DOKUZ EYLÜL UNIVERSITY
GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES

DECIPHERING ORNAMENT, DISSECTING "BIG": THE RETURN OF ORNAMENT IN CONTEMPORARY ARCHITECTURAL THEORY AND PRACTICE

by
Deniz BALIK

December, 2014
İZMİR

DECIPHERING ORNAMENT, DISSECTING “BIG”: THE RETURN OF ORNAMENT IN CONTEMPORARY ARCHITECTURAL THEORY AND PRACTICE

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Ph.D. THESIS EXAMINATION RESULT FORM

We have read the thesis entitled **"DECIPHERING ORNAMENT, DISSECTING "BIG": THE RETURN OF ORNAMENT IN CONTEMPORARY ARCHITECTURAL THEORY AND PRACTICE"** completed by **DENİZ BALIK** under supervision of **ASSOC. PROF. DR. AÇALYA ALLMER** and we certify that in our opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Doctor of Philosophy.

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To my mother

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DECIPHERING ORNAMENT, DISSECTING "BIG":
THE RETURN OF ORNAMENT IN CONTEMPORARY ARCHITECTURAL THEORY AND PRACTICE

ABSTRACT

Ornament has returned from its banishment in the Western architectural theory and practice in the twenty-first century. Despite being used enthusiastically and exuberantly by contemporary architects, it maintains its blurry, unclear, and slippery discourse as a challenging topic. The aim of this study is to construct the theoretical framework of this yet-ambiguous issue in the twenty-first century architectural domain. By expanding the discourse on social, cultural, and political aspects, this study makes a layered reading of architectural ornament as an instrument of image-driven contemporary culture within the spectacle-laden public sphere.

The study explores Bjarke Ingels Group (BIG), the global architectural office founded by the Danish architect Bjarke Ingels. With an intention of searching for a new form of expression and language, Ingels creates a unique vocabulary of ornament. Yet current literature on BIG's architecture does not point to their problematic use of ornament in their surface articulations. In this study, each chapter examines a different building by BIG and poses different questions on ornament. With a focus on the Mountain Dwellings in Copenhagen, The Arlanda Hotel project in Stockholm, and the Denmark Expo Pavilion in Shanghai, the study evaluates ornament in relation to the concepts of simulation, representation, irony, superficiality, meaning, and aura.

In contemporary architecture, the sensual, representational, structural, and digital facets stratify ornament metaphorically and literally, making it an intense medium of impression and expression. BIG's buildings in question stand out with their ornamental façades, becoming embodiments of consumption, exhibition, and public attention. Ornament in BIG's architecture contributes to image-making, commercial success, and marketing strategy, as much as it becomes a designerly instrument of achieving astonishment. This study thus should be considered not in terms of a biopsy of ornament as a grand-narrative in contemporary architecture, but as a dissection of BIG's architecture as a critique of ornament.

Keywords: Ornament, architectural theory, contemporary architecture, representation, façade, BIG (Bjarke Ingels Group).

SÜSÜ DEŞİFRE ETMEK, "BIG"İ İNCELEMEK:
ÇAĞDAŞ MİMARLIK KURAM VE PRATİĞİNDE SÜSÜN GERİ DÖNÜŞÜ

ÖZ

Süs, yirmi birinci yüzyılda Batı mimarlığının kuram ve pratiğine geri dönmüştür. Son yıllardaki kullanımı oldukça yaygınlaşırken süsün tanımı belirsizliğini korumaktadır. Çalışmanın amacı, bu muğlak kavramın yirmi birinci yüzyıl mimarlığındaki kuramsal çerçevesini oluşturmaktır. Çalışma, süse dair söylemin sosyal, kültürel ve politik yönlerini değerlendirirken, görüntü odaklı günümüz toplumunun bir aracı olarak süsün katmanlı bir okumasını yapmaktadır.

Bu çalışma kapsamında Danimarkalı mimar Bjarke Ingels tarafından kurulan Bjarke Ingels Group (BIG) adlı dünyaca ünlü mimarlık ofisinin yapıları incelenmektedir. Ingels, yeni bir ifade biçimi ve dil arayışı ile süs kavramına yönelik özgün bir dağarcık geliştirmeye çalışmaktadır. Ancak BIG ile ilgili mevcut literatür, BIG'in süs kullanımının taşıdığı problematiğe değinmemektedir. Bu çalışmada her bölüm BIG'in farklı bir yapısını incelemekte ve süs üzerine farklı sorular sormaktadır. Buna bağlı olarak da Kopenhag'daki Dağ Konutları, Stockholm'deki Arlanda Oteli projesi ve Şangay'daki Danimarka Expo Pavyonu üzerinde yoğunlaşarak temsiliyet, simülasyon, ironi, yüzeysellik, anlam ve aura kavramlarıyla ilişkisi üzerinden süsü deşifre etmektedir.

Çağdaş mimarlıkta duyusal, sembolik, yapısal ve dijital boyutlar, bir etki ve ifade ortamı olarak süsü katmanlaştırmaktadır. BIG'in bu çalışmada incelenen yapıları, süslü cepheleriyle ortaya çıkarken tüketim, sergileme ve kamusal ilginin somut birer örneği haline gelmektedir. BIG'in mimarlığında süs, imaj oluşturma, ticari başarı ve pazarlama stratejisine katkıda bulunurken aynı zamanda tasarımsal bir araç da olmaktadır. Dolayısıyla bu çalışma, çağdaş mimarlıkta süsün büyük anlatısını oluşturmak yerine BIG'in mimarlığı üzerinden eleştirisini yapmaktadır.

Anahtar kelimeler: Süs, mimarlık kuramı, çağdaş mimarlık, temsiliyet, cephe, BIG (Bjarke Ingels Group).

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1.1 Ornament as a Problem

Ornament has returned to the architectural theory and practice after its banishment in modern architecture. For over a century, the controversial issue of ornament oscillated between the two extreme conditions of being condemned and praised. Although current architecture receives ornament enthusiastically due to its design potentials, it still remains as a problematic and critical topic. For this reason, the current state and definition of ornament maintains its blurry, unclear, and slippery character.

Until the twenty-first century, the history of ornament was interwoven with the history of style. Each style produced its own ornaments *per se* with a clear definition and set of rules. The contemporary age is deprived of a specific style, yet it is governed by the paradigm of digital technology, which enables the design and production of intrinsic surface effects, as well as performative and dynamic ornamental surfaces. The advanced technology becomes a distinctive feature of the architectural surface, which supports the idea that the reemergence of ornament in the twenty-first century is grounded on the highly performative computer-based design and manufacturing programs. By means of technology, ornament becomes an element of developing ideas and experimenting with form and surface.

Ornament in contemporary architecture, in contrast to the traditional conception, is not necessarily reduced to materiality; by means of digital medium, it expands through the immaterial realm. It can be extrinsic or intrinsic to the building, and can be conceived at various scales from an architectural detail to the urban fabric. It is not strictly bounded by rules and laws, yet it works with context, function, climate, and lighting. By being a graphic composition, a flat image, a relief-like or three-dimensional sculptural construction, ornament in contemporary architecture is sensual, representational, and experimental.

In the last two decades, the emergence of a vast array of architectural exhibitions, journals, and books indicate the current interest in ornament. Globally, the reappearance of ornament became a theme for various exhibitions, such as the *Grammar of Ornament* (2013), *The Body Adorned: Dressing London* (2012), *Deep Surface: Contemporary Ornament and Pattern* (2011), *Political Patterns – Changing Ornaments* (2011), *Design Criminals Or a New Joy into the World* (2010), *Is Ornament a Crime?: Rethinking the Role of Decoration in Contemporary Wood* (2010), *Ornament is Crime?* (2009), *Lace of Architecture* (2009), *Visual Delight: Ornament and Pattern in Modern and Contemporary Design* (2009), *The Power of Ornament* (2009), *Ornament and Pride* (2008-2009), *Re-Sampling Ornament* (2008), *Technology, Performance, Ornament* (2005), *Ornament* (2005), *Sign as Surface* (2003), and *Ornament and Abstraction* (2001) (Table 1.1 and Figure 1.1).

Journal issues also analyze the return of ornament in contemporary architecture and its historical overview, specifically the "Ornament" issue of *Forward* (2009, No. 2), "Ornament: Return of the Repressed" in *Zona* (2009, No. 4), "Patterns of Architecture" issue of *Architectural Design* (2009, No. 6), "Pitch, Type, Pattern, Script, Algorithm, Ornament" issue of *Arch+* (2008, No. 189), *Werk, Bauen + Wohnen* (2007, No. 11), "Decoration" issue of *306090 Books* (2006, No. 10), *Eye: The International Review of Graphic Design* (2005, No. 58), "Ornament: Decorative Traditions in Architecture" issue of *Oase* (2004, No. 65), "Ornament / Ornement" issue of *Architecture D'aujourd Hui* (2001, No. 333). Within the Turkish architectural milieu, the journal *Arredamento Mimarlık* (2010, No. 241) published an issue of "Çağdaş Mimarlıkta Bezeme (Ornament in Contemporary Architecture)" (Figure 1.2).

Current books on ornament, investigating its sensual, symbolic, and material aspects, embrace its return in parallel with digital technology (Figure 1.3). In the book *Building as Ornament: Iconography in Contemporary Architecture*, Michiel van Raaij (2014) explores ornament in terms of building plasticity through a variety of interviews with contemporary architects. He suggests that building as ornament is intrinsic to the building as a whole, since it refers to iconography at the scale of the

Table 1.1 List of architectural exhibitions on ornament since 2000

DATE	NAME	CURATOR	PLACE	CITY, COUNTRY
05.-23.08. 2013	*Grammar of Ornament*	Rachel Barron	The Briggait Artists' Studios	Glasgow, Scotland
03.-04.04. 2013	*Pure Ornament*	-	Ann Long Fine Art Gallery	Charleston, USA
24.03.2012-06.01.2013	*The Body Adorned: Dressing London*	-	Horniman Museum	London, United Kingdom
24.09.2011-30.01.2012	*Deep Surface: Contemporary Ornament and Pattern*	Denise Gonzales Crisp and Susan Yelavich	CAM Raleigh Museum	North Carolina, USA
08.07.-03.10.2011	*Political Patterns – Changing Ornaments*	Sabine B. Vogel	IFA Galleries	Berlin and Stuttgart, Germany
29.09.-14.11.2010	*Design Criminals Or a New Joy into the World*	Sam Jacob	The Museum of Applied Arts	Vienna, Austria
05.-07.11. 2010	*Is Ornament a Crime?: Rethinking the Role of Decoration in Contemporary Wood*	Cindi Strauss	Exposition of Sculpture Objects & Functional Art (SOFA)	Chicago, USA
05.09.2009	*Ornament is Crime?*	Richard Slee	Middlesbrough Institute of Modern Art	Middlesbrough, United Kingdom
06.10.-19.12.2009	*Lace of Architecture*	Odile Werner and Sophie Trelcat	Maison de l'Architecture et de la Ville (MAV)	Paris, France
16.05.-20.09.2009	*Visual Delight: Ornament and Pattern in Modern and Contemporary Design*	Diane Minnite	Philadelphia Museum of Art	Pennsylvania, USA
21.01.-17.05.2009	*The Power of Ornament*	Sabine B. Vogel	Belvedere Palace & Art Museum	Vienna, Austria
01.08.-21.09.2008	*Re-Sampling Ornament*	Oliver Domeisen and Francesca Ferguson	Swiss Architecture Museum (SAM)	Basel, Switzerland
17.08-20.09.2005	*Technology, Performance, Ornament*	-	Urban Center Gallery	New York, USA
05.03.-26.03.2005	*Ornament*	Melissa Urcan	216 Exhibition Space and the Edge Gallery	Chicago and Pittsburgh, USA
06.09.-18.10.2003	*Sign as Surface*	Peter Zellner	Artists' Space	New York, USA
10.06.-07.10.2001	*Ornament and Abstraction*	Markus Brüderlin	Foundation Beyeler	Basel, Switzerland

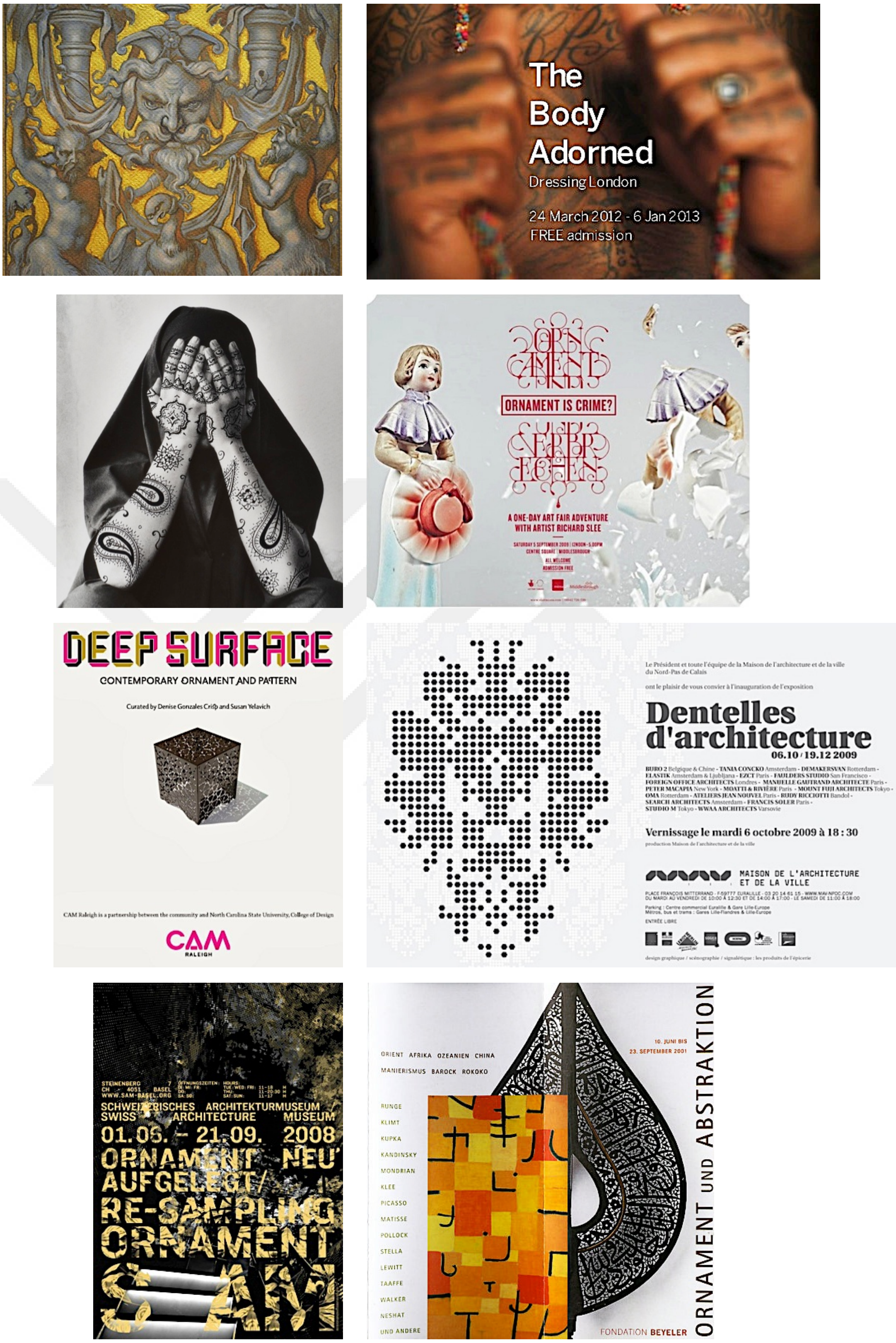


Figure 1.1 Posters of selected exhibitions: Pure Ornament, The Body Adorned: Dressing London, Deep Surface: Contemporary Ornament and Pattern, Ornament is Crime?, The Power of Ornament, Lace of Architecture, Re-Sampling Ornament, Ornament and Abstraction.

Figure 1.2 Covers of selected journals: Forward (2009, No. 2), Zona (2009, No. 4), Architectural Design (2009, No. 6), Arch + (2008, No. 189), 306090 Books (2006, No. 10), Oase (2004, No. 65), L'architecture d'aujourd'hui (2001, No. 333), Arredamento Mimarlık (2010, No. 241).

building. Raaij further argues in favor of using "thick", or a layered iconography, rather than a "thin" one, which is limited to the building surface and the production of analogical relations. On the other hand, a "thick" iconography integrates with every element of the design from its context to its structural system.

In the book *Ornament: The Politics of Architecture and Subjectivity*, Antoine Picon (2013b) analyzes the history of ornament and elaborates its contemporary conception. Referring to the characteristics of ornament in architectural history, Picon explores the limits of ornament in contemporary architecture. He argues that ornament has returned in direct relationship with the advancement of digital technology and has expanded its content to include texture, pattern, structure, façade plasticity, dynamic digital urban maps, and neuroscientific scans. On the other hand, it has lost its political and subjective aspects, as in symbolizing the social rank of the client or bearing the personal marks of the architect.

Figure 1.3 Covers of current books: Michiel van Raaij, Building as Ornament: Iconography in Contemporary Architecture (2014), Antoine Picon, Ornament: The Politics of Architecture and Subjectivity (2013), Jörg H. Gleiter, Ornament Today: Digital, Material, Structural (2012), Ben Pell, The Articulate Surface: Ornament and Technology in Contemporary Architecture (2010), Andrea Gleiniger and Georg Vrachliotis, Pattern: Ornament, Structure and Behavior (2009), Farshid Moussavi and Michael Kubo, The Function of Ornament (2006).

Ornament Today: Digital, Material, Structural, edited by Jörg H. Gleiter (2012), explores the re-emergence of ornament in contemporary architecture. Gleiter argues that ornament has returned to architectural milieu due to the expansion of digital technology with a concern on the structural and material aspects more than the historical discussions of style and taste. Departing from the modern idea of the abolition of ornament, six architectural theorists contributed the book with texts that range from elaborations on architects, primarily Leon Battista Alberti, Owen Jones, Louis H. Sullivan, and Adolf Loos, to discussions on digital design and manufacturing technology.

The Articulate Surface: Ornament and Technology in Contemporary Architecture, edited by Ben Pell (2010), categorizes and analyzes the ornamental façades of contemporary buildings. Pell argues that there is an apparent split between architectural theory and practice, which, on one hand, relates to representation and symbolic expression, and, on the other hand, comprises technique, utility, material and architectural detailing. Yet the renewed interest in ornament, which emerged due to the advancement of digital design and fabrication, points to the potential of binding theory and practice through the articulation of surface. Pell presents his argument by categorizing contemporary buildings in terms of applied, perforated/cut, layered, formed/cast, and stacked/tiled.

Pattern: Ornament, Structure and Behavior, edited by Andrea Gleiniger and Georg Vrachliotis (2009), analyzes pattern and ornament in the age of digital technology. Along with four other theorists, Gleiniger and Vrachliotis argue that the new ornament, which emerges by means of the digital technology, derives from pattern and pattern formation. Dwelling on the topics of algorithm, behavioral pattern, neuroscientific pattern, and musical pattern, the authors investigate the global expansions of ornament in the digital age.

Re-Sampling Ornament was edited by Oliver Domeisen (2008) as a supplementary catalogue to the *Re-Sampling Ornament* exhibition in Basel. Domeisen argues that the theories of Owen Jones, John Ruskin, Gottfried Semper, and William Hogarth should be reevaluated in contemporary architecture, since they serve as a basis for constructing the framework of the contemporary application of ornament. The book emphasizes the contemporary emergence of ornament in parallel with new construction and manufacturing technologies, specifically CNC milling, laser-cutting, three-dimensional printing, robotic layering. In this sense, as illustrated in the book, the contemporary reading of ornament covers a wide range of nature and organic forms, microscopic patterns and human bodies, corporate brand logos and iconography, textile and surface effects.

The Function of Ornament, edited by Farshid Moussavi and Michael Kubo (2006), illustrates and catalogues ornamental façade details of the twentieth and the twenty-first century buildings. Moussavi and Kubo argue the primary function of ornament in contemporary architecture is to produce affects and sensations. Architectural affects develop an internal consistency, replacing the synthetic conception of symbolism in postmodern architecture. Moussavi and Kubo categorize the buildings in terms of form, structure, screen, and surface to demonstrate that ornament is necessary and intrinsic to the building, since it emerges from the material and construction.

1.2 An Overview of Ornament in Contemporary Architecture

Today, ornament is justified through many grounds, such as experimentations with digital tools, novel materials and tectonics, investigation of different surface effects and sustainable elements, production of affects and sensations, representation of the building function, advertisement of a brand, and making contextual references. Considered as "new", ornament in contemporary architecture emerges as an elaborate medium of consumption and production, and an indicator of being current by means of engaging with new tools, methods, and techniques.

The idea of seamlessness and fluency became the current paradigms of the exuberant use of ornament in the age of digital technology. The integration of computer-aided design (CAD) and computer-aided manufacturing (CAM) technologies introduces the concepts of scripture, algorithm, morphology, deformation, distortion, evolution, formation, mutation, generation, transformation, and variation. Consequently, new terms are added to the vocabulary of ornament, such as pixellization, porosity, fractal, digital, and virtual. Besides, pattern in its broadest sense has been included to the research area of ornament, as it comprised of the concepts of the sequential, dynamic, configurative, informative, performative, morphogenetic, and parametric (Levit, 2008; Garcia, 2009; Schumacher, 2009; Gleiniger and Vrachliotis, 2009). The expanded vocabulary of ornament allows contemporary architects to define ornament according to their own design approaches *per se*. As of now, ornament is elaborated through attributions, such as "coded ornament", "dynamic ornament", "contemporary ornament", "new ornament", "ornamentalism", "ornamatics", and "digital Nouveau".

Contemporary architects use advanced technology with an intention of demonstrating their virtuosity in designing and producing surface effects. In the case of the Ravensbourne College in Greenwich, UK, which was built in 2010 by the Foreign Office Architects (FOA), founded by the partners Farshid Moussavi and Alejandro Zaero-Polo, the intention was to express the novelty of fabrication technology (Figure 1.4). The monolithic building is covered overall with 28,000 aluminium tiles in different sizes and colors, which assemble unique combinations on the façades around doors and windows. Blurring the scale of the building, the dazzling tessellations create a visual play, and produce affects and sensations as it is also proposed by Moussavi (2006) in *The Function of Ornament*. Yet the intention of representing the novelty of advanced technology resonates more to the argument of the theorist and architect Robert Levit (2008), who stresses that ornament in contemporary architecture associates more to the symbolic aspect than the sensual and the functional.

Ornament has the potential of merging surface, context, form, and structure, rather than conceiving them as separate and unrelated elements. As a case, the United Kingdom Expo Pavilion in Shanghai, 2010 by the London-based Heatherwick Studio is worth mentioning (Figure 1.5). Being referred as the Seed Cathedral, the building was one of the awarded constructions of the exposition. The surfaces were created out of 60,000 transparent fiber optic rods, each of which displays a different seed at the tip. The building addresses to senses, as it oscillates between provoking tactility through the unique assembly of materials and evoking visual surface effects when seen from a distance and from a far. Merging the displayed seeds, surface elements, structure, and form, the pavilion blurs the distinctions of the conventionally separated elements.

Figure 1.4 Façade detail of the Ravensbourne College, Foreign Office Architects (FOA), Greenwich/London, UK, 2010 (Author's archive, 2012).

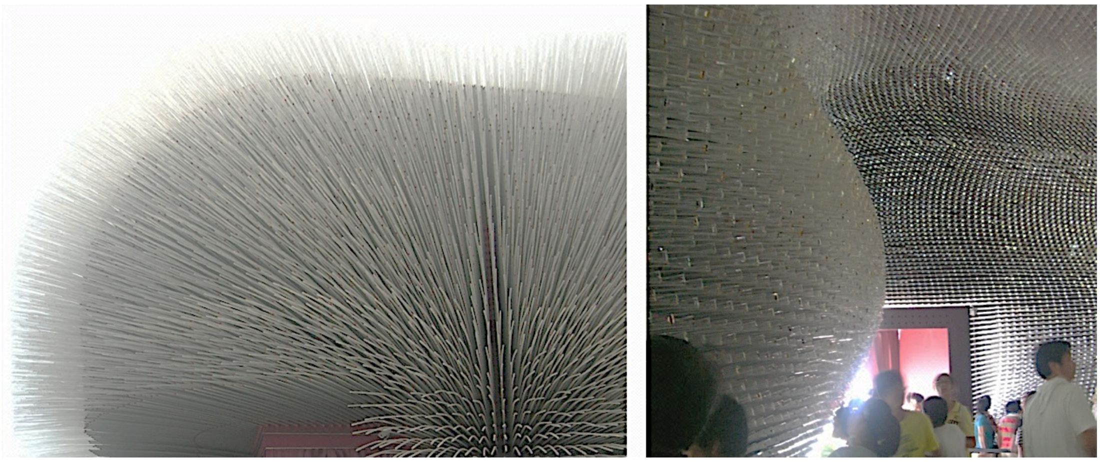


Figure 1.5 Outer and inner surface details of the United Kingdom Expo Pavilion, Heatherwick Studio, Shanghai, China, 2010 (Author's archive, 2010).

Current investigations on ornament expand to integrating sustainable systems with ornamental details, as in the case of the Spanish Expo Pavilion by Enric Miralles and Benedetta Tagliabue (EMBT) in Shanghai, 2010 (Figure 1.6). The concept of the building derives from the simulation of the traditional craftwork of wicker weaving. The whole building is wrapped by a systematic combination of flakes, each of which is woven with a different natural color. The wicker surfaces are supported by a steel structural system, and perform as sustainable elements in the heat and moist of summer.

Today, ornament is also used to represent the function of the building as an adaptation of the postmodern approach. The postmodern theorist Charles Jencks (2011) argues that an iconic building had to carry plural meanings and mixed metaphors in order to continue its distinctive presence as a landmark. Making a critique of the decorated shed in terms of signs attached to a flat surface, Jencks (2011) notes that a symbolic architecture merges multiple meanings with the functional and aesthetic dimensions, rather than dealing with signs. He coins the term "enigmatic signifier" as a representative of the multilayered meaning manifested through the ornamental façade. With an intention to avoid rapid consumption and the territory of superficiality through merely an obvious denotation, the enigmatic signifier reveals connotations through an in-depth narrative, representation, and interpretation. As an example, Beijing National Aquatics Center, widely known as the Water Cube, functions as a building of swimming sports, and simulates water bubbles on all of its façades (Figure 1.7). Built by the Australian architectural office PTW Architects in collaboration with Arup in 2007, the rectangular building is an example of the advanced construction technology with the integration of steel frame and pneumatic cladding. The enigmatic signifier reveals multiple meanings on the ornamental façades, as it expresses the novelty in construction technology, associates with the Chinese symbolism through the rectangular form, and represents the building function by resembling giant irregular bubbles.

One of the essential applications of ornament today relates to the aesthetics of consumption. The Louis Vuitton Store in the 5th Avenue of New York, built by the

Figure 1.6 Surface detail of the Spain Expo Pavilion, Enric Miralles and Benedetta Tagliabue (EMBT), Shanghai, China, 2010 (Author's archive, 2010).

Figure 1.7 Façades of the Beijing National Aquatics Center, PTW Architects + Arup, Beijing, China, 2007 (Author's archive, 2010).

Japanese architect Jun Aoki in 2004, can be seen as one of the contemporary conceptions of the decorated shed (Figure 1.8). The 1930 building by Cross & Cross, in which the stories located, is clad with glasses that were ornamented with the famous checkered pattern of the brand. From outside, the façades perform as a veil by means of the overlapped patterned glasses. Creating a moiré effect, façades draw the attention of passersby, allowing them to have a glimpse of interior at some points. Playing with the opacity of vision, the façades represent the building function by imitating the moiré effect of Louis Vuitton, as much as they turn the brand identity and the need for advertisement into ornament.

In contrast to the representational use of ornament in the Beijing National Aquatics Center and the 5th Avenue Louis Vuitton Store, Alejandro Zaero-Polo criticizes the representation of the building function through surface ornaments (Van Raaij, 2014). For him, ornament should conform to the building context, its environment or local culture. The 40 Bond apartment building, for example, which was built by Herzog & de Meuron in New York in 2007, is covered with an ornamental surface in the ground floor level (Figure 1.9). The ornament, which was made of cast aluminium with a relief-like structure, functions as a kind of fence for private accesses to ground floor terraces, as well as it sends the curious looks of passersby away from the ground floor windows to the complexity of its composition. Being an interpretation of the urban graffiti culture, the ornamental fence composes a graphic pattern that expands through the aluminium and wooden surfaces of the outer cladding and the interior decoration. In conformation with the media theorist Jean Baudrillard's (1993a) critique of graffiti as the invader of the white city, the graffiti stylizations of the 40 Bond building superimpose many architectural layers, as they use the surfaces as blank canvases without a beginning and an end.

Ornament usually associates with the façades or the plasticity of buildings; yet it also establishes relationships with the building and the urban fabric. In accordance with the increasing popularity of satellite imagery in the post-information age, satellite view as a new ornamental scale became of interest. To develop critical assessments, this issue is explored in recent architectural texts. Van Raaij (2014)

Figure 1.8 Façade details of the 5th Avenue Louis Vuitton Store, Jun Aoki, New York, USA, 2004 (Author’s archive, 2014).

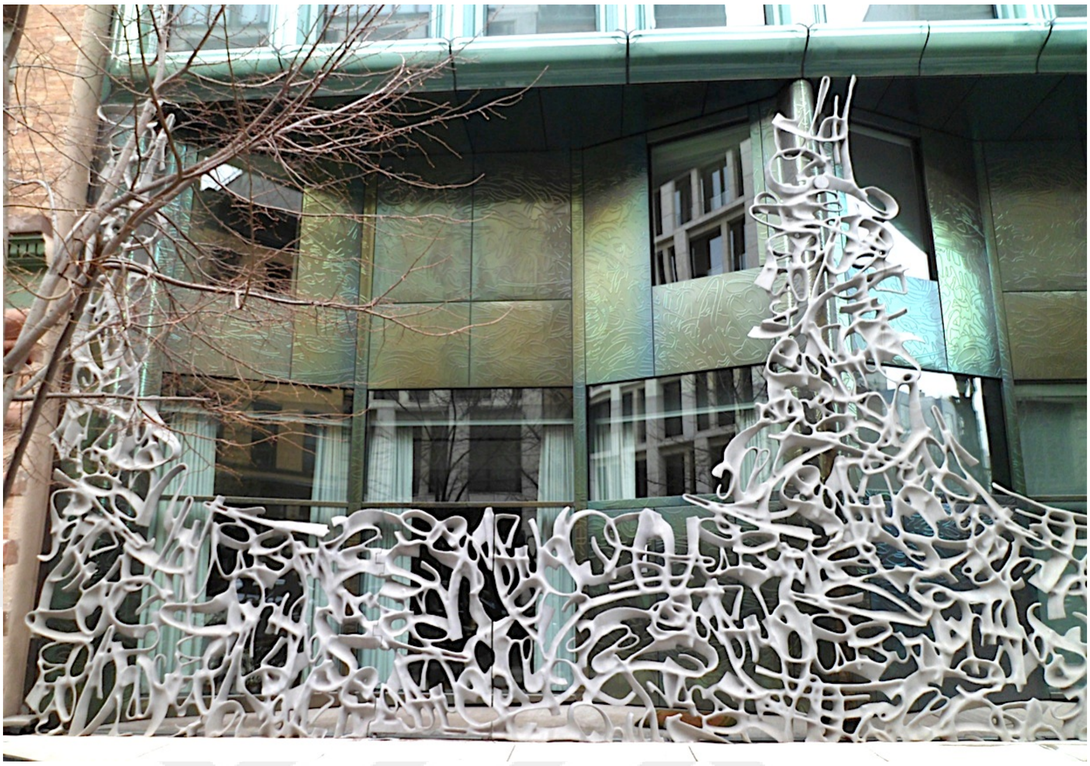


Figure 1.9 Façade detail of the 40 Bond apartments, Herzog & de Meuron, New York, USA, 2007 (Author's archive, 2014).

points to the current global trend of artificial island designs that have ornamental forms. Picon (2013b) notes that the contemporary buildings of starchitects resemble ornaments at the scale of the city. The architectural critic Jonathan Glancey elaborates the idea of viewing cities, which look like "gigantic carpets or textiles rolled across vast tracks of intensely used lands" (Glancey, 2012, p. 38). As the studies present, today, buildings can be viewed from different scales and distances, as well as from various points of view, which make them reveal different ornamental dimensions.

The problem of this study is to construct the theoretical framework of ornament in the twenty-first century. It is intended to further investigate the re-emergence of this-yet-ambiguous issue to redefine the limits of the concept of ornament in contemporary architectural theory and practice. In addition to deciphering ornament, this study makes a layered reading of architectural ornament as an instrument of the image-driven contemporary culture within the spectacle-laden public sphere.

This study explores the works of Bjarke Ingels Group (BIG), the global architectural office founded by the Danish architect Bjarke Ingels in 2005. In parallel with BIG's design approach, it explores if the advanced digital technology places ornament in a brand new context and argument in contemporary architectural milieu. The research will reduce conflict on the definition and application of ornament, and unveil its re-emergence in contemporary architectural theory and practice. The research of ornament goes beyond the material grounds of economy, labor, and time management, since its contribution to and position in architecture expands through the critical facets of contemporary culture. Dwelling on the unresolved and unaddressed points through BIG, this study will develop a unique point of view on BIG's architectural work, and will establish a critique of ornament in the current course of architecture.

1.3 BIG as a Case Study

Bjarke Ingels, the founder of BIG, previously worked as an architect at the Office for Metropolitan Architecture (OMA) in Rotterdam, Netherlands from 1998 to 2001. Afterwards, he set up the Danish architectural office PLOT with Julien de Smedt, whom he met at OMA. In 2006, he was separated from PLOT to establish his own firm Bjarke Ingels Group in Copenhagen. Along with seven other partners, the office now employs approximately 100 architects with a branch office in New York. BIG is a relatively new office, and according to their website, as of now, 14 % of their projects is constructed, and 5 % is under construction, whereas 81 % remains for now without materialization. Despite the high amount of unrealized projects, they have accomplished many awarded projects especially in Denmark, such as the Danish National Maritime Museum in Helsingor (2014), the Superkilen Park (2012), the 8 House (2010), the Mountain Dwellings (2008), the VM Houses (2004-2005), the Maritime Youth House (2004), and the Harbor Bath (2002) in Copenhagen. Currently, their under construction projects expand worldwide, such as the renovation of Transitlager warehouse in Basel, the West 57th Street housing complex in New York, and two towers at Grand Bay in Miami.

Ingels (2010) highlights BIG's objective as operating a "pragmatic utopian architecture", which has the potential of handling current challenges. The "new pragmatism", as coined by the philosopher John Rajchman, develops a critical attitude towards emerging urban conditions. With an attempt to merge the binary of theory and praxis, Rajchman (2010) approaches architecture discipline with the notion of "theory in the making." He proposes the use of diagram as a tool for analysis and critique with certain indefiniteness in the process of inventing ideas. Much like Rajchman's argument, Ingels points his intention to respond to accidental challenges of the contemporary city by integrating conflicts. Usually illustrating through diagrams, Ingels notes (2010) that architecture evolves from the functional, cultural, environmental, and social aspects, as well as the unforeseen and unintended ones. His design approach is dominated by an intense use of irony, beginning with his design vocabulary, which includes the concepts of "evolving through accidents and misunderstandings", "random opportunities", "karma", "luck", "surprise", "chance", and "unexpected".

Ingels has a distinctive vocabulary and ironic point of view *per se*, as a contribution to BIG's design approach. Apart from his own metaphors of design process, he uses an expanded and ironic vocabulary instead of ornament, function, shape and volume. He refers to ornament as "facelift", "cosmetic variation", "smacking facades onto identical barracks", "catchy head piece", "giant town sign", "royal face treatment", and "eye catching appendage". Furthermore, instead of form and function, he coins expressions, such as "biopsy of the Danish urban tissue", "three-dimensional game of tetris", "architectural alchemy", "cathedral of car culture", "urban layer cake", "architectural symbiosis", "orgy of architectural spaces", "scaling up the building three times to Chinese proportions", "bullet holes", "crushed milk carton", "boring boxes", "flat as a pancake", "melted tower", "funky silhouette", "concrete Lego slabs", "crazy shapes", "a thousand plateaus", "Gaudi meets Hertzberger or blob meets Lego", "giant chess board", "a chandelier of stripes", and "arbitrary funky shape". Refashioning irony, Ingels intends to create his own contemporary vocabulary of architecture, as a part of his search for a new form of expression and daily language.

Although current books, journals, and exhibitions on ornament illustrate a profusion of contemporary buildings, they do not investigate BIG's buildings. Besides, the literature on BIG does not point to their problematic use of ornament or the fact that some of their projects have ornamental characteristics in their surface articulations. In this study, the position of the architectural office in question orients the course of argument. Since the contemporary architectural milieu expands through divergent ideations and experimentations on ornament, the hypothesis and results would differ if another actor were chosen as a case study. This study thus should be considered not in terms of a biopsy of ornament as a grand-narrative in contemporary architectural theory and practice, but as a dissection of BIG's architecture as a critique of ornament.

1.4 Methodology and Themes

The analytical and theoretical research methodology of the study follows the aim of developing a discursive formation. Literature from ancient texts to contemporary treatises on ornament, and personal communications with the partners from the office of BIG constitute the qualitative data of the study. Building images were provided from books, official web sites, and personal archives of the author, which include on-site visits to buildings between 2009 and 2014. In addition, the study makes use of BIG's 2010 monograph, *Yes is More: An Archicomic on Architectural Evolution*, as a tool to further investigate the textual and visual representation of the buildings.

Throughout the chapters, the issue of ornament is not examined only through an architectural point of view, but also through comparative sociological, psychological, and philosophical layers, developed by analyzing cultural and social studies, as well as post-structural and critical theories. Examining different buildings, the chapters Three, Four, and Five pose different questions in order to make a critique of a distinctive aspect of ornament, as they also establish connections between each other. Each building is selected specifically as a critical representative of the major topic in each chapter. Constructed modularly, chapters are divided into five sections, which focus on different yet consecutive critical issues related to the main arguments of the chapters.

Chapter Two, entitled “Discourses and Thresholds of Ornament in Architecture”, proposes a look at architectural history through the lens of ornament. By doing so, it traces the history of ornament and its actors with an intention to clarify the turning points and shifts of architectural ornament. The five sections of the chapter indicate a distinctive paradigm shift in history. The first section, “The Origins and Etymology of Ornament”, expands the views of Marcus Vitruvius Pollio on ornament and related concepts of antiquity, as well as the etymology of the word. The second section, “The Albertian Notion of Ornament and Its Reflections”, dwells on the highly influential Renaissance architect Leon Battista Alberti and the influence of his notion of ornament in the following years. The third section, “The Primacy of Structure or Ornament”, probes the dichotomy of primacy that is given to either structure or ornament due to the technological advancements of Industrial Revolution. The fourth section, “Nature as a Source of Inspiration”, investigates the ornamental tendencies of the turn-of-the-century movements, which take botanical and organic nature as a source of inspiration in architectural and industrial design. The fifth section, “Ornament as Condemnation, Expression, and Representation”, elaborates the conflicting ideas of the banishment of ornament by the early twentieth-century modernism and its emancipation by postmodernism in the late 1960s, which lead to the contemporary transition of ornament into a digital element or a surface effect.

Chapter Three, entitled “When Venturi Meets Baudrillard: Mountain Dwellings”, discusses the extent of simulacrum and simulation with regard to the cultural theorist Jean Baudrillard, and compares the application of simulation and imitation to its postmodern version by Venturi and Scott Brown. It focuses on the Mountain Dwellings project as a case study, which was built in 2008 in Copenhagen, Denmark with the collaboration of Moe & Brodsgaard, SLA, and JDS. The first section, “Mountain Life in Ørestad”, compares Ingels’ approach of building “a mountain” in order to fulfill consumers’ desires with the constructions in Disneyland, which are the materializations of consumers' fantasies and dreams. The second section, "The Mountain Experience", compares the building with the authentic mountain through obvious simulation and in terms of experience. The third section, "Zooming In and Out", draws attention to the ornamental aspect of close and remote perception, which is widely practiced in contemporary architecture. The fourth section, "This is not a Mountain!", dwells on the problem of representation with reference to the post-structuralist philosopher Michel Foucault and his treatise, *Ceci N'est Pas Une Pipe* (*This Is Not a Pipe,* 1973). The fifth section, "Lifting Up, Peeking Out", evaluates the exposure of the materiality of architectural details, which is a contradicting manoeuvre for the simulation effect.

Chapter Four, entitled "When Zumthor Meets Warhol: Arlanda Hotel", explores the cultural and political aspects of ornament through the dichotomy of carrying deep meaning and being superficial with an emphasis on irony as an extension of postmodernism. The chapter focuses on the Arlanda Hotel project as a case study, which was designed by BIG in 2007 in Stockholm, Sweden. The first section, "Welcome to My Hometown!", elaborates the hotel as an enigma in-between a three-dimensional building and a two-dimensional image. The second section, "Urban Portraits as Extension of Power", probes ornament as a symbol of power, identity, and affiliation through the portraits of authority figures. The third section, "Yes is More!", deciphers BIG's employment of irony as a design tool, and discusses their intended surface effects. The fourth section, "Nine Victorias", compares BIG's study of the Princess Victoria portrait for the building façade with the pop artist Andy Warhol's silk-screen portraits with an intention to criticize culture industry. The fifth section, "Ornamental Déjà-vu, or Ornament in Series", makes a critique of BIG's tendency of replicating similar ornaments in different projects.

Chapter Five, entitled "When Ruskin Goes Digital: Denmark Expo Pavilion", develops an argument for the issue of digital design and manufacturing technology, deriving from the views of the Victorian era art critic John Ruskin. The chapter analyzes the Denmark Expo Pavilion in Shanghai as a case study, which was built in 2008 for the Universal Exposition in China, with the collaboration of Arup, Tongji, 2+1, and the artists Jeppe Hein, Martin de Thurah, and Peter Funch. The first section, "The Perfection of Digital Craftsmanship", elaborates the paradigm shift from craftsmanship to mechanization and then to digitization, in order to indicate the lack of the individual marks of the architect by means of the seamless integration of CAD and CAM. The second section, "The Digital Ornament of Denmark", dwells on one of the contemporary aspects of ornament in the digital medium as a second layer on the pavilion façades. The third section, "Redefining Aura and Image-Making in the Digital Age", lays emphasis on the real and the media construction of the building through its ornamental façades. The fourth section, "The Structural Stress Pattern and the Structural Ornament", evaluates the hybrid concept of structural ornament, which also becomes a common element in contemporary architecture. The fifth section, "Reviving the Tradition, or Simulating Craftwork", makes a critique of the virtuosity of CAM, which produces digital crafts on the pavilion façades.

CHAPTER TWO
DISCOURSES AND THRESHOLDS OF ORNAMENT IN ARCHITECTURE

Jacques Herzog, the founder and partner of the Pritzker Prize-awarded Swiss architectural office Herzog & de Meuron, reveals that they do not need to explain the necessity of ornament anymore, or apologize for a decorative detail in their works, since it becomes one with the form of the building that they designed (Chevrier & Herzog, 2006). This statement epitomizes the continuous shift in the conception of ornament in architectural history. This chapter traces the history of ornament in architecture mainly through critical literature that constitutes the body of the study of ornament (Appendix-1). Although it mainly focuses on discourses and thresholds in architecture and art theory, the concept of ornament is interwoven by linguistic theory, post-structural philosophy, and critical theory.

From the antiquity to the contemporary age, the definition of ornament has always been unclear, slippery, and contradictory. This is also seen from its divergent attributions of being additional, attractive, beautiful, decorative, degenerate, dirty, elaborate, elegant, extravagant, fancy, flamboyant, delightful, graceful, harmonious, luxurious, enhanced, excess, mistake, proportionate, savage, superficial, and superfluous. Accordingly, the ambiguous character of ornament is nourished by a vast amount of synonyms, such as adornment, decoration, embellishment, enhancement, enrichment, flourish, furnishing, garnishment, garniture, and pattern.

2.1 The Origins and Etymology of Ornament

The origins of the word "ornament" suggest more of an abstract and divine conception, rather than being primarily associated with physical and tangible entities. "Ornament" originates from the Ancient Greek term *kosmos*, which means "the order or arrangement of things, or world-order; and to ornament anything or anyone" (Coomaraswamy, 1939). In Ancient Greek philosophy, cosmos is created out of chaos, and emerges as an orderly, proportionate, and harmonious whole. In a similar vein, ornament in Ancient Greek conception merges conflicting worldly elements and creates order (K. Bloomer, 2000). Afterwards, persisting its divine connotations, the Christian tradition relates ornament to God's creation of living beings on earth, which is called as "a work of adornment", or *ornatus mundi* (Critios, 2004). Strongly associating with order, the word "ornament" derives from the stem "ordo", and is modified from the Latin word *ornatus*, which means to be fitted out, furnished, adorned, decorated, and embellished (Skeat, 2013). The word "adornment" also originates from "order," and is transformed from the Latin word *adornare*, which has the Latin word *ornare* in its stem (Skeat, 2013).

Further elaboration of *kosmos* demonstrates its relations to the word "cosmetic", which is connected with "order" and "ornament". Deriving from the Latinized form of the Greek word *kosmetike* as the art of dress and ornament, cosmetics means the art of beautifying (Skeat, 2013). As the structural anthropologist and ethnologist Claude Lévi-Strauss explains, the concepts of ornament, cosmetics, cosmos, mask, and style are strongly connected to each other: "In cosmetic there is cosmos; and it is not by chance that the word 'mask' has been introduced in the vocabulary of beauty salons… When the elegant woman has her hair done, when she 'masks' her face with cream, powder and various dyes, when she rectifies irregular lines with her brush and pencil to give them a style, … she is carrying out on her face – a universe in miniature" (as cited in Wiseman, 2007, p. 146). Recent studies on the relationship of cosmetics and ornament cover a wide range from the twentieth-century texts of *Indian Cosmetics* by Lévi-Strauss (1942), and *The Effigy of the Seductress* by Jean Baudrillard (1990a) to more contemporary works of *The Cunning of Cosmetics* by Jeff Kipnis (1996), and *Surface Architecture* by David Leatherbarrow and Mohsen Mostafavi (2005).

The earliest ornaments of ancient architecture derive from rituals of sacrifice. From the earlier times in history, animals and human beings have established strong bonds. Humans imitate the movements and bodily ornamentations of animals in their masks and ritualistic dances, as much as they adorn themselves with animal teeth, furs, and feathers (Baudrillard, 1990a). Moreover, the figures of leaves, eggs, feathers, teeth, bones, horns, and claws, which are carved on ancient tombs, temples, theaters, and other buildings, represent sacrificial rituals related to animals. From its blood to skin, every part of the sacrificial animal was considered as precious. Therefore, all parts of the animal were preserved after the animal had been cut to pieces, and were hung on tree trunks as adornments and memories of past sacrifices. The art historian George Hersey (1998) defines this performance as "the deconstruction and reconstruction of the victim's body" (p. 16). As tree trunks were transformed into building structures in time, body part names became references to the names of architectural elements: The column base symbolizes foot, volutes resemble horns, and triglyph refers to the thighbone chopped into three (Hersey, 1998). In this sense, sacrificial body parts perform as a kind of display, and the meaning of ornament becomes deprived of beauty. The bloody history of ornament continues in the theories of Marcus Vitruvius Pollio (1914), the Ancient Roman architect, who argues that the invention of Doric, Ionic, and Corinthian columns have background tales of bloody sacrifices and deaths.

Vitruvius is known to be the first theorist to write on ornament in his treatise *Ten Books on Architecture* (*De Architectura Libri Decem*) in the first-century AD. As the architectural historian Alina Payne (2002) remarks, Vitruvius suggests that ornament should be an independent concern *per se*, rather than being analyzed entirely in relation to architecture. With its semiautonomous existence, it has the potential to enrich other disciplines. For instance, ornament in Ancient Rome also involves as a distinct vocabulary of the art of discourse, or rhetorics. An ornamental and metaphorical language was *sine qua non* in the works of writers and poets, such as Marcus Tullius Cicero, Titus Lucretius Carus, Quintus Horatius Horace, Marcus Fabius Quintillian, and Marcus Terentius Varro, in order to create a powerful speech or text. In addition to the sophisticated and complex conception of ornament in language, great orators were also referred as ornaments, as, for example, Cicero (1875) addresses them as the ornaments of the city.

The relationship of rhetorics and ornament develops further with the term *decorum*, which originally belonged to the vocabulary of rhetorics, and shifted into one of the fundamental principles of the Vitruvian architecture as *decor*. In the

Vitruvian sense, *decor* refers to the proper use of ornament, whereas *decorum* in rhetorics means fitness to purpose (Vitruvius, 1914). Due to the similarity of definitions, the two merged in the Renaissance translations of Vitruvius' *Ten Books on Architecture*, rendering it an essential principle in architectural theory from Renaissance to the nineteenth-century modernism (Payne, 2002). *Decor* evolved to "decoration" as a theater term in the twentieth-century, but its origin derives from order. Much like the etymology of "ornament", *decorum* relates to the divinely order of things (Kohane & Hill, 2001). Furthermore, the ancient and unused hybrid English word "decorament" verifies the continuous confusion in the conception of ornament and decoration.

Vitruvius (1914) defines good architecture through a triad of *utilitas* (usefulness), *firmitas* (solidity), and *venustas* (aesthetics). He uses this triad with an intention to construct a framework for architecture, whereas Ancient Greek philosophers use it to conceive and explain worldly happenings (Jones, 2002). For example, in his dialogue *Meno*, written in 380 BCE, Plato (2008a) argues that a good and virtuous object is at the same time useful for human beings. In this sense, *utilitas* refers to the usefulness and correct use of an object in accordance with its nature. In his dialogue *Greater Hippias* (*Hippias Major*), written in 390 BCE, he associates beauty with order and *decorum* (Plato, 1982). Since beauty implies the essence of objects in the text, *venustas* refers to the harmonious proportions of an object. In his dialogue *Philebus* (*Philebos*), written in 360 BCE, Plato (1993) defines form as an intrinsic and permanent feature of an object. Being a natural constituent, the text designates *firmitas* as the stability and firmness of an object. Aristotle (2008), on the other hand, argues in his treatise *Politics* (*Politica*), written in 350 BCE, that city walls should be ornamental and strong. This approach recalls the word "garnish" as a substitute word for ornament, and points to the ancient relationship of ornament and firmness. Garnish was initially used in the meaning of fortification and defending oneself, which has the same definition in German and Old French. Yet the more common use of "garnish" as a term in culinary, which means decoration of a dish for table, was developed after the eighteenth-century (Skeat, 2013). With an emphasis on ornament and firmness, Vitruvius (1914) argues that the column is not only a load-bearing structure but also a representation of stability and permanence. He believes that ornament is a truthful representation of definite things by merging its physical qualities with high principles of honesty. As the Vitruvian notion demonstrates, the ancient scope of ornament establishes moral and ethical dimensions with strong philosophical attributions of beauty and virtue.

2.2 The Albertian Notion of Ornament and Its Reflections

Renaissance architecture highly appreciated Vitruvius' *Ten Books on Architecture*, since it is the only surviving ancient text on practical aspects of architecture, and considered as the proper application of ornament (Alberti, 1988). A variety of editions and a plenty of translations of the text were produced in Renaissance. Translations differ in tone, as some are more dictated and definitive, and some are passive in individual voice. The authoritative and explanatory translations formulated a theory of ornament as a semiautonomous category (Payne, 2002). On the other hand, passive translations were fixed on ancient ideas, rather than understanding Vitruvius' text through a historical perspective, and adapting it to contemporary needs (Thoenes, 2011). While the passive voice was a common mode especially among Italian writers, Leon Battista Alberti, the Renaissance architect, humanist, and theorist, established his presence as a distinctive figure.

Rather than making one-to-one translations of Vitruvius' treatise, Alberti wrote his own ten books, *On the Art of Building in Ten Books* (*De Re Aedificatoria Libri Decem*) between 1442 and 1452. Achieving a critical attitude towards Vitruvius, his book is accepted as the first modern treatise on architecture. In his magnum opus, Alberti formulated a theory of ornament by devoting four books, from Book VI to Book IX, to ornament: "Ornamentum," "Sacrorum Ornamentum," "Publici Profani Ornamentum," and "Privatorum Ornamentum." In the Sixth Book, *On Ornament*, he focuses on the characteristics of ornament, whereas in the Seventh, Eight, and Ninth books, he classifies building typologies according to their ornamental designs.

Alberti received a university education in Aristotelian philosophy, which was the dominant approach to natural sciences at academies throughout Renaissance (Mitrovic, 2011). Therefore, he formulated the problems of architectural theory based on an Aristotelian point of view. In his treatise *Nichomachean Ethics* (*Ethika Nikomacheia*), written in 350 BCE, Aristotle (1998) defines the essence of an object by truth, goodness, and beauty, since they are the ethical principles and intrinsic qualities of an object. In a similar vein, for Alberti (1988), beauty is intrinsic to architecture, whereas ornament complements beauty in order to compose a graceful and pleasant appearance. Furthermore, in his text *Poetics* (*De Poetica*), written in 335 BCE, Aristotle (2006) notes that a beautiful object has a proportionate scale and order, which constitute a holistic and aesthetic perception. Likewise, for Alberti (1988), beauty is associated with *decorum*. Individual parts come together to form a beautiful and complete whole, or the reasoned harmony.

One of Alberti's essential ideas was to consider ornament as an attachment and an addition to architecture, but as a complement to architectural beauty. For example, he considers the column as the principal and primary ornament (Alberti, 1988). In Renaissance architecture, columns were usually detached ornamental elements, rather than structural, since the function of load-bearing was performed by the wall (Kohane & Hill, 2011). This idea is recently criticized by the architect and theoretist Jennifer Bloomer (2000), who unfolds the Albertian notion of attached ornament through the paradox of lack. Ornament is the complement of beauty, thus a building without ornaments is considered as incomplete. From Bloomer's point of view, ornament points to a lack in the nature of architecture, since architecture achieves holistic beauty only with the application of extrinsic ornaments (J. Bloomer, 2000). This contradiction, however, is overcome by noting that Alberti constructs a symbolic concept of holistic beauty through both intrinsic physical elements, such as wall and column, and extrinsic physical elements, such as ornament and painting.

During High Renaissance, theories of ornament developed together with the idea of constructing decoration, and were supplemented by the treatises of the Italian Mannerist architect Sebastiano Serlio, the Venetian architect Andrea Palladio, and the German Mannerist architectural theoretician Wendel Dietterlin (Figure 2.1). Serlio appreciates the primacy of ornament as an independent category in his book *General Rules of Architecture Over the Five Manners of the Edifice* (*Regole Generali d'Architettura Sopra le Cinque Maniere degli Edifice*), written in 1537. In the fourth book, Serlio (2004) analyzes ornament from simple architectural elements to complex surficial organizations. Being one of the most influential figures in architecture, Palladio (2002) presents rules for architecture in his book *The Four Books on Architecture* (*I Quattro Libri dell'Architettura*), written in 1570, which includes the study of styles, ornaments, classical orders, and materials in the first book, referring to Vitruvius and Alberti. Palladio formulated the essentials of building as usefulness, durability, and beauty. Dietterlin interprets column orders in relation to ornament with a unique approach in his book *Architecture of Division, Symmetry and Proportion of the Five Columns* (*Architectura von Ausstheilung, Symmetria und Proportion der Fünff Seulen*), written in 1598. He considers ancient column orders as a base to develop bizarre ornamental fantasies and imagination, rather than keeping them as didactic examples of classical architectural ornaments (Skelton, 2007).

In contrast to the strict rules of proportion and the rational character of the Renaissance art and architecture, Baroque and Rococo ornaments were dramatic, dynamic, and spatial, as well as extravagant, superfluous, and excessive. They originated from a variety of fields from language to music. For instance, the expressions of gesture and mime, which are body and hand movements as a supplement to communication, were added to the design vocabulary of ornament (Bloch, 1986). Besides, the late sixteenth-century Baroque music suggested the word "embellishment" as a new musical term, and a substitution for the word "ornament" (K. Bloomer, 2000). Embellishment in music enriches the melody in order to express dramatic and enthusiastic intensity, which coincides with the Baroque conception of architecture as ornament and expression, instead of construction and structure (Van Eck, 1994).

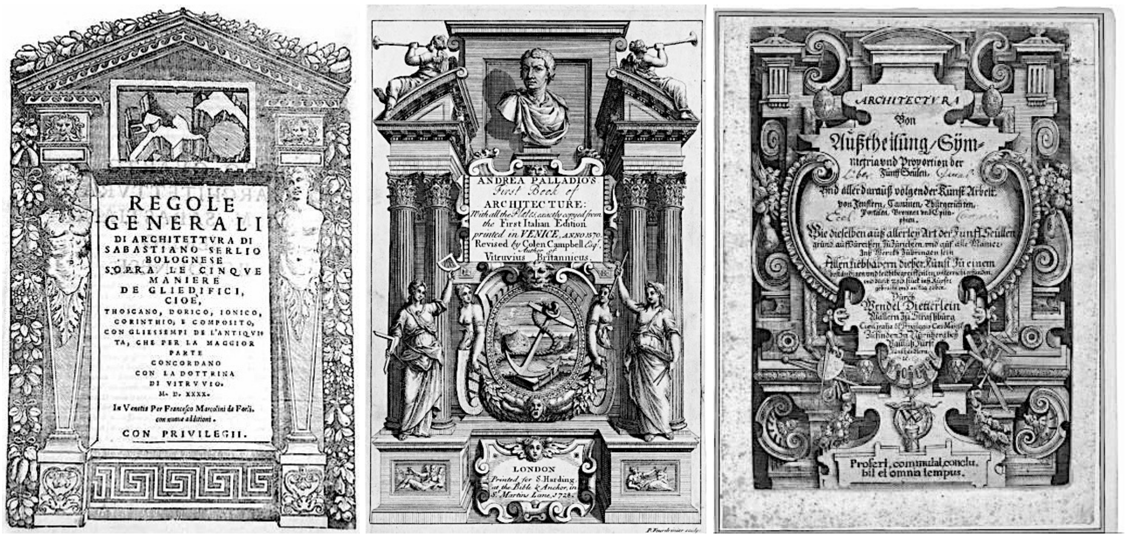
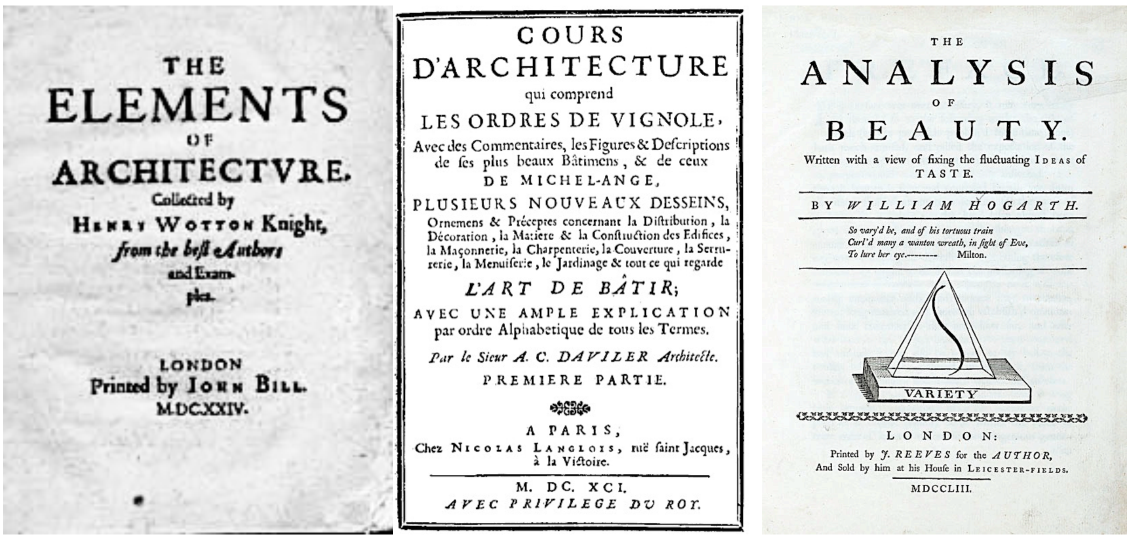


Figure 2.1 Book covers: Sebastiano Serlio, Regole Generali d'Architettura Sopra le Cinque Maniere degli Edifice (1537); Andrea Palladio, I Quattro Libri dell'Architettura (1570); Wendel Dietterlin, Architectura von Ausstheilung, Symmetria und Proportion der Fünff Seulen (1598).

The seventeenth and eighteenth-centuries witnessed inventions on architectural ornament with the Age of Enlightenment and its emphasis on reason and rational mind. On the other hand, expressive and representational approaches expanded in the studies of ornament in art and architecture. The translation of the Vitruvian triad of *utilitas*, *firmitas*, and *venustas* in the English-speaking world overturned the Albertian notion of the primacy of beauty and ornament. Translating the triad as commodity, firmness, and delight in his book *The Elements of Architecture*, written in 1624, the British author and politician Henry Wotton (1903) defends the primacy of utility over aesthetics. Being a free translation of Vitruvius' *Ten Books on Architecture*, the book states that architectural beauty no longer emerges from ornament as cosmos or divine order, but from empirical use and physical commodity in architecture. The French architect Augustin Charles D'Aviler contradicts the Vitruvian tradition of three column orders, in his book of two volumes *Lessons of Architecture Including Vignola's Column Orders* (*Cours d'Architecture qui Comprend les Ordres de Vignole*) written in 1691. With an attempt to classify column orders in terms of subjective characteristics such as historical (narrative reliefs), rural (shafts resembling tree trunks), and symbolic, D'Aviler (2004) invents a series of original shaped columns. Interpreting architectural shapes as a form of language, he argues that architecture should express function through form. the English artist William Hogarth elaborated the dynamic and curvature nature of Rococo ornaments in his 1753 book, *The Analysis of Beauty*. With an attempt to define beauty, Hogarth (1909) analyzes the principles of fitness, variety, uniformity or symmetry, intricacy, and quantity, as well as the characteristics of waving line, serpentine line, proportion, light and shade, and color. His notable analysis is the serpentine line, which draws associations with the human body and represents grace and elegance (Figure 2.2).

Hogarth's contemporary, the French architect Marc-Antoine Laugier (1977) developed contradicting ideas on the application of Baroque and Mannerist ornaments, as he puts emphasis on rational structures (Figure 2.3). In his treatise *Essay on Architecture* (*Essai sur l'Architecture*), written in 1753, Laugier argues that the distinction between structure and ornament should be eliminated in order to achieve "truth" in architecture. Despite the common view of the column as a non load-bearing ornamental element, he considered it as primarily structural, and illustrated his ideas by means of a primitive hut, which is a common idea in architecture since Vitruvius. Laugier (1977) distinguished between the necessary and


THE ELEMENTS OF ARCHITECTVRE. Collected by HENRY WOTTON Knight, from the best Authors and Examples. LONDON Printed by IOHN BILL. M.DC.XXIV.

COURS D'ARCHITECTURE qui comprend LES ORDRES DE VIGNOLE, Avec des Commentaires, les Figures & Descriptions de ses plus beaux Bâtimens, & de ceux DE MICHEL-ANGE, PLUSIEURS NOUVEAUX DESSEINS, Ornemens & Préceptes concernant la Distribution, la Décoration, la Matiere & la Construction des Edifices, la Maçonnerie, la Charpenterie, la Couverture, la Serrurerie, la Menuiserie, le Jardinage & tout ce qui regarde L'ART DE BÂTIR; AVEC UNE AMPLE EXPLICATION par ordre Alphabetique de tous les Termes. Par le Sieur A. C. DAVILER Architecte. PREMIERE PARTIE. A PARIS, Chez NICOLAS LANGLOIS, ruë saint Jacques, à la Victoire. M. DC. XCI. AVEC PRIVILEGE DU ROY.

THE ANALYSIS OF BEAUTY. Written with a view of fixing the fluctuating IDEAS of TASTE. BY WILLIAM HOGARTH. So vary'd he, and of his tortuous train Curl'd many a wanton wreath, in sight of Eve, To lure her eye.——— Milton. VARIETY LONDON: Printed by J. REEVES for the AUTHOR, And Sold by him at his House in LEICESTER-FIELDS. MDCCLIII.

Figure 2.2 Book covers: Henry Wotton, The Elements of Architecture (1624); Augustin Charles D'Aviler, Cours d'Architecture qui Comprend les Ordres de Vignole (1691); William Hogarth, The Analysis of Beauty (1753).

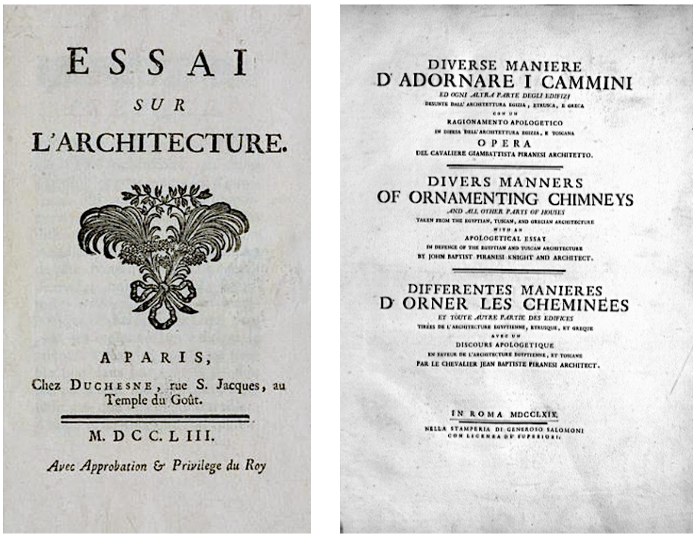


Figure 2.3 Book covers: Marc-Antoine Laugier, Essai sur l'Architecture (1753); Giovanni Battista Piranesi, Diversi Maniere d'Adornare i Cammini ed Ogni Altra Parte degli Edifiz (1769).

the secondary elements of architecture, and initiated the well-known nineteenth-century concept of decorating construction by giving priority to structure. This attitude triggered the transformation of the relationship of structure and ornament, and influenced the modern notion of realism and rationalism in the early nineteenth-century modernism (Levine, 2009). On the other hand, as noted, the Italian architect Giovanni Battista Piranesi intensely criticized Laugier's exaggerated rationality (Graham, 2013). Instead, Piranesi (1769) proposed the invention of new ornaments through the rich combinations of Greek, Etruscan, and Egyptian ornaments, as he elaborates in his 1769 book *Diverse Manners of Ornamenting Chimneys and All Other Parts of Houses* (*Diversi Maniere d'Adornare i Cammini ed Ogni Altra Parte degli Edifiz*). Dealing with the multiplicity of the narrative and imaginative dimensions of ornament, he is also known as the first eclectic architect (Mallgrave, 2005).

In the eighteenth-century, the idea of relating form, function, and ornament developed especially by the French Neoclassical architectural treatises with an emphasis on the idea of expression (Figure 2.4). Germain Boffrand (2002), a leading Rococo architect, suggests that ornament should speak in order to fulfill its task. As he explains in his 1745 book *Book of Architecture* (*Livre d'Architecture*), he

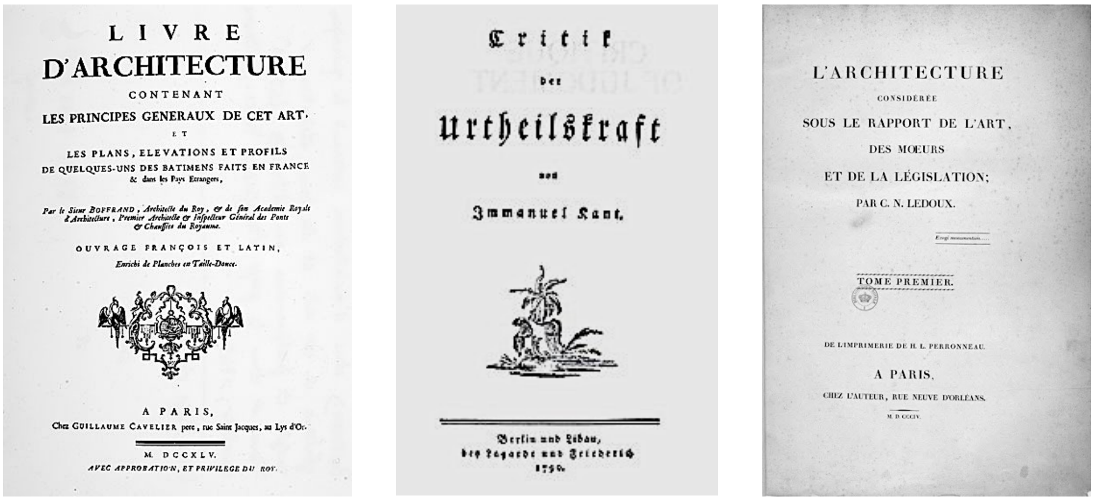


Figure 2.4 Book covers: Germain Boffrand, Livre d'Architecture (1745); Immanuel Kant, Kritik der Urteilskraft (1790); Claude-Nicolas Ledoux, L'Architecture Considérée Sous le Rapport de l'Art, des Moeurs et de la Legislation (1804).

appreciates the idea of providing relationship between the building and its ornaments. Boffrand develops his theory of *decorum* from the Ancient Roman poet Horace's literary principles, much like Alberti, who often refers to Cicero in terms of adapting his definition of a good orator (Anstey, 2006; Kohane & Hill, 2001). The narrative dimension of ornament, which represents the building function, later gave way to the concept of "speaking architecture," or *architecture parlante*, which draws close associations with the writings of Claude-Nicolas Ledoux, and the drawings of Etienne-Louis Boullée. Ledoux (2004) argues in his 1804 book *Architecture Considered in Relation to Art, Customs, and Legislation* (*L'Architecture Considérée Sous le Rapport de l'Art, des Moeurs et de la Legislation*), that architectural form should express the function of the building, rather than the social status of its owner. In a similar vein, Boullée, who was a pupil of Boffrand, aimed at expressing the function of the building through its form in his architectural drawings (Kaufmann, 1952).

Until the end of the eighteenth-century, the high values of truth, beauty, and goodness were regarded as intrinsically interwoven with ornament in the nature of an aesthetic object. This idea started to collapse particularly after the impact of Immanuel Kant's seminal work on aesthetics, *Critique of Judgement* (*Kritik der*

Urteilskraft) in 1790. As he elaborates in his treatise, ornament becomes deprived of its divine and ethical attributions, and is located merely in the domain of visuality and pure aesthetics. According to Kant (1911), ornament is an extrinsic element, whose only role is to enhance the delight of an aesthetic object without any practical concern. Initiated by Kant's and Laugier's ideas, the nineteenth-century theories discussed ornament primarily in terms of addition and subtraction. Moreover, for the first time in history, the idea of the superfluity of ornament came into consideration (Jenner, 1995). The primacy of ornament in architecture began to be questioned, despite the fact that Kant only intended to defend the autonomy of art.

2.3 The Primacy of Structure or Ornament

The nineteenth-century represents a turn towards rationality and technological upheaval with the Enlightenment and Industrial Revolution. Leaving the classical approaches aside, architects searched for new meanings of ornament. The shift in the theories and application of ornament was influenced by scientific and archeological discoveries, the advancement of building techniques and materials, the launch of international exhibitions, and the widespread expansion of printing technology. By means of the advanced print materials, a profusion of handbooks and visual grammars of ornament dominated the first half of the nineteenth-century. Narrating the history of ornament and categorizing international styles, these pattern books were used as technical references for the application of ornament, and also established the foundations of ornament education in art schools (Snodin & Howard, 1996).

Etymologically, pattern refers to a standard or a model to be imitated or copied (Skeat, 2005); yet it has been alluded to ornament throughout the art history, especially with regard to the widely recognized pattern books. Much like the original meaning of the term, pattern books were used as templates between the sixteenth and the nineteenth-century. The first set of ornamental prints named as the *Little Form or Pattern Book* (*Furm-oder Modelbuchlein*), was prepared by Johann Schönsperger the

Younger in 1523 for textile design (Snodin & Howard, 1996). It was produced for female amateur sewers, who intend to copy ready-made patterns.

Pattern books became ubiquitous before reaching the climax with the production of *The Grammar of Ornament*, which was prepared by the Welsh architect Owen Jones in 1856. Consisting of one hundred and twelve plates, the book illustrates general principles of arranging forms and colors of ornaments around the world (Jones, 1910). Published in the same year, by the British art historian Ralph Wornum, the technical book *Analysis of Ornament: The Characteristics of Styles and an Introduction to the Study of the History of Ornamental Art* encourages artists and art students to manipulate ornament in a creative way. He categorizes two styles of ornament, as the symbolic and the aesthetic (Wornum, 1884). Symbolic styles have the property of signification whereas aesthetic styles derive from the principles of form symmetry and color harmony. Handbooks of ornament provided the widespread of foreign and exotic ornaments from Egypt, Japan, Islamic world and so on. Yet they indicate a tendency toward eclecticism, since any exotic template of ornament became available for application on any object of irrelevant style. The possibility of combining ornaments from different styles and periods caused the nineteenth-century architectural milieu to be considered as lack of style. In order to overcome this issue, the German architect Heinrich Hübsch published his book *In What Style Should We Build?* (*In Welchem Style Sollen Wir Bauen?*) as early as 1828. The book holds great importance, as it proposes to emancipate contemporary architecture from the theories of antiquity. As Hübsch (1992) elaborates, after the structural frame is constructed, every craftsman is free to apply any decoration on it, as if the structure is a blank canvas (Figure 2.5).

Disagreements with eclecticism, and the idea of frivolous ornament were revealed at the Great Exhibition in 1851, which took place in the Crystal Palace in London in 1851. Promoting the idea of new techniques, the Crystal Palace was constructed out of the newly developed technologies of cast-iron and glass. Designed by the British architect Joseph Paxton, the exhibition building demonstrated that with the advanced new materials and building technologies, it is possible to build exhibition spaces,

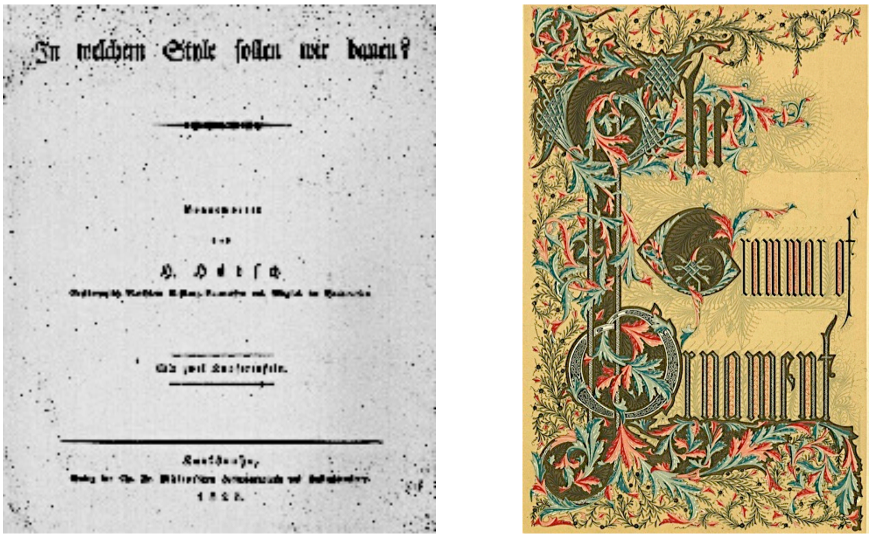


Figure 2.5 Book covers: Heinrich Hübsch, In Welchem Style Sollen Wir Bauen? (1828); Owen Jones, The Grammar of Ornament (1856).

greenhouses, and large markets. As observed by exhibition visitors, the existing artistic and aesthetic principles were not sufficed to adapt to new fabrication techniques of industrialization. The British artist Richard Redgrave (1851) focused on this issue in his report "Supplementary Report on Design", which is published as appendix to the jury reports of the Great Exhibition, as he criticizes the excessive ornamentation on objects in display, and appreciates the objects of utility with simple modern ornaments.

The nineteenth-century architecture presents a dichotomy of the primacy of structure or ornament. This controversy and different approaches to ornament caused a fundamental break in the tradition of ornament in the twentieth-century (Sankovitch, 1998). As a predecessor of the twentieth-century modernism, the nineteenth-century architecture revolves around three main figures, who are regarded as the nineteenth-century modernists (Figure 2.6): The British artist John Ruskin, the French architect Eugéne Emmanuel Viollet-le-Duc, and the German architect Gottfried Semper.

Ruskin's notions and critiques were part of a revolution against the British industrial ideology of the nineteenth-century (Brett, 1988). In his seminal treatise, *The Seven Lamps of Architecture*, written in 1849, he elaborates the concepts of sacrifice, truth, power, beauty, life, memory, and obedience in relation to the traditional craftsman, who is noble, ethical, and deprived of the capitalistic needs of industrial reproduction. Following this idea, Ruskin conceives ornament as the expression of the spirit of the craftsman. Craftsmanship was on verge of vanishing due to the newly-developing technology of mechanical reproduction; therefore he made a critique of labor division and mechanization in his books.

In *The Seven Lamps of Architecture*, the fourth lamp, which is the beauty, is closely associated with ornament, which, for Ruskin (1898), represents the unnecessary features of the building. For him, what differs architecture from edifice is the addition of beautiful but unnecessary elements, which is the ornament. Ornament should be enjoyed *per se* without any relation to the purpose of the building or any pragmatic utility (Ruskin, 1898). He defends this idea also in his influential book of three volumes *The Stones of Venice*, written between 1851 and 1853, as he explains, “The most beautiful things in the world are the most useless; peacocks and lilies for instance” (Ruskin, 2005, p. 26).

In *The Stones of Venice*, Ruskin (2005) develops the concept of the "wall veil" as a new approach to ornament. Exemplifying from Mont Cervin, or Matterhorn, he defines the wall veil as a delicate and ornamental outer layer, which conceals and separates a constructional inner core. Becoming identical with cladding, ornament is reduced to two-dimensionality. Surface is adorned with a thin layer of flat ornamentation, which covers the wall without a function or necessity (Chatterjee, 2009). According to Ruskin, ornament is not an attached element; it belongs to the essence of the building and its value depends on the similarities with organic nature. He further categorizes the ornamental forms by alluding to nature and under the titles of abstract lines, crystals, waves, flames and rays, clouds, shells, fish, reptiles and insects, branches and tree trunks, foliage and flowers, birds, mammals and human. His ideas on nature influenced contemporary architects, while his notions of the traditional craftsmanship have an impact on the turn-of-the-century Arts and Crafts

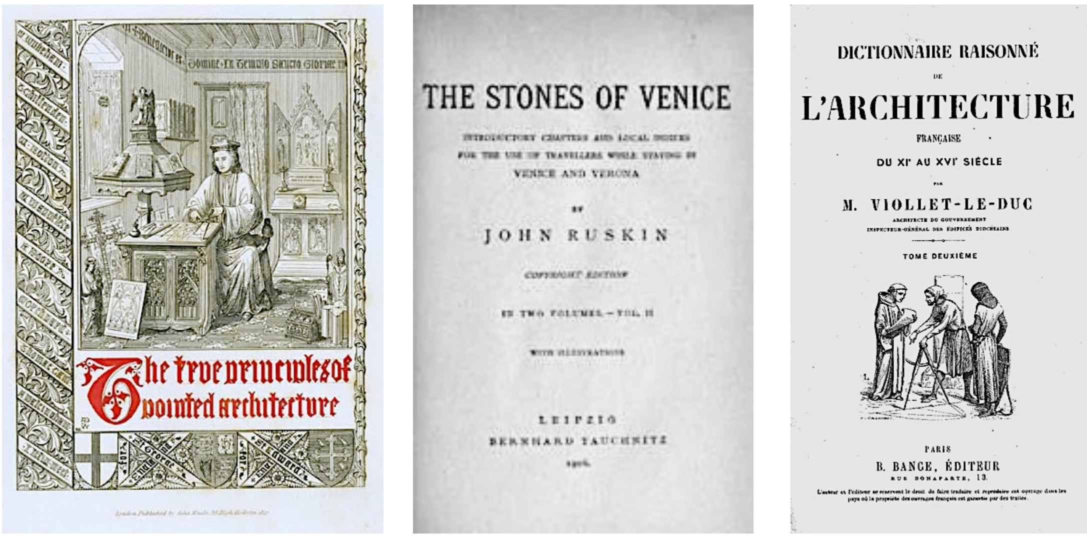


Figure 2.6 Book covers: Augustus Welby Pugin, The True Principles of Pointed or Christian Architecture (1841); John Ruskin, The Stones of Venice (1851-1853); Eugéne Emmanuel Viollet-le-Duc, Dictionnaire Raisonné de l'architecture Française du XIe au XVIe Siècle (1854-1868).

Movement, and his analyses of the Venetian Gothic architecture guided the Gothic revival movement in Great Britain, which was pioneered by Augustus Welby Pugin.

In the Victorian age of Great Britain, Pugin defended the primacy of structure and function, as he appreciated structural simplicity. In his 1841 book *The True Principles of Pointed or Christian Architecture*, the Gothic revival architect notes that ornament should be considered with reference to construction, since construction is the basis for all decorative elaboration. As Pugin (1841) elaborates, the classical approach of constructing decoration associates with bad taste and deception, since ornament should be generated from crafting materials and from the building itself as an enrichment of construction. Pugin's contemporary Viollet-le-Duc proposed similar ideas. He gives great importance to rationality, and makes a clear division of structure and ornament in his work *Detailed Encyclopedia of French Architecture from the 11th to the 16th Century* (*Dictionnaire raisonné de l'architecture Française du XIe au XVIe siécle*), written between 1854 and 1868, and the treatise of two-volumes *Discourses on Architecture* (*Entretiens sur l'architecture*), written between 1863 in 1872. Viollet-le-Duc (1875) defines architecture through the primacy of structure and function, rather than ornament. Being a Gothic revival architect, he illustrates his ideas on the rationality and efficiency of a skeleton of a Gothic building. In terms of ornament, he appreciated flatness, which later became common among other Victorian architects.

Being a contemporary of Pugin and Viollet-le-Duc, the German archeologist Karl Bötticher introduced the term "tectonics" as the performance of building (Schwarzer, 1993). In his book *The Tectonics of Helens* (*Der tektonik der Hellenen*), written in 1844, he develops the concepts of core-form (*Kernform*), which is the load-bearing construction, and art-form (*Kunstform*), which is the ornament, in order to establish his innovative theory of tectonics (Mallgrave, 1999). The ornamental form of a pillar, for example, highlights the load placed upon it. Giving supremacy to structure over ornament, the purpose of art-form is to highlight work-form (Schwarzer, 1993). In this sense, Bötticher's notion of ornament is representational, and is distinguished from structure.

In the mid-nineteenth-century, Bötticher's ideas were fully analyzed by Semper, who developed his own theory of ornament. Deriving from the idea of representation, Semper argues that ornament does not merely adorn a building but also represents the forces that act on it, such as structure and tension (Frampton, 2002; Mallgrave, 1999). Semper's theory emerges from a type of primitive cabin, which is the Caribbean hut. He was inspired by a full-scale model of the hut when he was a member of the advisory board for the Great Exhibition in 1851 (Spuybroek, 2011). A decade later, the primitive Caribbean hut served as a model for him to establish his ideas on the basic elements of architecture, which is seen as a fundamental break from the Vitruvian triad and Laugier's primitive hut theory (Frampton, 2002) (Figure 2.7). As he emphasizes in *The Four Elements of Architecture* (*Die Vier Elemente der Baukunst*), written in 1851, these elements are the hearth at the center, the raised earth as a terrace, the columns for structure, and the woven plant leaves as a wall (Semper, 1989). Semper associates these elements to certain crafts, and organizes the chapters of his seminal book, *Style in the Technical and Tectonic Arts; or, Practical Aesthetics* (*Der Stil in den technischen und Tektonischen Künsten; oder, Praktische Ästhetik: Ein Handbuch für Techniker,*

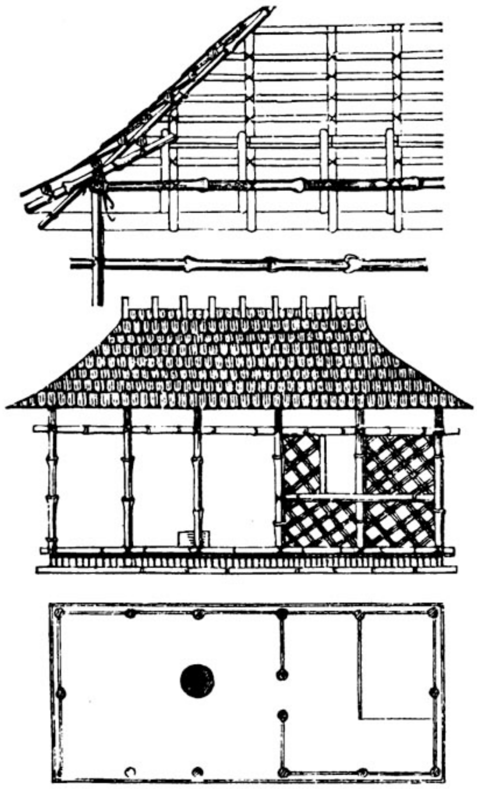


Figure 2.7 The Caribbean hut as illustrated in Style in the Technical and Tectonic Arts; or, Practical Aesthetics (Semper, 2004, p. 666).

Künstler und Kunstfreunde), written between 1860 and 1863, in accordance with these crafts. In the first volume of *Der Stil*, he devotes the third and fourth chapters to the craft of textiles, which he associates with the wall, and puts great emphasis on its precedence. The latter chapters in the second volume connect ceramics and metalwork to hearth, carpentry to structure, and stereotomy, or stone construction to the raised earth. Semper (2004) believes that the essential human instinct is the need for protection, cover, and spatial enclosure. The cover was initially made by weaving natural materials, and was then transformed into woven synthetic textile materials. Structure, in Semper's theory, is considered as secondary to architecture, since it is not directly related to spatial division. Semper indicates that the main source of ornament is not structure *per se* but the veil of structure, which is the carpet as a textile element stretched between structural elements.

Following these arguments, and being influenced by the archeological discoveries and ethnological theories of the 1840s, Semper developed his "theory of dressing

(*Bekleidungsprinzip*)" to give grounds for his use of ornament in architecture (Chatterjee, 2009). Ornament defines space by creating surfaces through the act of weaving, braiding, folding, and knotting. Semper's theory suggests that the origin of architecture is dressing or clothing, rather than construction or structure. As he elaborates in *Style*, in German, the word "wall (*Wand*)" has the same root and meaning as the word "garment (*Gewand*)", which indicates the textile origin of building (Semper, 2004). Yet his theory differs from the notion of cladding, which refers to materiality rather than a symbolic understanding. Semper's notion of dressing is a mediator between the existence of that which it covers and the world as it conveys a specific meaning (Mallgrave, 1993). Therefore, it is expected of him to emphasize the wall, or the enclosure, which originates from textile, and the autonomous ornamental surface as the primary element of architecture.

Three decades after the publication of *Style*, the Austrian art historian Alois Riegl established his own theory of ornament through a contradictory point of view. Even the title of his seminal work, *Problems of Style: Foundations for a History of Ornament* (*Stilfragen: Grundlegungen zu einer Geschichte der Ornamentik*), written in 1893, alludes to a critique of Semper's *Style*. Riegl (1992) proposed that unlike Semper's argument of ornament as an imitation of nature, ornament derived from artistic inventions and individual motives throughout the evolution of art history, which is termed as the *kunstwollen*. The human desire to adorn the body precedes the desire to cover it with woven textiles insomuch that geometrical ornamental figures have existed long before the manipulation of textiles for protection. With a critical stance, Riegl (1992) emphasized that this conception invalidates the materialistic Semperian comparison of textile and ornament, which dominated the art theory of the past quarter century. In order to elaborate his theory, Riegl investigated the historical evolution of ornamental forms from the Islamic arabesque to the Egyptian lotus. By doing so, he also became one of the first architects to introduce arabesque into the western world of architectural ornament. Associating with the urge of abstraction, Riegl introduced the idea of the psychological dimensions of ornament. His approach intensely influenced the German art historian, Wilhelm Worringer, who often refers to Riegl in his book, *Abstraction and Empathy* (*Abstraktion und*

Figure 2.8 Book covers: Gottfried Semper, Der Stil in den Technischen und Tektonischen Künsten; oder, Praktische Ästhetik: Ein Handbuch für Techniker, Künstler und Kunstfreunde (1860-1863); Alois Riegl, Stilfragen: Grundlegungen zu einer Geschichte der Ornamentik (1893); Wilhelm Worringer, Abstraktion und Einfühlung (1908).

Einfühlung), written in 1908. Worringer (1997) devoted a chapter to ornament, and associated the essence of ornament to artistic volition and abstraction (Figure 2.8). Coinciding with the newly-developing turn-of-the-century theories of empathy, psychological point of view influenced the texts of Art Nouveau architects. Furthermore, the tendency of the notion of abstraction, which began with Riegl, initiated the twentieth-century views of abstract art.

2.4 Nature as a Source of Inspiration

From the mid-nineteenth-century on, with the influence of Ruskin and Semper, there had been a growing interest on the concept of nature. Being against the effects of industrialization and mechanical reproduction on visual arts, architects and designers used botanical nature as a critical standpoint. Although nature has been a major source in architectural and artistic design since antiquity, the turn-of-the-century movements, namely Arts and Crafts, Art Nouveau, and Viennese Secession, studied plant forms as a means of reflecting living forces and expressing life. Without the restriction of any historical style, the study of nature was central to their conception of architecture. They merged botany as a branch of science with their own approach to architectural design, and invented new types of ornaments. These ornamental forms can be found in textiles, wallpapers, carpets, furniture, ceramics, book covers, and so on. Especially the Art Nouveau and Secessionist movements, which follow the idea of *gesamtkunstwerk* (total work of art), merged architecture, sculpture, and painting in a way that every object from picture frame to architectural details was crafted with plant forms and flower designs. In the second half of the nineteenth-century, these design approaches saw nature as a major source of inspiration, and conceived architectural and industrial design as a part of botanical and organic nature.

Semper's views initiated the idea of the Arts and Crafts Movement, which consisted of many individuals and groups in 1880s, such as the Century Guild, the Art Workers' Guild, the Guild of Handicraft, and the Arts and Crafts Exhibition Society (Harvey & Press, 1991). One of the most important groups in the movement is the Arts and Crafts Exhibition Society, which was initiated in 1888. The group published essays in 1893, stating that life is growing uglier everyday through modern mechanical advancement, comfort, and luxury, whereas the true basis of all art lies in the handicrafts (Mallgrave, 2005). The British textile designer and artist William Morris, who was a major figure in the Arts and Crafts Movement, influenced young architects, craftsmen, and designers through his lectures and designs. Morris became famous with his printed and woven fabric designs, machine-made and hand-made carpets and rugs, tapestries, embroiders, and fore most of all, with his wallpaper designs, which represent luxury, elegance, and artistic quality (Harvey & Press, 1991) (Figure 2.9). From his point of view, clothing is directly related to social relations, and he designed fabrics and dresses accordingly (Wigley, 2001). In his designs, it is clearly seen that his inspiration source is nature, specifically plants. He used various forms of herbs, flowers, and leaves as flat ornamental designs on fabrics and wallpapers.

Throughout the world, the Arts and Crafts Movement inspired the Art Nouveau movement in the 1890. Also known as Jugendstil in Austria and Germany, the movement is characterized by curvy leaves, flowers, and plant forms, as well as woman figures, twisting waves, and lines. Evolved by the Catalan architect Antoni Gaudí, and the Belgian architects Victor Horta and Henry van de Velde, Art Nouveau merged industry and artisanal qualities with an intention to create naturalistic ornaments in artistic, architectural, and industrial design. Being influenced by Viollet-le-Duc and Ruskin, they emphasized the importance of craftsmanship and Gothic style, and merged structural clarity with craftwork in their designs (Lahure, 2005; Riera, 2005). Van de Velde was deeply influenced by the psychological studies of perception, as well as the aesthetic theories of Riegl, Semper, and the decorative designs of Morris (Frampton, 1980). Both Riegl and van de Velde emphasized human will in artistic creation. Riegl related it to intellectual activity, or *kunstwollen*, whereas van de Velde associated it with an intrinsic organic drive. Van de Velde believed that the architect merged his design with his energy and brought forms to life as a basic human urge (Haddad, 2003b). Accordingly, the new style of the twentieth-century would be based on an organic conception of form. With a modern approach, he appreciated new constructional systems, while avoiding historical styles and rejecting the eclectic language of the nineteenth-century architecture (Haddad, 2003a).

Making an extensive research on ornament, Van de Velde began working on his unpublished treatise *Manuscript on Ornament* in 1915, and finalized its last version in 1935. He arranged all ornaments from all periods and cultures according to their origins, which fell into one of the three categories of technique, line, and nature (Haddad, 2003a). He further made a distinction between ornamentation and ornament, arguing that the former is attached and extrinsic to the surface, whereas the latter is functional and intrinsic to the surface (Frampton, 1980). In addition to being involved in architecture, he also published a book on clothing design, named as *The Artistic Improvement of Women's Dress* (*Die künstlerische Hebung der Frauentracht*) in 1900. He wrote on clothing, as well as designing his wife's clothes, since clothing design also takes part in his artistic reform, which was later criticized by the Viennese architect Adolf Loos (Figure 2.10).

Figure 2.9 “Strawberry Thief” wallpaper design, William Morris, 1883 (V&A Museum, T.586-1919).

Figure 2.10 Henry van de Velde, reception dress, 1902 (van de Velde, *Deutsche Kunst und Dekoration*, April – September 1902, VIII, p. 379).

A few years later than the establishment of the Arts and Crafts Movement, the artists Gustav Klimt and Koloman Moser initiated the Viennese Secession in 1897 with the architects Joseph Maria Olbrich and Josef Hoffmann. Olbrich approached ornament through a symbolic point of view (Frampton, 1980). He is the architect of the Secession building (1898) in Vienna, which is an example of *gesamtkunstwerk* (Figure 2.11). Hoffmann, on the other hand, has a more planar design approach with simple geometric forms. In his later years, he developed an atectonic style, and represented dematerialization through horizontal and vertical lines (Sarnitz, 2007).

After the Viennese Secession was established, the Austrian architect Otto Wagner, the master and teacher of Olbrich and Hoffman, joined the movement. Wagner, unlike his pupils, has a realistic sense of building, rather than a symbolic one (Frampton, 1980). He is one of the Semperian architects of the next generation; therefore in his book *Modern Architecture* (*Moderne Architektur*), written in 1896, he often refers to Semper and *Der Stil*. He adapted Semper's *bekleidungsprinzip* to his façade designs, as he embraced Semper's idea of the tectonic veil, which renders the structure behind visible (Frampton, 2002). Similar to Semper, Wagner (1988) believes that the first cause and the original purpose of building were the need and necessity for protection against nature. In this sense, from his point of view, the first ornaments were hut and cave decorations, such as flowers and trophies, which initiated the feeling of imitation and the urge of making art. In his opinion, architecture corresponded to the idea of pure utility, whereas ornament added a sense of beauty to the building (Wagner, 1988). This notion is explicitly seen in his Majolica House (1898), which expresses his Art Nouveau tendencies through flat and abstract compositions of majolica tiles (Figure 2.12). On the other hand, the Postal Savings Bank (1912) expresses his modern vision through granite façades (Figure 2.13). Although he has a modern approach in many of his projects, he criticizes the Modern Movement in *Modern Architecture*, as he claims that the modern eye has lost the sense for small and intimate scale, as it got accustomed to longer straight lines, larger masses, and plainer silhouetting. As he further elaborates, the Modern Movement, as the new style of the twentieth-century, merged tectonic

Figure 2.11 Joseph Maria Olbrich, Secession building, Vienna, Austria, 1898 (Author's archive, 2008).

Figure 2.12 Otto Wagner, Majolica House, Vienna, Austria, 1898 (Author's archive, 2008).

Figure 2.13 Façade detail of the Postal Savings Bank, Otto Wagner, Vienna, Austria, 1912 (Author's archive, 2008).

and sculptural forms, while avoiding the construction of statues as tectonic building elements, and obtained a clarity of ornamental forms (Wagner, 1988).

Around the same time, the American architect Louis Henry Sullivan developed his own theory of ornament through laws of nature. With an intention of inventing an organic system of ornament, he analyzed the methods of morphology, which is a branch of botany that develops the general laws of form production (Brett, 1988). Yet a century before Sullivan, the German artist and author J.W.V. Goethe made investigations in the morphology of plants, which associate with Sullivan's studies. Goethe developed his notion of "ur-phenomenon" to define the formative principle of plants. He proposed that the ur-phenomenon evolves into various forms in different plants and makes a plant generate differently than others (Heitler, 1998). Similarly, Sullivan (1979) investigated the possibilities of morphological variations, which he designated as "differential growth" in his text "Ornament in Architecture" in 1892. Rather than depending on the existing system of historical ornaments, Sullivan's idea of ornament develops infinitely through differential growth. In order to demonstrate his idea, Sullivan produced a portfolio of plates, named as "A System of Architectural Ornament" between 1922 and 1923, which illustrates and narrates the evolution of geometrical and singular forms into complex organic forms (Figure 2.14). He related these forms to human virtue, since he intended to establish connections between human psychology, botanical morphology, and architectural ornament, as he also elaborates in "Ornament in Architecture" (Sullivan, 1979).

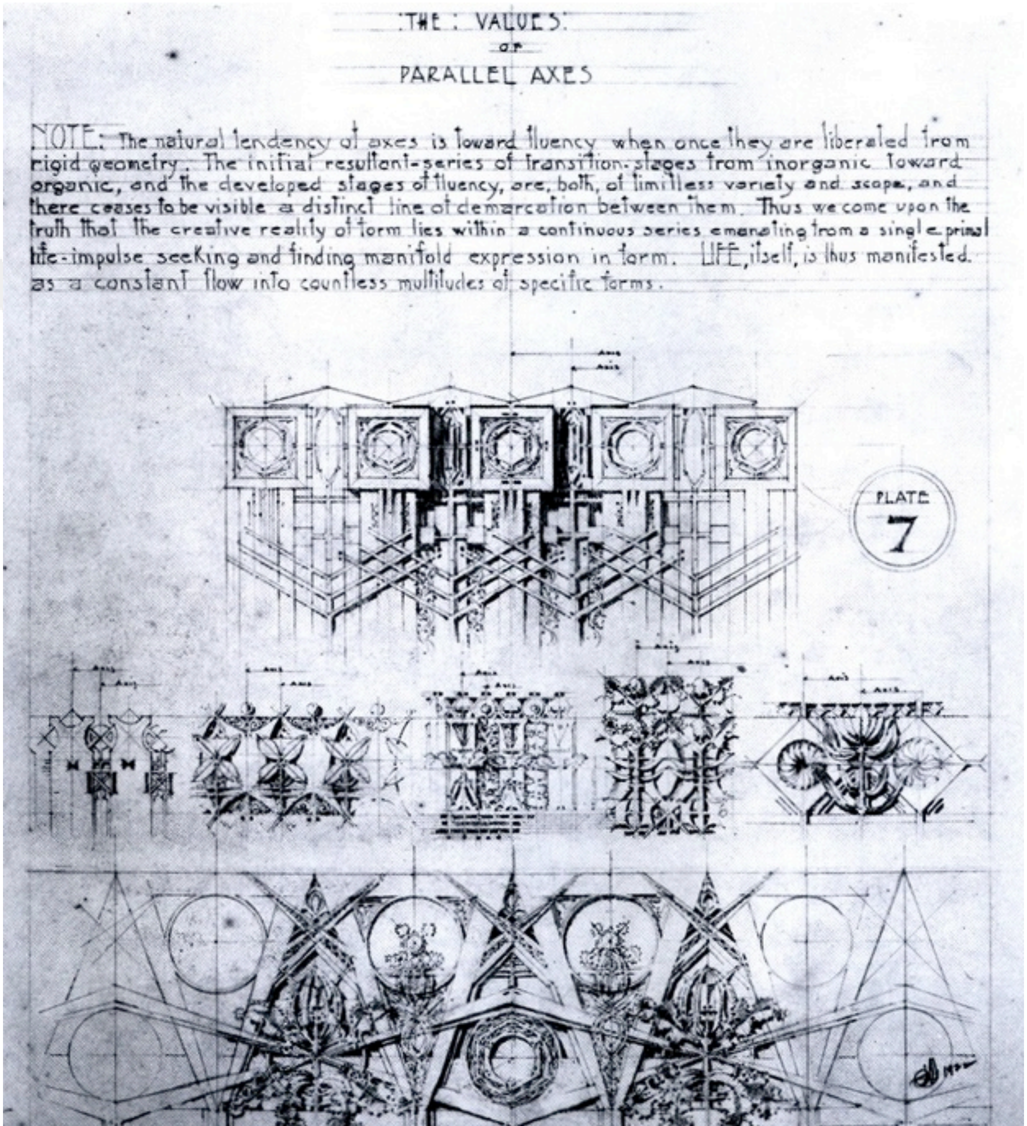


Figure 2.14 Louis H. Sullivan, plate 7: The Values of Parallel Axes, "A System of Architectural Ornament", 1922-1923 (The Art Institute Chicago archive).

Having studied Ruskin and Semper, in his buildings, Sullivan intended to reflect the lively spirit of nature through ornament (Figure 2.15). According to the architectural theorist Mark Wigley (2001), Sullivan's use of brick gives the building surfaces a textual quality, and indicates the influence of Semper: "The decorative surface is literally woven into a structural frame for the building, or, rather, the structure itself is woven into a decorative pattern" (pp. 60-61). Sullivan (1979) believes that a building as a true work of art is a living organism, which has an emotional expression, and ornaments emerge in accord with this expression. Throughout his research on nature and morphology, he developed the maxim, "form follows function." It was primarily an adaptation of the basic biological principle into architecture; however, it was later adopted by the functionalist architects of the twentieth-century (Morrison, 1998).

Figure 2.15 Façade detail of the Bayard – Condict Building, Louis H. Sullivan, New York, USA, 1899 (Author's archive, 2014).

2.5 Ornament as Condemnation, Expression, and Representation

The twentieth-century modernism is considered as the only period that is deprived of ornament, since it aimed to cut all connections with preceding historical styles. By means of the newly-developing technology of engineering and mass-production, ornamental movements were eliminated at the turn-of-the-century. The anti-ornamental and modern attitude, which appreciated machine aesthetics, expanded and evolved worldwide throughout the century. The German philosopher Ernst Bloch (1997) coins the terms antiflower and faceless screen to modern buildings, since the twentieth-century modernism calls for the death of ornament, and approves clear, simple, and pure designs. The contemporary philosopher Elizabeth Grosz (2001) articulates that architecture always contains an extra dimension, or excess, which goes beyond mere functionality or structural concerns. Ornament is referred to as the excess, or the superficial, the waste, and the unnecessary detail, which is othered and underestimated. Her critique defines the Modern stance against ornament, which declared ornament as a taboo and banished it from architectural milieu throughout the twentieth-century.

The attack for ornament and decorative styles was initiated by the Viennese architect and theorist Adolf Loos at the turn-of-the-century. In 1893, Loos had been the United States of America to visit the World's Columbian Exposition in Chicago. In his three-year stay, he witnessed the architecture of the Chicago School and the writings of Sullivan (Frampton, 1980). Specifically Sullivan's essay "Ornament in Architecture" influenced Loos' seminal essay "Ornament and Crime (Ornament und Verbrechen)", written in 1908. Afterwards, a decorative arts exhibition in Vienna in 1908, for which Hoffmann designed the temporary exhibition spaces, is considered to give the impulse for him to write down the essay (Mallgrave, 2005).

Although "Ornament and Crime" is the most influential work on the elimination of ornament in modern world, Loos' first battle cry on this issue is his 1898 essay "The Luxury Vehicle (Die Luxusfuhrwerk)." In the text, he considers the ornamentation of functional vehicles as a mistake, since it shows primitiveness, rather than modernism. As he stresses intensely, “To seek beauty only in form and not in ornament is the goal toward which all humanity is striving” (Loos, 1982e, p. 40). In his other essays, Loos continues to emphasize the superfluity of eclectic ornaments of the nineteenth century. In his 1898 text “Interiors in the Rotunda (Die Interieurs in der Rotunda),” he makes a criticism of the needlessness of style at turn-of-the-century (Loos, 1982a). In “Review of the Arts and Crafts (Kunstgewerbliche rundschau)”, written in 1898, he criticizes the Arts and Crafts Movement for being behind the contemporary age (Loos, 1982d). In “Poor Little Rich Man (Von einem armen, reichen Manne)”, written in 1900, he disapproves Hoffmann and the concept of the Secessionist *gesamtkunstwerk* (Loos, 1982c).

Loos suggests rendering pure materials visible, instead of covering them with historical ornaments. Defending the natural beauty of materials, his Goldman & Salatsch Building (1911) in Vienna’s Michaelerplatz is decorated with marbles as a kind of ornament (Figure 2.16). Widely known as Looshaus, the building is the first major urban building without traditional ornaments. Loos makes a detailed elaboration of materials in his 1898 text, “The Principle of Cladding (Das Prinzip der Bekleidung)”. Referring to Semper’s *bekleidungsprinzip*, Loos (1982f) emphasizes the primacy and essentiality of cladding (bekleidung) for protection. The structural frame, which holds carpets and tapestries, is secondary. He handles the issue of modern clothing design in a similar fashion, since it is also a kind of cladding that protects human body. With an attempt to illustrate the modern way of clothing, he wrote consecutive essays in 1898, such as “Men’s Fashion (Die Herrenmode)”, “Ladies’ Fashion (Damenmode),” “Men’s Hats (Die Herrenhüte),” “Shoemakers (Die Schuhmacher)”, “Underclothes (Wäsche),” which highlight efficient, functional, and non ornamental sense of dressing. Afterwards, with an intention of spreading the American way of modern dressing in Austria, he published his own newspaper in 1903, titled as *The Other: A paper for the introduction of Western culture into Austria* (*Das Andere: Ein Blatt zur Einführung abendländischer Kultur in Österreich*). He criticized the Austrians, since they continued to wear historical ornamental dresses, which kept them from working efficiently. He especially addressed to women, since they are the primary admirers of ornamental and colorful clothing, which are designed for sensual effects, rather than practicality and functionality.

Throughout his essays, he makes analogies of clothing and building. In his text, “Ladies’ Fashion,” Loos (1982b) stresses in a similar tone to “Ornament and Crime”: “The lower the culture, the more apparent the ornament. Ornament is something that must be overcome. The Papuan and the criminal ornament their skin. The Indian covers his paddle and his boat with layers of ornament. But the bicycle and the steam engine are free of ornament. The march of civilization systemically liberates object after object from ornamentation” (p. 102). In “Architecture”, written in 1910, Loos (1985) notes that the exterior of a house should be as inconspicuous and neutral as a non-ornamental dress, since it belonged to the public domain (Figure 2.17). The interior of a house, on the other hand, is where the inhabitant is free to remove the social mask and use colorful accessories, such as carpets. In “Ornament and Crime”, written in 1908, he refers to modern clothing design, as he mentions that the clothes of a modern man, who has a strong individuality, should be like a mask in public; therefore it should attract the least attention (Loos, 1966). For him, all elements in the life of a modern man should be plain, simple, practical, and functional. His clothes and shoes should be lack of ornamental details, his body should lack tattoos, and his furniture should lack style.

With “Ornament and Crime”, Loos declared ornament as a taboo not only in architecture but also throughout all aspects of modern life. He criticized the architecture of Vienna, which has turned to represent other cultures instead of its own. Vienna had specific building styles and traditions based on the Viennese way of life. However, due to the large number of divergent ethnicities in the city, the building identities became complicated, and ornaments became eclectic (Purdy, 2006). In such an environment, Loos commissioned himself to deal with the problem of diversity. He intended to eliminate the distracting and superfluous elements but not the ornaments that identify the buildings (Diniz Moreira, 2008; Furjan, 2003). Loos argues that culture evolves when ornament is removed from the objects of daily use, because he considers modern ornament as excess, superfluous, and irrelevant to

Figure 2.16 Adolf Loos, Goldman & Salatsch Building, Vienna, Austria, 1911 (Author's archive, 2008).

Figure 2.17 Adolf Loos, Rufer House, Vienna, Austria, 1922 (Author's archive, 2008).

the current state of architecture. Ornamentation is a crime against national economy, since it wastes human labor, health, money, and material. On the other hand, the lack of ornament means shorter working hours and higher wages for workers, as well as it represents spiritual strength. In his text, Loos (1966) addresses the aristocrats, rather than workers because in his opinion, ornament is the pleasure of natives, peasants, and uncultivated working class people. He believes that they need ornament to show their existence. The modern man, on the other hand, is more refined, and prefers art instead of ornament.

In addition to economic and aesthetic issues, Loos elaborates social aspects of ornament, as he dwells on the relationship of tattooing and criminology. He states that, “The modern man who tattoos himself is a criminal or a degenerate aristocrat” (Loos, 1966, p. 226). Being a permanent body decoration, tattoo is regarded as a mark, which represents a person’s identity. In “Ornament and Crime”, Loos tolerates the tattooed Papuans, since they belong to primitive tribes. He primarily focuses on the tattooed aristocrats because having a tattoo was a fashion accessory among the nineteenth century aristocrats. After the King George V of England had been tattooed by the famous Japanese tattoo artist Hori Chiyo; the royalties of Denmark, Romania, Russia, Yugoslavia, Spain, and other British aristocrats were tattooed royal emblems on their arms and torsos (Favazza, 1996). Prior to its ubiquity as a fashion accessory in the nineteenth-century, tattoo was a common social denominator in many primitive cultures. Etymologically, the word “tattoo” consists of the syllable “ta”, which means to tattoo, or to mark for the Tahitians and Maorians (Skeat, 2013). Tattoo was further investigated by architectural theorists, such as Semper and Riegl. Semper (2004) notes that the shapes of the tattoos in certain tribes coincide with the bone structure and muscle tissue underneath. Riegl (1992), on the contrary, argues that the spiral lines of tattoos, especially in the case of the Maori tribe, have no relationship with the structure of the human body. The argument on tattoo coincides with Riegl’s idea of *kunstwollen*, as well as his theory of abstraction and stylization in art and architectural design. Moreover, a different critique of Loos’ ideas on tattoo in “Ornament and Crime” compares it to his views on the exterior and interior surfaces in “Architecture” (Onaner, 2010). Loos’ conception of the colorful interior surfaces is interpreted as the transformation of the tattooed skin of the Papuan to the interiors.

Until the twentieth-century, the study of ornaments was one of the essential courses at art and design schools, much like learning the rules of perspective or color theories. In the first half of the twentieth-century, art schools adapted the new rules of modernity, beginning with the elimination of the study of ornament. After the impact of "Ornament and Crime," Loos wrote the article "Ornament and Education (Ornament und Erziehung)" in 1924, re-emphasizing the primitive nature of ornament, the irrelevance of decorating according to a style, and the superfluous work of the uncultivated ornament-maker. He defined the aesthetic features of modern and luxurious objects as being attractive without ornament, and having good material and high quality of finish (Loos, 1998). He noted that the use of ornament was the abuse of objects. Besides, he advised the architecture school professors to teach classical ornaments of columns and moldings, and warned them against designers, who try to invent ornaments. Furthermore, with the foundation of the Bauhaus school in Weimar by the German architect Walter Gropius, rationalism and functionalism became dominant notions at schools. Gropius considered ornamental buildings as "lies", and did not take into account contradicting views (Wolfram Cox & Minahan, 2005). Coinciding with the characteristics of the *Neue Sachlichkeit* (New Objectivity) movement, Bauhaus reformed applied art education with a worldwide influence for a century.

Around the same time, an eclectic style, which would be later called Art Deco, was presented at the International Exposition of Modern Industrial and Decorative Arts in Paris in 1925, and spread worldwide by 1940s. The style merges geometrical shapes and the ornamental developments of Arts and Crafts with the developing technology of machine age and new materials. The same exposition included the *Esprit Nouveau* pavilion that lacks ornament, designed by the pioneer of modern architecture, Le Corbusier (Figure 2.18). Afterwards, he wrote *The Decorative Art of Today* (*L'Art Décoratif d'Aujourd'hui*) to criticize the ornamental objects of daily use in the exposition, and to highlight the aesthetics of non-ornamental mass-produced industrial objects (Figure 2.19). Comparing the characteristics of decorative objects and plain objects of daily use, Le Corbusier (1987b, 1987c) notes that decorative objects are badly made, cheap, and commonplace since their decoration masks the poor quality of materials. The luxury industrial objects are, on the other hand, well made, neat, clean, and pure. Emphasizing the issues that Loos mentioned in “Ornament and Education” a year before, Le Corbusier (1987a) remarks the end of ornament, as he states that the year 1925 represented the beginning of the architectural movement of machine age. In his 1923 book, *Towards a New Architecture* (*Vers une Architecture*), he focuses on the aspects of the machine aesthetics, which is represented by mass-production and material clarity, and elaborates in detail through the modern inventions of automobiles, airplanes, and steam ships. Making a critique of style in a prophetic tone much like Loos, Le Corbusier (1986) criticized unnecessary use of style in architecture and appreciated non-ornamental plain surfaces for utilitarian needs.

Le Corbusier ascribed many negative connotations to ornament with a wide range from ethics to health, such as darkness, deception, and dirt, and located it into a metanarrative discourse. Instead of ornamental wallpapers and decorative surfaces, he advised citizens to apply the whitewash, since it associates with beauty, cleanliness, hygiene, honesty, truth, accuracy, transparency, thinking clearly, morality, and the joy of life (Le Corbusier, 1987a). The whitewash of modern architecture is further elaborated by the contemporary architect and architectural historian Mark Wigley (2001), who asserts that the white surface of modernism is neither neutral nor blank; it is more of a statement of modernism that emphasizes the absence of representation. Elsewhere, the whitewash surface as a symbol of hygiene is argued in relation to the concepts of advancement, moral healing, order, and discipline. Similarly, the white clothed person refers to the refusal of the past and to the embrace of a modern way of life (Şentürk, 2010).

Being referred as *Neue Sachlichkeit* in Germany, and *Esprit Nouveau* in France, the modern movement was denominated as the International Style in the United States of America. The name of the International Style derives from the International

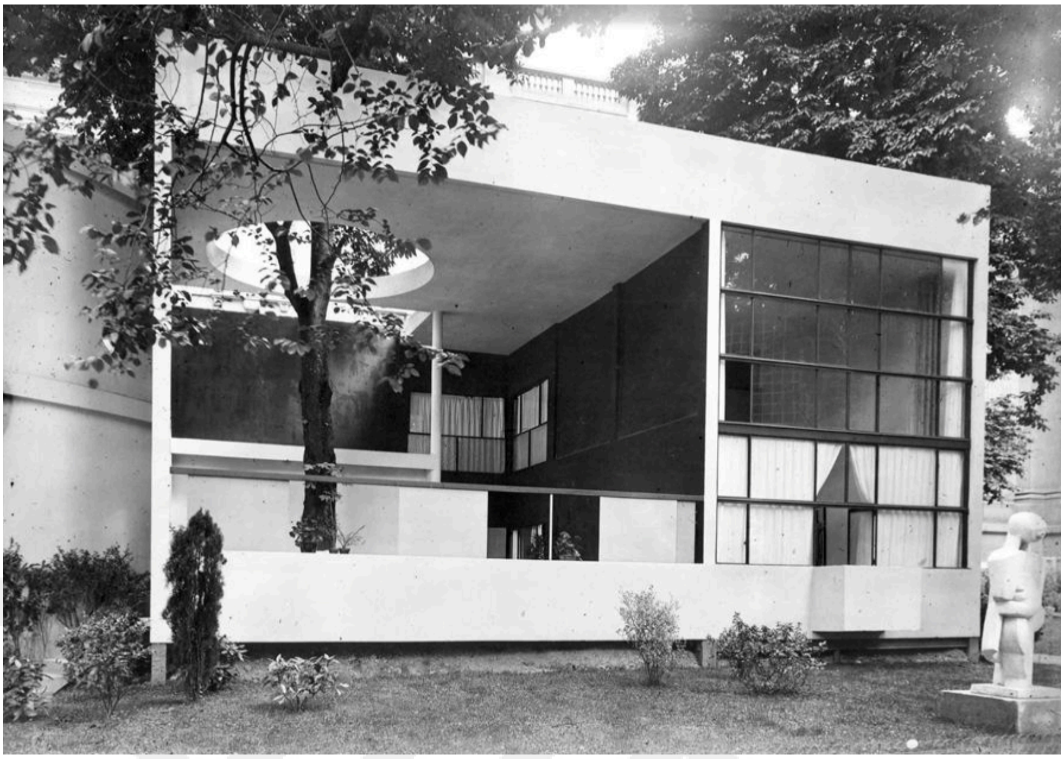


Figure 2.18 Esprit Nouveau pavilion, Le Corbusier, Paris, France, 1925 (FLC/ADAGP archive).

Figure 2.19 Book covers: Le Corbusier, Vers une Architecture (1923) and L'Art Décoratif d'Aujourd'hui (1925).

Exhibition of Modern Architecture in 1932, which was organized by the American architects Henry-Russell Hitchcock and Philip Johnson in collaboration with Alfred Barr and Lewis Mumford at the Museum of Modern Art in New York. Prior to the exhibition, Hitchcock (1970) wrote the book *Modern Architecture: Romanticism and Reintegration* in 1929, to define the framework of modern architecture, and good craftsmanship, advanced engineering, and the application of abstract ornaments in modernism. Accordingly, the exhibition intended to establish the principles of the new style by demonstrating the elimination of ornament, standardization of architectural elements, and the primary role of functionalism. The International Style consists of non-ornamental rectangular prisms of reinforced concrete, steel, and glass, almost “wearing the social mask in public” in Loos’ terms. As a supplement to the exhibition, Hitchcock and Johnson (1966) co-edited the catalogue *The International Style: Architecture since 1922*, which starts with a praise of the Gothic cathedrals and a critique of style, and then illustrates the sampled buildings in the exhibition.

Ludwig Mies van der Rohe, the former director of the Bauhaus school in Weimar, is one of the pioneer architects of the International Style. His architecture is characterized by steel and glass, as an application of the novelty in the twentieth-century structural systems. However, the steel or bronze I-beams visible on the building surfaces, especially in his postwar buildings, such as Lake Shore Drive apartments (Chicago, 1948-51) and The Seagram Building (New York, 1958), are replications of the structural system, which is hidden inside the building. Having an attached character, I-beams are not structural, as they cut off before they touch the ground (Figure 2.20). Along with some other modern architects, such as Peter Behrens, Mies searched for the ways that he can emphasize and express the steel structural system.

As anticipated, critical reactions to Mies’ use of I-beams by his fellow architects soon emerged. The American architect Frank Lloyd Wright expressed his disapproval through his comment to Johnson: “Someday let’s persuade Mies to get rid of those damned little steel posts that look so dangerous and interfering in his

Figure 2.20 Ludwig Mies van der Rohe, The Seagram Building, New York, USA, 1958 (Author's archive, 2014).

lovely designs" (as cited in Quetglas, 1988, p. 134). Furthermore, Robert Venturi and Denise Scott Brown (1996), the pioneers of postmodern architecture, consider Mies' attached I-beams as ornaments that signify and conceal the steel frame structure. According to Venturi, Scott Brown, and Izenour (1996), Mies' surface attachments represent naked steel-frame construction: "Less may have been more, but the I-section on Mies van der Rohe's fire-resistant columns, for instance, is as complexly ornamental as the applied pilaster on the Renaissance pier or the incised shaft in the Gothic pier" (p. 114). Elsewhere, they criticize modernism for using elements of pastiche, despite being against it: "Modernist elements, derived from an International Style – Russian Constructivist vocabulary, are used literally but as décor, rather than as rational and 'honest' manifestations of function and structure" (Venturi & Scott Brown, 1996a, pp. 262-263).

After the worldwide dominance of functional and structural concerns in architecture, in the late 1950s, counter-discourses against the strict primacy of these concepts flourished. Around this time, modern architectural doctrines and the authentic modern ideas of the pioneering architects began to be drained in meaning, and lost their original intentions when practiced uncritically and blindly by later modernists (Modeno, 2004). Johnson, for instance, moved away from modernism in his later years, as seen in his expressionist and postmodern architecture, as well as his famous lecture “The Seven Crutches of Modern Architecture”, given at Harvard University School of Design in 1954. Overturning Ruskin’s concept of the “seven lamps”, he criticizes the doctrines of modern architecture, defined as the crutches of history, pretty drawing, utility or usefulness, comfort, cheapness, serving the client, and structure (Johnson, 1983). Besides, the 1965 exhibition called “Ornament? Without Ornament (Ornament? Ohne Ornament)” was held in Zurich with an intention to demonstrate the Modern tendency of applying ornament especially in terms of materials (Gleiniger, 2009).

Postmodernism became widespread in the following decades with the architecture of Philip Johnson, Michael Graves, Hans Hollein, Arata Isozaki, Charles Moore, as well as with the early works of Frank Gehry. In addition to architectural works, the German philosopher Theodor W. Adorno makes a critique of functionalism and Loos’ ideas on the banishment of ornament in his 1965 text, “Functionalism Today (Funktionalismus Heute).” Adorno’s understanding of ornament stems from Kant’s conception of autonomy and Marx’s dialectic of commodity, which propose to conceive ornament deprived of any practical function. Thus Adorno (1997) did not believe in the separation of design elements as purposeful and purposeless, and considered these parts as historically interconnected. A building is constructed by both functional and nonfunctional elements because even the most pure forms of purpose derive from artistic experience. Adorno (1997) notes that what is defined as necessary and functional today could be attributed as superficial, or ornamental in the future. A symbol may be transformed into an ornamental element, and finally be marked as superfluous.

Theorists and architects in the 1960s pioneered investigations on the issue of meaning in architecture. Previously, semiotics was introduced to philosophy as the study of signs and symbols, and was developed by the American philosopher Charles Sanders Pierce in the nineteenth-century, and then led by Charles W. Morris in the early twentieth-century. In the 1960s, semiotics was transformed into semiology by the Swiss philosopher Ferdinand de Saussure. It was further elaborated by the French philosopher Roland Barthes in his treatise *Elements of Semiology* (*Eléments de Sémiologie*, 1964), and the Italian philosopher Umberto Eco in his book *The Absent Structure: Introduction to Semiological Research* (*La Struttura Assente: Introduzione alla Ricerca Semiologica*, 1968). In philosophy, semiology analyzes the meaning and syntax of words, and in architecture, it analyzes buildings as carriers of meaning like a language. The German philosopher Hans-Georg Gadamer contributes to the discussions on the symbolic meaning in architecture in his text "The Ontological Foundation of the Occasional and the Decorative (Der ontologische Grund des Okkasionellen und des Dekorativen)," which is a section in his seminal treatise *Truth and Method* (*Wahrheit und Methode*), written in 1960. For him, architecture has a symbolic dimension and an ontological purpose of representation, which point to the concept of ornament (Gadamer, 1997). Ornament thus has a fundamental role in architectural representation and the self-presentation of the building.

In accordance with the idea of semiology and meaning, architects contributed to the field by extensive treatises, which established theories of the newly developing postmodernism (Figure 2.21). The architectural theorist and designer Charles Jencks and the architect and theorist George Baird co-edited the book *Meaning in Architecture* in 1969 to demonstrate the application of semiology to architecture, and to lead the way to the concepts of sign and symbol in postmodern architecture (Jencks & Baird, 1969). Venturi wrote the book *Complexity and Contradiction in Architecture* in 1966 to illustrate that complexity and ambiguity improve the multiplicity of meaning in architecture. He notes that since Vitruvius, architecture has never been simplified and reduced; rather, it has always been complex and contradictory. Venturi (1966) begins his book by posing an attitude against the modern emphasis on cleanliness and purity: "I like elements which are hybrid rather than 'pure', compromising rather than 'clean', distorted rather than 'straightforward'" (p. 16). Another major work on postmodern architecture is *Learning from Las Vegas*, co-written by Venturi, Scott Brown, and their colleague Steven Izenour in 1972. In the book, the architects argue that modernism forgot and

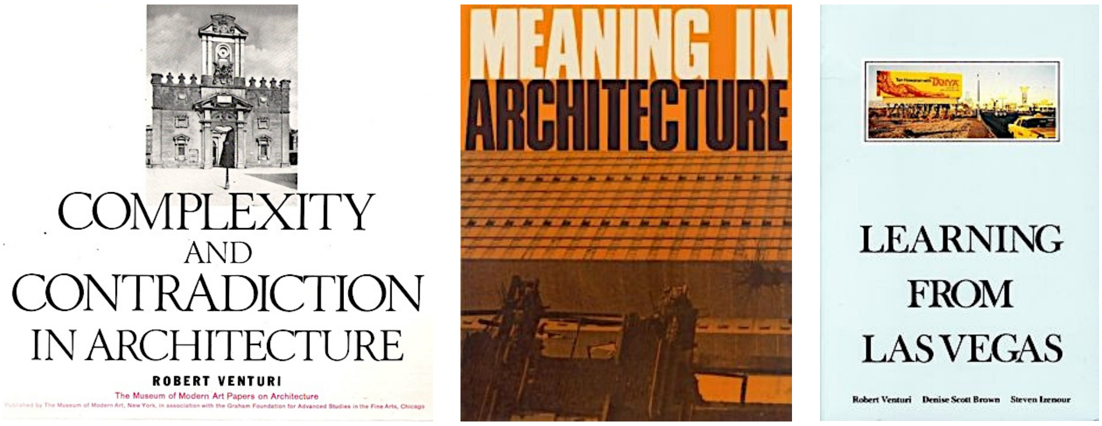


Figure 2.21 Book covers: Robert Venturi, Complexity and Contradiction in Architecture (1966); Charles Jencks and George Baird, Meaning in Architecture (1969); Robert Venturi, Denise Scott Brown, and Steven Izenour, Learning from Las Vegas (1972).

eliminated the important role of symbolism in architecture, which was oddly reclaimed by the architecture of Las Vegas.

Learning from Las Vegas is based on the arguments and findings that were tested in a design studio at Yale University School of Architecture, and a field study in Las Vegas in 1968. The architects preferred the Las Vegas strip because its architecture depended on communication and representation, rather than the modernist conceptions of structure and function. Before the publishing of the book *Learning from Las Vegas*, Scott Brown and Venturi elaborated their ideas in architectural journals. In March 1968, they published “A Significance for A&P Parking Lots, or Learning from Las Vegas”, and proposed two typologies in commercial environment: the sign as the building and the sign that fronts the building. Seven months later, they published “On Ducks and Decoration,” which was written while conducting the studio. The essay also constitutes the second part of *Learning from Las Vegas*, and shows their appreciation to the architecture of communication through symbolism and media as they reintroduce ornament (Scott Brown & Venturi, 1968). In 1972, the architects published the book form of their findings in the Las Vegas studio and trip. In the book, they coined the terms “duck” and “decorated shed” for the typologies that have been categorized in their previous articles. Duck is adapted from Peter Blake’s 1964 book, *God’s Own Junkyard*, which illustrates the duck-shaped drive-in, “The Long Island Duckling.” In Venturi and Scott Brown’s ironic approach, duck is the symbol *per se*, which submerges and distorts space, structure, and program through this symbolic form (Venturi, Scott Brown & Izenour, 1996). It also indicates the plasticity of the building as an aesthetic dimension. Decorated shed, on the other hand, has applied ornaments on its façades, and space and structure are of the service of program (Figure 2.22).

The British architect and critic Alan Colquhoun (1998) argues that the idea of the decorated shed is inspired by the nineteenth-century view of decorating construction, which was especially emphasized by Pugin. Influenced by the nineteenth-century eclectic architecture, Venturi, Scott Brown, and Izenour (1996) propose to rethink Ruskin's idea of architecture as an addition of ornaments on an edifice, and to practice Pugin's concept of decorating construction. As they exemplify, architectural history consists of both ducks and decorated sheds, since commercial architecture needed to communicate through ornaments to attract public attention. The precedent of the decorated sheds in the form of symbols and signs date back to medieval times, when signboards were hung outside the doors of traders, sellers, and service providers. Rather than using words, signboards illustrated the product that the trader sells or the symbol that represents the service provided. When literacy increased throughout Europe in the nineteenth-century, the signs included letters as well (Snodin & Howard, 1996). In the twentieth-century, Ledoux's concept of *architecture parlante* was revisited by Venturi and Scott Brown's idea of communication and representation. In the postmodern architecture of their office, Venturi, Scott Brown and Associates (VSBA), the world is conceived as a source of images, ranging from architectural heritage to everyday visual culture (Davidovici, 2004).

In *Learning from Las Vegas*, Venturi, Scott Brown, and Izenour make a critique of modernism, remarking that modern architects ironically applied ornament in their designs although they had banished it in their texts. In a sense, they turned their buildings into ducks, or giant ornaments, in promoting space and articulation over symbolism and ornament: "Walter Gropius decried the term 'International Style' but created an architectural style and spread a vocabulary of industrial forms that were

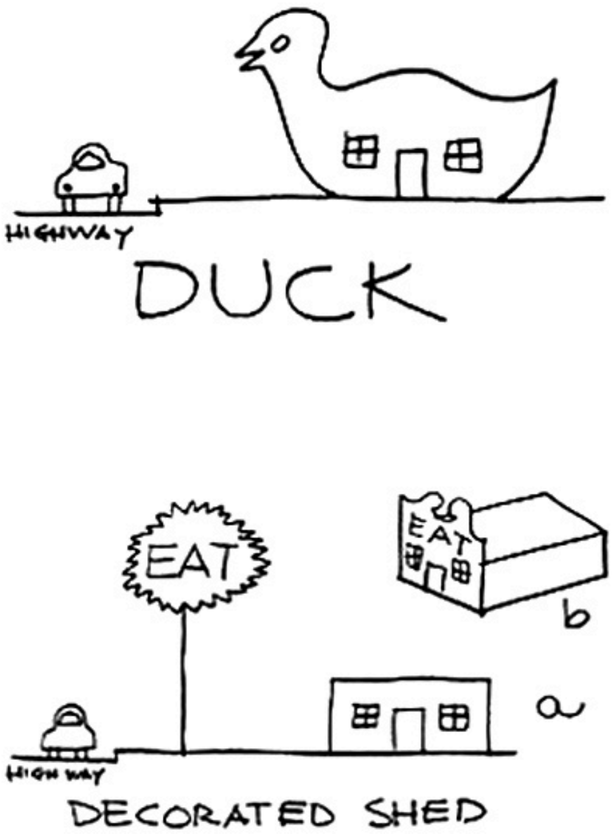


Figure 2.22 Illustrations of the duck and the decorated shed in Learning from Las Vegas (Venturi, Scott Brown & Izenour, 1996, pp. 88-89).

quite removed from industrial processes. Adolf Loos condemned ornament yet applied beautiful patterns in his own designs” (Venturi, Scott Brown & Izenour, 1996, p. 137). As the German philosopher and sociologist Jürgen Habermas (2000) notes, the companies in Las Vegas communicate with their clients and visitors through neon advertisement boards and colorful logos on their building façades. He further argues that the anonymous modern buildings of the twentieth-century are "faceless" architectures, which fail to show their function through form (Habermas, 2000). In contrast, Las Vegas had developed an architecture of signs that represents the function of the buildings. In this sense, Habermas considers *Learning from Las Vegas* as a critique of the Modern idea of functionalism.

As a counter-view, Colquhoun (1998) fiercely condemns Venturi and Scott Brown’s texts and architectural works in his 1974 essay “Sign and Substance: Reflections on Complexity, Las Vegas, and Oberlin,” as he suggests that the concept of the decorated shed is a misinterpretation of architectural tradition. Colquhoun (1998) makes a critique of the decorated shed as being the manipulation of surface appearance, rather than the proposition or definition of an alternative vision of modern architecture. According to the traditional texts of Vitruvius, Alberti, Palladio and so on, architecture consists of the art of building, crafting, *decorum*, and a system of aesthetic representation, which were reduced to two singular elements by Venturi and Scott Brown, as the shed and the sign (Colquhoun, 1998).

The concepts of the duck and the decorated shed evolved throughout the following decades. Emphasizing plasticity, the concept of the duck expanded worldwide by 2000 through the outburst of iconic building designs of museums, libraries, sport centers, airports, housing complexes, and so on. Being attracted by public through their sculptural architecture, iconic buildings carry obvious or implicit metaphors. However, Venturi and Scott Brown criticize the current tendency of over-ornamenting houses and housing complexes, since these buildings should bear the sense of shelter without transmitting public messages (Van Raaij, 2014). The concept of the decorated shed, on the other hand, was transformed into huge digital boards on building surfaces, known otherwise as "media façades". Through the current expansive field of postmodern architecture, contemporary theorists, such as van Raaij (2014), Picon (2013a), and Jencks (2011), initiate criticism on this comeback. Today, the narrative, imitative, symbolic, ironic, and superfluous aspects of ornament in the postmodern sense expand through the new facets of sustainable, digital, virtual, and structural, as much as they broaden the issues of representation, reproduction, and simulation.

CHAPTER THREE
WHEN VENTURI MEETS BAUDRILLARD: MOUNTAIN DWELLINGS

The Mountain Dwellings project, located in the center of Ørestad district of southern Copenhagen, was built in 2008 by Bjarke Ingels Group (BIG). Together with BIG's other housing projects nearby, namely the VM Houses and the 8 House, the building is a part of the urban development called the "Ørestad act." Initiated by the Danish Parliament in the 1990s, the developers intend to make the newly developing district the contemporary urban quarter of dwelling, studying, and working. With an attempt to reinforce the vibrant urban fabric of the district, various buildings of residential units and public spaces have been built, in addition to the improved green areas and rainwater canals (Figure 3.1).

The Mountain Dwellings building sits on a site that is adjacent to the elevated light train system in the west, which passes through Ørestad from the north to the south. The building is situated between two parallel rainwater canals, namely the Ørestad Canal and the Northern Land Canal. The first one runs below and in parallel with the railway construction, whereas the latter forms a borderline to the east between the new high-rise buildings of Ørestad and the low-rise suburbia of Copenhagen. The building's site is next to the VM Houses, two apartment blocks, also known as the first generation of the Mountain Dwellings since they were built for the same client in 2004 and 2005 consecutively (Figure 3.2). In contrast to the linearity of VM Houses, the Mountain Dwellings is basically a square prism on an area of 33,000 square meters, yet in accordance with the V and M forms of the VM Houses, the southern façade of the building also has a zigzag form of three fragments.

The Mountain Dwellings contributes to central Ørestad by proposing a unique way of combining housing and parking (Figure 3.3). Instead of making a conventional apartment building, BIG designed eighty apartments as independent units, each with their own private terrace and parking area. The concept of the mountain derives from the diagonally cascading terraced housing from the eleventh

Figure 3.1 Mountain Dwellings and the Ørestad Canal, Copenhagen, Denmark (Author's archive, 2013).

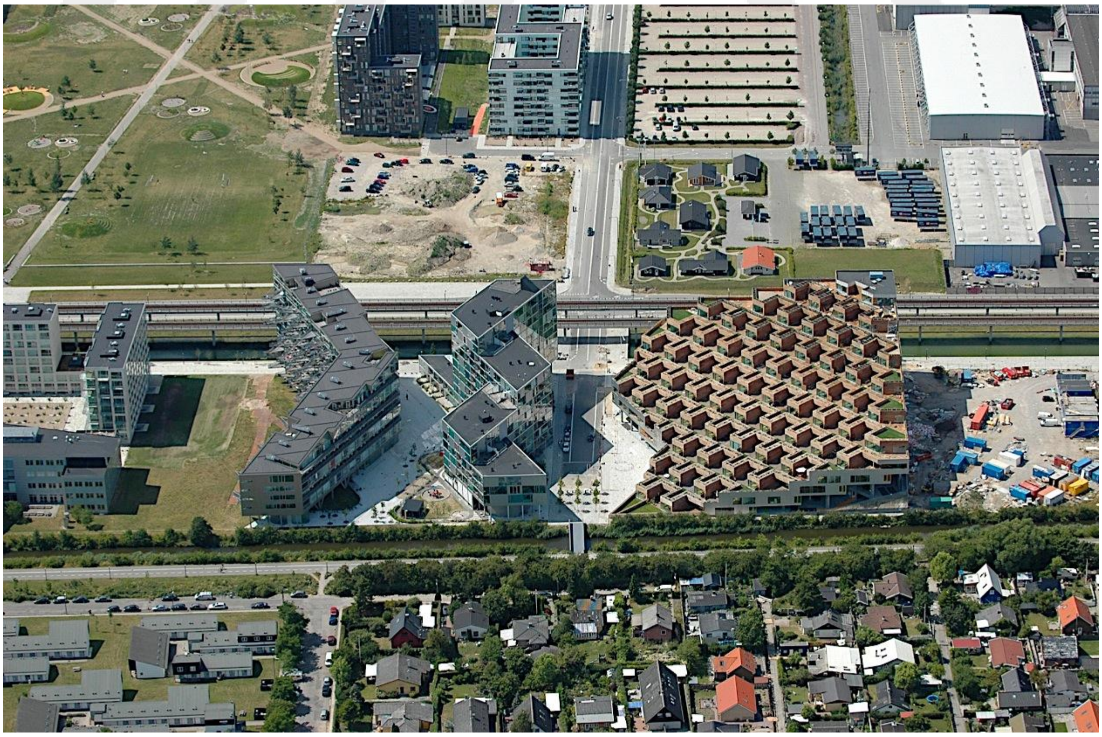


Figure 3.2 Site view of the VM Houses and Mountain Dwellings, BIG, Copenhagen, Denmark (BIG's archive, 2008).

to the ground floor. The pile of housing units faces southeast in order to take the advantage of sunlight and view. In front of each unit, there is a small private garden for the residents to enjoy the view over distant landscape and adjacent suburbia (Figure 3.4). Each terrace is surrounded by a 1-meter high planter, which allows greenery to grow, anticipating the "hanging garden" effect, illustrated in the initial renderings (Gallanti, 2008). Parking units, which consist of four hundred and eighty spaces for the use of the Mountain Dwellings and the VM Houses residents, are placed at the back of residential units in the northwest across the train system. They expand through ten mezzanine floors across the housing units in order to allow the Mountain Dwellings residents to park their cars directly outside their apartments. The parking floors are covered with a continuous perforated aluminium surface, folding into four parts from the southern to the eastern façades, for controlled sunlight and air circulation (Figure 3.5). Making reference to the project name, this folded surface displays a realistic image of Mount Everest, a part of the Himalayas, the highest topography on Earth. The building with its green terraces becomes an extension of the adjacent suburbia (Ingels, 2010). It presents itself as a "mountain" and simulates a suburban lifestyle in an urban district with its tranquil location and green view of housing units.

This chapter discusses the extent of simulation, imitation, and representation in the Mountain Dwellings project. It explores the idea of the simulated experience of living on a mountain, an experience supported by the image 'reproduced' on the architectural façades. In doing so, the chapter draws close associations with the views of the French philosopher Jean Baudrillard, who dwells on the concepts of simulation and simulacra expansively in many of his works, primarily *Symbolic Exchange and Death* (1976), *Simulacra and Simulation* (1981), *Simulations* (1983), *The Perfect Crime* (1995), *The Intelligence of Evil or the Lucidity Pact* (2005), and *The Conspiracy of Art* (2005). His works bring the real and the authentic into question, proposing the concepts of simulacrum, simulation, and hyperreality.

Figure 3.3 BIG, Mountain Dwellings, Copenhagen, Denmark, 2008 (Author's archive, 2013).

Figure 3.4 Terrace detail of the Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (BIG's archive, 2008).

Figure 3.5 Northeast view of the Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2014).

Although this chapter deals with the contemporary aspects of simulation, its history dates back to ancient age, extending its limits through the concept of imitation, or mimesis, with a vast amount of literature. Plato (1993b, 2000, 2008b) dwells on mimesis intensively in his dialogues *Sophist* and *Timaeus* in 360 BCE, and *The Republic* in 380 BCE, in terms of producing appearances, instead of essences. Aristotle (2006), on the other hand, considers imitation as a presentation of possibilities and probabilities, rather than being merely a copy of appearances, in his treatise *Poetics* (*De Poetica*), written in 335 BCE. During Renaissance, the invention of perspective techniques contributed to the evolution of visual imitation, whereas in the Baroque Period, the trompe l'oeil technique in painting created the optical illusion of three-dimensionality. The history of simulation is further analyzed by Thomas Hansli (2008) in his article "Parrhasius's Curtain: Visual Simulation's Mimesis and Mediality". Illusion and special effects from the Baroque period to the contemporary age is elaborated extensively by Norman M. Klein (2004) in his book *The Vatican to Vegas: A History of Special Effects*, in terms of scripted spaces, defined as narrative configurations that put the visitor/audience in a central position.

3.1 Mountain Life in Ørestad

According to Baudrillard (1994, 2005), the distinction between the authentic and the simulacrum – that is to say the simulation of the authentic – implodes, in the sense that they become equal representations of reality because simulation produces some of the characteristics of the authentic. Reproducing the real an indefinite number of times, simulacrum emerges as a copy of a copy, or an image of an image. As Baudrillard (1991, 1993a) further elaborates, the concept of simulacrum has three levels; the natural, the productive, and the hyperreal. The natural simulacrum is based on the image as imitation and as an obvious copy, which is distinguishable from the authentic. In this sense, it has a theatrical status. Secondly, the productive simulacrum is materialized by mass-production, blurring the boundaries of reality and representation by a well-made reproduction. In the first and second levels, the success of simulation is measured by comparing it to the authentic. The third level of simulacrum, however, is based on hyperreality, as it produces a model of reality *per se* without an origin or reality. It substitutes the authentic with its indistinguishable representation, or its hyperreality. The Mountain Dwellings associates with the first and the second orders of simulacra, since the reproduced "mountain" emerges as a theatrical imaginative reality.

Baudrillard uses Disney theme parks as an exemplification of an environment that merges all three orders of simulacra. The concept of theming simulates a different time, culture, and world than the one that is physically lived. By means of architecture and technology, theme parks offer visitors unique experiences in authentic environments and atmospheres (Lukas, 2007). Being artificial environments of the Disney Corporation, Disneyland and Disneyworld are created out of a play of illusion, dream, and fantasy. They are capable of concealing the absence of reality by substituting it with a much more perfect, convincing, and newer appearance. In this sense, for Baudrillard (1994, 2002), they are much more than a mere representation of imagination. They assimilate the real world and produce simulacra in the appearance of a theme park. They turn dreams and fantasies into reality and spectacle, as much as they commodify them. Baudrillard (2005b) epitomizes this idea through an advertising slogan: "You dreamed it, we made it" (pp. 76-77).

Apart from Baudrillard, Disney theme parks have been studied critically through the concepts of hyperreality, imitation, reproduction, and authenticity by other theorists in the 1970s. The French philosopher and semiotic Louis Marin's (1977) article "Disneyland, A Degenerate Utopia", and the Italian philosopher and semiotic Umberto Eco's (1986) essay "Faith in Fakes: Travels in Hyperreality", written in 1975, discuss Disneyland as being a mythical representation of daily life and an authentic fake place, which is newer and more fulfilling than real life. For Robert Venturi and Denise Scott Brown (1996b), the theater-like environment of Disneyworld associates with the architecture of Las Vegas, which is referred as "The Disneyfied Boulevard." Venturi and Scott Brown point out that the architecture of Las Vegas shifted from the decorated shed to the duck from the late 1960s to the late 1990s. Transforming from two-dimensional representation to the three-dimensional one, passersby in Las Vegas are absorbed into three-dimensional theater-like experiences (Venturi, 1996).

This chapter argues that, although the Mountain Dwellings is not a theme park, it emerges as a fusion of desire, fantasy, and reality for its residents with a dream of a suburban lifestyle in the city and a dream of living on a mountain in the flat plains of Copenhagen, mediated by the second order of simulacra. The geological and natural Mount Everest in Nepal is simulated by the architectural construction in Copenhagen. In order to fully grasp the mountain image, one has to walk around the whole building from a distance, rather than looking at only one of the façades (Figure 3.6). The viewers are well aware that the flat image is only a copy in a smaller scale; yet the intention of the architects goes further than deceiving them by a reproduced image after all. In this sense, Ingels (2010) expresses his attempt to modify the flat landscape of Copenhagen with a single comment, which recalls Baudrillard's slogan: "Denmark is flat as a pancake. If you want to live on a mountain, you gotta do it yourself!" (p. 76).

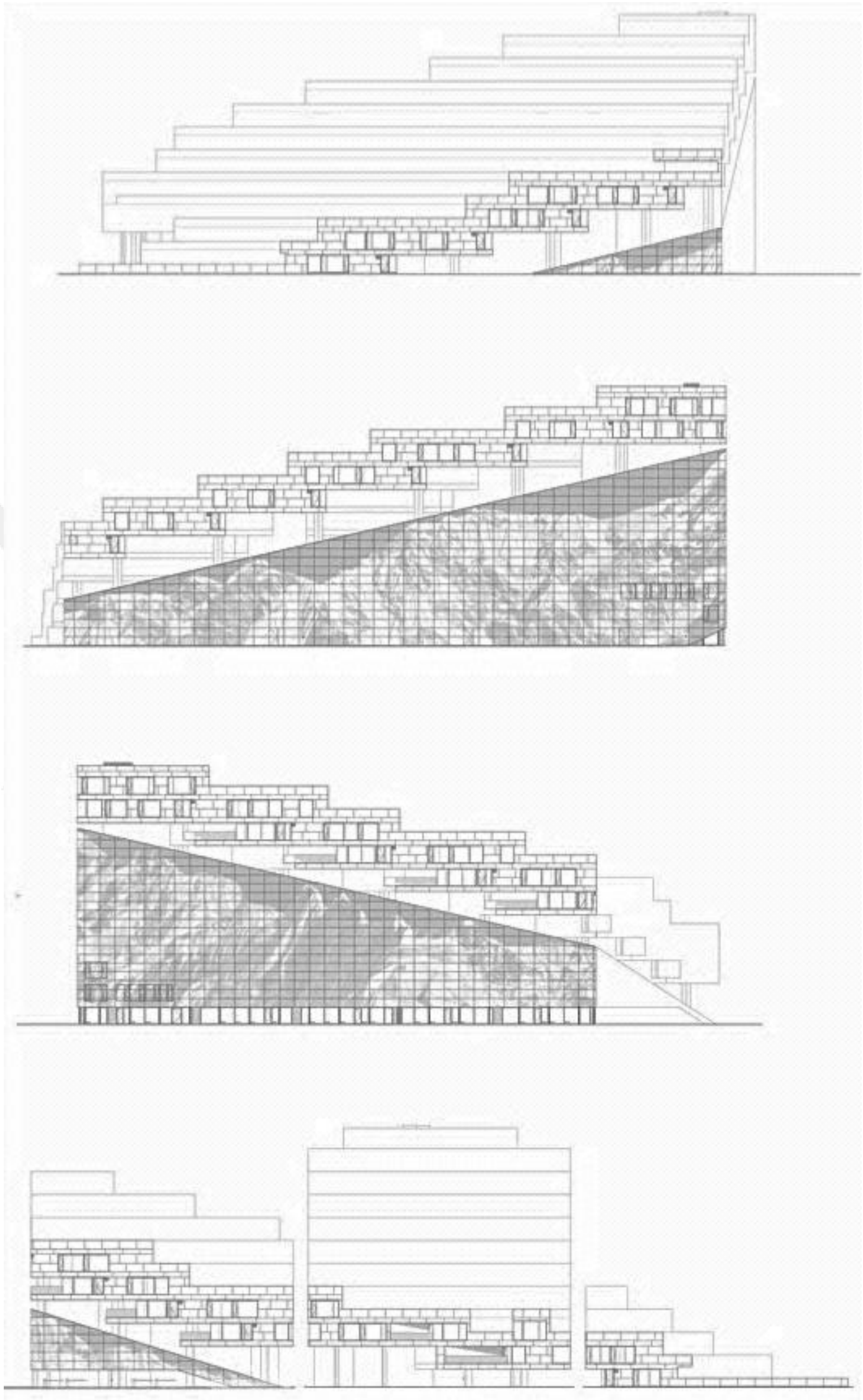


Figure 3.6 Elevation drawings of the Mountain Dwellings from the northeast to the east, BIG, Copenhagen, Denmark, 2008 (BIG's archive, 2008).

3.2 The Mountain Experience

The Mountain Dwellings attracts attention by simulating the atmosphere of living in hillside suburbia. In order to accomplish this, the architects created a project, which included not only the wrapped image of mountain applied to the building façade, but also other "mountain" experiences like climbing and taking in the view from the top. On two opposite sides of the building, the architects designed two long steel staircases that are attached to the perforated surfaces (Figure 3.7). One can go up all the parking levels through these steel stairs, and experience the full view of Ørestad, as if staring from the top of a mountain. The peak point of the staircase platform on the northwest corner of the building, where two opposite staircases merge each other, does not have a parking level connection; it climbs higher for providing an expanded city view (Figure 3.8). This experience is available for passersby and outsiders, as well as building residents, since the stairs have public accesses on both sides of the building. They become the means of creating sensual imitation, in other words simulating the affects of an authentic mountain. Unlike the visual imitation as a flat image, sensual imitation creates a new context for the reproduced mountain by adapting it to the new environment in Copenhagen. Through sensual imitation, the authentic experiences of being up above, and feeling cold and wind are replicated on the building. When one starts to climb up the staircase, the view expands more and more, while the wind starts blowing. Clearly, this does not provide an authentic experience of being on top of a mountain; what is provided is a new experience – that of being on top of a *simulated* mountain, of reaching this summit by passing below, entering through, and climbing up. The simulation of a mountain experience destroys the distance between viewers and the viewed building, and transforms the viewers into active participants.

The simulated mountain idea was to have been further reinforced by the installation of a climbing wall at the northern façade near the peak of the mountain image. The idea was sponsored by a local mountain climbers association and was to have been available for anyone who wanted to climb (McGrane, 2009). Through the building surfaces, the authentic experience of climbing a mountain would be

Figure 3.7 Steel staircase detail, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author’s archive, 2013).

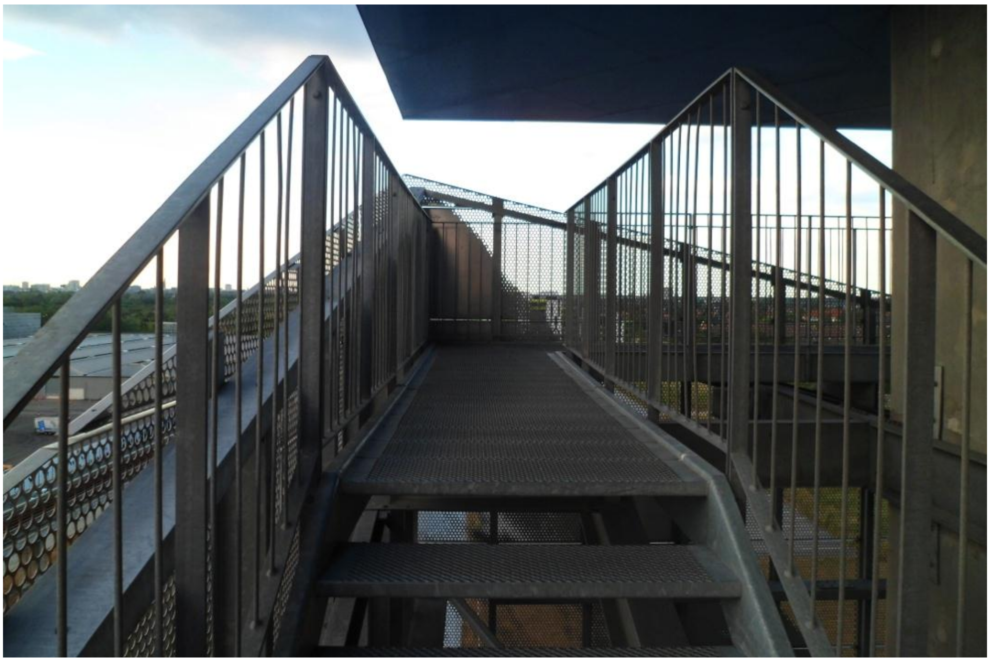


Figure 3.8 The top platform where two staircases merge, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author’s archive, 2013).

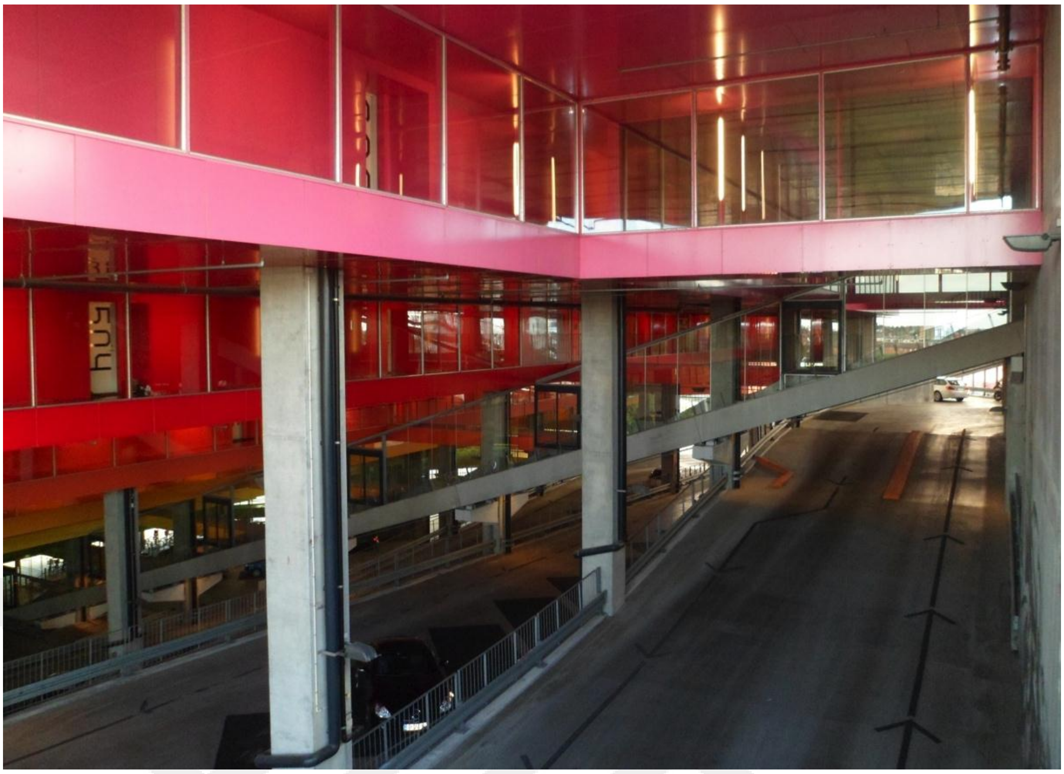


Figure 3.9 The sloping elevator and adjacent staircase from the ground floor to residential units, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

replaced by its equivalent performance on a simulated mountain. Though, the climbing wall was never built, and the residents usually ignore the long steel staircases, preferring the elevator and the attached staircase inside the building for a private access to their apartments and parking spaces (Figure 3.9). Nonetheless the potential for these bodily engagements with the experience of the simulated mountain is an important informant of the scheme that nuances the ontology of its "mountain" status, and contributes to the simulation by feigning the "mountain" experiences of climbing, feeling the breeze, and viewing from the top.

Simulated reproductions and hyperreal environments, as Eco (1986) emphasizes, make the people be satisfied with the reproduction, so that they do not feel the need to see the original. Hyperreality substitutes for the authentic, as the distinction between the original and the copy implodes. Returning to Disneyland, the Matterhorn Bobsleds in Disneyland, which is a steel roller coaster that passes through the replication of a mountain in Swiss Alps, is a significant example. In a critique of the Matterhorn Bobsleds, Charles Moore (2001a) suggests that the people find it more action-packed than the authentic Matterhorn in Switzerland, since the authentic one has only one surface on the outside and has nothing inside. As Moore (2001b) states, “Nobody thinks that that mountain is the Matterhorn or even a mountain… Yet the experience of being in that space is a real one, and an immensely exciting one.” (p. 128). Similarly, in the Mountain Dwellings, the obvious simulation makes it clear that the first intention of the architects is not to deceive people but to engage them in simulation. Accordingly, the mountain becomes something more of a mountain experience; more enthusiastic, more fulfilling, and much easily accessible than the authentic one.

3.3 Zooming In and Out

The snowy Mount Everest image, which covers an area of 4000 square meters on the Mountain Dwellings, is reproduced from a photograph, taken by the Japanese photographer Osamu Uchida. According to Bjarke Ingels (2010), the giant Mount Everest photograph that wraps the building on four façades is the largest black and white image in the world. Being created digitally by manipulating the original photograph taken in Nepal, the perforated image of the Mountain Dwellings was differentiated from its original, and was installed in Copenhagen with a different scale, resolution, and image quality (Figure 3.10). The process of reproducing the mountain image as an architectural surface consists of a series of performances of scaling, rasterizing, puncturing, manufacturing, and assembling. By means of digital medium, first of all, the original photograph was scaled up and rasterized. It was transformed into a composition of pixels to differentiate the black, white, and gray areas of the surface. The range of hues was matched with six different perforation sizes of laser-cutting machine, which perforated the thin aluminium material (Ingels, 2010). To create the unique façade of the Mountain Dwellings, one thousand and twenty aluminium plates were uniquely cut and joined together (Gallanti, 2008). To be installed on the building, the perforated image is folded into four huge sections, and then wrapped around the parking units leaving the residential units out in the open (Figure 3.11).

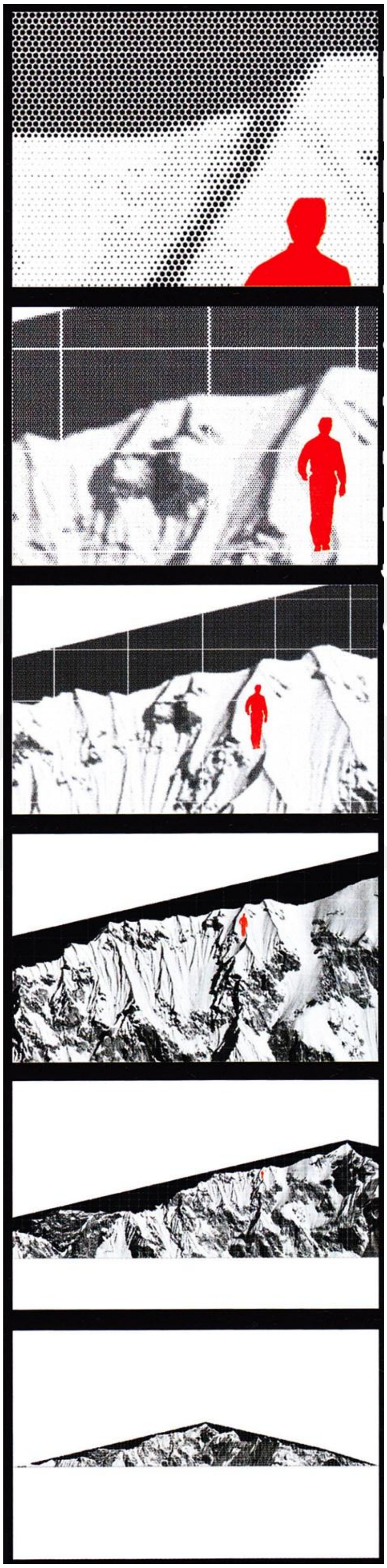


Figure 3.10 The mountain image that wraps the building (Ingels, 2010, p. 84).

After the installation, the perforated surfaces ended up with producing two different effects, depending on viewing distance. The image of Mount Everest is clearly perceived only when it is viewed from a far. The perforated characteristic of the surface teases viewers to approach in order to see more clearly, but, reversing the rules of perspective, the image dissolves as one comes closer to it. Distance, in this sense, becomes an essential element of the composition of the image. If people come too close to the building, the mountain image loses all its attributes and dreamy affects. Looking at a close range, the image turns into a regular aluminium surface with joint deformations and material corruptions. The dreamy affect of the mountain image pulls the viewer to itself, whereas disruptions on the surfaces turn her/him back to materiality. The perforated surfaces composed as a giant mountain image is reduced to material reality up close, which leads to the collapse of simulation, as the surface becomes nothing more than material *per se*.

The mountain image is clearly seen only when the viewer stands at the center of one of the façades. Conversely, when the viewer stands at one of the corners of the building, the mountain simulation collapses because viewers begin to see the folded parts of the image (Figure 3.12). Furthermore, the image is perceived differently at night. Since it is artificially lit throughout the colorful corridors and the parking space, a transparent, shiny, and colorful mountain image comes forward (Figure 3.13). The ornamental surfaces, in this sense, seem as if they achieve the original meaning of the term photograph, which etymologically implies “drawing with light” (Skeat, 2013). The effect is created by means of the dense and loose areas of aluminium plates, as well as the colorful corridors. The lights that pass through the dense areas of perforations transform the building into a negative photograph by making the mountain image appear glowing brightly and colorfully.

Each perforation plays a specific part in the composition of the image. In some parts, perforations are so large and dense that there is almost no visual restriction between inside and outside. The surface becomes a translucent element, which hides little (Figure 3.14). Also performing as natural ventilation, one can quite feel the wind breeze that passes through large perforations. Through these sensorial qualities,

Figure 3.11 North view detail of the Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

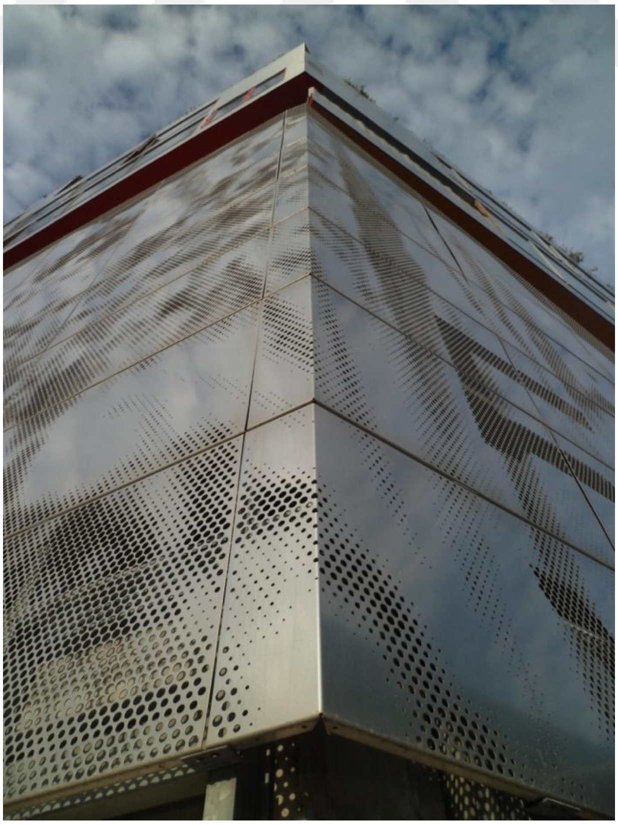


Figure 3.12 Detail from the southwest corner, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

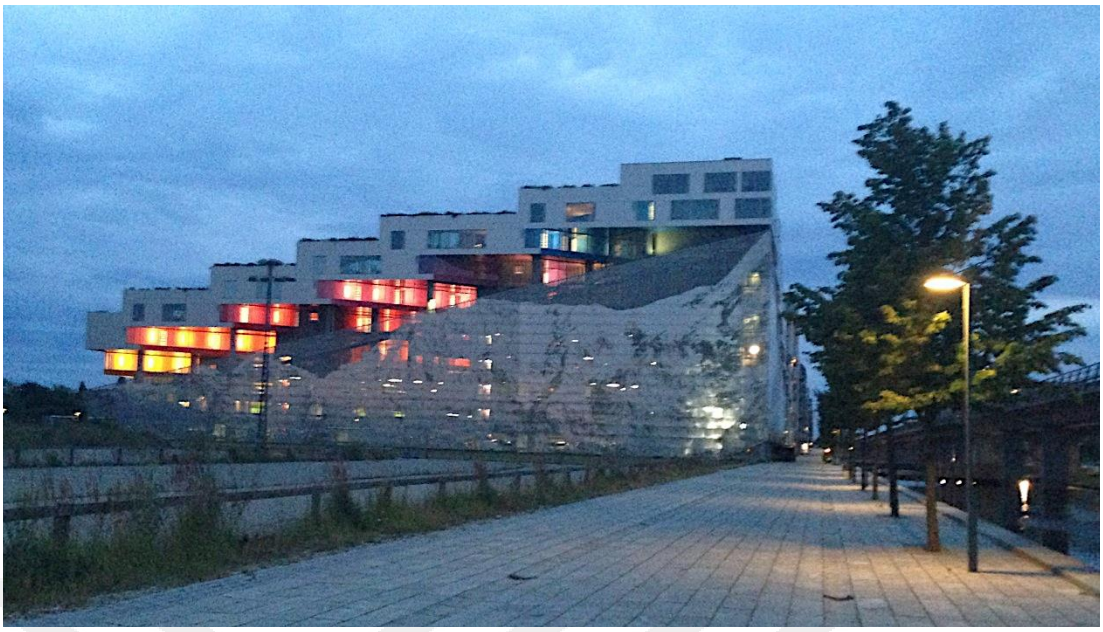


Figure 3.13 Night view, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

Figure 3.14 Façade detail of the Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

perforations transform the plain aluminium surfaces into a texture of affects. In contrast with the large and dense holes, some areas have fewer and smaller perforations so that the interior space of the parking units is almost completely hidden from outside (Figure 3.15). With these shifting qualities, the surface becomes so ambiguous that it belongs to neither inside nor outside. It allows passersby to drift into and walk through the five-story parking garage.

Inside the parking area, when one looks at the surface closely, one does not perceive the mountain image. Instead, one perceives outer details, such as I-beams support the aluminium panels, the structural system, car barriers attached to columns, ramps and stairs adjacent to the surface, and outside view that is partially seen through perforations (Figure 3.16). On the outside, when one comes close to the building, surface perforations are perceived individually, making the mountain image appear in low-resolution. Looking closely, one perceives the variety of perforations, the actual color of aluminium surfaces, seams, small elements that hold the joining parts, I-beams and parked cars inside that are partially seen through perforations.

With the possibility of close and remote perception, the surfaces achieve the characteristics of "zooming in and zooming out." With each zoom in, the mountain image seems more transparent and vague as simulation is dissolved, while the surface manifests different textural features. With each zoom out, the materiality of the surface disappears, and the mountain image becomes clear again. The various degrees of perception make viewers play along with the ever-changing transparency of the façades.

3.4 This is not a Mountain!

In a 2009 edition of the design magazine *Dwell*, the Mountain Dwellings project is introduced in terms that associate it with a real mountain: “A mountain rises from the flatlands. No ordinary geological behemoth, this sloping peak is a feat of residential engineering” (McGrane, 2009, p. 84). Although the building has different façade characteristics other than the mountain image, such as the cascading green

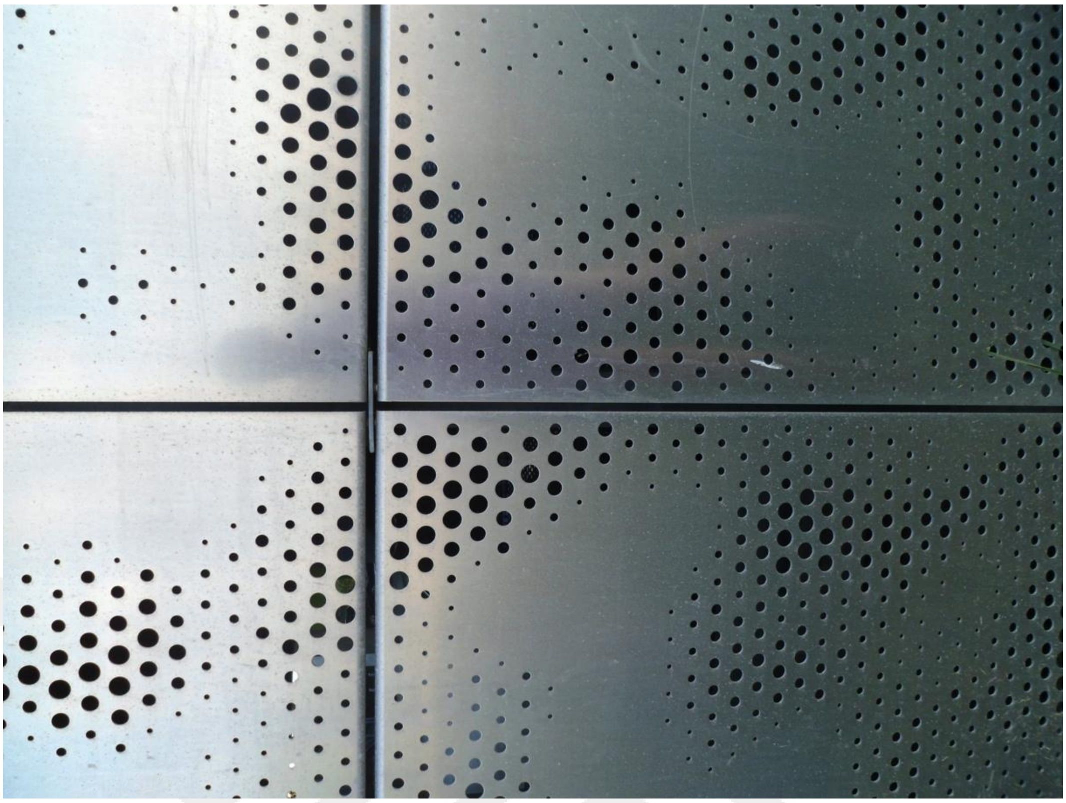


Figure 3.15 Façade detail of the Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

Figure 3.16 Interior view from the parking space, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

terraces on the eastern façade and the car park entrance gate on the southern façade, the simulated mountain image gives the building its primary character allowing it to be identified as a mountain (Figure 3.17). Besides, above the entrance gate of the parking space on the southern façade, a word in large font is perforated on the mountain image (Figure 3.18). The word is read as “Bjerget,” which means “Mountain” in Danish. The building emerges as a replicated mountain in terms of both visual image and spoken language through the imitation of generic form and name. In addition to language and image, the word “Bjerget” becomes a textual element as a contribution to mountain simulation. Although it is not literally a mountain, the architects proclaim it as such by writing “mountain” on it.

The contradiction of text and image is handled extensively by Michel Foucault in his treatise *Ceci N’est Pas Une Pipe* (*This Is Not a Pipe,* 1973). He discusses the issue of representation in art through the Belgian surrealist artist René Magritte's painting, *The Treachery of Images* (*This Is Not a Pipe*, 1928). In the painting, Magritte depicted a pipe and wrote the phrase “Ceci n’est pas une pipe” below, which is translated as “this is not a pipe” (Figure 3.19). By combining images and words, Magritte noted that the painting was not a real pipe; rather, it was a representation of a pipe. Separating text and image, he pointed to the distance that was supposed to exist between representation and reality (Paquet, 2006). As he stated clearly, “If I had written ‘This is a pipe’ under my picture, I would have been lying!” (as cited in Paquet, 2006, p. 9). Dwelling on Magritte’s painting through a post-structuralist look, Foucault emphasizes that language is a construct. He therefore criticizes the common conception of reducing texts to images and vice versa, since texts refer to the representation of images, rather than the real objects (Foucault, 1982). For him, there is a constant struggle of sovereignty between what is seen and what is said; yet, in fact, there is not a relationship between the two.

In contrast to Magritte and Foucault’s statements, the architects of the Mountain Dwellings claim that the building *is* a mountain by marking the reproduced image as a mountain. However, neither the building is literally a mountain nor the text “Bjerget” proves that it is a mountain. In this sense, the architects destroy the

Figure 3.17 South view, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

Figure 3.18 Parking space entrance, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

Figure 3.19 René Magritte, The Treachery of Images (This is Not a Pipe), 1928, Canvas, 60.33 x 81.12 cm, Los Angeles County Museum of Art (LACMA).

distance between representation and reality. In accordance with the simulated mountain, the concepts of reality and imitation become interchangeable by blurring their boundaries in the Mountain Dwellings.

3.5 Lifting Up, Peeking Out

Although the architects of the Mountain Dwellings reproduced a mountain by means of a photographic image, the building has many design decisions that disrupt the wholeness of the simulated image, and render the simulation invisible on some surfaces. Yet these details become noticeable only when the building is perceived from up close or from specific viewpoints. For instance, on the southern façade, the number 55 is written with large font as an indicator of the building address (Figure 3.20). In spite of being perforated with the same technique of the mountain image, the huge mark of 55 is not consistent with the simulated image. Secondly, on the western façade, the mountain image is elevated from the ground to the first floor

(Figure 3.21). The ground floor opens up to allow views into public spaces, such as restaurants and galleries through conventionally glazed transparent windows. The passersby on the sidewalk can see into these public spaces; yet, unless they turn their heads up, they do not see the perforated façade with a mountain image. Directing gazes away from the simulated mountain, as if lifting up the veil of a simulacrum, the windows allow a full display of interiors for passersby.

These design decisions are deliberate moves, which accommodate the necessities of a mixed-use housing complex that provides landscape views from all apartments. The architects have adopted this single photographic image as an architectural element through which to play with the residents' and viewers' perceptions of reality, simulacrum, and spatial affect. In this sense, their design approach recalls the postmodern use of false fronts and scenographic compositions with no intention of deceiving anyone. Associated especially with the works of the pioneering postmodern architects, Robert Venturi and Denise Scott Brown, such fictive architectural details are quickly grasped as counterfeits, which typically serve the function of evoking associative historical attribution, representation, and reminiscence. As Scott Brown (2004) notes, “We try to ensure that our allusions are representations, not copies, of historic precedent, that they don't deceive. You know what the real building consists of beneath the skin or peeking out from behind the facade” (p. 180). In the case of the Mountain Dwellings, when viewed from outside, the steel structure of the façade that also holds the staircases reveals itself explicitly on some parts of the mountain image (Figure 3.22). Rather than been completely hidden behind the image, as in the words of Scott Brown, the structure "peeks out" from behind the surface.

According to the architectural theorist Stanislaus von Moos (1999), the two-dimensional signboards in Venturi and Scott Brown's works make the viewer stand at a critical distance from the building. The building does not act “as if”; rather, the architects point to a gap that exists between the authentic and the reproduced (Stanislaus von Moos, 1999). Not surrendering to the simulacra, viewers expose the gap or the critical distance when they perceive the two-dimensionality of

Figure 3.20 Façade detail, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

Figure 3.21 Façade detail, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

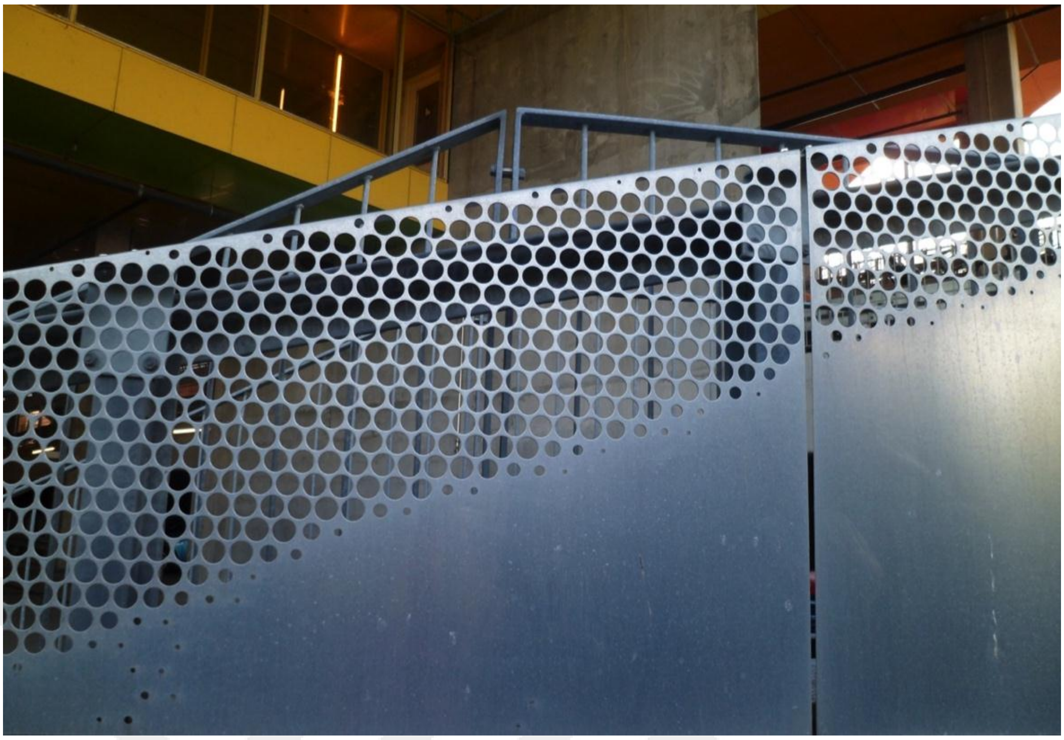


Figure 3.22 Façade detail, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

scenographic elements in the architecture of VSBA. In a similar vein, the architects of the Mountain Dwellings emphasize frontality by means of the giant flattened image that wraps the building. Because of the interior I-beams that support the façades, it is apparent that the mountain image has a front and a back side (Figure 3.23). The mountain image is perceived vividly from the outside but it is impossible to see the whole image from the inside. One can only have a partial glimpse of the mountain image, since the perforated surfaces are seen as dark porous materials.

When the architectural elements of the Mountain Dwellings obtrude to obscure the illusionary simulacrum of the mountain, in other words when they are "lifted up" or when they "peek out," they reveal the materiality of architectural construction and leave the perception of the simulated mountain aside. Although the image comes forward explicitly as a scaled-down imitation of Mount Everest, it is distinguished from the authentic mountain, which is gigantic, majestic, and sublime, in the blink of an eye (Figure 3.24). However, the disbelief on the simulation is suspended by the viewers and the residents, who willingly participate in the "mountain" experience.

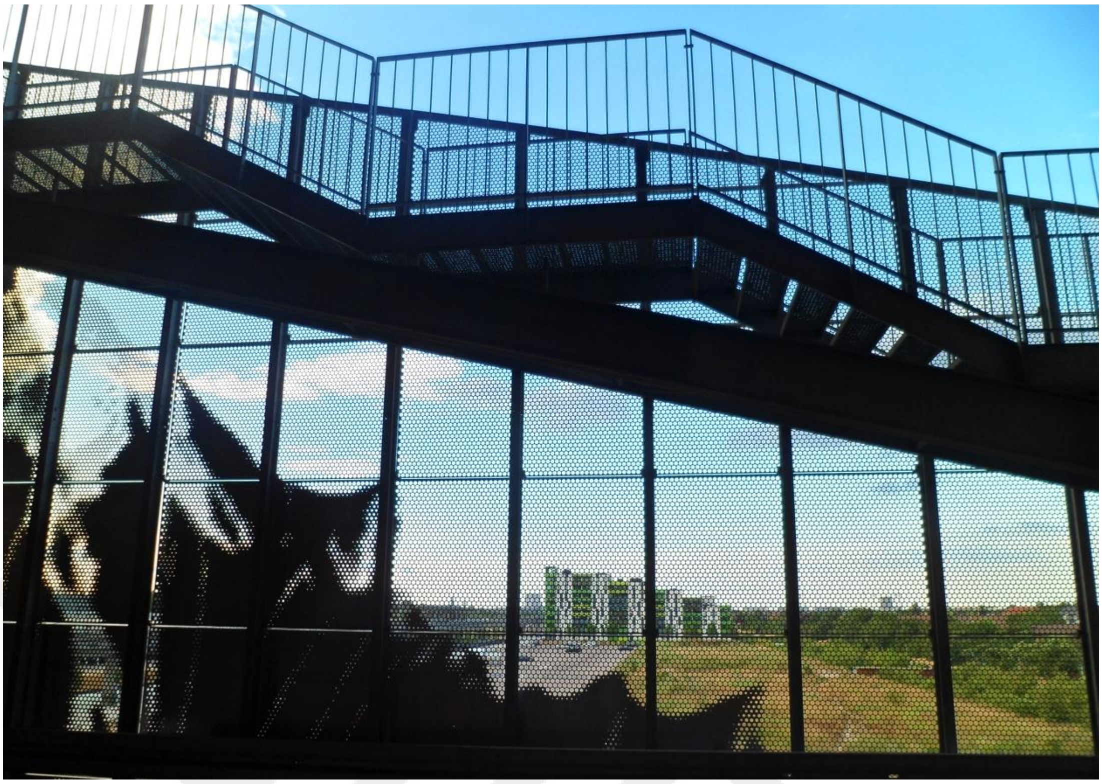


Figure 3.23 View from inside, Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

Figure 3.24 North view of the Mountain Dwellings, BIG, Copenhagen, Denmark, 2008 (Author's archive, 2013).

Through association with the concepts of spectacle and enchantment, the mountain image makes the building a landmark to be viewed and experienced in Ørestad district of Copenhagen. As a result, the building emerges as a mountain within a flat landscape, much like a cluster of housing units that sits on a mountain slope. The visual characteristics of the surface as a simulated mountain supersede the function of perforated façades as enclosing elements for the parking space. Yet the main intention of the architects in the development of simulation is not to copy a flat mountain image, but to propose an "improved" version of suburbia by bringing green gardens and a tranquil atmosphere to an urban district. The residents of the Mountain Dwellings may have never lived in suburbia or never been to Mount Everest in Nepal, but through the building, they have a chance to experience a suburban lifestyle and to climb a mountain. Similar to the Matterhorn Bobsleds of Disneyland, the Mountain Dwellings provides a new and a different mountain experience than any seen before. In contrast to the traditional notion of simulation itself, which distinguishes the authentic from the imitation, and precedes from the authentic to the imitation, in the case of the Mountain Dwellings, it is the feature of simulation that gives the building its authentic and unique character. This idea may be further elaborated as the end of authenticity in the traditional sense, or it may also mean that authenticity can be produced ad infinitum in contemporary architecture. In the plain landscape of Ørestad, the Mountain Dwellings emerges as a simulacrum of a mountain; yet this is not a mountain!

CHAPTER FOUR
WHEN ZUMTHOR MEETS WARHOL: ARLANDA HOTEL

Adolf Loos (1985) states that building façades should be neutral and inconspicuous, since they belong to the public domain. Beginning with Loos, the idea of blank and "faceless" façade was commonly used in the twentieth-century Modernism. A century later, the understanding of façade as being the neutral public face of the buildings has changed; as it is now conceived more of an urban adornment. This chapter focuses on one of the techniques of decorating building surfaces in contemporary architecture, which is to compose portraitures. In contrast to Loos' view of displaying blank surfaces, giant portraits in contemporary architecture are often displayed for the public view. The chapter explores the issue through the Arlanda Hotel design of 2007 by BIG, as it unfolds the concepts of power, memory, history, and self-display through its façades, and unifies the representative role of ornament with the ironic stance of BIG (Figure 4.1). It also makes use of BIG's monograph, *Yes is More: An Archicomic on Architectural Evolution*, as a tool to further investigate the textual and visual representation of the building (Ingels, 2010).

4.1 “Welcome to My Hometown!”

Arlanda Hotel is one of the significant designs of BIG, which dates back to 2007. Being yet unconstructed, the project is on hold after its schematic design phase (A. K. Pedersen, personal communication, April 18, 2013). The project is designed within an area of 25,000 m2 near Arlanda Airport in Stockholm, the capital city of Sweden. It is designed to sit on an artificial topography, which is a base for a vertical triangular prism (Figure 4.2). The prism contains hotel rooms and their service spaces, whereas the topography consists of public spaces, such as conference rooms and hotel facilities. Since the project area is in a plain and relatively unoccupied district of Stockholm, the hotel is planned to be perceivable from a distance, standing alone with its enigmatic surfaces.

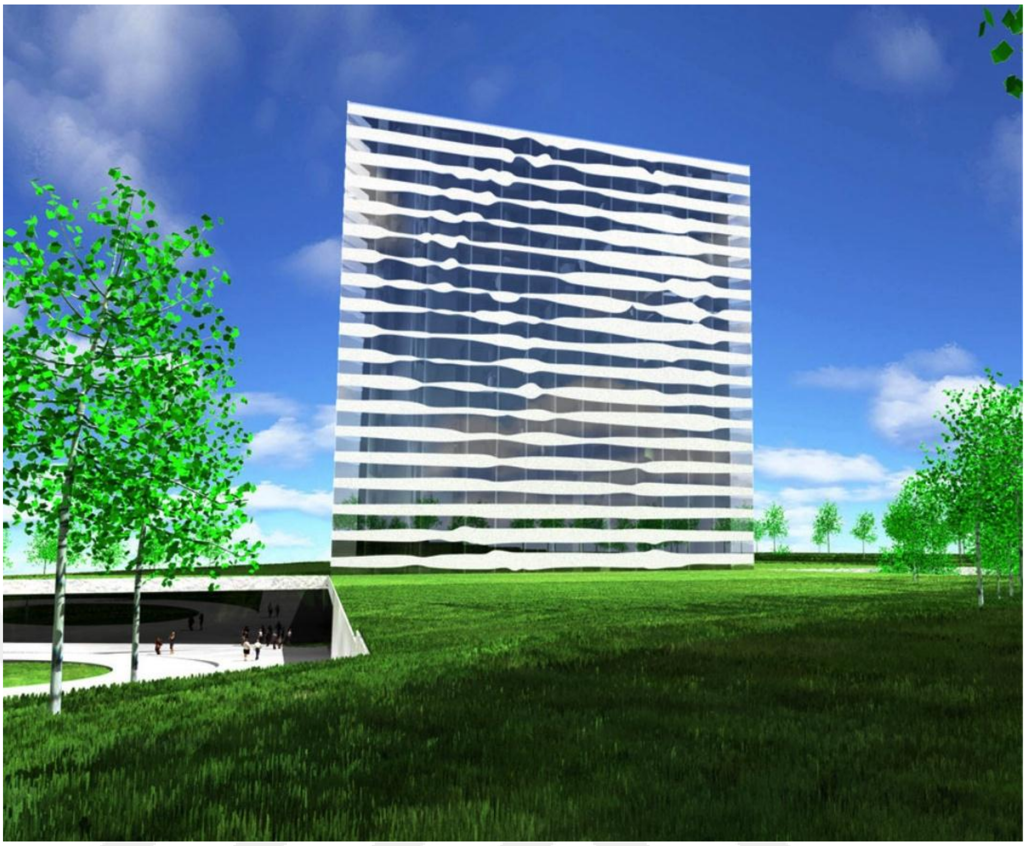


Figure 4.1 BIG, Arlanda Hotel, Stockholm, Sweden, 2007 (BIG’s archive, 2007).

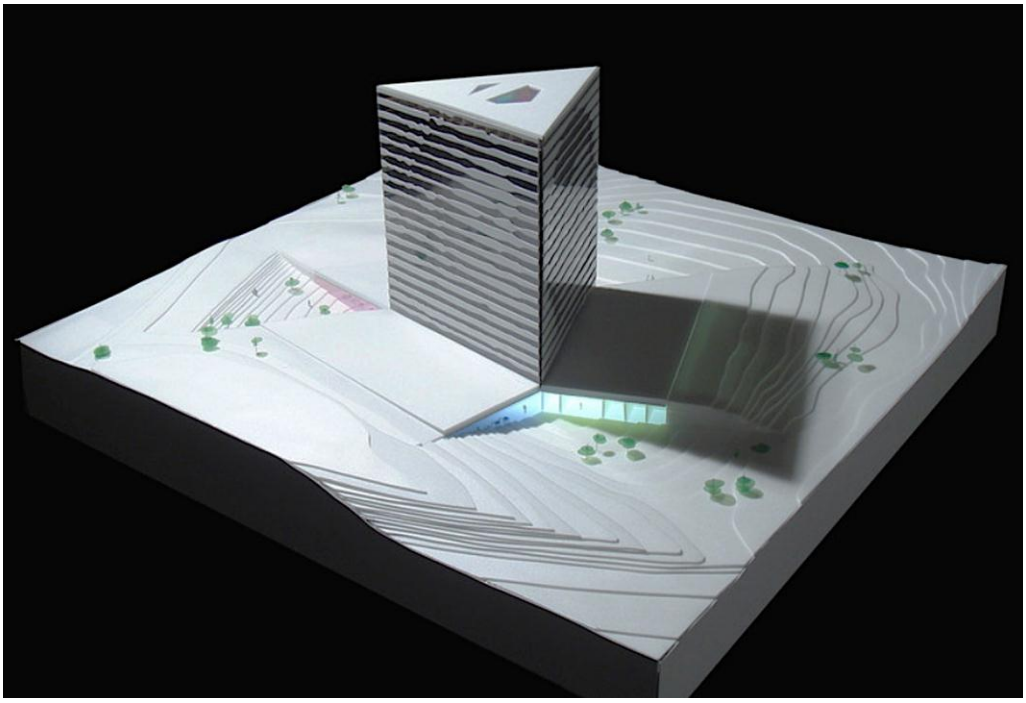


Figure 4.2 Model of the Arlanda Hotel, BIG, Stockholm, Sweden, 2007 (BIG’s archive, 2007).

The idea of representing royalty on the façades of Arlanda Hotel derived from the architects' very first impression of Stockholm. When a team of architects from BIG arrived at the Arlanda Airport, they were inspired by the depiction of famous Swedish people, which adorn the walls of the airport (Ingels, 2010). The luggage claim area of international arrivals section was decorated with a long series of billboards, where Stockholmer celebrities, from Ingrid Bergman to Alfred Nobel were appearing with cheerful images. Next to each image, one could clearly read the sentence, "Welcome to my hometown." It seemed as if celebrities were saluting foreigners that arrive Stockholm. Billboards came to an end with a large one at the luggage claim exit, where a pleasant image of the Swedish Royal couple, King Carl XVI Gustaf and Queen Silvia appeared (Figure 4.3). Deriving from this first impression of the city, the architects intended to design the hotel as an extension of the greeting ceremony. They created surfaces with ambiguous depictions of the Swedish Royal family: Crown Princess Victoria, Princess Madeleine and Prince Carl Philip, the daughters and the only son of King Carl Gustaf and Queen Silvia.

According to the site plan, the building is designed in such a way that it is seen from various locations (Figure 4.4). When people leave Arlanda Airport and set foot in Stockholm, they would come across the image of Princess Victoria on the building surface. She would, figuratively, salute them and say, "Welcome to my hometown." When people approach the building area from north, they would come across the image of Prince Carl Philip. Lastly, when people leave Stockholm and return to the airport, they would see Princess Madeleine as the last image of Stockholm.

The ornamental character of the building, which is composed through the portraits of the princesses and the prince, is created by cutting solid surfaces out by a CNC machine, and placing transparent glasses in-between in order to let sunlight and air into the hotel rooms (D. Pahhota, personal communication, July 31, 2014). The horizontal windows associate with a contemporary interpretation of the ribbon windows of Modernism. According to Modern architects, horizontal windows represent a new way of vision. They propose wide openings of horizontal vista, rather than the restricted visibility of partial landscape view (Leatherbarrow &

Mostafavi, 2002). Similarly, in the Arlanda Hotel, each horizontal ribbon window is designed to provide an unobstructed landscape view (Figure 4.5). In accordance with the composed portraits, some rooms have large openings, whereas others have narrow slits. Yet even the toilets of the rooms at the ends of the corridors have landscape views. What makes the portraits on the façades come forth so intensely is the concealment of vertical structural system inside. The solid elements of façades are designed as non load-bearing elements, and are attached to the walls in-between rooms (Figure 4.6).

Figure 4.3 Interior view from the Arlanda Airport, Stockholm, Sweden (BIG's archive, 2007).

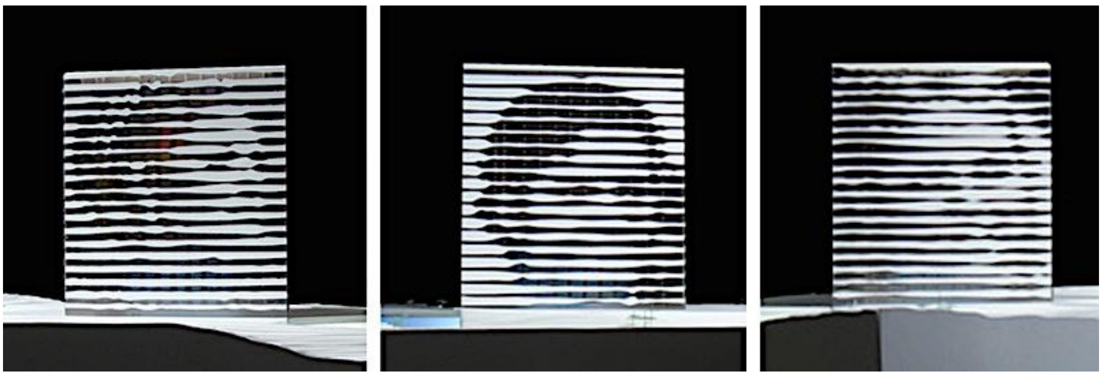


Figure 4.4 Façades of the Arlanda Hotel, BIG, Stockholm, Sweden, 2007 (BIG's archive, 2007).

Figure 4.5 Interior view of the Arlanda Hotel, BIG, Stockholm, Sweden, 2007 (BIG's archive, 2007).

Figure 4.6 Surface detail of the Arlanda Hotel, BIG, Stockholm, Sweden, 2007 (BIG's archive, 2007).

The building form as a triangular prism contributes to the perception of portraits as two-dimensional surfaces (Figure 4.7). Referring each façade as a “royal portrait on a postage stamp," Ingels (2010, p. 340) states that a close look at one of the façades from one edge of the building would render the other two façades invisible (Figure 4.8). The artificial topography makes the royal images fully exposed to the city by being a base for the perception of images. The ornamental façades take so much attention that one would not even comprehend it as a building; rather, confuse it with an advertising billboard or an urban sign. Refashioning the architectural theorist Karsten Harries’ (1998) reading of the relationship between representation and re-presentation, the cut-out surfaces of the Arlanda Hotel represent royal figures of Sweden and re-present the ornamental surfaces as signs. Loaded with impressions and affects, the building emerges as an icon covered with instantly recognizable royal figures in the city. Performing as an essential element of the greeting ceremony, ornaments as urban portraits transform the surfaces into a pure spectacle. They make the viewer focus on nothing but the decipherment of images as royal figures. The building thus turns into an enigma in-between a hotel and an image.

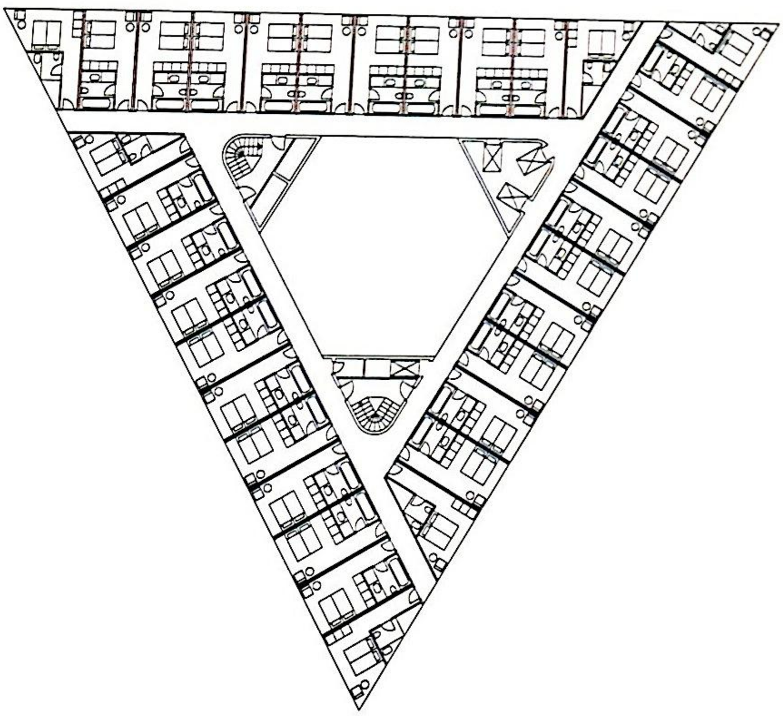


Figure 4.7 Typical floor plan of the Arlanda Hotel, BIG, Stockholm, Sweden, 2007 (BIG’s archive, 2007).

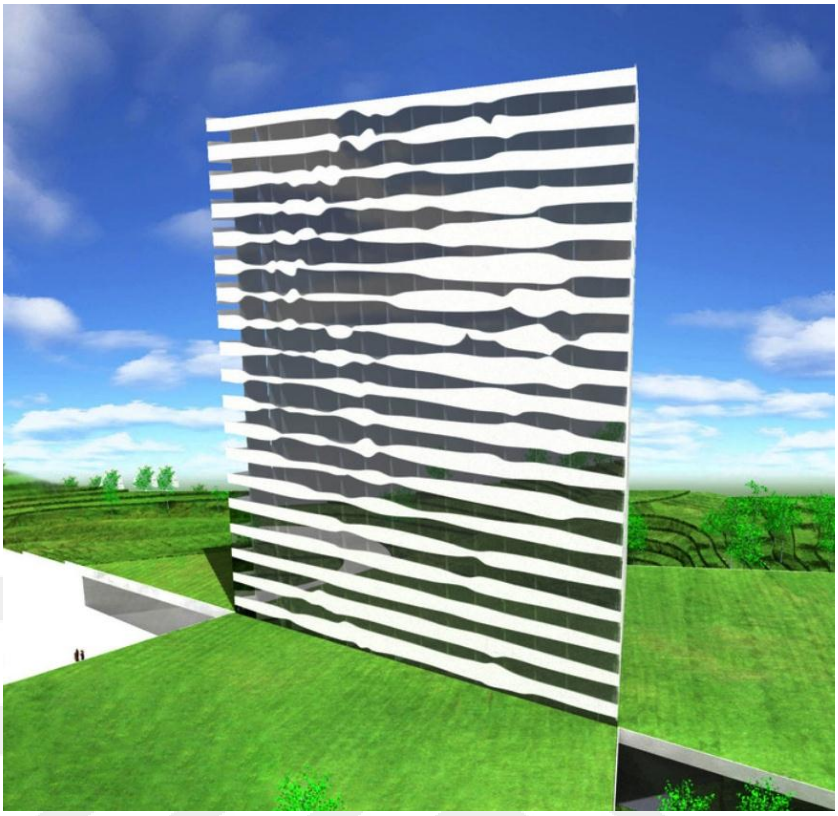


Figure 4.8 Arlanda Hotel, BIG, Stockholm, Sweden, 2007 (BIG's archive, 2007).

4.2 Urban Portraits as Extension of Power

When the ornamental façades of the Arlanda Hotel transform the building into royal images, they emerge as the embodiment and extension of power by associating with symbolic attributes. Through this association, the ornamental façades emerge as a representation of authority and an epitome of ideological aesthetics. According to Foucault (1997), representing power is not analogically related to a massive and huge building. In order to represent power in depth, symbolic connotations of a building should exceed superficial and analogical approaches. Ornament as a representation of authority connects with the signification of ideology, status, and position, as power is exposed to public by representing title and identity (Critios, 2004; Schmitter, 1996). The ornamental façades of the Arlanda Hotel represent the symbolic narrative of power by being materialized as giant portraits of royalty. In a symbolic manner, the urban portraits construct identity, affiliation, and power of the royal family.

Portrait painting as a representation of title and identity dates back to ancient times. In antiquity, various forms of statues, reliefs, wall paintings, and metal coins represented physical characteristics of the person in depiction. During the medieval age, position and status were essential representations of portrait depictions. Portraits became significant medium of representing affiliation, status, and nobility from the sixteenth to the eighteenth-century. Back then, leaders and royalties were portrayed in order to show and perpetuate their authority, power, and love. In these portraits, their faces and bodies as physical forms were transformed into ideal forms (Woodall, 1997). The capacity and energy of portrait paintings are also emphasized by Alberti (1956), as he conceives portraiture through the dichotomy of dead and alive or absence and presence. As he explains in his 1435 book *De Pictura*, the mortal life of a dead person transforms into eternity by means of portrait painting. Defined as the metaphor of body politics, or the absolutist portraiture, ideal portrait depiction is based on the idea of omnipresent authority figure. In other words, nothing can escape from the sight of the king, since he is everywhere and sees everything. Consequently, particularly in Europe, large portraits of the king had been painted and used to substitute him when he had been abroad (Mirzoeff, 2009). Conceiving this portrait as the representation of kingship, courtiers had regularly paid their respects to it. Otherwise, it would be counted as offense. Designated as "the contempt of Majesty," it was forbidden for the courtiers to turn their back on the portrait, as it had been the king himself (Mirzoeff, 2009). Such metaphor-laden portraits in particular, represent the ideal features of authorities, which are not affected by the age and other attributes of individual royalty. The manifestation of power with regard to emperor is further elaborated by Foucault (1977) in the "Panopticism" section of his treatise *Discipline and Punish: The Birth of the Prison* (*Surveiller et Punir: Naissance de la Prison*).

The significant role of portraits continues in contemporary age. Today, in the age of neo-capitalism, the content of portraiture has expanded from the aristocrat figure to the building investor. In this context, Bjarke Ingels (2010) explains that when the Danish architect and designer Arne Jacobsen was commissioned to build the Radisson Blu Hotel in Copenhagen in the 1960s, he also painted a portrait of his client, Alberto Kappenberger. The client was both the manager and the investor of the hotel; therefore, as homage to him, his portrait was placed on one of the walls of the Alberto K. Restaurant at the hotel (Figure 4.9). Ingels (2010) notes that, being influenced by Kappenberger's portrait, BIG intended to pay homage in the VM Houses project. On the entrance façades of the M-houses, the architects applied ceramic tiles of ten different colors, which compose two portraits of building investors (Figure 4.10). The end product became a pixelated artwork of colorful ceramics, which Ingels (2010) coins the term of the "thumbnail resolution portrait" (p. 74). Referring to computer terminology, thumbnail resolution is associated with low-resolution image quality. Much like the perforated surface of the Mountain Dwellings, the façades of the M-houses constitute images when they are seen from a distance. Being colorful ornaments in human scale, the portraits salute people as they enter the building. In the VM Houses project, Ingels (2010) justifies BIG's pragmatic approach of portraiture through the intention of overcoming blank surfaces and cold building materials. From their point of view, colored ceramics would improve the appearance of the building to a certain degree. Yet he subtextually admits that the building investors agreed to provide budget for the ceramics only when they had learned that it was their portraits that would be attached on the walls.

Integrating the portraits of building investors as a building element resonates with the former idea of ornament as a representation of social status. Until the nineteenth-century, one of the roles of ornament was to indicate the title, position, and personal achievements of the building owner (Picon, 2013). Being an important part of culture, ornament was a distinctive representation of status and prestige. This role is especially seen on the façades of royal buildings, such as parliaments, conference halls, and royal residences. As a case in point, Hofburg Palace in Vienna, which consists of residences and conference halls of royalty, is adorned with coat of arms and emblems of the royal family. During the reign of the Emperor Franz Joseph I, a new extension was added to the building complex in the late nineteenth-century. Named as St. Michael's Wing, the new building was constructed at St. Michael's Square, across Goldman & Salatsch Building (1909), which was built a few years later by Loos. At the top of the main entrance gate of the wing, a poetic and shiny ornament is clearly visible (Figure 4.11). Elaborated in stone, four angels are

Figure 4.9 Portrait of Alberto Kappenberger, Arne Jacobsen, Radisson Blu Hotel, Copenhagen, Denmark (Hans Nerstu's archive, 2007).

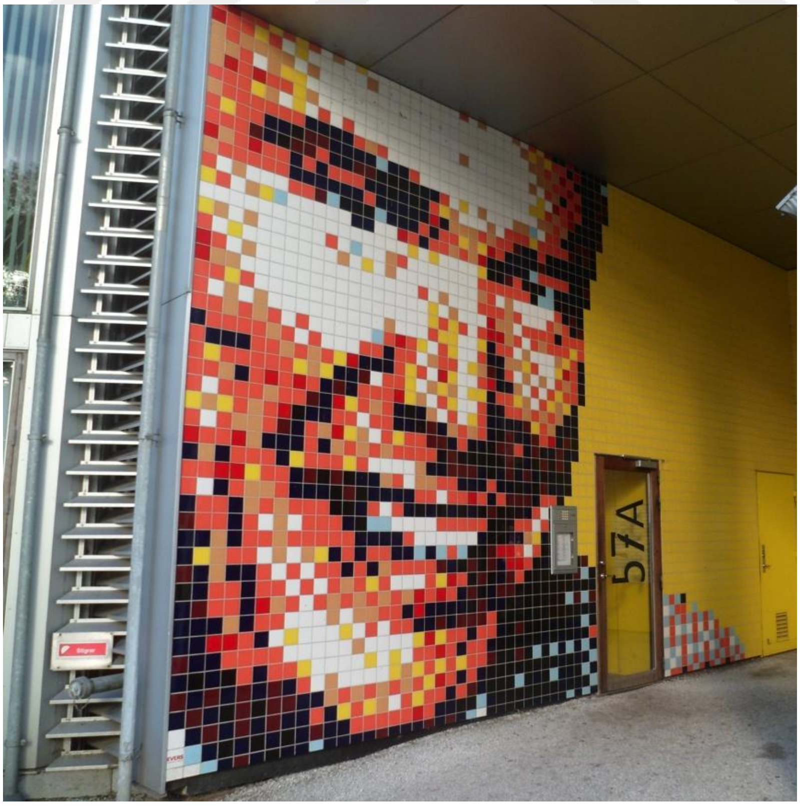


Figure 4.10 Surface detail of the VM Houses, Copenhagen, Denmark (Author's archive, 2013).

Figure 4.11 Façade detail of St. Michael's Wing, Hofsburg Palace, Vienna, Austria (Author's archive, 2008).

depicted as they carry the coat of arms of the emperor. Two of the angels play trumpets, as if they are announcing the emperor to public. To a great extent, in this building, ornament performs as a symbol to emphasize title and power, as well as a visual record of history.

The façades of the Arlanda Hotel do not symbolize the title of the building owner or investor; rather, they depict the royal figures of Sweden. By signifying the status of Swedish authority, the façades reveal the significant role of ornament as urban portraits, which connect with power and authority more than memory and history. On the other hand, the McCormick Tribune Campus Center at Illinois Institute of Technology in Chicago, was designed with the intention of preserving the memory of specific figures in architectural history and recording their history (Figure 4.12). The campus center was built by the Office for Metropolitan Architecture (OMA) in 2003 in collaboration with the graphic artist Michael Rock, who designed a series of icons that symbolize the student life at the university (Figure 4.13). The small icons

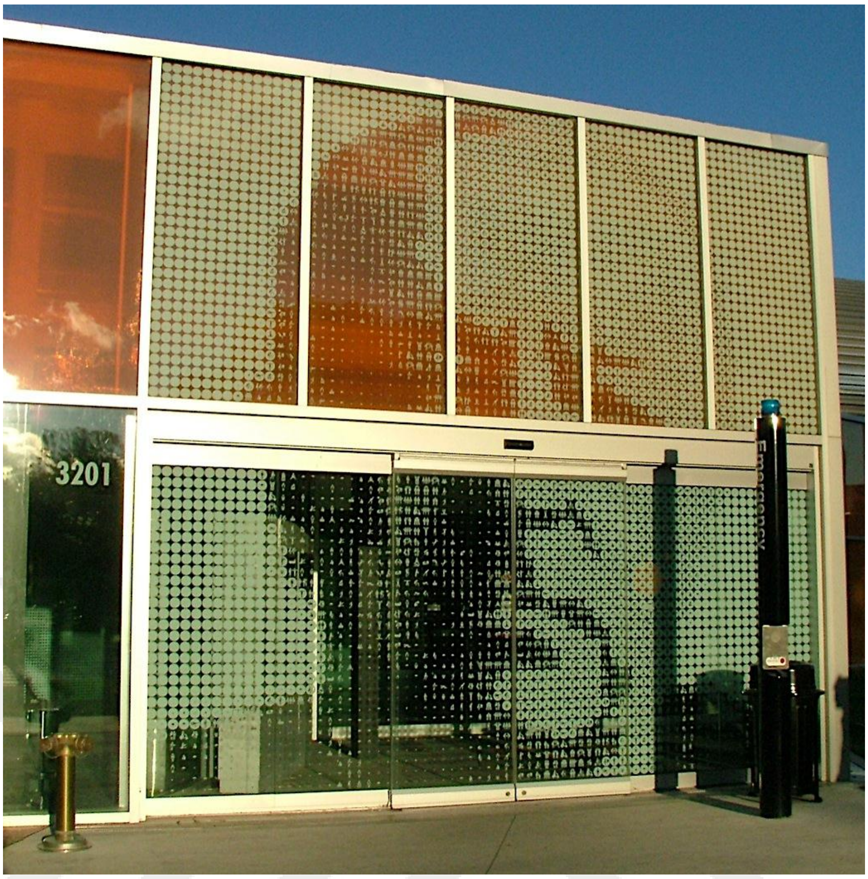


Figure 4.12 Detail from the entrance façade of McCormick Tribune Campus Center, Chicago, 2003 (Açalya Allmer’s archive, 2004).

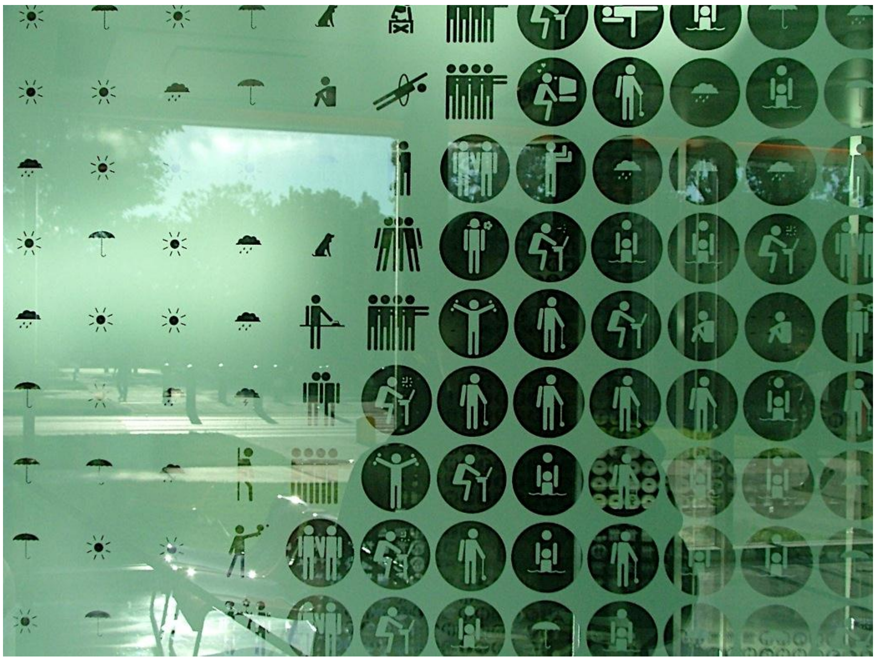


Figure 4.13 Detail from the entrance façade of McCormick Tribune Campus Center, Chicago, 2003 (Açalya Allmer’s archive, 2004).

were engraved on the glass walls in order to constitute several huge portraits from a distance. On the entrance façade, the icons form a pixelated portrait of Mies van der Rohe. Since he designed the campus master plan, many of the IIT buildings, and also headed the architecture department in the mid-twentieth-century, OMA pays homage to the modern architect and preserves his memory. Inside the building, translucent glass walls compose pixelated portraits of many IIT founders including Mies.

Ingels states in an interview that the composition of ceramic tiles on the walls of the VM Houses, was a significant example of architectural detailing, as well as it added a sense of history and identity to the building and the project site (Weiss, 2012). In the case of the Arlanda Hotel, the facades take over the role of the absolutist portraiture, as they become the extension of authority and power.

4.3 Yes is More!

When Ingels (2010) elaborates the design process of the Arlanda Hotel, he uses ironic expressions, such as “being reduced to facade architects”, “building a hotel with a royal face treatment”, and “Zumthor meets Warhol” (pp. 339-341). Using these expressions as a part of design input, Ingels develops his design ideas through the binaries of rational and irrational, ordinary and unusual, serious and humorous. Being previously a postmodern tool, irony closely associates with the works of Venturi and Scott Brown. Recalling and reinterpreting postmodern aspects, irony re-surfaces in contemporary architecture especially in BIG’s works. In a recent interview, in conformation with this view, Ingels refers to the Arlanda hotel as a serious joke (Van Raaij, 2014). During the design process of the hotel, he develops irony as a tool of collective creation, which he adopts to generate ideas with other architects in the project team.

Even the title of BIG’s book *Yes is More: An Archicomic on Architectural Evolution*, which illustrates their projects, evokes irony as a statement *per se* (Figure 4.14). Being in-between a monograph and a manifesto, the book reveals that Ingels’ own expression “Yes is more” is developed through an evolution of famous statements of Ingels' favorite characters, most of whom are architects (Ingels, 2010). He refers to Mies van der Rohe’s dictum, “less is more,” but points to the failure of indistinguishable similar buildings in Modernism. He then quotes Robert Venturi’s maxim, “less is a bore,” by criticizing postmodern buildings for being unimaginative anonymous boxes (Ingels, 2010). Ingels’ analysis further develops with Philip Johnson, Rem Koolhaas, and Barack Obama, until eventually he emphasizes his own statement. Designated as “yes is more,” his idea revolves around the view of mediating between social, economic, and environmental dimensions of architecture. Rather than automatically contradicting previous ideas, Ingels (2010) approaches the issues in an affirmative manner; since, for him, being in contrast with a previous opinion makes the architect ironically a follower of it.

Pointing to critical thinking, irony has the potential of deciphering Ingels’ expressions for the Arlanda Hotel project, some of which are stated above. When the architects of BIG were assigned to work on the design of the hotel, they were challenged by the strict demands of the client. From function diagrams to the building form, the client had determined most of the design decisions by himself without discussing with the architects. As a sarcastic and provocative reaction to the variety of predetermined parameters, the architects focused on merely designing the surfaces in detail (Figure 4.15). As the surface was the one theme that the client had not presented an opinion about, Ingels (2010) confronted him with an ironic point of view: “Jesus, he already designed the building – What’s left for us to do? Facades?” (p. 337).

Following the doctrines of modern architecture, it is known that being merely in charge of the façade design is not an architectural approach to building. It essentially indicates superficiality, similar to Le Corbusier’s (1991) association of style with the feathers in a hat as useless ornaments:

> The English suit we wear had nevertheless succeeded in something important. It had neutralized us. It is useful to show a neutral appearance in the city. The

Figure 4.14 Cover of the book Yes is More: An Archicomic on Architectural Evolution (Ingels, 2010).

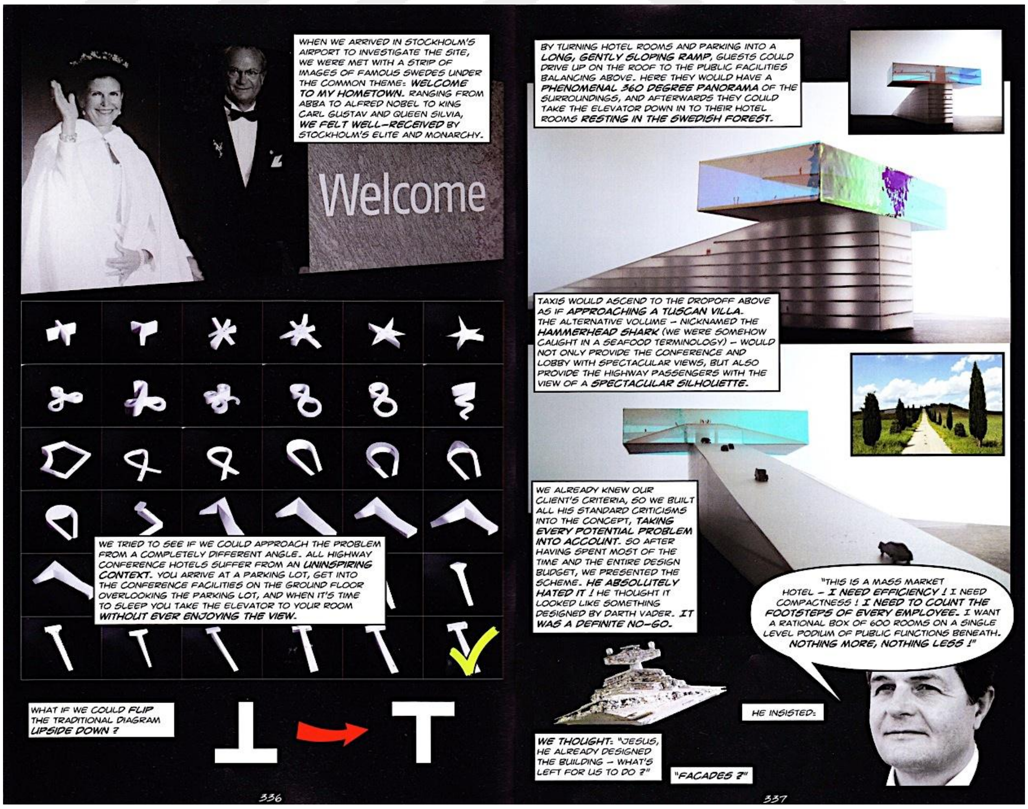


Figure 4.15 Extract from the book Yes is More: An Archicomic on Architectural Evolution (Ingels, 2010, pp. 336-337).

dominant sign is no longer ostrich feathers in the hat, it is in the gaze. That's enough (Le Corbusier, 1991, p. 107).

Having the potential of everlasting connotations, irony accepts contradicting realities, and becomes a coexistence of unstable meanings. Through irony, established codes and assumptions on architectural discipline are criticized and questioned. Architects conceive irony as a double-coded parody, simultaneously justifying and undermining it (Hutcheon, 2002; Petit, 2013). In the case of the Arlanda Hotel, the architects attribute themselves the ironic stance of "being façade architects," and approach the design with the attitude of designing only the façades. In this sense, their ironic approach produces an iconic building.

Throughout the design process, BIG justifies the ornamental surfaces of the Arlanda Hotel by means of various other ironic approaches. Ingels notes that the statues of Royal figures were historically erected on squares at the intersection of two major streets. Adapting this idea to modern city, the architects designed the hotel with the images of royal figures in the junction of two highways (Figure 4.16). Ingels (2010) ironically explains this adaptation as the merge of the European square and the American strip, which are two different urban typologies. Despite the fact that he makes an analogical and ironic comparison, the relationship of the American strip and the European city was previously mentioned by Venturi, Scott Brown, and Izenour. According to them, the strip and the square are related to the dynamism and development of cities. Both the Las Vegas strip and the Roman piazza are known as the symbols of urban sprawls of their time (Venturi & Scott Brown, 1996b; Venturi, Scott Brown & Izenour, 1996). Concerning the concept of the European city, statues of kings/queens, emperors/empresses, mythological gods/goddesses, and biblical personages on city squares are symbols of power. With the statues, fountains, and flags, the square establishes invisible routes for walking (Calabi, 2004). It emerges as a three-dimensional public space, which is appropriate for the movements and pauses of passersby. The traditional American strip, on the other hand, consists of huge signboards perpendicular and close to the highway. Big-scale ornaments and graphics as advertising billboards are perceived by the people in the cars at high

Figure 4.16 Site plan of the Arlanda Hotel, BIG, Stockholm, Sweden, 2007 (BIG's archive, 2007).

speeds. According to Venturi, Scott Brown, and Izenour, the strip is a landscape of symbols in space. It proposes two-dimensional signs rather than three-dimensional elements (Venturi & Scott Brown, 1996b; Venturi, Scott Brown & Izenour, 1996). In the case of the Arlanda Hotel, the merging of the typologies of square and strip creates a hybrid typology, which Ingels (2010) designates as "a hotel with a royal face treatment" (p. 341). Handling diversities with the keyword of "both - and", the Arlanda Hotel illustrates exactly what Ingels specifies through his expression "yes is more."

In the monograph *Yes is More: An Archicomic on Architectural Evolution*, the Arlanda Hotel is represented through another ironic binary, which is called as "Zumthor meets Warhol" (Ingels, 2010, 340). When the hotel is viewed closely, according to Ingels (2010), the façades would render pure Scandinavian materials visible. Since the façades are made of wood, stone, glass, concrete, and steel, as well as they lack any additional cover or paint, they connect with the architecture of the contemporary Swiss architect, Peter Zumthor (Ingels, 2010). From Zumthor's point of view, the meaning of materials and details in his buildings expands beyond physical features. Details are thresholds for sensing different textured surfaces, and materials are reactive to one another through an infinite potentiality (Zumthor, 2006, 2010). They perform in accordance with a phenomenological idea, rather than being mere adornment. Leaving aside sheer material presence, Zumthor deals with material affect, perception, and tactility. In this sense, the essential qualities of materials for his architecture become temperature, sound, atmosphere, and sensation.

Expanding the other end of ironic expression onto the American Pop-artist Andy Warhol, Ingels (2010) indicates that a distanced look at the building transforms it into an immaterial image. According to Ingels, artificial lights in the hotel rooms reflect the colors of carpets and wallpapers at night. Contributing to the immateriality of building surfaces, color and light add a layer to architecture (Ingels, 2010). In Warhol's works, temporality and ephemerality of life, fame, commodity, and so on are presented as colorful effects by means of silk-screen printing. In Zumthor's architecture, on the other hand, temporality relates to modifications on natural and constructional materials due to weathering. The binary of "Zumthor meets Warhol" expresses divergent versions of temporality, as well as it ironically confronts Zumthorian materiality with Warholian immateriality. In this sense, irony develops into a slippery ground, as it proposes multiple layers of contradicting meanings.

Furthermore, Ingels (2010) develops a third typology as an addition to the Venturian idea of the duck and the decorated shed, which is called as "the princess", or "functional elements that constitute a collective iconic expression" (p. 343). Elsewhere in the monograph, Ingels (2010) gives more historical references, such as interpreting Le Corbusier's idea of "the house as a machine for living" as "an Unité d'Habitation version 2.0" in a housing design, and merging the historical spire and the modern skyscraper as the "Danish version of the Spanish Steps in Rome" in a warped tower project (pp. 69, 107). Although Ingels makes clear historical and architectural references, his adaptation of them stand in-between being serious or deep, and humorous or superficial. In this chapter, BIG's tendency of creating "one-of-a-kind hybrids” through the merging of historical references is interpreted as an ironic approach. This approach further demonstrates that BIG's references of architectural history justifies their use of ornament, while over-theorizing their superficial surface effects.

4.4 Nine Victorias

Throughout the design process of the Arlanda Hotel, Ingels is intensely influenced by Warhol’s works, particularly his silk-screen reproductions of Marilyn Monroe. Along with Jacqueline Kennedy, Elvis Presley and so on, Marilyn was one of the celebrities that Warhol printed many times. By means of silk-screen printing, he reproduced Marilyn images as a series of flat and colorfully highlighted depictions. Recalling Warhol, Ingels makes a study of the Crown Princess Victoria portraits for one of the façades of the Arlanda Hotel in different color combinations (Figure 4.17). According to Ingels, artificial lights in the hotel rooms would reflect different colors each day through windows. Making the surface almost look like a wallpaper pattern, Ingels’ study illustrates compositions of different princess portraits on the surface in different nights. Since Ingels (2010) makes this study by “revisiting Warhol”, a comparison of the princess portraits by BIG to the Marilyn portraits by Warhol unfolds discussions on ironic representation through multiplicity. Particularly Warhol’s *10 Marilyns* (1967), which is one of his well-known series of screen-prints on paper, makes Marilyn Monroe a disembodied icon (Figure 4.18). Similarly, BIG’s study, which is coined as *Nine Victorias* in this chapter, renders Princess Victoria immaterial and contributes to the visuality of the Arlanda Hotel.

Warhol’s fascination for Monroe dates back to his childhood. Since he was a child, he had been amazed by movie magazines and autographed celebrity photographs (Indiana, 2010). According to Warhol, celebrities represent the most significant spectacle of consumer culture. They transform from bodily presences to pure images, and achieve the look of commodity. Through a profusion and consumption of images, Warhol politically and culturally questions the significance of iconography in modern culture. Depersonalizing individual figures through

Figure 4.17 Study for the façade of the Arlanda Hotel, BIG, Stockholm, Sweden, 2007 (BIG's archive, 2007).

Figure 4.18 Andy Warhol, 10 Marilyns (portfolio of ten screenprints), silk-screen on paper, 91.5 x 91.5 cm. each, 1967 (Andy Warhol Foundation for the Visual Arts / Artists Right Society (ARS), New York).

multiplication, he turns them into mere stereotypes of icons (Dyer, 2004; Gombrich, 2006). Defined as “nothing” in Warhol’s terms, pure images are representations of commercialized essences. Serial reproduction in his works connotes to his references of industry, as well as his ideas on immateriality and commercialization. Developed through multiplicity, Warhol’s images represent the infinite monotony of mass-production and consumption (Indiana, 2010; Mirzoeff, 2009; Rosenblum, 2001). For him, being a celebrity is closely associated with the mechanical reproduction of photography. The technique of reproduction makes art and industry symbolically exchange signs. A commodity object may be attributed as aesthetic, whereas an art object may be produced as a ready-made. As also elaborated by Baudrillard (1993a), being an infinitely reproductive machine, Warhol’s works redefine everyday reality, superficiality, and banality as aesthetic signs.

The act of deciphering the identities of royal figures in the Arlanda Hotel, despite the lack of details and photographic high-resolution, recalls the deformation technique in the works of Warhol. His prints accomplish the deformation of photographic images by a series of silk-screening process. Specifically in his works on disaster and death, Warhol made repetitive images in grainy and defective versions. What he intended by these defects was to deconstruct the reality of images and transform fatal topics into spectacle (Collins, 2012). With a similar approach, in the works of celebrity portraits, he reduced image quality and resolution in order to detach images from their initial referents. Therefore, celebrities as corporeal figures were transformed to sheer surface images (Ergüven, 2001; Shaviro, 1993). To a certain degree, for Warhol, deformation became a means of draining meaning and being superficial, since there is no theory or discourse beyond the surface.

In his serial works of celebrity portraits, Warhol challenges the conventional portraiture of making unique singular images, and destroys the notion of traditional in-depth contemplation on paintings. Although the silk-screening process eliminates details, viewers are still able to recognize the figures as celebrities. Images with a lack of detail challenge human memory, which is slippery, vivid, and powerfully selective (Crow, 2001). Physical features of a “Warholized” celebrity dissociate from corporeality, and do not depend on physical body. In this sense, celebrity as a work of art acquires a multiplication of nothingness. Warhol makes a critique of culture industry by way of his works, since the depicted celebrities have already been drained of meaning when their images were spread worldwide from advertising billboards to newspapers.

Similarly, prior to the design of the Arlanda Hotel, images of the royal figures have been reproduced in different media from newspapers to websites. By duplicating their faces as the ornamental façades of the Arlanda Hotel, they once more appear beyond their corporeal presences. Similar images of the authority figures repeat on various surfaces in media, as they promote the architects as producers, and the royal family as the produced object. In this sense, the royal portraits as ornamental façades can be seen as the epitome of culture industry. As elaborated by the Frankfurt School theoreticians Theodor W. Adorno and Max Horkheimer, culture industry works with the technique of advertising, as it reproduces an image on many surfaces continuously (Adorno and Horkheimer, 2002). The multiplication of images assigns them a commodity value and engage them in consumer capitalism, rather than the twentieth-century theory of monopoly capitalism, which Adorno and Horkheimer dwell on.

From Warhol's point of view, color is an instrument of deconstructing the corporeality of the depicted celebrities in series. By means of vibrant colors, images are dissociated from reality, and achieve an almost cartoon-like surreality. As a contribution to this surreal effect, Warhol unifies image and surface through a picture plane, and destructs the distinction between figure and ground (Dyer, 2004; Indiana, 2010). Printed on a flat surface, Warhol's works are composed of nothing but shadows and highlighting colors. In his *10 Marilyns*, for instance, each Marilyn image consists of at most four colors. Each image highlights a different part of Marilyn's face and drops shadow on a different area; yet her eyes, nose, mouth, and hair are more or less distinguishable. Images emerge as vibrant colored compositions of Marilyn. Concerning BIG's colorful study of the Princess Victoria, or the *Nine Victorias*, each Princess image consists of three colors. In each image, her nose, ears, and mouth are fused into the whole surface. The blurry contours of her eyes, hair, and neck are less hardly distinguished. Shifts in colors render the portraits ambiguous. Solid walls contribute to this ambiguity, as they appear white in the sunlight and black at night. Vibrant color effects, or the "Warholized" surfaces, transform the whole building into a pure visual affect. By means of multiplication, Warhol's *10 Marilyns* are perceived as superficial flat images, which employ the idea of nothingness as a critique of culture industry. The depthless composition of *Nine Victorias*, on the other hand, treats the architects as commodity and becomes a praise of the culture as industry.

4.5 Ornamental Déjà-vu, or Ornament in Series

As an extension of the idea of architectural evolution, BIG tends to replicate concepts, forms, and ornaments of a project on another design with a completely different scale, program, and context. As seen in many of their projects and also admitted by Ingels himself, the architects of BIG do not abandon the design of a form so quickly if it fails to be materialized in a project. Calling it as the "migration of ideas," the architects often replicate the same form on another design by adjusting the scale or turning the form upside down (Ingels, 2010). For example, BIG's project of the Zira Island master plan in Azerbaijan is highly controversial, since it replicates several of the previously developed ideas. Designated as the Seven Peaks of Azerbaijan, the project refers to the seven mountains of the Caucasus, since they are related to Azerbaijan's national identity (Figure 4.19). In the project, silhouettes of seven mountains are reproduced as seven building complexes (Ingels, 2010). When designing the building forms, the architects replicated some of their rejected projects in the past, such as the Vilnius World Trade Center in Lithuania, the placeless artificial island project of Dolphinarium and Wellness Center, the Holstebro Handball Arena, and the Housing Bridge in Denmark. Unifying the forms of their previous projects in a new context, Ingels (2010) reveals that, "Eight years of hard work on various aborted projects won't be wasted. BIG has become a sort of urban laboratory where we develop prototypes, breed species and evolve ideas" (p. 175). In order to support BIG's tendency of replication, Ingels points to Le Corbusier's

Figure 4.19 BIG, Zira Island masterplan, Azerbaijan, 2008 (BIG's archive, 2008).

seminal work *Towards a New Architecture*, which mentions that architecture is capable of producing typologies. Justifying his approach of sameness through Le Corbusier, Ingels (2012) believes that different architects can develop and manipulate any produced typology instead of starting from scratch. He further unfolds by giving grounds of artists, since they also gravitate toward working in series: "They will pursue the same idea in various iterations until they feel they have exhausted the potential of that idea and move on" (Ingels, 2010, p. 346). To a certain degree, designing in series has a commodity value as a promoter of the architect, who designs in series. Like an embodied signature, series refer to a collection of specific works that derive from the same idea.

In BIG's case, working in series emerges in relation to designing the concept, form, and ornament independently from the program and context. The problematic of replication is argued in the critical texts on BIG, especially in the "Bjarke Ingels Group" issue of the *Clog* magazine (No. 1), such as "Architects! Out of Ideas?" by Janine Buinno, "Greetings from 1973" by Karrie Jacobs, and "[Trans]planted / [Re]placed" by Han His Ho. In an ironic manner, authors criticize the replication of forms and concepts through expressions, such as "repeated transplant operations," or slogans such as "Pyramid shape fits within any context" (Buinno, 2012, p. 37; Ho, 2012, p. 55). Apart from replicating forms and criticizing them, BIG tends to work in series when ornament is in question. Specifically, the ornamental surfaces of the Arlanda Hotel resonate with the design of the Leadership Tower in Dubai (Figure 4.20). BIG's approach to the surface design of the tower is in the same manner as the hotel. The tower is conceived as a combination of an artificial topography in the plain desert and a multi-layered rectangular-prism building. Two opposing surfaces of the building are adorned with a lattice of small square window holes of different sizes. From a distance, the ornamental grid transforms into a composition of giant portraits of two Arabian Sheiks. Seeing the Arlanda Hotel and the Leadership Tower projects consecutively at the 2009 exhibition *Yes is More* in Danish Architecture Center or in the 2010 book *Yes is More: An Archicomic on Architectural Evolution*, one has the sense of being already seen the same generation of ornaments, much like a *déjà-vu* experience (Figure 4.21). In both projects, ornamental surfaces are designed primarily without taking the building program into account. While the spatial program of the Arlanda Hotel consists of conference halls and hotel rooms, the Leadership Tower program includes offices and hotel rooms. In order to achieve a series, ornaments as royal figures are detached from their initial location of the hotel in Stockholm, and attached onto the tower in Dubai as different portraits (Figure 4.22).

During the continuous performance of attaching, detaching, and re-attaching, ornaments are modified and re-adjusted to compose portraits (Figure 4.23). The ornamental façades of the tower do not resemble the horizontal cut-out ornaments of the hotel in detail; rather, they appear to be a grid pattern that covers the whole surface. The performance of ornaments introduces the idea of replicating ornaments in order to initiate diversity among series. Recalling a reading of Warhol's serial silk-screen images, BIG's ornament in series can be read as a "duplication that can accommodate difference" (Meyer, 1994, p. 105). The images of sheiks and princesses as ornaments in series depend on the differences of similarities. Variety of forms distinguishes ornaments from one another as unique elements, whereas similarity of preliminary ideas unites them as a signature. On the other hand, from a critical point of view, ornamental *déjà-vu* can be considered as a camouflage of the end or lack of creativity.

In the book *Yes is More: An Archicomic on Architectural Evolution*, Ingels (2010) remarks that the images of sheiks adorned billboards and building walls throughout the United Arab Emirates. Justified by multiplicity, their images are replicated on the

Figure 4.20 Model of the Leadership Tower, BIG, Yes is More Exhibition, 2009 (Darren Webb’s archive, 2009).

Figure 4.21 A view from Yes is More Exhibition, BIG, Danish Architecture Center (DAC), Copenhagen, Denmark, 2009 (Bujdoso Attila’s archive, 2009).

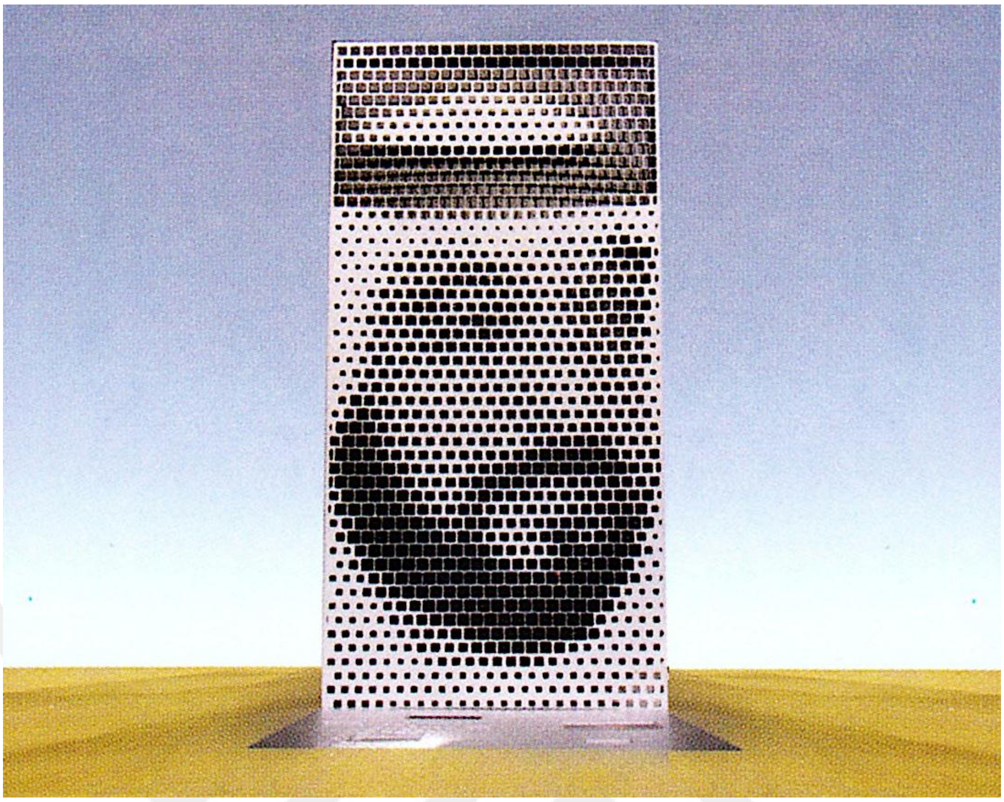


Figure 4.22 BIG, Leadership Tower, Dubai, 2007 (Ingels, 2010, p. 346).

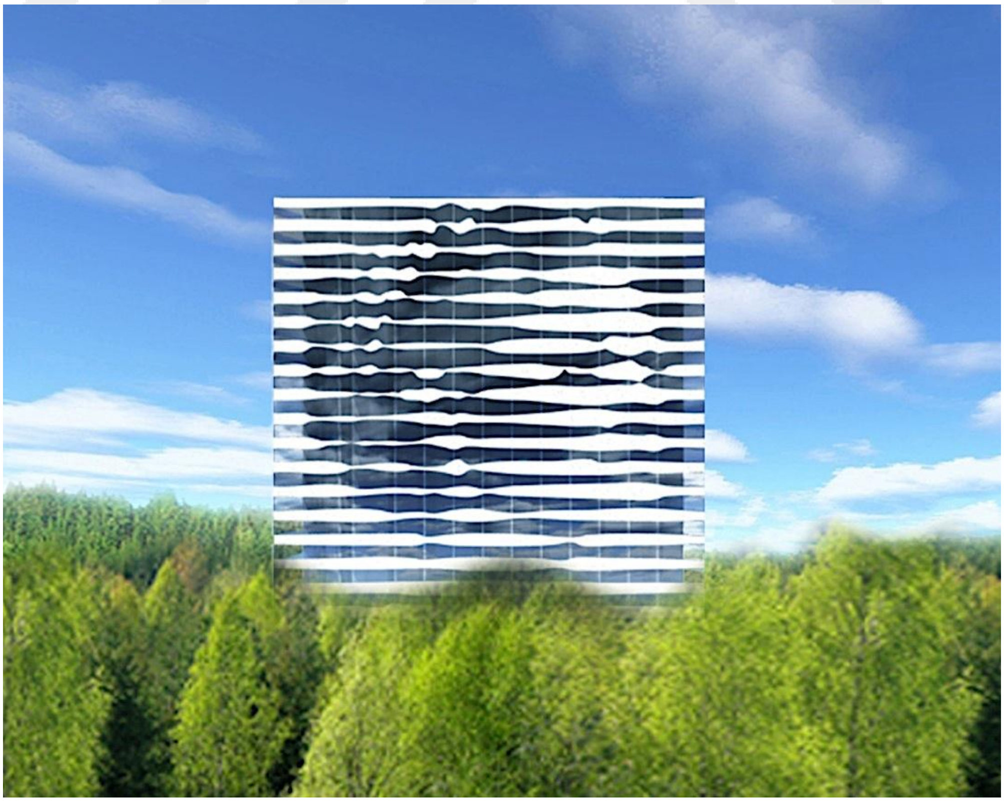


Figure 4.23 BIG, Arlanda Hotel, Stockholm, Sweden, 2007 (BIG’s archive, 2007).

Leadership Tower as an extension of this urban adornment. Scaling up the image sizes to intensify the representation of authority, ornaments attribute superhuman features to the power figures. Ingels (2010) further presumes that sheiks' images on the tower would give the impression of being a mirage in the desert. In this sense, he claims that the ornamental surfaces produce certain affects and sensations. Indeed, some contemporary architects, such as Farshid Moussavi and Michale Kubo (2006), explicitly state that the role of ornament in contemporary architecture is the production of affects and sensations. Yet in the case of the Leadership Tower, the affect of mirage adds to the representation of power and the omnipresent authority figure, rather than merely the production of affects and sensations.

Today, in the age of visual communication, a flood of images dominates the realm of contemporary architecture. Beginning with the twentieth-century widespread of photography, advertising, and publishing technology, mass media expanded worldwide and transformed objects into images. As indicated by the French Situationist Guy Debord (2002), modern life is represented by the accumulation of spectacles, which is the mediator of social relation among people. In parallel with this view, contemporary culture is defined by the concepts of advertising, displaying, consuming, and commercializing. Baudrillard (1993b) argues that in the culture industry, visual realm transforms bodily presence into spectacle, media, and image, since images and sign exchange values dominate objects and their use values.

Through the ornamental aspect of the Arlanda Hotel, it is demonstrated that spectacle has shifted places with the building, since the hotel performs more like a display of royalty and an advertisement of Sweden. It dissolves as a two-dimensional ornament, making the hotel to be defined as an urban representation of royalty in Stockholm. Through the performance of display, ornament regains the feature of representation in terms of power, irony, and superficiality, and emerges as a giant ornament of the capital city.

CHAPTER FIVE
WHEN RUSKIN GOES DIGITAL: DENMARK EXPO PAVILION

Marcel Duchamp, one of the pioneering artists of the Dadaist movement, and Constantin Brancusi, the worldwide famous Romanian sculptor, were viewed visiting the Hall of Aviation in Paris in 1912. As they walked around and observed motors and propellers of airplanes, Duchamp turned to Brancusi to ask: “Painting has come to an end. Who can do anything better than this propeller. Can you?” (Danto, 2000, pp. 178-179). The question was not intended to be answered; yet it was striking that Duchamp was addressing an essential and global paradigm shift of the twentieth-century: the shift from the virtuosity of handwork and value of human labor to machine aesthetics and the perfection of serial production. The paradigm shift continued in the twenty-first century, as mechanical production has lost its dominance over digital revolution. In many fields from art to architecture, human labor and skills became less essential, since craftsmanship was redefined through computer-aided design and manufacturing technology.

The affect of the digital revolution, as it is argued in this chapter, is twofold: On one hand, the advanced CAAD (computer-aided architectural design) and CAAM (computer-aided architectural manufacturing) technology give life to any ornament design in mind. On the other hand, the aura of the produced object is questioned, as it wipes the personal marks of the designer out. This chapter explores the issue of CAAD and CAAM through Denmark Expo Pavilion, which was built by BIG in Shanghai in 2010. It discusses how the architects use digital technology as a tool for designing and manufacturing ornaments, as well as a medium for rendering images and presenting architecture.

5.1 The Perfection of Digital Craftsmanship

Wandering down the European area of the Expo site in Shanghai, visitors come across many pavilion buildings that stand out with their striking façades. Among others, the Danish Pavilion is noticeable with its three-dimensional looping form, which folds onto itself and allows people to walk through and over (Figure 5.1). The building is a continuous linear ramp that orients visitors from the entrance to the terrace roof, where they can have a full view of the expo site. In the courtyard pool, the Statue of the Little Mermaid, which is originally displayed in Copenhagen and was transported to Shanghai for the Expo, was located as an attraction point (Figure 5.2). The inner and outer façades of the pavilion, which wrap the loop, have different characteristics: The inner façade is solid with only partial openings, and is used as media façades, which give information about Denmark (Figure 5.3). The outer façade addresses passersby, and is composed of large and small perforations (Figure 5.4). The perforated outer façade is almost 300 meters long when it is unfolded. It bears no visible trace of the architect, but is only whitewashed with a smooth paint, which makes it seem as if it is the exact copy of one of its mini size models (Figure 5.5).

The identicalness of the constructed building to its model alludes to the paradigm shift from the Albertian notion of the metaphorical distance between designing and building to the seamless integrity of CAD and CAM in contemporary architecture. Alberti believed that there should be a distance between drawing and building, since architect made the drawing, and not involved in the building (Carpo, 2011). For him, it was the craftsman and worker’s duty to construct the building, rather than the architect. In contrast to the fluency of CAD and CAM integration, the craftsman was a kind of mediator that adapts architect’s drawing into building (Allmer, 2006).

Since the Vitruvian times, it has been widely accepted that in order to be attributed as a "master," the craftsman should be capable of embodying his tools as if they were one of her/his body parts (Vitruvius, 1914). As if crafting a part of her/himself, s/he internalized the tools and the materials (Pallasmaa, 2009). However, the status of mastery has never been an easy achievement. As the contemporary sociologist Richard Sennett (2008) emphasizes in his book *The Craftsman*, one has to work for ten thousand hours, which equals to three hours a day for ten years, to achieve mastery on a field.

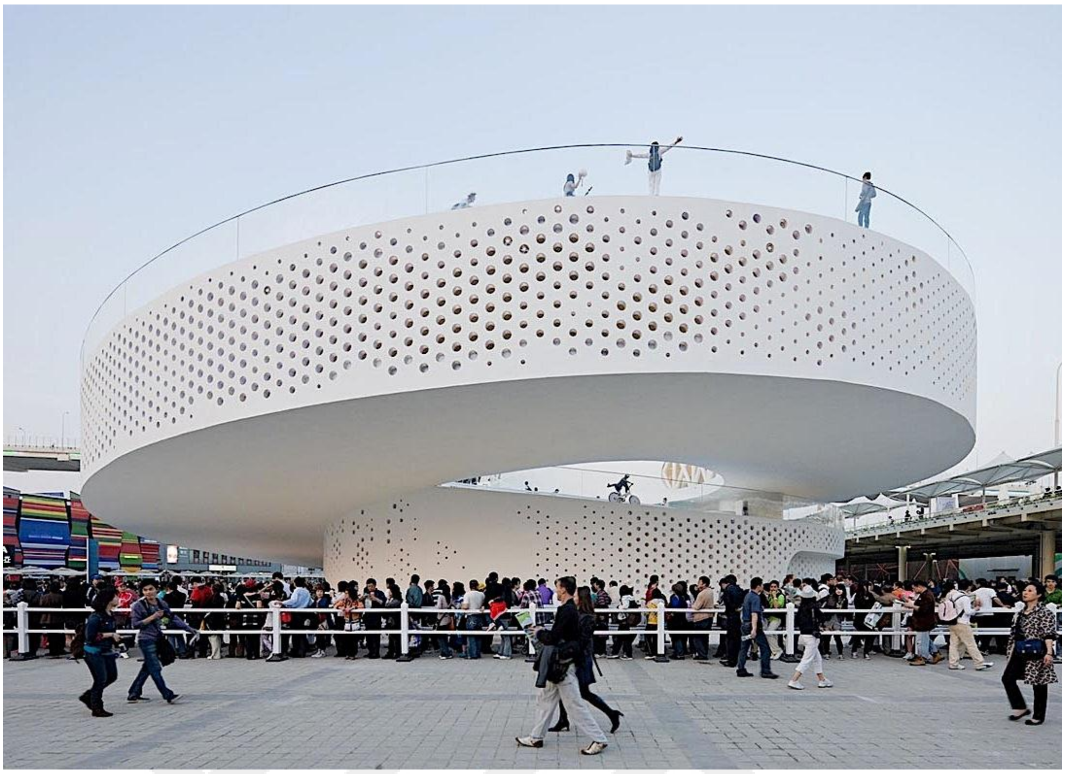


Figure 5.1 BIG, Denmark Expo Pavilion, Shanghai, China, 2010 (BIG's archive, 2010).

Figure 5.2 Courtyard view of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author's archive, 2010).

The age of the traditional craftsmanship is dominated by the paradigm of individuality, which brings forth the concepts of spirit, pleasure, improvisation, and experience when producing an ornament. The craftsman, by marking his work with a specific and individual sign, shows her/his presence on the produced object. Coined as the “maker’s stamp” by Sennett (2008), the distinctive mark of the craftsman presents her/his individuality, and becomes her/his way of saying that "I exist” by means of her/his tools. In a similar vein, John Ruskin (1989), one of the biggest supporters of craftsmanship in the nineteenth-century, emphasizes that it is the spirit of craftsman that differentiates handcrafted ornament from machine-made ornament. In contrast to the machine, the work of craftsman includes the characteristics of dignity, power, and authority, as well as it leads to the production of imperfect and inaccurate ornaments (Ruskin, 1989). Although imperfection has negative connotations, it is actually a means of expression: It represents the presence of craftsman on her/his work. Making a mistake differentiates the craftsman from the machine, since it is humanely and modest. The craftsman makes a mistake while crafting an ornament, and s/he finds the way out by her/his individual choices and inventions (Ruskin, 2005). By making a mistake, the craftsman learns how to improvise and solve a design problem. Improving her/his skills through improvisations and experiences, in the end, the craftsman gets advanced. For Ruskin (2007), the mistakes of the craftsman free her/him from being a machine:

> You can teach a man to draw a straight line, and to cut one; to strike a curved line, and to carve it; and to copy and carve any number of given lines or forms, with admirable speed and perfect precision; and you find his work perfect of its kind; but you ask him to think about any of those forms, to consider if he cannot find any better in his own head, he stops; his execution becomes hesitating; he thinks, and ten to one he thinks wrong; ten to one he makes a mistake in the first touch he gives to his work as a thinking being. But you have made a man of him for all that. He was only a machine before, an animated tool (Ruskin, 2007, p. 161).

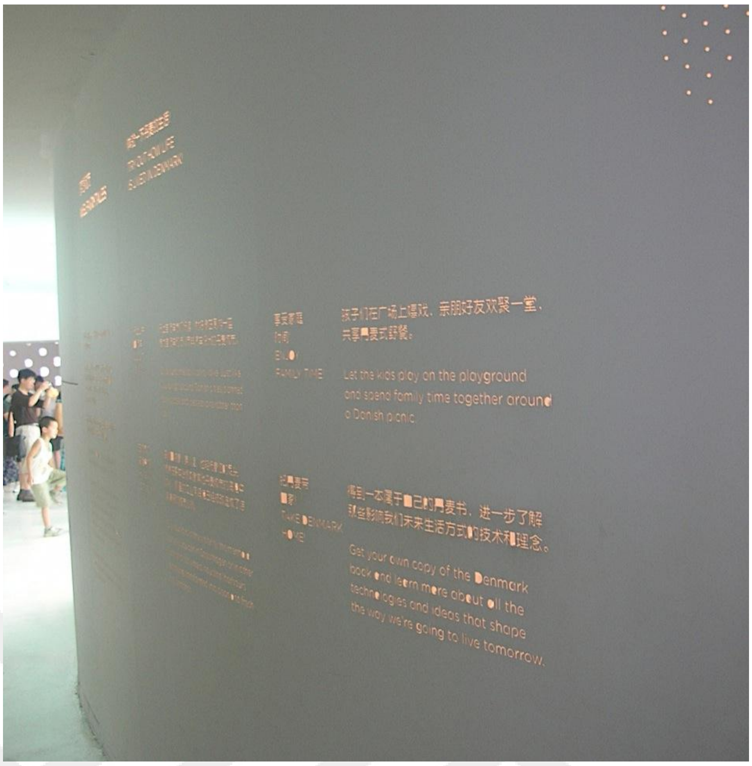


Figure 5.3 Interior view of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author's archive, 2010).

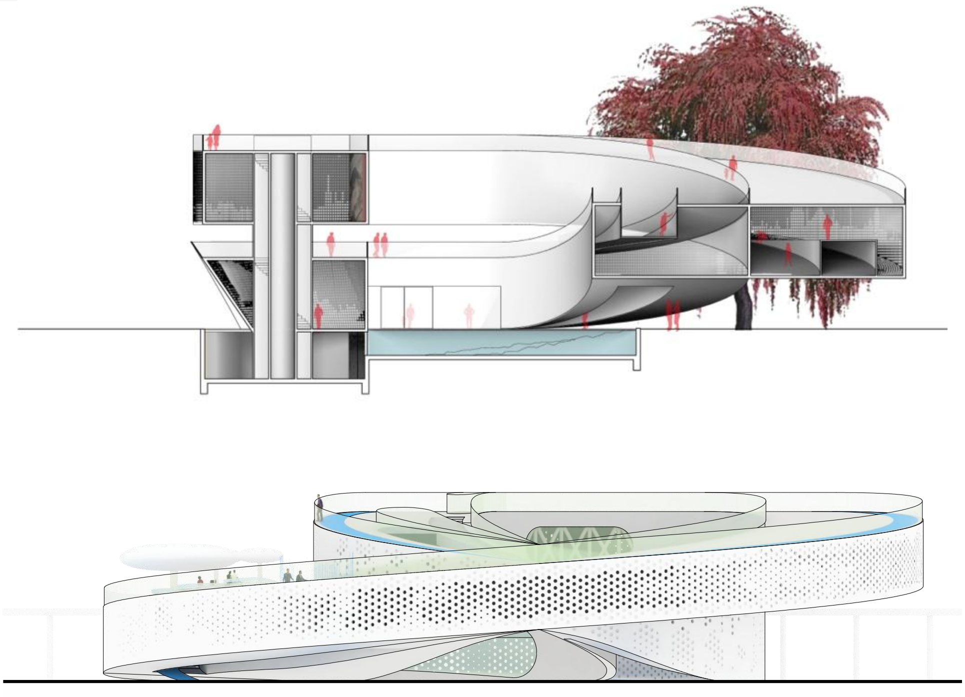


Figure 5.4 Section and elevation drawings of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (BIG's archive, 2010).

Considering the potentials of improvising and individualizing, it was accepted in the nineteenth-century that the experience of crafting is much more important than its duration. The quality of craftwork, in this sense, is directly related to the pleasure and devotion of craftsman in long hours of work. Consequently, the economic value of the work cannot be determined by the criteria of its use and necessity, since so much of it depends on "useless elements," such as ornament, in Ruskin's (1989) terms. Instead, the value of craftwork relates to subjective variables, such as personal experience and sacrifice, rather than objective variables, such as the total work hours and dimensions of the produced object (Ruskin, 1989). Labor, in Ruskin's conception, differs from the devoted work of the craftsman. Ignoring the traditional concepts of sacrifice and pleasure, it relates to the values of mechanization and mass-production (Spuybroek, 2011).

Mass-production, which was developed in the Industrial Revolution, is based on maintaining standardization and eliminating individuality from the produced works. The twentieth-century Modernists were so strict about anonymity that especially Le Corbusier (1987c) banished individuality in mechanical production, such as the fabrication of ornament. During the Industrial Revolution, when the working hand of the craftsman was substituted with the machine, the traditional conception of becoming one with the crafting tool began to vanish. Machine work took away the spirit of craftsmanship by alienating the craftsman from her/his tools. The performance of "making" with traditional craft tools transformed into the performance of "manufacturing" with industrial machines. Following this shift, the "work" of the craftsman became the "task" of the worker, who had to keep track of a set of instructions and execute labor by inserting a punched card, read by the NC (numerical control) machine (Spuybroek, 2011). As the industrial factory workers executed the same task over and over again, they became de-skilled through the NC machines, since empirical handworks are usually stored in the form of skills (DeLanda, 2004).

The NC machines were further developed into CNC (computer numerical control) machines in the twenty-first century, as technology moved forward from

Figure 5.5 View from the exit of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author's archive, 2010).

mechanization to digitization. Referred as digital revolution, this cultural shift is emphasized by mass-customization, which is defined by the subjectivity of commodity. Mass-customization, in terms of ornament, is a change from uniformity to variation, since CNC machines can cut or mill any shape as a unique element (DeLanda, 2004). Acting almost like the digital extension of the craftsman's hands, digital design and fabrication tools create a high-tech analog of preindustrial craftworks (Carpo, 2011). Similar to the characteristics of the traditional craftwork, mass-customization alludes to that which is rare and hard to obtain (Willis & Woodward, 2010). Besides, it offers each unique production as fast and cost-efficient as mass-production. In the process of mass-customization, the skillful and strong hands of the craftsman shifts places with accurate digital codes of the computer, and a range of variables of the manufacturing machines. Such variables include the accuracy of milling, printing, and cutting movement, the types of cutting or printing actions, the variety, thickness, and dimensions of the materials that can be cut or milled, and the milling or cutting axis of free-moving robot arm. These variables can be extended, but it is notable that with the whole control of these variables, there is no chance for mistake in the digital production of perfect machines. In contrast to Sennett's assumption of the need of ten thousand hours of work to achieve mastery, CAM technology proposes the digital one. With the digital mastery, one does not need ten thousand hours of work to become a master and to produce fluent and perfect ornamental designs.

In the digital age, the Albertian notion of distance between design and production vanishes, since the seamless coordination of CAD and CAM allows the formation of an integrated circuit. The division of labor and the strict linear processes of mechanical reproduction, which was criticized earlier by Ruskin, came to an end with the advanced digital technology (Kolarevic & Klinger, 2008). The contemporary architect designs every single detail in the scale of 1:1. Therefore, every drawing that exists on the computer monitor has already been measured and ready to be produced or constructed (Spuybroek, 2011). The computer became a generative instrument to create ornaments, rather than being merely used as a tool of representation. The computer has transformed the role of the architect from being a form-maker in classical conception to being a programmer and controller in contemporary understanding (Leach, 2004). Ornament became a programmable element, rather than being designed, since in the age of digital exuberance, it emerged as a production of digital mastery through the seamless collaboration of CAD and CAM.

In the case of the Danish Pavilion, the constructed pavilion lacks the individual marks of the architect, or the maker's stamp, who figuratively establishes his presence in the building. The presence of Bjarke Ingels is suspended by CAD and CAM, since digital technology has its own set of tools that do not allow any personal interruption.

5.2 The Digital Ornament of Denmark

With an intention to attract attention at night, as well as during the day, the lighting system of the Danish Expo Pavilion was exclusively handled. Though, at first, Bjarke Ingels wanted the pavilion to be illuminated very simply only by the white light. Based on the idea that additional narratives such as colorful or blinking lightings might distract visitors, the architect had changed his mind as the lighting design developed (Ebsen, 2010). In the construction phase, LED lights were placed in each of the 3600 holes on the continuous surface of the pavilion (Figure 5.6). Controlled by a computer program, light sensors automatically adjusted the interior lighting according to the amount of sunlight, and activate the LEDs in a predetermined order (Advanced Light, 2010). Performing as bright pixels at night, the LED lights create an ornamental surface out of lights that wraps the whole construction. As Tobias Ebsen (2010), the project coordinator and main visual designer of the pavilion notes, the digital surface transforms a simple lamp from being merely a light source to a pixel, which takes part in the composition of a holistic image.

Ebsen (2010) asserts that the composed image on the pavilion façades was initially considered to consist of various elements from Danish and Chinese cultures, such as flags, bicycles, and calligraphy texts. Yet an on-site work demonstrated that most of these media images were very hard to be seen from a distance. Therefore, the lighting designers and architects continued to work with the composition of a basic scrolling text (Ebsen, 2010; 2013). In the final construction, one can clearly read the word “Denmark” from a distance with large punctured letters on the curved façades (Figure 5.7). Performing as a huge advertisement board, the pavilion is instantly recognizable as a representation of Denmark by means of its digital ornament, which turns the building into spectacle.

Being activated as a screen, the digital façade renders the building visible at night. Rather than presenting constant and fixed significations, it develops into an environment of continuous interactivity (Lavin, 2011). Spreading digital information

Figure 5.6 LED installation in the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Ebsen, 2010, p. 90).

Figure 5.7 Night view of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author's archive, 2010).

over a physical surface, as the new media theorist Lev Manovich (2006) argues, the digital surface expands beyond the Venturian conception of the two-dimensional electronic screen as a moving ornament, which Venturi unfolds in his 1996 book, *Iconography and Electronics Upon a Generic Architecture: A View From the Drafting Room*. In the case of the Danish Expo Pavilion, Ebsen (2013) elaborates that the perforated curved façades of the looping-shaped pavilion, which enabled a distanced look from outside and a closer look from inside, challenged the conventional conception and application of the media façades as frontally and remotely viewed flat screens (Figure 5.8). In this sense, the digital ornament challenges the traditional methods of representation and perception as innovative as possible.

Produced and presented in the digital medium, the illuminated digital ornament merges electronics, materials, and physical surface. Throughout the process of constructing the digital façade, technology is used to produce nonconventional ornamental elements that cannot be produced by conventional means. Rather than being produced as an extrinsic element, which is projected or attached onto the

Figure 5.8 Interior view of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author's archive, 2010).

façade, the digital ornament is interwoven with material surface. In this sense, the perforated physical façade as the first layer merges with the digital façade as the second layer. With an emphasis on temporality, it creates the dichotomies of materiality and immateriality, stability and instability. It performs as a mediated layer, and blurs the distinctions of the static perforated surface and the flowing digital images. It is the digital ornament, which adds a layer of ever changing images, but also at the same time repeats the media images *ad infinitum*.

5.3 Redefining Aura and Image-Making in the Digital Age

Considering the digital ornament and the looping shape with perforated façades, the Danish Expo Pavilion offers a representational view for passersby and draws their attention. Yet taking BIG's initial idea into account, which won the national competition for the pavilion design, it is clear that the visual character of the initially designed building is not the same as the constructed pavilion. When the competition ended in 2008, BIG's winning project was announced throughout the newspapers, magazines, and architecture blogs. The global media published glossy renderings, and images of the models of the soon-to-be-built pavilion. Along with the sculptural shape of the building, spectacular renderings of the ornamental surfaces, which represent the skyline of Copenhagen, became a point of attraction (Figure 5.9). As the project design progressed in the late 2008, the architects and engineers decided to change the concept of the façades. Instead of the dazzling silhouette of the city of Copenhagen, they decided to perforate the whole surface with circular holes of different sizes (Figure 5.10).

The change of ideas from rendering to construction was due to the project budget. Previously, it was announced by the Danish government that the total budget of the pavilion would be twenty million Euros (Bosia, Kragh, Kwok & Sterling, 2010). During the public promotion and the construction process, funding and sponsorships were accepted in addition to the governmental budget. All these investments were made for the proper representation of Denmark, and the consolidation of its

Figure 5.9 Renderings of the Denmark Expo Pavilion, BIG (Ingels, 2010, p. 42).

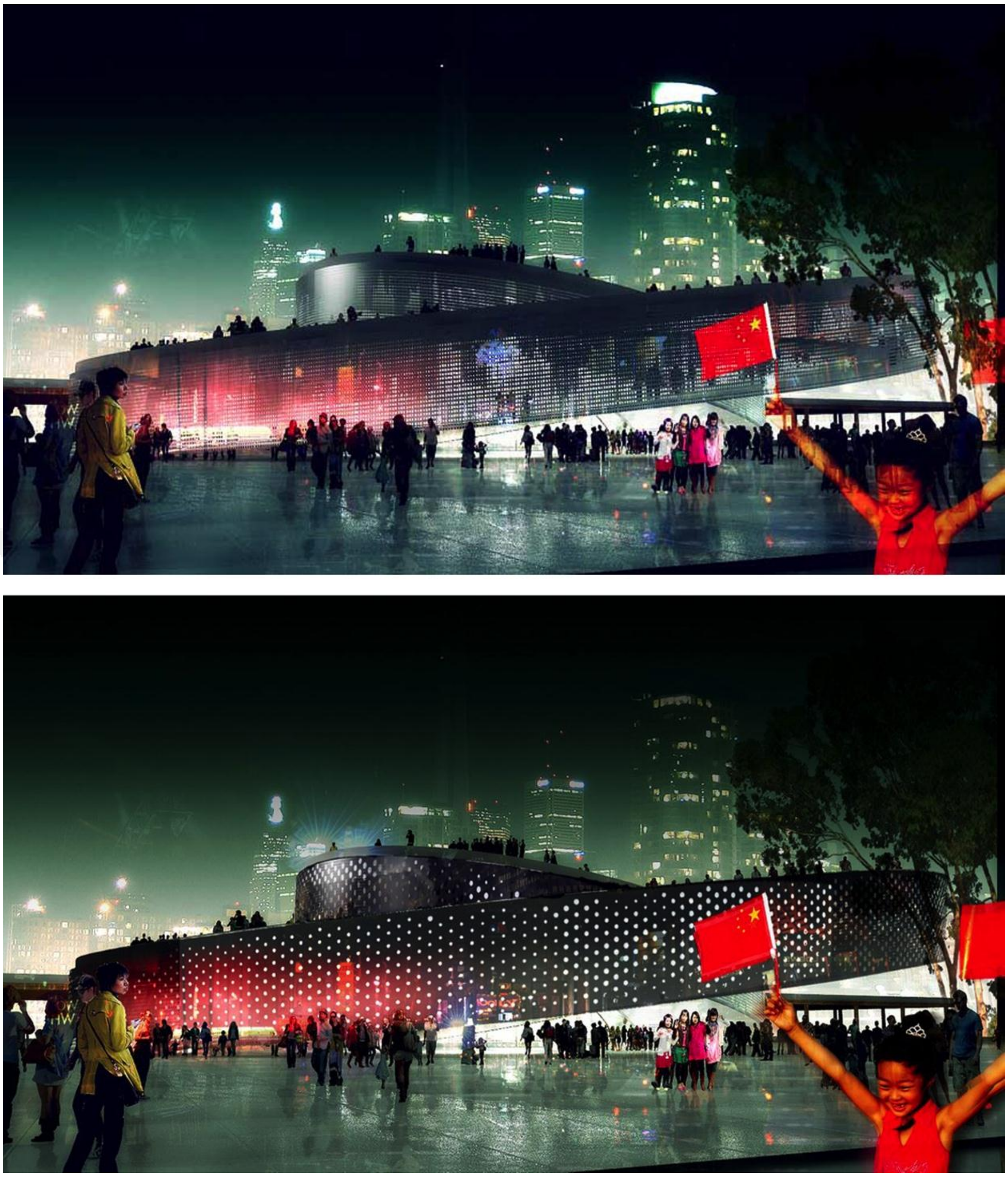


Figure 5.10 Initial and final renderings of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (BIG’s archive, 2010).

relationship with China. However, the budget with additional funds was not enough to construct the Copenhagen skyline on the façades.

Recalling the ideas of the twentieth-century Modernism, ornament was once again succumbed to economical grounds. One of the reasons of Modern architects to exterminate ornament on modern buildings was due to economy because ornament cost much more than a simple and bare design. Adolf Loos (1966) states that ornament is a crime against economy, whereas Le Corbusier (1987c) explains that the real luxury of an object lies in its plain and pure design with its high quality of manufacturing. In the contemporary age, although ornament can be produced economically by mass-customization, the cost of the surface of a building may be as high as the cost of its structure (Jencks, 2011a). Overturning the ideas of Modernists, the emphasis given to surface in contemporary architecture is as much as the interior space of the building, since the surface is the element that most of all relates to commercial success and image-making.

Since Expo buildings are a form of media, their digitized images in magazine pages and web sites are as important as their built presences. As elaborated by the architectural historian Beatriz Colomina (2008), photography is a means for architecture to be popular and marketable. In this sense, there is a difference between the real and the media construction of a building. Before a building is materialized, it is constructed and consumed through renderings, as well as through retouched and edited photographs (Colomina, 2008). Digital renderings become end-products, rather than being the rigid tools of construction. They are ready-to-be-consumed images, instead of representing the future building (Wenzel, 2012). As the American art critic Hal Foster (2002) argues, the package, or the image, becomes as important as the object itself. Through digital technology, the object or the building is redefined not primarily as a produced entity but as a manipulated element, which is continuously designed and redesigned, consumed and reconsumed. As it is also noted by Umberto Eco (1997),

> If we look at the expo buildings as structures to live in or pass through, they are out of scale, but they make sense if we look at them as media of communication and suggestion.... In an exposition, architecture proves to be message first, then utility; … we show not the objects but the exposition itself. The basic ideology of an exposition is that the packaging is more important than the product… (Eco, 1997, p. 204).

In the public promotion of the Danish Pavilion, it is apparent that the exuberance of splendid renderings and glossy images are merely for commercial use. They are flaunting representations of the pavilion, rather than orthographic drawings of construction. Produced as a marketing strategy, the images contribute to the commercial success of the pavilion. The constructed building emerges as an extension of the idea of image-making, as it becomes a point of interest along with other striking inventions and events. The pavilion is inventive as it offers visitors a "real" Denmark experience of riding bicycles, playing with the harbor water, visiting the Little Mermaid Statue, and enjoying urban playgrounds (Figure 5.11). In the end, the pavilion won a bronze award by its design in the category of self-built pavilions within an area of 2000 m^2 and 3999 m^2. Through commercial success and public attention, the pavilion creates a unique atmosphere, or a special aura *per se*, which is constructed by consumers' experiences and affects.

Figure 5.11 BIG, Denmark Expo Pavilion, Shanghai, China, 2010 (BIG's archive, 2010).

The aura, as an essential concept of the Marxist critic and writer Walter Benjamin's writings, is a unique atmosphere specifically for works of art and architecture. Traditionally, aura emerges in the presence of a unique work of art, and creates an abstract barrier, or a distance between spectator and the gazed object. It enables spectators to contemplate on the work, since the essence of aura is the connection between spectator and the work of art or architecture (Duttlinger, 2008). As Benjamin (1992) emphasizes in his 1936 article *The Work of Art in the Age of Its Mechanical Reproduction*, aura is one of the characteristics of a traditional work of art along with authenticity and presence in time and space. He criticizes that with the advancement of mechanical reproduction, the work of art becomes easily reproducible and attainable, which leads to the loss of its uniqueness, or "the contemporary decay of aura" (Benjamin, 1992, p. 300). Mechanical reproduction presents new concepts, such as consumption, commodity, and exhibition value, as it exterminates traditional ones, such as contemplation, uniqueness, and cult value. Despite the common view of associating it with the loss of uniqueness, aura survived the Industrial Revolution, and is redefined in contemporary architecture. It is constructed in the society of its own production, which makes it deeply dependent to the shift in the structure of society. In the contemporary culture, the interaction of spectator and architecture constructs aura in terms of a consumption-based criteria, thus the aura of the twenty-first century transforms into the sign exchange value. Fame produces aura, and image-making becomes *sine qua non*, since the contemporary image-laden culture is identified through the values of spectacle, fame, and consumption.

In contemporary architecture, digital image-making is a powerful tool. With the advancement of CAD technology, architects rely on the successes of digital renderings more than ever, even if the constructed buildings differ from their initial and digital representations. Renderings lack the unpleasant details of reality, with an attempt to create a perfect and marketable architecture (Hill, 2012). Shifting reality, renderings make architecture ready for consumption as an image. From this critical standpoint, digital images are perceived as buildings, whereas buildings are perceived as if they are images (Tsu, 2012).

The idea of image-making indicates that, today, a building does not need to be constructed in order to be known worldwide; yet it needs to be well-promoted. In conformation with this argument, aura is redefined in the twenty-first century in terms of spectacle, marketing, and consumption. In the case of the Danish Pavilion, the initial digital renderings presented for the competition serve for the image-making of the building before it was constructed. They create frames of an idealized architectural environment, which is produced as a show, with a focus on the ornamental façades of the pavilion. Through the visual accuracy of CAD technology, the rendered images of the initial design look much like a photograph of the built pavilion. Yet a comparison of their façade designs, from the representation of skyline to the perforation of circular holes, demonstrates that it does not.

5.4 The Structural Stress Pattern and the Structural Ornament

When the architects abandoned the idea of representing the Copenhagen skyline, they embraced the idea of perforated surfaces as a sustainable membrane, as well as a part of the structural system. The sustainable treatment of the façades derives from the need to take air in especially to the narrow corridors and interior spaces with low ceilings devoid of the heat and moisture of Shanghai during the summer (Figure 5.12). After the generation of dynamic thermal simulations and analyses of solar studies, the façades achieved the function of natural ventilation (Bosia, Kragh, Kwok & Sterling, 2010). Both the architects of BIG and the engineering team of Arup believes that the perforated façades of the pavilion conform to the theme of the expo, which was “Better City – Better Life,” as they show Denmark's sensitivity to sustainable environment (Bosia, Kragh, Kwok & Sterling, 2010).

Apart from sustainability, the perforated façades are a part of the structural system, as much as they compose a graphic pattern of structural stress. Performing as load-bearing elements, they exemplify the concept of structural ornament, and also visually represent structural forces. In the process, engineers calculated the overall statics of the building in order to analyze the stress levels of surfaces, and transformed them into graphical formation of perforation density (Figure 5.13). The

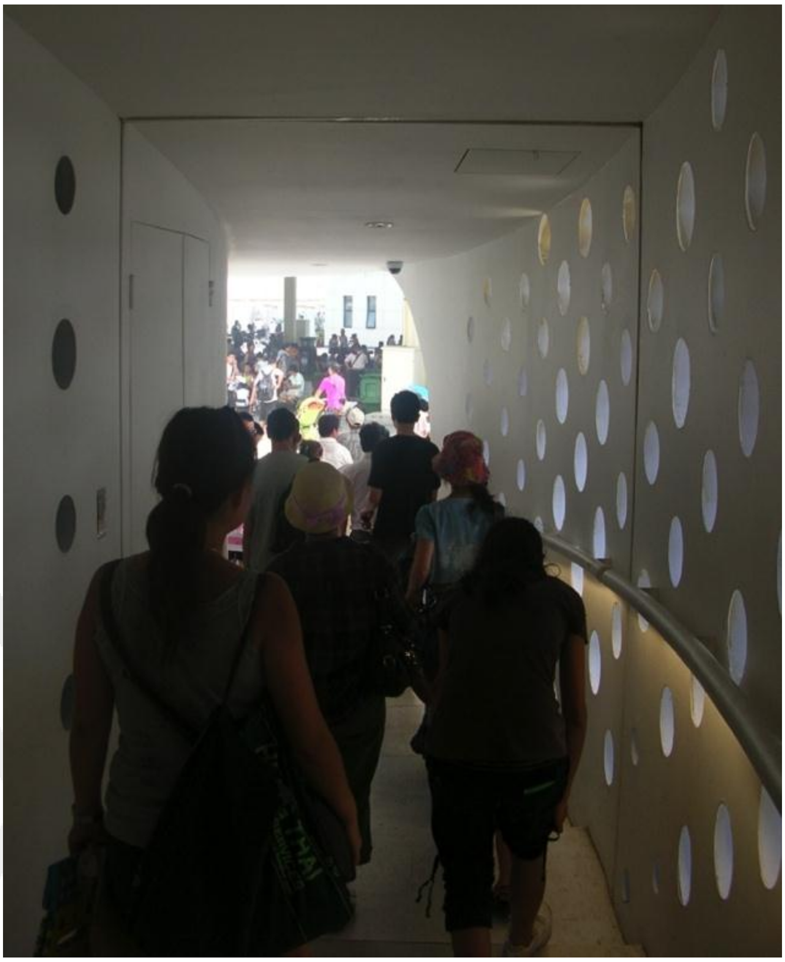


Figure 5.12 Exit corridor of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author's archive, 2010).

diameters and quantity of circular holes on the surfaces were calculated by means of the stress diagram (Bosia, Kragh, Kwok & Sterling, 2010): If stress was high on an area of the surface, it had less perforation (Figure 5.14); if stress was low, the surface had more perforation on that specific part (Figure 5.15). After a series of testing and prototyping through digital simulations and three-dimensional mock-ups, the 8-mm. thick plates were constructed as a series of curved plates, and then were attached to vertical steel structures (Bosia, Kragh, Kwok & Sterling, 2010). Ingels, in a recent interview, describes the expressive façades as a kind of "x-ray of the building" (Van Raaij, 2014, p. 208). Since the perforations were distributed according to the structural stress that acted on each surface plate, the perforated façades of the pavilion emerge as a structural ornament.

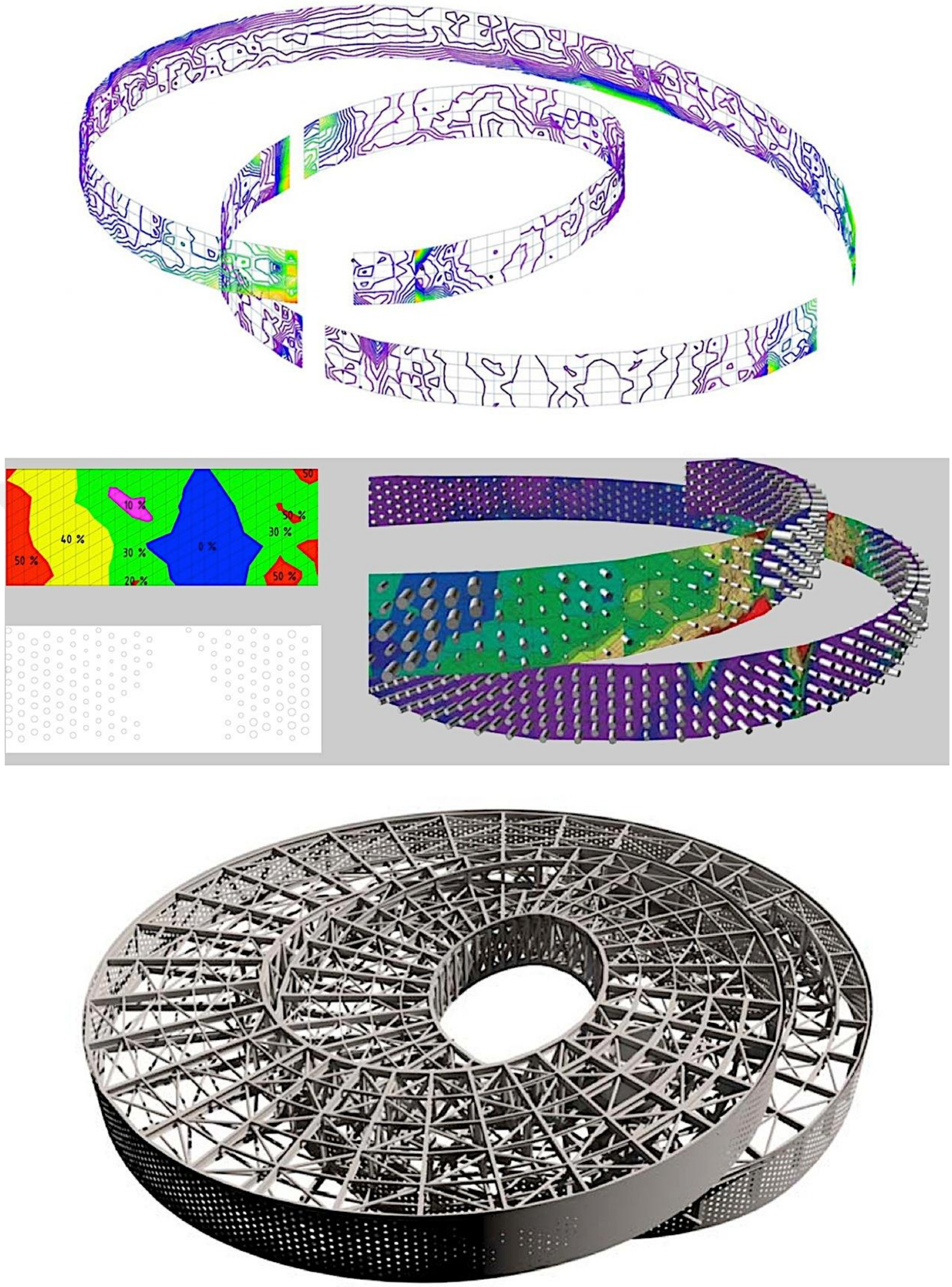


Figure 5.13 Structure and surface study for the Denmark Expo Pavilion (Bosia, Kragh, Kwok & Sterling, 2010, p. 28).

Figure 5.14 Façade detail of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author’s archive, 2010).

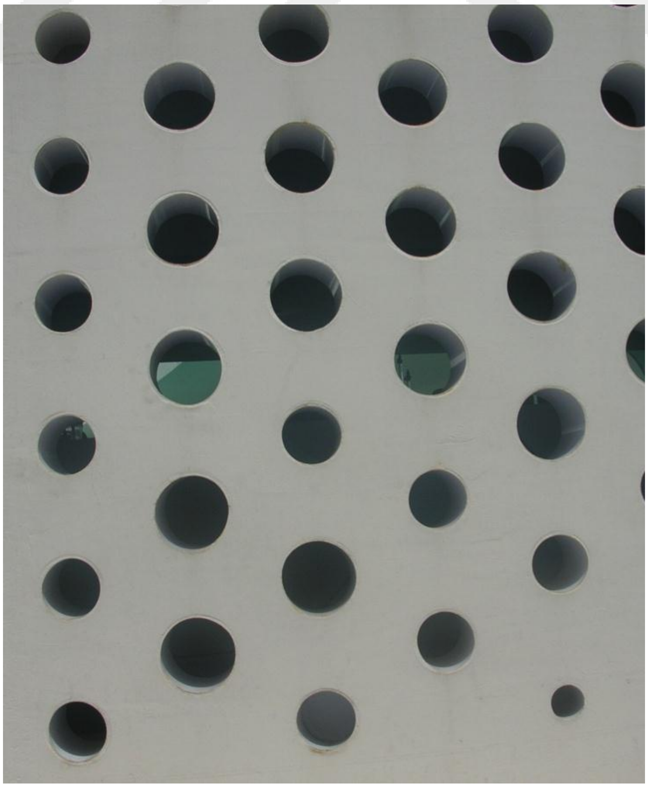


Figure 5.15 Façade detail of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author’s archive, 2010).

Although the perforated surfaces of the pavilion perform as an element of structure, this example is not the application of structural ornament to the highest degree in contemporary architecture. Structure and ornament are not designed and constructed as a single unit; instead, they were designed as separate parts, and merely work together seamlessly. However, contemporary architecture has long been an experimental ground for the construction of structural ornament. The contemporary architect Greg Lynn, for example, experiments with structural ornament as a means of exploring the potentials of materials. According to Lynn (2004), structural ornament frees ornament from being an applied decoration. If ornament is intrinsic to the shape and mathematics of the surface, it accentuates the formal qualities of the surface.

Aside from material experimentations and prototyping studies, such as Lynn's, the Beijing National Stadium is one of the most sophisticated examples in this context. The building, which was built in 2008 by the Swiss architecture office Herzog & de Meuron, is widely known as the Bird's Nest due to its character as a structural ornament (Figure 5.16). The Dutch architect Winy Maas, one of the founders of the architectural office MVRDV, refers to the Bird's Nest as the culmination of new ornamentation (Van Raaij, 2014). Herzog & de Meuron's idea of the nest derives from the aim of creating a structure with depth in order to unite space and surface, which are essentially two different entities. As Jacques Herzog elaborates, if a contemporary building lacks the unity of space and surface, ornament becomes an additional element, much like a wallpaper (Chevrier & Herzog, 2006).

On the other hand, if ornament and structure merge as a single element, designers no longer need to explain or apologize for the ornament, since it becomes an element of both structure and space (Chevrier & Herzog, 2006). In this sense, the concept of structural ornament is in contrast with the Albertian notion of the attached ornament, as Alberti (1988) states that ornament has the character of being an additional

Figure 5.16 Herzog & de Meuron, Beijing National Stadium, Beijing, China, 2008 (Author's archive, 2010).

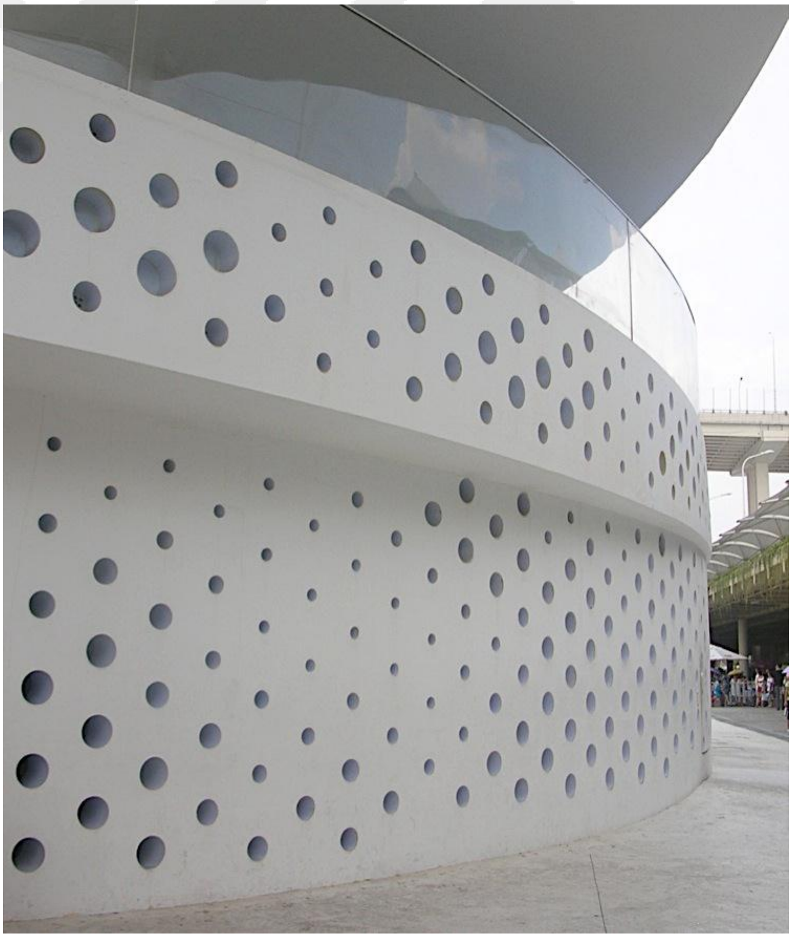


Figure 5.17 Façade detail of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author's archive, 2010).

element in architecture. Structural ornament, according to Charles Jencks (2011a), adds to the necessity of ornament by being integral to architecture. As it avoids superficiality and achieves complex depth, it addresses more than visionary and sensual qualities. Blurring the strict borders of the concepts of structure and ornament, structural ornament becomes a hybrid element.

In the case of the Danish Pavilion, when the perforated surface plates were attached to vertical steel structures, they were covered with a smooth white paint (Figure 5.17). Masking all the constructional and joining details of the materials, the white paint gives the impression that, much like a successful application of the structural ornament, the whole surface is produced as a single element that cannot be separated out.

5.5 Reviving the Tradition, or Simulating Craftwork

The contemporary architect Renzo Piano states that, "Decoration is not something added, but a necessary work on the textures, and the light of materials. Complex and rich" (as cited in Beccu & Paris, 2008, p. 10). In a similar vein, the porous texture of the Danish Pavilion creates the illusion of depth, and a play of light and shadow (Figure 5.18). The façades were manufactured by means of the advanced CAM technology, yet they simulate the traditional craftwork of perforation. The architects use the virtuosity of CAM, in order to feign craftsmanship and produce digital crafts. In every sense of the word, the traditional craftsman shifts places with the digital craftsman, the manufacturing machine.

Ornament, as Ruskin (2000) remarks, belongs to the category of craftwork. It is located in-between being an elaborate skillful handicraft and a complex machine work. In the digital age, architects transform traditional ornament into digital medium, and re-interpret the old crafts, such as ironwork, woodwork, wickerwork, knitting, lacework, and paper craft. As a case in point, the Polish Expo Pavilion in Shanghai is a striking example, as it is a monolithic piece of a giant ornament (Figure 5.19). The pavilion was designed by WWAA Architects (Natalia Paszkowska,

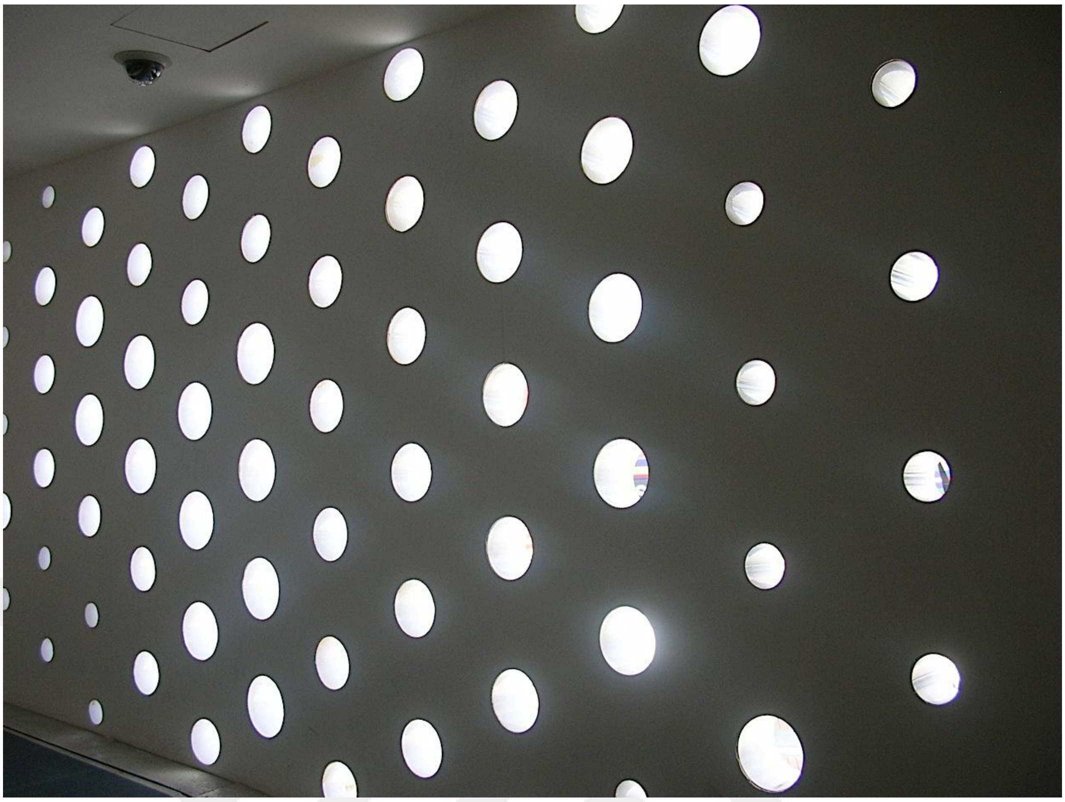


Figure 5.18 Interior surface detail of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author's archive, 2010).

Marcin Mostafa, and Wojciech Kakowski) in an area of 2400 m2. The inspiration for the building design was the traditional Polish folk craft of paper cut-outs. On the website of WWAA Architects, there is an unfolded image of the ornamental surfaces of the pavilion. The architects expect their web site visitors to print this image, and cut it out in order to make their own Polish Pavilion model in a mini size. Next to the cut-out image, one can find a series of visual instructions that show how to fold the paper in five easy steps (Polish Pavilion, 2010). Back to the constructed Polish Pavilion in Shanghai, the surfaces were made of CNC laser-cut plywood, which were stabilized by the steel structure. The interior space was covered by exhibitions of plywood cut-outs, which looked like stage sets (Figure 5.20). The two-dimensionality of full-sized crafts completely separated inside from the outside, creating a realm of fuzzy cut-outs and flowing colors.

Figure 5.19 Poland Expo Pavilion, WWAA, Shanghai, China, 2010 (Author’s archive, 2010).

Figure 5.20 Interior view of the Poland Expo Pavilion, WWAA, Shanghai, China, 2010 (Author’s archive, 2010).

The exaggerated size of the surface cut-outs is in contrast with the original scale of paper cut-outs. From a distance, one can clearly distinguish the Polish Pavilion building by its huge ornamental surfaces, which contrasts with the small and detailed work of authentic cut-outs. The scale of craftwork, in this sense, is flexible. As it is also elaborated by Ruskin (2005), ornament varies according to its distance from the viewer's eye:

> It is foolish to carve what is to be seen forty feet off with delicacy which the eye demands within two yards. One reason is that such delicacy is lost in the distance; also, the delicate work has actually worse effect in the distance than rough work (Ruskin, 2005, p. 96).

In another case, namely the Center for Contemporary Arts in Nottingham, the importance of the scale of the craftwork differs from Ruskin's understanding, as well as the giant ornaments of the Polish Pavilion (Figure 5.21). The contemporary architectural office Caruso St. John (Adam Caruso and Peter St. John) was inspired by the history of the building area, which had been a lace market in the nineteenth-century. With the consultation of a textile designer, they intended to pay homage to traditional lacework on the façades of the building. The fluted pre-cast concrete façades were embossed with a traditional delicate Nottingham lace pattern, which was applied so small in size that it could be barely seen from a far (Figure 5.22). Reminding of Ruskin's comments above, the details of ornamental surface is lost in the distance, and is only perceivable when seen very closely.

In an issue of the journal *Architectural Review*, the application of the lace pattern on the fluted façades is referred as "drapery frozen in time," as it gives the illusion of lightness (Gregory, 2007, p. 57). Referring to lace as an element of history, textile, and artistic challenges, Caruso (2004) indicated their interest in the writings and works of Louis Sullivan, John Ruskin, and Gottfried Semper. Caruso St. John brings back the ideas of Semper, who associates building with textile. According to Semper (2004), plaiting joins pieces seamlessly, and composes a rich ornament for both handicraft and architecture by giving rise to lace formation. Semper (2004) indicates

Figure 5.21 Caruso St. John, Center for Contemporary Arts, Nottingham, UK, 2009 (Caruso St. John's archive, 2009).

Figure 5.22 Façade detail of the Center for Contemporary Arts, Caruso St. John, Nottingham, UK, 2009 (Jencks, 2011b, p. 19).

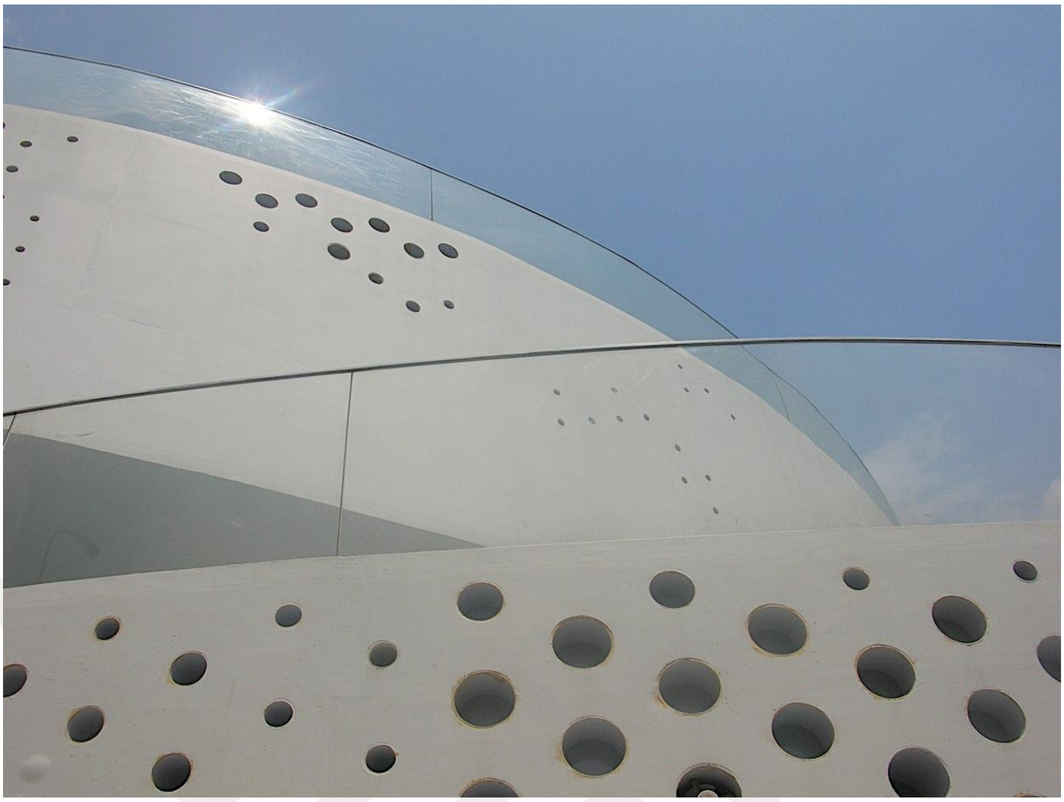


Figure 5.23 Façade detail of the Denmark Expo Pavilion, BIG, Shanghai, China, 2010 (Author's archive, 2010).

the magnificence and luxury of lace due to its refined appearance. Lace distinguishes itself from other handicrafts by its artistic fabrication, luxurious look, airy and fragile composition, and porous texture (Gordon, 1992). The symbolism of lace connotes to the sophisticated depictions in the classical period paintings, which depict aristocrats with noticeable lace pieces on their dresses. The classical painters consciously accentuate these lace parts, as it is a sign of luxury and status.

Similar to many contemporary examples, in the case of the Danish Pavilion, the architects simulate the craftwork of perforation on the façades (Figure 5.23). Simulating craftwork or reinterpreting traditional handicrafts in the building scale locates history into a contemporary context. In the urban scale, in many cases, it places the building into a level of sensitivity to the history of the urban context. It creates a sense of tradition, as if the architects are eager for catching the long lost aura of ornament.

In the Danish Expo Pavilion, the architects use digital technology as a tool for project design and mock-up models. Through the seamless coordination of CAD and CAM, the architects achieve the role of programmers and controllers, whereas CAM has the task of being a digital craftsman. Digital technology leads the way to reproduce traditional ornaments by means of new tools, as much as it expands the field of digital ornaments as a current interest. Through the use of digital technology as a tool in the Danish Pavilion, ornament becomes digital, symbolic, and structural. In addition to design and manufacturing processes, the architects use digital technology as a medium for presenting the architecture of the Danish Pavilion. Since Expo pavilions are image-oriented buildings, their public promotion is as important as their design and construction. With an emphasis given to its ornamental façades, the pavilion is ready to be consumed through glossy yet unrealistic images in the global media. Through the use of digital technology as a medium in the pavilion, ornament thus becomes an element of consumption, exhibition, and public attention.

CHAPTER SIX
CONCLUSION

Ornament in contemporary architectural theory and practice has a variety of layers. Being much more than an intricate material element of controversy, an in-depth study of ornament overlaps with the social and cultural *status quo*. Literature of the last two decades continuously highlights that ornament in contemporary architecture has a “new” definition and approach on account of CAD and CAM. Yet this study demonstrates that although the BIG’s ornamental façades were designed by CAD and produced by CAM, they are evaluated through a postmodern and a post-structuralist critique. As also supported by their extensive use of images that occupy much space in their monograph *Yes is More: An Archicomic on Architectural Evolution* (2010), their ornamental architecture becomes the epitome of culture industry and the production of image-driven contemporary society.

Today in the age of visual communication, a flood of images dominates the realm of contemporary architecture. Beginning with the twentieth-century widespread of photography, advertising, and publishing technology, mass media expanded worldwide by transforming objects into images. Contemporary culture is represented by the accumulation of spectacles, which is the mediator of social relation among people. In this sense, spectacle refers to consuming products for their sign values, such as appearance, fame, and public attention, rather than their use values.

To a great extent, this issue was previously addressed by the Modern poet and writer Charles Baudelaire in the nineteenth-century, together with Walter Benjamin, and theorized by the twentieth-century theorists, namely Guy Debord, Marshall McLuhan, Neil Postman, Roland Barthes, Michel Foucault, and Jean Baudrillard. Benjamin (1968) deciphers the modern metropolis as an endless spectacle, a visual show of spectacular images, dioramas, tempting dreams, and a realm of phantasmagoria in his 1939 text “Paris – Capital of the Nineteenth Century”. Debord (2002) emphasizes that media dominates the everyday life through consumption and mass production in his treatise *Society of the Spectacle* (1967). Barthes (1991) makes a critique of the spectacle and the authentic experience in his 1957 text "The World of Wrestling”, as he suggests the concept of the society of the spectacle a decade before Debord. Baudrillard (1993b) argues that the industry of semiotics goes further than the materialist rules of commodity, transforming everything into advertisement, media, or image. The dominating paradigm of visuality transforms bodily presence into spectacle, media, and image, and links the spectacle to the demand of astonishment and amazement.

Following the twentieth-century views, contemporary society intensifies its visual position. Today, the criticism of spectacle in architecture is made through the immaterial aspects of image, including flow, density, frequency, pixel, resolution, color, channel, bit, frame, and so on (Wigley, 2008). Image is reproduced infinitely in the spectacle-laden public sphere, so that the contemporary society is subjected to absorb a profusion of images every day. Correspondingly, in an image-driven culture, much emphasis is given to visuality, surface, and surface effects without the intention of contemplating but only consuming. As in the case of the Mountain Dwellings, the surfaces with the mountain image function as a natural ventilation and a physical protection for the parked cars, but its visual dimension as a simulated mountain supersedes other functions. Associating with the contemporary conception of spectacle, this idea contributes to the emphasis given to visuality and spectacle in the image-driven world. Furthermore, the fact that BIG became a starchitectural office while only 20 % of their projects are built or under construction shows that contemporary architecture is consumed through spectacles and images. Today, buildings do not have to be built to be worldwide famous, yet they need image-making to take part in the visual culture.

The paradigm shift of imitation, simulacra, and simulation interlaces with the concepts of image and display. The continuous production and consumption of simulacra by means of the ornamental façades of the Mountain Dwellings make the building to be exposed to aestheticization, spectacularization, and commercialization. In the case of the Arlanda Hotel, the vibrant color effects of the façades transform the whole building into a pure visual structure, and make it commercial, as well as aesthetic. Besides, the graphic deformation as a surface effect becomes a superficial gesture, since there is no theory or discourse beyond the surface. In this sense, ornament plays with the conception of a three-dimensional building or a two-dimensional image, as if, for BIG, there is no differentiation between the former and the latter.

The consumption of image-flow, or spectacle as a paradigm of contemporary society is related to the conception of current culture as industry. Architecture supplies the image industry through advertisements, website images, and magazine photographs, which make the building images to be constructed, perceived, and consumed instantaneously. In this sense, ornament in BIG's architecture contributes image-making, commercial success, and marketing strategy, as much as it becomes a designerly instrument of achieving astonishment. BIG's buildings in question stand out with their ornamental façades, becoming embodiments of consumption, exhibition, and public attention. In the Arlanda Hotel project, for instance, ornaments as urban portraits reintroduce human in contemporary culture, while they connote to ego, prestige, architect as commodity, and self-promotion in the celebrity-driven world.

The need for commercial success and a profitable image of the building unfolds the connection of ornament and capitalism. Architecture relates with the power of the client; thus the ornamental façades emerge as the result of compromise and commercialization. Today, the budget of the client and the mutual settlements with the architect are the limits for creating spectacular and astonishing façades. Since BIG's buildings in question are overpriced investments, investors demand definite success. The ornamental dimension is developed as an extension of constructing brand image and sign exchange value. For this reason, contemporary application of ornament does not discriminate between a public building and a housing complex. The Mountain Dwellings, for example, uses ornament and form with an intention to stand out in the newly-developing district of Ørestad. The building was created for the general public to perceive but was designed for the people of high income to inhabit. Ornaments become the symbol of prestige and the instrument of power, rather than being the representation of building function or program. The constructed buildings become the identical and perfect copies of their mini size models through the seamless integrity of CAD and CAM, and propose individuality for the client or investor, yet anonymity for BIG.

BIG uses ornament as a design instrument with a controversial maneuver. Their approach consists of reinventions using the advanced technology; however, it also stresses the end of creativity and authenticity. The perforation technique as in the cases of the Mountain Dwellings and the Danish Expo Pavilion is ubiquitous in contemporary architecture. It makes the computer to be a generative instrument of creating ornaments, rather than a tool of representation. The potential of close and remote perception renders different aspects of the façades visible with the changing density of perforations. In this sense, ornaments contribute to obtaining transparency and semi-transparency with a contemporary approach. Digital technology prompts the reproduction of the traditional perforation technique with new tools, as much as it introduces the field of digital ornament as a current interest.

In contrast to BIG's use of digital technology as a generative tool, their tendency of replicating ornaments in different projects, as in the Arlanda Hotel and the Leadership Tower, as well as their frequent employment of imitation like the mountain image or the royal portraits, jeopardize the originality, innovativeness, and imaginativeness of their ideas. At some point, this dangerous drift leads to the critique of their building façades as over-theorized surface effects, and the evaluation of their design approach as an extension of postmodernism and an exaggerated spectacle *per se*.

In contemporary architecture, the sustainable, sensual, representational, structural, and digital facets stratify ornament metaphorically and literally. Ornament contributes to the contemporaneity of the city and to the diversity of culture, much like a media façade, an advertisement billboard, graffiti, or a tattoo, not primarily as an element of utility but as an intense medium of impression, expression, and representation. The profusion of ornamental buildings that continue their worldwide expansion demonstrates that neither architects nor investors have done with revealing the potentials of ornament. In the future years, it is very possible that ornament will continue to be a critical discursive field for theorists, a playground of spectacle for public, and a challenging designerly instrument for architects more than ever.

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APPENDICES

Major Works Related to the Study of Ornament in Architecture Based on the Chapters One and Two

YEAR	AUTHOR	TITLE (ENGLISH)	TITLE (ORIGINAL)
1 AD	Marcus Vitruvius Pollio	*Ten Books on Architecture*	*De Architectura libri decem*
1452	Leon Battista Alberti	*On the Art of Building in Ten Books*	*De Re Aedificatoria libri decem*
1537	Sebastiano Serlio	*General Rules of Architecture Over the Five Manners of the Edifice*	*Regole generale d'architettura sopra le cinque maniere degli edifice*
1570	Andrea Palladio	*The Four Books of Architecture*	*I Quattro libri dell'architettura*
1598	Wendel Dietterlin	*Architecture of Division, Symmetry and Proportion of the Five Columns*	*Architectura von ausstheilung, symmetria und proportion der fünff seulen*
1624	Henry Wotton	*The Elements of Architecture*	-
1691	Augustin Charles d'Aviler	*Course of Architecture Including Vignole's Column Orders*	*Cours d'architecture qui comprend les ordres de vignole*
1745	Germain Boffrand	*Book of Architecture*	*Livre d'architecture*
1753	William Hogarth	*The Analysis of Beauty*	-
1753	Marc-Antoine Laugier	*Essay on Architecture*	*Essai sur l'architecture*
1769	Giovanni Battista Piranesi	*Diverse Manners of Ornamenting Chimneys*	*Diversi maniere d'adornare i cammini*
1771	Jacques François Blondel	*Course of Architecture Taught at the Royal Academy of Architecture*	*Course d'Architecture Enseigné dans l'Academie Royale d'Architecture*
1790	Immanuel Kant	*Critique of Judgement*	*Kritik der Urteilskraft*

YEAR	AUTHOR	TITLE (ENGLISH)	TITLE (ORIGINAL)
1804	Claude-Nicolas Ledoux	*Architecture Considered in Relation to Art, Customs, and Legislation*	*L'Architecture considérée sous le rapport de l'art, des moeurs et de la legislation*
1828	Heinrich Hübsch	*In What Style Should We Build?*	*In welchem style sollen wir bauen?*
1841	Augustus Welby Northmore Pugin	*The True Principles of Pointed or Christian Architecture*	-
1844	Karl Gottlieb Wilhelm Bötticher	*Architectonics of Helens*	*Der tektonik der Hellenen*
1849	John Ruskin	*The Seven Lamps of Architecture*	-
1851	Gottfried Semper	*The Four Elements of Architecture*	*Die vier Elemente der Baukunst*
1851 1853	John Ruskin	*The Stones of Venice Vol. I* *The Stones of Venice Vol. II and III*	-
1856	Owen Jones	*The Grammar of Ornament*	-
1856	Ralph Nicholson Wornum	*Analysis of Ornament: The Characteristics of Styles and an Introduction to the Study of the History of Ornamental Art*	-
1860-1863	Gottfried Semper	*Style in the Technical and Tectonic Arts; or, Practical Aesthetics*	*Der Stil in den technischen und tektonischen Künsten; oder, Praktische Ästhetik: Ein Handbuch für Techniker, Künstler und Kunstfreunde*
1868	Eugéne Emmanuel Viollet-le-Duc	*Detailed Encyclopedia of French Architecture from the 11th to the 16th Century*	*Dictionnaire raisonné de l'architecture Française du XIe au XVIe siécle*
1872	Eugéne Emmanuel Viollet-le-Duc	*Discourses on Architecture*	*Entretiens sur l'architecture*

YEAR	AUTHOR	TITLE (ENGLISH)	TITLE (ORIGINAL)
1892	Henri Louis Sullivan	“Ornament in Architecture”	-
1893	Alois Riegl	*Problems of Style: Foundations for a History of Ornament*	*Stilfragen: Grundlegungen zu einer Geschichte der Ornamentik*
1896	Otto Wagner	*Modern Architecture*	*Moderne Architektur*
1898	Adolf Loos	“The Luxury Vehicle”	“Die Luxusfuhrwerk”
1898	Adolf Loos	“The Principle of Cladding”	“Das Prinzip der Bekleidung”
1908	Adolf Loos	“Ornament and Crime”	“Ornament und Verbrechen”
1908	Wilhelm Worringer	*Abstraction and Empathy*	*Abstraktion und Einfühlung*
1922 1923	Henry Louis Sullivan	*A System of Architectural Ornament* (drawings)	-
1923	Le Corbusier	*Towards a New Architecture*	*Vers une Architecture*
1924	Adolf Loos	“Ornament and Education”	“Ornament und Erziehung”
1925	Le Corbusier	*The Decorative Art of Today*	*L’Art Décoratif d’Aujourd’hui*
1929	Henry-Russell Hitchcock	*Modern Architecture: Romanticism and Reintegration*	-
1932	Henry-Russell Hitchcock and Philip Johnson	*The International Style*	-
1935	Henry van de Velde	“Manuscript on Ornament”	“Manuscrit sur l’ornement”
1960	Hans-Georg Gadamer	“Ontological Foundation of the Occasional and the Decorative”	“Der Ontologische Grund des Okkasionellen und des Dekorativen”
1965	Theodor W. Adorno	*Functionalism Today*	*Funktionalismus Heute*
1966	Robert Venturi	*Complexity and Contradiction in Architecture*	-

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1968	Robert Venturi and Denise Scott Brown	“A Significance for A&P Parking Lots, or Learning from Las Vegas”	-
1968	Robert Venturi and Denise Scott Brown	“On Ducks and Decoration”	-
1969	Charles Jencks and George Baird	*Meaning in Architecture*	-
1972	Robert Venturi, Denise Scott Brown, and Steven Izenour	*Learning from Las Vegas*	-
1974	Alan Colquhoun	“Sign and Substance: Reflections on Complexity, Las Vegas, and Oberlin”	-
1988	George L. Hersey	*The Lost Meaning of Classical Architecture: Speculations on Ornament From Vitruvius to Venturi*	-
1996	Robert Venturi	*Iconography and Electronics Upon a Generic Architecture: A View From the Drafting Room*	-
2001	Mark Wigley	*White Walls, Designer Dresses: The Fashioning of Modern Architecture*	-
2006	Farshid Moussavi and Michael Kubo (Ed.)	*The Function of Ornament*	-
2008	Oliver Domeisen (Ed.)	*Re-Sampling Ornament*	*Ornament Neu Aufgelegt*
2009	Andrea Gleiniger and Georg Vrachliotis (Ed.)	*Pattern: Ornament, Structure and Behavior*	*Muster: Ornament, Struktur und Verhalten*

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2010	Ben Pell (Ed.)	*The Articulate Surface: Ornament and Technology in Contemporary Architecture*	-
2012	Jörg H. Gleiter (Ed.)	*Ornament Today: Digital, Material, Structural*	-
2013	Antoine Picon	*Ornament: The Politics of Architecture and Subjectivity*	-
2014	Michiel van Raaij	*Building as Ornament: Iconography in Contemporary Architecture*	-