Abstract

This paper will investigate the phenomenon of glossiness as a rising trend in contemporary architecture. Also, this paper will argue a significant transition in the surface finishing and socio-technical development has directed architecture toward the trend of glossiness. To gain a better understanding toward this particular phenomenon, the exploration within this study will be discussed in two parts. First, we will look at glossiness as material quality and the limitation of perception. This will suggest the glossiness as a result of the interaction between the known material qualities, such as transparency, reflectivity and opacity. Next, we will further look at this particular phenomenon in socio-technical development in the 20th century to understand why the glossiness has present in the contemporary architecture. Consequently, this understanding will bring us to the comprehension of glossiness as a product of consumerism culture and computer innovation in architecture surface materiality.

Acknowledgments

An Investigation into the Phenomenon of Glossiness in Contemporary Architecture

Key words   : Glossiness, glossy, sheen, phenomenon, phenomena, surface, architecture, contemporary architecture, fashion, fashionable, computer advancement, architecture materiality.

Word Count   : 5174 (excluding bibliography)

I. Introduction

In recent years, some of the world's most influential architects have chosen to employ glossy exterior surface finishes in their architecture. From Peter Cook and Colin Fournier's Kunsthaus in Graz, Austria (2002) to Zaha Hadid's most current designs for the Nordpark Railway Station (2007) or the Moscow Expo Centre (2008), recent architectural works seem to show an affinity towards developing a vocabulary of glossiness. Indeed, the early conceptual designs for the Embryological House by Greg Lynn, which serves as a forerunner of this contemporary trend, also experimented with material finishes that express a similar quality. The trend is not only limited to the realm of architecture, as allied fields like product design have also continued to adopt such material finishes in the development of consumer goods from electronics to furniture, with iconic works like Apple Computers' 1998 design for the iMac computers, or Karim Rashid's 2002 design for the Kapsule Chair defining current consumer trends.[1] Once again, Greg Lynn serves as a link between these realms of architecture and product design with his 2003 teapot design for the famous Italian

product design company Alessi. Through these recent examples, it becomes evident that there is a rising trend in architectural practice where the surface quality of glossiness could define a new aesthetic direction for upcoming architectural works. Accordingly, this paper aims to offer an investigation into the phenomenon of glossiness as a basis of developing a better understanding of this contemporary condition.

Based on some of the examples discussed above it may be argued that this tendency is part of the formal vocabulary of the already defined trend of 'blobitecture'. Therefore, it becomes important to make a distinction between the two qualities of 'envelope' and 'surface', to clarify the focus of this investigation. According to Tschumi "building in their simplest form, are made of vector and envelope."[2] If vector is the program then envelope is something to contain the program, which means that the force inside the envelope influences the shaping of the envelope. In contrast to this, surface, while also a part of the envelope, is not necessary influenced by the force inside the envelope. Therefore, surface corresponds to properties such as color or texture of materials. From this discussion it is clear that the discussion of blobitecture relates to the 'blob-like' form and does not explain the surface quality of glossiness exhibited by these examples. Furthermore, while the notion of surface can be understood as internal or external, this investigation of glossiness focuses on the external surface,[3] since the external surface

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[1] John K Waters, *Blobitecture: waveform architecture and digital design*, Massachusetts: Rockport publisher, 2003, 120-147.

[2] Bernard Tschumi, 'Vectors and Envelopes', in Bernard Tschumi and Irene Cheng, *The state of architecture at the beginning of the 21st century,* New York: Monacelli Press, 2003, 64-65.

[3] This definition of surface may be best explained in Mark Taylor, 'Surface-Talk', *Architectural design,* 73, 2003, 30-35. He refers to a philosopher Avrum Stroll in the search for the definition of surface and in Stroll's sense surface is always the outer boundary of an object.

has immediate connection with the social expression of architecture.

Comparing this rising trend for glossiness with the other material qualities like transparency, which was highly influential in the mid 20th century, this paper will argue that there is significant transition in the concept of surface finishing and the various socio-technical advancements over the last century have led architecture towards this trend of glossiness. Therefore, the paper will offer a discussion not only of the material quality of glossiness but also of its socio-technical expression. The paper will first look at the notions of materiality and surface in architecture and offer a discussion of the various theoretical trends of 20th century that have veered architectural practice in this direction. Since the exterior surfaces of architectural works belong with the social realm, the discussion will then move towards the socio-technical developments that have affected the rise of this trend. The paper will finally offer a comment on the technological developments that have led to the use of new materials and techniques in the production of the contemporary works introduced before.

II. Material Quality & Limits of Perception

The existing literature on the surface quality in modern architecture mainly focuses on the three interrelated qualities of transparency, opacity and reflectivity. While these qualities somehow incorporate the basis of glossiness, a direct discussion of the quality of glossiness is regrettably missing. Therefore, in order to gain an appropriate understanding of the current trend of glossiness, it is crucial to take into consideration the existing debates on transparency, reflectivity, and opacity.

Colin Rowe and Robert Slutsky, in their 1963 article on transparency, insisted that the material quality of transparency could be defined in both literal and phenomenal terms.[4] The article is contemporaneous with the rising interest in transparency in Modern architecture and thus the authors highlight this material quality of transparency as an important aspect of 20th century architecture. Here the literal transparency is understood as commonly perceived through architectural surface of a material such as glass. In Rowe and Slutsky's argument, the concept of literal transparency had been found in Picasso's painting, *L'Arlesienne*, which was associated with the Bauhaus in architecture. In Picasso, they argue, transparency is achieved by overlaying some elements in several layers where the elements on the underneath layers are perceivable through the top layers. This is the same concept that is applicable in the architectural surface of Bauhaus, where internal space can be perceived through the external skin even when there is a material that actually separates the internal and the external. Therefore, literal transparency is understood as a quality of an architecture surface of a material that allows obstruction-free visual perception.

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[4] Colin Rowe and Robert Slutzsky, 'Transparency: Literal and Phenomenal', *Perspecta,* 8, 1963, 45-54.

Figure 01. *L' Arlesienne*
(*Source*: Rowe and Slutzsky, *Transparency: Literal and phenomenal,* first published, 180)

Figure 02. Bauhaus
(*Source*: Photographed by *Alman Faluthi*)

On the other hand, Rowe and Slutsky define phenomenal transparency as something that is perceived as a result of juxtaposition of several elements. This is best exemplified in the painting by Fernand Leger, The Three Faces, where the perception of transparency is the result of putting elements in certain order leading to an illusion of obstruction free vision. In terms of architecture, Villa Garches by Le Corbusier is used as an example to describe phenomenal

transparency where the juxtaposition of planar surfaces generates the quality of transparency. From this discussion, it is evident that phenomenal transparency is a compositional phenomenon dependent on juxtaposition of architectural elements and has nothing to do with material quality itself.
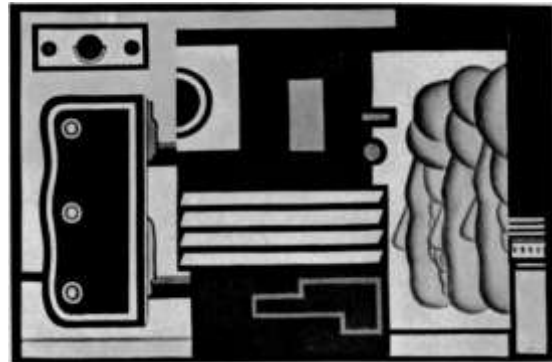
Figure 03. The Three Faces
(*Source:* Rowe and Slutzsky, *Transparency: Literal and Phenomenal,* 49)

Figure 04. Villa Garches
(*Source:* Rowe and Slutzsky, *Transparency: Literal and phenomenal,* 50)

In a more recent discussion regarding phenomenal transparency, Eve Blau (2007) suggests that transparency is the concept of continuous space, inside-out space, the space that can be experienced no matter where we are, either outside or inside. Blau quotes Kazuyo Sejima of SANAA as stating that

"transparency is a phenomenon that allows the invisible to be experienced optically and space to be expressed rather than contained."[5]   These ideas suggest that transparency as a concept opens up a way of experiencing invisible space. In other words, transparency may allow people to experience, through visual perception, either the outside or inside world without being present in either the outside or inside space. This particular formulation allows us to look at the material quality, as a larger phenomenon intimately connected with the perception of space which might offer a greater insight into the qualities of glossiness.

One of the values of the previous discussion is the construction of material qualities as being literal or phenomenal. This further directs our inquiry into glossiness as a quality that is not merely limited to a material but can be understood as a phenomenon that is revealed by its relationship to other phenomena. We may argue, then, that to be able to understand the phenomenon of glossiness it is necessary to understand other related phenomena of transparency, opacity and reflectivity. As it is available from many contemporary 3D modeling software programs like 3DSMAX, these interrelated phenomena often work together to define material constraint. For instance, reflection can contain two closely related phenomena of reflectivity and glossiness, while refraction is affected by transparency and glossiness. Such a definition further suggests that the phenomena of reflectivity and transparency often appear as part of a single surface. However, reflectivity and transparency do not necessarily always

appear together, for instance in a transparent fabric.

The earlier discussion also introduced the concept of perception in the recognition of material qualities and it is therefore important to clarify the understanding of this term for the purpose of our investigation. Literally, the word perception is defined as a way of seeing. Nevertheless, this definition is only limited to the understanding of perception in a visual manner. In contrast to this, Christian Norberg-Schulz offers a larger understanding of the term when he suggests that we grasp the phenomenal world through perception, and that in our life we often act based on spontaneous perception.[6]   Here, he suggests an understanding of perception as a judgment which does not only rely upon the visual basis, yet incorporates other senses of one's body. Norberg-Schulz further goes on to define phenomenon as something that starts to exist where there is an object.[7] This does not mean that phenomena do not exist when there is no object. However, we are only able to perceive a phenomenon when there is an objective presence. In other words, with the help of an object we are able to perceive a particular phenomenon in our surrounding. Therefore, phenomenon is an event existing in our world and can be perceived in several different ways, and glossiness as a phenomenon may be understood similarly.

In yet another discussion of transparency and opacity, David Leatherbarrow and Mohsen Mostafavi (2002) explain the two concepts as affecting each other through their interaction in a space they have created. On the one hand, they express how opacity can help identify the perimeter through its use as opaque surface as seen in works of

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[5] Kazuyo Sejima in Eve Blau, 'Transparency and the irreconcilable contradictions of modernity', *Praxis*, 9, 2007, 59.

[6] Christian Norberg-Schulz, *Intentions in Architecture*, London: George Allen & Unwin Ltd, 1966, 11-82.
[7] Norberg-Schulz, *Intentions in Architecture,* 28.

Voysey, Berlage and Fabiani to define streets and interiors.[8] While on the other hand, they employ Mies van der Rohe's project for the Concert Hall in 1942 to explain how opacity can help reveal transparency. The formulation of transparency within this project, they argue, is a result of putting opaque elements in a certain way so as to reveal transparency. This interaction between opacity and transparency is constructed through a phenomenal understanding and focuses on the interrelationship of material qualities.

This discussion of material qualities as being interdependent in the realm of perception is further taken up by Richard Weston (2003) in the discussion of the interplay between matte and glazed tiled surfaces in the construction of the Sydney Opera House. This is a particularly relevant discussion as it explains how opposing material qualities work together to create a unique overall surface of a building. Furthermore, this discussion of Sydney Opera House is directly related to the subsequent rise of the desire for glossiness in architectural works. Here, Weston suggests that the composition of glossy and matte tiled surfaces in the Opera House have created "a live surface in architecture." This unique perception of liveliness is then explained as the result of interaction of matte and glossy surfaces with the revealing qualities of light.[9] While this discussion comes close to the discussion of glossiness, it is limited to the interaction between matte and glossy surface and further investigation on why this glossiness is desirable needs to be done.

From these discussions, it is clear that glossiness can be defined as a material quality that appears to our visual perception as the result of the interaction between other known qualities such as transparency, opacity and reflectivity. Therefore, investigation into these various interrelated material qualities could give us an insight into the application and perception of glossiness in contemporary architecture. However, the one thing that this discussion does not explain is the prevalence of and the desire for this phenomenon of glossiness in contemporary society and more investigation is needed. Therefore, we must now look at the various socio-technical developments in the recent past to allow for an understanding of the larger forces in play that may direct our desires for certain material qualities.

III. Socio-Technical Developments in 20th Century

It is clear that a discussion of the exterior surface of architecture is closely tied to the social realm and the choice of material finishes often correspond to the relationship between individual and societal perceptions. Christian Norberg-Schulz suggested that in the socialization process, there are two pathways, namely imitation and identification. Cultural elements such as knowledge, belief and symbols are derived from imitation, while things that are formulated to have a common standard derive from identification.[10] For instance, the preference for a glossy car by an individual is actually dependant on how society or other people perceive that glossy car, and it becomes more desirable as it serves as a prototype for a luxury object by being more fashionable than a non-glossy variety. This sharing of perspectives on the definition of what is luxurious and fashionable serves as a common ground which is known as schematization in

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[8] David Leatherbarrow and Mohsen Mostafavi, *Surface Architecture,* Cambridge: MIT Press, 2002, 116.
[9] Richard Weston, *Materials, form and architecture,* London: Laurence King, 2003, 165.

[10] Norberg-Schulz, *Intentions in Architecture,* 37-48.

Norberg-Schulz's sense. Furthermore, the concept of fashionable is described by Georg Simmel as "imitation of a given pattern and thus satisfies the need for social adaptation;…it satisfies the need for distinction, the tendency towards differentiation, change and individual contrast."[11] Also, he insists by imitating it will give someone sense of accompaniment by others in taking an action.[12] Therefore, it can be argued that an investigation into glossiness needs to acknowledge the relationship between people within a society and further take into account the social perceptions guided by the process of socialization.

In addition to social questions of fashion, the discussion of glossiness in contemporary architectural practice also depends on the developments in technology as it is closely related to social ideals and ideas. Discussing the question of materiality in socio-technical terms Leatherbarrow argues that materials can be defined into two basic types, namely 'solid' materials and 'flimsy' materials. Solid materials are those which are used for the structure of a building while flimsy materials are employed towards the surface finishing of a building.[13] Leatherbarrow suggested that the surface finishing material can be conceived as flimsy materials as these types of materials are mostly used for their likeability.[14] Since the choice of the flimsy materials is dependent on social factor of fashion,[15] it is the relationship of finishing technology to social ideals that can best describe the shift towards glossiness that has come about since the mid of last century.

Starting from the 1950s there has been a gradual shift in societal norms that have allowed for a shift from the previously discussed ideas of transparency to those of glossiness. In the post-war years the dissatisfaction with the war and the turn towards democracy guided many developments in society. Accordingly, the euphoria of democracy was also captured in architecture through the use of surfaces that promoted transparency, thereby bringing new light for a better life.[16] This shift was exemplified in the post-war works of Mies van der Rohe, in a domestic project, Farnsworth House, completed in 1951, celebrated the concept of "live openly"[17] by engaging transparent surfaces for its walls. Another important structure in a public building, by Mies van der Rohe, the Seagram building, which was completed in 1958, used transparent surfaces to celebrate characteristics of honesty and democracy. Mies took advantage of the growing glass and steel industry and developed this new aesthetic which found support in the post-war economic context.

Figure 05. Farnsworth House
(*Source*: http://www.farnsworthhouse.org/photos.htm, photographed by *Jon Miller*)

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[11] Georg Simmel, 'Fashion, Adornment and Style'*,* in David Frisby and Mike Featherstone, *Simmel on Culture,* London: SAGE Publication, 1997, 189.
[12] Simmel, 'Fashion, Adronement and Style,' 188.
[13] Leatherbarrow, *The Root of Architecture Invention,* 145.
[14] David Leatherbarrow, *The Root of Architecture Invention,* New York: Cambridge University Press, 1993, 145.
[15] Leatherbarrow, *The Root of Architecture Invention,* 151-155.

[16] Claude F Bragdon, *Architecture and Democracy,* New York: Cosimo Classics, 2005, 61.
[17] See Bragdon, *Architecture and Democracy,* for more discussions of this concept on the discussion "after the war."

Figure 06. Sydney Opera House
(*Source*: Photographed by *Author*)
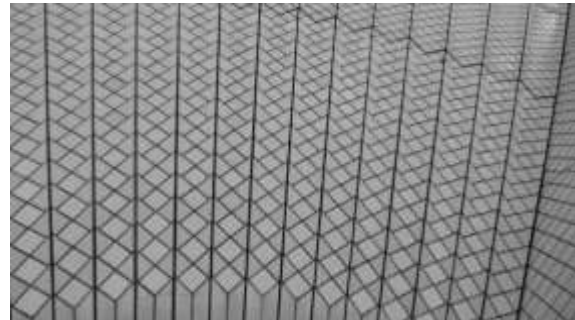
Figure 07. The glossy and matte tiles of Sydney Opera House
(*Source:* Photographed by *Author*)

The subsequent transition from transparent towards glossy surfaces was initiated by one of the masterpiece of the twentieth century, Sydney Opera House by Jorn Utzon in the 1960s. Utzon's formal language as well as the use of materials is significantly different than the post-war works of Mies and almost defines an opposition to the modernism of the former. Consequently, this building can be seen as a turning point in the technological innovations that bring a new focus to surface materiality. As mentioned before, the design for Sydney Opera House achieved a dynamic and lively surface through the interaction between matte and glossy tiles. Towards this end, Utzon was inspired by both Chinese ceramic tradition[18] and his visit to a mosque in Iran which prompted him to develop the surface of the opera house through ceramic tiles.[19] It took Hoganas, a Swedish tile maker, three years to develop the tile finishes intended by him.[20] In spite of this technological limitation, the design for the Sydney Opera House continued to develop a new aesthetic that brought attention back to the surface of the building.

This trend towards glossiness of the exterior surface is continued with another landmark, the Lloyd Building in London, which was constructed between 1978 and 1986 by Richard Rogers. As an example of High-Tech Architecture, this building adopted a very different approach from the Sydney Opera House. Here, the theoretical decision to expose the building's services allowed the architects a chance to develop a new kind of exterior which was in opposition to the modernist box. The exposed services were transformed into a formal statement that was visually appealing through the use of existing technologies in steel that allowed for a shiny exterior finish. Not only this, but the use of this finish added a delicacy to the appearance of the building by separating the service and served components of the design through the use of different materials.

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[18] Kenneth Frampton, *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture,* Cambridge: MIT Press, 2002, 280.
[19] Weston, *Materials, form and architecture,* 164.
[20] Weston, *Materials, form and architecture,* 164.

Figure 08. Lloyd Building by Richard Rogers
(*Source:*
http://www.richardrogers.co.uk/Asp/uploadedFiles/I
mage/0170_lloyds/RSHP_A_JS_0170_L_E_GB.pdf)

Figure 09. The glossy surface of Lloyd Building
(*Source:*
http://www.richardrogers.co.uk/work/all_projects/lloy
d_s_of_london/completed)

Michael Hays argues that by the 1980s the development of mass media, first as television and then through computers, had led to the rise of a consumer culture and affected the way we perceived the world. Being dictated by the marketplace meant that architecture too had to be manipulated to attract people and sell itself to the public.

The turn to "symbols and branding"[21] clearly enforced the social demand in surface finishes that was started earlier. Furthermore, by the middle of the 1990s the advancements in computing had allowed architects, Greg Lynn in particular, to explore the complexity in architecture for the sake of a new geometry.[22] This development in information technology along with the rise of consumer culture had generated the search of a new fashionable kind of object.

Lynn introduced a new methodology in design that took advantage of the advancements in computing within the product design and manufacturing industry.[23] It might be argued that Lynn's original intention did not take into account the surface of architecture at this stage, and his focus was on the overall geometry which introduced the term 'blob' in architecture. However, it was the tectonic of the 'blob' that eventually led him to work with a certain kind of surface. At a recent lecture at The University of Michigan, delivered in 2009, Lynn indicated his fascination with the surface of architecture and how his quest for the blob like form had led him to explorations in plastic as a surface material. The glossy finish of plastic is the further result of experimentation with the opacity and reflectivity of the surface in computing. Lynn now recognizes this plastic architecture as the future that turns away from the traditional methods of layering and

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[21]For instance, in America, John Chase stated the advertised food had affected people to buy national products, including canned and fast foods and often came with brand and symbol, compare to local. Consequently, this social condition has also affected architecture. During that time, 1980s, reflectivity was a strategy to achieve this, however, as the technology in architecture materiality getting more advanced in the recent years, glossiness seems to take over this role. This will be revealed as we move into further discussion within this study. See more detail of this discussion in John Chase, 'The role of consumerism in American architecture', *Journal of architecture education,* 44, 1991, 211-224.

[22] Waters, *Blobitecture,* 8-85.

[23] Waters, *Blobitecture,* 30-63.

collapses the structure and the surface into one. He explains this in reference to boat manufacturing, arguing for a shift from traditional segmented boat manufacture to contemporary plastic boats.

Furthermore, plastic is promising an infinite application for future surface of architecture. This is made possible as the technology in surface material keep growing toward more advances.[24] At the same time, the consumerism social condition that emphasizes the importance of the "symbols and branding" will employ glossiness even more desirable in the experimentation of the future architectural surface, particularly with the plastics products.

This search for new forms and surface finishes was successfully realized in a large scale project, first, by Frank Gehry when he applied computer technology to realize a vision toward the beauty of the complex geometry for Guggenheim Museum in Bilbao, Spain in 1997. Gehry's use of titanium gave the surface a dramatic finish as it produced a play of light all day long and took on different colors of the sky. Unlike its predecessors at Sydney Opera House and Lloyds Building, the Guggenheim museum allowed for greater interaction between the qualities of glossiness, opacity and reflectivity through the use of titanium. As titanium is an expensive material, it was "the advancement in CAD/CAM technologies" that allowed a way to efficiently generate a building surface material.[25] This indicates a crucial shift and advancement in architectural materiality where the use of computer technology to generate complex forms in architecture, also allowed for greater

economy in use of expensive materials in architectural surfaces.

Figure 10. Guggenheim Museum of Gehry
(*Source*: Gerhard Mack, *Art museums into the 21st century, 22*)

Figure 11. Up close view of Guggenheim's titanium surface
(*Source*: Mack, *Art museums into the 21st century,* 25)

Moving into the 21st century the rising interest in glossy surfaces gets further support from Peter Cook and Colin Fournier's project for the Kunsthaus in Graz, Austria completed in 2002. Here Cook reinterprets his idea of the walking city, which was proposed in 1960s by Archigram, into a single unit of Kunsthaus geometry. The technological limitations of the 1960s seem to have been overcome by this time, as

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[24] Andrea Deplazes, *Constructin Architecture: materials, processes, structures,* Basel: Birkhauser, 2008, 159-161.
[25] Michelle Addington and Daniel Schodek, *Smart Materials and New Technologies,* Burlington: Elsevier, 2005, 3.

innovations in computer technology and advancements in manufacturing have helped Cook realize his 'alien' vision. Following on from this trend, Zaha Hadid makes a shift from her early work towards a more fluid geometry and glossy finishes by the mid of the decade. [26] In her design for the Nordpark Railway Station entrance, completed in 2007, Hadid employed the advancements in the glass industry to generate a glossy finish for her complicated and fluid design. She explains, "new production methods like CNC milling and thermoforming guarantee a very precise and automatic translation of the computer generated design into the built structure."[27] This statement indicates a strong influence of computer technology in generating form that later formulate the glossy surface within this particular building. This technological experimentation, somehow, has implied that the glossy effect is often correctly associated with the complex geometry developed through computers.

Figure 12. Kunsthaus Graz of Cook and Fournier
(*Source*: http://www.arcspace.com/architects/cook/)

Figure 13. Kunsthaus Graz's glossy glass surface
(*Source*: http://www.austria.info/au/culture-arts/kunsthaus-graz-1140943.html)

Figure 14. Nordpark Railway Station entrance of Hadid
(*Source*: http://www.zaha-hadid.com/architecture/nordpark-railway-stations/, photographed by *Werner Huthmacher*)

Figure 15. Nordpark Railway Station's glossy curve glass
(*Source*: http://www.zaha-hadid.com/architecture/nordpark-railway-stations/, photographed by *Helene Binet*)

Therefore, looking over the last few decades of architectural development we can say that the experiments that began in the middle of the 20th century with the Sydney Opera House, and then continued with by the Lloyds building has eventually led to an architecture that perceives its surface materiality quite differently. The advancement of computers in the design and

[26] Lebbeus Woods, "Drawn Into Space: Zaha Hadid," *Architectural Design*, 78, 2008, 28-35.
[27] Zaha Hadid, *Nordpark Railway Station,* 2011, http://www.zaha-hadid.com/architecture/nordpark-railway-stations/ (accessed 20 September 2011).

manufacturing industry affects the method of production particularly in surface finishing, and this is clearly visible in recent projects by Gehry, Cook and Hadid discussed here. The concept of transparency which related to modern ideology and ideas of democracy, has given way to glossiness and the constant play with form and surface symptomatic of a consumer culture.

IV. Conclusion

The current investigation has revealed that glossiness, as a rising phenomenon, in the contemporary architecture can be comprehended in different ways. First, as a material quality which is the result of the interaction between other material qualities such as transparency, opacity and reflectivity. Here the notion of glossiness points to a perceptual and experiential desire. However, when considered as a socio-technical phenomenon, it reveals a different kind of dependence on the forces of consumerism and the rise of computers. This second mode suggests that glossiness is the effect of change in contemporary social conditions and the innovation of computer technology that followed.

As described by Michael Hays, the need for the 'social symbolic' directly relates to the innovation in mass media and computer technology and has allowed for a new paradigm in the production and reproduction of architecture, especially the surface finish. Furthermore, Hays insists that surface production is closely related to contemporary 'digital design'[28] which affects the desire for glossy architecture. Relating this to the rise of consumer culture and the greater social symbol accorded to the object than ever before leads us to the rise in demand for glossy finish. While this social desire may have been served by reflective

glass in earlier days, the late consumer culture with the influence of computer software, has found of another way to expose the object by increasing opacity and reducing transparency that then leads to glossiness. Therefore, glossiness is not merely the result of a recent fashionable trend but an ongoing experiment with surface materiality which reflects the social developments of the last century and would rightfully continue to define developments in the near future.

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[28] Hays, 'The Envelope as Mediator', 66-67.

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