

DESIGN
THAT
EDUCATES
AWARDS
2019



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About logo "Design that Educates Awards"

"D" from "Design" as a guide that illuminates, explains, educates.
The form of the sign allows it to extend endlessly, like knowledge.

DESIGN THAT EDUCATES AWARDS

The Design that Educates Awards (DtEA) investigate the educational potential of architecture and design. The ability to communicate the implemented solutions and features is the main theme of the awards. Such an informational layer of design and architecture provides an important (yet not fully explored) opportunity for a dialog between the user and the designer. The result—a new type of learning environment—provides a space for the exploration of both the design itself and its relation to the vaster context. Each year, the esteemed panel of judges will select the most outstanding examples. The objective of the awards is to recognize, showcase, and promote globally the best ideas and implementations of architecture and design that educate. The theme of the awards has been inspired by the research called ‘Educating Buildings’ (‘Bildende Bauten’) by Dr. Peter Kuczia. The jury selected the laureates in the categories of Architectural Design, Product Design, and Universal Design. Emerging Designer—is a label dedicated to the students’ project which received the highest score during the jury’s evaluation. Moreover, the representatives of Solarlux selected the laureates of Solarlux Choice.

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LAKA

Laka is an international network started in 2015 with a strong curiosity about how new technologies can positively transform our relationships with nature, architecture, and cities. Through a comprehensive strategy and with the support of our Partners, we develop projects and programs that underline the crucial role of architecture and technology in the process of positive social development.

www.lakaperspectives.com

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JURY

Maria Aiolova designer, educator, leader of Arup University, cofounder of Terreform ONE

Prof. Shingo Ando designer, educator, professor at Kyoto Arts and Crafts University

David Basulto founder, CEO, and editor-in-chief of ArchDaily

Dominic Harris architect, artist, founder and creative director of Cinimod Studio

Matthias Hollwich architect, AIA, principal at Hollwich Kushner, cofounder of Architizer.com

Prof. Barbara Holzer architect, lecturer, cofounder and director of Holzer Kobler Architekturen

Mikiya Kobayashi furniture and product designer, founder and director of Mikiya Kobayashi Inc.

Dr. Peter Kuczia architect, initiator of the Design that Educates Awards

Prof. Carlo Ratti architect, founding partner at Carlo Ratti Associati, director at MIT Senseable City Lab

Amandus Samsøe Sattler architect, founding partner at Allmann Sattler Wappner Architekten

Sarang Sheth industrial designer, content writer and editor-in-chief at YankoDesign.com

Prof. Tobias Wallisser architect, cofounder of LAVA Laboratory for Visionary Architecture

Aidin Ardjomandi industrial designer, director at Arena Design Studio

Paul Clemens Bart architect, designer, cofounder of BART//BRATKE

Marvin Bratke architect, cofounder of BART//BRATKE

Prof. Masayo Awe industrial designer, educator, founder of MasayoAve creation

At Laka, we are especially interested in the connection between a design and its user. This dynamic and usually subtle relationship may reveal new opportunities and provoke us to change our habits and expectations. I believe that design is a powerful tool that shapes not only our surroundings but, most of all, our mindsets.

The research of Dr. Peter Kuczia, 'Bildende Bauten' (Educating Buildings), and the questions "whether (and how) the design can educate us" resonate with Laka's interests and our other programs (e.g., the one in which we ask designers "how architecture can react [to outer factors]"). Having the opportunity to host the Design that Educates Awards is both exciting and challenging, and we are honored to be a part of this project along with Peter and representatives of Solarlux. Our deep gratitude goes to all the participants who took part in this year's edition, all the members of the judging panel, Stefan and Herbert Holtgreife and the Solarlux team for making the awards possible, and all of Laka's media partners for spreading the word. While we are celebrating this year's results, we already can't wait to announce the 2020 edition!

In times when the world is "designed" on an unprecedented scale, and when the human impact on the planet is comparable to that of powerful geological forces, is there anything more important than the ability to notice opportunities (and dangers) that are to come? The participants in the Design that Educates Awards prove that design can reach out to our sensitivity and that the objects in our surroundings—parallelly to providing their main programmatic functions—can communicate important values to us and guide us through desirable, positive practices.

Damian Przybyła
Founder of Laka, director of DtEA
www.designeducates.com



We are glad that the first edition of Design that Educates has aroused so much interest among designers from around the world—from the United States, Germany, and Switzerland to Brazil, Rwanda, Hong Kong, Japan, and Thailand. Such broad interest is confirmed by the importance of the educational value in the surrounding spaces, architecture, and objects of everyday use. The international panel of judges chose the 32 best ideas and implementations in the categories of Architectural Design, Product Design, and Universal Design. The best student project received the label of Emerging Designer, and the recognition of Solarlux's Choice was selected by representatives of Solarlux. The submitted projects solve the theme of the competition at various scales and locations, often growing up and communicating cultural and environmental aspects. The educational value was proposed in public spaces, façade elements, functional and spatial programs, as well as technological subjects and subjects related to playing and education in the early stages of life. There were also distinctions promoting close contact with nature, a healthy lifestyle, and responsibility for the environment. We are happy that as Laka, we can be a part of the Design that Educates Awards.

Rafał Przybyła
Cofounder of Laka, director of DtEA
www.designeducates.com



I have been blown away by the creative diversity on show in the first international “Design that Educates Award” competition. All the work we received glowed with the passion and creativity of its architects and designers, and illustrated the diverse array of approaches they used to achieve their goals.

Creativity is the engine of life and progress. It lies within all of us. Even as small children, we are always thinking up and shaping new things. We come up with new ideas every day in order to put everything we know, hear, see, and touch into context—even if it’s only in our own heads.

Creativity isn’t exclusive to artistic and design professions— it’s an important driver in every aspect of our society. It enables us to develop products and services that are more environmentally friendly, socially responsible, and forward-looking. These products and services are what we call innovations. It allows us to come up with new concepts for communication and interaction. In situations where routines are not enough, it enables us to improvise and come up with unconventional solutions.

In a nutshell, just like specialist knowledge and the ability to see the big picture, creativity is one of our most valuable resources.

We would like to take this opportunity to thank everyone who took part in the competition and all the judges for their involvement. We would also like to thank Damian and Rafał Przybyła of the Laka Foundation, who put a lot of themselves into the development and realisation of the “Design that Educates” competition. The interest in this prize among architects, designers and students alone has been reflected in the 115 registrations we received from all over the world.

Stefan Holtgreife
CEO, Solarlux GmbH
www.solarlux.com



Design is important. It generates added value. Good architecture and well-designed products don't just make our world beautiful and elevate our culture - they are becoming increasingly coveted and more economically valuable. They are regarded as good long-term investments, and their owners will not give them up lightly. The fact that they can be used for many years also makes them more sustainable. In addition to these benefits, good design can also take on another task that has thus far been underestimated - if it has even been noticed at all: good design educates.

Design ideas and designed objects, by their very nature, are increasing in complexity, and both are becoming increasingly difficult for users, building occupants and visitors to grasp. As such, it is becoming more and more important to communicate their essence and meaning correctly. Only then can their potential be realized and their advantages exploited, thus making it easier to accept them.

There is a unique opportunity to use designed artefacts as communication objects that speak for themselves. Good design solutions, however, can also communicate other important issues at the same time. This can be done using a direct approach - like that taken by the Solarlux Campus, where short texts and clear illustrations are combined with building signage to form an integrated system that provides information on different property features, many of which are not obvious at first glance. Alternatively, we can take a different - often subtle - approach to education, as many of the entries to our competition have shown.

When we launched the Design that Educates Awards our goal was to investigate the educational potential of architecture and design, and to recognise and promote the best ideas and implementations in this field. We have received a hugely impressive and varied collection of top-class work from all over the world that showcases the educational potential of the designed objects and the creativity that can be applied to the theme of the competition.

Thanks to the enthusiasm and unbelievable dedication of LAKA as the organiser of the competition, together with openness to the idea of the competition and the extensive material and organisational support provided by Solarlux in their role as the awards sponsor, the competition has proven a huge success in its first year. We would like to say a special thank you to both of them.

We would also like to thank everyone who took part in this year’s Design that Educates Awards and congratulate all the laureates on their success.

Dr. Peter Kuczia
Juror, curator and initiator of the Design that Educates Awards



PARTICIPANTS 2019

CANADA

UNITED STATES

MEXICO

PERU

BRAZIL

UNITED KINGDOM

IRELAND

NETHERLANDS

GERMANY

SWITZERLAND

FRANCE

SPAIN

POLAND

SLOVAKIA

AUSTRIA

HUNGARY

SLOVENIA

SERBIA

CROATIA

ITALY

LEBANON

LIBYA

RWANDA

RUSSIA

CHINA

SOUTH KOREA

JAPAN

PAKISTAN

INDIA

THAILAND

TAIWAN

MALAYSIA

ARCHITECTURAL DESIGN

FUTURIUM BERLIN

Design Richter Musikowski Architekten PartGmbB: Christoph Richter, Jan Musikowski, Sebastian Haufe, Elke Sparmann, Martina Huber, Nele Gessner, Daniel Eckert, Domenico Foti, Yvo Coseriu, Christine Darn, Elisabetta Vito, Johann Schulz-Greve, Phillip Rohé
Picture credits Schnepp Renou, Dacian Groza

The Futurium is a public building for Future-oriented exhibitions and events in the heart of Berlin. As an plus-energy building it achieves the BNB-Gold Status in sustainability. It is completely barrier-free. The building will serve as an open public place for presentations and will promote the dialogue between research, development and citizens. Future-oriented developments of national and international significance will be made visible through exhibitions and events.

Location and Facade

Embedded between the Spree Riverbend, the Berlin main station and the Charité Hospital, the Futurium creates its own sculptural identity in this ensemble. On the two main sides of the building two public spaces are defined by setting back the building. The entrances have cantilevering canopies of up to 18 meters generating sheltered public spaces. A pattern of dots covers the entire public space and lends it its own identity. The façade is made up of a reticular grid of shimmering diamond shaped panels. Under the constantly shifting lighting conditions they generate an ever-changing cloud image.

Forum, Futurium Lab and Cloud

The inner structure is divided into 3 large spheres - the „Futurium Lab“ in the basement, the “Forum“- spaces are placed on the ground floor. The permanent exhibition is on the upper floor. The “Forum“ is designed as an open, warm and lightfull space of communication. The “Futurium Lab“ on the lower level is designed as a subterranean laboratory. Dark-colored on-site concrete, black asphalt floors and a ceiling grid made of fluorescent lamps lend this space a contemplative atmosphere.

Energy Concept

The optimized and extremely energy- and climate-friendly energy concept uses as much as possible the regenerative energy of the sun. The goal is a high coverage of the own energy demand under fine tuning of active and passive measures. This is made possible by an intelligent combination of energy generation and energy storage, as well as rainwater harvesting for adiabatic cooling and a highly efficient and compact building envelope. The Futurium is designed as a plus energy house with a plus of 8kWh / (sqm/a). With the appearance of a large “solar-sail“, the roof is almost completely covered with photovoltaic and solar thermal elements. A public walkway is located on the roof with views to the city and large photovoltaic areas - the Skywalk.

Visible Energy Storage

The local storage of energy is done by a large mass storage in the middle of the building. It uses paraffin as a highly efficient storage medium. The paraffin mass storage is enclosed by a PCM-filled glass facade. It works as a didactic display, showing the functionality and charging states in to the visitors.

Lighting concept

The lighting of the ground floor is realized via linear LED lights lying above the grid ceiling. A specially designed metal grid ceiling directs and diffuses the light. It reacts and corresponds sensitively to the visitors and is a vivid example of energy saving. Fine dynamic light patterns or cloudy amorphous shadow figures with differentiated contrasts can subtly float across the light ceiling.



NATIONAL MUSEUM IN SZCZECIN - DIALOGUE CENTRE PRZEŁOMY

Design KWK Promes Robert Konieczny; collaboration: Michał Lisiński, Piotr Tokarski, Adam Radzimski, Joanna Biedna, Magdalena Adamczak; competition entry: Robert Konieczny; collaboration: Dorota Żurek, Katarzyna Furgalińska, Aleksandra Stolecka; exhibition: Piotr Wysocki, Roman Kaczmarczyk, Michał Czasnojęć, KWK Promes
Picture credits Juliusz Sokołowski, Olo Rutkowski, Jakub Certowicz, Jarosław Syrek

History and spatial context

Before the war, the space of Solidarity Square was the city's salon - there was a quarter of representative tenement houses. During the war this fragment of the city center ceased to exist - a gap was created in the urban tissue. This quasi-square in December 1970 became the arena of the workers' strike, resulting in deaths of 16 protesters. Since then, the place has become a symbol of struggle for freedom. In 2014, in place of former Konzerthaus, a new philharmonic hall was created, designed by Estudio Barozzi Veiga, which became the new symbol of the city. Another initiative changing the thinking about this space was construction of the Centre of Dialogue "Przełomy", museum dedicated to the history of Szczecin. While designing CDP, we adopted a humble attitude towards the history of the place and neighboring new icon of the city. Hence the idea to place the museum underground to create a background architecture.

Idea - urban hybrid

The building reconciles two conflicting traditions: the quarter and the square. This is how the urban hybrid was created - it encloses the space like a quarter, while maintaining values of open space. Expansion of the square creates foregrounds in front of the philharmonic hall and the church. The quarter is marked in opposite corners as the floor of the square is raised. One of them houses a museum, the other is a hill closing the urban interior and protecting it from the noise

of the street. There is no clear boundary between architecture and urbanism. The shape of the museum is a continuation of the square built of square slabs. In the uplifted corner, they gain a third dimension, becoming blocks. The whole is a monolith, which is transformed when the museum is open. Part of the vertical panels rotate creating arcades with entrances. The ground floor is the extension of the square and holds mainly entrance zone.

Exhibition - history told with art

The exhibition space is hidden underground. When we go down the stairs the concrete ends and we submerge in blackness - a background for the tale of Szczecin since the II world war, in a connection with Poland and the rest of the world. Simultaneously with the historic exhibition, based on pure information, we add a narration spinned by artists' masterpieces. This kind of attempt allowed the exhibition to become wider and more universal. The blackness allows to focus on presented objects while giving the impression of an infinite space. This brand new formula for the exhibition makes a historical museum an art museum as well.

Square - topography encouraging social interactions

Earlier, the square served only to commemorate history. As a result of the reconstruction, this part of the city has become attractive also for other residents. The open formula of the square encourages inventiveness. Topography allows you to discover new perspectives and views, and the sloping floor is used for various games. The square has retained its symbolic dimension, however, it is no longer the dominant aspect. Today, it is a space that is used by various age and social groups.



THE CORRIDORS OF MOSUL (IRAQ) POST-WAR RECONSTRUCTION STRATEGY

Design Maria Abi Raad

Picture credits Zoning map: Relief web; Damage assessment: UN-Habitat (Mosul portal) - UNDP; Mosul destruction photos: Timeslive, CNN, independent.co.uk, Al Jazeera, UNHCR; Mosul tents: periodpaper.com

Context

Architecture has the power to educate the people by communicating solutions around a certain theme. Because reaching a sustainable development is globally the biggest challenge, it would be expected from our designs to respect and project the principles of success regarding this theme.

Today, the old city of Mosul adds another challenge to that of sustainability: its reconstruction. Nevertheless, the destroyed city has the opportunity to rebuild itself in a better way by following the principles of sustainable development and become self-sufficient. However, how can architecture educate the Mosulis with no financial, technological means ...? How can we teach the people, who haven't had a particular education and are only interested in drowning their needs, the importance of ecological principles and of reusing the materials around them?

To do so, the architecture will play the role of educator through a human approach. Given that public buildings (schools ...) are scarce and not accessible to all, the best platform for learning is the corridors of Mosul, public places for daily exchange and communication. The reconstruction of housing/markets, the most common and reachable functions of the city, will allow the reconstruction of the important commercial hub of the city.

Proposal

The short-term recovery intervention consists of the tent made of muslin, recycled fabrics and metal. Landmarks (from reused elements) are also introduced in the city's public spaces and have a hygienic, sanitary and messaging role (for future projections...).

The beneficial courtyard buildings are reintroduced for the house-

market complex. The final result includes different typologies obtained using a participative approach, teaching the people the importance of recycling the materials available. The shop-dwellings consist of: organized debris / stone, wooden moucharabiyah, iron / muslin curtains, wooden doors and metal wind towers for natural ventilation. Also, to promote hygiene in the city, a capsule containing basic services is added to the complex and is adapted for a better urban integration of the Cartesian architecture. It also becomes the basis of the sustainable development of Mosul using passive energy goals (reuse of rain water, conversion of waste to fertilizers and usable energy). Following short-mid and long-term recovery phases, the tent evolves to become the housing/shops. That way, the old city of Mosul can reach its much-needed urban resilience.

The design that educates

Finally, it is not only the final design that teaches the importance of the sustainable development but it is the whole architectural process that achieves it:

- Participating in the construction allows a first experimentation with these new principles.
- Living in tents and homes/markets designed from reused materials demonstrates the benefits of recycling. The architectural flexibility allows the user to become the designer going beyond the dialogue between these two.
- Walking, shopping and growing in these corridors reminds citizens and visitors of the possibility of achieving the common goal: sustainable improvement. Exposed exterior facades display the positive result of reprocessing while the white capsules indicate the manifestation of a new start.



TOWER OF BRICKS

Design Interval Architects; Oscar KO (principal-in-charge), Yunduan GU (principal-in-charge), Zexing YUE, Xianmei HU, Jing CHEN, Jin HUANG

Picture credits Zhi Geng

Place and history

The project began with an abandoned Hoffman brick kiln, which was located between Hengshui wetland park and the city proper of Hengshui, China. The kiln was demolished by the government due to its collapsing status and with the plan to convert this wetland into a Botanic Park, our client wanted to design a botanic art center on the same site of the former kiln. We decided that the memory and history of the demolished kiln has to be recalled and remembered with the new architecture. We hope to connect the past and the present of the place with the project.

Reconstruction ≠ Replication

The new botanic art center is mainly a gallery showcasing plants, potteries and floral art. The new architecture is therefore a public facility that contrasts with the old kiln which was a introversive building purely for industrial production. With the intention to connect to the spatial history of the place, the new botanic art center has a massing and spatial composition that references to the old kiln but programmed with contemporary functions and experience. In doing so, the past and the future of the site are conceptually connected. The observation tower preserves the symbol and memory of the former chimney and the accessibility of the tower allows people to “climb up the chimney”.

Transformation from introversion to publicness

While the old kiln was an industrial building with no public access, the new botanic art center opens to the public as an cultural and exhibition architecture. The spatial composition of the botanic art center conceptually refers to the old Hoffman kiln with a looped and vaulted space surrounds a central courtyard. Along the vaulted arcade, several courtyards are proposed and breaks the spatial continuity of the space, creating a blurred boundary between landscape and architec-

ture, between interior and exterior, while also connects the inner central courtyard with the bigger environment. The roof garden of the podium also opens up the building and created unique viewing experience outwards. Courtyards are also proposed in between restaurants and kitchen at the northern and southern end of the building and allows better natural light into the dinning space.

Vaulted arcade as exhibition space

As opposed to a continuous vault in a Hoffman kiln, the arcade of the botanic art center is composed of a series of vaults which shows a visual and experiential progression of spaces in relation with light. The sequential setting of vaults defines separate but interconnected galleries that house exhibition and records the relationship between space, light and shadow.

From chimney to tower

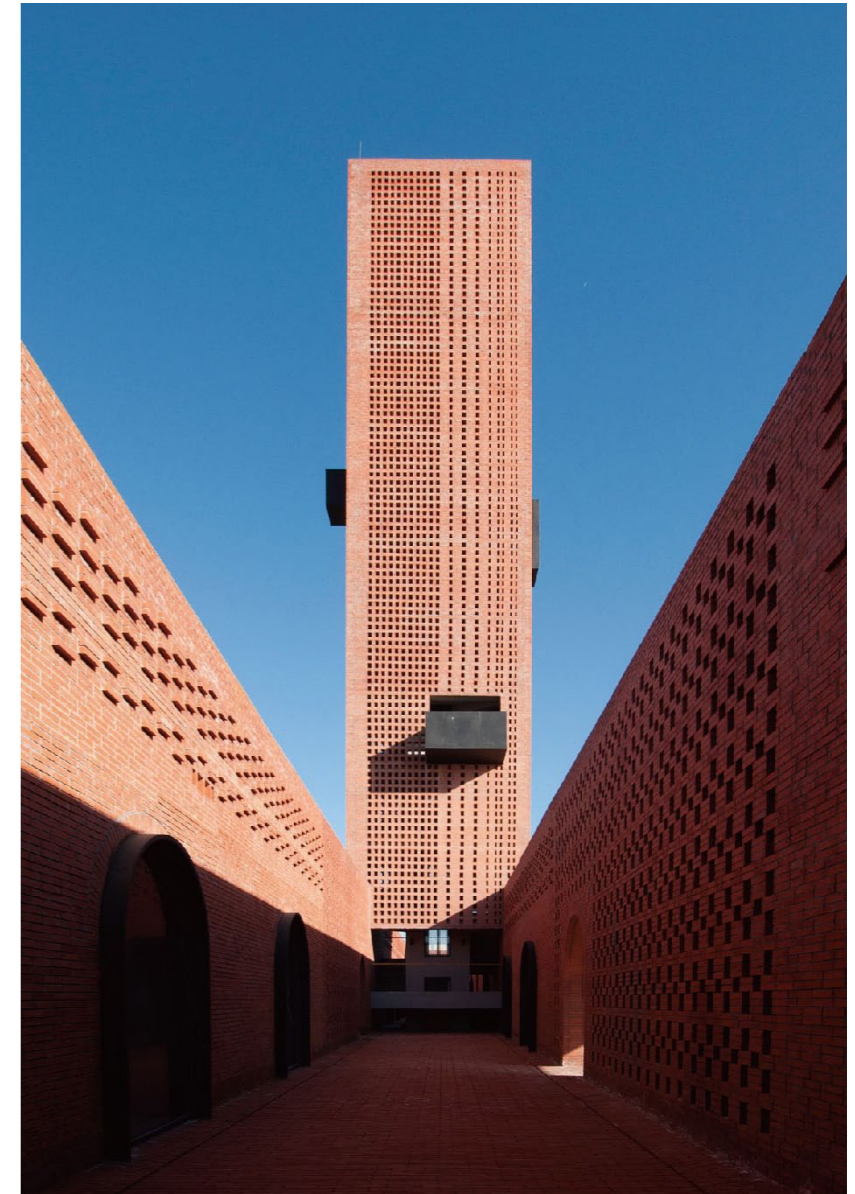
Every traditional kiln has a chimney and many people has the idea to climb on it. The proposition of an observation tower is reminiscent of the chimney and allows people to access the “chimney” with its four viewing platforms at different altitudes, which offers different views and experiences of the botanic park.

Materiality, light and shadow

Bricks were used as the main materials throughout the architecture and become a medium to recall the lost materiality and texture of the place. Various kind of stacking patterns of bricks area used on the facade in order to generate translucency, which breaks the solidity and heaviness of brick wall, allows different light and shadow effects and promote the sense of publicness. For instance, facade of the interior courtyards are made more translucent in order to imply the publicness of the space. The observation tower are clad with bricks stacked more porously to allow more light into the the tower and weaken the heaviness of the tower. While the design of the Tower of Bricks has a reference to a traditional kiln, the new architecture holds a contemporary position in terms of the idea of publicness, connectivity to the environment and user experience. It emotionally extends local people’s memory of the existence of a kiln. It is an architecture that connects history with future.

Educational Potential

1. By resembling the spatial structure of the former kiln on site, the new architecture concetually recalls people’s memory of the site. The relationship between the former typical Hoffman kiln and the new architecture forms an abstract learning environment that tells the history of the place.
2. Bricks as a major building material are fully tested in various ways of stacking for different effects. The idea of CRAFT in architecture is emphasized and exhibited as a learning process for designers, builders, and users.



HRIBLJANE HOUSE

Design Medprostor d.o.o.; Rok Žnidaršič, Jerneja Fischer Knap, Samo Mlakar; collaboration: Mojca Gabrič, Martin Kruh
Picture credits Miran Kambič

Hribljane, a small hamlet, is one in string of few little villages that lie between Rakitna and Cerknica. A deep serenity, bothered only by an occasional encounter with a bear, rules the forests. Investors would like a well arranged shelter in the land, with enough space to hold a large garden and a dozen sheep. Jazbine stream, running by the ruins of the old mill, crosses the plot, used as a local winter sledge slope. The house stands by a pine grove and evokes volumetric ratios of the local barns. Because of farmhouses never being placed on the brinks of the settlements historically, the new house takes its shape and material language from locally used ratios and materiality, to help with the revival of the hamlet. Despite its size, the house is barely notable in the broader landscape. Layout follows the existing terrain that helps the gradual escalation of the living quarters; foundations touch the ground in points only. Parking lot is hidden in a cleft under the house and the path runs by the pine grove towards the main entrance in the double height greenhouse at the end of the house. Living quarters comprise of a kitchen with a large dining room and a traditional oven that connects kitchen with the living room. By the side of the ramp running by the living room towards the workshop, private quarters are placed. Here are the stairs to the upper floor with a guest bedroom and a children room that opens to the double height green house. Structural skeleton of the house is made of raw wood; all of the final layers are made of natural materials; reused brick for the floor that covers most of the ground floor, coconut rug as softer flooring and wooden partition walls. Longitudinal appearance of the house is further enhanced by partitions of the façade in the longitudinal direction, while different clefts and notches part the house, revealing the programs in the inside.



ECD&F CENTERS (EARLY CHILDHOOD DEVELOPMENT & FAMILY CENTERS)

Design ASA Design Ltd - Active Social Architecture; partner architects: Alice Tasca, Francesco Stassi, Zeno Riondato; design fellows: Eric Kayijuka Mutabazi, Christian Karagire, Secil Taskoparan; collaboration: Dr. Tomà Berlanda, Dr. Nerea Amoros Elorduy, Arch. Michelle Stadelman

Picture credits ASA Design Ltd - Active Social Architecture

The implementation of ECD (Early Childhood Development) centres is one of Rwanda Government's flagship projects to improve education and invest in a sustainable future development of the Country. Result of an holistic approach to architectural interventions, our design focuses on the community participatory approach and the added educational value of design, to hopefully catalyse social change and poverty reduction.

The design and built prototypes of Early Childhood Development & Family Centers have been tested and implemented at national level for a total of 15 facilities built in remote rural areas. Each prototype is carefully integrated with the physical and cultural landscape of the Country, it is thought of as material and systemic ecosystems balancing the relationship between communities and their surroundings. The particular nature of the project gave us the opportunity to test its replicability and adaptability to varying topographic constraints, scarce and limited material resources, and different set of skills among the communities. Workshops have been organized to understand the most important themes in local village life, which have become the principal design items.

The conceptual approach to the design rests on two pillars: it highlights the role of a central space as catalyst for community gathering, in a contemporary reinterpretation of the traditional "urugo" settlement pattern; and it conceives a modular structure, where components can adapt to different terrains and situations, but originate always similar facilities, organized around the central space.

Two main typologies are being tested throughout the ongoing construction: a circular plan and a S-shaped plan. Ideally the outcome of

different aggregation of the modules, they are the result of the adaptation to varying topographies and plots. All have required adjustments and changes during the construction process, in an effort to source locally available materials and transport them to difficult and remote site locations, together with the challenge of reacting to different climatic and geological conditions, such as soil types and heavy rainfall. The centers consist of five different basic elements: stimulation classrooms; multipurpose hall; open demonstration kitchen; offices block; sanitation facilities

They are small reinforced masonry structures, built with locally produced fired bricks, assembled with Flemish bonds and vertical reinforcement bars, to improve stability and avoid the use of concrete. The brick pattern and the multiple openings of varying size, placed at different heights contribute to the sensory stimulation and the learning of small children, while providing natural lighting and cross ventilation. A continuous porch, covered in ceramic tiles, allows for a variety of covered outdoor spaces, for both learning and communal activities. The whole compound is fenced, and includes a dedicated area for playgrounds and kitchen gardens, and has an underground tank for rainwater harvesting.

Community members and children's parents are educated in construction, administration and management through the design and build process. At least 50% of the workforce is composed of women in order to fight gender discrimination. Design that educates communities and parents proved to catalyse social change: newly trained masons, carpenters and welders find better job opportunities, while children receive better care and nutrition at home.

Stimulation by design is our focus, especially due to the tight costs constraints that push us to use any little details to improve the child learning experience and the caregivers tasks. Design that improves education catalyse social change: children's brain between 0 and 6 is highly stimulated by the environment and its healthy development makes children more successful adults. Moreover, more stimulated, better nourished and healthier children have longer study perspectives, that eventually allow them to access better job opportunities.



Honorable Mention Architectural Design

SWISSHOUSE XXXII ROSSA

Design Davide Macullo Architects; Daniel Buren, Davide Macullo; collaboration: Mario Cristiani

Picture credits Alexandre Zveiger; photos-souvenirs © Daniel Buren – ADAGP Paris /Davide Macullo

The Calanca valley, when you go there, you forget the things that are known to you. In reality, the journey there is short, but it is a trip of a lifetime.

Once inside, the valley closes behind you, and beyond opens the door to your dreams.

Rocky walls, forests, soft fields; the ceaseless work of centuries of men and women; it warms us. The rocks tell us the story of the birth of the earth and how much it has had to move to give us this blessed place. Rossa is a place of memory where civilisation comes from simplicity. Our task is to continue this art of love for this land through humble but enduring gestures. This village in the Swiss Alps at an altitude of 1100 meters, lies at the end of the valley, where the powerful force of nature expresses itself, its presence revealing to us our measure in the world.

Building in this context means taking cue from the signs of the past in their essence, following the peace of a place that catalyses energies difficult to describe.

Swisshouse Rossa represents the constant commitment to build with respect for the places we inhabit and to make every effort in helping our understanding of civilisation. This is an opera that lies on the cusp between art and architecture, a living sculpture. Alongside its primary role in protecting man from the elements, it is an architecture that needs art to complete it.

It is an enclosure that defines a dynamic space. The points of view and the light penetrations work on the perception of time. It is an unbroken line of emotions. Each aperture is calibrated and oriented towards selected views of the surrounding landscape.

The basement is in reinforced concrete, the upper volume entirely in wood, without interpreting the traditional construction type of the Alps, but using it as it is.

Artists strive to show us ways that we had not before thought of, by opening us up to new worlds within our daily life and making us reflect on existence in every sense. Art is a necessity that allows us to grow and communicate the essentials.

The cross in vertical projection, the rounding of the edges and the simple torsion of the roof make it dynamic and reinterprets the archetype as a testimony to the fact that the reasons for making are inexhaustible, that buildings are our public art, just as the nature that surrounds us is not always the same, but morphs and moves, taking on new meanings depending on how we look at it. Our wonder makes us curious and nurtures creativity. It makes it a pleasure to ask questions and find the role of art in life. This work is the first step of a humble but very ambitious project: the desire to influence a joyful vision of the future, far from wars, and seek counsel in the surprising ability of children to marvel at the world, to whom this work is dedicated.



COMMUNITY CENTER CAMBURI

Design CRU! Architects - Bamboostic; Sven Mouton (lead architect); collaboration: Reintje Jacobs, Jan Detavernier, Britt Christiaense

Picture credits Nelson Kon

The community center of Cambury is a building by and for the local low-income community of Cambury, built as a social development project. The project, started in 2004 (first part of the center), is still active in 2018 (building of the community bakery) and is run by the local community members in the form of a cooperative and a local association. While the architects in the form of a non-profit-project offered technical assistance and finances to the building, the community decided all of the content and program of the building and its different parts built in different times over the last 14 years. The community decided that the first building was to be a community center to hold gatherings, while following years other parts such as a computer-room, library, pré-school, cooperative building-instruments storage room, surfboard storage room, association-office and last completed a community bakery. The team of architects was always strict to not enter in any decision regarding function nor workings of the cooperative or association and to keep to only aiding in designing and technical assistance. The entire project was foreseen as an educative training for this cooperative to perfect their techniques, whilst building community infrastructure. The new visiting architects over the run of 14 years in their turn, after some years had passed, were thought by the cooperative in bamboo- and earth building techniques whilst they provided architectural and engineering assistance to the project (as well as the connection to the sponsors, administration etc). Newly graduated architects came from Belgium to the Brazilian project to stay around one year to build a next phase in the project. For the design 3 main requirements were put forward by the local association of Cambury: to provide a communal space to hold meetings, school activities or other events and several separate rooms to host classes and to store material; to form a perceived geographical center of the town and thirdly to integrate the building within the surround-

ing landscape and the existing school located on the same terrain. The terrain is situated 50 meters land inward from the beach. The center is oriented in the direction of the sea to catch the main wind for ventilation. By raising the roof sufficiently high and by avoiding perpendicular walls blocking airflow inside the building, the ventilation flow is optimal. Under warm and humid conditions higher wind velocities have a positive effect on the physiological as well as psychological wellbeing. The height of the building aids the buoyancy or stack effect; air will flow in when the warmer indoor air rises up through the building and escapes at the top, therefore the design foresees both lateral sides open. The rising warm air reduces the pressure at the base of the building, drawing colder air in when there is a lack of natural airflow and stagnant air. Additionally, the sheer force of the wind is a key factor in the design. The impact of this force is larger when a construction gains in height (needed for the ventilation). In order to have adequate wind-bracing, the triangulation of the construction needed to be well studied and executed in good order and detail. Elevating a building with wind-bracing only at the end can have detrimental consequences during (frequent) storms. The use of four columns, with the cross-bracing of both lateral trusses proved to be sufficient to act as wind-bracing.



Honorable Mention Architectural Design

HAVEN HOUSE A GETAWAY IN THE ROCKS

Design & picture credits Anastasia Elrouss Architects

The Haven House is inspired by old Lebanese churches and hideaways that were carved inside Rocky Mountains historically and were appropriated with time by their surrounding natural environment, these small grottos remained hidden for centuries enabling their users to live their cultures and beliefs as they saw fit without any external social pressures.

The challenge was to create a hidden house with surreptitious experiences in continuous dialogue with nature at several scales and levels. These secret experiences would allow the creation of an imaginary world for its inhabitants, blurring the limits between public and private without physical boundaries or judgement.

Carved out in the rocky mountain and hidden between rocks and trees, a sloped cantilevered roof shelters the main reception space. The roof acts as continuation of the mountain's slope and disappears in its context. The sloped roof is cantilevered from one side above the internal stepped courtyards.

Three women will occupy the house transforming the space into a spiritual retreat.

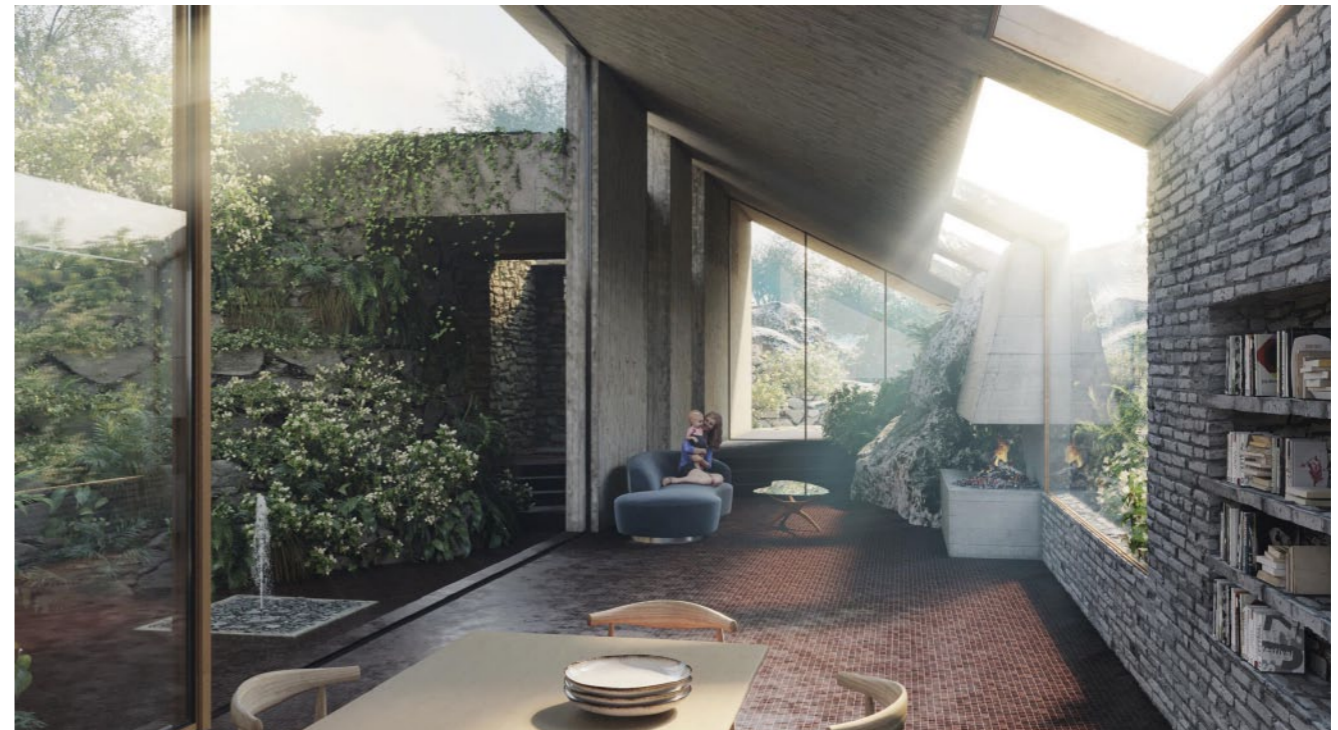
Three main planted courtyards act as natural breathing spaces for the main reception areas. These courtyards are formed by rock boundaries from outside and are elevated to connect to the upper main garden that provides visibility on the nearby village but remains hidden to the village through the protection of the sloped wooden roof. The house creates an intense experience for the five senses in a short sequence of moments. From the existing olive trees distributed chaotically across the rocks, that connect to form a stone shelter for the house, to the combination of wood and fair faced white artisanal concrete used in the interior, create a stone masculine fortress on the outside and a feminine, spiritual and soft space from the inside. The reception area takes the length of a 23 meters' procession of experiences always in contact with the sky or with the three courtyards. Three hidden doors lead the way to the three secret sleeping

spaces. A large chimney for heating and cooking, a bow window, an open kitchen and a library are always in contact with internalized rocky walls penetrating the main space from outside.

Three bedrooms disappear completely underground with each having two carved-in, secret thematic gardens that allow for natural sunlight and a private relationship to the outside world.

The architectural approach is focused on the empowered daily experience of the three users who recreate their spatial limits within the mountain leave their physical and spiritual trace. Aligning the main roof with the mountain's slope and creating a deconstructed, rocky landscape mimicking the hardscape in a contemporary vision allows the three users to appropriate the mountain itself. Creating complete freedom and intimate relationships with the natural environment that unleashes their creativity and spirituality through their own personal space.

Haven house is a revisited, contemporary vision of the gardens of eve.



EXTERIOR SKIN DESIGN FOR THE WYNWOOD MIXED-USE BUILDING AND PARKING GARAGE

Design FAULDERS STUDIO; Thom Faulders, Flori Kryethi, Andrei Hakhovich, Gregory Hurcomb, Holly Hodkiewicz, Marianna Diaz, Taylor Metcalf, Mai Yamada, Clara Tresgallo, Stephanie Thompson; building architect: Wolfberg Alvarez & Partners
Picture credits Moris Moreno Photography; aerial drone view photo: courtesy of Goldman Properties; images: FAULDERS STUDIO

We designed permanent architectural skin for a new 8-story building in Miami, Florida. The 250,000 sq. ft. Wynwood Garage includes retail spaces on its ground level, offices at the top floor level, and public parking within its intermediate levels (designed by another local architect of record). Construction was completed in December 2018. Formerly a manufacturing neighborhood, the Wynwood Arts District today is the creative arts hub of Miami. Attracting visitors from around the world to explore and photograph its renowned mural scene, this edgy part of the city is home to the highest concentration of street art in the U.S. Murals visually overtake every building, forming a 3-dimensional canvas that changes over time with the repainting of walls. The combined effect is an amorphous setting that never stops evolving. Amidst an increased presence of urban renewal, the new facade aims to merge optical and spatial layering to actively resonate with this painted city-space.

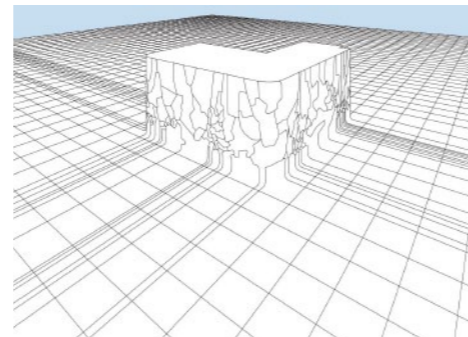
Architecture that Reveals Its Origins

Since 2009 the project author has explored architectural strategies for growing buildings through nature-based material methodologies. Our GEOTube Tower speculative project for Dubai is borne from regional salt crystallization from the Persian Gulf, and literally grows its exterior walls over the course of 50+ years. This demonstrates the possibility for buildings to 'tell their own story' of their making in public display. Our Bryophyte Building proposal absorbs moss spores from the air to accumulate and construct a soft exterior building envelope. Both projects were exhibited in Naturalizing Architecture for ARCHI-

LAB 2013 at FRAC Centre, Orleans, France. The GEOTube Tower and its material explorations are a part of the permanent collection of FRAC Orleans, and was exhibited in part in the Oslo Triennale in 2013. For the Wynwood Garage building skin, similar concepts for time-based emergent material properties inspired our design direction. While the building surfaces remains fixed, it partakes in the rapid layering of painted surfaces surrounding its elevations via a similar means of optical take-over: form is experienced a flattened surface containing non-architectural narratives within. If the traditional differentiation between the drawing of a building (representation) and the realization of the building (actualization) is eliminated, might this reveal its origins?

Occupy the Drawing

Foregoing the typical design method that would produce a drawing of a building, we alternatively situated the drawing directly on the building. As a two-sided canvas intended to be experienced differently from inside and outside, this 46,166 sq. ft. skin continuously wraps its four primary elevations. Contrasting outlines are 'drawn' throughout this surface via high-precision cutouts, to be further subdivided into a painted aluminum matrix of 1,1546 unique panels (a typical panel approximates 3.5ft wide x 11ft tall). Erasing legible differentiation between solid spandrel and car park openings, the concrete building is painted shadow-dark gray behind the suspended skin - a necessary



innovation that transforms the envelope into an interdependent two-layer system. A spatial reversal takes place inside: perforations once perceived as solid geometries transform into open inlets of light and air, and the white background optically recedes as a darkened field. Framed by floor plates and column bays, a linear gallery of zoomed-in shapes and figures is displayed, crafting the skin unique to each parking space, and inviting visitors to peer onto pixelated views of the city outside.

Mega-subtle

Understanding that 'car-park-brutalism' would be incongruous with this nuanced context, the façade's free-form pattern offers a non-narrative effect: the softened outlines hover between recognizable shapes and unfamiliar forms, resist definitive naming, and cast the viewer into an active role of visual interpreter. Ranging in size from three feet to more than six stories in height, irregular polygonal shapes are bordered by slotted perforations and elevated fins. This network of fissured 'sight-lines' perpetuates a visual meandering

throughout the street-oriented elevations and back to the city. From afar, porous surfaces appear to be smooth planes of gray, and boundary lines look solid and continuous. Upon close proximity these geometries shape-shift into a more subtle yet actual texture of spatial data: hand-size dots and dashes that penetrate the surface to provide daylight inside.

Shape-shift

With a non-repeating pattern across the entire façade, we use geometric shape-shifting to perceptually alter the visual scale of the building. Delineated outlines are more expansive higher up, and address visual registration from a distance. At closer proximities the façade's pattern blends with the urban texture of the neighborhood; and nearer to street level, focused areas of articulation guide the eye downward to pedestrian street activities. The result is a loose-fit relationship that intentionally contrasts with interior floor levels, and reinforces the ubiquitous misalignment between painted shell and contained functionality found throughout Wynwood's architecture.

RESIDENCE IN TRIVANDRUM

Design Vinu Daniel, WALLMAKERS; Srivarshini J.M., Oshin Varughese , Aparna Renu, SankarNath, Vineeth A.C, Pushkar Sharma, Dhawal Dasari, Shreyas Unni, M.Archana, Shyamala Baskaran, Gayathri Maithani, Saathvika Pancholi, Shekizzar, Tushar Sharma, Jemy Joy, Apoorva Gautham

Picture credits Anand Jaju

The residence depicts an atmosphere that is an oxymoron in nature - Serene and warm, with minimalistic decors, at the same time adventurous and wild in design.

The site was on a low-lying terrain with issues of water-logging, which was the primary obstacle we had to tackle. The primary idea was to ensure that the building wasn't creating a hindrance in the flow of water. Being in a state like Kerala, where rains are frequent, we had to ensure that the water percolates into the ground and that it could be harvested. We had to come up with an alternative and sustainable solution which could also enhance the spatial quality- a pond in the lowest point of the site so that water is retained in the site as well as adding to the veristic vibe of the residence.

Using bamboo for the façade had a downside to it - which is that it is precarious and cannot support an entire edifice of an enormous size. This is the barrier that was demolished and proved wrong by dint of this project. The bamboo façade is created and conserved in a stable position by reinforcing the bamboo with steel rods. The continuous string of bamboos hand you the front elevation to the residence instead of the walls, also creating a semi-open place for your quit thoughts. On a closer look, the bamboo façade furnishes an impression of flowing water that adds to the aesthetic layout of the structure. The distinctive form of CSEB bricks (Compressed Stabilized Earth Blocks) has been used to create a rotating Jali work which produces varying intricate patterns on the floor when light beams through the concise spaces created by the peculiar arrangement of bricks. Apart from the marvel, the light creates; the consecutive polar arrangement allows uninterrupted flow of air allowing ample ventilation.

The use of scrap grills instead of fresh factory made ones is an imperative part of the residence. Use of such grills instead of fresh ones propagates the idea of up-cycling as well as serves as a medium of income for labourers who part their blood and sweat to create exquisite pieces of art.

We have tried to bring small changes in the usual routine of wastage by inculcating something we regularly see in junkyards. The use of washing machine motor base plates, welded together not only encourages sustainable living and reuse but also adds to the beauty of the residence. Utilizing scrap material and turn it into something spectacular is made possible.

What set the home apart from usual residences is the simplistic and minimalist interiors of the residence. The architects make use of uprooted trees and waste wood from saw mills as the furniture for the residence. The sleek and rustic furniture takes the vibe of the residence up a notch.

The structure connects closely to nature in terms of terrain, design and materials alike. The residence hugs and stays close to the environment of peace around it and the outgoing and cordial vibe within the four walls of the residence.

Materials used: CSEB bricks (Compressed Stabilized Earth Blocks), Bamboo, Ferrocement.



CHIRATH RESIDENCE

Design Vinu Daniel, WALLMAKERS; Pushkar Sharma, Srivarshini J.M., Tushar Sharma, Akash Sharma, Sagar Kudtarkar, Oshin Varughese, SankarNath, Dhawal Dasari, Shreyas Unni, Shyamala Baskaran, Gayathri Maithani

Picture credits Anand Jaju

In today's world, it is a prevalent trend to add the prefix of sustainability to most things. However, there seems to be very little that is done to represent the concept.

We, as a community, have devoted ourselves to the cause of using Mud and Waste as the chief components to make structures which are alluring and utilitarian. As a firm practicing sustainable architecture exclusively for a decade, we know about the aspirations of a "modern" client, where his house is a symbol of his status and prominence in society instead of being a statement for the future.

When we first met the client, he mentioned to us about his disapproval towards the traditional Kerala style home system. The traditional houses in Kerala are typically sloped roof structures with heavy overhangs. Although the roof prevented rain and the cooling was phenomenal, he was deterred by the atmosphere of darkness which stayed prevalent or was associated with the ambience inside the house. The second altercation was that many of the architectural systems that were in place promoted gender inequality in the olden days since women were restricted to the courtyard. Thus during the early days of the project, the client had made a point that the house should be a symbol of a new light, or a new outlook to our age old systems and beliefs.

"Chirath" which denotes a traditional lamp in Malayalam is the name given by Mr. Ramanujan Basha for his house at Pala, Kerala. The client, thus asked for a solution by throwing away the bad and utilizing the good.

"Bring in the sun, but not the heat.
Bring in the rain, but not the leak.
Bring in the elements, but not the maintenance."

We decided to break the roof, split it open and let the light flow in, all while using waste and mud to build the house. This is the concept of Chirath.

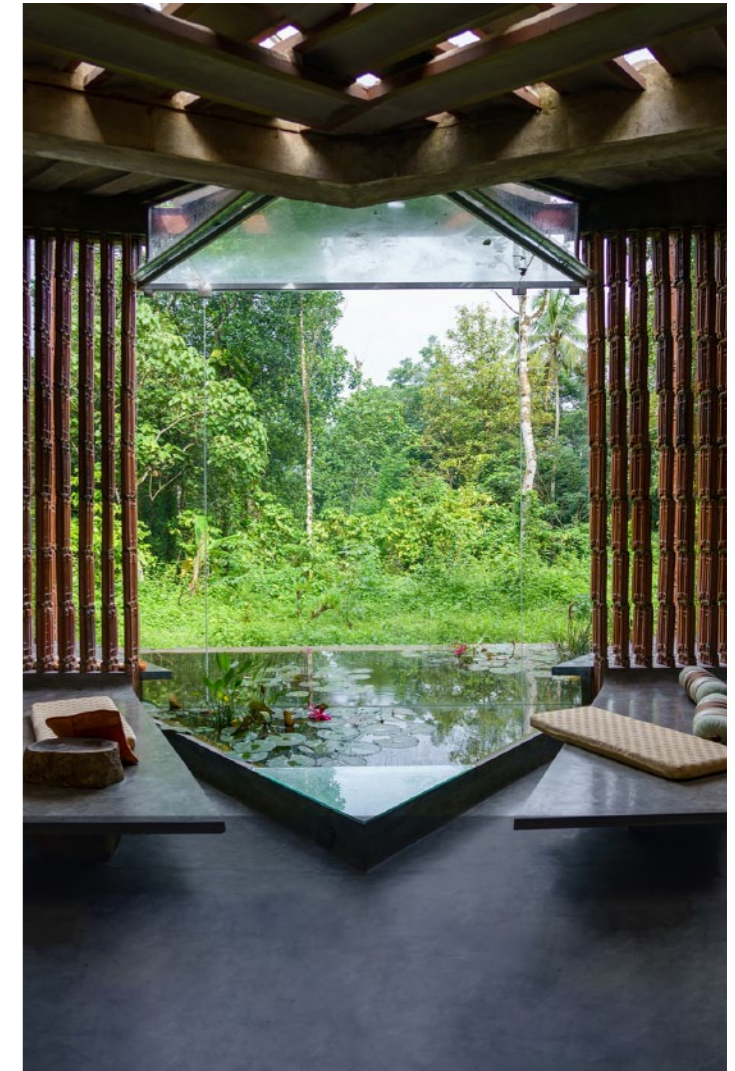
What is waste? Waste can be classified as anything that was produced, used and then discarded from its original function. While the work and construction process results in the production of a lot of scrap, we believe in not being deterred by this demon and instead have learnt to build with it.

Materials of Construction Detail:

1. Shuttered debri wall- a patented technique .This wall construction technique involves mixing cement, soil and waste materials of various sizes(coarse aggregate) ranging from 10mm -70mm skillfully to give a strong wall (5.2MpA compressive strength)
2. Ferrocement Shell Roof - These wafer-like structures are steel reinforced arched shells with effective thickness of 1.5cm and they take equal load of respective R.C.C slabs. They effectively reduce the overall cement consumption by 40% and steel consumption by 30%.These replace the R.C.C Slab in roofing as they are as strong as 1200 kg/m²
3. Terracotta tile jali - Locally available tiles are used in a composite manner with ms rods running through them and forming successive sets placed one below the other with gaps in between for ventilation.
4. Waste wood - plained and cut into long pieces, and joined to make furniture like bedsead, kitchen cabinets, chairs, etc.
5. Scrap for window grills - Waste steel rods and ms plates are put to use beautifully as window grills, and ventilators.
6. Ferrocement walls and slabs - Partition walls in toilets, kitchen slab, and seating in living area are made of ferrocement.
7. Oxide - Floor and selected walls have been finished with grey and white oxides.

Special Features:

- Pond - The pond in the living area aids in evapo-transpiration and helps in passive cooling.
- Rainwater Harvesting Tank as an extension to the pond serves as a collection pit for the flow of stormwater from the sloping roofs. With a capacity of 35m³, this stored water is recycled for all domestic purposes.
- Innovative ferrocement shell roof leaving pockets of light which enter the building and change the mood every hour.
- Reinventing the use of terracotta tiles as jali on the exterior walls.
- Well amalgamated interiors and exteriors, which allow peaceful transition into spaces.



UNIKATO

Design KWK PROMES Robert Konieczny; collaboration: Michał Lisiński, Marcin Harnasz, Marcin Króliczek, Aneta Świeżak

Picture credits Juliusz Sokołowski, Olo Rutkowski

Context

Unikato is a residential building located in the center of Katowice - once a dynamically developing industrial city. The testimony of that era are the impressive modernist buildings. Today, the city is experiencing a demographic crisis and suffers from suburbanization. There is a lack of new residential buildings, and the city is subordinated to car traffic generated by people coming here every day to work from the sprawling suburbs. Unikato is to be an impulse to reverse this negative trend and to breathe new life into the area.

Project guidelines

The project budget was extremely low. The investor provided funds only for a cheap finish - styrofoam, plaster, white plastic windows - and for the balconies, which were to be a storage space for small apartments.

Idea

Modernist buildings of Katowice, once bright, for many years exposed to the smog, gradually got dirty and became almost black. Their white windows always contrast with the black of the façade. This observation has become an inspiration for the project. From the neighboring building, we took a characteristic motif of the balcony in relation to the window. Full balustrade covers the exit, thanks to which all the windows appear square. The balcony becomes an extension of the apartment, at the same time providing privacy, which residents quickly appreciated using it for recreation or storage. Thanks to the full balustrades, the building maintains consistency, and the objects kept on the balconies do not disfigure the area.

Balconies are the most characteristic building motif. Their arrangement in the same direction on all façades, along with position shifted in relation to the irregular outline of the building, creates a charac-

teristic silhouette, which is the dominant feature at the end of the quarter. The balconies hanging above the sidewalk make the building very dynamic, but as the distance from the façade increases, it becomes more subdued, mildly fitting into the context.

Importantly, the characteristic composition of balconies is not only a formal treatment. On the eastern façade, balconies adjoining the wall with the shorter side and sticking out far beyond the building outline catch much more of the southern light.

Another reference to the surroundings is the plinth motif taken from the neighboring buildings, which stretches across the entire frontage. On the other side, where Unikato borders with a free-standing villa, the plinth becomes a fence, referring to the fence surrounding the villa.

Materials and technology

Only economical, easy to implement solutions were at stake in the construction of the building - a monolithic skeletal structure filled with a wall of ceramic hollow bricks, a raw reinforced concrete staircase, white plastic windows and plaster on the facade. The balconies are made in a monolithic construction. Their steel barriers are clad with cement panels and covered with plaster. The base of the building is finished with cheap aluminum sheet, which is gradually tarnished. The building is equipped with installations minimizing energy consumption and is powered from an ecological municipal network. Despite the limited budget, the roof was designed as green - it absorbs dust and smog and improves the microclimate.



CHILDREN ECO-VILLAGE

Design & picture credits O2 DESIGN ATELIER
SDN. BHD.; Edric Choo Poo Liang, Lim Min Syn

The aim of the project is to create a conducive place to learn, play and live for the Kenyan orphans. The Children Eco-Village design is inspired by traditional Kenyan Maasai architecture that emphasize on the spirit of community, robust in-between spaces and the use of local materials. We took reference from the native architecture and local materials and created a setting where the children could find a sense of belonging and happiness. The design reinvents traditional form to suit the need of a large institutional and housing facilities by innovating on appropriate local building material and technology.

It is planned as a self-sustaining village with clear zoning of programs. Public area like training center, community hall and farm are located near the front of the property. Homes for the orphans are toward the back protected by the schools and farm in between. A wide circulation spine links all components together and increase the legibility and accessibility within the site. The village, will provide homes for 100 orphaned children and education facilities for more than 500 children. It will serve as a sister campus to the existing One Heart Village located nearby in Turbo, which has care facilities for 75 children and education facilities for 200 children. Schools and homes are laid out in circular clusters and each cluster represents a unique program. The center of a cluster (home/school) is a large shaded open courtyard for outdoor learning and playing. Abundance of in-between spaces between the circular classrooms promote informal learning and encourage interaction.

Classrooms and bedrooms are designed according to the local climate. Shaded clay brick wall with big window openings cool down the classroom by inducing cross-ventilation during the hot day. At night, heat absorbed by the bedroom concrete block wall help keeping the interior warm. Sustainable material like bamboo is explored as structural element. New bamboo starter plants are planted at the perimeter of the site to be harvested for future construction. The inspiration behind the design was to create a place where the children who will live there could feel at home.



TETRIS NURSERY



Design IROJE KHM Architects; HyoMan Kim (principal)

Picture credits Sergio Pirrone

Design concept of Tetris Nursery was to create diverse events of learning experiences. As for the programs of learning diverse experiences for kids, we tried to introduce various spatial events which are continued by strolling all around the places in this kindergarten.

From playground, through the playstair, rest terrace, playbridge, roof-playstair, upto roofgarden, there are various strolling spaces of circulation and playful spaces. Consequently, all the inner and outer spaces are playful spaces, at the same time, they are the places of learning diverse experiences, we expected this kindergarten to be the educational places for various experiences of many kinds of qualities of spaces. To introduce southern sunlight, we adapted clearstory system to each roofs of this kindergarten, so it divided into several masses which look like Tetris block. By design the colorful glazed windows of translucence, we tried to teach all kids the physical experiences of change of color and mixed color.

We expect all the parts of this architecture could be the learning things for all the kids of this kindergarten.



KAENG KRACHAN LIBRARY

Design & picture credits Junsekino Architect and Design

Kaeng Krachan Library is a project located on the rural part of Thailand, surrounded by shady tree and serene nature of Petchaburi Province. The initiation of this project has started from the owner's intention who wanted to build a public library contributing to the community. The only constrain by the owner is to design a space that suitable for all kind of user in all ages. As there is only one librarian looking after this place, the architect decided to manipulate the function to be easily to use and organize.

As for zoning and programing, the architect merged together the active and passive program. The space is divided into 5 main boxes. 4 boxes aside are used as shelves for keeping all the book and separate them into categories. One box in the middle is a space for the librarian. These one - storey boxes are connected to each other by a flexible function space for a convenient access to the space and simple usage for all users. In every architectural design, it is important to understand the context including weather and topography of the site in order to reflect the tradition of the local which for Kaeng Krachan Library, the architect uses the benefit of form and material for the most efficient space.

Local traditional material that can be find easily in the area such as steel, wood or translucent corrugated sheet is chose to be part of the design. The way material is applied and combined help creating an intriguing effect. Moreover, with a monsoon weather condition, it is important that the selected material should prevent the space inside from wind and rain but still allow natural light and ventilation to penetrate through the space within.

Kaeng Krachan Library is a public library contributing to the community with a strong belief of the owner to distribute education to the folk which this is not only limited for the locals. With the delicately design and interesting method of combining each material including translucent corrugated sheet as roof and wall, natural light can penetrate through the interior space which help saving energy with the roughness of brick help blending the building with the surrounded nature. The result is an environmentally and socially friendly piece of architecture.



HADDAD COMPOUND

Design & picture credits Anastasia Elrouss Architects

In a 40,000-square-meter plot of forested land in Sainte-Adèle, a lush region north of Montreal, Canada, the Haddad Compound is engaged in an ongoing conversation with its surrounding forests.

Home to the Haddad family and built as an extension of two existing buildings, the Haddad Compound was designed to flow harmoniously with the existing natural grid, while at the same time empowering residents by giving them the freedom to create their own scenarios in multiples structures and volumes. A building that is composed of many parts, the “exploded” house encompasses a series of pavilions that surround the existing main house, which is geographically located on the highest point of the site. The pavilions are designed to capture the diverse experiences of inhabiting a forest, creating an emotional attachment through the adoption of the forest as a home. The architectural interventions are positioned in order to bring together the larger family, while respecting the privacy and natural evolution of each smaller part of this same family. The resulting autonomous pavilions offer great privacy, making them an ideal place for guests. With large windows at either end of its living space and a dramatic skylight in the roof, the Elias family house, the first new addition, functions as a sort of cathedral honoring the surrounding forest and the sky. Its long and tall silhouette gives residents both light and space. The second addition is composed of three Tree Houses, designed for travelers who want to be immersed in nature. The living space is within the main structure, and it offers a cooking area, bathroom and two bunkbeds, while the two additional tree houses are home to the sleeping quarters. In this vast forest, each structure represents a tree that effortlessly blends into its natural environment.

The Tree Houses were conceived as living testaments to the transformation of wood. Over time wood cracks, twists and changes, showing that each piece of wood is unique. Similarly, each Tree House has its cracks, resulting in its own identity. The crack avoids the middle, the wood’s heart, preserving it and allowing for a cozy and comfortable space under the trees. Around this heart, and following the crack,

a thick layer of bark surrounds the tree house, offering it protection and separation from the outside world. The only place to look out, is up, through the crack.

Much like the Tree Houses capture the experience of living among towering nature, the Miniature House represents life at ground level, where the sky is far away and tree trunks reign supreme. To emphasize this effect, two slabs squeeze the underwood into one space: one slab for the ground and another one for the roof, replacing the tree canopy. Trees randomly scattered, piercing through each slab, bring natural light in this darker environment. At the end of the two slabs, in a corner, is located one of the main miniature houses.



PRODUCT DESIGN

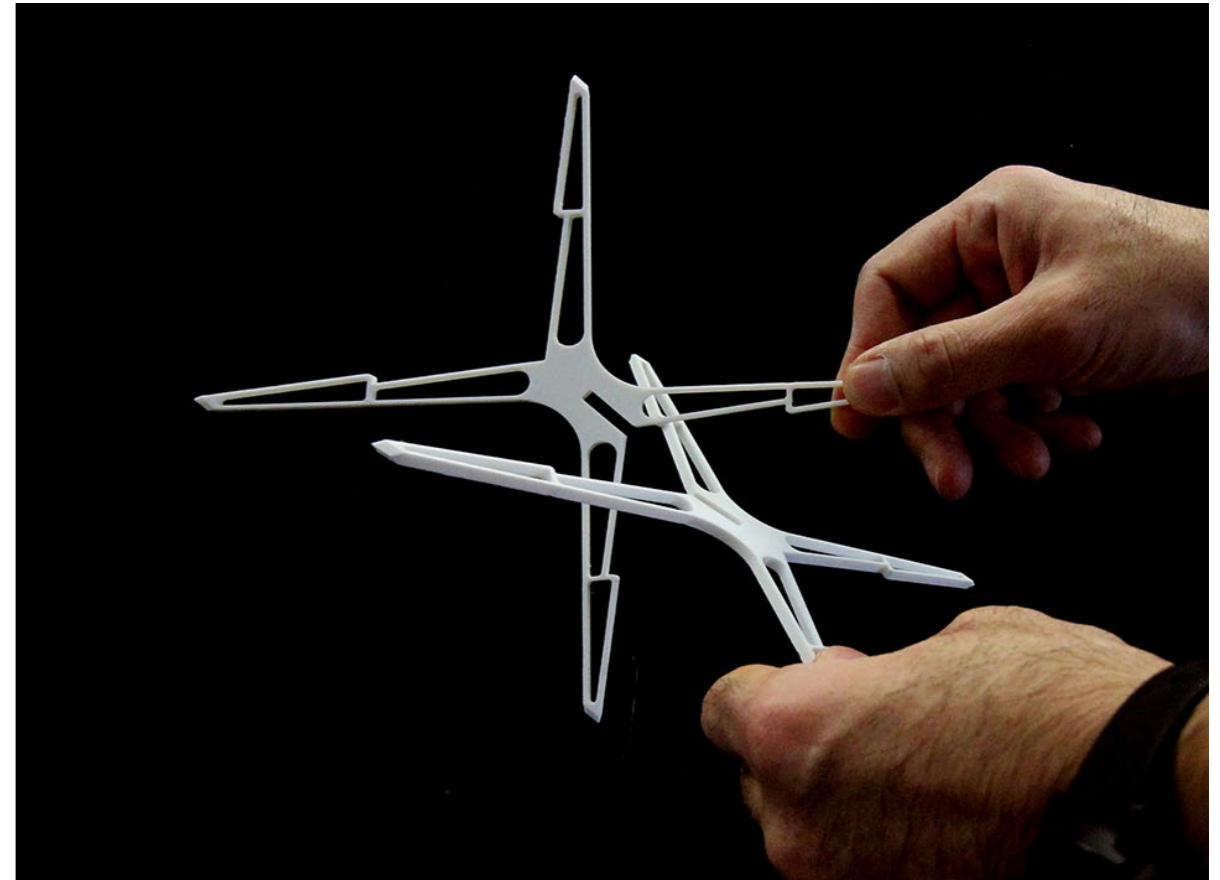
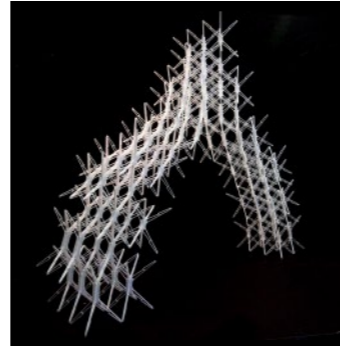
SIMS (SNAP-INTERLOCK MODULAR SYSTEM)

Design & picture credits Jin Young Song

In 1953, Konrad Wachsmann imagined a single universal structural element which, industrially produced, could be used in building construction for every conceivable purpose. More than 60 years after his notion of the systematic modular coordination based on the industrial production, our building structure is still based on the Dom-ino system (1914) or steel based post and beam, on top of which we are adding our digital advancement and sustainable technology as functioning ornaments. Current smart fabrication techniques with advanced digital design tools allow us to revisit Wachsmann's holistic approach for the unit-based 'part to whole' system.

SIMS (Snap-Interlock Modular System) is a structural module prototype based on the elastic instability of steel, distributing forces through its unique stacked and interlocked mechanism. One module has 4 hooked legs in the top and bottom direction, when one module snaps into 4 legs from connecting 4 modules, the 5 modules are interlocked as one unit. Finite Element analysis shows the elastic nature of steel and confirms the structural integrity for the construction scale. The module can be cast or cut to assemble for mass production. The internal structure of the module can be controlled to increase the stiffness. The center connector can be added to allow specific angles to form a curved geometry.

The snap-interlock stacking is relatively easy to do by human hands and two arch shape prototypes are built using 3d printed modules. The system can achieve limited geometric freedom. Despite further structural analysis and new interpretation necessary, this 'part to whole' system can be applied to the building structure, facade application as sub-structure, sheer wall, partition wall, and more.



LET'S MAKE IT VISIBLE

a printed legend to make the text readable for people with good vision. The kit consists of 9 already produced models but not limited to only biological topics. The principle can be applied to various school subjects, including physics and astronomy.

Design Elena Khloptseva (project manager),
Asya Dyro

Picture credits Yevgeny Loika

The models are dedicated to the topic of explaining the invisible world for children. Accumulation of knowledge is strongly connected to the way we get the new information. The more types of encoding (as a crucial first step to creating a new memory) we engage the more sufficient is the education process. Proceeding with the models' implementation we also take into account that "reading" the pictures is a more comfortable type of reading for the children as well as Gamification is a way to make education more attractive.

The educational kit we present is a puzzle which consists of the set of various elements which are made of different materials (plastic, wood, plexiglas), have vivid contrast colours, give various tactile perception experience of the surface. The child studying the topic of single-celled eukaryotes have to sort out the different elements which the cell consist of, to recognize the difference between them, to assemble the elements, to describe the model and so on.

The main intention was to find an interesting, spectacular, aesthetic and guidelines-accurate way to explain to visually impaired pupils the basic topics of the school program.

The important task we tried to solve was making these models usable and acceptable for education for visually impaired children. Finally, the models appeared to be an enthralling puzzle for everyone. The process of assembling the parts can help every pupil to memorize the model's structure, and assembled model is ready to be explored by visually impaired pupils. This way everyone is involved in the educational process. Different textures help recognize the important parts of the models and memorize them. We used vivid and contrast colours where possible to make models user-friendly for visually impaired people who can see colours. The important textual information was typed with Braille font and printed out on a transparent plexiglas plate according to the standards, the plexiglas base of the model can be put on a paper with



FROZEN MOUNTAIN

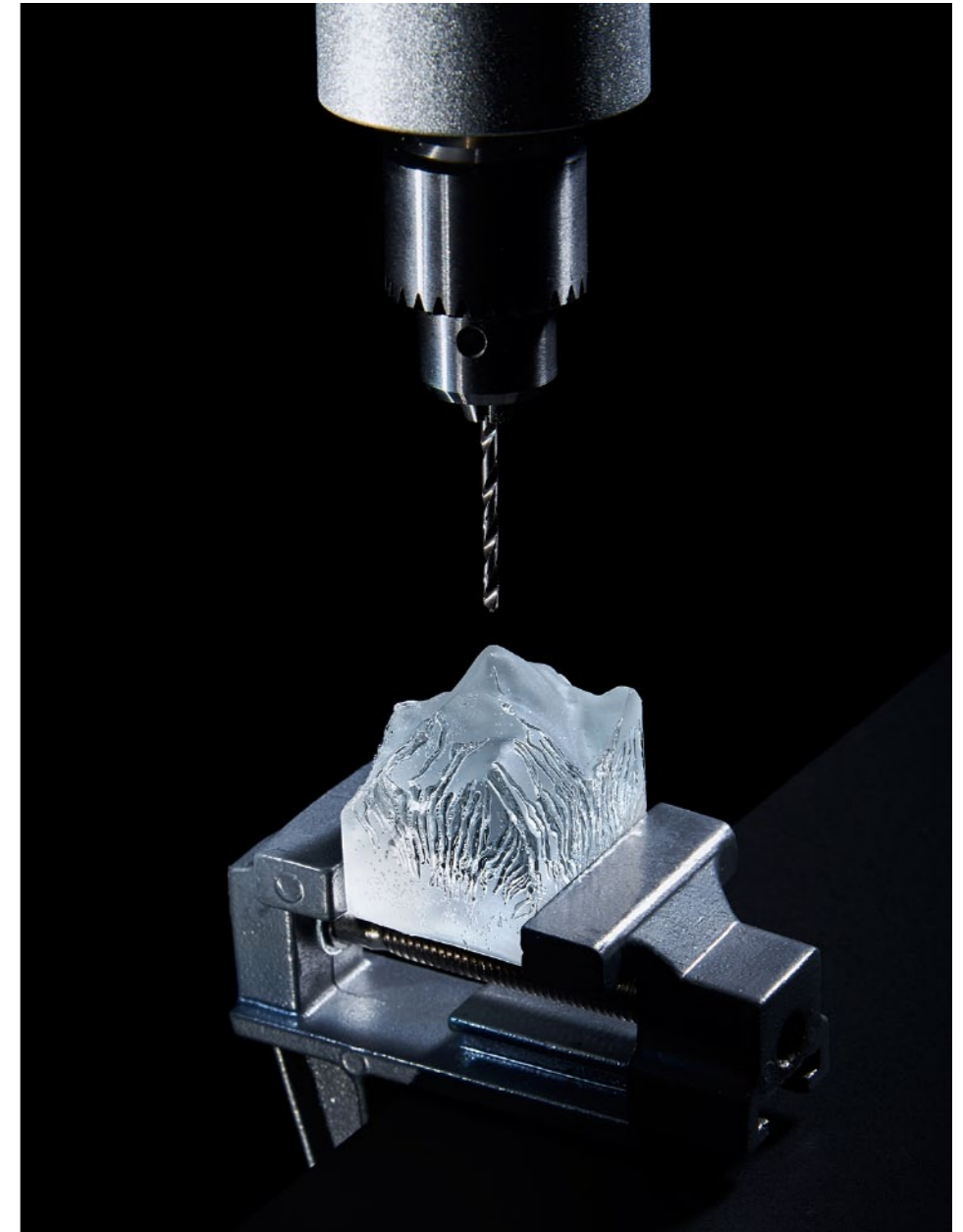
Design Napp Studio; Tsang Aron Wai Chun, Chan Juan Hou Alfred; graphic design: Ko Chun Ming Anthony
Picture credits Chong Ng

Trained as architects, we often focus on large developments, buildings or urban plannings in hoping to create a better world and environment. Frozen Mountain, on the contrary, is a tiny artifact, compared to ordinary architecture-scale, yet, probably capable of achieving a much greater impact.

Invited to design and create the official official souvenir for the 2017 Bi-City Biennale of Urbanism/Architecture (Hong Kong), we wish to create a piece that visitors can interact and, hence, acknowledge the message inherent to the Biennale exhibition's underlying theme: the concerns of the ever-decreasing greenery ratio in Hong Kong due to ever-increasing development needs.

The work consists of a silicone ice mould of the few most iconic Hong Kong's nature: North Lantau, Tai Mo Shan, Lion Rock, Tai Lam, Lamma Island and the Peak. Visitors may bring these home and make their own "melting-nature".

Instead of feeding them with textbook information, which no doubt would not be effective at all, through these daily objects, we wish the public would slowly begin rethink the relationship with the nature and be aware of various development policies that may destroy our previous habitat before it is too late.



Honorable Mention Product Design

TODAY WE EAT A COW!

Design Katharina Karras

Picture credits Captns & Partner

The «Wendetiere» show you where the meat from your plate comes from. The cow «Berta» & the pig «Franz» are playful teaching aids. The idea of the «Wendetiere» arose from the sentence «Today we eat a cow!» that I've picked up over lunch in a day-care centre, and that left a mild shock not only with the children. Now I want to produce a small series and thus create more awareness of our meat consumption.

The Story behind

One day in a German day-care centre the following situation occurred. It was midday and the children had lunchtime. Everybody got its plate. The carer served the dishes and asked the kids to guess what they will eat today. The group recognized that they have besides rice, carrots, peas and sauce, meat on their plates. The educator wanted to know where the meat comes from. The children said, «From the supermarket.» «But where does it come from actually?» «From the supermarket!» Then the educator revealed, «Today we eat a cow!» The children started laughing and replied that this could only be nonsense. Seeing this real scenario it was obvious for me to create something that reacts to the problematic of our unconsciousness towards food and its origin. Something that helps to form an individual and informed decision on what we want to eat or not, something that helps to connect humans (again) to their environment.

The Project

The «Wendetiere» reveal impartially where our meat comes from. «Berta» and «Franz» consist of a double layer of wool felt and genuine leather. They are intended for people of all ages from three years who consume food.

Once you have turned the shell by hand, the animal will show its inner life: on the left flank the meat parts and on the right its respective typical dishes.

One punching that is sewed with an elastic thread makes the three-

dimensional animal body. The heavy but flexible structure of the sandwich construction makes the turning process possible by being stabile at the same time. Every piece measures around 30 cm x 17 cm x 10 cm. The wool felt is tested for harmful substances according to Oeko-Tex® Standard 100.

The German and English versions of the animal carcass and meal plans do not refer to a particular region or country. They collect familiar and unfamiliar terms of different German and English language areas. The cow and the pig can be used for example on dining tables, in kitchens, but also on butcher's counters, in restaurants or in day-care centres and schools.

The Production

Not only the product itself, also the production is expected to remain faithful to the objective of re-alienation. So I use authentic, high-quality materials: wool felt and real skins (Cow coat and saddle leather). The production of a first small series (50 animals at all) is taking place in Switzerland at Ruckstuhl, Langenthal, and in the printing studio of the University of Arts Bern (HKB) by my own manufacturing.



TRU UNITY HANDLE

Design & picture credits TruRegard Ltd.;
Connor Musoke-Jones (founder, director)

Educating the need for non-excluding design that works for EVERYONE and looks good doing it.

A door handle is more than just a tool to use a door, it's an invitation to a space, experience and people. Too often that has been overlooked and NEEDS to be taught again.

The Tru Unity door handle has been developed and designed with the concept of inclusivity and integration for mixed-ability and multi-generational use in commercial, residential and public spaces. Adapting to support and guide the natural movements of different capabilities in a way that's personal to the user; while still maintaining an aesthetically pleasing form that engages users and de-stigmatizes associations by keeping someone's capability private and personal. In an effort to better understand around the need's musculoskeletal conditions like Arthritis, which affect over 11million people in the UK alone (many of whom are under 30 years old) and conditions like muscular dystrophy. The higher purpose of the design is to "normalize" the idea of inclusive design, to make it a standard and not a specialist need.

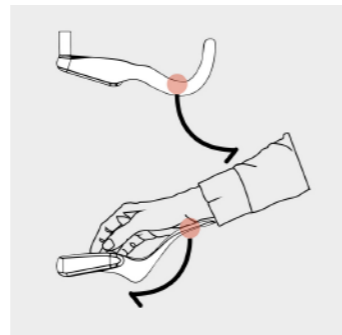
I have been developing the Tru Unity door handle for further inclusivity of all users.

An effective hardware solution for accessibility, usability and inclusiveness. This modern, sleek, ergonomic and un-obtrusive design allows for over 300 times the leverage of a standard lever handle, with no pressure or force to/from the hands or wrists. As conditions like Arthritis can make the joints swollen and painful when put under pressure. This makes gripping and holding handles a painful and difficult process; discouraging use of spaces. We chose to relieve and lessen joint pains by transferring all the force needed to operate the door to come from body weight and the arms natural movement.

Completely usable, along all 4-axis, regardless of capability: without the need for any fine motor controls, grip strength, dexterity, or even a hand. The design actively encourages curiosity and personal

intuition around your needs. Its elongated shape and strategically placed curves mean users get a level of support and stability no matter what their shape, size, range of movement or strength. Letting each user see a way to use the Tru Unity handle that works for them. Conforming to all relevant UK standards and regulations (BS's) for accessibility, Fire safety, Usability, productivity and Disability Discriminations acts (DDA's) and Equality acts (EQA's)

Easy to install, with a standard grub screw (blind set screw - non-UK) the level is attached to the spindle of the door mechanism in the same way as other standard lever handles. The use of standard components, fitting, manufacture and finishing techniques helps Tru Unity position itself, and its users, as a tool that can exist outside of "disability aid" equipment. Helping to integrate design for inclusivity into the standard, not the specialist.



UNIVERSAL DESIGN

SMOG FREE PROJECT

Design Studio Roosegaarde

Picture credits Studio Roosegaarde, Pim

Hendriksen, Derrick Wang, Willem de Kam

SMOG FREE PROJECT is a series of urban innovations to reduce pollution and provide an inspirational experience of a clean future. The SMOG FREE PROJECT aims to create an immediate impact on a local scale and activate new solutions towards smog-free cities. SMOG FREE TOWER, SMOG FREE RING, and SMOG FREE BICYCLE provide a local solution of clean air in public spaces. Along with governments, NGOs, pro-bicycle campaigns and the clean-tech industry, people can work together to make a whole city smog free. Recent SMOG FREE PROJECTS have been launched all over the world, along with initiatives for smog-free workshops for students to attend.

Smog free tower

The world's first smog vacuum cleaner is a 7-meter tall SMOG FREE TOWER that uses patented positive ionization technology to produce smog-free air in public spaces, allowing people to breathe and experience clean air for free. It is equipped with environment-friendly technology, cleans 30.000 m3 per hour and uses very little green electricity. The SMOG FREE TOWER captures and collects more than 75% of the PM2.5 and PM10 airborne smog particles and releases clean air around the tower with a 360-degree coverage creating an almost circular zone of clean air in its surrounding.

The SMOG FREE PROJECT was inspired by the lead designers numerous off travels in China and particularly by a visit to Beijing in 2013 when it was no longer possible to look up out of the hotel room and where children were kept indoors due to the severity of the smog. More than 80% of people in urban areas are exposed to air-quality levels that exceed the World Health Organization limits. The Smog Free Project is part of a larger vision, creating 'Landscapes of the Future' that connects people, technology and space to improve the quality of daily life in urban environments.

The SMOG FREE TOWER provides a local solution for clean air such

as in parks. The effect of the SMOG FREE TOWER has been validated through an on-site study. The Smog Free Project is not only intended to be a local solution for parks, but also an inspirational experience of a clean future.

Creating a tangible souvenir, the designers also created the SMOG FREE RING of compressed smog particles. By sharing a SMOG FREE RING you donate 1000 m3 of clean air to the city. In 2017, a new addition is added to the Smog Free Project: SMOG FREE BICYCLE. The innovative bicycle inhales polluted air, cleans it, and releases clean air around the cyclist.

Since, "true beauty is not a Louis Vuitton bag or a Ferrari, but clean air and clean energy."



THE AIRSHIP SERIES: SENSORIAL LEARNING SPACES

Design Breathe Earth Collective; Karlheinz Boiger, Lisa Maria Enzenhofer, Andreas Goritschnig, Markus Jeschaunig, Bernhard König

Picture credits Simon Oberhofer (aerial photo), team.breathe.austria

The successful designed Austrian pavilion in the context of EXPO 2015 in Milan, was the team's starting point to work on one of the most important social, environmental and technological challenges of our time: air and climate. As follow-up projects a series of climate installations called "Airships", that prototypically act as hybrids between "nature" and "technology". In public spaces of different European cities, such as Rome, Milan (IT), Bordeaux (FR), Graz and Tulln (AT), during the summer time these climate positive and cooling micro-architectures involved visitors in a sensual learning process to reflect on climate, city and personal behaviour in the context of climate change. Each Airship - Cultural Forest (2016), Evapotree (2017), Fountain of Air (2018) - has its own characteristics. They all reflect on the topic of air quality and oxygen production in an increasingly polluted and in summer over heated urban environment. At the same time, their immersive environment with plant habitats offers a rich sensorial experience and atmosphere to visitors. Only by 'breathing' visitors became active part of the interior climate performance (inhale oxygen, exhale carbon dioxide). In this sense, the Airships with its cooler temperature, intense forest scents and sound, provide a highly educative environment. Rather than rationally, the visitors experience a natural forest habitat with their own senses and thus reflect complex global issues.

In the Airships, the synergetic action of nature (several hundred plants, water pond) and technology (compact geometry 5 m in height, open to the sky, climate-active membrane, fog nozzles and ventilators) provides an urban oasis in the summerly city that also reduces the temperature around it. The Airships are designed to provide a cooled and cooling shelter in the centre of urban heat islands. Almost like a new urban furniture type the installation invites passengers to sit

down, relax and breathe fresh oxygen.

For example, in Airship.03 - Fountain of Air, by covering the sight (visitors were asked to put a blind fold) the olfactory and tactile experience were amplified. The playful environment was discovered by the human body. In the Airship.01 - Cultural Forest fog nozzles with spray events offered an opportunity to play and explore a sensorial journey for kids and adults.

The design team relies on sensorial experiences as a powerful means of communicating an important message, why it is important to integrate Green in future cities. Visitors learn and reflect on a deeper and enduring level through a prompt, immersive and bodily experience. Linked to the rational communication, a graphical print hand-out, distributed at the entrance with explanations of the functions of the installation and the plants ecotypes. Furthermore, guided tours with team members gave the chance to get in a dialogue between designers and visitors, exploring together the potentialities of nature-technology hybrids for our daily lives and future cities.

The Airship series therefore is small scale intervention which shall be scaled up and become translated permanently into our cities to gain the most benefits for citizens, climate and nature.



Special Recognition Universal Design

ECOCAPSULE

Design Tomas Zacek, Sona Pohlova, Katarina Cabakova, Matej Pospisil, Milan Stukovsky, Jakub Zlatnansky, Miroslav Klabnik, Eduard Pohl, Tomas Zacek sr., Dusana Lehotova, Peter Beljak, Bohuslav Pizar, Matej Gyarfas, Patricia Cudzisova

Picture credits Ecocapsule Holding

Established in 2015, the Slovak company Ecocapsule designs and produces a microhome of the same name. Ecocapsule is a mobile, self-sustainable, smart micro-unit, that utilises solar and wind energy. It allows people to live in remote places out of reach of infrastructure, while retaining a high level of living comfort. It can be used as a cottage, pop-up hotel, caravan, houseboat, research station etc. Ecocapsule is powered by a dual system of energy production, which - in connection with high-capacity batteries - ensures energetic self-sufficiency even in the case of a temporary lack of sources. Ecocapsule also has an electric plug, enabling to charge the batteries from an external electric source if needed.

The spheroid shape of Ecocapsule is designed to maximize the collection of rain water and dew. The water filters consequently ensure the transformation of water from any natural source into clean water. The design of the outer shell also minimizes energy loss. Hollow walls filled with highly efficient thermal insulation protect inhabitants from harsh environment and help achieve a performance almost on the level of a passive house. Furthermore, the unique design makes Ecocapsule a piece of art that stands out in every environment. Ecocapsule is optimized for easy transportation. It can fit into a standard 40'HC shipping container and therefore can easily be shipped globally with the lowest shipping fees possible. The custom designed trailer enables transportation of the Ecocapsule with a passenger car, turning it into a fully functional caravan.

Ecocapsule teaches people to connect with nature. Ecocapsule allows people to stay completely off-grid, yet with a comfort of a hotel room. This way it makes it very easy for its users to get

in close touch with the nature and enables them to feel and act like insiders rather than observers from outside. This leads to greater connection and respect towards the natural environment.

Ecocapsule educates people towards energy saving consciousness. Ecocapsule is designed as a smart home - via a smart home app users get real time overview of how much energy and water is being spent for e.g. taking a shower, cooking pasta or charging phone. This raises their consciousness of resources usage and helps them think about how they can downsize their consumption.

At the same time, users can see how much resources is flowing in from the nature and how much is stored in batteries and water tanks. This encourages them to reflect upon limitedness and costs of resources.

Ecocapsule teaches people to own less.

Ecocapsule is designed to offer just enough space for basic human needs. It inspires people to think about what they really need and so discourages them from surrounding themselves with items and creating unnecessary waste.

Ecocapsule's eyecatching design helps to spread the sustainability ideas to masses.

Ecocapsule's unique, elemental and smooth shape catches everyone's attention. That is why media just love to present Ecocapsule - it engages their audience. That is when people get to learn about all the above-mentioned messages which takes them one step closer to leading more sustainable lifestyles.



Honorable Mention Universal Design

CONNECTING WITH CLEAN WATER. A TOWER FOR HARVESTING WATER

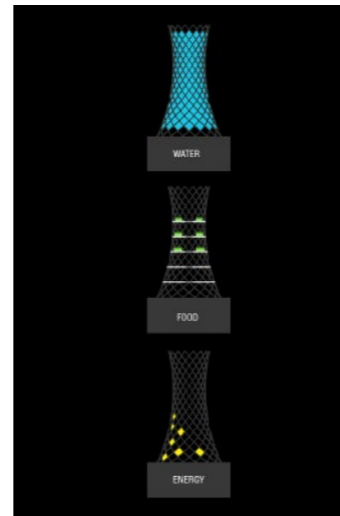
Design Salim El Filali, Amirhesam Monshi;
faculty advisor: Terri Meyer Boake

Picture credits Salim El Filali, Amirhesam Monshi

It is on the banks of the Omo River in Ethiopia, close to the Kenyan border, that many tribes are facing a major water crisis that threatens their everyday lives. Climate change and the construction of a major dam (Gibe III) have caused many drought problems in the river which, besides these problems, is also contaminated by human waste. Every day, women and children have to walk several kilometers to find a water hole or to dig in the ground to fetch water for their families. This crisis is the source of many conflict between rival tribes, with men fighting each other and getting killed for a place where they can find a clean water point or grassed land. Furthermore, the region is in need of bridges that can potentially activate and increase the economy of the villagers in the area as well as facilitate the flow of humans and their herd of cows and sheep looking for pasture, by connecting one side of the Omo River to the other.

In the context of the Omorate village, which borders the Omo River in Ethiopia, our natural response was to design a bridge that can do more than just connecting the two sides. The Warka Water's harvest system is a structure for a special fabric that liquefies the water vapour or humidity that comes from the oceans and this water is then collected to be used subsequently. Because of its gaseous state, the collected water is completely clean and therefore safely drinkable. Inspired from the Warka technic, our strategy is to create a central diagrid tower that will not only hold the bridge through a tension cable system, but will harvest water and integrate a program of five storeys for farming and collecting the water stored in the water tanks. The diagrid steel structure system is a perfect fit for supporting the water harvesting fabric because of its framing system, where the steel members bear a water piping network that collects the water coming from the fabrics on the diamonds voids. Moreover, we have decided to incorporate a few photovoltaic panels in some of the diamonds voids in the south part of the tower in order to collect some

energy for lighting and other facilities, like operating water pumps. In conclusion, our proposal is to build a bridge with a tower that can harvest water; a tower that can connect people; a tower that can provide fresh food; a tower that can create energy; a tower of life; and finally, a tower that will connect both sides of the threatened river while also connecting people with clean water, at the same time.



Honorable Mention Universal Design

EGG-SHAPED CRADLE

Design & picture credits Cai-In Interior Design Co., Ltd.

The evocation of feelings

Our design seeks to evoke the feelings of safety; the white, egg-like exterior is suggestive of a uterus, whose purpose is to elicit feelings of safety, relaxation and security, to soothe children's excitable and restless nature. Sensory development can be stimulated more effectively once (the children's) emotions are stabilized.

To soothe children's emotions via the use of colors and lines

Colors are closely related to children's psychology and emotions. According to experts and scholars, the more colors that people are exposed to during infancy and early childhood, the better their learning and cognition abilities. Colors also bring out the inner moods and personality tendencies of children. For example, bright and warm colors are good at attracting attention, they will therefore make good background colors for children's book displays. Vivid greens remind people of forests, trees, peaceful serenity and the feeling of being protected; from a psychological perspective, green represents rationality and the capacity for self-control. We have also added a variety of contextual lighting to enhance the presentation of an environment with saturated and layered colors. Multi-layered flowing ribbons in varying colors surround the space to train and stimulate dynamic vision.

To stimulate children's imagination via specific imagery

Figurative patterns can stimulate the brain's imaginative and associative powers, and more importantly, they can cultivate one's capacity for three-dimensional perception. Therefore, we installed a huge white sapling in the center of the space to serve as the focal point of the venue's reading area. The upward reaching stems and leaves house lights and make up a portion of the ceiling's design. The floor features variegated patterns and the use of different materials, providing a safe and healthy resting place for the children in the community via lively and natural imagery.



ROBOTIC HABITATS

Design Aldo Sollazzo, Stuart Maggs, Eugenio Bettucchi, Marco Sanalidro, Gianluca Pugliese, Pavel Aguilar, Laura Civetti, Federica Ciccone, Laura Ruggeri, Angel Muñoz, Cristian Rizzuti, Adrien Rigobello, Jessica Diaz

Picture credits Tõnu Tunnel

Deep learning has paved the way for machines to expand beyond narrow capabilities to soon achieving human-level performance on intellectual tasks. A.I. establishes its place within humans, Society will need to develop a framework for both to thrive.

A new form of artificial life will emerge, which will find space in the peripheries of humanity so as not to compete for resources dominated by humans. AI. it will improve its operating environment not only to survive but also to be self-sufficient, forming the basis of a restricted civilization at the intersection of Nature and Technology.

Robotic Habitats aims to question the evolution of artificial intelligence into a new species, operating among the intersection of Nature and Technology in the Paljassaare Peninsula. The installation envisions the rise of a new independent civilization through the extraction and processing of natural resources. The exhibit showcases multiple robots establishing novel symbiotic associations within their surrounding, finally conceiving a natural landscape robotically manipulated. The goal of this exhibit is provoking a discussion around the role of AI within our Society and the rise of a new equilibrium among the forces ruling our World's ecosystem.

The framework Noumena developed to build this narrative is based on the cross disciplinary intersection of computational design, mechanical and electronic design, rapid prototyping interaction and mapping.

The Robots skins are assembled with multiple 3d printed shells, manipulated in order to enhance the growth and expansion of living bacterias over their outer skins.

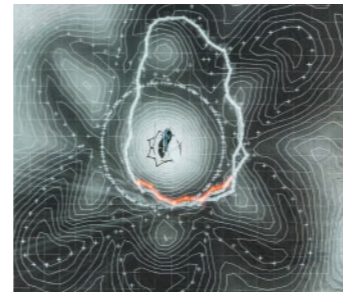
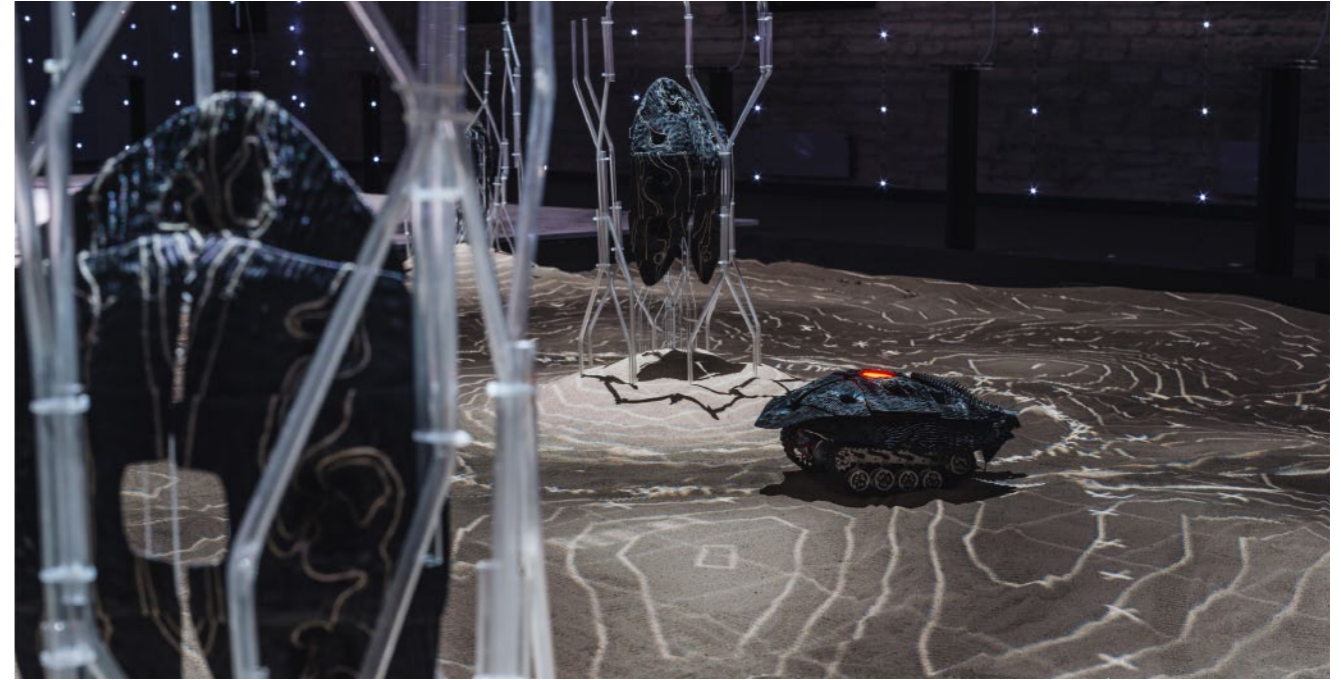
Those shells are connected to the main frame of the robots, where

all electronics and motors are placed. The main board is an Arduino which is controlling the two dc motors moving the crawlers. Each instruction for the movement is transmitted through a kinect motion sense input device. The red light placed on the robots is read by the kinet and send back to a processing script that through computer vision detects the actual position of the rover and communicate future instructions back to it. All projections are produced in Max msp, animating a transforming landscape which is built over the different columns hosting the new generation of robots.

Each robots is finally depositing through a syringe a mixture of aggregating material and mycelium through a peristaltic system placed along the vertebral column of the rover. As a result of this operation the sand aggregates around the mixture, generating a non uniform network of lines and bacterias, shaping a new articulated landscape robotically manipulated.

The installation is organized around a frame of 5 x 5 m completely filled of sand over which the robots are performing all interactive and additive fabrication performances. As a fix installation there are also 3 columns collecting the nutrients deposited by the moving robots.

Those columns are incubating the new new robots, shaped to mold endless shells of bacterias skins that will be covering the next generation, organically evolving into an autonomous and self-sufficient entity.



SALINE MACHINE

Design & picture credits Fabian Partoll, Lukas Strigl

Our strategy was to create an efficient ecosystem, that adapts to the surrounding conditions. Seoul has an large amount on air pollution and the site next to the river should function as an air cleaner. We generated an landscape based on the main wind direction heading from the city towards the Han River. Our hotspots where we placed our buildings, were those areas where the turbulences of the city had their highest density. To get a higher effect we also modified the landscape there, to create some lakes.

Water helps to rise the velocity of the wind, the so called chimney effect. In combination with the carefully chosen areas and the landscape modification we are able to collect the highest amount of polluted air from the city. The structures get sprayed with titanium dioxid and in reaction with sunlight it creates salt. After a while this salt can be harvested and used for many benefits. Salt can be used to treat many deceases like, allergies, it helps to recover infected lungs, and it has many benefits for the human skin. Some say it also helps to release some stress. The landscape with its harvesting lakes is sectioned in different parts. There are open/public areas open for everyone, but there is also the possibility to rent certain areas, for privat urban salt gardening. The Terminal is like a huge three dimensional garden, open to everyone. You can excess it from the river by boot or through two mainly entries from the city. When there is enough salt grown, you can walk through the meandering paths and stairs. Once you are in the building, you can fully immerse in it. You can discover new areas of fresh grown salt and can harvest your own salt on your way through the building.



INTERSPECIFIC EDUCATION

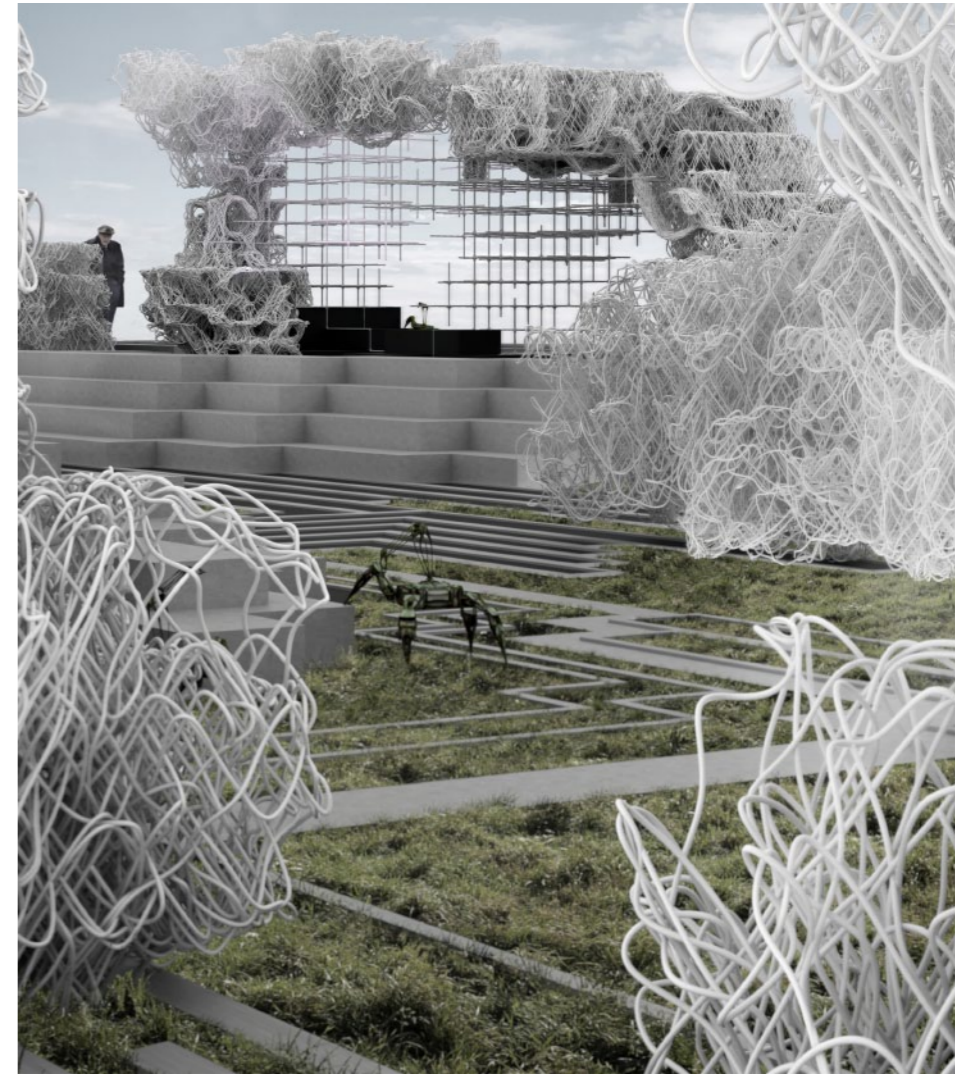
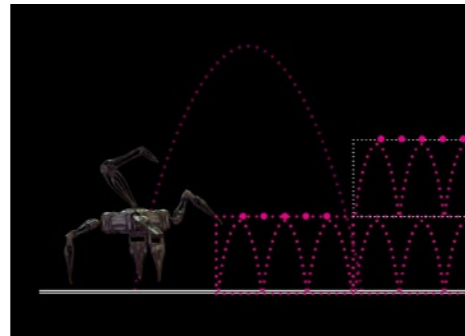
teaching machines to do certain tasks, this will create an effect that reaches out not only into our digital environments but create a second layer onto the physical reality. More than a final form, this design proposes a process where both species are allowed to educate themselves freely in order to create an environment where education is demonstrated as an act of creation, not dictation.

Design & picture credits David Stieler

Most of the time design tasks on education consider the design of a space, an object, an interface etc., that allows or supports the transmission of knowledge. While it is true that architecture and design play a key role as an enabler for the successful transmission of knowledge, within this project the idea of “education” is literally used as a starting point for spatial creation itself.

Today, we live in a world of ubiquitous computation. Advancements in information technology and sensing objects have fundamentally disrupted the way not only digital space is perceived, but also altered the way social interaction and learning is organized in our built environment. The organization of (not exclusively) human interaction in space is one of the main functions of the architectural discipline, it does so by organizing and programming matter into space. Within this project and option is proposed to literally integrate the idea of learning into a morphogenetic building process. Rather than creating a space for education, a machine is educated to create space.

During the last years the term of “machine learning” has been heavily utilized to draw pictures in the range of the brightest future to the darkest ideas of humanity becoming the slave of its own technological creation. While speculating on a future scenario, this project lies its focus on the interspecific exchange between humans and machines that already is reality. While we are already heavily engaged with the feedback driven and open-ended organization of digital materials and production, the procedures used to materialize architecture still rely heavily on top down and deterministic approaches. Within this project we challenge this top-down approach and teach a machine to build an environment according to its own physical appearance. This project of niche-building is informed by its physical capabilities and the given function to deposit a filamentous material in order to build spaces that are meeting points of both human and machinic actants. Education is always a process of mutual learning, the things learned and understood heavily shape the way you interact with the world around you. We should be conscious about the fact that when



SOCIAL [JUSTICE] MEDIA

Design & picture credits Jungwoo Ji (EUS+ Architects), Bosuk Hur (Folio), Suk Lee

The museum should strive to create a new-world idea and symbol for the cause of civil rights and social justice. The museum should become an icon that would generate mass awareness on the aforementioned issues and provide an interpretive learning experience for the visitors on various aspects and events of the civil rights movement, becoming a 'virtual epicenter' for the resistance against tyranny. In several countries, the civil candlelight marches are in full swing to restore the value of democracy against unequal civil rights and social injustice. We have designed this museum inspired by the situation of such civil movement. Here is the main statement. 'This museum is located on Liberty Island with Statue of Liberty in New York but it is not the only place for citizenship and social justice in New York and the United States. It is an architectural device that reflects in real time how human rights situation and justice of the world is working in people's everyday life as well as the center for those activities.

When people send messages (tweets) to this museum about their city's human rights and social justice using their smartphones, each unit connected wirelessly to each area receives the electronic signals and changes the angle of the unit by the mechanical system. The angle is towards that region. The tilt of the unit indicates that the decline in human rights and social justice in the region decrease. The more changes will make the whole landscape of the Liberty Museum different continuously. Our wish is that these museum units are standing straight up all the way to the sky, that means the human rights and social justice of the whole world are in good situation. With this point, we call this Liberty Museum as 'Social Justice Media'. It is a social media of a new style as an object which mutually reacts in real time, not merely an explanatory museum to go see the exhibits. To the contrast of the Statue of Liberty which is a single, huge vertical monument of the former method, the new born 'Social Justice Media' has been generated by horizontality, collectiveness, diversity,

and landscape. We propose a possibility at this place as new typological monument. The congestion of the NYC skyscrapers in the background associated with this place. If the torch of the Statue of Liberty has represented a single idea, hundreds of water droplets here are measuring sensors of diverse values and various regions. Visitors can experience this down here, even on the water surface, even above, among others, and each unit shows the situation of human rights and justice in each region of the world in real time on the projection surface.

The Liberty Island will now be an island of human rights and social justice not only in New York but also in the whole world.'

The structure that supports a unit which may be a small flame or a small teardrop is designed with inspiration of the pillar structure of the World Trade Center Twin Towers in New York which collapsed by terror.



THREE CUBES IN THE FOREST

Design Kotoaki Asano (KOTOAKI ASANO Architect & Associates), Toyohito Shibamura (Shibamura Structural Engineers)

Picture credits KOTOAKI ASANO Architect & Associates

Playground equipment for children, public furniture, art objects, meditation rooms, arbors, small rest spaces, waiting rooms, chairs with roofs. Three cubes are the micro-architectures with the various characteristics and functions. Three cubes can be easily transported by a truck and can be installed, because of the size and the shape. Three cubes with the rich spatial implication can give the new public extensity to each place and can activate urban spaces. In terms of the size, the installation (the inclination), seat surfaces, windows etc., each cube is designed characteristically.

Three cubes are referenced to Japanese traditional spaces like tea ceremony rooms. Its characteristics can be explained from the viewpoint of richness, variability, mobility of minimum spaces. Three cubes bring people heuristic and fresh spacial experiences. Three cubes are the device with the various properties and functions, and can be put at the public place.

Three cubes can be moved relatively easily, and are the suggestion of the playground equipment with the rich spatial implication. Three cubes have rich spatial characteristics. It can be an art work, public furniture, an arbor, a small rest space. Each cube is designed with much playfulness. Each cube brings a heuristic spatial experience and relaxation time to people. The inside is filled with various devices in comparison with the concise appearance. Urban spaces are activated by three cubes.

(a) About size and shape. A part of the cube whose side is 1,800 mm to 2,000 mm is cut off. It is placed so that the cut surface of each cube is on the ground. Therefore, each cube contains space with the richer complexity than imagined.

(b) Because of the size and the shape, three cubes are able to be transported by a truck relatively easily (after produced in a factory)

and are able to be installed. Three cubes can bring new playful spatiality and public extensity in each place.

(c) In terms of the degree of leaning, material, a seat surface, a size of window and the placement, each cube is designed characteristically and is distinctively differentiated from each other. For many people, a heuristic spatial experience is possible.

(d) The seat and the window are carefully designed in each cube. It is possible for children and families to rest for a long time, and children can meet scenery and people here. Therefore, the dimensional relationships are strictly considered.

Three cubes have ambiguous spatial nuances, and it is a device that can be easily transported and allow children to participate in urban space. From the observation at Kobe Biennale 2015, adjustment points were found. In spite of placing abruptly in public places, unspecified number of people flexibly used cubes more than the designer imagined. And, I made some improvements about the durability of the materials. Now, three cubes are installed in the forest at Nagano.

Three cubes may change the concept of the architecture, and are furniture, art, small buildings and playground equipment. Therefore, it is located in the border of the conventional design concept.



EMERGING DESIGNER

SOAR - VR KIT FOR EDUCATION

Design & picture credits Jaewan Choi

Digital textbooks have been supplied in many countries, and classes run with Tablet PC PCs. Since the education using AR and VR enables students to have more stereoscopic and livelier experiences with different spaces, its effects and potentials have been proven, so that it has been included as contents in the digital textbooks. And yet, the fact that you should have too many products when you would like to use VR devices limits the actual distribution and utilization. (When you use VR contents, you should mount a mobile device (mobile phone) containing another CPU in addition to the Tablet PC already supplied in order to use VR, and since an HMD equipped with a display is specialized in games, it has a problem that it is heavy and voluminous to students.) Soar is a VR kit for education, which may produce synergy in the existing environments where Tablet PCs have been supplied. Thanks to the method of connection to a Tablet PC, the number of necessary devices decreased from five to one. It is a kit type product which can be put on a desk in the classroom. It was designed compactly in the shape and size suitable for students' body. The VR headset is easy to see in the form of a magnifying glass, designed to be easy to peel off



SOLARLUX CHOICE

THE ALTERNATIVE WAY TO EDUCATE

Design IntuyLab; Jose Cepero, Hannah Klug, Walter Soto, Giancarlo Pava; collaboration: IRGE Stuttgart university, Alto Peru community, Association Project Alto Peru, Sto-Stiftung
Picture credits IntuyLab

Architecture schools are responsible for preparing students for new challenges. Unfortunately, this does not happen always. We are interested in designing educational processes where academia and society can relate and learn together. Our projects have led us to principles that define our philosophy. The workshop "Lima 3.0" serves us to explain these ideas.

Understand territory and people

The first step to think architecture is to understand what society needs. It implies to analyse our cities and its complexity. Studying its physical and social dimension ensure us a deep knowledge of it. "Lima 3.0" took place in Alto Peru, Chorrillos in 2018. An initial investigation with local students showed us that we were on an old fisherman's village affected by migrations. Also, informal housing growth is causing conflicts with the formal city. Nevertheless, there was an interesting spot that could be turned into a new meeting point with a communal centre

Cooperation for sustainability

Projects should be realized by the union of different actors that can work together for the same dream. "Lima 3.0" represents the idea of connecting a community with international architecture students. Also, the local NGO and a foundation interested in financing our educational project joined us to push together the project.

From the territory to human

It is necessary to study the context going from urban to human scale. In "Lima 3.0", we proposed students to study the historical layers of Lima to understand city growth and how informality is established

as a system for city development. Through dissertations, visits, and debates, we reached a point where international students could understand how territory influence people.

From human to the territory

Architecture and territory are always influenced by dreams. To understand the human scale of the communal centre we had several participatory sessions with neighbours. These end up with an architectural program that served as a starting point for the final design.

Dialogue as a design tool

The debate always takes us to the best decisions. During all the design process, several meetings were organized to discuss the final design with everyone. For us dialogue represents an essential tool to get a collective consensus.

Long processes vs. short interventions

Community projects should always be planed as long-term projects to involve everyone on it. On the other hand, immediate activations are useful to maintain the interest of all actors and to test strategies. During the workshop, a street in Alto Peru was temporary activated to help us understand social dynamics in public spaces and integrate them to the final proposal.

These principles are the result of projects in informal communities in Peru where academia and society worked together. The confrontation with reality in our workshops generates a change of paradigm in students and citizens to empower them to be part of a social change. With our work, we want to invite everyone to find their own way to understand territory and people through architecture.



SOLARLUX

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Solarlux Campus in Melle

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