

:: Student housing - case study

:: Introduction

Rapid scientific and technical development, changing conditions of market economy society have resulted in new opinions about the system of education. The character of university buildings, the inseparable part of which are student dormitories, has also been adapted to the new opinions. The variety of students' requirements gets a wider shape and their demands for specialized spaces for study and social life in the dormitory increase.

This paper analyses the structure (construction, functional qualities) and the character of the concrete architectural work. The observation of legibility of details and space organization of the building on the basis of plan documentation (ground plan, section, views), followed by comparison with common typology of similar buildings is also included. The aim of the paper is, on the basis of the architectural judgement of the given subject, to contribute to the improvement of designing, thus reaching higher qualitative parameters of university students' housing. In preparation of this work I have gathered and analysed information related to the student's dormitory called Simmons Hall, I gained from the sources identified in the List of references herein.

: Simmons hall

Steven Holl, a world-class architect and a professor of architecture at Columbia University, in collaboration with Perry Dean Rogers architects designed an exceptional building of a residence hall of urban type called Simmons Hall. The building is a part of the expanding and famous Massachusetts Institute of Technology (MIT) campus where unique designs of great



contemporary architects including Frank O. Gehry, Fumiko Maki, Alvar Aalto, Kevin Roche have been realized.

The MIT, situated in the city of Cambridge in the USA, is considered one of the world's leading research institutions in science and technology and numerous other fields. Simmons Hall is an exclusive undergraduate dormitory dedicated in September 2002.

This exceptional student housing is also highly appreciated by architecture professionals. Architect Steven Holl, principal-in-charge of Steven Holl Architects, New York, won the Honor Award for Architecture from the American Institute

of Architects in the year 2003, and later the Harleston Parker Medal from Boston Society of Architects. The American Institute of Architects considers Simmons Hall „ a project of enormous power that locates architecture within the realm of the intellectual pursuit „ (4)

:: Exterior view

This „porous“ building bordered by the neighbouring Vassar Street is situated on the western side of the university campus and overlooking the Charles River flowing along the edge of the campus.

Compared to similar student dormitories Simmons Hall engages everyone's interest with the characteristic atypical gigantic measure of the building in the surroundings. The long narrow and compact block of monotonous character is dynamically cut by large prismatic openings which define main entrances, observation galleries and open terraces intended e. g. for sporting activities.

In contrast to the prismatic character of the large openings which read from the exterior, the interior of the building is punched through by amorphous vertical openings allowing daylight to enter and which at the same time allow air circulation.

The cuts of the amorphous volumes through individual floors create characteristic unique identity of the internal environment of Simmons Hall. They create unusual spaces cutting corridors in various spots and dividing them by narrowing and opening of the volume, thus vertical through views, atria used for community life are formed.

The facade is not structured only by the above-mentioned prismatic cuts and vertical openings, its characteristic spongy structure is created by more than 5 500 small windows arranged in the regular square grid of precast concrete panel system „PerfCon“ (of panels 45 centimetres thick) on which the facade's aluminium panels sit. The concrete is reinforced by four steel bars that vary in thickness according to the stress of the cantilevers.

Individual window jambs are distinctly differentiated in colour (blue, green, yellow, orange and red), coat of paint marks the size of the steel armatures cast in the panel (i. e. red means high stress and blue equates with a lesser load). Windows are so deeply inset that from the front view of the facade only grey aluminium colour is perceived, from the angle view the building explodes with colours.

The building is ten storeys high but the tiny-structural facade creates an impression of a many-storey construction. A large number of small windows of the same size also defines the character of the interior spaces of the building. The rooms

are equipped with openable windows with the dimensions 60 cm by 60 cm.

Daylight enters students' rooms mostly through nine small square windows which provide ideal air flow through the bottommost and uppermost windows when airing the rooms. Window panes are deeply inset into the facade, thus favourably eliminating strong sun's rays in summer, and in winter not preventing heating the rooms by the rays falling from a lower angle.

:: Interior view

Simmons Hall provides housing for 350 undergraduate students, 2 housemasters and 10 graduate students. It also

:: The main entrance into Simmons Hall.



includes several apartments where faculty can live and interact with students. The students' rooms are situated on both sides of wide and not very long central corridors which are punched through by vertical openings (also with daylight), large terraces and narrowings of irregular shapes. The optimal length of corridors in a residential college is actually shorter than 22,5 m.



:: View on undergraduate dormitory Simmons Hall after dark.



Housing units as basic building blocks of the housing section are accessible from the central corridor and usually consist of 2 quite spacious single- or double-dormitory rooms. Sanitary facilities (a toilet, a shower, a washbasin) belonging to the unit are mostly shared by 2 rooms, they are accessible either from the central corridor or from the shared threshold space. Steven Holl also designed the interior facilities of student rooms - variable wooden furniture which can be moved according to students' wishes (e. g. a bed can be placed directly on the floor or fixed on posts above the writing desk).

The above-mentioned huge amorphous vertical volumes also cut the areas of several student rooms, their atrium walls form a unique space identity. Rooms in similar types of student dormitories are usually the same, uniform on the whole floor or in the entire section.

Apart from the basic housing units spaces for students' social life and spaces intended for leisure activities form a natural part of Simmons Hall. They are mostly public spaces (some with adjacent kitchenettes), study spaces, a 125-seat theatre and a foyer. The foyer is an important meeting point and place

of welcome for visitors. The reception desk (a control point) is also situated here. The dominance of the foyer is created by an unusually shaped concrete staircase leading to the first floor.

Just inside the main entrance with the reception desk is situated a basement-level concert hall for giving concerts, theatre performances, lectures etc. Its proper location and the control function of the reception desk enable to use the concert hall also for non-residents invited for public events hosted by the college.

The dining hall (a double-height room), found on the ground floor and open onto the street with an exterior shelter enables outdoor dining. It is one of the most important public spaces in the dormitory. It is directly connected with a spacious kitchen and a servery. The dining hall also serves for various social activities, students can have meals here with friends from other colleges.

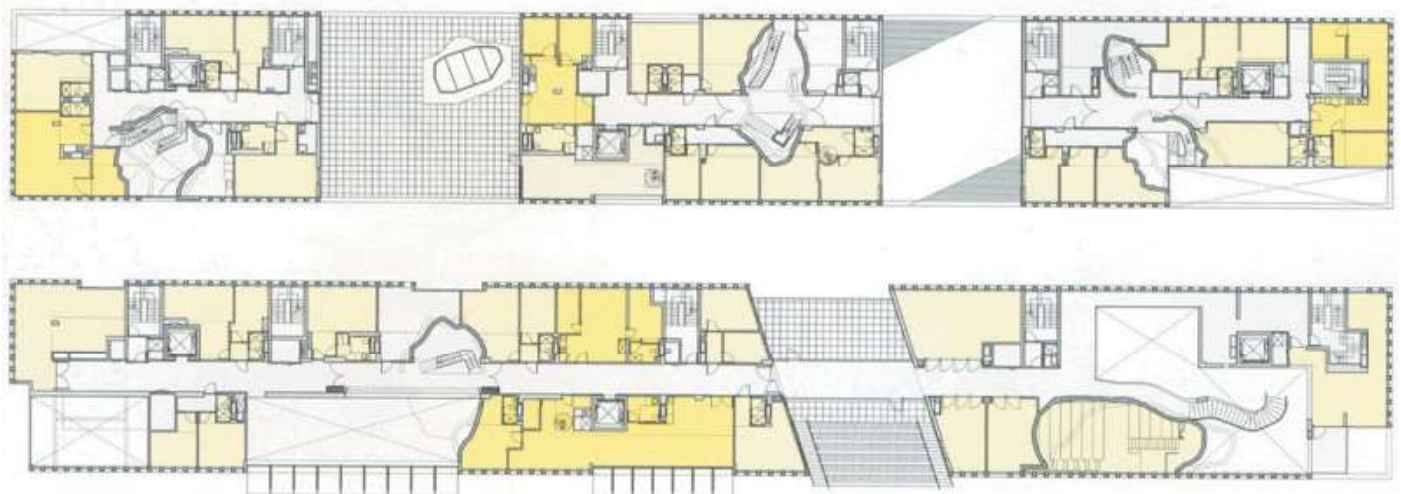
There is also a separate kitchen designed for students in which they are allowed to prepare meals for themselves.

Design theorists of student dormitories recommend dining halls to be large enough to hold all members of the college at one time for special events. The Simmons dining hall is a bit small but the dormitory provides a wide range of public spaces for different activities (e. g. a concert hall) and a number of smaller lounges.

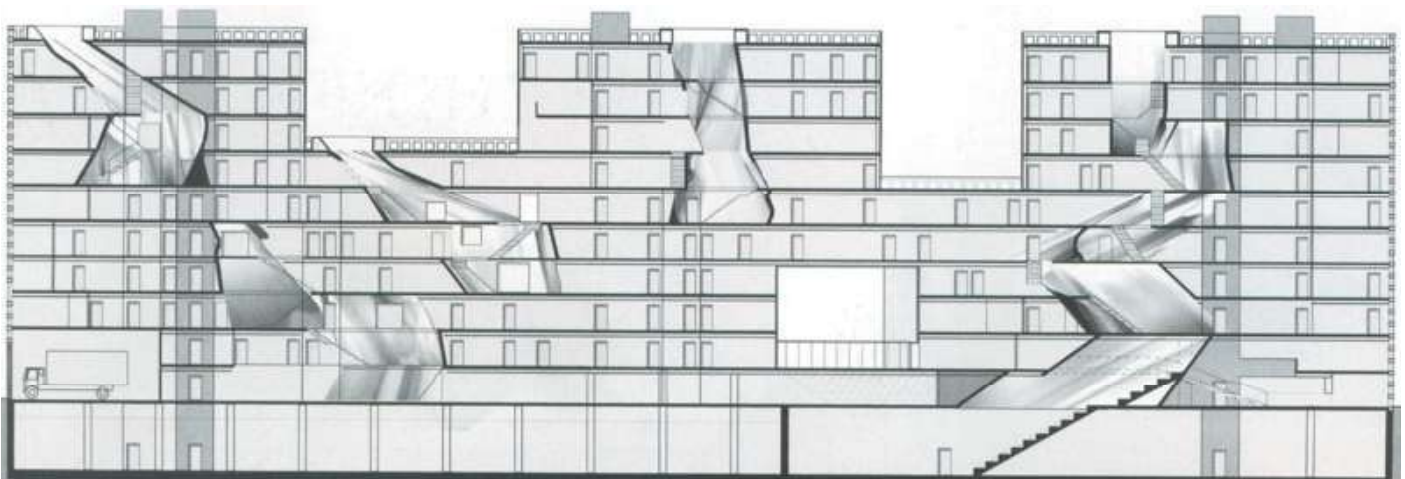
Close to the public spaces the architect located a laundry room, thus students have a place to socialize while waiting for their clothes to wash and dry.

An important part of the dormitory disposition is a game room with several tables for playing ping-pong, pool etc. It is properly separated from the students' rooms because during running hours it becomes a noisy place.

:: Typical floor plans.



:: The long section through building with visible amorphous vertical openings.



Every residential college should have a small library of its own. Simmons Hall provides students with library and gallery space on the first floor above the entrance hall, which is an excellent combination of two mutually enriching functional elements.



:: Students common spaces of their unique nature.

The chapel or meditation room on the ground floor (furnished with wooden benches) should be characterized as one of the most silent and peaceful spaces. Its wrong location next to the parking place makes the chapel noisier than the spaces of the same type should be. The situation could have been solved by translucent windows or by changing the location of the chapel in the disposition of the building.

Simmons Hall offers students a large number of other special purpose rooms (e. g. a fitness centre, a photo laboratory, a 24 hour coffee station, practice rooms). It is an excellent example of a student dormitory as an independent running "organism" designed to fulfil requirements and needs of its residents - students.

Participation of students in preparatory phases of designing the dormitory is of great importance and it means a contribution to the project. In the planning process architect Steven Holl and his team collaborated on the project with a group of students, faculty and staff who acted as clients. The designers tried to implement specific requirements of students as future residents of the building. Architectural and landscape theorist Charles Davis argues that : " It is important that the committee

be fully representative of the campus community. Without this breadth of representation, substantial problems can develop with a project of such complexity and cost, due to lack of relevant information during critical stages. " (1)

:: Conclusion

Student dormitories form an important component of higher on-campus public utilities. An inseparable part of student dormitories designing is formed by the principles of architectural composition which together with other factors are aimed at the creation of the object harmonic from the architectural and technical point of view.

The analyzed student dormitory called Simmons Hall provides a higher standard of a public institution and at the same time offers a unique architectural solution. Simmons Hall respects the variety of students' requirements for social life and provides high quality spaces for studying as well as diverse forms of housing in spacious rooms with their unique character.

:: The student room with unusual wooden furniture.



Simmons Hall is an illustration of a specific approach to the student housing projecting, the analysis of a number of components (architecture, composition, disposition) shows a new way of designing today's student dormitories. In the project phase it is necessary to use the whole range of architectural principles, to design different functional units corresponding to the needs of a contemporary student as well as to local conditions. Present trends require more spacious rooms for students, and public utilities of higher quality.



Contemporary architects use progressive materials /atypical concrete constructions, aluminium or titan-zinc facade panels etc./ The buildings are divided into several smaller masses, thus creating interesting interior and exterior spaces. As good example may serve roofs on which green terraces, areas for relax and sports activities are situated.

A student dormitory should not be a dormitory or a hostel but home.

:: List of references

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