

**AR3A160** Lecture Series Research Methods

**CONSTRUCTING CULTURE THROUGH TECTONICS:**

The phenomenology of weight in contemporary regional architecture

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## I INTRODUCTION

### The relevance of methodology

The architectural profession and its academic counterpart both play an important roles in the development of the discipline of architecture. With design-led practices being more project goal orientated and academic institutes more research based, for both to productively contribute to what has gone heretofore, an understanding of its research method(ologie)s is crucial. Through this understanding, both of these domains can situate themselves in the different schools of thought to better position themselves. Formulating a research methodology allows one then to design a concise strategy which has been optimised heuristically to deliver a defined set of objectives. Within practice, where projects are more episodic, this awareness allows one to build knowledge for reference in the future.

From the lecture series and literature, I gained the most from the issues of Material Culture. It directed me towards the writing of Semper and Heidegger; the first to get a better understanding of tectonics, and the latter to look at the phenomenological implications of environments created through this materiality. Alongside this, I found the epistemological views of falsification and fallibilism quite provocative.<sup>1</sup>

### The appearance of a particular architecture

Through the process of globalisation our cities have become more interconnected. Modernism, starting with the International Style, has aided in this process, ensuing architecture with a non-site-specific quality to them.<sup>2</sup> Now operating under the terms such as Post- and Neo-Modernism, architecture of a neoliberalist nature has become ubiquitous, leading to placeness and a loss of identity for its inhabitants.

An obvious solution to tackling this problem of generality is imbuing architecture with a specific contextual quality. Looking at the field of Material Culture, which my chair - Interiors, Buildings and Cities - is largely associated with, we can see that it has the ability to tackle the alienation of this international architecture through the tangibility and specificity of things. Of recent architects loosely associated with neo-traditionalism, Job Floris has written that “[For Posener, the concept of mass] *causes the building to belong to the concrete world of objects. As opposed to the technical world of devices. Posener argues that devices induce fear, whereas concrete commands confidence... Even if the building no longer consists of massive brickwork, the expression of mass remains useful for it is familiar and gives shelter.*”<sup>3</sup> While there is clearly a line of argument that advocates for the solidity and durability in architecture, the reality of today’s political economy suggests that it is slightly utopian to solely respond with this type of architecture. Especially with the continual creation of contemporary architecture using abstractable materials such as steel and glass. Not only this, but what validity can we place on the sensorial analysis of the ‘devices’ which induce ‘fear’? In a time where universalisation and prefabrication are considered necessary solutions among others, there is a need to resolve the differences in between the global and the local, or what some may attribute the



Figure 1. Dubai as a collection of ‘iconic’ architectural forms rising from the desert, OMA.

1 K. Faschingeder et al., *The Architecture in the Age of Empire* (Weimar: Publisher of the Bauhaus University, 2011), P. 161

2 R. Adams, *The Globalisation of Modern Architecture* (Newcastle: Cambridge Scholars Publishing, 2012), P. 19

3 H. Heijden et al., *Post Piraeus* (Alphen aan den Rijn: Vakmedianet, 2017), P. 25

modern and the traditional. The intersection of these two supposed dualities is where my interests lie. In an attempt to find a mediation between the global and the local, my thesis will question this notion of the visual representation of weight in architecture, found in the theory of tectonics, and the phenomenological experience of it through contemporary construction techniques.

## II RESEARCH-METHODOLOGICAL DISCUSSION

### Methodologies - System of Inquiry and Schools of thought

To tackle this thesis, I will employ an intersubjective approach, or system of inquiry, which epistemologically and ontologically engages on a “*socio-cultural context*.”<sup>4</sup> The rationale behind this approach is the world view that people have specific neurological responses with their environments, taken from their biological structure and their lived experiences.

Within this system of inquiry, there are two key schools of thought in my thesis. The first is found in tectonics and the second phenomenology, both of which having relations to material culture theory considering an intersubjective approach. A fairly concise review of the concept of tectonics is found in the writing of Kenneth Frampton’s *Studies in Tectonic Culture*. In the book he draws largely from the work of Semper to explain fundamental aspects such as the visual upthrust motion of architecture in response to the forces and the socio-cultural contextual question of how elements in the building meet each other.<sup>5</sup> Essentially, its relevance is that tectonics can be used as a language to visually express culture.

In order to critique the experiential conditions which we are presented with in our environments - presently the critical application of tectonics in this thesis - we must look towards a subjective methodology such as Phenomenology. In the *Eyes of The Skin*, Juhani Pallasmaa, a leading academic in phenomenology, advocates for the use of our less widely used senses such as scent and touch<sup>6</sup>. His viewpoint and others is that humans have a tactile memory, amongst others, through which they can infuse feelings of touch in their visual perception. These experiences can be explained in the similar theory of embodied cognition, found in the work of *The Embodied Mind* by Francisco J. Varela and Evan Thompson<sup>7</sup>.

### Methods - Strategies and Tactics

As a studio we visited the cities of Paris, Milan and finally Antwerp for the site of the project. The strategies and tactics which I will and have used in my research is through a mixed approach between Etic and Emic, or objective and subjective, methods of researching.<sup>8</sup> Firstly in these three cities, I subjectively analysed them through inhabiting them, in order to gain qualitative experiences of the character of the city rooms and streets relating to the studio’s theme of the intimate city. Methods that I used to document this included photography, film and sketches, to represent the atmosphere and

4 L.N. Groat and D. Wang, *Architectural Research Methods* (New Jersey: John Wiley and Sons, 2013), P. 76  
5 K. Frampton, *Studies in Tectonic Culture* (Cambridge, MA: The MIT Press, 2017), P. 5  
6 J. Pallasmaa, *The Eyes of The Skin* (Chichester: John Wiley and Sons, 2012), P. 60  
7 F.J. Varela, E. Thompson and E. Rosch, *The Embodied Mind* (Cambridge, MA: The MIT Press, 1993), P. 147  
8 R. Lucas, *Research Methods for Architecture* (London: Laurence King Publishing, 2016), P. 10

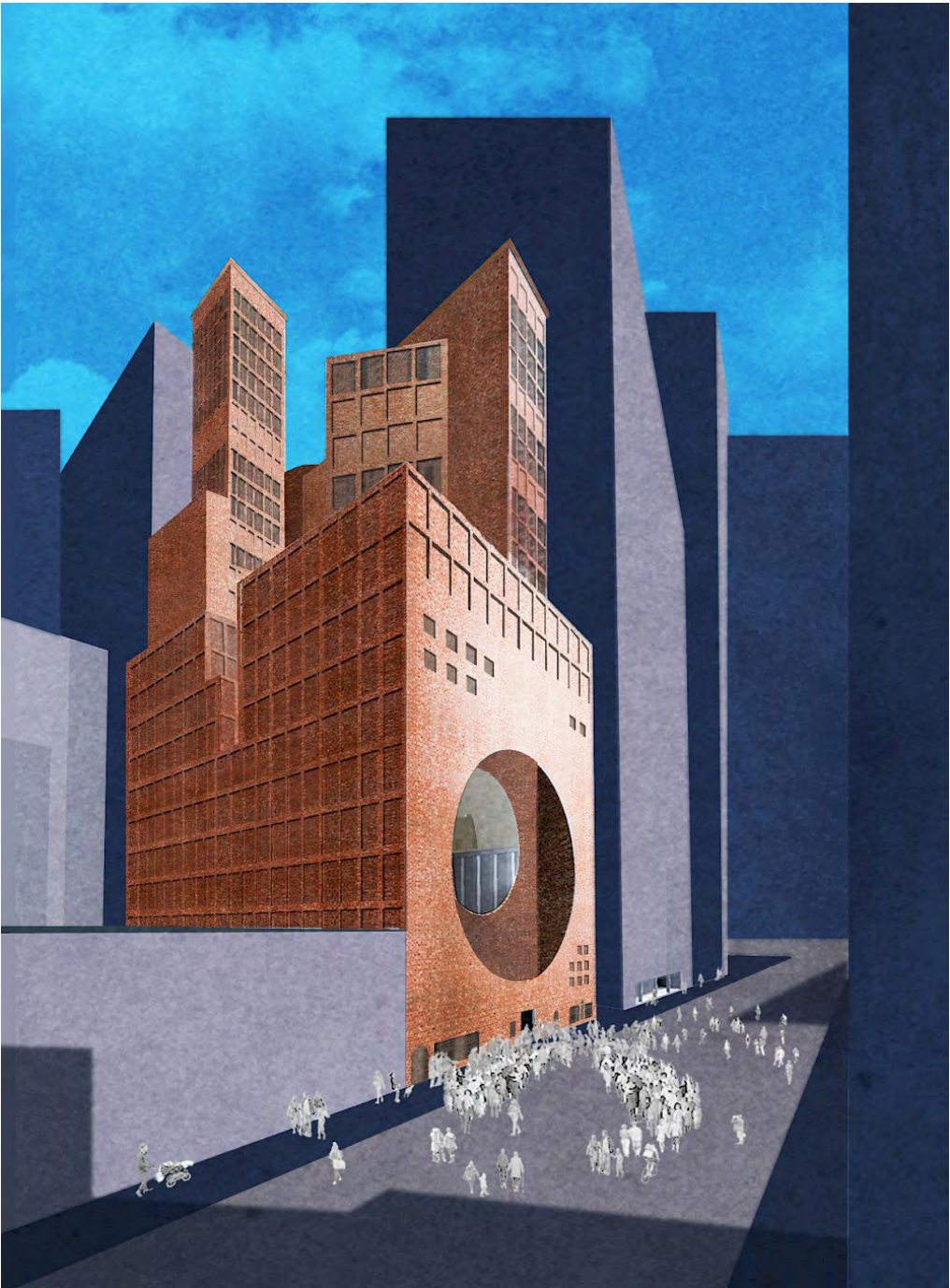


Figure 2. The Oculus, Monadnock (Job Floris and Sandor Naus)



material culture - with emphasis towards tectonics - of these cities.

Particularly in the research of Milan and Antwerp, I produced more quantitative drawings, such as figure-ground plans, in order to objectively compare the two cities; understanding their differences and similarities will allow them to be appropriated for the final design of the project. I have also objectively analysed the history of the cities through various sources in order to get a socio-cultural understanding. Reading Richard Sennett's *The Fall of the Public Man* gave me an account of the social-cultural context of Paris which many European cities were influenced by.<sup>9</sup>

In researching the history and urban fabric of Antwerp, I will be able to choose a site which fits within my theoretical framework. Once I have found my site, I will do more research of the immediate area, such as interviewing community members to get better subjective understanding, as well as collect relevant surveys which allow me to objectively understand the demographics. Furthermore, researching the context and its existing material practices will allow me to develop contemporary methods of construction for the local character of the area.

Alongside this contextual research, I designed a public room with no site in order to start developing the material research for the project. This exercise allowed me to present from imagination some of the experiences that I had embodied in my trips to Milan and Paris, which are operating in the context of the European city. For the design of the main building, I will critique it in a quantitative and qualitative manner. Qualitatively, the use of models will be fundamental to get a sense of the spaces spatial and material qualities. The design will question the experience of weight in elements such as its massing at a larger scale, to the solidity of a handrail and its assembly on the detail end.

III RESEARCH-METHODOLOGICAL REFLECTION

Tectonics and the representation of weight

Central to my thesis is the concept of Tectonics. Although there are variations on the definition of tectonics, the best source for its classical interpretation comes from one of its original writers: Semper. In the *Four Elements of Architecture*, Semper contends that the constructions in Greek Temples are the result of experimentations of “combinations and the cross-breeding of various architectural elements”.<sup>10</sup> He goes on to outline that the origins of these temples lie in the primitive hut, which consist of four essential elements. From this, Semper shows that architecture takes on an evolutionary role where buildings have transformed previous forms of construction. This evolutionary role in the man-made can be found in the ancient objects, such as seen in Dan Hick's *Material Cultural Turn: Event and Effect*.<sup>11</sup>

The four elements consisted of of the hearth, as the essential 'moral' element, and the three surrounding protectors of roof, enclosure and mound. Crucially, Semper attributed different craftsmen skills which developed over time such as masonry to the mound and the weaving of mats to the walls,

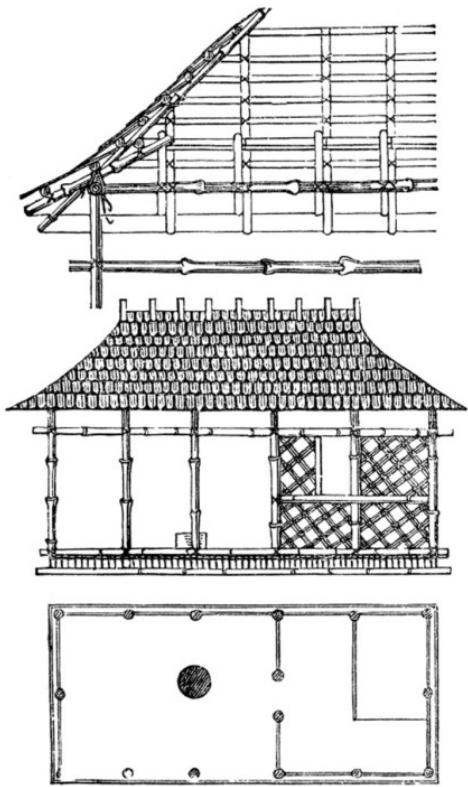


Figure 3. Caribbean Hut 1851, Gottfried Semper, *The four elements of Architecture*

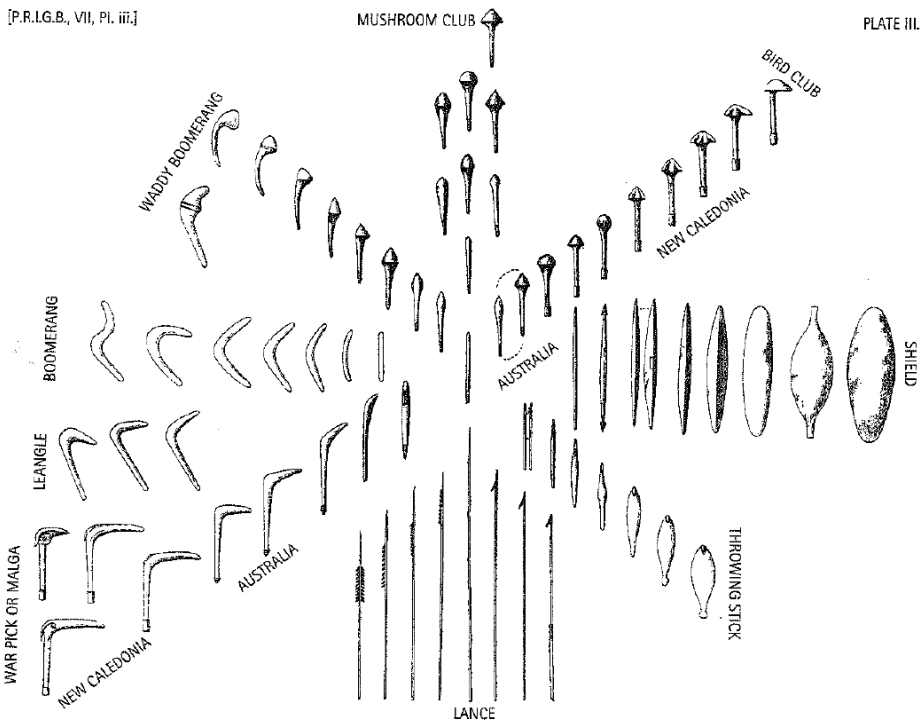


Figure 4. 'Clubs, Boomerangs, Shield and Lances': Pitt Rivers' Scheme for Australian weapons showing forms emerging in series from the centre outward, from a hypothetical single form (Pitt Rivers, 1875)

9 R. Sennett, *The Fall of the Public Man* (London: Penguin Books, 2002), P. 47-63  
10 G. Semper, *Four Elements of Architecture and Other Writings* (Cambridge: Cambridge University Press, 2011), P. 122  
11 D. Hicks and M.C. Beaudry, *The Oxford Handbook of Material Culture Studies* (Oxford: Oxford University Press), P. 32.

or the enclosure. It was Semper’s belief that architecture should not just be created according to the material’s properties, but also to “*make the form and character of its creations dependent on the ideas embodied in them*”.<sup>12</sup> The implications of this are that architecture can be built and understood in an allegorical manner. In later period, when the technique of weaving was perfected, its idea of strength was allegorically and artistically transposed to the ornamentation of columns.<sup>13</sup> Making use of the crafts in objects such as timber furniture, these allegories are expanded in much of *Style in the Technical and Tectonic Arts; or, Practical Aesthetics*.<sup>14</sup>

As well as being influenced by Karl Schinkel, Semper also came in contact with Karl Botticher after the publication of the *Four Elements of Architecture*. His colleague theorised how architecture should articulate the forces between the elements. Botticher’s interpretation of these elements was that they should convey their upthrust aesthetically, unlike academics before such as Arthur Schopenhauer, who believed it was the downward thrust of weight.<sup>15</sup>

A series of contemporary architects draw from the work of Semper. One of these architects, Hans Kollhoff, has been influential to the theme of mass in works such as his Piraeus building and his Kollhoff tower, with the latter expressed it in the articulation of the facade. In regards to the representation of weight, Alexander Pols writes: “*As Fritz Neumeyer summarised it so beautifully... Hans Kollhoff’s work is no longer about whether the picture of the facade agrees with the actual distribution of weight and whether material is real or authentic.*”<sup>16</sup> Kollhoff only cares that his architecture visually obeys the classical laws for the viewer.

Expanding from Kenneth Frampton, Anna Beim has developed the tectonic school of thought further in recent years. Beim formulates the idea that technology and methods of construction have changed since Semper’s time. Industrial manufacturing has heavily influenced the way we create architecture. Past exemplars can be found in Modernist’s such as Le Corbusier, Louis Kahn and Jørn Utzon, who were instrumental in creating spaces that have an atmospheric and haptic quality to them in their expression of new materialities. Schmidt goes on to argue that while tectonics can be understood as any architecture due its use of technology, her definition depicts a particular architecture, similar to the master builds of old - and a select few in contemporary times - which develop “*an architectural idea with respect and appreciation of the pragmatic and poetic aspects of its materiality.*”<sup>17</sup>

**Phenomenology and the perception of the city**

Much of the origins in theory of Phenomenology lie in the writing of Edmund Husserl and Heidegger, with the latter widely written about in the discipline of architecture. In Heidegger’s essay *Building, Thinking and Dwelling*, he describes the concept of the Fourfold, which consist of the collection of the “*earth, sky, mortals and divinities.*”<sup>18</sup> Pertinantly, Heidegger’s earth and sky alludes to the meeting

12 G. Semper, *Four Elements of Architecture and Other Writings* (Cambridge: Cambridge University Press, 2011), P. 102  
13 H. Mallgrave, *Semper, Animism, and Embodied Simulation*, [online video], 2015, <http://www.youtube.com/watch?v=IJjNsCVHc34>, (accessed 04 December 2018)  
14 G. Semper, *Style in the Technical and Tectonic Arts; or, Practical Aesthetics* (Los Angeles: Getty Publications, 2004), P. 655  
15 Ibid.  
16 H. Heijden et al., *Post Piraeus* (Alphen aan den Rijn: Vakmedianet, 2017), P. 21  
17 Ibid., P. 11  
18 M. Heidegger, *Poetry, Language, Thought*, (New York: Harper Colophon Books, 1971) P. 144



**Figure 5.** Ministries of Security and Justice and Internal Affairs, Hans Kollhof, The Hague



**Figure 6.** Ministry of Security and Justice facade detail, Hans Kollhoff, The Hague



of heavyweight and lightweight materials, or the stereotomic and the tectonic in the writings of Frampton.<sup>19</sup> Although the fourfold clearly has a religious underbelly, understood metaphorically we can see the powerful potential in the spaces which he alludes to, which have a poetic quality to them.

Within the school of phenomenology, Heidegger, Pallasmaa, and Peter Zumthor all draw upon their childhood memories of dwellings, to conjure the appropriate spaces which they believe tackle human condition. Both Pallasmaa and Zumthor increasingly use the experiences of their early life to infuse qualities of returning home to their work. They use phenomenology as a methodology to incorporate atmospheres to spaces which have a profound sensorial effect in their architecture. Through light and dark, big or small, soft or hard. There is some logic from drawing on our childhood experiences, with Harry Mallgrave advocating for an embodied simulation, based on the theory of embodied cognition, which alludes to the idea that we understand the tactility and feeling of things through the simulation by drawing from the memories of our past experiences.<sup>20</sup>

Brian Eliot states that “*In ‘The Author as Producer’ Benjamin marks out - in a manner directly opposed to the nostalgic-regressive stance of Heidegger - a way towards a politically progressive understanding and use of modern art.*”<sup>21</sup> In contrast to Heidegger’s romantic position, Walter Benjamin saw architecture in a more progressive, utopian way. Benjamin was resolved to explore the origins in modernism and the genealogy of urbanism, for he wanted to make use of technology, rather than to thwart it. Benjamin’s response to the alienation of modernism lay in Surrealism. The surrealists used the practice of material culture to produce art that came from their internalised embodied memory to surpass commodity and opulence. For Benjamin, this artistic production allowed him to overcome the bourgeoisie dwelling of his era, and replace it with the modernist housing for the proletariat.<sup>22</sup>

This embodied memory led Brian Eliot to contend that “*For Benjamin the built environment does not primarily register with its human inhabitants in cognitive or intellectual terms. Rather, the modern city produces primarily physiological or somatic effects and by this means induces changes in collective perception.*”<sup>23</sup> He further clarifies later by writing “*Benjamin attributes two basic qualities to architecture’s reception: it is experienced collectively and in a state of ‘distraction.’*”<sup>24</sup> Distraction is meant in a way that encompasses the whole of the body, rather than just the inner self. This idea of a collective experience or perception can be seen in ideas of the collective memory through the writing of Aldo Rossi in *The Architecture of the City* and also partially in the work of Heidegger. Rossi’s view assumes that we have a collective memory imbued in architecture - or what he defines as “urban artifacts”<sup>25</sup> and the objects that we create.

19 K. Frampton, *Studies in Tectonic Culture* (Cambridge, MA: The MIT Press, 2017), P. 7

20 H. Mallgrave, *Semper, Animism, and Embodied Simulation*, [online video], 2015, <http://www.youtube.com/watch?v=IJjNsCVHc34>, (accessed 04 December 2018)

21 B. Elliott, *Benjamin for Architects*, (Abingdon: Routledge, 2011) P. 55

22 Ibid.

23 Ibid., P. 27

24 Ibid., P. 79

25 A. Rossi, *The Architecture of the City* (Cambridge, MA: The MIT Press, 1984), P. 130



Figure 7. The Utzon Centre exterior, Jørn and Kim Utzon, Aalborg



Figure 8. The Utzon Centre library interior, Jørn and Kim Utzon, Aalborg

#### IV POSITIONING

As mentioned previously, my research firmly based in the realm of material culture, with its tectonic and phenomenological relations. My position is that we should be able to instill contemporary materials with distinct qualities and assemble them as a development of traditions in construction, in order to have a cultural importance to the inhabitants of the city. Moreover, I contend that there are multiple perceptions of architecture from each individual.

Aldo Rossi's 'collective memory' is based on his understanding of the old Italian city, the culture of its population more homogenous at the time. Although beneficial at times, this general perspective doesn't cater for the fragmented nature of many of our cities, such as Antwerp's, having a more heterogeneous population. This necessitates the need to understand the communities of a city, as well as its whole, to imagine the multiple experiences in the occupation of it. Similarly, in the school of phenomenology, it seems that the personal experiences of Zumthor and Pallasmaa taking the central priority in the design of their architecture, other the perception of others. It is only in isolated, controlled spaces, like in the Thermal Vals, that we can predict the perception of said space with more certainty.

The strength in Benjamin's writing lies in his ability to see the potential in the industrial methods of modern architecture. His term of artistic production shows how we can adopt the methods of the surrealists in order to create architecture that is based in tradition, without copying the past. However, there is some hypocrisy in his thinking shown in the writing of Brian Elliott: "*As Benjamin will come to express it in the 1930s, technological advances in the use of glass herald new cities where individuals will no longer leave behind traces of their inhabitation. No other material could be better suited to explode the claustrophobia of the bourgeois interiors Benjamin experiences with a profound dread in his childhood.*"<sup>26</sup> On one hand Benjamin sees that found objects of the past are imbued with importance, on the other he regards the ability to cleanse all traces of inhabitation as liberating. The latter aspect is troubling as one could infer that he is advocating for austere spaces which lack any character of the individual.

With neo-traditionalists, such as Hans Kollhoff, ascribing to a traditional understanding of the visual expression of weight - with heavier elements towards the ground and lighter elements towards the top, as well as a preference to closed over open elements in their facades - it is my contention that while European architecture in the past operated on a more solid visual representation of construction, the citizens of these cities now are capable of accepting architecture of other qualities. We can be more creative in our uses of materials whilst being based in place and culture. Unlike Kollhoff, and even partially Frampton's position of architecture, Semper's writing of tectonics can be seen in analogoric manner. It is obvious that when he relates textiles to brick infill, it isn't meant literally. This allegorical method is useful in contemporary times to create architecture advocated for by Anna Beim.

The promise in the allegory lies in the fact that architecture is seen as a language, with tectonics being a tradition, seen as the continuation of it. With international and commercial forces creating a sea of oblivious and unrestrained urbanity, tectonics is proposed as a riposte to the generic as well as the aesthetically driven populist architecture. By situating my thesis in between the territory of the traditional and the modern, I will attempt to overcome the alienation derived from the generic industrially manufactured forms of construction. Questioning the field of tectonics in its relation to weight allows one to re-evaluate the ability to create cultural meaning, through morphology based on the evolution of its typological history, the given material and its symbolic characteristics, and the assembly of its detail. Understanding the phenomenological impact that weight - of heaviness and lightness - has on the individual is essential to create relevant architecture. In our financially and ecologically constrained reality, the use of tectonic in our recent technological advancements can ensure that new buildings have a cultural significance to its inhabitants, ensuring their longevity and stimulating new expressions of culture which was unthinkable before.

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## IMAGE REFERENCES

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<https://www.rubenpb.com/portfolio/ministry-of-safetyjustice/>

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