SIGMA COLLEGE OF ARCHITECTURE

Moododu, Anducode Post, Kanyakumari District, Tamilnadu - 629 168
Website : www.sicarch.com E-mail : sigmagroup155@gmail.com
Contact : 04651 - 209 039 Mobile : +919443370072

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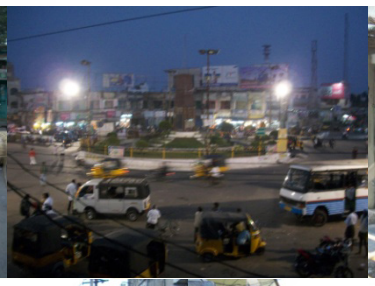
TABLE OF CONTENTS

AN URBAN SQUARE LOOSING ITS SIGNIFICANCE

Ar.Indira Kolli M.Arch
Principal

Koneru center, it was busiest guzzling trade center during the time of Europeans trade. It has got significance because it is a public point and junction also trade route which is directly connected from Machilipatnam port to Hyderabad and neighboring places since ancient times. It was a common meeting place for all the native and European traders. Now also it is a whole sale business center at small scale. Koneru center used to be call it as Robertson square during Europeans it was known as before Europeans. Koneru center which means Temple tank. This great urban center lost and losing its significance because of its non active port activities and lack of public and trade infra structure facilities.

At present it is also a business center and also having unique traditional market activities going on. At presently it is famous for bamboo weeving works, and Gold covering jewelers. It is a proper public square and and some ground plus one story building facility provided by Machilipatnam Municipal corporation. Also this connected to main cities around Machilipatnam and it's a busy transport center .This public square needs an immediate government or public initiaters attention to strengthen and revive the past glory.



"TIME FOR NEW ARCHITECTURE ERA"

Accept and Adapt

Ar.S. Chinnadurai M.Arch
Head of the department

Globalization and westernization plays a vital role in depleting the traditional values and customs. Traditional architecture which evolved by the ancestors is well designed by considering context and made built form what exactly is needed for their activities. But due to westernization, people started to neglect our traditional planning and way of making built form. They started to adopt westernization into their life style and spaces. This leads to increase the problems in both physical and environmental. In reality we can't stop the modernization but same time we can't neglect the traditional also. It's a high time to come up with new architecture era.

Post traditional modernity architecture can be a choice which balancing the both modern and traditional. The architecture for future doesn't need star architects. Merely it needs architects who make architecture with harmony between human and nature and also fulfills the social needs.

THE HARD ROAD TO DECARBONIZATION

Ar.R.Reghu M.Arch (RED)
Assistant Professor

The Green Building has inarguably transformed the way of the building business for the better-quality. It transfers the masses around the concept of environmentally responsible construction. The "co-importance" of many green buildings, like sufficient daylight and enhanced indoor air quality, visibly improve people's health and comfort. Green Building significantly saves energy and "nearly equivalent" environment and wellbeing benefits.

Without the Green building Concept, smart thermostats and low-Volatile Organic Compound VOC paints might not be accessible in Market. But the incompatible proof on energy savings is worth a gut-check, particularly since more than just private profits are at risk.

Most in all cities, states and hundreds of municipality suggest green-building tax benefits and subsidy, many of them tied directly to Green Building Agency. The government initiates to follow green building concepts for every new building it constructs.

What would "green building" standards for environmental friendly? "Existing Buildings" must produce *more* energy than they consume, and we need to incorporate more sustainable technology for neutralize the carbon produced in the building. Net-positive water use and net-positive waste are also required.

The reality is, climate change isn't going to remain for a long period, its slowly changing day by day according to the environmental, so immediate requirement to implement different sustainable technologies. Carbon pollution need to stabilize immediately, but carbon in the environment is day by day increasing. At the present carbon emission rate, we may have only a less duration of years to bound global warming. Retrofitting all urban buildings to be net zero sounds wildly ambitious, but that's what decarbonisation would require.

"The quantity of carbon and harmful gas in the environment continues to increase," Environmental Study Survey noted. "And if not we change that, if we want to sustain we have to follow sustainable technologies to construct a building in an environment where as human life is not possible if it's not follows.

BEHAVIOUR OF MASONRY WALL DURING EARTHQUAKE

Er. E.M. Jerin Shibu M.E
Assistant Professor

Masonry buildings are brittle structures and one of the most vulnerable of the entire building stock under strong earthquake shaking. The ground shakes simultaneously in the vertical and two horizontal directions during earthquakes. However, the horizontal vibrations are the most damaging to normal masonry buildings. Horizontal inertia force developed at the roof transfers to the walls acting either in the weak or in the strong direction. If all the walls are not tied together like a box, the walls loaded in their weak direction tend to topple shown in Figure1

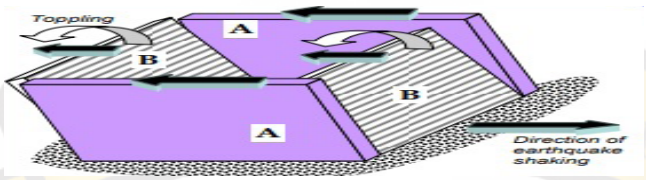


Figure 1: The direction of earthquake shaking wall B tends to fail

To ensure good seismic performance, all walls must be joined properly to the adjacent walls. In this way, walls loaded in their weak direction can take advantage of the good lateral resistance offered by walls loaded in their strong direction shown in Figure 2. Further, walls also need to be tied to the roof and foundation to preserve their overall integrity.

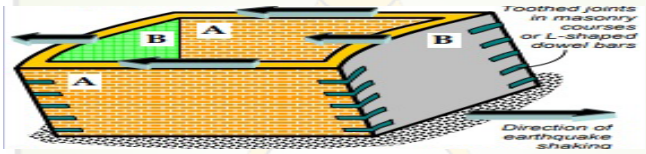


Figure 2: Walls joined to the adjacent walls

HOW TO IMPROVE THE BEHAVIOUR OF MASONRY WALLS

Masonry walls are slender because of their small thickness compared to their height and length. A simple way of making these walls behave well during earthquake shaking is by making them act together as a box along with the roof at the top and with the foundation at the bottom. A number of construction aspects are required to ensure this box action. Firstly, connections between the walls should be good. This can be achieved by

- Ensuring good interlocking of the masonry courses at the junctions, and
- Employing horizontal bands at various levels, particularly at the lintel level.

Secondly, the sizes of door and window openings need to be kept small. The smaller the openings, the larger is the resistance offered by the wall. Thirdly, the tendency of a wall to topple when pushed in the weak direction can be reduced by limiting its length-to-thickness and height to-thickness ratios .Design codes specify limits for these ratios. A wall that is too tall or too long in comparison to its thickness, is particularly vulnerable to shaking in its weak direction.

APPLICATION OF MATRIX CONVERTER FOR WIND ENERGY CONVERSION SYSTEM

Er. Jenner Z. ME
Assistant Professor

Wind energy is considered to be a viable source of energy due to the increased energy demand. As the most affordable, renewable and emission-free technology, wind power has become a rapidly growing technology as a source of power generation. WECS is used to harness wind energy and convert it into electrical energy. Variable speed wind turbine has a number of advantages; it improves the performance of energy conversion and decreases the mechanical stress of wind blows. The main drawback of the traditional AC–DC–AC converter is the bulk DC capacitor used for energy storage. Instead of the traditional AC–DC–AC, the Matrix converter is used because it does not include the bulky size condenser and also has the ability to control the displacement factor of the input. Moreover, the Matrix converter can be provided in a simple construction, and gives a wide range of output frequency. In comparison with cycloconverter, the Matrix converter can give an output frequency that may be equal, less or greater than input frequency.

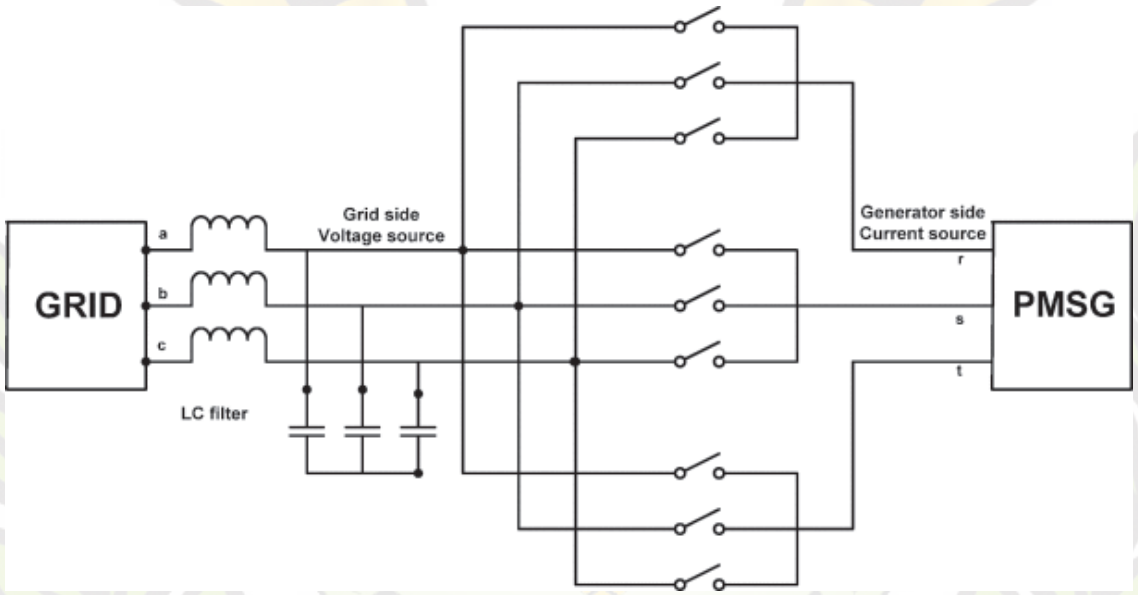


Figure: Matrix Converter

AIRPORT CONNECTIVITY QUALITY INDEX

Mr.P.S.Stem Edilber M.Sc, M.Phil
Assistant Professor

A useful approach for developing a model of airport connectivity is to construct a simple air transportation network and to consider what changes to the network should increase or decrease an airport's connectivity to the rest of the network. For instance consider the simple air transportation network in fig 1. We wish to examine the connectivity of the red airport A, which currently has two flights per day to a small airport G and two flights per day to a large hub airport H. connecting services is available from H to four additional small airports labeled 1-4

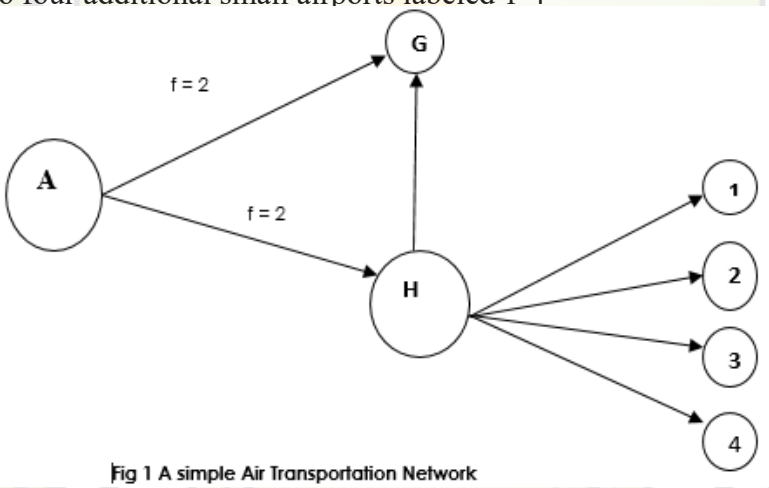


Fig 1 A simple Air Transportation Network

For instance in fig 2 the number of flights from airport A to airport H has increased from two to four .this should increase airport A's connectivity score.

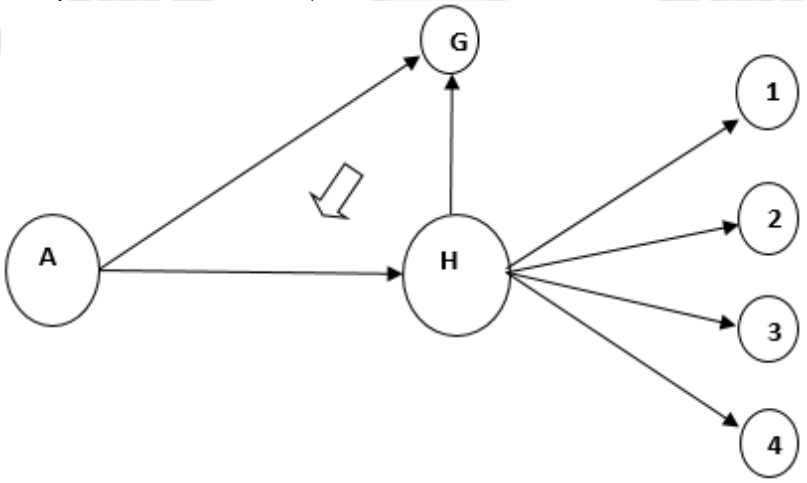


Figure 2 : Increasing connectivity by increasing flights to existing destinations

Connectivity at airport A should also increase if more connecting destinations are available in the network. For instance if an airline introduces services from hub H to an additional small connecting destination (labelled 5 in fid 3), Airport A's connectivity should increase. This scenario is shown in figure 3. Note that the magnitude of the increase in connectivity should depend on the quality of the new destination. Connectivity at airport A should also increase if more connecting destinations are available in the network. For instance, if an airline introduces service from the hub H to an additional small connecting destination (labeled 5 in Figure 3), Airport A's connectivity should increase. This scenario is shown in Figure 3. Note that the magnitude of the increase in connectivity should depend on the quality of the new destination. In this case, the new destination in Figure 3 is a small airport, so the connectivity gains for airport A would be relatively minimal.

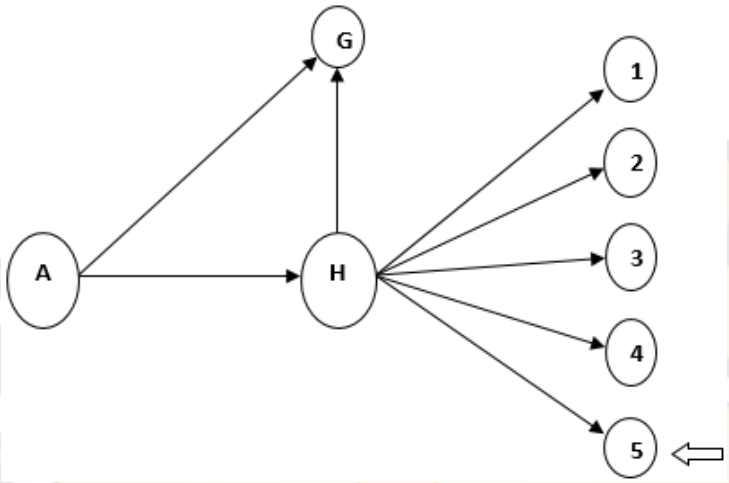


Figure 3 : Increasing connectivity by adding a one-stop destination

Finally connectivity would increase if service to a new non-stop destination is introduced from airport A. once again the magnitude of the increase would be related to the quality of the destination and the number of daily flight serving to the new destination. If possible that a new non-stop destination will also allow the possibility of connecting flights to airports that were not previously available. Figure 4 extends our simple network by introducing a new daily flight to large airport K. Note that connecting service to airport 5 is available through the new destination K. Yet in this case, no net connecting destinations are added, since airport 5 is already served via connecting service from hub H.

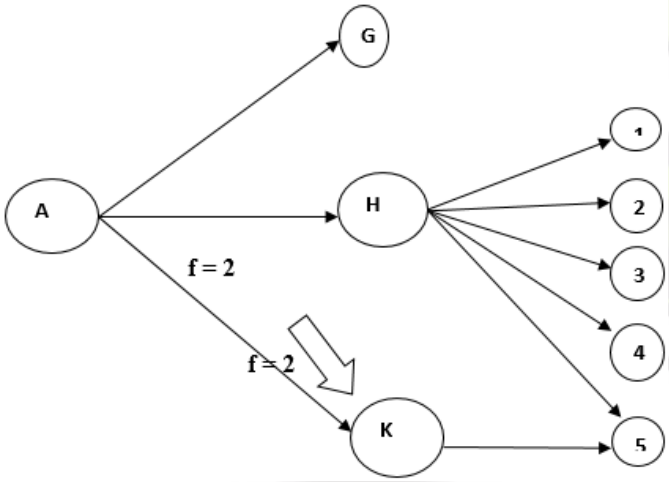


Figure 4 : Increasing connectivity by adding a new non-stop destination

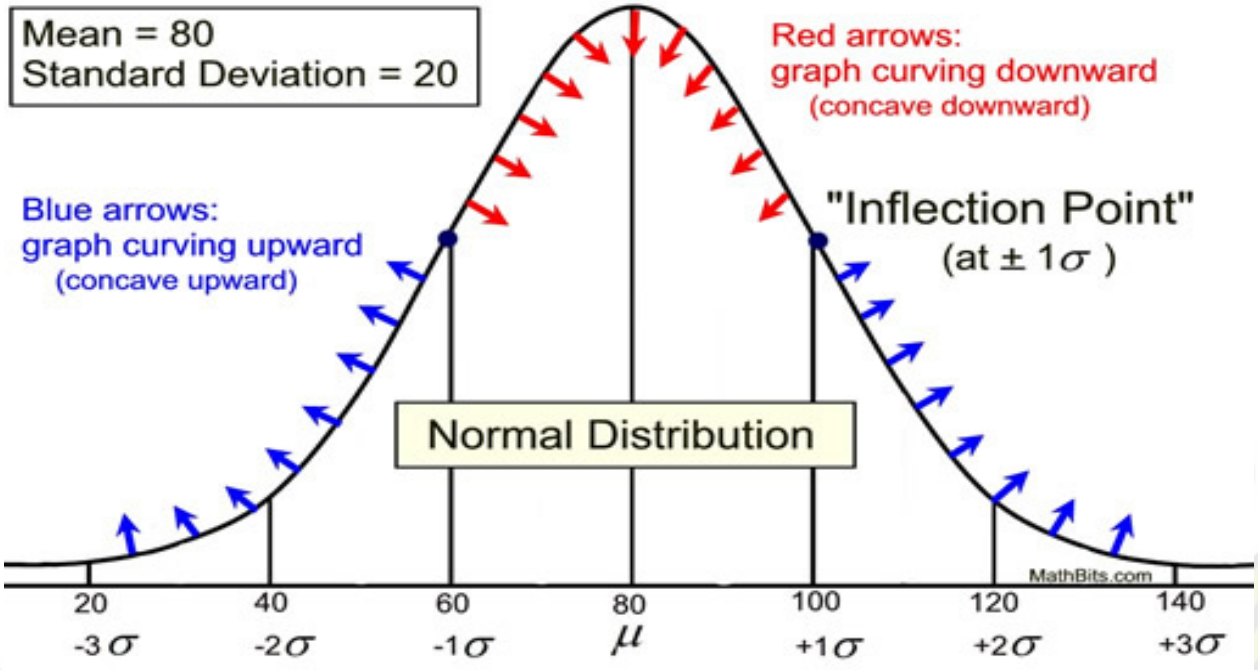
To summarize, an airport's connectivity should increase if:

- More flights per day are offered to an existing destination (as in Figure 2)
- The connecting opportunities from current nonstop destinations increases (i.e., more connecting service is available from an existing destination, as in Figure 3)
- The number of non-stop destinations increases (as in Figure 4) or
- The quality of destinations increases (for instance, a flight to a new Large Hub destination should be more valuable than a new flight to a small, Essential Air Service airport).

APPLICATION OF NORMAL DISTRIBUTION IN REAL LIFE

Ms.R.Maria Anushiya M.Sc
Assistant Professor

The normal distribution is symmetrical about the mean. In normal distribution mean, median, mode, asymptotic are all equal. A graphical representation of a normal distribution is called a bell curve because of its flared shape.



Here both the left and right sides of the mean are equal and it dependents on two parameters namely mean (μ) and standard deviation(). Height of human population is the example of normal distribution. Most of the people have average height. The number of people taller and shorter than the average height people is almost equal, and a very small number of people are either extremely tall or extremely short .Therefore it follows the normal distribution. Normal distribution is uni modal. It is useful for controlling the quality in business.

ROLES OF ARCHITECTS IN CONSTRUCTION

Ar.R.Anand Godson M.Arch(IA)
Assistant Professor

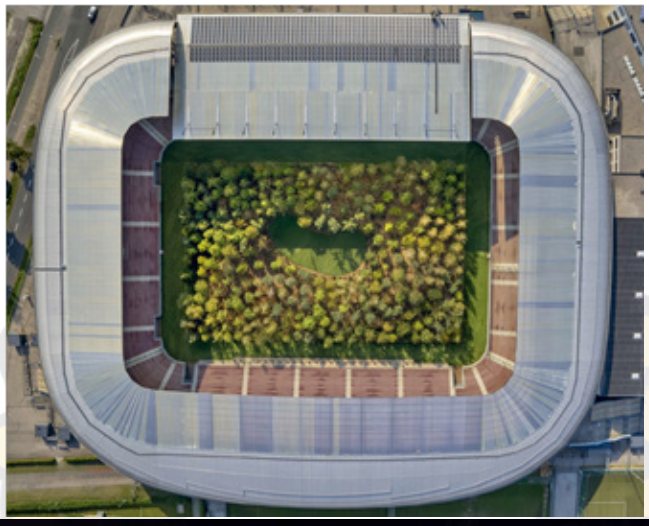
Architects are in charge of design and project planning, and they are also responsible for the visual appearance of buildings and structures. The term “architect” refers only to individuals who are registered with a local governing body. To become licensed, architects must meet specific professional training requirements and pass an exam. Architectural services can be obtained from individuals without licenses, but they cannot call themselves architects and cannot sign construction documents.

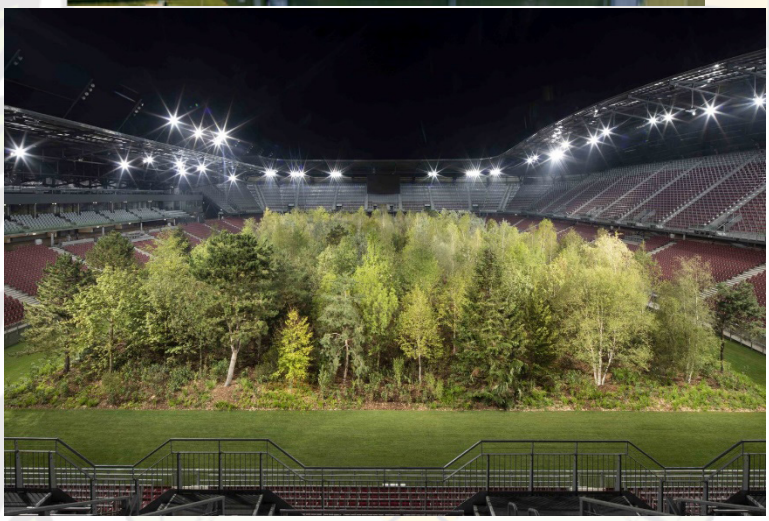
Once an architect is contacted by a client, a meeting is called to discuss the project needs and requirements. Several meetings may take place until both parties are satisfied with the conceptual design. However, designing an entire building is a huge task for a single person; architects work with civil and structural engineers to discuss technical issues and the structural integrity of a building.

Architects are not just involved in the building design phase. Their role is important in every stage of a project, and this article summarizes their responsibilities. Architects can also help improve energy efficiency, by designing buildings that maximize natural lighting and ventilation, while reducing the heating and cooling needs.

STADIUM TRANSFORMED TO FOREST

Ar Dinesh Pandian M.Arch
Assistant Professor





On September 8, 2019, Austrian's largest public art installation to date opened to the public. Titled for forest – The endless Attraction of Nature, the planning transforms the Wörthersee sports stadium in Klagenfurt into a native central European forest.

Designed by Swiss curator Klaus Littmann and impressed by a dystopian drawing by Austrian creator and designer max Peintner, the installation advocates for pressing up to date problems like global climate change and deforestation.
Through the structural containment of this large forest, it suggests that nature might sometime only be found in specially selected areas, as animals are these days in zoos.

Containing almost 300 trees, some weighing up to six tons each, the installation fills a space designed for up to 30,000 spectators. It contains a very various vary of species, including silver birch, alder, aspen, white willow, hornbeam, field maple, and common oak. As season's amendment, the forest is expected to take on a life of its own, attracting wildlife and changing colors.

Once the temporary installation closes on October twenty seven 2019, the forests are rigorously replanted on a public site close to the initial sports stadium, remaining as a living 'forest sculpture'.

SUSTAINABILITY THROUGH LOW COST TECHNIQUES

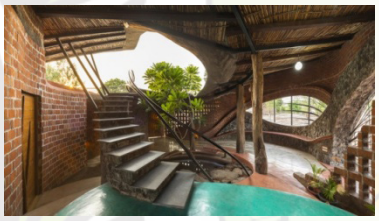
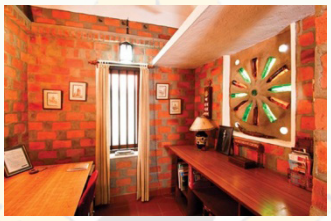
Ar. T. Josephine Sabeena B.Arch
Assistant Professor

Sustainability through low cost housing techniques provides information on the use of building materials for low-cost housing in developing countries, specifically materials that can be seen as 'sustainable'. The applicability of building materials is always determined by the following local circumstances: the availability of raw materials; the culture of making building materials; the construction methods. Sustainable and low-cost is now a trend in architecture, there are several projects which are truly based on low cost techniques which was used by Sir Ar. Laurie baker and some architects also still working on it. Study is to lighten up the latest techniques which they used in their projects, and his principles and selection of materials.

Inferences of Baker through Low Cost Design Principles:

Baker believed in applying vernacular principles to modern construction technology in his works. He mentioned that we need to take forward by adding modern technology to that which has already been accomplished by our ancestors and contribute to it instead of contradicting it.

Plan and Structural Form: Very rarely do we find the square or rectangle but very often the circle is used. The straight line is rare, but the graceful curve is frequently seen, interesting scientific observation is that the length of the wall enclosing given area is shorter if the shape is circular and longer if the shape around the same area is a rectangle.


Materials Used: Natural locally available materials were commonly preferred over modern materials. The materials like brick which were locally made. The choice of these materials are made by using low budget and minimal use of energy.

Techniques Employed: Baker used techniques observed by improving on them, he applied vernacular principles to modern construction techniques, as the traditional methods often had apt solutions to current day problems faced in construction.

Labour Employed: He himself participated in the construction process, enacting the role of a designer, builder and contractors simultaneously. Traditionally construction was carried out by craftsman, this practice has been appreciated by baker in his practice as well.

STRENGTH AND DURABILITY PROPERTIES OF CONCRETE MADE WITH THE PARTIAL REPLACEMENT OF CEMENT BY MARBLE POWDER AND M-SAND BY SILICA SAND

Er. R.Relin Geo ME
Assistant Professor

In this project the cement is replaced by marble powder and the sand is replaced by silica sand with 10%, 20%, & 30% and 25%, 50% & 75% respectively. The mix ratio has been calculated and various mix has been proportioned by M1, M2, M3 and M4. In this paper split tensile test has been done and the split tensile strength has been calculated and tabulated in table1.

Splitting tensile strength test on concrete cylinder is a method to determine the tensile strength of concrete. It is necessary to determine the tensile strength of concrete to determine the load at which the concrete members may crack. The test is conducted on 14th day, 28th day and 56th day. The cylinder is held in horizontal position and the load is applied gradually and value is recorded if the cylinder fails while applying the load in it. Values are taken for concrete made by marble powder with 0%, 10%, 20% & 30% and M sand by silica sand with 0%, 25%, 50% and 75%. Split tensile results for various mix is shown in the fig.1

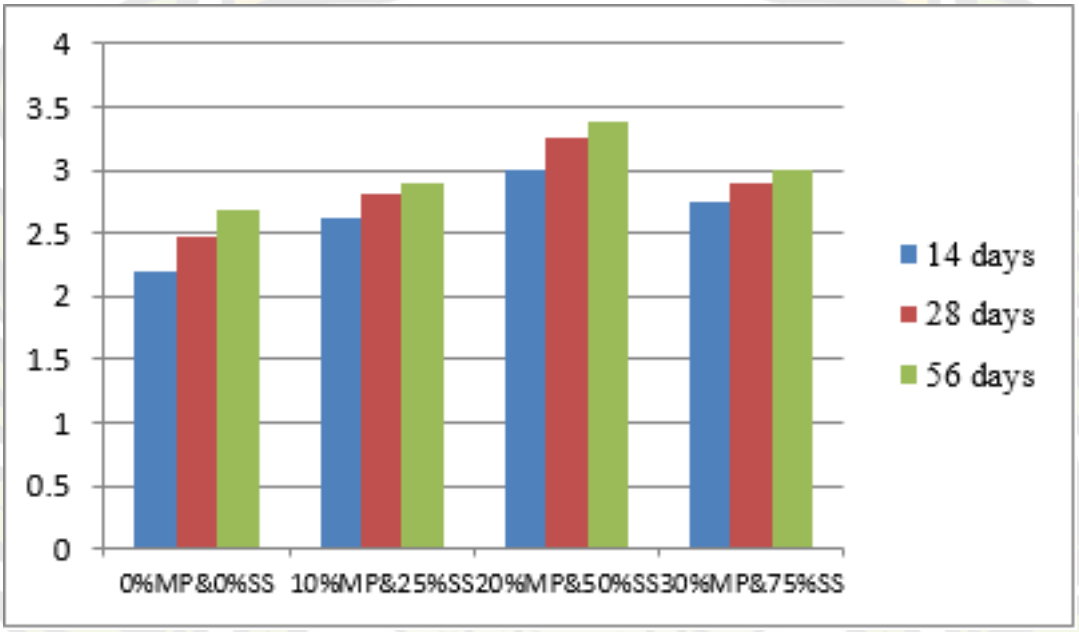


Fig 1: Split tensile strength results

WEAVING A HOME

Ar.K.Keerthana B.Arch
Assistant Professor

Abeer Seikaly's - conceptual emergency shelter is composed of "high-strength plastic tubing that is molded into sine-wave curves and woven into a stretchable fabric membrane, a technical, structural fabric that expands to enclose and contracts for mobility." The hollow tubing allows for services such as heat, electricity, or running water and are able to adapt to various climatic conditions. Seikaly poetically describes her project stating, "Refugees carry from their homes what they can and resettle in unknown lands, often starting with nothing but a tent to call home… The structural fabric functions on multiple scales from the scale of the aperture to the scale of a tent city, a landscape of domes that facilitate community and transcend the basic need of survival and instead a place where community integrates, heals, and renewal thrives. A nomadic urbanism that physically and metaphorically weaves a community, service, functional design and beauty.

Nature uses only the longest threads to weave her patterns, so that each small piece of her fabric reveals the organization of the entire tapestry." -Richard P. Feynman

SUSTAINABLE CENTRAL PARK WITH ENERGY-PRODUCING TREES

Ar.K.Ashwin Prakash, M.Arch
Assistant Professor

Laboratory for Vision Architecture (LAVA) and Australian design practice Aspect Studios have won an international competition to design the new Central Park for Ho Chi Minh City. Located on the site where southeast Asia's first train station was located, the 16-hectare linear park will pay homage to its industrial heritage with walkways overlaid atop 19th-century railway tracks. In addition to historical references, the visionary public space will also integrate sustainable and futuristic "tree" structures engineered to provide shelter, harvest water and generate solar energy.

Located in District 1, the central urban district of Ho Chi Minh City, the proposed Central Park will replace and expand the existing September 23 Park. The new design will retain its predecessor's lush appearance while adding greater functionality to include sculpture gardens, outdoor art galleries, water features, music and theater performance pavilions, a skate park, sport zones and playgrounds.

Prof. Dr. T. James Wilson

B.E., M.I. Mar. Tech., MISTE, MBA., Ph.D.

CHAIRMAN

9443370072, 9750976611, 9443370058,
8012561000, 9750976622

+91- 9443370072

Sigma college of architecture

www.sicarch.com

sigmagroup155@gmail.com