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# ARCHITECTONIC ANALYSIS OF COMMON SPACE ORGANIZATION IN CONTEMPORARY STUDENT DORMITORIES AROUND THE WORLD

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**Abstract**. *In the paper, the organization of space for common facilities in modern student dormitories was analyzed. The detailed analysis of 42 student dormitories, built in the last 10 years, all over the world indicated 6 types of space organization. These examples are located mainly in the most economically advanced countries of Europe and North America. The most common type of space organization of common facilities is "Type 3", even though it does not satisfy the social criteria which are, according to the latest research, very important. This type involves the space for the common facilities for all residents at the entrance to the dormitory, which is connected with student rooms via communication paths. This trend of the space organization of the common facilities in new student dormitories resulted from the balance between economic and social factors.*

**Key words**: *student dormitories, common facilities, economic factors, social factors*

## 1. INTRODUCTION

Education has a strategically important role in economic and social development, and has an important impact on the quality of life and living standard of a society. Researches indicate a continuing tendency of growth of students educated at undergraduate, master and doctoral studies. This indicates a need to increase student accommodation capacity in dormitories (Kostić, 2012).

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Namely, students as users of student dormitories, being young persons with certain needs, habits and obligations have a different perception of the environment in which they live. They exhibit certain expectations, wishes, attitudes and value judgments. In addition to learning, as a main activity and finding the most rational methods in their work, students require rest, a well conceived and quality usage of their leisure time (Nešić, 1996).

The fact the quality of collective housing in student housing cannot be assessed only through the quality of the structure, but through a wider area included by the concept of "housing", indicated the importance and role of the public space in the everyday life of students (Anđelković, 1996). The residential environment includes: neighbourhood, micro district or the physical structures that mankind uses for shelter, and the environments of that structure, including all necessary services, facilities, equipment and devices needed for the physical health and social well-being of the family and the individual (Christina, 1997).

People are more interested in housing with more amenities than in the basic ones that historically have been provided on campuses. Suite style and apartment housing has become the trend (Dessoff, 2007). What were once considered to be luxuries in student housing – kitchens, private bedrooms, private bathrooms, social spaces and lounges – are now expected (School Facilities) as a norm. Internet connectivity – including wireless connections and cable are considered basic requirements. Cognizant of the world in which they live, students also demand a safe and secure environment (La Roche, 2010).

At the same time, residence halls must provide adequate structures to help new and transferring students make a smooth transition to college life. Students are asking for more than just technology. Laundry facilities, air conditioning, and security systems are also required nowadays. Fitness rooms, satellite dining facilities, coffee shops, and convenience stores are routinely considered for new construction projects. Common spaces for socializing and studying are becoming abundant. Giving students spaces that work for the ways they live and learn is at the core of innovative building design (Miller, 2007).

While security and cost are important considerations, the Student Housing Survey revealed the following "Top Ten" amenities that are either "very important" or "somewhat important" to students (La Roche, 2010):

1. Private bedroom (95.5%)
2. Onsite parking (92%)
3. Double beds (91.3%)
4. Onsite laundry facilities (90.3%)
5. Internet access (88.8%)
6. Proximity to campus (73.3%)
7. Fitness Center (73.3%)
8. Private bathroom (73%)
9. Cable TV (56.4%)
10. Satellite Dining (50%)

This paper analyzed designs of the contemporary student dormitories created in the recent 10 years. The goal of the analysis is determination of contemporary trends of common space organization within student dormitories. Through analysis of the entirety of student dormitories, the attention was focused on the disposition of communal areas at the level of the entire building or of a standard dormitory floor. The analysis was performed on 42 structures of student dormitories around the world, built on European, American and

Australian continents. Organization of common areas at the level of the entire dormitory or standard dormitory floor can be classified in six types. Here are analyzed characteristics of each of the six types in respect to the housing units and communications and organizational diagrams are provided. Each type, through a most characteristic example, provided with in-detail annexes, was analyzed from the aspect of organization and presence of common areas. The common areas are divided into two groups. Those intended for all the residents of the dormitory, and those intended for a small group of residents on one floor. These areas are intended to meet psychical, social and personal improvement needs.

In contemporary student dormitories around the world, which are built as a standalone structures, the most present common areas meeting the social needs of the students are:

- Living room, with a TV hall and a dining hall, for larger or smaller groups of residents.
- Areas for work and learning within the living rooms for large groups of residents
- Areas for provision of food, kitchens and dining halls for small groups of residents, within a standard floor.
- Areas for laundry washing and drying for large groups of residents
- Storages for bicycles and garages for large groups of residents
- Sport and recreational areas (open air sports and park areas) for large groups of residents
- Lower presence of common areas:
- Areas for work and learning (libraries, internet halls, lecture halls)
- Workshops for arts (music, drama)
- Cafés, restaurants
- Shopping facilities
- Health care facilities (outpatient clinic, pharmacies)
- Recreational facilities (gyms, billiards halls, fitness clubs)
- Sports facilities (enclosed sports facilities, swimming pools)

## 2. First Type of Student Dormitory Space Organization

The first type of space organization comprises student dormitories where the connection between an entrance and student rooms is direct via vertical and horizontal communications. The common areas are intended for all the dormitory residents using these communications. Figure 1 presents the space organization diagram of this type of student dormitory.

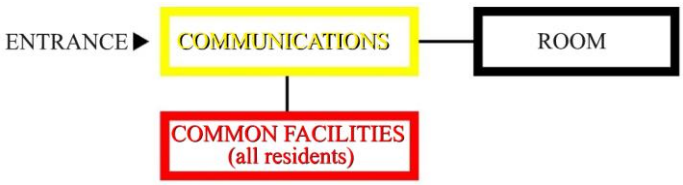



**Fig. 1** 1st type student dormitory organization diagram

### 2.1. Monash University Student Dormitory

**Design Author:** BVN Architecture; **Location:** Monash, Australia;
**Year of construction:** 2012; **Capacity:** 600 students;

**Fig. 2** Monash University Student Dormitory (Source: http://www.archdaily.com/228371/monash-university-student-housing-bvm-architects, Accessed: 2016-09-09)

This five storey building (Fig. 2) consists of four wings which are mutually angled so as to partially form an inner yard (Fig. 3). The main entrance to the building faces the inner yard and it is connected to vertical communications. Each two wings are connected by the space in which vertical communication and common space for all the dormitory residents are organized. The living room with a TV hall is organized on two floors and all the dormitory resident can use it through galleries and communications (Fig. 4). The inner yard is equipped with furniture and paths used for recreation and socialization in the open air. The housing units are located in all four wings on all floors. They are equipped with kitchenettes, bathroom and space for staying and sleeping.

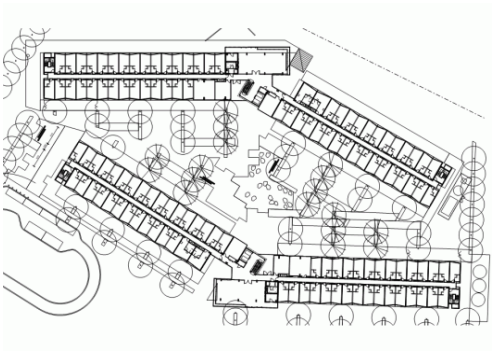


**Fig. 3** Standard floor layout

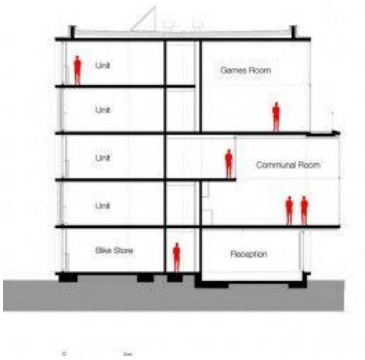



**Fig. 4** Building cross section

(Source: http://www.archdaily.com/228371/monash-university-student-housing-bvm-architects, Accessed: 2016-09-09)

Other examples differ only in terms organization of the housing units which do not contain kitchenettes.

### 2.2. Space organization diagram

In the presented student dormitory, very small number of rooms is intended as a common space. The student dormitory organization concept is very similar to the multi-family dormitory building one. Observed at the level of the entire building (Fig. 5) the only group of common facilities is located either on one or on several floors. This group relies on horizontal communications and it is intended for all the residents of the dormitory. In this way the interaction among the residents is reduced to the minimum, especially because of a large number of housing units which can function independently.

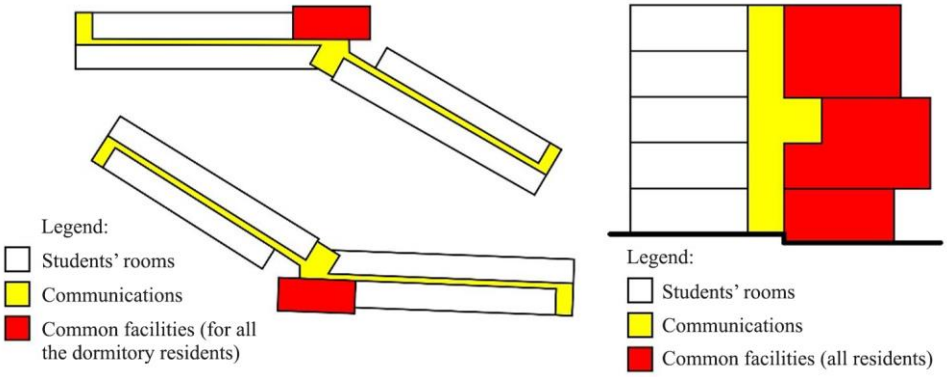



**Fig. 5** Space organization diagram at the level of the standard floor and entire structure

**Table 1** First type of space organization of student dormitories

| No. | Student dormitory name | Location | No. of residents | Year of construction |
|---|---|---|---|---|
| 1 | Grundfos Kollegiet Dormitory | Aarhus, Denmark | 206 | 2012 |
| 2 | State Street Village, Illinois Institute of Technology | Illinois, USA | 367 | 2012 |
| 3 | Monash University Student Dormitory | Monash, Australia | 600 | 2012 |
| 4 | Student Dormitory | Heidelberg, Germany | 194 | 2009 |
| 5 | University Students' Dormitory and Services | Florence, Italy | 250 | 2007 |

Five examples of the 1st type of common space organization are singled out (Table 1). Their characteristic is that they are built for a large number of residents (200 – 600), that they are representative of all countries on European, American and Australian continents and that such organization is a result of economy. The downsides of such organization is that socialization of students is reduced to the minimum, and large groups attend the facilities since they are intended for all the dormitory residents.

## 3. SECOND TYPE OF STUDENT DORMITORY SPACE ORGANIZATION

The second type of space organization comprises student dormitories where the connection between an entrance and student rooms is organized through the common space on the ground level and via vertical and horizontal communications. The common space intended for all the residents of the dormitory are located exclusively on the ground floors. The standard floors are intended solely for dormitory and have no common facilities. Figure 6 provides the organizational scheme of such areas.


**Fig. 6** 2nd type student dormitory organization diagram

### 3.1. Student Residence Paul Lafleur

**Design Author:** Bisson, Associés Architects; **Location:** Saint-Irénée, QC, Canada;
**Year of construction:** 2013; **Capacity:** 60 students;

**Fig. 7** Student Residence Paul Lafleur
(Source: http://www.archdaily.com/441026/student-residence-paul-lafleur-bisson-associes-architects, Accessed: 2016-09-09)

On the ground level of the student dormitory (Fig. 7), there is: a hall with reception and offices, laundry room, kitchen with dining hall and large multifunctional hall (Fig. 8). The first and the second storeys are identical, and solely intended for dormitory. In them, around the central hall, there are 15 double beds, one with its own bathroom, and the others with bathrooms shared by pairs of rooms (Fig. 9).

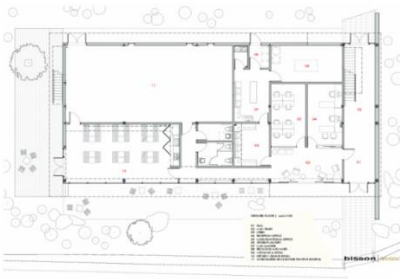


**Fig. 8** Ground floor layout

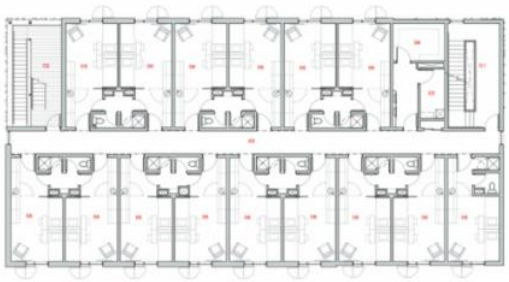


**Fig. 9** First and second floor layout
(Source: http://www.archdaily.com/441026/student-residence-paul-lafleur-bisson-associes-architects, Accessed: 2016-09-09)

Other examples of this type feature only differences in types of common facilities. In some structures, there are bicycle storerooms, shops, and sports facilities in the immediate vicinity. In addition, in some cases there are also musical rooms, cafés, classrooms, workshops, TV halls, sports facilities, living rooms and kitchens which can be used by all the dormitory residents.

### 3.2. Space organization diagram

In the presented student dormitory, there are rooms intended for all the residents. Observed at the level of the entire building (Fig. 10) the common space rooms are located on the ground level. These facilities are connected to other rooms through vertical communications. In the standard floor space organization (Fig. 13) one may observe that the connection of student apartments with vertical communications is realized through corridors, which reduced the interaction between the residents at the floor level to a minimum.

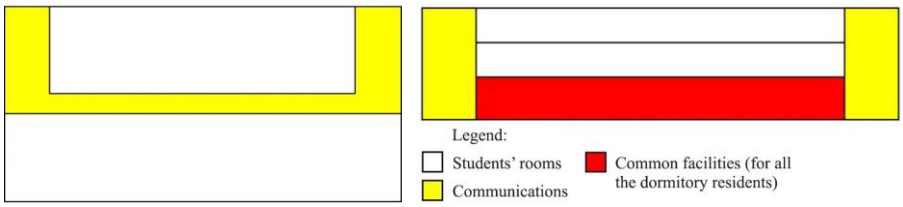



**Fig. 10** Space organization diagram at the level of the standard floor and entire structure

**Table 2** Second type of space organization of student dormitories

| No. | Student dormitory name | Location | No. of residents | Year of construction |
|---|---|---|---|---|
| 1 | Student apartment studios in Paris | Paris, France | 192 | 2012 |
| 2 | Neuenheimer Feld | Heidelberg, Germany | 194 | 2009 |
| 3 | Student Residence Paul Lafleur | Saint-Irénée, Canada | 60 | 2013 |
| 4 | Student Dormitory in Sant Cugat del Vallès | Barcelona, Spain | 56 | 2012 |
| 5 | Student Dormitory in Bordeaux | Bordeaux, France | 114 | 2009 |
| 6 | New residence hall on Gallaudet University in Washington | Washington, USA | 164 | 2012 |
| 7 | Campagneplein dormitory at University Twente | Enschede, Holland | 100 | 2008 |

Seven examples of the second type of common space organization are singled out (Table 2). Their characteristic is that they are built for a small number of residents (50 – 200), that they are representative of all countries on European and American continents and that such organization is a result of economy. The downsides of such organization, as in the previous type, are that socialization of students is reduced to the minimum.

## 4. THIRD TYPE OF STUDENT DORMITORY SPACE ORGANIZATION

The third type of space organization comprises student dormitories where the connection between an entrance and student rooms is organized through the common space on the ground level and via vertical and horizontal communications (Fig. 9). The common space intended for all the residents of the dormitory are located on the ground floors and some of higher floors. The standard floors are intended for dormitory with common facilities on some of the floors. Figure 11 provides the organizational scheme of such areas.

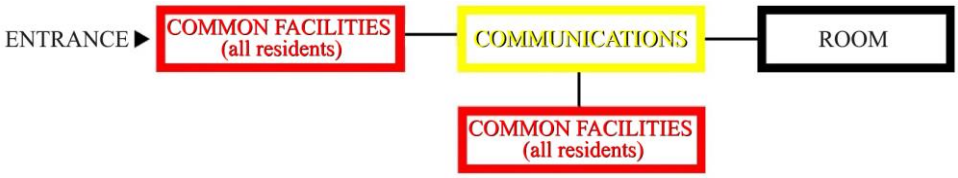



**Fig. 11** 3rd type student dormitory organization diagram

### 4.1. Milestone Student Dormitory

**Design Author:** Josef Weichenberger Architects + Partner, Ernst Hoffmann Ziviltechniker; **Location:** Vienna, Austria; **Year of construction:** 2013; **Capacity:** 420 students;

**Fig. 12** Milestone Student Dormitory
(Source: http://www.archdaily.com/495286/milestone-student-housing-josef-weichenberger-architects-partner-ernst-hoffmann-ziviltechniker/5345e962c07a804338000043-milestone-student-housing-josef-weichenberger-architects-partner-ernst-hoffmann-ziviltechniker-photo, Accessed: 2016-09-09)

At the entrance of the student dormitory (Fig. 12), there is an access plateau with green area and sitting street furniture. From the plateau, one accesses a two-storey hall, which is fully glazed and thus is visually connected with the plateau and envisioned as place for gathering of all dormitory residents. On the ground floor of the dormitory (Fig. 13) immediately next to the entrance, there are common facilities, reception with administration, laundry room, fitness gym and study hall which are directly connected to the hall. The rest of the ground floor is occupied by student apartments. Each of the apartments has a bathroom and kitchenette. The first floor contains an open area of the entry hall and student apartments (Fig. 14).

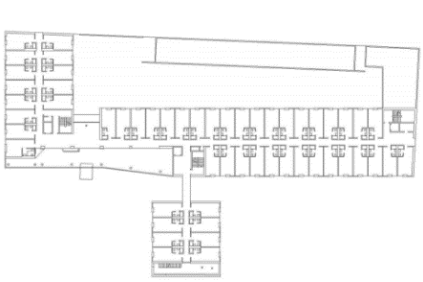


**Fig. 13** Ground floor layout

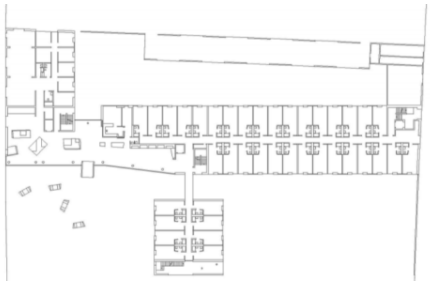


**Fig. 14** First floor layout

(Source: http://www.archdaily.com/495286/milestone-student-housing-josef-weichenberger-architects-partner-ernst-hoffmann-ziviltechniker, Accessed: 2016-09-09)

In other examples of this type of space organization, there are various common facilities. Those are living rooms with kitchens and dining halls, workshops, classrooms, shops, cafés, open air recreation terraces, night club, storerooms for bicycles, garages intended for all the student dormitory residents.

### 4.2. Space organization diagram

In the presented student dormitory, there are common facilities intended for all the residents. Observed at the level of the entire building (Fig.15) the common space rooms are located in the basement, on the ground level and the ultimate floor. These facilities are connected to other rooms through vertical communications. In the standard floor space organization one may observe that the connection of student apartments with vertical communications is realized through the central corridor, which reduced the interaction between the residents at the floor level to a minimum.

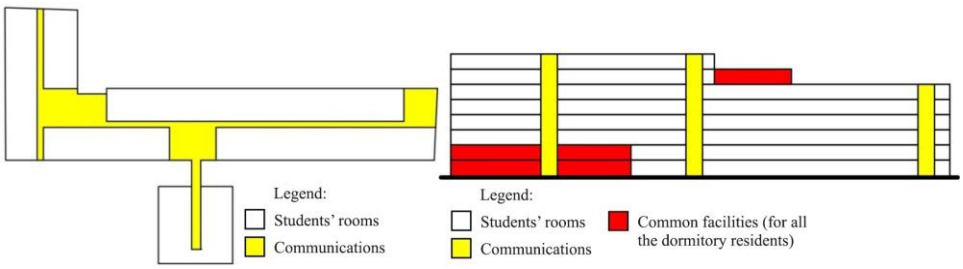



**Fig. 15** Space organization diagram at the level of the standard floor and entire structure

Eleven examples of the third type of common space organization are singled out (Table 3). It is the largest number of a total number of analyzed examples in relation to organization of common facilities area. Their characteristic is that they are built for a various number of residents (50 – 800), that they are representative of all countries on European, American and Australian continents and that such organization is a result of economy. The downside of such organization, as in the previous two types, is that in spite of contemporary tendencies, the social aspect made way for the economic one.

**Table 3** Third type of space organization of student dormitories

| No. | Student dormitory name | Location | No. of residents | Year of construction |
|---|---|---|---|---|
| 1 | Tovværksgrunden | Esbjerg, Denmark | 48 | 2014 |
| 2 | Block1 | Arnhem, Holland | 90 | 2009 |
| 3 | Vivida | Hawthorn, Australia | 405 | 2011 |
| 4 | Milestone Student Dormitory | Vienna, Austria | 420 | 2013 |
| 5 | Trondheim My Space Student Dormitory | Trondheim, Norway | 116 | 2012 |
| 6 | Tietgen Dormitory | Copenhagen, Denmark | 400 | 2007 |
| 7 | St Edward's University New Residence and Dining Hall | Austin Texas, USA | 300 | 2008 |
| 8 | New Residence Hall and Dining Commons for Chicago | Chicago, Illinois, USA | 800 | 2015 |
| 9 | Student Dormitory in Epinay | Epinay, France | 170 | 2008 |
| 10 | Calslaan dormitory at University Twente | Enschede, Holland | 152 | 2007 |
| 11 | Te Puni Village | Wellington, New Zealand | 389 | 2009 |

## 5. FOURTH TYPE OF STUDENT DORMITORY SPACE ORGANIZATION

The fourth type of space organization comprises student dormitories where the connection between an entrance and student rooms is organized through the public space on the ground level and via vertical and horizontal communications. The common space intended for all the residents of the dormitory is located on the ground floors. The standard floors are intended primarily for dormitory with common facilities on each one of the floors intended for the group of residents of that floor. Figure 16 provides the organizational scheme of such areas.

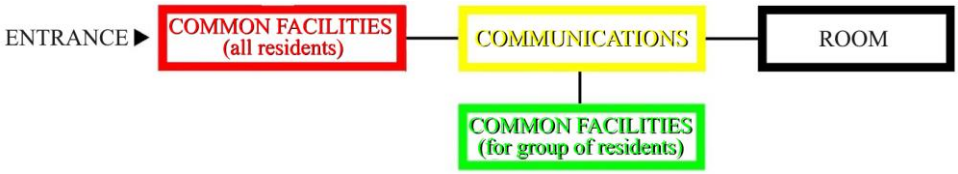



**Fig. 16** 4th type of space organization of student dormitories

### 5.1. Alice Paul & David Kemp Residence Halls

**Design Author:** William Rawn Associates
**Location:** Swarthmore, Pennsylvania, USA
**Year of construction:** 2009; **Capacity:** 150 students

**Fig. 17** Alice Paul & David Kemp Residence Halls
(Source: http://rawnarch.com/sites/default/files/projectfiles/Swarthmore-College-Residence-Halls.pdf, Accessed: 2016-5-08)

At the very entrance to the dormitory, there is a large common area which extends through two floors (Figures 18 and 19). It was conceived as a living room, that is, a place for gathering and socialization of the students living in both the wings of the dormitory. Often, various manifestations take place in it. Glazed partition panels connect the room with the common inner yard extending between two wings of the building, so that in warm season, these two areas work together as a single unit, unifying the exterior and interior. The inner yard also has a barbecue which is a symbol of gathering and socialization.

The building consists of two wing with housing units with the common bathroom. On each floor, there is a living room and a study in each wing.

**Fig. 18** Ground floor layout **Fig. 19** First floor layout
(Source: http://rawnarch.com/sites/default/files/projectfiles/Swarthmore-College-Residence-Halls.pdf, Accessed: 2016-5-08)

In other examples of this type of space organization, there are various common facilities. Those are classrooms, lecture halls, laundries, storerooms for bicycles, indoor sports facilities, gyms, fitness centers, garages, restaurants, outpatient clinics, banks, post offices intended for all the dormitory residents.

### 5.2. Space organization diagram

In the presented student dormitory, there is a large number of common facilities intended for all the residents. Observed at the level of the entire building there are two groups of common space rooms. The first group is the space intended for all the residents of the student dormitory which are located on the ground level and the first floor. These facilities are connected to the second group which is primarily intended for residents of the floors where they are live through vertical and horizontal communications. In the standard floor space organization (Fig. 20) one may observe that the connection of student apartments with vertical communications is realized through the corridors. From the corridors are accessed common living rooms and studies. In this way the designers strived to attain a better socialization among the students, directing them to the direct contact with everyday usage of these rooms.

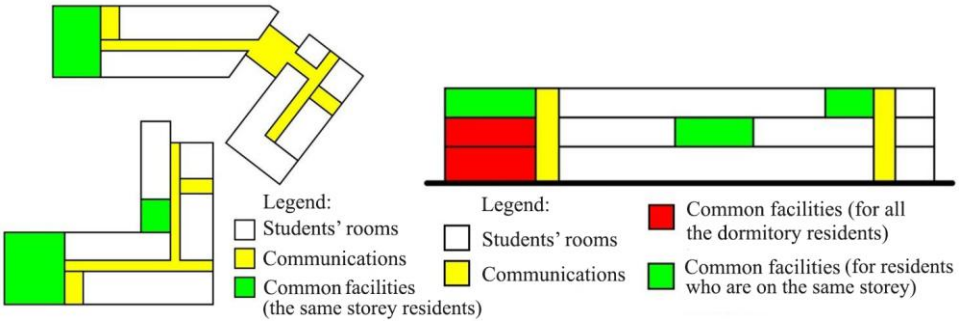



**Fig. 20** Space organization diagram at the level of the standard floor and entire structure

**Table 4** Fourth type of space organization of student dormitories

| No. | Student dormitory name | Location | No. of residents | Year of construction |
|---|---|---|---|---|
| 1 | Alice Paul & David Kemp Residence Halls | Swarthmore, Pennsylvania, USA | 150 | 2009 |
| 2 | Smarties Student Dormitory | Utrecht, Holland | 405 | 2009 |
| 3 | Student Dormitory in Split | Split, Croatia | 600 | 2012 |
| 4 | Massachusetts College of Art and Design's Student Residence Hall | Boston, MA, USA | 493 | 2013 |
| 5 | School Group and Student Dormitory | Paris, France | 152 | 2013 |
| 6 | Roebuck Castle Student Residence, UCD | Dublin, Ireland | 2500 | 2010 |
| 7 | Hillside Hall | Rhode Island, South Kingstown, USA | 429 | 2012 |

Seven examples of the fourth type of common space organization are singled out (Table 4). Their characteristic is that they are built for a large number of residents (150 – 600), with one building designed for 2500 students, which stands out. They are representative of all countries

on European, American and Australian continents and that such organization is a result of sociological reasons irrespective of the economy. Accommodation capacities in such dormitory are reduced in respect to the total area of the buildings. In all cases care was taken to meet psychical, social and personal improvement needs.

## 6. Fifth Type of Student Dormitory Space Organization

The fourth type of space organization comprises student dormitories where the connection between an entrance and student rooms is organized through the public space on the ground level and via vertical and horizontal communications. The common space intended for all the residents of the dormitory is located on the ground floors. The standard floors are intended primarily for dormitory with common facilities on each one of the floors intended for the group of residents of that floor. Figure 21 provides the organizational scheme of such areas.


**Fig. 21** 5th type of space organization of student dormitories

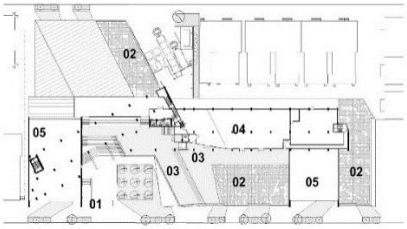
### 6.1. Radian Apartments

**Design Authors:** Erdy McHenry Architecture;
**Location:** Philadelphia, Pennsylvania, USA; **Year of construction:** 2009;
**Capacity:** 500 students;

**Fig. 22** Radian Apartments
(Source: http://www.archdaily.com/158386/radian-apartments-erdy-mchenry-architecture, Accessed: 2016-09-08)

The Radian Apartments building (Fig. 22) consists of two sections: a shopping center and a student dormitory. The shopping center is on the ground floor of the building while the dormitory is erected above it. The student dormitory is accessed via an immense staircase from the street side, which leads to the roof of the shopping center. The shopping center roof is a ground floor of the dormitory, accommodating cafés, a restaurant, spaces for gathering and socialization. A large part of the shopping center roof is transformed into a green roof terrace (Fig. 23), which enriches the space with greenery. Four housing units

are organized into a cluster containing a common living room, kitchen and bathroom. The rooms are connected to horizontal vertical communications via common spaces.



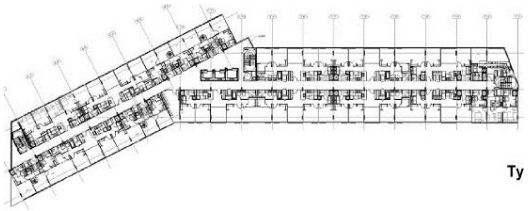




**Fig. 23** Ground floor layout **Fig. 24** Standard floor layout
(Source: http://www.archdaily.com/158386/radian-apartments-erdy-mchenry-architecture, Accessed: 2016-09-08)

In other examples of this type of space organization, there are various common facilities. Those are classrooms, libraries, lecture halls, indoors sports facilities, restaurants, kitchens, cafés, open air terraces. These facilities are intended for all the dormitory residents, and in some cases to the residents of that part of the city where the student dormitory is located.

### 6.2. Space organization diagram

In the presented student dormitory, there is a large number of common facilities. Observed at the level of the entire building (Fig. 25) there are two groups of common space rooms. The first group is the space intended for all the residents of the student dormitory which are located on the ground level. These facilities are through vertical and horizontal communications connected to the second group which is primarily intended for small groups of residents and they are located on all floors. In the standard floor space organization (Fig. 25) one may observe that the connection of student apartments with vertical and horizontal communications is realized through the space for common facilities. Such way of space organization of a student dormitory greatly improves social interaction among the students.

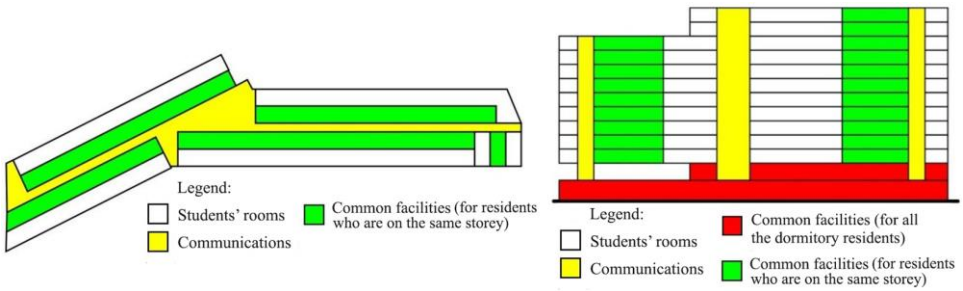



**Fig. 25** Space organization diagram at the level of the standard floor and entire structure

**Table 5** Fifth type of space organization of student dormitories

| No. | Student dormitory name | Location | No. of residents | Year of construction |
|---|---|---|---|---|
| 1 | Radian Apartments | Philadelphia, Pennsylvania, USA | 500 | 2013 |
| 2 | Mitchell and Hilarie Morgan Residence Hall | Philadelphia, USA | 1275 | 2013 |
| 3 | Medaille College Student Dormitory & Commons | Buffalo, New York, USA | 100 | 2012 |
| 4 | New Student Quarters for Boston University | Boston, Massachusetts, USA | 164 | 2011 |
| 5 | Rita Atkinson Residence | San Diego, California, USA | 550 | 2010 |
| 6 | Maison des Etudiants | Geneva, Switzerland | 243 | 2013 |
| 7 | The New School University Center | New York, USA | 600 | 2013 |
| 8 | Studentenheim Molkereistraße | Vienna, Austria | 278 | 2005 |

Eight examples of the 5th type of common space organization are singled out (Table 5). Their characteristic is that they are built for a large number of residents (100 – 600), with one building designed for 1275 students, which stands out. They are representative of the countries on the American continent and such organization is a result of sociological reasons irrespective of the economy. Accommodation capacities in such dormitory are reduced in respect to the total area of the buildings. Care was taken to design common facilities which will allow unimpeded social interaction among the dormitory residents.

## 7. Sixth Type of Student Dormitory Space Organization

The sixth type of space organization comprises student dormitories where the connection between an entrance and student rooms is organized through the common space on the ground level and via vertical and horizontal communications, and through the common space intended for small groups of students on each floor. The common space intended for all residents of the dormitory is located both on the ground level and on some of the higher floors. For small groups of students there are common spaces which are directly connected to the rooms and allow better social interaction among the residents. Such type of organization allows a better social interaction among the residents. Figure 26 provides the organizational scheme of such areas.


**Fig. 26** Sixth type of space organization of student dormitories

### 7.1. Student dormitory in Odense, of Southern Denmark

**Design Authors:** C.F. Møller Architects; **Location:** Odense, Denmark;
**Year of construction:** 2012; **Capacity:** 250 students;

**Fig. 27** Student dormitory in Odense
(Source: http://www.archdaily.com/785806/student-housing-cf-moller, Accessed: 2017-05-02)

The building of the student dormitory (Fig. 27) in Odense, Denmark consists of 3 towers having 14 floors, which are mutually rotated and connected with the core containing common facilities for the residents of that floor. On the ground level of the structure (Figure 28), in the central part, there is an entrance hall with reception. One wing contains a laundry and bicycle parking. The second wing contains rooms for accommodation of persons with special needs, with the common facilities connecting them. The third wing contains the café-bar with the auxiliary rooms, large lecture hall and open air, but covered sitting space. Each

**Fig. 28** Ground floor layout

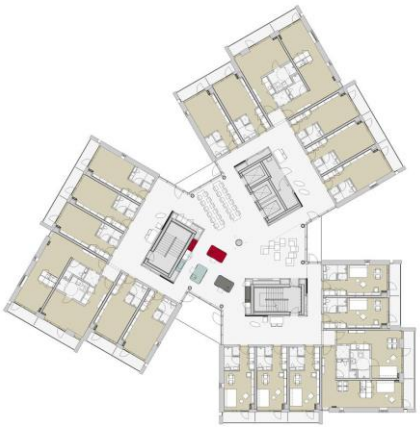


**Fig. 29** Standard floor layout
(Source: http://www.archdaily.com/785806/student-housing-cf-moller, Accessed: 2017-05-02)

floor in the central part contains a living room, dining hall and kitchen for all the residents of that floor. The rooms are grouped around the common facilities intended for the group of students using them. These facilities are located on each floor in each wing and they are next to the vertical communications and central living room. Apart from that, on the ultimate floor there are areas for a musical and dramatic hobby groups, library, gym and passable green terraces which can be used by all the dormitory residents. The park areas around the building are used for recreation and rest. The multifunctional gardens in the immediate vicinity are used to grow plants in the urban environment, which is done by some of the dormitory residents. A diverse variety of facilities are planned in the building, which satisfy psychological, social and personal improvement needs of the students.

In other examples of this type of space organization, there are various common facilities intended for all the dormitory residents and they are located on the ground floor of the building. In addition to living rooms and dining halls, there are also billiard halls, fitness clubs, internet halls, classrooms and workshops. The large majority of examples contain car parking lots.

### 7.2. Space organization diagram

In the presented student dormitory, there is a large number of common facilities. Observed at the level of the entire building (Fig. 30) there are two groups of common space rooms. The first group is the space intended for all the residents of the student dormitory which are located on the ground level and the ultimate floor. These facilities are through vertical communications connected to the second group of spaces which is primarily intended for residents of the floors on which they are located. Figure 30 shows the space organization diagram at the level of the standard floor. The student's rooms are vertically connected by the common facilities intended for the residents who are on the same storey. In this way the designers strived to attain a better socialization among the students, directing them to the direct contact with everyday usage of these rooms.

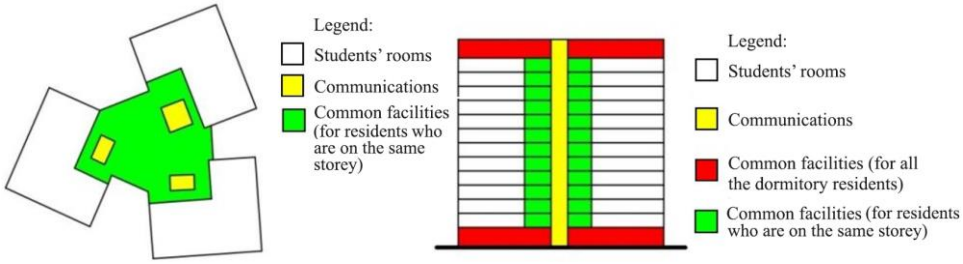



**Fig. 30** Space organization diagram at the level of the standard floor and entire structure

Only four examples of the 6th type of common space organization are singled out (Table 6). Their characteristic is that they are built for varying number of residents (250 – 460). They are typically representative of the countries on the American and European continents and such organization is a result of sociological reasons irrespective of the economy. Care was taken to design common facilities providing unimpeded social interaction among the small groups of residents, but also at the level of the entire building. Such space organization requires higher financing not only of construction but also of operation of such buildings.

**Table 6** Sixth type of space organization of student dormitories

| No. | Student dormitory name | Location | No. of residents | Year of construction |
|---|---|---|---|---|
| 1 | University of Southern Denmark | Odense, Denmark | 250 | 2012 |
| 2 | Worcester Polytechnic Institute – Faraday Hall | Worcester, Massachusetts, USA | 258 | 2014 |
| 3 | Fordham University New Residence Halls | New York, USA | 460 | 2010 |
| 4 | RWU North Campus Residence Hall | Bristol, USA | 350 | 2009 |

## 8. RESULTS AND DISCUSSION

Based on 42 analyzed examples of student dormitories, 3(three) from Australia, 17 (seventeen) from North America and 22 (twenty two) from Europe, a classification of common facilities space organization was created. Classification according to the types as well as their share in percents was given in table 7.

**Table 7** Student dormitory space organization

| Types of student dormitory space organization | I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|
| No. | 5 | 7 | 11 | 7 | 8 | 4 |
| % | 11.9 | 16.6 | 26.2 | 16.6 | 19.1 | 9.6 |

Based on the analysis in the previous examples it was concluded that the common facilities in contemporary student dormitory around the world are present to a varying extent. Most often, those are spaces for staying, socialization and work. Other types of common facilities occur either individually or in a small number of examples.

Modern age contributed that the living conditions in the student dormitories are improving. In a majority of presented cases, the student rooms have their own bathrooms, except in several cases on the territory of the USA. The quality of life of the student dormitory is influenced, in addition to the private space, also by the spaces for common facilities. In all the analyzed buildings, such areas are present to a varying extent. However, more common facilities comprises increased construction costs and less accommodation capacity for the same surface area.

The research conducted in an earlier period (Krasić, 2013) indicated that sociologically best designs of student dormitory space organization comprise existence of spaces for common facilities intended for a small group of students. Such type of building was presented on the space organization diagram as a "6$^{th}$ type". However a small number of buildings meets the criteria which feature different common facilities. One of them is the student dormitory in Odense, Denmark, which, apart from the common spaces organized for small groups of residents, has a variety of facilities for all the residents of the dormitory, which is not typical for other examples. Those are workshops, areas for cultural activities, gym and multifunctional gardens.

Based on 42 analyzed examples, it was concluded that the highest share of the buildings belongs to the Space organization "3$^{rd}$ type". This type comprises the organization layout which comprises the common facilities at the entrance of the dormitory, and which is through

communications connected to the student rooms. At 26.2% this type of space organization of common facilities has the highest presence worldwide in the recent 10 years, regardless of the fact that it does not satisfy the sociological aspect which is very important according to the latest research. The buildings which held the sociological aspect in regard are the fewest. Those are "type 6" structures, which are mostly constructed on the territory of the USA, since this is one of the economically most developed countries.

The explanation for such a trend of organization of common space in newly constructed student dormitories can be found in the balance between the economy and social factors. Even though financial savings are pursued, care is taken to build a space which will allow unimpeded social interaction among the dormitory residents. The second explanation can be found in contemporary information-technological age we live in. The social network phenomenon where social interaction and communication is progressively transferred to virtual environment is characteristic for this age.

## REFERENCES


1. Kostić A., "Arhitektonska organizacija prostora studentskih domova, Arhitektonska organizacija prostora javnih zgrada", Građevinsko - arhitektonski fakultet, Niš, 2012.
2. Cekić N., Vasov M., Bjelić I., "Student housing unit in a floor area without corridors", Facta Universitatis, Series: Architecture and Civil Engineering Vol. 11, No 1, 2013., pp. 27 – 33
3. Anđelković M., Stanković D., "Društveni sadržaji kao kvalitativna komponenta studentskog stanovanja", Monografija Studentski domovi u Srbiji, 1996., pp. 59-77
4. Cekić N., "Razvoj stambene jedinice kod studentskih domova", Univerzitet u Nišu, Građevinsko - arhitektonski fakultet, Niš, 2000.
5. Krasić S., Pejić P., Cvetković R., "Architectonic analysis of common facilities in European student hostels in 21st century", Facta Universitatis, Series: Architecture and Civil Engineering Vol. 11, No 2, 2013, pp. 135 – 146
6. Jovanović A., Pejić P., Djorić – Veljković S., Karamarković J., Djelić M., "Importance of building orientation in determining daylighting quality in student dorm rooms: Physical and simulated daylighting parameters values compared to subjective survey results", Energy and Buildings 77, 2014., pp. 158–170
7. Nešić V., "Psiho-socijalni aspekti uticaja organizacije prostora studentskih jedinica na korisnike, Monografija Studentski domovi u Srbiji", Izdavač, 1996., pp. 155-178
8. Bondinuba F.K., Nimako S.G., Karley N.K., "Developing Student Housing Quality Scale in Higher Institutions of Learning: A Factor Analysis Approach", Urban Studies Research, Vol. 2013, 2013, Article ID 383109, 11 pages, http://dx.doi.org/10.1155/2013/383109
9. Christina B. H. "Affordable housing scheme in Ghana: the role of GREDA", Unpublished Thesis, University of Ghana, Legon, Ghana, 1997.
10. Nimako S.G., Bondinuba F.K., "An empirical evaluation of student accommodation quality in higher education", European Journal of Business and Social Sciences, Vol. 1, no. 12, 2013, pp. 164–177
11. Miller H., "Room and Board Redefined", Trends in Residence Halls, Herman Miller, Inc, 2007 (https://www.hermanmiller.com/content/dam/hermanmiller/documents/research_summaries/wp_Room_and_Board.pdf) (assessed 29.3.2017).
12. La Roche C.R., Flanigan M.A., Copeland P.K., "Student Housing: Trends, Preferences And Needs", Contemporary Issues In Education Research,, Volume 3, Number 10, 2010, pp. 45-50.
13. Cain D., Reynolds G.L., "The Impact of Facilities on Recruitment and Retention of Students. Part I.", Facilities Manager Magazine. Vol. 22, 2006, pp. 54-60.
14. Dessoff A., "Campus Auxiliary Facilities: Universities Stress to Accommodate Student Desires and Future Trends", May-June 2007, pp. 20-23, http://www.ncef.org/content/campus-auxiliary-facilities-universities-strive-accommodate-student-desires-and-future (assessed 29.03.2017).
15. Hill C., "Housing Trends of the 21st Century: Addressing Today's Student Expectations", AIA Convention Address, Boston, May 15, 2008.
16. Ellis,D.: Dorms of the Future, CNNMoney.com, http://money.cnn.com/2006/08/03/pf/college/future_dorms/, accessed 8/31/2006.

# ARHITEKTONSKA ANALIZA ORGANIZACIJE PROSTORA ZA ZAJEDNIČKE SADRŽAJE U SAVREMENIM SVETSKIM STUDENTSKIM DOMOVIMA

*U radu je izvršena analiza organizacije prostora za zajedničke sadržaje u savremenim studentskim domovima. Detaljnom analizom došlo se do 6 tipova organizacije prostora na osnovu 42 primera studentskih domova u svetu, izgrađenih u poslednjih 10 godina. Primeri su uglavnom na tlu Evrope i Severne Amerike u ekonomski najrazvijenijim zemljama. Najzastupljeniji tip organizacije prostora za zajedničke sadržaje je „tip 3", bez obzira što ne zadovoljava sociološki aspekt koji je prema najnovijim istraživanjima veoma bitan. Ovaj tip podrazumeva šemu organizacije u kojoj je na ulazu u dom prostor za zajedničke sadržaje za sve stanare, koji je preko komunikacija povezan sa studentskim sobama. Ovakav trend organizacije prostora zajedničkih sadržaja u novoizgrađenim studentskim domovima može se pronaći u balansu između ekonomskog i socijalnog faktora.*

Ključne reči: *studentski domovi, zajednički sadržaji, ekonomski faktor, socijalni faktor*