Intermediate Design Strategy of Candilis-Josic-Woods' Urban Complex

Sang-Hak Lee¹ and Jiae Han*²

¹ Strategic Planning Manager, L’ EAU Design Co. Ltd., Korea
² Assistant Professor, Department of Architectural Engineering, Hongik University, Korea

Abstract
Candilis-Josic-Woods, who were active during the 1950s and 1960s, provided various ideas for achieving this. The urban complex projects of Candilis-Josic-Woods are distinguished from the projects of other groups in CIAM and Team X in the aspect that the organizing principles of urban space were applied to their projects to reflect the context. This study aims to identify the strategic characteristics by which a new structure can be "intermediated" into the old urban pattern by using the Candilis-Josic-Woods architectural approach to the city to analyze urban planning case studies. The design strategy of Candilis-Josic-Woods provides the idea that we can try diverse levels of design proposals in relation to a complex community that can not be merely established by the physical structures. The most significant meaning is that Candilis-Josic-Woods' architectural attitude stimulates the contemporary practice to the issue of modification and convergence. The validity of this conclusion increases from a modern perspective, and is the most distinctive and basic feature among the various differences between Candilis-Josic-Woods and CIAM.

Keywords: Candilis-Josic-Woods; intermediate design strategy; street system; building complex; urban context

1. Introduction
Cities in Asia have a unique characteristic, namely, a "zoning structure that is compartmentalized into the planned grid" on top of the old "spontaneous pattern." This situation creates a variety of urban landscapes in which tradition and modernity are combined. At the same time, these cities face the challenge of finding an architectural solution that can create a more organic relationship, bridging the gap created by the sociocultural conflict that results from this structural combination of two opposing styles.

Candilis-Josic-Woods, who were active during the 1950s and 1960s, provided various ideas for achieving this. Instead of eliminating the "old," as proposed by CIAM, they showed how "new structures" could be integrated into traditional patterns, using as their model the plans developed to combine architectural traditions with new structures during the rebuilding of Europe's destroyed cities after the Second World War.

This study aims to identify the strategic characteristics by which a new structure can be "intermediated" into the old urban pattern by using the Candilis-Josic-Woods architectural approach to the city to analyze urban planning case studies. This work aims to rediscover the value of Candilis-Josic-Woods, who have been somewhat forgotten in modern architectural discussions, while, at the same time, exploring a strategic direction that could meet the architectural challenge faced by modern Asian cities.

In selecting a subject for this study, three standards have been met; the study defines a temporal, spatial, and content range. In the temporal range, architectural works built between 1951 and 1963 have been selected. The year in which Candilis-Josic-Woods began working as a group was 1955. However, George Candilis and Shadrach Woods were already disseminating new architectural and urban planning concepts through their research at ATBAT-Afrique in 1951. The Candilis-Josic-Woods partnership dissolved in the late 1960s. Their key concept is judged to have been completely developed in 1963. Accordingly, this study, which examines the architectural and urban concept developed by Candilis-Josic-Woods, limits its research period to the years before 1963. The spatial range of the subject includes not only Europe, in which Candilis-Josic-Woods mainly worked, but also Africa then a French colony, and parts of the Middle East, where Candilis-Josic-Woods participated in a project. As for the content range, a standard scale is used. The criteria used to define scale are based on the center of the building complex, because the larger scale of the building complexes constructed by Candilis-Josic-Woods required larger centers of these building

*Contact Author: Jiae Han, Assistant Professor, Ph.D., Department of Architectural Engineering, Major in Architecture, Hongik University, Sejong-si, Korea
Tel: +82-44-860-2021 Fax: +82-44-865-9434
E-mail: jiaehan@gmail.com
(Received April 7, 2015 ; accepted November 5, 2015 )
DOI http://doi.org/10.3130/jaabe.15.89
complexes. Examples for which the data is insufficient making analysis difficult have been removed from the group of case studies considered appropriate for each standard. Eighteen cases that exhibit all of the characteristics of a Candilis-Josic-Woods project, as well as five "research works by Candilis-Josic-Woods" used to provide secondary data for the study, have been selected.

Table 1. Project Cases for Research

| Project Title                      | Year | Program          | Location |
|-----------------------------------|------|------------------|----------|
| Carrière Central                  | 1953 | Housings         | Morocco  |
| Terrade                           | 1955 | Housings         | Algeria  |
| Place Korte                        | 1955 | Housings         | Algeria  |
| Bagnoi sur Céze                   | 1956 | Housings         | France   |
| Bobigny                           | 1957 | Housings         | France   |
| La Viste                           | 1959 | Housings         | France   |
| Abadan Semi Urban Housing Competition | 1960 | Housings         | Algeria  |
| Jouy en Josas                      | 1960 | Housings         | France   |
| Clos d'Orville                    | 1961 | Housings         | France   |
| Hamburg Steilshoop                | 1961 | Housings         | Germany  |
| Caen Hérouville                   | 1961 | Housings         | France   |
| Bilbao Asua                       | 1962 | Housings         | Spain    |
| Vallée de Belleville winter resort competition | 1962 | Housings         | Germany  |
| Fort Lamy                         | 1962 | Housings         | Chad     |
| Bochum University                 | 1962 | College          | Germany  |
| Frankfurt main centre              | 1963 | Shopping Mall    | Germany  |
| Free Berlin University            | 1963 | College          | Germany  |
| Toulouse le Miraile 1961-63       |      | Housings         | France   |

The study is structured as follows. Chapter 2 verifies the relationship between the architectural viewpoints of CIAM and Team X since the formation of Candilis-Josic-Woods, based on which the role recognition of architects with respect to the unique Candilis-Josic-Woods urban space is derived. Chapter 3 focuses on the methodology used repeatedly by Candilis-Josic-Woods for the urban project: the existing space in the city is spatially patterned, and the central and regional hierarchy are strengthened to introduce spatial units without forms. As a process and means for intermediate design strategy, which is the focus of chapter 4, the hierarchy are strengthened to introduce spatial units without forms. As a process and means for intermediate design strategy, which is the focus of chapter 4, the influence of this methodology is reflected in the introduction of the street system and establishment of communities through phased regional coupling.

This paper reexamines the method used by Candilis-Josic-Woods to understand and use existing urban structures. This reexamination is highly significant because it elucidates the detailed attitude and viewpoint about present-day urban projects that the new organization and previous urban structures should adopt in terms of intermediate design strategy.

2. The Neutral Relationship between Candilis-Josic-Woods and their Surroundings

2.1 Relationship through ATBAT Activities

The Atelier des Bâtisseurs (ATBAT) Research Center (1947) was established by Le Corbusier to enable architects, technicians, and engineers to conduct substantial research on ways to meet the acute need for mass housing in European cities at the time. These urban situations required a system that could develop and accommodate the maximum number of households in a small area. ATBAT offered an opportunity to achieve perfect integration between the architecture of Le Corbusier and the existing city. While the development of the Marseilles Unité d'Habitation was carried out between 1945 and 1952, Le Corbusier established the ATBAT-Afrique branch (1949) for the discovery and study of integrated structures that could realize this ideal development. George Candilis was the project architect for the construction of the Marseilles Unité d'Habitation. For two years, Candilis and Sharach Woods carried out research together at ATBAT-Afrique, which was managed by Wladimir Bodiansky under the direction of Le Corbusier. ATBAT-Afrique carried out actual planning and construction, becoming much more than a simple research center. Researchers there discovered a way to integrate economics into the geographical features and standardized construction system of Morocco in North Africa; this initiative required France to justify functionalism. However, in a departure from the original purpose of ATBAT, Candilis and Woods saw the need for an architectural perspective that took into consideration the social and cultural context, in addition to the rationality of functionalism. They worked as founding members of Team X, alongside members of CIAM.

2.2 Recognition of the Role of Architects

Candilis-Josic-Woods did not deny either the scientific-technical rationality of CIAM functionalism or the economic concept of standardized mass production. They criticized only the one-sided viewpoint and attitude of architects biased in favor of standardized technical rationality, and not the basic concept of functionalism, which resulted from demands over time.

In fact, Candilis-Josic-Woods claimed that architects facing a new urban situation in the neutral space between extremes that is, between CIAM's functional urban approach and TEAM X's sociocultural urban approach, should fully embrace various social and cultural changes in a people-oriented city, using
standardized technology to connect systems in the new city to enhance the existing environment.

Furthermore, Candilis-Josic-Woods saw the disappearance of the concept of human scale in these rapidly expanding new urban structures as a problem. They argued that, by reassessing the essential aspects of industry and technology, architects could design an integrated structure of buildings for the city, allowing residents to create an urban story for themselves.

3. Urban Design Strategy of Candilis-Josic-Woods

3.1 Spatial Patterning of the Existing Topology

The Fort Lamy Project and Frankfurt main center plans best illustrate the urban concept of Candilis-Josic-Woods. Fort Lamy Project was a plan drawn up by Candilis-Josic-Woods to enter a competition for a redevelopment in Chad in central and southern Africa in 1962. At the time, the site featured a boundary between northern Europeans and the southern indigenous people. The purpose of the competition was to reconcile the two regions, which were strikingly different. In addition, architects were asked to reduce the gap between the two groups by providing residential space that reflected both European housing technology and the local people's way of life.

One peculiar characteristic of the plan was that the building complex was arranged in such a way that it protruded into the empty space of the existing city in a linear shape. This layout minimized interference with the existing urban spaces. In this way, Candilis-Josic-Woods fulfilled the objective of the competition. The building complex was laid out in a linear design in the space between the two groups, thereby connecting the two regions spatially and physically and leading to a resolution of regional conflict.

The redevelopment plan of Frankfurt main center integrated spatial gaps caused by wartime bombing into the naturally multilayered street. Its strategic characteristics are more evident when compared to Le Corbusier's "Plan Voisin," a similar project of the time. Candilis-Josic-Woods were attempting to reproduce the small-scale spatial units characteristic of markets and streets, thereby retaining their complex story through the industrialized technology of the period.

3.2 Subdivision for Spatial Hierarchy

In the plans for Caen Herouville, Fort Lamy, Toulouse Le Mirail and Hamburg-Steilshoop, buildings integrated into a fixed unit are arranged around a street. This unit creates a route from the street at the center to buildings on the outskirts of the complex. The overall layout of the building complex is formed through the repetitive arrangement of units towards the center. Such a layout strengthens the center while segmenting the hierarchy of space from the center to the outer areas. Although they feature different architectural forms, Fort Lamy and Hamburg-Steilshoop also used a street to strengthen the center, segmenting the spatial hierarchy. This differs from CIAM in two cases in an aspect that strengthens the role of the center by combining a linear center with buildings, alleviating the heterogeneity of the inter-area through an intermediate area.

3.3 Architectural Framing of Urban Space by Eliminating Forms

In plans for the center of Frankfurt and the Free University of Berlin, the original structure of the buildings was lost and the buildings were divided and arranged into a number of functional units. These functional units were reconstructed within a multilayered street grid during the process of rebuilding. Accordingly, the inherent spatial organization of the original buildings was functionally reconstructed. The buildings were inserted into a uniform street grid and integrated into the existing
street through the construction of small-scale street systems.

A set of spatial units outside the form developed a spatial frame for various programs, moving away from their existing single use. The spatial frame also made possible a continuously changing program. This approach to layout provides a frame for a developing building complex, in contrast to CIAM's urban plan, which created a complex in its final and complete form.

4. The Intermediate Strategy of Urban Space

4.1 Construction that Focused on the Street System as an Intermediate Space

A "method of connecting the inside and outside of the building complex" is related to the location in which the particular complex is located, while the "building layout method" is related to its use. This begins to have implications depending on the character each relation gives and an aspect of the building complex through which each relation gives such character.

First, when it comes to the "method connecting the inside and outside of the building complex," the "frame of growth" is the central street of the building complex; "urban intermediation" creates the same scale from the outside and is realized through the extended street which leads inside.

"The strengthening of the center and hierarchy" achieved through the building layout occurs as the buildings are integrated into the street. "The frame of change" is also formed by the street system grid. Accordingly, the street is a key element in the construction of the building complex, which creates the complex system that gives the building complex its central character. The building complex mentioned earlier is characterized internally by diversification and externally by the street system. One characteristic of the street system is that it intermediates a subject with more than two characters. In addition, it can be understood as a "space" rather than as a pedestrian area, because it is a place that produces urban behavior and forms an internal space. Thus, the street system of Candilis-Josic-Woods has significance as an "intermediate space."

4.2 The Intermediation of Urban Context

In this study, the "changing urban environment" is discussed as a problem of "urban expansion" and "urban redevelopment". Both of which were key issues in modern architecture after World War II, in the 1950s and 1960s. They reflect population growth, the restoration of inner cities destroyed during the war, and accelerated social change. Given these considerations, the constructions of that era continuously addressed the issue of urban expansion in relation to population growth by building new complexes outside of the city.

4.3 The Gradual Improvement of Surroundings

This urban attitude indicates that they had the solution by interweaving the surrounding condition and community inside after setting up the space unit. When we compare the urban plan of Le Corbusier and Candilis-Josic-Woods' Frankfurt main center project, the solution shows more critical characteristics. The Free Berlin University Planning provides a diagram presenting a direct spatial clue to the strategic points. This project discloses the intention that connects the surroundings by the architectural framing that contains the program rather than the form of the architecture. This is an intermediate system between that existing urban fabric and the new architectural urban structures.

The application of "the frame of growth" to areas outside the city can be understood as a way of resolving the problem of "urban expansion." Within the city, use and "the frame of change" were related. This relationship can be understood to be formed for the sake of the relationship since the character of "urban redevelopment" is related to its use, which is decided within the city. In addition, the building complexes of Candilis-Josic-Woods create a relationship between different areas, which can be interpreted as an attempt to connect aspects of the building complex and community, reflecting an emphasis on social interaction. The techniques developed through the street system are classified as the "formation of frame" and the "establishment of shared community between areas." The subject and method for intermediating them are as follows.

Fig.4. Architectural Framing, Eliminated Forms
(Free Berlin University Planning)

Fig.5. Free Berlin University Planning Diagram

92  JAABE vol.15 no.1 January 2016  Sang-Hak Lee
become a city and a new urban order. In the existing city, the single center provided unequal urban services to parts of the expanding city and to the mass-produced slum districts. Candilis-Josic-Woods therefore built a linear complex at the center to provide equal services by establishing a building complex and basic structure in an area that would become urban, connecting with the landscape through its street system.

The street system bridges a city through "a frame of change." As mentioned earlier, this happens through the perception of external space and the design of the inside of the building. Adapting to social change requires the construction of a new complex that is appropriate for the new social order but preserves the existing urban space, thus modifying its surroundings. Eventually, the intention that they tried to present by the design strategy is that the solution has to be not by the modification but by the gradual improvement of architecture within the urban surroundings.

4.4 Community between Areas
Candilis-Josic-Woods integrate the building complex and community into a street system that deliberately promotes social interaction within the overall framework of preparing for change. Inside the city, a community strengthens its public areas by linking the way of life of surrounding areas through intermediation with urban approaches. In the case of residential use, Candilis-Josic-Woods attempted to produce a phased exchange through hierarchies of public and private space segmented by the street system. This became possible through the phased integration of an intermediate space. In public areas, the community creates the possibility of behavioral exchange by inducing a version of the internal program in part through the phased integration of an intermediate space.

5. Conclusion
The objective of this study is to propose a way to organize building complexes and find their current significance by analyzing the complexes built by Candilis-Josic-Woods. As reflected through the "connection between the inside and outside of the building complex and building layouts," Candilis-Josic-Woods used the street system to organize their building complexes. The street system creates complex characters through the use of an intermediate space. This is designed to adapt to a changing urban environment. In its physical, programmatic, and social aspects, it builds a community complex through the "establishment of a new order" and "partial modifications" of the new space and existing urban space.

When it comes to organizing a building complex, Candilis-Josic-Woods differed from other groups within CIAM and Team X in attempting to find and apply a structural principle of urban space in order to adapt to the changing urban environment. To achieve this, they constructed a building complex that focused on "the street system as an intermediate space" formed from an architectural unit. Accordingly, Candilis-Josic-Woods are particularly significant because they were the first to propose the integrated approach of urban architecture now favored by modern architecture.

The design strategy of Candilis-Josic-Woods provides the idea that we can try diverse levels of design proposals concerning the relation of complex communities that cannot be merely established by the physical structures. The most significant meaning is that Candilis-Josic-Woods' architectural attitude stimulates contemporary practice regarding the issue of modification and convergence. The validity of this conclusion increases from a modern perspective, and is the most distinctive and basic feature among the various differences between Candilis-Josic-Woods and CIAM.

Figure Credits
Fig.2.: Layout of Port Lamy Inserted in Urban Space/Shadrach Woods, Candilis. Josic. Woods Building for People, Frederick A. Praeger, 1968, pp.200-201.
Fig.3.: Spatial Patterning of the Existing Topology/Shadrach Woods, Candilis. Josic. Woods Building for People, Frederick A. Praeger, 1968, p.204.
Fig.4.: Architectural Framing, Eliminated Forms/Shadrach Woods, Candilis. Josic. Woods Building for People, Frederick A. Praeger, 1968, p.209-210.
Fig.5.: Free Berlin University Planning Diagram/Shadrach Woods, Candilis. Josic. Woods Building for People, Frederick A. Praeger, 1968, p.209.
Fig. 6.: The Gradual Improvement on Surroundings (L) Toulouse le Miraile le planning/Shadrach Woods, Candilis-Josic-Woods Building for People, Frederick A. Praeger, 1968, p.205 (R) Frankfurt Main Center Planning/Tom Avermaete, Another Modern the post-war architecture and urbanism of Candilis-Josic-Wood, NAI publisher, 2006, p.276.

Fig. 7.: Continuous System on Existing Community Orders/Shadrach Woods, Candilis. Josic. Woods Building for People, Frederick A. Praeger, 1968, p.208.

Table 2.: Cases of Subdivision for Spatial Hierarchy/Shadrach Woods, Candilis. Josic. Woods Building for People, Frederick A. Praeger, 1968, p.179, p.182, p.196.

Acknowledgement
This work was supported by the Hongik University new faculty research support fund.

References
1) Shadrach Woods. (1968) Candilis-Josic-Woods Building for People, Frederick A. Praeger.
2) Shadrach Woods. (1968) The Man in the Street: a Polemic on Urbanism, Pelican books.
3) Tom Avermaete. (2006) Another Modern the Post-war Architecture and Urbanism of Candilis-Josic-Woods, NAI publisher.
4) Hashim Sarkis ed. (2001) CASE: Le Corbusier's Venice Hospital the Mat Building Revival, Prestel.
5) Eric Mumford. (2001) The CIAM Discourse on Urbanism, 1928-1960, MIT Press.
6) Alison Smithson, K. Lee (1994) Architectural Language of Contemporary Cities, Tearceem Press.
7) S. Sohn (2004) The History of Formation of Urban Residence, Youlhwadang.
8) Song, H. (2010) Jose Luis Sert's Naturalization of Architecture in the City, Journal of Asian Architecture and Building Engineering, Vol. 9, No. 2, pp.275-282.