ACADEMIA International Journal for Social Sciences
Volume 4, Issue 4, 2025 ISSN-L (Online): 3006-6638

A Report on the Internship Experience with Arch Vision Plus, Focusing on Planning and Developing High-Rise a Residential Housing Schemes in Line with Environmental Aspects and Modern Architectural Trends

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Received: 06-10-2025 **Revised:** 03-11-2025 **Accepted:** 20-11-2025 **Published:** 06-12-2025

ABSTRACT

This paper presents an overview of an internship undertaken at Arch Vision Plus, with a particular focus on the planning and development of high-rise and residential housing schemes. The internship experience provided an opportunity to explore the intersection of contemporary architectural design and sustainable planning strategies within the context of rapidly urbanizing environments. Emphasis was placed on addressing environmental considerations, including energy efficiency, climate responsiveness, and the integration of green spaces, as essential components of resilient and livable urban housing developments. Participation in project design reviews, site planning exercises, and collaborative design discussions offered valuable insights into the professional processes that inform architectural practice. The internship further highlighted the role of innovative design approaches in meeting the increasing demands of urban living while simultaneously mitigating environmental impacts. Key learning outcomes included the application of academic knowledge to the challenges around the world. The development of professional design skills, and the recognition of the importance of interdisciplinary collaboration in shaping sustainable housing solutions. Overall, the internship experience provided a practical framework for understanding how architectural practices can balance modern trends in high-rise and residential housing with ecological and social responsibilities. The study underscores the relevance of integrating sustainable principles into contemporary architectural practice and contributes to the broader discourse on environmentally responsive urban development.

Keywords: *Education, Professional Learning and Practice, Architectural Internship, Architecture Design, High-Rise*

INTRODUCTION

Internship programs are of great importance because they ensure the professional preparation of students. Internships provide practical opportunities to increase true understanding of the knowledge and future prospects of working conditions in that profession. "*An internship is a unique educational program that aims to integrate study with planned and performance related experience"* (Parveen and Mirza, 2012). Getting an opportunity to do an internship is every student's dream. Generally, students do get such opportunities but doing an internship with a desired organization depends on many factors. An internship lets the student learn through fulfilling the responsibilities and duties. Also, as most internship programs are achievement oriented, the learning ratio is always very high. Based on that, successful completion of assignments demonstrates growth and a sense of responsibility in a student (Gault et al., 2000). Internees and supervisors contribute in many ways to the project, however, the aim is always to train the internee to prepare him or her to meet future demands, like team working, leadership, research and project-based learning (Rashid, 2012). Furthermore, the combination of theory with practice is an essential constituent of landscape and architecture student's education. The proliferation of landscape and architecture courses in many other countries involves internships in order to develop students' management competencies, such as evaluations, management and cost estimation (Walo, 2000) (Burton & Salama, 2023).

Moreover, combining theoretical knowledge with practice is an essential component of architectural education. The proliferation of landscape and architecture curriculum worldwide includes mandatory internships to help students develop competencies in evaluation, management, and cost estimation (Walo, 2000). More recent studies emphasize that internships are indispensable in architecture because they substitute technical competence, critical thinking, and adaptability to business and manufacturing standards (Khalid & Ahmed, 2021; Malik, 2022).

Internship experiences also enhance students' abilities to apply academic frameworks to real-world contexts. Recent research climaxes that architectural internships enable students to transition theoretical knowledge into actual design and construction workflows, strengthening skills such as technical drawing, model making, site analysis, and sustainable design practices (Shah & Javed, 2023). Besides, architectural education increasingly emphasizes sustainability incorporating building design practices, and interdisciplinary collaboration in curriculum which produce environmentally responsible professionals (Hussain et al., 2024).

Internship experiences also enhance students' abilities to apply academic frameworks to real-world contexts. Architectural internships facilitate the transition from theoretical knowledge to actual workflows, strengthening skills such as technical drawing, model making, site analysis, and sustainable design practices (Williams, 2024). Furthermore, architectural education is increasingly embedding sustainability building practices, design, and interdisciplinary collaboration environmentally responsible professionals. Studies show a growing integration of pedagogies into architectural curriculum. (Burton & Salama, 2023)

I was lucky enough to get such an opportunity with Arch vision plus on their Sumya Palm Resort & Farm house and Burj Harmain projects in Karachi, Pakistan. The internship lasted for seventy-five days. Arch vision plus is renowned for its professional and well-trained staff. The staff includes 10 architects, 8 structure engineers and 30 draftsmen who are qualified users of AutoCAD, Photoshop and 3D Max. The buildings they have designed are not only in Pakistan but also in the United Arab Emirates, UAE. This report is an explanation of my personal and professional gains. The theme of the internship was: "Landscape

and architectural planning with new thinking, built for the better environment".

The Sumya palm resort and housing project

The Sumya palm resort and housing project is a 252 Acre residential and commercial project. The project site is located at about 100KM distance from Karachi city. It is surrounded by three major highways; Gharo Katee Buder Road, Costal highway and Circular Road. The project has 252 plots for 500 Sq. yards houses, 321 plots for1000 Sq. yards houses, 4 plots for 2000Sq. yards and 16 plots for 4000 Sq. yards houses. A total of 108762 Sq. yards or 9% of the overall project land is to be used for public buildings, landscape and mosque. For the internal movement inside the Sumya palm resort, i.e. roads and streets, a total of 26% of the land has been reserved. A centrally located lake has been divided into four sections, two circular water bodies in the middle of the map and a larger star fish shaped water body at the far end of the landscape. All the three sub-lakes are interconnected via a 50 feet canal. 166142 Sq. yards or 13 % of the total area will be used for a water park near the main entrance. Opposite to the 4000 Sq. yards plots, some empty land has been reserved for future developments (Figure 1).

Burj Harmain project

Situated on main Claremont Road, the Burj Harmain project is a relatively smaller project and is spread over 10 Acre of land. The site is located inside Karachi city, near DHA housing scheme. It is totally a housing project, comprising of four 18 story buildings with different numbers and sizes of flats. All bedrooms in all flats are located in the corners in order to provide full exterior views and airy environment throughout the day.

The four blocks have the following sizes:

Block 1) 10536 Sq. yards

Block 2) 12752 Sq. yards

Block 3) 25410 Sq. yards

Block 4) 12648 Sq. yards

In the project, landscape has been designed with special attention. A club house, mosque, reception area, swimming pool, playing grounds, walking tracks and parking areas are all included in this project, (Figure 2).

Figure 1: The Sumya palm resort and farm house project

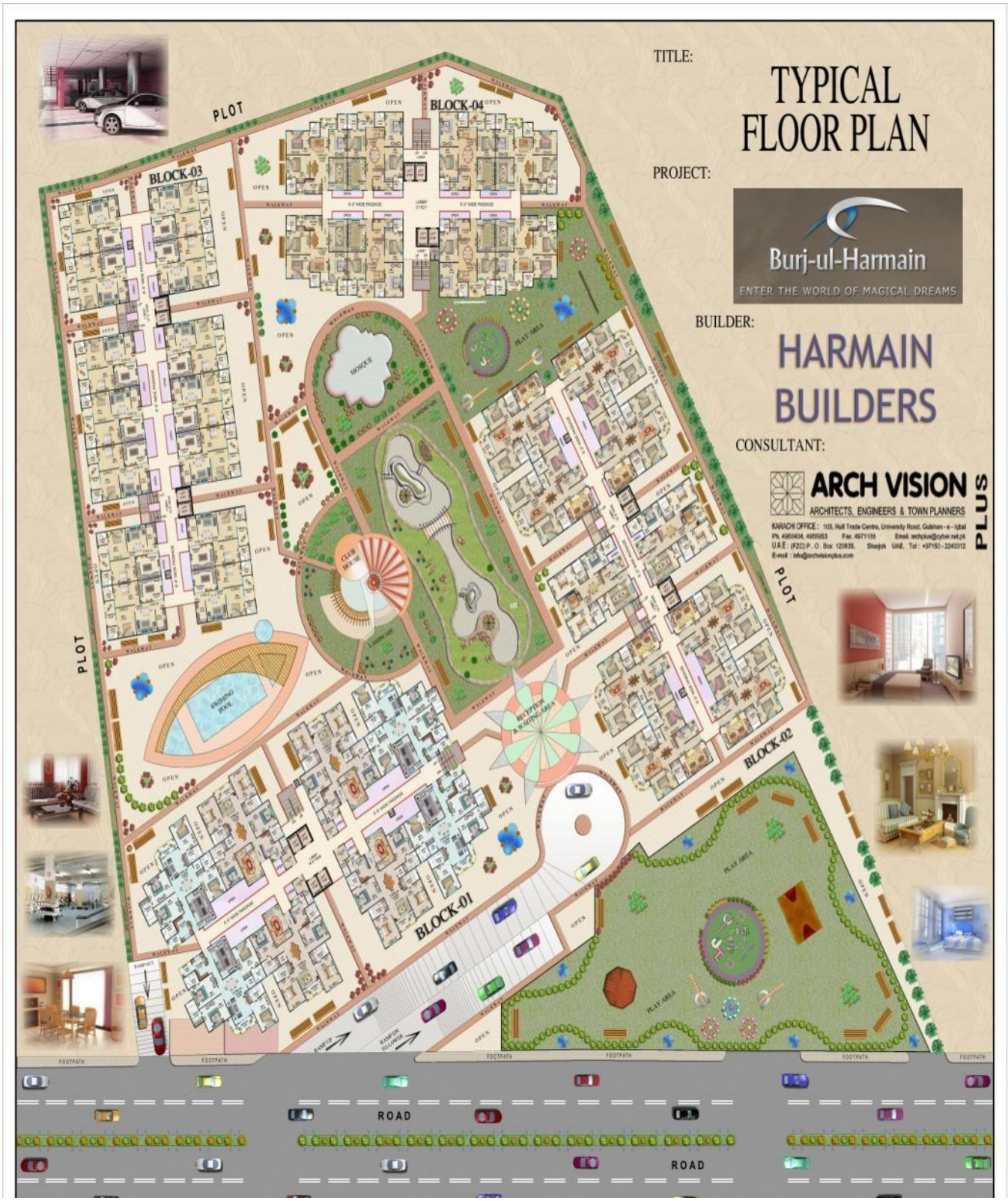

Figure 2: Burj Harmain

Planning And Designing of Burj Harmain

The project was designed for our clients, Harmain builders, Karachi. The buildings were designed to be built in R.C.C frame structures and block masonry. Other materials, like, marble skirting, wooden deck, timber and glass doors with aluminum frames were also planned to be used in the construction.Similar to other such housing buildings, the reception is next to the main entrance, not far from the road. The unique cladding also provides the buildings generous fenestration, which looks very attractive from outside and more spacious from inside. Roof pergolas in elliptical shape are designed in each complex to enhance the overall elegancy of the structures. Vertical high mass in the form of walls is used at the rooftop, between two towers to make one cluster for elevation treatment.

The project consists of four blocks. On each floor of the first block, eight fla ts have been designed. The first block has two different categories of flats, type A and type A 1, parallel to each other and fully equipped with all the amenities of human life (Figure 3). Two distantly located stairs and two pairs of elevators, opposite to each other at the center of the building serve in reaching each flat. Four rooms with attached bath rooms, a lounge with terrace, a drawing room and a kitchen have been designed in each flat. However, both the categories of flats have been designed according to different life styles. Special attention has been paid in accordance to the size of the flats to let more daylight in and to keep them properly ventilated. The passageway between flats is six feet wide.

Figure 3

In the second block, category B and B1 flats have been designed. Each floor in this block accommodates eight category B and two category B1 flats. All of these flats have three rooms with attached bathrooms, lounge, drawing room and kitchen.

Similar to block one, two distantly located stairs and two pairs of elevators, opposite to each other at the center of the building serve in reaching each flat (Figure 4). In general, these flats are relatively smaller than the type A and type A1 flats of the first block.

Figure 4

A very attractive and beautifully designed, circular shaped reception counter that also serves as a waiting and meeting point has been designed at the main entrance of the building. The reception is linked to the first two blocks through walkways.

In the third block, each floor has fourteen category D flats (Figure 5). These flats are designed to have two bed rooms with attached bathrooms, lounge, kitchen and a drawing room.

In this block, all the flats are of the same design in which the two bed rooms are linked to the terrace (Figure 6). Unlike the first two blocks, the pairs of elevators are not located at the same place as they have bee separated by an equal distance across the building, keeping in mind the extra number of residents. The stairs are located opposite to each pair of elevators. The fourth block has been designed to have three bedrooms with attached bathrooms, a lounge, kitchen and a terrace.

Only eight category C flats have been designed on each floor of this block. The elevators are located at the Centre of the building; however they are separated by a distance of 21 feet. The stairs are located at the backside of the elevators. The distinctive feature of this block is its much wider lobby (21'X21') compared to all other blocks.

In planning and designing this project, special attention has been paid to include good looking green spaces and a semicircular shaped club house inside the green space. The green spaces are centrally located in each block and maintained in a very professional way. Some parts of the green space have been utilized as a playground for the children of the residents. An eye shaped swimming pool has been designed between block 1 and 3. A mosque has also been designed at equal distance to each block. Along the edges of the green space, a walk way has been built to be used for jogging and running.

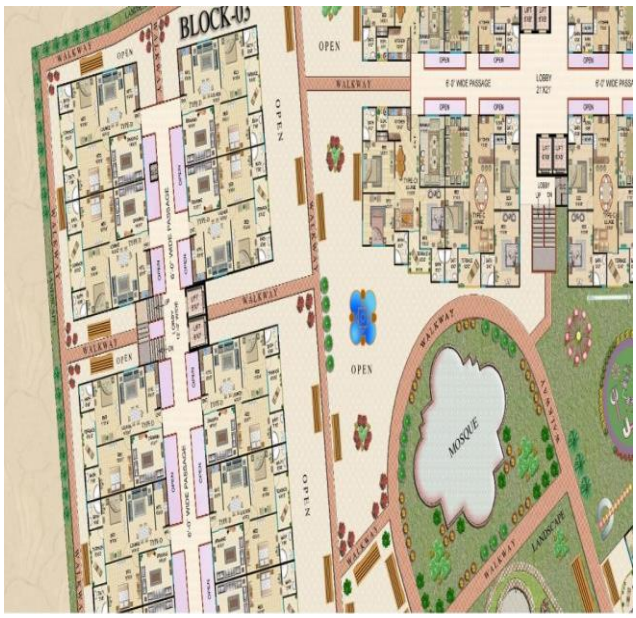

Figure 5

Figure 6

PLANNING AND DESIGNING OF THE SUMYA PALM RESORT AND FARM HOUSE PROJECT

This project was designed for our clients, Hiba builders, Karachi. The buildings were designed to be built in R.C.C frame structures and block masonry. Other materials, like, marble skirting, wooden deck, timber and glass doors with aluminum frames was also planned to be order used in the construction. The area specified for the project is rectangular and the structures within the project are strictly of geometrical frame layouts. The plots have been distributed in a very logical way to ensure the construction of houses in the form of clusters, which are easy for administration purposes.

Entrance

The main entrance is very attractive in design due to its landscape and monuments (Figure 7). It has been designed in D shape with a circular office at the centre. The entrance and the exit points to the project are located on left- and right-hand sides respectively. Water ponds and the usage of blue glass in the designing make a nice combination. The front of the building is specified for visitors' car parking.

Figure 7

Water Park

After we enter trough the main entrance, there is a big (166142 Sq. yards) water park. The water park is placed in a separate corner of the project so that the residents are not disturbed by the large number of residents who want to swim, especially in summer. The park is highly visible as it is located along two major high ways and its attractiveness will surely guarantee more business. The water park is a nice family recreational point as it provides all the world class features of a family water park. The proposed materials for the water park are wood, masonry, coated and non-coated non-corrosive or combinations of these materials (Yazdani et al., 1997). Next to the water park, 20 commercial plots are reserved for banks, shops and restaurants. Behind the commercial plots, a large empty plot is reserved for the expansion of the water park or the construction of a playground in the future. A water channel, emanating from the lake at the other end of the project runs parallel to two roads in the Centre of the project, leading to the main entrance. The width of the roads on each side of the channel is 50 feet.

Figure 8

Residential Area

The first residential plots start after passing the water park. These are the 1000 Sq. yards plots in two rectangular and one vertical blocks on both sides of the road. These blocks are separated by 40 feet wide roads. Next to these blocks, two circular shaped blocks of the 500 Sq. yards plots have been designed. Inside these circles, lakes surrounded by green landscape have been designed in order to reduce the environmental impact of the closely attached houses. The two lakes on both the sides of the road and the

long water channel are all inter-connected. A bridge will be built over the connection point of these three water bodies to make way for the road.

The project is dominated by a large circular residential area which comes next to the two small circles of houses. Two categories of houses (1000 Sq. yards and 500 Sq. yards) have been planned in this circle. The inner side of the circle has been reserved for the construction of a star fish shaped water body which will be linked to the other water bodies through a water channel.

Along the sides of the fins of the star fish, 1000 Sq. yards houses have been planned. However, the inner sides of two fins have been reserved for the construction of club houses or indoor sports halls for games like table tennis, billiard and snooker etc. The club house is further connected to a boat club where the residents of the town can enjoy rowing across the vast lakes and the channel. Like in many other places in the project, special attention has been paid to maintain green landscapes on the inner edges of the lake. Since this is a large residential section of the project, a network of 40 feet wide road has been planned across this huge circle of houses.

This plan visually looks high quality as it uses geometrical combinations,e.g. Squares and circles according to all planning rules. The landscape architectural elements used are of the best quality. We can see that there is a constant repetition of elements used by formal or informal land conditions or natural conditions. This project is a theme between nature and the intellectual work of man.

Figure 9

DISCUSSION

Practical training is an important factor of the developmental process of a society. In a globalized world where a fierce competition is intensifying each day, industrial building and planning sector plays one of the most important roles in the sustainability of a nation's development. The capability of practically training landscape planners and architects is therefore very crucial for such developments (Okay and Sahin, 2010). An important indicator of a country's development is the quality of its work force. Generally, only developed countries have educated the human resources required for their national development (Kepenekci, 2007). The increasing competitive labor force and their adaptability to the rapidly developing markets is important for reducing the unemployment ratios of a society. Building industrial corporations also in courage practical and updated knowledge, skills and qualifications to stay in line with the changing trends in their industrial growth (Binici and Arı, 2004). Hauck et al. (2000) proved though their research that the group of students who did internships performed better than all those students who did not do any internships. Many students found their work fulfilling and beneficial with regards to career growth and grasping of the concepts presented in future coursework. In many parts of the world, structured internships are becoming an essential part of the academic activities

The practical experience gained from such programs plays an important role in the student's success in practical life. The benefits are normally in the following ways as explained by Flesher et al. (1996):

1) Exposure to techniques and problems not encountered in a classroom.
2) Better understanding of a business climate.
3) Opportunity to evaluate and improve classroom experiences.
4) Increased motivation.
5) Opportunities for permanent placement with the sponsoring company.
6) Clarifying career choices.

Increasing student's self esteem

During my own experience, I learnt the practical use of participation, geometry in building designing as well as the underlying logic, philosophy and methods of drawing and model making which broadened my vision and knowledge. This enabled me to draw better high-rise complexes, sustainable in terms of environmental, economic and social issues. Most of my work included sketching, drawing, drafting and the actual on-site fabrication according to the local traditional space usage. Most of my work also included learning the right way of using the permanent elements, e.g. cement and concrete. Mr. Akbar Jamil was kind enough in supervising my training process. He was very determined and devoted to his work. The group of architects working there was unique as they were very much focused on their objectives. The goal was not only to maintain a local architectural design but also to revive and improve many common features.

In the last 15 years, significant progress has been made in design science. Improved understanding of the engineering design process, its stages, and the use of computer tools to support both the conceptual and detailed design stages. The synergistic impact of these three factors potentially mean a paradigm change in the area of structural design and the emergence of a new generation of structural design processes and computer support tools (Pullmann et al., 2003).

Urban task force in Hong Kong (1999, 2002) emphasizing on the importance of planning states that

"Development plans should become simpler, more flexible and strategic documents, closely integrated with other local strategies, and avoiding the inclusion of detailed site-level policies;"

Planning methods from the past may not be suitable for planning in the present and future. For a building designer, ventilation or cross ventilation is a key issue as it directly affects the health of the occupants. Due to the rising fuel costs and consequently higher electricity prices, minimum dependence or expenditures on fuel and electricity is very important (Leach, 1987). For the long-term planning of the project, durable design, using quality construction material and maintenance are required. Considering the change in social needs, economic issues and environmental protection, modern buildings need to address all such issues (Ribeiro and Marques, 2002). Planning is a highly technical profession and planners try to mediate between many governmental authorities and the investors by their architectural designs. And therefore, it is obvious that planning is always under the influence of supremacy. As a mediator, planners must maintain a neutral position in settling disputes and discourses between various factors involved in the planning process (Allmendinger, 2002). Planning is also a socioeconomic practice, involving interaction with a various factors and different means of negotiation strategies. When challenges or problems come across, the method of institutional governance remains the same. The top down, coherent and organized planning methods no longer fit in with the social related planning practice of today and is now being replaced with a more

democratic and normative approach, stimulating public and institutional participation (Albrechts et al., 2001). As a result of globalization, not only the society has transformed but it has also affected the means of governance by the state authorities. It has now become a core issue whether the government institutional structure in the planning framework is proficient enough for the current issues in development and forecast. Latest approaches in governance are therefore necessary in order to adjust to these innovations (Albrechts et al., 2001).

In a residential project, the step wise satisfaction of the client is the responsibility of the designing company. The designing company needs to explain and clarify all the drawings and technical features of the designed project. Therefore, it is essential for such a company to stay updated with modern trends and knowledge in this field (Pahl et al., 1996). Successful decision making at executive level determines the fate of a building designing company. Similarly, both interior and exterior designing of a project is crucial for the overall acceptability of the development (March and Heath, 1994).

Planning, and in this case spatial planning, should be open to innovation and adapt to present situations. This practice is mostly driven by a combination of construction and economic factors. Both the projects are designed for people of different life styles and socio-economic Backgrounds; however, we can still see houses or flats for common or not very rich residents. In the Burj Harmain project, the high-rise buildings are specifically designed for this purpose. The 18 story buildings provide state of the art architectural designs at an affordable price. Its location in the heart of Karachi city makes it a prime choice for the working class. The landscape and the swimming pool makes this project more attractive compared to all other similar projects in the area.

CONCLUSION

As internship provides an opportunity to a student to practice their academic learning, the outcome of such an experience is always beneficial for the future of the student. In the developing countries, especially South Asia, where increasing population is a major issue, the scope of high-rise buildings is very prominent. However, the success of such buildings depends on the availability of investors, legislations, access to resources and above all, a sustainable building design. Good economic feasibility reports reflect the success of such heavy investment projects. Facades must be distinct and able to achieve a good balance between form and economic cost. The construction materials should suit the efficiency and the competency of the local Market.

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