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Mission

ATINER is a World Non-Profit Association of Academics and Researchers based in Athens. ATINER is an independent Association with a Mission to become a forum where Academics and Researchers from all over the world can meet in Athens, exchange ideas on their research and discuss future developments in their disciplines, as well as engage with professionals from other fields. Athens was chosen because of its long history of academic gatherings, which go back thousands of years to Plato’s Academy and Aristotle’s Lyceum. Both these historic places are within walking distance from ATINER’s downtown offices. Since antiquity, Athens was an open city. In the words of Pericles, Athens “...is open to the world, we never expel a foreigner from learning or seeing”. (“Pericles’ Funeral Oration”, in Thucydides, The History of the Peloponnesian War). It is ATINER’s mission to revive the glory of Ancient Athens by inviting the World Academic Community to the city, to learn from each other in an environment of freedom and respect for other people’s opinions and beliefs. After all, the free expression of one’s opinion formed the basis for the development of democracy, and Athens was its cradle. As it turned out, the Golden Age of Athens was in fact, the Golden Age of the Western Civilization. Education and (Re)searching for the ‘truth’ are the pillars of any free (democratic) society. This is the reason why Education and Research are the two core words in ATINER’s name.
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Before you submit, please make sure your paper meets some basic academic standards, which include proper English. Some articles will be selected from the numerous papers that have been presented at the various annual international academic conferences organized by the different divisions and units of the Athens Institute for Education and Research.

The plethora of papers presented every year will enable the editorial board of each journal to select the best ones, and in so doing, to produce a quality academic journal. In addition to papers presented, ATINER encourages the independent submission of papers to be evaluated for publication.

The current issue of the Athens Journal of Architecture (AJA) is the first issue of the sixth volume (2020).

Gregory T. Papanikos, President
Athens Institute for Education and Research
10th Annual International Conference on Architecture
6-9 July 2020, Athens, Greece

The Architecture Unit of ATINER, will hold its 10th Annual International Conference on Architecture, 6-9 July 2020, Athens, Greece sponsored by the Athens Journal of Architecture. The aim of the conference is to bring together academics and researchers from all areas of Architecture. You may participate as stream organizer, presenter of one paper, chair a session or observer. Please submit a proposal using the form available (https://www.atiner.gr/2020/FORM-ARC.doc).

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• Abstract Submission: 9 March 2020
• Acceptance of Abstract: 4 Weeks after Submission
• Submission of Paper: 8 June 2020

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• Greek Night Entertainment (This is the official dinner of the conference)
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Conference Fees

Conference fees vary from 400€ to 2000€
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Zakopane, Poland: The Critical Analysis of Contemporary Large-Scale Architecture

By Ewa Stachura* & Marta Mantyka‡

Zakopane is a Polish winter resort renowned for its vernacular, wooden architecture and strong regional culture. Development of the city is linked strongly to tourism and nestled in the foothills of the Tatra Mountains, Zakopane and the Podhale region since the second half of the 19th century has attracted mountaineers, researchers, scientists and later sanatoriums for tuberculosis patients. The city obtained charter rights in 1933. Subsequent development has seen a progressive change in the local architectural style with the construction of larger scale buildings to accommodate growing visitor numbers. Currently, Zakopane attracts around 3.5 million tourists annually making it one of the most visited cities in Poland. Specific changes to the built form are the result of newly constructed buildings predominately designed for wealthy, out of town people as investments in rental and time-share vacation accommodation bringing inappropriate adaptations of the local, vernacular architecture such as unauthentic decorative motives and citations. Nevertheless, while most properties offer high quality, luxury accommodation with many amenities it has made real estate prices unobtainable for local residents and changed the socioeconomic and urban aspects of everyday life in Zakopane. This paper aims to study and classify new, large-scale investment in the city such as hotels, condo hotels and apartment buildings and their influence on the vernacular urban architecture of the city. It will also investigate and characterise various qualities of these new developments such as functionality, aesthetics and the protection of existing cultural values such as the city centre and area around the Ski Jump.

Introduction

The popularity of Zakopane has been increasingly growing since the middle of 19th century. Starting then Zakopane was primarily a lodging and a ski centre. Currently, the most popular place for skiing is nearby Bialka Tarzanska, and, in the past 30 years, Zakopane has transformed into a more significant urban centre offering lodging as well as shopping.

This change and the growing popularity of this touristic destination in Poland and abroad have altered the urban layout. The city today is over-developed, and lot prices have gone up impacting the investors’ decisions on the size of new buildings in the town. Also, to meet the needs of demanding clients, the

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accommodation must offer more amenities, requiring more space. This paper aims to scrutinise and classify new large-scale investment in the city like condo hotels, hotels and apartment buildings and its influence on the urban design of the town. It will also investigate and characterise various qualities of this new development like functionality, aesthetics and will attempt to evaluate its impact on existing cultural/heritage values by the example of the city centre and an area around the Ski Jump.

**Literature Review**

Zakopane, its history, architecture and original regional culture have been attracting researchers since the mid-nineteenth century. Many valuable, interdisciplinary studies developed at the turn of the century when the Polish national style was shaped, taking the form of the Zakopane style. Its creator, Stanisław Ignacy Witkiewicz, published many articles, books, architectural designs and drawings. Because for decades Zakopane continuously held the function of an important artistic centre in Poland, the artists effectively supported the protection of the local building tradition. The value of Zakopane's heritage increased in times after WWII: Zakopane - unlike most cities and towns, it was not destroyed. The eclectic currents returning in waves often referred to the forms of the Zakopane Style, triggering discussions and disputes. Nowadays, in the subject literature, the architectural form of objects erected in Zakopane and the vicinity of postmodernism is analysed.

**The History and Contemporary Development of Zakopane**

**Zakopane - The History**

Zakopane is a very well-known touristic destination in Poland, currently inhabited by approximately 27,000 residents. Its’ popularity is still growing, and now, Zakopane is the second most popular city in the Lesser Poland Voivodeship, and the 6th most popular vacation destination in Poland. Year after year it attracts a larger group of visitors.

Zakopane is situated in the Podhale region, directly at the foot of the Tatra mountains, the highest range of the Carpathian Mountains. This geographic placement was the main reason why Zakopane was settled quite late in comparison to the neighbouring villages (first mentioned as Nowa Osada in 1624.) It was due to a problematic, Alpine climate of the place, the lack of good, fertile soil and the incline of the hills were negatively impacting the agriculture. Until the discovery of various metals in the Tatras, the primary purpose of the settlement was sheep

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In 1766 a forge was built in Kuźnice, doing the split between the village and the workplace. The route between both places has, later on, became the most popular and prestigious street in the Zakopane, Krupowki. During the romanticism, the mountain landscape has become increasingly popular, and for the rather poor village of Zakopane, it meant first tourists and the impulse to grow. Visitors were coming to appreciate the mountains, and to treat various pulmonological disorders. In 1818 the village was populated by 1805 people. The First Partition of Poland saw the whole Zakopane region fall under the Austrian rule. The mountain area was administrated directly by the State. Property ownership of Kuźnice and the forge, as well as the surrounding, was sold, the family of Jan Vincent Homolacs became the owners of Zakopane for 50 years. Later, it was owned by Ludwik Eichborn (1869-1879), Magnus Pelz (1879-1888), and Jakub Goldfinger (1889). Count Władysław Zamoyski (Paryski and Paryska 1995), who acquired Zakopane estate in May 1889 turned out to be the most prominent owner of this area. Nevertheless, and he turned it over to the Nation in 1924.

The first wooden church was built in 1847 and the first parish priest, Józef Stolarczyk, came to Zakopane. His presence was significant for the further development of the settlement regarding village planning and the foundation of the first public institutions. Zakopane hosted a growing number of scientists and tourists from the neighbouring countries, yet the conditions were severe due to food shortages, low standards of lodging and a lack of proper roads. The primary source of income for the locals was still cattle and sheep farming.

Many organisations and societies came into existence to help the development of the town and the area. The most important was the Towarzystwo Tatrzanskie (Tatra Society) that marked out many mountain routes and built mountain lodges, including the Morskie Oko mountain hostel established in 1874. The wooden building of the Dworzec Tatrzanski – a concert hall with the first library and reading room started its activity in 1882. The Society donated money for the formation and running of the Woodcarving School and promoted Zakopane culture with various publications. Doctor Tytus Chałubiński raised the popularity of Zakopane (Długolecka and Pinkwart 1989) by promoting the benefits of the Podhale region climate as fighting Tuberculosis. Following these climate properties, in 1885, Zakopane got officially recognised as a health resort and a year after, the first hospital in the Town was opened. Growing population and the number of tourists brought the need for modern infrastructure.

Poland at the turn of XIX and XX century was partitioned among three foreign powers. As a counteraction, the idea of national revival occurred and attracted many writers, scientists, artists, painters, composers, conspirators, naturalists and explorers. Zakopane with its traditional culture and indigenous architecture became the important place and the idea of the national style. Styl Zakopiański (Zakopane style) in architecture created by Stanisław Witkiewicz was

strongly inspired by the vernacular style of the local Highlanders. It also relates to other forms of design, e.g. furniture design, art, and crafts.

Zakopane received the city status in October 1933 what stimulated the city’s urban development and to established Zakopane’s position as a tourist centre by the construction of a ski jump and cable car to the top of Kasprowy Wierch as well as Gubalowka funicular. World War II saw Zakopane taken over by Germans and turned into a recreation centre with a large hospital for German soldiers. It also became a key location for illegal routes for underground organisations to keep the communication between Poland and its’ government in Great Britain. After the war Zakopane resumed its role of a health resort, gradually moving towards tourism and a sporting centre. The growing number of tourists brought many new hotels and accommodation facilities.

The Urban Development of Zakopane

Zakopane has developed in rather hostile natural conditions – located at the foot of the Tatra Mountains and therefore faces the capricious climate, long and harsh winters, short summers.

In the XVI century was used by the shepherds during the summertime, the constructions were wooden and provisional, gradually moving towards more meticulous, permanent interlocking log cabins between XVII century to the middle of XVII century.6

The climate forced the local people to adopt the vernacular architecture to the surrounding conditions. The openings, like doors and windows, were tiny and placed on the south side of the buildings. The over-hanged roofs, unlike buildings in the Alps were much steeper, in between 48-53 degrees, to help to remove the snow and withstand the local wind, Halny. The sheds placed on the west side protected households from the reoccurring southwest winds (Figure 1). A typical floor plan was rather simple, founded on a rectangular shape with an entrance hall and two rooms: “a black” chamber heated with an open fire, wood-burning stove for everyday use, and “a white” one, representational, for the distinctive guests. The endemic style of vernacular architecture appeared both in Zakopane and the surrounding area of Podhale.7

The development of Zakopane as a summer destination and a spa town pushed the Highlanders to increase the size of the newly constructed houses, now having often even four rooms and a porch.8 The guests were also accommodated under the roof, in the attic.

Later, after the discovery of Zakopane by Tytus Chałubiński 4 room house was no longer sufficient to accommodate vacationers, and the eclectic style, called “the Swiss style” was introduced to Zakopane. The Swiss style overtook the

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7. W. Matlakowski, Budownictwo ludowe na Podhalu (Akademia Umiejętności; Skład główny w Księgarni Spółki Wydawniczej Polskiej, 1892).
village and was present until the end of XIX c. To this day on, the Swiss style buildings from that era are a vital part of the local landscape. The local architecture style adapted some elements of the Swiss style.\textsuperscript{9}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{oldest_wooden_house.jpg}
\caption{The Oldest Wooden House in Zakopane}
\label{fig:oldest_wooden_house}
\end{figure}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{willa_pod_jedlami.jpg}
\caption{Willa Pod Jedlami by Stanislaw Witkiewicz}
\label{fig:willa_pod_jedlami}
\end{figure}

A big supporter of the local vernacular style was artist Stanisław Witkiewicz whose idea was to create a national style not only for architecture but also for the other forms of artistic expression.  

The first building designed by Witkiewicz in style known as Styl Zakopianski (Zakopane Style) was Villa Koliba (Completed in 1892 at Kościeliska Street). It is form, structure, and used materials were inspired by a typical Highlander house but with many eclectic citations. Buildings were much bigger, comparable to standard two-storey Swiss style villas. This first design was very successful and followed by other projects. Later on, Witkiewicz was attaching more vernacular style elements in his projects like stone wall base, multiple roof ridge, decorative pins and the crossbeam. The most famous buildings by Witkiewicz are Willa pod Jedlami (The House under the Firms, 1897; Figure 2) and the Chapel of the Sacred Heart in Jaszczurówka.

The train system completed by 1899 connected Krakow and Zakopane caused the development of the lodging base and helped the transportation of heavy building materials like bricks and other fireproof materials. So, more stone buildings appeared in the cityscape at the turn of XIX and XX centuries. Nevertheless, the transition of Zakopane style to use brick by Stanisław Witkiewicz was unsuccessful, what the building of Muzeum Tatrzańskie (1913-1922) shows. Unsuccessful attempts are still present in the cityscape.

The first modernist buildings appeared in Zakopane between 1910-1911. At that time the village was developing quickly and started to resemble the city structure. The sewage and water systems were modernized.

During WW II, under the German siege, Zakopane was under order action - Ordnungsaktion. The law prohibited constructing new buildings, and only a few buildings were erected during the war. The architectural style during the war was a compromise between regional and modern, and it became an essential inspiration in shaping the New Zakopane style. After the war, high levels of wood and stone crafts and social realist forms, which continued throughout the interwar period, characterised the architecture. Some mountain hostels and the “Dom Turysty” are the examples of buildings of the mentioned above “New Zakopane Style”. Along with Poland’s political changes in the early 1990s, mail pedestrian track - Krupówki was modernised. The tilted lampposts, for example, were highly controversial being described as chaotic and disharmonic.

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10. T. Jabłońska, Styl Zakopiański Stanisława Witkiewicza (Poland: Olszanica BOSZ Publisher, 2008).

11. S. Krzysztofik-Kozakowska, Sztuka Młodej Polski (Kraków, Poland: Ryszard Kluszczyński Publisher, 1999).


The Large-Scale Buildings in the Contemporary Zakopane

Throughout the history of the city, Krupowki Street was always one of the most important parts of the settlement. Nowadays the popularity of this place precedes the attractiveness of the surrounding Tatra Mountains, and the tourists are more likely to visit the street, rather than go hiking. Zakopane has become the all-year-round destination for tourists, as it is one of the most popular streets in Poland among Krakowskie Przedmieście in Warsaw, Florańska in Kraków, Bohaterów Monte Cassino in Sopot, and Piotrkowska in Łódź (turystyka.wp.pl 2014). For 20 years the main change associated with tourism in the city is the fact that previously people came for longer periods, but only during the summer or winter school holidays. Currently, Zakopane is equally as popular in the fall and spring, but more as a weekend destination.

These factors are the main reason why the town is booming, and therefore is an attractive real estate investment option for well-to-do people from outside the city.

The most popular is the purchase of an apartment or a condominium. The potential owner can either use it himself/herself or for short-term rental. Many companies are offering the find and manage to book, as well as cleaning and maintenance services. The owner can use the place for around two weeks a year.

Lately, more attractive is the purchase of a room in a condo hotel- which is more expensive in comparison to the apartment, but it promises better investment returns (in some cases advertised as up to 50%) and offers a broader variety of facilities- like swimming pools, spa, ski equipment rentals, restaurant, gym, 24 reception among others. The circumstances mentioned above attract wealthy investors who are willing to pay higher figures.

The prices of the real estate in Zakopane and Podhale region are comparable with the prices from a bigger city like, for example, Warsaw. Unfortunately, the average wages in the city are much lower, making it difficult to purchase an apartment for an inhabitant. The local people are often forced to move out, e.g. to Nowy Targ (the closest town of Zakopane), where apartment prices are still affordable, creating at the same time morning and afternoon commute traffic. In the future, it may also cause the problems of depopulation and gentrification.

Zakopane is a Polish winter resort renowned for its vernacular, wooden architecture and influential regional culture. Development of the city is linked strongly to tourism and nestled in the foothills of the Tatra Mountains. As mentioned before, Zakopane and after, whole Podhale region have attracted mountaineers, researchers, scientists and later sanatoriums for tuberculosis patients since the second half of the 19th century. The city obtained charter rights in 1933. Subsequent development has seen a progressive change in the local architectural style with the construction of more significant scale buildings to accommodate growing visitor numbers. Currently, Zakopane attracts around 3.5 million tourists annually making it one of the most visited cities in Poland. Specific changes to the

built form are the result of newly constructed buildings predominately designed for wealthy, out of town people as investments in rental and time-share vacation accommodation bringing inappropriate adaptations of the local, vernacular architecture such as unauthentic decorative motives and citations.

Nevertheless, while most properties offer high quality, luxury accommodation with many amenities, it has made real estate prices unobtainable for residents and changed the socioeconomic and urban aspects of everyday life in Zakopane.

This paper aims to study and classify new, large-scale investment in the city such as hotels, condo hotels and apartment buildings and their influence on the vernacular urban architecture of the town. It will also investigate and characterise various qualities of these new developments such as functionality, aesthetics and the protection of existing cultural values such as the city centre and area around the Ski Jump.

Communicationally, Zakopane does not have many roads. Many of those are unusually narrow or under a very steep incline. The condensed unique development does not allow significant changes in the existing transportation system. With an increased number of tourists visiting every weekend the amount of traffic is going up, making the driving around the city nearly impossible. On some occasions, for example, after the New Year’s Eve 2018/19 the 22 km drive between Nowy Targ and Zakopane took up to 5 hours. Similarly, Zakopane does not have enough parking spaces. The areas around the city centre offer a couple of options to park, but it is not enough.

The underground car parks do not exist, and the negative occurrence is turning the green fields into the parking, destroying nature, and also the landscape of the city. Negative consequences of congestion affect the area of Kuźnice, which does not allow the drive-in entry, turning the surrounding Słowackiego and Mieczysława Karłowicza streets into the parking lot.

Common in Zakopane is car parking on sidewalks. The city authorities installed the parking poles to stop the cars from entering paths. It does regulate the situation in the summer, but during the winter, it prevents proper snow removal and therefore cases even more traffic.

The other consequence of city development is air pollution. It is caused both by car traffic and coal-based heating. The amount of particle pollution is exceeded even up to 100 days a year, and currently, Zakopane, based on the judicial decision from 2018 cannot charge the tourists the climatic tax. Also, in the times of the high season, the water supply system is not enough to provide the water to all of the households.

The local Masterplan from 1994 expired in 2003. Before the city’s government was able to pass a new bill, building permits for around 10 years have been based on a case by case scenario, which has led to architectural chaos in the form of high-density and often inappropriate development, the disappearance of the green spaces, the oversizing of buildings and the lack of proper, regional policy objectives. It has a negative impact on this day, as it increased the overall size of

the buildings, and change the ratio between the building and green space. One of
the biggest scaled construction in Zakopane is the Radisson hotel (Figure 3 and
Figure 6, photos 1-2), on Bulwary Słowackiego street is the example of the out-of-
scale development, that does not correspond well with the neighbouring
architecture. Also, the construction of this format, on a small and narrow street,
will cause communication problems. The other issues that are highly probable are
noise, and lack of parking for inhabitants or churchgoers.

The design of the three building refers to the Highlander style - the roofs are
tilted; the façades resemble interlocking log cabin and wood. It does lack the
authenticity of the vernacular architecture and feels like an unsuccessful imitation.
Similarly, to the above mention, Goszczyńskiego street (Figure 4 and Figure 6, photos 4-5), is a one-way street grovel three new condominium buildings will impact road. It used to be a green field, but due to the popularity of the area (the proximity to both ski jump and the city centre), it was developed. The biggest building is offering 90 new apartments, with a spa and an outside whirlpool.

Like at Bulwary Słowackiego, there are not enough parking spaces for the visitors, and the road is too narrow for such a massive scale development. The design of the complex is modern and aesthetically pleasing; yet again it contrasts with the single-family houses predominantly existing in this tranquil area.

Due to the shortage of plots, the new buildings are replacing old houses intended to be demolished. Therefore the costs of the property are usually very high, and a client demands the biggest buildings allowed by a local bylaw. In many cases the parking lot is underground, but no visitor or employee spaces are provided. Also, many buildings have virtually no green space, not to mention a lack of trees.

**Figure 4. Map of the New Developments in Goszczyńskiego Street**
*Source: Own Study.*

The demolishing of the old buildings is questionable, as in some it causes the illegal scheme of burning down structures to sell or build. The contemporary
architecture of Zakopane is problematic. In the past, decorative elements have been sparsely used by the locals, but currently, the architects opted for the designs that employ vibrant motifs used purely for decoration without the previous functional component. Also, the used patterns are often foreign, cartoonish and extensive. The transformation of other styles into the regional architecture is highly disputable and out of place, and quite often Zakopane is criticised for its’ architecture.

The example would be a historical building of “Warszawianka” (Figure 3 and Figure 6, photo 3), at Jagiełłońska Street that due to the bad technical condition was demolished and in recent development got a half-arch arcade, called by the national press “Zakopane’s Coliseum”. Also, this building contains traditional elements which feel foreign.

![Map of the New Developments in Krupówka Street](image)

**Figure 5. Map of the New Developments in Krupówka Street**
*Source: Own Study.*

The recent large-scale development in the main street (Figure 5 and Figure 6, photo 6) is a shopping and tourist apartment building. Because Krupowki is a predominantly pedestrian street, there is no access to the lot with a car. The closest parking space in Zborowskiego Street is rather small and insufficient, making it nearly impossible to provide the desired park car to serve this investment. Also, in comparison to other buildings in this location, the building seems out of scale and does not have the features of existing, historical architecture arrangement like the inside court, surrounded by the buildings.
The examples cited do not exhaust all problems related to new buildings erected in Zakopane. Buildings of smaller scale (e.g. detached houses) often interpret traditional forms and details in a free manner. They lose their original function, size and often use an entirely different material than the native ones. Wealthy investors complicate the architectural form wanting to stand out from the surrounding buildings. These destructive patterns reproduced in many versions make it difficult to educate and popularize valuable vernacular architecture.

Figure 6. Current Developments in Zakopane (Photos 1-2. Radisson Hotel, Bulwary Słowackiego, Photo 3. Warszawianka, Jagiełłońska Street, Photos 4-5. Goszczyńskiego Street, Photo 6. Krupówki Street)
Source: Own Study.
Discussion

Zakopane is losing its' original feel, and due to over-development, and wrong architectural choices, it has experienced severe criticism. Some initiatives work on the local issues - like for example the Krupówki Cultural Park\textsuperscript{16} (established in 2016) - that protects the image of the main street,\textsuperscript{17} and the social initiative "Zakopane without Smog" to clear the air in the town. There are many social consultations organised by the town's government, and unlike in the past, residents start protesting against the large - scale developments.

One of the ideas to help Zakopane with its' traffic problem was to create a big parking space in Nowy Targ or Szaflary based on the model of Park and Ride and connect both cities with a train. This concept created in the 80s' of XX century, unfortunately even with a currently well-functioning train system has not been established.

The other solution to battle the ongoing communication problem in Zakopane is the public transportation system. Currently, the city does not offer many routes, and the schedule is also rather rare. Also, the creation of the shuttle bus between the main touristic attractions around the city would hopefully encourage people not to use cars.\textsuperscript{18}

The guidelines for the development of a larger scale architecture in Zakopane should be established as soon as possible and should focus on the following aspects:

1. The lots of the larger scale constructions should be under more strict control. The scale of the buildings should correspond to the existing architecture, rather than dominating it.
2. The architectural arrangement plan should draw upon the neighbourhood.
3. The possible changes in the transportation conditions of the lot should be analysed and considered before the building permit.
4. The neighbours of the large-scaled buildings should be surveyed to determine the potential building size.
5. The obligatory underground parking lot should be a mandatory element of the functional program for every large scaled building providing parking lots for guests, visitors and stuff.
6. The existence of arranging green space around every structure should be mandatory
7. The Highlander citations should be careful and adapted appropriately to the design.


\textsuperscript{17} Moździerz and Marcinék, \textit{Rys Historyczny Rozwoju Przestrzennego i Architektonicznego}, 2016.

\textsuperscript{18} B. Rzygocińska - Tyżuk, \textit{Fenomen Ulicy Głównej jako “Serca Miasta”}. \textit{Wybrane Przykłady} (Krakow, Poland: Czasopismo Techniczne Politechniki Krakowskiej, 2008).
Conclusions

Zakopane is unique when compared to many other touristic towns and villages in Europe. Its urban and architectural quality based on vernacular culture makes it a highlight of Poland's heritage. Because of political and economic factors, a large-scale architecture appeared in the town and the area much later than in, e.g. the Swiss resorts. Today, with a better understanding of sustainability rules and the appreciation of heritage value, it seems to be easier to protect vernacular culture.

On the other hand, the danger for Zakopane comes from its extending popularity. The new expressways and good train connections with major Polish cities and airports will even intensify tourist visits in the nearest future. Social media and numerous promotion actions by organisers of events also encourage people to come for shorter and longer stays.

The situation presented above is part of global trends and dilemmas for the development of historic cities and areas, which are affected by contemporary high-intensity buildings. Some of the new investments may be prestigious. On the other hand, prestigious projects can be considered as stimulators of spatial development, protection of cultural resources and brand support factors.

A result of a snowball can be noticed in the real estate market - high demand for lodging in Zakopane and area affected at very high prices for rent and purchase. A significant number of Poles decided to invest savings in a property in Zakopane. This strategy generated a strong demand for holiday apartments and houses. In the present urban circumstances (limited number and relatively small plots in the centre), a large-scale architecture became an inevitable result of factors influencing the town's development.

Today, Zakopane is in real danger. The town is facing many problems that so far, have no solution. The ongoing process of city transition may provoke the loss of authenticity of Zakopane heritage architecture. The historical, cultural and natural importance of this place should be more strictly protected; therefore, architectural projects should follow very restrictive rules. The role of social participation must strengthen allowing local people co-decide on the future urban development and architecture quality.

To save the genius loci of the place, change in the development direction is a pressing matter. The town may also require a more in-depth study on the threat assessment and possible solutions to show the strategic approach to secure and well-balanced sustainable development.

Urgent actions must be taken to stop and prevent negative factors and phenomena.

The Master Plan is highly needed for Zakopane, and the new document, unlike the current one, must be developed and revised by the same team of urban designers in order to keep unified points. Also, as in the past, the works of social

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initiatives (e.g. Towarzystwo Opieki nad Zabytkami) is highly needed in order to educate and protect the heritage of the place. Other forms of highly effective locals’ engagement are social consults, where residents can voice their opinion and ideas to the local government.

Changes in tourism are required as well. Education could increase the knowledge about the region in order to prevent degradation of local culture. Zakopane should also start re-shaping its image, which would overall shift the target group of the visitors. The activities offered in the city should include the wider variety of cultural experiences instead of mass events.

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The Fading Away of the *Bilbao Effect*:
Bilbao, Denver, Helsinki, Abu Dhabi

*By Gerardo del Cerro Santamaría*

This paper uses several cases of attempted urban regeneration via cultural megaprojects to show the drawbacks and failures of so-called Bilbao Effect: a model of urban revitalization based on iconic architecture that became commonplace among urban managers worldwide after the alleged success of the Bilbao Guggenheim upon its opening in 1997. It is argued that cultural megaprojects are in fact vehicles for a property-led urban revitalization strategy with substantial disadvantages for cities and regions. The impacts of these iconic buildings on the urban fabric are often unintended and negative. The relative success of Bilbao has been hard to replicate elsewhere because urban leaders in most cities have overlooked the intrinsic limitations of iconic buildings to effect urban socio-economic regeneration. Urban leaders elsewhere also failed to examine and understand the specific socio-economic and political context in Bilbao as well as the overall local revitalization strategy of which the Guggenheim was just one element among many. As a result of the failure and the fading away of the Bilbao effect, the Guggenheim Foundation dream of museum franchises around the world, controlled by the Foundation and paid for by host cities, has not been realized.

Introduction

The influence of neoliberalism on urban areas under pressure to attract investors and become visible has led to a relatively uniform approach to urban policy across political and geographic boundaries. The “recipe” for urban economic improvement has focused on property-led regeneration even if such strategy has been presented as “cultural regeneration.”¹ Cities have been encouraging this strategy through zoning and megaproject-based investment in areas that can easily be redeveloped and are often populated by low-income and minority communities. In “entrepreneurial cities,” heavy manufacturing was gradually replaced by niche real estate, service sector employment, tourism and culture.²

Urban megaprojects (parks, art museums, sports stadia, convention centers) are intended to attract new investment and draw tourists and foot traffic to underutilized areas, thus increasing property values and triggering widespread gentrification. More and more cultural attractions, especially museums, are now

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¹U.S. Fulbright Award Recipient (Urban Planning), New York City, USA.


the central part of urban development strategies for inner-city and other central development projects, pursuing an important economic aim and representing the overall project as a flagship or icon. Museums allow cities to advertise themselves as locations of arts and culture, which tends to attract wealthier individuals. In this way, neoliberal public space is a vehicle for economic development benefitting some populations to the detriment of others.

Museums (such as those discussed in this paper) have become a part of urban planning strategies for redevelopment only recently. The Museum of Modern Art in Manhattan (Edward Durrell Stone, 1939) epitomized the “white cube” model of museum architecture and the International Style. The MoMA established the influence of modernism on cultural architecture. The MoMA continued to be the pre-eminent model for art display, but the beginning of sculptural form in museum design is Frank Lloyd Wright’s Guggenheim, also in Manhattan, on 5th Avenue. This building, in both its exterior and interior’s curving galleries, inspired a lineage of sculptural museums in opposition to MoMA, including, notably, the Guggenheim Bilbao designed by Frank Gehry.

Following Wright’s Guggenheim, the next major museum in this category is Centre Pompidou (1977) designed by Richard Rogers and Renzo Piano. Hoping to renew the idea of Paris as a leading city of culture and art, the Pompidou shifted the role of the museum away from a purely educational institution. It was the main strategy of the Parisian government’s attempt to redevelop the historic neighborhood of the Marais and it represented the beginnings in the era of iconic museums as a force of urban regeneration. In 2007, when Rogers won the Pritzker Prize, the jury said the Pompidou “revolutionised museums, transforming what had once been elite monuments into popular places of social and cultural exchange, woven into the heart of the city.”

Thus, when the Guggenheim Foundation and Basque planners agreed to build a Guggenheim Museum in Bilbao in 1991, emblematic projects and cultural megaprojects were already playing an important role in the revitalization of cities in Europe (e.g. Paris, London) and the USA (e.g. Pittsburgh), and the key role of iconic architecture in changing a city’s image was being discussed and was well understood among urban planners. Bilbao became a game-changer both because of the early success of the Gehry building in architectural circles, and also because the socio-political and socio-economic contexts (political unrest, deindustrialization

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and severe economic downturn), in a city unknown to most, added up to a good journalistic story that swiftly travelled around the world. This is how the “Cinderella” story (a museum puts the city on the map and rescues an urban economy in crisis) misleadingly spread out.  

The Bilbao Effect in the World

The Bilbao Effect can be succinctly defined as the attempts by a significant share of urban elites worldwide to build icons in their cities, largely based on a superficial and media-based understanding of the Bilbao case, which led many to firmly believe that a city in economic difficulties could be turned around just by iconic architecture. The Bilbao “Cinderella” story captivated many urban leaders. The Guggenheim Foundation received in those years numerous offers from cities in five continents to pay for the full cost of a building designed by Frank Gehry. Thus, the Bilbao effect transcended the discursive realm into the material world and many in cities around the world considered it possible to effect local transformations similar to Bilbao’s by simply building a Guggenheim Museum.

The model of the global museum franchise envisioned by the Guggenheim seemed, for some time, to become a reality. Many urban officials contacted the Guggenheim Foundation with firm plans, though just a handful went beyond the initial conversations – Rio de Janeiro, Vilnius, Salzburg, Guadalajara and Taichung -- only to see negotiations end before reaching an agreement. The Guggenheim Foundation was able to openly advertise itself as a global art organization with a new, successful vision for the museum of the twenty-first century.

The Foundation planned for a large Guggenheim museum on the waterfront in lower Manhattan, and it engaged Frank Gehry as the architect. His essentially complete designs for the building were showcased in 2001 at the Fifth Avenue museum, but these plans were disrupted by the economic downturn of the early 2000s and the September 11, 2001 attacks, which prompted reconsideration of any plans in New York.

Two outposts of the Guggenheim opened in Berlin (1997-2012) and Las Vegas (2001-2008), but they did not achieve much success and had to close. Abu Dhabi and Helsinki have been more recent and successful contenders. The Guggenheim Abu Dhabi (designed by Frank Gehry) has been built, is almost complete, and was expected to open in 2017, after several delays, but as of June 2019 it has not yet opened its doors. The Guggenheim Helsinki project unveiled the winning design in June 2015, following an international competition (Figures 6 and 7). However, in Fall 2016 the City of Helsinki voted to cancel the project due to increasing controversy and civic opposition. Plans seemed completed or near completion in 2016 for new cultural hubs centered on museums in Saudi Arabia.

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10. B. Alsdorf, *Collections Curatorial Assistant for the Guggenheim Foundation* (Guggenheim Foundation, 2002).
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(Mecca), Australia (Perth), Albania (Tirana) and Brazil (Belo Horizonte). What became Eastern Europe’s largest museum, the Mystetskyi Arsenal, with 50,000 square metres (540,000 sq ft) of exhibition space, opened fully in Kiev, Ukraine, in 2011.11

The Bilbao Effect was utilized to explain events whose causal relationship with the success of Gehry's building is not easy to prove. For instance, the alleged success of the Bilbao museum has been credited with the increased wave of museum construction, extension and reform in the United States in the past fifteen years. Critic L. A. Wilson argued that the museum in Bilbao “was widely credited with having sparked an economic boom in northern [sic] Spain”12 which other cities aimed to replicate. She quoted architecture critic and Editor-in-chief Robert A. Ivy of Architectural Record, who proclaimed that “Gehry's Bilbao has conflated cultural, economic, and political interests, alerting all to what a dazzling object in the cityscape can accomplish.”13

The Guggenheim building in the Basque capital was also perceived as the beginning of a new era in which museums are thought of as monumental sculptures, potentially becoming the most important work in an institution’s collection (Figures 1-3). Museum plans developed all over the United States, including New York (a new Guggenheim by Gehry and the Whitney extension by Rem Koolhaas); Philadelphia by Tadao Ando, Hartford, CT; Boston, Bellevue, WA; San Francisco, Denver, Saint Louis, Milwaukee, WI; Cincinnati, Savannah, GA; Kansas City, MO; Atlanta, GA; Austin, TX; Charlotte, NC.

According to a study from the University of Chicago, “between 1994 and 2008, 725 new arts facilities were built in America at a price of more than $US 15 billion.”14 Even the 2008 recession couldn’t stop the boom: according to the Art Newspaper, from 2007 to 2014, $8.9 US billion was spent on museum expansions worldwide, and $5 US billion in the United States alone.15

“To tour the museums and art galleries of the last two decades is to take in a whimsical menagerie of iconic creations: curls of Frank Gehry–built metal rippling through Cleveland and Seattle; neo-futuristic Zaha Hadid monuments alighting in Azerbaijan and Guangzhou like so many glossy alien motherships; Daniel Libeskind shards poking out of heritage buildings from Dresden to Toronto.”16

Cultural megaproject construction was not limited to wealthy global cities like Paris, New York and London. Regional and small cities such as Biloxi, Mississippi, and Roanoke, Virginia, also attempted Bilbao-like urban transformations into

11. A. Klebnikov, Museums Inc. (Forbes, 8 January 2001).
15. E. Blakemore, Museum Building is Booming in the United States (Smithsonian.com, 11 April 2016).
cultural hubs via iconic museums. According to Joanna Woronkowicz, one of the authors of the University of Chicago study, "the people behind these buildings all had something in common: they had read Richard Florida and absorbed his message. Building a large, eye-popping museum wasn’t an act of hubris; it was a civic duty."\(^{17}\)

Nevertheless, the *Bilbao Effect* faced significant criticism and skepticism among numerous architecture and art connoisseurs. Chicago Tribune critic Blair Kamin noted that the rise of “starchitects” poses a broad set of questions about the impact of globalization on an art that is ultimately local:

“Should 15 or 20 starchitects be designing all the world's great buildings? What does it mean if every city has its Gehry, its Koolhaas, its Calatrava? Are the backers of these buildings simply seeking known commodities rather than taking genuine artistic risks? Can the stars tailor their style to a vast, cross-cultural array of functions and places?”\(^{18}\)

Architectural critic Witold Rybczynski asked whether the cities commissioning new museums by starchitects can become the next Bilbao in terms of visitors. He noted that attendance at the Experience Music Project in Seattle, designed by Frank Gehry for Paul Allen in 1996, decreased by a third eighteen months after the museum opened, while the number of visitors to the local art museum increased by more than a third during the same period. Recently a portion of the building was converted into a science-fiction museum. Despite its unusual architecture, consisting of colorful, rounded forms said to be inspired by electric guitars, the museum of rock music and Jimi Hendrix memorabilia, the Experience Music Project has not proven to be a success.

Rybczynski was “skeptical that designing in the full glare of public competitions encourages architects to produce better buildings. The charged atmosphere promotes flamboyance rather than careful thought, and favors the glib and obvious over the subtle and nuanced.”\(^{19}\) More recently, Rybczynski has argued that “perhaps the Bilbao effect should be called the Bilbao anomaly,” since “the iconic chemistry between the design of a building, its image and the public turns out to be quite rare, and somewhat mysterious.”\(^{20}\)

“Failed icons do not disappear though, which is indeed problematic. Since the Bilbao effect mistakenly teaches that unconventional architecture is a prerequisite for iconic status, clients have encouraged their architects to go to greater lengths to design buildings that are unusual, surprising and even shocking. The shock, however, will inevitably wear off, and 100 years from now most aspiring iconic constructions will resemble a cross between a theme park and the Las Vegas strip.”\(^{21}\)

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17. Ibid.
Figure 1. Aerial Photo of the Guggenheim Building (Frank Gehry, 1997) in Bilbao (Spain)

Figure 2. Panoramic View of the City of Bilbao with the Guggenheim Museum in Center Foreground
The Case of the Denver Art Museum

Both the Denver Art Museum (DAM) and its critics see the origins of the Hamilton Addition at Bilbao, after the director of the DAM visited the opening of the Bilbao Guggenheim and got captivated by what he saw: he “wanted one for Denver.”22 (Figures 4-5). The mayor of Denver was quoted predicting that the jumble of metal-clad, faceted geometric forms that made up architect Daniel Liebeskind’s design (open in 2006) would “put us on the map as a world-class destination city,”23 a still unrealized wish today.

Our discussion on Denver follows Snyder (2016) as well as Lindsay (2013).24 There are abundant formal similarities between the two museums (Bilbao and Denver), including their material choice (titanium cladding), the selection of a star architect, and the construction of a daring sculptural structure. In addition to

architectural similarities, the Hamilton Addition was intended to play a role in developing the long under-used Golden Triangle neighborhood to the south of the addition. The use of an international architect to garner attention at the Ponti Building suggests that the influence of the Guggenheim Bilbao on the DAM is indisputable.

The Hamilton Building was sold to the public as not just a building but as a symbol and an event. The power of architecture as icon is dependent on the “circulation of visual images, combined with an embodied, performed set of tourist practices on the part of architects and their professional critics and journalists.”

That is, iconic architecture has a strong media presence and draws tourists to consume it visually. According to architectural theorist Charles Jencks, the iconic building “need not be a great work of architecture, but it must be a captivating one. It has to move your viscera, whether you like it or not, and stay around as a memory image that attracts other thoughts into its orbit.”

As Lindsay remarks, using a building to represent a place is not new; the Eiffel Tower, the Sydney Opera House, even the Gothic Cathedrals are icons that draw people to visit them. “The Hamilton Addition stands out from the surrounding buildings, breaks with historical norms for art museums and civic centers, uses a new material for cladding, and defies gravity with its angles and cantilevers.”

“But it is a break that has been vetted, successfully tried in Bilbao, Spain, and copied by cities across the United States. The selection committee had strong evidence in the Jewish Museum and Gehry’s Bilbao that this could be a successful strategy.”

Both local and global elements had an influence in the planning and design of The Hamilton Addition, which was an urban event, aiming at an international scale, because it intended to expand the global reach of Denver. Libeskind’s design was simultaneously a tool for local urban planning and a symbol for the region of urban innovation.

“In a very basic way, the Museum is part of the urban fabric of Denver, and the Hamilton Building takes seriously its role at the urban level, seeking to connect the Civic Center and the Golden Triangle. It makes physical gestures towards downtown, with the prow pointing in that direction, while reducing its height near the residential Golden Triangle.”

29. Ibid, 36.
30. Ibid, 43.
Urban gentrification was an intended effect of the building. Urban leaders in Denver tried to transform the civic center of the city “from a place of homeless people into a place where the upper classes spend time.” The success of the building at this is only partial, and property prices in the area have not significantly changed by effect of the building-led gentrification itself.

“So some of that is due to timing: although Denver’s housing market did not crash as badly as it did in places like Las Vegas or Phoenix, it still experienced the slow-down in housing that affected the United States in the wake of the 2008 crash.”

The museum received substantial criticism: about Libeskind’s architectural style and decreasing quality of his work, about the ability of the building to work as an art museum, about the building’s perceived failure as a space for exhibiting art.

“Criticism of sculptural museums contends that both the exterior architecture and the interior gallery spaces can distract museumgoers from fully appreciating the art within. The first concern is that the architecture upstages the art it contains, because visitors come to see the building instead of the art. The second exception critics take is that the architecture distracts visitors from viewing the art. This criticism is especially relevant for the Hamilton Addition.”

While the Hamilton Addition received mostly negative criticism concerning Libeskind’s style and its display of art, it received favorable comments regarding its relationship to urban space. Critics referred to the Hamilton Addition as a “surprisingly sensitive shaper of urban space,” a “contemporary spin on urban context,” and a “tour de force on urbanistic grounds alone. It actually succeeds brilliantly in weaving together disparate parts of the cityscape.”

When sculptural museums are used in urban neoliberal strategies, commodification of iconic buildings is a common feature. Just like cultural regeneration cannot be separated from property-led regeneration, the intentionality of urban leaders when using iconic museums in their revitalization plans is mainly one of increased economic returns, growth, competitiveness and global visibility. In this context, the role of art is at best secondary and often neglected.

31. Ibid, 56.
“[…] while previously museums were identified by their collections, now this is by their architecture: In other words, the dominant image is the container, rather than the content.”34

Further, one must not forget that when museums are intended as catalysts for urban development, there are usually many negative impacts concerning accessibility and quality of life in urban areas. New museums often attract visitors and energize neighborhoods, but too often residents – and particularly low-income residents – tend to be disregarded. Victoria Newhouse writes that,

“During the last two decades this role has become increasingly frequent […]. Because major renewal projects normally spearhead gentrification, dislodging low-income populations, they cause tremendous social and economic upheaval and tend to be highly controversial.”35

According to Snyder, the Hamilton Addition was “an integral part of Denver’s attempts to transform its downtown, and in particular the Golden Triangle, into habited, “urban villages” intended for upper income residents.”36

“Development skyrocketed in the downtown generally, especially in the LoDo area and other neighborhoods in the northwest portions of downtown. Some development occurred in the Golden Triangle, but not to the same extent as other downtown neighborhoods. Following Denver’s planning and building in the Civic Center and Golden Triangle pointed to more interesting research regarding the city’s use of arts and culture in urban policy.”37

All in all, the Libeskind building in Denver did not turn the city into a world-class tourist destination. One reason is the intrinsic limitations of urban icons to trigger significant economic change in cities. The other is the change away from spectacular architecture in design theory and away from using spectacular architecture as a tool for urban revitalization. Snyder contends that “there has been a shift in Denver’s rhetoric and planning away from monumental building like the Hamilton Addition towards the cultivation of smaller arts institutions or street culture.”38 From iconic buildings to cultural districts to sustainability, there has been a clear evolution in planning and urban strategies in the past ten years. With this development, the meaning of the DAM in Denver has shifted and its influence as an urban revitalization tool has decreased.

34. A. M. Guash and Joseba Zulaika, Learning from the Guggenheim Bilbao (Reno: University of Nevada Press, 2005), 16.
37. Ibid, 164.
38. Ibid, 176.
“Denver’s planning and building in the Civic Center and the Golden Triangle from 2006 to the present, with respect to issues of public space, shows a shift in Denver’s conceptualization of “arts and culture” and with that, the decreasing authority of the Denver Art Museum as the icon of culture in Denver.”

Figure 4. Daniel Liebeskind’s Hamilton Addition to the Denver Art Museum (2006)

Figure 5. Liebeskind’s Museum Building in the City of Denver, Colorado, USA

Helsinki’s Failed Guggenheim Museum

The Guggenheim Museum Helsinki is a failed project that will not be built. The outcome of the Guggenheim Helsinki’s international competition was known in June 2015, with the winning project going to the Paris-based firm Moreau Kusunoki Architectes. However, in Fall 2016, the City of Helsinki voted to cancel the project due to increasing controversy and civic opposition.

The project was perceived as an onerous economic expenditure in Finland. The project came with a €130m price tag and a hefty €27m licensing fee to the Guggenheim for the privileges of using the Brand, not to mention the cost overruns that the project would have likely generated, as most megaprojects do. Kaarin Taipale, the co-author of *In the Shadow of Guggenheim*, a book that analyzed the project challenges, stated:

“If [Guggenheim] is a private enterprise, so it’s simply not part and parcel of Finland’s welfare society to support that kind of organization with public funds […] Everything would be financed by the city – the land, the construction, the upkeep of the building, the salaries, the license fee, everything.”

Finland was in a recession after 2008 and experienced difficulties in pledging to finance the megaproject. The country is considered to be in a “lost generation” due to losses in industrial development, and EU sanctions imposed on Russia, Finland’s biggest trading partner. The cost of the project was the primary reason that it was denounced by opponents. Paavo Arhinmäki, Cultural Minister of Finland, stated that the Ministry would not fund the project, saying:

“We are already cutting money for museums, theatres and orchestras […]. There is a really tough economic situation. 70 million for construction and a million a year in operating costs, there isn’t that kind of money in the culture Budget.”

The assumption of the Guggenheim project was that the money would be provided by external sources such as franchising payment, which would cover the 30 million USD that would be paid to the Guggenheim Foundation for rights to use the name and brand. Arhinmäki also said that all other payments would be funded by taxes:

“Now it looks like everything else is supposed to come from taxpayers […]. That means that when the National Board of Antiquities (which funds

42. K. Ziabari and J. Urpilainen, “Finland’s Economy is in the Middle of a "Lost Decade,"” *Fair Observer*, 31 October 2014.
43. YLE, *Minister Says No Culture Budget for Guggenheim* (YLE, 1 December 2012), 12.
museums in Finland) makes cuts, museums will have to scale back their operations. So the issue should be assessed honestly. This would mean big cuts would have to be made elsewhere in the culture Budget."  

Failure to Recognize Local Culture and Context

In the architecture competition by the Guggenheim Helsinki, none of the finalist firms – nor any participating firms – were Finnish, and neither were most of the artists in the Guggenheim collection. Raoul Grunstein, a Finnish artist, also worried that “the meaning of our local artists would be diminished.” Richard Armstrong, Director of the foundation and the Guggenheim in New York addressed this issue:

“I felt some defensiveness and some very developed hostility to us, a fear which I was empathetic toward — that the distinct local character of Helsinki would somehow be amalgamated into some sort of gigantic industrial apparatus.”

Kaarin Taipale echoed the opinion of Armstrong. She stated:

“This is like we are buying a Louis Vuitton bag because it is a famous brand – we [Finland] need our own brands.”

The project’s opponents were mainly on the political left, while the right saw it as a boost for Finland, citing the example of the Bilbao Guggenheim, which, according to conventional wisdom, helped transform the Spanish city into a popular art and architectural destination. Dazzled by the promise of the “Bilbao effect,” dozens of cities have been courting the Guggenheim every year. But when Helsinki city councillors were asked recently if the museum would benefit Finland as a whole, none agreed strongly, while almost half disagreed.

As The Guardian newspaper informs, Mark Wigley, dean emeritus of the graduate school of architecture at Columbia University and chair of the judges in the international design competition, said the “genuinely dignified” status of the public in the winning design (by Paris-based Moreau Kusunoki Architectes) was “a wake-up call to the Guggenheim and architecture in general.”

“I am so bored with 80-year-old white men getting out of their aeroplanes, not knowing anything about the city but pretending to love the clients and dumping one more uninteresting museum on them.”

44. Ibid, 16.
46. Ibid, 29.
47. Ibid, 28.
Architect and urbanist Michael Sorkin, opponent of the Guggenheim Helsinki, criticized the six finalists of the architectural competition. He said:

“My general reaction is that it’s all architecture, simply a series of single buildings on a particularly charismatic site. There’s nothing unusually extraordinary. I found bizarre the idea that the jury is attempting to preserve the anonymity of the entrants—two kids in my studio more or less figured them out in a few seconds.”

Sorkin was the chair of The Next Helsinki (TNH), an international competition that sought innovative ideas for the improvement of the cultural and public space of Helsinki. Launched as an alternative to the controversial Guggenheim Helsinki project, the Next Helsinki “called upon architects, urbanists, artists, and environmentalists to imagine how Helsinki and the South Harbor site allotted to the proposed museum can be transformed for the maximum benefit of the city’s residents and visitors,” as the official TNH website states:

“We initiated this project out of a sense of both outrage and love. Outrage at the march of the homogenizing multi-national brand culture emblematized by the imperial Guggenheim franchise – the cultural equivalent of Starbucks – was what launched us. The feeling of love came from our mutual affection for Helsinki, from a sense that it is a singular place, unique in setting, form, and culture. Understanding the impetus to acquire a Guggenheim as a pursuit of the vaunted Bilbao effect, the idea that some gaudy global repository would put a tired place on the map, we wondered why a city so indelibly fixed in the urban firmament, so superb, would want to surrender such a fabulous site to some starchitect supermarket.”

The TNH competition, pitched to “attract innovative ideas about how to more fully meet the city’s cultural, spatial and sustainability needs,” branded the Guggenheim project a “misguided vanity project, and a symbol of the Finnish capital selling out to an American brand.” According to The New York Times, the majority of city residents opposed the project and local artists expressed concern about the Guggenheim potentially absorbing the Helsinki City Art Museum.

Call for submissions for TNH opened on September 9, 2014. Deadline for submissions was March 2, 2015. Over 200 international entries were submitted to the Next Helsinki competition from 37 different countries on five continents. The international jury, chaired by Michael Sorkin, announced the competition results on April 20, 2015 in Helsinki, about two months prior to the outcome of the official Guggenheim Helsinki competition. The jury was most excited about

51. TNH - The Next Helsinki.
52. Ibid.
53. Volner, Can the Guggenheim Charm Finland?, 2015.
entries that suggested building on existing resources, and that tried to capture emergent urban trends and tendencies in the city.

Lack of Focus on Sustainability and Creativity

The six finalists’ architectural designs of the Guggenheim Helsinki were criticized as being uncreative and lacking in focus on sustainable bioeconomy, which Finland leads in. Finalists’ final designs were repeatedly reminiscent of modern architecture, such as

“light as a beacon, industrialized portal frames with a modern twist with piano roofs and one entry that resembles a lotus flower or something resembling flora which had been so overdone.”

Architecture needs to be responsive and be considered as a form of “critical regionalism,” which has been lacking in a significant number of projects:

“The renderings look amazing no doubt, but how exactly does this incorporate the bioeconomy and sustainability that was stressed upon in the brief? And did any of the finalists bother to incorporate the rich heritage site that it sits on? Being the main reason for its selection in the first place?”

Figure 6. The Winning Design for a New Guggenheim Museum in Helsinki, Finland, by Moreau Kusunoki (2015) - Never Built

55. Z. Kalla, To Guggenheim or not to Guggenheim Helsinki ?... That is the Question (Arch2o, 2014), 51.
56. Ibid, 53.
Abu Dhabi and Dubaization

The Dubaization of Abu Dhabi includes a new Guggenheim Museum, designed by Frank Gehry, originally set to open in 2012, then in 2017, and still not completed as of March 2019 (Figures 8-9). The Guggenheim in Abu Dhabi is twice the size of the museum in Bilbao, twelve times the size of the Frank Lloyd Wright Guggenheim in New York. Carol Vogel in The New York Times refers to this Gehry design as “a graceful tumble of giant plaster building blocks and translucent blue cones.”

Most Arab world cities are competing to imitate Dubai in its unprecedented effort to build the tallest, the biggest and the largest ever built architectural and urban statements. This phenomenon can be best described as “Dubaization,” the process of urbanizing a city with futuristic, pioneering architecture. Dubaization is qualitatively similar to the “Bilbao effect,” and part of the “icon project,” and it has spread to other cities, even outside of the Gulf area, such as Istanbul and Vancouver. Dubaization triggers crucial questions: What are the consequences of this urbanization strategy on the future of Arab cities? What kind of social life will emerge out of this development? Is this just an elite-driven process of constructing, reconstructing and deconstructing identities and the territorial outlook of Arab cities? And also, is there any future for sustainability in the developmental strategies of Arab and Middle Eastern cities?

Dubai, as a model of urban development, is based primarily on images and icons rather than sustainable concepts and processes. Major conflicts are resulting from this, including failing to adopt sustainability, limited interpretation of

globalization and degradation of locality. Arguably, Arab cities need to consider a more holistic approach for its sustainable strategic development. Architecture as a domain and creative reflection of local culture can be used as a vehicle to maintain local culture and interact with the global appetite for knowing “the other.” The main condition for these architectural products to be exposed to the other is that they should be coming from a deep and original local vision rather than being exemplars of a globally crafted strategy. The multiple controversies and disruptions associated with the Guggenheim Abu Dhabi indicate errors and failures in planning, policy and implementation.

Abuses on Foreign Workers

Foreign workers in Abu Dhabi comprise 85% of the workforce, most originating from nearby countries such as Bangladesh, Pakistan, Nepal, India and Sri Lanka. According to a PriceWaterhouseCoopers compliance report,58 86% of the workers paid illegal recruitment fees to agents, while 92% said they paid for their own relocation fees including visa, accommodation and travel expenses. These statistics have increased since the previous report, from 75% and 72% respectively. Many of these workers are young men who were led to believe they would be working high-paid construction jobs.

Despite their payment, these workers live and work in dire conditions. According to Human Rights Watch,59 some workers were under the impression that they would be working as hotel employees or waiters only to realize they would be working far less lucrative jobs in the construction industry.

The Guggenheim, in conjunction with NYU Abu Dhabi and the Louvre, insisted on the guarantee of worker’s rights to prevent discord from board members and donors. Despite this assurance, The Guardian released a 3-month investigative report on the work and living conditions, and found the following:60

- Companies withhold the passports of migrant workers, trapping them in the UAE.
- Thousands of workers are living in substandard conditions elsewhere in the UAE, in apparent breach of the TDIC's (a developer of major tourism destinations in Abu Dhabi) pledge to house them all in its model Saadiyat accommodation village.
- Dozens of workers were deported in 2014 for striking over pay and conditions.
- Mobile-phone video footage of a riot in August shows dozens of men roaming the camp armed with metal spears and planks spiked with nails, with men seen jumping out of windows to avoid the conflict.
- A worker who claims he lost his leg while building luxury villas has been forced to live on the top floor of a migrant camp for a year. He only

received a prosthetic leg last month and has been reliant on the Red Crescent for medical support. His claim for compensation, and request for ground-floor accommodation, have been rejected.

Possibility of Downsizing the Museum

The original cost of the Guggenheim was said to be around €800m out of the €27b budget for the cultural district. Ramin Salsali, honored as patron of the arts by the UAE vice president Sheik Mohammed bin Rashid Al Maktoum, said that the project would not stimulate the local economy and cultural development because Abu Dhabi does not need the museum to enhance its reputation. He stated:

“The Guggenheim effect is sexy when you are not on the radar. When you are Bilbao. But Abu Dhabi today – I’m sorry to say, but the Guggenheim should pay Abu Dhabi to be there, not vice versa. Does Abu Dhabi need the Guggenheim still? I don’t believe so… The luck is that the delay may provoke a reconsideration of why we should have a Guggenheim of that scale, with that amount of money. Let us downsize it.”

Religious and Political Censorship

In Abu Dhabi, and specifically in Saadiyat Island (the location of the new Guggenheim), only purely ornamental art is permitted, while modern art to be exhibited in the Guggenheim museum is generally regarded as “largely liberal, tolerant and exuberant.” This contrast between local culture and modern art would create a clash in society, where “cultural biases threaten to divide the project philosophically while practical differences suggest that the users and providers also disagree about the eminence of economic or aesthetic interests.” Verena Formanek, Senior Project Manager of the Guggenheim Abu Dhabi, admitted that the compiling process of contemporary art is difficult because,

“[It’s] completely different in the process of acquiring the work because we represent the government. This is government money. We want to accelerate

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64. C. Skluzacek, *Universality and its Discontents: The Louvre and Guggenheim Abu Dhabi as a Case Study in the Future of Museums* (Macalester College Art History Honor Projects, 2010), 35.
65. Ibid, 43.
slowly, not beginning with the contemporary in the sense that we shock people and no one ever came back here."  

However, she also noted that the delay in the construction of the museum gave the government time to educate the public and prepare them for the art that would be exhibited in the museum. Rita Aoun Abdo, Saadiyat’s Cultural Director, has noted that museums need to develop organically within the local culture, or else their survival is compromised.  

Apart from religious censorship, there are also worries that there will be political censorship in the Guggenheim after the Arab Spring movements. Although the political movement largely passed by the UAE, the country introduced internet restrictions in 2012 on the use of social media to organize protests and imprisoned a large group of Islamists who were charged on plotting a coup in 2013. One example of political censorship includes the sacking of Jack Persekian as the Director of Sharjah Biennial in 2011, which planned to display a picture considered offensive to the ruling Sheikh in Sharjah. “No one anticipated that this [Arab Spring] would happen. I think everyone was thinking about religious issues, no one thinking of this powerful political aspect.”

Adverse Effects due to Reclamation and Breakwaters

In order to accommodate the Guggenheim Abu Dhabi, along with the Louvre and a Performing Art Centre, new lands and breakwaters are being created. Previous breakwaters in other places are known to stagnate oceanic flow around the area and cause environmental problems. When the flow is stagnant, waste cannot flow out of the area and nutrients cannot flow in, hence further deteriorating the environment along the shore. The turbidity and sedimentation levels along the shores of Saadiyat Island could also increase, which would further harm the aquatic life as insufficient oxygen is dissolved into the water.

Multiple floodings have also occurred during the reclamation projects. According to the environmental impacts report on dredging and reclamation issued by Terra et Aqua, in a settlement pond for the trailing suction hopper dredger (TSHD) has extremely unsatisfactory performance:

“The flow over the pond constantly changed because of differences in reclamation activities and locations. Therefore management of the weir boxes

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66. Batty, In Abu Dhabi, they Call it Happiness Island. But for the Migrant Workers, it is a Place of Misery (The Guardian, 21 December 2013).


68. A. Dhabi, Why the Arab Spring Never Came to the U.A.E. (Times, 18 July 2011).


70. Wells cited in Batty, 2015.

and maintenance of channels and scum booms had to be organised very carefully […]. During the course of the project, however, the settlement pond filled up with material. As a result of the constant flow of water over the pond, the material could not be removed and the settling capacity of the pond decreased. Furthermore, the settlement pond was part of the design of the island, and needed to be reclaimed as well. As reclamation progressed, the remaining area for settling decreased and the height of the weir boxes was no longer sufficient to hold enough capacity to ensure tailwater quality […]. Closer investigation showed that depth of the trenches was still not according to the screen requirements.”

Adverse Effects on Marine Life

Sensitive marine communities, including mangroves, seagrass and coral communities around the area are being adversely affected by dredging activities. For mangrove death to occur, the sedimentation rates of greater than 15mm per year just need to smother the aerial roots where gas exchange occurred. Despite the modelling of sediment accumulation indicating little risk of smothering of mangrove roots, mangroves located inside the boundaries of reclamation areas are likely to suffer due to both reclamation and dredging. While mangroves and seagrass are very sensitive to the salinity and acidity of the surrounding water, coral communities are very sensitive to sediment load on surface water. Impervious surfaces, such as roadways, increase the runoff rates and carry water mixtures containing pollutants; these waters are eventually discharged into coastal waters. Coral communities are harmed in this process, threatening biodiversity in the area.”

Figure 8. The Guggenheim Abu Dhabi by Frank Gehry (2017) in Saddiyat Island

73. Ibid, 36.
The Fading Away of the Bilbao Effect

In 2007, del Cerro Santamaría warned that iconic architecture could be replaced as the hegemonic discourse of urban revitalization and, with this development, the *Bilbao Effect* would fade away.⁷⁴ Along these lines, architectural critics such as Michael Kimmelman have come to understand that the *Bilbao Effect* sat on shaky foundations:

“The truth is, the Bilbao effect is largely a myth. Frank Gehry’s museum alone didn’t turn around that city. It capped decades of civic renewal. Flashy, even brilliant buildings rarely rejuvenate neighborhoods or guarantee crowds and cash just by virtue of their design [...] Sadly, museums, like cities, have squandered fortunes praying to this false idol. They still do.”⁷⁵

The example of the new Ordos Art Museum in Inner Mongolia, beautifully designed by MAD, a prestigious firm of Beijing architects, suggests (not too surprisingly) that just building a terrific museum is not enough to ensure success. The city of Ordos has sprung up fast and is relatively wealthy, thanks to discoveries of oil and gas, but the museum has no collections and precious few plans for exhibitions. No wonder it is devoid of visitors.

Even before actual construction, the Guggenheims in Helsinki and Abu Dhabi have attracted significant criticism, as this paper has shown. The projects could be questioned along three main lines: (1) iconic architecture is no longer the

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hegemonic visual discourse in urban revitalization; (2) the franchise model imposed by the Guggenheim means that local officials have no autonomy to make major decisions on matters from exhibition calendars, to budgets and investments; and (3) local cultural identities are usually neglected under a foreign global arts model. In addition, the environmental impacts of the projects may not be negligible. The Abu-Dhabi project has also been controversial around issues of workers’ rights and labor conditions. Iconic megaprojects trigger many controversies, including cost overruns, negative environmental impacts, gentrification risks, drawbacks of top-down cultural engineering, neglect of local cultural identities, and uncertain economic success. None of these externalities bode well for cities that are counting on instant icons to salvage them during times of economic malaise.

Despite the media success of the Bilbao Guggenheim, the Bilbao effect has proven to be difficult to replicate in most places, even for Frank Gehry. On the other hand, some architectural icons, such as Gehry’s Stata Center at MIT, work well with no Bilbao effect -- most MIT scientists working in the building praise its playful and inventive feel, as I have personally witnessed.\textsuperscript{76} Cooper Union alum Daniel Libeskind’s jagged edges, sharp angles and complex geometries (the extension to the Denver Art Museum, the Royal Ontario Museum in Toronto or the Danish Jewish Museum in Copenhagen) have not had the universal acclaim of his Jewish Museum Berlin, an illustration that success, impact and visitor attraction are not necessarily a function of a building’s spectacular design. Many works by Shigeru Ban or Tadao Ando are excellent examples of highly admired and successful architecture in the antipodes of iconic buildings designed to stun.

Woronkowicz et al analyzed new cultural facilities built in the U.S. between 1994 and 2008, a building boom for museums and other arts institutions.\textsuperscript{77} According to their analysis, the \textit{Bilbao Effect} did not materialize in most cases. There has been a decrease in poverty rates and an increase in property in communities where new cultural centers or expansions were built, but poorer residents also suffered displacement in those areas. In addition to the usual gentrification effect caused by cultural megaprojects, the researchers show that supply may have outstripped demand and cities have been left with the responsibility to maintain or even pay for cultural centers that they don't entirely need.

Further, the analysis shows that expansions and new museum projects don’t have spillover effects one way or the other (positive or negative) for nearby cultural institutions. In addition, the authors explain that leaders involved in building cultural megaprojects depend on “inside knowledge” obtained from their own experiences, and those of their collaborators' experiences. “What tends to be absent in their thinking, however [...] is “outside knowledge” regarding the distribution of projects that did not go as planned,” the book continues.\textsuperscript{78}

\textsuperscript{76} R. Campbell, \textit{Does Gehry’s Stata Center Really Work?} (Bloomberg Business, 19 June 2007).
\textsuperscript{78} Ibid, 56.
Cost overruns and project delays are typical symptoms associated with cultural megaprojects. In the cases analyzed in Woronkowicz (2015), a full 91 percent of performing-arts centers built during the study period went over budget. Of the projects they studied, 54 percent featured lower revenues than projected, while 59 percent featured higher expenses. What the research shows is a gap in cultural facilities management lacking level-headed analysis that leads to misplaced expectations and mistakes resulting in budget shortfalls and cost overruns.

In summer 2017, the Centro Botín opened in Santander, Spain. Located just an hour from Bilbao, the contemporary art centre was designed by Renzo Piano, a “starchitect” who is no stranger to flashy, monumental design. As Hune-Brown explains:

“The museum is an elegant, striking structure, but its creators have been eager to tamp down any Bilbao-related rhetoric about civic transformation. According to the Botín foundation’s president, the museum was built for the people of the city, not to “create an icon.” It is nearly invisible from within the city itself – a “self-effacing” building according to one architecture critic. The building feels like a public affirmation that the heady days in which we talked about architecture saving cities are over. When Piano was asked about his approach to the design, he didn’t mince words. “I suppose our strategy was the opposite of the Guggenheim,” he said. “How many Bilbao effects can you have after all?”

Conclusions

Denver, Helsinki and Abu Dhabi, the cases examined in this paper, add to the list of cities around the world that attempted urban transformations similar to Bilbao’s. We know that the Helsinki Project was cancelled and will not materialize, but we wanted to show the numerous controversies and civic opposition it triggered during the planning and design phases. In the case of Denver, urban planning developments in the years since the opening of the Libeskind addition to the DAM in 2006 have displaced the Denver Art Museum to the sidelines in local efforts at urban improvement. In Abu Dhabi, the new Guggenheim will play in a complex environment within the context of an increasing diversification of the local economy and, if its fate is similar to Masdar City’s eco-experiment in the outskirts of Abu Dhabi, the success of the new museum is far from guaranteed.

Even if Bilbao is considered a very successful case of image reconstruction via iconic architecture (something that by itself did not solve many of the

79. Ibid, 61.
structural and socio-economic problems of the city), the Bilbao Effect was largely a failure and has clearly faded away. The failure and the fading away of the “Bilbao Effect” owes to the limitations of existing political rationality and decisión-making processes at times when globalization put pressure on urban leaders to redevelop and become globally visible. It also owes to a poor understanding by outsiders of the context and true reasons behind Bilbao’s urban revitalization success, which have little to do with iconic architecture: they owe to a sound economic policy by the financially autonomous Basque government and a well-crafted and comprehensive revitalization plan of which the Guggenheim was just a very small and ad-hoc component. Further, while Bilbao has been more successful than other cities at branding and image change, the realities of urban life in Bilbao remain subject to the complexities, contradictions and shortcomings of the neoliberal model of urban development, including precarization of the labor market and severe socio-economic inequality. Iconic architecture has brought tourists to Bilbao, but it has contributed nothing to solving the structural problems of Bilbao’s urban economy.

Bilbao’s economic performance after the opening of the Guggenheim broadly follows the ups and downs of economic cycles, a clear indication of both the embeddedness of cities – and iconic megaprojects – in multiple scales of socio-economic action and the limited power of architectural icons to explain development, competitiveness and urban economic change. Institutional contexts, specific policy instruments and territorially grounded social dynamics give rise to distinct patterns of iconic megaproject development and help explain the degree to which such megaprojects succeed or fail.

On the other hand, in the hypothetical case that the star of the Bilbao Guggenheim begins to dim and visitors cease to arrive in Bilbao in large numbers, the consequences for the Basque city would not amount to significant economic decline, as the museum represents just 2.2 percent of the Bilbao economy. Cities are complexly determined formations, and a spectacular building alone, even if projected by experts and the media on a worldwide scale, is not usually capable to shift their fortunes in fundamental ways.

In addition, not every city is well positioned to be "put on the map," especially second or third-tier cities that are comparable to Bilbao in terms of size but are located off main routes and flows of people and commerce. Bilbao is located in one of the top three tourist destinations in the world (Spain), which has been a factor in the museum's spectacular ability to attract visitors. Spain receives about 85 million visitors annually, of which approximately 2.5 million tour the Basque Country, with around one million visiting the Guggenheim Museum in Bilbao.

To be sure, cities should not expect to be able to replicate the success of Bilbao just by implementing fashionable urban policy marketized via appropriate global media discourses. Each city has a local history, a region within which it develops, and a specific political make-up that influences local decision-making processes. Cities and regions around the world partially adhere to their own specific logic of development.

Each city shows particular features that contribute to explaining decline, and each may need localized strategies for redevelopment. Applying the standard
elements in the revitalization mix, including iconic megaprojects, to cities around the world may be unavoidable due to rapid and acritical adoption of policy discourses from center to periphery. However, expecting to replicate a city’s success by merely adopting such strategy is often a recipe for disappointment.

Twenty-two years after the opening of the Guggenheim in Bilbao, the Bilbao Effect has faded away and the inflated claims of this age of urban icons no longer hold. When every city seems to boast a spectacular museum, the strategy of building cultural megaprojects has diminishing returns. In this paper, we have tried to show and explain the shortcomings and failures of this mode of urban development. We need to work in favor of other approaches and models where the traditionally overlooked synergies between research-based evidence, management and urban governance for holistic sustainability become a priority area for urban and regional policy-makers to address.

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The Fading Away of the Bilbao
Sustainable Skyscrapers: The Standard Bank Centre, Johannesburg

By Christo Vosloo*

Over the last 20-30 years there has been a renewed interest in tall buildings and skyscrapers as symbols of growth, affluence and progress. The building and operation of this typology is highly resource-intensive and the failure to create sustainable buildings will have serious implications. The Standard Bank Centre in Johannesburg is one of a handful of ‘upside-down’ or hanging buildings in the world. It was designed to be a prestige symbol in a city that, at the time, was one of the fastest growing cities in the world. Johannesburg is situated on the edge of the world’s largest known gold reserve and the associated wealth lead to a city that grew rapidly. The main aim with the design of the building was to create a symbol of the success of its owners, as is the case with many of the skyscrapers constructed in recent times. While the building functioned as intended for a number of years, the owners started planning new accommodation within just seven years and eventually moved out of the building. Sadly, the building stands virtually deserted and derelict and studies have found that it will be very expensive to refurbish this iconic structure. There is a chance that all the energy (physical and human) that went into it may be lost. This is something that must be prevented, here and elsewhere. While the development of the building took place before sustainability or green design became an issue, a retrospective analysis will be undertaken in an effort to corroborate the principles of sustainable or green building and urban design. The aim is to determine if green design should play a role in sustainable investment, and what caused the unsustainability in this case, in order to prevent situations like this recurring in future skyscraper developments.

Introduction

Skyscrapers have been described as a “machine that makes the land pay.”¹ Ken Yeang defines skyscrapers as “the large high-rise intensive building-type, generally regarded as being over 10 storeys, and which can be of commercial, residential, hotel or mixed use.”² The skyscraper archetype emerged with the onset of the industrial revolution when it became possible to mass manufacture many of the components that made this building-type possible. As this building-type became more common, particularly since the end of the Second World

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War, skyscrapers became the new topographic reference points and the quintessential building-type of the previous century. It also became a celebration of technology and innovation, particularly structural innovation. Adrian Smith holds that skyscrapers make us look up while walking down city streets. To him, “like towering divas, skyscrapers command the urban stage, holding us enthralled yet half-fearing their next majestic manifestation.”

Lepik believes that they have replaced church towers as skyline pinnacles and new reference points in our cities. He continues, saying that skyscrapers reflect the apparent limitless potential of technology to provide the cities of the future. As such, the relationship between skyscrapers and sustainable design has become a frequent topic in the academic conversation regarding this building type. Authors such as Ken Yeang, Stephen Del Percio, Steve Watts and Kheir Al-Kodmany have addressed this topic in recently published works. Prominent architects have included sustainability in the skyscrapers they have designed. Here London’s Swiss Re Headquarters building by Norman Foster and Partners is a case in point. Built at the turn of the century as one of the city’s first high-rise buildings of recent times, it not only symbolises the changes in urban planning but also the need to design buildings that are more environmentally sensitive, using natural forces to achieve conditions that older buildings could only provide through the use of man-made energy. While this building is not noted for its height, the same period saw a global competition between cities and countries to have the highest buildings. The Burj Khalifa by Skidmore, Owings and Merrill (completed 2010, 828m), the Ping An Finance Centre (completed 2015, 660m) by Kohn Pedersen Fox Associates, the Shanghai World Financial Centre also by Kohn Pedersen Fox Associates (completed 2008, 492m) and Jeddah’s Kingdom Tower by Adrian Smith and Gordon Gill Architecture (completed 2019, 1 000m) being cases in point.

At the same time, other emerging economies strove to have the most significant or iconic skyscrapers as symbols of their new-found wealth and prominence. Examples include the CCTV Headquarters in Beijing by OMA (completed 2008), Shanghai Tower by Gensler (completed 2015), the Petronas Towers in Kuala Lumpur (completed 1998) by Cesar Peli and Associates and some less prominent examples such as the Taipei 101, Endless Dubai, Jin Mao Tower and the Burj al Arab.\(^{13}\)

Not to be outdone, developed economies responded with a number of prominent skyscrapers. Examples include 53W53RD in New York by Jean Nouvel (completed 2018), The One World Trade Centre in New York by Skidmore, Owings and Merrill (completed 2014), The Shard in London by Renzo Piano Workshop (completed 2012) and the International Commerce Centre in Hong Kong by Kohn Pedersen Fox Associates (completed 2010), amongst many others.\(^{14}\)

The development of the skyscraper typology was based on a number of factors. The first of these are developments in structure and technologies, including the ability to build higher, move people through these buildings, install services and improve the interaction with the natural environment.\(^{15}\) Another aspect is commercial interests, which in turn are linked to the raised status of the firm, a city or a country, because buildings of this nature rarely provide a rapid return on investment.\(^{16}\) However, skyscrapers are increasingly seen as a solution to the problems caused by rapid urbanisation and as such, skyscrapers will increasingly be constructed. However, there exist questions about the proliferation of this building-type in the light of sustainability or green requirements, considering the costs of tall buildings in energy and natural resources are higher.\(^ {17}\)

However, as Yeang points out, those who regard skyscrapers as “energy-hungry parasites”\(^ {18}\) are not looking at the entire life-cycle of the building, in addition to the larger interrelated web of human and environmental systems. He holds that the possibility of eventually recycling these materials is far greater in the case of skyscrapers.\(^ {19}\) Furthermore, he holds that the increased densities, and concomitant compact cities, affirm skyscrapers as a viable substitute to the low-rise, spread-out alternative, often associated with green architecture. This view is supported by Sassi who points to the fact that land constitutes a limited resource that must be used conservatively.\(^ {20}\)

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14. Ibid.
The Standard Bank Centre in Johannesburg (Figure 1) incorporates the key attributes of the skyscraper typology: It was conceived and initiated (as will be shown) to solve urban problems in a rapidly developing city, and as a symbol of the wealth and economic achievement of its owners. As the project developed, technological and structural challenges were solved in innovative ways which were at the cutting edge of skyscraper building technology. Despite this, the building stands virtually deserted now and by and large unused, yet is still acknowledged as one of the iconic buildings of Johannesburg. However, unless the designers of future skyscrapers learn from the sad fate of this building, more of today’s skyscrapers might befall a similar fate.

![Figure 1. The Standard Bank Centre](source: J.G. Boss from Hentrich 1970, 48.)

Based on a literature review and augmented by an interview with one of the architects responsible for this building, this paper will firstly consider hanging buildings as a phenomenon that took place during the late-modern period. The design and construction of this example will then be discussed. Thereafter, its layout and form will be analysed from a sustainability point of view. This is done in an effort to determine possible indications as to why this building is standing largely unused. Because skyscrapers are seen by some as an appropriate response to the environmental crisis, it is pertinent that we analyse examples of this typology to discover the lessons that we can learn from past projects, in order to avoid repeating these mistakes in future buildings. The natural and financial resources captured by every new building make it imperative that we continue cautiously as we venture on.
**Principles of Sustainable or Green Design**

In general terms, sustainability is understood as “the quality of being able to continue over a period of time.”\(^{21}\) This attribute is crucial when considering a building from a cost point of view, just as ‘sustainability’ is important from an ecological or environmental point of view. While no general accepted definition for sustainable development exists, one of the more important definitions is the so-called Bruntland definition which holds that it is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”\(^{22}\) Sustainable design has in turn been defined by Foster and Partners as “creation of buildings which are energy efficient, healthy, comfortable, flexible in use and designed for a long life.”\(^{23}\) Another definition is “environmentally conscious, energy saving and utilises responsive and renewable materials and systems.”\(^{24}\) The impact of buildings, particularly skyscrapers, and the importance of sustainable design are underscored by Sassi\(^{25}\) who reminds us that “no matter how energy- and water-efficient a building might be, it becomes a waste of resources and a potential detriment to the community if no one wants to occupy it”. With this statement she links the fields of sustainability and usability, two aspects that are keys to this study.

The need for designs that are flexible and can easily adapt to changing circumstances, practices, requirements and technologies, introduced in Foster and Partners’ definition (above), is also articulated by Sassi who explains that in order to ensure the long-term usage of a building, it is essential to provide a building that can accommodate changes in purpose and context and that is built from materials that are durable, and easily maintained and upgraded.\(^{26}\)

**Hanging Buildings**

According to Charles Jenks, Modern architecture finally died July 1972 (even though the process started in 1967.)\(^{27}\) Jenks holds that the death of Modern architecture led to a relatively brief period which he termed Late-Modern architecture. He describes Late-Modern architecture as ‘single-coded’ architecture which reuses the elements of the Modern movement at a new level - one where these ideas and forms are taken to “...an extreme, exaggerating the structure and

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23. Ibid.
26. Ibid, 49.
technological image of the building in an attempt to provide amusement, or aesthetic pleasure.\textsuperscript{28} He regards Norman Foster’s Sainsbury Centre (1974-8) and Piano and Rogers’ Pompidou Centre (1971-77) as prime examples of this period. To him, this period started in 1960 and continued in parallel to Post-Modernism.\textsuperscript{29}

One of the manifestations of this movement was the so-called ‘hanging buildings’ which were constructed over the period 1969-1985. While suspended structures were not new, this period saw it given new prominence in the way of Late-Modernism. Some of the buildings and structures constructed in this way during this period include the Westcoast Transmission Tower in Vancouver by Rhone and Iredale (1969), BMW Headquarters, Munich by Karl Schwanzer (1973), Standard Bank Centre, Johannesburg by Hentrich and Petschnigg (1970), Munich Olympic Stadium by Frei Otto (1972), Federal Reserve Bank, Minneapolis by Gunmar Birkets (1973), Hypo Bank, Munich by Bea and Walter Betz (1980) and the Hong Kong Shanghai Bank by Norman Foster (1986)\textsuperscript{30} (Figure 2).

\textbf{Figure 2. Shanghai Bank Headquarters, Hong Kong}

The advantages associated with this type of structure are:\textsuperscript{31}

- There are no columns on the ground floor and no load-bearing walls are required. If the ground floor is enclosed in glass, there is no visual obstruction between the building and its surroundings. This was one of the main reasons why this type of structure was chosen for this building.
- The useable floor area of each floor is maximised resulting in enhanced feasibility and a reduction in perimeter walling.

\textsuperscript{28} Ibid, 8.
\textsuperscript{29} Ibid, 32.
The sectional area of the hangars is smaller than what columns would have been, leading to better space utilisation.

The areas that carry the loads down to ground level are heavily pre-stressed and therefore more able to resist bending moments caused by lateral forces.

As will be described in more detail, the Standard Bank Centre was typically built from the top down. The central core containing services and vertical movement spaces were built first, and thereafter three sets of cantilever beams were constructed from this core. The floors were constructed from the top down, suspended by prestressed concrete hangars from the cantilever beams.

**Research Methodology**

A qualitative approach comprising a literature review and interview were used as part of this approach. The project architect was interviewed and research comprising books and other sources was undertaken. The building and the construction process are well documented. Unfortunately, almost all the literature on it hails from the 1970s. However, this does not affect their usability for this study.

Boote and Beile consider that, “A thorough, sophisticated literature review is the foundation and inspiration for substantial, useful research”. Many others, including Combs, Bustamante & Onwuegbuzie (2010), Onwuegbuzie, Collins, Leech, Dellinger & Jiao (2010) affirm that literature reviews can form a very important step in research.

**Context**

Gold was discovered at the place where Johannesburg was to rise in 1886. The extent of the discovery led to a rapid process of development and growth, causing Carl Jeppe to write in 1906, “Those who marvel at Johannesburg, who stand amazed at the energy and enterprise which called up a city of a hundred thousand inhabitants, equipped with all the advantages of modern civilisation, where ten or twelve years previously there had been only the lonely veld, are often not aware that the wonder is even greater than it appears at first sight. For not one but three Johannesburgs were built in that time. First came the primary - the corrugated iron stage; next, the age of one or two storied brick buildings; finally, these were again demolished to make room for edifices of which any

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33. Ibid, 6.
The rapid development continued beyond 1906 with development governed by British inspired town planning regulations resulting in congested narrow building sites (15-30m wide) and buildings which were “aggressively different from its neighbour. The whole results in the type of urban nightmare so consistently criticized.” The actions of property developers, such as Gotlieb and town planners, such as Professor Wilfrid Mallows, resulted in changes to the 1967 amendment to the Town Planning Regulations. The revised regulations allowed for higher buildings as a trade-off for the creation of public open space to ease the existing congestion. While the Standard Bank Centre (1970) was the first building to give expression to the change, it was soon followed by the Carlton Centre (1972) designed by Skidmore, Owings and Merril (SKM), and the IBM Building (1974) by Arup Associates, all within a few city blocks of each other. The changed regulations furthermore led to 60 tower blocks being constructed in the central business centre of Johannesburg within the next 10 years. However, what Prof. Mallows and company had not realised was that Johannesburg was running out of steam and that the central area’s economy, social mobility and entrepreneurial energy was limited by generations of institutionalised segregation. Social changes would soon see businesses migrate away from the central area towards the northern parts of the city as the demographics started changing in line with political changes.

In order to be allowed a high-rise building (25-30 storeys) the project was restricted to a mere 26% coverage and the building was placed in the north-eastern corner of the site to minimise the negative influence of its shadow on adjoining properties.

Design Parameters and Process

Hentrich recalls that the clients had two objectives namely:

- A prestigious headquarter with national, and possibly international, acknowledgement for themselves.
- An adequate return on their investment.

These objectives can be elaborated on as follows:

38. Ibid.
39. Ibid, 141-152.
40. Ibid, 146.
41. Ibid, 164.
43. Ibid.
• To incorporate the branch that the bank had been operating on the site for many years.
• To house the bank’s executive offices (and related facilities) and its most important divisions.
• Office space should be of a high standard comparable with international standards.
• Optimising the limits imposed by the Town Planning restrictions.44

The first step by Standard Bank was to appoint Professor Mallows as planning consultant in 1963. He was tasked to conduct a series of pre-design studies.45 This was an innovative approach, the first of a number of such ‘first-offs’ associated with this project.46 In his report, submitted in 1964, Prof. Mallows examined several options in broad outline. The report strongly argued for the creation of an open space and a tall building that would dominate its neighbours. Furthermore, it recommended that the bank seriously consider that the building should provide a deep space office plan with as many offices as possible situated away from any street and the maximum possible number of parking spaces, and that the lower ground floor should have well-planned access and contain commercial activity.47 Because of the client’s requirement that the building should offer an adequate return on investment, the pre-design process also required feasibility studies conducted by the appointed quantity surveyors.

The pre-design studies were accepted by the clients and Prof. Mallows suggested that Heinrich-Petschnigg and Partners from Düsseldorf, Germany be appointed as architects.48 The firm was renowned for their skyscraper buildings, notably the Dreischeibenhaus (1957-1960) also known as the Thyssen Steelworks Building, still regarded as one of the most noted post-war buildings in Germany.49 The Johannesburg firm, Stucke, Harrison, Ritchie and Partners, the practice responsible for all local Standard Bank buildings, were appointed as architects of record. Heinrich-Petschnigg and Partners opened a local office in Johannesburg where all the documentation and detail design occurred. This office later became Hentrich, Bergs and Associates who in turn were responsible for a number of notable Southern African buildings.50 Ove Arup and Partners (London-Johannesburg) were appointed as structural engineers.51

The design concept was the creation of an open space in the congested urban area. In order to strengthen the effect of the open space, there should be as little obstruction as possible at the ground floor level, the core of the tower

excluded. To this end, the architects managed to persuade the client that the banking hall (of the branch that had operated on the site for years) should be located on a lower ground floor level and that there should be no other shops at ground floor level either. In order to achieve this, the architects opted for a hanging building structure. The tower comprised a central core housing all the vertical movement and service distribution areas (Figure 3).

The design of the structural system strongly influenced the final form of the building. A conventional suspension system that utilised an umbrella-like structure at roof-level would interfere with the service runs. This led to the decision to use a prestressed concrete cantilever beam system. Three sets of cantilever beams, acting as brackets, jutted out from the central core. Each set

52. Ibid, 27.
53. Ibid.
54. Ibid.
of cantilever beams supported nine office floors, suspended from it by prestressed concrete hangars. Because of the influence of weight on the size and cost of structural elements, lightweight concrete was used predominantly.

The spaces between the cantilever beams were used to house mechanical plant rooms (Figure 4.) The soffit of the first floor slab ended at 10.8 meters above ground level, further aiding the spatial character of the design concept.

Figure 4. East-West Section through Building

Figure 5. Office Floor Plans


57. Ibid, 17.
The first basement (or lower ground floor) was given to the banking hall supported by limited retail space. In order to maintain the connection between the lower ground floor and the ground floor (piazza) the two levels were linked by a double volume space that included the foyer area (Figures 3 and 4), while the second and third basement floors accommodated the bank’s computer centre with car-parking on the fourth and fifth basement floors. The choice of a hanging structure for the tower block meant that the structural grid for the basement could be decided without having to find a compromise between the requirements of the tower block and the basement. In this way the design concept was realised. The various floorplans are shown in Figure 5. Various images showing the completed building in context are shown in Figures 6-7.

**Figure 6. The Standard Bank Centre in Context**
*Source: Anglo American Photographic Section in Hentrich 1970, [s.p.]*

**Figure 7. Street-View: Standard Bank Centre**
Construction Process

The bulk excavation for the lower ground and four basement floors was planned in stages to allow for the earliest possible start to the central core structure. Work on these foundations started as soon as the excavations were completed. Technology developed by the local mining industry was put to use in the construction of the four large diameter shafts (5.03 meters in diameter) which house the piles that support this section (Figure 8). After completion, the four shafts were capped with a raft that would receive all the loads from the tower structure.

![Figure 8. Progress Photograph: March 1967](image)

Source: J.G. Boss from Hentrich 1970, 44.

Next the 158.5m high service and movement core was cast using sliding formwork. The process was complicated by the requirement to provide for the subsequent attachment of the floor slabs and the cantilever beams (Figures 9 and 10). During this time the excavation of the remainder of the basement floors continued.

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**Figure 9.** Progress Photograph: October 1967  

**Figure 10.** Progress Photograph: March 1968  

**Figure 11.** Progress Photograph: October 1968  
The lifting of the precast and other components was done by means of a 68.9ton double boom crane placed at the top of the central core (Figure 11).

Hereafter the three cantilever brackets were constructed. According to Hentrich, this was arguably the most difficult part of the process. This was accomplished by progressively building out from the core, using the completed section as support for the next section. After completion the cantilever beams were prestressed in stages to match the load applied by the cumulative floors as they were constructed. The floors were constructed from the cantilevers downwards, starting with the highest floor and adding floors downwards. The hangars were constructed from precast, prestressed concrete panels and supported four precast, prestressed perimeter beams (one on each side of the building). The floors were supported by these beams and the central core. The three banks of floors were constructed simultaneously resulting in substantial time savings (Figure 12). The floors were also constructed from precast, prestressed concrete panels.

The installation of the remaining components forming the building envelope, and the various services and finishes took place as the structure took shape (Figures 12-14).

**Figure 12. Progress Photograph: March 1969**

The construction process was made possible by a number of ingenious solutions devised to solve many of the unique problems resulting from the novel building structure. In this way the building not only pushed many design boundaries but also resulted in many construction ‘first-offs’. Notably, it was completed before time and within budget. 60

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An aspect that played a critical role in the success of the construction project was good communication and teamwork between all parties. If necessary, meetings were held day after day, week after week, throughout the process. Hentrich believes that “communications in the building industry is probably the one aspect which has received the least attention from the industry... and the failure to communicate successfully has almost certainly been responsible for more wasted costs, delays in construction and inefficiency than any other single factor in building.” He continues by stating that, “Only by these means was it possible to ensure that the contract proceeded smoothly, that no items were left unresolved and that everyone knew without any doubt exactly what his function in the entire operation was expected to be.” However, the extensive use of prestressed concrete and the hanging structure, with its concomitant stresses, means that demolition is almost impossible.

Figure 13. Progress Photograph: October 1969
Source: J.G. Boss from Hentrich 1970, 47.

Figure 14. Progress Photograph: March 1970
Source: J.G. Boss from Hentrich 1970, 47.

63. Ibid.
Yeang’s Model for Analysing the Environmental Impact of Buildings

‘Green’ is a term often used when referring to sustainable design. Ken Yeang defines ‘green’ or ecological design as “building with minimal environmental impacts, and where possible, building to achieve the opposite effect; this means creating buildings which have positive, reparative and productive consequences for the natural environment, while at the same time integrating the built structure with all aspects of the ecological systems of the biosphere over its entire life cycle.” 64 This more holistic approach is needed if the human species is not to overload the planet’s ability to support all species and natural systems. Failure to design in this way will result in the total devastation of our natural and built environments. 65 Yeang’s approach is far closer to the Bruntland definition than that of Foster and Partners. Furthermore, Yeang developed a model (Figure 15) that can be used to assess the sustainability of a particular building’s design. While this model was published as far back as 1999, it remains relevant to this day. Furthermore, his model emphasises passive design, rather than the active systems that have gained prominence since then. It is important to note that because the analysis considers a building started 33 years earlier, any model that places much emphasis on active systems would not be suitable.

For the foregoing reasons, this model will be used to assess the extent to which the building complies with green design principles of the Standard Bank Centre in order to assess the extent to which the building’s design contributed to its present state.

Yeang considers that “a building exists both in terms of its physical being (form, siting and structure) and its functional aspects.” 66 Both of these aspects constitute a relationship between the built structure and the natural environment, a relationship that takes place during the lifespan of the structure. Therefore, the building functions as a living organism that consumes energy and materials instead of food, while emitting outputs into its environment. This concept of the building as an open system was developed into a “partitioned matrix” which combines these sets of interactions into a single model illustrated in Figure 15. The designer must use the partitioned matrix to consider his/her design in terms of its component parts: inputs, outputs, internal relations, external relations and how these interact with each other.

However, more importantly, he emphasises the need for all design to be regarded in the context of the complete life-cycle of the building, from the sourcing of materials and manufacture of components to the eventual demolition of the building and the reuse/recycling of the materials and energy embodied in it. 67 This calls for a much deeper and more holistic, ultra-long-term analysis - far more than the pitiful feasibility study carried out before the start of this project. 68

65. Ibid, 8.
66. Ibid, 63.
67. Ibid, 51.
(LP) = \[\begin{array}{cc}
L11 & L12 \\
L21 & L22 \\
\end{array}\]

(LP) - Combined interactions

L11 – The internal environmental relations of the built form: The sum of all the activities that take place inside the building over the life cycle of the building.

L12 – The total outputs from the built environment into the natural one. This includes all the discharges of waste and exhaust from the building’s construction and operation and the physical matter of the structure which, at the end of the structure’s life, must be disposed of.

L21 – The total outputs into the built system. This includes all the exchanges of energy that are embodied in the materials used to form the system.

L22 – The designed system’s external interdependencies: The totality of ecological processes of the ambient ecosystem and its interaction with other ecosystems and resources.

**Figure 15. Yeang’s Partitioned Matrix**

L22: External Interdependencies

The site for the Standard Bank Centre is in a built-up area and was largely covered by older buildings before the project started. The existing buildings were demolished and it is not known what happened to the materials obtained during the process. It is assumed that they would have been transported to a landfill-site since recycling was not common at the time. No evidence of any trees or other vegetation on the site before construction commenced could be found. From photographs (Figure 16) it would appear that the entire area was covered. As part of the project, the erstwhile Hollard Street was closed and replaced by a ‘garden.’ It is not known what species of plants were planted in this area and if they were endemic to the Johannesburg area.

The only planting introduced as part of the project were long narrow plant boxes used to demarcate the edges of the property and to retain soil on the sides where the piazza is lower than the surrounding ground level (Figure 3). Planting of trees would have been complicated by the basements that covered the entire site. However, the result is that the public space that formed the core concept of the design ended up devoid of substantial greenery that could provide welcome shade, soften the harsh urban environment and act as windbreaks. Importantly, if trees

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71. Ibid, 11.
were included in the design, it could have contributed to a linking of ecosystems, albeit on a limited scale, and in creating a space that is more inviting to passers-by.

The decision to minimise the footprint of the tower block is a positive aspect because it creates a much-needed open space and allows sunlight into the public space. Furthermore, the building was positioned to minimise the impact its shadow would have on adjoining properties. While this can be commended, no attempt was made to collect and reuse rainwater or to channel it in ways that will maintain natural drainage patterns. Likewise, the square form of the building meant that the building was not oriented to maximise the benefits of the northern aspect or to minimise exposure to the negative implications of the eastern and western aspects. The envelope on all four sides is identical and overhangs with tinted glass and vertical blinds are used on all sides. This must have resulted in the rooms on the eastern and western sides overheating in the mornings or afternoons and/or high operating costs associated with cooling during summer. To make the situation worse, the entire building is air conditioned and no windows can be opened. Loose plant boxes form part of the interior design providing some relief.

From the foregoing it is clear that with the exception of the positioning of the building on the site, no attention was given to external interdependencies.

L21: The Total Outputs into the Built System

Construction started in April 1966.\textsuperscript{72} The first steps involved the demolition of the existing buildings. The materials that could be harvested, as far as can be ascertained, were not reused or recycled (something that was not practice at the time). Hence, all the energy and resources embodied in those buildings were lost.

Looking past the loss of embodied energy, the demolition of these buildings, some of which had heritage value such as the renowned Cullinan Building by Leck and Emley, also resulted in the loss of valuable urban assets which should have been retained for their historical value (Figure 16.)\textsuperscript{73}

The new building was constructed with the extensive use of reinforced concrete and pre-stressed lightweight concrete. Other materials used extensively, were glass (laminated and toughened), anodised aluminium, steel (mild and stainless), fibre-glass insulation, neoprene gaskets, gypsum board, vinyl and asbestos (in the vinyl-asbestos floor tiles and as part of the partition walls.)\textsuperscript{74}

\textsuperscript{72} Ibid, 18.


\textsuperscript{74} Hentrich, \textit{Standard Bank Centre Johannesburg}, 1970.
When compared with embodied energy figures the extensive use of concrete, commendably, resulted in relatively low levels of captured embodied energy. What is alarming is the use of plastics (vinyl and neoprene) and even more so, the extensive use of asbestos. However, the positives associated with the extensive use of concrete are diminished by the fact that most of it is used in prestressed panels, and in a post-stressed and hanging building structure that massively complicates demolition and harvesting.\(^\text{75}\) Furthermore, the extensive use of asbestos and the imperative to remove it from the building will have serious cost implications for any attempt at refurbishment.

The foregoing indicates that thorough lifecycle planning and the implications of the embodied energy levels were not considered as part of the design (common practice at the time). However, in hindsight this aspect should have received more attention.

**L11: The Internal Environmental Relations of the Built Form**

When considering the sum of all the activities that take place inside the building over its life cycle, the aim should be to determine the extent to which the design optimises the use of all passive means of controlling the interior environmental conditions. The aim should be to create comfortable environmental conditions with the smallest possible use of energy.\(^\text{76}\) Much of this has always been part of good design and architects cannot claim that these aspects were not important in ‘those days’. However, to achieve this and create high performance buildings, the complete integration of architecture and engineering is of pivotal

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importance.\textsuperscript{77} The expense associated with sustainable design will then be recouped from lower running costs.\textsuperscript{78}

Ali and Armstrong believe that such an integrated process is required because green design impacts many aspects of a building. This includes aspects such as daylighting (a factor of siting, orientation, building form, façade design, interior finishes, lighting and cooling loads,)\textsuperscript{79} floor layouts and ventilation.

Johannesburg is also regarded as one of the cities with the most comfortable subtropical climatic conditions, moderated by its high altitude (1 750 meters above Mean Sea level.)\textsuperscript{80} Hence, right at the outset, the decision to use air-conditioning throughout the building and not have any windows that can open must be criticised. However, the architects’ failure to develop a more appropriate environmental design does not end there. The aspect ratio of the square building (1:1) is not suited for this environment where aspect ratios of between 1:16 and 1:3 would be more appropriate.\textsuperscript{81} As was pointed out earlier, matters were made worse by the ‘one solution fits all’ treatment of all facades without any recognition given to the different orientations’ exposure to the hot morning or afternoon sunlight (the average annual amount of sun hours in Johannesburg is 3 182 or 8.42 hours per day)\textsuperscript{82} and the potential impact thereof on the comfort of the inhabitants or on the cooling loads imposed on the air-conditioning system.

Despite the perceived advantages of core structural systems,\textsuperscript{83} the situation is further compromised by the decision to locate all the major service ducts and movement systems in the centre of the building (as they often are in skyscrapers) (Figure 5). Central core layouts result in significantly higher cooling loads.\textsuperscript{84} Had they been placed at the eastern or western ends of the building (as in Norman Foster’s Hong Kong Shanghai Bank, also a ‘hanging building’) (Figure 2) they could have served to reduce the cooling load, apart from the many other advantages of such arrangements.\textsuperscript{85} Furthermore, central cores also result in inflexible layouts, something that can diminish the lifespan of the building, thereby drastically increasing the energy and resources wasted. It also meant that the deep-space offices which Prof. Mallows called for could not be realised. Also, it is a direct contravention of the ‘flexible’ principal, highlighted by Foster and Partners. Sassi summarises by stating that “getting the building configuration and structure right makes the largest contribution to creating low energy buildings.”\textsuperscript{86}

\textsuperscript{78} Ibid.
\textsuperscript{79} Ibid.
\textsuperscript{80} Climates to Travel, \textit{Climate – Johannesburg: Average Weather, Temperature, Rainfall, Sunshine Hours} ([s.a.], [sp]).
\textsuperscript{81} Yeang, \textit{The Green Skyscraper: The Basis for Designing Sustainable Intensive Building}, 1999, 205.
\textsuperscript{82} World Weather and Climate Information.
\textsuperscript{84} Yeang, \textit{The Green Skyscraper: The Basis for Designing Sustainable Intensive Building}, 1999, 208.
\textsuperscript{85} Ibid, 209.
One of the potential benefits of this type of floor-layout is that the proximity to the perimeter enjoyed by most areas could be used to reduce the energy load induced by lighting. However, once again, the designers adopted a simplistic ‘one size fits all’ approach with lighting distributed evenly across the entire area regardless of orientation or distance from the perimeter windows.

On the positive side the designers also took steps to reduce the energy load of the building. The biggest of these was to incorporate two thermal storage systems to serve all the air handling plants. Energy costs were reduced by heating the water in these tanks during the night when the unit costs of electricity dropped. Secondly, the design of the ground and lower ground floors created a triple volume space which connected the banking hall with the ground floor, thereby allowing natural daylight, streaming in through the glass screen that enclosed the space, to also stream into the banking hall, in turn reducing the lighting that had to be installed.

L12: The Total Outputs from the Built Environment into the Natural One

This includes all the discharges of waste and exhaust from the building’s construction and operation, and the physical matter of the structure which, at the end of the structure’s life, must be disposed of. As indicated above, these aspects received no attention from the designers. Similarly, no attention was paid to the possible reuse of grey water in order to minimise the impact the building will have on the environment.

Furthermore, it must be remembered that the extensive use (wastage) of electricity will have a negative impact on the environment in a country that still relies on coal for generating most of its electricity. In addition, the extensive use of asbestos means that asbestos fibre, long shunned for its negative impact on health, continue to be released into the environment.

Conclusions and Recommendations

With the benefit of hindsight, the foregoing analysis shows that this much admired, elegant building, despite all the technological advances it embodied, and all the attention it attracted, fails when considered from a green design perspective, and that this has contributed to its current state. The design did not result in a sustainable building from any particular understanding of sustainability. Thus, it is not surprising that it stands as a hardly used historic artefact in the centre of Johannesburg.

While it is true that many of the city’s businesses moved out of the central area, as mentioned by Clive Chipkin in the Research Methodology Section, it is noteworthy that when the Standard Bank decided to build a new headquarters building in 1978 (only eight years after moving to the Standard Bank Centre!) they chose to remain in the central city, as did some of the other major South African

banks. However, this was not the main reason for their eventual move out of the building.

Interestingly, the brief for their new building called for:

- A low-rise building which allowed for quick and easy vertical movement.
- A deep-space layout which would provide a completely flexible office layout system.
- A mass thermal storage system for greater energy efficiency.\(^{88,89}\)

Clearly the bank had learned a lesson, i.e. superficial feasibility studies are not enough and buildings must be designed to ensure their sustained use. Planning and feasibility studies should consider the entire life-cycle of the building, as proposed by Yeang.\(^{90}\) Noteworthy is that the new Standard Bank building was recognised for its focus on low-energy consumption and remains one of the bank’s main operational centres in Johannesburg. Thus, because the future is difficult to predict, flexibility and adaptability remain critical aspects that will extend the usable lifetime of any building.

What this furthermore indicates is that even ‘vanity projects’ must follow green design principles to enhance their financial sustainability. If not, then the same sad future might await those buildings. While keeping the period during which the building was designed in mind, the foregoing analysis showed that the main causes of the building’s current state is the simplistic concept which adopted a single design solution for all the sides of the building, failure to recognise the advantages that Johannesburg’s mild climate could provide, coupled with the central core layout which resulted in an ‘inflexible’ floor layout. Despite this, new skyscraper developments are still designed using this type of layout. Examples are London’s One Blackfriars and Strata SE1 buildings. If the case of the Standard Bank Centre is kept in mind, buildings designed in this way must be approached with care.

Furthermore, planning for financial or investment sustainability must include planning for environmental sustainability in line with ‘green’ guidelines, not merely because tenants might insist on it, but because the two go hand in hand.

Bibliography


\(^{89}\) Interestingly, the building was designed by Prof. Mallows’ own firm: Mallows, Louw, Hoffe and Partners.


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Understanding Participatory Design of Public Housing Renewal in Singapore: From the Perspectives of History, Strategy and Reflection

By Dou Ruiqi*

In response to alienation of human-earth relationship and weakened community bonding resulted from rapid urban development since 1960s, a series of participatory design projects have been launched by the Singapore government in cooperation with related grass-roots organizations and researchers, promoting distinctive working model and space prototype. This paper traces the development history of participatory design in Singapore and investigates related public housing renewal projects, so as to conclude operational strategy of Singapore model and to discuss its practical and theoretical significance and enlightenment.

Introduction

Background

Participatory design, although without single definition due to diverse backgrounds and areas of concern, could be considered as an attitude in creation and management of environments which takes collective intelligence and effort of participants from different backgrounds into consideration. Its roots lie in the ideals of a participatory democracy where collective decision-making is highly decentralized throughout all sectors of society, so that all individuals learn participatory skills and can effectively participate in various ways in the making of all decisions that affect them.

In terms of housing and community-building, participatory design emerged in 1950s when professionals collaborated with urban poor in developing countries such as Peru, and then developed respectively in the USA and the UK from 1960s to 1970s. Since then, the principles and methods of participatory design have been empirically concluded with a number of projects practiced in multiple countries. Despite achievements above, most of the projects were bottom-up cases developed by architects or non-profit organizations in low-rise and low-density environment, and there are still several problems to be discussed, for example, the disconnect

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between the initiator's and the public's expectation and the suspicion of participants' impact on the outcomes.4

In comparison, the historical and social context is significantly different for Singapore government to carry out participatory design. Gaining independence in 1965, Singapore has transformed from a third world to a modern global city-state with a series of bold urban programmes such as public housing, urban renewal and government land sales, aiming to achieve economic development and to solve housing shortage.5 As a result, today over 1 million affordable flats developed by Housing & Development Board (HDB) provide home for more than 80% of the residents in Singapore.6 Nevertheless, rapidly developed high-rise and high-density HDB flats also result in side effects in living environment and social life, for instance, alienation of human-earth relationship and weakened community bonding.7 In response to issues above, participatory design has been introduced into several programs that encourage residents to participate in community renewal have been launched by HDB with the assistance of People’s Association (PA), Town Council (TC), institutions, Residents Community (RC) and other grassroots organizations.

Research Questions

Initiated by the government and developed in high-rise and high-density environment under rapid urbanization, community renewal in Singapore reflects an alternative model which aims to push on participatory design from bottom-up individual practice to inter-subjective systemic programme. This paper focuses on new features of its organizational support, operational mechanism and design results, which would not only extend the theoretical boundary of participatory design but also provide reference for community renewal under similar condition.

In order to extensively understand Singapore model, three main issues are discussed in this paper: Firstly, why does original bottom-up participatory design become a consensus between the public and the government in Singapore? Secondly, how to carry out participatory design in high-rise and high-density environment with residents widely involved? Thirdly, what is the influence of Singapore model on community building and participatory design research?

Methodology

Facing the issues above, literature review, field research, case study and design practice have been adopted mainly from 3 perspectives:

To begin with, a research on the history of public participation in Singapore is carried out through two clues — the folk background and the official initiatives, so as to find out the cause and driving force of Singapore model.

In the second place, a participatory design project in Hillview @ Elias of Pasir Ris in 2018 is introduced to discuss design strategies in detail. As part of the “Remaking Our Heartland” programme in which residents and stakeholders are actively engaged from the early stages of urban planning to the renewal of community space, this ongoing project could be regarded as a sign that participatory design in Singapore advances from individual experiments to extensive promotion. The author facilitated in field research, process design and design workshop of this project together with professors and students from National University of Singapore (NUS).

At last, based on literature review and case studies, practical effect and experience of Singapore model is concluded and a research framework is proposed to systematically understand participatory design.

Driving Force: History of Public Participation in Singapore

Folk Background: from “Kampong Spirit” to “Public Participation”

Although the history of participatory design in modern context is not long since its birth, residents’ participation in housing and community building can be traced back as early as to folk houses and spontaneous settlements led by craftsmen, households and their relatives.

Kampong (or kampong), which means Malay village, is the earliest living environment in Singapore and had been around for 400 years before replaced by urban environment during 1960~1980s. By comparative study between kampong’s and modern organizations, operations and spaces, it could be concluded that kampong provides reference for participatory design in the following three perspectives:

Firstly, in terms of organizational support, management of daily affairs and construction of houses and infrastructure were mainly self-organized by the villagers, while issues such as water supply, markets and building inspectorate had long been administered by the government departments (e.g. Rural Board of colonial government from 1909-1958). Under this background, informal leaders worked as the communication channels between the residents and the government, which promoted the development of early grass-roots organizations.

Secondly, in terms of operation methods, gotong royong (mutual aid in Malay) is the basic way to create and maintain living environment, which helped

to develop a volunteer culture. For example, villagers’ relatives and their neighbors engaged in building houses (Figure 1) and managing security work collaboratively.

Thirdly, in terms of space, prototype of participatory planning and common space could be viewed in Kampong: residents’ own houses usually face to others with windows open on all sides, so as to ensure security and to improve ventilation; Anjungs (front porch in Malay, Figure 1) and courtyard were kept as semi-public space for communication.

Even though geographical kampong has disappeared, kampong spirit drew more attention from both the public and the government due to the facts that racial conflict occurred occasionally in urban area and high-density living environment had affected residents’ social life and mental health after massive resettlement.9 Thus, a consensus between the public and the government is reached, which became the internal driving force to promote participatory design: kampong spirit is not only nostalgia to remember the past and to criticize current situation, but also a political view to seek national identity and to carry out volunteer work.

**Figure 1. Collaborative Housing Construction in Kampong in 1950s (Left) and Anjungs as Social Place in Malay House (Right)**


**Official Initiatives: from “Inform” to “Empower”**

Neighbourhood relationship and related space innovation have been concerned from the beginning of public housing construction in Singapore. HDB was established in 1960 to clear squatters and slums and to resettle residents. In the same year PA was founded to manage neighbourhood grassroots communities and social organizations. In 1966, sample household survey, which has been continuously carried out every five years until now, was firstly held to collect social and economic data for future planning by questionnaire. With the efforts above and due to lack of community cohesion and shared facilities, the form of HDB housing has been changed in the aspects of both urban planning and architecture design: from “prototype model” (town-neighbourhood structure, each neighbourhood serves 6,000 households) in the 1970s to “structural model” (town-neighbourhood-precinct structure, each precinct serves 400-800 households) in the years following.

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1980s (Figure 2),\textsuperscript{10} and from common corridor designed to enhance neighbourhood relationship on the same floor in the 1950s to void deck in the 1970s — overhead space at the bottom designed to hold activities such as weddings, funerals, elections and residents’ daily communication.\textsuperscript{11} Although decision-making in planning and development as well as management of public housing is still highly centralized by the HDB, Town councils established in 1988 has taken charge of maintaining the common areas of HDB flats and estates, decentralising and localising the management and introducing new public housing programme.\textsuperscript{12} These developments provide management and space foundation for participatory design in housing renewal project.

\textbf{Figure 2. Neighbourhood Diagram in 1983}
\textit{Source: Stanilov and Scheer, Suburban Form: An International Perspective, 2004, 133.}

With joint efforts of the government and the public, residents’ participation in HDB housing renewal has increased step by step, which could be explained by The International Association for Public Participation’s the 5-degree classification (from low to high) of: inform, consult, participation, collaborate, and empower.\textsuperscript{13} The Main Upgrading Programme (MUP), in which residents could only get informed and give feedback, was launched in 1990 to upgrade physical environment of old HDB estate before replaced by Home Improvement Programme (HIP) in 2007. The Neighbourhood Renewal Programme (NRP), implemented by TC since 2007, gathering residents’ feedback by diverse methods such as Town Hall Meetings, dialogue sessions, block parties and mini-exhibitions, and would only carries out a project with more than 3/4 of the

\textsuperscript{13} IAP2’s Public Participation Spectrum (Louisville: International Association for Public Participation, 2014).
community owners’ agreement. Later in 2012 and 2013, Over 2,700 households in Bukit Panjang and 1000 residents in Tampines were encouraged to participate in site selection, program planning and design of community space in “Building Our Neighbourhood Dreams” (BOND!) in 2012 and “Hello Neighbour!” in 2014 by means of survey, seminar and workshop, which marks a further step in HDB community renewal from state-led to residents-driven. Phase 3 of Remaking Our Heartland (2015–) carried out in Toa Payoh, Woodlands and Pasir Ris invited more residents and stakeholders to participate in Focus Group Discussions in the early stages of the rejuvenation planning, and extensively promoted participatory design of common space in more HDB communities.

**Development Strategies: based on a Case Study in Hillview @ Elias**

Participatory design project carried out in Hillview @ Elias of Pasir Ris in 2018 is taken as an example in this section. Based on a seamless “community mall network”, the participatory planning result of Remaking Our Heartland programme, this project aims to upgrade public space in a three-block, 2000 households precinct so as to activate adjacent social spaces, which reflects the following three strategies of participatory design in Singapore.

**Organizational Strategies**

The operation of participatory design is based on an intersubjective structure (Figure 3) consisting of four groups: the government (HDB, PA and TC), professionals (researchers and students from National University of Singapore and architects from HDB), grassroots organizations (RC and convened volunteers) and residents. The Project Working Committee (PWC), set up by HDB, PA, TC and representatives from RC, is in charge of communication with each group, financial allocation and supervision. Teachers and students majoring in architecture works as facilitators to carry out field research and to design the process instead of the concrete environment, ensuring that the residents get command of the basic skills to form and present their design concepts. Architects from HDB and professional construction team would deal with technical issues after design workshop. Grassroots organizations and volunteers work as link of the residents, the government and the professionals, interpreting ideas of different group, gathering feedback and offering service in special events during the design process. The resident group, including volunteers in design workshop and respondents in field research, reflects living condition, cultural environment and neighbourhood relationship and works as user, designer and evaluator during the project.

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In Figure 3 is shown the organizational structure above, the roles of professionals and residents with the help of volunteers, the government and grassroots organizations. The professionals get trained on facilitation model, such as “4D Model” — Determine Requirements, Design the Session, Deliver/Debrief the Session and Discover New Learning, cultivating awareness in space, process, outcome and time. As the resident group is generally not a fixed crowd due to time constraint and willingness to participate, informal leaders such as initiator of a project, serviceman in RC or residents with strong leadership would be more likely to participate in the whole process and play an important part in understanding local context and establishing common interest. The other residents, according to field research, tend to participate only if they understand that the project directly benefits them.

Initiated by the government, the way to achieve mutual understanding among different groups is to set a relatively broad target and then to reach a consensus gradually in terms of social capital rather than economic interest. Thus, a participatory design process should be carefully designed and modified flexibly.

Process Strategies

The 10-week design process is co-formulated by HDB and NUS and adjusted according to residents’ feedback, which could be divided into three main stages: Sensing, Pop-up and Ideation Workshop (Table 1).

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Table 1. Workflow of the Hillview® Elias Project in 2018

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Cost</th>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensing</td>
<td>200$</td>
<td>1.24</td>
<td>Preparation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.27</td>
<td>Field Research</td>
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<td></td>
<td>2.2</td>
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<tr>
<td></td>
<td></td>
<td>2.5</td>
<td>Submit to PWC</td>
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<tr>
<td></td>
<td></td>
<td>2.10</td>
<td>Pop-up</td>
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<td>2.23</td>
<td>Report to PWC</td>
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<tr>
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<td></td>
<td>3.5</td>
<td>Submit to PWC</td>
</tr>
<tr>
<td>Pop-up</td>
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<td>Preparation</td>
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<td>Seminar</td>
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</tbody>
</table>

Source: Co-Formulated by HDB and NUS.

In Sensing, the designers carried out field research with the methods of site observation and on-street interview, in order to experience local daily life, map important and problematic public places and pathways (Figure 4), build relationships with informal leaders and local connectors, and locate possible sites for intervention. Site observation reveals well distributed educational and sports facilities, self-built gardens, unutilized void decks and blurring boundaries between public and private space in residents’ daily life (Figure 5). Informal interviews, on the other hand, reflect locals’ evaluation on amenities (convenient but insufficient, not bicycle friendly), shared spaces (quiet, dirty void decks, smokers), activities (not enough) and kampong spirit (friendly, limited interaction, unawareness in younger generation), and give suggestions on possibilities solutions. The outcome of Sensing includes (Figure 6): a new route was proposed for the Community Mall Network according to observation of cyclists and pedestrians; 2 venues were recommended to the PWC to choose the pop-up spot according to human traffic on Saturday morning; several facilities and activities were summarized as image reference according to the interview.
In Pop-up, the Meeting diversifies participation by going to the people with temporary outdoor booths (such as vehicles, boards, tables and decorations), so as to engage communities with flexible civic encounters that appeal to residents and accommodate their needs. Pop-up in Hillview @ Elias project was located in the first proposed venue because of greater diversity age group, and was carried out by 4 professionals and 3 volunteers (Figure 7), which lasted for 3 hours on Saturday morning. The professionals assisted residents to pin up their walking and cycling routes at one booth and discussed their facilities and activities at another two, while the volunteers worked as “pullers” to attract pedestrians and helped to collect the basic data of the participants. After this stage, the participants demographics and their preference for the type and location of facilities and activities were analyzed and 2 sites (pathway & void decks along blk632-634, void deck @ blk650) were selected for the Ideation Workshop (Figure 8).

Figure 6. Adjusted Community Mall Network and Proposed Pop-up Venue
Source: Diagrams Drawn by the Design Team from NUS and Photos Taken by the Author.

Figure 7. Professionals’ (Left) and Volunteers’ (Right) Engagement in Pop-up
Source: Photos Taken by the Author.
In the Ideation Workshop, all the four groups of participants gathered together in one meeting room, facing the challenge that non-professionals should get the design results within 2.5 hours. The process (Figure 9) is divided into 7 stages and the duration of each activity was taken note of by the co-facilitators. 4 and 7 residents selected by the PWC were appointed to carry out design of 2 sites with assistance of 2 professionals and 1 volunteer respectively. After All the participants were briefed by the chief facilitator, the first part of the workshop was to gather feedbacks regarding the usability & identity of proposed Community Mall Network, and then they would envision the space based on the pop-up results. Later on, pictures of the current state of the space were shown to the residents to address any possible limitations regarding their proposed envisioned statement. The end of the first half was cross table sharing to address concerns or questions, so as to reach design briefs of each site. Then, the participants were given materials to visualize their own design both in 2D and 3D, and finally the 2 groups gathered once again to share their design outcomes and ideas.

Figure 8. Residents’ Preference on Facilities (Left) and Activities (Right) and 2 Sites Selected for the Ideation Workshop
Source: Diagrams Drawn by the Design Team from NUS.

Figure 9. Process of the Ideation Workshop
Source: Workflow Designed by the Design Team from NUS and Photos Taken by the Author.
Presentation Strategies

Besides visual aids of the possible design ingredients and brief introduction of previous participatory projects to guide the participants in design thinking process, the following co-generating methods were adopted in the Ideation Workshop to facilitate non-professional participants in design:

Post It notes were given to each participant to write down their concerns and questions and to discuss solutions during cross group sharing (Figure 10), so as to get the design brief by brainstorming and voting.

Picture Drawing and Collage Games evoked residents’ awareness of community’s current situation and possible activities and facilities in the future life. Each group was required to come out with a sketch of their design by collaging photos, drawings and descriptions on the A3 site picture (Figure 10), which provided significant foundation for subsequent steps.

Design Buffet provided the familiar setting of buffet meal to invite community stakeholders to design without prior training. Design ingredients (Figure 11) such as cut-out furniture catalogue, 3D base model in 1:30 and additional materials were prepared in a tray as “food” for participants to collect and carry out design by making models (Figure 12).

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Reflection of Singapore’s Participatory Design

Practical Results and Effects

Participatory design model in Singapore not only contributes to stimulating new space types, but also ensures that the design results meet the residents’ needs. Firstly, two design typologies (Figure 13) are developed, practiced and concluded through a series of projects: one is Neighbourhood Incubator, a one-stop community hub to promote community activities and ground-up initiatives; the other is Social Linkway, which introduces communal functions and facilities to the transitory linkways to encourage residents to linger for social communication. Secondly, neighbourhood relationship has been strengthened not only during the design process but also in the daily use of the newly created spaces. For example, the design results of “Hello Neighbour!” registered around 200 visitors per day, spending an average of 13 min and with more than one in three users interacting with their neighbours, according to site surveys and interviews conducted by the NUS following the completion of the project in 2015. Moreover, participatory

design programmes help to cultivate informal leader who would independently participate in the construction and improvement of the living environment in the future. For instance, in the past two years, several community gardens have been set up near Social Linkways by informal leaders who participated in “Hello Neighbour!” (Figure 14).

However, several particularities of the government-initiated top-down model are still questionable compared to bottom-up participatory design methods. Firstly, the design and construction cycle has been shortened due to relatively fixed time table, but the participation of residents is difficult to guarantee, especially when the resident participants are usually not a fixed group in different design stages. Secondly, as design typologies concluded from previous projects are often provided as reference for the residents, which may lead to a mind set and challenge the creativity and originality of the new design. Thirdly, the condition of short-term design results is unanticipated in the long run, because maintenance of them depends on the residents and the grassroots organizations in the long run.

![Figure 14. Community Garden Developed by Informal Leaders who participated in “Hello Neighbour!”](image)

Source: Photo Taken by the Author.

**Theoretical Significance and Enlightenment**

Based on the perspectives of history and strategies, the historical continuity of public participation in shaping living environment is indicated: from self-organized operation, mutual-aided lifestyle and semi-public space, to multiple organizational support, participatory development process and community-based urban space. From this point, a community planning model based on interaction within system, environment and behavior could be concluded which targets at design process rather than physical environment (Figure 15). This model involves multiple fields such as urban planning, architecture design, economy and management, which requires involvement of professionals from different area as well as new department engaging in internal logic in interdisciplinary manner. However, the way to establish a communication mechanism to break the barriers of various disciplines is still the shortcoming of current research.
In addition, as the assessment from participants is gathered throughout the whole process and affects design results significantly, this trend could possibly develop the evaluation process from assessment model to optimization model (Figure 15), achieving self-development and self-renewal of the design process.

Conclusions

Based on development of public housing renewal in Singapore, this paper reveals the historical continuity of participatory design and proposed an optimization model which involves multiple fields and focuses on process: the transmission of a common concept (such as the kampong spirit) provides the basis for reaching consensus intersubjectively; a platform constructed by combining spontaneity and regulation shapes the process of collaborative operation; reference from case accumulation helps to guide non-professionals in designing.

It is worth mentioning that this model is not universal in practice considering the status of political and financial support and change of historical context, and there are still several limitations in current research: in terms of orgware, the power distribution of different participating groups is still unclear; in terms of software, as young people’s leisure time is reduced, it is difficult to balance the time of participants in different ages; in terms of hardware, the contradiction between design simplification and construction mechanization and specialization remains to be discussed.

Based on achievement and enlightenment, there are also several issues for further discussion in practice: Firstly, it is essential to enhance the communication between the participation design process and the subsequent stages such as construction, operation and evaluation to reach participants’ expectations and to form a cyclic design circulation; secondly, it is necessary to discuss the possibility to promote participatory design thinking into larger scale projects with more participants; Thirdly, it is challenging to localize Singapore’s experience in other
countries, considering that its urban-rural relationship is vastly different from the others.

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