

## **THE BRITISH COUNCIL LAHORE'S GREEN AND LEED CERTIFIED LIBRARY BUILDING**

### **Designing the library**

Raza Ali Dada was at his architectural practice in Lahore, reminiscing how he had acquired the British Council library project in June 2014. Raza was the lead architect at one of Pakistan's most successful and celebrated architectural firms, Nayyar Ali Dada & Associates (NADA). The British Council's project managers had run a commercial tender and NADA had come out top when assessed against a range of rigorous criteria, including price. At the pre-qualifying stage, architectural firms had not been invited to do any actual design work and were evaluated on their experience and to-date portfolio. The LEED (Leadership in Energy & Environmental Design) accreditation was internally agreed as an outcome for the project from the start, and NADA understood this expectation better than most peer firms.

The design process thereafter had been detailed and client interaction was frequent. The client's expectations had been straightforward. The British Council required a new-age library building aimed at a younger demographic and had requested the highest compliance to international building codes. The major requirement was that the job had to be done well. Thereafter, the architect had full freedom to translate these needs into a modern building, able to house a modern library.

In January 2016, Raza Ali Dada's firm proposed a design with a glass facade. The client requirements on adherence to international standards and building codes meant local specs for the proposed glass facade would be inadequate. In fact, the Council wanted high quality laminated safety glass with extra fire protection on top of the energy efficient double-glazing suggested by the architects. The cost of imported, high-end glass from international suppliers such as Saint Gobain that fulfilled all clients' requirements exceeded the estimated cost of the entire project. For the client safety as a feature was non-negotiable. Raza was worried about the impact of the decision on the project's financial viability. He knew he had to find a solution acceptable to the client soon as the unresolved matter was affecting project timelines.

Some of the possible ways to resolve the matter were to either increase the budget or lower specifications. Since the client had budgetary constraints, it was unlikely that they would have been willing to subscribe to a significant increase in the project cost. The other option was to keep the design feature but bring it in line with safety glass specifications used for the British Council's main building. The main building had been designed and constructed much earlier and given the evolving safety standards, the question was if the client would be willing to go back to older standards in a new building?

## **Nayyar Ali Dada & Associates**

Nayyar Ali Dada & Associates (NADA) is one of Pakistan's leading architectural firms, named after the owner-founder who happens to be amongst the most famous architects of country. Established by Dada in 1978, the firm is credited for the design of several iconic structures. These include the Grand Jamia Mosque in Karachi Bahria Town, the Alhamra Arts Council, Lahore (for which it won the Agha Khan Award for Architecture), BCCI Bank building in Colombo (Sri Lanka), the Gaddafi cricket Stadium in Lahore, Serena Hotel in Islamabad and the Shaukat Khanum Memorial Cancer Hospital & Research Centre in Lahore. Dada has been Awarded Pride of Performance by the Government of Pakistan in 1992 and remains at the helm of a successful architectural practice that has employed and groomed many architects, designers, interior designers and landscape architects.

Raza, Nayyar Ali Dada's son, trained as an architect at the National College of Arts (NCA) in Lahore. He later joined his father's architectural firm for two years after his bachelors from NCA before heading to the Pratt Institute in New York for his masters in Architecture. He rejoined his father in running the firm in 2008 after working at SBLM Architects in New York for eight years. Passionate about sustainable design and responsible urban regeneration, Raza considers himself to be a conservationist and an activist. He was a board member of the Lahore Conservation Society, a social society movement with the aim to 'undertake and promote programs necessary for the protection, conservation, and improvement of the physical environment of Lahore'. At NADA, he spearheaded several of the firm's lead projects.

At the time of this particular project NADA had several 'green' projects in its portfolio, complimented by Raza's personal ethos on sustainability. Further, given the global push to 'go-green', LEED certification was a necessary benchmark for Pakistani companies, to compete in global projects and achieve recognition.

NADA, as a progressive company wanted to lead the green adoption wave in Pakistan by trying to educate their clients about benefits of adopting international construction standards and sustainable architectural design. NADA's pitch towards adoption of world-class building standards and green building practices had paid off during the 2010 Serena Hotel Islamabad project. The luxury five-star hotel (considered to be one of the world's leading hotels) was built across fourteen acres of prime land in the capital city. The hotel was recognized as one representing the heritage of the sub-continent and the Islamic idioms of design. The language of the building design was innovative and contemporary and provided a layout that addressed security concerns, provided breathtaking views of the surrounding hills, included a roof garden, and used local resources, materials and labor. The local artisans (World Architecture News.com, 2018) for example, had made all light fittings, the marble flooring, chandeliers and artwork. Due to the adoption of world class building standards in construction, facilities design and support services, the space in the high-end Serena Business Complex at Serena Hotel, Islamabad was snapped up by multinational companies within days of launch.

## **The Client**

The British Council is United Kingdom's international organization for cultural relations and educational opportunities. With a presence in over 100 countries across the world and operations in fields as diverse as arts and culture, English language, education and civil society, the aim of

the British Council is to bring high-quality English language materials to learner and teachers. It offers more than three million UK examinations worldwide. Operations include dissemination of information regarding scholarships, fellowships and other learning opportunities in the UK. The transformation of local educational systems, to be more inclusive and open, is also part of British council's Portfolio. Their work in the arts has helped increase audiences for international artwork. The Council also supports the development of skills and policy in the creative industry.

Globally, the Council has also developed an environmental policy to assess and reduce the impact of their activities on the environment. This includes minimizing consumption of natural resources, particularly nonrenewable, including energy and water usage. The policy extends to their buildings, processes and transportation. It also includes the reduction of waste material and implements re-use or recycling initiatives wherever possible. The Council views itself as a globally responsible operation mindful of its impact upon the communities and locations it is situated within. The British Council has had a presence in Pakistan since 1948 and has offices in all four provinces (Punjab, Sindh, Baluchistan and Khyber-Pakhtunkhwa). In Pakistan, the British council's repertoire includes working towards improving educational opportunities, giving a voice to young people, developing employable skills and strengthening links between universities in Pakistan and the UK. The services provided by the British council also include oversight of IELTS and Cambridge exams as well as multiple other initiatives all over the country to learn the English language (PEELI). However, things changed post 9/11 when security within Pakistan became a real concern for foreign presence in the country. As per British Council International policy its operations in Pakistan considerably reduced, for example: all library services were shut down by British Council immediately post 9/11. The remaining operations of British Council in Pakistan required heavy security measures including high site safety procedures. While this had affected library users in Pakistan, the British Council itself also felt at the time, that the impact it made through its non-education services on local Pakistani communities had diminished.

Nevertheless, the situation changed in 2013 when the British Council adopted the '*going beyond borders*' strategy essentially aimed at opening its doors to the public through various services so that the 'walls' that had been erected post 9/11 could be removed. The purpose was to re-establish connectivity to local communities not only through services that had been withdrawn earlier, but also by making use of new digital technologies to reach out to a wider audience. This was an exciting time for the Council. Senior management also believed that environmental concerns were important for the future of Pakistan and as an organization operating in the country; it had to be environmentally responsible. However, security remained at the top of agenda for the Council and therefore it was expected that the new library building would follow the British Council's safety protocols. The council also wanted the library to be flexible, open and multi-purpose: for reading and studying, workshops or even a concert, for example.

Reopening of the library services was a key element of the 'going beyond borders' strategy. As part of this strategy, the British Council wanted the libraries project to be a success. The then British Council Punjab Director, Kevin McLaven, became de-facto sponsor of the libraries project. His role entailed representing the Council on the ground in all decisions related to building works, facilities and security of the newly established physical library. Re-establishment of libraries in Pakistan was also an emotional undertaking for the British Council, as they were returning to Pakistan after 15 years of absence. The libraries project represented the Council's goal of bringing

modern, technology-embedded 21st century library services with advanced digital content and library spaces primarily catering to technologically-savvy Pakistanis of younger demographic profiles. Kevin's library team later expanded as it was joined by Maarya Rehman in 2015, a young librarian from London who had worked in a series of libraries in the London area and was familiar with the running of modern library services. Maarya had acknowledged during an interview with a local academic that the architects had been great advocates of sustainable building design refinement process, the Council felt, was where the architectural firm supported them extensively leading to their decision to adopt sustainable design for library structure.

### **Doing Business Sustainably**

Sustainability has been one of the most prominent issues to emerge in recent times. Public concern about society and the environment has risen, as they have become more aware of problems such as climate change, pollution, waste, and depletion of natural resources. Companies have increasingly come under the spotlight and demand has grown for them to act more responsibly. Business activities that have an adverse sustainability impact are no longer acceptable.

Tickling the right boxes where corporate responsibility is concerned is something of a no-brainer. Many firms do realize this and rightly regard sustainable actions as a means of securing a competitive edge. However, sustainability does not just magically fall into place. For most firms the issue poses significant challenges. For starters, sustainability itself is arguably a learning process from which an appropriate mentality should gradually emerge.

This invariably requires a change in organizational culture so that learning and sustainability becomes core tenets. Information related to sustainability can be transformed into important knowledge that is ideally absorbed, embedded, stored, and retrieved when required. Ensuring that this knowledge is retained within the organization's memory is especially critical. Personnel will naturally evolve but retention enables access to information even when key individuals leave the company.

Constructing and using 'green infrastructure' is one form of exercising sustainable business practice. Green buildings are designed to reduce the consumption of energy, water, materials and natural resources spanning the life of a building. They are built to reduce the overall impact on the natural environment and human health. Moreover, they also reduce waste and pollution, as well as improve employee productivity. There are several ways to make a building green. For instance, contractors can choose to incorporate reused, recycled materials in their construction. They can also choose to create healthy indoor environments by using natural light and lessen product emissions. Furthermore, they can also improve their landscape whilst reducing water usage, e.g. using plants that do not need much water. Green buildings can use renewable and low carbon technologies to fulfill the buildings' energy needs. The users of a building can also contribute to making it greener by generating less waste via recycling and using more durable materials. Buildings can be made more sustainable by creating resilient structures and flexible spaces that can adapt to changes in their use over time. Green buildings not only provide benefits to the environment but also provide various economics and social benefits. They reduce operating costs and optimize performance of the building over the course of its lifecycle. Additionally, they

enhance comfort of the users and improve quality of work and life. Some people may feel that constructing green buildings would cost more. It is true that even though green materials cost more than the conventional ones, it is important to consider the savings (e.g. energy costs) this approach will reap over the course of the building's life.

In the west for example, a primary catalyst for moving green buildings into mainstream construction is based on the development of reliable standards, evaluation criteria and introduction of tax benefits from the government that themselves pioneer the green standard movement. This is somewhat lacking in Pakistan. In the developed world, for example, LEED buildings have faster lease-up rates and qualify for a host of incentives like tax rebates and zoning allowances. Not to mention they retain higher property values. This is not the case in Pakistan, and they therefore remain a 'hard sell'.

Although local adoption of foreign standards such as LEED by Pakistan Green Building Council (PGBC) had led to the establishment of local standards, little or no support from the government formally existed for the green industry despite some efforts through the National Energy Conservation Authority (NEECA).

### **Policy and regulatory environment in Pakistan**

The earliest evidence of building energy regulation in the country looked at the implementation of building energy efficiency codes. It had come in 1987 when the National Energy Conservation Centre (ENERCON) was established under the Ministry of Environment, Government of Pakistan. Its aim was to build general awareness regarding energy conservation and to assist in policy development around energy-conserving buildings. However, the center (now the National Energy Conservation Authority-NEECA) only recently, in 2011, has been able to finalize the Building Energy Code of Pakistan. This is a statutory notification leading onto building energy codes that will to be added as an amendment to the local building by-laws. The implementation of this energy code is expected to result in 25 to 30% of energy saving in new buildings. Also, the National Energy Efficiency and Conservation Act 2016 was passed by the Constituent Assemblies in July 2016 and provides impetus for the establishment of institutions, mechanisms and procedures that will provide effective conservation and efficient use of energy across various sectors of the economy including construction.

### **LEED Certification**

LEED, which stands for *Leadership in Energy and Environmental Design*, is a certification program focused primarily on new, commercial building projects and is based on a points system. The more points the building earns, the higher is its rating. The points denote how "green," or compliant in terms of energy conservation, water usage, air quality, and building materials, a structure is over the course of its construction and thereafter. LEED-certified buildings have 40-49 credits, silver buildings have 50-59 credits, gold buildings have 60-79 credits, and buildings with 80+ credits are called LEED platinum (Burger, 2018). Projects pursuing LEED certification earn points across several categories, including energy use and air quality. The categories include *Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Site*

*Sustainability, Water Efficiency and Innovation in Design.* Based on the number of points achieved, a project earns one of four LEED rating levels: Certified, Silver, Gold or Platinum (LEED, 2018).

LEED works for all buildings anywhere. *Building Design and Construction (BD+C)* is just one of the many rating systems under LEED's umbrella and was the framework that NADA wanted to employ for the library. BD+C applied to newly constructed buildings as well as ones undergoing a major renovation. LEED for Building Design and Construction (LEED BD+C) provides a rating system for building a holistic green building. The framework offered the chance to perfect every sustainability feature, therefore, maximizing the benefits. It allows the creation of a healthy, resource-efficient, cost-effective building. LEED BD+C is applicable to many project types, including but not limited to new construction, core and shell, schools, retail, hospitality, data centers, warehouses and distribution centers and healthcare. Moreover, it includes major HVAC improvements and interior rehabilitations in buildings undergoing restoration. This rating system is also good for projects where the developer controls the design and construction of the entire mechanical, electrical, plumbing, and fire protection system (i.e. core and shell) but not the design and construction of final interior design.

Reliable building-rating systems LEED rating system has done much to highlight the benefits of green construction. Alternative rating programs include the United Kingdom's *Building Research Establishment's Environmental Assessment Method* (BREEAM) and Australia's Green Star. However, LEED continues to be the industry standard for green building.

### **British Council Library design**

The library was to be a flexible and efficient space. The client required a multi-functional space so that the library could serve various purposes using the same space and layout. The design entailed covering the footprint of the old library building over an area of 5,121 square feet. The design envisioned simple, functional and flexible space for a highly useable library. The library site was in the close vicinity of the old main building from 1911, adjacent to a large garden. The plan was to remove the now unused older library building to construct the new one in the same footprint (hence preserving the site to the maximum), but to turn the previous library building material into recycled material for the new one! The design consisted of the side facing the garden to comprise a floor-to-ceiling glass wall. This was to offer minimal breaks in vision, based on open format designs and meant to give a sense of continuity. It also allowed for a greater amount of natural light within the library during daylight hours, in line with the ambitions for sustainable energy consumption. Comprising reflective glass, to the outside observer, the building was meant to reflect the various hues of the garden across seasons, rendering it less obtrusive, almost nonexistent, appearing an extension of the garden itself.

Local influence, materials and creative fabrication was to have considerable use in the interior space. The design had hard brick floors in the interior and recycle paper used to form ceiling louvers, which were wrapped in jute for sound absorption. The walls at the end of the library structure had similarly formed panels wrapped in fabric. These panels added color and provided sound control. All materials used were to be locally sourced apart from some carpeted areas and

the safety glass system that had to be procured from Spain (since specialized glass with security specifications was not available locally).

The design features were complimented by mechanical systems to improve resource efficiency. Temperature and lighting would automatically adjust to maximize lighting and internal comfort whilst recovering as much energy as possible. Energy-saving fixtures were to minimize water use and a green roof on the building was built into the design to offset heat gains and water runoff. Green roofs are building roofs that are partially (or completely) covered with plants. These plants grow on a growth medium (comprising compost solution), resting over a waterproof membrane that protects against seepages. The plantation absorbs rainwater (hence reducing run-off) and lowers cooling costs by absorbing solar heat. Green roofs also provide extensive environmental air quality benefits through the ability to absorb not only greenhouse gases such as carbon dioxide, but also pollutants and dust.

The green design was innovative and ambitious. The design was such that the library could:

- achieve 30% improvement on baseline building performance rating (through optimization of energy performance through materials, design and use of renewable technology);
- use 20% recycled building materials;
- 10% salvaged, refurbished, or reused building materials was to be used;
- Utilize 20% regionally extracted, harvested, recovered, or manufactured materials;
- Ensure 75% diversion of all construction and demolition debris;
- Make sure that 75% of occupied space had daylighting;
- That 90% of occupied space had quality views;
- 40% reduction in baseline indoor water use; and
- 50% reduction in wastewater generation

### **The problem**

Raza continued to think about the problem at hand. As the design had refined, an issue had come up. While the main 1911 British Council building had safety glass that adhered to the client's requirements, they had requested the highest grade laminated safety glass with extra fire protection on top of the energy efficient and day lighting glazing suggested by the architects. The cost of high-end glass from Saint Gobain that fulfilled all the client's requirements exceeded the estimated cost of the entire project. The client was adamant about safety features. Raza was worried about the decision's financial viability. He knew he had to negotiate a solution soon as he could not let this stalemate impact the project schedule. What were the alternatives he could propose? How was he to negotiate?

## **Acknowledgement**

The author would like to thank the British Council Pakistan and Nayyar Ali Dada and Associates for providing fruitful information to write this teaching case. However, for anonymity purpose, some information is disguised and enhanced and therefore the case facts do not fully reflect the administrative details and decisions made at the time of the library build.

## **References:**

Burger, R. 2018. *What Are The Benefits of LEED Certification?* Available from: <<https://www.thebalancesmb.com/what-are-the-benefits-of-leed-certification-845365>> [Accessed 10 August 2018].

LEED. 2018. *Leadership in environmental and energy design*. Available from: <https://new.usgbc.org/leed> [Accessed 10 August 2018].

World Architecture News.com. 2018. *Serena Hotel by NAYYAR ALI DADA & ASSOCIATES in Islamabad, Pakistan*. Available from: <http://www.worldarchitecturenews.com/project/2011/16602/nayyar-ali-dada-associates/serena-hotel-in-islamabad.html> [Accessed 10 August 2018].