

GLOBAL AWARD FOR SUSTAINABLE ARCHITECTURE™ 2017

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GLOBAL AWARD FOR SUSTAINABLE ARCHITECTURE™

The Global Award for Sustainable Architecture™ was founded in 2006 by the architect and professor Jana Revedin. The Global Award Community, which consists of the 55 contemporary architects from around the globe who have received the award, works towards a sustainable architectural ethic and fosters research, experimentation and transmission in the fields of sustainable

architecture, urban renewal and academic social responsibility. It defines architecture as an agent of empowerment, self-development and civic rights.

The Global Award is run by the Cité de l'architecture & du patrimoine Paris and is under the patronage of UNESCO.

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Cover: *Cliff House*, Brian Mackay-Lyons & Talbot Sweetapple,
Nova Scotia, 2008-2009 © Greg Richardson

Invisible Resources

by Jana Revedin

1. Jana Revedin, "The Radican City: Why Sustainable Living Space grows Like Ivy", in: Marie-Hélène Contal, Jana Revedin, *Sustainable Design III: Towards a New Ethics for Architecture and the City*, with a foreword by Christopher Alexander, Gallimard Éditions Alternatives, Paris, 2014.

2. Ferdinand Tönnies, "Gemeinschaft und Gesellschaft: Grundbegriffe der reinen Soziologie", second edition 1912, final edition 2005, Wissenschaftliche Buchgesellschaft, Darmstadt, 1878.

3. Upon arriving in exile in the United States in 1946, Walter Gropius, creator of the multidisciplinary experimental pedagogic approach of the Bauhaus, established, together with Marcel Breuer and their new generation of Harvard students, the TAC, "The Architects Collaborative", as a manifesto of "a profession which employs collective design in the service of society." Walter Gropius' nearly forgotten publication "Architektur", Fischer Bücherei, Frankfurt, 1956.

Resources form the toolbox of architectural conception and construction.

In these ecosophic times of global climate change and expiring renewable resources, natural and recyclable building materials are being re-discovered and their use is being re-invented: from stone to earth and from wood to straw, old construction techniques are becoming contemporary through new processes of design. These are the new and old resources of architecture, one of the fundamental sciences of mankind.

Yet, beyond these material resources of architectural design there are the resources of architectural thought. A crucial intellectual and sensual reservoir for a paradigm change that is transforming the architect's profession before our very eyes: from the architect product-producer to the architect process-leader, who invests his expertise in the service of society's needs.

The 2017 edition of the Global Awards for Sustainable Architecture is dedicated to this dialectical relationship: the broadening of the material, technical and aesthetic resources of architecture in sense and meaning to form an architecture of resources which includes the immaterial and invisible agents of time, rights, community, processes, flows, interdisciplinary dialogue, resilience, senses and experimentation. Endlessly renewable themselves, these nourish the architect's formation, profession and lifelong learning.

Resource = Raw material, mineral energy resource; but also:

richness, abundance; way out, solution; agent, capacity, ability

What if we, in a characteristic inversion of the ecological approach, stopped subordinating the process to the final architectural product and, conversely, considered that this product should be defined as a function of the nature and the activation of the available - visible and invisible - resources?

What if the quality of the process, its enrichment and meaning, its cultural adequateness and economic feasibility prevailed over the design of the product?

If this happened, resources would be recognised as much more than mere raw materials and natural, mineral or energy resources but, rather, as sources of richness and abundance as much for the architect-lifelong-experimental-learner as for the architect-social-militant and the architect-researcher-transmitter. Because long-term programming and design processes "with the people by the people" enable us to discover surprising dimensions of dialogue and compromise which can - if we listen well and watch closely - lead to obvious solutions or "ways out", just because they are necessary, evident, affordable, scalable and shared by the strongest agent of human progress: community².

Asking wisely reflected questions instead of proposing quick and repetitive (and, hence, uncreative) answers can allow time - with its multiple capacities, endlessness, universal availability, inexpensiveness and malleability - to take over the dialogue. In the "gained" space offered by time invisible resources will join the visible ones as agents of change and discoverers of true potential.

The reintegration of time opens the way for an experimentally reformist architecture which, as put beautifully by Walter Gropius in his unparalleled holistic learning-by-example approach, acts "in the service of society"³. It no longer considers - and this is a new theoretical direction - the project as the design of the perfect product but, rather, as a long-term process of improving inhabited milieux. The architect emancipates himself from his roles as an agent of vertical and radical political timescales and as an Olympian fighter for commercial assignments. Instead,

4. "Locus: the at once singular and universal relationship between a certain specific location and the buildings that are in it." Aldo Rossi "L'architettura della città", Clup, Milan, 1966

5. Carl Gustav Jung, "Approaching the Unconscious", in: "Man and his Symbols", Dell Publishers, New York, 1964.

6. or, as Rossi beautifully puts it: "The biography of a city is written analogously between the lines, in a fabric of feelings." Aldo Rossi, "The Analogue City", in: "The Architecture of the City" (1966), with an introduction by Peter Eisenman, English edition, MIT Press, Cambridge, Massachusetts, 1982. The concept of analogy is borrowed, like the previous Locus concept, by Christian Norberg-Schulz in "Existence, Meaning and Symbolism", in: "Meaning in Western Architecture", Electa, Milan, 1974, English edition Rizzoli, New York, 1980.

7. Juhani Pallasmaa, "The eyes of the skin: Architecture and the Senses", John Wiley & Sons, Chichester, 2005.

8. Jane Jacobs, "The death and life of great American cities", Vintage Books, New York, 1961.

9. Hannah Arendt, "The Human Condition", University of Chicago Press, Chicago, 1958.

10. Richard Buckminster Fuller's prototypes for proving "systemic forces through economic efficiency", Christopher Alexander's universal pattern-tool-box for compositions "at the service for all", Giancarlo de Carlo's consensus-based design method - to name but a few.

11. The idea of the open work was subsequently developed by Umberto Eco during the 1960s: artistic or literary works were purposely left unfinished, generating an "openness" of interpretation. The author invited his public to participate through an "open end" - and the interactive process of creativity and transfer of interdisciplinary knowledge could start. See Umberto Eco, "Opera Aperta", Bompiani, Milan 1962, English edition "The Open Work", Harvard University Press, Cambridge, Massachusetts 1989.

he returns to society and reconsiders his uniquely wide, yet truly responsible, political and professional role.

We are currently exploring the new (and yet so ancient!) paradigm of the civic responsibility of our profession: Habitat, city, milieu are being seen and documented under the complex influence of all available resources, human experience and aspiration, the sedimentary timescale of the city and the long-term rhythm of geography and climate.

Learning from the existing, learning in the making

This analysis of place and of its milieux, this act of giving the floor to the unique character of any local situation⁴, of listening to users and uses, of experimenting with urban and architectural co-programming as a form of civic catalyst and of persuading inhabitants and ourselves - the architects - to accept extensive dialogue and sensibly elaborated compromise during a collective process of co-conception and co-construction naturally requires time. But there are two invaluable dimensions which it requires even more: humility and curiosity.

Learning from the existing, from its collective memory⁵, its symbols and analogies⁶, its sensual qualities⁷, its hopes and fears, its potentials and threats means putting the character of place and the needs and aspirations of society before our creative ego and believing that public spaces "(...) have the capability of providing something for everybody, only because, and only when they are created by everybody."⁸

What if we thus remobilised ourselves as true explorers, searching for the highest possible quality of designing and making through continuous experimentation, through trial and error, true to the original approach of our profession which always knew that "(...) the things we have to learn before we can do them, we learn by doing them"⁹?

Design and building laboratories are currently being established in many places as experiential learning programmes which work at all design scales from the architectural detail to the city and can focus on techniques for building with renewable resources, earth, wood, stone... or on zero-energy maintenance, prefabrication, transport technologies.

Sometimes these programmes join with members of communities to execute self-built prototypes; sometimes they donate modular constructional kits or engineering concepts to the open-source web-community.

This necessary revival, which is consistently based on the knowing investment of such invisible resources as time, needs, community, flows, rights, experimentation - and whose results must, of necessity, be *in the service of society* - is taking place fifty years after the learning-by-making pedagogies established in Illinois, Berkeley or Venice¹⁰ and nearly a century after the Bauhaus' unequalled learning-revolution which grew out of Walter Gropius' pioneering methodology of mixing artisanal, industrial and trading traditions, expertise and aspirations. The objective of the Bauhaus' experimental work, which was organised in long-term curricula and reciprocal consulting sessions that used open-work learning dialogues¹¹, was the development of "adequate, affordable and scalable" design concepts, which were "ready for reproduction yet typical for our times."

Translated to the current architectural discourse this could suggest that it is the role of us, the architects, to assume overall responsibility for identifying simple, necessary but conceptually brilliant answers, the *right-tech* kit of parts of an unambiguously contemporary approach which avoids both numeric self-deception and backward romanticism.

The 2017 award-winners

Brilliant answers, which? Inspired by whom? Elaborated how? In what kind of teams?

Yui and Takaharu Tezuka have rediscovered Gropius' interdisciplinary exchange between the members of the *Bauhütte*, the building guilds and the scientific, artistic and industrial avant-gardes. Their invisible resource is the continuous open-work dialogue with a range of intellectual cultures and ways of experimenting. "To work alone means to work just within our own capacity", they say and mean: a loss of time!

12. Vitruvius, "De architectura libri decem" (33-22 B.C.) translated as "The Ten Books on Architecture" by Morris Hicky Morgan, Dover Publications, New York, 1960.

13. Interview with Paulo David, transfer-arch.com, November 2016.

14. Juhani Pallasmaa, "An Architecture of Dialogue: Lessons In Architectural Syntax", introduction to: Robert McCarter, "Economy as Ethic: The Work of MacKay-Lyons Sweetapple Architects", Thames & Hudson, London, 2017.

15. Alvar Aalto, Interview for Finnish Television, July 1972, published in *Alvar Aalto in his Own Words*, edited and annotated by Göran Schildt, Otava Publishing Company Ltd., Helsinki, 1997.

16. Conversation with Brian MacKay-Lyons, Paris, November 2016.

Sonam Wangchuk is the first "Engineer" - in the original sense of this word - to join the Global Award community of colleagues of excellence and we know why.

He re-proposes the role of the architect-inventor, the architect who creates the machines and infrastructures he needs to build a better world. He reformulates - for today - Bruno Taut's declaration from 1916, in the middle of World War I, that "our age only has one size: the desire for something better!" ("Eine Größe hat unsere Zeit: Besseres wollen"). And his work is true to this desire. His broad interdisciplinary expertise reaches from agronomy, geography and constructional science to economics and teaching. Between the lines of such a broad design approach we can read Vitruvius' recommendation to any young architect: to approach architecture from the outside, from the wider world, as the culmination of a programme of universal training. "Let him be educated, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have knowledge of medicine, know the opinions of the jurists and be acquainted with astronomy and the theory of the heavens."¹² "Let him be skilful with the pencil" was only the final skill requested by Vitruvius, the concluding, recapitulatory expertise which the future colleague had to learn.

What about the crowd-intelligence not of experts but of communities? **Assemble**, a collective which represents contemporary practices of "learning and making by doing" shows us that the invisible resource of crowd intelligence combined with time is truly endless. By installing collective activities - theatre, art, workshops, temporary housing and even projects for the care of the elderly or the inclusion of the marginalised - in the gaps, the "white spots", in the urban grain they demonstrate the intelligence with which it is possible to explore the spatial and temporal in-between.

Paulo David lives on an island among an ocean of visible and invisible resources. His practice is "a new form of acting, building a conscience of compulsion towards the analysis and reading of a totality, the one of territory, and towards building with architecture. All of these experiences rapidly made me understand (although in a slow reading process) the richness and form in which man has continuously transformed this place."¹³

Brian MacKay-Lyons and his partner **Talbot Sweetapple** have spent their lifelong journey of exploration experiencing the invisible resource of the various *images* of our planet earth. Their buildings, as Juhani Pallasmaa beautifully puts it, "are orchestrated in relation with the dynamics of the landscape, they inform the visitor about the land."¹⁴ They chose to stay in one place and to know it well. So well, that their work of architectural derivation is a master class in building realism: Their buildings simply tell us their story, how they were built, how they stand up and what they are used for. They offer proof that refreshing and unpretentious realism is a resource which, in the words of Alvar Aalto, "usually provides the strongest stimulus for our imagination."¹⁵ Asked to name the most precious, the most inspiring resource, Brian would answer, "the community! All our making is inspired by the needs of the community and depends on its cooperation." It is also no wonder that a thoroughbred building-teacher and teaching-builder does not forget a second fundamental resource: the interdisciplinary and intercultural "perpetual exchange inside his building team."¹⁶

Award-winners

2017

Award-winners

2017



2017

Award-winners

2017

Award-winners



Above:
Takaharu Tezuka and Yui Tezuka
© Tezuka Architects

Opposite:
Roof House © Katsuhisa Kida/FOTOTECA
Sketch for the Roof House
© Tezuka Architects

TAKAHARU TEZUKA + YUI TEZUKA Tokyo, Japan

by Marie-Hélène Contal, translated from french by Rupert Hebblethwaite

Takaharu and Yui Tezuka founded their office in Tokyo in 1994 and first became known for their houses: fluid, inventive and intimately involved with nature – even if this is merely a tiny garden or an adjacent park, Japanese situations that these architects know how to exploit. Ever since these first projects, their architecture has learnt from the modern (cantilevers, free plan, strip windows ...) without hesitating to invert it in order to create new “living scenarios” which are captured in the names of the houses: *canopy house*, *house to catch the mountain*, *house without walls*... Which is how the roof terrace of the Roof House (2001) becomes... the house’s main room. The Tezukas combine typological invention and architectonic daring in a single, liberating device – here, the inclined plane of the roof of the Roof House returns the landscape to the inhabitants, there a spectacular cantilever, a truly *free* plan, or Fuji Kindergarten (2007), coiled below Saturn’s huge ring.

The office grew, built schools, clinics and cultural facilities, but they didn’t let the normativity of these more complex projects blunt their search for a freer and livelier interior life. The Tezukas know how to transform the most restrictive brief into a place full of life – the Child Chemo House is a children’s cancer hospital where relatives can also stay.

While not excluding any building material they favour wood, with its structural and haptic qualities. Just as they favour the air and daylight that fill the spaces in which they constantly minimise the presence of the walls. The relationship with nature is, for them, more important than meeting green building standards.¹ But who says that ecology, the science of living environments, only concerns the constructional aspects of architecture?

Which resources for “reimagining programmes”?²

Another constant, more innovative aspect of the Tezukas’ process is their desire to re-establish, at the heart of the school, workplace and urban life, the “modes of collective living”³ that they consider to have been deeply damaged by advanced industrial society. Hence, design is no longer about executing a brief but about redefining meaning. This desire permeates their projects; it focuses on the human-being whose welfare must prevail over the working of the machine (for caring, educating or living-in); it pays great attention to the relationship between the body and its environment; it supports a fluid spatialisation which is inspired more by molecular movement than by the panopticon or the grid.

Japanese, but educated in the Anglo-Saxon tradition ... the Tezukas draw heavily upon science: life sciences, social and behavioural sciences, physical sciences ... It is this very distinctive, investigatory approach which we will now outline.

This will firstly enable us to challenge those international critics who praise the *virtuosity* of the Tezukas but don’t look any further. One can marvel at the Fuji Kindergarten, symbiotic in its surroundings and built at the scale of the children, but it would be naive to ascribe this solely to the *talent* of the architects, as if this alone can conquer norms and liberate space...

An architect seeking to transform an institution like they did at Fuji must address its social role. This *goes beyond the boundaries* of his profession and demands more than talent. In order to design such an inventive school the Tezukas needed help to get their argument across. Didn’t they work with educational experts?

1. “My quest is wider: how can we be part of nature? How to connect the interior with the landscape, with the light? How to remove walls? How to use air, light as raw material? It is because I pursue this quest, that I come to develop an architecture without air conditioning or artificial lighting...” “Interview by Marie-Hélène Contal, January 2016.

2. Tezuka Architects: *The Yellow Book*, Jovis Verlag GmbH, 2016.

3. Félix Guattari, *Les Trois Écologies*, Editions Galilée, 1999.

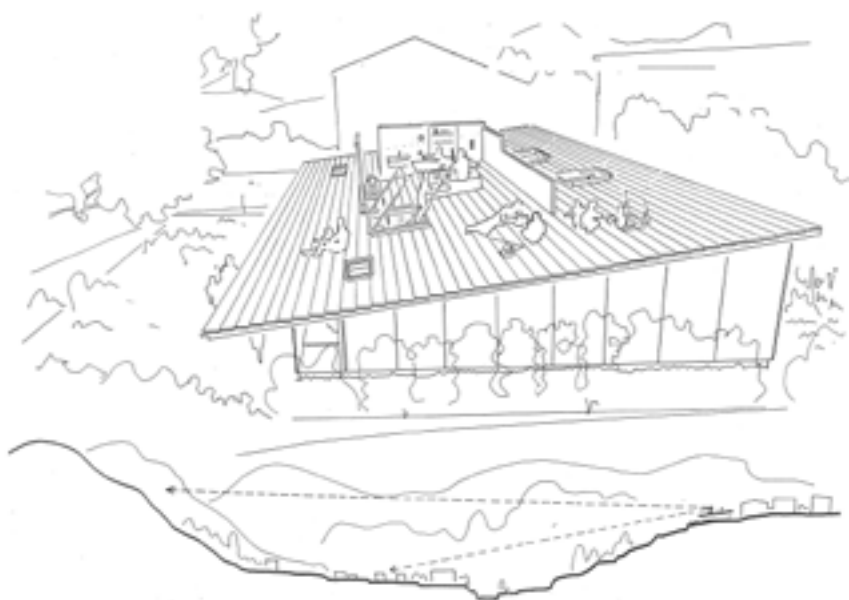


4. Interview by Marie-Hélène Contal, January 2016.
5. *Ibid.*

“Indeed,” confirms Takaharu Tezuka. “We conceived all the schools with Sekiichi Kato *who, from my point of view, is one of the greatest thinkers on education after Rudolf Steiner, Célestin Freinet, Maria Montessori.* The Montessori Method was conceived for disabled children, while Sekiichi Kato developed the concept for all children and wished, above all, to include the spatial and physical environment. I met him as the Principal of Fuji Kindergarten in 2002. He was developing his ideas but he didn’t know how to realise them, how, precisely, to translate them into space... That’s how we began to work. We learned a lot from each other, we developed the brief, the concept, the spaces together,

and we are still doing so: four schools have been built and we have new projects. He is one of the most inspiring people I’ve met, and this is how I conceive our work.”²⁴

Since this meeting, the Tezukas have reproduced the approach, drawing on the best scientific sources. Very aware of atmosphere and of its influence on humans, they work with Tsutomu Ohashi, “a molecular biologist, composer and neuroscientist, renowned for his outstanding research on the effects of hypersonic sounds on humans. He is also interested in environmental science, information science, anthropology. With his laboratory, Akiva, we arrived at the suspicion that the silent modern classroom without background noise is one cause of autism. This is the kind of background noise that happens naturally at Fuji Kindergarten, where sound travels between the rooms ...We are lucky; we need to work with very open-minded people, educated experts in their own fields. I’m very attached to such long-term exchanges of knowledge. That’s why I’m not very excited by architecture competitions! These mean working alone... *For me, working alone is working within my capacity.*”²⁵





10. Interview by Marie-Hélène Contal, January 2016.

11. *Ibid.*

12. *Ibid.*

13. *Ibid.*

“To contribute to changing the world”¹¹

For the aim of the Tezukas is not just to build but to spread innovation globally. “We share with such partners the aim of not only improving in efficiency and well-being in our own fields of activities through architecture, but also influencing the evolution of those activities and their facilities.”¹²

It is not just about disseminating a new standard. “I try to be universal, *but not by a global theory*. I wish to extend first through practice - our projects are small but they are a beginning and they open up a first type of dissemination. Let me give you an example: the kindergartens conceived with Seikiichi Kato are owned by a private educational company which is another reason why we didn’t have to observe government standards. But experts visited them and the Fuji school received very significant awards such as

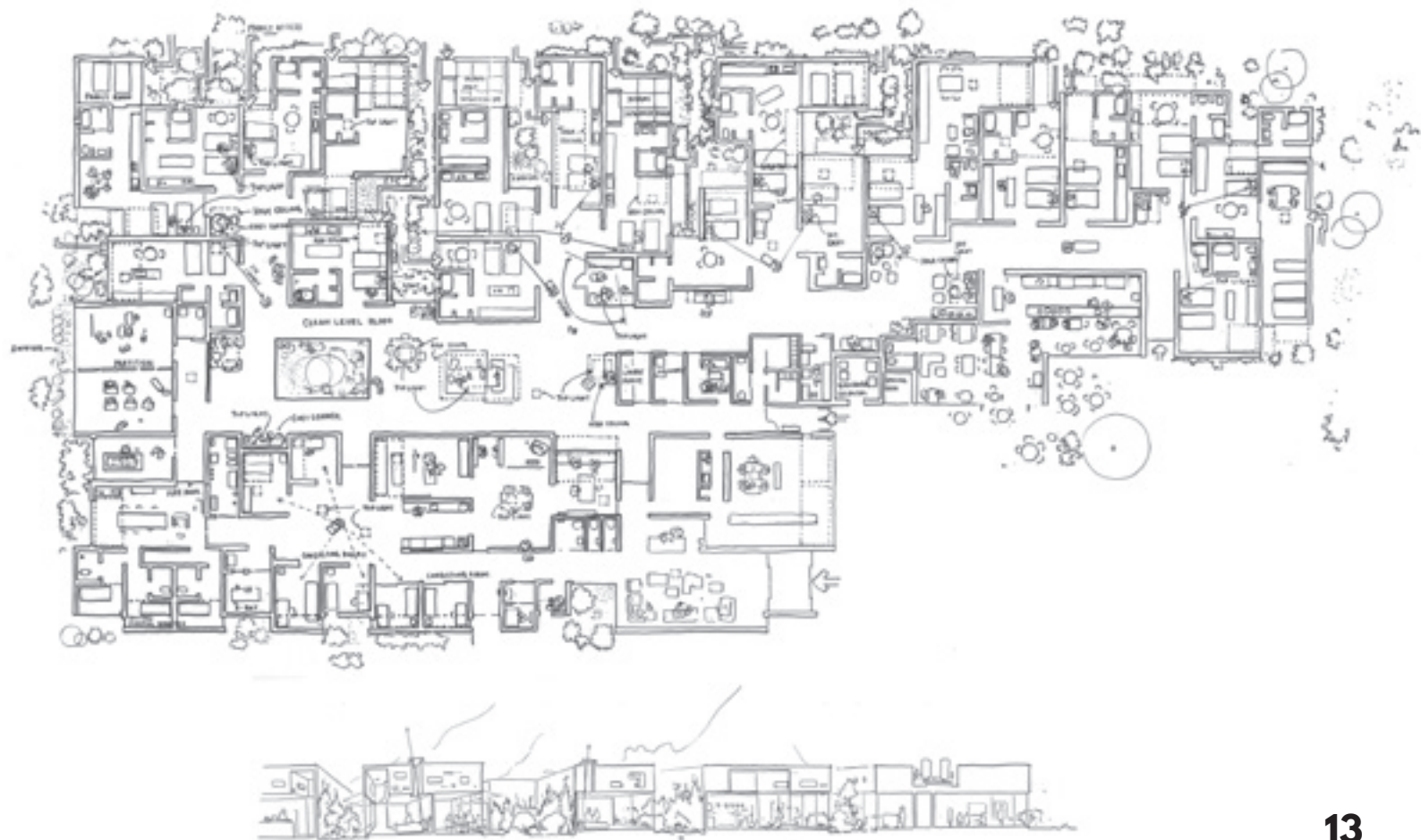
the 4th *OECD Compendium for Exemplary Educational Facilities*... And now I observe that our innovations are spreading into other “normal” schools. We are changing the standard and this makes me happy! In our office, we don’t only fight for our architecture. We want to open up new ways.”¹³

The petri dish of the Global Award allows us to recognise here a way of thinking that is spreading amongst a number of award-winners and major 21st-century architects. Architects who want to re-enchant the world not with the scale of their oeuvre but by the ability of a project to breed innovation, resistance ... and then to disseminate these in *open source*. Take Wang Shu who chooses, in China, to build little, convinced that he can wield much more influence through the cultural magnetism of this work than by simply increasing his output (this battle which 20th-century architects knew how to fight is lost in advance).

Opposite:
Sora no Mori Clinic, Okinawa,
Japan, 2014
© Katsuhisa Kida/FOTOTECA

Below:
Child Chemo House, Kobe, Japan, 2013
© Katsuhisa Kida/FOTOTECA









Takaharu Tezuka takes another path but shares the vision of an architecture which opens more than it covers (the surface of the globe). "I've discovered an incredible way of dissemination through the TED talks. Since my TED talk on Fuji Kindergarten appeared in 2015, four million people have listened to it. I'm in contact every week with educational stakeholders worldwide. A TED Talk is a more effective way of improving education than building! It contributes to changing the world."¹⁴

This way of seeing things could appear surprising in the world of architecture. The Tezukas seem to think that, after the 20th-century's "flattening of subjectivity, goods and environments"¹⁵, architecture gives people the freedom not only to throw off standards but also to stand out again. In Japan the Tezukas use their projects to clear, dig, plant; and the experience that they reap, they then sow to the winds, confident in the fact that other environments will produce their own living places, "which are, at the same time, interdependent and more and more different."¹⁶

Takaharu and Yui Tezuka were born in 1964 and 1969 respectively and met at Musashi Institute of Technology where they graduated before completing their studies abroad, Takaharu at the University of Pennsylvania and Yui at the Bartlett in London. They settled in London where Takaharu worked with Richard Rogers who played a decisive intellectual and human role in his development. Returning to Japan they set up Tezuka Architects in 1994. Having realised a number of family houses which quickly gained international attention they then won the competition for the Matsunoyama Museum of Natural Science in 2009. The series of kindergartens which began with Fuji in 2007 continued with Asahi in 2011 and, in 2012, Yamamotochou Fuji which was built for people displaced by the tsunami that had ravaged Tohoku. Takaharu and Yui are nomads and Takaharu devotes much time to teaching at the university and, worldwide, as a workshop professor.

14. Interview by Marie-Hélène Contal, January 2016.

15. Félix Guattari, *Les Trois Ecologies*, Éditions Galilée, 1999.

16. *Ibid.*

Below:
Sketch with raised hand
of the Sora no Mori Clinic
© Tezuka Architects



Left page, up:
After the tsunami
© Tezuka Architects
Asahi Kindergarten, Asahi, Japan, 2012
© Katsuhisa Kida/FOTOTECA

Left page, down:
Sora no Mori Clinic, Okinawa,
Japan 2014
© Katsuhisa Kida/FOTOTECA



Opposite:
Ice Stupa
© Sonam Wangchuk/BR

SONAM WANGCHUK

Founder of the NGO Students' Educational and Cultural Movement of Ladakh-SECMOL Leh, Ladakh, India

By Patrice Doat¹, architect, professor, co-founder of the CRAterre-ENSAG
translated from french by Rupert Hebblethwaite

Sonam Wangchuk was born in 1966 in Uletokpo in the heart of Ladakh, a Himalayan region at an altitude of 3,100 metres in the state of Jammu and Kashmir in the far north of India.² He has always lived in this high desert, famed for its Tibetan Buddhist culture and mountainous landscapes. Winter temperatures fall to -30°C. Sheltered by the arc of the Himalayas (annual rainfall never exceeds 90mm) the region is exceptionally sunny. The people of this "Little Tibet" are mountain-dwellers who speak Ladakhi, which is similar to Tibetan.

Sonam Wangchuk left for the National Institute of Technology and Engineering in Srinagar³ where he gained his mechanical engineering diploma in 1987. Very attached to his origins he returns to the high plateaus and starts to think about forms of development appropriate to the inhabitants. He starts by trying to understand how they manage to live in these villages and ancient monasteries with their harsh climates and few resources but then he asks *the right questions*: about the future, the education of the younger generations. About agriculture and husbandry, water resources, materials, construction, architecture and about the energy that could build Ladakh's future. These questions constantly inform the very diverse experiments in which he is involved as builder, physicist, teacher, inventor, agronomist, architect...

This is the first time that the Global Award for Sustainable Architecture has been awarded to an *engineer*. But, with his broad spectrum of knowledge, this one is more like a disciple of the great holistic Encyclopaedia of the French Enlightenment than the

compartmentalised engineer of the last century. This is no small thing - and certainly not retrograde. Sonam Wangchuk's position in his society illustrates how emerging countries are by-passing the *division of labour* of the 20th-century which isolated technology in the one-way street of progress. In returning technology to its proper place - at the service of a people the Ladakhi engineer is exploring, in his own way, the revived humanism of the philosopher Gilbert Simondon⁴ who advocates the integration of technology in culture, as a means of challenging its current alienation.

SECMOL: an innovative initiative for education in Ladakh

In 1988, at the tender age of 22, Sonam Wangchuk creates the NGO SECMOL⁵, *The students' educational and cultural movement of Ladakh*, in order to reform public education in villages in collaboration with the government of J&K. With determination and conviction, SECMOL gradually develops a didactic model adapted to the local culture, based on respect for the environment and research into sustainable development. He calls this strategy "the three Hs of education": *Bright Head, skilled Hands and good Heart*.

Later, in 1994, he helps to launch operation New Hope, a tripartite effort by government, villages and civil society to completely reform the school system in J&K. The programme has three pillars: the creation of "village education committees" destined to take charge of public schools, the training of teachers to protect children and the rewriting and publishing of material specific to Ladakhi culture.

1. Award-winner of the Global Award for Sustainable Architecture 2016.

2. J&K.

3. Capital of the state of J&K.

4. *Sur la technique*, Paris, P.U.F, 2014-posthumous publication.

5. Students' Educational and Cultural Movement of Ladakh.





6. Following this action, Sonam Wangchuk was consulted on educational programmes by Nepal (2008) and Bhutan (2009).

Above:
SECMOL
© Sonam Wangchuk/DR

This final point – the defence of vernacular language and culture – could seem retrograde or, at least, not an educational priority. But this cultural strategy produces incredible results: the school success rate climbs from 5 to 55% in seven years before reaching 75% in 2010⁶. (In parallel with this public reform, Sonam Wangchuk runs an alternative school at Phey which has around 60 pupils every year, with priority being given to those who have failed in the public system.)

Earth and sun, “Himalayan answers to Himalayan problems”

As an engineer and teacher, Sonam Wangchuk is bursting with ideas for applying social, economic and environmental solutions to the problems

of the people of Ladakh. He combines generosity and an intuitive approach to solving problems with his engineering training in an attempt to reconcile the resources of Ladakhi culture with contemporary science. One initial synthesis is the perfection and promotion of a bioclimatic architecture based on the use of earth. I have often heard him asking “what is more obvious than building with the earth below our feet and the sun above our heads?”

Having become a builder he has been working with the earth and the sun to design every building of the SECMOL Institute since 1988. Solar energy is stored in “collector walls” adapted from the Trombe method of storage and diffusion (a south-facing, dark-coloured earth wall placed behind glass captures heat during the day and diffuses this into adjacent interior spaces at night). The result is convincing: internal temperatures remain at 15°C even when it is -15°C outside. Built in mud, an inexpensive traditional technique, the campus now consists of three houses, 20 small “cells” and a large school building, all heated using this technology.

The SECMOL campus was the first experiment by an engineer whose ideas and projects are, at the same time, both numerous and incremental.

7. CRAterre is a laboratory of the École nationale supérieure d'architecture in Grenoble

8. Sonam Wangchuk; conversations with Patrice Doat, Grenoble, 2008-2010.

Sonam Wangchuk works with the most productive NGOs, planning and leading projects on every front: education, ecology, renewable energy, culture, agriculture, architecture, *tourism*. He tests innovations and then perfects, adapts – *“I want to offer Himalayan answers to Himalayan problems”* – and synthesises them.

Between 2003 and 2007 he developed passive solar mud-brick buildings, creating a social construction company, Shesyon Solar Earth Buildings, whose profits supported educational reform and the development of local enterprises. One result of this patient work is the sustainable architecture movement which is spreading out today across the arc of the Himalayas.

“The earthen pilgrimage”

Sonam Wangchuk studied “Earthen architecture and sustainable development” at the CRAterre laboratory between 2008 and 2010⁷. It is there that I had the chance to get to know him and his projects.

I remember our conversations. He told me that he had to learn to tame that harsh desert not by fighting it but by seeking to understand it. *“You have to respect it and see it positively if you want to work with it.”* Sonam lives by this vision and it is a real pleasure to come across such a generous and radiant personality. The Global Award will encourage and support his approach. I am delighted for him and hope to continue accompanying his journey.

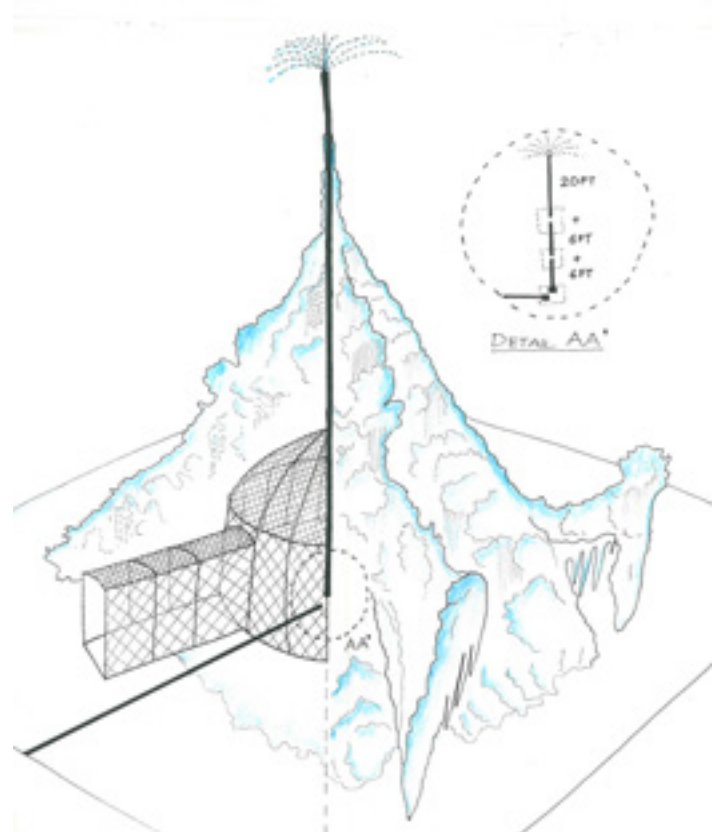
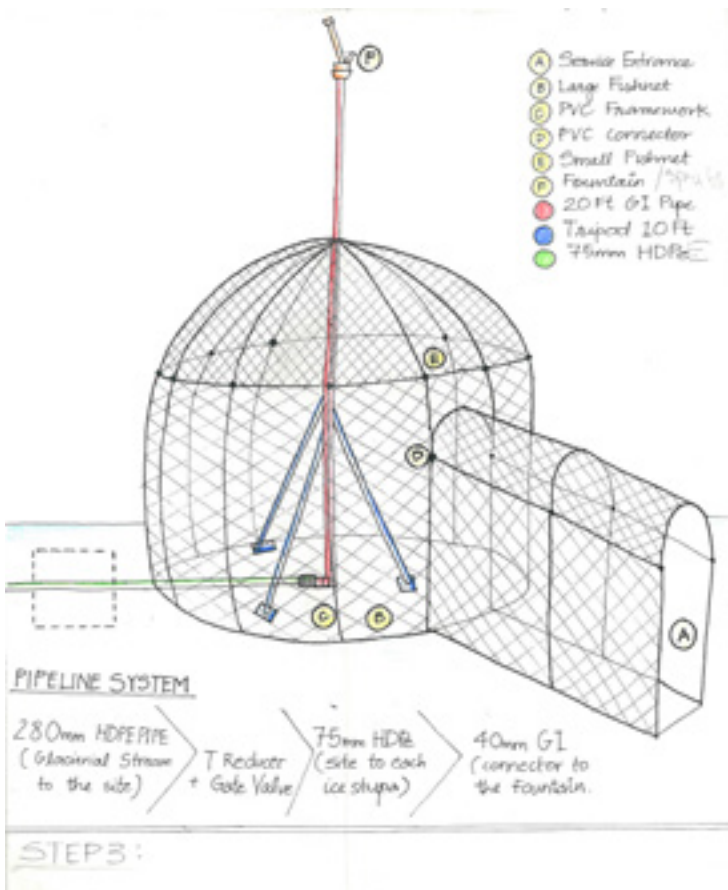
In 2012, Sonam Wangchuk undertook what he called his “Earthen Pilgrimage”. He travelled the length of the Himalayas, from Nepal to Tibet, from Sikkim to Bhutan, collecting knowledge about mud building, a traditional technique which is still in use. The long pilgrimage then took him around the world, from Auroville in India via Australia to Palo Alto in the USA, the home of the architect and leading mud expert David Easton. The trip ended in Europe with his time at CRAterre-Ensag which culminated in his diploma thesis “Return to the Future” in which he argues for the development in Ladakh of a modern, earth and sun-based architecture whose use of mud is part of a centuries-old vernacular building tradition.

“Ice Stupas” for irrigating cultures

In these mountains with very low rainfall the water crisis is endemic. Sonam Wangchuk first addressed this in 2010 by imagining a system of artificial glaciers, ice stupas, which would store water in winter before distributing it in spring through melting.

The proposed method is both ingenious (based on physics) and cyclical, addressing the seasons and the needs of rural communities. In winter, when farmers use little water, Sonam Wangchuk diverts it in order to create artificial glaciers using a process which, without electricity or machinery, relies solely on gravity. In spring, when the farmers’ needs are huge, the melting water is collected in large reservoirs which then supply the land.

The water is captured in streams at the foot of the glaciers (whose surfaces are melted by the sun all year round, even in winter) and descends in deeply buried pipes to the edges of the villages, several kilometres down the mountain. The huge height difference between the points at which the water is captured and emitted generates such pressure that it gushes from the pipe like a geyser – almost back up to the catchment level. “The water is free to gush”⁸. As a result it forms a fine drizzle which, given the glacial external temperature, falls as frozen particles which gradually create a mountain of ice in the shape of the cone of sand in an hourglass, a compact form which means that the stupa doesn’t fully melt until June. This freezing process can thus create such huge ice cones throughout the Ladakhi desert. One 30-metre-high ice stupa can contain 15 million litres of water which, the engineer-agronomist has calculated, can then irrigate 50 hectares.



9. It is for this innovation which combined culture, environment and technology that he received the Rolex Award in 2016.

10. Himalayan Institute of Alternatives, Ladakh.

The first ice stupa built in the winter of 2013 produced 150,000 litres of water and *held* until May 2014. In 2015, Sonam Wangchuk built a 2.3-kilometre-long pipeline to carry the water and create a stupa with a height of 20 metres which contained 1.5 million litres and *held* until the following July.⁹

Water distribution and irrigation are then managed downstream. Sonam Wangchuk has adapted and promoted drip irrigation (invented in the Negev Desert).

Five thousand shrubs have been planted around the first ice stupa.

Sonam Wangchuk and his team continue to improve these processes in order to freeze millions of litres of water and address the shortages faced by Himalayan agriculture. It is a fascinating *experiment*, in both senses of the word: as a Cartesian science-based approach and as a slow, empirical trial that is carried out over the long term.

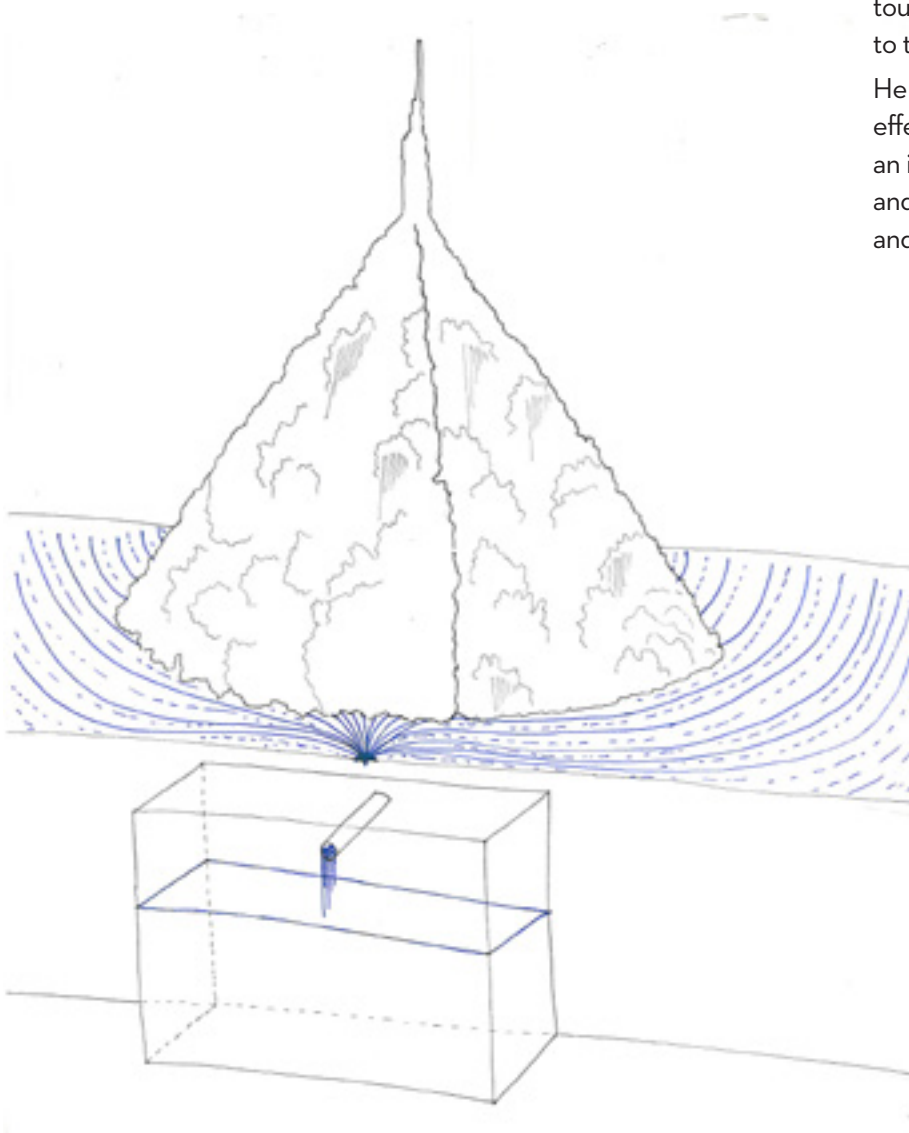
The dream of a green city in the desert: the Himalayan Institute of Alternatives¹⁰

Sonam Wangchuk wants to realise dozens of ice stupas that reach a height of 30 metres... They will irrigate the desert, promote cultivation... and fuel his project for a university. Because, true to his character and bursting with ideas, he is now dreaming of building a “green city” on the six hundred hectares of Phyang Desert.

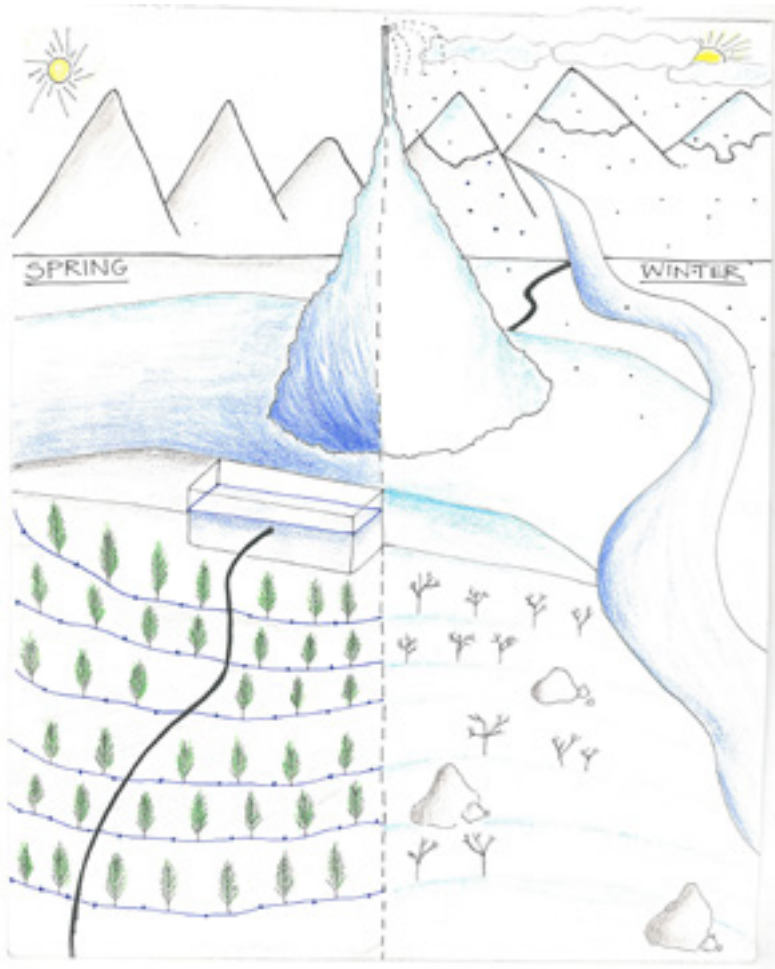
In collaboration with Leh’s self-governing council and the company Drikung Kagyu he is developing a project for a teaching university dedicated to addressing the challenges of the arc of the Himalayas. The Himalayan Institute of Alternatives should be built on 150 hectares of desert, rendered green by ice stupas... Sonam Wangchuk plans to open the university in phases starting in 2017. It will offer courses in agriculture, architecture, tourism, ecology and economy, all adapted to the demands of the mountains.

He is counting on multiplier and learning effects as means of creating an international movement of education and research into ecological uses and resources in arid climates.

Opposite and next pages:
Ice Stupas in the désert of Ladakh
and educational drawings
© Sonam Wangchuk/DR







Sonam Wangchuk is born in Ladakh, J&K, India in 1966. He obtains his mechanical engineering diploma from the National Institute of Technology in Srinagar in 1987. Between 1988 and 2007 he co-founds and directs the NGO Students' Educational and Cultural Movement of Ladakh (SECMOL). He sets up Ladakh Melong, the only magazine printed in Ladakh, in 1996 and advises the government on educational matters until 2005. He takes part in the Asia 21 young leaders' summit in Seoul in 2006 and studies for a DSA, a specialised and investigatory diploma, in "Earthen architecture and sustainable development" at CRATERre-Ensag between 2008 and 2010. In 2010 he launches the artificial glaciers initiative "Ice Stupas" (prototype 2012, acquisition of funding, initial realisations). In 2015 he becomes coordinator and a founding member of the Himalayan Institute of Alternatives, Ladakh, establishing a course in ice stupa technology, sponsored by PNUD, in 2016 and creating a first ice stupa in the Swiss Alps. Sonam Wangchuk received the Governor's Medal for Educational Reform in J&K in 1996, the Ashoka Fellowship for Social Entrepreneurship in 2002, the Green Teacher Prize of Sanctuary Asia magazine in 2004 and the Rolex Award for Enterprise for his ice stupa project in 2016.



Above:
Assemble © DR

Opposite:
Folly for a Flyover, Hackney Wick,
London, United-Kingdom, 2011 © DR
Cineroleum, Clerkenwell Road,
London, United-Kingdom, 2010 © DR

ASSEMBLE London, United-Kingdom

by Marie-Hélène Contal translated from french by Rupert Hebblethwaite

The collective Assemble was created in London in 2010 by around 15 Cambridge students who were a little bored with studying and working in offices where most of them were earning a little and *learning the job*.

Assemble swiftly made a name for itself through its actions of social and cultural repair in underprivileged areas, the gaps and “modern ruins” of London and other UK cities. They initially launched these actions themselves, finding and rediscovering a use for a location and then, with the help of residents, renovating it and giving it life. Then associations and other groups asked them to get involved in other interventions in ways that were even more participative and communal. Rather than sidelining architecture this approach does the opposite. Assemble’s projects reveal a clear, often gleeful creativity that covers a wide spectrum: from their way of looking at a piece of *waste ground*, the resulting “reprogramming”, as if on a blank slate, the design, the execution (in which Assemble, for both ethical and economic reasons, participates) to the life of the locality, its cultural and social vibrancy.

Assemble gives London a new face. The dominant image is that of a global city with extraordinary building sites which feels like a permanent architecture festival. The action of Assemble’s members, still students, reveals the deep inequality created and then accentuated by this boom.¹ Their decision also shows that, even in London, talented students can become bored in the factories of this globalised architecture...²

“We’d like to see more affordable spaces that foster creativity”³

Assemble’s first projects involved brownfield gaps in the “car-friendly city”. Like cities worldwide, Greater London has many of these abandoned places: disused petrol stations, car parks, sterile plots isolated amidst labyrinthine road junctions.

In summer 2010 the students took over an empty Texaco station and turned it into a street cinema. The idea – their own – transformed a waste object (an ugly, empty canopy that had become a carcase) into a resource – the concrete slab is accessible, flat and the canopy broad... the students convinced volunteers, raised some money; they all wielded hammers and screwdrivers to build the wooden seats and wrap the former station with a veil that rises and shimmers like a theatre curtain – it is made of Tyvek, an insulating material for roofs, cheap, silvery and highly resistant ... In 2011 they built a “Folly for a Flyover” between two expressways. In the same way that 18th-century parks were adorned with fake ruins a ‘fake’ house is made out of from railway sleepers; its pointed gable at the level of cars flashing by, above, signals that an open-air theatre and café exist, below. It only lasted one summer but the public came and gave it a practical value – and then the wood was used elsewhere...

In two projects, Assemble learnt to look at the city differently thanks to a combination of Street Art and happening and the poise granted by a good start in life and heads which are “well-screwed-on”: *“as young people, educated at Cambridge, we have the privilege of confidence. At the*

1. “Wealth disparities are definitely a reality in London and across the UK” - Interview with M.H. Contal, received by S. Henty – March 2017

2. In the same way, Anne Feenstra (Global Award 2012), Director of the School of Architecture of Ahmedabad, chose to leave Will Alsop’s office, where he was an associate, when it grew from 40 to 100 people soon after 2000.

3. Interview with M.H. Contal, transcribed by S. Henty – March 2017



4. Interview with M.H. Contal, transcribed by S. Henty – March 2017
5. Design Week – interview of Paloma Strelitz and James Binning, Assemble – 22nd April 2016.
6. Interview with M.H. Contal, transcribed by S. Henty – March 2017
7. Patama Roonrakwit, founder of CASE Studio, Bangkok, Global Award 2016
8. “Better a broken bone than a broken spirit”
9. Interview with M.H. Contal, transcribed by S. Henty – March 2017
10. The Granby Four Streets Community Land Trust (CLT)

Below:
Yardhouse, Stratford, London,
United-Kingdom, 2014 © DR

beginning we proposed ideas to people. We would consult the property register, contact owners and see if we could work on their land. When we first started, we were able to write a coherent text, create some beautiful images and contact as many people as we could to develop a project.⁴”

Things became more intense when Assemble first contacted and was then increasingly asked by disadvantaged communities to do projects. The issue was now social repair and their knack of having the right idea didn't suffer. But the happening of the Cineroleum was already also based on a critique of a procurement system that stripped the architect of all social relevance: *“part of the reason we're really interested in self-initiated projects is that we feel that in the traditional tender process, the architect comes to the table too late, when all critical decisions have been made”⁵*. Thus, Assemble doesn't shirk. But the new experiment tests the fledgling approach: what are the criteria for accepting an intervention? How does one have a dialogue with residents about acute social needs? How does one raise funds, organise self-building, create enabling public spaces and, moreover, redevelop activity? How can one ensure that the

architects' work is respected and properly remunerated in a social contract agreed amongst all protagonists if that work is so unconventional?

“As a collective we think that architecture is socially responsible for cultural development”

The method takes shape. Every request for intervention is discussed by the collective; it is accepted if two members agree to lead it. The collective performs the immersion (*“spending time on the ground, in the community, to obtain a finer grain of information”⁶*) familiar to such architects of popular habitat as Thailand's Patama Roonrakwit⁷ who trained on the... participative project at Oxford. Assemble develops its know-how; it builds its first workshop-office, the Yardhouse, a wooden shed clad with *hand-made* scales of coloured concrete. Public places are built including the adventure playground in Glasgow's disadvantaged Baltic Street district (led by Amica Dall and Fran Edgerley) which follows the educational principles of Lady Allen⁸ and is run by the families.

“What interests us is how we can help a community, or contribute to a community. We look at what an architect can add and how this can sustain the project that is the construction. We don't see architecture just as a building that you construct and leave. It needs maintenance – this is especially true for Baltic Street Adventure Playground. We're interested in what makes a good building, or what makes a building good – not as a construct but as a contribution, or add-on, to the already existing community; we stress the importance of sustaining and continuing the life of the project.”⁹

The experiment crosses a new threshold in 2013 as the Granby Four Streets¹⁰ community in Liverpool asks Assemble to intervene in the old working-class area of Toxteth by restoring the houses and acting as a catalyst for redevelopment. In this symbolic location the young architects go on to do a lot, initiate, stimulate... and learn through their contact with battle-hardened militants and the residents who perform the experiment with them.





11. 1981-2011: the “anniversary” of the Toxteth Riots, which remain in the memory as a symbol of the Thatcher years, marked the political and cultural year of 2011.

12. Interview given to the Guardian in 2011 and quoted by the journal Crafts, “Toxteth”, January/February 2017.

13. The city entrusted the project to the company Housing Market Renewal Pathfinder.

14. “Toxteth”, Crafts, January/February 2017.

Even if Assemble sees its action as part of a narrative – the post-industrial and post-deregulation British city - its members naturally didn’t experience the Thatcher years. The Granby Residents Association on the other hand remembers the riots of 1981 when Toxteth, the heart of working-class Liverpool, rose up. After nine days of rioting the response of the authorities was brutal: the dispersion of the residents and the abandoning of the district followed by the renovation – or, better, demolition – of the Victorian terraces. Upon visiting the last remaining terraces (Granby Four Streets) and the compulsorily acquired area around them in 2011¹¹ the playwright Jimmy McGovern didn’t mix his words in attacking what the professionals, architects amongst them, called *regeneration*: “If this is regeneration, what is vandalism? These are decent houses, left to rack and ruin.”¹²

These four adjoining streets were “saved” by the refusal of a *final handful* of residents to leave. The announcement in 2010 that their turn for *regeneration*¹³ had arrived rekindled the flames. “Dumping grounds were cleared-up, a market was set-up and any spare ground was planted with flowers in bouts of guerrilla gardening”¹⁴... and they contacted Assemble to carry on the fight and renovate the houses.

The rest of the story is well-known amongst young European architects. Assemble introduce self-building and self-production to this community in motion. The duo of Lewis Jones and Fran Edgerley move in. They open a “workshop” in one of the houses with the ovens and workbenches required to make the necessary finishes at low cost: ceramic tiles and door handles, wooden furniture, recycled concrete mantelpieces, crazy-paving... these objects are carefully developed by Assemble (self-construction is not a spontaneous act) together with two locally-recruited workers (a project manager and a ceramist); one was a tailor and the other had worked in printing and returned to this area where she had once lived to join the experiment.

The strategy of *empowerment* held. By 2017, not 10 but 15 houses have been renovated, modernised – their small spaces

Illustration above:
Axonometry of Toxteth neighbourhood;
on the right we distinguish the four last
streets still intact, Granby Four Streets,
Liverpool, United-Kingdom, 2011 © DR

Drawings and et models for
Granby Four streets, 2011 © DR





opened up and completed with objects which are *tailor-made* and produced *in situ*. The residents returned. And the most determined have returned to the workshop and established themselves as artisans with the idea of developing and selling ranges of objects.

How to avoid drying up resource of experimentation

The future will reveal whether this new *short-chain urban* craftsmanship that is flourishing in this last vestige of the former industrial glory of Liverpool will experience the same fate as the Arts & Crafts of William Morris. One cannot avoid noticing that these two pre- and post-industrial initiatives from the two ends of Britain's century of iron (from, it is often said, Queen Victoria to Margaret Thatcher) share the same social utopia of a more communal and self-producing society. The British are not unreceptive to Assemble's message.

In 2016 the collective moved into a new workshop-office (a disused school) which they, naturally restored themselves. The contemporary art world woos them, wonderful projects are on the table. The members still aren't qualified but, on the other hand, many teach – in the best schools of architecture and design: The Bartlett, Central Saint Martins...

What is Assemble's future? How can it last? The question pervades the entire young *alternative, participative* scene... which wants to escape the system of order/project and rediscover a social and cultural role. Responding to the question, Assemble (where everyone also teaches to balance the books...) seems less concerned with its own survival ("the one thing that we all agree on is that everyone has a future; there is no plan")¹⁵ than with the quality of the experiment that it is living through: "we are still questioning how we can grow as a project, *because Assemble is a project after all.*"¹⁶

The choice of this term – project – could suggest that the question is badly put. Why must one *become established*? Why reassume a way of working which one had abandoned because one had judged it to be incapable of change? And what if the architect were a sequence of experiments? Developer, designer, self-promoter... Assemble combines some trades and invents others and tomorrow some of its members may leave to carry out other experiments in other fields. They will bring their experience of the last one: a skill in social reactivation which is Assemble's own. A skill which one cannot imagine, today, being left unused in an office but which they will continue to activate and disseminate as they move around in society.

The collective Assemble was created in 2010 by a group of mostly year-out students of the Department of Architecture of the University of Cambridge. The collective currently has 18 members. The project for the redevelopment of Granby Four Streets led in 2015 to their receipt of the prestigious Turner Prize which is traditionally awarded in the UK to contemporary artists.



BRIAN MACKAY-LYONS & TALBOT SWEETAPPLE MacKay-Lyon Sweetapple Architects Halifax, Nova Scotia, Canada

by Robert McCarter*, architect, professor of architecture and author

Economy as Ethic: Critical Practice and the Cultivation of Place

The work of MacKay-Lyons Sweetapple Architects (MLS) embodies their engagement with two interrelated primary principles, *economy* - the ethical imperative to make the most with the least - and *place* which, for MLS, means coastal Nova Scotia, its climate, landform and material culture. Economy and place come together both in MLS' recognition of architecture and agriculture as related modes of cultivating the land and in their interest in the vernacular. Characterized by economy, ecological balance, the limited use of resources and adaptability to local climate and topography, the vernacular is not only timeless but also always the appropriate approach: *that which you do when you can't afford to fail!*

MLS believe that architecture is about neither fashion nor form, but the material culture of building and the making of places. It defines how spaces house the activities that take place within and between them; how a building engages with a place and its history of human occupation; how it is built and structured, the materials of which it is made and how all this affects the experience of its inhabitants.

The firm's emphasis on economy and place - on climate, topography and building culture - reflects Frank Lloyd Wright's insight that limitations are the architect's best friends. The resulting architecture is both practical - in its ecological and economic ethic - and poetic - in its appropriate enrichment of experience. In its capacity to make place, create identity, construct community, and

shape experience it embodies a belief that architects (like farmers) best serve a local culture by employing practices that leave a place more cultivated and more capable of sustaining richer experiences of inhabitation than before they arrived.

Beginning with the land

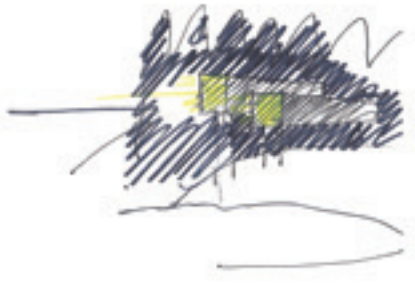
MLS engage deeply with the place where they live and build. Reflecting Aalto's propensity for prefacing lectures with an overview of the landscape and climate of his Finnish "nightland" context, MacKay-Lyons invariably begins his essays with a description of the process of glacial movement that shaped Nova Scotia into a series of drumlins - parallel hills or ridges that run perpendicular to the coast. The embedding of the geomorphology of the site into every building by MLS reflects an understanding of the profound long-term effect of landscape on human habitation. "The pattern laid down by the glaciers is like a musical staff over which the melody of human settlement has been laid, ultimately producing the genius loci, or particular sense of place, for this region."²

MacKay-Lyons characterises the works of MLS as "essays on climate and weathering, responding to the effects of sun and wind ... studies in cultural processes of human settlement on the land."³ Settlement in Nova Scotia has always been defined by farming, fishing and forestry, all of which share the seasonal reality of lifecycles and it is this recognition of the cyclical imperative of nature and landscape that lies behind MLS' interest in the parallels between agriculture and architecture. Echoing the way in which the ploughed furrows of the field reveal the effect of sun, wind, rain and drainage on the landscape, their work engages with the marks made in the land that record previous human

1. The many paraphrases of or quotations from Brian MacKay-Lyons in this essay are taken from countless extended conversations with him over the past fifteen years.

2. Brian MacKay-Lyons, "Hill," in *Ghost: Building an Architectural Vision*, New York: Princeton Architectural Press, 2008, p.35.

* Robert McCarter is a practicing architect, professor of architecture and author. He is the Ruth and Norman Moore of Architecture at the Sam Fox School of Design & Visual Arts, Chair, Washington University in St. Louis. Amongst his most recent works: *Marcel Breuer* (Phaidon, 2016); *Steven Holl* (Phaidon, 2015); *Local Architecture*, with Brian MacKay-Lyons (Princeton Architectural Press, 2015); *Alvar Aalto* (Phaidon Press, 2014); *Carlo Scarpa* (Phaidon, 2013); Robert McCarter is the author of *The Work of MacKay-Lyons Sweetapple Architects. Economy as Ethic* (Thames & Hudson, 2017).



3. Brian MacKay-Lyons, "Listening," in *Ghost* op. cit., p.214.

4. Frank Lloyd Wright, *The Future of Architecture* (New York: Horizon, 1953), p.41.

5. MacKay-Lyons, "Village Architect" in *Ghost* op. cit., p.160.

6. Kenneth Frampton, *Studies in Tectonic Culture* (Cambridge: MIT Press, 1995).

Above:
Two Hulls House, Port Mouton,
Nova Scotia, 2008-2011
© Greg Richardson

Sketch for *Two Hulls House*,
Port Mouton, Nova Scotia,
2008-2011
© MacKay-Lyon Sweetapple
Architects/DR

habitation, reconstructing the history of the settlement of a site as part of the preparation for new construction. In Wright's words, "the land is the simplest form of architecture ... It is man in possession of his earth. It is the only true record of him where his possession of earth is concerned. While he was true to earth his architecture was creative."⁴

MacKay-Lyons and Sweetapple spend innumerable hours walking, listening to the land - to the stories it tells of its previous inhabitation - before identifying the ideal place to build a house. This puts them much closer to the original settler and his search for the ideal location than to the placeless instrumentality of today's developer. They replace meaningless property lines with the ecological-agricultural common sense of local building tradition. "The village architect is like a farmer who is engaged in cultivation rather than consumption of the land."⁵

For MLS, nothing is more sustainable than a family farm, where one lives on the edge, with no room for mistakes and relying on a hard-won knowledge of climate, landscape, and vegetation passed down from previous generations who, quite literally, lived off the land. The ruthless economy of vernacular farm buildings, with their precarious ecological balance, severely limited resources and incremental adaptation of local materials to climate and topography is the appropriate model for contemporary architecture.

Brian Carter has written "that the many layered history of settlement, which has been so obviously shaped by geography at this threshold to the continent, can influence design and inform the act of building today is an important thesis." This thesis has critically important implications for contemporary practice.

Engaging material culture

Equally important to MLS is their engagement with the material culture of a place. Local building traditions are best revealed by local structures that withstand the demands of climate and appropriately house the activities that take place within them, and for many years MLS have continuously studied such buildings; historical and contemporary, barns and farmhouses, vernacular and colonial houses, fishing sheds and boatbuilding structures. These are studies of both *tectonic culture* - defined by Kenneth Frampton as the history not of the evolution of forms and styles but of how architecture has been built⁶ - and *material culture* - which addresses both the local building tradition and its typical materials and methods. It is equally important to understand how tectonic and material culture, exemplified by the vernacular, has evolved over time, constantly adopted new materials and been integrated into recent, modern constructions. "Vernacular is not a style or an image.



7. Brian MacKay-Lyons, *The Village Architect*, *Design Quarterly* 165, Summer 1995 (Cambridge: MIT Press, 1996), p.9.
8. Brian MacKay-Lyons, *Brian MacKay-Lyons: Selected Projects 1986-1997* (Halifax: TUNS, 1998), p.17.
9. Brian MacKay-Lyons, "Listening," *Ghost*, op. cit., p. 215.
10. Brian MacKay-Lyons, *Brian MacKay-Lyons*, op. cit., p.71.
11. Malcolm Quantrill, *Plain Modern: The Architecture of Brian MacKay-Lyons* (New York: Princeton Architectural Press, 2005), p.27.
12. Sverre Fehn, *The Thought of Construction*, Per Olaf Fjeld (New York: Rizzoli, 1983).

It is a process or cultural view, connected to material culture and the culture of building. By taking up new technologies and materials, the vernacular is always contemporary and forward-looking, rather than sentimental and backward-looking."⁷

In their studies of material culture, MLS have discovered a building tradition that almost exclusively uses wood for both primary structures and enclosing skins and has provided many precedents for their own work. Boatbuilding structures with elegantly curved roof trusses and floors which are shaped to allow the tide to enter and lift the finished boats; small fishing shacks which, perched precariously on the rocks, belong more to the ocean than to the land; tight-skinned, minimally perforated, box-like houses such as the "Newfy Box" (from Newfoundland) and Cape House (from Cape Breton); farm buildings clustered around loosely-defined, informal courtyards. And boats themselves: tight outer skins, fine ribs and exposed structural frames enclosing the space within. In studying these vernacular examples, MLS have discovered principles for their practice and arrived at "an understanding of the general through studying the particular, and seeing essential principles in ordinary things."⁸

Among the characteristics shared by such structures are their sense of restraint and the way in which they combine economy with elegance to reap maximum benefit from minimal consumption of material, energy and space. "The concept of elegance is eternal - do the most with the least."⁹ Also notable is the understated yet precise way in which the weathering process reveals both the age of the structures and the nature of their local materials. This understanding of the material culture of wood construction has led MacKay-Lyons to note that "gravity is easy, wind is hard."¹⁰ The relatively minimal weight of the building and its occupants exerts a negligible vertical, downward force when compared to the horizontal, lateral forces generated by the wind striking the walls. As a result, the builder thinks of making the building from the ground up, starting with the foundations, while the engineer thinks of structuring

the building from the sky down, starting with the wind loads on the walls and roof. In this sense, the houses engage Frampton's two fundamental building types: the heavy, grounded *stereotomic* mass and the lightweight, aerial *tectonic* frame - as well as Wright's two archetypes - the cave and the tent.

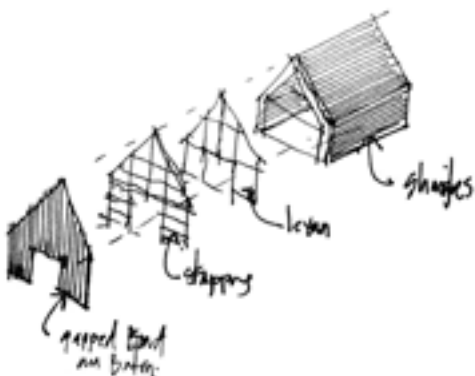
In the material culture and local building tradition in which MLS work "the art of building is passed from generation to generation (so that) there is no need for a conceptual theory."¹² Where to start and how to proceed in the siting, design and construction of a building is largely learned from buildings that have stood the test of time in the same location. In material culture, theory comes from practice and not *vice versa* and this makes MLS acutely sensitive to the unique characteristics and qualities of place. Their empathic engagement with context results in designs that are at once *responsive* and *responsible* - responsive to existing material culture, both agricultural and architectural, and to patterns of previous inhabitation and responsible in that their interventions are minimal yet offer maximal experiential enrichment to the inhabitants.

Learning by making

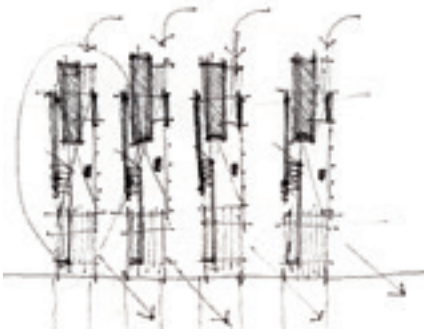
The idea of developing a limited set of spatial types from which individual buildings evolve as variations on a theme—one of the strongest characteristics of the work of MLS—exemplifies the tradition of *learning by making*. While contemporary international architectural culture is often dominated by theory generated from academia rather than practice, *learning by making* recalls earlier modern working methods such as those of Wright, Mies, Aalto and Le Corbusier, as well as the educational ideas of John Dewey and Maria Montessori. *Learning by making* also finds parallels in the writings of the 18th-century Neapolitan philosopher, Giambattista Vico, who believed that human history consisted not of natural events but of what humans have made, and that men can therefore only truly know what they themselves, or their ancestors, have made.

Opposite:
Construction of *Refuge Freelab*,
Student workshop, Bay of Fundy,
Nova Scotia, 2012-2014
© DR

Below:
Sketch *Refuge Freelab*,
Bay of Fundy, Nova Scotia,
2012-2014
© MacKay-Lyon Sweetapple
Architects/DR







13. Carlo Scarpa, quoted in Sergio Los, Carlo Scarpa, *Architetto Poeta* (Venice: Cluva, 1967), p.17.

14. Marco Frascari, "The Tell-the-Tale Detail," *VIA 7, The Building of Architecture* (1984), p.24.

15. Louis Kahn, *What Will Be Has Always Been: The Words of Louis I. Kahn*, Richard Saul Wurman, ed. (New York: Rizzoli, 1991), p.101.

Above:
Sketch for *Ghost 7*,
Shobac Campus, Upper Kingsburg,
Nova Scotia, 2-7 of July 2005
©DR

Opposite:
Ghost 7, Shobac Campus,
Upper Kingsburg, Nova Scotia,
2-7 of July 2005
©DR

Construction of *Ghost 7*,
Shobac Campus, Upper Kingsburg,
Nova Scotia, 2-7 of July 2005
©DR

Construction de *Ghost 1*, Shobac
Campus, Upper Kingsburg,
Nova Scotia, 1994
©DR

Upon being appointed Dean of the School of Architecture and Urban Design in Venice in the 1960s, Carlo Scarpa had Vico's aphoristic phrase, "*verum ipsum factum*" (truth is in the made) carved over the school entrances and embossed on the students' diplomas. Translated by Scarpa as "we only know what we make," the phrase precisely defined his understanding of architectural training. It could also be a motto for MLS, in whose work thinking and making combine irrevocably in a way of creating buildings similar to that which Sverre Fehn has characterized as "the thought of construction."¹³ In this way, the work of MLS embodies the notion that architecture has its own disciplinary tradition and ordering principles, unique unto itself, which determine its capacity to make place, lend identity, construct community and shape experience - all through the understanding that *we only know what we make*.

In another parallel with MLS and their habit of learning by drawing throughout the design and construction process, Scarpa said that he could not see anything until he had drawn it. "I place things in front of me, on the paper, so I can see them. I want to see, therefore I draw. I can see an image only if I draw it."¹³ Using words that could apply just as well to MLS, Marco Frascari characterised Scarpa's drawings as both "construing and constructing."¹⁴ Today, most architects both design and compose construction documents in the virtual space of the computer in such a way that the process of making architecture is, literally, never touched by the architect's hand. Regarding this, Louis Kahn noted that "oftentimes you imagine you are thinking when you are not, and this often happens when you are not drawing."¹⁵ Continuous drawing is, however, critical to both the conception and construction of the architecture of MLS who use sketches throughout the design process to confirm and clarify decisions at both the macro (context) and micro (detailed) levels.

Robert McCarter

Brian MacKay-Lyons was born in the small village of Arcadia, Nova Scotia in 1954. He studied architecture at the Technical University of Nova Scotia (TUNS) in Halifax and at UCLA under Charles Moore as well as participating in Giancarlo De Carlo's International Laboratory of Architecture and Urban Design at the University of Urbino. He established an architectural practice in Halifax in 1985, the year in which began teaching at TUNS (now Dalhousie University) where he is now professor of architecture. From 1994 to 2013, Mackay-Lyons conducted an exceptional educational program at his own family farm, the Ghost Architectural Laboratory: summer design-build workshops, enabling students to assimilate knowledge through direct experience - project-based learning taught in the master builder tradition - with emphasis on issues of landscape, material culture, and community.

Talbot Sweetapple was born in St. John's, Newfoundland. He studied philosophy at Dalhousie University and architecture at TUNS from which he graduated in 1997. He then worked for Shin Takamatsu in Berlin and KPMB in Toronto before returning to Canada to join the MacKay-Lyons firm, where he had earlier served an internship, in 1999.

Since 1996 Sweetapple has taught at Dalhousie University where he is now professor of practice.

In 2005 Talbot Sweetapple became a partner and the firm was renamed MacKay-Lyons Sweetapple. The practice works locally and internationally on cultural, academic and residential projects and has built an international reputation for design excellence confirmed by over 100 awards, including the Gold Medal of the Royal Architectural Institute of Canada in 2015.



Above:
Paulo David
© DR

Opposite:
« Casa das Mudas » Arts Center,
Vale dos Amores, Calheta, Madeira,
Portugal 2001-2004
© Fernando Guerra & Sérgio Guerra
Sketch for Piscinas do Atlântico e Passeio,
Marítimo das Salinas, Câmara de Lobos,
Madeira, Portugal, 2002 © DR

PAULO DAVID

Funchal, Madeira, Portugal

By Marie-Hélène Contal translated from french by Suzannah Henty

The work of Paulo David has already gained significant international attention amongst circles of architectural criticism and studies in architectural history.

The first circle, that of essentialist criticism – for which architecture is a work of the mind, measurable by its creator's ability to enable a release from all contingency, subjection, *constructionnisme* – likens the work of Paulo David to that of Eduardo Souto de Moura or Peter Zumthor.

On his home island of Madeira, with its sumptuous geography and tormented history, the architect works on the great classical and modern archetypes of architecture. He has developed a series of powerful buildings, carried by imaginary fortresses that sculpt its anchorage, deploying *architectural promenades*, deeply rooted in European culture. The visitor of the Casa das Mudas Arts Center will have an alternately chthonian and solar experience.

The centre was built on the summit of a once unattainable rocky peak, an almost cubic and basalt monolith. We first see a chessboard of negative and positive occupations (roofs-terraces and patios), perfectly horizontal and dominating a landscape of cliffs and sea. Then, a belvedere ramp descends into a square patio, the center of the composition that distributes the three levels. The cubic volume and the rock into which the building is embedded has been pierced with openings so that descending walk provides to the visitor inner recollection, a view of the great landscape and a confrontation with the ocean. The structures of the building are complex; its geometry asserts, in response to the volcanic landscape, the perennially of a place civilized by man.

“Here, the geography, the topography and the manipulation of forms are fait accompli.”

The second circle of criticism, this time more existentialist where architecture is built with the history and geography of people, also distinguishes Paulo David as one of his own.² The architect has forged deep links with Madeira, its culture and geography, orographic³ and human of this volcanic archipelago, discovered by the Portuguese navigators and populated since the fifteenth century. Its heritage testifies to a rich relationship with elements and history. A rural industry settlement has carved into the escarpments, digging canal⁴ irrigation systems into the slopes of the hillsides. A history of piracy and commerce is condensed into port architecture both cosmopolitan and powerfully defended.

Paulo David returned to settle in Funchal in 1995 at age 36, after completing his studies and his first years as an architect in Lisbon, to elaborate in an island that gives him the *Three Units*⁵ an architecture that perpetuates its idiosyncrasies. David studies the vernacular patrimony of settlement, marked by the will to both anchor and be open to exchange: “It is interesting for me to understand the insular context not only a closed data, but also a possibility for simultaneously observing phenomena of cosmopolitanism and endemism. The island has always been a place of “contamination”, of stops between ports, of destiny for travels. It hybridizes with the outside world.”⁶

In 2001, he was entrusted by the city of Funchal with the task of designing a city development project. David carefully studied the knowledge-gathering systems that have deeply nourished his practice.

1. Interview with Paulo David, *Transfer*, 28 July, 2016.

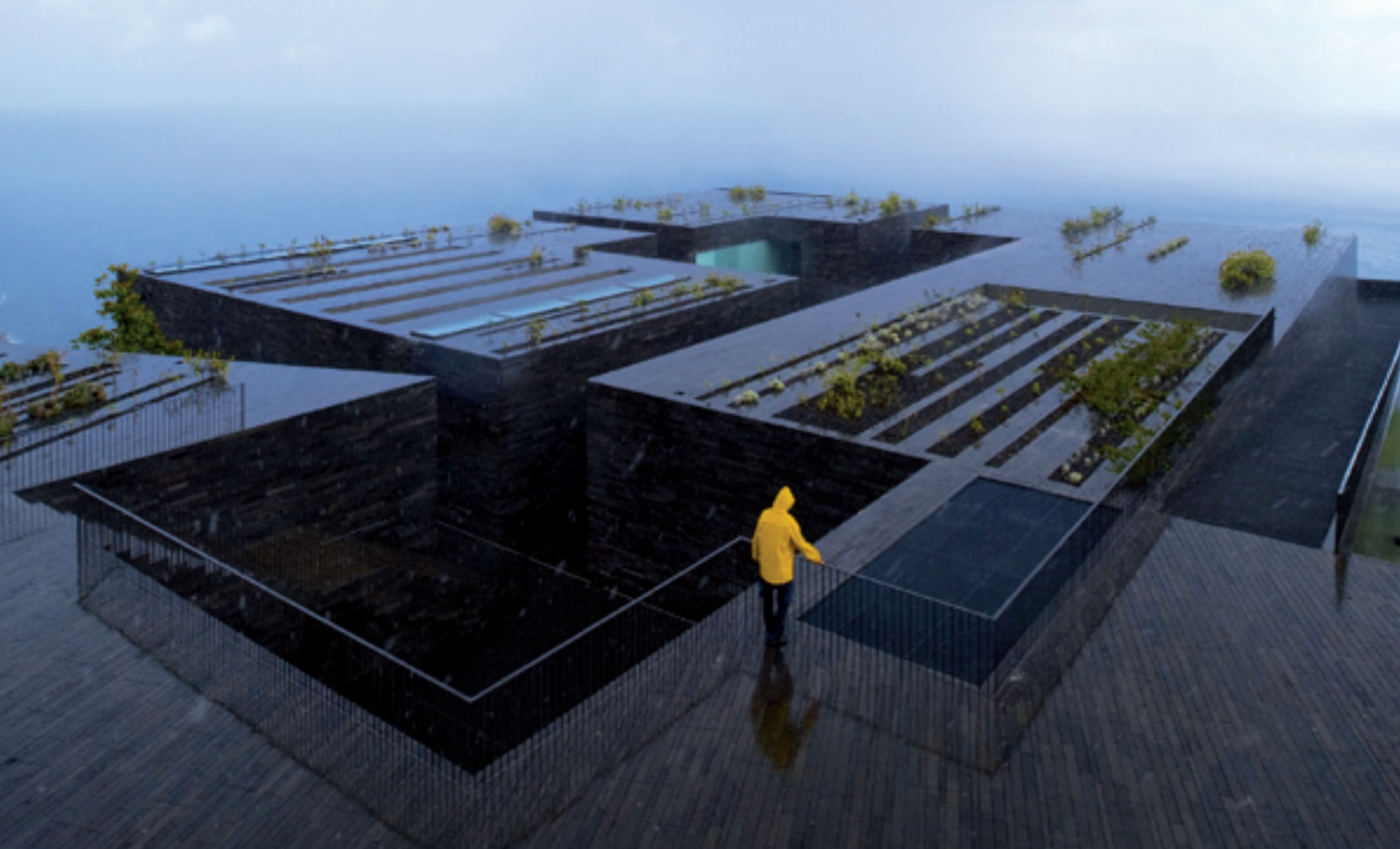
2. Cf. comments of the jury for the Alvar Aalto Medal, 2012: “David’s work is locally rooted, yet at the same time universal. His work continues the search for an appropriate, relevant and authentic architecture that fuses with the landscape. The work respects and responds to ‘history, time, place, culture and technology’ – his is architecture of response rather than of imposition.” Alvar Aalto Medal Archives.

3. Orography is the study (description, mapping, geomorphology and formation) of mountainous terrain.

4. The levadas are canals dug to irrigate the southern part of the island, drier than the north where it rains abundantly. Their route follows the contours of the island, which minimized the need for piercing in the rock.

5. In classical theatre, a piece must have a principal unit of Action, Place and Time.

6. Interview with Paulo David, *Transfer*, 28 July, 2016.



- 7. *Ibid.*
- 8. *Ibid.*
- 9. Paulo David.

“All of these experiences rapidly made me understand (although in a slow reading process) the richness and form in which *man has continuously transformed this place.*”⁷

Paulo David's essentialist architecture has thus been enriched by a constructive culture and typology: “This knowledge has always been through transformation, by contrasting the pyramidal shape of the island. Structural elements have been made following the natural shape with similar materials. It is built with the same material found locally. Almost like a rudimentary gesture that I like to focus on and which supports my formal project operations. This radical touch (close to the roots) that creates a platform for life in this island throughout the times.”⁸

Built in 2004 by the ocean in Funchal the Atlantico Swimming Pools and Salinas Promenad are a tribute to the Madeiran vernacular tradition. At the end of the cornice, on former salt marshes, fishing and drying docks, the architect arranged a set where the geometry of the basins, rigorous as always in his projects, are in osmosis with a ragged site: “The intervention uses some of the existing features and extends the compositional principles of the site, after the territorial tradition of the island, with the operation achieving definition in successive walls and platforms, creating an area that can be perceived as an accessible entity, visually and thematically connected. (...) A long, high wall delimits and articulates Das Salinas, maintaining a constant dialogue with the sea. This thickset wall softens and shores up the steep embankment. This volcanic stone wall, highly reminiscent of those used in the local agriculture, gives the landscape a humanized feel.”⁹





10. "Landscape and tourism: between exploiting and preserving, the works of Paulo David", Biennale of Venice Catalogue 2016, Reporting from the front.

11. The Casa das Mudas and other cultural facilities built by Paulo David have benefited from European subsidies to support the economic and tourist development of the island.

12. Interview with Paulo David, Transfer, 28 July, 2016.

13. See note 4.

14. ERDF: European Regional Development Fund.

15. Interview of Paulo David, review Transfer, 28 July, 2016.

"These forces are much bigger than architecture"¹⁰

... wrote Paulo David when presenting the manifesto project of the Observation Shelter at the 2016 Venice Biennale, and one might indeed imagine that it evokes the nature of Madeira. If the climate is mild, the ocean is violent, the island is a bouillon of hardened lava that erodes, the escarpment renders everything *homme de l'art*, artisan or architect, observing before acting. Yet, the forces evoked at the exhibition in Venice are not telluric. It is the economic flux that sweeps through the archipelago today; and thus, this work allows a *third critical reading* – that of the Global Award, and the questioning of the contemporary condition of the architect.

For a long time, Madeira has lived not only on agriculture, fishing and the port – but too, on tourism, which has found the ideal meeting point of an exceptional heritage and an enclosed space. The architect of the development plan of Funchal is well aware of the stakes.¹¹ From his first projects, David sought to civilize this tourism, to regulate the relationship with an activity that appears, in the light of history, both a resource and invasive flow that Madeira can channel by re-transforming its fabric: "In the past, dangers came from the sea and the constructions had a character of defence. Several fortress were built along the coast line. After this period, construction focused on seeing the ocean, as this was the gateway of the island, and several towers have been erected all over the city to «view the sea». (...) Today, this liquid space can be read as an exercise in contemplation, also associated with touristic activity. In this confrontation of different times, the steep slopes that necessitate the supporting of the lands to promote life, and the memorial logic of observation establishes the understanding of this place."¹²

The Access Pavilion of Volcano St Vincent, a touristic facility, continues the trends



of rural development. It adopts the form of the tanks which irrigate the crops; it distributes caves and paths ascending towards the gardens; at these heights, it disappears as the architect has captured the water of *levadas*¹³ to transform the roof into a basin, which thus abolishes its mass and becomes a mirror of the great landscape.

However, since 20 years, this point of cultural balance between tourism and the eco-system has been undermined. The regional government has invested ERDF¹⁴ grants in large-scale infrastructure. As result of the burrowing of dozens of tunnels, a network of highways now cross the island – providing the world, one might think, treasures that the relief of the island previously made inaccessible... But tourism, if its flow is not regulated, destroys that which it desires.

For Paulo David this piercing of the highways destroyed the perception of the island: "the introduction of desire to tear and conquer time through expressways has turned into a sort of amnesia of the place."¹⁵

Opposite and above:
Piscinas do Atlântico e Passeio (détail),
Marítimo das Salinas, Câmara de Lobos,
Madeira, Portugal, 2002-2006
© Fernando Guerra & Sérgio Guerra

Piscinas do Atlântico e Passeio,
Marítimo das Salinas, Câmara de Lobos,
Madeira, Portugal, 2002-2006
© Fernando Guerra & Sérgio Guerra

16. "Paulo David creates a cliffside plateau, carved with a labyrinth of spaces at Casa das Mudas," David Cohen, 'Architectural Record,' May, 2007.

17. "Landscape and tourism: between exploiting and preserving, the works of Paulo David", Biennale of Venice Catalogue 2016, Reporting From the Front.

18. "Observation shelter," Pico do Areeiro, Madeira, Paulo David, Biennale of Venice Catalogue 2016, Reporting From the Front.

His projects fight against this erasure. This is why the Casa das Mudas is not only a variation of the *architectural promenades* of Modernism but too an instrument of recoding of the island. "With the tunnels, you go too fast, you are lost. But my images from my childhood are of stopping at lookouts to see the incidents of the landscape, the cliffs and the valleys."¹⁶ As a result of these memories, the Casa is hollowed of loopholes, notched with platforms that restore to the visitor an *experience of discovery*. This art center serves perhaps less as a revelation for artworks than an *orographic and human work* for the island.

Madeira has built less since the global financial crisis of 2008. In any case, there are fewer cultural places as «large hotels and aggressive, hackneyed real estate begin to populate the landscape, (...) eroding hillsides, consuming water and altering the ecological balance»¹⁷ are always financed. But they are not being entrusted to Paulo David.

Extreme fires struck Madeira in 2010. After a destructive flood in February, in August a forest fire destroyed an Ecological Park for the preservation of endogenous species, the creation of which had mobilized the inhabitants of an island now exposed to mass tourism. How can one fail to see that a densification without rules, of

which summer fires are the symptom, has become a factor of erosion more powerful than the elements? Paulo David intervened in the public debate in 2012 to raise awareness of this overexploitation of tourism, with the obvious project of an Observation Shelter, to be built on the site of the fire. "A simple, rudimentary wood construction system is proposed, reusing logs from the extensive burnt trees, with an added covering over the structure with soil from this same place. (...) The space created by imbricated tree logs draws a possibility for internal retreat and storage for the mountain devotees. On its counterpoint, a light stair overhangs throughout the outer ridge of the construction and promotes observation over the immense mountains."¹⁸

Since then, the architect has continued his work. He devotes a great deal of time to teaching in Europe and across the world in an off-shore knowledge market that has also become "much bigger than architecture" ... He teaches students the careful observation of places and roots, of the material, the reverse of the production of off-shore architecture that flourishes in Madeira. One can always regret, when one is in the presence of such a dense architectural work, that its author spends time elsewhere than with his projects, to draw manifest projects or to teach, activities that resemble sending a bottle off to sea. Yet, this is perhaps the fate of European architecture: to condense centuries of urbanity and civility in a bottle and throw it into the sea, so that it can be found – by students, readers, by tourists who are retracing their steps, visitors of the Casas das Mudas, or in the nature trails of an island that is the last fragment of Europe, 600km west of the coast.

Opposite and below:
«Casa das Mudas» Arts Center,
Vale dos Amores, Calheta, Madeira,
Portugal 2001-2004
© Fernando Guerra & Sérgio Guerra





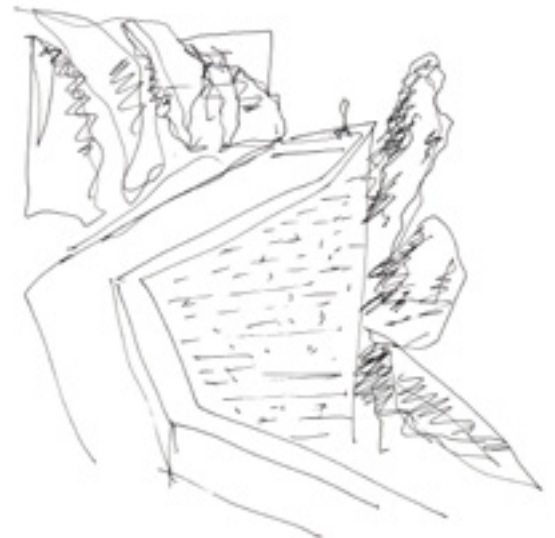


Above:
Pavilhão do Vulcanismo, Grutas
de São Vicente, São Vicente, Madeira,
Portugal 2003-2004
© Paulo David Studio
Inverted Ruins, Venice Biennale, 2016
© Andrea Avezzi

Opposite:
*Sketch for Piscinas do Atlântico e
Passeio*, Marítimo das Salinas, Câmara
de Lobos, Madeira, Portugal, 2002 © DR

Right page:
Piscinas do Atlântico e Passeio,
Marítimo das Salinas, Câmara de Lobos,
Madeira, Portugal, 2002-2006
© Fernando Guerra & Sérgio Guerra

Born in Funchal, Madeira in 1959, Paulo David graduated from the Faculty of Architecture at the Technical University of Lisbon in 1989. From 1988-1996, he worked in Lisbon with Gonçalo Byrne and then João Luís Carrilho. Upon his return to Funchal, he created Paulo David Arquitectos in 1995. He was consulted by the Urban Development Department of Funchal for the development of the city's development project (2001-04). He has also devoted himself to teaching, first in Madeira at the University of Arts and Design (2001-04) and then in Civil Engineering (2006-09); his early projects (Casa das Mudanças Art Center, swimming pools and promenade of the Saltworks, Funchal in 2004, Pavilion of the Volcano St Vincent in 2006) earned him the title of Visiting Professor in an academic circle that progressively grew: University Autonomous Lisbon, 2009; ENSA of Nancy, 2010; University of Sassari in Alghero, 2014; Catholic University of Santiago Chile, 2015; Politecnico de Milan, 2016... Equally an essayist, Paulo David has published "Street Corner Meetings", "Vamos Falar de Cidade" (Let's Talk About City) and has participated in numerous exhibitions, such as *The Global Ends - Towards the beginning* in Tokyo, and the *Alejandro Reporting from the Front of Aravena* in Venice. He received the *Premio Enor Portugal* in 2005 and the *Alvar Aalto medal* in 2012.





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received the patronage of Unesco in 2011.**

www.unesco.com



For the past forty years, Bouygues Bâtiment International (a subsidiary of Bouygues Construction) has been a benchmark in the construction industry. Its many projects around the world demonstrate its varied skills and know-how.

In 2013 Bouygues Bâtiment International became a partner of the LOCUS foundation. This partnership is the result of the convergence of our shared concern over the twin issues of sustainable architecture and urban renewal. By supporting the Global Award for Sustainable Architecture™, Bouygues Bâtiment International promotes an ethically responsible image of the construction industry.

Following the example of the LOCUS Foundation, Bouygues Bâtiment International has made cultural respect for local environments and all aspects of innovation the basis of corporate philosophy. Supporting the Global Award is a way of demonstrating its commitment to and hands-on participation in the worldwide debate on sustainable development. Far from seeking merely a fashionable image, Bouygues Bâtiment International aims to contribute to building better lives for everyone everywhere in the world. Through its robust sustainable development strategy, Bouygues Bâtiment International designs and builds highly energy-efficient and environmentally-friendly projects which meet the expectations of all its stakeholders – clients, partners, staff, local authorities and civil society.

The architect is often involved at the beginning of the construction process, whilst the contractor comes in at a later stage. By joining up these two links in the chain, this partnership will enable us to join forces in promoting environmentally-friendly design and sustainable construction.



BNP Paribas Real Estate, one of the world's leading real estate service providers, offers a full range of services that integrate the entire life cycle of a property: Promotion, Transaction, Consulting, Expertise, Property Management and Investment Management. With 3,800 employees, BNP Paribas Real Estate brings to its clients its knowledge of local markets in 37 countries with more than 180 offices. BNP Paribas Real Estate is a BNP Paribas Group company.

As part of its CSR policy, BNP Paribas Real Estate supports the development of the city's construction trades. Based on the principle that what we are building today shapes our world of tomorrow, BNP Paribas Real Estate developed in 2007 a patronage in favor of architecture. One of its first commitments was the support of the first temporary exhibition of the Cité de l'architecture & du patrimoine: "Before after, architectures over time".

Moreover, for the past 10 years, BNP Paribas Real Estate has been encouraging young talents every year through its *Prix des Espoirs de l'Architecture*, inviting young students in schools of architecture in France to reflect on the construction and transformation of city.

The shared concerns with the Cité de l'architecture & du patrimoine about architecture and sustainable development, as well as the ambitions carried by the Global Award for Sustainable Architecture have driven BNP Paribas Real Estate to support the 2017 edition of the Prize.

Scientific committee

Benno Albrecht, architect, historian, professor at IUAV University, Venice, Italy

Marie-Hélène Contal, architect, director of Cultural Development, Cité de l'architecture & du patrimoine, Paris, France

Spela Hudnik, architect, professor, Director of the International Architecture Biennale of Ljubljana, Slovenia

Kristiina Nivari, Deputy Director of the Museum of Finnish Architecture, Helsinki, Finland

Jana Revedin, architect PhD, professor at École Spéciale d'Architecture, and at Blekinge Institute of Technology, Sweden, Founding President of the Global Award for Sustainable Architecture

Honorary members 2017:

Patrice Doat, architect, professor, co-founder of CRAterre, Global Award 2016

Anne Feenstra, architect, professor, Dean of the Faculty of Architecture, CEPT (Center for Environmental Planning and Technology) of Ahmedabad, Global Award 2012



Cité de l'architecture & du patrimoine

Paris - citedelarchitecture.fr

The Cité de l'architecture & du patrimoine offers its visitors an exceptionally diverse cultural experience organised in a single, unique location occupying 22,000m² in the heart of Paris. From urban renewal to the revitalisation of our cultural heritage, questions of the city occupy us daily. A public entity under the umbrella of the Ministry of Culture and Communications, the role of the Cité is to be a source of information and knowledge in all questions related to the quality of architecture, from the upgrading of our cultural heritage to the preservation of the urban environment. Aimed at both the general public and a more specialist audience, the programme of the Cité is highly diversified: permanent and temporary exhibitions, teaching and workshops, symposia, debates, projections...

Specialists in the areas of architecture and urbanism are invited to take advantage of the courses offered by the École de Chaillot as well as the library and the archives of the Cité.

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Università IUAV di Venezia

Venice - www.iuav.it

Venice's IUAV University is one of the world's best known and enjoys a particular reputation for the quality of its research laboratories in the areas of composition and the theory and history of architecture and the city.

Since 2005, IUAV University has created an international master's degree in Sustainable Urban Planning as a centrepiece of its research programmes.

Museum of Finnish Architecture

Helsinki - www.mfa.fi

Created in 1956, the Museum of Finnish Architecture is the world's oldest architecture museum. Since its creation, it has produced and sent out over 1,000 exhibitions. Today, MFA is home to valuable expertise in the area of sustainable architecture, in particular in Scandinavia, the focus of the most advanced research in this area. The Museum of Finnish Architecture works in close collaboration with the GAU:DI network and the most important international architectural institutions.

International Architecture Biennale

Ljubljana - www.architecturebiennaleljubljana.si

The International Biennale of Architecture of Ljubljana was created in 2000 by Peter Vezjak and Špela Hudnik. This young biennale of contemporary architecture is one of the most dynamic players on the Eastern European architecture scene. Focussed on the exchange of information, the event organises an innovation competition and on-line activities of excellent quality. This intra-European platform allows local figures (from Slovenia, Italy and Austria) to come head-to-head with international names from the creative sectors of the contemporary architecture scene.

CITÉ DE L'ARCHITECTURE & DU PATRIMOINE

Auditorium, 7 avenue Albert de Mun
Paris 16^e - M° Iéna ou Trocadéro



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