



INSTITUTO SUPERIOR TÉCNICO  
Universidade Técnica de Lisboa



## **Residential Hybrid Buildings**

Different temporalities in city's life

Andreia Sofia Felisberto das Neves

### **EXTENDED ABSTRACT**

#### **JÚRI**

Presidente: Prof. Arquitecto António Manuel Barreiros Ferreira

Orientador: Prof.ª Doutora Maria Alexandra de Lacerda Nave Alegre

Vogal: Prof. Doutor António José Damas da Costa Lobato dos Santos

**November 2012**



## EXTENDED ABSTRACT

Returning to times as remote as classical antiquity, one could already identify the signs of what would later come to define the term hybrid, both in terms of the city context and the architecture itself. The concept of hybridization was born from the necessity to improve certain characteristics of an entity by combining favorable elements. In the city, this was formalized by combining functions in the first urban centers and later in Hybrid Buildings.

Generally, in regard to functional brief, hybrid buildings are characterized by a high programmatic complexity. These can incorporate different categories of urban uses, allowing a great capacity of adaptation and interaction with the urban environment they integrate, containing unique and distinct characteristics from other buildings of this type in different urban contexts. Its definition only took shape in the early twentieth century, when the architect Joseph Fenton (1985) decided to study the development of north American cities. Since then, the evolution of this concept has attracted increasingly more architecture critics, emerging as a way to resolve some of the current issues in architecture and urbanism.

In this context, this paper elaborates a method of analysis and deepens the theoretical issues relating the conception of Hybrid Buildings with residential programs, which may include distinct temporal patterns of permanence in the city, as well as other programmatic generic categories that were found significant during the development of the architectural project carried out in the academic year of 2011/2012. This project was developed for the course of Projectes X, under the Erasmus mobility project, between the months of February and June, at the School of Architecture of Barcelona (ETSAB) which belongs to the Polytechnic University of Catalonia (UPC).

The overall objective is to understand the Hybrid Building with residential programs in relation to its particularities, genesis, historical context, position in the contemporary city context, interaction and contributions to the city and society, trends of functional organization and potential social relationships. The aim is also to analyze the interactions that are established with in its urban environment and how the design of these buildings adapts to the contemporary cosmopolitan society.

Initially, we present the object of study, the Hybrid Building, its concept is defined and the underlying theoretical issues are explored. Latter, the methods of intervention in contemporary urban context is analyzed through the incorporation of these buildings in

project options and categorized some of the interrelationships between the hybrid building and the city. In order to support the research of the integration of these types of residential programs in these types of buildings, 14 current hybrid buildings with these programs were analyzed. This analysis allows investigating the gains associated with this programmatic combination against other generic programs, contextualizing its development over time and assessing trends in (functional) organization. Finally, a characterization is presented for the users of the hybrid building, the current cosmopolitan society and their social and functional requirements regarding the programs that this type of building may contain.

The methodological procedure of synthesis and interpretation of the theoretical information makes use of analytical frameworks exposed at the end of each sub-chapter of the contextualization. Following a systematization of the features of the recent hybrid building is elaborated; the characterization of the contributions and forms of interaction of the hybrid buildings with the city, the preferred organization of residential programs against other uses; urban and social contributions of hybrid buildings that integrate residential programs with different times of permanence in the city; synthesis of some of the features of contemporary society, its social and spatial demands; and functional requirements imposed on generic programs that the hybrid building can incorporate.

Then, the empirical and theoretical analysis of the presented problem is developed through a detailed investigation of three case studies, based on the previous research. This helps to understand the evolution of hybrid buildings and helps proving analogies, overlaps and differences. It also allows synthesizing trends that will be useful for future designs. The methodology consists in the framework of the project, characterization of the urban context, formal and programmatic characterization, evaluation of the potential of urban and social enrichment. The same analysis is applied to the developed project with the aim of elaborating a constructive critic that investigates the adequacy of the proposal.

Finally, a set of conclusive ideas that encompass common principles of intervention in urban impacts are described, as well as the impacts and suitability of the project. This allows one to establish factors that should be taken into consideration in future project interventions and to answer the main questions of the objectives.

## PROJECT FRAMEWORK

The historical context behind the genesis of Hybrid Buildings and especially its extension to the fields of urbanism presents bases as distant as the structure of urban and social antiquity. However, its recent definition applied in architecture and, more specifically, its programmatic and functional combination, encompasses many different scenarios that range from the American capitalism (end of the XIX century), the socialism associated with the Soviet State (first half of the XX century), to the peak of the housing market and the economical growth that is being observed in China and the East, which increasingly encourages the creation of these architectural structures.

After understanding how the society functions and contemporary cities as a living organism with changing demands, one can comprehend the hybrid term in architecture which is highly related to this context. In reality, the method of designing an architectural object is planned depending on the community user targeted and its reaction to the impositions of historical and cultural surroundings in which it operates.

Currently, hybrid buildings have an important role in the urban development, helping to meet the required demands in terms of interaction with its surroundings, absorbing urban crossings and infrastructures when needed, providing the functional requirements of the space in which they operate and lastly collaborating with the skills necessary to overcome the barriers in the city. Simultaneously, these buildings incorporate spaces that provide meetings, social and cultural activities and particularities that make them spatial references in the city.

The most sensitive field in programmatic integration in hybrid buildings is the housing or other types of residential forms. These include requirements for security, privacy and comfort. When combined with other functions, the balance between privacy and community requires a consensus of shared interests that do not neglect the civic and cooperative responsibility of every individual. The confrontation between the existing residential hybrids and social condensers, developed in the early decades of the twentieth century, allows us to analyze the different needs of these historical times. The current residential forms have been changing their functional requirements, adapting to new areas other than the simple shelter. Their presence ensures a continuous functional use of the hybrids buildings and their integration in the diverse characteristics of the urban environment. In addition, the combination of residential forms with different time periods in the city brings new social relationships, visions and interpretations of the urban

environment. It can introduce new creative valences, promoting the exchange of experiences, coexistence or the ease of integration of residents in the local community.

The period of residence (residence times) in the city, represents the uninterrupted duration of the stay of a social group in the city, allowing it to grasp the characteristics of the city. Distinct temporalities, here associated with programs that cover different residence periods in the city, allow for the relativization the comprehension of the city, introducing new spatial, cultural, social and functional perspectives. These temporalities can be associated to the inclusion of social groups with new cultural values, enriching the social and urban development as referred by Rocha and Eckert (2005).

Simultaneously, the material, technological and artistic innovations in architecture have been influencing the behavior of the contemporary society and the functional requirements that they impose to their habitat. These may vary depending on the political and economical context to which they belong, as referred by Steven Holl (quoted in Per et al., 2008). However, not only the technological innovations imposed on construction but also those which influence directly the society as, for example, the emergence of new computing and telecommunications technologies such as new virtual social networks and the globalization of wireless commercial devices (e.g. Wi-Fi), have allowed the generalization of some characteristics common to this society and their needs according to the architectural programs, regardless of other contexts (Duarte et al., 2008).

Contemporary society is characterized by "open groups of friends" (Alexander, 1966), sociable, communicative and active (Oblinger and Oblinger, 2005), it has a set of needs and social-functional requirements to the subprograms of hybrid buildings that promote coexistence, empathy, cultural and intercultural social activities, dynamics / spatial mutations, among others. The Hybrid Building can include various urban uses throughout its program. The remaining can be complementary to each other, appearing spatially overlapped or even sharing common spaces and functions, meeting with the actual demands and predicting future ones.

## CASE STUDIES

The topic under study integrates both the issues of privacy and security, as well as urban and social aspects depending on the usage, public and private, associated with hybrid buildings with residential programs. Given its high degree of complexity, the three cases relating to hybrid buildings, incorporating residential programs with different temporalities of residence in the city, were studied in detail. The selected cases are: the Unite d'Habitation in Marseilles (1945-52) of Le Corbusier, the building hybrid L'illa Diagonal (1986-93) in Barcelona, from the architects Moneo and Solà-Morales and, at last, the Sliced Porosity Block hybrid building (2007 -2012) in Chengdu, by Steven Holl. These have characteristics that allow to corroborate the distinct aspects of these buildings against other architectural structures, understanding the transition between their predecessors and evaluating the current project solutions.

The framework of each project has shown similarities in terms of referral of these works in future projects since they all are based on studies that combine urban and social ideologies.

In terms of relations with the urban space, the evolution of hybrid buildings confirms their contributions in urban interaction. Only l'unité d'habitation in Marseille has no interactive relations with the urban context, one of the points which defines it as a transition building, thus preventing it from being defined as a hybrid building, even though it has common characteristics. In contradiction, the analysis of the other two most recent cases showed a similarity of urban actuation but assuming different types of representation and scales. In both cases, some contributions can be denoted, such as pedestrian crossings, accessibility to outdoor living spaces, permeability and a generation of pathways. The European case study can be distinguished by the use of road infrastructures and transition of levels, whereas in the Asiatic case, the connections to public transportation are more relevant.

Regarding the formal characterization, the research allowed to assess the hybrid buildings, generators of new architectural typologies still in development. Moreover, the recently adopted design strategies have evolved with the technological innovations and materials. The combination of different structural systems in the same architectural object has enabled formal dynamics, larger sizing and more economical solutions to structural requirements.

The experienced transformations in the programmatic organization enabled to verify a tendency to place, in terms of the surrounding level, programs that generate activity, attractiveness and public use. The privacy and security of residential programs and offices have evolved in the way of being secured by their location on the highest points of the building that provide unobstructed views. In terms of space dynamics within the programs

there was an increase in flexibility as well as in the valence of adaptation to future developments. Included are multipurpose spaces, the spaces characterized by centers of indispensable installations and movable walls or compartments generated by the positioning of furniture, amongst others.

The potential social and urban enrichment are dependent on the urban and social dynamics, the movement of population flows, forms of open relationships, "nomads", communicating and indefinite, the diverse modes of interaction between the architectural object and its context of insertion. These aspects do not fully apply to the transition buildings that precede the hybrid buildings. The progress investigated showed a tendency of spatial actuation with concerns on a broader scale than that of the architectural object as well as an equilibrium in the concentration of programs with private / public use and resident / outside users to the building, as assumptions to take in consideration as project options.

Concluding, the adaptability of hybrid buildings to their context, possible developments and future transformation depend on many factors. Some of these factors include economic factors and promoting entities, the territorial political-economical context, technological and functional developments that are needed in that space, the needs of urban structuring, connections to transportation systems, social activities, crossings and routes, among others. They influence the project solutions at the level of dimensioning, utilization rates, scale of buildings, spatial configurations and the adopted design strategies.

## DEVELOPED PROJECT

The project resulted from an urban scale plan, performed in a group, for the territory surrounding the Plaça de les Glories, in Barcelona. Later, it focused on the development of a block that was divided between the three elements of group and whose individual work should not compromise the connections and parameters initially defined. One of those parameters corresponded to the pragmatic combination and its distribution amongst the three hybrid buildings that compose it. The individual project included, as an architectonic program, the integration of housing, students residence, hostel, multipurpose spaces, reading areas, cybercafes restaurants, supermarket, among others, in one building.

Concentrating the most important characteristics of hybrid buildings with respect to the services availability, programs, general characteristics, social and urban relations, the proposed hybrid building was analyzed in light of the same methodology used for the case studies, allowing to evaluate the adequacy of its operation to the current demands.



The urban environment was in compliance with the parameters defined in group, establishing important connections in the city. The crossing of the DHUB museum's existing building, allowed the easy access between the public platforms, interstitial spaces of the hybrid complex and the Poublenou neighborhood with Plaça de Les Glòries, characterized by a confluence of transports and road infrastructures. Likewise, the crossing designed for the hybrid complex's interior, provided the connectivity, mobility and accessibility between the Poublenou neighborhood and its surroundings, favoring the quotas transposition that was verified in this steep block with high quotas.

The program of the hybrid complex is quite intricate, with self-sufficient characteristics that allow its inclusion in the category of Towicz (2008) for the Hybrid as "a city within a city."

The contributions to the urban context, in addition to the above-mentioned, fulfill all the requirements for both the hybrid building and the complex. The identity and personality of the hybrid stand out, not only for new connections, permeability of the building, implementation of quotas, interstitial spaces, semi-public courtyard, but also for the distinguishable differences of material with the urban surroundings. Moreover, the interior configurations, mainly the common spaces to the residential forms, are quite flexible. This ability is conferred by the almost complete lack of dividing walls. The space is characterized by the presence of nuclei around which the programmatic activities are organized with capacity to adapt to the functional needs and the possible developments in technology, comfort and social terms, among others.

Since part of the common programs of residential forms present a public utility, the public and private vertical accesses should be separated so as not to compromise the security and privacy of the residents, as found in the case studies of newer hybrid buildings. In the developed project this obstacle was addressed by preventing the accessibility to higher floors through security codes in elevators and restricted access to stairs. However, it remains one of the weakest points of the project. The sectional organization of programmatic categories also assists the preservation of these factors, adding the quality of visibility of residential programs that is obtained by positioning them on a higher volume.

The potential for social and urban development is presented in this proposal in diverse but efficient conceptions. The urban regeneration in this conflictual territory, through its densification, contrasts with the creation of quality outdoor spaces and new routes. Meanwhile, the programmatic selection with residential programs with different periods of residence in the city, the concentration of uses set group and the inclusion of spaces for coexistence, the civic activities, cultural and interactive also contribute to the cultural, technical, artistic, apprehension of the city and the intensity of functional use of the urban space.

## CONCLUSIONS

According to the information collected, it is concluded that progress has been made in order to adapt the hybrid buildings to the socio-functional and spatial requirements of their users according to the urban and social surroundings. Thus, the design must meet these factors and provide new flexible configurations and alternative programmatic characteristics that enable the adaptation to future functional, spatial, social and urban requirements.

Therefore, the methodology of designing a hybrid building with residential programs demands a detailed study of the implantation site, involving analysis of the urban environment, its opportunities and potentials, functional deficits, weaknesses and threats. It also requires special attention to the characteristics of a contemporary cosmopolitan society, its requirements and the possibility of future changes of their socio-spatial requirements. In conclusion, the introduction of spatialities and flexible programs capable of predicting future adjustments and settings are a key factor in the utility of hybrid buildings. It is possible that these entities can evolve to keep up with social, urban and functional trends, combining with a level of individual creativity of the architect who opposes the induction of vicious cycles of the architectural design. This research aims to help as much as possible, the intellectual and reflective journey, in order to question the past procedures, adjust them to contemporary changes and suggest future processes of architectural actuation.