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Research Article

Understanding the relationship between architecture and topography in spatial terms: The case of Seattle Central Library

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Abstract
This study aims to present the concept of topography as a multi-layered entity and an active given of the architectural design process. Different from the discussions on topography in architecture which reduce topography to its mere physical characteristics, this study's theoretical framework redefines topography in figural and spatial layers and discusses how they are interpreted in the architectural design practice. To further investigate the insights in the theoretical framework, the case study method is instrumentalized via spatial analysis of the Seattle Central Library. The spatial analysis of the library involves figure ground map and public use diversity and access maps. Accordingly, the diagrammatic representation, the site plan and site section of the project are redrawn in the urban scale of 1:1000 and the building scale of 1:200. Consequently, the design of the Seattle Central Library presented hybrid spaces that are nurtured from connections to the spatial and figural layers of topography. The manipulation of the building envelope, the continuity of the ground floor line and programmatic flexibility of the library's spaces were critical elements to integrate to the urban topography to create interstitial situations in connection to both figural and spatial layers.

Keywords: Architectural design, Public space, Urban topography, Seattle Central Library, Spatial analysis

Extended Abstract

Introduction: Every architectural building must deal with its topography for it is the very first given of the architectural design process. While cities compete for a global reputation and star architects are commissioned to design alluring large-scale public buildings, the design of the building envelope risks claiming urban topography as a mere background for the designed object. Many studies in this area present materials, silhouette lines or construction methods as the base of the relationship between architecture and topography and conceptualize topography as a natural physical entity. Criticizing this approach, this study conceptualizes topography as a layered entity that consists of both natural and man-made physical layers and the ephemeral spatial layer.

Purpose and scope: The research design aims to reveal the relationship between figural and spatial layers of the urban topography and the design of urban public buildings. In this context, the study is structured along with a theoretical framework that redefines the relationship between architecture and topography. Following the theoretical framework, a case study analysis is conducted by spatial analysis to discuss the relationship from an architectural design perspective and present urban topography as an equivalent entity in the architectural design process.

Method: In the study's theoretical framework, the figural layer of the topography is redefined with the ground's contour line, which is augmented by the urbanization process. To recognize the figural layer of topography as a nurturing ground; rather than an obstacle in the architectural design process, topography is conceptualized as an artefact which is constantly unfolding for creating urban continuity. The discussion of the connective capacity of the figural layer of the topography

is continued with the spatial layer in the study's theoretical framework. Consequently, the spatial layer of the topography is explained as the place of spatial relations which are manipulated and altered by architectural design. To further investigate the insights in the theoretical framework, the case study method is instrumentalized via spatial analysis of the Seattle Central Library that is designed by OMA and LMN. The spatial analysis of the library involves figure ground map along with public use diversity and pedestrian access map. Accordingly, the diagrammatic representation, the site plan and site section of the project are redrawn in the urban scale of 1:1000 and the building scale of 1:200. The purpose of 1:1000 scale drawings is to present the pattern of figural and spatial layers of topography where white areas present the grounds/volumes for spatial relationships to take form. Additionally, the purpose of 1:200 scale drawings is to present the integration/detachment of architectural design to the pattern of figural and spatial layers of topography. In the process, mostly visual data from different maps and photographs are transcribed and the traditional drawing techniques are altered via using ichnographic and diagrammatic representation methods

Findings and conclusion: The spatial analysis on the 1:1000 scale showed the heavily non-public use and connectivity of pedestrian access. The drawings on the 1:200 scale are used for discussing the design decisions of the library on integration to the figural and spatial layers of topography. Different from conventional public buildings that generally set a sharp boundary between inside and outside and use determinate spatial division along with programmatic determinacy, the design of the library is still critical for trying to maintain connection to the topography's figural and spatial layers by creating intervals through hybrid spaces. The living room shows that programmatic flexibility is a way of creating connection to the spatial layer of topography. Additionally, the figural manipulation of the building envelope creates wraps over the fourth and fifth avenue entrances and contribute to the formation of interstitial spaces. Consequently, the case study of the Seattle Central Library presented the hybrid spaces that are nurtured from connections to the spatial and figural layers of topography. The manipulation of the building envelope, the continuity of the ground floor line and programmatic flexibility of the library's spaces were critical elements to integrate to the urban topography to create interstitial situations in connection to both figural and spatial layers. On the other hand, the continuity of the circulation between the ground levels of the library is found not to be met by a continuity of public use. Still, the case undoubtedly sets an example to the creative potency of instrumentalizing interstitial situations in connection to the spatial and figural layers of topography in the architectural design process. Further research from this study can be performed by implementing the analysis on different public buildings for revealing their strategy to integrate to the urban topography and presenting the creative intervals on figural and spatial layers. Also, the findings may be used in the design practice to conceptualize topography as a nurturing ground for spatial relationships and figural references.

Keywords: Architectural design, Public space, Urban topography, Seattle Central Library, Spatial analysis

INTRODUCTION

Every architectural building must deal with its topography for it is the very first given of the architectural design process. While cities compete for a global reputation and star architects are commissioned to design alluring large-scale public buildings, the design of the building envelope risks claiming urban topography as a mere background for the designed object. On the other hand, urban topography is a multi-layered entity that contains natural, man-made and spatial layers that are waiting to connect with the architectural building. As Gregotti (1997), Betsky (2002) and Leatherbarrow (2004) argue, the context, the place or the topography needs to be a main reference for the architectural design process. Also emphasizing the need for context-based references, Psarra (2022) and Trotter (2010) criticize the inefficiency of the sole authorship of the architect in the architectural design process. In this context, the study interrogates how the figural layer of urban topography is transformed by architectural design and how architectural spaces become part of the existing spatial relationships on the surface of the urban topography.

There are other studies that discuss the relationship between architecture and topography (Frampton, 2007; Kullmann, 2015), along with landforms and form-making possibilities (Jencks, 2011; Allen, 2011; Portal, 2017; Novoselchuk et al., 2022). There are also similar studies to this study that discuss design manipulations on topography for creating spatial connections (Marot, 2003; Berrizbeitia & Pollak, 1999) and the possibilities of interdisciplinarity between architecture and landscape (Betsky, 2002; Jauslin, 2019; Perrault, 2016; Brayer & Simonot, 2003). While similarly positioned on the landscape and architecture's interdisciplinary section; this study enhances these discussions from an architectural design perspective that is embedded in an urban context.

RESEARCH METHODOLOGY

The study aims to create a new perspective on the existing unstructured knowledge of the relationship between topography and architecture which mainly consists of practical inferences and normative theory. Thus, the study can be situated on the relationship-building mode in the theory-building phase within Cash's theory-building/testing cycle (Cash, 2018: 89). As Eisenhardt indicates, building theory from case study research is particularly suitable for creating a new perspective on an already researched subject (Eisenhardt, 1989: 548). Characterized as architectural design research, the methodology of the study mainly consists of the theoretical framework for presenting conceptual insights and the case study for enhancing the insights with practical design knowledge. In the theoretical framework, figural and spatial layers of topography are elaborated as two main themes to present the dynamic relationship between architecture, topography and space from an architectural design perspective. Following the theoretical framework, the case of Seattle Central Library that is designed by OMA and LMN, is analyzed to discuss architectural design's figural and spatial transformation and integration capacity on the urban topography. The spatial analysis of the library involves figure ground map and the pedestrian access and public use diversity map. Accordingly, the diagrammatic representation, the site plan and site section of the project are redrawn in the urban scale of 1:1000 and the building scale of 1:200.

Theoretical Framework: The Relationship between Topography and Architecture

The etymological origin of topography is derived from the Greek word *topos*, which means place. Accordingly, topography has been defined as describing the features of a place (Hoad, 1996). Relatedly, topography can be defined as the depiction of a place with different intentions. As different disciplines -such as construction engineering and architecture- adopt the term topography, the holistic description of the place is instrumentalized into more informative and dimensional concepts. Instead, this study puts topography as an active element of the environment and argues that topography affects architectural space by being the connective or limiting ground for spatial relationships.

Table 1. The relationship between the figural and spatial layers of topography and architecture

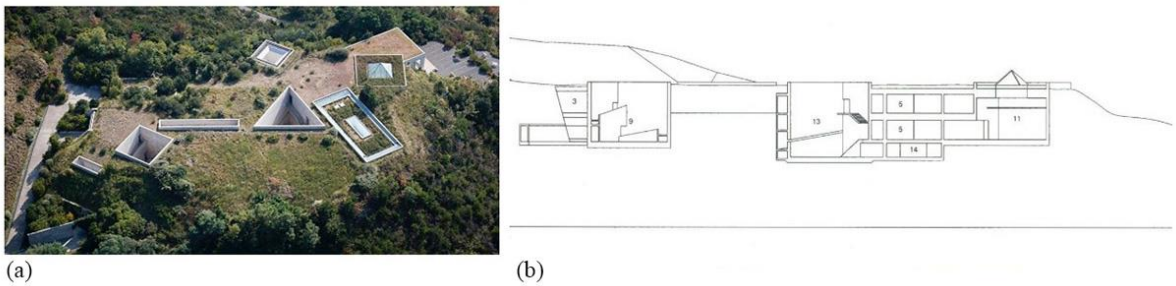
The Figural Layer of Topography	The Spatial Layer of Topography	The Role of Architecture	
-is formed by the contour line of the earth's surface -is composed of natural and built layer -is constantly under transformation via urbanization	-is formed by the continuous pattern of spatial relationships -is conditioned by the figural layer of topography -is constantly redefined by access and use	**to the figural layer**	integration to
			detachment from
		to the spatial layer	is to enable connection
			is to limit connection

The structure of the theoretical framework is designed to redefine the figural characteristics of topography as the precondition of space and conceptualize a spatial layer of topography as the pattern of inside and outside spaces on the continuous surface of the urban topography. While architectural elements create integration to or detachment from the figural layer of topography; architectural space is conditioned by the architectural program and the architectural manipulations on the figural layer (Table 1).

The Relationship between Topography and Architecture in the Figural Layer

This chapter aims to redefine topography for its inherent figural qualities and discuss topography as a figural reference to architectural design. Caché (1995: 17) discusses the figural characteristics of topography for its ever continuing and partially changeable contour line. He indicates that curves of topography as peaks and valleys on the continuous surface create an interval of proliferation and differentiation. While containing high and low levelled areas in its continuity, topography lays out the first contour line for the architectural design and the urbanization process. While the proliferation of various architectural buildings continues to shape topography, both in art and architecture, the practitioners were called to constitute a reciprocal relationship between the figure and ground. Krauss (1979: 34) critiqued contemporary sculpture for its disconnection from

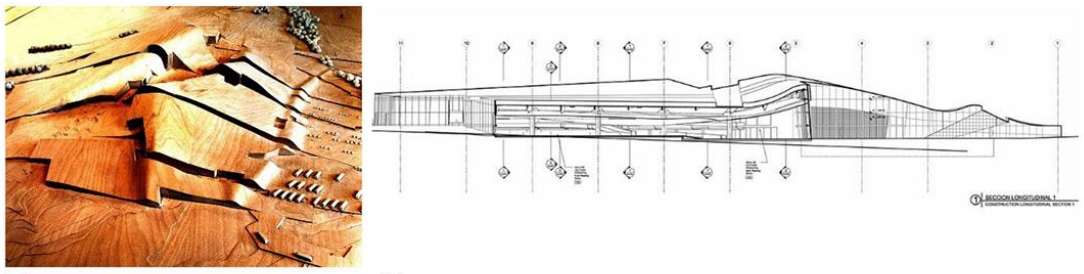
the ground and for creating "sitelessness" and "absolute loss of place". In parallel to the discussions in the arts, the search for a context-related reference or relational figure for the building envelope continued in the architectural design practice. Leatherbarrow (2004: 169) questions the main drives of the architectural design process and indicates that if topography was the main reference of the architectural design process, architectural buildings would be more interrelated and extroverted. Rather than creating a dominance of figures by self-referential design decisions, building a correlative relationship with the topography would lead to a new interpretation of the figure of the architectural building. In the architectural design practice, every architectural building must present its connection strategy towards the ground figure of the topography either by detaching from, directly connecting to or burying itself under (Berlanda, 2014: 56). However, figural integration to the topography is often practiced by integrating the contour line of the building envelope with the contour lines of the natural topography. Relatedly, Betsky (2002: 8) defines landscrapers as a new category for architectural buildings with low, folded and hidden qualifications rather than celebrating taller and abstract figural characteristics. Similarly, Allen (2011) focuses on buildings with geology-inspired figures and the landform building concept.



(a) (b)

Figure 1. (a) Chichu Art Museum by Tadao Ando, (b) the section drawing

The integration to the figural layer of topography is frequently practiced by hiding the building under the ground level of natural topography which can be seen in Tadao Ando's Chichu Art Museum (Figure 1) and Dominique Perrault's Ewha Women's University. At the same time, creating relief or curvilinear ridges from the contour line of existing topography is another way of relating architecture to topography which can be seen in FOA's International Passenger Terminal and Eisenman's City of Culture of Galicia (Figure 2). These buildings create formal and relational transformations on the topography and usually the interiors of these buildings were similar to grottos that are partially detached from the outside.



(a) (b)

Figure 2. (a) City of Culture of Galicia by Eisenman Architects, (b) the section drawing

While landforms were presented as the new eco-friendly trend for the building figure, the same trend is justifiably critiqued for becoming a spectacle of new construction technologies that enable the manufacture and use of topological forms on the building envelope. Choi (2019) states that designing landforms regarding the forms of natural topography serves as a sustainability mask for eco-capitalism. Although the figure of the buildings appeared less monolithic; they were still self-referential and not necessarily connected to public realm.

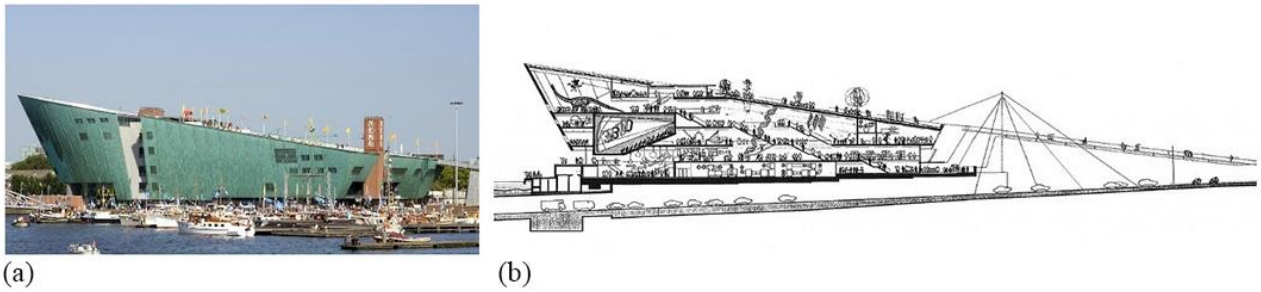
The Spatial Turn in the Relationship between Topography and Architecture

The previous discussion in the figural layer shows that architecture's apparent continuity with the natural topography of the site or any other reference to the topographical form is insufficient to create spatial relations.

Similarly, Aureli (2009) discusses the value of non-figurative architecture which does not prioritize the basic geometry of the building envelope; but prioritizes publicness through its spatial infrastructure. Following this spatial turn, this chapter aims to discuss the relationship between topography and architecture from the point of spatial relations. Thereby we are fostered to see urban topography as a place of spatial relationships in an urban context and to use an interdisciplinary comprehension that would incorporate the understanding of the architectural theory with landscape architecture and urban theory. While doing so, the term topography overlaps with the term landscape and the term space multiplies into its contextual variations.

Understanding space in relation to urban topography leads to conceptualizing space as an interrelated, scattered, and simultaneous phenomenon. Wall claims that the term landscape should be perceived as the functioning matrix of connective tissue that regulates the relationships between things, spaces, processes and happenings (Wall, 1999: 233). Similarly, Corner also conceptualizes the landscape space where singular places are interwoven in the texture of the landscape on the nestling ground of topography (Corner, 1992: 247). When topography is conceptualized as the nestling ground for spatial relationships, the urban ground can be seen as a continuous matrix where urban open spaces and architectural interiors become interconnected. While there is a perceived continuum in the spatial layer of the topography, there is a process that includes the connection and isolation of singular spaces on the nestling ground of topography. As Duarte (2017: 64) argues, space cannot be defined as a uniform concept and can dynamically be redefined according to the context. Malpas also uses the terms place and space as overlapping phenomena. While space is associated with openness and place is associated with boundedness, space is dynamically defined as involving limited and open qualities simultaneously (Malpas, 2012: 236). Accordingly, the spatial layer of topography presents in the form of a continuous matrix where spatial relationships are manipulated through architecture by creating limits or continuity. Both Allen and Caché state that the main purpose of architectural intervention is to set the scope by defining what will happen outside and inside. Caché (1995: 23) refers to this as setting a probability frame and Allen (2011: 77) defines it as setting limits. Relatedly, the spatial operations of architecture on the topography are defined by creating limits and boundaries and prioritizing the interior despite the exterior.

On the other hand, rather than creating limits, the possibility of creating continuity in spatial relationships is also discussed in architecture's theory and practice. Examining spatial relationships instead of architectural objects is presented as a way of sensitive urbanism (Ellin, 2003: 224); also leftover, undetermined and undesigned urban open spaces are discussed for their authentic spatial characteristics and inter-relational capacities (Careri, 2014: 108; Franck, 2014: 154). Additionally, the concept of interstitial carries the discussion from boundless open space to urban gaps in the adjacency and the presence of other architectural buildings (Brighenti, 2016: xvi; Lévesque, 2016: 23). Consequently, urban space is redefined with its relational capacities. A dynamic and interdisciplinary approach between landscape and architecture enabled to discussion of the permeable relationship between interior and exterior, the spatial qualities of the urban underground, external interior/internal exterior spaces and urban interiors (Berrizbeitia & Pollak, 1999: 14; Perrault, 2016; Birksted, 1999: 109; Attiwill, 2011). This variation of spatial conceptions also can be interpreted as the answer from the architectural theory to before mentioned space-place discussion in this chapter.



(a) (b)

Figure 3. (a) Nemo Science Center by RPBW Architects, (b) the section drawing

There are also answers to the search for a more relational architecture from architectural practice. Different from the projects that only create a figural connection with the building envelope to the physical topography; these projects also aim to create a connection in the spatial layer. Parent and Virilio (1996: 68) discuss the

spatial unfolding of the oblique floor surface and develop the concept of the function of the oblique. Among their theoretical debates and architectural experiences under the same title, they also developed the concept of habitable circulation as a prerequisite for their architectural intervention. While their work uses topographical geometry as the formal reference, they also limit the angle of the floor surface within a walkable scale. Additionally, many other contemporary architectural buildings functionalized the oblique surface for public use both interior and exterior spaces. Hadid's Landscape Formation One Pavilion is an example of how bridges and pathways are integrated into the design of the architectural building and participate in public access. Additionally, RPBW's NEMO Science Center in Amsterdam (Figure 3) and Snøhetta's Norwegian Opera and Ballet of Snøhetta in Oslo extend the public open space via the accessible/walkable ramped roof.

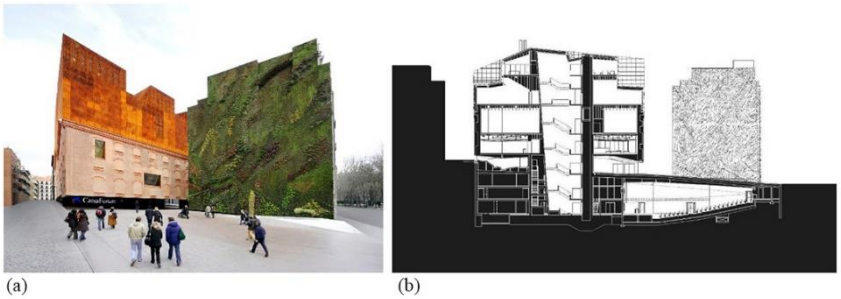


Figure 4. (a) CaixaForum Madrid by Herzog & de Meuron, (b) the section drawing

Still using spatial relationships as a critical entity in the design process, several contemporary architectural buildings do not use topological surfaces and oblique geometries to transform the building envelope. This time we see the connection between the ground floor of the architectural building and urban topography in a continuum. To expand the public urban ground, the architects of Herzog & de Meuron raised the main building from the urban ground in the Centre for Heritage and Art in Tai Kwun and CaixaForum in Madrid (Figure 4). Similarly, Zaha Hadid Architects (n.d.) came up with the term "urban carpet" in the design of the Rosenthal Center for Contemporary Art in Cincinnati. To accentuate the continuity of the urban topography from the ground level to the interiors, the design of the building includes a gentle slope. Expanding the public open space into the building site, the design approach of these buildings expresses a desire to create a dynamic relationship between the spatial layer of the urban topography and architectural space by activating the horizontal geometry of floor and roof.

The Method of Analysis

To further investigate how the figural layer of topography is manipulated by architecture and thereby architectural space is activated, the study instrumentalizes the case study method and analyses the Seattle Central Library for its figural and spatial integration to its topography. The method of spatial analysis is based on the figure-ground map, pedestrian access and the public use diversity map. By adding the section view in order to understand the role of architecture and architectural space; a sum of four drawings is redrawn in the analysis process. The purpose of 1:1000 scale drawings is to present the pattern of figural and spatial layers of topography where white areas present the grounds/volumes for spatial relationships to take form. Additionally, the purpose of 1:200 scale drawings is to present the integration/detachment of architectural design to the pattern of figural and spatial layers of topography.

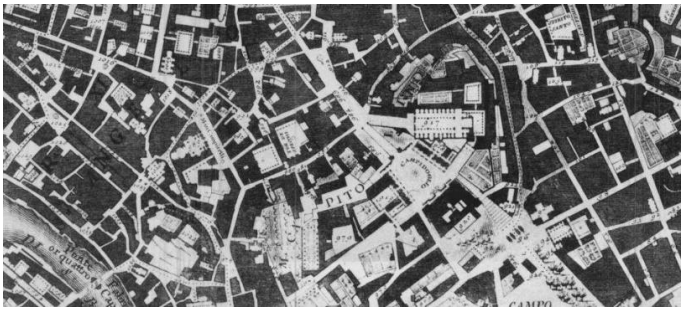


Figure 5. The new topography of Rome Comasco

Figure-ground maps are commonly used to discuss architecture's intervention in urban topography (Koetter & Rowe, 1984). Especially, Nolli-type maps (Figure 5) are revisited for their capacity to represent public space and urban landscape (Sease, 2015; Ji & Ding, 2021). Relatedly in this study, the illustration method of the site plan is similar to the Nolli Map of Rome and the blank areas represent the accessible open public spaces on the ground level. The illustration of both the interior and exterior of the public spaces creates the layout for understanding the interrelations between urban public spaces and the built environment. The illustration method of the site section also uses the same strategy as the site plan. The illustration method is described in Table 2.

Table 2. The illustration method of the figure-ground map

		Orthographic View		**Color Code**
		Extended Site Plan (1:1000)	**Extended Site Section (1:1000)**	**In all drawings**
Natural Slope of Topography		-	Section view	Light Grey
Roads		Plan view	Section view	Dark grey
Buildings with private use		Top view	Silhouette view	Dark Grey
Buildings with public use	Interior spaces for private use	Plan view (ground level)	Section view	Dark Grey
	Interior spaces for public use	Plan view (ground level)	Section view	White
Exterior Public Open Spaces		Plan view	Section view	
Pedestrian ways and crossings		Plan view	Section view	
Planting		Plan view	-	Green

The adaptation of the Nolli map to the contemporary realm also brought issues on the definition of the public space. Although the contemporary urban realm consists of many variations of public spaces, the blank spaces on the extended site plan are consistent with the open public space categorization of Dovey and Pafka (2020: 239) which includes public sidewalks, plazas, parks, beaches and libraries. Additionally, their categorization leaves out the ticketed and inaccessible public spaces such as museums, car parks, public transport, universities, schools, vehicle spaces, government compounds etc. These places also are painted in dark shades in the extended site plan in the case study. Additionally, the data for the figure-ground map is collected from Google Maps (satellite and map views) and Google Earth.

Table 3. The illustration method of public-use diversity and pedestrian access maps

Space	**Program**	**Diagrammatic Expression**
Open Public Spaces	Library	Red dot (entrance)
	Plaza, park, beach	Red dashed line
Spaces for Pedestrian access	Public sidewalks, stairs and crossings	
	Public transportation stops	Red ring
Spaces for Public Leisure Activities	Restaurants, cafes, bars, diners	Orange dot (entrance)
	Stores	Yellow dot (entrance)

Unused Spaces	Closed/rental spaces	Grey dot (entrance)
Main Buildings	Main entrances of buildings	Empty dot (entrance)
	Main building use	Text

The spatial layer of topography is illustrated through its publicness and accessibility. As also emphasized by Ellin (2006: 18), the diversity of public use and connectivity of publicly accessible interior/exterior spaces are accepted as the fostering factors for spatial relationships. Therefore, the spatial analysis reveals the diversity of public use and pedestrian accessibility on the ground level. Not measuring the movements of pedestrians per se, the design of the analysis aims to reveal the spatial infrastructure for public use and access which are accepted in this study as the indicators of the spatial relationships in urban living. As mentioned in the design of the figure-ground map, the open public space categorization of Dovey and Pafka (2020: 239) is used as the main reference for open public use and spaces for public leisure activities are added to the map. Due to particular situations in the case area, rental or closed places are presented as designed and unused spatial infrastructure for public use. The details are described in Table 3. Additionally, the data for the diversity of public use and accessibility diagram is collected from Open Street Map, Downtown Seattle Accessible Map and Transit Guide, Privately Owned Public Spaces Map and Google Maps (map and street views).

FINDINGS

The Seattle Central Library was selected for two reasons. Firstly, the building has its own literature of theoretical debates about the design of the building envelope, its publicness, its public sphere, and its interpretation of the library program among which this study can be placed (Stamets, 2004; Mattern, 2003; Hogenboom, 2018; Dovey, 2017). Secondly, the library building represents a contradictory situation for the theoretical discussion of this study for detaching from the urban topography in figural terms and still creating a connection to the urban topography in the spatial layer. Having a provocative figure from the outside (Figure 6), the plan layout and program of the library building promise spaces that are strongly connected to the urban realm.

Figure 6. The building envelope of the Seattle Central Library

The transformation of the natural topography of Seattle can be conceived as determinate progress for the sake of urbanization and the creation of a worldwide city. Additionally, the use of the urban grid as the main city planning instrument, and the organization of the city emphasizes the precedence of economic utilitarianism (Rose-Redwood, 2022: 162). The rationalization of the urban topography caused its natural facilities to diminish and the city to be more urban, more reachable, and thereby have a more competitive economy (Williams, 2015: 5). Within this context, Seattle Central Library is in the central business district on a hill that climbs along Madison Street beginning from Elliot Bay.

The Relationship between the Seattle Central Library and the Urban Topography on the Urban Scale

Focusing on the urban scale, this chapter discusses the existing pattern of figural and spatial layer of the topography. The figure-ground display of the extended site plan (Figure 7b) shows the layout of the urban grid and the network of urban public space which is dominated by buildings that do not offer open public use and

vehicle spaces such as roads and car parks. While The Seattle Central Library offers the main space for public use, there are various interior and exterior spaces. Due to the Privately Owned Public Spaces regulation (City of Seattle, 2023), there are also privately owned interior and exterior spaces for public open use such as the lobby and terrace of the Safeco building which is in front of the Seattle Central Library.

The pedestrian access and public use diversity maps are mainly placed on the public sidewalks and crossings (Figure 7a). Due to the grid organization, the connection between streets is smoothly maintained. Spring and Madison streets which climb the topography, offer less activities for public use than the streets that are aligned with the natural slope of the topography. Therefore, the pedestrian access is much easier. While the buildings in the downtown area mostly consist of hotels and offices, on the ground level there are places for public leisure in these buildings. Also, there is a shop and a cafe within the Seattle Central Library for maintaining long time use in the building. Being the diversity for public use is higher in 4th avenue than the 5th avenue indicates that the entrance of the 4th avenue is more critical and welcoming for the library.

Figure 7. (a) Pedestrian access and public use diversity maps, (b) Figure ground map of the extended site plan, (c)Figure ground diagram of the extended site section

Due to the hilly natural topography, which is illustrated in the extended site section (Figure 7c), public accessibility by walking is hard. Therefore, the network of open public spaces is assisted by outdoor and indoor elevators and stairs. The site section displays the public stairs on the exterior of one building that connects to a little plaza. In addition to their public use, the interior open public spaces of the Seattle Central Library and the ground floors of Safeco Plaza serve as public transition areas and maintain an urban continuity on the ground level of the urban topography. Different from the extended site plan, we can also see that the accessible ground floor is augmented to the upper floors of public use in the Seattle Public Library. While the library building is not the single element of the open public space network, it offers the greatest indoor space for public use and serves public access through its elevators and stairs.

The Relationship between the Seattle Central Library and the Urban Topography on the Building Scale

Using a closer view and focusing on the building rather than the extended views, this chapter discusses how the design of the Seattle Central Library creates a connection to its topography in figural and spatial layers. Different from the analysis in the 1:1000 scale, the 1:200 scale shows the program and architectural space of the library in relation to the urban space. The spatial analysis of the design is based on the site plan and section of the Seattle Central Library. The section line is aligned to the entrance axis of the building where the relationship between inside and outside is established. The site plan illustrates two different leveled ground floors of the library partially and conjoins them with dashed lines. Thereby the ground line which connects different street levels and creates the ground for the open public space is simultaneously visible in the same plan.

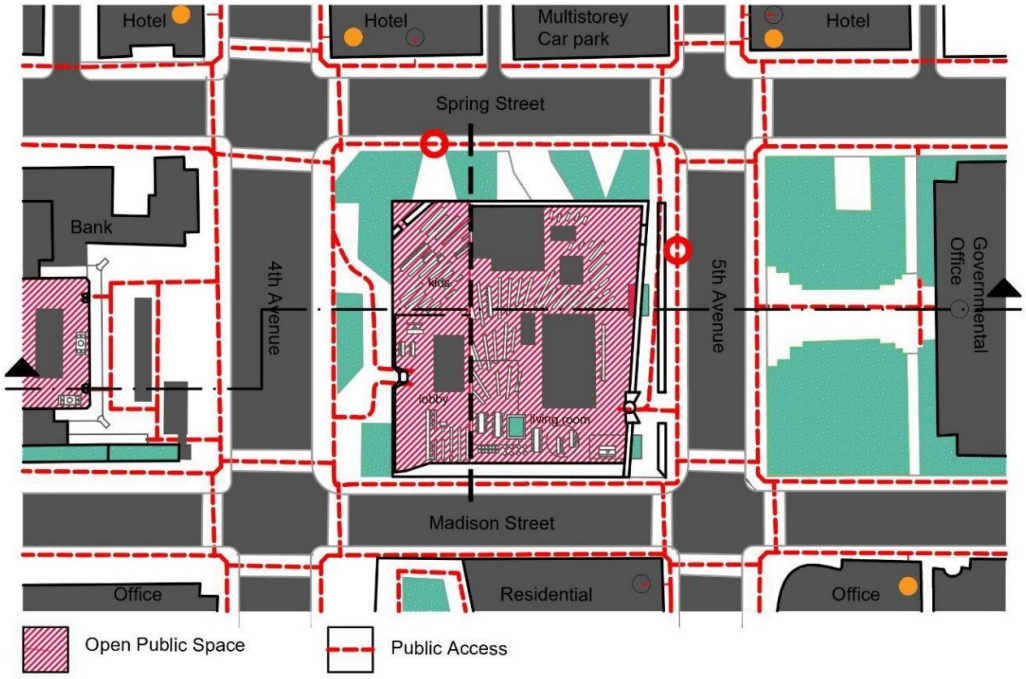


Figure 8. Site plan of the Seattle Central Library in 1:200 scale

The site plan (Figure 8) illustrates both the open spaces and interior spaces for public access and use. The lobby of the Safeco Plaza at the left and the ground floors of Seattle Central Library in the middle form the sum of interiors in the plan drawing. The exteriors for public access and use are mainly formed by the front plazas of the Safeco Plaza, the Seattle Central Library, and the Nakamura Federal Courthouse. Additionally, we see public transportation stops, sidewalks, pedestrian crossings that enhance pedestrian access. There are also some cafes and restaurants that bring diversity to public use.

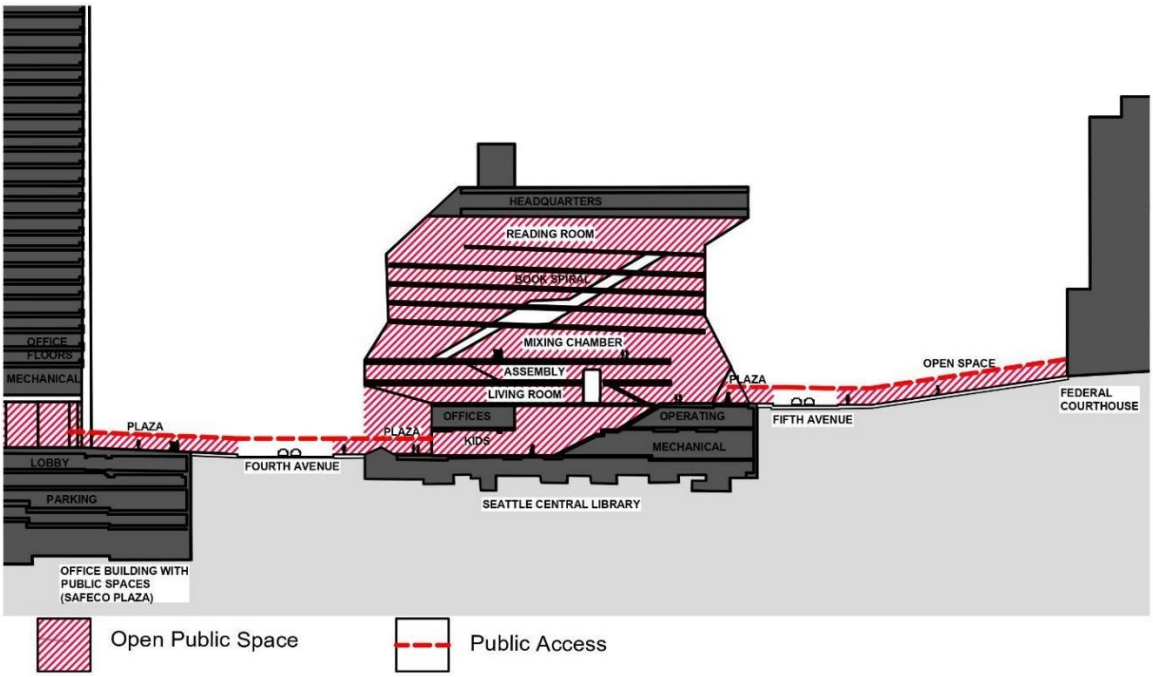


Figure 9. Site Section of the Seattle Central Library in 1:200 scale

The section drawing (Figure 9) enables us to understand the figure of the building in relation to its interior and exterior spaces and understand the volume of the spaces for public use. The design of the building envelope is mainly shaped by the volumes of interior spaces. Also, the way the library floors augment the ground level for public use is explicit in the section drawing. Additionally, we see the front plazas are met with different figural gestures of the building envelope. The main entrance to the library on the kids level (Figure 10a) and the front plaza or the walkway (Figure 10c) is completely covered up by the building envelope. These spaces also constitute interstitial spaces between the interior and exterior urban space. Via re-programming the conventional library needs, the strategy of the project is to create programmatically flexible spaces throughout the building. The living room is specially designed with the intention to continuate the urban public use without the limitation of programmatic needs. The outside urban realm seems to be reproduced on the inside of the building (Figure 10b). Regarding this study's critical point of view, the role architecture in this case, is found to be simultaneously limiting and enabling the connection to the spatial dimension of the topography with different design decisions. Different from conventional public buildings, which generally set a sharp boundary between inside and outside and use determinate spatial division along with programmatic determinacy, the design of the library is still critical for trying to maintaining connection to the topography's figural and spatial layers by creating intervals through hybrid spaces. The living room shows programmatic flexibility as a way of creating connection to the spatial layer of topography. Additionally, the figural manipulation of the building envelope creates wraps over the fourth and fifth avenue entrances and contribute to the formation of interstitial spaces.

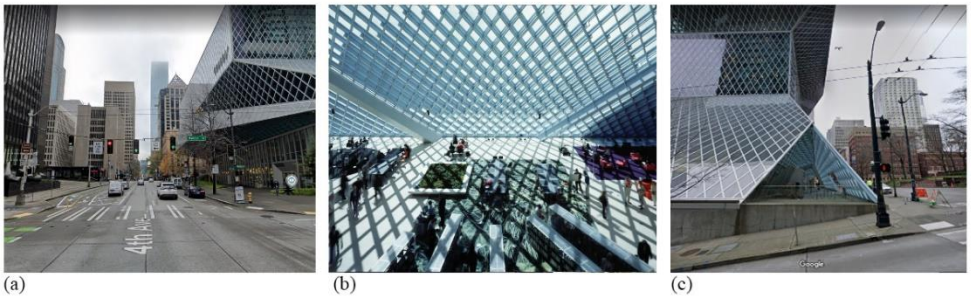


Figure 10. (a) The entrance plaza on the 4th avenue, (b) the living room, (c) the entrance plaza on the 5th avenue

However, these connections on the figural and spatial layers do not create a continuum with the spatial layer of the topography. Although, the section drawing (Figure 9) shows the spatial infrastructure of circulatory continuum between the ground levels of the building, this situation is not met by the continuity of spatial use. The spaces on the ground levels, which are the fourth avenue plaza, the auditorium, the living room and the fifth avenue plaza, are all aligned to the circulatory continuum, yet functioning relatively disconnected. Therefore, possibility to create a habitable circulation is omitted from the design. Consequently, the living room can only serve as an isolated inner public space. Additionally, despite the opportunity of circulatory connection, the front plazas are not furnished to offer diverse public use and remain as transitory spaces.

CONCLUSION

This study interrogates the effect of architectural manipulation on the urban topography using the lenses of figural and spatial layers. Many studies that discuss the relationship between architecture and topography present materials, silhouette lines or construction methods as the base of their discussion and conceptualize topography as a mere physical entity. Criticizing this approach, this study conceptualizes topography as a layered entity that consists of both natural and man-made physical layers, and the ephemeral spatial layer.

The discussion on the theoretical framework showed that the ground line of the topography is much more vital than the silhouette line for the urban public realm. Also, even the exterior figural lines of a building envelope can become grounds for public access. Following the ground line of the topography, the public urban space is deduced to be an inter-relational and scattered phenomenon and discussed as the spatial layer of topography. Consecutively, the design of the building could create a critical value by trying to achieve a connection to the spatial layer of topography.

The case study of the Seattle Central Library presented the hybrid spaces that are nurtured from connections to the spatial and figural layers of topography. The manipulation of the building envelope, the continuity of the ground floor line and programmatic flexibility of the library's spaces were critical elements to integrate to the urban topography to create interstitial situations in connection to both figural and spatial layers. Therefore, discussing the figural along with the spatial layer of the topography revealed that there are creative intervals which can be revealed by hybrid spaces. In the case of Seattle Central Library, these hybrid spaces are formed by the flexibility of the architectural program and enwrapping the outer spaces by the building envelope. On the other hand, the continuity of the circulation between the ground levels of the library is found not to be met by a continuity of a public use. Still, the case undoubtedly sets an example to the creative potency of instrumentalizing interstitial situations in connection to the spatial and figural layers of topography in the architectural design process.

Further research from this study can performed by implementing the analysis on different public buildings for revealing their strategy to integrate to the urban topography and presenting the creative manipulation on the intervals of figural and spatial layers. Also, the findings may be used in the design practice to conceptualize topography as a nurturing ground for spatial relationships and figural references.

Authors' Contributions

The authors contributed equally to the study.

Competing Interests

There is no potential conflict of interest.

Ethics Committee Declaration

Ethics committee approval is not required.

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