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Malai by Malai Biomaterials Design Pvt Ltd

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exterior

The original keeps its promise.

Primary school Sassenburg Westerbeck, Photo credit: thyssenkrupp Plastics GmbH, Architect: Augustin und Frank Architekten

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CERA's impressive triple launch of designer tiles and designer Sanitaryware for architects

Ar Hafeez Contractor, Ar Divya Kush, Ar S Gopakumar, Ar N Mahesh, etc. taking a visit of the display of tiles.

CERA Sanitaryware Limited, the fastest growing premium home solutions company, launched an impressive range of new offerings from CERA stable at a glittering event held in Fairmont Hotel, Jaipur in which over 300 architects from all over India attended.

The new launch, aptly called Royal Collection from CERA Tiles consisted of over 1000 designs in various categories like:

1. Refinito (double charged vitrified tiles) in 600x1200mm, 1000x1000mm, 800x800mm and 600x600mm. Also full body tiles and step tiles.
2. Lucido (digital glazed vitrified tiles) in 600x1200mm in high definition, in matt travertine, in matt tobacco, same punch concept, matt crossline, and 600x600mm in matt romano, wood, single tile bookmatch and 3D.
3. Panache: (vitrified wall tile highlighter concept) in 300x600mm in polish, single tile bookmatch, sugar lappato, matt sugar, matt, matt butter, matter corporate.
4. Digitale: (high definition digital tiles) 300x600mm in high gloss polish, single tile bookmatch, glue, TR coating, vitrosa, mica, matt sugar, matt lappato sugar, corporate, 300x450mm in gloss, matt, 300x600mm in elevation. 300x450 in elevation and 200x800 in wood planks.

These tile designs are exclusively conceptualised by the team of designers for CERA, considering the current and future trends in India. Many renowned architects like Ar Hafeez Contractor, Ar N Mahesh, Ar S Gopakumar, Ar G Shankar, Ar Sangeet Sharma, Ar Divya Kush, Ar K R Raju, Ar Hiren Patel, Ar Gyanendra Shekhawat, etc. to name a few, appreciated the huge collection of designs of CERA. ■

For more information, please contact:
P K Shashidharan, Senior Vice President Marketing
Mobile: +91 9327674111, Email: pks@cera-india.com

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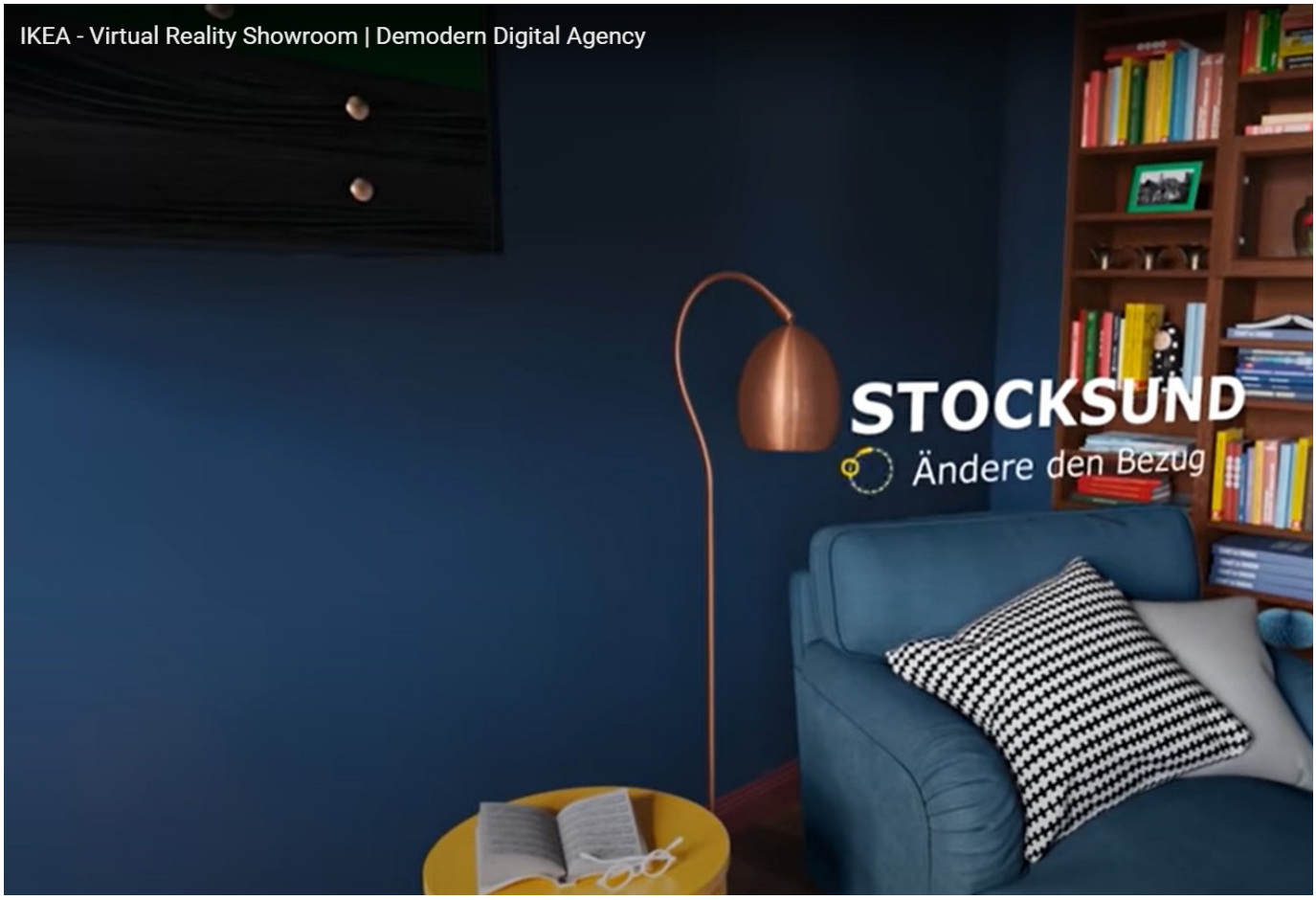
Visit the IKEA Showroom at the comfort of home

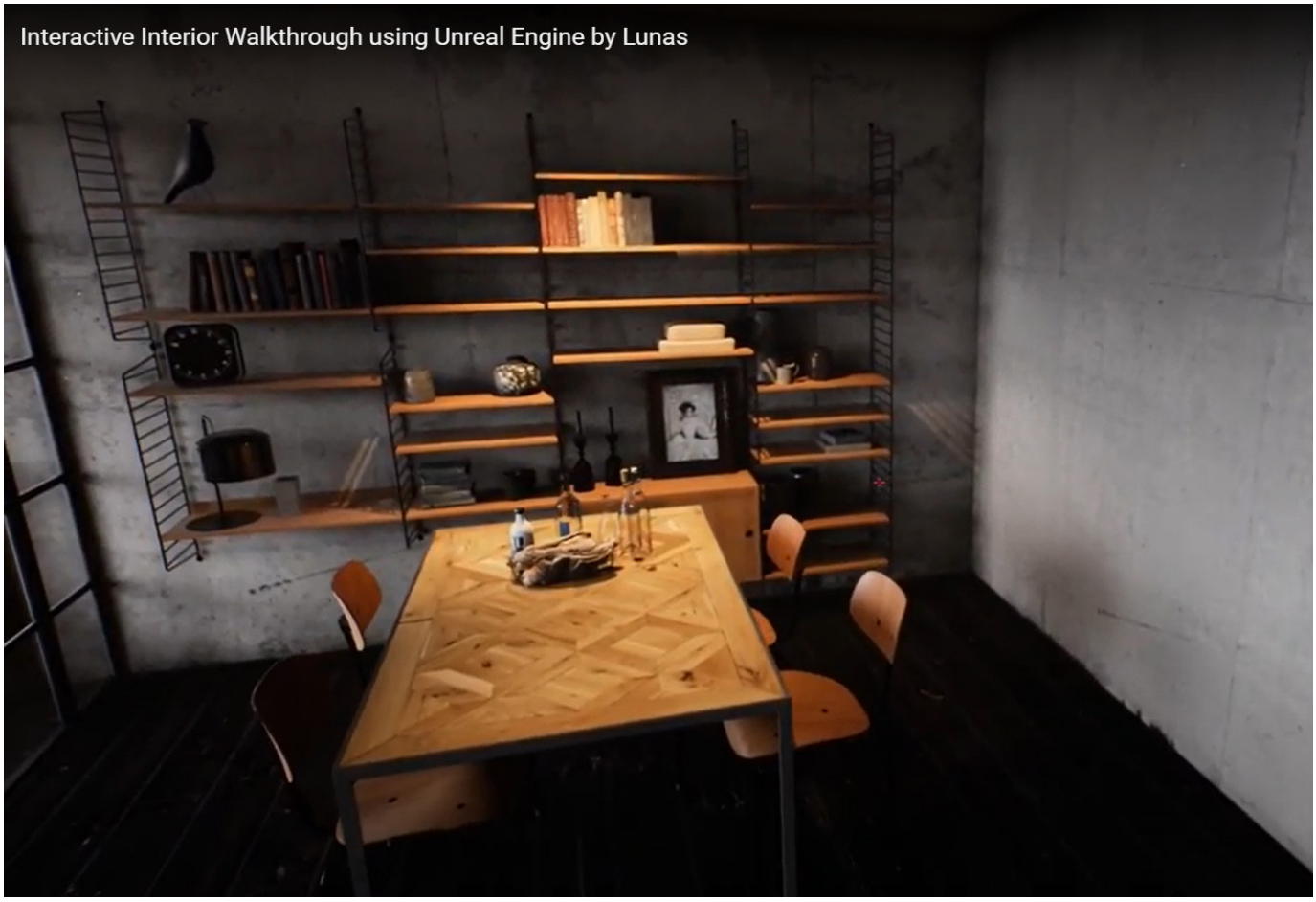


Video Link: https://www.youtube.com/watch?v=Zd7ZWgVqslo

IKEA is revolutionising and recreating the user experience of designing homes and spaces through its Virtual Reality Showroom. IKEA's Virtual Reality Showroom brings to life an interactive digital realm that allows its users to explore products through a virtual interface. From choosing products to experimenting with decor and aesthetics, the virtual showroom enables an immersive experience of interaction and configuring furniture. The 360 degree experience allows them to combine fabrics, wall colour and even the time of the day. With an array of possibilities with colour, textures and finishes; IKEA redefines the art and flourish of decorating homes.

JUNE-JULY 2020

Interactive Interior Walk through



Video Link: https://www.youtube.com/watch?v=d9_2dgP6WZI

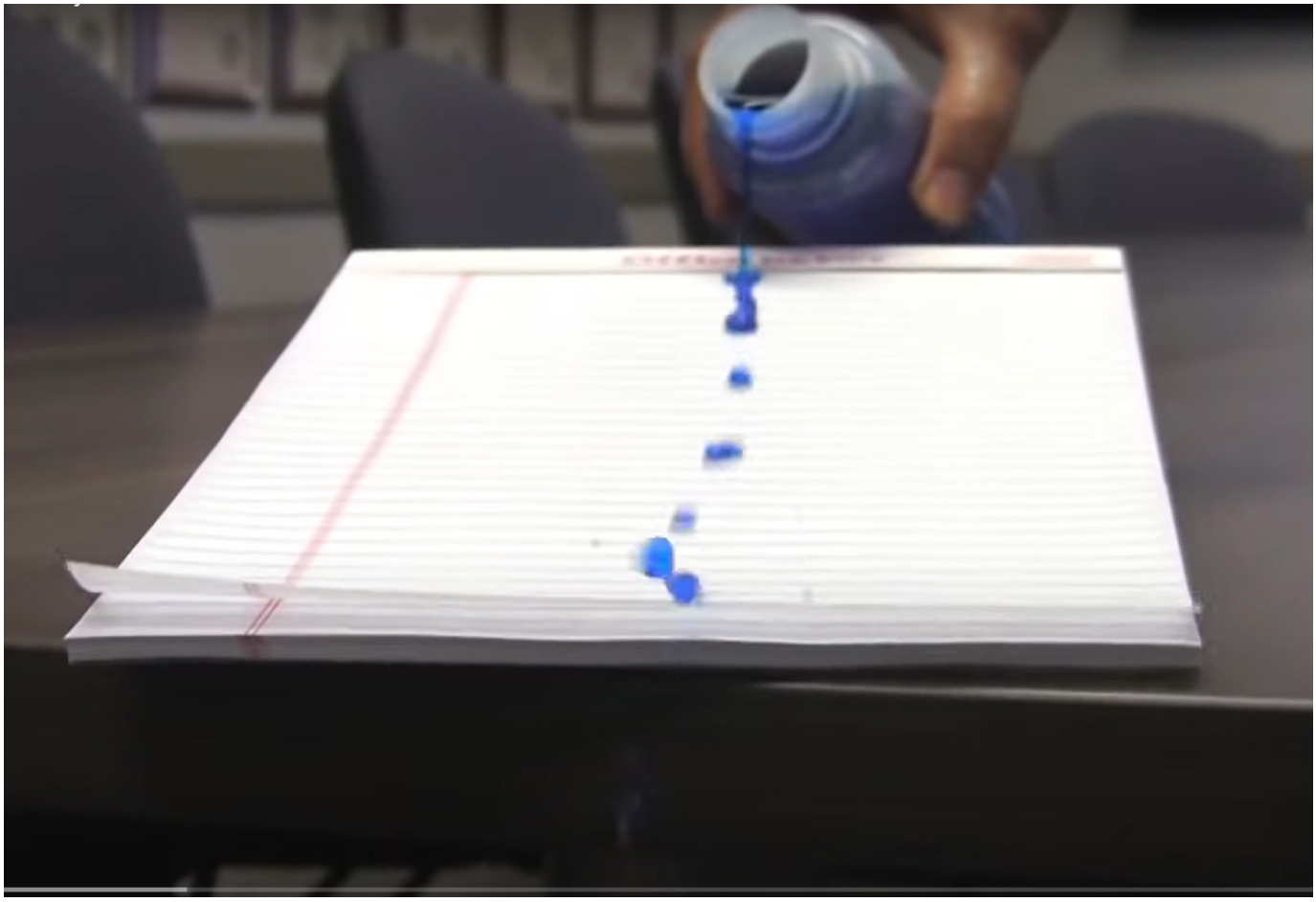
Blurring boundaries between reality and virtual realms; Lunas 3D Visualization Studio recreates spaces with high attention to detail and an intricately crafted expertise on screens. The virtual tour resplendent with realistic finishes allows the user to visually experiences tactility, textures, spatial qualities and more. The video-walkthrough allows for immersive qualities which gets as close to reality as the lived experience of navigating a finished space. Lunas 3D Visualization Studio offers virtual rendering with such finesse and perfection to redefine space design and experience.

Tata Steel: Leadership on sustainable futures

Video Link: https://www.youtube.com/watch?v=DUTFfkAGcDs

Sustainability must be at the heart of all design for a holistic future of the planet. Being a 100 year old company, Tata Steel recognised the need for sustainable solutions ahead of its peers and contemporaries. The practice inculcates sustainability from the grassroots to its office culture to its product and service offerings and future innovations like renewable energy, short distance mobility and the role of technology to enable circular economy. The next seeding project is steel recycling to utilise natural resources responsibly, paving way for a sustainable and self-sufficient future. Tata Steel believes that sustainability is no longer a choice but a crucial undertaking for the survival of humanity.

Ultra-Ever Dry – Liquid Repellent Material Innovation



Video Link: https://www.youtube.com/watch?v=UHcSGSI4WXU

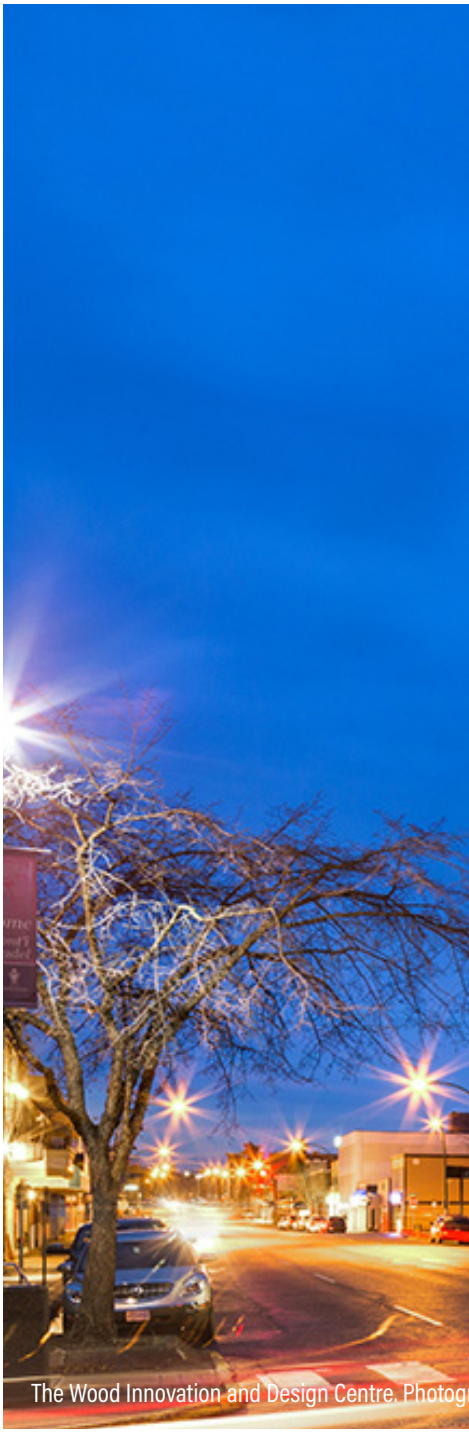
The superhydrophobic (water) and oleophobic (hydrocarbon) coating, Ultra-Ever Dry coats objects to repel wet concrete, water, some oils and liquids. It primarily works to keep off most water-based and some oil-based liquids. Its proprietary omniphobic technology coats objects and creates a surface chemistry and geometric textures with peaks that repel the aforementioned liquids. It finds use in applications that mandate high durability. With improved adhesion and abrasion, Ultra-Ever Dry is optimal in areas and situations for improved strength and liquid résistance.

An adventure in architecture

Michael Green Architecture (MGA)

Presenting a strong case for wood, Michael Green's works bring to the forth the merits and challenges of wood architecture. Wood construction can play a pivotal role in steering the world away from global warming and climate change. But arguments like speed of construction, cost, strength, feasibility override most materials, etc. often deter the actualisation of such techniques on a large scale. The works of MGA demonstrate solutions that mitigate the same.

Text: Shriti Das
Images: Courtesy of MGA | Michael Green Architecture



The Wood Innovation and Design Centre, Photog

Michael Green, founder and principal architect at MGA | Michael Green Architecture, is a Canadian architect who is passionate about adventure, nature and making. Michael currently lives on the west coast of North America, in one of the greatest forests of the world. To him, the trees offer fascinating stories and insight; the capacity of the branches to withstand winds, bear the load of snow and so

rapher – Ema Peter.

on. The fibres align themselves to carry weight in ways that architecture has yet not discovered, invented or gauged. And MGA emulates these forms to understand and even push the capacity of forms.

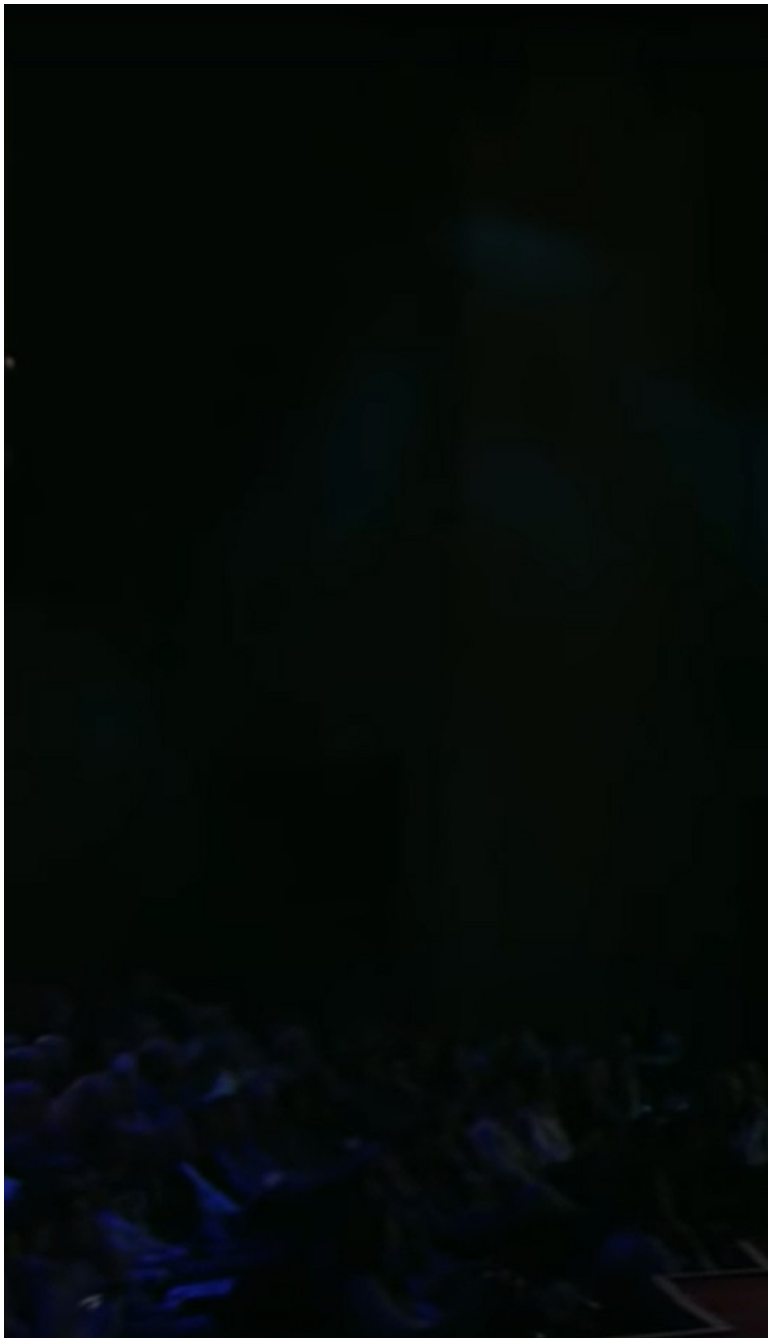
These experiences and observations shaped Michael's vocation; he became a carpenter, went to architecture school alongside climbing mountains and guiding mountaineers. While 'culmination' seems

like a rather limited and narrow term to describe his practice and endeavours; these undertakings shaped the way MGA looks at design.

It is predicted that the world will witness a large rural-urban migration in the coming years. There is immense pressure on housing and building tall is assumed to be the sole approach to the challenge. While Michael does not advocate building tall, he presents wood as sound material to construct higher. Wood is carbon-neutral. It is perhaps the only material that can store carbon unlike steel and concrete that account for 11% of man's greenhouse emissions.

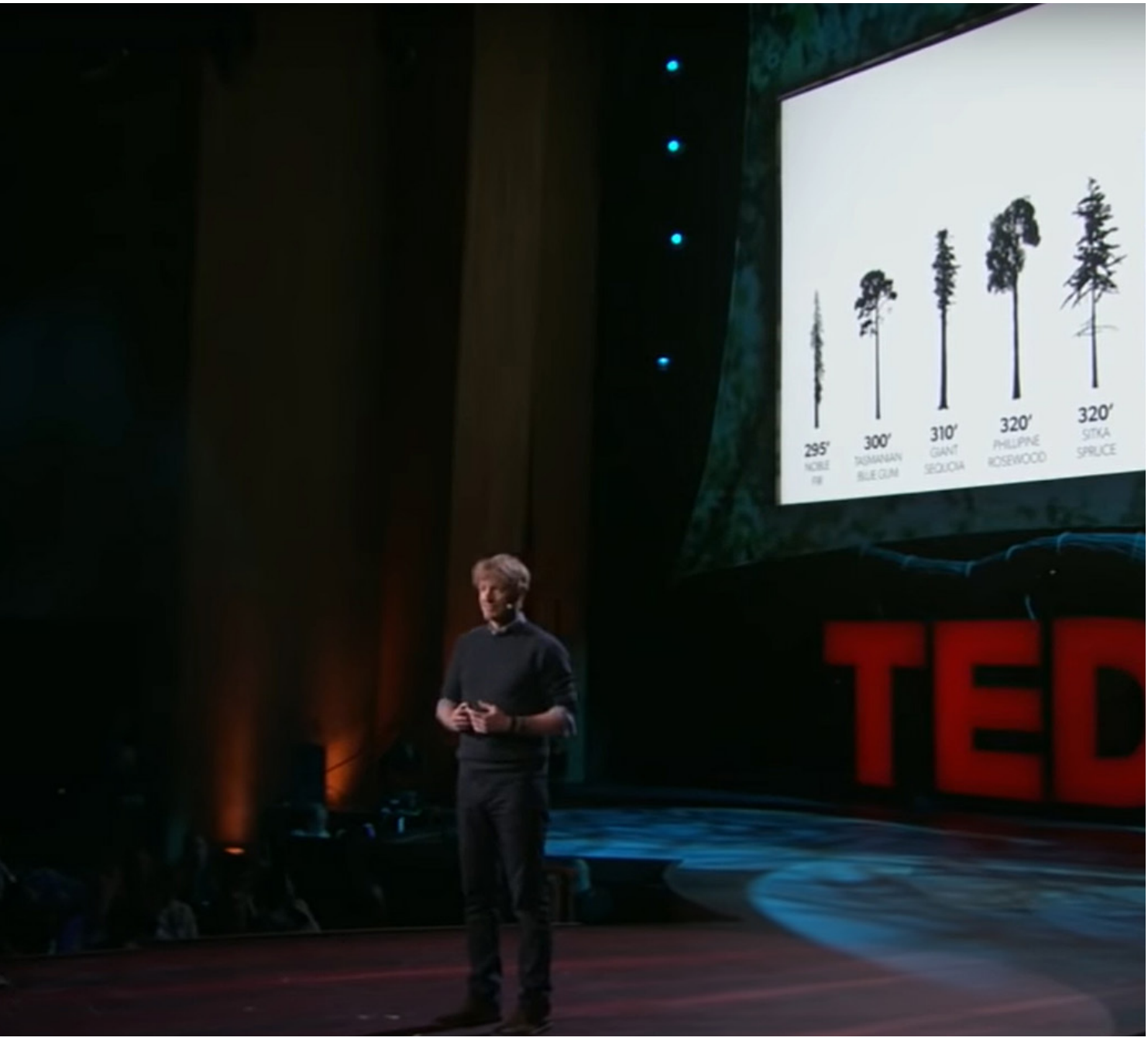
Michael asserts and has proven that the Empire State Building and all its 102 floors can be made in wood. MGA uses post-tensioned structures, box-sections using engineered woods and large-size wood panels. Innovations spanning across the last 20 years have introduced mass timber panels that are 4 meters wide and 20 meters long. Available in various sizes, they are glued together to make huge panels of wood.

The North Vancouver City Hall project deploys wooden structural panels on the ceiling that are laminated together to



Video Link: https://www.youtube.com/watch?v=Xi_PD5aZT7Q

create large prefabricated panels. These are 9 meters wide and 6 meters long. They act as tension chords at the bottom of shallow trusses. The shallow trusses are lumber made of small pieces of wood glued together. The Ronald McDonald House for families and children with



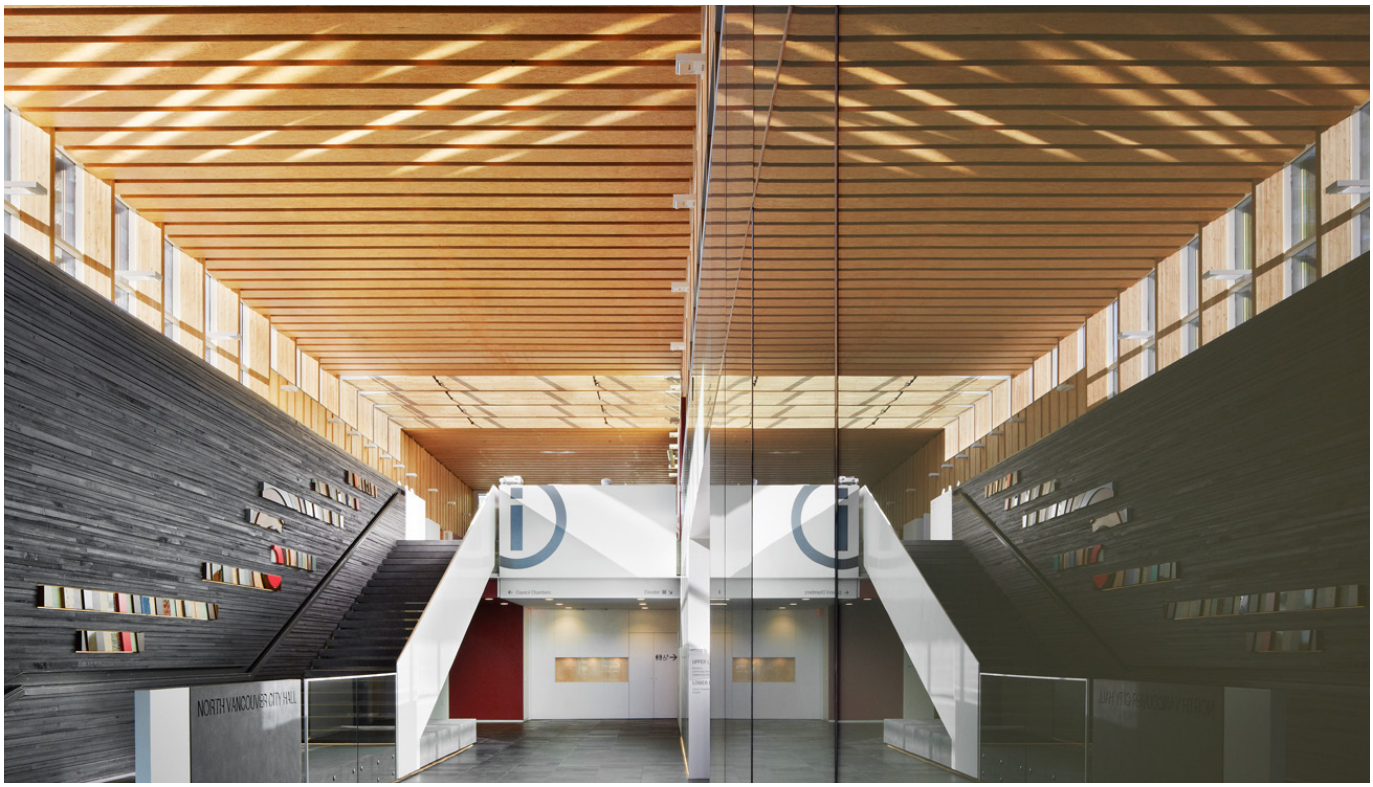
illness is built entirely in wood but is used an example to illustrate that wooden buildings can be finished in glass, stone or other materials. The structural system is constructed in wood using 12 meter tall panels that create 4 storeys.

Upon completion, The Wood Innovation and Design Centre was the tallest modern all-timber structure at 8 storeys at 29.5 meters. It was an experimental project made entirely in wood, built before the building codes allowed it. The foundation is in RCC but is constructed entirely in

Upon completion, The Wood Innovation and Design Centre was the world's tallest modern all-timber structure at 8 storeys / 29.5m. Photographer – Ed White.

The Ronald McDonald House BC + Yukon. Photographer – Ed White.

The Ronald McDonald House for families with children receiving medical treatment is built entirely in wood but is used an example to illustrate that wooden buildings can be finished in glass, stone or other materials. Photographer – Ed White



North Vancouver City Hall deploys wooden structural panels on the ceiling that are laminated together to create large prefabricated panels that act as tension chords at the bottom of shallow trusses. Photographer – Martin Tessler.

North Vancouver City Hall. Photographer – Ema Peter.

wood from the ground up. The wooden core provides the lateral bracing. The fire-core and staircase are also made in solid wood. The idea seems counter-intuitive as wood is known to burn efficiently, or so it believed. But mass timber doesn't catch fire easily. The behaviour of burning wood is highly predictable and fire-fighting systems can be devised accordingly to minimise or prevent damage. Wood buildings are also faster to build. They can be assembled and put together quickly as opposed to concrete that necessitates time for curing, pouring and setting. While wood behaves better than cement and steel in terms of energy efficiency, it is one part of the solution to environmental issues. But wood is rapidly depleting resource. Forests are razed for agriculture and development. MGA is working with countries to build forests for wood for construction that creates an income source and strengthens the economy. It also provides an alternative to concrete.

To communicate these ideas further, MGA created a not-for-profit online school, Design Build Research Institute, which provides free global education. It addresses not only architects and designers but also engineers, contractors, policy makers, fire officials, environmentalists, insurance companies, the general public and other professionals and enthusiasts. Perhaps the vocation has embraced this idea as most practices revolve around individual practices of creating well-designed buildings but at individual scales. The small community is still 'tinkering around the edges' afraid or shy of initiating big change. The industry needs big ideas and brave moves. This notion needs acceptance and action. If each building is treated as tool to contribute to the bigger change, even the sole individual, a seeming drop in the mighty sea, is capable of immense transformation. ■

The avant-garde vernacular

Aaranya Farmstay Resort, Gir lion sanctuary, Gujarat.

India prides over the attribute that its regions change their character at every turn and with every passing mile. But its architectural identity is headed in a totally different direction wherein every city is being developed in a face-less cookie-cutter fashion. Even the sustainable or the green building practices are bracketed into guidelines and standardised norms over vernacular and contextual design. Aaranya Farmstay by Ahmedabad-based d6thD design studio is a contemporary spin on age-old traditions that captures the ethos of vernacular design with an approach that can be applied to new-age architecture.

Text: Shriti Das
Images: Inclined Studio
Drawings: d6thD design studio

Aaranya Farmstay Resort, Gir lion sanctuary, Gujarat by d6thD design studio.

The cottages are planned to meander around the existing mango trees so that it does not obstruct the existing site conditions.

The vernacular is a dialect, a style or a way of being that pertains to a region, is inherently local in character and not imposed or learnt. When the same term is adjunct Indian architecture, it should ideally conjure structures that are as diverse as its dialects, cuisines and people. It is responsive to its immediate surroundings and requirements of its people without robbing the land of its resources. It could be in the form of stone construction, brick, wood or even reinforced cement concrete (RCC), if the need be. The idea of "need" is of essence, since the earth can fulfil needs but not greed. This opinion is voiced by Ahmedabad-based d6thD design studio whose buildings follow vernacular principles. Its works are a pleasant paradox; wherein each building is starkly different from the other yet unmistakably similar. They mirror similar cultural sensibilities, deep sensitivity towards their precincts and with an inherent quality of nostalgia.

The construction harks back to traditional techniques like sandstone arches and random rubble walls.

Local 'thin' brick columns and terracotta tiled roofs create a semi-open dining area.

The elongated roof is the project's most striking feature.

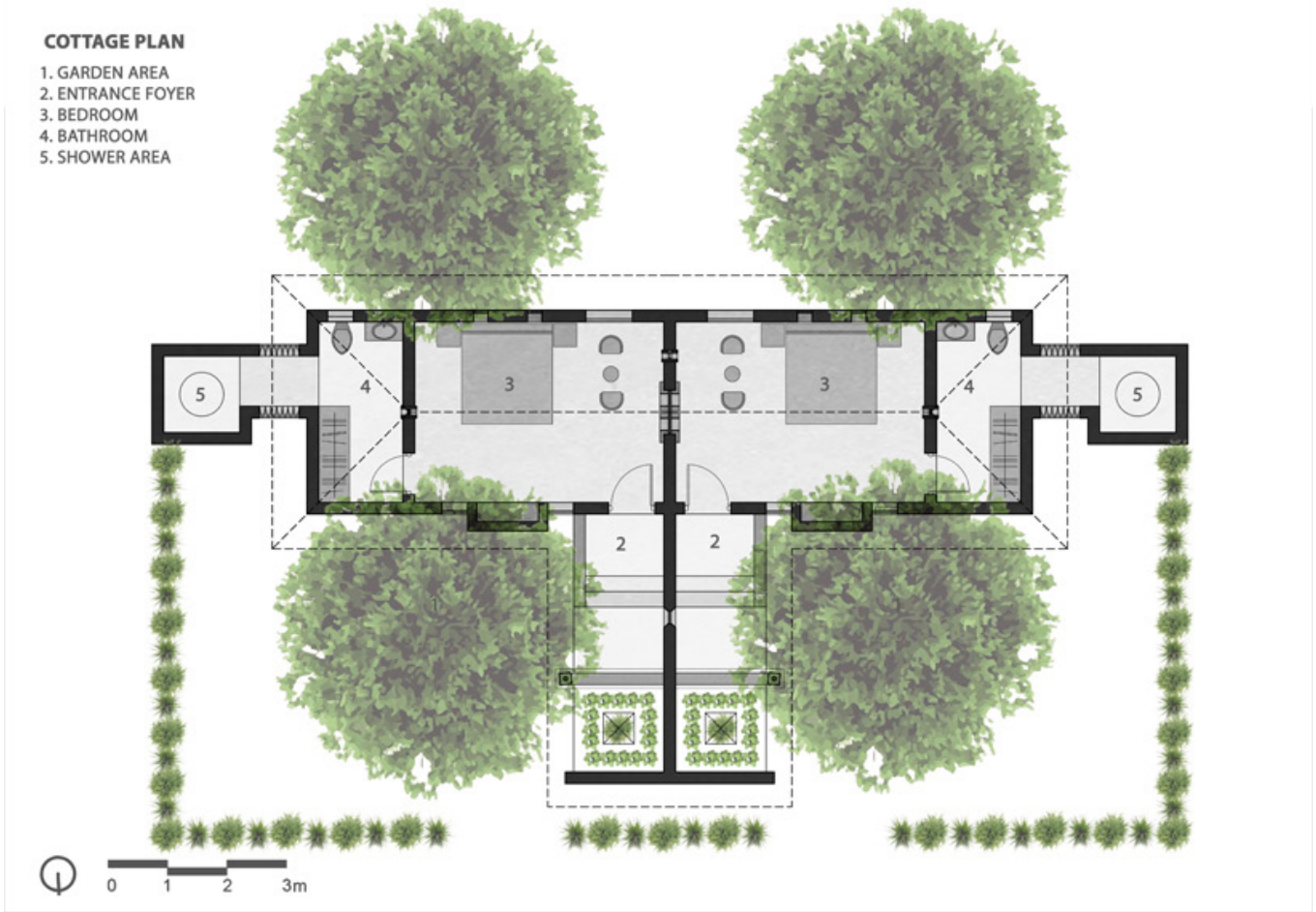
The roof is punctured which will allow creepers to sprawl across the roof and make their way into the interiors creating a lush inside-outside space for the user.

The cottage bedroom.

A sky-light in the brick dome illuminates the bathroom.

Aaranya is an agricultural farm-stay that bears all the making of a vernacular building if one critiques it through the aforementioned lens. Located in the Gir Lion Sanctuary, the project is a series of cottages built for visitors. The construction technique uses rubble-stone packed foundation with loadbearing exposed sand-stone walls. The roofing system is a conventional sloping roof with clay tiles alongside a brick dome with China mosaic. The dome accommodates a skylight for the bathroom area


COTTAGE SECTION
1. SITTING SPACE
2. ENTRANCE FOYER
3. BEDROOM
3
2
1


COTTAGE PLAN
1. GARDEN AREA
2. ENTRANCE FOYER
3. BEDROOM
4. BATHROOM
5. SHOWER AREA
5
4
3
3
4
5
2
2
1
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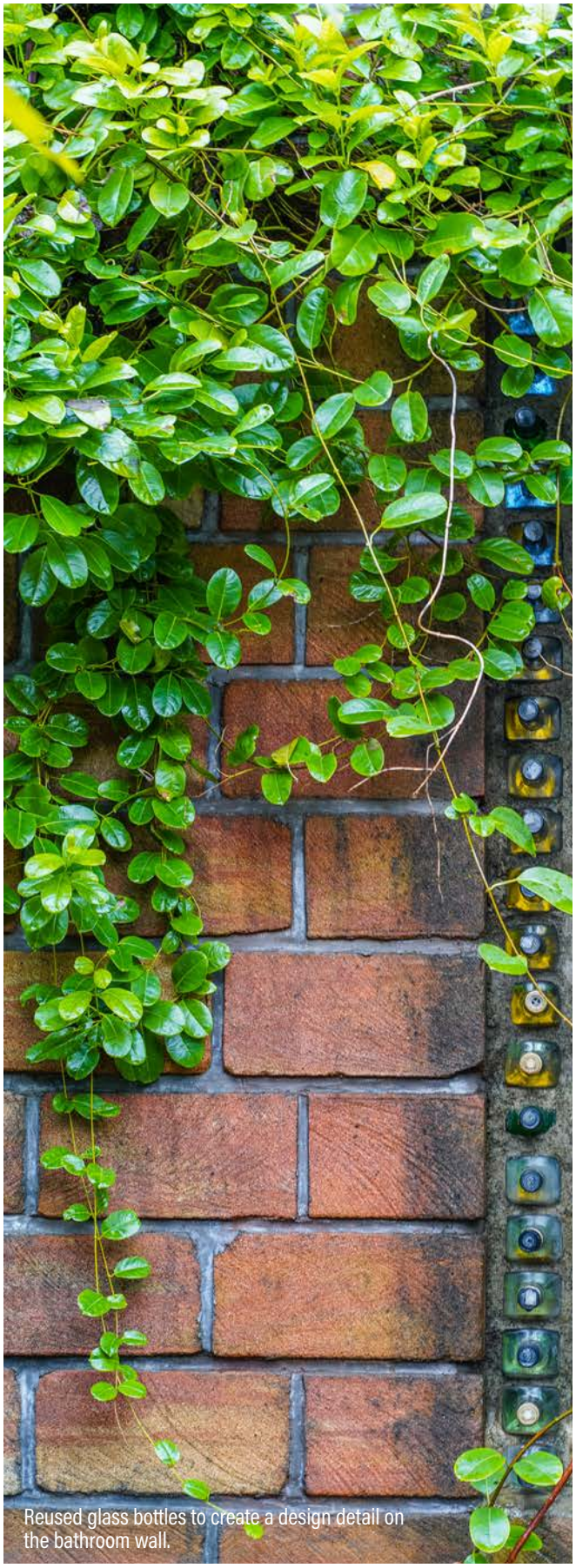


Reused glass bottles to create a design detail on the bathroom wall.

resulting in a beautifully illuminated space for the user. This abundant natural light in the bathroom is further accentuated with a stained glass panel. On the other side is a wall that is embedded with waste glass bottles that further accentuates the play of light. The cottages are planned to meander around the existing mango trees so that it does not obstruct the existing site conditions. The structure is designed to minimize heat gain and maximise cross-ventilation and it also accounts for seismic activities in the region. ■

FACT FILE

Project	:	Aaranya Farmstay Resort
Architect	:	Himanshu Patel
Design Firm	:	d6thD design studio, Ahmedabad
Location	:	Bhojde village, Gir lion sanctuary, Gujarat, India
Client	:	Nishant, Dhanaji
Construction team	:	Jagdish, Mansukh, Jitu, Ramnik, Nanji, Nitin
Photographs	:	Inclined Studio
Completion	:	January 2019

Reversing the pollutant into products

Carbon Tile by Carbon Craft Design

Carbon Craft Design is addressing the largest elephant in the room that most conglomerates only tiptoe around – pollution. Pollution and addressing its repercussions are often considered within the purview of engineers and scientists. Designers, even if they choose to work around ecological concerns, the scale is limited to projects and perhaps the over-arching belief-system of the practice. But that won't perhaps create the larger impact that is the need of the day. With its first prototype, the Carbon Tile, Carbon Craft Design aims to create a shift in consumption and production patterns of the construction industry by using pollution itself as a raw material, thereby shifting its annotation from a pollutant to a potential material.

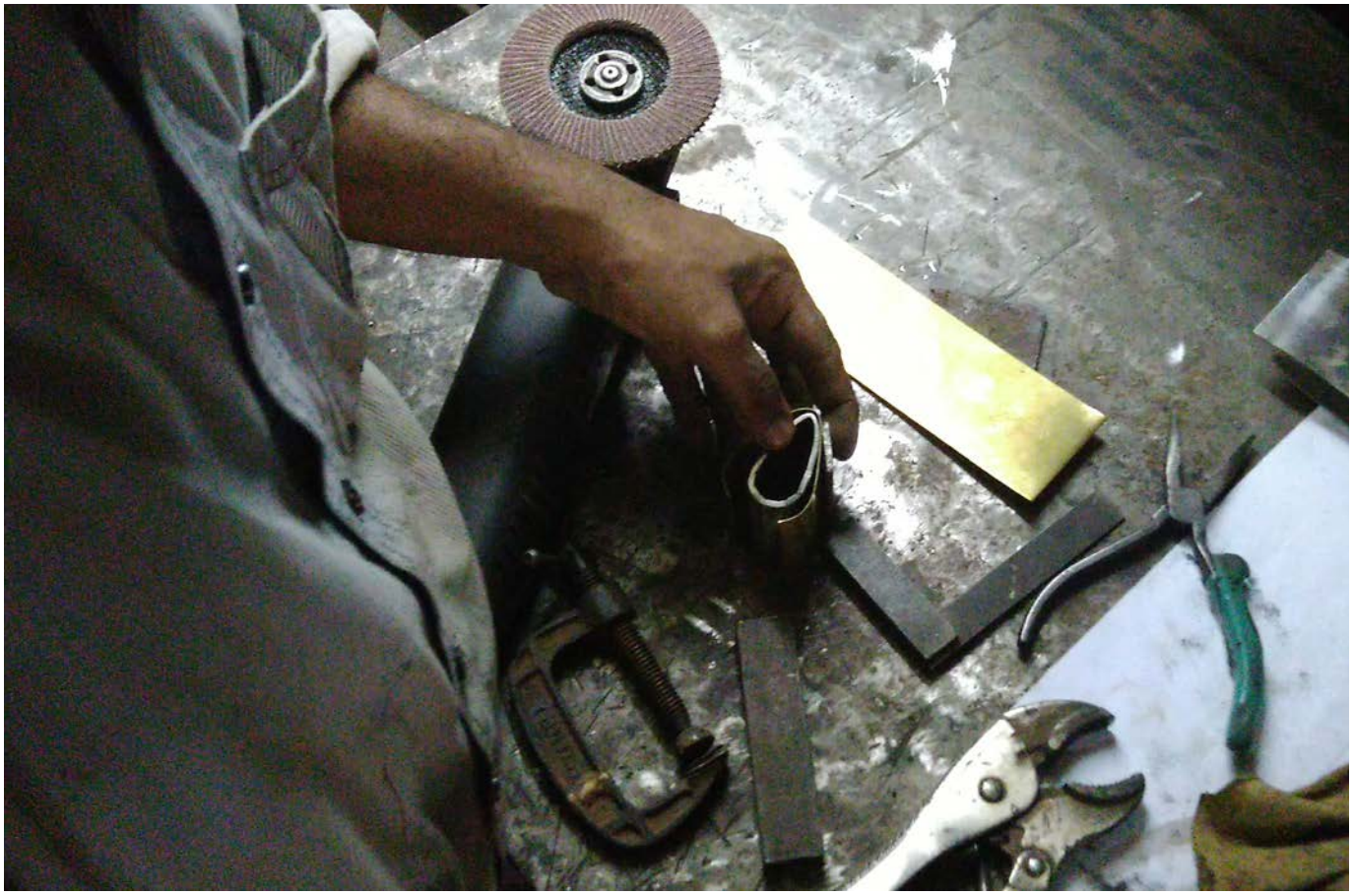
Text: Shriti Das
Images: Carbon Craft Design

The building & construction industry accounts for 39% of global energy-related carbon emissions. Mumbai-based Carbon Craft Design captures this carbon and entraps them into tiles before they can further pollute the environment. The tile is only one component of possibilities that arise with air pollution. The overarching aim of Carbon Craft Design is to develop materials, technology and products that can address social and environmental issues through design. The tile was produced in collaboration with Graviky with the help of craftsmen who work with Galicha Tiles. The Graviky team captures air pollution and processes it into a water-based ink. This pigment is used in the tiles that Carbon Craft Design had devised as a part of its pilot project to explore possibilities with pollution.

The initial experimentation with carbon emissions was a seed of an idea that germinated from Tejas Sidnal's workshops and research on bio-mimicry. Tejas is the founder of Carbon Craft Design who is also the director of AA workshops in India. He wanted to apply the research onto projects

The Carbon Tile – made from pollution

Making the Carbon Tile.



The Carbon Tile is manufactured by craftsmen who make Galicha Tiles in Gujarat.

with a tangible outcome to issues of air and water pollution through design. The first idea involved addressing both indoor and outdoor air pollution. The prototype would use an electrostatic precipitator to capture outdoor air through building facades and supply filtered air to the indoors. But the project was not scalable beyond being an efficient product for users. The Carbon Tile, on the other hand, creates an eco-system of change that begins with reversing carbon emission into a product instead of creating an object that leaves a footprint, creating jobs and a larger impact on the construction industry.

The tile was chosen as the first commercial product with soot or pollution particles in collaboration with Graviky Lab's AIR-INK. Tiles have a wide application across projects of various scales. The Carbon Tile is manufactured by craftsmen who make Galicha Tiles in Gujarat. Galicha has been facing stiff competition from vitrified tiles which are machine made. Vitrified tiles are baked but Galicha is a cement tile that follows a curing process which has fewer repercussions on the environment. For the

The Carbon Tile is made using a hydraulic press to fuse together carbon, cement and natural materials.

Carbon Tile, Carbon Craft Design uses a hydraulic press to fuse together carbon, cement and natural materials. The artisans are keen to work for a product for their livelihoods and its ecological impact is an added impetus for them. While the Carbon Tile is a great product that uses pollution and waste – a single tile is equivalent to preventing 30,000 litres of air from being polluted (correct usage would be). But no material can be created without energy or emission. The tile is currently undergoing its life-cycle assessment (LCA) which documents its carbon footprint from sourcing the raw material to manufacturing to transporting it onto sites. But as a product, the tiles have zero emissions once they are installed. Beyond the tile that is currently used for indoor spaces; the studio is also developing lighting, planter and furniture with the technology.

Against popular belief, carbon emission is not the crux of the problem. The core problem of pollution arises because the methods of measuring efficiency and economic progress deployed by humans are inherently flawed. The economy

The artisans are keen to work for a product for their livelihoods and its ecological impact is an added impetus for them.

The Carbon Tile reverses carbon emission into a product instead of creating an object that leaves a footprint, creating jobs and a larger impact on the construction industry.

A render showing the application of the Carbon Tile.

follows a linear pattern of growth. It is determined by its production; the monetary value of all goods and services. This system opposes the cyclic law of nature which follows a loop of creation and degeneration wherein one form transforms to another. A simplistic example is the tree; they shed dead leaves that convert into manure on ground which feeds the mud and organisms which then feed the tree. As a result, nothing that is created by nature is left behind in the form of waste as opposed to human patterns of production. And as factories continue manufacturing, the carbon emissions are massive and unchecked. So are the plastic waste and other surplus objects that are beyond the earth's capacity to decompose in this lifetime. To that effect, nothing is really a pollutant unless it is allowed to go wasted and become a toxin. ■

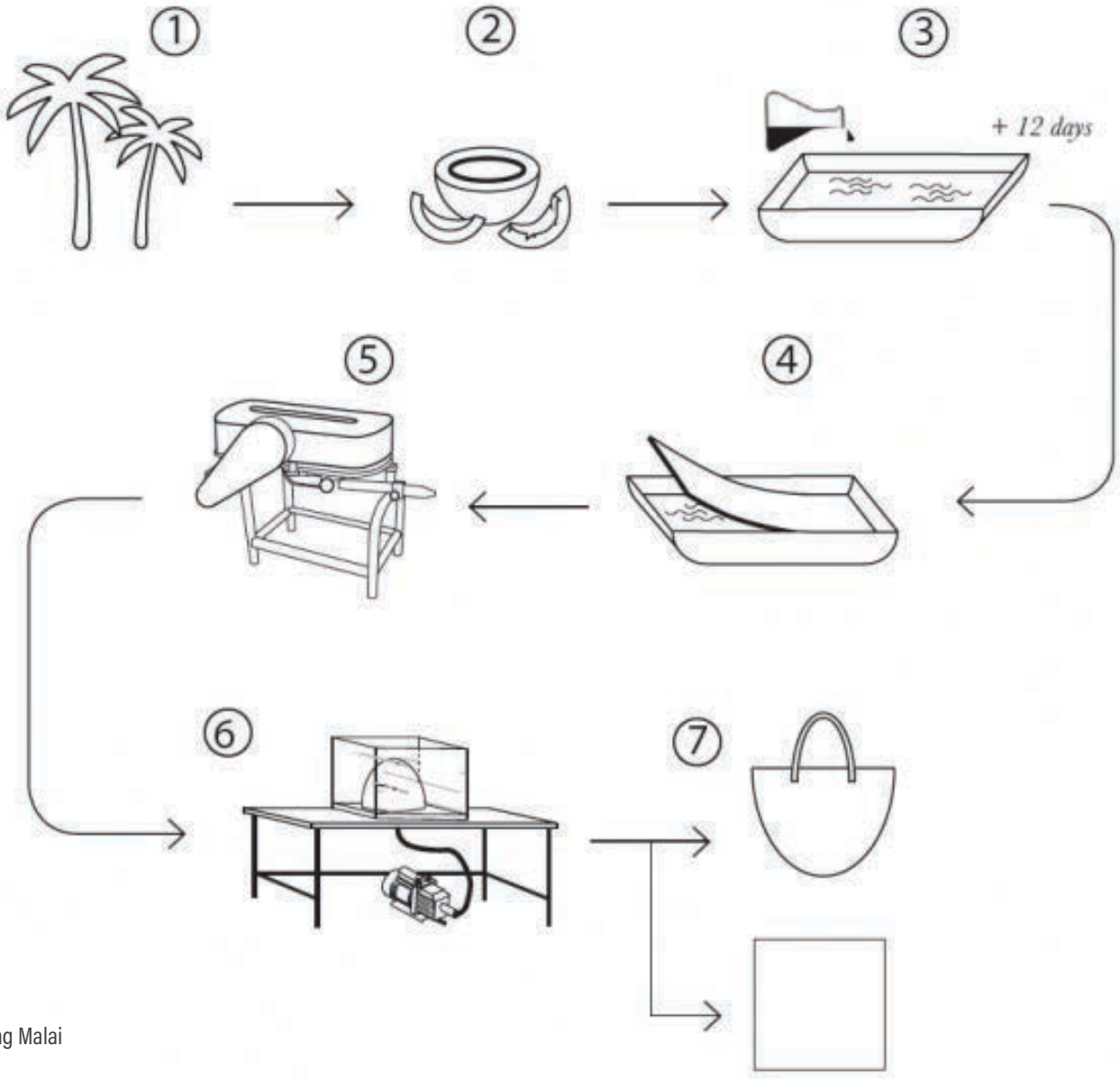
The biodegradable, vegan and sustainable alternative

Malai by Malai Biomaterials Design Pvt Ltd

Materials are increasingly being analysed for not only form and function but also their contribution to ecology, society and sustainable systems. As the world wakes up to piles of non-biodegradable waste choking land, seas and even skies; Malai shines a ray of hope amidst the grimy greys that pollute earth. Malai is a vegan, sustainable and entirely biodegradable material that is made from fermented mature coconut water. IAB Magazine explores the product – its feasibility, challenges and merits over mainstream materials like leather, plastic and paper.

Text: Shriti Das
Images: Malai Biomaterials Design Pvt Ltd

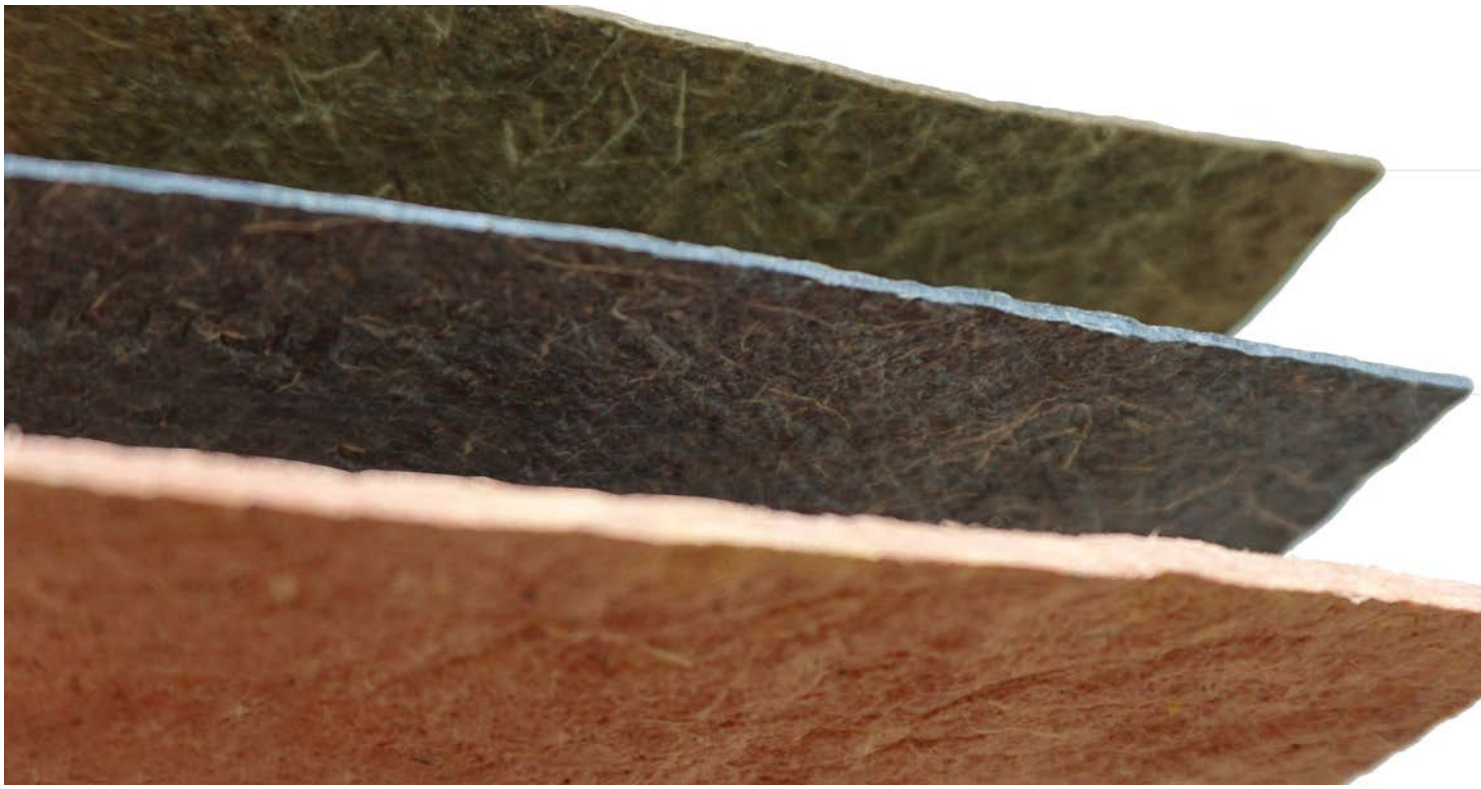
Malai and leather are as different as chalk and cheese who find use in similar products – shoes, bags, stationery and decor. While Malai mirrors the aesthetic of leather and paper, it ranks way higher on the karmic scale. Made from fermented mature coconut water and natural fibres, Malai is vegan, entirely biodegradable, does not emit harmful fuels and is even good for consumption. Kerala-based Malai Biomaterials Design Pvt Ltd was co-founded by Susmith CS and Zuzana Gombosova in 2018. It specialises in bio-materials with a focus on refining them to create products that are strong, beautiful and ecologically sustainable. The procedure of manufacturing Malai involves mature coconut water by introducing it to bacteria which results in fermentation and a solid gelatinous layer is formed. This procedure is commonly used to make Nata-de-coco or coconut gel which is a



Making Malai

chewy and translucent, jelly-like edible substance. The sterilised cellulose is processed with natural fibres to achieve Malai in the form of sheets. The natural fibres are procured from agricultural waste as is mature coconut water. Mature coconut water is also obtained from oil mills, desiccated coconut industry, restaurants, etc. If mature coconut water mixes with soil, it raises its acidic value posing as a pollutant. It is interesting to note that a natural material such as coconut water, which is unprocessed, poses a threat to the environment. Whereas Malai reverses this cycle of pollution to create a product that is actually good for the environment.

Malai is available in sheets of varying thicknesses. Malai soft is 300 – 500 gsm, Malai medium is 550 – 650 gsm and Malai strong is 700 – 1000 gsm. The thinner variants are easier to cut and stitch and possess paper-like qualities. The thicker



variants have more strength and are similar to leather. And similar to paper and leather, it is cut, glued, stitched and dyed. While the pilot projects with Malai involved objects that were foldable and 2-dimensional in nature, the studio has devised ways to fabricate 3-dimensional objects such as bags and shoes.

The studio engages actively with collaborations and experimentation to explore potentials with Malai, to find new uses and so on. These range from working with like-minded organisations to creating designs for exhibitions to even academia. October 2018 saw Malai exhibit at the Prague Designblok Festival where they displayed work created in collaboration with Slovak and Czech brands. Malai approached TON, the manufacturer of

Malai Studio cushions for stools, 2020.

Malai soft
300-500 gsm

Malai medium
550-650 gsm

Malai Strong
700-1000 gsm

Collaboration with Czech designer Libena Rochova, Interior object, 2019.

A pillow cover made by australian collective Plant Matters, 2019.

Students' work at UTB Zlin, CZ, 2019.

bent furniture from Czech Republic to test the material as upholstery fabric and subsequently Malai was used to upholster the Leaf barstool. A mirror was designed by studio Dechem for the festival. The industrial design from The University of Tomas Bata in Zlin experimented with Malai in 2019 to combine Malai, golden tubes and Czech crystal glass for project Alchymisti.

Products like Malai are often deemed a 'luxury' but the notion is far from true. Malai's cost is by virtue of the quantity of raw material required for production. 150 – 25 coconuts are required for a square-meter of Malai among other production requirements. The studio also invests in research, collaborations and other initiatives. Consumers often steer towards cheaper and convenient options not realising that Malai and equivalent materials are a long-term investment for better health. The money saved by buying plastic and similar materials will be exponentially spent in buying medication when toxins from the same pollute the environment. Plastic is choking land and seas whereas leather industries release carcinogenic substances into the eco-system. In the long run, one could either choose to invest in Malai and similar alternatives or pay the price of breathing pollution, ingesting toxins and living amidst a highly imbalanced eco-system. ■

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