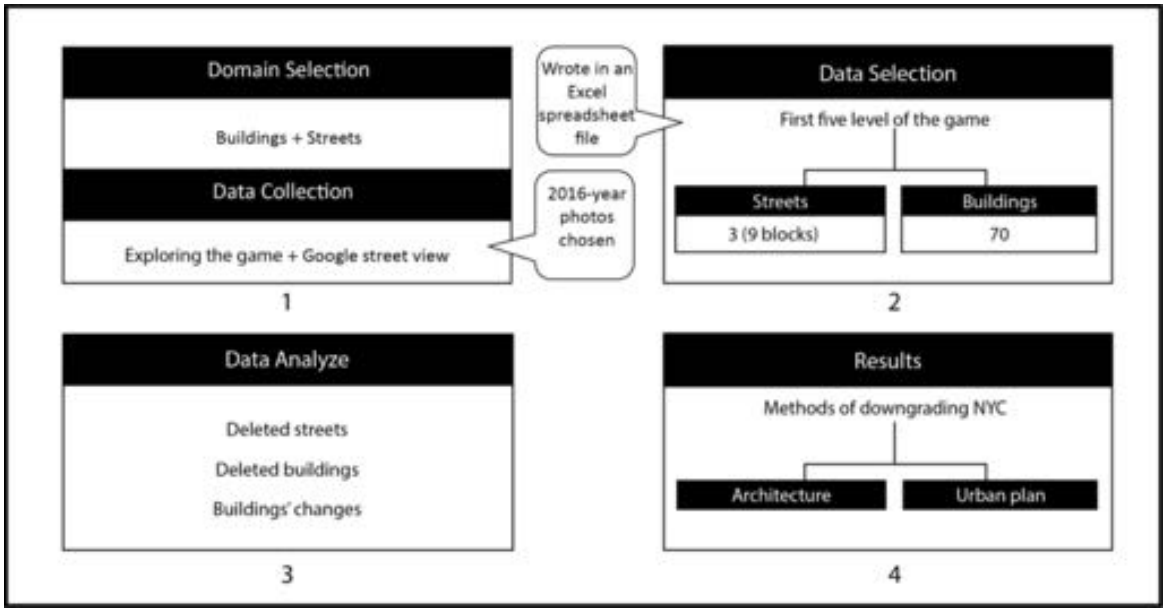

Figure 1. Methodology for analyzing the game.

RESULTS

Ubisoft's designers were able to create a metaphor for New York City 2.5 times smaller than the real environment (Figure2). It is evident that the designers used several ways for this challenge. The designers designed creative techniques to create the cityscape. For instance, to make the design support the gameplay dynamics better, they made the city aesthetically more intriguing.

ARCHITECTURAL STYLE

The architectural style of the game is the same as real architectural styles in Manhattan. Each of the districts represents the same social and economic condition of the neighborhood. For instance, by using colors and decorating the buildings and streets, designers tried to reflect the luxurious lifestyle of the area. Furthermore, according to Lynch, landmarks are described as "point references" and have a significant role in the image of a city (Lynch 1960: 78). Tom Clancy's The Division presents the landmarks visible from long distances and various locations of the metaphor. The designers modeled the landmarks with a high level of detail. However, some landmarks such as Penn South Plaza or London Terrace are duplicated in two or more different streets.

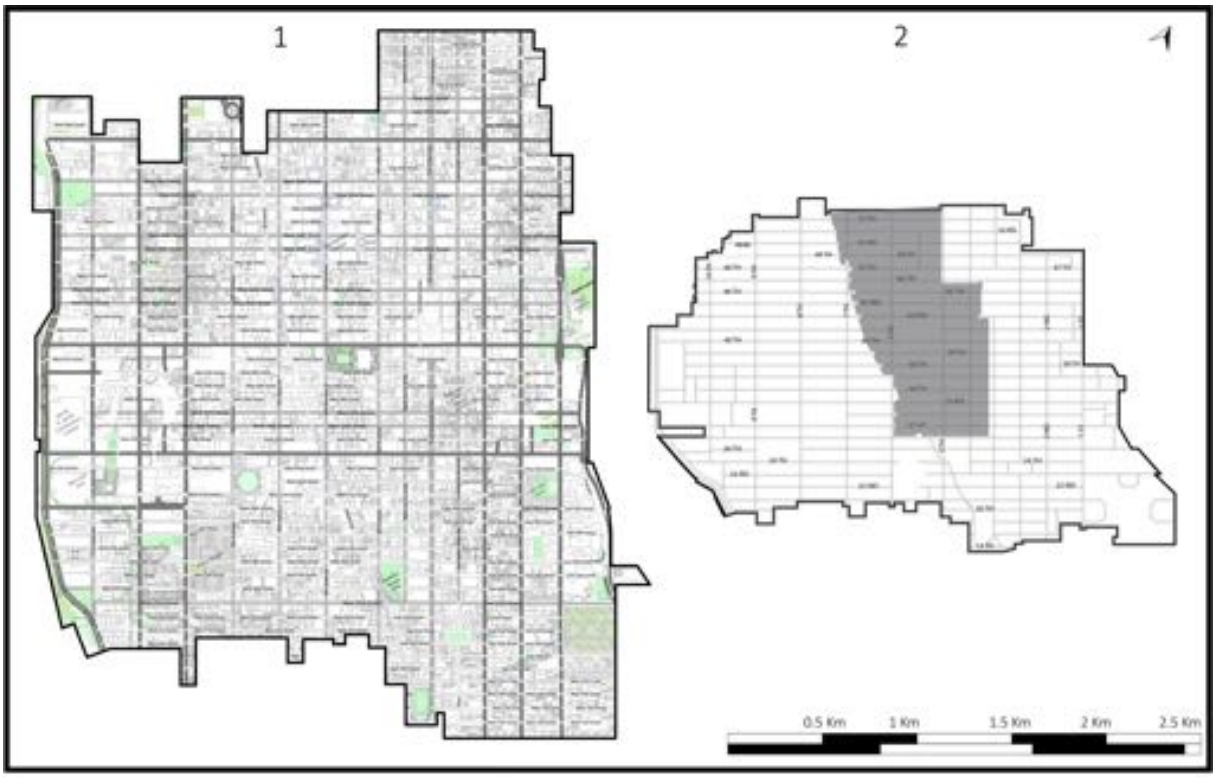

Figure 2. Selected parts of New York City for the metaphor (1). In-game map (2).

On the other hand, some landmarks, such as Greenwich Savings Bank, have not appeared. Repeating the components in the game environment makes the player curious to explore around and also it makes the design process easier; however, it can break up player's attention. The research compared 70 buildings of three streets to find the differences (Figure 3). Yellow, brown, and red are the primary colors used for the buildings to communicate with a warm feeling. 61% of the buildings' color and texture are same, and for 27 buildings, the color has been changed to synchronize it with the game's atmosphere. In addition, 45.7% of buildings' elevations were same, and for 38 buildings, they increased or decreased the heights to skyline make a deep perspective. In most streets, buildings' elevations are near each other, giving the player a long-distance view. Furthermore, ten buildings of those three streets have not appeared in the game, and they replaced another building or made a free urban space instead.

Similar Charactrestics	Number/total *	Percentage
Window column number's	10/70	14.2%
Color and Texture	43/70	61.4%
Elevation	32/70	45.7%
Existance of the building in the game	60/70	85.8%

* Number of the similar charactrestics/ Number of total compared buildings

Figure 3. Number and percentange of the similar charactrestics of the buildings

URBAN PATTERN

Tom Clancy's The Division Expresses the vastness of the New York environment to the players. In general, New York's main streets are more expansive and more extended than The game in some cases. New York has represented as a busy and chaotic city in the aftermath of a viral pandemic, and the urban landscape covered with crushed cars and garbage bags allows a new experience of the city to the players. Using snow and fog effects influences the urban pattern to seem more realistic. However, by comparing the in-game map with the New York map, it is evident that Ubisoft's designers downgrade the scales in creative ways. For instance, they deleted buildings with a high level of details that do not count as landmarks, or the level of the details has not shown. As an example, in figure 4, the designers deleted building B and extended building A. This technique was applied in multiple streets, which helped the designers to decrease the number of modeled buildings.

Figure. 4. Screenshot of the Street View Map (left). Screenshot of the exact location in the game (right). It shows a sample of deleted buildings.

Furthermore, in New York and most cities, similar buildings in neighborhoods are observable. In this regard, for metaphors, designers are able to model one of those buildings. In Tom Clancy's The Division, if adjacent buildings contained small differences in the details, the designers merged those buildings. For instance, in Figure 5, instead of modeling buildings A and B, they combined them and modeled one structure. This approach of representing and creating the cityscape is applied in various game's scenes. The used approach consequently decreases the length of the streets, which helps the designers downgrade the urban scale in a stylized way.

Figure. 5. Screenshot of the Street View Map (left). Screenshot of the exact location in the game (right). It shows the merging technique for two buildings.

Moreover, using a metaphor is to take the concept that we understand the second object, so by representing with lesser elements, the user can clearly understand it. As an example, in figure 5, Ubisoft's designer tried to show building C with fewer windows and deleting the ground floors' shops. Using this method describes New York and increases the time efficiency for the designers.

According to Kim (2018), the story is one of the essential layers in designing a virtual landscape, so designers should consider the story to prepare the proper spaces. In this vein, Ubisoft's designers deleted some of the small buildings where they needed more space for the game story, or buildings' place shifted. Figure 6. A describes three applied techniques of shifting the building's place, merging, and deleting structures.

As Kevin Lynch mentioned, districts are elements that play the primary role in the image of a city (Lynch 1960), so it is significant to let the players experience most parts of each district. However, designing whole parts of each district considers lots of time and effort. In this regard, to minimize the virtual landscape vastness and prevent developing lots of spaces that the player will not use, designers chose one row of the street and combined it with the next street row (Figure 6. B). By using this technique, designers are able to design at least 50% less than the real world.

Figure 6. Diagram (A) describes the three used techniques for the buildings. Diagram (B) describes the merging technique for the streets.

As mentioned, in most cities, including New York, similar buildings in neighborhoods have been built, and in several cases, all buildings' façades of a street are built as same as each other. On a hand, vision is the most essential sense of the human in both real and virtual environments; however, we focus on what attracts us more in the virtuality. So, during exploration in the virtual landscape, players do not focus on the whole travel experience, same as what we usually do in the real world. On the other hand, according to the story layer's significance in designing the game environment (Ikhwan Kim 2018), the designer can delete blocks of streets that do not involve the game's story. For those streets, Ubisoft's designers deleted blocks of streets in several places (Figure 7. A).

Figure 7. Diagram (A) describes the deleting streets with similar blocks. Diagram (B) describes the shifting blocks.

As the person moves around the real environment and perceives the environment, they can be seen as creating a movie in their head through the images they encounter. Most people use landmarks to create that movie in their heads. So, to minimize the virtual landscape by decreasing the length of the long streets, small buildings of a region have been deleted. In addition, a grand vista will appear in environments that contain just high buildings (Friedman A. 2021). On the other hand, most of the open-world games contain missions, and the players do not leave the area to finish the mission; and the first component which the players are interacting with is the street, so due to the perspective effect, the players prefer not to see a distant scene, but pay more attention in close views. Therefore, deleting small buildings helps to make a grand vista. For instance, if most buildings have ten floors and some have less than four floors in the middle of the streets, designers can cut those small buildings (Figure 7. B).

CONCLUSIONS AND FUTURE DEVELOPMENTS

The digital game industry's economic importance means spending time on design research. Instead of trying to recreate all parts of an environment to look like reality and use real-world techniques, we

need to collaborate across disciplines, which is more efficient in terms of design effort. Tom Clancy's The Division design analysis has identified several factors of interest, and the mentioned results are the techniques that can apply for virtual landscape designs. First, it revealed that senior designers in the AAA game companies are trying to interpret creative design works to create metaphors to increase time and cost-efficiency. Showing these techniques help junior designers or people outside of the digital game design field learn these approaches in their designs or use the concepts to interpret more creative approaches. Hence, this study helps the players be aware of digital games' artistic qualities and pay more attention to the relevant aspect of the digital games.

Moreover, the study highlighted that architecture and landscape architecture play an essential role in designing virtual landscapes. For instance, landmarks are essential cultural elements that players can communicate with and get historical information. It makes players curious to explore that area.

Furthermore, virtual landscape is a new domain that requires lots of research and scholars. This domain will grow and become increasingly critical due to its usage in any virtual reality device. However, by searching on the game forums, we figured out the players understood the deleted parts of the Manhattan and duplicated components, making the virtual landscape seem unnatural. If we consider the virtual landscape as important as the real world and understand the players' requirements, our designs can raise the emotional senses of the player, as in the exploration of real cities. The investigation of virtual landscapes can trigger further research questions which have not previously been formulated. One of the future aims is to use cognitive design principles and find more efficient techniques to increase the efficiency of the designers and manipulate the players' sense of the scale.

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COMPARISON OF BASIC DESIGN COURSES WITHIN THE DEPARTMENTS OF INDUSTRIAL DESIGN, ARCHITECTURE AND CITY AND REGIONAL PLANNING

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ABSTRACT

Basic design can be evaluated as an introductory course to architectural and design education by serving as a common ground where field specific knowledge and skills would be founded on. It is the course where students are encountered with the phenomenon of design. Design based disciplines are divided into subfields such as industrial design, graphic design, interior design, etc. because of being a comprehensive field. Furthermore, disciplines such as architecture, city and regional planning and landscape architecture also concerns with design issues. Despite these disciplines generate different outputs in terms of scale and scope, their education contains similar basic design courses focusing mainly on the understanding of common design principles.

Being a researcher and instructor who teach basic design to the departments of industrial design, architecture and city and regional planning, many similarities and differences have been observed. Presenting these similarities and differences and expressing the perspectives of different disciplines to basic design education would be valuable in terms of the transfer of knowledge. Therefore, this paper serves as an introduction and comparison of the approaches, projects and syllabus of the basic design course within the departments of industrial design, architecture and city and regional planning. The deductions and presentations of this paper might serve as an introduction for the instructors in terms of seeing how other disciplines approach to basic design and might enable them to take credit for enhancing their basic design course.

1 INTRODUCTION

Serving as a common ground for design-based disciplines, basic design course is taught at the first year of the departments of architecture, industrial design, graphic design, interior architecture, city and regional planning, landscape architecture and fine arts. There are many differences among these departments: as graphic designers and some fine art departments deal with two-dimensional works and the rest deal with three-dimensional works; as graphic designers mostly work through computer or on paper, the rest need to make models; as the scale of the outputs of the graphic designers, industrial designers, interior architects and artists are within human scale, the scale of the outputs of architects, landscape architects and city planners are much bigger (Findeli, 1990; Salama & Wilkinson, 2007). Despite of these differences, basic design courses within these departments are taught in a similar way by dealing with the concepts of design language, visual literacy and visual problem-solving (Akbulut 2010; Besgen, Kuloglu, & Fathalizadehalemdari 2014; Hargrove & Rice 2015; Makaklı & Özker 2015; Özer 2004).

Being an instructor who had basic design teaching experience in the departments of architecture, city and regional planning and industrial design, presenting these experiences together with project examples, profession specific approaches and reflections is thought to be valuable. Therefore, the aim of this paper is to make an evaluation and a comparison between the basic design courses of the departments of architecture, city and regional planning and industrial design. For that purpose, it starts by presenting the historical background of the basic design course, followed by the current situation of the course. Later, the evaluation and comparison of the basic design courses are presented and finally it is concluded.

2 HISTORICAL BACKGROUND OF THE BASIC DESIGN COURSE

It is important to begin with indicating the essential events that shaped the current situation of the basic design course. The foundations of the current basic design course dates back to the 19th century of which Beaux-Arts system was the prevalent approach to teach art and design (Farivarsadri, 1998). Within this system, a workshop training method that depended on a master-apprentice relationship was used. However, the system was criticized for limiting the potentials of the students and causing them to adopt the perceptions, methods and styles of their masters (Drexler, 1984). Due to this criticism and to meet the needs of the industrialized society, Bauhaus school was founded in 1919 arguing to serve a freer, individual and flexible approach to art and design education. Main aim of the school was to liberalize students from conditionings through using a new pedagogy (Balamir 1985; Lerner, 2005; Lerner 2012; Meyer and Norman 2020).

The best known and the basis of the Bauhaus school was the preliminary course that was founded to overcome the problems of the previous methods by allowing students to develop their individual styles through experimenting and discovering (Boucharenc 2006; Özgen, Afacan and Sürer 2019; Wick, 2000). The preliminary course was a one semester course in which all of the students participate to study materials and forms (Figure 1). After producing a graduation project and establishing a base, students then could join a three-year specialized program according to their choices (Wick, 2000).

Figure 1. Bauhaus curriculum (Itten, 1964).

The content of the preliminary course was designed to allow for the acquisition of a shared design language by focusing on two main categories: plastic elements and tools and materials. The plastic elements are the elements that constitute a design such as line, color, shape, texture, space, structure, motion, volume, etc., and the tools and media are the things that the mentioned elements can be executed through such as paper, pen, wood, plastic, clay, camera, etc. The course aims to give opportunity to students to experience various assignments and approaches in order to discover their talents and potentials before joining to the three-year specialized program. For that purpose, students were asked to study with one specific element by using different tools and media; and with one specific tool and media by using different elements (Findeli, 1990). The successful results of the preliminary course made it the most valuable legacy of the Bauhaus school (Cross, 1983) and caused many of the architecture and design departments all around the world to follow a similar approach (Blachnitzky, 2009; Yu, 2009).

3. CURRENT SITUATION OF THE BASIC DESIGN COURSE

Although the current design education takes its roots from the preliminary course of the Bauhaus, because of the constant developments in technologies, materials and resources; design profession, design education and inevitably the basic design course has changed since the emergence of Bauhaus (Pontis & van der Waarde 2020).

Basic design was regarded as the foundation of a building by Teymur (1998) where profession specific knowledge will be founded on. The courses are conducted in a studio environment which is different from the known classroom environment. Contrary to the teacher-centered education system, studios are interactive environments where students are always in a communication with their fellows and instructors: they exchange ideas, materials and receive feedback (Güngör, 2005). Thus, they learn and develop their understanding of design by experimenting and observing the approaches of others (Sausmarez, 1983).

In this course students acquire the knowledge and skills related with design language, visual literacy and visual problem-solving (Akbulut 2010; Besgen, Kuloglu, & Fathalizadehalemdari 2014; Hargrove & Rice 2015; Makaklı & Özker 2015; Özer 2004).

Design language is necessary to communicate in a designerly way. As in the case of disciplines such as mathematic and medicine, the discipline of design has its own specific language that involves design

elements and principles. Where design elements are associated with words of a language, design principles are associated with the grammar. The logic is: students should learn the words and grammar of the language in order to generate sentences and essays in their future education (Mittler, 2006). The design elements, which are point, line, shape, texture, color, etc., are the components of a design work and they are composed by following the design principles, which are direction, balance, harmony, contrast, emphasis, rhythm, etc., in order to create a composition (Gürer, 1998). By using these design elements and principles and making interpretations about them, students deal with various assignments and become familiar with the design language.

Alongside the conducted assignments, the visual environment where students inhabit helps to develop a visual literacy. By seeing the posters, works of their fellows and instructors and projects of the other disciplines in the faculty, students perceive the visual world better and gain a visual awareness. In that sense, through following the Gestalt theory, which concerns about the organization and perception of the visual elements, basic design also aims to bring students the ability to read and compose the visual elements in order to achieve a visual literacy (Besgen et al., 2014; Lerner, 1012).

Furthermore, the assignments also help students to develop their visual problem-solving ability (Güngör, 2005). Through interacting with their fellows and instructors, the students experience how to understand, interpret, approach, plan and design the visual design-problems. By using different materials and tools within the assignments that are getting more complicated day after day, students gain a perspective to tackle with the encountered design problems (Erdoğdu 2016; Makaklı and Özker 2015; Resuloğlu 2012).

4 COMPARISON OF THE BASIC DESIGN COURSES OF THE DEPARTMENTS OF INDUSTRIAL DESIGN, ARCHITECTURE AND CITY AND REGIONAL PLANNING

The author of this paper had a basic design teaching experience in the departments of industrial design, architecture and city and regional planning. Being a research assistant, the basic design course of the department of industrial design was taught for six years at Middle East Technical University (METU), that of architecture and city and regional planning has been taught for three years at Pamukkale University (PAU). Within these periods, many observations and inferences were made regarding the similar and different approaches performed by the instructors of these departments. In this section, the approaches of these departments to basic design course will be presented together with the similarities and differences. Furthermore, usage areas of profession-specific basic design knowledge and skills regarding the mentioned disciplines will be indicated.

4.1 Basic Design Course of the Department of Industrial Design at METU

Basic design course of the department of industrial design at METU is taught in the first year for two semesters under the names of ID101 and ID102 respectively. Both the courses of ID101 and ID102 is taught for 12 hours per week (one day 8 hours, one day 4 hours). While the focus of the ID 101 course is about two-dimensional and relief abstract works, the focus of the ID102 course is about profession specific three-dimensional abstract and concrete works.

The syllabus of the ID101 course proceeds through daily individual exercises dealing with design elements and principles such as line exercise, basic organizations using simple geometric shapes, direction, depth, repetition, pattern, harmony, contrast, transparency, dominancy, figure/ground and hierarchy till the mid of the semester. While the exercises were done using black, white and grey-toned cardboards at the beginning of the semester, colored cardboards begin to be used in the second quarter of the semester.

Figure 2. Examples of two-dimensional works.

With the second half of the semester, the scope and the size of the exercises are expanded. Students now work in groups and experience relief works that are larger in size and wider in duration. The materials used are still black, white and gray-toned and colored cardboards. The semester proceeds through two or three of these relief works (Figure 2) and at the end, students design an individual relief work corresponding to a given visual design problem for the final.

Figure 3. Examples of relief works.

The content of the ID102 course consists of three-dimensional exercises. This time apart from cardboards, students experience and use new materials such as wire, styrofoam, wood and clay. Although the semester starts with three-dimensional abstract works in order to examine volumes and their relationship with their surroundings, the focus of the semester is profession specific concrete works such as packaging, sitting units, lighting units, door handles, chess set, cutlery set, etc. (Figure 4) These works are still conducted and evaluated within a basic design approach that deals with composition and visual sensibility.

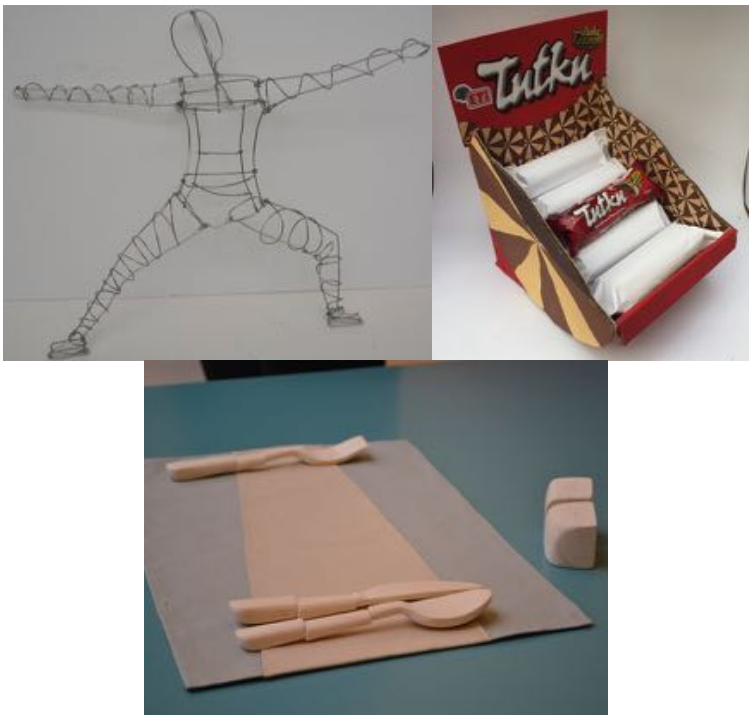

Figure 4. Examples of three-dimensional works.

4.2 Basic Design Course of the Department of Architecture at PAU

Basic design course of the department of architecture at PAU is taught in the first year for one semester under the name of MIM103. It is taught for 8 hours per week. Unlike the basic design course of the department of industrial design at METU that proceeds through daily individual small exercises, basic design course of the department of architecture at PAU conducted through two extensive projects done within a group. Furthermore, instead of focusing on design elements and principles one by one through various exercises, the basic design course of the department of architecture at PAU adopts a holistic approach through experiencing and discussing design elements, principles, materials, context and visual sensibility over extensive projects. While the first project is related with experiencing materials, volume and structure (Figure 5), the second project is related with human, object and space interaction (Figure 6).

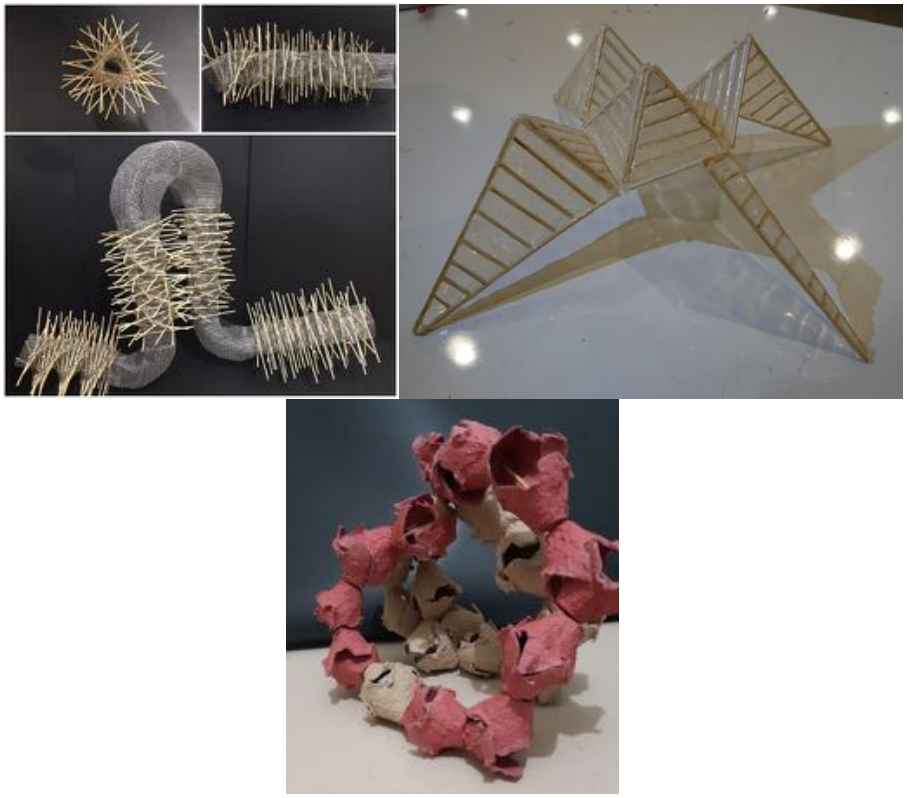

Figure 5. Examples of the works from project 1.

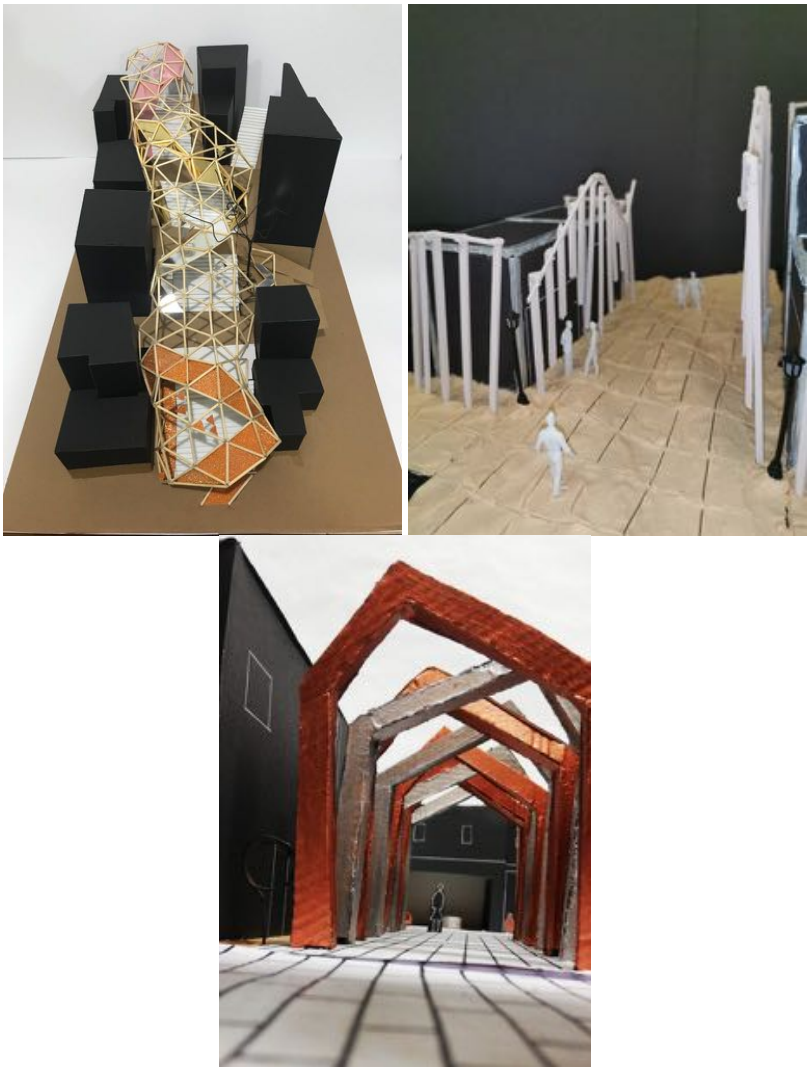

Figure 6. Examples of the works from project 2.

4.3 Basic Design Course of the Department of City and Regional Planning at PAU

Basic design course of the department of city and regional planning at PAU is taught in the first year for one semester under the name of SBP100. It is taught for 12 hours per week (6 hours for two days). The approach of the basic design course of the department of city and regional planning at PAU show similarities with the basic design course of the department of industrial design at METU in terms of the scope of exercises. Nearly two third of the course focuses on basic design through daily individual exercises such as, line exercises, texture, gestalt, color, harmony, contrast, rhythm and dominancy (Figure 7). The rest of the course is more related with profession specific issues such as Lynch analysis, topography and regional planning (Figure 8).

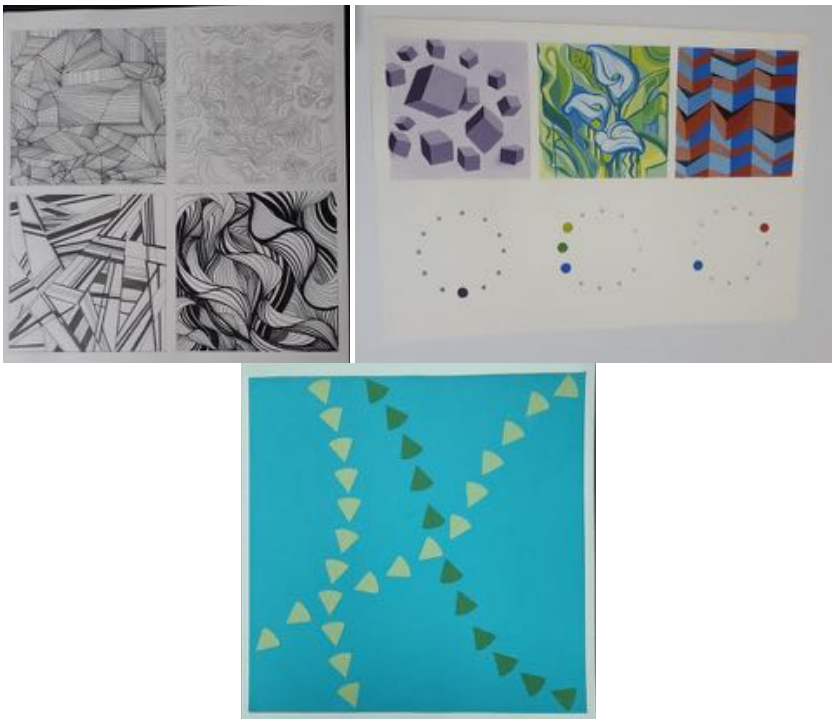

Figure 7. Basic design examples of SBP100

Figure 8. Profession specific exercises of SBP100

The essential similarity between the mentioned basic design courses is about the position of the course within the curriculum. They are all taught at the beginning of the education. Although the basic design course of the department of architecture at PAU show differences from the other two, many of the architecture departments around Turkey adopt similar approaches just like the basic design course of the department of industrial design at METU and basic design course of the department of city and

regional planning at PAU in terms of teaching design elements and principles through various small exercises. Furthermore, the first two courses show similarities in terms of encouraging the use of different materials such as wire, wood, styrofoam, etc. However, the basic design course of the department of city and regional planning at PAU only use paper as a material.

On the other hand, there are critical differences among the mentioned courses in terms of course hours, duration, scale and content of the course. While the basic design course of department of industrial design at METU embodies two semesters of the curriculum, the others embodies one semester. Furthermore, considering the three-dimensional and profession specific works, there is a distinct scale difference. While industrial design students deal with human scales and produce outcomes that are mostly 1:1 scale, architecture students produce outcomes that are 1:10 to 1:100 scales and city planners produce outcomes that are 1:500 to 1:2000 scales. Moreover, while two-dimensional, relief and three-dimensional works are the content of the basic design course of department of industrial design at METU, three-dimensional works are the main content of the basic design course of department of architecture at PAU and two-dimensional works are the main content of the basic design course of department of city and regional planning at PAU.

5 CONCLUSION

This paper compares the adopted approaches of three different basic design courses of different departments. It does not argue the right and wrong approaches, it only serves as an introduction and comparison. It is seen that there are similarities between the basic design approaches of the departments of industrial design, architecture and city and regional planning in terms of position of the course within the curriculum, exercise types and materials used. On the other hand, there are also some critical differences in terms of course hours, duration, scale and content. Generalizations cannot be made since the paper introduces only the approaches of three different departments to basic design education. Furthermore, further research can be conducted in order to examine the effects of the differences between course hours, duration and content.

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PAUL BONATZ'S UNKNOWN DESIGN IN SAMSUN

HASAN TAHSİN SELÇUK

A. DECISION TO BUILD A BRANCH IN SAMSUN AND IMPROVEMENS

The Central Bank of the Republic of Turkey opened its branches primarily in the economically developed regions of the country in accordance with the economic and investment policies of the period. The first branches were opened in Istanbul (1931), then in Izmir (1932) and simultaneously in Samsun and Mersin (1933), and no other branches were opened until 1951. (Attachment -1)

Samsun branch started its service in September 1933 by renting the building, which is still available today at Gazi Caddesi no:21 (Photo: Photographs of the building taken in 1934 and 2021). In Samsun, the bank branch buildings were located on Kazım Paşa Street (known as Bankalar Street before the Republican era), which was opened parallel to the sea coast. Following the opening of the branch, the Institution made attempts to purchase the municipality's land on Kazım Paşa Caddesi to have its own building built. (Attachment _2)

Photograph _1: 2021 view of the building, where the Central Bank Samsun branch started its service in 1933. The building is located on Gazi Street at number 21.

Photograph1 : Site Photo of TCMB Samsun Branch in 1935. Right side T.C. Ziraat Bank. On the left Ottoman Bank Buildings at the photo

Regarding the building to be built, the TCMB General Directorate determined the function program of the required building for the Samsun branch and asked the branch to ask the municipality about the suitability of such a building for zoning, with the foresight that a building consisting of a basement, entrance floor and a front and back garden would be built on this land in a 200m2 residential area(Attachment _3) The municipality has answered to TCMB about its terms and the conditions, "provided that it is neither the maximum nor the minimum, the construction of a two-storey building at an altitude of 8.5 meters from the ground and the facade of the building should not be less than 7 meters, it is possible to construct the building in the garden. Announcement that you aspire to buy the whole of this place, provided that a building is built in this way…" (Attachment _4) Based on this response, the TCMB Headquarters approved the land purchase and allocated the land purchase price of 9-10 thousand liras, which was previously reported by the branch, on the condition of "deduction within the framework of possibility".

The Headquarters, in its information message dated 17.08.1937 regarding this request, stated that a definite date could not be given for the construction of the branch building, but in the telegraph sent with an 'urgent' note on 6.03.1938, it was stated that they decided to organize an architectural project competition for the branch building. (Attachment _5: In the telegraph, it was requested that the current situation plan be sent to the Headquarters.

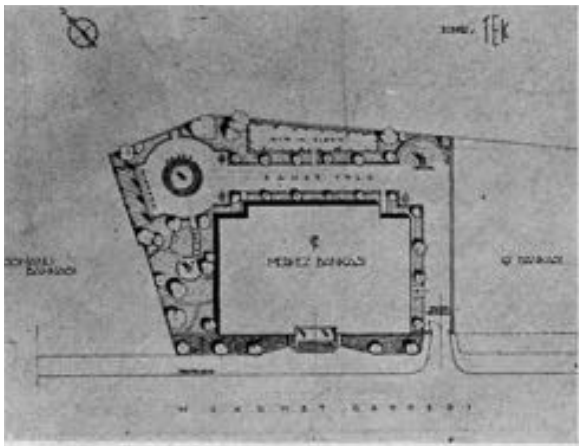
TCMB Headquarters, with the instruction letter dated March 23, 1939, sent the architectural project competition announcement text in the annex of the instruction for the announcement of the competition in the local newspaper, and envelopes containing the competition specifications, provided that they are given to the participants in return for their signature.

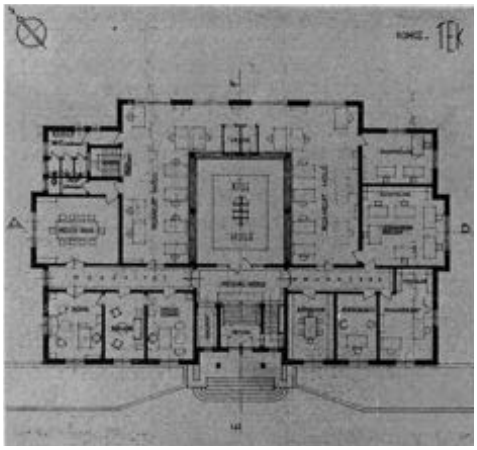
On March 23, 1939, the CBRT Headquarters gave instructions for the Samsun branch to announce the competition announcement in the local newspaper. In the annex of the instruction, he sent the announcement text and the envelopes of the competition specifications to be given to the participants in return for signature. Competition announcement published in the local newsletter called "Samsun Vilayet Gazetesi" in March 31 1939. (Attachment_ 6)

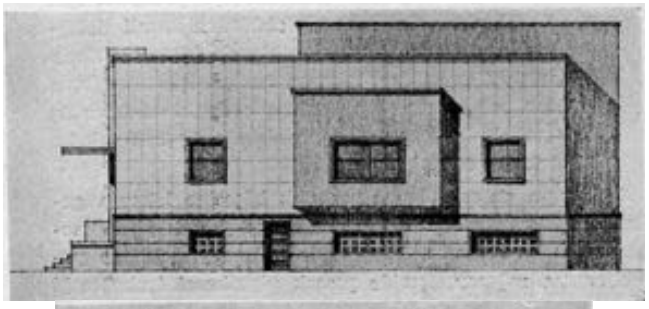
The competition held on 1 June 1939. In the archives of the bank, no documents have been found yet regarding the Project jury, jury reports and winners. The only Architecture periodical of the period, 'Arkitekt' magazine, published the award-winning projects of the Project competition. Except for the award winning project and the competition specifications, only the explanation report of the 1st award winning project was published in the journal.

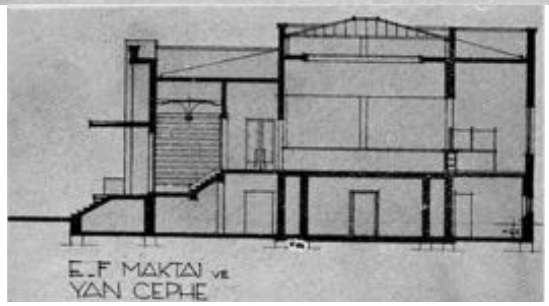
The project of the competition winner, M. Architect Hüsnü Tamer (Arkitekt Magazine,

Ön grüönüş

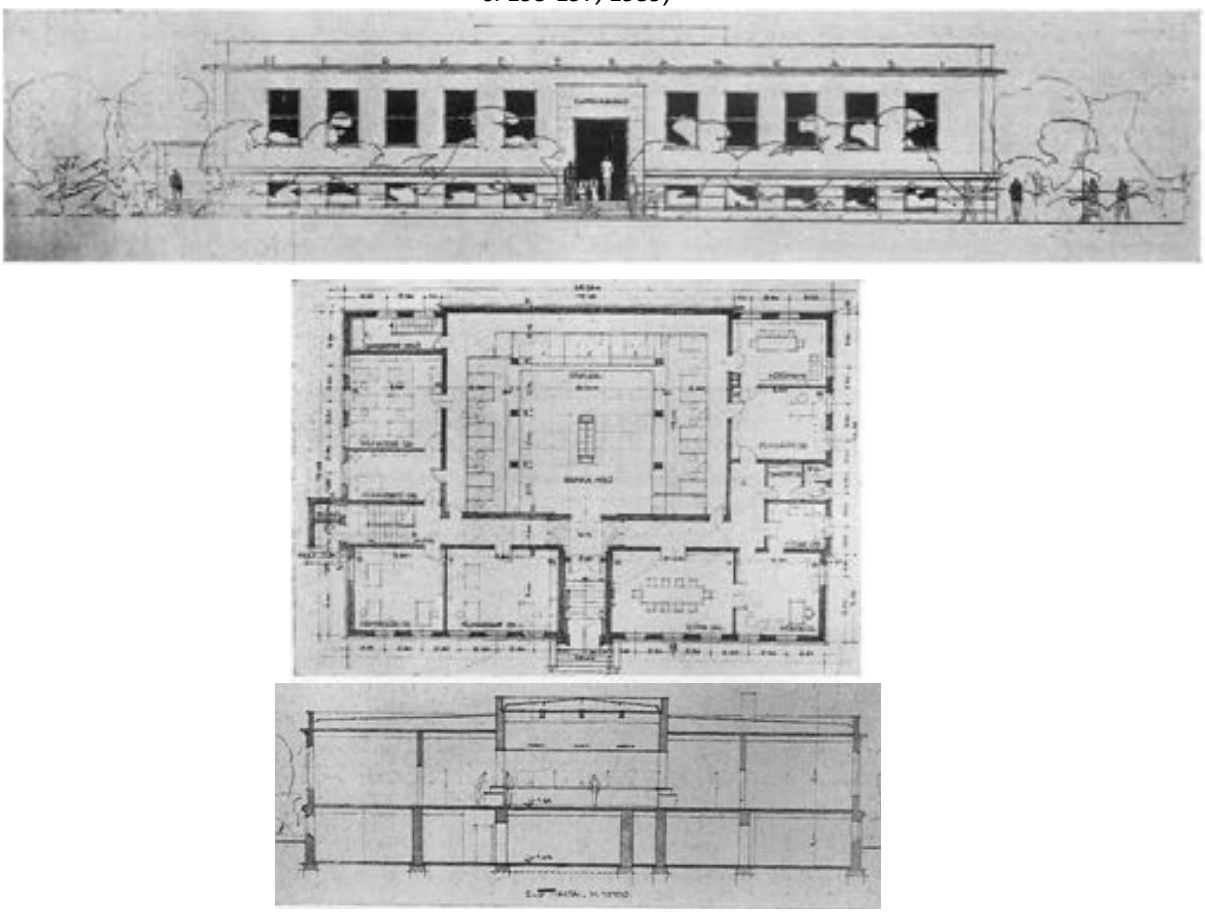




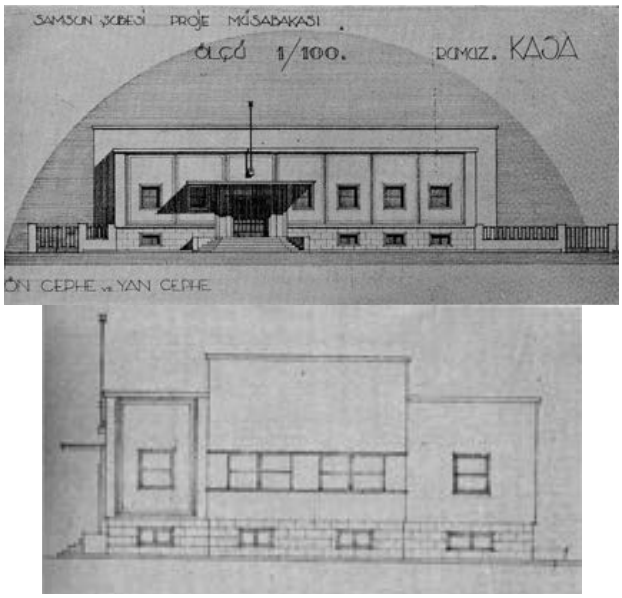


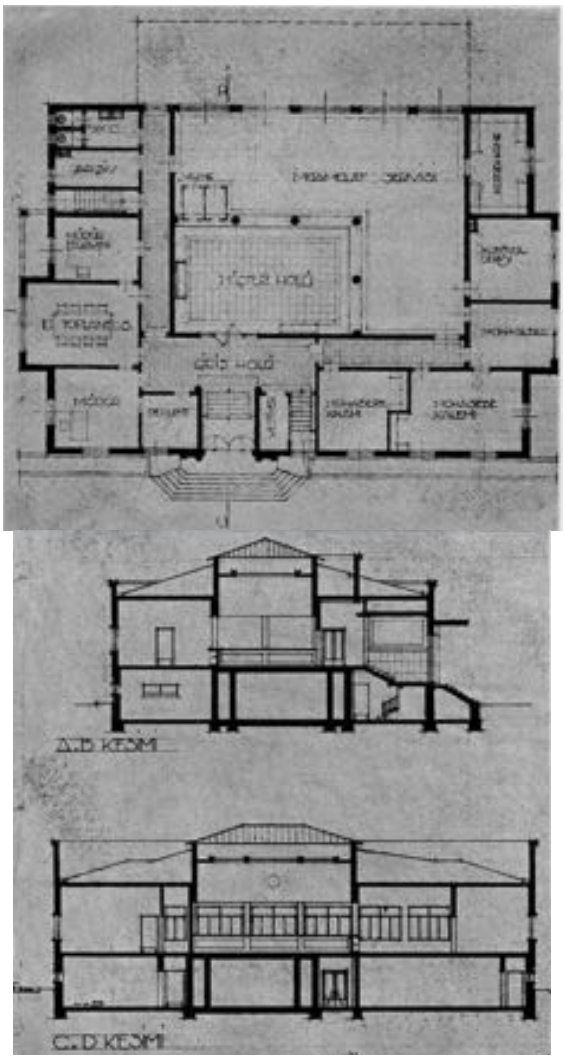


The project of the competition runner-up M. Architect Eyüp A. Kömürcüoğlu (Arkitekt Dergisi, sayı 107-108, s: 195-197, 1939)



The project of the competition 3rd Place M. Architect Sinan Mimaroğlu and H. Tamer (Arkitekt Dergisi, sayı 103-104





The resulting projects were shelved due to the official start of "World War II" on September 1, 1939. Afterwards, the expected economic activity in Samsun did not materialize due to the "World War II" and accordingly the construction of the Samsun branch building was postponed.

B. PAUL BONATZ - AHMET SABRİ ORAN PARTNERSHIP AND TCMB SAMSUN BRANCH PROJECT

Paul Bonatz, who has a hegemonic effect in the history of Turkish Architecture, both as an educator and as a jury member in competitions; He was an important academician-architect who shaped the character of Turkey in the 1940s with his projects and practices. Sibel Bozdogan defines Paul Bonatz as "the architect who left his mark on the decade" (Bozdogan, 2002). In the process he was in Turkey, it is compatible with his own understanding of modern architecture; an approach that blends traditional materials with modern architecture has developed, and he has built many monumental works in this environment.[1]

[1] Gizem Özal, "Erken Cumhuriyet Dönemi Erkek Sanat Okulları: Niğde Erkek Sanat Okulu Örneği", s.44, Yüksek Lisans Tezi, Karabük Üniversitesi Fen Bilimleri Enstitüsü, Karabük, 2019

P.Bonatz has successfully used stone material in his designs, and in the words of Sabri Oran, “He tried to create a style that brings architecture to simplicity and simple forms. Giving a monumental expression to simple forms with strong details; He is a great artist who values the characteristic architectural principles such as creating vitality and vitality in architecture, not disdaining the technique, but never being a prisoner of it.[2] Paul Bonatz's "Stuttgart Train Station (1911-1928)" is the work that made the architect famous by including all these features. The Samsun Branch of the Central Bank of the Republic of Turkey is also a successful design with the specified qualities.

Afife Batur divided the formalist approaches in the buildings produced in the National Architecture period into three groups. He stated that the first group is "nostalgic and innovative" that developed around the ideas of SHEldem, the second is "monumental and academic" transferred by Bonatz, and the third group is "populist and indigenous" forms conceptualized through S.H.Eldem and E.Onat (Batur 2005: 33-40). Ülkemize gelen yabancı mimarlardan Zeitlos ve Paul Bonatz her dönem için geçerli olacak yapı elemanları ve ürün biçimleri kullanmaları, yapılarında saçak ve pencerelerde kesme taş kullanım biçimleri ve cephede belirli bir oran oluşturulmaları, biçimci yaklaşımlarının karakteristiği olarak ortaya çıkar. (Özal, 2019, s. 41) [3]

During his stay in Turkey, Paul Bonatz had been recognized as a prestigious authority in the field of architectural design activities, with the interest and support of both Turkish architects who were students in Stuttgard and Emin Onat. From September 1943 until 1954, he worked as a consultant to the Ministry of National Education "Vocational and Technical Education Undersecretariat", "Construction Affairs Bureau".[4]

In addition to this duty, he worked as a professor at Istanbul Technical University until 1955, starting from the date of the "Saraçoğlu Mahallesi" construction he designed in 1946.[5] Based on this position, Bonatz wrote letters to institutions to design the structures needed by public institutions. This situation was met with a reaction among Turkish architects and it was strange. (Arkitekt)

This building, which he designed in Samsun, can be considered as one of the important indicators of its prestigious position.

In 1948, the management of the Central Bank of the Republic of Turkey decided that P.Bonatz would prepare a general project for the building and it would be designed by Sabri Oran.

According to archival documents, on March 3, 1948, an "Architectural contract" was signed with Sabri Oran for the construction of a branch building.

To be delivered on March 31, 1949, the construction tender of the project was made in June 1948 with an estimated cost of 410,892 Turkish Liras and 27 kuruş.

"Artılım İnşaat" won the contracting contract for the building with a 15,63% cut and received a "Construction License" for the building on 18 June 1948 in Samsun.

The “Construction Tender Contract” was signed on June 25, and the foundation of the building had been laid on August 1, 1948.

In accordance with the architectural contract, a contract was signed with Ahmet…, the control architect provided by Sabri Oran, as the “control architect” on 1 October.

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[2] Sabri Oran Arkitek dergisi P.Bonatz anma yazısı

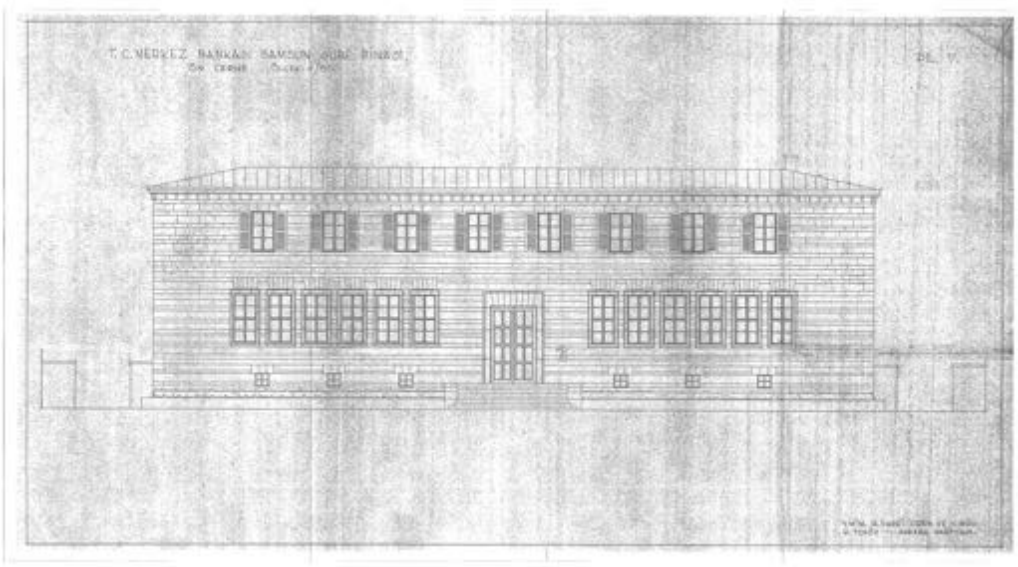
[3] Gizem Özal, “Erken Cumhuriyet Dönemi Erkek Sanat Okulları: Niğde Erkek Sanat Okulu Örneği”, s.41, Yüksek Lisans Tezi, Karabük Üniversitesi Fen Bilimleri Enstitüsü, Karabük, 2019

[4] Hikmet Eldek Güner, Faruk Tuncer, “Paul Bonatz İmzalı Tipolojik Bir Deneme: Kayseri Erkek Sanat Okulu”, s.55,

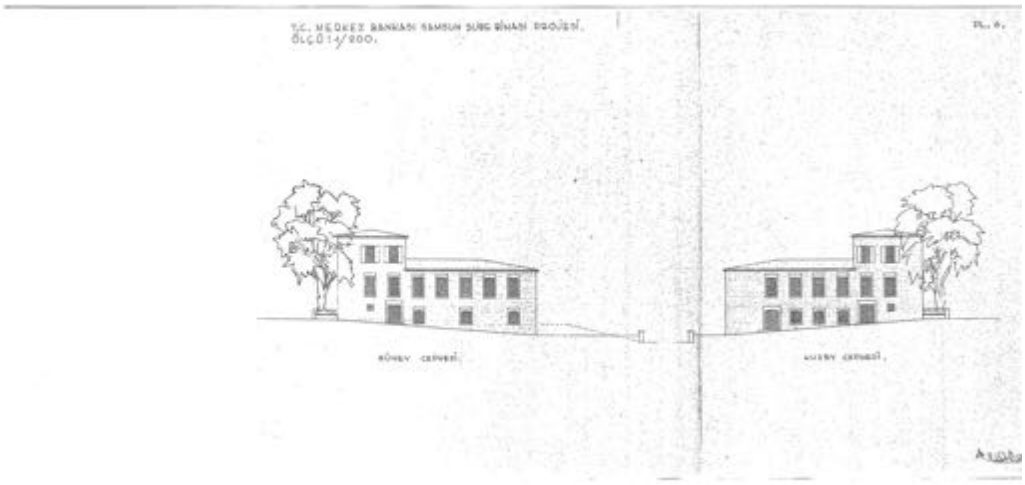
[5] Üstün Alsaç, “Türk Mimarlık Düşüncesinin Cumhuriyet Devrindeki Evrimi”, s.16, Mimarlık 11-12, 1973 http://dergi.mo.org.tr/dergiler/4/465/6831.pdf

Abidin Mortaş, A.Sabri Oran and …, who had been also the architect of the İşbank branch building next to the TCMB Samsun branch building, made the job acceptance during the construction process of the building. The building, as seen in the reports, had completed on December 13, 1949, and its final acceptance made a year later.

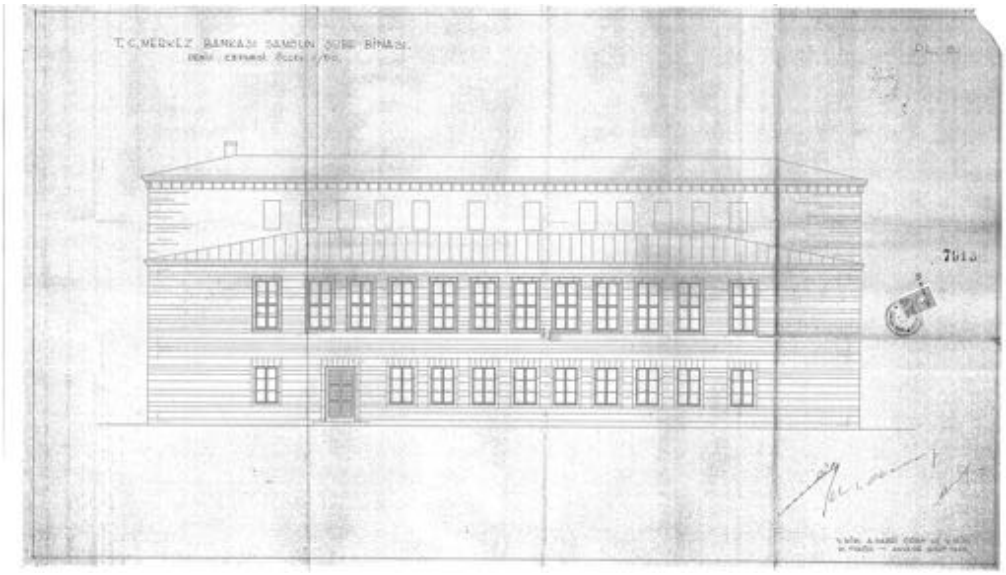
TCMB SAMSUN BRANCH ORIGINAL DRAWINGS BY A.SABRI ORAN (TCMB SAMSUN BRANCH ARCHIVE)



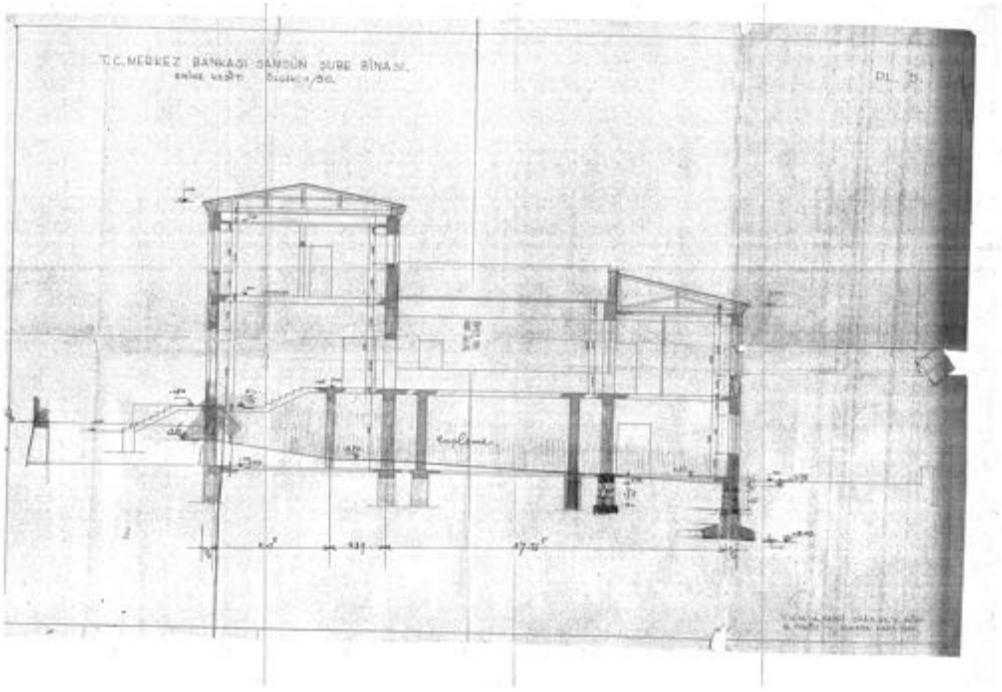
FRONT (SOUTH) ELEVATION



EAST ELEVATION

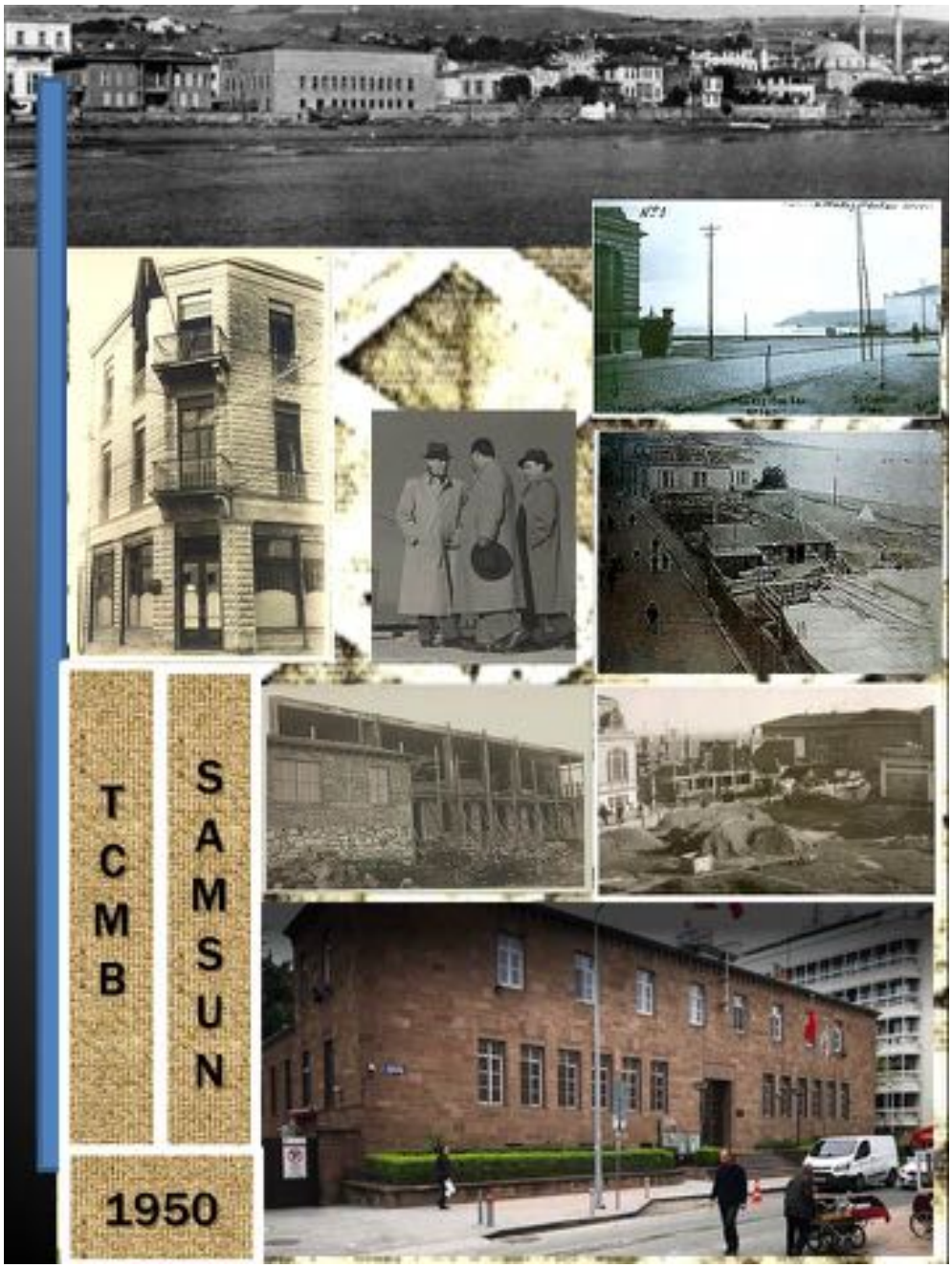


NORTH ELEVATION



SOUTH - NORTH SECTION

POSTER:



ATTACHMENTS

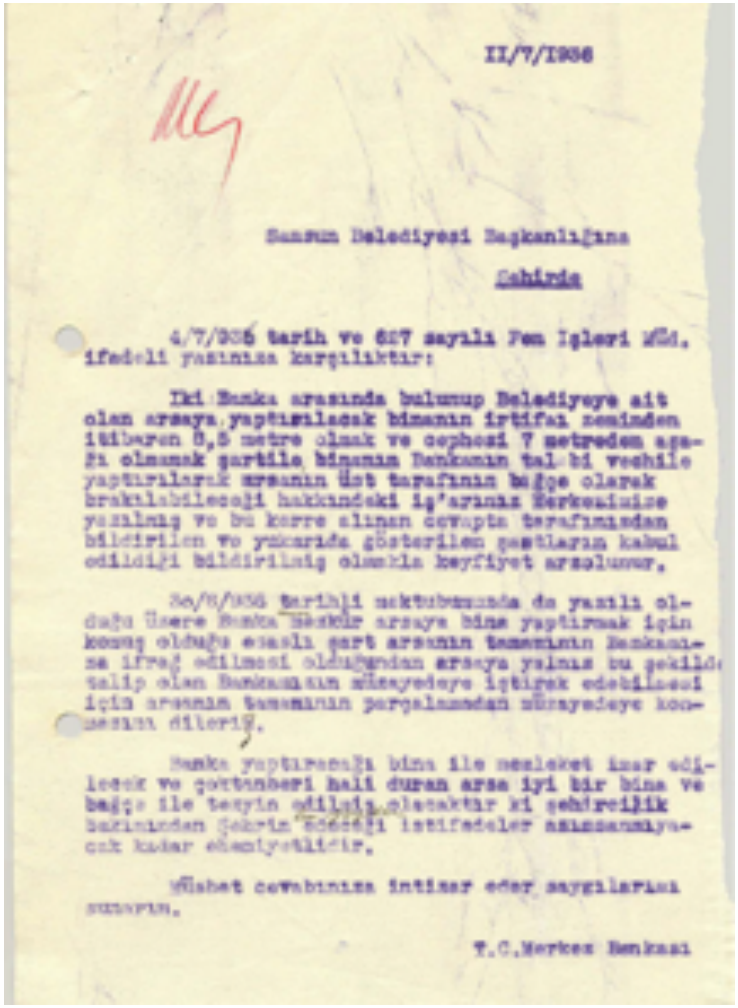
TCMB Branch opining dates and 11.03.1933 dated TCMB Concil Desicion

Şubeler	Açılış Yılı	(2009 Sonu)
Adana	1969	75
Ankara	1931	269
Antalya	1963	64
Bursa	1969	74
Denizli	1974	55
Diyarbakır	1955	57
Edirne	1963	44
Erzurum	1959	51
Eskişehir	1954	58
Gaziantep	1956	58
İskenderun	1951	48
İstanbul	1931	405
İzmir	1932	160
İzmit	1983	71
Kayseri	1968	59
Konya	1974	52
Malatya	1977	58
Mersin	1933	54
Samsun	1933	57
Trabzon	1963	60
Van	1978	45
Temsilcilikler		
Frankfurt Temsilciliği	1976	4
Londra Temsilciliği	1977	4
New York Temsilciliği	1977	5
Tokyo Temsilciliği	1997	2

Kaynak: TCMB.

Türkiye Cumhuriyet Merkez Bankası Şubeleri ve Açılış Tarihleri (TCMB Annual Report, 2009, p.57)

To the mayor of Samsun for Land request application



II/7/1936

Samsun Belediyesi Başkanlığına

Şehirde

4/7/936 tarih ve 827 sayılı Fen İşleri Müd. ifadeli yazınıza karşılıktır:

İki Banka arasında bulunup Belediyeye ait olan arsaya yaptırılacak binanın irtifaı zeminden itibaren 3,5 metre olmak ve cephesi 7 metredem aşağı olmamak şartile binanın Bankanın talebi vechile yaptırılarak arsanın üst tarafının bağçe olarak bırakılabileceği hakkındaki iş'arınız Merkezimize yazılmış ve bu kerre alınan cevapta tarafımızdan bildirilen ve yukarıda gösterilen şartların kabul edildiği bildirilmiş olmakla keyfiyet arzolunur.

30/6/936 tarihli mektubumuzda da yazılı olduğu üzere Banka Şehir arsaya bina yaptırmak için karar olduğu esasla şart arsanın tamamının Bankamıza ifraz edilmesi olduğundan arsaya yalnız bu şekilde talip olan Bankamızın müzayedeye iştirak edebilmesi için arsanın tamamının parçalanmadan müzayedeye konmasını dileriz.

Banka yaptıracağı bina ile memleket imar edilecek ve şimdiye kadar boş duran arsa iyi bir bina ve bağçe ile tezyin edilmiş olacaktır ki şehirciliğin bakımından şehrin güzelliği istifadeler anlaşılmayacak kadar ehemiyetlidir.

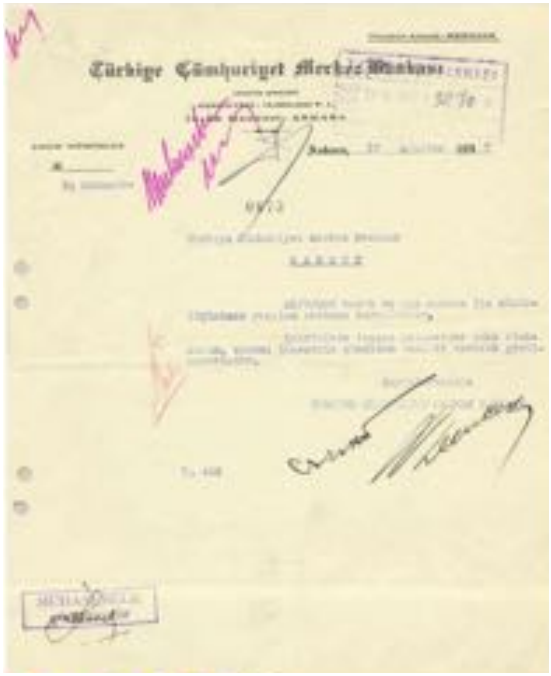
Müsbet cevabınıza intizar eder saygılarımı sunarım.

T.C.Merkez Bankası

Answer to the application for land of the TCMB Samsun Branch

4- Request for opinion and response from the Municipality dated 4.07.1936 regarding the building to be built on the purchased land

Opinion and telegram of the Headquarters on the construction of the Central Bank Branch Building in Samsun



17.08.1937 dated
6.03.1938,

telegraph stating that

the building project will be made with a competition

Architectural Competition announcement for TCMB Branch of Samsun, 31.03.1939

Cuma
31 Mart 1939
SAYI : 788

SAMSUN

3 Kuruş
Senelığı 150 kuruş
YIL : 15

Haftada bir Çıkar Vilâyet gazetesi

Millî Şef
Mühim bir Beyanname Neşrettiler

İsmet İnönü'nün teşekkürleri

Yeni Meb'uslarımız

Vilâyet Meclisi Toplantılarını bitirdi

Bir İnyir

Meb'us intihabatı

İSMET İNÖNÜ

Yerli Mallar Vitrin Müsabakası

Türkiye Cümhuriyet Merkez Bankasından

Samsun defterdarlığından

RESOURCES

Arkitekt Dergisi, sayı 107-108, s: 195-197, 1939

Alsaç Ü., "Türk Mimarlık Düşüncesinin Cumhuriyet Devrindeki Evrimi", s.16, Mimarlık 11-12, 1973 http://dergi.mo.org.tr/dergiler/4/465/6831.pdf

Güner H.E., Tuncer F., "Paul Bonatz İmzalı Tipolojik Bir Deneme: Kayseri Erkek Sanat Okulu", s.55, Mimarlık 402

Oran S., "Üstad Mimar Paul Bonatz", p.176-177, Arkitek, 1954, number: 289,

Özal G., "Erken Cumhuriyet Dönemi Erkek Sanat Okulları: Niğde Erkek Sanat Okulu Örneği", p.41, Yüksek Lisans Tezi, Karabük Üniversitesi Fen Bilimleri Enstitüsü, Karabük, 2019

TCMB Samsun Şube Arşivi

TCMB Annual Report, 2009, p.57

THE ONTOLOGY OF MATTER. BETWEEN REPRESENTATION AND CONSTRUCTIVE REALITY

KALTRINA JASHANICA

The interdependence of subject and matter in architecture today has slightly commutated the way we perceive material and immaterial domain. The antagonistic forces that constantly haul architecture between these two crucial conditions oscillate on different influential parameters that our discipline is 'urged' to consider and reevaluate. Considering the new materiality and beyond, architecture in the two last decades encountered a suspended qualities of noble materials as a means to rediscover a new meaning, compatible with nature or/and new spatial configurations on the way. "Yet, architecture is a true co-presence of meaning and material" (P. Emmons). As a consequence, the metaphor of time and matter lies in the mediation of what is perceived and the reality of construction as altered to the extent of phenomenal reasoning. The study consists in research of matter of architectural interpretation and the material reasoning of architecture, while understanding how the material choice influences architecture conception and construction within the operative dimension of project beyond its perceptive mien. The intention further seeks with the opposite -immaterial architecture can be studied as force and process rather as an absence of physical matter. Thus considering the latest events and to some extent new manifestos, rises the interdisciplinary interest for the reassessment of materiality, corporeality and atmospheric drift of contemporary architecture. Hence, the study is organized through selected examples with intention to compare and clarify the influences in physical and immaterial sense and understand how this affects the new spatial qualities in relation to new contingencies.

CREATING FALSE MEMORY IN ARCHITECTURAL HISTORY: HOW MEDIA AND CINEMA CHANGES REALITY INTO AN ILLUSION

TÜRKAN NIHAN HACIÖMEROĞLU

City and architecture are integral parts of media and cinematic vision. As a tool, architectural spaces both in cinema and media serve the narrative. What is seen is what should be seen as part of the story on the screen. Often that means, cinema and media change the perception of the city and built spaces regarding scale, program, context, spatial plans, user-space relationship, and material. Buildings are misread because of alterations in their context, facade, or surroundings, repurposed or re-functionalized spaces, distinct changes in dimensions, spatial patterns creating fictional connections following cut/edited movements in space, altered sound, material, and color of spaces using digital technologies. Spaces are deconstructed and reconstructed by using montage to fit the story. What we have in the end is not the actual space but a fictional one in the mind of the viewers and eventually in public memory. Even cities are transformed and presented as part of the spectacle. Collective memory on architecture is at risk of losing its integrity by popular culture via cinema and media.

This study is about the situations that change the memory of architectural history with fictional imagery. It analyzes how media and cinema change the perception of space for the sake of narrative and create fictional spaces within the original ones, thus creating false memory in the public's mind.

THE ARCHITECTURE WITHIN ART: “THE UTOPIAN PROJECTS”

TÜRKAN NIHAN HACIÖMEROĞLU

From September 07, 2017, till April 29, 2018, Hirshhorn Museum hosted the exhibition "The Utopian Projects" by Ilya and Emilia Kabakov. The exhibition consisted of small-scale models and info posters of both realized and unrealized works of the artists. The realization of the works meant constructing 1/1-scale architectural structures ranging from standard-sized rooms to approximately three-floor high constructions. The works in the exhibition famously blur the lines between art and architecture. The artists are also designers of space in a utopian world.

The relationship between utopia, art, and architecture comes together in the works of Kabakovs'. For this purpose, this paper focuses on the works presented in "The Utopian Projects" to question the relationship between architecture and art and how art utilizes architecture. To achieve that, eight works (models) from the exhibition are selected. First, the common elements in these works within the context of representation are defined and grouped. Then the narrative of the artworks is analyzed to understand how it utilizes architectural elements, representation, and narrative with references to Bolt, Pallasmaa, and Derrida's conceptual approaches.

The paper concludes that the representative power of architecture is utilized by art in different senses. The creation of space for any purpose is the work of architecture, but art has the power to take the experience of space from reality to beyond, to the unknown, a dream, or a utopia. The architectural space allows users to self-reflect and gives them a chance to realize themselves in an alternative experience.

FICTIONALIZING THE ARCHITECTURAL PRACTICE THROUGH THE ACT OF MAKING OVER THE MODELS

ÇIĞDEM KÖSEOĞLU KAYHAN, GÜLÇIN PULAT GÖKMEN

Model making is both a leading act of representational purposes and a constantly renewed design method used by architectural practice for centuries. After the distinction between the architect and the builder has been shaped, model becomes a prominent medium that architect can relate with the phenomenon of making. It is a common belief; architects see the building as something completed, while builders think of the same process as a series. Because the stages of construction consist of a series of events that pile up one after the other, this is the most significant consequence of the perception of designing and making as different situations within the discipline of architecture. This paper aims to read architecture as a process of making through the models as an emerging activity. The initial setup of this study is based on Yaneva's researches evaluating the architectural office and its routines with an anthropological perspective. For this reason, the design rituals of architectural offices which employ models as a necessity in their design approach are investigated to document the dynamics of making. According to the in-depth interviews made with the architects, each practice has developed a distinctive way of making in the context of physical models. Models produced for different reasons at various scales in many points of practice, starting in the office and maintaining until the construction process is completed. They provide the continuity of experimentation through the physical form's tactile quality both for the designer and the person who interacts with them. As a result of being used both as a communication and testing tool, making model creates a field to discuss critical moments of architectural practice in current conditions.

TEACHING AND SPACE SYNTAX: DESIGN EXPERIENCE FOR AN ARCHITECTURE GRADUATION PROJECT

WIEM ZEROUATI, RAYANE GOUMIDI, NADJET NEMLA

Wiem Zerouati

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Rayen Goumidi, Nadjet Nemla

Architects, Master degree, Department of Architecture, University Ferhat Abbas-Setif 1.

ABSTRACT

The present article describes our experience in supervising an end-of-study project for obtaining the master's degree in architecture for a pair of students at the Institute of Architecture and Earth Sciences (IAST) at the University of Setif 1 in Algeria. This unique experience and the first of its kind at the institute consisted in using the theory of space syntax in two stages: the first related to the use of the theory as a tool for analyzing the study area and the second concerns its use as a decision support tool for the design of the project of a community center for women in El-Eulma / Setif in Algeria. Space syntax has been widely used for the analysis of architectural and urban spaces with the objective of improving their attendance and accessibility by users. The field of intervention located in an administrative district forming part of a commercial city (El-Eulma) of international scope. The analytical phase based on three analysis tools, namely: the axial map (All-line Analysis), the Visibility Graph Analysis (V.G.A) and finally Agent based Analysis.

The conceptual stage attempts to respond to the issue of reconciling public space that is welcoming, inclusive and respecting the needs of Algerian women. Following the results of an online questionnaire, the respondents deplored the lack of spaces to practice certain activities: sport such as cycling, cultural such as drawing or public art, etc. The design of the project was based on the various results of the syntactic analysis closely linked to the results of the questionnaire conducted. An architectural project with its urban public space was proposed in a certain objective way to meet the needs felt by the users and to respect the spatial configuration of the environment in which the project will be designed.

This experience allowed the students to design based on objective data and to propose a project in harmony with its environment and meeting the objectives initially set. This experience remains beneficial and useful for future actions to consider and share in order to receive criticisms, remarks and suggestions allowing the improvement of the approaches to be undertaken in the future.

KEYWORDS: Urban Public Space; Space Syntax; Community Center; Design Solution, Teaching Experience.

INTRODUCTION

This article describes our experience in supervising an end-of-study project for obtaining the master degree in architecture for a pair of students at the Institute of Architecture and Earth Sciences (IAST) at the University of Setif 1 in Algeria. This unique experience and the first of its kind at the institute consisted in using the theory of space syntax in two stages: the first relating to the use of the theory as a tool for analyzing the field of intervention and the second concerns its use as a decision support tool for the design of the project of a community center for women in El-Eulma / Setif in Algeria. Space syntax has been widely used for the analysis of architectural and urban spaces with the objective of improving their attendance and accessibility by users.

The analytical phase based on three analysis tools, namely: the axial map (All-line Analysis), the Visibility Graph Analysis (V.G.A) and finally Agent Analysis. The students being native of the city and in perfect knowledge of the study field confirmed the concordance between the results of the syntactic analysis and the use observed on site.

The conceptual stage attempts to respond to the issue of reconciling public space that is welcoming, inclusive and respecting the needs of Algerian women. Following the results of an online questionnaire, the respondents deplored the lack of spaces to practice certain activities: sport such as cycling, cultural such as drawing or public art, etc. Based on the responses collected, we proceeded to formulate a qualitative and quantitative program to try to remedy the gaps and deficiencies mentioned. The design of the project was based on the various results of the syntactic analysis closely linked to the results of the questionnaire conducted with the people concerned. The work was iterative: two alternatives were proposed to retain only one in accordance with the recommendations resulting from the syntactic analysis. Following this, an architectural project with its urban public space was proposed in a certain objective way to meet the needs felt by the users and to respect the spatial configuration of the environment in which the project will be designed.

This experience, the first and certainly not the last, allowed the students to design based on objective data and to propose a project in harmony with its environment and meeting the objectives initially set, namely respect for the needs of women in public space and the integration of the project in its immediate environment.

Gender, architecture and public space

Panerai et al. (2002) states that:

"The public space includes all the ways: streets and alleys, boulevards and avenues, squares and squares, walks and esplanades, quays and bridges but also rivers and canals, banks and beaches. This set is organized into a network in order to allow distribution and circulation ".

However, women are still largely users of a city made by and for men. They do not have the same use of it because they always have, statistically, activities different from those of men: this is why the conception of public space must be questioned. The organization of public spaces is a result of the distribution of the social roles of men and women:

the man becomes the adventurer, the financier, the one in charge of affairs;

the woman, confined to the private sphere and to the tasks domestic workers.

This distribution of spaces has been internalized over the centuries and persists today.

The process of the emergence of women as an active member in a society is an issue for its change and development. The use of public space by women is limited to simple uses (traffic, shopping, etc.) and often with short stays reduced to specific times (morning / working hours, school, etc.). The woman has not yet come to inhabit the public space. The emergence of women in public social space is

ambiguous. While women have acquired new skills (mobility, education, salary, etc.) their place remains problematic and vague.

The presence of women in public social space implies neither a broad and undifferentiated appropriation of public spaces and places by women, nor their mixed use. The abandonment of public space by women for any cause (male domination, the way of life of a discriminating society, the quality of public space and the activities offered, etc.) presents social gaps as a consequence. This situation has made women lose the advantages of social diversity: the opportunities for socio-cultural meetings between men and women, the opportunity to discover new potentialities through relationships and interactions between them, a public space more welcoming to women, which will be more favourable in the future. So:

How can we build welcoming and accessible public spaces for all by encouraging cohabitation?

We suppose that an inclusive and friendly environment promotes the use of public space by all. This assumption will be verified by designing an architectural project with public space based on women suggestions using an objective tool as space syntax.

METHODOLOGY

Any urban area can be represented as a matrix of connected spaces whose quantitative properties can be measured using computer simulation. Space syntax models the spatial configurations of a city using a graph representation. It is used by architects and urban planners to study how the spatial configuration of buildings and cities influences the economic, social and environmental parameters of human movement and social interaction. According to the space syntax theory, all human activities have a spatial geometry: the movement is linear, the interaction requires a convex space in which all the points can see all the others and from any point in space we see a formed visual field called an "isovist" (Hillier and Vaughan, 2007)(Figure 1).

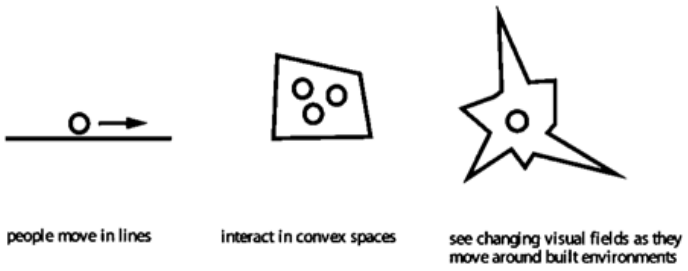

Figure 1. Relation between space and activity. (Source: Hillier and Vaughan, 2007)

Space syntax allows to predict the movements of pedestrians and vehicles by the syntactic measurement of local integration. It is considered as an appropriate technique to objectively identify invisible patterns.

Space syntax is mainly based on simulations carried out using several software, including Depthmap developed by Alsadair Turner at University College of London, using AutoCAD or MapInfo drawings, to perform accessibility analyzes and visibility with several analysis tools: the visibility graph (Visibility Graph Analysis VGA), the axial map, the “All-line Analysis” and other tools.

We used during the analytical phase three analysis tools, namely: the axial map (All-line Analysis), the Visibility Graph Analysis (V.G.A) and finally Agent Analysis. The students being native of the city and in perfect knowledge of the study field confirmed the concordance between the results of the syntactic analysis and the use observed on site. The generated maps show the most integrated or segregated spaces visually, with a color code ranging from red to blue. Red represents the most integrated spaces (high values) while blue shows the most segregated (low values).

Axial Map / All-line Analysis

The axial map is based on the generation of axial lines on the basis of a plan of a city or the study area. An axial line is the longest straight line of free sight in a convex space that can be followed on foot. Axial lines represent the basic unit of spatial analysis and serve as the cognitive equivalent of a street. They show how people perceive and move around the road network. An axial map, the sum of the axial lines, is the basic topological representation of a city where space is graphed, which allows for a non-metric topological analysis of the configuration of the urban space (Figure 2).

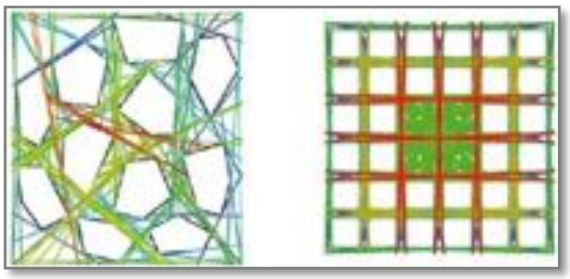

Figure 2. All-line analysis applied by Hillier on two different spatial structures (Source : Hillier, 1996 in Mokrane, 2011).

Visibility Graph Analysis (V.G.A)

Visibility Graph Analysis is a technique that enables integrative analysis of multiple positions in an environment by calculating inter-visibility of positions distributed evenly throughout the entire environment.

Desyllas and Duxbury (2001) assert that a significant correlation was found between V.G.A and pedestrian movement in ill-defined outdoor spaces when compared to other syntax analysis techniques such as the axial map.

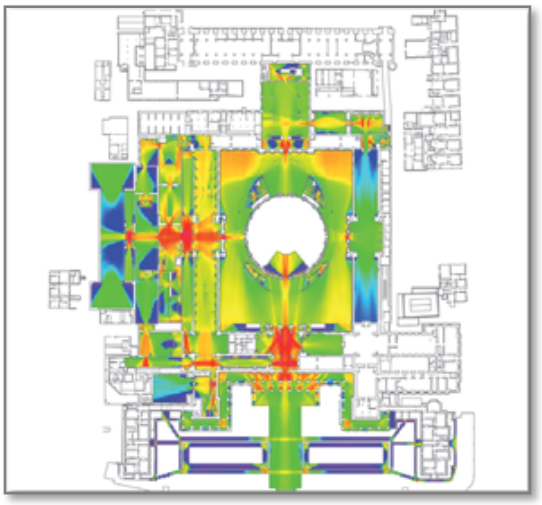

Figure 3. The visibility graph applied to the ground floor of the British museum (Source: Spacesyntax.net, 2016).

Agent based Analysis

Al-Sayed et al. (2012) explains that "*the Agent model is instrumental to acquire a better understanding of the cognitive basis of natural movement and probably explain navigation and wayfinding*." (Al-Sayed and al., 2012, p. 4)

The tool is based on agents released in the spatial system. These agents move on the base of the visual perception related to their position in the environment (Al-Sayed and al., 2012). The analysis based on the agents changes upon the visual information they receive. It is a dynamic process as much as :

"*the Agent model starts from the irreducible elementary actor in the system, that is the individual, and present the visual dynamics that direct his movement aiming to understand and reproduce the process of inhabitation and occupation in space*." (Al-Sayed and al., 2012, p. 4)

The figure 4 represents one of the implementation phases in the City of Madar. A visibility-based agent simulation of one of implementation phases gives a detailed picture of pedestrian activity. The colors represent levels of pedestrian flow that correspond to certain urban characters generated by people's presence. Designers can visualize the character of public spaces and evaluate the likely impact of the changes that they make to urban layout.

Figure 4: Using Agent analysis in the phase of implementation in the city of Madar. (Source: Karimi, 2012)

Online Survey

A questionnaire was posted on social networks and via emails so that women answer the questions to be used in the design process. 130 answers were collected. The results shows that women preferes both interior and extérior public spcaes for their activities (Figure 5). Women are as embarrassed by the insecurity that reigns in certain public spaces as by the quality and condition of the space frequented. Nevertheless, they deplore the impossibility of practicing certain activities in the public space, in particular outdoor space, namely: sport, cultural activities, art and reading. Women opt for two possibilities for cohabitation between the two sexes, namely integration or inclusion. These results will be exploited for designing the project.

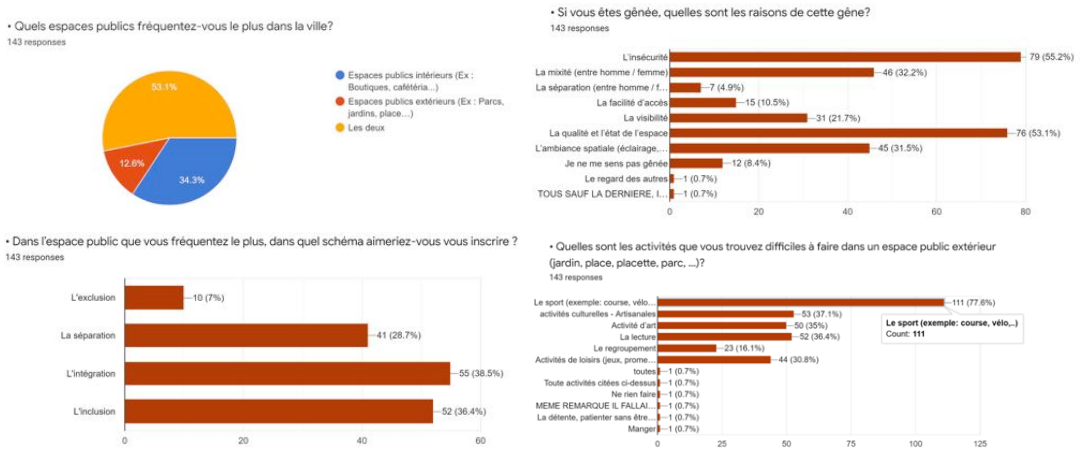

Figure 5. Survey results. (Source: Authors, 2021).

AREA STUDY AND ANALYSIS

The syntactic approach was applied on the case of study as an analytical tool first and as a conceptual one in the phase of designing the project.

Setif / Eulma localisation

Setif is a wilaya located in the East of Algeria 300 km from Algiers. It's the second most important city in the country (Figure 6). The municipality of El Eulma is located in the Sétifian highlands. It is a municipality in the wilaya of Sétif, located 28 km east of the capital of the willaya (Figure 7).

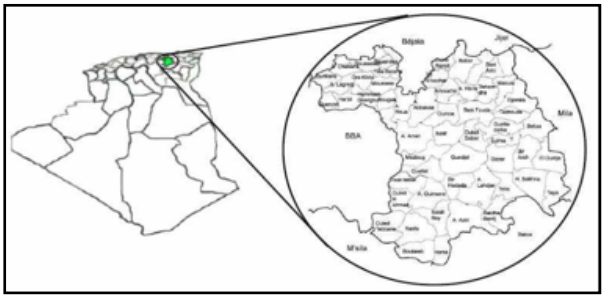

FIGURE 6. LOCATION OF SÉTIF IN ALGERIA (SOURCE: DSA OF SETIF, 2011). FIGURE 7. LOCATION OF EULMA. (SOURCE: WIKEPEDIA).

The city of El-Eulma has know a great extension since the seventies. This evolution has been mainly due to the commercial activity (Figure 8).

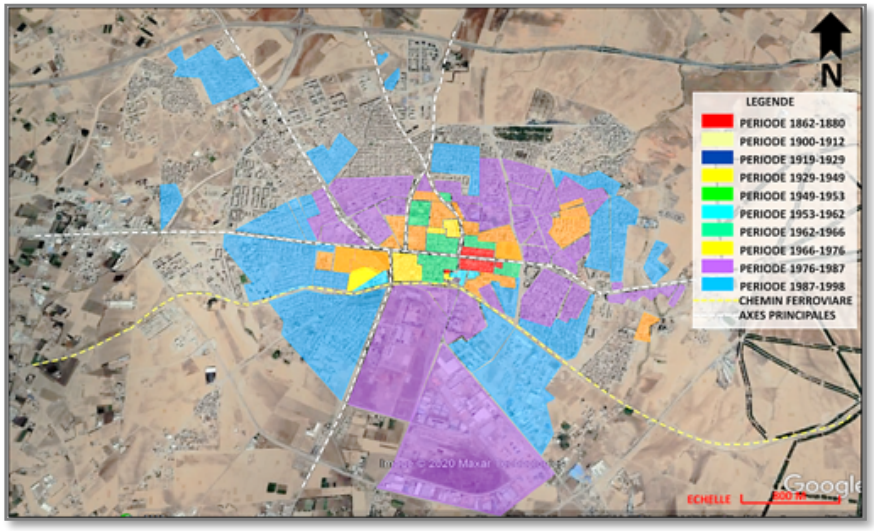

Figure 8. Evolution of the city of Eulma. (Source: D.U.A.C and authors)

Site of intevention

Before 2013, the site was still a public space, there was a built part consisting of a hydraulic building and a cafeteria, and an unbuilt part consisting of a garden and an exhibition space for Roman ruins.

After 2013, all the built-up part of the land was demolished, the ruins are transported to the city museum and all the site has been redeveloped into a public garden (Figure 9).

Figure 9. Situation of the site of intervention. (Source: Google Earth)

Space syntax analysis

The V.G.A integration graph indicates that the maximum values, represented by the color red, are at street level November 1, 1954 (RN ° 05); while the average values represented by the colors orange and yellow are at the level of the street of Djemila. The street limiting Charaa Dubai knows minimum values represented with the colors green and blue (Figure 10 right). The V.G.A results show a high value site crossing area to be considered in the design phase.

The graph resulting from the All-line Analysis shows the axes with high integration values. These values are presented in red, orange and yellow, corresponding to the street of November 1st (RN ° 05). An axis with high values crosses the site diagonally represents an important pedestrian movement axis to be considered in the design of the project (Figure 10 left).

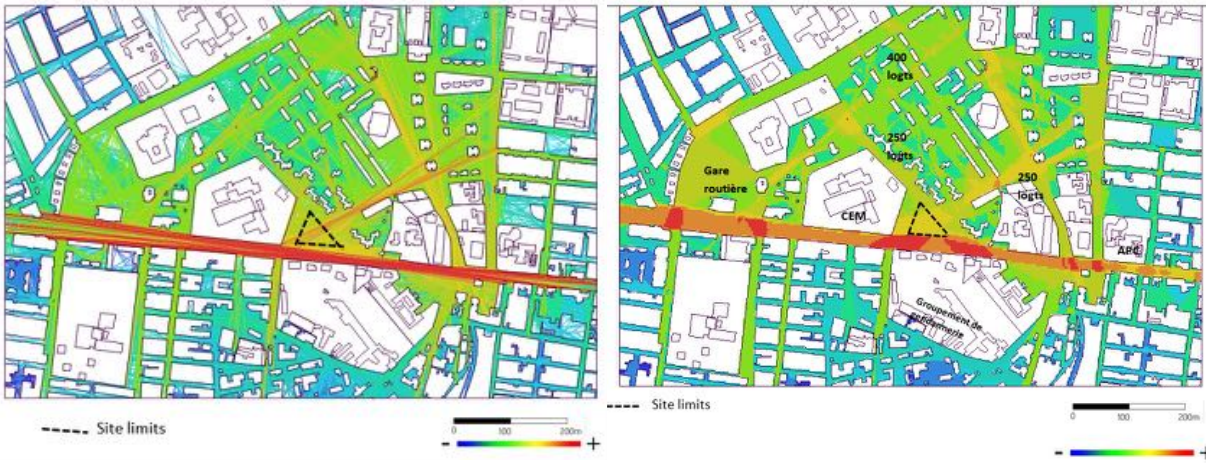

Figure 10. V.G.A and All-line Analysis results for integration. (Source: Authors, 2021)

Synthesis (SWOT)

The study area is located in an environment of varied activities (administrative, educational, residential, commercial, etc.). The majority of buildings are individual housing in the East, West and South, and in the north, mass housing (integrated housing estates). The existing commercial activity to the east and west of the intervention site has created great momentum in the study area.

We note a lack of local facilities that meet the needs of the inhabitants, especially cultural, sports and recreational facilities. There is also a total absence of public space or a garden to meet and relax, and those that exist are abandoned and poorly invested (Table 1).

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
• **Strategic location** reinforced by major road axes which make the study area an advantageous transitional space; • **Good accessibility** to the study area; • **Proximity to the city center** and administrative establishments; • The presence of individual and collective housing gives the study area the **attractiveness of inhabitants flow**; • The study area has an **important multifunctional pole**; • **The dominant commercial activity** is a factor of **dynamism and attraction.**	• **The heavy traffic** in the major axes presents a **nuisance**; • **Lack of diversification** transportation (soft mobility); • **Lack of animation and dynamics** around the study area; • **Lack of leisure, rest, walking and green spaces;** • **Lack of play areas** for children; • **Narrow and poorly landscaped sidewalks**; • **Lack of social attractiveness and parking space**; • **Lack of quality structuring equipment and services.**	• The strategic position of the site favors the **creation of meeting places, leisure and relaxation** which encourages **social interactions;** • The **existence of plant screens of trees**; • **Security** offered by the proximity of the gendarmerie and the police; • The possibility of **vertical densification** resulting from the width of the lanes around the site.	• **The dominance of mechanical traffic** at street level on November 1, 1954 (RN ° 05); • **Lack of quality passage** due to small sidewalks; • **The condensation of the housing** sector and the neglect of other sectors.

Table 1. Synthesis S.W.O.T (Strengths, Weaknesses, Opportunities and Threats) of the site. (Authors, 2021)

Results : the community center for women

The conceptual stage attempts to respond to the issue of reconciling public space that is welcoming, inclusive and respecting the needs of Algerian women. Following the results of an online questionnaire, the respondents deplored the lack of spaces to practice certain activities: sport such as cycling, cultural such as drawing or public art, etc. Based on the responses collected, we proceeded to formulate a qualitative and quantitative program to try to remedy the gaps and deficiencies mentioned.

The design of the project was done on the various results of the syntactic analysis closely linked to the results of the questionnaire conducted with the people concerned. The work was iterative: two alternatives were proposed to retain only one in accordance with the recommendations resulting from the syntactic analysis. Following this, an architectural project with its urban public space was suggested in a certain objective way to meet the needs felt by the users and to respect the spatial configuration of the environment in which the project will be designed.

Since the project consists of several levels, the table 2 presents the program for each level.

Underground	Parking
Ground Floor	Reception Commercial premises Exhibition space Technical space
1st Floor	Craft workshops Art workshops
2nd Floor	Cycling circuit Cloakrooms
3rd Floor	**Garden terrace** **Reading area**
4th Floor	Play area Consumption area
5th Floor	Administration

Table 2. Programm of the project. (Authors, 2021)

GEOMETRIC COMPOSITION

The students wanted to used cercles, with different sizes, as a primary forms by positioning them in the angles of the triangle respecting the site form (Figure 11). This disposition gives rise to a space between the base of the triangle and its vertex. This space will be designed as a public space for movement and interaction based on the syntactic results precising an important axis.

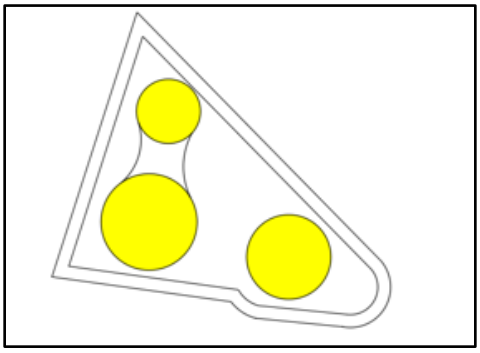

Figure 11. Geometric composition of the project. (Source: Authors, 2021)

Conceptual Syntactic analysis

The integration graphs by the All-line and Fewest-line analysis shows high-value axes represented by the colors red and orange in the center of the site which offers an advantageous pedestrian traffic flow for the project. In front of the site in the basis of the triangle, the values are low to average due to the presence of the school walls.

Figure 12. Integration results of the site All-line Analysis. (Source: Authors, 2021)

PROJECT DEVELOPMENT

As shown in the figure 13, the circles become cylinders as separate disks for the building floors. The most activities are distributed in the two cylinders linked with a circulation space. The separated cylinder is a public social space with a lot of activities for children and adults. The garden semi buried is for children playgrounds. The parking is underground since the site surface is limited and to free the ground floor for green spaces accessible exclusively to pedestrians. The ground floor is equipped with commercial activities, shopping and services. The first floor is dedicated to arts and craft activities. This floor is superimposed by a cycling circuit for women. Then, in the upper floor we found a space for eating : cafeteria, restaurant and terraces. The two last floors are reserved to playing area and the administration that which manages the building and the project with its exterior spaces.

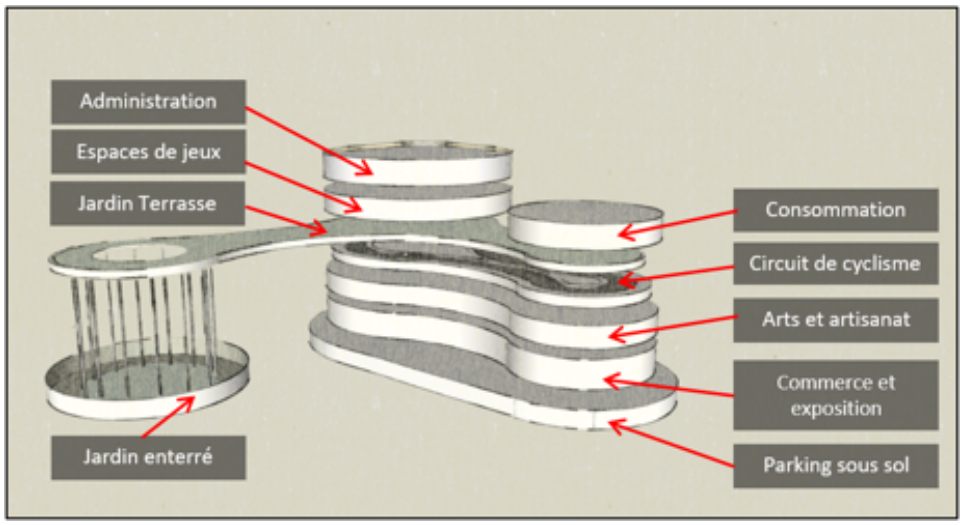

Figure 13. Project development. (Source: Authors, 2021)

MASTER PLAN AND BUILDING ACTIVITIES

The design of the master plan is based on the syntactic results. It contains various activities like : gathering and meeting spaces, public art space and children playgrounds (Figure 14).

Green spaces and water plans are also availables to animate and energize the atmosphere of the place.

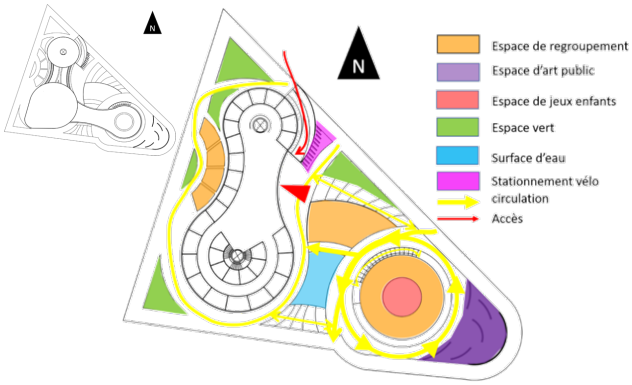

Figure 14. The first drawing of the project master plan. (Source: Authors, 2021)

The figure 15 shows the different steps of the project development. The first step was precising the pedetrian network in the site based on the syntactic results. The choice of the implementation of the building was deducted from the syntactic analysis and simulated to see the effect of the spatial configuration on the possible use of the space by pedestrians. To give rise to a better volumetry and propose a different aspect for the immediate environment, cylinders was chosen.

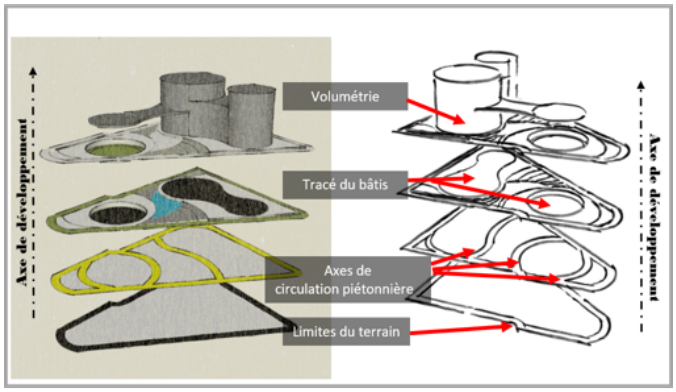

Figure 15. Distribution of activities by floor in the project. (Source: Authors, 2021)

The final result was outstanding for the environment (Figure 15). The project should be an attractive place for women, without or with children. It cas be a place for playing, reading, crafting ...for all activities absent until now from the Algerian public space (Photo 1).

Photo 1: View of the project from the garden semi-buried. (Source: Authors, 2021)

Figure 15: Final Project Master plan. (Source: Authors, 2021)

CONCLUSION

The design of an architectural project is not just a geometric composition, but also a whole process and a set of theories and criteria to follow. This long process leads us to a complex project that meets environmental, social, architectural and even cultural requirements. The reconciliation between these requirements makes the architectural project unique and adapted to its implementation context.

This community center project is an attempt to respond to the problem raised at the beginning of the master degree project. This response tries, by relying on several techniques of data collection (the questionnaire) and architectural analysis (Space syntax) to meet certain needs experienced by

Algerian women in order to be able to practice public space in all its dimensions. This experience, the first and certainly not the last, allowed the students to design based on objective data and to propose a project in harmony with its environment and meeting the objectives initially set, namely respect for the needs of women in public space and the integration of the project in its immediate environment.

We should note that the experiment was carried out in just two months, a period considered very short for the scope of the work to be done, but the students were able to rise the challenge. This experience remains beneficial and useful for future actions to consider. This experience deserves to share in order to receive criticisms, remarks and suggestions allowing the improvement of the approaches to be undertaken in the future.

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CONTEMPORARY URBAN ISSUES

REVISITING A MODEL FOR HOUSING AND INFRASTRUCTURE SUPPLY WITH PRIVATE CAPITAL: THE CASE OF THE JAPANESE ARCHITECT Y. UCHIDA

TAKAAKI NAKAGAWA, JUNKO SANADA

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ABSTRACT

To identify the origin of the contemporary housing problem in Japan and gain clues to achieve solutions, we revisited Yoshikazu Uchida's plan for a residential area in Tokyo, Japan, in 1922. To do this, we analyzed Uchida's plan, planning materials, and handwritten notes. The results achieved in this study fall under two perspectives. From a spatial point of view, Uchida considered the topography when selecting and planning the site. A newly discovered drawing depicting the layout of a large area reveals that Uchida planned to facilitate the commute to the center of the capital by building new roads and an electric tramway on raw land in the suburbs to create connections with the existing transportation system. From an economic perspective, Uchida aimed to establish a private housing company to purchase the land and build public facilities, infrastructure, and housing. Uchida's handwritten notes suggest that he referenced overseas examples such as the Letchworth and Welwyn garden cities in the topography, transportation planning, and the establishment of companies. The above-mentioned plan was intended to show capitalists that they would recover their investments from the project. These findings demonstrate the plan's objective to supply housing and infrastructure to suburban areas with private capital to solve a serious housing shortage.

KEYWORDS: housing company, private capital, housing shortage, garden city, Yoshikazu Uchida

INTRODUCTION

Since the industrial revolution, providing a comfortable living environment for all in a growing population has been recognized as an essential urban issue worldwide. However, creating a comfortable residential area requires large areas of land and large amounts of capital. In Tokyo, Japan, a serious housing shortage in the 1910s–1920s led to a lively discussion among pioneering thinkers in urban and housing policy. This discussion explored the respective roles of the national government, local governments, and the private sector based on the economic perspective. In particular, the Housing Company Bill considered subsidizing private companies with public funds to build housing. Although this bill was not passed, housing companies were expected to be the organizations that would build the garden cities and implement urban planning projects (Fukuoka, 1993). Revisiting the discussions of that time is crucial for identifying the origin of the contemporary housing problem in Japan and gaining clues to achieve solutions.

The famous Japanese architect Yoshikazu Uchida was an urban planner who also designed cities and worked on legislation regarding urban planning. Uchida had proposed a plan for a residential area to a committee that was considering the Housing Company Bill in 1919. He also presented it in a lecture at the Architectural Institute of Japan and in newspapers in 1922. This residential area plan by a private company, called the Garden City Plan, was for about 3,000 houses in 1.76 square kilometers. Several studies have focused on Uchida's other plans (Kikata, 2004; Nakano et al., 2015; Nakagawa et al., 2020), but the Garden City Plan, one of his earliest urban plans, is known only in outline. Regarding this plan, Watanabe suggested that Uchida's proposal combined Raymond Unwin's skillful design and Ebenezer Howard's meticulous calculations (Watanabe, 1993, p. 197). However, the plan's characteristics have been analyzed based only on his lecture material at the Architectural Institute of Japan (Uchida, 1922). Using other materials to demonstrate the aims of Uchida's plan and what he was referring to is essential for a deeper understanding of the historic Japanese housing policy. In addition to the lecture material, we analyzed Uchida's planning materials and handwritten notes deposited in the Tokyo Metropolitan Archives by his bereaved family. Thus, we revisited Uchida's plan by examining its characteristics from both spatial and economic perspectives.

SPATIAL CHARACTERISTICS

In his lecture material, Uchida stated that the planned site was located about 7–8 km west of Shinjuku (Uchida, 1922), but its exact location remains unclear. To clarify the spatial characteristics, we investigated Uchida's planning materials. We discovered a layout plan of a large area that depicted the planned site, parks, a civic center, and main roads. Figure 1 shows the original layout plan and what we traced on it. As presented in Figure 1, Uchida set the planned site on physical land, although his plan was never intended to be built. From Figure 1, we can see that Uchida planned three main roads within the planned site, which are traced in purple. The first is a road connecting Ogikubo Station on the Chuo Line and Kami-Kitazawa Station on the Keio Electric Tramway, with 2.73 miles of an electric tramway. The second road connects the Itsukaichi-Kaido Highway and the Koshu-Kaido Highway. The third one crosses the planned site from east to west. The above-mentioned Chuo Line, Keio Electric Tramway, and two highways were existing transportation systems, leading to Shinjuku, a major transportation hub. Moreover, Uchida proposed a civic center at the intersection of three main roads, where a large plaza, an office of the housing company, a public hall, a police station, a fire station, a post office, and a telephone office were planned. Uchida also planned housing, stores, and public facilities within the site; however, no factories or companies were planned. These findings demonstrate that Uchida planned to facilitate the commute to the center of the capital by building the main roads and the electric tramway to connect with existing transportation systems.

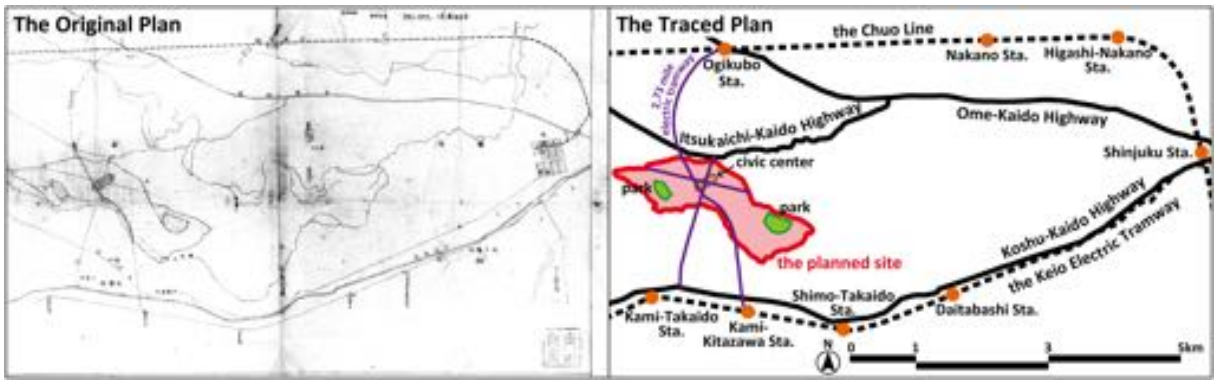

Figure 1. The layout plan of a large area (Tokyo Metropolitan Archives, 1922)

Based on the site's location identified by Figure 1, Figure 2 shows the plan presented by Uchida in 1922 and a topographical map of similar age. By comparing the two, the following characteristics regarding topography can be identified. The planned site was a suburban area that had not yet been urbanized and sloped gradually toward the south to allow sunlight for the housing. Along the south side of the planned site was a land-use of low paddy fields, utilized as vegetable gardens in Uchida's plan. The western park was located in a valley-shaped depression that lowered following the paddy fields. These findings illustrate that Uchida considered the topography when selecting and planning the site.

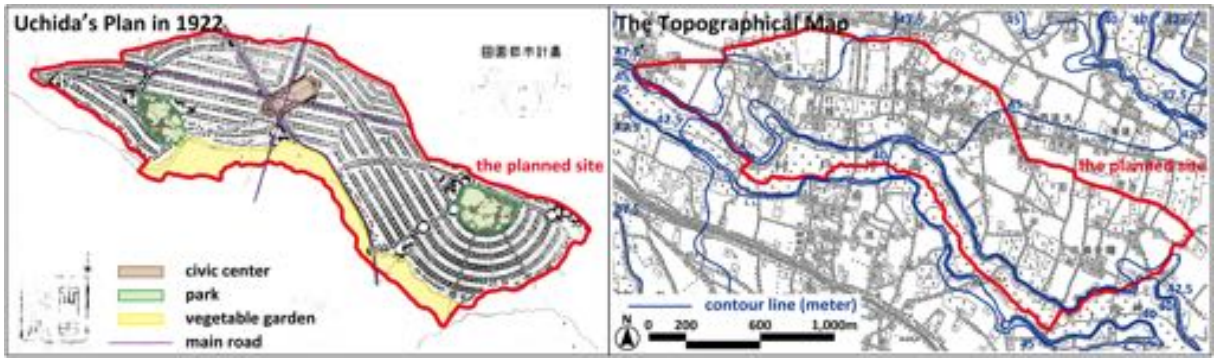

Figure 2. Uchida's plan in 1922 (Tokyo Metropolitan Archives, 1922) and the topographical map of similar age (Imperial Japanese Land Surveying Department, 1917)

ECONOMIC CHARACTERISTICS

Uchida estimated that building the residential area on raw land in the suburbs would cost approximately 20 million yen. Table 1 shows the details of the development costs based on the lecture material at the Architectural Institute of Japan. Table 1 includes the cost of purchasing the land, building the site, and constructing the housing. In addition to this, the fact that Uchida also included the costs for infrastructure is significant. For example, the estimated construction costs of roads, the electric tramway, water and sewage systems, and public facilities reveal that Uchida aimed to supply housing and infrastructure simultaneously.

Breakdown	Expenses (Yen)
Site purchase cost	4,260,624.00
Roads on the site and plaza construction cost	1,459,825.00
Off-site roads: purchase and construction cost	261,600.00
Double-track electric tramway laying cost	819,000.00
Park site development and facilities cost	147,120.00
Public facilities site development cost	13,592.50
Residential land development cost	161,631.00
Water facilities cost	375,000.00
Sewage facilities cost	329,070.00
Public facilities construction and equipment cost	730,000.00
Housing construction cost	11,059,000.00
Miscellaneous cost (founding cost, employees' salary, public impost, etc.)	300,000.00
Total	**19,916,462.50**

Table 1. The development costs for the residential area (Uchida, 1922)

Uchida explained the method for paying for the above development costs as follows (Uchida, 1922). First, a private housing company would be established to purchase the land and build housing and infrastructure. Next, the company would determine the price of a lot and a house based on the development costs. Then the ownership of the lot and house will be transferred to the residents in exchange for a deposit of 20 percent of the price. After this, the company would hold mortgages and have the residents pay the balance over 15 years at 8 percent interest per annum. Finally, the company would reduce the size of its assets approximately 17–18 years after its establishment, thereby completing the project of building housing and infrastructure with a yield on capital of 8 percent per year.

These calculations assumed middle-class or higher housing. Uchida also offered the option of allowing lower-class housing to be run separately by a local government organization or impose upon the company to build them in exchange for subsidies. Uchida's overall plan was to supply housing and infrastructure to the suburbs by using large amounts of private capital in the face of a serious housing shortage.

UCHIDA'S HANDWRITTEN NOTES ON THE GARDEN CITY

To understand Uchida's ideology for the above plan more deeply, we analyzed his handwritten notes on the garden city (Tokyo Metropolitan Archives, n.d.). Among his handwritten notes, we targeted those that contained readable information from before April 1922, the date of the lecture at the Architectural Institute of Japan. Based on several descriptions in his handwritten notes, we were able to identify their sources. Figure 3 shows actual pieces of his handwritten notes, and Table 2 shows the correspondence between their contents and their respective sources, including English and Japanese articles. By comparing the contents with the sources, we found that his handwritten notes were translated from English articles into Japanese or transcribed from Japanese articles. As shown in Table 2, Uchida had gathered the latest information at that time about the English garden city, focusing on foreign cases such as Letchworth and Welwyn rather than Ebenezer Howard's garden city theory.

A more detailed investigation of the contents revealed that they share spatial characteristics with Uchida's plan. For example, in the Welwyn Garden City, the main Great Northern line ran through the center of the estate, and two branch lines led from the center to Hertford in the east and Luton in the west, respectively (Reiss, 1920). According to the drawings attached to the notes, the town center, with shops and public buildings, was located next to the main line station, where the branch lines converged. Additionally, most of the estate gradually sloped towards the south, providing an excellent residential environment (Reiss,

1920). The above descriptions show that the features of the garden city in terms of transportation and topography are similar to those of Uchida's plan.

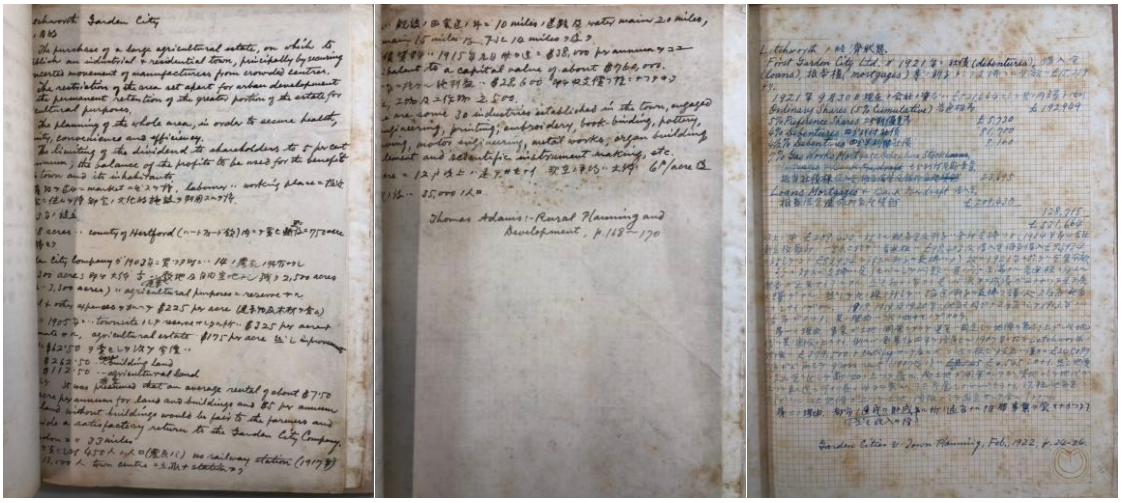

Figure 3. Uchida's handwritten notes on the garden city (Tokyo Metropolitan Archives, n.d.)

Title	Type	Contents	Descriptions of their sources	Sources
Letchworth Garden City	1 page of notes	General outline of Letchworth	N/A	(Fukuda, 1919)
Letchworth Garden City	2 pages of notes	Development process and planning details for Letchworth	Thomas Adams, Rural Planning and Development, pp. 168–170	(Adams, 1917, pp. 168–170)
Letchworth. The health of the Iown.	1 page of notes	Letchworth's infant mortality and population	N/A	N/A
The finance of Letchworth	1 page of notes	The finance of Letchworth	Garden Cities & Town-Planning, Feb., 1922, pp. 24–26	(Purdom, 1922)
The town area of the Letchworth estate of First Garden City Ltd.: Plan of present development, summer 1908	Drawing	Overall view of Letchworth	Inigo Triggs, p. 200	(Triggs, 1909, p. 200)
Welwyn Garden City	3 pages of notes	Development process and planning details for Welwyn	The Town Planning Review, December, 1920	(Reiss, 1920)
Welwyn Garden City	3 pages of notes	Explanation of the Daily Mail Ideal Village	The "Daily Mail" Ideal Village. Borrowed from Mr. Kan Nakamura	N/A
Welwyn Garden City herts: Diagram of town plan shewing zones, open public spaces, public buildings and through roads	Drawing	Overall view of Welwyn	L. de Soissons A.R.I.B.A., S.A.D.G., Architect, Welwyn Garden City Ltd.	N/A
Factory area: Welwyn Garden City	Drawing	Enlarged view of factory area	L. de Soissons A.R.I.B.A., S.A.D.G., Architect, Welwyn Garden City Ltd., Drg. no. 415, 21. 6. 21	N/A

Table 2. The contents of Uchida's handwritten notes and their sources (Tokyo Metropolitan Archives, n.d.)

The economic aspects of the garden city were also focused on in his handwritten notes. The First Garden City Ltd. and Welwyn Garden City Ltd. were established in Letchworth and Welwyn, respectively, to develop housing and infrastructure. In particular, the detailed article on the financing of First Garden City Ltd. (Purdom, 1922), which Uchida translated in his notes, shows that Uchida was also interested in a financially viable development method. However, First Garden City Ltd. earned revenue from ground rents instead of selling a lot and a house. Furthermore, one of the general objects of the scheme was using the balance of the profits for the town and its inhabitants by limiting the dividend to shareholders to 5 percent per annum (Adams, 1917, p. 168). In practice, however, Letchworth only paid a dividend of 2.5 percent from 1918 to

1921 (Purdom, 1922). In comparison with Uchida's plan, the establishment of companies is the same, but the leasing of land and the restriction of dividends are different.

CONCLUSIONS AND DISCUSSION

This study revisited Uchida's plan for a residential area in Tokyo, Japan, in 1922. Our results show that the selection and planning of the site took into account the topography and the transportation planning for large areas, thereby highlighting the spatial characteristics. At the same time, the utilization of private capital with detailed calculations supplied housing and infrastructure to the suburbs, thereby focusing on the economic features. In other words, the plan was implementable from both spatial and economic perspectives, as demonstrated by more clear evidence than in previous studies. At that time, Uchida was more interested in the Letchworth and Welwyn garden cities than Ebenezer Howard's garden city theory. Uchida's handwritten notes suggest that he referred to overseas examples in terms of the topography, transportation planning, and the establishment of companies. Compared to prior studies, these results reveal a strong influence of the overseas garden cities.

However, Uchida chose the method of selling land and housing, even though the original concept of the garden city was to lease them. This difference seems to be an objective of his plan to demonstrate the feasibility of the business for capitalists to build housing and infrastructure. In his lecture at the Architectural Institute of Japan, Uchida mentioned the following three factors that had prevented the realization of such housing companies in Japan: the requirement for large amounts of capital, the difficulty in obtaining vast land areas, and the lack of knowledge among Japanese capitalists on managing residential areas (Uchida, 1922). In his opinion, the first and second factors could only be solved by legislation and the national government, but his propaganda could solve the third factor. For this, Uchida needed to show that capitalists would recover their investments from the project to build housing and infrastructure. Therefore, instead of a long-term system of returning surplus profits to a town, Uchida adopted a system of subdivision for sale that ensures the collection of a certain amount of money on time.

In summary, to solve a serious housing shortage, Uchida aimed to establish private companies that would supply housing and infrastructure to suburban areas based on overseas examples. To achieve this, Uchida intended to utilize private capital with the propaganda of his plan to capitalists. The above-mentioned model of assigning public roles to the private sector implies significant possibilities for contemporary urban housing issues worldwide.

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RESILIENCE OF OPEN PUBLIC SPACES SURROUNDING SMALL URBAN WATERCOURSES IN BELGRADE'S URBAN PLANNING DOCUMENTS

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ABSTRACT

To what extent is the concept of resilience integrated into Belgrade's planning documents with regards to the revitalization of small watercourses?

Belgrade is located on a complex web of small rivers and streams, which were neglected for years and not recognized as a potential for urban development. They were straightened, channelized, piped, or even filled in and built over. Soon, the disadvantages of this approach became obvious – increasingly frequent floods have led to a number of problems, hurting local ecology and endangering citizens' lives.

Consequently, experts from different fields associated with urban development recognized the significance of these rivers and streams. As a result, the revitalization of small urban watercourses, surrounding open public spaces and the development of city-wide blue-green corridors, have become an important topic of planning documents, starting from the high-level strategic plans all the way down to the urban design.

Carefully planned urban riverfront areas can show enormous potential for recovery and rehabilitation, combining urban regeneration with environmental, socioeconomic, and aesthetic improvement. Additionally, public spaces on the banks of small rivers and streams can live year-round, even during frequent floods and periods of recovery, if planned and designed accordingly. For that purpose, socio-ecological resilience – an interdisciplinary concept – can be used as an important framework offering a conceptual ground for the principles for the creation of such resilient spaces.

Therefore, this paper will study whether – and to what extent – the principles of socio-ecological resilience are a part of the planning documents dealing with the revitalization of small watercourses in Belgrade.

1. INTRODUCTION

Urban planning following sustainability principles illustrates the importance of open public and green spaces in cities by including them as one of the major topics in strategic and regulatory planning documents. Unregulated and undeveloped green areas have already been recognized as a valuable resource for increasing the resilience and sustainability of cities. The revitalization of small urban watercourses – another example of open spaces – is one more topic increasingly being represented in planning documents, as they are often neglected, untidy and potentially even dangerous in case of torrential floods.

The city of Belgrade in Serbia lies on approximately 160 small watercourses. In general, the condition of these streams is very poor, characterized by mostly neglected banks and riverbeds. However, in the last decades, the awareness about the importance of their regulation has been growing among experts. Slowly, the old ways of regulating rivers by removing them from the urban environment to make room for development are changing towards recognizing their potential in the development of a resilient and sustainable city.

In this research, I will be dealing with socio-ecological resilience as it is very important for the revitalization of small urban watercourses. The concept of socio-ecological resilience was chosen among other different concepts because it considers the role of both sociological and ecological systems to be equally important in achieving resilience. This research aims to examine whether and in what way the principles of socio-ecological resilience are integrated into the planning documents in Belgrade, specifically the parts that deal with the revitalization of small urban watercourses.

In the first part, I will be using the critical analysis of the literature, highlighting the principles of socio-ecological resilience that are important for achieving the resilience of open public spaces along the banks of small urban watercourses. In the second part, I will be examining (a) the extent to which the general postulates of this concept are integrated into strategic documents and (b) whether measures to achieve resilience of open public spaces along small watercourses based on the concept of socio-ecological resilience form a part of Belgrade's regulatory urban plans.

2. PRINCIPLES OF SOCIO-ECOLOGICAL RESILIENCE IMPORTANT FOR SMALL WATERCOURSE BANKS

The concept of socio-ecological resilience was chosen as a basis for the principles that can be applied to increase the resilience of an area in the vicinity of small watercourses as it comprehensively considers the issue of resilience while respecting both social and ecological resilience. The term social in the socio-ecological refers to not only social but also to economic and cultural spheres. Socio-ecological resilience is the ability of a system to absorb disturbances and reorganize itself during a change while keeping its function, structure, and identity. At the same time, the change promotes the system to evolve and create new trajectories for development (Folke, 2006).

When talking about small watercourses, the most significant disturbance is flooding. Creating resilience to the effects of flooding is achieved primarily by raising the quality of coastal space (ecological), but also through the improvement of local communities and institutions (social). Together, these two represent a single socio-ecological system.

According to Wilkinson (2011) there are related topics within urban planning and socio-ecological resilience that link these two disciplines: (a) both are closely related to sustainability, (b) deal with human-nature relations, (c) are directly related to practice (natural resource management and urban governance, respectively), and (d) are concerned with cross-scale spatial dynamics in complex systems (Wilkinson, 2011). The most significant changes that the integration of postulates of socio-ecological resilience brings into current principles of urban planning and design, which are relevant for the revitalization of small urban watercourses, are listed below:

1. Nature in cities is getting an increasingly significant role, and consequently in urban planning and design. Environmental and ecological consideration is becoming a driving concern in urban planning. Although a history of the relationship between man and nature exists in urban planning and design, the ecological component has become important only in recent decades, resulting from the influence of the sustainability concept.

2. Social and ecological systems are closely related and interdependent. The separation of these systems is human construction (Berkes & Folke, 2003). The link between socio and ecological systems is of special importance for this research as open public spaces along the coasts of small watercourses have even more pronounced features of a socio-ecological system than the remaining city structure. The laws of nature are what largely determine the way these spaces are shaped (McHarg, 1996).

3. Understanding the uncertainties brought about by disturbances changes the approach to urban planning and design, especially the way problems are identified and solved. Instead of trying to tightly manage and control the change and disturbances, as it is usually done today, the focus shifts to the idea of absorbing change by raising social, economic, and environmental capacities. The product of urban design - the space – is no longer final and finished. Instead, it must adapt and improve over time.

4. Revitalization and improvement of the banks of small watercourses and their activation will increase the resilience of that area. By raising the quality of social, economic, and ecological capacities, changes and disturbances are absorbed and new trajectories of socio-ecological systems are created.

According to the general principles of socio-ecological resilience relevant to urban planning and design, we've listed the important measures for the creation of resilient open public spaces along the coast of small watercourses:

1. Planning and use of natural stream management where possible,

2. Providing room for a river to expand and integrate into the environment by increasing the area of open public spaces,

3. Prevention and removal of illegal construction on floodplains,

4. Integrating passive flood protection systems in urban spaces,

5. Creating multifunctional open spaces that allow the river to expand freely, in such a way to allow for space to be active and to live during periods of recovery from disturbances,

6. Designing space so that it can support different activities and contents,

7. Creating dynamic riverbanks by designing diverse open public spaces,

8. Linking both sides of a river in terms of form and function, and integrating the water into public spaces,

9. Ensuring accessibility to small watercourses,

10. Connecting watercourses into one system of open public spaces,

11. Actively involving the local community in planning and the use of these spaces; Special attention should be put on informing the public how to behave during floods and education on various warning methods,

12. Ensuring vertical and horizontal coordination of institutions.

The text that follows will analyse the extent to which the general principles of resilience are integrated into plans at the strategic level, and the extent to which measures developed under the concept of socio-ecological resilience coincide with those existing in general and detailed regulation plans.

3. PRINCIPLES FOR THE DESIGN OF RESILIENT OPEN PUBLIC SPACES ALONG THE COAST OF SMALL WATERCOURSES IN STRATEGIC DOCUMENTS

The two most important planning documents that shape the development of Belgrade are: the General Urban Plan (GUP) and the Strategy for The Development of The City of Belgrade Until 2021. The GUP is a part of formal planning practice in Belgrade – it is the highest level, most important urban plan used to control the land development and presents a foundation for all lower-level plans, i.e., regulatory plans. The Strategy for The Development of The City of Belgrade, on the other hand, is a document that is part of informal planning practice in Serbia. There are no clearly defined connections between these two. Over the last decade, the importance of informal planning has grown so that the GUP is now created in accordance with the main goals laid out in the Strategy.

3.1. Strategic documents for the City of Belgrade and Climate Change Adaptation Action Plan with vulnerability assessment

Strategy For the Development of The City of Belgrade was adopted in 2017 for the period until 2021. The document defines eight strategic goals that should contribute to the realization of the vision of the city as "urban, sustainable, responsible, dynamic and developed European region"(The Assembly of the City of Belgrade, 2017). An important principle on which the strategy is based is the environmental awareness, i.e., the idea of the necessity of a sustainable natural environment as a prerequisite for development, and it is integrated into all goals. The goal that is mostly related to resilience states that Belgrade should be a sustainable, resilient, and renewable city.

The three main priorities of this goal are: 1) Protection and improvement of the quality of environmental, 2) Preservation of biodiversity, nature and protected natural areas, and 3) Development of an institutional system for management, monitoring and reporting on the environment (The Assembly of the City of Belgrade, 2017). One of the measures to achieve these priorities is to improve the quality of threatened small watercourses by establishing integrated water management practice. Another important measure that mostly refers to the resilience of the city is the call for the implementation of the Climate Change Adaptation Action Plan with Vulnerability Assessment issued by the City of Belgrade, Secretariat for Environmental Protection.

The Climate Change Adaptation Action Plan with Vulnerability Assessment is a document that mostly tries to integrate the principles of resilience into its goals and measures. It consists of three parts: vulnerability assessment, the assessment of future risks and opportunities, and the action plan. The action plan provides measures that includes the principles of resilience for the revitalization of small watercourses. The measures are split into several parts:

1. A group of measures relating to green areas in the city and the creation of "green infrastructure" - a network of natural spaces. Such spaces provide environmental, economic, cultural and other benefits that improve the quality of life of citizens, plants and animals and offer a natural environment for their development (The Assembly of the City of Belgrade, 2015). New green spaces and revitalized old ones are treated as spaces of natural, cultural, and aesthetic values, places for assembly, contact, communication, education, recreation, and enjoyment of residents, all of which positively affect people's psychophysical health and affirm the social dimension of the city.

2. The second group of measures includes those directly related to flood protection, which includes the regulation of riverbeds of small watercourses and the design and construction of retentions that are planned on a large number of small watercourses.

3. The third group includes measures related to urban planning and design and construction of facilities, the most important of which is the ban on the construction of facilities in the areas endangered

by floods. Another important thing is that the plan indicates that urban planning should be used to increase the resilience of the area to floods.

4. The fourth group of measures refers to raising the awareness among citizens and influencing their behaviour during disturbances, i.e., floods, and the creation of early warning systems.

5. The last group of measures are institutional and organizational measures. It is necessary to establish a mechanism for coordination of activities: within the city administration, between the city administration and public enterprises, between the city administration and local groups, and between the city administration and state authorities (The Assembly of the City of Belgrade, 2015).

The Strategy for The Development of The City of Belgrade considers nature an important element of the city and states that the protection and improvement of the environment is a prerequisite for the development of Belgrade. The general principles of resilience are recognized in some goals and are used to introduce a framework for the development of a resilient city.

The Action Plan for Adaptation to Climate Change is the document that mostly deals with the topic of resilience. It deals with the ecosystem, considering man an important part of it. Floods are one of the extreme weather events, so the revitalization of the area along the coast of small watercourses is considered an important factor in adaptation to climate change. The action plan states several measures related to urban planning and flood protection, and even guidelines for the design of facilities. However, the plan provides very few measures related to urban design of open public spaces along small watercourses, nor does it show an initiative to integrate flood adaptation measures into the urban design of these areas – for example, to make passive flood protection facilities a part of public open spaces that citizens will use. The plan however does call for the need to develop urban renewal projects, within which this issue can be further elaborated.

3.2. General urban plan of Belgrade (GUP)

The General Urban Plan of Belgrade until 2021 is the highest in the hierarchy of all urban plans and stands for a strategic document with development guidelines that are in line with the Strategy for the development of the city of Belgrade. Unlike the Strategy, the GUP deals with the issues of small watercourses in more detail and provides clear instructions on what green corridors along the streams should look like.

The green corridor, according to the GUP, is designed or natural green space, in the form of a line or strip, whose basic function is connecting green areas into a single system, thus providing easier access to it. Depending on the location and accessibility, green corridors play a significant role in the active and passive recreation of the citizens. Furthermore, as they provide the opportunity for species migration, the corridors play a significant role in preserving the city's biodiversity. Green corridors can be formed from different types of green areas, depending on the width, shape and spatial position. Also, certain parts of a green corridor can be developed as parks, forests, or areas of natural vegetation (vegetation created by the process of natural succession). Green corridors should be equipped with standard infrastructure and, if needed, an irrigation system. They can have pedestrian and bicycle paths with accompanying equipment and facilities (The Assembly of the City of Belgrade, 2016).

GUP as well as the Strategy bases its conception on the importance of preserving the environment. The principles for planning green corridors are in line with the goal of resilience - they provide guidelines for the revitalization of these areas through several principles: diversity of space, different activities, connectivity and accessibility, a high percentage of greenery, biodiversity.

4. PRINCIPLES FOR THE DESIGN OF RESILIENT OPEN PUBLIC SPACES ALONG THE COASTS OF SMALL WATERCOURSES IN GENERAL AND DETAILED REGULATION PLANS

The most important plan concerning resilience is the Plan for The General Regulation of Green Areas (PGRG). The preparation of this plan is a direct result of the strategic commitment to developing Belgrade on the principles of sustainability and, accordingly, to give the green infrastructure, which has been neglected and subordinated so far, the status of primary infrastructure. The goal of the Plan is to establish a unique system of green areas of Belgrade, and its development into the green infrastructure of the city by integration with other natural areas in the vicinity such as water areas, wetlands, natural green areas, etc.

The general principles for planning green areas are similar to those laid out by the GUP and are in line with strategic documents. According to the Plan for The General Regulation of Green Areas, one of the priorities is the preservation of natural valleys of small watercourses, i.e., their revitalization. The plan lists several urban watercourses that pass through the city core and are piped or partially regulated and identifies two reservoirs that have been constructed to mitigate the torrent floods. The flood protection on riverbanks is planned by using active (construction of retention and accumulation basins for mitigation of flash floods in the upper parts of the river basin) and passive methods (construction of line flood defence systems - regulation of the riverbed).

The plan also proposes to build 728ha of new green corridors. According to the PGRG, the City should strive for natural riverbed regulation with the necessary biotechnical measures. The most important measures prescribed by this plan for zones of small watercourses are (a) to ensure that 70% of the land in these areas be covered with vegetation in direct contact with the ground, (b) to form separate bicycle and pedestrian paths, (c) to provide places for resting every 1km or less along the coast, (d) to create fields for sports and picnic areas, (e) construction or covering of the ground should be discouraged, and (f) excess rainwater should be collected and purified by using aquatic plants (The Assembly of the City of Belgrade, 2019).

The Plan of General Regulation of Green Areas gives a clear identification and classification of green areas, which is a huge contribution to the creation of a resilient city. Currently, this plan is in effect is applied to all public green areas in the city.

It provides clear guidelines for the creation of green corridors and green connections that extend along the banks of small watercourses and proposes natural regulation, where possible. Unfortunately, relative to the area of all watercourses the space where it is possible to implement green corridors is small and is located in the city zones that are far from downtown. Furthermore, the number of watercourses that are preserved and without any development is small. For streams that are piped or already channelized, no adjustment according to the principles of resilience is envisaged, even though this is becoming a widespread practice in many cities in the world.

As a part of this research, we analysed several detailed regulation plans that encompass some of the small watercourses in Belgrade. For example, the plan for detailed regulation that includes the Topčiderska River, which according to citizen surveys is the most famous small watercourse in Belgrade and was historically used as a famous picnic area in the 19th century. Today, it is partially channelized, very polluted, and not integrated into the environment through which it passes. This plan does not attach much importance to it and only states that it should be greened and landscaped but fails to propose improving the resilience of the area nor does it analyse the potential impact of the river to increase the attractiveness of the areas through which it passes.

5. Conclusion

The plans that we analysed present an important contribution to the development of Belgrade towards a resilient city, especially the Climate Change Adaptation Action Plan and Plan for The General Regulation of Green Areas. All these plans advocate the development of environmental awareness, and the idea of a sustainable natural environment as a prerequisite for development and propose measures to increase the resilience of the city that is exposed to the effects of climate change.

What can be recognized as a shortcoming in the plans is the lack of vertical coherence, i.e., the lack of conceptual, contentual and methodological coordination between higher-level and lower-level plans so that goals formed at the strategic level are partially lost at the level of detailed regulation plans. In addition, various third parties such as wealthy developers have a major influence on detailed regulation plans, whilst the public interests are often neglected, and since there are *de facto* no obligations to pursue the interest of the public, the principles of resilience are disappearing and are much less recognized in lower-level plans than in strategic documents. The development of public open spaces and green spaces depends on financing policies.

Having an integrated approach to the development of open public spaces in the areas of watercourses, successful interdisciplinary cooperation and competent institutions are all very important for planning small urban watercourses. When designing open public spaces, it is important that flood adaptation measures are integrated into the urban design of these areas, that passive flood defence mechanisms become a part of open spaces and areas for socialization and recreation. This can be achieved by developing a good framework that can be applied to projects of urban renewal and revitalization of these areas.

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OPEN GREEN AREAS ALONG THE SMALL URBAN WATERCOURSES: AN OPPORTUNITY FOR ENHANCING URBAN LIVEABILITY

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ABSTRACT

Small urban rivers and streams that Belgrade abounds in, are mostly unregulated and inaccessible to citizens. They are often polluted, with the deteriorating environment, frequently flood the surrounding areas, and represent unattractive and inaccessible areas of the city. As a result, small rivers became barriers between different parts of the city.

However, instead of separating, the role of small rivers and streams can be a complete opposite – to connect different parts of the city! Although they are currently a problem, the areas surrounding the streams actually have great potential – they are rich in greenery and water. By revitalizing and properly developing these areas we can create new open public spaces for the recreation and socialization of citizens. Carefully planned urban riverfronts can act as a binding element between areas in their immediate surroundings and support the creation of blue-green infrastructure connecting numerous neighbourhoods through which Belgrade streams pass.

This paper aims to show the ways we can use open public spaces to link small rivers and streams with the urban environment. I will present the principles of urban design of open public spaces along small rivers and streams that could be used to improve accessibility to watercourses, highlight their attractiveness and create quality connections between various parts of the city.

INTRODUCTION

During the last decade, the integration of nature into urban areas has become one of the major topics in the development of Belgrade. Following the recently introduced "green infrastructure" concept, Belgrade plans to connect and revitalize every natural area in the vicinity, hitherto inconspicuous and/or neglected. These areas also include valleys of small watercourses, which are often very polluted and whose ecosystems are disturbed. Many of these watercourses disappeared in the process of urbanization, by being piped underground while the roads and buildings were being built above. However, some have been preserved to this day. These surviving surface waters are partially regulated (channelized) and usually very polluted, thus negatively affecting the environment.

Instead of being viewed as a problem and a barrier between city areas – inaccessible and unsafe zones – these numerous streams can play a significant role in the development of pedestrian and bicycle traffic in the city and new recreational zones. Seeing beyond technological and economic aspects, there is exciting potential in revitalizing neglected watercourses and surrounding areas, by utilizing the synergy of urban regeneration and socio-economic progress to improve the urban landscape.

There are roughly 160 small watercourses located in Belgrade that belong to several watersheds. They represent the potential for the creation of green corridors and a green network, whose main role would be to connect the urban areas through which they pass. By developing open public spaces in the river valley, streams can become connecting elements – an infrastructure that binds various parts of the city. To achieve this, they must be easily accessible to citizens, attractive and offer various activities. In this paper, I will present the principles of urban design for shaping such public spaces, that serve to connect parts of the city in two ways: 1) by linking different urban areas along the river and 2) linking areas of the city that lie on opposite banks of a small watercourse.

BELGRADE AND IT'S WATERCOURSES

Today, Belgrade's streams are often neglected, unkempt and forgotten. But they used to play a significant role in the urban life of the city in the past. There were many more of them and some of them were especially important for the formation of the first settlements or major outing areas. Some had different-looking riverbeds (natural) or different shape, their flow winding and often meandering. Some were even used as city beaches (Miljanic, 1985).

Today, unfortunately, very few of them still flow on the surface. Some major city water collection systems are named after these old streams. Beneath many of today's streets are streams enclosed in concrete pipes. It can be concluded that, in the earlier decades, little attention was paid to them, and early urban planning was not as far-reaching. As a result, very few streams from the rich network remained unregulated in the traditional hydro-technical sense (Cvejić, et al., 2002). There are no surface small watercourses left in the Belgrade downtown area, while in the middle and outer areas many streams remained partially or completely unregulated.

According to the results of a pilot survey about awareness of streams in the city and their current state that we conducted online on a sample of 117 randomly selected citizens of Belgrade over the age of 18, the citizens know very little about streams – 61.3% of respondents had the opportunity to see up to 2 streams (out of some 160 that exist in the wider area of Belgrade), and only 2.8% of respondents had the opportunity to see more than five streams. This data speaks to how invisible and inaccessible streams are today (Djukić & Sretović Brković, 2018).

PROBLEMS ON BELGRADE WATERCOURSES

Given the condition of Belgrade's surface streams, it is first necessary to undertake revitalization measures for them to become a viable part of the urban fabric, thus fulfilling the prerequisite for the creation of active open public spaces that could connect different areas of the city. The main problems the streams are facing that should be solved for open public spaces to thrive on their banks are:

1) High pollution levels. The natural environment of the streams and small rivers has deteriorated, and several environmental incidents were recorded in previous years. Pollution is most often caused by industrial complexes and illegal landfills, as well as illegal settlements found on the banks of these watercourses (Cvejić, et al., 2002). Until the water quality in streams gets better and the ecosystems improve, these zones cannot become attractive locations, nor it is possible to integrate the water into the environment.

2) Floods and fear of floods. During the previous century and the beginning of this one, many large floods occurred on small rivers and streams. In 1949, the outpouring of the Mokroluška river onto the populated area in the lower zone of the watercourse caused several casualties (Cvejić, et al., 2002). Unregulated or poorly regulated rivers can pose a great danger to citizens. River regulation is an integral part of the formation of open public spaces and these two activities should be considered together.

Figure 1. Explan Small urban streams and rivers in Belgrade (Source: left - www.beobuild.rs, www.espreso.co.rs right – own work, L.Vuletić)

3) Massive developments in floodplains. Although Belgrade's urban plans do envisage landscaping of watercourses, very few streams are actually not converted to construction sites. As a result, there are not many watercourses that can be revitalized and on which it is possible to implement planned landscaping projects. New buildings are located adjacent to the water, sometimes along the riverbed itself. This

prevents the creation of a single continuous binding element in the city structure and increases the risk of erosion.

4) Unattractiveness and inaccessibility. This problem is in part a consequence of the above-mentioned problems. Many streams in Belgrade are not attractive, or are neglected, and therefore negatively affect the environment. As such, they are inaccessible and unsafe. If we tackle these problems, it would be possible to transform Belgrade's urban streams into attractive green spaces.

The pilot study mentioned in the earlier part surveyed citizens about the problems that streams face and the results indicated that the citizens are mostly aware of the problems related to pollution. Almost all respondents, 97.3% of them indicated that they consider large amounts of waste and polluted water to be the biggest problem. 39.3% of them opted for illegal construction on the coast, and only 29.5% of citizens consider water outpours and floods a problem. Interestingly, as many as 65.2% of citizens noticed the issue with unattractiveness and inaccessibility. In fact, a large number of citizens consider the appearance of streams and the zones that surround them important and would like for the streams to be revitalized and revived (Djukić & Sretović Brković, 2018).

Considering the problems presented in the previous paragraphs, it is clear that the revitalization of city rivers and streams in Belgrade is necessary. Primarily to minimize negative environmental impacts, such as water quality problems and negative effects on aquatic and coastal habitats and biodiversity. Moreover, in addition to environmental, it is necessary to take into account cultural, social and aesthetic requirements in this process. Harmonizing all these requirements should be one of the key goals during the revitalization, so that these spaces become liveable, and thus important connecting elements of the city.

SMALL WATERCOURSES AS CONNECTING ELEMENTS IN THE CITY IN CURRENT PLANNING DOCUMENTS GRADE AND IT'S WATERCOURSES

Regarding small watercourses, the most important document among the current Belgrade urban planning documents created in the end of last decade is the new General Regulation Plan for Green Areas. It attaches great importance to green spaces, preservation, and revitalization of watercourse areas in city development (The Assembly of the City of Belgrade, 2019).

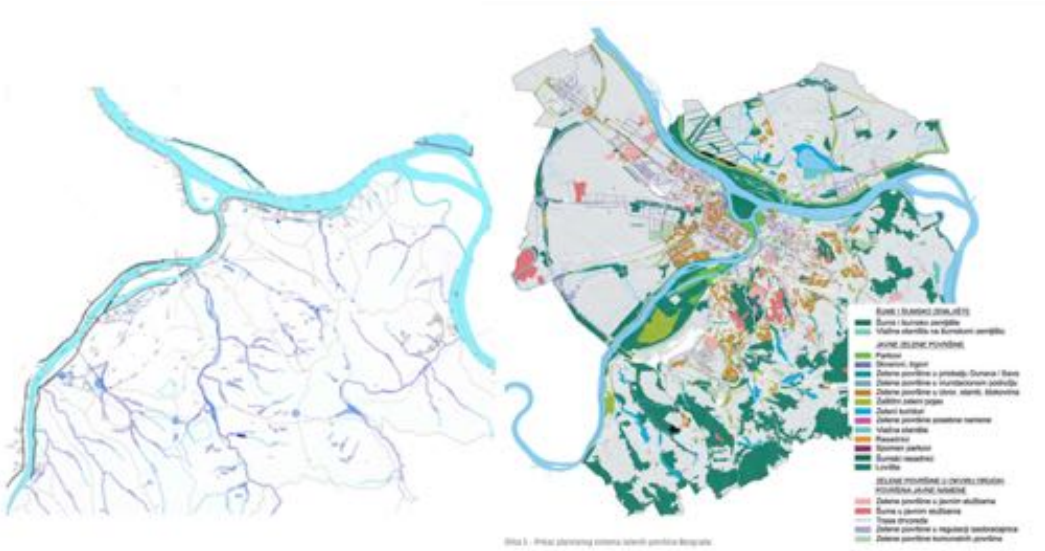

Figure 1. left: Small urban streams and rivers in Belgrade (Source: Master Plan of Belgrade 2021); right: The planned system of green areas of Belgrade (Source: General Regulation Plan for Green Areas)

Small watercourses are part of the city's green infrastructure. They are envisioned as part of green corridors and as such, they are to function as an important connecting element between various green open spaces in the city. They are called green ties, which is their key role. The watercourses are important for pedestrian and bicycle traffic and are places in which passive and active recreation of citizens can take place. They also have a vital role in species migration and the preservation of biodiversity. Therefore, they should be planned and designed to be accessible to the citizens (The Assembly of the City of Belgrade, 2016).

Regulatory plans that put forward proposals for the development of green corridors along the banks of small watercourses are the foundation for the creation of revitalization projects for these zones. These projects require a multidisciplinary approach to overcome all issues and challenges faced by small watercourses, making the roles of urban design and open public spaces important parts to ensure that these areas become successful and liveable places.

The next part of the paper will present the principles of urban design of open public spaces along small rivers and streams that could be used to improve accessibility to watercourses, enhance their attractiveness and create quality connections between various parts of the city.

DESIGN PRINCIPLES FOR OPEN PUBLIC SPACES ALONG SMALL WATERCOURSES

One of the main goals of small watercourse revitalization is to remove all obstacles and barriers to movement created within these zones and to transform them into visual and functional connecting elements of the city. Due to the specific physical characteristics of these areas – the length to width ratio (a length of a watercourse is very pronounced compared to its width i.e. a distance between opposite banks), the question of connection must be analysed in two different ways. The first refers to connections between open public spaces along the river flow and their harmonization, with the aim to effectively bring together different urban areas through which a river flows. The second refers to the connection between open public spaces on opposite sides of a river and their integration into urban areas located on riverbanks.

Connecting urban areas along the river

Watercourses differ from other open public spaces by their pronounced length, which is an important characteristic that influences their urban design. In urban areas, a length of a stream can be hundreds of meters or tens of kilometres. On one hand, this linear characteristic requires a unifying approach to the design of such space, especially since its role is to be a connecting element. On the other hand, an urban stream can be very long and flow through very different surroundings, so it is difficult to observe them as one whole. So, in urban design, they must be viewed simultaneously as a whole and segmented, while trying to achieve:

1.Continuity of space. Elements such as water, hiking and biking trails usually run a full length of a stream, therefore, connecting it into one whole. The repetition or continuity of some feature through space generates a sense of wholeness and continuity. On the other hand, repetition or uniformity can create a sense of monotony, so the above-mentioned elements should vary in form and appearance.

2.Dynamics of space. For open public spaces to be attractive and inspiring for citizens, they must be dynamic, so it is important to work on the diversity of individual open public spaces. Since they can be located in various parts of the city and have different surroundings, they must be designed in accordance with the

context in which they are located and the needs of prospective users of the space. The diversity of spaces depends on both the shape of a body of water and the way it is regulated. Combining different types of landscaping and including various activities creates dynamism (Djukić & Sretović Brković, 2020).

3.Spatial and temporal harmonization of different activities. Due to the length of a watercourse, it means it will flow through diverse spaces in a functional, aesthetic, and cultural sense, and that numerous different activities will exist along it. It is important for the activities that occur in space to be synchronized in time. Understanding the patterns of activities in space and time makes it possible to achieve synergy and improve the quality of space. High-quality space offers its users many different activities to choose from, in addition to spontaneous social interaction that can pop up as long as there are people present (Gehl, 2010).

Connecting opposite sides of a watercourse

Unlike large rivers where left and right banks are distant and can be regarded as completely independent entities, in the case of small watercourses the banks and the water present an inseparable whole. The urban design of open public spaces along small watercourse should achieve:

1.Visual and functional unity of the left and right banks. Due to the small distance between the banks, the water and its banks should be designed as a single space that is a combination of open public spaces and water surfaces. The ratio of these elements: water and land vary depending on the water level. When the stream dries up, the connection between the banks is more pronounced, and the space can get completely new characteristics and identity. When the waters levels are high, especially in extreme cases and floods, water dominates and occupies a large part of the open public space (Djukić & Sretović Brković, 2020).

2.Accessibility of the river. In addition to the bank-water-bank connections that should be created, it is important to integrate the watercourse with the existing built environment using open public spaces. The new spaces should add to the existing connections and tie into the current pedestrian and car routes.

3.Spatial and temporal harmonization of activities. Periods of floods, recovery from floods and droughts shape the space in different ways, and thus dictate the different activities that take place there. Activities shape space, and at the same time, space stimulates activities (Gehl, 2010). Activities that occur in space must be synchronized in time and observed through the timeframe of change. Each different shape of space encourages the emergence of different types of activities.

CONCLUSION

After a long period of neglect, small watercourses are becoming a topic that is increasingly being talked about in professional circles. One reason is the commitment to develop the city according to the principles of sustainability, which focuses on green areas. The other is a growing impact of climate change and increasing occurrences of extreme weather events to which small watercourses are directly exposed. Consequently, open public spaces along the banks of small watercourses will become an important element for the resilience of the city. Although small watercourses have become an important topic in planning documents, their future revitalization and implementation of plans will depend on priorities in urban policies, the city budget and policies for financing the construction, landscaping and maintenance of green areas.

In the last few years, the citizens in Serbia are becoming more aware of the importance of the environment, which is reflected in the frequent rallies for the protection of waters and air from various forms of pollution. The fact that the protection of nature and the environment is recognized as an essential need, shows how

much important is to inform the public about the issues the urban streams are facing and ways to overcome them. After all, the way we'll treat small watercourses in Belgrade will largely depend on public support.

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SHARED SPACES AND USER SATISFACTION AS TOOLS FOR RESIDENTIAL COMPLEX DESIGN: THREE CASE STUDIES IN TIRANA, ALBANIA

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ABSTRACT

In Albania there is a large variety of housing typologies. Residential complexes are the most recent and this typology is increasing in number and demand. One of the criteria that influence the users' preference is the open shared spaces. The meaning of shared spaces in Albania has changed in different time periods the cities have passed. Therefore, features of shared open spaces influence the user's perception and for sure their satisfaction. The objective of this research is to assess spatial quality of shared spaces in three different residential complexes in Tirana, and to explore their impact in the life of the residents.

Through observation checklists, structured questionnaires with the residents and analysis of buildings layout patterns this research determines the characteristics of in-between spaces of selected residential complexes and the user's satisfaction. The results imply that resident's satisfaction is associated with spatial and social features of the complexes. Important features such as safety, maintenance, accessibility, and spaces for different activities are what sets the satisfaction.

KEYWORDS: Residential complex, Residential environmental quality, Shared spaces, User satisfaction.

1. INTRODUCTION OF SHARED SPACE IN RESIDENTIAL COMPLEXES

Living in the capital or big cities these last years has given to the residents a feeling like they have a lack of something in their life which is important to be discussed (Kooshali, A.D., et al., 2015). Among the problems can be listed urbanization that brought a decrease of public spaces quality and quantity. Citezens have different needs and to have a qualitative life, different aspects are crucial and should be handled with care. (Nasution, A.D., 2014).

However, one of the most recent subjects that is of great importance and has become a subject matter for several studies worldwide are the residential complexes and the focus in shared spaces of these residential complexes (Mahdavinejad, M., et al., 2012). They are a social infrastructure with heavy importance in housing developments. The main function and purpose of the open shared public spaces is to create a place for various activities for comfort and beauty in residential complexes. It is the combination of activities that makes these spaces meaningful and attractive (Gehl, 2006). All about creating a feeling of satisfaction regarding people's needs (Omar, D., et al., 2015).

This quality of open public spaces that has a wide usage in the vocabulary of the architects and designers during the last years shows the quality of life in a specific place. In the 1980s William H. Whyte, in his book 'The social life of small urban spaces', shows this connection between qualities of city space and city activities and shows how small physical alterations can make the usage of the city better, and the residents can profit from this.

This research will have a closer look of what happens inside a residential complex, by analyzing three case studies of successful complexes regarding the aspect of open shared spaces Its aim is the spatial quality of open public space in residential complexes, such as Tirana, Albania. It is observed that there exists a gap between the space quality that the existing residential shared spaces have and what is that the users want, need and desire.

There are two main sides of the problem. On one hand, there exist spaces with no proper usage between buildings or inside residential complexes, on the other hand, there are public spaces totally missing or usurped: buildings of several heights stand next to each other and neighborhoods that don't have common space for people to sit and stay.

Results will affect the designers and architects of these open public spaces by providing them with feedback about the problems of such spaces. On the other side the residents of these units will benefit from this research, architects will have it easier to provide possible solutions to them.

2. QUALITY OF RESIDENTIAL SHARED SPACES

Both the quality and other aspects of the public space benefit from activities in association with elements of communal open space (Nasution A.D., et.al., 2014). There are six architectural features to be considered when it comes to common areas for residents The public space's architecture design features are listed as; architectural style, design quality, natural features, cultural features, and services related to accessibility (Shabak, M., et al., 2015). Open spaces in a residential area include side spaces, pedestrian and vehicular walkways, green areas, parking spaces, temporary stations, and landscape furniture. Another key element is also the access to other elements such as greenery, playgrounds, places to seat, place to rest etc. (Saiedlue, S. et.al. 2016) The elements of open public space have a significant impact on the completeness of human interaction needs. Green places, water elements, and physical qualities are among these elements (Omar, D., et al., 2015). All these elements contribute to the development of residential complexes and their shared spaces. The size of the open space, density of that area, arrangement of the site, and location are the major indicators of a developed public space (Shabak, M., et al., 2015) (Figure 1).

A pleasant environment is seen to be a form of protection. The term "protection"; can refer to a variety of things. The relationship between activity intensity and degree of safety is mentioned by Jane Jacobs (1961). Protection from crime, vehicular access or traffic, and adverse weather should all be present in a location where varied activities can take place. The protection from the wind and the requirement of the sunshine are what people want and need for their outdoor activities to happen.

One of the reasons that can make people stay longer in a public place is the high quality of that public space (Nasution, A.D., 2014, Gehl, 2006).

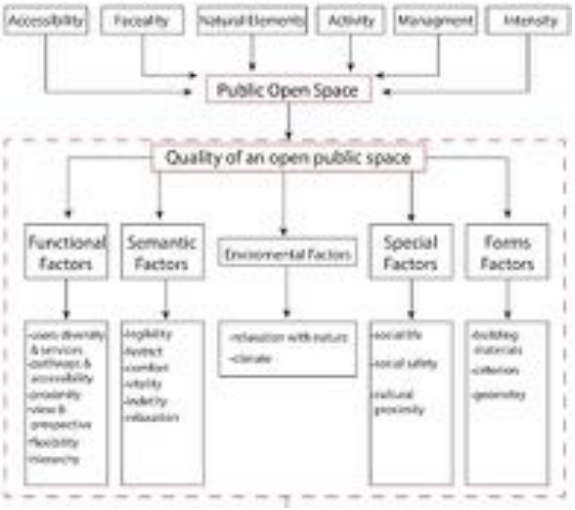

Figure 1. *Quality of an open public space relationships.*

There are two ways to look at the quality of public space. Function features are those that include information about people's backgrounds and activities in these spaces. The second factor is physical characteristics. (Gehl, 2006, Nasution, A.D., 2014).

The characteristics can be summarized as:

1. Feasibility (size of the open public space) (Henf and Chan, 2000)

2. Accessibility (possibilities of people to achieve their needs) (Giles-Corti, et al., 2005)

3. Safety (security that residents have when they frequent their public space) (Wicox et al., 2003)

4. Comfort (the well-being) (Gedikli and Özbilen, 2004)

5. Social interaction (contact, exchange of information and the connection of residents in the public spaces) (Gedikli and Özbilen, 2004)

6. Crowding (the usage of the public spaces from a lots of people) (Mannings,2003)

7. Pleasure (the good feeling that people experience) (Maas et. al, 2009)

3. METHODS

Three complexes were chosen in Tirana, Albania for closer investigation. There are two main reasons for choosing these complexes. Firstly they are built in different times and periods and secondly their closeness to the city center which represent different types of users.

Through an observation checklist and a structured questionnaire with 30 residents of each residential complex and through the analysis of buildings layout patterns this research determines the characteristics of in-between spaces of selected residential complexes and the user's satisfaction.

4. "GARDEN CITY" COMPLEX: RESIDENTS' PERCEPTION ON ELEMENTS AND ACTIVITIES ON SHARED SPACES

Built in 2006, "Garden City" complex shows an attempt of the designers to create a residential complex with lots of elements and activities in it. It is located at the entrance of the city, and it is considerably far away from the city center (Figure2). Playing areas, urban furniture, green areas, areas for elders, parking, pedestrian streets, cafes, commercial areas, sportive areas, automobile streets and picnic areas are some of the main elements that were asked to the residents of the "Garden City". Unanimously, green areas are considered as the most important element of open public space.

Figure 2: *" Garden city" complex located at the entrance of Tirana*

Green spaces were followed next by pedestrian streets, urban furniture, sportive areas, areas for elders and playing.

A considerable number of the interviewed residents gave an answer as "not important at all" to elements such as: picnic areas and cafes where these last ones where so much in number. A clear understanding can be viewed in the figure below (Figure 3).

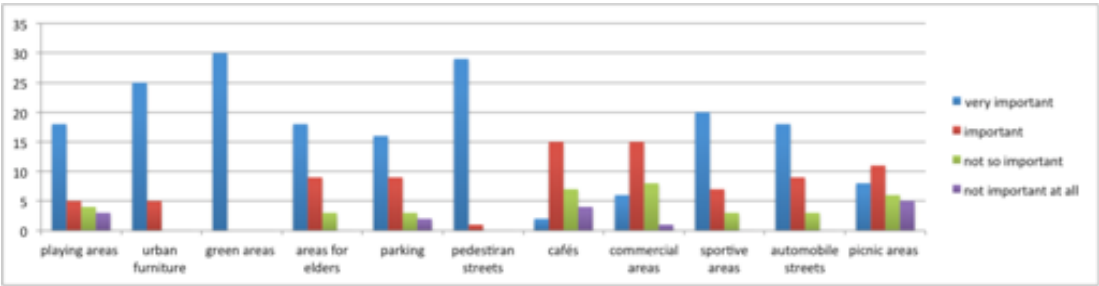

Figure 3: *Elements importance as expressed by users*

Despite the elements, activities of the open public space are of great importance for the residents. Enjoying and relaxation are two of the activities that are of a great importance for the residents in the Garden City Complex (27 out of 30 interviewed residents). Walking, social interaction, different sports and sitting are also very important activities for them. Important activities mostly for the parents and children are the games for children of different ages, but there are some people, who consider these games as not important at all since they don't use them.

4.1 Observations

With the aim of problem finding and problem solving, the researchers conducted observations to identify and map out the way the residents use the space. This observation is done during different days and hours of the spring season. Accurately, this complex is observed on Tuesday 22/05/2018 from 18:30 o'clock to 20:30 o'clock and Thursday 24/05/2018 from 09:00 o'clock to 11:00 o'clock. During the first part of the day walking around was an activity that was done from ages like 40 years and more for the reason of just walking their grandchildren, or with each other and social interacting at the same time. This activity is of great importance also during the evening. Different ages walk around the complex while they exchange talks and even games sometime . In the evening is seen as the main activity done by the residents.

Figure 4: Activities and the spaces related to them in the complex.

Coffee drinking is one of the activities used most from ages 20 and higher in the morning but also in the evening. It is important here to mention that the most crowded time for this activity is the evening and also during the weekends. While the parents drink coffee their children (mostly of the age 0-14) are **playing** different games most of them improvised following the site that is not appropriate. They play in the streets, sidewalks or in the two areas

dedicated to children, where actually there is not a place for their parents or friends to sit. **Sitting** is important for them, during the observations, there are seen residents sitting in the urban furniture that were present there but also sitting in the sidewalks, stairs of cafes due to the lack of the urban furniture everywhere in the complex (Figure 4).

4.2 Resident's satisfaction on quality of communal spaces

There are several factors that indicate quality of residential common space. Four of most important are size of common space, accessibility, safety and social interaction. Safety was the most important factors for the thirty of the residents interviewed. It is considered as a lack in this complex mostly from the large space given to automobiles and less space given to pedestrians. Accessibility, social interaction and size of common space follow next according to the importance. Size of common space from some residents was considered as not important since this complex has huge spaces that are not properly managed. It is crucial to mention here that: none of the factors was considered as "not important at all".

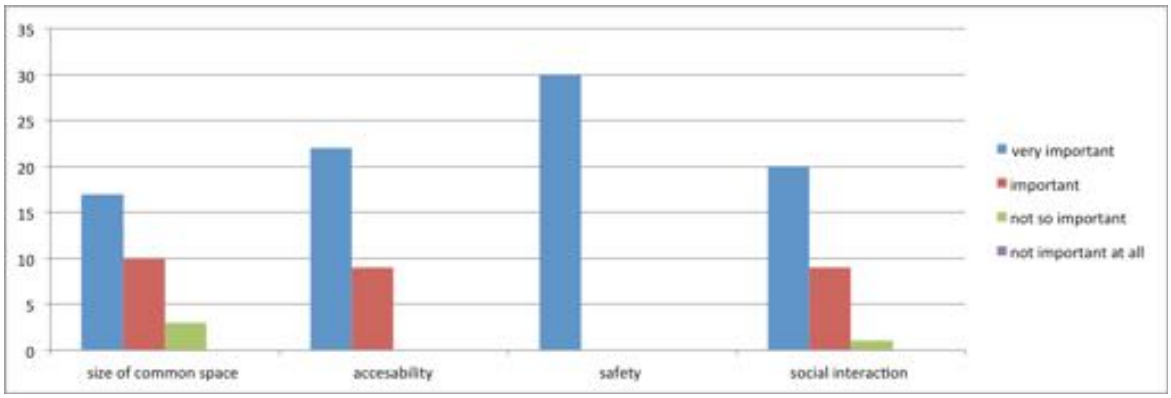

Figure 5. *Current situation regarding elements that show quality of open space from the resident's point of view.*

5. "MAGNET" RESIDENTIAL COMPLEX

This complex is built in 2014. It is designed by Daniel Libeskind and it has brought a new way of living in Tirana. Shared open public spaces of the complex are designed with the philosophy of being used by all and with several vegetable plantation to be used by all. Location of this complex is closer to the city center compared with the "Garden City" complex (Figure 6) .

Figure 6: "Magnet" complex location

Regarding the elements showed in figure7 the residents see green areas, sportive areas and pedestrian streets as the most important elements for the case of this complex. Important for them are also

considered elements like: playing areas, urban furniture and areas for elders. As not so important for the residents of this complex are considered elements like parking and automobile streets. While there are a considerable number of residents that consider cafes, commercial areas and picnic areas as elements that are "not important at all".

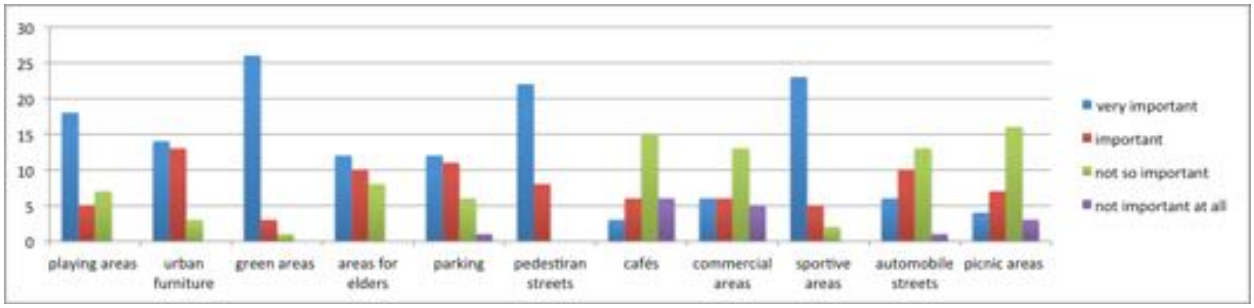

Figure 7. *Importance of open public space's elements as expressed by users*

Despite enjoying of common space and relaxation, which are considered of course the most important activity of open public space, in this complex; walking, playing for children and different sports are considered as "very important" activities . Social interaction, sitting and running are also important activities that are very present in this complex.

5.1 Observations

Wednesday 23/05/2018 from 10:00 o'clock to 12:00 o'clock and Monday 28/05/2018 from 17:00 o'clock to 18:30 o'clock is the time that the shared spaces in this complex are observed. **Walking around** is the activity that was the first to be noticed. Ages mostly elders like 50 years and up were the main residents that do this activity. In the first part of the day they walk around with their grandchildren like shown in the *Figure 8* (left side). While in *Figure 8*, (right side) are shown some of the paths that residents follow to walk not only in the first part of the day but also in the evening by different ages mostly 30 years old and for different purposes.

Figure 8. *Grandmother walking around with her nice (left side); (courtesy of the author); paths residents follow to walk (right side).*

While parents and grandparents walk around they stop by the places dedicated for children to **play** or do **different sports,** which are shown in the figure 9.

Figure 9: *Location of playing areas (left sides); areas for different sports (right side);*

Children of age 3 to 14 years old use these spaces in different times of the day, mostly before going or returning from school or in in the evening while their parents **drink coffee**. Cafes are very large in number inside this complex as you can see in *Figure 10*.

Figure 10: *Cafes location in the complex (left side); photo taken from one of the cafes (right side).*

Sitting to a café comes as a result of the urban furniture that are not very present for people to sit while they get tired of walking or while their children play**. Social interaction** is the activity that happens in the same time with the other activities that were mentioned before.

5.2 Resident's satisfaction on quality of communal spaces

Same as in the other complex, the most important factor for the residents of "Magnet" complex is considered safety. It is important to mention in this part that safety is an advantage and the reason why most of the dwellers has chosen for living there. The non-presence of the automobiles inside the complex and non-presence of the main transportation streets make it safe for children and residents to move freely. As shown in the *Figure 11* following safety accessibility is considered also as "very important" for the residents. Way finding was a problem mentioned by the residents and sometimes they use shortcuts in order to access faster the spaces they want. Social interaction and size of common spaces as considered "important" from a considerable number of residents. There are few answers given as "not important at all" to the size of common space.

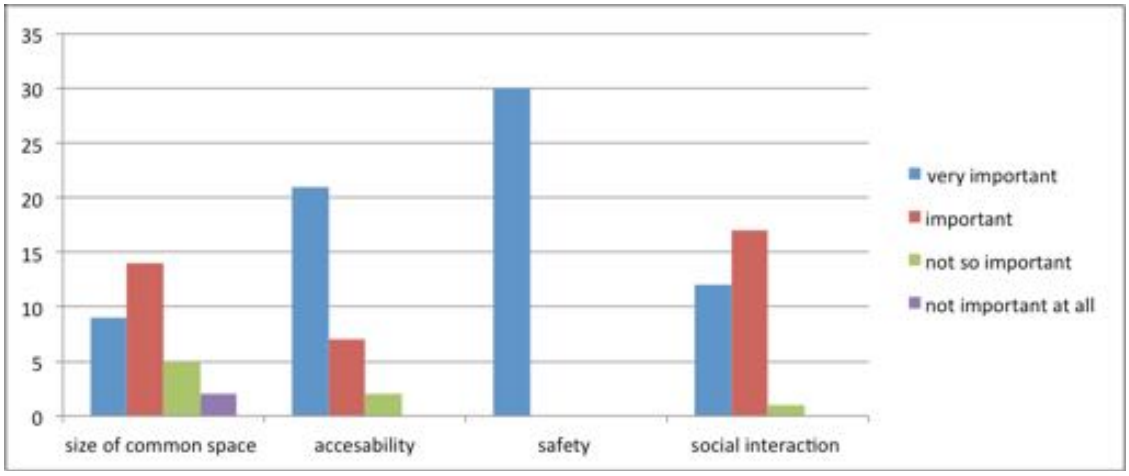

Figure 11. *Current situation regarding elements that show quality of open space from the resident's point of view*

There are also other factors that show whether a common space is of good quality or not. As mentioned, safety brings comfort, a large number of residents give the answer that this complex is considered comfort, but still there are some others that give answers as "somehow" and few of them as not comfortable. Residents admit that it is not comfortable to move around and especially older people have difficulty on walking around the grandchildren with the stroller . Common spaces have an influence in communication but there is seen that a considerable number of residents do not know their neighbors. There are seen problems regarding utilization of the space. A considerable number of residents gave answer that is not utilized fully by the residents due to the invasion of the public spaces.

6. RESIDENTIAL COMPLEX AT "ASIM VOKSHI" STREET

With an admirable location, and constructed in 1990's, it is considered as closed to the city center and it is inside the first ring of Tirana (*Figure 12*). The conditions of the questionnaires, interviewed residents and observations are the same as the other two complexes mentioned before.

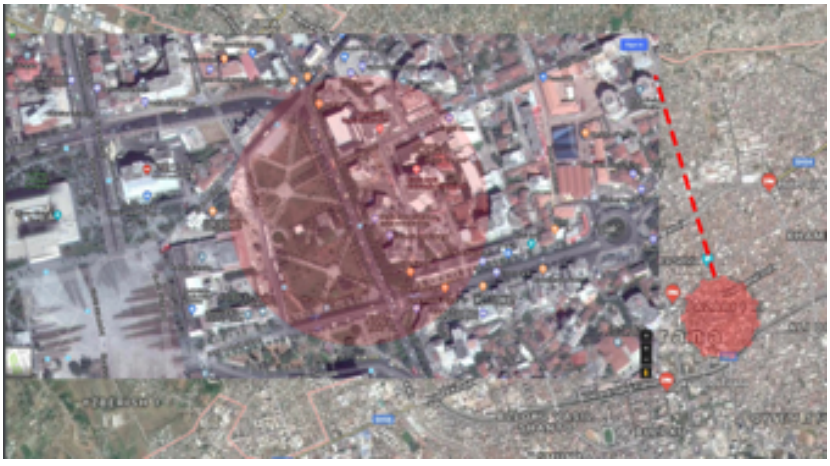

Figure 12. *Complex "Asim Vokshi"*

In *Figure 13* are seen the same elements that are asked for their importance to the residents of the other complexes. According to the responses of the residents of these complexes, green areas are viewed as a "very significant" factor by thirty out of thirty persons. Elderly places and urban furniture were highlighted as key aspects by locals, however picnic areas, parking, commercial areas, and play areas were deemed "not important at all" by a significant majority of inhabitants. Playing areas are plentiful in this public place, although they are underutilized by some age groups, which is why this is provided as a response.

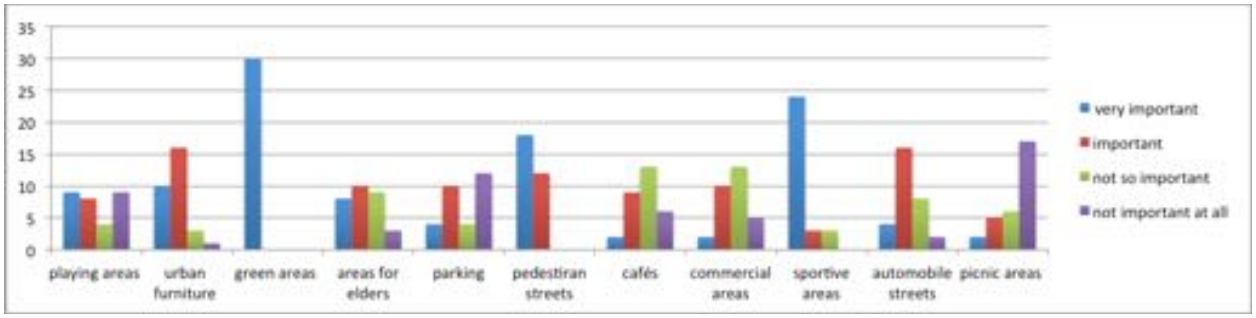

Figure 13: *Importance of open space elements as expressed by users*

While different activities are evident, inhabitants in this complex value walking, running, relaxing, and social interaction as well. It is also vital to emphasize that children's "important" activities include sportive areas and playing.

6.1. Observations

As one of the methods of this research are observations, Tuesday 15/05/2018 from 10:00 to 12:00 and Wednesday 30/05/2018 from 18:30 t0 19:45 are the days that this complex was observed. Something very important to be stressed since the beginning is the intensity of activities form the first part of the day and the evening.

The largest part of the site is dedicated to children. One of the most common activities that takes place is playing. Children aged 0 to 6 years old use this space for virtually the whole day, with the exception of lunch. In this scenario, sitting and playing are inextricably linked. Parents and grandparents can relax and wait for their children thanks to the existence of some urban furniture. Sitting is also present for elderly while they play dominoes; it is a socialization mode. They have their specific places for this, which are shown in the *Figure 14* (b). The sitting area for this case is not so much appropriate but still there exist improvises with the tree stumps used as urban furniture to sit. Except this reasons resident use other places also for sitting like the stairs of the buildings or the pavements. The distribution is better shown in the *Figure 14* (c).

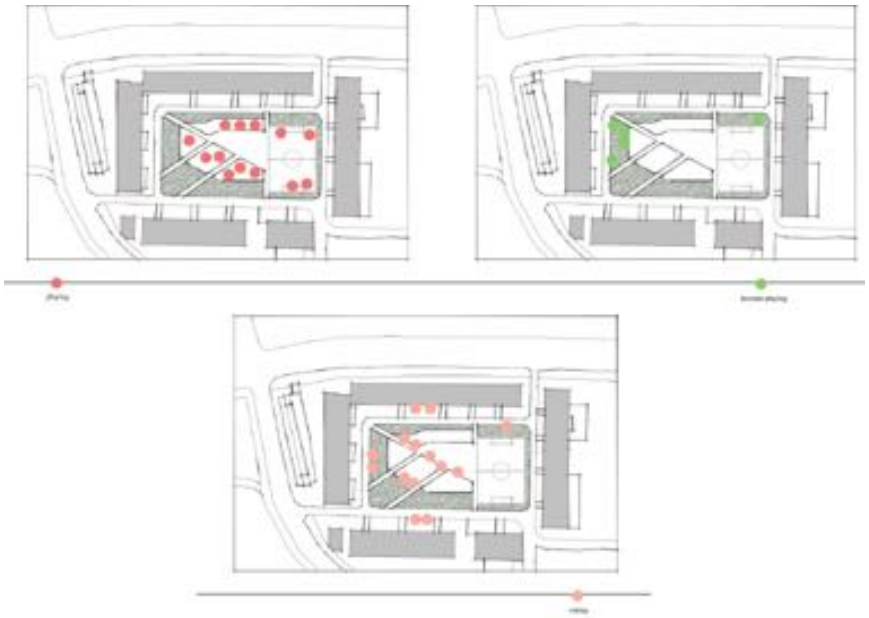

Figure 14: *playing areas for children (a); domino playing areas (b); sitting places distribution (c)*

There are other activities that happen in these communal spaces of the complex even though less in intensity than the others mentioned before. During the observations there are seen people that **pass through** this space form the residents but also other citizens who use the public space as a shortcut to pass to other places.

Due to a lack of parking spaces and the prevalence of non-resident cars, parking is considered as a problem. This can occasionally become a safety issue for children who play in designated areas. There are fewer business areas than in the other two complexes. There is a café that is usually used by people of various ages in the second half of the day, as well as a fast food that is mostly used by those between the ages of 15 and 30. 5.2 Resident's satisfaction on quality of communal spaces

Safety is the first factor evaluated as "very important" for the residents. Same as shown in the *Figure 15* the other factors like social interaction, accessibility and size of communal space are considered as "important" elements. According to the conditions regarding mostly age and profession some of the residents gave the answer as "not important at all" to social interaction and size of common space.

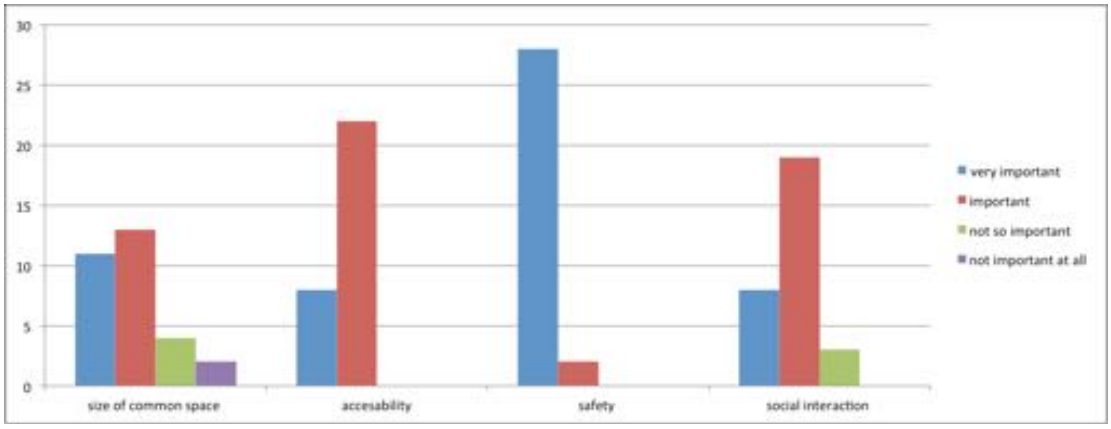

Figure 15. *Importance of the factors that indicate quality expressed by the residents*

The other factors listed in the *Figure 15* below are also indicators of spatial quality of open public spaces. According to the answers of the interviewed residents it is seen that somehow it is a crowded complex. The shared spaces have also influence in communication between residents, which brings somehow neighbor recognition with each other. Due to the problem of children's safety, which is sometimes evident, it is considered as a non-comfortable shared space from the residents. Two of the factors that resulted in a "not much" response were comfort and space usage.

7. DISCUSSION AND CONCLUSIONS

Residential complex is a new model of settlement proposed in the recent years together with the public spaces inside it. The problems regarding them, which the main one was the lack of variation and vulnerability, made architects, revise them in more details. They were concentrated more in the relationship between users and communal spaces (Mahdavavinejad, M., et al., 2012).

Several conclusions were drawn from the investigation regarding the shared spaces of residential complexes. The correct administration of shared space is a common problem that should be mentioned right from the start. That approves with Philis (1996) who claims that the successfulness of communal residential spaces depends on factors like good design, proper management and supportive people (Philips, 1996 Furthermore, management issues create issues in:

Safety is the most important element that shows open public space's quality: In "Garden City" complex it is considered as problematic element mostly for children. The residents of "Magnet" residential complex say that, they do not have safety problems. Residential complex in "AsimVokshi" street has an enclosure with the main streets, which have a very heavy traffic.

Greenery : In "Garden City" complex, the greenery presence is very small in proportion to the total area of the complex. On the other hand, "Magnet" complex has more presence of the greenery, but the residents also require a closer connection of people and especially children with these areas. The residential complex in "Asim Vokshi" street has trees positioned around the perimeter of the shared space. What is seen in all complexes, there are not rich residential complex projects regarding the landscape design. Main problems that are mentioned mostly from all the researchers and are connected with our complexes also are; missing attention to the green spaces, lack of attention to the pollution and missing of appropriate space for leisure time (Behrad, B., et al., 2015). All the element of communal spaces and especially green spaces affect people in every type, size or condition they have (Kooshali, A.D., et al., 2015).

Cleanness as a quality showing element: This element is seen as a problem more in "Garden City" complex where residents through waste in the public space. "Magnet" complex there is seen a lack of the bins inside the complex but still there is a very clean environment and no waste thrown in the public space. The same happens in the residential complex in "Asim Vokshi" street, the environment is clean, and the waste bin present there is enough for that size of public space.

Sportive areas: Of course a space that is considered as qualified space needs sportive areas to be called like this. In "Garden City" complex it is seen the presence of only one sportive field that does not complete even the normal standards. In "Magnet" complex there are some places dedicated to sport like gymnastics, but still residents require the presence of sportive field for different sports and different ages. In the complex located in "AsimVokshi" are present sportive areas for gymnastics and also a sportive field used for football, basketball and volleyball.

Activities: Residents in three of the complexes require more variety in activities that happen in their shared spaces.

Urban furniture: Urban furniture are considered by the residents as elements missing in three of the complexes, but more in "Asimvokshi's" street and "Garden City" complexes.

Pedestrian streets: In "Magnet" residential complex, is given huge space to the pedestrians, but some of them mention problems with the way finding complexity and require a simplification regarding the pedestrian streets, where pedestrian look for shortcuts. In the complex at "AsimVokshi" street due to the size of the shared space has that is not so big looks that this part is less problematic. Something totally different is happening to the "Garden City" complex where pedestrian streets are so minimal and residents are required to use automobile streets for walking.

Looking at the results above and to the aim of the research we can come with some conclusions. The primary objective of this research was to create a guideline what is missing regarding shared spaces in residential complexes by investigating three of the in a developing city like Tirana.

Three complexes were chosen for a further research in details. "Garden City" complex, "Magnet" complex and the residential complex located in "AsimVokshi" street are the complexes used for the research. In order to measure the quality of open spaces in a residential complex, this study examines several fields to direct us to the results. Firstly, the importance of elements of public space and activities were asked to the residents. The satisfaction of people with the current situation in their shared spaces of their complexes and the level of this satisfaction was asked and indicated whether the common space of that specific complex was of quality or not.

Except these elements, in order to measure the quality of open space in residential complex activities are also of great importance to be taken in consideration. Activities were divided on physical activities (different sports, picnic, games for children, walking and running) and social recreational activities (relaxation, social interaction, standing and enjoying of communal space). Relaxation and enjoyment of the public spaces were two of the activities considered as "very important" by all the residents in three of the complexes. They were followed next by also sports, walking and just standing. Residents claim that activities happening in these complexes should be more various, comprehensive and well organized. According to the obtained results elements and activities of the open communal spaces affect people physically and psychologically, thus, the shared spaces should be designed by referring to these issues.

After all, the study found that improving the quality of open spaces will bring crucial changes in the living standards of the residents in the three complexes. If referred to their responses to questionnaires, which were distributed, changes were required in the physical and social elements and activities of open shared spaces in their complexes. Improvements in these features will be visible in the quality of open public space, which will, in turn, improve the quality of life of those who live in these complexes. The interrelationships between enhancing open space quality and inhabitants' quality of life in residential complexes will pose a challenge to the designer and raise the question of how to simultaneously improve both open space and living circumstances. Finally, open public places are critical to achieving a sustainable city outcome (Omar, D., et al., 2015).

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