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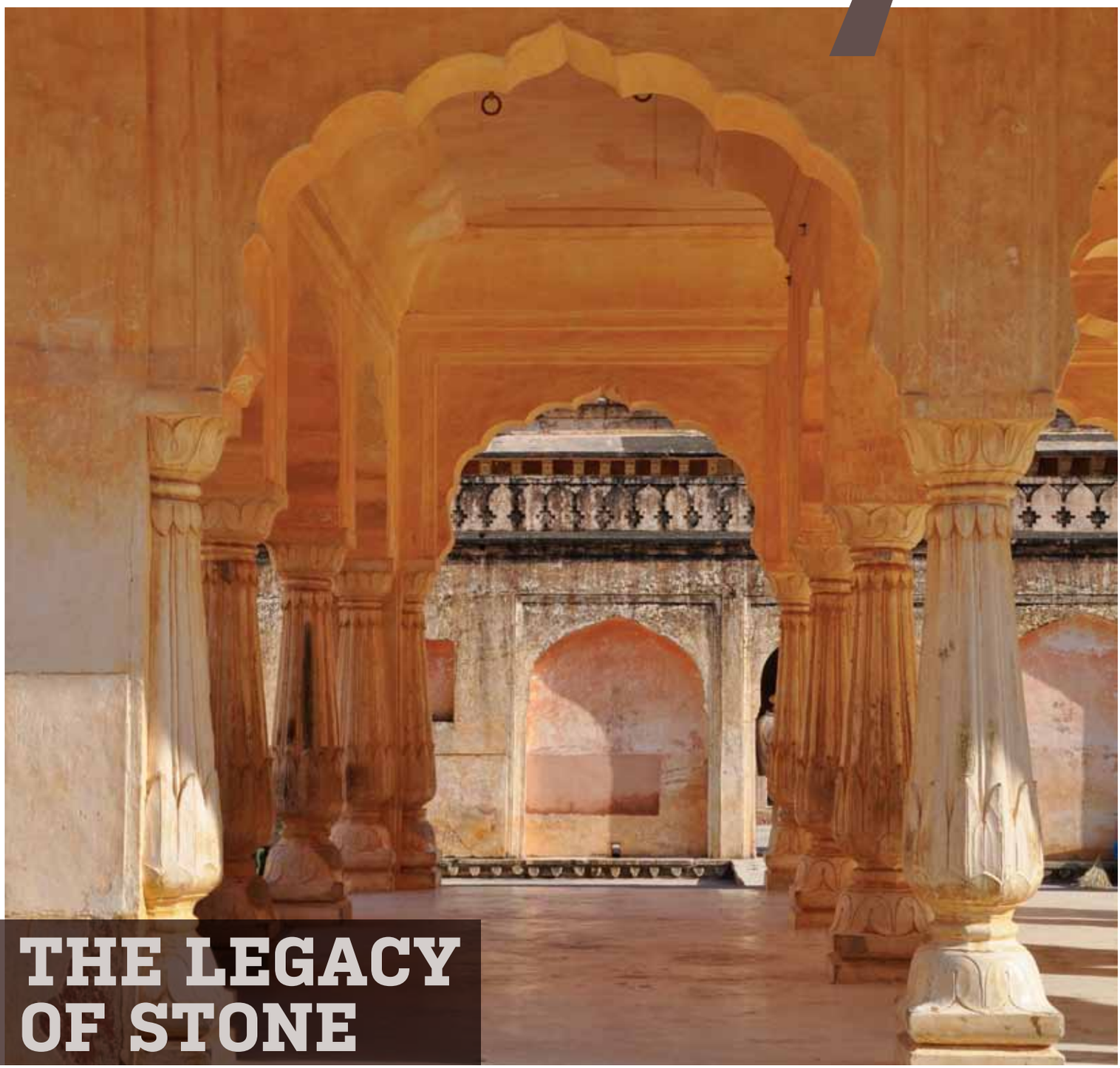

THE LEGACY OF STONE

INDUSTRY FEATURE
AN EXHIBIT IN STONE

MASTER STROKES
DEAN D'CRUZ

IIID BANGALORE REGIONAL CHAPTER

INSTITUTE OF INDIAN INTERIOR DESIGNERS
Bangalore Regional Chapter

CHAIRPERSON'S FOREWORD

Dear IIID Bangalore Chapter members,

Another Edition of Antarya! The use of stone has always fascinated architects and master craftsmen in structuring beautiful buildings from time immemorial. The story of structures in stone will definitely be an interesting read!

In the coming month we have NATCON in Indore from the 18th to 20th February. This being the Flagship event of IIID, it promises plenty of fun and excitement with many well-known and interesting speakers lined up. Register and be in Indore to catch the camaraderie and the action!

Design Yatra is also set to roll with four Sponsor Nano Cars and plenty of events under the 'Design for Masses' theme in each city! IIID BRC is proud to announce 'DESIGNURU', a Design Festival that will bring various disciplines of Architecture, Heritage, Interiors and Urban Design to the limelight for a week from 26th February to 6th March.

Volunteer, Google it, Connect with it. It is the first Design Festival for Art and Architecture in Bangalore! Have a Fabulous February!!

Gayathri Shetty
Chairperson IIID BRC, 2014 – 16
gayathri@gnarchitects.com

IIID BANGALORE REGIONAL CHAPTER

IIID Bangalore Regional Chapter Emblem

The letter form B and its mirrored version together form this symbol. The idea is inspired by the forms of Rangoli. Bangalore as a city is a unique combination of the traditional and the contemporary. This coexistence of dual cultures is iconic of Bangalore as it is present in arts/architecture and the general landscape of the city and its culture. Using Rangoli (Traditional) as the basis, we have created letter form B (Modern) and reflected this form to enclose the space in between (Interiors). The colour palette is also representative of the traditional and modern.

EDITOR'S NOTE

Greetings from the Antarya team for the New Year! I am sure 2016 will see Antarya reach greater heights.

Ever since man invented some basic tools he tried to work on tougher and tougher materials. One of the biggest successes achieved was when these tools attained the capability to work on tough materials like natural stone. Over the years, this workability continuously improved resulting in the creation of some breath-taking monuments in natural stone, some of which have been declared as "wonders of the world". The current issue dwells on this inseparable relationship between man, stone and the building.

Antarya has continuously received kudos from across the country and looks forward to continued, active participation from all. Do let me know your views.

Dinesh Verma
Managing Editor
verma@acegrouparchitects.com

ISSUE 11 SEPT–OCT 2015

REVIEW

Dear Dinesh,

I have just received the latest issue of Antarya. I must say you are taking the Bangalore Chapter to newer heights. All other Chapters of IIID and IIA should look up to you guys and try to emulate you. Bangalore Chapter is setting the benchmark. Kudos to you and your team.

I would like to personally thank you for asking me to contribute to the magazine, and you have so dearly published the same.

Regards,
Architect Prof. Mukul Kulkarni
(Dean – Design, Priyadarshini Institute of Architecture and Design Studies, Nagpur)

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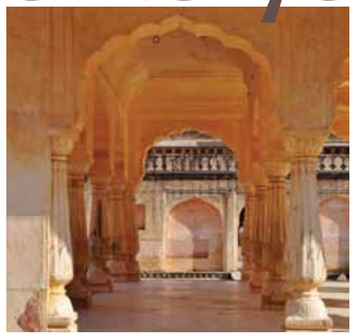

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Amber Fort, Jaipur, Rajasthan

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COVER STORY
INDUSTRY FEATURE

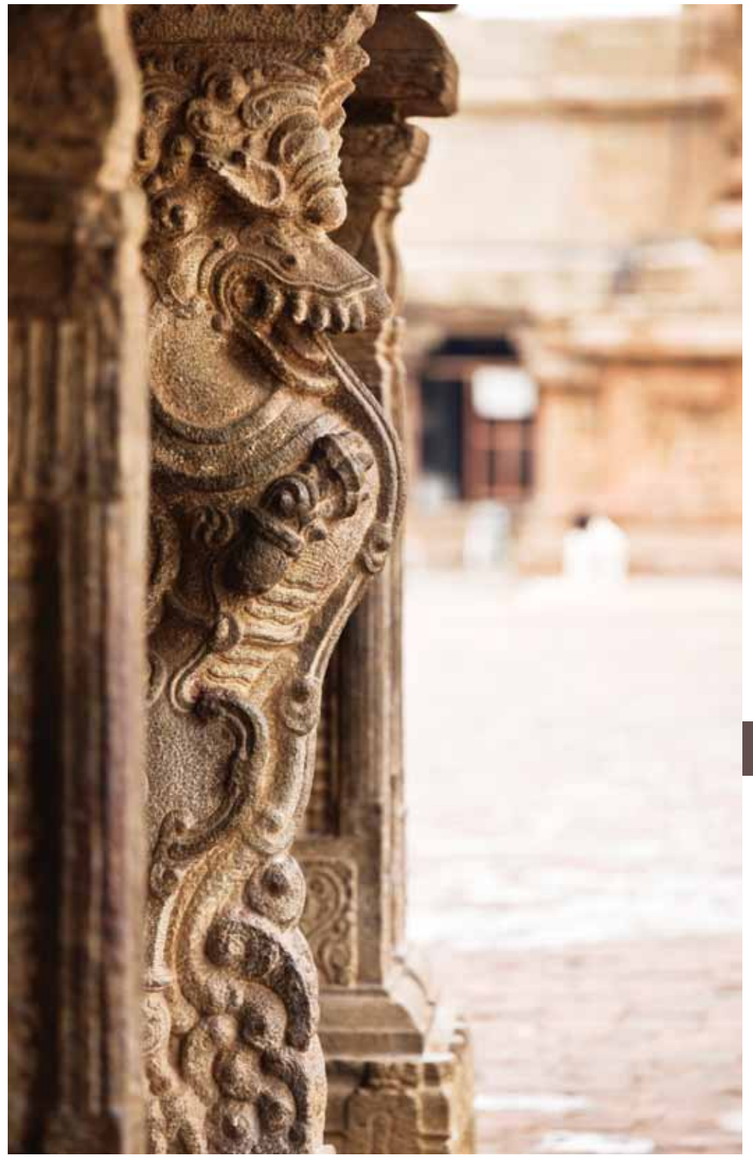
AN EXHIBIT IN STONE

THE LEGACY OF STONE

By Nandhini Sundar

When you trace the history of humanity, a material that inseparably runs along with the history is stone. History of humans is in fact traced to the Stone Age man. Civilization began and evolved from here. Natural stone not only formed the first dwelling of man, the very first tools used too were stone. It is a legacy passed down centuries of human evolution, the natural stone formations not only serving functional uses but also performing the role of custodians of history, the fossils opening the doors to the past, offering the invaluable knowledge of the progression of human race.

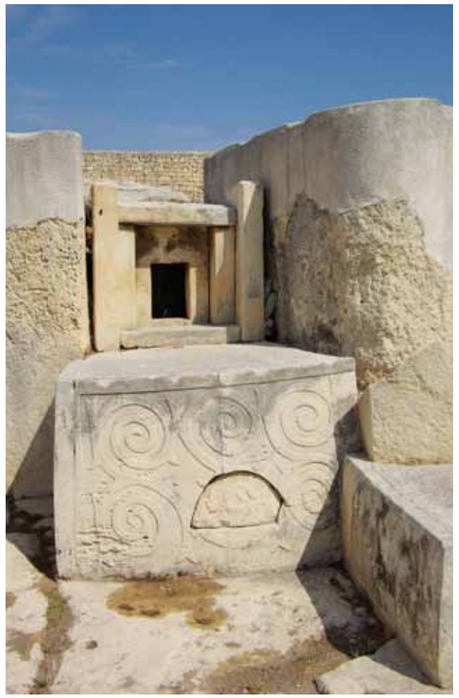
Walking down this history, some of the oldest dwellings erected by man, that has still stood the test of time, are made of stone. The majestic pyramids are a classic example of spectacular stone architecture of the past. The arresting cathedrals as well as castles of the past, each iconic in design and some of these still standing tall as a testimony to the fine architectural sensitivities that prevailed, are all made of stone. When it came to public places and walkways, the first cobbled pavements too were made of stone. Some of the first public works such as the aqueduct in Rome to supply water to the city was made out of stone.



Top: *Pyramids in Egypt*
Right: *Tanjavur Temple*
Photographs by: Mahesh Chadaga

HISTORY CAPTURED IN STONE

Looking back in time at the spectacular structures that came up in each century during each civilization, like the Parthenon in Greece, the Pyramids of Egypt, the stone that served as the basis, captures the history of that era to relate in centuries that followed. While the count of such iconic structures and architectural masterpieces are innumerable, there are a few whose designs have been intriguing, leaving the onlooker spell bound, making it worth exploring into.



GGANTIJA TEMPLES

Referred as the Giant Tower, Ggantija temples are a series of Megalithic temples in Malta built during the Neolithic Age. These temples are older than the pyramids of Egypt and is said to have been in existence before the Stonehenge in England, making them the second man made religious structures in the world after Gobekli Tepe. The monument has two structures built side by side, enclosed with a boundary wall. The structures are built in clover-leaf shape, the inner blocks marking the shape that was later filled with rubble. The plan brings in five large apses that contain alters, with a series of semi-circular apses connecting with a central passage. The structures were erected at a time when metal tools were absent and the wheel was yet to be introduced. It is believed that the small spherical stones discovered from the site were used as ball bearings to transport the giant rocks for the construction.

Top left: *Malta Temples – Ggantija Temples, Gozo*
Photograph from: Wikimedia
commons.wikimedia.org/wiki

Above: *Malta Temples – Ggantija Temples, Gozo*
Photograph by: Ronny Siegel
www.flickr.com/photos/47309201@N02

Treasury of Atreus
Photograph by: Spiros Vathis
www.flickr.com/photos/vathis

Left: *Ggantija Temples, Gozo*
Photograph by: Kev Allen
www.flickr.com/photos/kevallen

Top: *Knap of Howar*
Photograph from: Wikimedia
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KNAP OF HOWAR

Situated in Scotland, this Neolithic farmstead is the oldest preserved stone house in northern Europe. The structure comprises of two rounded adjacent rectangular thick walled buildings where their low doorways face the sea. The second structure is considered to have served as a workshop. The farmstead was built on what was earlier a midden and continues to be surrounded by midden which has protected the structure. There is a total absence of windows, with the space lit up by fire. A hole in the roof may have been the vent to let out the smoke. The walls reach up to 1.6m with the stone furnishings such as beds, storage shelves, fireplaces, partition screens still very much in place. Post holes too prevail indicating the type of roof structure adopted.

Scotland is also home to the stone built Neolithic settlement Skara Brae, Europe's most complete and well preserved Neolithic village, consisting of eight clustered houses. These houses, occupied around 3100 to 2500 BC, used earth sheltering, sunk as they are into the ground on to mounds of middens. The houses, 40 Sqm in size, comprise of a large square room with a stone hearth that is used for heating and cooking. Stone furniture in the form of cupboards, dressers, seats, storage boxes prevail

TREASURY OF ATREUS

Constructed during the Bronze age around 1250 BC, Treasury of Atreus, with its interior height of 13.5m and diameter of 14.5m, had the tallest and widest dome till the construction of Temple of Hermes and the Pantheon. It has a semi-subterranean room with a circular plan with a corbel arch. The lintel stone placed above the doorway was the largest in the world, weighing 120 tonnes. The huge stones used were positioned with care to ensure the vault's stability over time. The entrance to the tomb is an inclined uncovered hall 36 m long with dry stone walls. A short passage leads from the tomb to actual burial chamber which has a cubical shape.

BHIMBETKA ROCK SHELTERS

Bhimbetka Rock Shelters exhibit the earliest traces of human settlement in the Indian subcontinent, the beginning of Stone Age in South Asia. Located in the state of Madhya Pradesh, the rock shelters are considered to have been inhabited by Homo erectus more than 100,000 years back. The caves, giving early evidence of dance, house a large number of paintings, with the oldest paintings estimated to be 30,000 years old.

Bhimbetka Rock Shelters
Photographs from: Wikipedia
en.wikipedia.org/wiki/Bhimbetka_rock_shelters

SANCHI STUPA

The Great Stupa of Sanchi, in Madhya Pradesh, is the oldest stone structure in India dating back to 300 BC and was commissioned by emperor Ashoka. The centre is a simple hemispherical brick structure that was built over the relics of Buddha. It also has a finely polished sandstone pillar. The original brick stupa was covered with stone later in the Shunga period. The stupa was expanded to nearly twice its size using stone slabs. The dome was also flattened close to the top and crowned by using three superimposed parasols in a square railing. Its many tiers symbolise dharma, the wheel of law.

DHAMEK STUPA

This massive stupa located in Varanasi, dates back to 249 BC. While the stupa was expanded on six occasions, the upper part continues to remain unfinished. The stupa is a solid cylinder made of stone and bricks, towering at a height of 43.6 m with a diameter of 28 m, making it the most massive structure in its location. The stone is chiselled, with delicate floral carvings. Exquisitely carved figures of people and birds along with various inscriptions cover its walls.

Dhamek Supa
Photograph by: Binh Huynh
www.flickr.com/photos/91385636@N02

Sanchi Stupa
Photograph by: Travelling Slacker
www.flickr.com/photos/travellingslacker

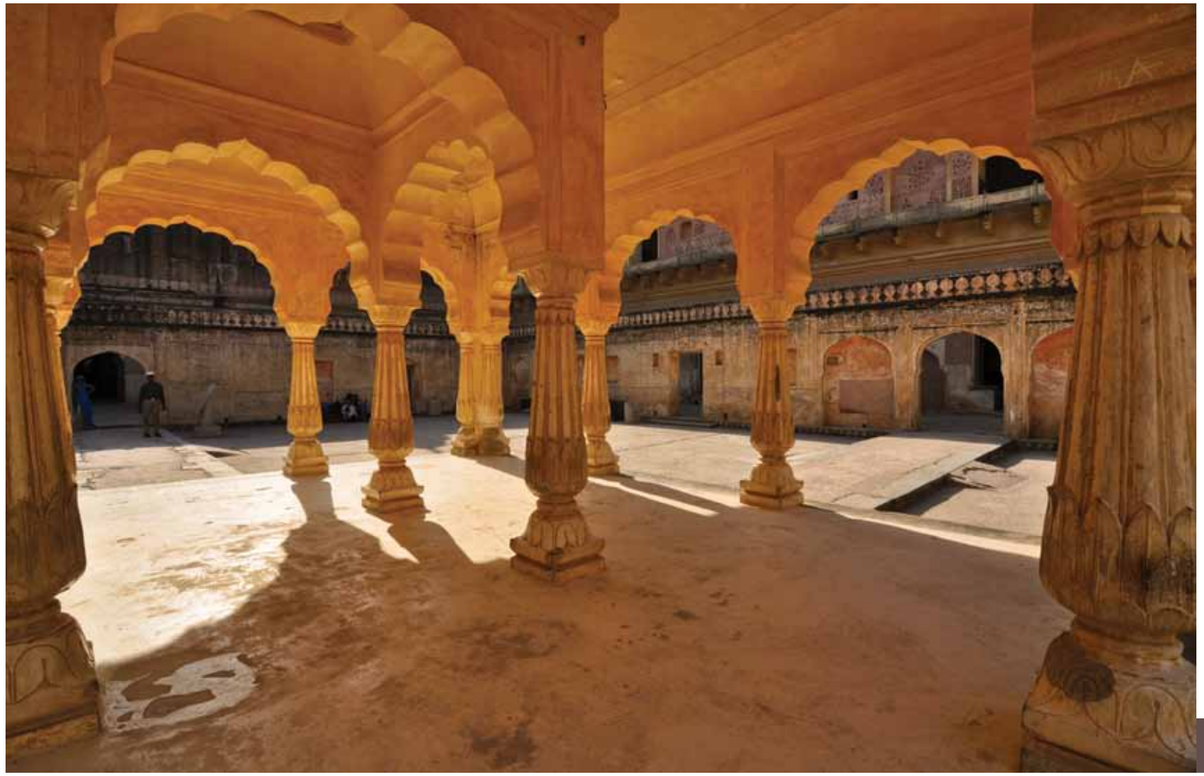
INDIAN HERITAGE

Indian history dating as far back as 3200BC, displays not just use of stone in construction but also a range of architectural marvels built in a variety of natural stone found in the local region. Innumerable temples, forts, palaces stand testimony to this inclination. Be it the Taj Mahal, rock cut structures of Khajuraho temple, Elephanta caves, Konark temple, Hampi ruins, Badami cave temples, the multiple ancient temples of Tamil Nadu including the Big Temple of Tanjavur, the palaces of Rajasthan, the list is endless, each unique in its architecture and stone use and standing the test of time. Modern buildings like the Rashtrapathi Bhavan, Parliament House, Supreme Court and the recent Bahai House of Worship too reflect stone construction.

Khajuraho Temples
Photograph by: Saad Akhtar
www.flickr.com/photos/saad

Shiva and Parvati at Elephanta Caves, Maharashtra
Photograph by: Elroy Serrao
www.flickr.com/photos/enygmatic

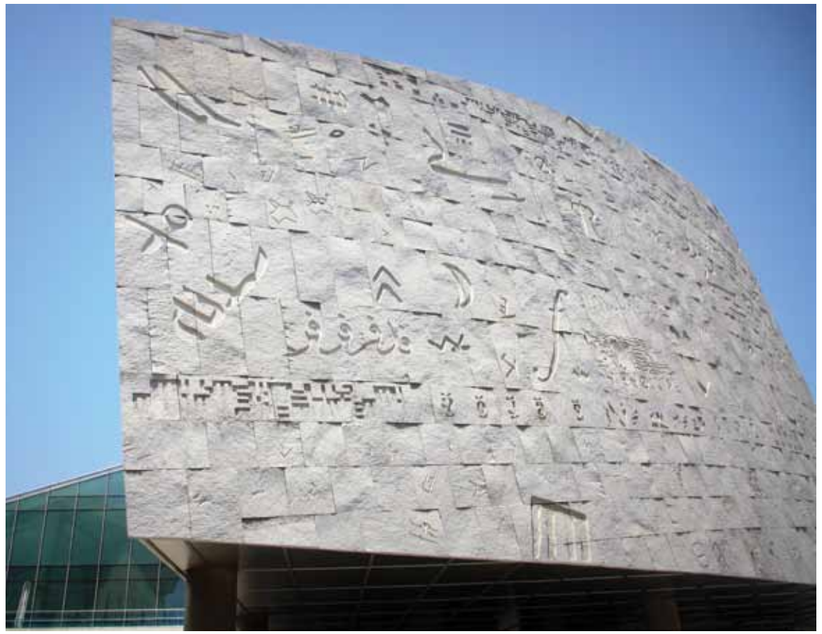
A row of carvings – Konark Temple
Photograph by: Steve Browne & John Verkleir
www.flickr.com/photos/proxyindian



Amber Fort, Jaipur, Rajasthan
Photograph by: Mahesh Chadaga

MODERN EVOLUTION

While history used natural stone as a structural material with vast sheets of the building constructed with it, be it the structure, walls, vents, decorative sculptural elements, the second half of the 20th Century witnessed a new development in the use of stone. Here, the traditional use of natural stone to address structural function transformed to its use merely as a decorative element where the stone used were thin sheets compared to the blocks of rock that prevailed earlier. The thickness of the stone layer currently used is continuously reducing with finer developments in progress, offering sheets that are as thin as 5mm, serving as an authentic layer of skin for the building.



The Bibliotheca Alexandrina
Photograph by: Matt Weibo
www.flickr.com/photos/mattweibo

MANISH BANKER

STRUCTURED IN STONE

Stone structures date back to history, their beauty timeless. Modern stone buildings bring forth this nostalgia, their physical features equally spellbinding. **Architect Manish Banker** of **TAO Architecture** lends a taste of this spectacular stone feature in structures, offering a contemporary twist to a timeless existence.

Top: A response to local climate and construction methodology, the architectural formation is primarily driven by key components like cooling towers and stack rowers to generate passive cooling system, supported by peripheral verandas and twin courtyards.

Top left: Natural aesthetics of stone, wood and textile exploited to generate interiors suitable for local climate and culture.

The architecture comprises of functional elements like arches, *machan,* hot air stacks, building envelope and cooling towers. Living spaces expand onto outdoors through series of semi-open verandas.

Top: Designed courtyards create micro nature within private spaces.

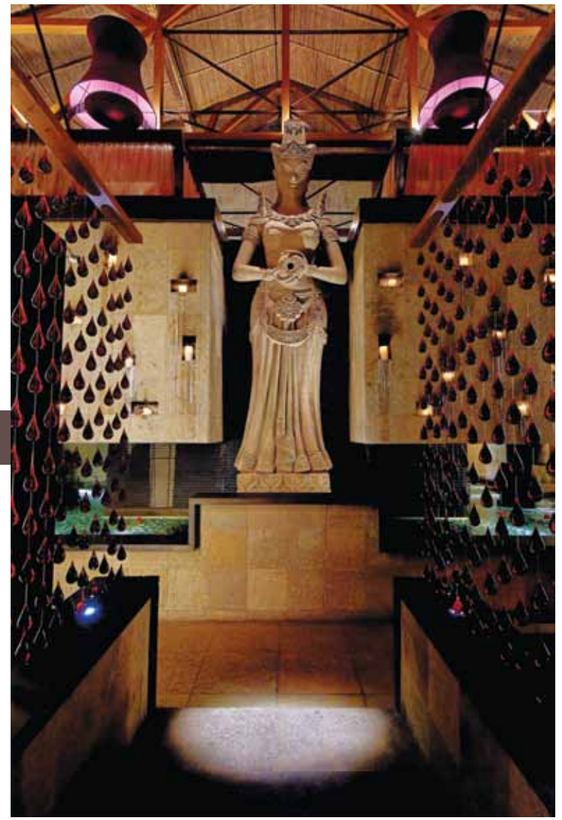
Middle: Single floating roof designed with various layers of landscaping to create an interesting experience. The water body generates interesting reflections and extensions.

Left: Entrance lobby with a grand main door made of onyx stone leads to the waiting area that overlooks the lush green interiors. The perpendicular Malad stone wall runs through the interior and exterior spaces.

SANDEEP KHOSLA

COMPOSED IN STONE

Natural stone comes with its own quiet beauty that is unmatched. **Architect Sandeep Khosla** of **Khosla Associates** accentuates this silent splendour with embellishments and stunning design features to transform the interior spaces.



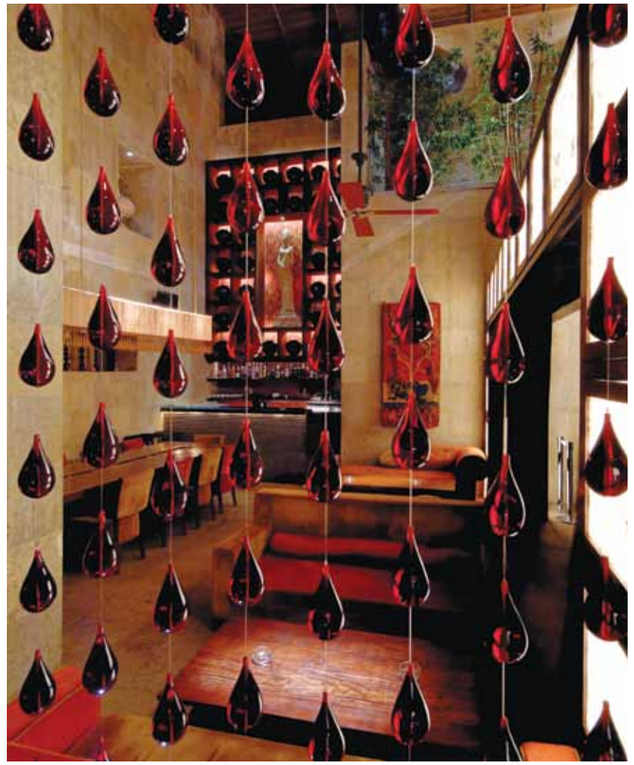
Top: The awesome proportions of a 45 feet high bamboo clad dimly pitched roof houses the dramatic 20 feet high figure of a Balinese consort emptying an earthen vessel of water into a moat filled with pebbles and lotuses.

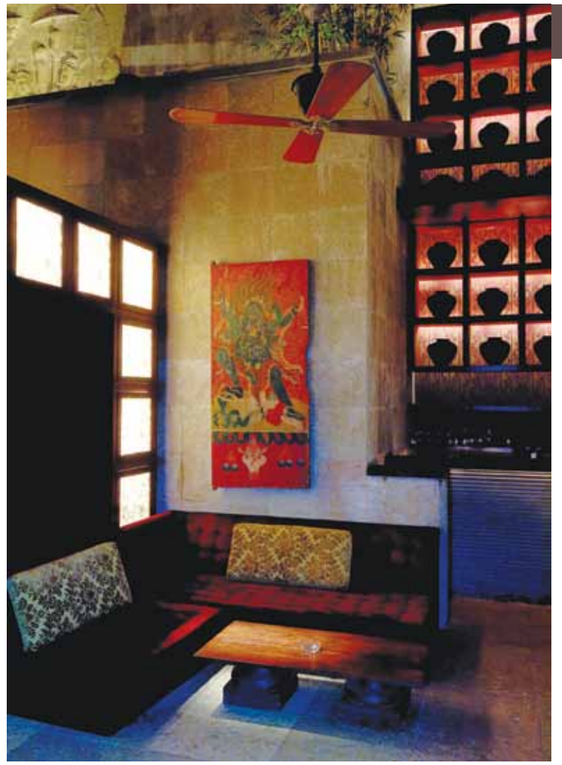
Right: The dining area is reminiscent of Japanese Shoji screens with a Japanese floral woodcut print that is gently back-lit, contrasting with the warm yellow slate.

Facing page top: Perfectly proportioned South Asian statuary and friezes blend in with the monochromatic rustic slate shell of the interior. Bamboo spouts let water into a linear water feature replete with pebbles.

Facing page bottom left: Customised screens of red translucent teardrops gently divide the entrance area from one of the three private rooms.

Facing page bottom right: Walls of the entire shell are clad in warm yellow slate. A dramatic wall composed of repetitive Chinese urns in square niches, are back-lit against a backdrop of floral silk.





GAYATHRI SHETTY & NAMITH VARMA

SERENITY IN STONE

The presence of natural stone brings in a feel of strength into a space. **Architects Gayathri Shetty and Namith Varma** of **GN Architects** use the serene beauty of natural stone to exude a sense of peace and tranquillity to the space.

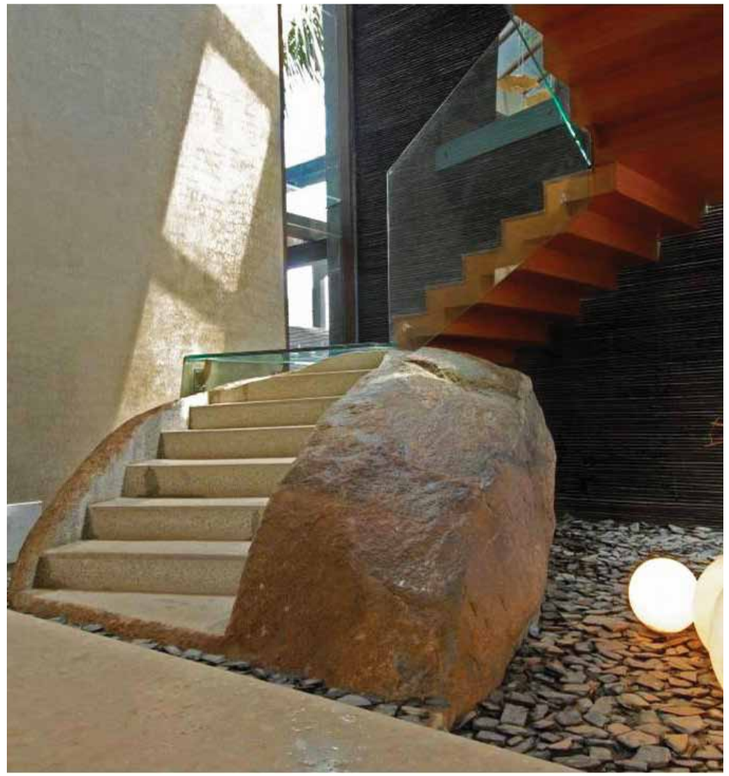
Top: Stone ensconced water body accentuating the rugged outdoor feel amidst the calming effects of water.

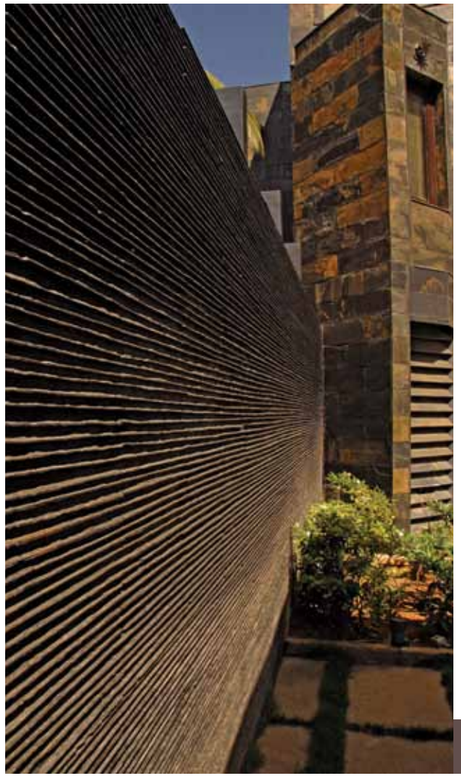
Left: The stone clad bathtub serves as a stark contrast to the captivating Kerala style setting and grey stone walls.

Facing page top left: The staircase is carved out of a boulder, the mighty base a striking contrast to the delicate glass railing.

Facing page top right: Clad in slate that is chipped and laid on edge, the screen wall serves as a dramatic entrance.

Facing page bottom: The stone sculpture brings in a relaxed aura to the space, complemented by the presence of the water body and slate clad wall that serves as the back drop.





LEENA KUMAR

CRAFTED IN STONE

A structure can be patterned differently when the delicate layers of stone come into play. **Architect Leena Kumar** of **Kumar Consultants** crafts the interiors and exteriors with a fine lay of stone that reveal exquisite craftsmanship and beauty

Facing page top left: The stone patterns on the marble floor define the functional segment of the space while bringing in an element of art.

Facing page top right: The onyx stone with its back lighting brings forth the beauty and detail of the metal cut-work beneath.

Facing page bottom: A heated pool framed in stone.

Top: The tree of life carved out of sandstone slabs and framed with granite blends well with the vertical garden as a static element in the midst of the ever-changing landscape.

Left: The rugged Sandstone arches within a sleek metal space frame held by a granite obelisk serve as a striking contrast.


Absolute Black


Bengal Black


Amba White


Aurora Blue


Bengal White


Bash Paradiso


Neopolitan Flooring & Plywood


Bianco Azul

AN EXHIBIT IN STONE

It is a material that is timeless, lasting centuries, its beauty unmatched, the history dating back to the very first structures built by humans beginning from Stone Age. Natural stone has etched its place in architecture, making it an irremovable element in a revisit of the history of architecture. Early architecture universally displays extensive use of stone in construction, many of which have continued to last over centuries. Natural stones continue to have a significant presence in construction across the world in various forms, especially in public buildings, temples and increasingly in residences.


Bianco Typhoon


Black Forest


Brass Blue


Neopolitan Flooring & Plywood


Brown

WHY NATURAL STONE?

Be it in the process of extraction, transformation, transport, as well as its lifetime, natural stone, both qualitatively and quantitatively proves to be sustainable. Sustainability essentially pertains to extraction of a resource at a rate that is far less than the time required for its renewal. It is a compliance with the three integral tenets of recycling, reducing and reusing. Use of natural stone is also compatible with the environment as the level of consumption of natural stone as compared to the natural resources is very low making the possibility of its use almost indefinite.

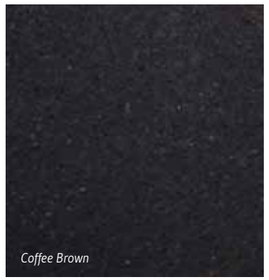
Natural stone is economic and cost effective as the energy consumption, cost of extraction and processing of natural stone is minimal when compared to other building materials and in fact can almost reach zero when viewed against its durability or total lifespan. In fact, from the architectural point of view, natural stone saves energy as it has values of thermal conductivity, transmittance and thermal inertia.

Natural stone is also not toxic, it is fire resistant and given its strong weather resistance, needs far less maintenance as compared to other building materials. It requires no chemical treatment during its lifetime unlike synthetic materials, metals, glass and others. This automatically reduces the presence of toxic components in the structure. Further, with no emissions happening from the processing or use of natural stone, there is no resulting acidity in the atmosphere nor emission of industrial toxins that are hazardous to health.

Reuse in the case of natural stone is very pronounced with cobblestones used in walkways, pavements. Likewise, natural stone generates residues which are formed of the various varieties of stone. These can be used in the calcium industry, that of cement, paper, paint, sealing and adhesives, cosmetics, rubber, carpets and so on.

Use of natural stone, by virtue of its lifetime where it ages better than any other material, reduces the need for replacement and in turn the requirement for newer source of materials. The aqueduct of Segovia, lasting over 2000


Classic Brown


Coffee Brown


Colombo Juprana


Colonial Ivory


Coast Green

years is a case in point. Interestingly, natural stone not only has significantly higher levels of resistance to weather compared to other materials, it also comes with an unmatched beauty.

Every single piece of natural stone is unique, coming with its own distinct character and offers an expansive range of possibilities in colours, textures and finishes. While every piece of natural stone holds within multiple minerals, these minerals may either be evenly spread or positioned differently. Based on their positioning, an array of colours and patterns emerge giving each stone its distinctive identity.

There is of course a visual impact that comes along in the mining phase but this can be addressed and corrected with strong norms of restoration and clean mining practices. Given the labour intensive nature of the industry, it serves to be the biggest employment generating material, contributing to significant economic development.

MAKING THE RIGHT CHOICE

What do architects and designers look for when they choose to use natural stone? It is essentially stone with the right colour and pattern, a stone that is suitable or adequate for the purpose, that is, whether it is hard enough, not too absorbent. The natural stone also has to be easily available in the quantity required and within the time frame of the project. And finally of course, the affordability of the natural stone in relation to the budget allocated for the project.

When natural stone is mentioned, what essentially comes into mind? Is it design, decoration, bringing to recall a vision of a beautiful entrance hall in a hotel, a showroom with a fine looking worktop or even a striking shower cubicle with exquisitely book-matched, veined slabs of an exotic material? Is it also art, the many beautiful sculptures, be it antique or modern, enjoyed in a walk around a city or when visiting a monument? Or is it as a building material? How often, as architects and designers, there is an urge to stop and admire a beautiful façade, a rustic wall, a shop-front with a special finish?

And what about the history inherent in natural stone? It is undeniable that natural stone is an integral part of our heritage. Being one of the most durable materials, natural stone has always been used for structures, be it the Pyramids of Egypt or any old building in a city, serving as a living testimony of human history. It is obvious, natural stone is a material like no other.

Given that it is a natural product with its own peculiarities, it calls for making an informed decision while exercising choice for a project. This takes one back to the question, what is the criteria for this choice? A sound method that can be adopted is to make a checklist to facilitate this choice. These would be:


Ghibli


Imperial Gold


Himalayan Blue


Green Surf


Ivory Brown

- Choice for commercial or domestic use
- To be used for internal or external application
- Does it involve special finish requirements
- Does it conform to colour scheme and book matching
- Is the quantity required available
- Sampling and viewing the stone in large slabs before choice
- Budget constraints
- Availability of technical data or tests

TYPE OF USE

Commercial use implies heavier traffic, calling for a harder-wearing stone. Soft stone such as limestone, however great it may appear, cannot be used in a place like a shopping centre floor though it can be used for the walls. In case of domestic use, one has, in theory, a whole array of natural stone to choose from depending on the purpose. For instance, for a kitchen countertop, the best choice remains granite given its chemical composition making it less susceptible to staining from acid corrosion.

PLACE OF USE

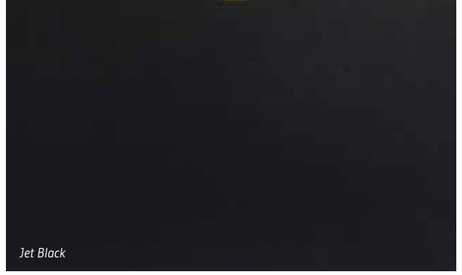
Use of the natural stone, be it for internal or external application, again will vary the choice. While the functionality of the space, be it commercial or domestic will aid the choice when it comes to internal applications, in the case of external use it will first have to be determined whether it is for wall cladding or flooring. Most stones are suitable for cladding as the water runs down the walls though it is important to take into consideration the technical data of the stone.

For instance, the absorption data should be considered. Currently there is a test called 'salt crystallisation' which gives insight into the manner in which the stone will age and wear with time. As for external flooring, weather plays a major role. Water, snow or ice will remain on the surface and have a much greater interaction with the stone. Hence, external flooring in cold climates requires stones that meet the highest specifications.

LENDING A SPECIAL FINISH

Safety requirements call for special non-slip surface and in many cases this implies applying a special finish such as flaming, bush-hammering or sandblasting. But these finishes cannot be applied to all natural stones. For instance, flaming is out of the question when it comes to majority of limestones.


Ivory Cream Extra


Jet Black


Kashmir Black


Kuppam Green


Jurassic Green


Ivory Chiffon


Lemon Ice


Mandanapalli White


Night Blue


Pegasus Copper


Paradiso Classic


Parada Gold


May Flower

COLOUR SCHEME

There is a natural colour for literally every colour scheme in a project. Being a natural product sourced from a quarry, it does not come with perfectly even-coloured pieces that a factory line produces. This natural colour variation makes it unique, giving it its beauty. The issue to be addressed here is quantity versus uniformity. In case of a project concerning a large area, it may seem prudent to restrict to stones that are naturally uniform. One should also be aware of the great potential of the effect of book-matching with veined materials (image book-matched material). This can in fact make the project unique as there will be no other set of slabs in the world displaying exact similar pattern.

QUANTUM AVAILABLE

Of any given natural stone, there are slabs that are more figured while others are less figured. If a perfectly clean look is desired for a larger area, it may be almost impossible to achieve the required quantity. Yet, even with such a limitation, while dealing with mega projects, it is advisable to ensure the quarry has the capacity to extract the quantity of material required within the timescale planned.

VIEW IT LARGE

It is imperative that the final choice of natural stone is not done based on merely viewing a sample. This is a common mistake made in selecting natural stone. It is highly recommended to visit the local distributor and see for oneself the large slabs that offer a more realistic picture of what the stone would look like in a larger area, be it flooring, a façade or others. In situations where a personal visit is not possible, high quality photographs of the slabs can be viewed to make an informed, correct choice.

BUDGET CONSTRAINTS

While the choice has to conform to the budget allotted, it must be said that there is almost always a natural stone for every budget.

TECHNICAL INFORMATION

Quarries are increasingly producing technical data sheets for each type of material based on lab tests. This needs to be brought to awareness to make an informed choice depending on the project undertaken. Since July 2013, this has been made compulsory by the European Union for quarries to supply this information.

In short, while it is beyond dispute that natural stone can add unique value to a project, it also requires a wise choice. Here, making use of the knowledge and experience of the distributor or natural stone supplier is a good idea. A visit to the display centre, a conversation with the distributor addressing all the queries, major and minor, a feel of the natural stone, would help in ultimately making the right choice. In case of a particularly complicated requirement, the stone supplier is available to provide all the answers directly from the quarries.

A project using natural stone highlights not just the uniqueness of the stone used but the entire project. An informed correct choice will only further enhance the distinctive streak of the structure built.

WONASA: MAKING A DIFFERENCE

The World Natural Stone Association (WONASA), a non-profit organisation encompassing some of the leading companies of the natural stone industry across the world, offers a platform to its members to share experiences as well as challenges facing the global natural stone industry. WONASA promotes the use of natural stone in construction, addresses the changing market scenario where economic development has opened up newer markets and potential. The association focuses on educating the users of natural stone on the advantages prevailing in different applications besides bringing to the fore the innate greenness of natural stone and its use, especially in the current heightened environment sensitive world.


Neopolitan Flooring & Plywood


Red Multicolour


Pegasus Gold


Neopolitan Flooring & Plywood


Regal Black

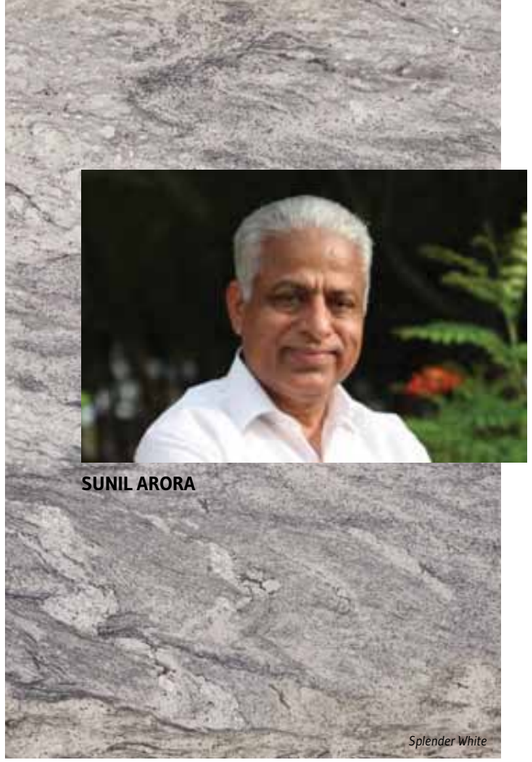

Ivory Gold

Given the emerging challenges facing the natural stone industry, WONASA works towards finding solutions in this globalised modern world by bringing in new ideas, facilitating relevant exchange of information. The association interacts with various international organisations and government bodies to promote and encourage industry friendly pro-active policies. The association also works towards ensuring eco-friendly sustainable mining practices that follow all safety standards.

While there are several stone industry associations all over the world (in India, for example, among others, there is FIGSI, which organizes the STONA fair in Bangalore every 2 years), WONASA is the only organization that adopts a global approach to all its activities and the implementation of its objectives. Its current membership is around 60, spanning 20 countries. Incidentally the first President of WONASA is Mr Veeramani, CEO of Gem Granites, India. The current President is Mr Heikki Palin of Palin Granit, Finland. One of the three Vice Presidents in the current executive team, Mr Sunil Arora, CEO of Aro Granites, also hails from India.

WONASA has taken several initiatives to benefit the natural stone industry across the world, notable amongst them being the co-sponsoring of the Environmental Product Declaration (EPD) study, done in collaboration with Euro-Roc, a European association. An easy to read guide for architects and designers was recently prepared in the form of queries and answers in several languages by WONASA to facilitate easy understanding of the different aspects of natural stone. The guide is available on the WONASA website.

Competitions amongst university students of architecture are also organised by WONASA to further encourage graduating architects to use natural stone. Likewise, educational seminars for architects and industry professionals have been organised in different cities such as Moscow, Warsaw, Xiamen. A larger gamut of similar activities is on the anvil for the future.


Splender White

SUNIL ARORA

With the forthcoming STONA Fair to be held in Bengaluru, **Sunil Arora, CEO of Aro Granites and Vice President, WONASA**, shared his views with **Antarya** on the current state of natural stone industry in the country and the challenges faced. Here are a few excerpts from the conversation.

Q. What is the current state of natural stone industry in India?
The construction industry –residential/apartment and commercial have been very slow in India from last one year as there was over construction in last few years. Hence, demand for Natural stone has been very slow. Also, there is high competition from ceramic/porcelain and engineered stone which has taken the large share of the market, reducing demand for Natural stone.

Q. Which set of natural stones from India are most popular outside the country and which are most popular within the country?
In the international market, at present only white, grey and black colour granite are popular and all other colours like brown, blue, green, gold are completely out of fashion. Hence, from India the most popular granite is absolute black, steel grey and white colour granite like Colonial white, Madanapally white and River white. Within India most popular colour is beige or cream colour marble from Italy and Turkey.

Q. What are the main challenges facing this industry?
The engineered stone / quartz stone is taking the big share of market in India and globally, which is taking away natural stone market share. The exchange rate around the world has dropped by 30 per cent to 60 per cent whereas the Indian rupee has devalued by approximately 8 per cent in the last one year.

Q. In the forthcoming STONA 2016, how many international participants are expected besides local participation?
Approximately 200 international participants are expected.

Sources
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NATURAL STONE: AN EXAMPLE OF SUSTAINABLE MATERIAL
By Estefanía Fernández Prieto, Chemical Engineer, Technological Centre PINACAL INSER,Valladolid (Spain)
laboratorio@pinacal.es | Published in LITOS 122, July / September 2014

HOW TO CHOOSE NATURAL STONE FOR PROJECTS
By Rogerio Moutinho, MGLW (United Kingdom) | Published in LITOS 118, September 2013

www.wonasa.com

DEAN D'CRUZ

KEEPING THE DESIGN NATURAL

By Nandhini Sundar

Commander Narayanan's House

There is a sense of quietness about him, to the point of almost being mistaken for being an introvert, with information on his work too shared only when probed. He strikes you as a person who is happy to be left to do his designs undisturbed. The ambience of his work place too speaks similar inclination for solitude and presence of nature, the work spaces opening on to a totally serene woody space.

Architect Dean D'Cruz of **Mozaic** certainly needs no introduction, his structures acclaimed not just for their ingenuity in handling of spaces but also for the inherent green ideology embedded in them. On graduating from JJ College of Architecture in 1983, Dean moved to Goa where he partnered architect Gerard De Cunha for 7 years before starting Mozaic.

Beck Umbrella – Overlay roof

Beck Umbrella

Having started his career with 'low cost architecture' as he prefers to call it, where the accent was on a 'hands on approach', Dean was influenced greatly by Laurie Baker's basic approach to design. But this influence was in the past and has now got corrupted, he says, extending his captivating smile.

His designs reveal a strong inclination towards open earthy spaces that are traditionally oriented while meeting contemporary sentiments. The structures display a conscious attempt to shun or limit the use of RCC. There is copious presence of natural materials such as laterite stone, a significant presence of recycled elements, the architecture representing a reinterpretation of traditional arches, balustrades and laterite columns.

The laterite stones used in some of his projects were ones that had been discarded as waste. Dean sourced these and used them as random rubble, lending an arresting look to his structure. The materials that Dean sourced from discarded waste were not just natural stones and old wooden columns, doors and windows, but extended to even items such as Athangudi tiles for the floors.

His early works display plenty of experimentation in design and structure. A significant level of conservation work too prevails in his earlier days. The old world feel as well as the inherent features were retained to a large extent in his renovations while addressing the present day functional requirements.

His project Captain Lobo Housing brings in amply his design sentiments of economy and use of materials in raw form. Encompassing 20 units in all, each different and unique in design, the project uses laterite blocks for the structure and is organic in nature. The individual units are compact and economical in structure, creating a sense of community through their close knit apartment like structure. While the density of the layout is reminiscent of an apartment complex, yet the traditional spirit is abundantly captured in its design elements and the raw use of materials.

Prestige, 4 X 400 Sqm bungalows, brings in the courtyard concept along with his organic design sentiments. The residence structured around a central courtyard, uses the local laterite stone, while the design opted effuses a strong traditional approach. The copious presence of natural stone in the living area lends a strong aura of the exteriors. The spaces are effectively connected to gardens and terraces. The structure also reveals the minimal play of concrete and columns. The load bearing is deftly achieved by a clever structure of walls in the required locations.

Tito's Goa

The Eleven lakh house, as the name itself indicates, is a very low cost residence that Dean chose to design. "Coconut wood is used in plenty in the residence along with recycled windows and doors as well as rafters for the ceiling. Coconut wood also prevails as walls and railings in some places" says Dean. The traditional art and flavours are brought in here through Worli art. The concept of recycling has been taken to the extreme in this project with an old scooter handle bars featuring as the tap for the washbasin in one of the bathrooms.

The Disconnected House, as the name of the project indicates, is an assembly of individual pavilions that are totally disconnected. In short, movement from one individual space happens through the open to sky corridors and garden spaces. The bedroom and living areas feature as separate entities, inviting you to step on to the courtyard every time there is a movement from one room to the other.

Encompassing 350 Sq m of site area, the structure within uses laterite stone and traditional design sentiments. Deep overhangs prevail in the Kerala styled roofs in the totally open interior spaces, the outdoors seamlessly infiltrating into the interiors. The boundaries of the inside and outside are thus hard to define.

The Pavilion House with its umbrella roof is inspired by Kerala architecture. The structure once again reflecting the presence of seamless spaces, with the bedroom flowing into the open bath space and thence to a private garden, has also the living area opening on to the outdoors, sans walls. The structure and its internal spaces are a strong reminder of pavilions where the view of the exteriors is seamless and totally open while affording the spectacular feel of living in the outdoors.

The Artist House is different in its design, hosting a series of parallel walls, with three concrete walls reaching double height to offer a space that connects overhead. The totally contemporary version of the spaces display a fine play of art in the form of Jaalis, bringing in the artistic flavours effortlessly. The art on display

Captain Lobo's Hideaway, Verem, Goa

Kim Morarj's Disconnected House

further serves as a contrasting, albeit charming element in the straight lined white interior housed amidst parallel walls.

His Cathedral project shows a strong asymmetry, the roof left floating over the stone walls. The floating tiled roof mounted on a steel tiled structure, appears like an umbrella over a space, connected as it is cleverly to the stone walls. "We wanted an even more unique structure and design element to be opted where the stone walls merely would be piled random granite blocks. But that did not prevail", says Dean. "The roof now floats over the stone structure. RCC columns here serve as supports for the steel and wood roof."

When he was offered the design of a library, Dean chose to do something different once again. And thus evolved the Hampi style design, with a water tank strategically placed on top to cool the fins of the Gopuram. While the stone building served to be naturally cooling, open to sky courtyards brought in the sunshine and ventilation into the interiors.

Traditional inclinations are not the only feature seen in Dean's designs. The Japanese style hotel he designed reflects the temporary approach with its range of charming wooden cabins, effectively bringing in the Japanese theme. Use of wood in entirety in the structure is seen in other projects too like the Taj Hotel where he used recycled timber picked from fallen trees in the site to fashion an arresting timber lodge.

Subodh Kerkar – Artist's House

Asymmetrical Chapel

RR Nagar House

Akila Keshav House

SMET

Kishore Residence

BHAVANA & SRICHARAN
AN HONEST PORTRAYAL

The design ideology is to bring in a bit of earthy tones in a contemporary setting, the mood fairly rustic, the materials used in their raw form, be it bricks or concrete. In short it is an honest portrayal, be it materials or the tones offered, all wrapped to address current lifestyle requirements as manifesting in a more contemporary theme. For the young **Architects Bhavana Rao and Sricharan Bhoopalam,** their firm **Slice of Life Architecture** is to offer precisely that, a slice of life in the most practical honest sense, as portrayed in the designed spaces.

Cornucopia

Graduating from RV College of Architecture in 2010, Sricharan lost no time in starting a firm in 2011, to give an unhindered scope to his creativity and design inclinations. His partner Bhavana joined him a year later. The duo currently has over 30 projects to their credit, most of which are residential architectural projects.

The accent of their design has chiefly been a fine integration of the interiors with the exteriors, where the demarcation almost dissolves to make it seamless. Akin to traditional architecture where framing of exteriors through exotic arches was common, the duo lends plenty of attention to similar framing of exteriors to give a live art feature for the interior spaces. “Every view is turned into a frame while the presence of skylights and large corridors bringing in abundant natural light and ventilation, complements this exterior framing”, says Bhavana. To ensure there is natural internal cooling, strategic vents to let out hot air are an integral part of most of their projects. “The style was evolved over time, the initial focus being to create simple spaces that are high on warmth and aesthetics”, adds Bhavana. Add to this design ideology the innovative streak that flows in most of their designs, and the resulting space never fails to be striking.

The Café Cornucopia in Mysore displays this innovative streak with the use of shipping containers in erecting parts of the structure. The café boasts of an amphitheatre, a performance stage surrounded by a water body to lend a floating feel, supported by a recording studio. Natural materials such as Sadarahalli stone, waste stone from quarries have been used to raise the stone walls, with the feature wall displaying random rubble structure. The cobble stones picked locally serves as flooring for the open area that is teamed with greenery. The building also boasts of recycled elements such as reclaimed windows, furniture.

The inward looking Iha Residence connects with the outdoors through a central courtyard where all the internal spaces, including the kitchen, open on to it. The interconnected spaces reveal exposed concrete while the sky lit courtyard incorporates a fully grown tree amidst the Sadarahalli and pebble floors. Greenery prevails in exteriors too, the stone clad façade dripping with it. Totally contemporary style combined with earthy textures prevails in the Kishore Residence, the seamless spaces revealing a copious play of wood. Internal courtyard finds its presence into the spaces, blended with bamboo and trees that bring the foliage on to the first level. The structure reveals a framing of the solid with the void, the wood and glass combination occurring, introducing warmth while enhancing the feel of free flowing spaces.

The Gowda residence, with its exposed concrete and brick walls effusing an earthy yet contemporary ambience, blends in a water cascade in the façade. The water cascade begins from the second level and streams down to the planter boxes placed in the balcony of the first level and thence to the courtyard. “The feature is inspired by Charles Correa”, smiles Bhavana.

Exposed brick and stained cement walls in place of exposed concrete team attractively with planters on every level in the commercial complex SM Electronics. “The building is off the grid, fed by solar power and has no air conditioners. The interiors are structured with strategic large windows that bring in plenty of natural light and ventilation”, says Sricharan. A large vertical garden in the sky lit stairwell brings in greenery into the informal lobby area while the natural light filters into the basement too.

The outward looking Akila residence offers an outdoor dining space, capitalising on the site overlooking an expansive thick green patch. Interestingly, indoor dining is confined to merely a breakfast counter in this residence. With the residence perched on the second level of a commercial structure, the view of the expansive green patch is further taken advantage by having the living area to open seamlessly on to a deck that overlooks it. Exposed brick walls bring in the earthy hues into this otherwise contemporary space.

VINAY & THEERTHAK

KEEPING IT NATURAL

They are both barely 27 years. Yet their firm **D.U.N.E** is already five years old, having started it informally in 2010 while still in the final year of their architecture course, with just their strong design ideology and passion their companion. Young architects **Theerthak Rajashekar and Vinay H C**, students of RV College of Architecture believe in adopting a practical approach to design where the accent is on retaining the natural textures, the final structure timeless in feature. The line drawn between their natural state and treating them slightly is very hazy, says Theerthak.

Mathew's Residence

Mathew's Residence

Gupta's Residence

While the inclination is to use materials in their raw form wherever possible, limiting the tendency of the building to wear out, the natural sentiments are carried to the design of the structure too, bringing in a seamless blend of the exteriors with the internal spaces. "Close to 40 per cent of our spaces have a skylight or a vent that connects to the sky or visually to the exterior landscape", states Theerthak. As for the use of materials in their natural form, he contends that this enables the structure to age gracefully with time.

The 5500 Sqft Mathews residence displays the duo's design inclinations abundantly. The four bedroom residence comes with massive windows, large skylights that connect the exteriors with the interiors. Terraces flank the rooms, extending the internal spaces

Banasiri's Residence

Raj's Residence

into the open while the double height living area adds to the volume. A suspended staircase adds to the flavour, finished as it is with railway sleepers to lend the natural rustic aura. The contemporary themed house also incorporates Sadarahalli stone door frames to accentuate the raw natural feel of the décor.

While the four storeyed Raj residence integrates a metal screen to the façade, the Sharan residence has a metal railing on the façade that has been turned into a vertical garden. To cut the vertical expanse of the four storeys, a geometric twist has been brought on to the façade while the large windows with protruding seating further bring in varying dimensions in the form of cubes. Every floor hosts a skylight, bringing in ample natural light into the interior spaces.

The Rajashekar residence reflects similar inclinations in design, hosting vertical gardens, sky lit bathrooms, stone frame doors and windows. Cement and reclaimed timber floors bring in the rustic leanings while the expansive terrace gardens introduce the presence of overflowing greens in an urban site.

When faced with the renovation of the Gubbi residence, the duo realised that some clever manipulation of the structure would have to be brought in to alter the design and ambience. A sunken family area was created from under the staircase which had hitherto been left unused. "A column here obstructed our conversion and we were faced with its removal while ensuring the structural support was not impaired", says Vinay. The duo did that to create a charming informal living space in an earlier abandoned spot.

The AGDPL wood factory posed a different kind of problem where the site was home to over 20 trees. Being totally against the felling of trees, Vinay and Theerthak decided to design their structure around the existing set of trees. Needless to say, the evolving design was geared to bring in the nature, the presence of greens connecting visually into the interiors. The liberally naturally lit office interiors incorporated ample skylights and vents to bring in fresh air.

The Corner House proved to be a mixed project, combining residence with the commercial. The 5200 Sq ft residence hosts expansive living spaces while the retail store incorporates a glass ceiling and geometric shelves to lend the difference. The Banasiri House, being a renovation project, involved working with an existing structure and altering it successfully to make it more functional as well as reflect their design inclinations. The duo struck extensively, bringing down walls, took out an existing staircase, added another two levels to the existing structure. The existing terrace garden was turned into a lounge where metal teamed with wood became the new staircase. While all the rooms were fitted with skylights, Jaisalmer stone was used to brighten and cheer the space.

Costa Rica Congress Hall

IN CONVERSATION WITH:
CARLOS ARNAIZ
SUBTLETIES OF ARCHITECTURE

It is philosophy, innovation, honesty and connection to the roots when it comes to designing structures for **Architect Carlos Arnaiz of CAZA**. In an enthralling discussion on architecture with **Antarya,** Arnaiz speaks at length on the subtleties of design that needs address in the evolution of a building.

100 Walls Church

City Center Tower – Exterior View

Q. Your structures reveal an intense openness and large volume. Do you feel that spaces are confined not just to the four walls but stretch beyond to encompass the infinity?
Architecture is rhizomatic, not bound by four walls or site but extend to their outdoors, to the city, the nation. Our structures are designed to address the subtler elements and this has to do with my background in philosophy. I took a degree in philosophy before becoming an architect! We establish a conversation between the project and the deeper cultural meanings of the context.

Our Hundred Walls church is open and mysterious like the mysterious relationship with spiritual life. You choose your path here just like in spirituality but all paths lead to the core. There is also an intense conversation with nature with the interiors opening on to

Taipei Pop Music Centre – Public Area

BRT Stations – Tower view

La Salle Church

14 different gardens, representative of the last 14 events of Jesus Christ before the Crucifixion.

The undefined interior spaces and openness represented by the parallel walls numbering hundred in this chapel came about with the site situated between the mountains and the beach. The structure, with its open design, brings in the relationship between the sky and ocean. The angle of the walls, each varied in height and width, also have a functional role, shading the roof with their height at various places.

CEBU which is an inexpensive project addressing rapid bus transit system has 14 modular stations done in four different styles. Here the city is an artistic capital with a long history of textiles, furniture making and the city is also colourful with its festival clothes where floating costumes prevail. The bus station captures this culture effectively displaying colourful metal triangles welded together, the colours and crossings reflecting local culture.

Q. Your structures reveal a strong leaning towards using elements in their raw form. Is it their raw beauty or the honest portrayal of materials and handling of spaces that brings this inclination?
For each philosopher, the important tool is language which is different. In architecture, the language is materials. There needs to be honesty in how you treat it differently. Even in playfulness, manipulation, there should be honesty. The material essentially evolves. If you see cooks, they use different ingredients and transform it to something different. Likewise, we take physical elements and transform it where it is tailored to the needs of the project. We use materials differently where the transformation gives a different twist to it even when portrayed in its raw form. For instance, in one of the office buildings, we treated glass and aluminium like a skirt in response to the masculinity that is usually seen in such buildings. We also made it pink to offer a different gender tone.

Q. Geometry is pronounced in your architecture. Is it more as an aesthetic or a structural statement?
Geometry is one of my biggest obsessions. Once we start a project, we select an approach; we try to think of the primitive, the basic geometric form underlying it. In the Hundred Walls church, it was the line segment. We study the geometric relationship in the space and use it like a scientist in a lab. This underlying primitive, a combination of circles, lines, rectangles, parabola, through their intersection, come out with a shape that forms the project.

While these also connect to the infinity, there is also a systematic connection to the different scales, the local context and beyond, reaching to the cultural roots of the city. This scale in turn connects to the details such as the door, the windows, the glass façade while the utility of the geometric system has consistency through the project. Going back to the Hundred Walls church, the idea of the walls connects to every element in the design.

> "In architecture, the language is materials. There needs to be honesty in how you treat it differently. Even in playfulness, manipulation, there should be honesty."

Q. Should buildings be contextually tuned before trying to be iconic? Should ego of architecture take second place allowing function to take precedence?
Context is very important and we need to be committed to this. But how do you define the local? How far are we from the parameters? Is it the city, the neighbourhood? The boundaries are very fluid. Technology and computers have made us leap through time and space and our societies too are globalised.

So it is not a closed conversation but as architects we play a key role in establishing a dialogue. What does the local mean, is it its culture? If the place is in mutation, we need to engage this conversation in a responsible way. It does not mean the design has to be too old or new, there is no black and white here. When a building sits in a place and ages gracefully, the context is important. A new building can equally make you understand the new. Buildings, even when they seem out of context, they actually have a context to relate to, like the Gherkin responding to the need of London to compete with other cities.

Q. Your structures appear to shy away from intricate patterning. There is more massing that is evident. What is the reason?
Pattern is power. Floor plans too are patterns when you design complex buildings. The power of architects depends on how they visualise these patterns. There is however, a careless use of patterns in architecture these days and perhaps that is why I shy away from it. For instance, the Doha airport has patterns everywhere but one pattern has nothing to do with the other. A lot of architecture display similar inclinations.

Q. What is your view on green architecture?
It is our professional responsibility to be green but it is not something to be advertised through a rating. It should be ingrained in the structure like the way we provide wheel chair access in a building. Green has unfortunately become an industry and this is dangerous. This also makes it inaccessible to the normal consumer. Architecture in essence is green. The designs in traditional buildings are naturally green.

We cannot escape the fact that, whatever be the structure erected, architecture is intrusive as it uses up resources. So we need to think about how we can represent nature in a project. Like the stepwells in Rajasthan which are incredible green architecture.

FR House – Exterior view

IN CONVERSATION WITH:

RITA MODY JOSHI

PRACTICALLY SENSITIVE

Character of an area is sacrosanct to its environment, says **Architect Rita Mody Joshi** of **Rita Mody Joshi & Associates,** adding that one should not design sore-thumb structures merely to make a statement. In a candid chat with **Antarya,** Joshi opined that projects designed with character would create a new language and style for future generations to get inspired, making them as future benchmarks

Villa Josephine

Q. Your projects show a fine blend of the old world with the contemporary leanings. What elements need to be considered to achieve this fine balance where the old world charm is retained without sacrificing the functional requirements of present lifestyle?

Architecture is not just piling stones to build a building. It goes beyond. An architect has to have the passion for the building and the rest by heart, where it is also a relationship that is built. The traditions and cultural opinions need to be kept in mind while conceptualising the design. In essence, there is a creation of drama at every level. The architect has to see the dream the same way as the prospective occupant and ensure every smallest detail is in place.

When it comes to specific elements that need to be considered, aspects such as roofs and fenestrations complete a project aesthetically. Within the interiors the spatial detail determines the success of any development.

Q. Colours, textures and patterns prevail quite strongly in your spaces where it warrants, yet the striking hues offer a calming ambience. How is the character of serene spaces maintained even amidst a fairly loud play of tones and textures?
I have certainly used a lot of colour and texture in most of my projects. This was done essentially to highlight specific areas as well as volumes. Colour in essence enhances the spatial quality and brings in freshness to a space. It can also bring in drama to a space by the presence of the varied hues. I have mostly used earthy textures and colours to add elegance to a project and these are certainly not loud in anyway. The objective is to bring about a wow impact on the space.

Q. Art has its own language and has the power to transform a space. How can art be brought into an interior where it serves to be an arresting highlight yet is not overbearing?
Art in any sphere cannot be overbearing unless it is used excessively. Art can prevail in the form of sculptures, murals or any object that is purely functional. Artistic water bodies, exquisitely designed fabric can also serve to enhance the ambience of a space. Art too can create drama in a space through its presence in vantage spots, in strategic corners. Residences are an extension of the occupants, the reflection of their personality and art can effectively bring in this personality into the space. I love bringing in my own designs for windows and grill where there is a subtle play of art.

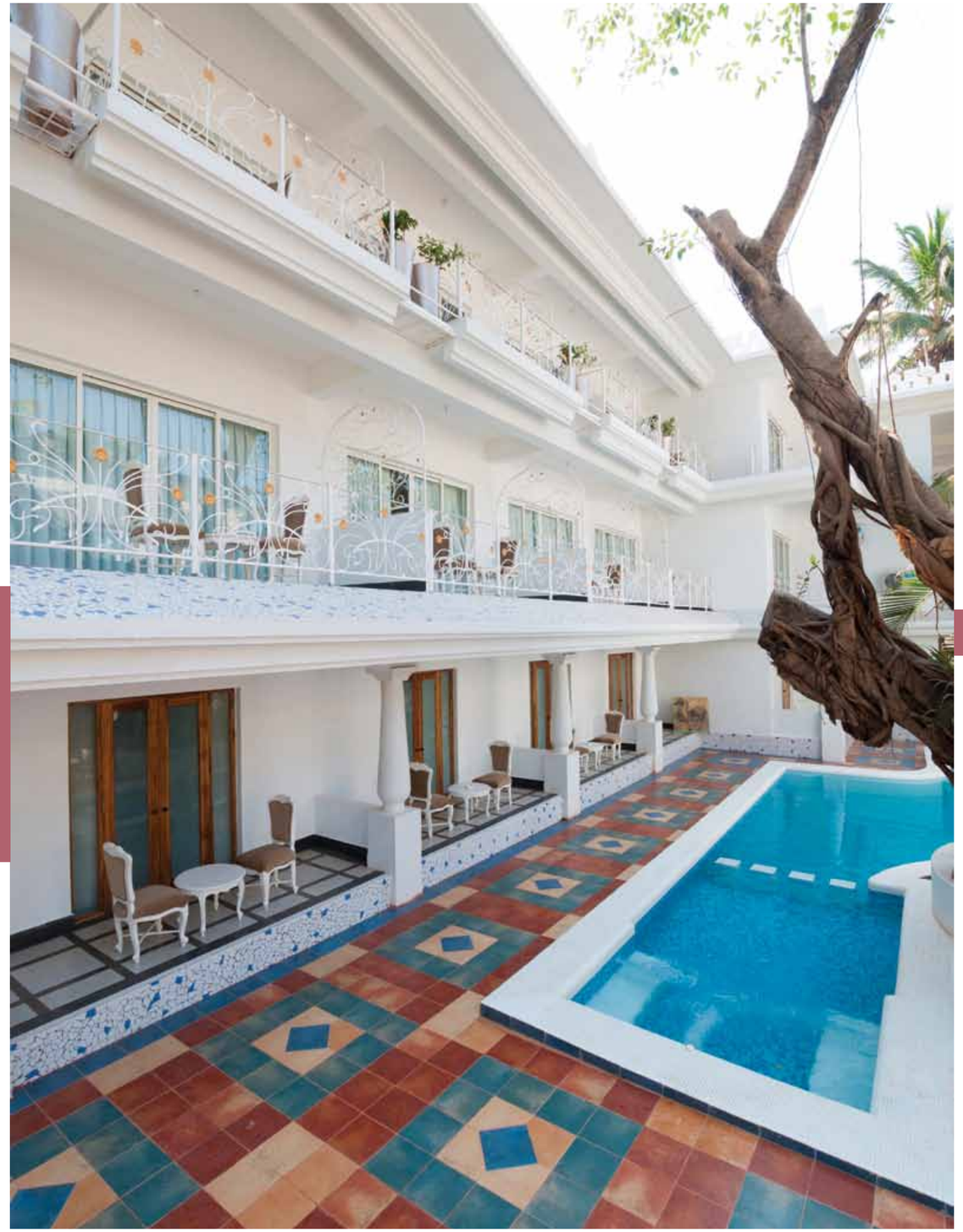
Q. You have worked on old buildings and restored them. What is your experience in restoring such structures?
Restoring old structures to their original splendour and glory gives me great joy. The end result of restoration is certainly very satisfying as it takes you back in time to the lifestyle adopted earlier by recreating the old world charm in these spaces. However, before restoration work is undertaken, a comprehensive history of the building, the spaces, state of the structure is understood. We reach to the roots and start our work from there. The restoration work as well as extensions to the old structure is done keeping in mind the old world sensitivities while tying it seamlessly with current day sentiments and requirements. In short, the restoration work is done in a manner where it is hard to tell where the old structure ends and the new begins.

Q. Goa is famous for its magnificent old buildings, though many are being demolished to give way to the new. Would you advocate a policy where such fine structures are to be retained and restored?
Retaining and restoring heritage buildings is certainly important especially in specific heritage zones. Yet I would not advocate this policy for every building merely to retain old structures. With townships developing and resulting in a severe dearth of space, the pattern of land use in the city needs to be revisited. Unless it is possible to renovate and refresh an old building so as to suit current day requirements, it is not practical to cling on merely in the name of heritage. I do feel, in such cases, one has to be unemotional.

Q. Buildings bring character to the city. Increasingly our cities display a global architecture, robbing the city of its unique character. Would you advocate a policy where the local sensitivities in design are addressed even in the emerging new buildings to preserve this character?
I had the privilege of working with architect Joseph Allen Stein on the Habitat building on Lodhi Road in New Delhi. He was a master who taught me to be sensitive in design, yet practical in my approach. He taught me that the character of an area is sacrosanct to its environment and not to its bygone history. One should not design sore-thumb structures, just to make a statement. However, by designing projects with character one can create a new language and style for the future generations to get inspired and to use the same as a benchmark for future projects.

“One should not design sore-thumb structures, just to make a statement. However, by designing projects with character one can create a new language and style for the future generations to get inspired... ”

Sydney Pinto Apartment at Porvorim



Art Hotel, Calangute

Jyothibai, Muvattupuzha

Narayanan Residence

P K SREENIVASAN

ORGANIC IN GODS OWN COUNTRY

By Nandhini Sundar

He works from the lush green environs of Gods own country. His design inclination is equally green as his environs. His structures are unquestionably organic, built as they are, using mud sourced from the site and surrounding location and teamed with locally available materials. As for their aesthetics, the buildings serve as charming highlights amidst the greenspaces. **Civil Engineer P K Sreenivasan** nurtured a passion for design and this passion had green roots right from the beginning.

On completing his engineering, he decided to learn the techniques from master architect Laurie Baker where he perfected the brick mode of construction during his four year stint with him. After a brief tenure in Costford, Kerala, he started his own design firm and forayed into exposed brick constructions and mud architecture.

While his initial structures were more of exposed bricks as well as laterite, his later projects were totally mud, with the varieties of mud sourced being of four to five types from the site as well as from the surrounding location. His technique is chiefly rammed earth or Cob with mud plaster while in some projects he has also used sun dried bricks. While his constructions have a total absence of steel, the RCC used is rare and minimal.

His structures reveal raw mud plaster where the colour of the mud used brings in the hues, both in the interiors as well as the exteriors. His buildings are totally shorn of paint and display the use of plenty of recycled elements. “Most of the windows, doors, wooden columns in our structures are sourced from old houses that have been demolished. We also use only locally available materials, be it stone or wood in the structure”, says Sreenivasan.

Since the mud sourced varies in colour depending on the location and can also offer varying hues from within the same site, Sreenivasan brings in a play of shades too in the mud plastered walls. “The colours are all natural with no pigments added”, he says. In his project of Dr Surdas’ Residence, he brought in an arresting pattern akin to a wave in the interior walls merely by using different colour shades of the soil for different portions of the walls. Art is also brought in through leaf imprints on the mud plaster to enhance the aesthetics.

Typically, the mud plaster is done in two layers, the first being rough, done with a mixture of mud and a small portion of sand depending on the quality of the clay sourced along with an even smaller portion of cement for stabilising. “A bit of rice husk too is added to this mixture to give a rough texture”, he says. Once this plaster is dry and cured, a second albeit a very thin layer of 2 to 3mm of mud plaster is done to offer the smooth finish. “This second mixture comprises of mud, a small portion of finely sieved sand along with lime and very little cement”, adds Sreenivasan.

Interestingly, a large part of the soil used for this mud plaster is also sourced from waste soil. “When a well is dug, at each layer the colour of the soil is different. The natives discard this as waste soil. But this serves as a fine soil ideal for mud plaster and the varying shades of the soil offer a fine variety of hues to the final finish of the structure”, smiles Sreenivasan.

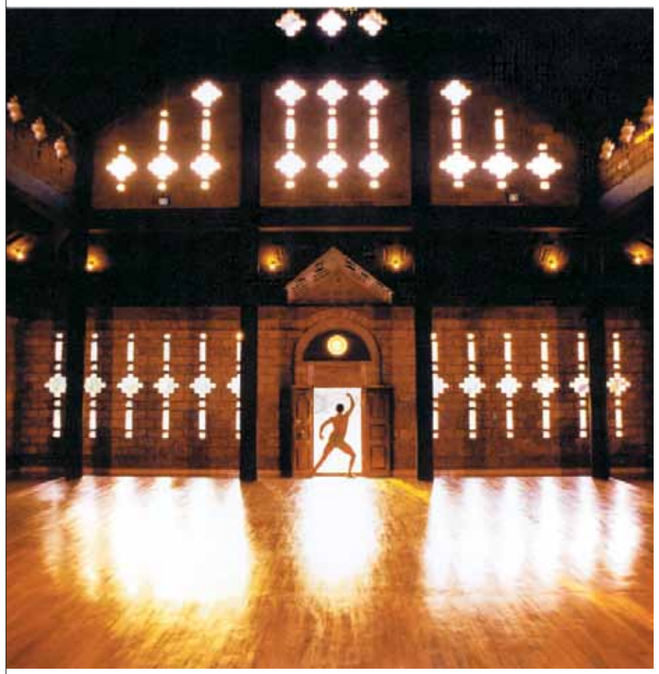
Given his design and construction methods being totally organic, the flooring in most of his projects again reveals the use of natural materials and old world methods of treatment. Thus, oxide flooring in different colours form his strong style. Stunning oxide floors in yellow, red and black, capture the eye as one walks through his spaces.

His spaces also invite plenty of natural light and ventilation, being so designed and oriented. The Adishakti theatre is a case in point. Here, the interiors bring in an artistic play of light through the innumerable jaalis created in the exposed laterite walls.

When Sreenivasan was required to build 10 tribal houses, he trained the tribal people in the methods of Cob construction techniques, thus distributing 70

Geethanjaly, Thrissur

Greenland Ashram, Thiruvannamalai



Adisakthi

Sangeetha KJ "Anpu", MG Kavu, Thrissur

per cent of the expenditure on construction amongst them as remuneration for their work. The houses were built using rammed earth for foundation and Cob for walls, while coconut wood rafters served as support for the tiled roof.

His ashram project in the hot region of Thiruvannamalai uses a fairly large amount of stone in construction. "The site was barren with plenty of stone cut into small pieces. This freely available stone was used up to the windowsill. Exposed bricks were also used in parts while the rest has Cob walls. The locally available soil was also of different hues with quite a bit of grey soil sourced from the nearby paddy fields. These offered the colour variations in the mud plaster", says Sreenivasan.

His project in Wayanad, the residence of Meera, interestingly has coconut barks as columns along with the coconut wood rafters used to support the tiled roof. "Coconut wood sourced from a 60 to 70 year old tree that is past its fruit bearing years, is not only strong but lasts over a 100 years. Coconut wood was traditionally used in Kerala but unfortunately not many use it these days even though it is cheap, strong and long lasting", he says.

The mud walls in the residence also reveal fairly varying hues because of the shades offered by the mud sourced from this location. "We managed to get soil in seven types of shades with one of the shades almost white in colour. We used these different shades in the mud plaster, bringing in variety in the colours of the walls", he says.

Exposed filler slab roof, rammed earth walls and laterite columns prevail in the Anpu residence. While the walls use similar mud plaster, the floors display black oxide. "The black colour is derived by using burnt coconut shell powder. So the pigment used for the floor is again organic", says Sreenivasan.

The residence of Jyothibai reveals grandeur in a mud plastered house. From its arresting mural painted walls that serve as artistic skirting of the walls, to the antique gorgeous doors sourced from Karaikudi, the mud plastered columns in the sun lit courtyard, the red slate floors, the traditional Charupadi in the lobby, the residence stands testimony to how an organic structure can be equally stunning in creativity and décor.

STRUCTURED IN MUD

By Nandhini Sundar

Photographs by Mahesh Chadaga

When we first heard about the resort, we had a fair idea that the structure was built differently and it would vary from the conventional types. But we never expected such authentic depiction and construction, the design and materials used keeping to the theme in totality.

For the mud structures that greeted us were not just purely mud walls, but even the accompanying elements such as the roof, the doors, the décor were totally organic, sourced from the site. It was like a walk back in time, to the naturally erected structures in the villages of yore, with only the tasteful attention to details and comfort setting it apart from an authentic rural stay.

Saraya, situated in **Sangolda, Goa,** designed by **Architect Deeksha Thind** is an assembly of earth and tree houses, essentially evolving as an inspiration of the landscape it features in. The individual mud houses are in fact built around the existing trees, with some houses having a tree in the midst, the cot and seating placed charmingly around it.

The materials used in construction are totally natural, having been sourced from the site, such as mud, clay, bamboo, palm leaves, twigs and barks; very much in keeping with the traditional modes of construction in rural India. While the earth houses are erected by opting traditional mud construction methods, the tree houses are erected totally with bamboo and bark.

The décor reveals a total absence of conventional materials. Thus, the door handles emerge from twigs, the side tables are nothing but tree barks, the bed posters of the bamboo cots again an array of twigs. Even the lighting, the mirror frames, hooks are made out of twigs sourced out of the trees in the site, the soap dishes being empty coconut shells, the wash basin made of clay. The tiny windows are enclosed with recycled coloured glass, the vents on the mud walls totally reminiscent of typical rural huts.

While natural palm leaves serve as thatch for the roofs, the seating is again fashioned in mud with merely

cushions bringing in the comfort, complementing the smooth, treated clay flooring. The tree houses are reached by a bamboo ladder with bamboo mats covering the floors. A charming bamboo balcony offers a cheerful vent to step out and relax.

The mud and tree houses are surrounded by winding pools, a gentle reminder of mini-canals that wind through many rural streets. Bark seating prevails in the small open assembly space, again a typical village scene, inviting residents to sit back and chat.
Says Deeksha, “the idea was to source all the materials, be it for construction or décor, from the site and offer genuine earth houses to reside in which would give the resident an experience reminiscent of actually staying in a village, in an authentic rural house, yet have the comfort of a nice bed and accompanying facilities.”

A bit of history too prevails in the resort, the reception area and art gallery housing a 300 year old structure. “We retained the structure and renovated it slightly to meet functional requirements”, says Deeksha. Recycled iron bars twisted on site to a haphazard shape form the quaint doors and railings of the connecting bridge while a stunning bark and twig staircase take you to an equally antiquated reading area placed on the attic.

If you thought design is the only thing that captures the attention in Saraya, wait till you dip into some of the spectacular delicacies dished out by its café which incidentally also displays Deeksha’s design inclinations copiously in its rustic decor. Cooking being her other passion, Deeksha has lent her recipes to the café, turning anyone who dips into her preparations, her loyal customers.

Wood fired pizzas, freshly rolled, cut and prepared pasta, homemade ice creams and exotic deserts, washed down with an array of fresh fruit juices, all sourced from Deeksha’s personally created recipes, invite the hungry guest to tuck in. The romantic setting at night of the Saraya café with the candle lights and greenery only add to the flavours, making the visitor reluctant to leave even after finishing the meal.

Needless to say, having not only tasted her mouth-watering recipes including her wood fired pizzas that merit a special mention, but indulged and experienced an authentic rural stay, when it was time for us to leave, we did too with great reluctance.

A CHANGE IN FOCUS

By Prof. Dr Kasthurba A K
Associate Professor, Department of Architecture, NIT Calicut

The current system of education is more pedagogical with practical experience and applications taking a back seat...The academic rigour introduced needs to be more practical in approach with experiential and field learning forming a significant part of the syllabus structure.

Architecture schools have been mushrooming across India producing every year a large talent pool of young architects. While young minds and differential perspectives to design are welcome to this field, the manner in which architecture education is currently imparted needs a revisit. The current system of education is more pedagogical with practical experience and applications taking a back seat. The syllabus too is not fully tuned to current day requirements where global trends and methodologies are incorporated. The academic rigour introduced needs to be more practical in approach with experiential and field learning forming a significant part of the syllabus structure.

While emergence of more architect schools does address the dearth of architects, the volume of good architects produced by these emerging institutes is questionable. Perhaps the present practice of starting architecture schools in every possible location across the country needs to be reviewed to ensure there is no watering down of the standard of professionals that come into this field.

It is pertinent to point here that the teaching faculty in architecture schools also need a revisit to ensure quality education is imparted. Many a time, practicing architects form the guest faculty but invariably these prevail more in the established institutes. A policy change in terms of the proportion of faculty being compulsorily practicing architects may be a good idea to address this lacuna.

Even amongst the full time teaching staff, it may be more appropriate to insist on teaching faculty to have had a few years of practice before entering the academic arena. This would change the manner in which architecture is taught and the approach to design for the students where the syllabus is not governed just by academic rigour but more practical, experiential perspectives.

To reiterate the importance of good experienced teaching staff, I would like to bring in the example of the teaching system prevailing in the B Arch course at NIT Calicut. The B Arch course was started here as an engineering course under the civil engineering department that essentially has civil engineers as teaching faculty

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Since the COA norms are not followed in the faculty recruitments, the course is unfortunately more accented towards engineering than architecture, design and creativity. Thus, subjects like structural design, mathematics and mechanics are taught in detail which is not required for architecture. The result, there is a significant number of failures amongst students.

In most architecture schools, students learn most when they go through their internship in the final year as this is the time they are exposed to real architecture. Instead of confining such a practical exposure to the last year, it would make sense to incorporate it from the initial years of architecture school. Such practical exposure and training coupled with faculty who are also either practicing architects or were practicing before they decided to branch into academics, would certainly tilt the scales on the quality of architects that is finally produced by the architecture schools.

Students learn not only through academic training but also through the ambience during this academic journey. Thus, the design and structure of an architecture school has its own influence and inspiration on the mind-set of students. A differentially designed building housing the architecture school can prove to be a big source of inspiration for students, prompting them to look at design differently from their first day in architecture school.

It is time for all architecture schools to come together and bring in a consensus so as to alter the current system and approach to architecture education in the country.

THE HOUSE THAT HAUNTED Le CORBUSIER

By Architect Prof Jaffer Khan
AUT University, Auckland, New Zealand

Eileen Gray (1878 – 1976)

E.1027, Cap-Martin France (1926 – 29)

Eileen Gray is very rarely mentioned by historians of the 20th century Modernism. Though she did not build much but lived up to 98 years designing, this modernist dream house was designed and built by her in the year 1926 for her lover, architect writer Jean Badovici. He encouraged Eileen into architecture and this house became a symbol of their love and the passion of her's towards Modernism. Built on a hilltop to provide excellent view of the Mediterranean, the house could be mistaken as the one designed by any other modernist of the period.

Le Corbusier, a friend of Badovici used to visit this house and almost fell in love with it. He frequented every summer to spend his creative time and would swim across the shore to look at the house that inspired him so much. Though he liked the house, he probably and surely did not like the lady who designed it and perhaps felt threatened by her genius.

"House is not a machine to live in," said this modernist opposing the view of Le Corbusier's version that "House is a machine". She said it is "the shell of man – his extension, his release and his emanation". This perhaps contradicted the very basis of Corbusier's philosophy of work. An Anglo-Irish woman, born in 1878, however built this revolutionary house sensitive to its landscape hovering over the Mediterranean in Roquerbrune, Cap-Martin France and called it E.1027.

When Eileen left Badovici, Le Corbusier in the years 1938-39 was in so much awe of this house that he was obsessed to the extent that he filled up the walls with his

Le Corbusier, at Work at E.1027

Corbusier in the Cabanon, Cap Matin, France

paintings and murals, most of it sexually explicit. When she heard of this, she was so furious and incensed on Le Corbusier for desecrating her original work through his imagery. Many thought that this was graffiti from an envious competitor and a callous display of disrespect to another artist's work. The obsession of Le Corbusier was so much that he tried but failed to buy it on several occasions.

He continued visiting this place until in 1951 he landed up with a small plot where he built a small cabin for himself called "Cabanon". This small Cabin was just 12 feet x 12 feet, and is supposed to be the only house he built for himself. The place had everything except a kitchen as Corbusier used have his food at a neighbouring restaurant that offered him this place to build his "Cabanon". This is the place where he used to develop schemes for his projects and it is quite possible that he could have dreamt of "Chandigarh" in this Cabanon.

While the Cabanon receives attention even today, the E.1027 is now more talked about not just for the pioneering work of this great "woman" architect of the 20th century but also the great paintings and murals of greater hero of architecture, who painted these walls almost standing naked. The greater naked truth could be that Corbusier despised and feared Eileen Gray so much that he could have used her as the subject of his sexual imagery as he is notorious for painting women naked, even if they are his acquaintances. In my opinion, Eileen Gray was indeed an inspiration to this great man called "The Crow".

THE COMPOSITION OF AN ADVENTURE

By Architect Prof K Jaisim

Four and half decades back, with a strange conviction and courage I stepped out into a new world of private professional practice, unwilling to work for another and wanting to find one's own expressions. The path was very difficult at first. But when I cut the thorny bushes and `moved on', rather snail paced, I glimpsed new vistas, where no one had walked before. A world of opportunity opened up, the practice lost all control – it rocketed. The Fountainhead helped to steady the journey, evaluated every step like a moral judge, and I never compromised. But, I was only an infant, innocence personified. I shifted gears and moved on.

In our adventures with mud, the first use of it in a very definitive manner was in Anthem. Here I discovered that it was a waste to use on the internal walls the burnt brick. While the outer layer bearing the brunt of the weather was of well-burnt bricks, the inner layer consisted of un-burnt bricks, thus saving a lot of energy and cost. A few years later to my surprise when I broke the walls of a 50-year-old building, in which we had our practice, this practice was evident. History smiles knowingly at every modern step.

The environment, built and un-built makes architecture come alive. This is when time becomes still, beyond measure. Spaces dance, minds sing, material and structure have a symbiotic relationship and nature rejoices. In this complexity is a clarity born with simple truths. An honesty of integration, an expression of the subject, with objective understanding – life becomes meaningful.

Imagination and innovation fired by inspiration is the basis of a creative approach. To question and seek not mere solutions but definite answers makes the journey alive. Emotions do have a sway but reason restrains them before accepting. Many a critic asks – To whom are you addressing your work. My reply – to myself and my ego, self-esteem, self-respect – the rest happens.

Architectural realisation is subject to influences at every stage. It is a Continuum. For the early part of Human history the art and science of building was limited to very definitely known methods and practices. Thus was born the trinity; the architect the builder and the client, the roles clearly identified and defined.

Future of architectural practice goes back a cycle when he was the master builder – once again he just can't sit back, dream, contemplate and conceptualize, for someone else to interpret this into reality. He gets the opportunity to express his innermost dreams but at a price – the price of performance. The result of architecture is in the realization of the design and not just floating ideas in the wilderness of the mind.

One must achieve. This is where I strongly advocate this new possibility of training the designer to execute. He shall not only master the many nuances of the profession but also that of time and money.

Mies once said God lives in the details. This is true. Value is hidden, it is up to each of us to be able to discern and evaluate every step of design. It is wise to remember that all architecture concerns the human. It is man that appreciates, and it is only by appreciation that values make sense.

Today, it is a dance. One accepts every client and project as a challenge. Not just the project but also the client. They come with set, preconceived minds and beliefs. They must be heard and in turn made to listen. In this music there suddenly comes discord. They come in the form of wrap architecture, nostalgic and historic architecture.

Popular architecture has pervaded the scene and is choking the profession. Individuality and manner of self-expression are almost disappearing. To set a meaningful style takes a lot of one's self interest and conviction. But it is not a lost cause. It is these glimmers that keep alive one's perception of a whole new brave world of architecture. Aesthetics and great architecture cannot be everywhere and anywhere, they have a place and a space.

We are at a unique age and time in history. The world as we know it no longer exists. The age of Knowledge has influenced every aspect of our lives. It has affected Architecture at its very foundations. We must wake up to this task. Otherwise the pace of the system will take off without architecture. We must address these facts with a realistic approach. The above argument is one such.

A PARASITIC DWELLING

A Report by Architect Priti Kalra

of pylons, interconnected footbridges, and scaffolding, which can be reconfigured easily to suit different urban scenarios. This system of construction also makes it possible to disassemble the structure if a need for relocation arises. The modular dwellings which protrude out of the side of the bridge would house residences, offices, shops, galleries and public spaces. Since the structure would be raised above the bridge using scaffolding, the traffic beneath the bridge would be unaffected and could continue to flow as always.

Urbanisation is taking over. More and more people want to live in the city, but land and resources are scarce. In an era of global economic downturn and overpopulation in condensed areas, architects have begun to introspect the issue of under-utilised spaces within the urban fabric of our cities. For French architect Stephane Malka of Malka Architecture, the bridges in Paris fall into this category of spaces which are not being utilised to their full potential. Although highly functional in nature, in that they enable crossing over water bodies, he asserts that in reality there is scope to explore why these areas remain uninhabitable. Bearing this thought in mind, Malka Architecture has taken a serious look at the issue and proposed the Pont9 Project as a conceptual solution.

In the scheme, a bridge over the Seine is to be taken over with a series of modular and functional urban spaces forming a sort of nomadic micro-city. The insertions would be supported via a system

An idea such as this, although honourable in intention, is quite unlike any urban intervention we have witnessed so far, and will invariably invite much opposition. For instance, there is some concern over what impact an intervention like this would have on the aesthetics of a city. Of course, if it is offering a solution to the housing shortage, then surely looks are not so important? There is also the question of how exactly the structure would be installed, and once installed, whether it will be durable enough to house the residents permanently. Even if it is durable enough, still one wonders whether living forty-nine feet floating above the ground is a psychologically comfortable shelter.

This kind of architecture has been referred to as 'parasitic', quite naturally because it feeds off of an existing construction. It is interesting to note, though, that the term 'parasitic' is also reflective of what we as human beings are doing to our world.

The project was born in direct response to the prevailing economic crisis, the dependency on mass production and the spatial segregation inherent in real-estate prices. The conceptual bridge is meant to immediately upscale impoverished unused spaces by introducing an 'active system'.

The project was first featured in Le Petit Paris, which was published in April 2004. In his interview, Malka proposed for the scheme to be run entirely by its own residents, reinforcing the fact that it is a self-sustaining 'city within a city' that will not need external assistance for its maintenance. In Malka's words, the concept proposes a "voluntary ghetto, an organised community

of ideas, a hood built from an appropriation of land both conquered and controlled."

Although the project is a mouthful to take, it is essential to understand the merit behind it. Whether the concept should be implemented exactly as it has been envisaged is up for debate. But the thought behind it warrants revisiting. How do we optimally utilise the seemingly uninhabitable voids (or 'negative' spaces) - the alleyways, the disputed and neglected plots, the space below flyovers and metro lines - in our own cities? Could this be a solution to preventing squatter settlements and slum dwellings? Needless to say, investing time in bringing up the lower rungs of our socio-economic ladder will ultimately benefit us and our cities as a whole. But, when will we realise that it is worth our while to do so? Food for thought.

Image & Information credits:

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ASPIRING TO BE ICONIC

A Critique by Architect Yamini Kumar

The Scottish Parliament building in Edinburgh sits on the edge of the Old Town, the Royal Mile, in an important urban area. Located at the junction of the east and west sides of the city, it has close proximity to public transport. The areas around the site have been redeveloped with new commercial and residential developments. In the immediate vicinity of the building is the Palace of Holyroodhouse, which is bordered by the broad expanse of Holyrood Park and the steep hills of Arthur's Seat. The Scottish Parliament is open to the public and is visited by a number of tourists throughout the year.

Construction of the building commenced in 1999 and the formal opening by Queen Elizabeth took place in 2004. Enric Miralles, the Spanish architect who designed the building, was famous for his free-formed, quirky buildings. Some of the materials he used were often unusual. The form and material are supposed to interpret the place, traditions and history, in a poetic art form. These forms, however, are abstract and vague to a lay person's eyes.

I visited the building in October 2009. Edinburgh is filled with palaces, castles, ancient churches and narrow winding streets. The Old Town has a unique medieval character and the New Town comprises of Georgian architecture. The city is many centuries old and rich in heritage. Given the significance of the building, perhaps its character could have resonated more with the culturally significant buildings it surrounds.

To be clear, buildings with strong historical contexts need not replicate the architectural styles of the surrounding ones. Modern architecture can stand out as being new and contemporary, but need not overshadow their surroundings. The aesthetics of the parliament house, in order to complement its context, could have been one that respects the importance of its neighbourhood, and its stature in public life. The city of London for example, has a conjunction of buildings more than three centuries apart. The modern high rise skyscrapers are as much a part of the skyline as is the Tower of London. Their very difference sets up a lively, interesting atmosphere. They form a dialogue between one another, complementing each other. The buildings are minimalist, geometric and elegant.

But with Miralles' building, the architecture looks forced, as though crying out for attention. It is no doubt an interesting building, perhaps if seen in isolation. But it struggles to blend in with Edinburgh's enchanting cityscape.

Miralles wanted to use the Parliament to build the grand end of the Royal Mile. Although the idea is apt, the result was a non-hierarchical, organic collection of low-lying buildings. It was intended to suit the surrounding rugged scenery and symbolise the connection between nature and the Scottish people. Not all these connections are apparent, however. The building has many features that intend to connect nature and land, such as the leaf shaped motifs of the steel and glass roofs.

Although there is a symbolic connection between the leaf motifs and nature, it is hard to see a visual connection between the form, its materials, and the hills in the background.

In addition, the complex comprises of groups of buildings that have different architectural styles. It lacks uniformity, unlike the surrounding buildings. References to Scottish culture are also reflected in the building and particularly on some of the building's elevations. These references are metaphorical, abstract, and hard to identify. One needs to read about the building to appreciate the architect's double meanings.

There are a series of "trigger panels", constructed out of timber and granite, which resemble guns or hairdryers. Miralles, however, intended it to evoke an icon of Scottish culture – the painting of Reverend Walker skating on ice. He enjoyed the use of ambiguous forms with multiple meanings. These panels also represent a window curtain pulled back. The varied nature of the building and the different styles and materials that have been used, is supposed to represent democracy.

The combination of materials used too seems uncommon. One block of buildings, for

example, has been clad with granite. It has bay windows which project out from the building, their designs having been inspired by repeating leaf motifs and by Scottish stepped gables. These projections that jut out at different angles have been constructed from stainless steel and framed in oak, with oak lattices covering the glass. These abstract forms and the unusual mix of materials, clash with the uniformly constructed palaces and castles built out of stone blocks.

The context of this building is a complex one. The building needed to embrace its historic surroundings, respond to the hills beyond, as well as serve as a democratic parliament house. Its organic form and leaf motifs have made an attempt to respond to the hills, but sharply contrast with the ancient stone buildings around. Its complexity, iconography and layering of meaning resulted in an extremely innovative, original building. It could be seen as a masterpiece if viewed as a piece of art or sculpture. It might have been well suited to be a concert hall, museum or gallery, but does not come across much like a parliament house.

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THE INSPIRING BURNTWOOD

A Report by Architect Priti Kalra

Several questions are raised when it comes to designing a school building, the main function of which is to educate and whose primary users are children. The heart of the concept must lie in raising the students' educational enjoyment and sense of achievement. Functional and practical aspects aside, a school must create an atmosphere where children can mould their aspirations and learn to value themselves and the education they receive. In light of this, the Burntwood School, a comprehensive girls' school in Wandsworth, London proves to be a fine example of an inspiring school building. Winner of the coveted RIBA Stirling Prize 2015 for UK's best new building, it was designed by Allford Hall Monaghan Morris (AHMM), a London-based architectural practice that has grown to be known as a veteran in school design.

In 2004, the Labour government established the Building Schools for the Future (BSF) scheme which aimed to rebuild or refurbish every secondary school in the country. However, in 2010, Michael Gove, then Secretary of State for Education, axed the scheme on the pretext that the budget being allocated towards it was disproportionately high. Burntwood School is one of the last projects that was built under the program.

The brief essentially spoke of an overhaul of the existing 1950's Modernist school designed by Sir Leslie Martin. The architect's task was to weave the new construction with the existing buildings to produce a campus for 2000 girls and 200 staff. AHMM looked at the fact that the existing school was designed by the London County Council architect as a set precedent for excellence. Although a lot of the older facilities were no longer fit for their purpose, the overall master plan had a simple elegance that worked well.

In the overhaul plan, two large teaching blocks as well as some smaller pavilion buildings were demolished. The new design introduces six new structures

– four teaching pavilions, a sports hall and a performing arts facility - within the existing campus, retaining the pool building and the existing hall. The design also reorganises the site with lawns, squares and a central pedestrian spine that runs the length of the site, with an aim to form a complete and coherent campus. Interestingly, the campus boasts of its own high street – a covered walkway formed from off-the-peg bus shelters.

The master plan has an orthogonal layout, with the buildings aligned corner-to-corner with each other. This creates distinct courtyard spaces in between which when combined with the pedestrian spine, make the site easy to navigate. Inside the teaching blocks, the classrooms are laid out on either side of a central corridor that runs almost the entire length of the building. The corridor breaks out into double- and triple-height spaces making natural light and ventilation abundant. It terminates with windows at each end enabling visual connections to the exterior and creating well-framed views of the campus.

The regularity of the plan translates to the elevation with faceted precast concrete panels that correspond to a 7.5 metre structural grid and classroom module. The deep, load-bearing panels with glazing of different sizes and orientation produce non-repetitive, self-shading elevations. The playful manner in which the fenestration sits on the rigid grid, creates surprising spaces inside, full of light and varying volumes. The architectural expression is sculpturally bold, full of character and has an air more like that of a university than a school. This lends the building a very collegiate feel, almost demanding an equally collegiate behaviour. The relationship between the new concrete structures and the older ones adds a sense of architectural history and depth to the whole site.

The design of the building teaches important lessons to the architectural community with its 'technically sophisticated' use of prefabrication, its low-energy strategy, and the minimal disruption that was caused to teachers and pupils during the construction. The project is truly collaborative in nature, combining the vision, foresight as well as nostalgic sentiment of the head teacher, the expertise of architects with a deep understanding of education architecture, landscape architects who managed to transform the existing palette with minimal intervention and a graphic artist who has changed the idea of signage into a striking art form in many AHMM projects.

Judges' comment: "It is the most accomplished of the six shortlisted buildings because it demonstrates the full range of the skills that architects can offer to society."

Image & Information Credits:

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MATERIAL MEMORIES

A Report by Architect Akshara Verma

Buildings draw character from associations, not only of their form but also the materiality of their fabric. Renowned Chinese architect Wang Shu says the principle behind his work is guided by feelings. Architecture is inarguably emotional. The work of Wang Shu is an attempt to distance architecture from the abstract or the diagrammatic and pave way for one that is richly associative. "Memory is deeper than symbols", he says. Memory is endless.

This report explores issues of architectural preservation and memory against the quality evoked by building materials in two striking museum projects. The Kolumba Diocesan Museum in Cologne by Peter Zumthor and the History Museum in Ningbo, China by Wang Shu. Both architects, having been conferred the prestigious Pritzker prize in 2009 and 2012 respectively, portray very distinct approaches to architectural restoration. The narrative of Kolumba is a crafted dialogue in form between the old and the new, while the Ningbo Museum is entirely new, built however from fragments of the old.

It is interesting to note that both, the regions of Cologne as well as the Ningbo province in China have been victims of large-scale destruction. While a WW2 air-strike tore down much of the city of Cologne in 1943, including the gothic-church of St. Columba, it presented Peter Zumthor with a strong historical context to respond to by his architecture. He embraced the ruined state of the church to generate the new museum around it. Through the exploration of materiality, form and time, Zumthor creates a symbiotic relationship between the ruined church walls and the new walls of the museum. In his approach, the old church walls seem to provide the structure to the new, while the new provide shelter and cover to the old; opening up a new set of relations between the existing and the inserted.

Wang Shu, on the other hand also investigated material, form and time in architecture tested against however, a different context. The Ningbo province in China, a historical trade city along the Silk Road, faced large-scale demolitions of its satellite villages in order to make way for development. Wang Shu recounts his design approach, saying, "When they developed this area, 29 out of 30 surrounding villages were demolished. I collected the material from these ruins, and reused them in the new building."

The result is poetic. Layers of salvaged material manifest into a vertical archeological layer, constructed traditionally


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by a technique called the 'wapan' method. Wang Shu, subsequently in the interview also expressed surprise, when he learned that local people were visiting the museum multiple times once completed. He claims the visitors form associations with the materiality of the structure. It reminds them, for instance of their family courtyard, their living room hearth, generating personal pasts where the construction and material triggers their associations. The restored material guides the visitor through the building.

While an emphasis on surface and façade are deeply rooted in Chinese culture, it is in Wang Shu's search for salvaged material that helps articulate the façade of the museum. In the same light, it is stimulating, and almost ironic to learn that across the globe, Zumthor too took a while in search of the perfect material for the Kolumba museum. Specially developed for this project in Denmark, the brick were fired in charcoal, absorbing a warm hue.

Known to be mindful of the use of materials, Zumthor's use of the gray brick that drapes the destroyed fragments of the site is a porous perforated skin. It remains rather anonymous on the outside but allows diffused light revealing the stone ruins with subtle drama within. The play of time is a well-articulated concept, seen not only by the ruins through different centuries, (the Roman and medieval periods as well as German architect Gottfried Bohm's 1950 chapel that is located within the building) but also by the seasonal play of light, creating an ever-changing, playful landscape within the building.

The Kolumba museum remains one of the only works of Zumthor that is relatively easily accessible to the public, nested in the heart of Cologne. The building materials being the narrator, helping the visitor understand the evolution of the city, with clues and hints to read between the lines and discover the history of the place. The Ningbo museum too, appearing like a fortress in scale, invites the visitor to investigate the courtyards and valleys within the building mass, revealing the view of the city beyond and make their own discoveries.

Re-discover, in both cases, a renewed sense of place, memories, association and material.


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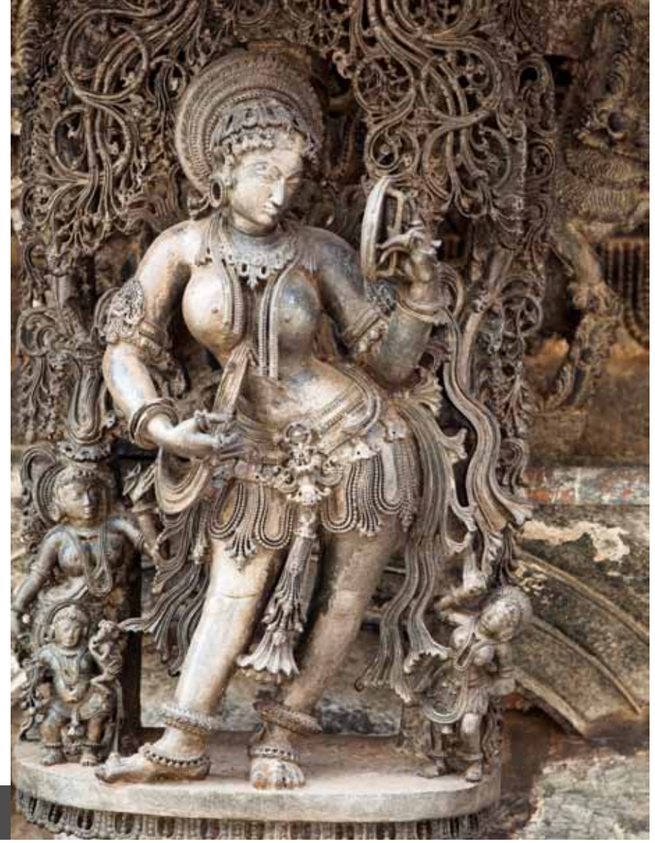
POETRY IN STONE

It is sheer poetry etched in natural stone, the intricate carvings and detail breath-taking, the craftsmanship astounding, leaving the viewer awestruck. **Interior designer Mahesh Chadaga** captures the spellbinding work of our erstwhile stone sculptors in the timeless monuments of Belur and Halebidu in the Hassan district of Karnataka.

THE CHENNAKESHAVA TEMPLE, BELUR

This temple is one of the finest examples of Hoysala architecture. Built by King Vishnuvardhana to commemorate his victory over the Cholas at Talakad in 1117 AD, the temple is said to have taken 103 years to complete. Intricate sculptures, friezes decorate the entire façade, displaying elephants, horses, lions, episodes from Indian mythologies and sensual dancers. Interiors of the temple houses ornate pillars that are equally spectacular in workmanship.



THE HOYALESWARA TEMPLE, HALEBIDU

Halebidu, meaning old city, was the capital of Hoysala Empire in the 12th century. The temple was built by King Vishnuvardhana around 1121 AD and is believed to have been completed around 1160 AD. The structure is equally astounding in its sculptural detailing, the exteriors adorned with intricate figurines of animals, birds, dancing figures and Hindu mythology. Incidentally, no two sculptures in the temple are replicated.

HAPPENINGS IN BRC:
NOVEMBER TO DECEMBER 2015

ARCHITECT PRESENTATION: TRANSCENDING THE THRESHOLD

The philosophy is to bring in a seamless transition, be it between the inside and outside spaces or integrating the spaces so fine that there is an absence of threshold. For **Architects Shivani Kumar and Sucheth Palat of Studio XS,** spaces flow beyond the defined parameters, eliminating a definite demarcation between the ending of one space and beginning of another. Presenting their work in an event recently hosted by IIID BRC, sponsored by **Symphony Finest Wood Flooring,** Kumar and Palat put forth an interesting range of ideas to transform unutilised urban spaces in the city into interactive public spaces, thus giving a new edge to urban planning. The ideas encompassed not just unutilised spaces piled with litter but also spaces under the metro where it is placed in a fairly open area that afforded such utilitarian conversion. The ideas on offer ranged from creating an attractive promenade to a string of small shops teamed with a café.

ANCHOR AWARDS 2015:

Institute of Indian Interior Designers in collaboration with Anchor by Panasonic celebrated excellence in interior design, with the selection of the prestigious IIID-Anchor award winners at the zonal level having been finalised recently in Coimbatore. Bangalore designers bagged 17 of the 27 awards at the zonal level.

SHORT LISTED ENTERIES FOR Z1

CATEGORY	AWARD	NAME OF THE PARTICIPANT	DESIGN PRACTICE	CITY
Residential Single Dwelling	WINNER	Sandeep Khosla/Amaresh Anand	Khosla Assocaites	Bangalore
	RUNNER UP	Sandeep Khosla/Amaresh Anand	Khosla Assocaites	Bangalore
	RUNNER UP	Jayadev Kesavankutty	Architecture Tangible	Cochin
Residential Multi Dwelling	RUNNER UP	Hameeda Sharma	Aamir & Hameeda Associates	Hyderabad
	COM	Chandrakant S Kanthigavl	4 Site Architects	Bangalore
Retail	WINNER	Sandeep Khosla/Amaresh Anand	Khosla Assocaites	Bangalore
	RUNNER UP	Sona Reddy	Sona Reddy Studio	Hyderabad
	COM	Hameeda Sharma	Aamir & Hameeda Associates	Hyderabad
	COM	Santosh Kumar T	Oculus – The building Laboratory	Coimbatore
Commercial Workplace Small	WINNER	Pramod Jaiswal	Between Spaces	Bangalore
	RUNNER UP	Kanan Modi	Kanan Modi	Secunderabad
Commercial Workplace Large	WINNER	Ajit Jain	Praxis Inc	Bangalore
	RUNNER UP	Bhyrav B R	1 Leaping Frog Studio	Bangalore
	COM	Manoj Wahi	New Designer Web Pvt Ltd	Hyderabad
	COM	Rajesh S	Techno Architecture	Bangalore
Leisure and Entertainment	WINNER	Sandeep Khosla/Amaresh Anand	Khosla Assocaites	Bangalore
	RUNNER UP	Shajil V P	Between Spaces	Bangalore
	RUNNER UP	Dhaval Shellugar & Farah Ahmed	Fadd Studio	Bangalore
	COM	Suraj Anchan	R C Architecture	Bangalore
	COM	Praveen M	3 Fold Design	Bangalore
Hospitality	WINNER	Ajit Jain	Praxis Inc	Bangalore
	RUNNER UP	Nishan M	DE Earth	Calicut
Institutional & Public Spaces	RUNNER UP	Sujit Nair	SDEG	Bangalore
Product OR Furniture Design	WINNER	Aabid A aRahem	AR & DC	Kerala
	RUNNER UP	Kanan Modi	Kanan Modi	Secunderabad
Young Interior Designer of the Year	COM	Faisal Vohra	F + S Design	Hyderabad
	COM	Dhaval Shellugar & Farah Ahmed	Dhaval Shellugar & Farah Ahmed	Bangalore

UPCOMING IN 2016

DESIGNURU 2016: BRC DESIGN FESTIVAL

Create a dialogue with citizens through art, design, with the community and public works laying the background to bring forth urban design interventions that would set the benchmark for public spaces in Bengaluru; document and reconstruct the city's identity over a period of time. This in short is the primary objective of the Designuru Festival planned for the month of March by IIID BRC, which will also aid the art and design community in the city to network and build, making it a stronger entity.

The festival hopes to rouse the curiosity amongst the public, initiate a reaction as well as a discussion with respect to art and design, make good designs not only available but also accessible to the public, offer one good project a year that benefits the larger interests of the city, make design an element of every civic project and bring in stronger the green architectural character of the city.

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