



Original Article

The Role of Layers Assembly Procedure in the Creation of Architectural Form: Eisenman Design Strategies

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ABSTRACT

In architectural strategy, two key features are the sources of inspiration and the methods of creation. Although many architects have employed layer assembly as a design process, it is still not formally recognized as an architectural design strategy. This research frames the layer assembly as a creation procedure in architectural design strategy. The research question is How can the process of layer assembly be utilized within architectural production? The study examines selected Peter Eisenman projects to pinpoint firm assembly principles, highlighting important factors and strategies used in his layering. This study aims to provide clear principles of assembly procedure for architectural design. The objective of this study is to determine variables that are used in the assembly procedure of architectural form creation. The method used in this study is about analyzing the architectural project by Peter Eisenman, who used the assembly of layering to create architectural form, and then extracting the main factors and types related to the assembly procedure of layers. The study identifies six main strategies that together make up Eisenman's approach, based on a qualitative analytical approach: collecting and assembling, historical excavation, folding, scaling, reuse, and tracing. The study also identifies ten transformational processes that contribute to conceptual and formal richness. The research concludes that a layer assembly system can be used by architects to produce creative, multifaceted architectural products.

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Keywords: layers assembly; Peter Eisenman; architectural creation; design strategy.

1 Introduction

Layering, a natural procedure, is used in many creation and design fields, such as architecture. The layers' assembly is defined as the action of arranging something in layers. It is like arranging pieces of something on top of each other to form something ^[1]. The concept of layering appeared in art first in painting when Wolfflin (the German theorist) introduced the concept of layering in the early 20th century to describe a particular type of order in painting. More deeply, Cubism as a twentieth-century phenomenon highly affects the evolution of the concept of layering in art. When cubists see and represent an object made up of planes rather than being a mass ^[2]. Layering in architectural design is an approach where elements are superimposed or organized in layers to create depth, complexity, and coherence in a structure. This method can apply to both physical and conceptual aspects of a building's design. More deeply, assembly

of layers offers a system of architectural form creation and acts as a design principle ^[3]. The layered character of architectural design creates a different understanding ^[4]. Thus, finding a process that integrates multiple incomplete conceptions and converts them into a continuous process is the goal of the layers' assembly process ^[5].

There are six types of assembling in architecture: conceptual layering, formal layering, meaning layering, context layering, interior spatial layering, and temporal layering. The layering system of assembly is also a top-level process that encompasses these types ^[2]. The assembly of layers in the process of creating architectural form is part of the architect's liability; layering leads to the pleasure of the eye wondering about the final configuration, opens the boundaries to the free meaning, and stimulates reading ^[6,7]. During the initial phases of architectural design, layering refers to the systematic and rational grouping of ideas. Jencks mentions that in historical cities, the existing urban fabric becomes the ground through which new layers are added or assembled to create a new situation. Jencks also clarifies that Eisenman extracts the concept of projects from the site, which is

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either from the site itself or the data left in the site or neighbourhoods ^[8,9,10]. According to Tschumi, architectural concepts are referred to as concept forms, meaning that one reinforces the other by generating forms that generate concepts or concepts that generate forms ^[11].

It is important to consider the type of layer used in the layering process. Any project's choice of layers is influenced by several variables. Broadbent states that form selection depends on the meaning of the selected source, either the origin of meaning or the meaning of the chosen part. The selection of elements is done according to their ability to generate new meaning ^[12,7]. By extracting complexity from architecture, creating diverse forms, and communicating meanings, layering in architecture can enhance projects' worth. In this regard, Jencks combines chaos and order in a new format to achieve diversity ^[13]. In this context, Tschumi relies on the overlapping of frames in a way that is abrupt, spontaneous, and unexpected. Jencks, Broadbent, Eisenman, and Tschumi share the idea that layering achieves complexity ^[14,12,15,16]. In other words, Jencks collects the text with different techniques such as collage, juxtaposition, radical eclecticism, superposition, and choral work that enrich the text and step towards diversity. Eisenman also agrees that diversity can be achieved by layering through pluralism to permit anything to occur, guaranteeing complexity. Layering comes in an attempt to achieve complexity and integration ^[17,8,14].

In architectural design, the assembly of layers is not formally recognized as a distinct design strategy. This research aims to establish the layer assembly process as a formalized procedure within architectural design strategy. The purpose of this research is to elucidate the procedure involved in the assembly of layers within architectural creation. Besides, it aims to determine the conditions of using this procedure effectively in architectural creation. The research question is: How can the process of layer assembly be utilized within architectural production? This study aims to establish layering principles as an assembly procedure in architectural design. It attempts to discover the procedure of applying in the layered assembly of architectural form creation, through an investigation of Peter Eisenman's strategy. The research plans to conclude the key factors and typologies related to the layering assembly procedure.

2 Literature Review

Layering has appeared to be a critical strategy in architectural creation, offering a means to generate depth, complexity, and narrative meaning in architectural products. Teng studied the assembly of the layering process on the urban scale, which forms an existing character of the city integration ^[18]. From the Parc de la Villette to the Elliptic City, several urban projects start with abstract geometries that can be modified to fit the unique cultural or geographic characteristics of the locations in which they are situated ^[19]. In parallel, Broadbent introduces layering through Derrida's breakthrough experiment to achieve a complex architecture that relies on multiple mergers producing a superposition at the formal level ^[12].

Different types of layers can be used in the layering process of Eisenman to create architectural form. Kormoss mentions a series of elements regarded as layers in the designing process, including grids, including abstract grids or site grids, scientific diagrams, and volumes, including bars, blocks, and forms ^[20]. Grid and volume are types of layers used in common in the assembly procedure. When Eisenman creates illogical clashes of grids, spaces, and volumes, breaking open the form of the building to expose the complex and contradictory nature of the act of building itself ^[21]. In this context, cities are made up of multiple layers that show what was constructed at various points in time simultaneously, providing a complicated perspective of time where a view of the present incorporates a perception of the past. Regarding historic cities, Schultz concludes that one can read layers characterizing the physical chronology of the city's history. Where in the 21st century contemporary architects added strata layers to the design. For Eisenman, the site is more than a visual context, he focused on the materialistic and archaeological layers of the site in particular and the entire location in general ^[22].

Although many architects have used layer assembly as a design method, Peter Eisenman, the most recognized architect, used assembly techniques in his designs by using diagrams to examine assembly techniques and using them as generative systems that inform design decisions rather than just representational tools. Diagrams according to him organize architectural components like grids, points, and lines abstractly. Eisenman explores the connections between architectural elements, their spatial effects, and their symbolic meanings through an iterative assembly process. Moreover, Eisenman's focus on assembly procedures covers the physical construction of buildings to include wider conceptual frameworks. To give the designs numerous layers of meaning, he investigates how the arrangement of architectural components reflects cultural, historical, and philosophical factors ^[23].

Silva studies diagrams in Eisenman's work and describes them as tools for creating and presenting architectural form, allowing for a design process that is open to unlimited possibilities. The layers method is a language, a grammar for generating the architectural form ^[24]. Ozdemir examines the concept of "surface" in Eisenman's architecture, classifying it as a formal creation tool, an analytical tool, and a diagrammatic tool. Ozdemir analyses Eisenman's usage of surfaces to create the architectural product. The study provides insights into how surface treatments contribute to the layering and complexity in Eisenman's designs ^[25].

The previous literature offers diverse viewpoints on Eisenman's design strategies, especially layering, and confirms that layering plays a crucial role in the generation and expression of architectural form. Scholars have examined layering as a representational tool, a surface treatment, and a conceptual operation in Eisenman's work, focusing on its importance in enhancing the complexity and meaning background of projects. However, despite that research, there remains a gap in the

systematic analysis of layering as a procedural design strategy that can be used clearly in architectural strategy.

3 Research Method

The methodology used in this study is an analytical method to examine Eisenman's architecture, focusing on projects that employ the assembly of layering to create architectural forms. The study discovers the general strategies of layers employed and understands the transformational processes that are integral to the layering technique. Peter Eisenman, one of the most influential architects of the 20th and 21st centuries, is known for his innovative and conceptual approach to architecture. The study selected Eisenman as a focal designer because he is one of the most prominent architects who used the layering process for architectural form creation. Moreover, Eisenman has provided detailed explanations about his strategies in forming his architectural projects, making his work particularly valuable for this research.

The study's methodology is about collecting and analysing Eisenman's architectural projects. Ten of Eisenman's projects have been selected to examine his use of the layering procedure. The selection criteria of case studies are: first, each project provides Eisenman's application of layering as a design strategy. Second, the projects are in eras and locations. Third, selected projects are internationally recognized as iconic examples of architectural innovation. Finally, each project has been thoroughly documented, including design process statements by the designer, providing sufficient data and insight for in-depth analysis. Each project is analysed separately to extract the factors related to the assembly of layers. Following this, the identified

factors are grouped into categories to formulate a comprehensive strategy for layer assembly in architectural creation, as used by Eisenman. The resulting procedure can then be applied to future architectural design processes.

The study's analytical framework is about examining the layering process in the chosen projects. This includes offering the story and step-by-step design process of the project, with a focus on the layers used throughout the design. Moreover, the study examines the impact of the strategy of assembling these layers to produce the final architectural form. To support the analysis, diagrams illustrating the design process and the types of layers used in each project have been developed. The study used graphical drawing tools for analysing, redrawing the project scheme, and used Adobe Photoshop and AutoCAD software tools. The data are collected from the previous studies and the official website of the architect Eisenman.

4 Case Study

One of the New York Five architects, Peter Eisenman, is the subject of this research. Eisenman is renowned for his highly modernist and deconstructive designs ^[26]. Eisenman used the assembly of layers as a way of form creation in his projects. The case study used in this research is classified into two categories. The first six of Eisenman's projects used layering as a main strategy for creating project forms, and the designers described his design strategy coded (A1-A6). In the second category of four projects, designers used the arrangements of layers as the supportive procedure for enhancing the quality of form without considering it as a main project strategy coded (B1-B4) as shown in Table 1.

Table 1: Peter Eisenman's projects were used as a case study in this study.

Layers Assembly Strategy Projects		
		
A1: Romeo and Juliet Project	A2: University and the Museum of Art	A3: Church Project
		
A4: Long Beach	A5: Banyoles Olympics Hotel	A6: City of Culture

Arrangements of Layers Projects			
			
B1: Columbus Convention Centre	B2: Wexner Centre	B3: Aronoff Centre for Design and Art	B4: Parc de la Villette

5 Eisenman Projects that Used Layers Assembly Strategy

5.1 Romeo and Juliet Project

Shakespeare in *Romeo and Juliet* used various original texts, transforming them in unexpected ways, to extract the main concept of *Romeo and Juliet's* story [27,28]. In the architectural project, Eisenman used the same concept of creating the story, beginning with three stories about the conflict between the two

families; each is considered a pre-text that is superposed with other texts. Many methods and treatments have been used to expose the conflict depending on the exaggeration and reduction at the same time in the form of a grid, reusing them many times in different locations and scales [8,9]. Eisenman is visualizing his project as a fictional text in which different fictional elements (*Romeo's* castle and *Juliet's* house) are transposed in the historical site of Verona, in analogy with three different versions of the story [20]. As shown in Figure 1.

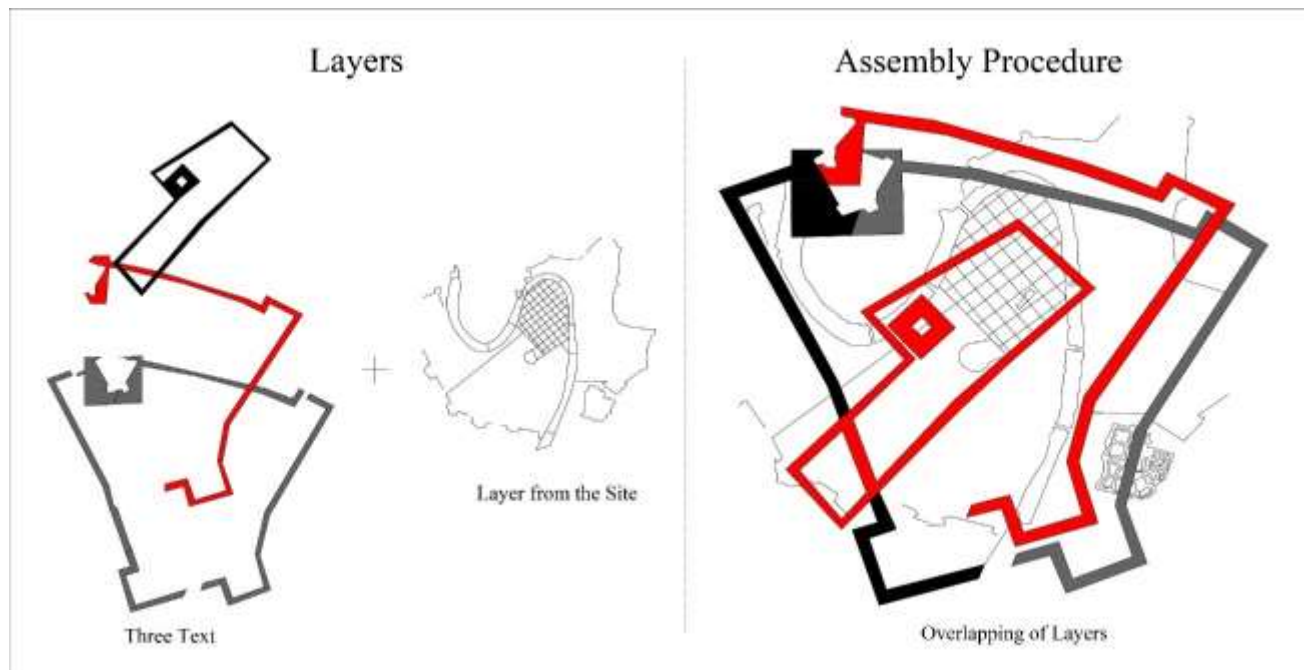


Figure 1: *Romeo and Juliet*, Peter Eisenman, 1985. Adapted from [20].

Collecting and assembling as a method of layer assembly strategy acts by the collection of two or more systems that affect each other, and the result will be drawn from their contradictions and differences [12]. Jencks confirms that the goal behind layering is to create a complex system by collecting different systems and letting them collide with each other without any interference in this interaction [8]. Jencks considered Eisenman a leader in layering in terms of collecting and assembling strategy [14].

5.2 University and the Museum of Art in California

Eisenman, in the project of the University and the Museum of Art in California, uses the process carried out in the depths of the site to find ancient and future traces. The design allows the project to be recognized as if it is an archaeological artifact through the layer's assembly procedure. Layers in the design represent the history of the site in a series of notable dates, starting with the settlement of California in 1849, the design of the campus in

1949, and the rediscovery of the museum in the year 1949. The building takes its form from the overlapping registration of

several maps as shown in Figure 2 ^[29,26].

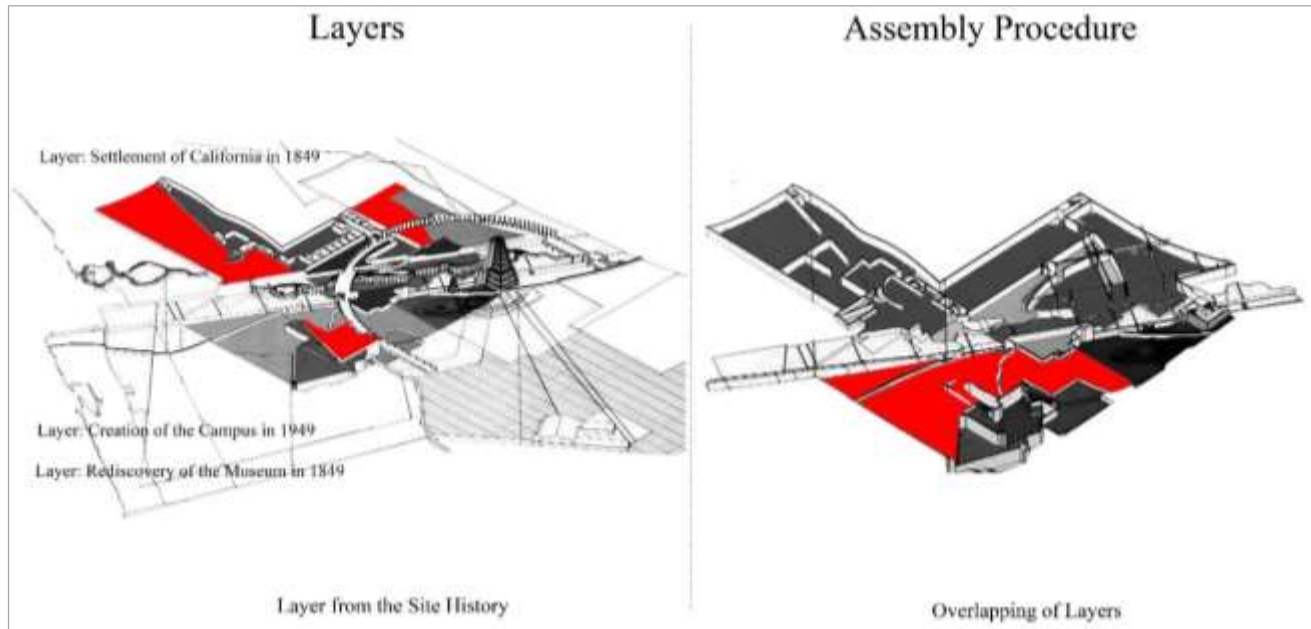


Figure 2: University and the Museum of Art in California, Peter Eisenman, 1988. Adapted from ^[26].

5.3 Church Project in Rome

One of the key foundations of architectural design related to folding is that the folded layers in its genesis draw on the grid. Eisenman adapted this rule in his folded designs; he also understands the fold as a connection to the outside resulting from the removal of the distinction between figure and ground ^[30].

Folding is the most representative design strategy of the early-mid-nineties in terms of figure-figure relationships or figure-ground relationships. The project the church designed by Eisenman in 2000, shown in Figure 3 is based on two parallel ideas: first, the proximity and distance inherent in the idea of the pilgrimage. Second, the new relationship between man, God, and nature ^[20].

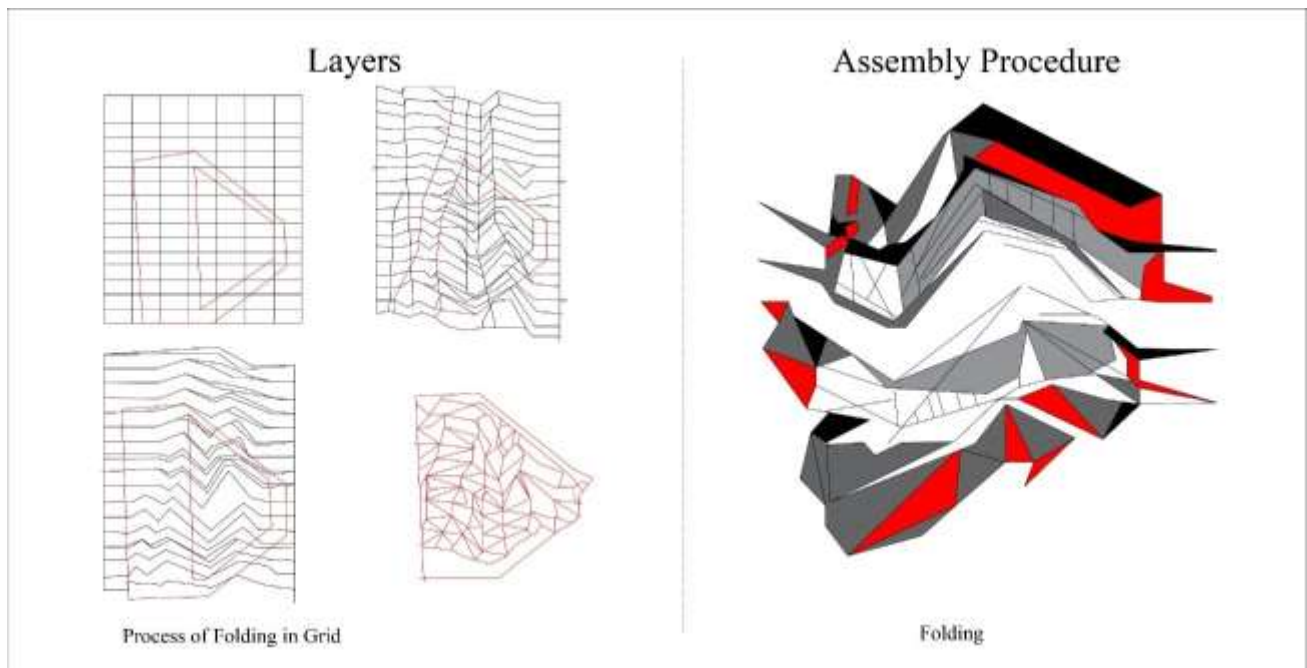


Figure 3: Church Project in Rome, Peter Eisenman, 2000. Adapted from ^[26].

According to Gilles Deleuze, the folding process never produces the same form twice; it consistently develops unique forms^[31]. In parallel, Greg Lynn's idea of the fold is animated form, when folds mean layers in which there is no priority among them^[32]. Deleuze defined the folding strategy as doubling nature: doubling of concept, form, and doubling of other aspects. This doubling technique does not result in the literal division of one element into two. Instead, since there is no distinct starting point for this type of multiplication, the elements produced by doubling are never the same. Doubling folds elements into semi-autonomous components that are not related to the original^[32, 31]. Thus, the

types of folding strategies are figure-figure folding and figure-ground folding.

5. 4 Long Beach in California

For the Long Beach project in 1986, Eisenman tried to read the site as a region with knowledge, history, and design impact. Eisenman derived six maps of different scales from the site condition, the history of the site in the past, and the future. Then the designer superimposed them and tried to find connections between the maps and the site to create the form of the project^[33,34]. As shown in Figure 4.

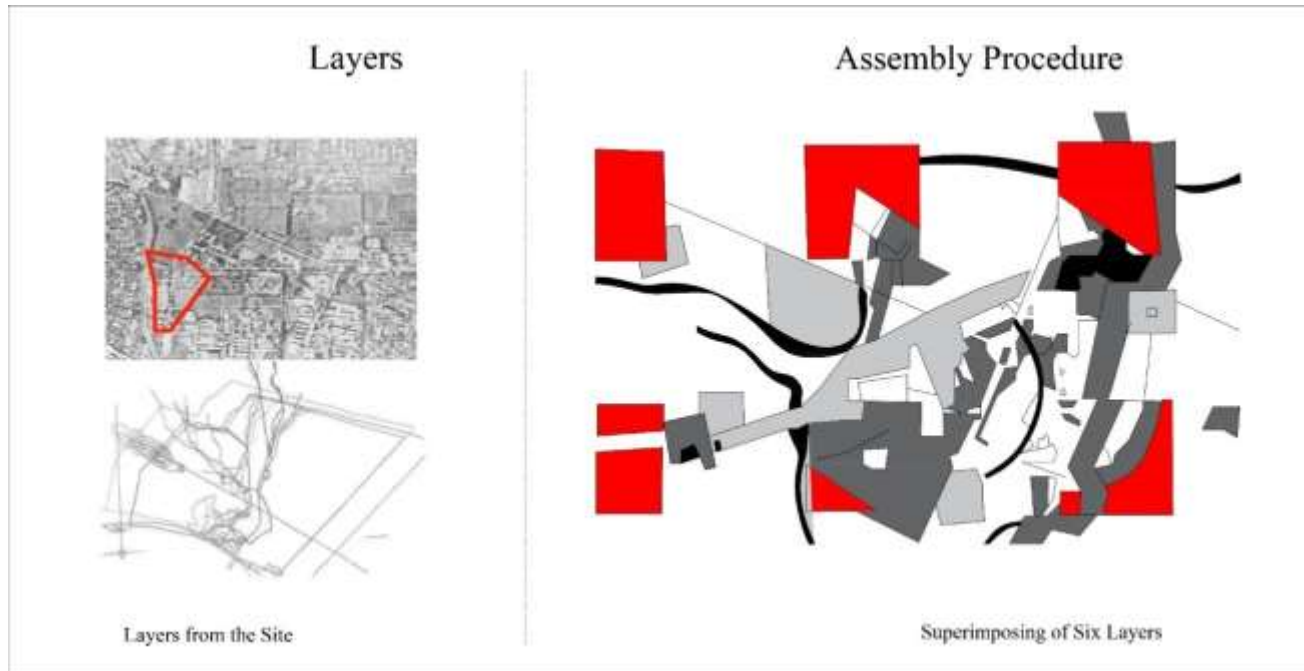


Figure 4: Long Beach in California, Peter Eisenman, 1986. Adapted from^[33,34].

Eisenman discussed the process of layering through scaling and defined it as how the formal characteristics of one subject are taken out of its context and applied to another, then re-represented on a different scale in terms of their relationship with elements in the new context. For Eisenman scaling is one of the ways to recompose and resolve previous references. It means to destroy the classical tradition of architecture, as he explains, “to destabilize the value of origin, the notion of anthropocentrism, and the aesthetic object.”^[35] Scaling or the superposing of analogous materials at different scales achieves geometric subdivisions (recursively), metaphorical change (self-similarity), and fragmentation of forms (discontinuity)^[35]. Thus, the types of scaling strategies are geometric scaling and character scaling.

5. 5 Banyoles Olympics Hotel

The concept of Banyoles Olympics Hotel is using the same grid used in the previous projects in a new context. The line of its

geometry is no longer Cartesian. The project is informed by three distinct trace conditions of time: the agricultural divisions serve as a representation of the past. The form and space that are produced can no longer be understood in the traditional sense of architecture as shown in Figure 5^[26].

The concept of reuse is one of the strategies that lead to the achievement of layering by re-investing form and concept to form a new context^[15]. Reusing form and concept will produce new functions or new contexts that will generate new meanings that could sometimes be contradictory^[23]. Eisenman also put forward a new concept within the reuse of principles, in which he looks at the specific images as a base where it is re-invested multiple times and in multiple contexts. The same thing applies to a conceptual composition where a certain concept is reused to draw a new formative perception of a new context that reflects new meanings^[15]. Thus, the types of re-use strategy are the new function re-use and the new context re-use.

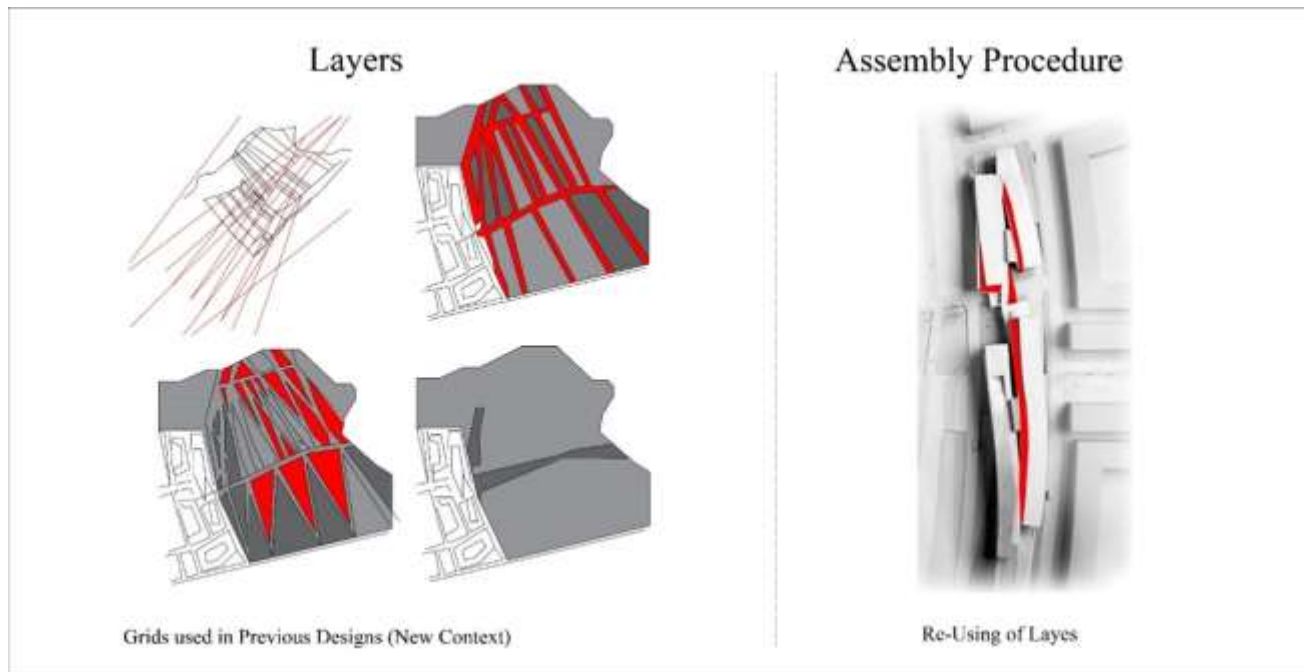


Figure 5: Banyoles Olympics Hotel, Peter Eisenman, 1989. Adapted from [26].

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5. 6 City of Culture in Galicia

The design started with a historical reading of the site to find a trace from history, which is a pattern of a historical city. The main layer was superimposed with the other two layers, then excavated the site according to topography with the resulting form [37]. This strategy's premise is that the project and the location are interpreted textually and analogously, which informs the design process. The artificial excavation is based on the layering of artificial figures that are derived from the urban, architectural, archaeological, or topographic texture of the project. The artificial figures are first abstracted from their initial context in the form of elements. Then copied and scaled in different sizes, shapes, and materialities. After that, figures are superposed upon or subtracted from each other and then imprinted or extruded on the surface of the site. The site is treated as a topological skin or surface that can be stretched and imprinted with multiple layers [20]. As shown in Figure 6.

Eisenman in this strategy moves from the formal to the poetic, from composition through decomposition to excavation,

indicating a shift from the syntactic to the fictional [39]. To elaborate on the excavation strategy, the project design is to follow the site conditions and excavate the multiple layers through active participation in creative ways [32]. According to the figure-figure and figure-ground relationship in artificial excavation strategy, Eisenman states in one of his interviews that:

“I believe there’s a need in architecture to return to figuration. But not full-blown figuration, partial figures. Figures that can be understood as aspects of ground or aspects of other figures but that do not lead to necessary whole objects.” [40].

Therefore, the types of the artificial excavation strategy are figure-figure excavation and figure-ground excavation.

6 Eisenman Projects that used Transformational Process of layering

6. 1 Columbus Convention Centre in Ohio

Eisenman in the Columbus Convention Center design showed the multi-layer of the communication lines. The similar layers are vertically located next to each other, and the complexity of the layers makes the whole building a single structure. Eisenman uses juxtaposition as a formal process, and layers take the shape of stripes as shown in Figure 7 [41].

The four distinct approaches can be used to assemble the layers. Attaching layers is the first step, where layers are spatially located in a single location but have space between them [42]. Thus, the process of arrangement classifies into attaching layers (horizontal, vertical, diagonal) as in the Columbus Convention Center.

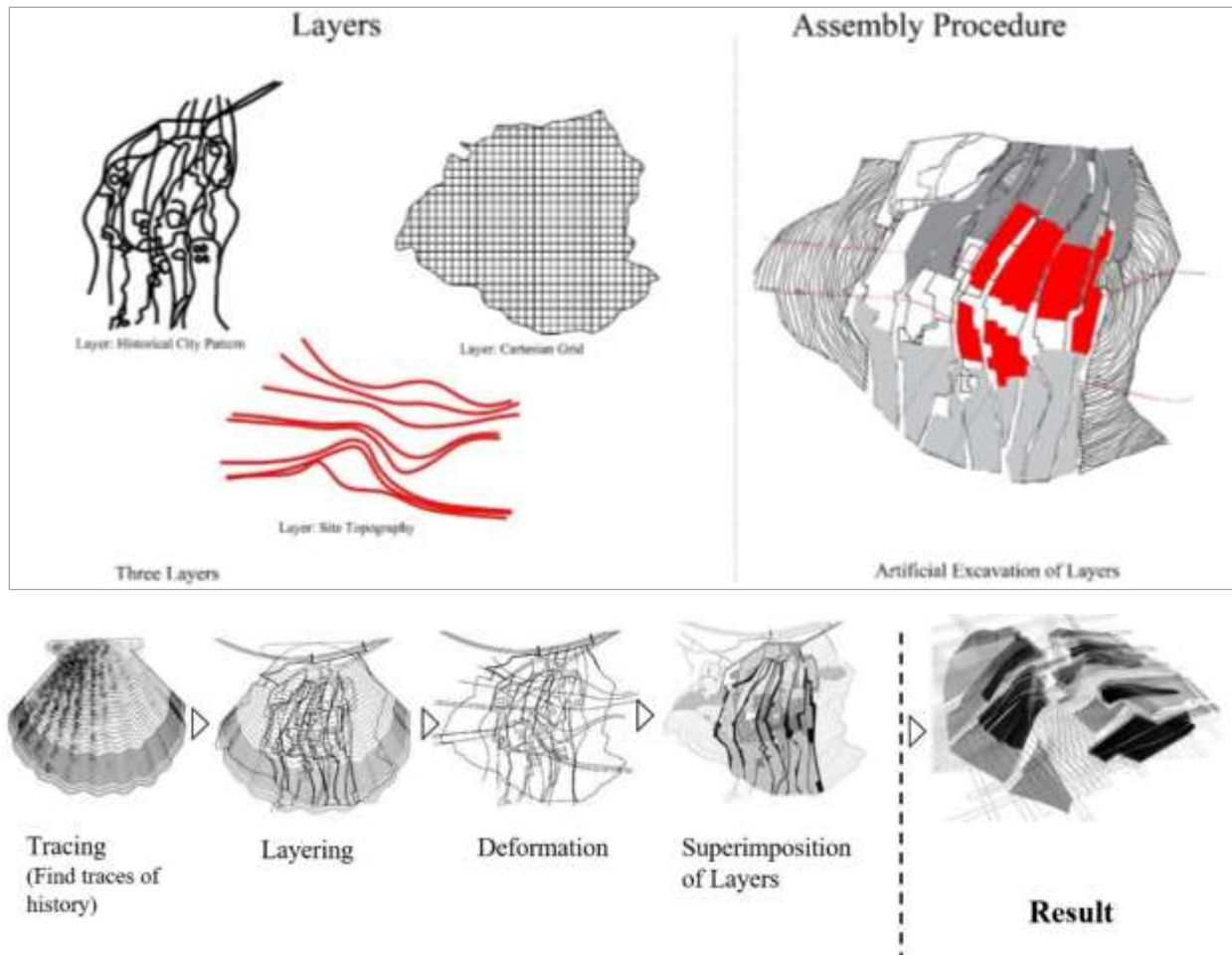


Figure 6: City of Culture in Galicia, Peter Eisenman, 1999. Adapted from [38].

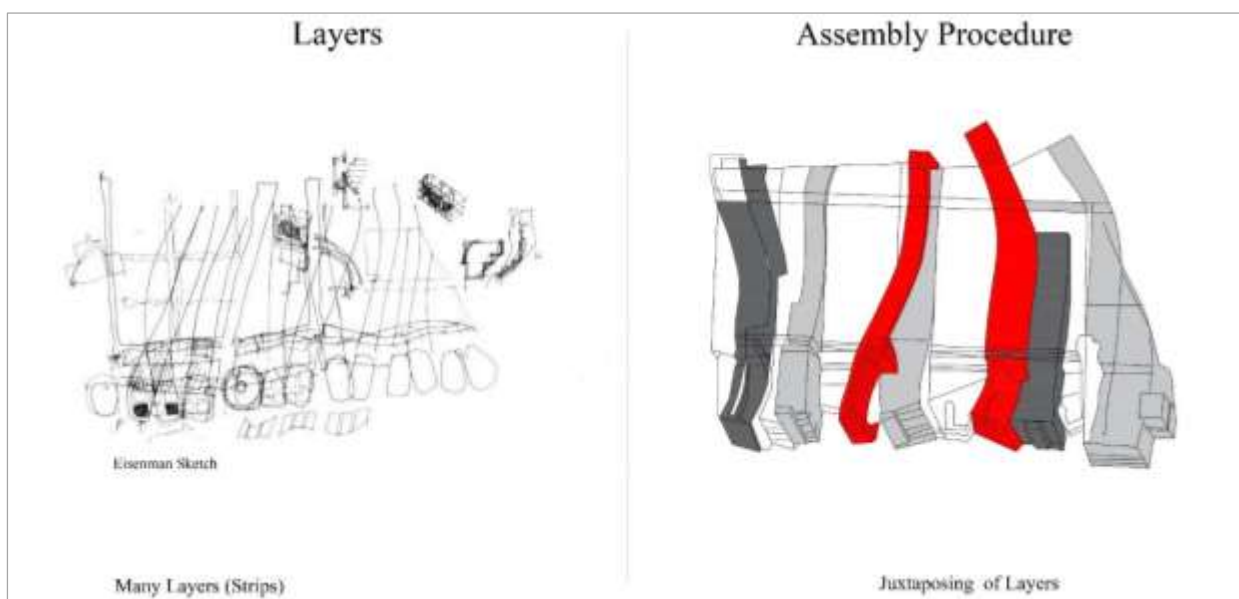


Figure 7: Columbus Convention Centre in Ohio, Peter Eisenman, 1990. Adapted from [41,26].

6. 2 Wexner Centre in Ohio

Eisenman uses the process of superimposing historical site readings to create content that serves as a foundation for a design. Eisenman is looking for complexity in material related to the history of the site ^[34]. Eisenman used the superposition of layers

in the Wexner Center in Columbus, Figure 8. The design is about the superposition of several grids and maps (from the campus, the city, and the state of Ohio), which are misaligned with each other. The design is characterized by its giant white scaffolding structure, a dominant part of the project. The concept of the project takes from complex articulation grids ^[20].

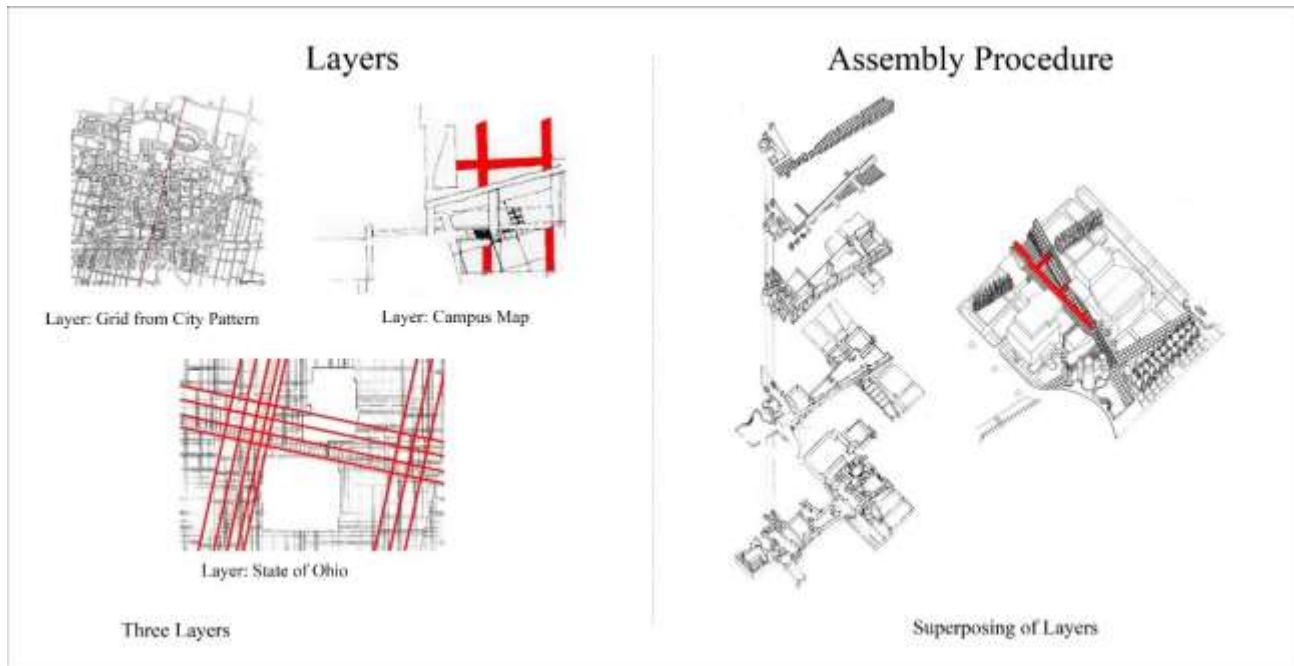


Figure 8: Wexner Centre in Ohio, Peter Eisenman, 1983. Adapted from [26].

The other three types of layer arrangement are juxtaposition, superposition, or superimposition. Juxtaposition is organizing blocks in parallel to each other. Other ways of arrangement are superposition and superimposition, with small distinctions between them. Karaman defined superposition as the arrangement of layers concerning one another, while superimposition denotes the interlocking of layers. When two or more layers are layered on top of one another, they imply interactions that define different connections ^[41]. Eisenman also distinguishes between the two where superposition is the presence of a body on the ground of another reference, such as the projection of classical columns on a modern floor. Superimposition is presenting a system within another so that it remains complete ^[15].

Eisenman disrupts the conventional Cartesian grid system, which forms the basis of architectural order, by introducing multiple layers of grids that intersect at various angles. This strategy creates spatial ambiguity and complexity, as seen in the Wexner Center for the Arts, where two overlapping grids (city and campus) disrupt the expected spatial order.

6. 3 Aronoff Centre for Design and Art in Cincinnati

Eisenman tries to destroy the predominance of the right angle. Thus, form, as a means of representing things, is a reflection of

experience's limitless diversity and volatility. as demonstrated at the Aronoff Center for Design and Art in Eisenman in Figure 9 ^[21].

The last way of arranging layers is superimposition, which makes it feasible for us to examine how various levels relate to one another and pursue the design process by allowing us to view how parts that belong to two layers overlap ^[41]. According to Eisenman, the generation of an architectural product from its initial form to the final one is called the transformational process ^[40]. The design results from a series of successive processes such as copy, move, modification, combination, and repetition ^[20]. Eisenman generates events through the displacement of site planning when idiosyncratic urban design operates through the morphology of architectural design ^[32].

6. 4 Parc de la Villette in Paris

Eisenman and Derrida highlight another level of layering within the application of the so-called choral work, which is the use of more than one method in one project. They applied this method in the design of Parc de la Villette in Paris. Jacques Derrida, the French philosopher, collaborated with Peter Eisenman on the theoretical background for the project. They began with a procedure of layer assembly in which one site was allegorical read through another, as shown in Figure 10 ^[43,44].

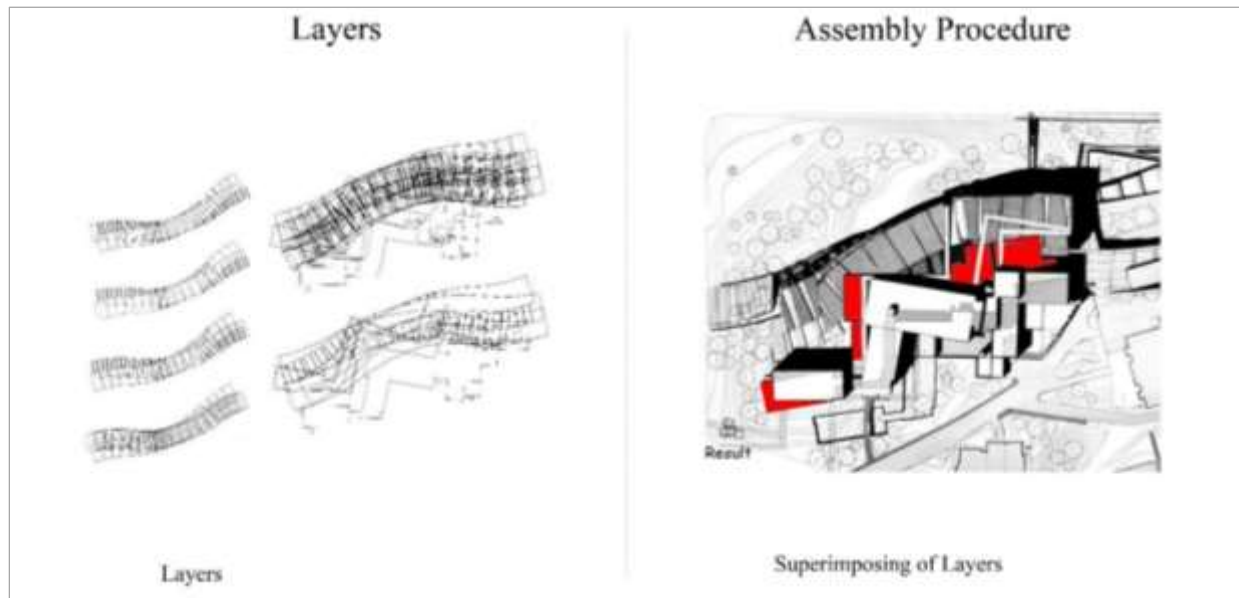


Figure 9: Aronoff Center for Design and Art in Cincinnati, Peter Eisenman, 1988. Adapted from [26].

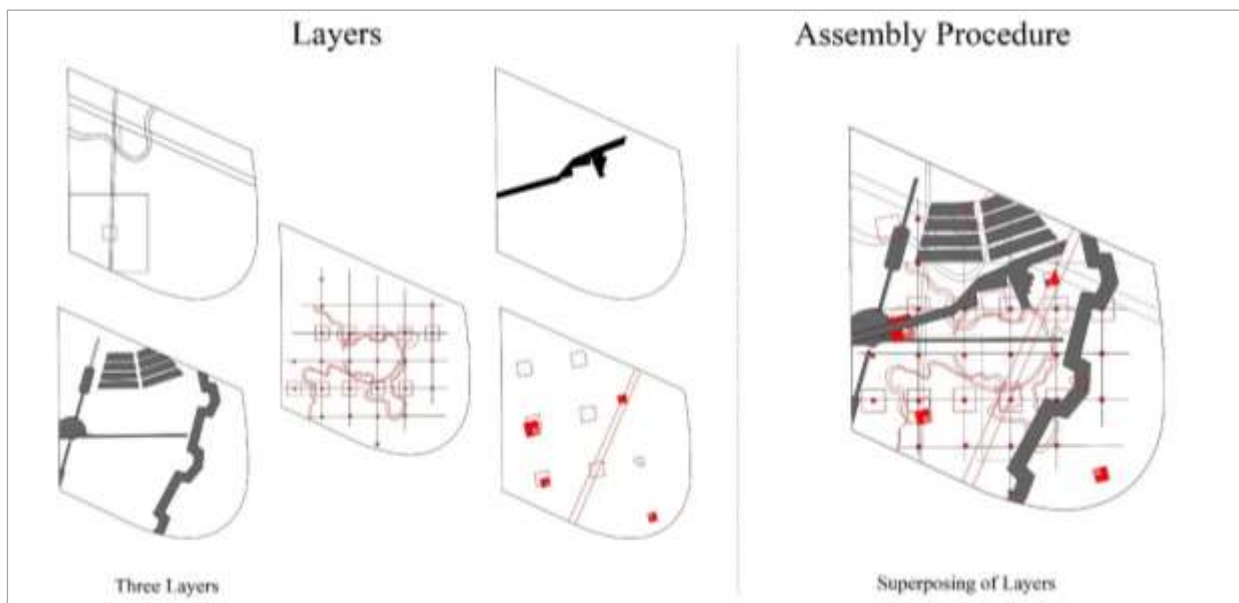


Figure 10: Parc De La Villete Proposal, Peter Eisenman and Jacques Derrida. Adapted from [44].

Another process is tracing, which is the last deconstruction transformational process that involves two processes, namely, the erasing and the residue. In the tracing process, the site is not the actual site, but the traces of the site in the Derridean sense. To follow a trace, an architect must dig deep into the near and distant past [33].

7 Results

The accepted method by which layering is accomplished is the assembly system. In the layering process of architectural designing, the assembly system of layering identifies the quality of final products. The assembly of layering can be classified into

three main factors: general strategy of layering, arrangement of layers, and transformational process. Architects used several strategies of layering. The main strategies used in designing related to the concept of layering can be divided into six main strategies. The previous section explained six strategies of designing used by famous architects that can be applied in the layering process of designing. Some architects used more than one strategy, and some strategies were used by more than one architect. Thus, previous architectural literature summarizes that the general strategy of layering consists of six strategies. Figure 11 shows drawing explanations about all six strategies of layering.

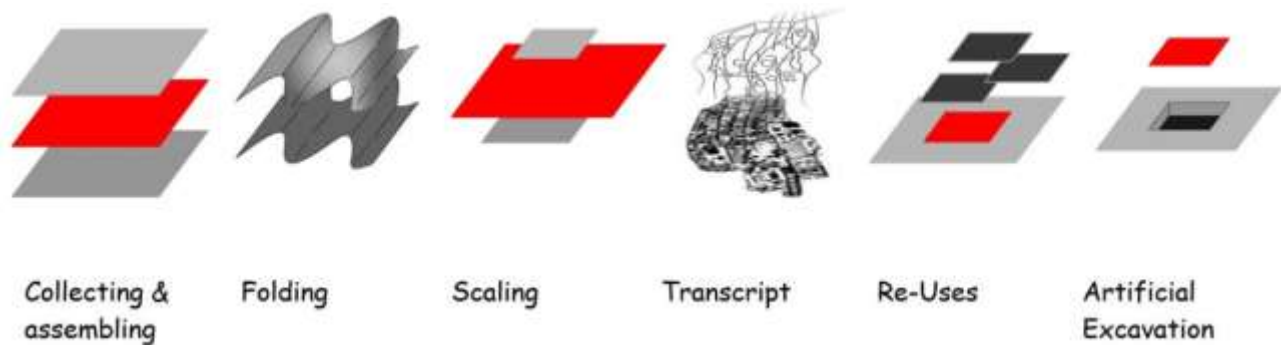


Figure 11: The General Strategies of Layering.

Based on what is mentioned in this study, the transformational process in layering could be displacement, tracing, fragmentation, reversing, repetition, rotation, mixing,

abstraction, distortion, and twisting. Figure 12 clarifies all these transformational processes.

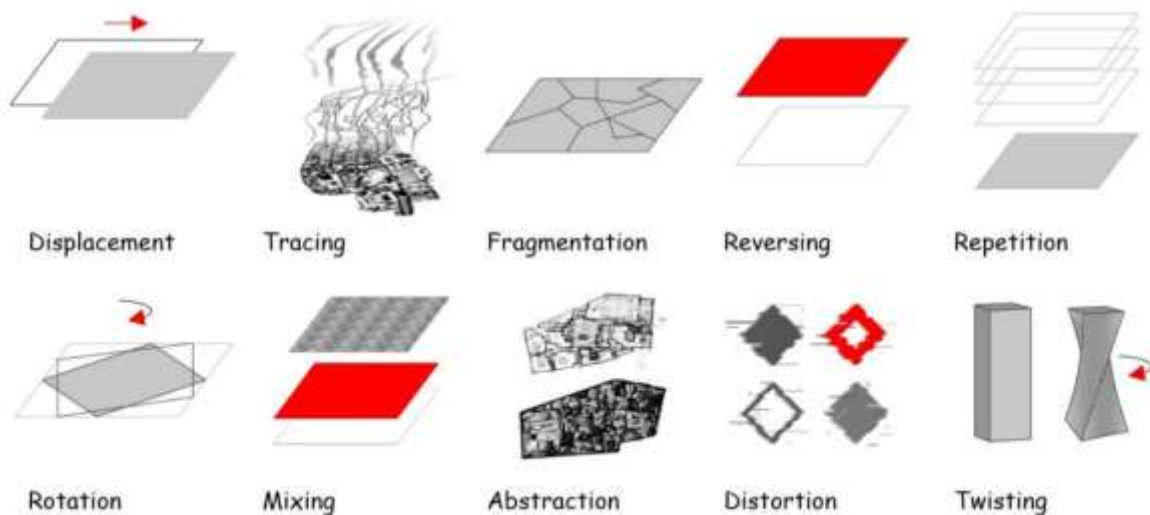


Figure 12: The Transformational Processes of Layering.

The results indicate that Eisenman's layering strategies transcend mere physical layering, incorporating intellectual, temporal, and conceptual dimensions. These strategies generate a multiplicity of readings and experiences, aligning with Eisenman's deconstructivism approach, which challenges the traditional understanding of form and space. Each strategy contributes to an architecture that is not only perceived physically but also engages the user cognitively.

The transformational processes of displacement, tracing, fragmentation, reversing, and repetition play a crucial role in the layering process of architectural design, enhancing both spatial complexity and conceptual depth. Displacement is about shifting elements from their normal positions to another position, creating new relationships and spatial juxtapositions. Tracing is mapping historical, contextual, or conceptual references from the site, layering them onto the design as abstract or literal guides for form generation. Fragmentation collapses architectural components into pieces, creating new forms of interaction between layers. Reversing is about changing the typical sequence of elements,

and inverting to create new architectural configurations. Repetition introduces continuity and rhythm through the repeated use of elements.

The transformational processes of rotation, mixing, abstraction, distortion, and twisting enhance the layering process in architectural design by introducing dynamic change of form. Rotation shifts elements around an axis to create new formal relationships. Mixing is about combining several architectural elements or concepts. Abstraction simplifies forms by skipping details, showing the original geometry or conceptual essence. Distortion influences the shape or proportion of layers, shifting conventional forms into unexpected configurations. Twisting introduces dynamism and generates a sense of movement. Together, these processes transform the design into a dynamic interplay of layers, to give a richness, multi-dimensionality to architecture.

8 Discussion

Layering assembly can be categorized into three major factors:

general strategy of layering, layer arrangement, and

transformational process (Figure 13).

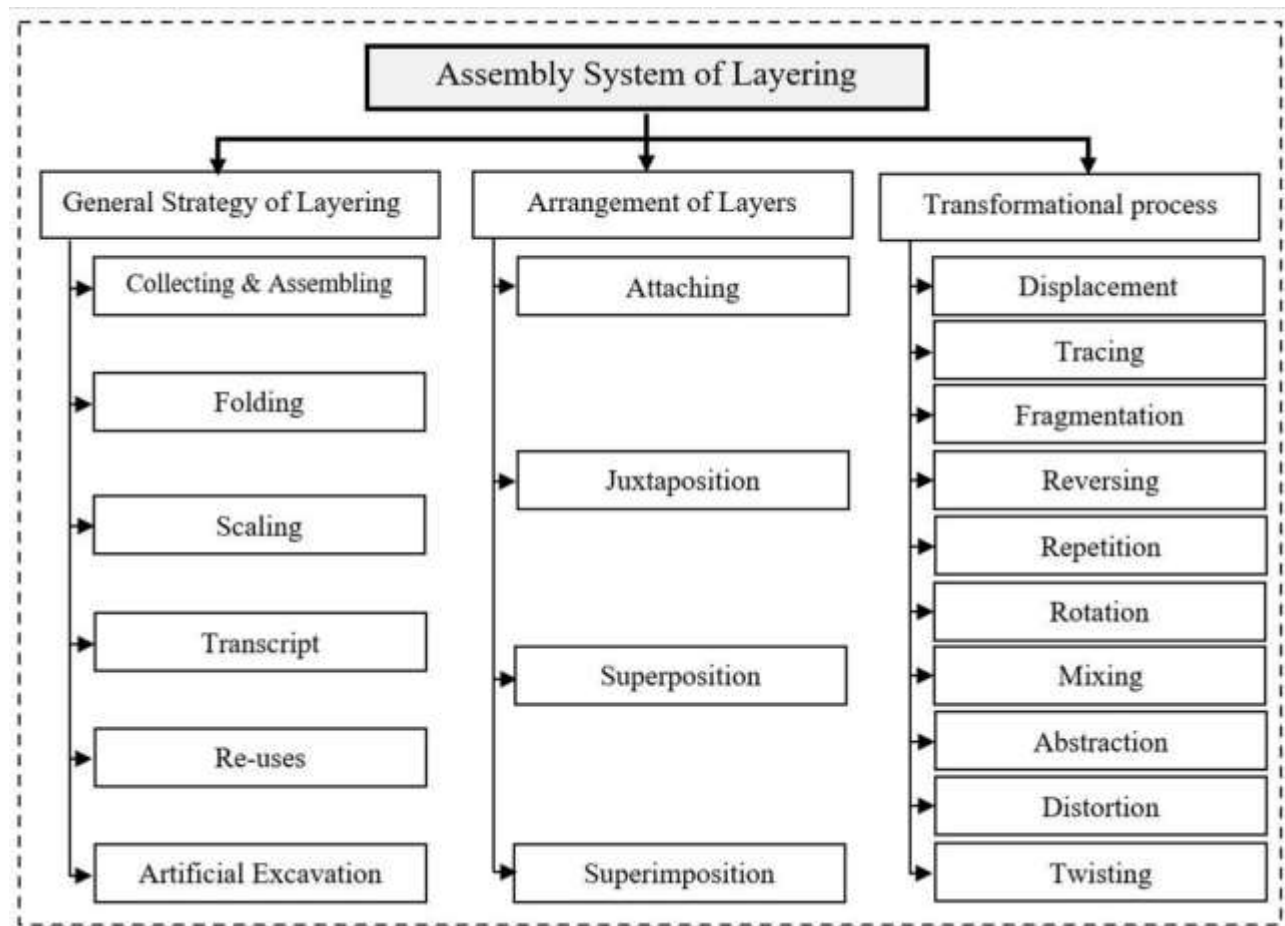


Figure 13: Assembly system of Layers Procedure.

General strategy of layering refers to the universal approach used in order to create architectural forms. After studying Eisenman's work, six distinct methods have been observed: collecting and putting together (as seen in Romeo and Juliet Project), exploring the past (as observed in City of Culture), folding (used in the Church Project), scaling (used by Long Beach), reuse (exemplified in Banyoles Olympics Hotel), and tracing (used in Parc de la Villette). Each strategy determines how layers interact, overlap, and contribute to the conceptual - formal richness of the project. Eisenman's use of historical excavation, for instance, layers the city memory over new forms, adding cultural richness into the design.

Layer arrangement accounts for the spatial relationship of these layers in the design. Four ways of arrangements were highlighted in this study: attaching (as in Columbus Convention Centre where layers are piled), juxtaposition (parallel layering in a number of projects), superposition (skewed grids in the Wexner Centre), and superimposition (overlapping shapes in the Aronoff Centre). These arrangements affect the spatial complexity and perceptions of the users. For example, in Wexner Centre, superimposition of city and campus grids creates a unified spatial experience which breaks traditional architectural hierarchy.

Transformation is the process by which the specific design operations transform and refigure the layers. Ten processes have been identified: displacement, tracing, fragmentation, reversing, repetition, rotation, mixing, abstraction, distortion, and twisting. Displacement and fragmentation were used by Eisenman regularly, such as Aronoff Centre, where forms are displaced. In addition, tracing is used at Parc de la Villette involves superimposition of conceptual and physical references.

Conclusion

This study formalizes the layering process as a design strategy in architectural production to achieve research objectives. The layering procedure to create architectural form is divided into three main categories. The first category is the six main strategies of layering that are used independently as a formal creation process. These strategies together create a complex, dynamic, and deep architecture. Understanding these strategies gives insight into Eisenman's architectural legacy and contributes to discussions on complexity and conceptualism in architecture.

The second category is about the way of arranging layers, which influences the creation of architectural form and is divided into four main ways. The third variable is the transformational

process, which contains ten different processes that are used in the layering processes.

In particular, the layering strategy creates the basic conceptual framework of the architectural design. For example, the Wexner Centre and Parc de la Villette show that superposition and tracing turn layering as a method into an independent creation strategy. By understanding this procedure, designers can be inspired to cross the limitations of conventional design techniques and create designs that provide fresh perspectives on architectural forms. This structured layering framework is used in design applications to enhance form and meaning in architecture.

Future Research Directions:

Future research could expand this study by applying the layering strategies to other architects and design contexts to test their broader applicability. Integrating computational tools and sustainability criteria. Additionally, translating these findings into architectural education or design studios could enhance teaching methodologies. Practice-based experimentation and exploration at urban or landscape scales are also recommended to validate and extend the use of layer assembly in diverse architectural settings.

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The authors declare no conflict of interest

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