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STUDY ON INDEGENEOUS WEAVERS HABITABLE SPACES

Ar.Indira Kolli M.Arch
Principal

In Andhra region some of the areas are very distinctly identified by weaver's community, especially in the place called Pedena in Krishna District and Dharmavaram village in Visakhapatnam District. These houses are very unique and it is built, based on their occupational activities. In these region weavers houses are usually made of mud walls and cow dung coat wall finish. The roof is of thatched roof. House design included with work space. Mostly single room and front lobby, verandas and looming space. Some houses have separate work space; they do weaving inside the house as well as working cottage. The streets are also used for material preparation. The Kitchen placed at the south east corner and they lived in groups. All the houses are almost same in design, the hut forma are square and circular in shape. These traditional weaving methods and techniques are unique. It needs to be continued.

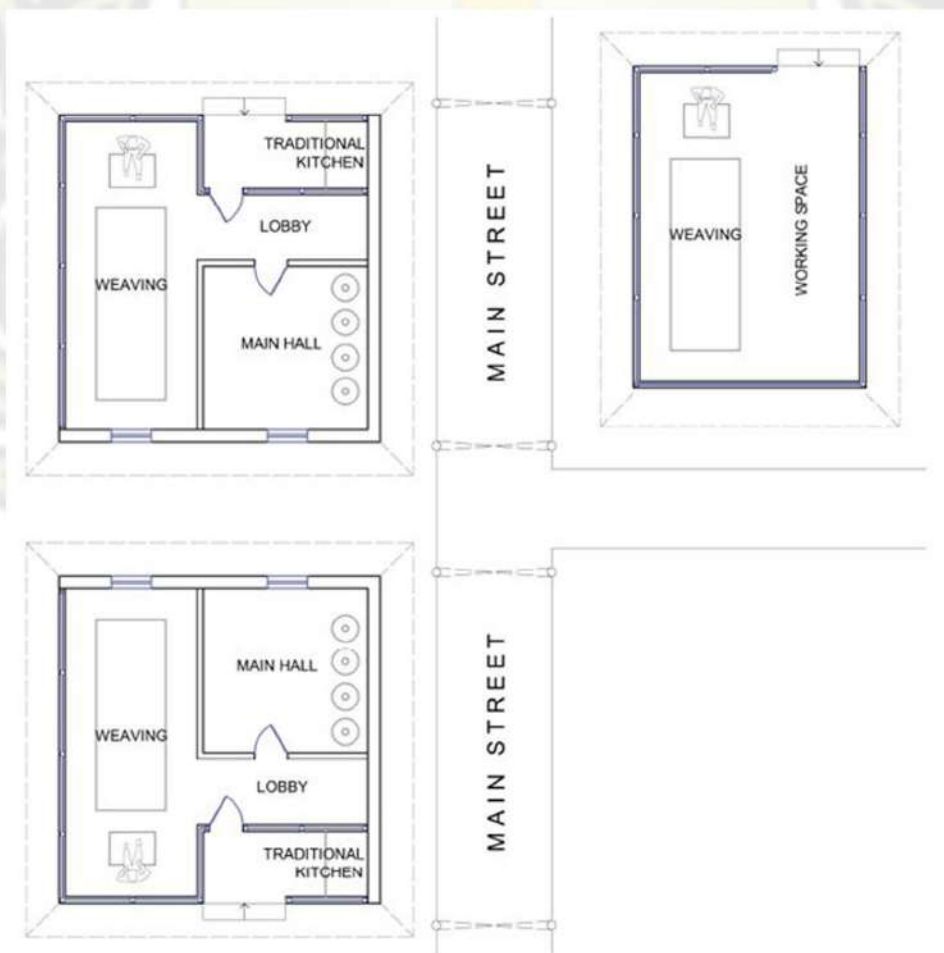


Fig: Typical weavers hut plans.

PALACE CONSERVATION

Ar.Chinnadurai.S M.Arch

Head Of The Department



A palace plays an important role to represent the history of the event. The physical structure not only represents the architecture style to us. It also represents the ruler, religion, culture, material resources enriched present in that era. So palace conservation is not just to preserve the physical structure of the palace. It is about preserving these values and identity from the threat in present and future. As we know that architecture is mirror of life. All the activities which we involve in our daily life, it will always reflect in art and architecture.

Palace also tells us not only about a specific timeline. Most of the Indian palaces is built by some ruler and used by different rulers from different geography. Each ruler they renovated these palaces according to their culture and ideas. So in many palaces we can see these transitions. Documentation of these transitions should be carefully done because we may lose history of the cultural contribution by the people of the past.

Palace conservation will preserve glory of the past and pass on to the future. It is mandatory to preserve all these cultural heritage of our mankind.

CONTEMPORARY ARCHITECTURE IN INDIA

Ar.Raghavendran.M, M.Arch
Assistant Professor

Contemporary architecture is becoming more prominent across the country, from the larger, urban cities to smaller, rural areas. The changing culture of architecture in modern India, both as a lifestyle and as a profession, has been eye-opening. In terms of lifestyle, we never predicted the extent to which architecture and design could affect us as well as the society and culture we live in, nor did we predict how deeply symbolic of our beliefs and attitudes they'd become. As a profession, the huge wave of development and technology that caused us to try and ape everything that didn't belong to us, has made us question and search for our own identity and provoked us to revisit the solid traditional roots and foundation of Indian architecture. Glass, steel and aluminium might remain as 'fashionable' materials, but there has been a shift in sensibilities with the revival of Indian crafts and the use of natural and alternative materials such as brick, mud, clay, bamboo, wood, stone, etc. The importance of context, sustainability, nature, and creating an architecture that is true to our culture and cultivates an 'Indian identity' has gained much credence. Today, a lot of younger contemporary practices in India have joined them, such as Sanjay Puri Architects, Mathew & Ghosh Architects, RAT lab, Cadence, Studio Symbiosis, Morphogenesis who are making waves overseas for their futuristic thinking that rests on a traditional ethos and the core tenets of a contextual, responsible and resourceful architecture.



WATER CONSERVATION

Ar.M.Priyadarshini M.Arch
Assistant Professor

Ancient Indian Methods:

In ancient times, houses in parts of western Rajasthan were built so that each had a rooftop water harvesting system

Rainwater from these rooftops was directed into underground tanks

This system can be seen even today in all the forts, palaces and houses of the region

Underground baked earthen pipes and tunnels to maintain the flow of water and to transport it to distant places, are still functional at Burhanpur in Madhya Pradesh, Golkunda and Bijapur in Karnataka, and Aurangabad in Maharashtra

Indus Valley Civilization:

- most sophisticated urban water supply and sewage systems in the world
- covered drains running beneath the streets of the ruins

Naneghat in the Western Ghats:

- One of the oldest water harvesting systems
- A large number of tanks were cut in the rocks to provide drinking water to tradesmen who used to travel along this ancient trade route
- Each fort in the area had its own water harvesting and storage system in the form of rock-cut cisterns, ponds, tanks and wells that are still in use today.
- A large number of forts like Raigad had tanks that supplied water

Agriculture:

In India's arid and semi-arid areas, the 'tank' system is traditionally the backbone of agricultural production.

Tanks are constructed either by bunding or by excavating the ground and collecting rainwater. In many parts of India Rainwater is collected during monsoons and used for irrigation during the drier months

The technique varies based on the needs of the region. Requirement:

- water is necessary for the growth of plants and crops
- A depleting water table and a rise in salinity due to overuse of chemical fertilizers and pesticides has made matters serious
- Various methods of water harvesting and recharging have been and are being applied all over the world to tackle the problem
- In areas where rainfall is low and water is scarce, the local people have used simple techniques that are suited to their region and reduce the demand for water.

NEW WIND POWER TECHNOLOGY INVELOX

**Er.E.M. Jenner M.E,
Assistant Professor**

INVELOX is a new idea in wind energy generation technology that significantly outperforms traditional wind generators. Its first revolutionary characteristic is the removal of tower-mounted turbines. The traditional wind tower is massive and consists of mechanically complicated generators, and the large towers are used to mount them. They are additionally high priced, inefficient, and risky to humans and wildlife. The second progressive feature of INVELOX is that it captures wind float through an omnidirectional consumption and thereby there's no need for a yaw manipulation. Similarly, INVELOX gives solutions to all of the fundamental problems such as low turbine reliability and environmental issues. The placement of three wind turbines in series in an INVELOX system provides additional 120 percentage power compared to a single turbine.



BINOMAIL DISTRISTBTION WITH REAL LIFE EXPERIMENT

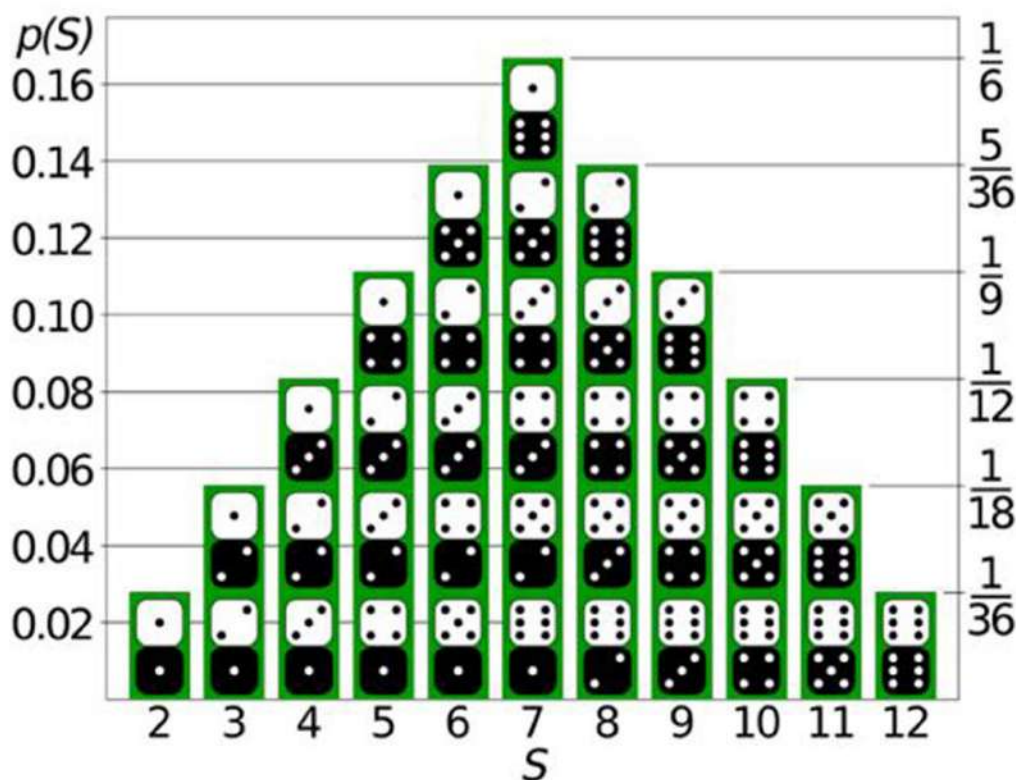
Mr.P.S.Stem Edilber M.Sc,M.Phil
Assistant Professor

A Binomial Distribution, with parameters n and p , is the discrete probability distribution of the number of successes in a sequence of n independent yes/no experiments, each of which yields success with probability p .

We read that when the sum of the roll of two dices is a binomial distribution. Is this right? I know that the sum looks like a binomial.

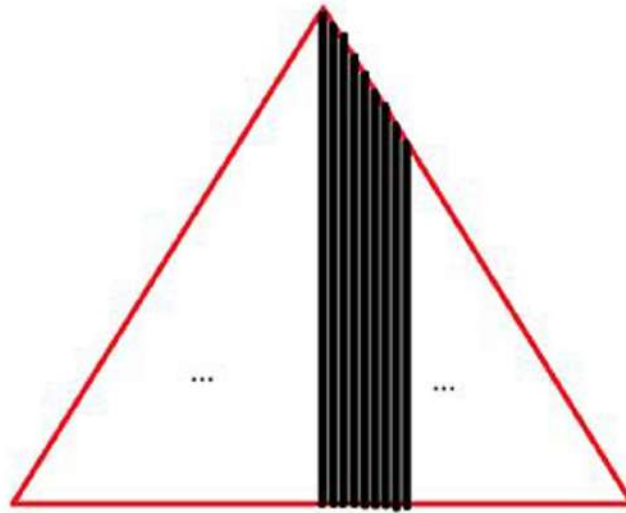
But if it is a binomial we have three questions

1. What event do I regard as a success?
2. What is its probability?
3. How many times do I repeat the experiment?

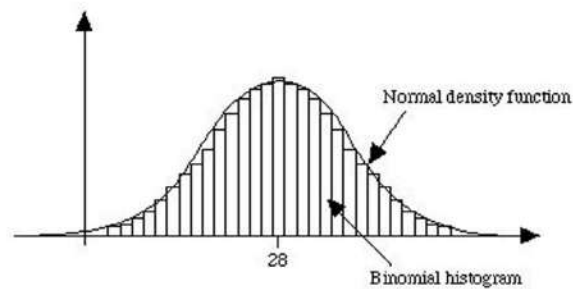


We can say a Binomial Distribution measures the probability of observing an event (which has probability of success p), k times in specific amount of repetitions n . Here we see 12 different events with different probabilities there is some confusions.

The histogram for the sum of two n -sided dice approaches the shape of a triangle. This becomes even more apparent as n gets even larger. Here is the start of the histogram for $n \approx 30$ (it's a lot of effort to complete, but you get the idea).



On the other hand, the binomial distribution appears with the all-familiar "bell-shaped" curve.



As such, these are two very different distributions

MOVING BUILDINGS-TYPES & PURPOSES

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

Moving buildings are structures which are relocated from its original location to new site. Different types buildings can be moved and the purpose of moving such buildings are discussed. Moving buildings involves the motivation behind moving the structure from one site to another, the process of moving buildings, and necessary precautions need for a successful moving of the structure.



Fig.1: Moving Building



Fig.2: Relocation of a Building

Types of Moving Buildings

Timber building, bearing wall buildings, and framed buildings are possible to be moved using necessary techniques and equipment.

Moving Buildings Purposes

- There are various factors that creates the need to move buildings from its original positions to new locations, for example, preserving historical structures from demolishing when its location is needed for industrial purposes or due to increase in population density new residential buildings are required to be built.
- Another factor is that building have not been constructed based on proper plans and arrangements, so buildings are moved to provide desired arrangements.
- It may be more economical to move the structure to the new location rather than demolishing it and then constructing new buildings.
- There are situation in which the residential areas suffer from repeated catastrophic natural events such as flooding, so in this case moving buildings might be suitable option, for example, Clermont houses were moved due to the risk of flooding.
- Historical houses are sometimes moved and collected to form a historical village.

BIOMIMICRY IN ARCHITECTURE

Ms.ArAshika P, M Arch
Assistant Professor

Biomimicry is a design principle which seeks sustainable solutions to human problems by consulting and emulating nature's time-tested patterns and strategies. It is a scientific and technical discipline finding inspiration in biological systems to define new engineering solutions. In biomimicry we imitate or take inspiration from nature's designs and strategies to unravel human problems. It's a multi-disciplinary subject that involves a diversity of other domains like electronics, informatics, medicine, biology, chemistry, physics, mathematics, and much other.

In architecture, biomimicry is typically used to seek sustainable measures by understanding the principles governing the form rather than replicating the mere form itself. The mimicry is usually seen at three levels. One is at the organism level, then at its behaviour level and lastly at its ecosystem level.



Beijing National Stadium

The Beijing National Stadium, popularly referred to as the bird's nest, was designed by Swiss Architects Herzog & de Meuron in 2008 for the Olympics.

The structure rises from its surroundings like a big upturned nest. The stadium comprises two structures. One is the concrete seating bowl, and the outer is the steel frame. This exactly represents the twigs of the nest from the stadium. Like how a nest is insulated by stuffing material between the twigs, the façade is filled with ETFE panels to protect spectators, provide acoustic insulation, reduce the dead load on the roof and improves the entry of sunlight.

POST OCCUPANCY EVALUATION

AR. Nishya.N, M.Arch
Assistant Professor

Post occupancy Evaluation is evaluating the performance of the building after inhabiting the building for certain time period. Post Occupancy Evaluation is mainly related with Green Building Design. In Green Building Design Process, design parameters will be used to increase the performance of the building in means of Acoustics, Lighting and Thermal character of the building. After the building is occupied the performance may vary from the designed, based upon the building performance rating is given to the building by Green Rating Agencies. Building performance auditor or Building performance evaluator will be doing the Post Occupancy Evaluation.

Steps in Post Occupancy Evaluation are

Step 1 - Walk through Evaluation is done by the auditor or evaluator . Here he will be noting the comfort of the inhabitant of the building, performance of the comfort and lighting equipment installed in the building.

Step 2-The simulation results obtained during design phase is compared with the current performance of lighting i.e. For Lighting Lux levels are measured, Thermal comfort internal temperature is measured and the occupant suggestion regarding thermal comfort is taken into account.

Step 3- Electricity usage from the simulation results and the building electricity usage is compared.

Step 4- Building Performance satisfaction form is circulated among the inhabitants of the building.

Step 5- All the above steps are analysed and the required Green Rating is given to the building

BIODIVERSITY AS PART OF URBAN GREEN NETWORK SYSTEM PLANNING PONTIANAK CITY

(YUDITHYA RATIH, JOCKIE ZUDHI FEBRIANTO)

Ar.T.Josephine Sabeena B.Arch
Assistant Professor

Human and nature are the two things that cannot be separated. Natural system and how human use it to their needs are the main purpose in this planet, especially in urban area where they mostly dwelled. Urban ecology is a new paradigm in viewing urban area as human-dominated ecosystem. This kind of ecosystem consists of socio-cultural as well as economical aspects which play important roles. Urban ecosystem had caused major ecological problems such as flood, Urban Heat Island, pollutions, and biodiversity loss. Green network system is crucial factor in urban ecology and become an alternative approach to overcome ecological problems in urban areas. Urban green space in a form of parks and corridors are integral part of green network system, therefore they are potential urban fabrics. Due to specific social and ecological function, green open space in high density settlement should integrate these functions. On the other hand, urban biodiversity serve as indicator of environment quality. In urban area, natural system play an important role as they support human activities. Biodiversity, on the other hand, indicates the quality of environment of these human habitat. Due to the need to fulfill the 30% of green area in the city, every local government urged to build more parks. A quantitative approach was made to calculate the city needs base on its habitants, the amount of vehicles and the carbon need for the 30 years ahead. A master plan of green open space was made to meet this need, mostly based on the city structure rather than ecological structure. The green open space was made, mostly to meet the human need of outdoor space with hard land covered to do their activities outdoor, rather than to feel the nature within the city. This research aim to figure out factors that influence the level of biodiversity of the green open space in Pontianak.



Fig. 1. Landuse Map of Pontianak



Fig. 3. Green Network System of Pontianak City

STRUCUTAL VIBRATION CONTROL

**Er.Relin Geo.R M.E,
Assistant Professor**

The management of mechanical and structural vibration has vital applications in producing, infrastructure engineering, and client product. within the machine trade, mechanical vibration degrades each the fabrication rate and quality of finish product. In applied science constructs, structural vibration degrades human comfort. In automotive and part fields, vibration reduces element life, and also the associated acoustics noise annoys passengers. varied strategies are applied to vibration management within the engineering field. historically, passive isolators and dampers are wont to attenuate mechanical vibrations. as an example, putting in rubber mounting between the machines and foundations or adding passive dampers to structures are common practices in vibration isolation and attenuation. Recent advances in digital signal process (DSP) and sensors and actuators technology have prompted interest in active vibration management. Active vibration management may be an immense analysis space that includes knowledge domain technologies. as an example, a typical active vibration system is associate integration of mechanical and electronic parts in synergistic combination with computer/microprocessor management. the most important parts of any active vibration system are the. mechanical structure influenced by disturbance, sensors (to understand the vibration), controllers, and actuators. harmful interference from the forces generated by the actuators reduces and/or cancels the results of the disturbance on the structure.

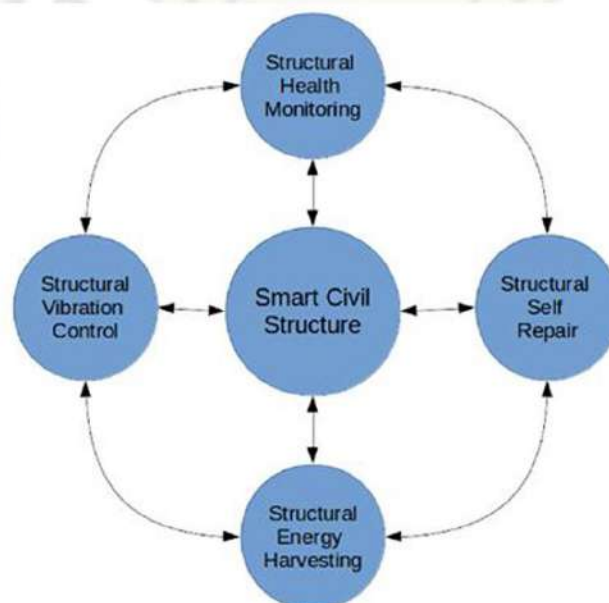


Fig1. Vibration control System

BHUNGA HOUSE

**Ar.Ajila Shiny R S, M.Arch
Assistant Professor**

Bhunga houses are known for their round huts of Kutch that possess the uniqueness of Kutch desert areas. These beautiful handmade traditional houses built using mud, thatch and decorated with various things like exquisite mud, mirror work, and paintings from inside and outside. These houses are the living museums of Kutch. They just express the cultural practices of the Kutchi people. They adopted the vernacular architecture of desert islands in the northern parts of Kutch like Banni and Paccham. They are considered architectural wonders as they maintain the internal environment of the house. They keep the home warm in winters and cool in summers. These traditional bhungas are so strong that they protect against natural calamities like desert storms, earthquakes, and anything else which is made possible by adopting the traditional knowledge gained over centuries.

A circular-shaped mud wall structure with a thatched roof is constructed using the construction details are as follows. The foundation is of depth up to 24 inches and the diameter of a Bhunga (wall) is of 18 feet approximately. The roof is placed on two thick wooden posts placed across the circular walls structurally. These two posts bear the load of the roof. At the lower level, wooden framed windows are set for cross ventilation. To prevent direct sunlight and increase the insulation from the environment, low-hanging roofs are used to cover the wall. By resting on a spiral frame, the thatch is constructed on top of the walls forming a cone. Thatched roof is formed of the wooden top dome using bamboo sticks. These sticks are tied alongside dried grass rope. On the roof, a thick layer of grass is placed. Bamboo sticks which are tied by grass ropes are used for constructing walls of Bhunga. Then trash and dirt are removed and the wall plaster is applied to form the beautiful and structurally stable.

Structurally, during the earthquake, this traditional bhunga always reacts as an arch against the forces applied from any direction. Since they're within a circular shape, they're more stable in an earthquake situation. Most of the fabric is extremely lightweight hence they're helpful against lateral forces and storms. The circular shape also helps by not obstructing the wind movement and hence they are doing not create big pressure and helps during cyclones.

GRAPH THEORY IN REAL LIFE

Ms.R.Maria Anushiya M.Sc
Assistant Professor

Graph Theory is used to find shortest path in network. In Google maps, various places are represented as nodes and the roads are represented as edges and it is used to find shortest path between two nodes. Graphs are a common method of to visually illustrate relationships in the data. It provides a helpful tool to quantify and simplify the many moving parts of dynamic systems. Graph theory is nothing but connected nodes. It can be used in ecosystem and DNA sequencing. Also it can be used in computer networks, for security purpose. It also plays an important role in transportation and navigation. The internet is the largest network ever created by mankind. Every vertex is an individual webpage, and every edge means that there is a hyperlink between two pages. While websites and hyperlinks form a virtual graph, there is also the physical network of computers, servers, routers, phone lines and cables. Graph theories make it possible to guarantee a reliable service, for example by finding diversions when a particular connection is busy. All roads and motorways also form a large network, which is used by navigation services like Google maps when working out the shortest route between two points.



BAMBOO ARCHITECTURE

Ar.R.Reya, M.Plan
Assistant Professor

Bamboo belongs to the family of grass, which is a building material for thousands of years. Bamboo is a renewable and versatile resource with multi-purpose usage in the building industry. There are more bamboo plant species, among which few selected bamboo plant is used extensively for construction of building such as BambusaBacooa, BambusaNutans, Bambusapolyomorpha, and BambusaTulda. Bamboo is an economically feasible natural resource that is light in weight. Bamboo walls provide excellent insulation property, hence more favorable for leisure and residential buildings. Bamboo is capable of bending in any shape, which makes its application in constructing the organic form of the building. It is a natural building material having compressive strength two times higher than the concrete and tensile strength closer to steel, hence bamboo is possibly used to construct any parts of a building such as foundation, wall, doors and windows, roofs, flooring, furniture's and as well as structural system. As Bamboo is easily available and being renewable natural building material, bamboo is considered as one of the sustainable building material. Bamboo architecture is also considered in eco-building, also seen in much cost-effective community development projects like Green School, Bali. Even though the application of bamboo in architecture is abundant with high aesthetic and healthy facts, bamboo construction requires skilled labor. Lack of design guidance and codes for constructing the bamboo building is another hole seen with bamboo architecture. Also even though various techniques emerged for joining bamboo, the structural reliability of the bamboo structure is still unsatisfactory.



Fig: Bamboo Architecture.

INDUSTRIAL REVOLUTION AND ARCHITECTURE

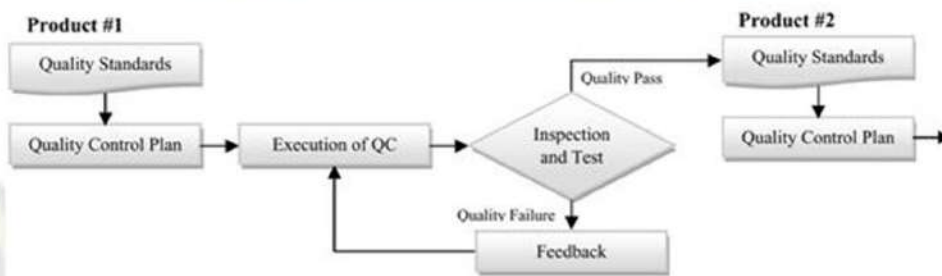
Ar.GnanaShini G, B.Arch
Tutor

The industrial revolution that began around 1760 in England, crystal rectifiertomonumental changes at every and each level of civilization throughout the planet. The expansion of significant industrial material brought a lot of new building materials that area unit forged iron, steel, and glass withthatarchitects and engineers rearranged the idea of perform, size, and kind. The disillusion with Baroque, Rococo, and with neo-Palladianism turned late eighteenth century designers towards the first Roman and Greek prototypes. Some new settlements were done by Greek names as Ithaca, Syracuse, Doric, Troy, Ionic columns, pediments, and entablatures that were principally reworked into white-painted wood; they were additionally applied to public buildings and wereadditionallyvitaltownhouses within the vogue known as Greek revival. In France, the imperial cult of Napoleon design in an exceedingly a lot of Roman direction, that was additionally witnessed within the Church of the Madeleine around 1807 to 1842 was an enormous Roman temple in Paris. The French thoughts for design were a turning purpose of the age by theextremely ingenious revealed comes of Etienne-Louis Boullée and Claude St. Nicholas Ledoux. The most revered creator of that era was Sir John Soane, he designed the depository as his own London house in 1812-1813, and it still excites the astonishments for its innovative romantic science. The late English classical came to be seen as moralist or the new homes of Parliament, wherever the authorities insisted on Tudor revival or Gothic. In the spouse of the 19th-century dislocations led to by the impact of business revolutions became overwhelming. Numerous of them wereaghasby the hideous urban districts of the factories and also the worker's housing, by the deterioration of the general public style among the freshly made individuals. For the new modes of transportation, tunnels, canals, railroads, and bridges, architects were used just for the availability of the cultural veneer. The massive Crystal Palace that was made from 1850-1851 and got reconstructed from 1852-1854 at London and a colossal however short-lived exhibition area was the work of Sir Joseph Paxton. Some massive indoor open areas created attainable with the utilization of sturdy iron framed construction were additionally known as ideal for factories, train stations, and museums. The tower was designed for the exhibition in Paris in 1889 as a dramatic demonstration by the French of their mastery of coming construction technology. The architects and engineers belonged to new and ornamental art, that were iron corners, decorative bolts extending on the far side the inject, additionally a kind of Gothic piece of work of iron.

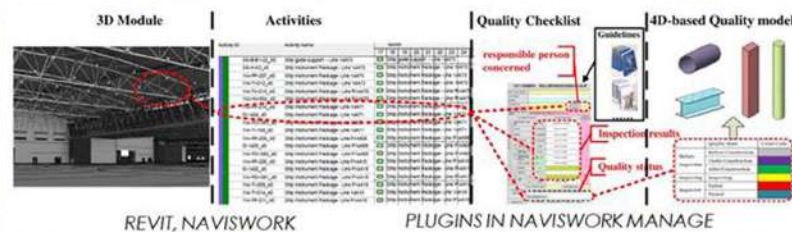
BIM: QC PROCESS 4D

Ar. Ajin Bosco M. Arch
Assistant Professor

The majority of students, academicians, civil engineers, and even experienced practicing architects are not aware of the full potential of BIM. They often limit their use of BIM tools only to generate elevation, section, and views out of the BIM models. Some professionals use these tools to generate material quantities. In this newsletter, I'll try to capture some glimpses of using BIM for managing the quality control process.



BIM Quality Information Modelling:



- BIM application carries both schedule and quality information of the model.
- All national, and urban code guidelines regarding one inspection item are integrated as text-based through the BIM application
- Anytime/anywhere comparison of the As-planned and As-built progress can be visualized/monitored.
- So, quality inspections can be effectively scheduled immediately after the completion of one task, before the next task begins and related activities and quality checklists and information can be retrieved at the right time of construction.
- By comparing actual quality inspection data with the standards. We could generate the report of status for each component in the model
- The quality status of each of the components is reflected in color coding
- GREY unconstructed; RED inspection failed; BLUE, inspection passed; PURPLE under construction; GREEN constructed, not yet inspected.



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