

The Centrum-Bandung : Adaptive Reuse at Heritage Building as Sustainable Architecture

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Abstract. Historic buildings which are the remains of the Dutch Colonial period from the glorious past era still exist in some cities in Indonesia. These buildings can be easily recognized from their typical architectural style in which a mixture of European architecture adjusted to the country's tropical climate known as Indische Architecture. The style is obvious in parts of the cities in which the Dutch carried out their activities such as districts for offices, trading centres, housing complexes as well as recreational areas. One colonial building in Bandung infamously implementing the style is The Centrum. The building which originally functioned as a recreational vicinity was built in 1920s. Designed by C.P. Wolff Schoemaker, it served as swimming pool or bathhouse where the people of Dutch residing in or visiting the city spent their leisure time. The Centrum, of which facilities the Indonesian in the colonial period were prohibited to even used, has become a cultural heritage landmark located in historic military base. A cultural heritage should be conserved to preserve the valuable generation-to-generation history, and one of the favoured ways to do it is adaptive re-use, or re-using of existing building as part of the concept of sustainable architecture. This paper discusses adaptive re-use implemented in The Centrum building, which has undergone the process of function shifting from swimming pool to restaurant and wedding venue, and lastly to selfie spot. Using qualitative approach along with comparative descriptive method, the study applies the theory of adaptive re-use to investigate the changes in function of The Centrum from period to period. It is found that the function shifts of The Centrum from time to time is the result of situational adjustment to the change of its owner/user, architectural needs as well as current trends such as selfie tourism.

1. Introduction

Bandung is one of the cities in Indonesia that has many relics of colonial architecture. This has brought the local government's attention by issuing a Local Regulation about Cultural Heritage which classifies 6 regions of cultural heritage areas [1]. One of them is Military Districts in which spreads buildings dominated by colonial architecture. The Centrum is one of the buildings that still stands against the test of time in this kind of area. Built in 1920, The Centrum was initially intended for infrastructure to facilitate the needs of the colonial government. Its main function at that time was to serve as a swimming pool or bathhouse specifically for the Dutch citizens or visitors while the local people were prohibited from entering it.

Living in a building is an important part of human life [2]. Heritage buildings provide a valuable glimpse of the past and lend character to communities and therefore should be conserve for future generation [3]. A common problem faced by historic buildings is the threat of modernity to the



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architecture and the existence of the buildings. Therefore, there must be efforts put to conserve them. The Centrum is an example of a cultural heritage building that underwent a series of conservation process so that its existence and architecture is still beneficial for the city as well as its community. Conservation is indeed a process which has the ability to minimize the threat to cultural heritage buildings which defines as a process of managing a place or space or object so that the cultural meaning of it is well maintained [4]. The activities in carrying out conservation efforts to protect cultural heritage buildings are various, including conservation, preservation, restoration, reconstruction, adaptive reuse, rehabilitation, renovation, revitalization, facade, heritage, cultural heritage, and historic buildings [5].

As previously mentioned, one way of conservation efforts is called Adaptation (Adaptive re-use). Adaptation is an action of changing cultural heritage areas and / or buildings so that they can be used for more appropriate functions without requiring drastic changes [6]. However, there are things to consider when implementing adaptive reuse to existing building such as architectural characters (e.g. style & elements forming styles), the structure and construction types, the electrical systems (e.g. lighting, vertical transportation, communication systems, fire safety), the existing mechanical systems (e.g. air conditioning), the existing plumbing systems, and economic analysis [7]. In light of this idea, there must be thorough evaluation of the buildings' exterior as well as interior, in which the adaptive reuse will be applied to maintain continuous use.

Conservation process applied to cultural heritage buildings is in line with the concept of sustainable architecture which supports the idea that a building should last up to tens or even hundreds of years. There are three main opportunities for making use of existing materials including reusing existing buildings, reusing components of existing buildings, and using recycled materials [8]. Further, to achieve a more sustainable urban design, the aim should be to reduce the lifetime environmental impact of any development by reducing the energy and resources used and waste produced at each stage of the development life cycle construction, occupation and if necessary demolition. This can be achieved through reducing dependence on the wider environment for resources and reducing pollution of the wider environment by waste products in other words by making any development both in its original construction, and throughout its lifetime, as self-sufficient as possible [9].

The lasting existence of The Centrum until now makes it interesting to be the object of research. To survive, this building has undergone the changes of both ownership and function from a swimming pool/bathhouse, restaurant & wedding venue to a selfie spot for tourism attraction. This study attempts to trace changes occurred to The Centrum Bandung for almost 99 years seen from the angle of adaptive reuse.

2. The Research Method

The research employed qualitative approach meanwhile the object of this research is The Centrum Bandung. Further, the data were collected using the methods of field surveys involving documentation, interviews and field observations, as well as of literature study. Interviews were conducted with the community of Bandung Heritage and Tirtamerta swimmers to obtain real data by verbally gathering information on the history of The Centrum building. The study also employed descriptive comparative method by comparing the building physical data in the period of the year 1920 to those of 2000, 2011 and 2018. The variables determined in this study were the changes occurred to the function, layout, and architecture related to the structural and economic changes (functions), as well as attitudes towards regulation.

The Centrum is located exactly in front of the Music Park and flanked by Bali and Sumbawa Street (**Figure 1**). It is in a cultural heritage area classified as military district where historic buildings such as state owned high school 3-5, Kologdam (ex Jaarsbeurs), Kodam III Siliwangi, and Galeri Kita are dominant sights.

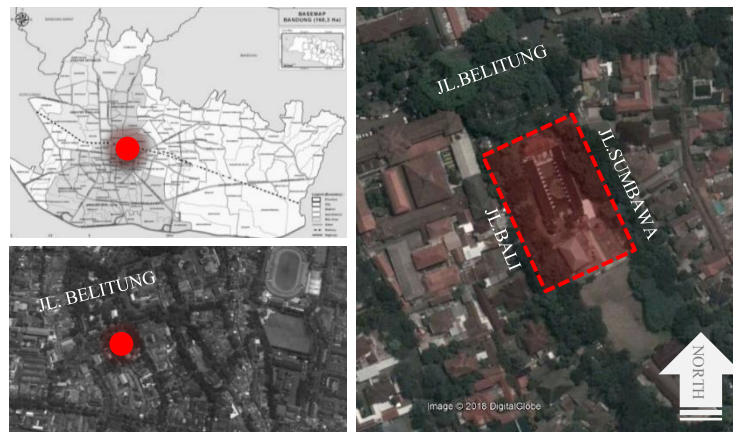


Figure 1. Location of The Centrum Bandung
(Source: www.google.com/maps/, 2019, edited)

The Centrum was built when the military central office was moved from Batavia to Bandung in 1920 intended for the preparation of Bandung as the Capital of the Government of the Netherlands East Indies. The process required the construction of monumental facilities and buildings. One of them was The Centrum as a military office facility.

Built in the 1920s, The Centrum is designed by C.P. Wolff Schoemaker initially functioned as a bath house opened only for the Dutch who lived in or visited Bandung. At that time, the Indonesians/local residents were forbidden to use the swimming pool. The Centrum's ownership was handed over to an Indonesian citizen named R. Tjandraprawira in 1949 as the Dutch living in Bandung returned to their home country along with the end of the Dutch colonial era in Indonesia.

The Centrum was first opened again to public around the 1960s, most of which visitors were school children. This building was renovated in 2000 and the result was the adding size of the length of the swimming pool. In 2011, The Centrum was bought by Kagum Group and then its function was changed into a restaurant and wedding venue after R. Tjandraprawira had died and its ownership had been at the hand of his biological son named Kingky Tjandraprawira. In 2018, The Centrum's function changed again into a selfie tourist site called The Centrum Million Ball.

3. Result and Discussion

Based on the City Regulation number 19 year 2009 regarding the criteria for classifying historic buildings, The Centrum bears several criteria belong to group B even though the inclusion process of classifying historic buildings into the Mayor's Regulation The Plan is still under discussion of the Bandung Cultural Heritage Team (Bandung Heritage). There are some points to be considered in the process of restoring buildings, they are :

- a. It is forbidden to intentionally demolish a building, and when having bad physical condition, crumbled, burnt or unfitted, it must be rebuilt similarly to the original design;
- b. In the event of transforming a building, distortion of the building's character should be avoided and its substantial details as well as ornaments should be preserved;
- c. As part of the efforts of rehabilitation and revitalization, the changes of functions and inner layout are made possible provided that the main structure and character of the building are not altered;
- d. In the parcel or plot of cultural heritage building, attaching additional buildings which become a unity with the main building is also possible.

3.1. The Centrum at the 1920-2011 Period

The Centrum was built on an island flanked by Bali and Sumbawa roads. The design of the building consisted of 2 parts; the main building located in the north part with tropical architecture style (Indische Architecture) and supporting buildings in the south side. According to Handinoto (1994),

Indische Architecture is a blend of East and West culture spiced up with some housing customs of Chinese descendants, usually marked by large gardens and courtyards as well as the adaptation of joglo shape in the roof, completed with terraces erected around the building to serve as protection against direct sunlight, rain gutter, cross ventilation as well as deep-jutted wall [10]. The swimming pool was placed in the middle of the site, surrounded by both the main and supporting buildings. Located in the east and west wing of the main building, the supporting buildings applied the concept of symmetry.

The main building served function as a reception area consisting of a ticket window, a food counter, two stairs leading to the 2nd floor, a waiting room and a sitting room leading to the swimming pool. The supporting buildings also consisted of 2 floors, the 1st of which served as area for dressing, rinsing and utility while the 2nd of which in the form of a roof top functioned as sitting area that had direct view towards the swimming pool. The size of the dressing room and the rinse area is 1 structural grid divided into 3 rooms (**Figure 2.**).

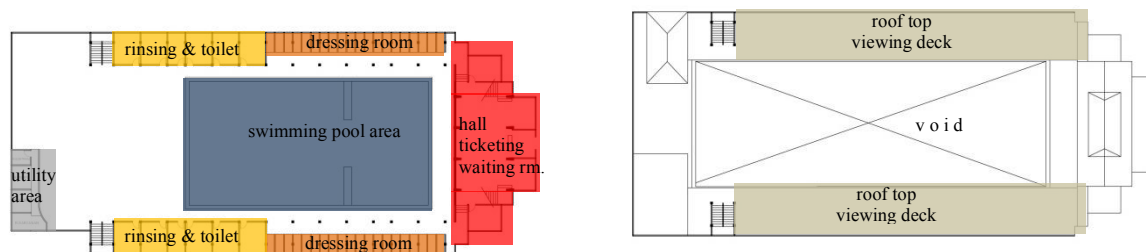


Figure 2. The Blueprints of the 1st and 2nd floor of The Centrum Bandung (1920-2000)
(Source : interview, Tirtamerta, 2017, edited)

The Centrum had a swimming pool with 30 meters in length and 16 meters in width. The main building had floor elevation which was higher than the pool area and the supporting buildings. This made it look more magnificent and monumental than the other parts. Referring to Indische Architecture style, the swimming pool was an adaptation of a large garden/yard and the roof of the main building had deep jutted wall.

The Centrum's main building implemented a combination of roof constructions. The entrance applied half-saddle roof (pitch roof), the inner of the main building was topped by a julang-ngapak style roof (gabble roof) covered with tiles made of clay. The facade of the principal front of the building was dominated by stones painted black and was crowned by skylight (bouvenlicht) made of transparent glass using wood painted green as the frame (**Figure 3.**).

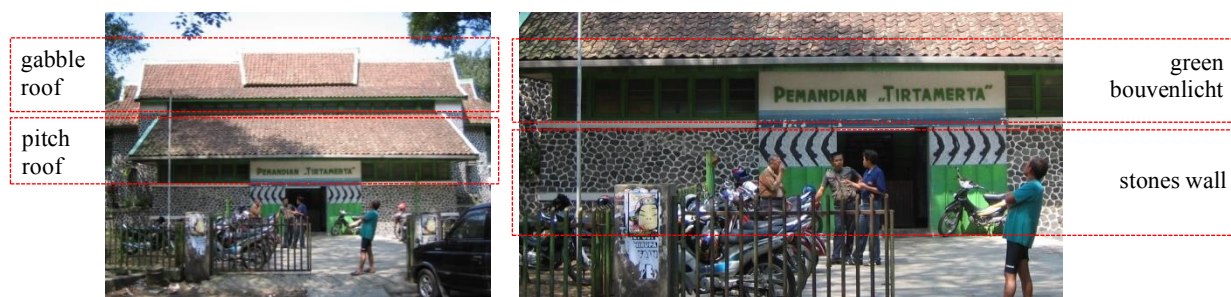


Figure 3. The Façade of the Outside of The Centrum's Main Building (1920-2000)
(Source: <http://2.bp.blogspot.com/>, retrieved 17 Oktober, 2017,edited)

The façade of the inner building (the pool sides) applied the concept of openness and transparency by omitting walls creating a clear exposure of the main structure's columns. The waiting room area located in the main building was separated from swimming pool with circulation.

The segmentation of The Centrum originally targeted the Dutch citizens and their offspring as its only users meanwhile the local inhabitants of the city were prohibited from using the swimming pool. However, around 1960 when The Centrum was handed over to R. Tjandraprawira and it opened to public from all walks of life, including the members of the swimming clubs. In 2000, The Centrum's swimming pool was enlarged. Originally 30 meters, the length of the pool became 46 meters. However, the façade area and other functions remained unchanged.

3.2. *The Centrum at the 2011-2018 Period*

In 2009, The Centrum was bought by a property developer, Kagum Group. Not very long, in 2011 The Centrum experienced a change in function from swimming pool to restaurant & wedding venue. Along with it, physical changes occurred to the entire building which included the main building, supporting buildings and swimming pool area, on both the 1st and the 2nd floor. Likewise with economic status changes, restaurant users had different characters from pool users who needed a simpler circulation system.

Among other changes that underwent on the 1st floor of the main building were the transformation of ticket window of the swimming pool into reception area as part of the lobby, and the conversion of the waiting room into a large kitchen overlooking the pool area. On the right and left sides of the large kitchen there were a gas storage room, a laundry room, and a wet warehouse. Meanwhile, there were also additions of functions on the second floor of the building namely a staff's and a chef's room. The addition of kitchen functions in the main building required changes at a part of the principal structure. The half saddle roof over the inside of the building (pool side) turned into a flat roof made of concrete. This change caused the need for additional column structure as well as brick walls. The addition of this new structure quite changed the building style of Indische Architecture with a priority on tropical roofs as one of its main feature. In this period, there were 3 exhaust fans resembling ship funnels on the concrete flat roof above the large kitchen. This area also functioned to connect the supporting buildings of the east and the west wing.

The façade of the principal front building had also followed the change by the addition of a terrace at the main entrance equipped with a concrete portal and natural sandstone from the city of Jogja combined with walls painted blue. The black painted river stones functioned as the cover of brick wall were still preserved while the originally green skylight wooden frame was then painted white. The material of the roof tiles which had initially been clay was replaced with ceramic, considering that the character of a building must not change even though changes are made to the building in question. The changes occurred to the supporting buildings were the transformations of rinse areas, toilets and changing rooms into dining area for sitting on the floor style, VIP dining area, beverage counter, toilets, stairs to the 2nd floor, and utility area. The 2nd floor of the building which was originally a roof top provided for gathering area was turned into an open plan dining area that had multi-functional use (**Figure 4**).



Figure 4. The Blueprint of 2nd Floor and the Changes of Room Functions at The Centrum's Supporting Buildings at the 2011-2018 Period
(Source: Bandung Heritage, 2017, edited)

The supporting buildings which in the previous period were without barrier, in this period were enclosed by a combination of metal sheets and membranes for the roof. The metal roofing sheets were supported by truss frame which also functioned to hold the membranes of the tent roof firmly in place. Therefore, a column structure was added on the 2nd floor. The façade of the supporting buildings was a white painted brick wall equipped with fixed circular glass windows (**Figure 5.**).



Figure 5. The Roof's Metal Sheets and Membranes of the 2nd Floor of The Centrum's Supporting Buildings at the 2011-2018 Period
(Source: Survey and research result, 2017)

Meanwhile, at the ground floor there was a repetition of circular glass on the doors of the VIP rooms as well as other spaces. Railing made of ropes separated the ground floor's corridor area from the pool area (**Figure 6.**).



Figure 6. The Façade of the Centrum's Supporting Buildings at the 2011-2018 Period
(Source: Survey and research result, 2017)

Transforming the function of the swimming pool into ornamental pond was executed by backfilling the floor level. A wedding venue in form of plaza/courtyard covered with natural stone material was placed in the middle of the pool area. The other function of the plaza beside as a wedding venue was as an outdoor dining area surrounded by vegetation and railing made of iron and rope (**Figure 7.**).



Figure 7. The Transformation of Swimming Pool into Ornamental Pond The Centrum at the 2011-2018 Period (Source: Survey and research result, 2017)

The south area of the site functioned as a restaurant & wedding venue was in form of two gazebos which had direct access to the ornamental pond through stair steps. Each gazebo was equipped with a roof covering frame. In accordance to the City of Bandung Local Regulation No. 19, 2009 concerning Criteria, Classification and Restoration of Cultural Heritage article 22 states that it is prohibited to deliberately demolish building classified as cultural heritage of Group B when undergone restoration process, and when the physical condition of buildings is poor, collapsed, burned or unfit, it must be rebuilt similar to the original design. Based on this, The Centrum was not demolished and the physical condition of the building was still original except for the swimming pool and flat roof area of the main building.

Based on user segments, The Centrum in this period had more visitors during the weekends when some areas were usually rented for certain events than during the weekdays.

3.3. The Centrum at the 1918-now Period

In 2018, The Centrum was turned into a tourist destination by becoming a selfie spot to attract tourists, called the Centrum Million Ball. This new function adapted to today's tourism needs. The change in function of course has given impacts on some architectural layouts and structures (**Figure 8**).

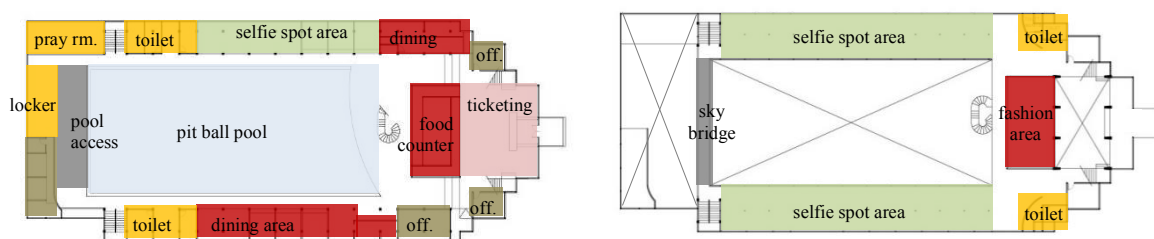


Figure 8. Blueprint of the Building's 1st Floor (left) and 2nd Floor (right)
The Centrum at the 2018-present period (Source: Survey and research result, 2019)

The changes to the main building among others was the transformation of the restaurant's lobby into a ticket booth, and the previously large kitchen room into a souvenir area (**Figure 9**).



Figure 9. The Transformation of Façade & Rooms of the Main Building
(Source: Survey and research result, 2019)

The exhaust fans resembling ship funnels, located on the 2nd floor when the building functioned as a restaurant & wedding venue, was then turned into a commercial area equipped with a swivel staircase to give access to the upper floor. The staircase was painted with contrast colours overlooking ball pit pool area (**Figure 10**).



Figure 10. The Transformation of the Façade of the Pool Side of the Main Building of The Centrum Bandung (Source: Survey and research result, 2019)

The transformation of the facade of the main building was slightly occurred in the principal front especially at the building entrance. The stone walls at the west and east of the entrance were painted white while the entrance area, which was originally a wall made of natural sandstone from Jogja, was painted with contrast colours designed to attract visitors' attention (**Figure 11.**).



Figure 11. The Facade of the Outer side of the Centrum's Main Building (2018-present) (Source: Survey and research result, 2019)

The function and architecture layout of the 1st floor of the supporting buildings have not experienced prevalent changes i.e. as a sitting/dining area, food counter and toilets. Similarly, at the façade some elements of the walls, columns and doors from the time when the building functioned as a restaurant & wedding venue are still used similarly even it has become a selfie spot. A quite major transformation was carried out on the 2nd floor, where the function of the open plan dining area has turned into a thematic selfie area with a variety of colours applied to each modular structure. The food court area, however, remains in the similar place as it was in the previous function on the 1st floor with a slightly different interior design (**Figure 12.**).



Figure 12. The Transformation of the Facade and Function at the East Wing of the Supporting Buildings (Source: Survey and research result, 2019)

The transformation in the pool area occurred on the ornamental ponds which have turned into a ball pit pool. This pool can be used as one of the visitor's photo / selfie areas. The ball pit pool is surrounded by ± 1.2 -meter-high wall to keep balls from bouncing into the dining area and corridor. The ball pit pool can be accessed using the stair straps as well as slides for children at the south side of the site.

The ball pit pool area along with the second floor of the supporting building are topped by a wide span roof making use of metal sheets supported by IWF steel frame. The old structure columns are still retained and now serve to support the wide span roof. All of these changes have made the Centrum Million Ball an indoor tourist spot. Based on regulation No. 19, 2009 in the efforts of rehabilitation and revitalization, changes in functions and inner layout are made possible provided they do not alter the character of the main structure of the building. In this regard, the change in the function of the Centrum Million Ball does not alter the character of the main structure of the supporting buildings, but alter the overall character in a way that the pool area which was initially outdoor becomes indoor with its wide span roof (**Figure 13.**).



Figure 13. The Addition of Wide Span Roof
(Source: Survey, 2019)

The gazebo area has turned into a corridor connecting the supporting buildings and the ball pit pool and was constructed into 2 floors, on the 2nd of which railing is placed along the end side bordering it to the pool area. Referring to Article 22 City of Bandung Local Regulation No. 19, 2009 about Criteria, Classification and Restoration of Cultural Heritage, that on parcels or building areas of cultural heritage it is possible to construct additional buildings attached to the main building as a unit, the connecting building is still in harmony with other buildings (**Figure 14.**).

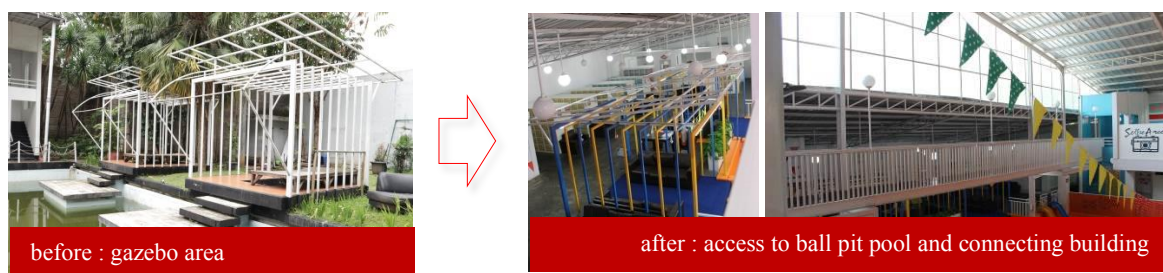


Figure 14. The Addition of Funtion at the South Area of th Site
(Source: Survey and research result, 2019)

In conjunction with the transformation, the user segment of The Centrum also changes in a way that more visitors come during the weekends or school holidays, and the type of visitors are usually families.

4. Conclusion

The application of adaptive reuse is an effort to increase the economic value of The Centrum. The transformation that occurs to the building has not yet had a definite benchmark in the regulation as The Centrum's status is still under the Board's discussion to which group of Cultural Heritage it belongs to. The transformation of The Centrum in the term of functions from time to time is part of adjustment process to its environmental needs in a way that the existence of The Centrum Bandung continues to adapt to the owners (users), architectural needs and current activity trend, namely selfie tourism.

Based on the results of the analysis on the building of The Centrum Bandung, significant changes occur in architectural values in the form of changes in function, addition and reduction of space and facades. The architectural adaptation pattern from the ininitial to the latest period shows the increasing use of colorful materials. Further, structural, utility and economical changes undergo adjustment due to changes in function and space. The pattern of structural adaptation represented by the wide span roof to fulfil the requiment arisen from the presence of the ball pit pool and air condition for all area has caused the Indische Architecture concept featured by the presence of outdoor park to vanish.

5. References

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