

# Psychology of Modern Buildings

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Architects are often blamed for the design of spaces that make it impossible for people to live and work in comfort. Human behavior has a significant impact on the design of physical spaces; this relationship is what is referred to as the psychology in architecture. Psychology can be defined as the study of establishing the relationship between built environments and human beings. Moreover, psychology also looks at how the environment affects the attitude of human beings and what the environment has in terms of making the occupants comfortable. This relationship between psychology and architecture is broad as it covers the various aspects of physical design. Attempts to design buildings that promote human welfare and behavior have been undertaken in recent times with much success. Nevertheless, this has not been without problems because there is a mismatch between the designers and the potential users. This gap arises because the architects do not discuss their project plans with potential users except for private residences. The designers have to use articulation to make their physical spaces design clear, distinct as well as precise. The research paper will look at the effect of the design space on human behavior. The study will also examine the important principles of designing a place; these principles include the color of a room, textures as well as arrangement of spaces among others. Moreover, the paper will also look at various case studies of how designers have tried to create spaces that support people in gyms, workplaces as well as hospitals. The paper will be based on three research questions:

- i. How the design of physical space affects humans?
- ii. What is the relationship between built environment and human behaviors?
- iii. How can we create places to encourage human lifestyle?

## Literature Review

I will examine four case studies about the topic in my literature review. These case studies are John Crank Memorial Garden, Mackenzie Health Sciences Centre of Edmonton, Mission Bay UCSF Hospital and Sidwell Middle School.

A widely accepted assumption is that better designed spaces lead to better lives. The design of physical space affects human behavior in several ways. Kamarulzaman et al. (2011) examine the influence that the design of offices has on employee productivity. In their study, the researchers suggest that physical spaces have a significant impact on the employee's behavior, satisfaction as well as performance that in turn impacts on the productivity. The other aspect of physical design that influences human behavior is layout. For example, the layout of shops, casinos or theme parks will affect the attitude of people that visit the places. The physical layout of buildings controls people's behaviors though it can also create opportunities for evading or side-stepping controls. The two images below show how the layout of physical space can affect human behavior. In both pictures, pedestrians have created their own pathways regardless of the pathways that were put in place by the designers. This can be attributed to the fact people wanted to get to their destinations in a fast but this was not possible due to the physical design hence they resorted to creating their own pathways.

John Crank memorial garden, Brunel University (Source: Lockton 2011)

The other element of design that influences human behavior is color. The effects of color to the behavior of occupants in a building have been examined by various researchers. Although designers do not take into account this aspect, (Kamaruzzaman & Ahmad Zawawi, 2010) note that it is time designers take this aspect seriously. In their research that focused on 50 employees in various Malaysian sectors, the researchers established that there is a positive relationship between the color scheme and productivity. Moreover, the authors go further and suggest that by mixing colors, designers liven up the environment at the workplace.

Lighting of modern buildings has also been found to affect the behavior of users. Lighting takes into account the different aspects of artificial and natural lighting and tries to balance between the two aspects. Charnofsky (2012) found this aspect to be particularly important when it comes to patients in hospitals. In her study, she established that hospitals will try to put patients in rooms according to the condition of the patients. For example, in the field of healthcare, it has been established that patients assigned to sunny rooms recover quickly as compared to others. Charnofsky gives an example of Mackenzie Health Sciences Centre of Edmonton where patients in sunny rooms took an average of

16.9 days to recover as compared to others who took 19.5 days. An example of lighting in a hospital is the pictures show below; from the picture, one can gather that the designers have tried to balance artificial and natural lighting.

(Mission Bay UCSF Hospital)

(Children's Hospital in Colorado)

Cummings (2012) also found out that there is a significant relationship between built environments and human behavior. She uses a case study of Sidwell Middle School that is perfectly designed to meet the needs of young learners. The images below show the environment around the school. In her study, she notes that such an environment will not only affect the performance of the learners but also tier overall results.

View of the Exterior Façade of Sidwell Friends Middle School; "Sidwell Friends Middle School"; Isiah King, 14 June 2009; flickr.com

View of the Interior of Sidwell Friends Middle School; "Sidwell Friends Middle School"; Isiah King, 14 June 2009; flickr.com.

The literature review shows that indeed, the design of physical spaces affects human behaviour in various ways. These effects are discussed in detail in the conclusion part of this paper.

### Methodology

The research paper uses a case study approach to look at the effects of built environment on human behaviour. Case studies are the preferred approach when 'how' and 'why' questions have to be answered; the question to be answered in this case is how built environments affect human behaviour. From the literature review, there are several studies that can be used to establish the effects that built environment has on human behaviour. The case studies that are compared in this research paper include the John Crank memorial garden in Brunel University, the Mackenzie Health Sciences Centre of Edmonton, Mission Bay UCSF Hospital and Sidwell Middle School. These cases have been examined in detail in the literature review section of the research paper. The table below summarizes the effects of the built environment on human behaviour.

### Case

#### Effect on Human Behaviour

##### John Crank Memorial Garden

Pedestrians formed their own footpath due to poor planning by the designers (Lockton, 2011).

##### Mackenzie Health Sciences Centre of Edmonton

Patients in sunny rooms recovered faster as compared to other in dimly lit rooms (Charnofsky 2012).

##### Mission Bay UCSF Hospital

The lighting of the children's room affected their behaviour.

##### Sidwell Middle School

The buildings in the school are designed in such a way that the children's performance (Cummings, 2012).

### Conclusion

#### How the design of physical space affects humans?

From the literature review conducted on this research paper, it can be established that the design of physical space has several effects on humans. The employees at the workplace, students in schools, patients in a hospital as well as pedestrians are all affected by the design of the physical space around them. For example, the employees will be affected by the design of the office space in terms of texture and color that will affect their overall productivity. Cooper, Reimann and Cronin (2011) note that most physical designs will affect human behavior and architecture often tries to design spaces that will have a minimal impact on humans.

#### What is the relationship between built environment and human behaviors?

The literature review also established that there are several relationships between the built environment and human behavior. For example, if the built environment obstructs the movement of people around, then humans will always try to get easier routes to get to the built environment. Lin, Sun and Li (2014) suggest that the built environment has a significant impact on the walking behavior of humans. The researchers further note that "a built environment is labeled as 'pedestrian oriented' if it has relatively high density, a mixture of land uses, a street network with high connectivity as well as desirable aesthetic qualities" (52).

How can we create places to encourage human lifestyle?

Having established that there is indeed a relationship between built environments and human behavior, the next aspects that designers have to focus on is creating physical places that encourage human lifestyle. To do this, designers have to create environments that encourage outdoor activities. The physical environment influences outdoor activities to a certain degree and designers should take this into account when they are designing places. The other activities that will encourage human lifestyle are physical activities that are also influenced by the presence of public spaces. Such activities should be taken into account when designing physical places and provide spaces for them to enhance human lifestyle (Gehl, 2011). Designers should also design environments that encourage the protection of the natural environment. People should be encouraged to use more green energy but this will largely depend on the physical space around them (Corbusier, 2014).

#### Summary and Recommendation

Architects continue to realize that their designs have significant effects of human behavior. The physical designs will affect the movement of people, their productivity as well as walking. The designers should therefore take into account the effects of their designs on the human behavior and ensure that the designs do not impact on humans negatively. This can be done by collaborating with the potential users of the physical space to be designed to ensure that their input is taken into consideration.

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