Clues to the Future of Media Architecture

Media Architectures have only emerged to the world more than 10 years, but are developing very rapidly in recent years. Especially in China, this new trend of architecture has grown into a strong force, leading to the changes of urban scene as well as people's idea, cognition and understandings towards architecture, cityscape and even the city itself.

THE UGLIEST BUILDINGS?

CNN – Cable News Network – have conducted a poll a few years ago for the top 10 ugliest buildings in the world, with the Bullring Shopping Centre in Birmingham voted the ugliest architecture in the U.K.

Since the Bullring Shopping Centre looks so similar to the recent typical media architectures. Media Architecture, may also be considered as the next ugliest form of architecture.

WHAT IS MEDIA ARCHITECTURE?

Dr. M Hank Haeusler, Senior Lecturer at the University of New South Wales, who is also the person in charge of Media Architecture Institute(MAI),has said:

> *"Since a wider definition of architecture often includes the design of the total built environment, the effects on urban space of media facades incorporating moving images, graphics, texts could therefore be described as media architecture."* [1]

Therefore,according to the current situation, we might say that, Media Architecture is a novel architectural form with the combination of architecture façade and image-based digital media. To some extent, media architecture is an art work features with science and technology, and with the function of media. Apart from the fundamental field of architecture, media architecture also pertains to various field including visual communication, advertising planning, art of film and TV, media art, installation art, experimental animation, digital intelligence, semiconductor lighting, green energy, etc.

In year 1986, the Tower of Winds project in Yokohama, Japan by Toyo Ito became the herald of this architectural category. In daylight, the Tower of Winds is a 21 meters high oval building clad in aluminum panels; while at night, it turns into a memory device recording the city's life. Being controlled by 2 computers, the tower goes dim and bright with varying wind speed and direction, contributing to a splendid light show that reflects the close interaction between the tower and its surroundings (Figure 1).

CHANG ZHIGANG
Central Academy of Fine Arts, China

In year 2003, Graz Art Museum in Austria embraces architecture with media technique – the BIX system - and intensifies the architecture image in the city with media contents. The BIX system employs high precision computer software and circuitry to control 930 units of 40cm-diameter 40 Watt fluorescent bulbs to achieve large screen displayed, low resolution, motional image. Although its resolution can only match 0.2% of the resolution of a traditional television display, every individual bulb can adjust its lightness by a speed of 18 seconds per frame so each of them can compete with a computer or TV display in the perspective of resolution (Figure 1).

In year 2008, Jingya Hotel, located in Xicui Street, Chaoyang District, Bejing, introduced the photovoltaic glass curtain walls designed by Simone Giostra with partner architects Arup. The whole façade is laminated by 2300 pieces of 9 different standards photovoltaic panels, which are placed with different density to satisfy the architecture function requirement. With a control system, the façade changes into a smart skin of the building. It collects power via solar panels during daytime and converts that into electricity for the night. Then, the media façade takes the roll of an envoy for green communication with the environment (Figure 2).

In year 2013, Wanda Plaza designed by UNStudio is completed. The 23,000 square meter façade of Wanda Plaza is furnished with 86,000 units of stainless steel made globe pixel. Each globe can sparkle and cast the light to the metallic panel rearward, forming a double deck façade with virtual depth of view which can carry more complicated magnificent media contents. The façade displaying moving media contents at night is used as an attraction to people as well as a communication tool with the urban space so as to stimulate the business inside the building. In this case, the two independent elements – the large screen and architecture – has not only formed a whole new building structure, but also tightly connected the architecture to its surroundings in an innovative manner by transformed into one fresh form of architecture (Figure 3).

CLUE 1 TO MEDIA ARCHITECTURE'S DEVELOPMENT:
FROM VOLUME TO SURFACE

At the beginning of 20th Century, Le Corbusier's ideas of free plan and the long horizontal window liberate the building envelope from the structural function and enable it to express. Although the early modernists see the exterior walls as a sculpture means, trying to create the vision of volume by the uneven faces to pursuit *"the precise, correct, excellent management of all the measurements under the sunlight"*. Ludwig Mies van der Rohe is the man who actually presents the building envelope as skin. He abstracts architecture to skin and bone which can be intensified by delicate and refined details. This idea becomes the fundamental concept for the self expression of architecture skin.

Post modernists bring the theory further and explain that all architectures consist of two layers of skins - the interior skin stands for functions while the exterior skin stands for forms. In allusion to the principle of modernism that architecture should reflect the real interior function, Robert Venturi proposed to adopt dualism in architecture. Thanks to dualism, architects were freed from conformity; the architecture skin gained more freedom and independence on expression.

Within deconstructivism or some contemporary avant-garde architectural works and commercial buildings, the flying walls has become an important technique of expression and it's definitely a stylish trend.

Figure 1: *the Tower of Winds Graz Art Museum,* http://image.google.com/.

Every age has its theme concerns, as the industrialization of construction brings us modulization and assemblage skills, digital design and construction, as well as the influence of green ecology concept, architects shift the focus from the traditional elements of volume, shape to the building envelope itself in the pursuit of pureness, abstractness, minimum, pop and green ecology. Hence, the building envelope restores its true self – architecture skin – and abandons its traditional mission of providing sculptural appearance.

In that case, the easy logical conclusion is that the architecture skin will certainly turn into the main carrier of expressions as that's the essential attribute of texture.

Texture, the composite of repetition of construction units, possesses infinite extensibility. This feature enables the texture to be converted into pixels, providing advantage for the mediumization of architecture skin (Figure 4).

CLUE 2 TO MEDIA ARCHITECTURE'S DEVELOPMENT:
FROM SYMBOLIZATION TO MEDIUMIZATION
*"Architecture is the history of stones. "*Ever since architecture exists, it plays the role as a shelter as well as a messenger carrying information about the contemporary social backgrounds, humanity characteristics, territory, climate and also the behavior and frequency of its owner.

In the 1960s, French economist Jean Baudrillard established the concept of consumer society and considered the consumer society as a token economy society where the tokens replace the real subject to become the main consumptive entity and the token value is independent from the actual value of commodity. Robert Venturi thinks:

> *"the expression of architecture does not come from the presentation of structure or other elements, but the exhibition of ornaments and symbols. Communication is the most important thing in our world and it's what creates communities. Therefore, architecture design should pursue the goal of communication and transform into a way of interaction. Architecture contains 2 signaling system. One is to post the signals to the buildings direct, and the other is to include the language system to the design of the buildings, which I prefer the former one."* [2]

He also introduces the ideas of image, symbol architecture and replacing the traditional façade with advertisement in his book Learning from Las Vegas. In post modernism architectures, the importance of symbol surpasses the building itself and symbolization becomes a trend.

The 21st Century is marked as the period when media and information disburse everywhere, between people and urban architecture as a medium. With the involvement of fast-paced business culture and visual digital media, the public is surrounded by varies replaceable visual symbols whether watching TV or simply walking on a street. Like it or not, countless images came into the public's sights in a fascinating speed. While the industrial era was recognized with the theme of and image-focused time. Under this background, with the help of computers ad the development of information terminal technology, LED and control technology, many media expression techniques, including motional image, three dimensional pixels, projection, mechanism, are all fused into the architecture design, influencing the design and ideas of architecture. Thus, architecture got the basic function of mass media, become components of social media. Meanwhile,
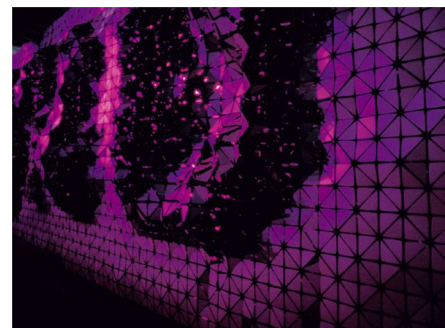
Figure 2: *Jingya Hotel,* Media Facades-History, Technology, Content.

Figure 3: *Wanda Plaza.*

Figure 4: *Texture-Aegis Hyposurface*, Media Facades-History, Technology, Content.

media architectures bring in the concepts of orientation and architectural vision, reshaping the urban space (there are plenty of advertising media all over the public space, which people will find it weird if it's all gone).

Victor Hugo iterated in The Hunchback of Notre Dame that *"books will ruin architecture"* and *"the time of cathedrals will be ended by printing"*. Before printing is invented, the valuable handwritten Bible is not available to everyone, while after that, the low cost printed Bible is, weakening the intermediary function of the cathedrals. If Hugo has seen the LED curtain wall at the business streets and the media display interfaces in the exhibition centers today, maybe he will amend his prophecy to: Media will ruin architectures.

CLUE 3 TO FUTURE OF MEDIA ARCHITECTURE:
FROM PHYSICAL STRUCTURE TO DIGITAL IMAGE
The mediumization of architecture usually employs multiple techniques of sound, lights and electricity to produce a visual image transcending the original structure. The importance of the building structure is hence weakened or even going backwards in the commercial environment.

After the Graz Art Museum was completed, the public began to complain: Why are only images and pictures to see, where has the "complete building" gone? The stigma, paintings on the surface, concrete blocks, beams and all the traditional elements of architecture……Where are they now?

For a long time, the aesthetics and value orientation of architectures are always towards the physical factors like the structure, construction, materials etc, which is still believed by many architects who are still pursuing construction – sufficient cognition, understandings and researches for the physical elements of the building itself and achievement of beauty over above factors and technical design and logic. They try to return to architecture noumenon rather than any other techniques. They may actually contempt the post modernism symbol architecture.

In today's mediumized architecture, this kind of beauty is difficult for people to notice. Because once the buildings are exposed to commercial requirements, most parts of the building will be covered by media interfaces. However, many architects are too stubborn to let go of their profession. They ignore that the city is now filled with photovoltaic media and indulge in the old architecture form (Figure 5).

According to George Berkeley, *"to be is to be perceived"*. When media interface covers the building, the media interface is what we can perceive. According to Edmund Husserl, *"phenomenon represents the truth"*. Thus for architects, the noumenon of architecture should be the architectural interface rather than the construction.

Martin Heidegger says in The World of Image *"the contemporary development is the course of conquering the world of image"*. Heidegger calls the contemporary society as the world of image, *"when the world turns into image, all the existence enter the state of being expressed"*. Nowadays, image media has replaced captions to become the main entity to cover the buildings, spreading information and communicating with the recipients. The media image has impacts on people's visual feelings, deciding the cityscape, proving Heidegger's theory. Symbolization, imagism mediumization are inevitable and those don't want to change will be changed eventually.

CLUE 4 TO THE FUTURE OF MEDIA ARCHITECTURE: PUBLIC ART CONCEPT

Public Art, the direct meaning is art for the public. Emphasis on the important role of "public" considers public art is a manifestation of public in the art field. As a major artistic and social trends in Europe and America since the 1960s, the rise of public art is formed under the development of Western aesthetics theories and contemporary philosophy. Structuralism is one of its most important ideological and theoretical basis.

Structuralism is one of the most popular research techniques in late 20th century for analysis of language, culture and social phenomenon. Structurists believe the connection in the world are not initiated by objects; the nature of an object is not in the object itself, but in the structure between objects and people only feel the connection when they are in those connections.

Structuralism and the corresponding aesthetics idea emphasize the involvement of audience. This involvement will create meanings for the artworks and the interaction between creator – artwork – audience is very important. Structuralism declares that subject of appreciation – the audience - is the only way to realize the aesthetics value of arts; emphasizes the acceptance to art works of audience is not passive, but initiative process of art reproduction. The initiative involvement and the creative interpretation by audience is the only way of realizing the artwork's aesthetic values.

The public involvement to public arts refers to the relation between the artist, artwork and audience. The public involvement is a critical and necessary condition to realize the public arts.

In recent years, new media techniques, especially the interactional technique has further accelerated the public involvement. For the new interactional arts, public involvement does not stop in appreciation level, but actually becomes part of the artwork. Without public involvement, there's no interaction and no arts. In terms of the characteristic of creator, audience in the process of making public arts, the first thing is, the role that a creator always played has changed, it is no longer about making individual art work and have totally control, but to share the rights with audience. Secondly, the so-called audience is no longer exist, instead, they are shown up as a "participants", "interaction" or "visitor", for some kind of game, also known as "players." This means: the public or the audience participants in the work, the artist may only play the role of an intermediary or facilitator.

Based on the core values of the "public", architecture can be view as a sort of public art in certain degree. Then it comes to us the question that what can an architect learn from public arts?

Figure 5: *Chanel Ginza,* Lighting Design.

CLUE 5 TO THE FUTURE OF MEDIA ARCHITECTURE: SMART CITY

The most important contribution of a smart city is to greatly improve the city's innovation, order and continuity. These are based on the large amounts of data, transparency of information and the maximization of communication.

 A Smart City is a city well performing in the 6 characteristics (smart economy, smart mobility, smart governance, smart living, smart people, smart environment), built on the 'smart' combination of endowments and activities of self-decisive, independent and aware citizens.

Recently, an article titled the industry trends in the next 5 years has been widely spread through the internet. The article discussed about retail, manufacturing, advertising, tourism, finance and insurance, publishing and so on, but architecture industry is only one that has not been mention.

Smart city is the trend of future, governments are seeking to promote. As a urban form, smart city is not only about the technique, it is more related with life style and human behavior. So it is no doubt that the shelter of us——architecture, would definitely in this process.

Nowadays, the high technology is developing rapidly, however, they are just tools that makes our life more efficient, and makes our urban landscape more spectacular, the essence of architecture has little changed, especially on the relationship between real world and virtual world, as well as subject related to big data and media transparency.

MEDIA ARCHITECTURE: NEW FORM

The current media architecture is still at the situation that just simply mixing various elements together, sometimes even serving just as a artifice of commercial purpose. Its inner logic, values and theoretical system are still wait to be construct. As it cannot play the role of an era, it inevitably becomes "ugly." This is somewhat similar to the case of the late 19th century, although at that time with all the material and technical conditions of modern architecture, architects would still rather put on a outside of classical architecture on a building made with concrete, glass and steel. It was not until Le Corbusier and a number of pioneers bought the modern concepts, of art and design into architecture, that the modernist architecture has truly come into being. Therefore, architectural concepts and paradigms are more important than technical conditions.

Media architectures should neither be taken as buildings displaying motional image, nor buildings evolved from digital technology and architectural technology, they are the result of mutation caused by the fusion of culture, society, art and science. To clarify, Media architectures is not the sum-up or pile-up of those factors, but an essential innovation.

1. City

As the entrance between real world and virtual world. Media architecture can contain both real space and virtual space, which is its most extraordinary feature. By blurring the borders between space, the communication of people and architecture can reach a new level. Media architecture should not only be a visual performance, it should also be a connection that can effectively organize the whole urban space, so as to achieve the purpose of comprehensive communication.

OPEN CITIES: The New Post-Industrial World Order

2. Architecture

Media architecture will reconstruct the appearance and connotation of architecture. The architectural works will be the presenter for the media arts, with new façade and appearance. Media arts will be the driving force of creativity and novelty for architectures. Media architectures will evolve into the producer and messenger of social media with prominent publicity as well as a communication channel penetrating into people's daily life. Media architecture is not only the product of appearance design with contents, but also a physical socialized media installation which supports actual information exchange and interaction.

3. Art

Architecture is the carrier of almost all present forms of art, while media architecture is trying to open up a new form of expression under the up to date social backgrounds. Being different from the past, Media architecture designers and artists will become the creator of media arts and public arts. They will have the city as a stage for them to showcase their interactive, public, social and complex art works, which will lead to unprecedented level of influence.

4. Culture

Media architecture is not simply an issue about visual design or landscape feature. It will contribute to the formation of a public sphere, citizen could have the opportunity to discuss public issue in a more open and rational environment, then the public opinion will come into being, and then lead to the new life style and new behavior pattern as a chain reaction. It is more like a platform to construct new idea and meanings rather than architecture itself.

5. Industry

Architecture is no longer limited to architecture itself or the private art works of architects, but a fresh architecture design pattern required the cooperation of different fields of multi-industries. Media architecture's future development will definitely trigger the transformation of the industry chain and design process. The design will become more and more comprehensive, breaking all the traditional processes and stages, with higher standard requirement on technology. More diversified and professional solutions and concepts will be employed, and a new design pattern – design resources, procedure, and teamwork - will be established. The contemporary outstanding media architectures are usually installation art with scientific properties. This is the outcome of the joined force of architects, façade designers, and artists. The architects are now tending to become a more and more comprehensive installation artist and director.

6. Education

This is a challenge for architects' profession breeding and education, but it's also an opportunity to combine architectural arts and techniques. Architectural education should pay more attention to visual communication, graphic design, advertising planning, synthetic arts, media animation, installation arts and public arts. The overall coordinating ability, multi industries integrating ability and the sensitivity to society changes will be much more important than ordinary techniques.

THE UGLIEST ART IN HISTORY

There's an anonymous exhibition joined by more than 30 painters and sculptors held in Paris, 1874. One of the arts is a landscape theme painting called the Sunrise Image from Monet. There's one short review of the exhibition calling it an impressionism exhibition because of that Monet painting. This imposed title was with contemptuous intent for the anonymous artists and the newly emerged art style. At that time, impressionism paintings were considered as the ugliest paintings with no doubts by the critics as well as the public. Therefore, impressionism arts are usually taken as jokes or intents to make fun of the honest. However, impressionism eventually becomes the starting point of modern art, followed by abstractionism, expressionism, cubism etc. which are all rooted in impressionism.

Years later, 300 renowned Paris citizens signed a petition requesting to stop the construction of the Eiffel Tower. They claim that this ugly tower is going to damage the reputation and image of Paris, even the temporal French President sets himself against the tower at that time. However, the Eiffel Tower has now become an irreplaceable icon of France.

Therefore, never stop on the way of progress because of the so-called ugly.

ENDNOTES

1. Dr. M Hank Haeusler. *Media Facades-History, Technology, Content* . avedition, 2009.

2. Robert Venturi / Steven Izenour / Denise Scott Brown. *Learning from Las Vegas.* The MIT Press, 1977.

3. Robert Venturi. *Complexity and Contradiction in Architecture.* Museum of Modern Art, 2002.

4. Le Corbusier. *Toward an Architecture.* J Paul Getty Museum Pubns, 2007.