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UIA OPEN FORUM AND STUDENT WORKSHOP SUSTAINABLE BY DESIGN

INTERNATIONAL UNION OF ARCHITECTS

UIA OPEN FORUM AND STUDENT WORKSHOP

SUSTAINABLE BY DESIGN

Architecture for a sustainable future [Region I]

Imprint

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International Union of Architects, UIA

with contributions by
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UIA OPEN FORUM AND STUDENT WORKSHOP

“SUSTAINABLE BY DESIGN”

Content

Imprint 1

Forward 5

UIA Copenhagen Declaration 8

Introduction 11

Sustainable By Design 14

A building needs daylight to be sustainable by design, *Lone Feifer, VELUX* 18

UIA Open Forum

Sustainable Design Strategies

Resource Efficiency & Renewable Resources, *Sebastian El khouli, UIA, Germany* 24

The new squares of today & tomorrow, *Guendalina Salimei, La Sapienza Rome, Italy* 28

Recycling & Revitalization Strategies, *Nicoletta Trasi, La Sapienza Rome, Italy* 32

Vernacular & Low-Cost Architecture, *Christiano Lepratti, TU Darmstadt, Italy* 36

Lectures

Sustainable Building, *Manfred Hegger, TU Darmstadt, Germany* 42

Urbanability, Urban(sustain)ability, *Roberto A. Cherubini, La Sapienza Rome, Italy* 46

Slow Space, *Christiano Lepratti* 50

Sensitive Limits: Land arch/ Vertical Labyrinths, *Guendalina Salimei* 54

Sustainable landscapes, *Nicoletta Trasi* 58

Sustainable Urban Living, *Brian Edwards, Royal Danish Academy, Scotland* 62

Reuse vs. Recycling, *Massimiliano Gilberti, Università di Genova, Italy* 66

Sustainable Building Renovation, *Federica Ottone, University of Camerino, Italy* 70

The Global Award for Sustainable Architecture, *Jana Revedin, Germany* 74

Industrial systems and architectural concepts, *Søren Nielsen, Denmark* 78

On sustaining beauty, *Anna Heringer, University of Art and Design Linz, Germany* 82

Student Workshop

Students Workshop During COP15/UIA, *Hans Drexler, MSA Münster, Germany* 88

Copenhagen Site, *Brian Edwards* 92

The L'Aquila Challenge, *Christiano Lepratti, Guendalina Salimei, Nicoletta Trasi* 98

Student Projects 102

with works by: Heiko Habben, Ulrik Sludekilde, Sylvie Duvoisin, Ilja Maksimov, Huihui Lü, Giada Serra, Marika Moscatelli, Paola Andreozzi, Ole Storjohann, Adelheid Henkel, Kerstin Janssen, Yesim Gülsular, Janae Futrell, Valerio De Angelis, Elisa Ottaviani, Sophia Vassiliadis, Philipp Lüffe, Federica Benvenuto, Lars Marquardsen, Alberto Maiozzi, Yisu Wang, Erling Christoffer Forfang, Camilla Grappelli, Lena Pipkorn, Chrisitan Zilisch, Bianca Maria Di Cola, Eliska Stuchlá, Ting Liu, Frederike Meier, Nazir Rahmaty, Isil Tanriverdi, Stepanie Eickelmann, Pascal Maas, Mathias Hampe, Kerstin Burkard

Final statement 136

HOPENHAGEN

Louise Cox

Forward

It is a great pleasure for me to write this Forward. It was so exciting to be part of the UIA Open Forum and the Winter School for students, under the headline of "Sustainable by Design", held for a week at the Royal Danish Academy of Fine Arts, School of Architecture, Copenhagen. There was great interest from the public and the programme was varied between presentations, films, exhibitions and debates, with the students working extremely hard to interpret "Sustainable by Design" in their projects on sites in Copenhagen, Denmark and L'Aquila, Italy. I enjoyed it all immensely. My personal thanks to everyone involved, you know who you are and have been acknowledged elsewhere in this publication.

Copenhagen was a great success for UIA, in spite of the weather and with no real opportunity to speak at, the United Nations Climate Change Conference 2009, COP15, either at a main session or a side event inside the venue at the Bella Center. At least we were interviewed at "…inSide climate change" Solutions broadcast on RTTC Climate Change TV inside the Bella Center, the world's first Internet broadcaster dedicated entirely to the climate change issues. The UIA Open Forum was written up in the COP15 Post Newspaper on 9th December 2009 under the heading of "A Call to Action from Architects", exposing our presence even further in Copenhagen.

The hardest thing for me to understand was the question from one of the delegates waiting outside the venue for COP15, asking me what are architects doing at COP15? Why are they interested in climate change? Is it really uncommon knowledge that what architects do can make or break a project depending if they think sustainably or not? The building industry is very wasteful, the design professions are profligate and we do not always consider how to make sure that the energy used in a building is related to the design that architects control, or that the materials are used, or reused sustainably, or that the siting of the building in its setting, whether in the city or the country, is sustainable or not, and sensitive to the built environment adjacent.
The most important thing of all is our "Sustainable by Design Declaration", officially launched on the last night of the Forum. The toughest part will be to ensure that each of our member sections can develop specific national plans with their governments, for implementing the "Sus-

Image left page:
photo Hans Drexler

tainable by Design Strategy". We have set up a special International project team to develop practical methods for its implementation.

The Dutch architects are starting to really think about alternative ways of living for the future in their Architecture of Consequence – Dutch Designs on the Future, an exhibition taken to the 8th São Paulo International Biennial of Architecture, Brazil in October 2009, and published as a book [1].

This parallels our Copenhagen "A Call to Action from Architects - Sustainable by Design" and gives very interesting insights into the future, by putting issues like Food, Health, Energy, Space, Time, Social Cohesion and Value Creation onto the Agenda.
The architecture in this exhibition presented solutions to questions that are much bigger than architecture and which are impossible to tackle without architecture. It is about necessity, architecture's capacity to resolve pressing problems. It is not distracted by the current market situation of whether there is work for architects or not, it is about a vision for the future and the focus that is required to keep it sharp.

This Dutch exhibition and book point out that: "…for far too long we have been privatizing the gains and socializing the losses, resulting in an intense crisis of the economic system" which has penetrated to all parts of the globe. "…it is evident in retrospect that architecture has contributed mightily to a spread of global crises. If architecture is to demonstrate its added value, and to shed its burden of guilt, it needs better arguments than its ability to offer shelter".
"A profession that bases its efforts to win cultural respect on mere spectacle is living dangerously. How can that pinnacle of unparalleled fame become an overnight symbol of cultural bankruptcy?" It reinforces UIA's stance.

We have to go back, look at our heritage and see how our forefathers solved their environmental problems, and they did very successfully in all climates. We need to look at accessibility for all; how older building stock can be reused and/or adapted for new uses; reduce fossil fuel consumption; look at renewable energies, wind, water, sun and the like, generated from the place not reticulated at vast expense from afar; the provenance of materials used and reused; the efficiency of the building process, using easily obtained local materials in preference to those coming from a long distance; and the future management of buildings.

The solution cannot dispense with architecture. The architect as sinner can only be redeemed by the architect as saviour, in the person of an architect who faces up to the challenge and is a sustainable visionary. Architects need to tap into their innovative inner thoughts, because we can offer the solution to these crises, in new ways. We always think laterally and this is the

[1] Architecture of Consequence – Dutch Designs on the Future, edited by Ole Bouman, NAi Publishers, Netherlands Architecture Institute, 2009, Introduction pages 4 to 9

time to do this and to be "Sustainable by Design". This is our global opportunity to show how innovative we can be for the benefit for all mankind, not for ourselves alone.

Our publication giving an insight into the Open Forum, will allow those not present in Copenhagen to feel that they are now part of it, by reading the précis of all the presentations here. Enjoy your reading and join your member section whilst it is bringing "Sustainable by Design" to your government, and add your ideas. You can read the UIA Copenhagen Declaration on the next two pages, and make your contribution to your government matter. We all have a responsibility to work together for a better future and to be "Sustainable by Design" and to present all our ideas together at the next UIA World Congress in Tokyo, Japan in September 2011.

Louise Cox AM, UIA President
14th February 2010

UIA Copenhagen Declaration
SUSTAINABLE BY DESIGN

The International Union of Architects is committed to making our world Sustainable by Design.

The Declaration of Interdependence for a Sustainable Future established at the UIA World Congress in June 1993, and the Declaration on Sustainability and Cultural Diversity approved by the UIA World Congress in June 2008, underline the following facts:

The building and construction industries, and the processes that create, modify and remove built structures, and, the whole-of-life operation of those facilities represent half of our opportunity to resolve today's climate challenge. In addition, the environmental impact of our food, water and waste handling systems is determined by the form and operating characteristics of our built environment.

In the 1980's the environmental focus was on energy and technical solutions. Now we know that technology alone cannot solve our problems; we must engage holistically to attain both sustainability and a high quality of life for all.

UIA Objectives

The UIA is committed to reducing, or reversing, the negative impact of the built environment on the global climate. Here at the UN Climate Change Conference in Copenhagen the UIA is initiating its Sustainable by Design strategy, which will lead to the adoption of practical programmes at the UIA World Congress and General Assembly in Tokyo in 2011.

The UIA will work to:

- Foster awareness and practical knowledge among architects, engineers, clients, investors, contractors, statutory authorities and the wider community on how building design, urban design and regional planning affect society's environmental impact and can contribute to sustainable development and redevelopment.

• Serve the Millennium Development Goals and acknowledge wisdom from the past to improve the quality of life for all communities through sustainable development, whilst remaining open to new ideas.
• Formulate, in cooperation with other stakeholders, global guidelines with clear objectives, criteria and methods for sustainable architecture and built environments.
• Establish Sustainable by Design as a universal architectural concept, by improving knowledge, strategies and methods across different climatic, political, social and cultural contexts.
• Require more and better education and training on Sustainability by Design within existing academic and professional development programmes, in accordance with the UNESCO-UIA Charter for Architectural Education.

SUSTAINABLE BY DESIGN

Architecture must utilise holistic, integrative methods from the smallest scale up through that of city and regional planning, never forgetting that buildings, landscapes, the natural environment and infrastructures are all essential elements in the continuous creation of a sustainable future. A careful and considerate design of forms, geometry and spatial strategies, married with the appropriate materials, equipment and functional distribution can reduce the use of resources, greenhouse gas emissions and overall environmental impact by 50% to 80%.

Sustainable by Design: Strategy

• Sustainable by Design begins with the earliest stages of a project and requires commitments between all the stakeholders: clients, designers, engineers, authorities, contractors, owners, users and the community.
• Sustainable by Design incorporates all aspects of construction AND future use based on full Life Cycle Analysis and Management.
• Sustainable by Design optimises efficiency through design. Renewable energies, high performance and environmentally benign technologies are integrated to the greatest practical extent in the project conception.
• Sustainable by Design recognises that all architecture and planning projects are part of a complex interactive system, linked to their wider natural surroundings, and reflect the heritage, culture, and social values of the daily life of the community.
• Sustainable by Design seeks healthy materials for healthy buildings, ecologically and socially respectful land-use, and an aesthetic sensitivity that inspires, affirms and ennobles.
• Sustainable by Design aims to significantly reduce carbon imprints, hazardous materials and technologies and all other adverse human effects of the built environment on the natural environment.

• Sustainable by Design endeavours to improve the quality of life, promote equity both locally and globally, advance economic well-being and provide opportunities for community engagement and empowerment.
• Sustainable by Design recognises the local and planetary interdependence of all people. It acknowledges that urban populations depend on an integrated, interdependent, and sustainable rural-urban system for their life support systems (clean water and air, food, shelter, work, education, health, cultural opportunity, and the like).
• Sustainable by Design endorses UNESCO's statement that cultural diversity, as a source of exchange, innovation and creativity, is as necessary for humankind as biodiversity is for nature.

Sustainable by Design: Implementation

The UIA Council has extended the Architecture for a Sustainable Future Work Programme's terms of reference, by establishing an international project team to develop practical methods for implementing the Sustainable by Design Strategy. The UIA is working directly with all of its 124 member countries to develop specific, national plans for implementing the Sustainable by Design Strategy. The Sustainable by Design Mission will then be launched at the UIA World Congress in Tokyo in 2011, and submitted for formal adoption at the 2011 UIA General Assembly.

Copenhagen, Denmark
7th December 2009

Sebastian El khouli

Introduction

BACKGROUND

The COP15 conference was the fifteenth Conference of the Parties (COP) under the United Nations' Climate Change Convention. This conference took place from 7th December to 18th December 2009 at the Bella Center, Copenhagen, Denmark. UIA had official observer status at the conference from the UN and took the only possibility to inform the delegates of the conference about the role of architecture in fighting climate change and the will of the architectural community to face their responsibility, with an Internal TV interview at the Center, given by the UIA President, Louise Cox, on 8th December 2009.

Because the COP15 was a closed event targeting a "non-architect" audience, UIA responded to the great interest in sustainability within the architectural and local Copenhagen community with two parallel events under the headline "Sustainable by Design" - an Open Forum for architects, students of architecture and the architecturally interested public and a Winter School for students from different International architecture faculties, that took place between the 7th and 12th of December in the School of Architecture of the Royal Danish Academy of Fine Arts.

ACTIVITIES

As part of the UIA Open Forum "Sustainable by Design" the UIA Work Programme Architecture for a Sustainable Future [Region I] organized several activities together with the participating Universities – the Royal Danish Academy of Fine Arts, Copenhagen, Denmark; the Technische Universität Darmstadt, Germany; La Sapienza, Rome, Italy and the Münster School of Architecture, Germany, and the cooperation partners – architekturclips.de, the Architects' Association of Denmark and VELUX.

These were:

- A digital library with films, projects, links and information about sustainable architecture.
- A film loop with 30 short films about architects and architectural projects that focus on sustainable design strategies.

• The Exhibition "Global Award for Sustainable Architecture™ in cooperation with the "Cité de l'architecture et du patrimoine" of Paris, France"
• A series of daily events with lectures of international lecturers, short films and debates.

During the 6 days of the Open Forum over 20 lectures were held and 15 architectural short films were shown to the public. Numerous architects, students and guests visited the exhibition, our digital library and the film loop or followed our blog via the UIA COP15 homepage or Twitter. Our media partner architekturclips.de produced two short films about the Open Forum and the Student Workshop and additionally 6 interview films: "5 questions about Sustainable Architecture" with internationally known architects like Anna Heringer, Jan Gehl, Manfred Hegger and Philippe Rahm. Over 40 international students worked very successful for 5 very intensive days on a future development concept and strategies for Copenhagen and L'Aquila. During the whole week, we had very intense discussions about the possibilities, chances and responsibilities of sustainable architecture strategies.

This publication is part of the documentation of the UIA Open Forum and was authored by all the participating Universities, partners and lecturers. We would like to thank everyone for the enormous efforts that were necessary to organize the event and this publication:

Thank you to everyone from the Work Programme "Sustainable Architecture for the Future" – Albert Dubler, Christiano Lepratti, Guendalina Salimei, Nicoletta Trasi, Thomas Haas, Tamara Horbacka, Vibeke Gruppe Larsen and Georges Billot – that they were all willing to spend so much time in the preparation and realization of our event during the 9 months before and the week in Copenhagen. I really hope, that we all continue this work.
Thank you to the UIA Secretary General Jordi Farrando, the UIA Secretariat in Paris – Nicolas Jelansky, Catherine Hayward, Jean-Christophe Polger and Paula Liberato – for making this event possible and for helping us with the agreements, the declaration and the Press Releases. And to all the other UIA Officials and Region I Representatives such as Antonio Riverso, Mauro Latini and Ian Pritchard who were willing to support us with the money from Region I.
Thank you to Louise Cox for her support and presence during the whole week and for working on the declaration so hard.
Thank you to BAK – Claudia Sanders and Tillman Prinz – for helping us very fast, and for being uncomplicated and sympathetic, whenever help was needed.
Thank you to AA – Annette Blegvad, Annette Holek, Anne Barbra Hald – for their PR work and their company in Copenhagen, and for letting me have a look inside the heart of COP15.
Thank you to the School of Architecture in Copenhagen – Winnie Friis Møller, Helle Bøcken Wikke, Brian Edwards, Torben Dahl, Frans Drewniak and Ola Wederbrunn– for making this event during this already very intense week for you possible. You were fantastic hosts and I always

appreciated that you were gentle but quiet clear in your positions and opinions to me.
Thank you to Isabel Schmidt, Fred Plassmann and Astrid Vogelpohl - not only for the work during the week in Copenhagen - but also for the tremendous work before the Open Forum in preparing all the films.
Thank you to the whole teaching staff – Hans Drexler, Mirka Greiner, Brian Edwards, Frans Drewniak and Ola Wederbrunn, Stefania D'Alessandro, Laura Guerrini, Italo Iacobucci, Fabrizio Zonetti, Teresa Granato, Mario Ferrari, Vincenzo Bernardi, and again Guendalina Salimei, Nicoletta Trasi, Christiano Lepratti – thanks to your efforts the students designed really great projects in only 4 ½ days.
Thank you to VELUX – Lone Feifer, Mette Nimb, Per Arnold Andersen and the others – who invest so much in making architecture more sustainable.
And last but not least I would like to thank Dominique Gauzin-Müller and Jana Revedin for their great moderation and all the contacts they established, and for the Global Awards exhibition, and for supporting us and our common aim for free.

I really hope that every one of you was pleased or maybe even satisfied with our work. And I hope that our Work Programme will be able to prepare an event maybe even bigger and better and more inspiring for the UIA World Congress in Tokyo, Japan in 2011.

Sebastian El khouli
Director UIA Work Programme
SUSTAINABLE ARCHITECTURE FOR THE FUTURE [Region I]

Sebastian El khouli

Sustainable By Design.
The responsiblilty of the architect

Sustainability is far too often seen as a duty. It is linked to terms like reduction, restriction and mitigation and still a big part of the architectural community is afraid of losing a part of their creativity and freedom needed for the architectural design and planning process. While the building industry has already detected the label sustainability as a selling point, architects are often kept in self-referential discourse that leaves out not only the ecological and economical context, but also the social and cultural aspects and challenges of today.

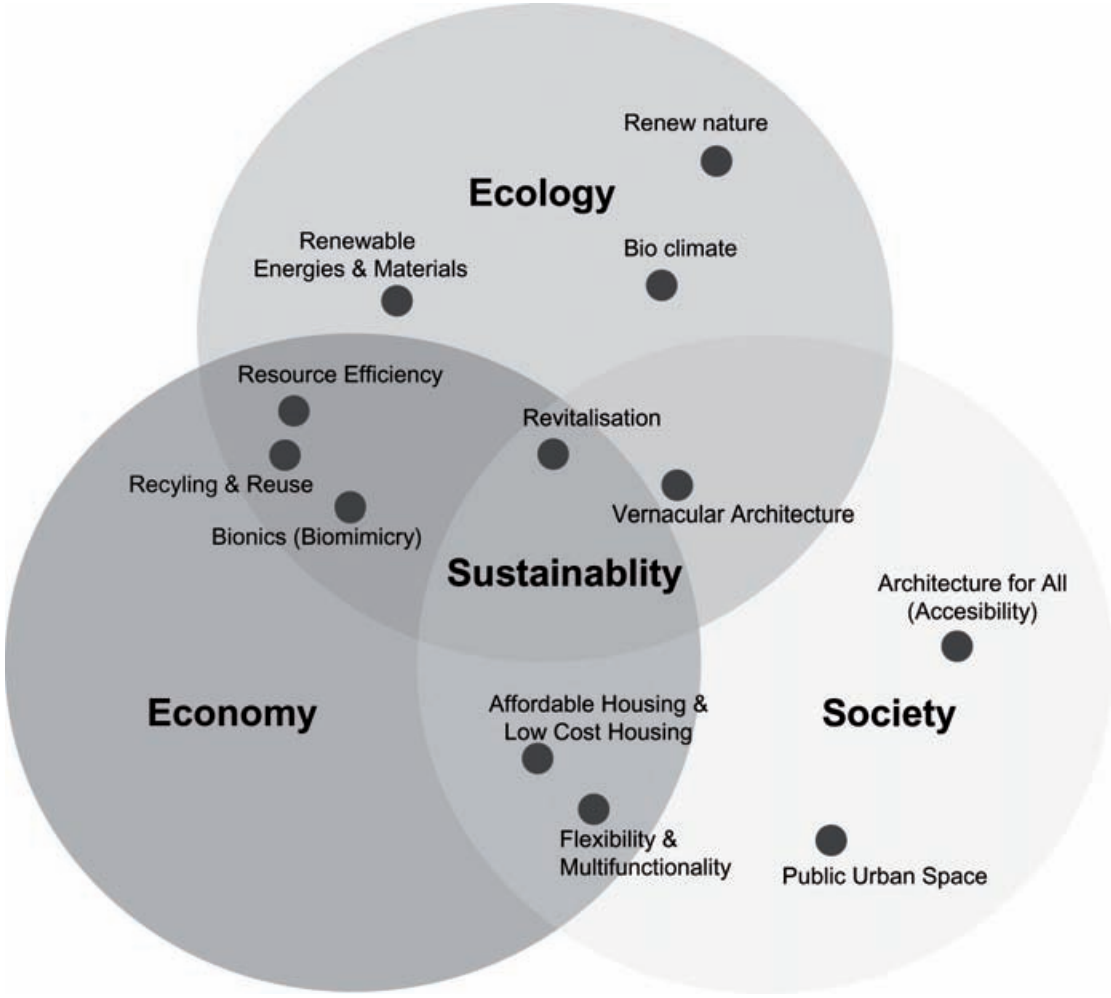
CATALYSTS OF THE PARADIGM SHIFT

From our point of view, sustainability is much more a challenge and a chance than a duty. For the first time for nearly a century architects have the possibility to be the catalysts for a real paradigm shift. Therefore it is necessary to widen their views instead of just focusing on innovation and high-technology. We have to recognize the cultural and social dimensions of sustainable architecture and their importance, as well. We have the possibility to incorporate other aspects into the architectural design process, that have been underestimated for too long – buildings, that refer to their climatic, ecological, social and cultural context. Holistic architecture - people oriented but without neglecting the interactions with their environment. Therefore it is necessary to acknowledge that the challenges and the framework are not the same in different situations, that there are no recipes for sustainable architecture, and that even in a globalized world, architecture has to become local again.

SUSTAINABLE DESIGN STRATEGIES

The "Map of Sustainable Design Strategies" shows the different methods, aspects and strategies for sustainable architecture and their relation to the three columns of sustainability – ecology, economy and society. Most of the topics already refer to more than just one of the overall goals and an intelligent and specific combination of different strategies is frequently possible. Depending on the existing context, it is necessary chose the right strategy. Therefore a profound analysis of the situation is implacable. Aspects like the traffic, the offer of renewable energies, the existence of energy networks and other resources like water and local or reusable

Image right page:
sustainable design strategies


Renew nature
Ecology
Renewable
Energies & Materials
Bio climate
Resource Efficiency
Revitalisation
Recyling & Reuse
Vernacular Architecture
Bionics (Biomimicry)
Sustainablity
Architecture for All
(Accesibility)
Economy
Affordable Housing &
Low Cost Housing
Society
Flexibility &
Multifunctionality
Public Urban Space

building materials, the economical and demographical development as well as the existence and quality of affordable private living spaces and public urban spaces have to be incorporated in the analysis to find out the key aspects with the highest leverage. The design process then has to integrate and address these aspects and to use the existing synergies to generate a project as a dynamic, flexible and self-sustaining system out of this context. These strategies can be summarized under four headings:

Resource Efficiency & Renewable Resources
Be Sustainable by Design by reducing the energy demands for heating, cooling and artificial lighting with an efficient and intelligent building design. Implement energy-networks to balance different local energy demands and offers. Increase the use of renewable energies and materials to minimize the embedded energy, the energy consumption and CO2 emissions of the build environment.

Public Urban Spaces & Accessibility
Be Sustainable by Design by rediscovering the quality and necessity of public urban spaces with attractive offers for everyone. Transform the city into a pedestrian paradise, enforce the use of public transport, raise the percentage of people using bicycles, and preserve the city to stop it becoming separated and gated communities.

Recycling & Revitalization Strategies
Be Sustainable by Design by thinking and designing buildings from cradle to cradle, by inventing flexible structures for the different lifecycles of the building, by recycling and reusing buildings and building materials, by revitalizing brown field areas and increase the density of the urban sprawl, by greening industrial and housing areas in shrinking cities.

Vernacular & Low-Cost Architecture
Be Sustainable by Design by refining vernacular architecture typologies - Use the primary building design and material used to reduce the consumption of energy and avoid energy losses or overheating. Give homes to the increasing number of the poor worldwide by inventing Low-Cost Architecture typologies. Preserve the cultural heritage and enforce regional structures and identities through incorporating the important stakeholders like the users and the local residents into the design process.

The following articles in this publication all focus on one of these four main topics in relation to the approach of a holistic architectural design.

RESPONSIBILITY OF THE ARCHITECT

The paradigm of a sustainable development will only become set up for the masses, if we can show to people that they are responsible for the success of our mission - and not only to the politicians, the industry or the architects. But we, as the architectural community, are responsible for designing and building good examples, for creating positive images of this other way of thinking and acting, and for taking on this new – or maybe old - but different attitude.

Sustainability means responsibility – not as a burden but as an opportunity and a challenge to design and build our future for everyone.

Be Responsible for the Environment by reducing the input of resources like energy, water or land, and also the output, as the production of waste or emissions.

Be Responsible for the Economy by contributing to the innovation of the building industry and the goals of the investors, as well as by designing affordable housing and houses.

Be Responsible for Culture & Society by optimizing the impact on the public space and the social and cultural context and for the quality of the designed space.

Lone Feifer

A building needs daylight to be sustainable by design

The VELUX Group was cooperation partner for several events and side events during COP15. Two of these events were set up by UIA: a workshop and an open forum titled "Sustainable by Design".

In the western world, we spend 90% of our time indoors but 30 % of our existing buildings have poor indoor climate. This issue must be solved in close cooperation between good architects, engineers and building companies. Our day-to-day surroundings need to become not only healthier, more climate-friendly and energy-saving they also need to contribute to better quality of life through attractive and functional design. In these aspects daylight has a role to play. The better we use daylight and sunlight in our buildings - both as a source of light and heat - the less energy we will need to use for lighting and heating.

It is clear that new energies and advanced technologies alone cannot solve our climate problems. Only integrated design and planning strategies will allow us to attain sustainable development with a high quality of living. The VELUX Group believes that architecture has an important role to play in the aim of solving climate change. And as the VELUX Group's products plays an important role in the buildings of the future, we need to engage in a productive dialogue with architects around the world. In recent years, we have extended that dialogue to include architecture students through workshops like Winterschool/Open Forum and through the International VELUX Award. And we wish to thank UIA for a good cooperation. It is our common responsibility that the homes and workplaces of the future have the quantity and quality of daylight we need and so that we exploit the passive heating from windows to limit energy consumption, without compromising indoor climate or quality of life", states Jesper Salskov Jensen, managing director VELUX Danmark.

Exit pavilion – VELUX House

During COP15 the VELUX presented the VELUX House to the delegates of the UN Climate Change Conference as an example of sustainable living. Most of the delegates walked through the VELUX House every day when leaving the conference and then got a first-hand experience of how sustainable architecture and design can play an important role in the worldwide efforts to overcome climate change when it comes to addressing the fact that buildings currently represent approximately 40 % of global energy consumption. The VELUX house presents a holistic and experimental approach to future housing and sustainable living. The house is constructed in order to achieve the best possible balance between energy efficiency, indoor climate and the environment – for the benefit of the climate, the economy and the health of human beings. The house communicated the message that the sun should not just be seen as a problem in terms of global warming – it is a free source of energy, it is also very much part of the solution. The daylight and energy of the sun can be optimally utilized in new buildings as well as when renovating old buildings.

Green Lighthouse – sustainable by design

Another beacon for sustainable design during COP15 was Copenhagen University's new climate friendly building 'Green Lighthouse', which is Denmark's first public CO2-neutral building. The house is actually a lighthouse in more than one sense. It was a lighthouse of CO2-neutral buildings up to COP15. It is still a lighthouse of efficient public-private cooperation; and last, but not least, it continues to be a lighthouse for the Faculty of Science at the University of Copenhagen, which now have its student services consolidated under one roof.

Green Lighthouse's pivotal point and primary energy source is the sun. The unique design involves the optimal use of daylight, an automatic ventilation system and an automatic cooling and heating system. The orientation of the building, with regard to the sun, means that it can take full advantage of solar energy. The house is 950 m2 and is constructed according to the active house principle, meaning that it generates energy. It has its own energy supply containing a combination of solar energy, heating pumps and a district heating never seen before. Green Lighthouse is an energy-efficient building of high architectural quality, allowing a great amount of daylight to enter. The natural ventilation assures plenty of fresh air and a healthy indoor climate. Through energy design and visionary architecture, the building's energy consumption is reduced by around 3/4 compared to present building standards. The house demonstrates that we can construct sustainable buildings that are climate friendly and functional at the same time with the standard building components that we already use today.

The parties involved in the project are the Danish Ministry of Science, Technology and Innovation, the University of Copenhagen, the City of Copenhagen and VELUX and VELFAC.

RTCC

Under the theme of "Sustainable Living – Sustainable Building", the organization Responding to Climate Change (RTCC) hosted a COP15 side event, sponsored by the VELUX Group. Solar energy expert Richard Perez told the invited delegates and media how the sun is actually the only energy source that can produce enough energy to cover the world's energy requirements on the long term in a financially viable way. Highlights and interviews from the event were broadcasted internationally.

Apart from focusing on CO2 emissions from the VELUX Group's own production, VELUX also works intensively on supplying products that help others to reduce CO2 emissions from buildings. With our products and the way they are used, we wish to contribute to more sustainable buildings.

You can read more about the VELUX Group's involvement in energy renovation in cooperation with the municipality of Copenhagen, e.g. Osram Culture Centre and the Guldberg school. You can read more about the VELUX Group and sustainable living: http://www.velux.com/Sustainable_living/default.aspx and ModelHome2020: http://www.velux.com/Sustainable_living/Model_Home_2020/

Note: The International VELUX Award is now open to students of architecture from all over the world. Registration closes on 1 March 2010. The deadline for submitting projects is the 3 May 2010. The winners will be announced and celebrated at an Award event at La Rochelle in France in October 2010.

Note: The VELUX Group works steadily towards its own CO2 reducing solutions. The Group has set the goal of reducing the global CO2 loads by 20% by 2012 and 50% by 2020, compared to the 2007 level. To achieve this goal, the company is making investments of up to DKK 400 million over the next few years in a series of energy-improving initiatives.

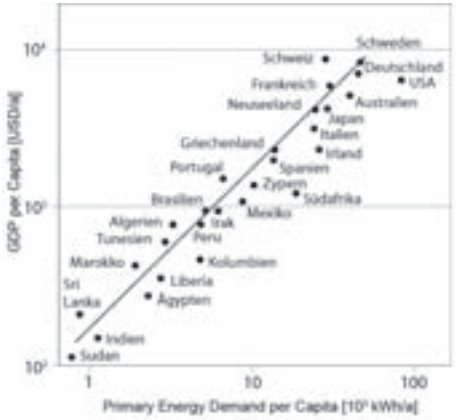
Image left page:
Green Lighthouse by night
photo Adam Mørk

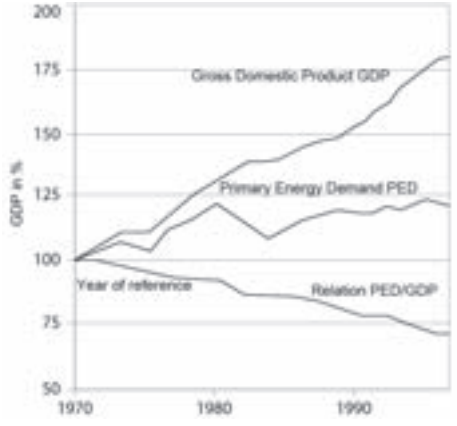
WWF
for a living planet
Panasonic
ideas for life

UIA Open Forum

Sustainable Design Strategies

photo Hans Drexler





Graphics above:
Relation Energy Demand/GDP and Development Energy Demand/GDP, Sebastian El khouli

Sebastian El khouli

Resource Efficiency and Renewable Energies

The Light map of our globe not only shows the energy consumption, it also shows the differences between developed and third world countries. The use of energy still is a synonym for wealth, even if this relation is existing no longer. While until the 1980's the parallelism of income per capita and the energy consumption was considered, the situation in the most developed countries has changed during the last 20 years. Energy-efficiency has relieved the consumption of energy as an indicator for wealth. At the same time we have to consider that buildings are responsible for 40% of the global energy consumption and 50% of the materials world wide are used for buildings. But meanwhile the efficiency in other industrial sectors has risen up to 50 times during the 20th Century; the energy-efficiency of buildings has stopped on a very low level until the 1970's. With the first energy crisis in 1973 the building industry had to think for the first time since the beginning of the industrialization of ways to make buildings more efficient. Today we are able to reduce the energy-consumption of new buildings up 90% in comparison to the existing building stock. But efficiency – or in other words "to do the things right" – is just one and the most obvious possibility, to reduce our resource consumption. We have nearly balanced the energy-consumption in the building-sector through raising other factors like the size of the living space per capita or the distances we pass every day for going to work and doing our shopping. To really be able to reach the goal of an overall reduction of our energy consumption and CO2-emission, efficiency will not be enough. Instead of just being efficient it is necessary to be effective - or in other words, it is necessary "to do the right things". So the formula for a real change towards the use of our natural resources would be:

[EFFICIENCY + CONSISTENCY] X SUFFICIENCY = EFFECTIVENESS

EFFICIENCY = MINIMIZE RESOURCE DEMANDS

The easiest way to reduce our energy and resource consumption is: to minimize the demands of buildings; a higher efficiency because of a rational resource transformation and use – the same service with less resource use.
Meanwhile the methods to make buildings more efficient are well known: Reduce heat losses

through the building envelope and enhance the passive solar profits in cold climates; prevent overheating and good natural ventilation in warm climates; a high natural daylight level and use of efficient artificial daylight technologies; high efficient techniques to minimize transformation losses; reduction of the use of building materials with intelligent lightweight structures.
But efficiency is a very technical and scientific approach, based on the conviction, that we can solve every problem with innovation and technology. It does not query our strategies and habits, the way we abuse the environment and our natural resources. To achieve a social-ecological modernization of our society we have to change our approach towards the sources we use.

CONSISTENCY = USE OF LOCAL RESOURCES

Forming of closed resource circles through the intensive use of renewable energies and the separation of material flows in the building design. The potential of renewable energies is inexhaustible and is sufficient for a multiple of the actual world wide energy demand, but only a very small part of it is used so far. To be able to use the local energy offers effectively it is necessary to analyse the local offers and demands very precisely. And to also think of contemporary expressions for a sustainable building design in using renewable materials and through the integration of solar technologies in the building envelope – but with due respect for the build context.
But probably neither the reduction of our energy demands nor the efficient use of local resources alone will be enough to cope with the actual challenges.

SUFFICIENCY = ADAPT REQUIREMENTS

Change of life- and consumption habits in self-responsibility; the renouncement of energy-intense products and services. Calculations of the Federal Agency of statistics in Germany have resulted that in the decade between 1995 and 2004 we have nearly compensated the reduction of the energy-consumption in the building-sector through a higher level of energy-efficiency. A study of the Swiss Federal Agency for environment pointed out, that the living space per capita and the place of resident belong to the most important factors for our environmental impact.
The challenge for the architectural community is to invent new concepts that are able to convince with the quality of space and not just with the quantity. Density without the loss of intimacy. Family-friendly and mixed inner city dwellings. Flexible building and living concept that can adapt to different needs and demands of the users - from daily or seasonal changes to changes of use. An architecture that does not foster isolation. Small is beautiful. Integration instead of separation.

Architects misunderstand the possibilities of this change far too often. It is a mistake to hand over these challenges to engineers and energy consultants. The architectural design is the key for a sustainable building. A resource-responsible design is more than just using heating pumps and pv-cells – it requires a different attitude and architectural expression.

Image above:
More than good space, Forum Chriesbach,
Bob Gysin & Partner BGP, photo Roger Frei, Zürich

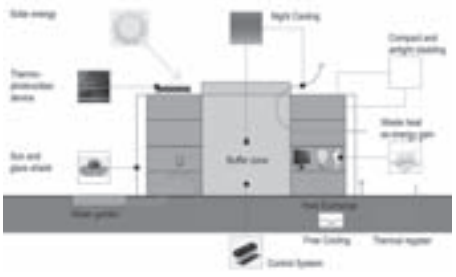


Image above:
The building as a system, Forum Chriesbach

Image left page:
A small and flexible powerstation to live in –
Solar house, FG ee, TU Darmstadt,
photo Leon Schmidt

Image last page:
Sustainability made visible,
Elbtorquartier HafenCity Hamburg,
Bob Gysin & Partner BGP

Guendalina Salimei

The new squares of today and tomorrow

Collective spaces are, by their very definition, an expression of social changes as well as of the time features and the contemporary ways of life.
Such places are the shopping malls, airport terminals and stations, convention- and cultural-centres, hotel lobbies and offices, petrol stations, museums and many more.

"Although dominated by empty spaces, they now tend to be wide enclaves with large covered spaces and rather than as representative places, they actually present themselves as 'urban scenes'; theatres (i.e. location) of highly significant events, they can be treated as "scenic images" that don't aim to participate the city around, but rather to be themselves small towns, small worlds of their own, of elsewhere".

Contemporary collective places are undergoing a major transformation also determined by new ways to experience recreational and cultural activities. Once they've lost their role as representatives of given values as well as their homogenizing character bearer of a single identity, these places must respond to the needs of society by provoking tension, expressing suggestions, and above all by being open to multiple uses and meanings, in order to be accepted and lived by the community.
The sites fairly playing the role of what we may call 'the new centres of the future' are those that give voice to the multiple identities of a people who cannot recognize itself any longer in the traditional social class system, but is rather detectable in the shape of small groups, enclosed circles fragmented to express the very individual.

Unlike historical squares traditionally in a relation of spatial continuity with the urban framework, these sites no longer interpret given values, but they rather represent themselves above all: the eye is no longer supposed to watch and collect a single vision of the entire space, but it is more likely to get bewildered almost losing its sense of direction. Thus these sites can evoke emotions and represent places where one can also enjoy new psychophysical, educational and meaningful experiences.

These new centres of the future are gathering places defined by fluid, dynamic spaces, likely to be experienced in different ways, in different seasons and different times of day. They are places where citizens may no longer find given values, cornerstones of their existence - such as those typically expressed by houses of worship, centres of political and administrative power, markets and traditional museums - but rather the chance to walk and live emotional experiences, in order to learn to linger among several possible routes, starting from the known ones to those leading to unexplored feelings.

Due to their function as collective places, of attractive and aggregating poles with a huge charge of energy, they can also lead to significant changes in the neighbourhood in the sense of urban re-qualification. It follows that some parts of the city, as close to nodes of exchange and therefore easily accessible, tend more than others to become powerful attraction poles, that involve people through improvements in the surrounding area, suggestions of possible solutions and the shaping of new identities for the parts of town that have none.
These places have, in short, the power to bring on a contemporary level the role of the traditional public squares by integrating past and present achievements.

A definition of public space is increasingly difficult for architecture scholars trying to define urban order through the coordinates visible in-between the urban built space and the social space, but what they eventually find is nothing but absence, repetition and fragments. For the majority it's almost impossible to recognize those "places" as public spaces. Undoubtedly, if public space is defined through the traditional - steady and physical - categories of the past such as the agora, the forum, the square and the street, the new places are to be considered pretty unsatisfactory despite the crowd they constantly attract. However, if we propose a more flexible definition, then both "public" and "space" will be concepts constantly redefined and negotiated with reality, "and we can read the existence of these new areas as a proof of the non-disappearance of public spaces as well as the emergence of a new kind of public domain not fully understood yet".

By reversing the traditional logic of architecture, interior become the core of the building and allows its functioning and placement in any context, from the urban centre to the open countryside. Frederick Jameson has explained how these spaces, though sometimes private but used for public aims, constitute a new category of social space, somewhere between the private space of family life and the public spaces of a collective sphere. They are characterized by a complex mechanism of exclusion as well as a strong trend towards inclusion. By opening access to huge crowds, they have "replaced" traditional public spaces: airports serve as entrances to the city and shopping malls are increasingly being assimilated to town squares. We're now witnessing the most significant transformation in public places.

What are these places, as they appear in the contemporary city and what role do they play? What are their main features? Where in the city do they lie? Are they all external, peripheral, do they live on the edge of the cities as places that actually replace the no longer existing traditional suburbs? Or are they also created in downtown fulfilling the space left empty by discontinued activities? Why is their role no alternative to the square of the past but still a valuable interpretation of the squares of the future?
The meaning of these places is unique, since they give voice to the needs and attitudes of a constantly changing society and they express the several cultures our contemporary society is made up with.
Flexibility and adaptability are the key words of these spaces that express the very present or rather all of the emotions connected to a finite, corporeal perception of time. The show as a simulation or interpretation of reality, the game as an expression of free time touching people on an emotional, intimate level, are important features of these spaces that can no longer be expression of universal values, but rather one among many visions of life. They provide possible impressions, suggestions, dreams and thus also 'consolation' to the individual discovering new pathways of their existence.

They become the place where the individual can try different experiences, providing a concentration of collective emotions helpful to reflect on our own lives and almost taking back the essential function originally held by historical squares and today no longer matching with the common use of the word 'square'.
The novelty of these phenomena is actually revealed even in the very difficulty to name them according to the vocabulary of architecture. Names should reveal the interpretation and somehow the fate of things. Here we are facing the challenge to find appropriate names to describe the new urban public places and the risk is to end up using a vague terminology in order to describe such complex phenomena.
The problem is encountered immediately when the term piazza is used, since it has now little or nothing in common with the concept of square of Italian piazzas. The term 'square' has been indeed overused and has come to designate any open space in the urban framework, even if it's a just a roundabout or an empty space in the sense of free from edifications.

The uncertainty in terminology that has arisen is undoubtedly a sign of more serious difficulties of interpretation, which lead to the necessity to expand the notion of urban space with new categories that go beyond any predetermined referrals.

Even the adjective 'collective' used to define these places, does no longer express any membership of people, groups or centres of interest, but it rather encompasses either the multiplicity of its uses or that of the people converging.

Image left page
Redevelopment of waterfront as public space, Naples, T-studio project

Nicoletta Trasi

Recycling and Revitalization Strategies

The different ways of revitalization: reinvented landscapes, restored landscapes

The need for a new concept of landscape as it was outlined by Gregotti in the 60s, went to the revaluation of the fundamental role played by human activities in relation to the construction of the "form of the territory", with the immediate implication of extension of traditional disciplinary issues on which was based landscape architecture.

At a distance of forty years, today there is the problem, as it were the reverse, namely the need for retraining of all those areas so far utilized, and mostly abandoned by man, the desperate attempt of man to repair to fragile ecological balance, now partially compromised.

Even starting from the belief that all the natural morphology is a communication system can take many suggestions for the redevelopment project, now those shares are broadly grouped into two addresses, which constitute the horizon of theoretical and practical utility of these types of interventions in the landscape , two perspective.

A perspective that I have called aesthetic, which mainly arises from the fact that the most frequent regeneration projects in such areas are intended for parks and gardens, as claimed by M. Desvigne "... the lack of any explicit feature - a park or garden is no good - they emphasize the size and accessibility of purely aesthetic purposes ... " (M.Desvigne, *Trasformazioni indotte*, Lotus 87, 1995.) and an ecological perspective, that relying on specific theories, and the founding of many redevelopment projects of the space altered.

The two domains of investigation that have most enriched the discussion and the production of contemporary landscapes that are open and the ecology of contemporary art, primarily through the Land Art

The birth and development of ecology has emphasized the importance of interdependence of operations of the living. More broadly the reflection on the landscape has fed this need for mutual relations. Some projects are contemporary landscape, while still covering only ten square meters, invest one hundred others are places simply derived from their environment (geographical, architectural, structural ...); all somehow try to organize systems of formal report.

On the other hand in their work, artists from Land Art showed us that action sometimes very

least, could bring out the qualities of a place: their intervention is no longer there for himself, but as a means to reveal a quality already present. Even if the sites proposed to the reflections of the landscape does not have the status of clear plastic deserts of Richard Long, in landscaping projects to large scale, an attitude of this nature has become essential.

"How to do a negative something positive? The way out is poetic" (B. Lassus, *Les continuités du paysage*, in: Urbanisme 250/1991) says Bernard Lassus, referring to those places where it is not always possible to return to the previous situation (such as quarries for example) and for which remains is the reinvention of the existing criticism. This brings a sense of place, both the passer that the inhabitant is a dominant theme in the practice and theory of the French landscapist.

This design approach, as applied to landscapes altered means not just reading the site, but the visitors make it clear to his character, often forgotten or overshadowed by recalling items injury. This is why I insist on the work of reinvention, the representation of the place that it once again, and renewed both for residents and visitors alike.

And it is in this sense that I mean the reinvention of places we need to think and act relying on those values lived whose actual meaning, once clarified, will perhaps be the first matrix of their reinvention.

The underlying theme of the "landscapes reinvented" is just a deep understanding of the sites in question, the confidence in the operational model of the culture of that area, interest in the invention, imagination, poetry, as well as the science of place, but above all faith in a response to poetry, shared by residents and visitors to the places designed, above and beyond a human need for its healthy and clean.

Reinventing a place has become a characteristic of all the great landscape designers, due to the obvious fact that today's employment opportunities in the territory are partial and mostly change, as the major infrastructure have already taken place, the work on the recycling of industrial space in disuse is increasingly urgent and essential, and so the soil remediation, or land reclamation work in which they become occasions for the reallocation of meaning, sometimes finding the lost sense, become the new themes of the project.

Excluding those cases of revitalization is purely natural, I'd rather move the discussion on those projects of a mixed, so to speak, that is those cases where the nature was in some way helped, addressed of this tendency to take back land .

These cases I have defined "environmental restoration" here in some way is a project, an invention even if the value inherent in the operation of composition is lower than the first group. In the first case it comes to operating in more scenic, mostly formal manner, while the second means to operate in natural terms, then with more structural objectives that perception.

In this second group of projects, we can speak of recovery and not of restoration because you can not bring the area interested in the original situation. Typical is the case of the quarries, where the removal of material change, the potential of sites and makes it virtually impossible

to restore the original condition. The project here will be of real environmental recovery and will find ways not directly related to the state of affairs preceding the opening of the quarry but consequential to the presence of the new situation: an example is the creation of wetlands using the digging of pits materials alluvial plain.
The thing I want to emphasize is that both the first group than in the second it is always a "transformation" of landscapes, and an important concept is the consideration that it is better to design a good transformation of the landscape rather than attempting forced restorations.
Bernardo Secchi remarked with a peculiar paradox of paradigmatic: "maybe the whole environment should be designed if you would be preserved."
In fact, I would add, to entrust the work of "preserving" the conduct project ceases to be a paradox at the very moment that you identify all the landscape and environmental values as a system of interdependencies in evolution and take note of the imposing degenerative stress induced on it by human activity.

Image left page:
Michael Heizer, Rift, 1968,
Nine Nvada Depressions #1

Christiano Lepratti

Vernacular and Low-Cost Architecture

Image above:
traditional house in Yazd, Iran,
photo malearc

Obsolete globalisation of the International Style

The idea of the Modern Movement to establish an International Style which would guarantee better life to everyone through higher dwelling standards, more sunlight, air and ventilation in every part of the earth, was an expression of faith in the technological progress, as an unstoppable force that would enhance life conditions for everybody everywhere.

Humanity would be able to improve and progress limitlessly just counting on its own forces by subordinating natural to human values. The theory of the International Style considered genius loci, and therefore any relationship of architecture with its natural and historical context, obsolete and anti-modern. Reproducing the same architectural shapes everywhere resulted in a breach of the balance between human and natural space. The architectural break with nature followed the same principles of the industrial revolution when it disconnected the economy of man from the economy of nature. The utopia was to create a space for humans made by humans with a presumable total control of nature.

The criticism of the utopia of the International Style made by the Postmodern architectural movement referred to its architectural language, in particular its lack of interest toward geo-historical references, social forms of dwelling and their semantic values. Nowadays the criticism of globalization (which somehow represents the same revised and modernized utopia) is bolstered by the consciousness of limits, the importance of circumscribed economies, the importance of preserving diversity and the limitedness of natural resources. This criticism took its origin in different fields of study but involves architecture very closely.

Technological optimism

The main development factor of human progress since 1800 has been the incredible speed of technological achievements. From the energy crisis onward, opinions divided between those who believe the future lies in further technological development and those who relate climate change to the model of progress itself. Although his Economic Possibilities for Our Grandchil-

dren was written in 1930, John Maynard Keynes can be considered a member of the latter group when he states the necessity of a shift in perspective through a radical moral and political change. In the Meadows Report, commissioned in 1972 by the Club of Rome, an MIT team of experts directed their criticisms against "technological optimism" and all those researchers who considered scientific development and its applications as the solution to all the problems concerning the scarceness of natural resources.

Low and High Tech

The architectural debate, although less polarised, shows the same contrapositions - the supporters of high tech on one side and the supporters of low tech on the other. Both approaches aim at finding solutions to the problem of the limitedness of resources through a very high level of know how. High tech solutions are often complex and sophisticated and imply high costs in terms of emissions and resources (just think at the development of the space pen by NASA versus the simple use of a pencil by Russian cosmonauts). This is one of the reasons why low tech applications are found especially in poor and less developed countries. Architectures built with low technologies need simple maintenance, can be repaired on site, have no difficulty to find spare parts and therefore last longer. The better sustainability of these characteristics versus high tech products is evident and piqued the interest of richer and more developed regions. If architecture returns to focus on the cultural, economical, social and climatic context, design culture will develop a longer lasting and deeper understanding for its future.

Darwin and the architectural type

Therefore the concepts of reuse and transformability of traditional building types have a deep interest even for rich regions. The definition of spatial shapes and building techniques developed over the centuries which became set in "architectural types" has been a long process, and recalls very closely the process of natural selection described by Charles Darwin. Traditional buildings are the result of a long transformation and adaptation to local features of dwelling, social customs, cultural history, climate and geography. For this reason an architectural heritage is a testimony of the cultural history of a place and its people's social and behavioural habits. The architectural type is a document, in its shapes and evolution, of the history and culture of a population.

In the architectural type each feature is a response to local conditions such as materials and techniques, and in turn it affects the visual relation of the buildings to their context and their shape. The choice of the best material to build a house is made according to its physical characteristics, its availability on site and its economy. For this reason the city of Yazd in the Iranian desert is built with mud, some villages in the German Pfalz with sandstone, those in Swiss Ticino in stone, those in Nagaon (Mombay) in wood and the villages of Burkina Faso with adobe.

The use of local materials and resources saves transfer time and costs (from production to building sites) and it means economy in the qualification of workers, who learn traditional local techniques. The result is that architecture built with this premise appears closer to the site even in its gestalt. Towns in the desert seem to have been modelled by the desert, stone villages on the mountains look like rocks formations and wooden houses like an extension of the forest.

Low cost from function to necessity

Low cost building is a moral imperative in this phase of human history characterized by fast demographic growth and accelerated urbanization. Several suburbs of rapidly growing megalopolises such as Karachi, Shenzhen, Cairo and Sao Paulo already look more miserable and horrifying than the working class suburbs described by Charles Dickens. The applicable strategies are not many but they could be very effective. Among these:

- The self-building strategy such as that used by Alejandro Aravena in Chile and before him by Alvaro Siza in Malagueira (Portugal) show how excellent architectural results can be achieved with the active participation of future owners.
- The use of local materials and techniques such as the self production of bricks, adobe, wood and other hand crafted materials.
- The reuse of materials, not only as an initiative of single individuals but as a current practice supported by public policies, the industry and the architectural culture.

This does not mean to give up the idea of beauty, as we can see in the plans of Wang Shu or Rural Studio

These examples could contribute to the removal of the missionary aspect and third world emergency character of the low tech building approach, instead contributing to establish it as a universal practice thanks to its contents of austerity and good sense.

Image right page:
Courtyard of traditional house in Yazd, Iran, photo malearc

Part 1 UIA Open Forum

Lectures

All the texts are transcripts of the lectures held during the UIA Open Forum in Copenhagen

photo Hans Drexler

Manfred Hegger

Sustainable Building

Development

According to a survey of the Bundesumweltamt (German Federal Environmental Agency), more than 90% of the German population agrees that sustainability is an important issue. But only about 10% can say what this term means. This result of a 4-year-old inquiry seems to be true even today.

This survey does not differentiate between the average population and people working in the building sector. Yet, it is evident that sustainable building is a key issue in planning and building processes, and it often stands for ecology, energy-efficiency, longevity and environmentally friendly processes or economics. Different participants in building define the three pillars of sustainability in different ways - as real estate agencies would say, these are capital, value, cash flow and return on investment. The holistic efficiency and quality approach to building related to sustainability of course is not meant by such humorous interpretations.

In fact, the three-pillar model of sustainable development starts from the idea that sustainable development can only be reached if social, economic and ecological aims are being followed at the same time. This is based on the United Nations Brundtland report, from 1987, saying that: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." It contains within it the concept of needs and the idea of limitations. In 1992 the heads of government of 180 States chose this general principle as a dictum for their political action.

Architecture

It is quite obvious to transfer this maxim into architecture and building. This sector plays a decisive role in attaining sustainability. As an economic sector, because almost 50% of the total capital value of a country is fixed in the housing sector alone and about 70% in the total building stock. Regarding the use of resources, the pressure to act is even more evident:

Graphic left:
Structure of criteria for German sustainable building hallmark,
source BBR-Jahrbuch 2008/2009

• In Germany in spite of demographic decline, more than 100 hectares daily is transformed into building and traffic areas.
• Many buildings are short-lived because they cannot react to changing needs.
• The building sector requires about 50 % of all resources.
• The building sector produces more than 60% of waste.
• The operation of buildings in developed countries requires more than 40% of the total energy demand.

Building creates values

Building is an activity with long-term effects. As a result it should produce usable, efficient and resource-saving buildings maintaining long-term values: comfortable and healthy, for investors and owners economic and profitable for a long time, a social and cultural advantage for everybody and, last but not least, an enrichment of life and an aesthetic experience.
Planning decisions have a lasting effect into a future with scarce natural resources. Many of today's buildings will experience the end of the fossil oil and gas age and a scarcity of other resources.
These issues also point at the key aspects of action: location and building site, programs and adaptability, building materials and construction, energy and cost, technical quality and process quality. Many of today's building programs and competition briefs ask for sustainable building. Yet many flowers of speech do not help.
Sustainable building requires a holistic and manifold approach to location, architecture and building quality. This can only be reached if criteria are defined at an early stage and become a basis of the conceptual thinking of architects and engineers.

Image above:
The Solar Decathlon 2009 contribution of Technische Universität Darmstadt, surPLUShome, built by students, photo SD 2009, Team Germany

Competition and design stage

Some criteria of sustainability are predetermined by the basic conditions of building projects, like location. Many others are determined by the designer, and these are decisive. They determine to what extend a building can reach requirements of economy, ecology and social cultural qualities.
Architects, designers and members of juries are familiar with these criteria. They influence design and evaluation processes in an implicit way. If high quality requirements are attained, sets of criteria and benchmarks can support their work and lead to better results. They determine and enrich design processes.
Many of the criteria of sustainable building can only influence planning in later stages, like the choice of materials, eco-balances, energy concepts, life cycle, costing and many others. It is only in this phase of the work that sustainability issues reach their full extent and complexity.

Education

Sustainable development is no fashion, trend or style. It is simple necessity. Its transfers into daily life and professional attitudes will determine the next decades and require new ways of thinking and action. These need to be trained. The transfer of sustainable development into curricula of educational programmes is only at its beginnings. This is especially true for planning and building related educational processes.

Major contributions to this can be pilot projects. They require combined design, research and building. With our contributions to the US competitions Solar Decathlon 2007 and 2009 we succeeded in opening up the minds of teachers and students to sustainable buildings. The persuasion of real buildings made the German government to commission a replica of the 2007 competition as a Plus-Energy-Home for a road show through Germany in order to open up the minds of the population to this subject. But planning and building still have a long way to go to make sustainable thinking self-evident for everybody and to make it a broad stream of new thinking and action. New curricula for basic and further education and demonstration projects will be the pillars for the successful way in this direction.

Architects and engineers have the best prerequisites to develop and visualise the elements of a sustainable better future and to integrate it into the larger global context. It is the architects' role to rearrange the material basis of our civilisation and to to use their creative potential to its fullest. The innovation potential is huge and hardly utilised at all. The challenge of sustainable development in the building sector is a great chance for scientific technical and creative renewal in the building sector.

Image above:
The assembly of the German surPLUShome in Washingthon DC,
photo SD 2009, Team Germany

Roberto A. Cherubini

Urbanability, Urban(sustain)ability

CSIAA[1] for Reykjavik and Valencia

Images above:
Reykjavik. Project for the dismissed airport area of Vatnsmyri (CSIAA 2007-2008)

Urbanability is a word game we use in our work with two superposed meanings: on one hand it definitely compacts sustainability in urban design, on the other it alludes to sustainability as the only real ability for the urban design. A general discussion is currently open on whether sustainable design has or has not a real influence on architectural aesthetics. The debate is still without a real solution. However sustainable design has – we firmly believe– a strong impact on the identity of a city. We appreciate all design efforts in making sustainable single buildings but we believe that a critical mass is needed in order to make our efforts significant. This critical mass is the town. It means first taking care of the general sustainability of design on a wider urban scale. Sustainability is not only a matter of managing resources. Sustainable buildings are always included in peculiar urban cultures, needs, traditions, and opportunities. This is urban identity. CSIAA is actually working on urbanability, searching for the highline of an environmental friendly settlement in which all the elements, including public spaces and heavy infrastructures are shaped according to cultural, economic and climatic context. We believe that resource efficiency has different meanings on different latitudes. This is why, especially for urbanability we must think locally, working globally. If we don't meet the dreams of the inhabitants, we'd obtain efficient and sustainable but sad towns.

Two recent projects, different for position, geography, climate and aims, show this strategy.

The city airport of Reykjavik is going to be dismissed. The area is of strategic importance, adjacent to the centre of the town. Aim of the government is to establish a contemporary settlement, a mix of housing, public buildings and spaces, green areas, able to express a sustainable identity for Reykjavik as a capital town. Our projects propose a linear Mile of open spaces, transparent green houses, ponds and public buildings, running on the original site of the airport's main runway, connecting the old town with the coast and further on with the outer districts.
On Latitude 68°8'N, light and heath are resources to be carefully preserved. The Mile is composed by a complex of sheltered public spaces of different sections adapted to the Icelandic climate. The architecture is mostly transparent in order to assure a total visibility of the inner

activity, becoming a community landmark during the wintertime. In some locations the public space has the consistence of green/controlled-climate house, hosting trees and plants. Each green house is passed-through by the light railway running along the Mile which hosts a stop of the line. In its Southern end the railway is integrated by a speed boat line directed to the outer coastal districts of the town. Taking into account the peculiar Icelandic feeling for outdoor hot water bathing, a new offshore thermal and nautical sports centres were proposed for the fjord. Vegetation and water are considered to mitigate the severe Icelandic climate. Therefore forest surface in the project area is planned to increase of 70% along an east-west belt from the hills to the coast, crossing the Mile and re-connecting the residential districts. The water surfaces are planned to be increased of 50% by a new main water pond adjacent the existing bird sanctuary and by the proposed pools system along the Mile.
In order to preserve the present townscape of Reykjavik, the building model of the project is a low rising system with opportunely increased densities in order to avoid social isolation. The new housing settlements are semi-detached and detached buildings of different typologies, mixed with four-five storey apartment buildings.
The transversal system of public directional and cultural buildings, transparent, enlightened and located on the side of the Mile on a linear pattern, will reproduce at night the airport's landing lights system, as a permanent memory of the former function of the area.

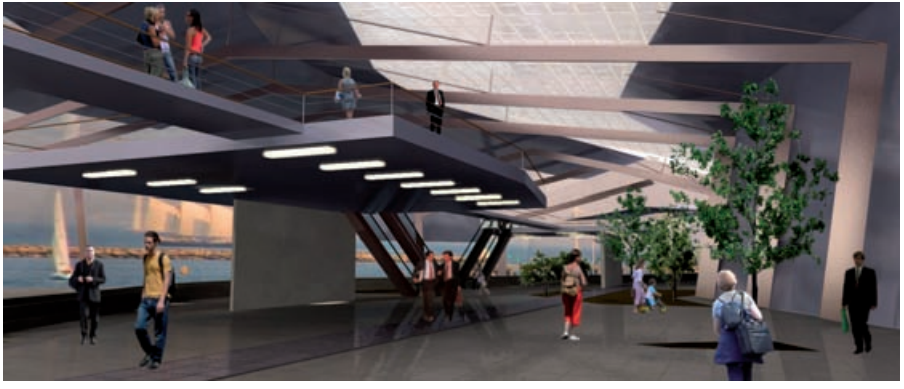
Latitude of Valencia is 39° 28' N , the shadow as shelter from the sun to become a resource.
Hosting America's Cup brought significant changes all around the inner harbour. The aim of the town after the event is to establish in the area a new sustainable urban identity and a permanent sense of community. In order to achieve this, our project works on the reconnection of all the elements along the harbour waterfront, meanwhile creating continuity and site topography where the city has always lacked one. This, by the means of the hybrid architecture of an artificial Dune made of a natural skin wrapped on a built-up body. A strip of land with a Mediterranean essence running all along the port bow, shaped as a garden on its surface and housing in its inner core, opened towards the sea, promenades and plazas, spaces for public and private activities, parking lots, vehicular roads and tramways.
The Dune offers new ways of using the quays, creates an acoustic barrier against the container port nearby, and mitigates the microclimate, diverting the summer and winter prevailing winds. Hosts community life in shade and cool temperatures in summer time just as providing a dry shelter for winter downpours.
On front of the marinas the Dune is a complex element: it incorporates shipyards, nautical and commercial services as well as the fish market under its' wind-tower metal vaults.
On its inner part, adjacent to the town centre, the Dune is split in two parts. The first wing along the inner harbour waterfront is the civic forum of the water world centre: museums, exhibition hall and harbour hotel, including some old buildings listed in the harbour's cultural heritage of

Images above and following page:
Reykjavik. Project for the dismissed airport area of Vatnsmyri (CSIAA 2007-2008)

the town. The second orthogonal double wing embraces the architecture of an experimental housing settlement. A settlement inspired by new ways of balancing privacy and social life, house and work, sports, culture and entertainment. It is a low-rise housing settlement with combined private and public open spaces mixed with higher photovoltaic skin translucent buildings, crossed by a network of pedestrian suspended walkways. No private vehicles, if not electric are allowed.
In this peculiar cityscape, which reflects the identity of a possible urban sustainable future, some of the America's Cup team bases, selected with a popular consult, are moved from the harbour's quay, and set in the natural surface of the Dune. They will remain in the memory of the event, used as containers for social, commercial and leisure activities, dedicated to the whole population of Valencia.

Credits: CSIAA for Reykjavik (2007-2008) Roberto A. Cherubini , Anna Esposito, Sara D'Innocenzo, Cristina Labianca, Andrea Lanna, Lorenzo Pagnini, Antonio Menghini Calderon. CSIAA for Valencia (2007) Roberto A. Cherubini, Stefania Beciani, Anna Esposito, Antonio Menghini Calderon

Images above and left:
Valencia. Project for the inner harbour area after the America's Cup (CSIAA 2007)



[1] First established in the year 1999 in Rome, CSIAA is today a free association of architects and designers of different age and experience, working in variable formations and leaded by Roberto A. Cherubini. CSIAA is not only the name of a design team, CSIAA is a think tank for architecture, urban and landscape design, able to work out of the common highline, accompanying its design activity with individually structured public debates, research and publications. CSIAA design action is focusing the contemporary problems of development and sustainability, permanence and transformation, local identity and globalized image. From its base in Rome, CSIAA looks to the wider international scene of design out of any geographic or cultural border. www.csiaa.it

Christiano Lepratti

Slow Space

adapted from "die Stadt ohne Autos" Aufbruch in die klimatische Moderne, der Architekt. 03/09, Berlin

Image above:
This space of hospitality, quiet and still, helps people to relate to themselves and to other people".
Project New Orthodox Church Skopje,
Malearc, 2008 Berlin

Slow Space

The third revolution is coming.
The investments in alternative energies have outdated the sums invested by the automobile industry … an announcement from yesterday.
Here is another announcement, from today: the crisis is here and harder than expected. It is here and sinks the Atlases, the Titan, which once supported the world economy - General Motors, Ford, Porsche…
The Giants are shaking and with them the world they created: a world full of cars. The crisis brings the job to its end: the criminalisation of the emissions, of the cars and their power and speed.
Already before the failure of families, and the disappearance of their savings, it was not allowed to buy opulent cars.
The money was still here, but already conscience could not permit to push the gas pedal without remorse; it left dark clouds. Clouds that made the air dirty, clouds that poisoned the world, clouds that killed the butterflies.

The day before yesterday it was quite different: the car was the symbol of modern times for everyone, especially for architects. They always wanted to harmonize nature and industrial products, but from the beginning they had a strong preference. Le Corbusier dedicated a house to the car, the "maison citroen"; he photographed a car like a dear relative in front of the Villa Stein. Other architects had inquired the automakers about the scientific methods of production - Klein studied Henry Ford, Kahn (Albert this time, not Louis) built the new temples of the functionalistic religion, the Ford industries.
The Ford industries were the built space of the Taylor System, Spaces and Spatial Sequence: perfect and efficient, no more dark dusty corners, no more Breaks, everything in motion (Movement). The car had the honour and the responsibility to bring speed into the cities, the car transformed places into traffic islands, the car suggested to Le Corbusier to proclaim "la mort de la rue" – the death of the street, the car converted the former place for communication,

leisure and commerce into the mono infrastructure for motorization. Houses were built with wide spaces in between and set on pilotis just to give more ground to the cars. Buildings stood like pink flamingos in the middle of a herd of running buffalos. Buffalos always demanding more place, more horizon and more asphalt ground.
That's how the space for velocity was developed, a space where all non aerodynamic elements were smoothed; all kinds of decoration disappeared, light could not be caught by surfaces anymore, it could just be reflected, like the metallic glimmer of a Lamborghini body, or be absorbed by the grey asphalt.

Now this seems to be definitely past history. Barak Obama demands electric cars, probably they will be slower, the sustainable moral requires more and better functioning public transportation and don't forget - the most sustainable movement is rest.
Will the European city change from a prairie of roaring cars into the city of the Flaneurs?
Could decoration and the spaces of contemplation return?

The comparison between two worlds

Berlin between wide and dense.
Alison and Peter Smithsons' project for the reconstruction of Berlin capital shows the fruits of "hypermobility obsession" in the middle of the last century. The Smithsons modelled the city like an artificial landscape; the buildings were represented as pure volumes, the roads as bitumen rivers deeply flowing "into the abyss".
Also, the Cultural Forum of Hans Scharoun was conceived as an artificial nature, but not an idyllic one, the ensemble was meant to be like a kind of prairie. The Philharmonic Concert Halls and the State Library in its crystalline structure look like rocks, eroded by the cars. The principle of the city landscape of the fifties would have been inconceivable without cars, the wide spaces were to be filled with the kinetic energy of the cars.
Pedestrians looked like thirsty foreign legionary soldiers in search for an oasis, dazzled by the yellowish reflex of the metallic building skin, spaces too extensive to be comprehended by the human senses. But finally the principle of the city landscape failed in Berlin, the politicians of the last reconstruction were against it, the European city had to be made like Haussmann's city, closely and homogeneous, with boulevards, Flaneurs and horse-drawn cabs. Yes horse-drawn carriages not cars.
Was the "critical reconstruction" of Berlin a visionary project? Can it be a model for the future?
Horse-drawn cabs versus cars?
What do we have to do?

Image above:
The space between the church and the public square is a filtering space made of light and shadows. Project New Orthodox Church Skopje, Malearc, 2008 Berlin

The urgency and the gravity of the problems indicated by the agenda of sustainability makes an inversion of the equations necessary.
car = beauty
speed = beauty
aerodynamics = beauty
far = beauty "the splendour of open space" (Le Corbusier)

These equations must therefore be rewritten as follows
bike = beauty
slow = beauty
dense = beauty
near = beauty
The city will not be able to respond to the questions of the sustainability agenda without a very drastic change. It is a city where the public space does not have a central role. It is a city where houses are far from each other to leave space for the movement of the cars. It is a city where land is used as if it were a renewable resource. It is a city where the infrastructures built for the velocity myth are becoming ruins. The badly built space has to be recovered; it has to be transformed into common resources, common goods, to recover space from the cars. We have to introduce a general criticism of the myth of individual mobility, which generates sprawl and all its negative consequences; we have to convince, not only the architects, but the citizens and the politicians.

Image above:
The idea is to make spaces for relationships, to give an interpretation of the res publica, the "public thing" as the Latin phrase goes.
Project New Synagoge Potsdam,
Arche-Malearc, 2009, Berlin

Slowness versus velocity

2 Strategies

1. Density
Project of public spaces,
Filtering public and private, filtering inside and outside.
The idea is to make spaces for relationships, to give an interpretation of the res publica, the "public thing" as the Latin phrase goes.
The pictures show an approach to this kind of strategy:
The space between the church and the public square is a filtering space made of light and shadows. This space of hospitality, quiet and still, helps people to relate to themselves and to other people". Like a portico. (Image 1, malearc, Skopje, 2008).
In the next project the same action of setting sequences of spaces, from the private to the public, becomes a staircase and a courtyard as filtering spaces - not heated - and accessible (Image 2, archea+malearc, Potsdam, 2009)

2. Slowness
This strategy deals with different speeds within the city, removes spaces from the cars and the buildings and gives them back to the citizens.
The idea is to use the roof as a common resource, common good, to recover space from the cars, the space for the bar and the offices are covered by a urban garden open to the public, the offices are compacted in the tower.
(Image 3, malearc, Florence, 2007)

Transformation and humanization of old infrastructures not in use any more: an abandoned infrastructure for fast connections becomes a park for slow connections, to take a walk on.
A paradigm project of the changing times, a statement of how slowing down can enhance quality life. (Highway Manhattan, Diller and Scofidio, New York, 2010)

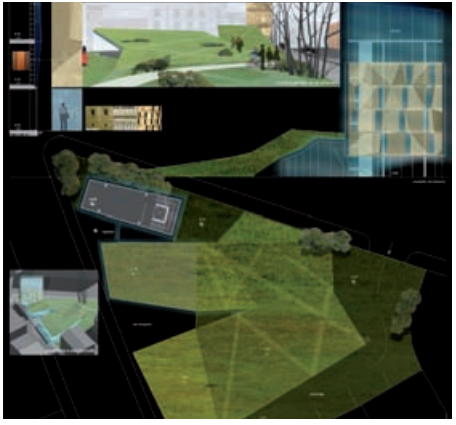


Image above:
This strategy deals with different speeds within the city, removes spaces from the cars and the buildings and gives them back to the citizens.
Project Casa dell'Architettura Florenz,
Malearc, 2007, Berlin

Guendalina Salimei

Sensitive limits: Land arch/Vertical labyrinths

Image above:
Multifunctional building and public spaces, Vydrica, Bratislava, Tstudio project

The urban texture, cities, collective spaces are constantly in evolution, the people show new and unexpected needs. The work of the architect becomes a work of research, multidisciplinary investigation in an attempt to interpret the evolution of time. In this sense working in the architecture field for Tstudio means developing conscious projects for continuously transforming realities. A more and more complex reality in which dimensions and different staircases are totally interwoven starting from the territory to the city, to the environment, then to a specific place. Physical contexts, but also social and economic ones; historical contexts, but also embedded in the present and projected in an uncertain future.
The commitment of the project, its awareness, consists of finding a point of equilibrium between demands and different bonds, an expressive form of a plurality of solicitations and questions.
The conscious project makes load of the complexity and the urban disorder. It is compared with the environmental demands and the shortage of the energetic resources. The project is conscious and sustainable.
The project search interprets the physical existence of the places, its signs and its traces, the stratified plot of the history and both the transitory and contemporary histories. It is measured with the questions and the desires of the consumers, with their request of new public spaces and of new spaces to live in.
For the conscious project there is no separation between architecture and infrastructures. The pervading space of the infrastructures becomes, for its central position, the scenery leading of the new architecture.
The conscious project shows architecture over the building and the design, seeking every time a meaningful relationship with the cities and the landscape.
The research topics investigated in recent years regard stratification and dilation applied to the border areas of conflict and transition.

The areas of frontier, the limits between city and water, among city and ports, between city and infrastructure, between delimited spaces and endless spaces, they assume new tensions, new

meanings, new potential.
Such spaces, often marginal, degraded, almost unknown, indefinite, not projected, become occasions of reflection and research for new project strategies able to overcome the native exclusion promoting new spaces of meeting and new central realities.

Stratification and dilation are topics that only apparently seem to be opposites but which in reality are very close, so-considered simultaneously in units of a common principle of a more universal as they are equally content-it does not compare more like opposites but as complementary, through a sort of polarization that does not alter the unit the common principle: for this apparent opposition is neither irreducible not absolute, but relative and contingent and entirely overcome in the name of a design that transforms the words into a kind of metaphysical architecture.

Land arch, architecture of the ground

About the topic of dilatation, the building tends to disappear into the landscape, becoming one with it, in a logic of dissolution. So, it's not a volume it occupies a space, it's like an empty space where the volume tends to disappear, and becomes as a backdrop.
The project was born from the ground, from its folds, from its signs, from its stratifications, from its hollow.
The architecture dissolves itself and integrates in the landscape, it doesn't impose itself as volume that occupies some space anymore, but rather it organizes the void absorbing the subtended rules from the plot of the landscape and the ground.
The architecture works with the earth, it invents new landscapes between artifice and nature, it plays with the real and the imaginary geographical conformations. The new architecture doesn't immediately reveal itself, it doesn't impose itself as an absolute icon, but it reveals itself little by little, it lets you discover it while you're approaching to it, it becomes fragment of an ampler process.

Vertical labyrinths

In the contemporary city the horizontal labyrinth of the surface is separated from that of the underground. The vertical labyrinth intends to explore the complexity of the layers and the overlaps, promoting a more intense relationship between the above and the bottom, between the air, the surface and the underground.
Stratification as possibility to operate on more levels, overlapping signs and different meanings. Interpreting the stratifications to realize complex places both spatially and functionally: in such perspective the architecture multiplies its space and its landscapes, while the urban system reinvents itself becoming "city inside the city and city above the city."

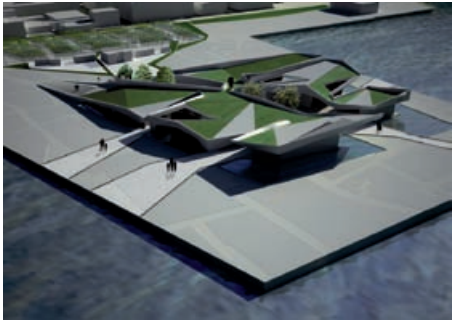


Image above:
Redevelopment of Siracusa's port.
T-Studio project

Image following page:
Multifunctional building in the Taranto's port,
T-Studio project

Crossing the labyrinth also means trying to re-establish a bond with the earth, with the thickness of its crust, with the above and the bottom, individualizing new forms of integration and correspondence. How can we make this relationship visible in the process of the urban transformation? How can we promote a great environmental equilibrium among the two parts? Through which threads of Arianna will it be possible to reconnect the two labyrinths?
For this plan and this project new itineraries of research and intervention will be organized.

Image left:
Under the Vittoriano - Dionisocity Vertical Labyrinths, T-Studio project

Nicoletta Trasi

Sustainable Landscapes

Image above:
Beexby Park, Palo Alto, San Francisco,1992
from rubbish dump to a "sustainable landscape",
photo Process Architecture n°. 128/1996

Image right page
Quarry of Milos , Greece,
photo Nicoletta Trasi

This text deals with the relationship between design and landscape restricting it in fragile landscapes; its fragility can be caused by anthropic causes (for example extractive activity, etc…) or due to natural events such as an earthquake, an eruption, a landslide, a tsunami and the list could go on. On this occasion I would like to talk about landscapes that have become fragile from the use that man has made of them. Into the two designs presented here, even though they are in geographic and cultural areas that are completely different, the first in Spain, and the second in Egypt, we will talk about possibly one of the weakest and most polluted, most degraded and most rejected landscapes in current opinion, and as such about the difficult design challenge to re-qualify these areas: waste dumps.

It is possible to distinguish three temporal phases in these kinds of places such as mines, dumps or other similar contexts: the first, is that of "function" in which the place is potentially used to the maximum and in which it is possible to say that the site "lives"; the second is that of "casting off" in which the site is exhausted and therefore can no longer produce, so it assumes an abandoned and melancholic look in which one could say it is 'dead'; the third phase is that of a sustainable project of a possible new life with new functions, in which the site will live again in a different way than it did before.

I believe that it is very important in this type of restoration project that the "fragility" of the site in question is not hidden as an embarrassment, but that it is in some way revealed. An example is Beexby Park by American landscapist George Hargreaves, which was made from the largest urban dump in San Francisco through an interesting abstraction of the natural and anthropic processes in the area, which channels its unique characteristics, the waste; small hills and mounds of earth united in large groups create elevated areas where people can sit and let the breeze blow by them, while the symbolic reference to the mounds of refuse that were present in the site for years are still there.

Contemporary art played an important role in that concept by giving special attention to the existence of these fragile and rejected spaces. I believe that thanks to the viewpoint of certain artists and photographers, as well as directors, that these degraded places have been taken into consideration – and with them the idea of trash or refuse – from an aesthetic point of view: their viewpoint manages to go beyond the banal or usual to grasp that which is the essence of these unspeakable places that are extraneous to us and unclassifiable.

The temporal dimension is another important aspect of these designs. When the construction is completed the ecological processes will continue their destiny over a long time; an aspect that we are unused to in architectural projects. In these designs the process of re-colonization by planting new vegetation to make up for the lack of earth, the reconstitution of the ground and the introduction of new species will grow into a "mature" landscape only after five, ten or even more years; enough time for the ecological dynamics to begin and to allow for forgetting that landscapists had been active there a long before.

Image above:
Cairo Aerial view of the park,
photo archive Aga Khan Foundation

Landscape restoration of the controlled rubbish dump "La Vall de'n Joan"

Since 1974 it is used as a rubbish dump not only for most of the Barcelona urban waste but also for that of other cities in the metropolitan area. The restoration project defines a pattern of topographic configuration with terraces, side slopes, drainage system of internal fluids (separated from the external drainage net), biogas extraction net, pathways and plantation by phases. The whole restoration project goal is that Park del Garraf absorb the dump by using the local forest tissue and supporting the establishment of primary ecosystems and its development and succession which through time will turn to situations adapted to the site environment. The plantation process is done through strong local species, which need little irrigation and already adapted to the environment. The vegetal structure planned using different local sorts of shrubs (such as bardissa, brolla or Mediterranean màquia) and trees, organizes the plantation project. Waste Deposit Restoration seeks to regain the public use of this area.

Al-Azhar : from dump to park

The new park, which is 30 hectares, was begun in 1997 thanks to the cultural and economic support of the Aga Khan Trust. It was started after a complex recuperation operation: thousands of tons of earth and rubble, many cubic meters of earth underwent geotechnical treatments (washing, sifting….) and were then mixed with special sand and vegetable earth to cover the site with a layer of 'good vegetable soil' around 2 meters thick. Above it, a 50 cm layer of clay of was added to keep irrigation water from infiltrating and then the final layer, a mix of alkaline sand and vegetable earth, with sulfuric and calcium superphosphate additives, made it possible to correct the high salinity of the soil to allow cultivation of different types of plants. Moreover, a sophisticated irrigation system monitors the atmospheric conditions to ensure that only the

exact and necessary quantity of water is used. The architectural character of the park is woven throughout with Islamic patrimony; a nature area includes a citrus orchard and rows of palm trees. All of the buildings were realized with materials of Egyptian origin. Inspired by the Islamic decorative traditions, the public areas displays the styles of different eras and regions: the areas for resting in the shade (takhtabous), the passageways with Fatimid facades; Persian and Timurid elements are found in the fountains. A lake, fed by untreated water from the Nile is present in the southern part of the park and the water is mechanically filtered and pumped into the irrigation system.

The high temperatures and the scarce humidity caused by little rain and the desert winds have imposed rigorous rules for the landscape project: over 650.000 different essences were planted including sycamore, jojoba and acacia trees. Following the tradition of oriental and western gardens many types of aromatic and medicinal plants were also planted.
A local from the area, Ms. Moza Gouda, looked out the window of her small and dilapidated house in old Cairo towards the new Al Azhar Park and said: "this view is so beautiful, before there was only dirtiness, rats and dust, I used to see an enormous mountain of dirt, rats and dust; now I see orange flowers, a lawn of grass and palms".

I think that these two projects are an extraordinary example of a balanced intersection between Sustainability, Society and Ecology.

Image above:
The controlled rubbish dump "La Vall de'n Joan", photo studio Battlle y Roig

Image left:
Natural Park Garraf in Begues (Barcelona). Initial phase of plant re-colonization, photo studio Batlle y Roig

Brian Edwards

Sustainable Urban Living

adapted from Rough Guide to Sustainability 2nd edition

Image above:
Sustainable urbanism. High rise - high density, Turning Torso Malmö, Santiago Calatrava, photo Brian Edwards

Density and the Benefits of Mixed-Use Neighbourhoods

Only by achieving housing densities above 200 persons per hectare can a diversified pattern of land-uses and public transport be sustained. Increased density is important because it progressively reduces the need to use private cars. Density is crucial to reducing CO2 reduction and other transport-related pollution, and leads to an urban layout that creates sheltered streets and convivial spaces. As housing density increases yet further potential is unleashed, such as community-power initiatives and the economic viability of facilities such as art centres and branch libraries, which often bring redundant buildings back into use. So density is the key to sustainable urban living.

High density should, however, be accompanied by a clear strategy for open space, landscape and urban design, and the promotion of mixed-use residential neighbourhoods. Mixed uses also improve personal security and security of premises and engender a feeling of respect and safety which elderly people in particular value. Mixed-use neighbourhoods are more likely to offer employment locally and encourage links between colleges and workplace, enhancing training opportunities. High-density, mixed-use neighbourhoods give back the sense of place that 20th-century planning policies undermined as it explored garden city ideals.

Microclimate Design

As density and the complexity of land use increases, so too does the need for integrated measures across the frontiers of urban, landscape, transport and building design. In the past, urban design was neglected and overtaken by mechanistic measures of performance (leading to high-rise and monotonous system-built blocks). Without a structure of spatial urban patterns based on design guidelines, the benefits of high density are negated. Urban design needs to respond to four imperatives:

- the forging of social space;
- the enhancement of the urban microclimate;
- the creation of place not placelessness; and
- the provision of solar penetration without windy conditions.

Urban design can engineer social space by developing a clear framework of enclosed volumes (small and large) and by the provision of various forms of linkage (streets, alleys and footpaths). Human interaction often takes place in sheltered, sunny, overlooked spaces, often near to the thresholds of dwellings. Plants, seats and attractive paved finishes give such areas their quality and their sense of purpose. Comfortable microclimates are created by forming protected external volumes adjacent to south-facing (or at least sunny) dwellings. Groups of houses, either terraced or, more appropriately, built as apartments, should be placed to break down large areas into sheltered parcels. Planting around the edge can deflect or reduce wind speeds and, in the centre, can provide local shelter and summer shade.

Sense of place is an elusive concept: it is formed partly by attitude, partly by use and partly by physical attributes. Whereas space is abstract and measurable, a sense of place is shaped by social perception. Good urban design can help build a sense of place by providing lively areas and focal points and by articulating the public realm through exciting architectural design for key buildings (such as a school or doctors' surgery), public art, the use of water and perhaps a small amphitheatre for community use. Most of all, place requires a critical mass of people, landscape and activity.

Typologies for Sustainable development

Looking at human development broadly there are four patterns of urbanism which constitute models for the future. They are varied in form, carry quite different cultural connotations, are adapted to different climates and functions, and represent different possibilities for the future.

Rural model This is the legacy of the hunter gatherer, farming tradition which was universal up to the industrial revolution. It survives today in remoter parts of the world and is a pattern of living which appeals to the rich (in USA and Australia for example) and is a necessity for the poor in large areas of Africa and South America. It is sustainable in the way local resources of energy (solar and firewood etc) and food (locally grown or hunted) are utilised. A feature of this lifestyle is the dependency upon renewable and usually local resources not just for sustenance but for construction. There are two main drawbacks- first, the carrying capacity of the environment is low and this limits population, second, the spatial dispersal makes infrastructure (schools etc) costly and fossil fuel dependency for transport is high. As a result there is little social interaction and no culture.

Image last page:
Sustainable urbanism. European perimeter block, high density - medium rise, Malmö
photo Brian Edwards

Suburban model The suburbs which are largely a 20th century phenomenon also offer certain green advantages. There is contact with nature, food can be grown locally (in allotments or gardens), there is usually good access to renewable energy sources, and buildings can be orientated to take advantage of favourable climatic conditions (eg solar gain). The main disadvan-

tages are in the area of infrastructure provision and public transport. Densities are normally too low to support efficient public transport. Suburbs grew up in an age of cheap oil, and the challenge today is to restructure them to make them viable in the post petroleum age. This entails increasing density, insinuating new metro systems into old development patterns, constructing economic and community nodes around new railway stations, and intensifying land uses in section and plan.

European urban model The dense medium rise mixed use city common across Europe (and also other regions of the world under European influence) offers many advantages in the search for sustainable urban models. There is usually sufficient population density to support mass transit (normally a mixture of metro and bus), the bulk of journeys can be on foot or bicycle, mixed use means that heat transfer between buildings is high at the times of the day when it is most beneficial, and land-use integration results in close grained urban textures. Overall energy consumption per person is around half that of a comparable lifestyle in the suburbs.

Pacific urban model This is the high rise mixed use model common to Asia which places in towers many of the characteristics of the European perimeter block. It forms the basis for much of the recent urban development in China and can be seen in more mature form in Hong Kong or Vancouver. The tower block of this type (unlike tower blocks in Europe) normally contains shopping, laundry, restaurant and office accommodation on the lower floors, perhaps a gymnasium on the roof and often an atrium through the centre. Being mixed use many facilities are contained in the building making external journeys unnecessary. Such towers are exposed to the elements on many surfaces providing good access to renewable energy and possibly farming.

The Ideal City

From a sustainable development perspective, the ideal city is compact, with well-defined edges and medium-rise buildings that are neither too high nor too low. The spaces between buildings should be used for recreation, urban farming or energy generation. There will be dense corridors along transport routes and green wedges leading right into the centre. Nothing will go to waste, including buildings which will be perpetually recycled. Nature will provide the model.

Image above:
Sustainable urbanism. Suburban/ rural: low density, Hawkes House, Staplehurst, Richard Hawkes photo Brian Edwards

Massimiliano Giberti

Reuse vs Recycling
The use of industrial products in designing architectural envelopes

Over the last 25 years, the concept of "façade" has expanded its borders; in each instance, it takes on new, more flexible features that have given it a wider role. The façade, as a two-dimensional, one-directional system, is the starting point for exploring the "skin's potentials as a membrane between inside and outside, which becomes three-dimensional and multi-directional.

Image above:
PERFETTI VAN MELLE offices and store, Lainate, Milano, project and photo Archea

The technique of weaving applied to architecture was developed and perfected starting from the foundation of powerful, deeply-rooted historic traditions, and the choice of materials on which this method is used is currently introducing exciting experiments.
Today, the frame is becoming an abstract grid, a basis on which to apply possible patterns made of countless different materials.
Like the possibilities made available by an electronic screen in which each point in space corresponds to a pixel that can take on specific features of light and color intensity, the frame that structures the architectural membranes is made of substances and materials whose specific qualities are defined as needed according to contingencies.

While chemistry and sophisticated industrial processes for recycling provide new, high performing, flexible materials, suiting the new design processes that are used today, we can also rethink the same materials originally made for other purposes and use them as base elements for architecture.
A practice that has been gaining increasing ground in recent architecture involves intercepting a product at a point in its life cycle, from the design to industrial manufacturing, going on the market, use, disposal and possible recycling, in order to use it as a pixel and minimal base material in a façade system.
Moreover, it's important to individuate alternative ways of facing the environmental sustainability problem: on one side, there's an high tech approach, based on high performances of new materials and on sophisticated technologies of recycling and production of clean energy, that nevertheless assume a high waste of energy from the beginning, and on the other side, one

wants to develop the research towards a second low-tech approach linked above all to reuse and "superuse" of waste products and to constructive elementary technologies of very low energetic impact. This second approach starts from the obvious point that it could be possible to retrieve and reuse a product one it has finished being used, but before it enters the destruction and recycling cycle. In other terms, it's possible to save all the energy that could be used to destroy a product - separate materials, disaggregate and reduce them to primary matter, in order to rebuild other materials and products, simply reusing the product as it was originally planned for, but modifying its use.

The Can-Products association, working in South Africa, has built an experimental village in Teyateyaneng, a city 50 km from the capital of Lesotho Maseru, built entirely of used aluminum cans. The project, which was partly financed by the United States, involves building and selling houses and solar kitchen systems in different parts of Africa. The aluminum can is used as a pixel for the façade texture, and also fulfills technological requirements for insulating the rooms and static requirements, serving as a "continuous walling".

Similar projects have been made using glass bottles to construct entire buildings, mainly housing. Here too, it takes advantage of the static and technological qualities of the silicates that make up the glass bottle and the object's form, which provides a good level of insulation because of the air inside each bottle.
In the late sixties, even Heineken made a prototype of a bottle/brick that could be reused, once emptied, as a building product. Its rectangular shape, the corrugated surfaces on two sides for better adhesive grip, and the concave bottom to hold the adhesive of the next insertion, make this prototype an excellent example of reuse design.

The principle of reuse, as opposed to recycling, is the basis of some projects developed by our firm Archea Associati, during the last years, where architectural facades technology is mainly designed by reusing discarded materials, or by customizing the industrial processes, giving a new life to some serial objects that are abandoned.

PERFETTI VAN MELLE FACTORY RENOVATION

Lainate, Italy, 2005

The existing industrial complex, placed in front of a large green area and a recent residential district, is part of the outskirts of Lainate. The overall reorganization of the plant comprises the construction of a new office building, warehouses and goods loading areas, new parking spaces,

the redesign of the interior green areas and the spaces for handling of goods. The fragmentation of the existing volumes has been screened by an enclosure consisting of a sequence of double uprights in galvanised steel covered by perforated sheet metal onto which an "alliteration" of circular elements in glass, with variable diameter, are fixed. In addition to enclosing the "beech garden", the warehouse and the entrance building, this "wing" forms a single, "gelatinous" urban front that is more than 200 metres long. These glass elements where originally suspension insulators, produced for the electrical high voltage net. We decided to take advantage of the technolgical characteristics of the glass, rethinking the cladding system of these elements and transforming them into an architectural facade.

MERATE TOWN HALL
Merate, Italy, 2001

The project centres on the adaptation of the old Town Hall of the city, built in the late nineteenth century, by the addition of a long and narrow wing on the rear, placed orthogonally to the original building. The latter appear as semi-transparent shells that conceal and reveal the interiors through the decorative web of the external sunscreens formed by a system of "grates" in cast aluminium, fixed to the load-bearing structure, which protect all glazed parts. Also these elements where originally industrial products used for railings and gates, made in iron. We changed the material to reduce the weight, and modified the cladding system to adapt it to our necessities.

NEMBRO LIBRARY
Nembro, Italy, 2002-2007

The project consists of the renovation of a building from the late nineteenth century in the old centre of a small town in the province of Bergamo, which had initially been built as a primary school. The new structure takes the form of a triple-height book-case, contained in a transparent shell or casket, protected by sunscreens formed of terracotta books supported by a system of steel profiles which screen and filter the sunlight. This "diaphragm", characterized by the free rotation of the books, symbolically defines the character and the significance of the entire building.

ARCHITECTURE DEPARTMENT BUILDING
Tripoli, Libya, 2008

The concept rejects a hierarchical arrangement of the façades, while the references to local architectures with their closed façades which protect from the sun and the winds, look to the

Image above:
Curno Library, Bergamono, Italia,
photo and project Archea

interior courts; this is a pretext to play with the relationship between interior and exterior, public and private. Four volumes are arranged to form a four-leaf clover around a covered central square, crossed by the two orthogonal axes which identify the public paths. The external façade features a continuous system of structural steelwork onto which gold-glazed earthenware tiles are fixed: a union between the passive technology of the sunscreen and the characteristic patterns of traditional wooden grate and mosques. The protective exterior is contrasted by the interior elevations, which are completely glazed, showing the students arranged in rings on the three floors.

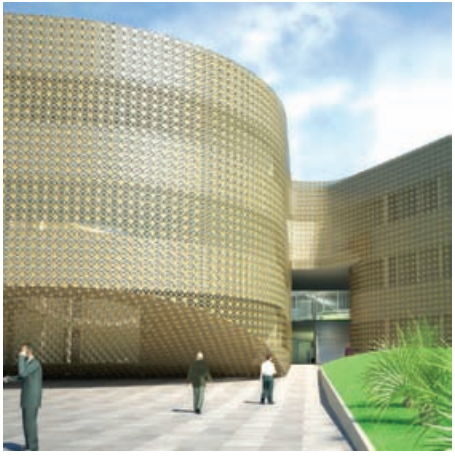


Image above:
New University, Tripoli, Italia,
photo and project Archea

Image left:
Town Hall, Merate, Lecco, Italia,
photo and project Archea

Federica Ottone

The second life of the project

My presentation will focus on issues related to urban transformations in what is generally referred to as the "diffuse city" [1]
In a recent publication[2] I explored this subject, which was born of a desire to re-appropriate the practice of architecture in the fields of teaching and research; a practice all too often ignored in the name of abstract theories that have little in common with real phenomena, with regard to which we must now maintain a certain readiness and capacity for action.

The model of the diffuse city can be extended to different global contexts and regions, though with diverse connotations and forms of settlement.
In Italy it corresponds to a form of urban development that equally affects large cities and small urban centres, often providing them with areas for different uses, spread like leopards' spots throughout territories crisscrossed by mobility infrastructures.

Its most common characteristics are:
- a lack of hierarchies;
- the absence of characterising landmarks;
- the presence of untended open spaces, or spaces with no specific use;
- the absence of any definition of public space as an element capable of creating relations and thus:
- the absence of neighbourly relationships.

Architectural culture is unable to renounce the idea of governing the complexity of processes of urban transformation at the large scale, even while being aware of the current impossibility of imposing decisions that guarantee stability over time.

The complexity of urban phenomena can and must not hinder the possibility of improving urban space through specific and minute interventions, referred to as the spaces of everyday life [3].

To achieve this we must implement a selective reduction that allows for the identification of the most urgent issues to be confronted using the tools of architecture.

Beginning with a definition of the everyday life and referred to the contemporary city, we can distinguish between two types of design:
The first, the "design of programme", does not necessarily refer to existing regulations, but is itself a generator of regulations. It is not an urban planning project, but rather the organisation of a collection of necessities referred to different subjects who must dialogue with one another and identify points of convergence.
It is a project that requires lengthy periods of time.
The architect intervenes as a member of the group of designers involved for various reasons in the process, without assuming the role of leader.
The economic aspect is preponderant with respect to all others.

The "design of the everyday" makes direct reference to the architect's responsibility to favour "exemplary" transformations, within the fragmented fabric of the city.
I refer to this type of approach as the "*second project*", because today, in contexts analogous to those found in Italy, witness to the uncontrollable development of urban peripheries, it is more useful to operate through specific projects, derived from programmes or situations already underway, but not yet complete.

This approach can be adequately illustrated by presenting schematically the main issues which must be to understand the most relevant research and method problems.

The *second* project (or second life of the project) is thus a method of intervening in the city that begins with real needs that arise as a result of the incompleteness of programmes or projects, and thus the result of the failure of these projects or programmes.
It may be limited to an object, or a system of objects. While it is rarely a large-scale project, it may be conceived of at the large scale, as an experience that can be repeated, in whole or in part.

The thematic environments can be used as references in order to understand lines of action or research along which to work.
Intervening in processes already underway means employing sustainable technologies, focused on inverting a process implemented previously. We take for granted that what has already been done is, in any case, unsustainable, if not actually dangerous, and that the methods of intervention must be self-sustainable.

Image above:
Cristiano Toraldo di Francia_Temporary garden in Piazza del Popolo in Ascoli Piceno, 2009, photo Toraldo di Francia

Within the diffuse contemporary city, man becomes aware of increased possibilities of intervention because it is an open and available space that accepts new languages and promotes innovation.

The local condition is the driving force behind the development of the second project. It is a method of facing up to globalization from a position of strength, rather than weakness.
Consequently, it's a local project that refers to global conditions (glocal)).

The *second project* is a project for construction. It may begin where a previous project has failed to find an equilibrium in form and content. It strengthens the weaknesses of previous conditions. It recovers a tactile and perceptive dimension of making architecture, in order to obtain a better and renewed exchange between industry and the professionalism of the architect.

The *second project* intervenes in processes of re-stitching the urban fabric through fragmentary and specific interventions, using technological instruments (networks, transport, energy, illumination, etc.) that physically and virtually tie it to the local and global community and by employing elements of architecture that restore dignity, form and identity to everyday experiences. It is primarily a technological project. It seeks modifications capable of improving inhabitability in the quality of relationships between the elements of the spatial system and between the latter and man.

The reduction of complexity does not comport a reduction in the interpretative and selective capacities that belong to the sphere of the 'culture of design'. The second project limits itself to fixing a variability of data that are difficult to classify within a given period of time.

The *second project* exploits conditions that remain incomplete due to an absence of programme in order to respond to new questions and reinforce local economies that are useful to the definition of new urban spaces within interstitial and casual areas that are difficult to recognise as belonging to a system.

In the *second project*, the architect recovers disciplinary competence, prefiguring the qualitative technological systems that reinforce and render concrete the conception of architecture and space, independently of the dimension and scale of intervention.
Public space may represent that fragment of space in which the architectural intervention can work towards ethical and demonstrative objectives, utilising technologies regulated by motivations of shared well-being.

Image above:
Ecosistema urbano, Bulevar bioclimático, Madrid, photo F. Ottone

The *second project* affects the organisation of space in large urban containers (shopping centres, rail stations, airports, etc.). It tends to identify a technological matrix through the composition of architectural parts that create the necessary conditions for improving the quality of space and its inhabitation, in reference to the entire system.
This practice implies criteria of flexibility and reversibility as technological parameters of quality. It prefigures spaces/services useful to the system and employs simple and modular elements that can be easily extended, assembled and disassembled with an elevated level of autonomy with respect to the macro-system that contains them.

In summary, the architecture that derives from the *second project* can demonstrate a potential of transformation highly more effective than what generally is acknowledged. Accordingly, the architectural culture must promote those creative processes that can directly intervene on the existing urban space, mostly the space mainly affected by the severe lack of quality within the diffuse contemporary city.

[1] The concept of diffuse city is now central to studies on cities, which are currently performed by different disciplines (planners, sociologist, anthropologist, etc.), that try to understand this new phenomon looking for innovative solutions. Among recent publications in this area the following deserve to be mentioned: Francesco Indovina Dalla città diffusa all'arcipelago metropolitano, Franco Angeli, 2009. Mike Davis, Planet of Slums, Verso2006. Alfonso Vergara, Juan Luis de las Rivas, Territorios inteligentes: nuevos horizontes del urbanismo, Fundacion Metropoli, Madrid 2004.

[2] F. Ottone, Il progetto secondo, nuovi spazi del progetto ambientale, Quodlibet Studio, 2008

[3] On this subject, confront: François Jégou, Ezio Manzini, Quotidiano sostenibile. Scenari di vita urbana, Edizioni Ambiente, 2003. Michel de Certeau, L' invenzione del quotidiano, Edizioni Lavoro 2001

Jana Revedin

Global Award for Sustainable Architecture

Image above:
The Global Award team in the field to report the laureates activities: with Wang Shu in Hangzhou and Alejandro Aravena in Santiago de Chile
photos Jana Revedin Architects

Brave new world

The energy and environmental crisis is affecting all societies at the same moment. Such a global and simultaneous rupture has never before occurred in the modern world.
In the 20th century, industrial development was born along on a "train of progress" which disseminated the same model of life and the city, commensurate with each society and its history. Today, they no longer use the same energy or follow the same paths.
The focus of priority is the city and its architecture. At present costly in energy and resources, they are the laboratories of a sustainable future and of the profound transformations it demands. From Chile to Finland, from the USA to China, an architectural vanguard has adopted a new perspective: to build our glo-bal civilisation on new relations between human organisation and resources.

Innovation and transmission

The developed countries of the North are home to several nuclei of invention. In them, energy and mate-rials are the focus of an industrial revolution for which architects are the trailblazers. A new collective nar-rative is coming into being. Architecture makes it visible by giving it form and meaning.
In the southern hemisphere, the crisis is rewriting the development equations: technology and society, development and progress, city and equity...
The urgency of the situation drives innovations that are often more radical than in the North, and this au-gurs an entirely new relationship between South and North. A worldwide architectural scene is emerging. The exchanges between its protagonists are intense, towards a shared goal and ethical framework. The globalised design of the late 20th century is giving way to the universality of an architecture which, from the depths of each territory, of each culture and climate reflects the search for a new balance. Every project is a fragment of the world, and orders the world.

Locus: quality of place

The relation of architecture and place is crucial in a sustainable and integrated Design process. The attention to the place saves us from personal obsessions, gives us a cultural and historical dimension, a social reference, a sense of home, following the Rossian concept of Locus: the singular but

Image above:
Andrew Freear teaching at Rural Studio Alabama

Image above:
The Global Award winners at the yearly Symposium at the Cité of Paris

Image last page:
Francis Kéré and his Gando Building team trying out innovative building techniques with local materials photos Jana Revedin Architects

universal relation between a local situation and the constructions found in that site.
If the people love our architecture in a specific surrounding, they will save this architecture, keep it in perfect functionality, clean and cared of. It will age well and become sustainable by its own.
If we can create innovation in a place and region, thanks to architecture, sustainable research and Industrial Design, buildings assume a double function as technical *and* cultural developers.

South-North-South

We believe that innovation happens between the coming markets and developed countries. To be sustainable and at human scale, we promote transmission between innovative southern and know-how-rich northern countries.
The Global Award for Sustainable Architecture was created to foster this worldwide debate on architec-ture in 2006 by Jana Revedin, architect and teacher, and co-founded by visionary public institutions: The regional government of Versailles/France assured the sponsoring, the Cité de l´Architecture of Paris the cultural valorisation.

Every year, the Global Award rewards five architects who share the ethic of sustainable development and have constructed an innovative and ecological approach, whether in developed cities or on behalf of the planet's most vulnerable populations.
The purpose of the Global Award for Sustainable Architecture is to create a community of these highly talented architects, to publicise their approach and to stimulate the exchange of experience between North and South.
Since 2007, fifteen architects have won the award. An international exhibition[1] with documentary films [2] and publications (Birkhäuser/Le Moniteur/Ambiente)[3] display and explain the work of this avant-garde.

Scientific Committee and choice

The Global Award winner's work offers clear insights into the search for a rational contemporary architecture which is:

- fully in step with the ethical, civil and social concerns of today
- innovative in the areas of ecology, energy, materials and technology
- progressive in its search for new standards for both housing and public facilities

The very fundamentals of a project: functionality, structure and materials are being readdressed in the search for both an approach and an aesthetic which respect people's new concerns.
The major selection criterias of the laureates are: Diversity. Human, social and political dimension of the work. Innovation (research) and transmission (participation, teaching, publishing).
The Global Award Scientific Board is formed by the following institutions and assisted by an

international network of independent experts:
Cité de l'architecture et du Patrimoine, Paris / Marie-Hélène Contal, Deputy Director / Ifa International Centre for the City, Architecture and Landscape – Brussels / Christophe Pourtois, Director
Deutsches Architekturmuseum, Frankfurt / Peter Cachola Schmal, Director
Università IUAV Venezia, Venice / Benno Albrecht, Professor
Museum of Finnish Architecture, Helsinki / Kristiina Nivari, Deputy Director
International Architecture Biennale of Ljubljana / Spela Hudnik, Director

The Global Award Laureates 2007 to 2010

2007: Stefan Behnisch – Germany. Balkrishna Doshi – India. Françoise-Hélène Jourda – France. Hermann Kaufmann - Austria. Wang Shu – China
2008: Fabrizio Caròla – Italy. Alejandro Aravena, Elemental – Chile. Andrew Freear, Rural Studio – USA. Philippe Samyn – Belgium. Carin Smuts – South Africa
2009: Patrick Bouchain and Loïc Julienne - France. Thomas Herzog - Germany. Bijoy Jain, Studio Mumbai - India. Diébédo Francis Kéré - Germany/Burkina Faso. Sami Rintala - Norway
2010: The Laureates 2010 will be awarded May 11 2010 at the Cité de l´Architecture of Paris .
[4]

Coming up

From 2010 the Global Award for Sustainable Architecture is assured, in cooperation with the Cité de l´Architecture of Paris, by a foundation created to explore the research and didactic activities of the laureates and to intensify interaction between worldwide scientific, cultural and social institutions.
The purpose of the LOCUS Foundation is to publicize and encourage innovative sustainable architecture created for the people.
Through research, teaching, publications and implemented projects the foundation will stimulate the exchange of experience between North and South.
DARE – TRANSMIT – FEDERATE

Image above:
The Global Award Exhibition starts its world tour in Paris la Vilette, photo Jana Revedin Architects

[1] The exhibition is produced by the Cité de l'architecture & du patrimoine / Institut français d'architecture Paris, curators: Jana Revedin (Jana Revedin Architects) and Marie-Hélène Contal
[2] Films: Portrait of the 15 architects. Edition 2007.2008.2009. Director: Rebecca Levin - Scientific Director: Jana Revedin - Production / Editing: Eclectic Production
[3] Marie-Hélène Contal - Jana Revedin: Sustainable design. Towards a new ethic in architecture and town planning / 2009
[4] Follow the symposium and all Global Award cultural activities on www.global-award.org

Søren Nielsen

Industrial systems and architectural concepts in projects by Vandkunsten

Image above:
Kvistgård, Tegnestuen Vandkunsten

Image above:
Kvistgård Tegnestuen Vandkunsten

Vandkunsten has a number of times in the recent years had the opportunity to do excursions into light-weight, industrially rationalized production systems. Industrial systems are employed in order to minimize building costs but industrialization also has a resource-saving potential. Three very different projects are described.

Kvistgård

The housing scheme Kvistgård, marketed under the slogan 'Better and Cheaper Housing', is a terraced-house typology arranged in 20 four-winged courtyards in a rural landscape but with easy access to public transportation. The program of the competition, won in 2004, was focusing on housing types suitable for prefabrication.

Kvistgård is an example of prefabrication in a relatively open production system, consisting of wooden-frame slab-elements for walls and roof. It is a model of semi-prefabrication, as the on-site assembly demands a longer building period in comparison to volume-elements. Even though the production system allows a high degree of variation, the elements are kept geometrically uniform primarily for economical but also for architectural reasons; the design of the scheme presupposes the repetitive structure of mass production and the architectural motive nurtured by the aesthetic of the generic container-like volume. Nevertheless, the concept offers a large variety of housing types, based on combinations between a pair of basic volumes on the ground floor and additional volumes on the first floor. The purchasers configure the housing units themselves according to a set of variations. It is possible to add build-on elements and change positions of interior dividing walls.

Similarly, the terrain is prepared as flat terraces which make the foundation and the on-site assembly less complicated. The levelled building plateaus demand a considerable adjustment of the terrain, but again this condition caused by the building system is also an important architectural concept; flat, square courtyards gently rotating within an undulating green landscape.

Bolig+

Bolig+ project was a competition projects for 60 apartments in a 6-10 storey housing block in Aalborg which aimed at energy-neutrality; the building was supposed to be self-supplying with energy for operation by means of passive and active strategies. While renewables like wind-turbines and solar-cells were involved, the proposal focuses on passive strategies: Insulation, heat-recovery and energy-storing capacity. The proposal was relatively openly articulated in relation to the production system, and suggested a structural system of solid wood-slabs.

Strong focuses were on preserving the energy capital embedded in the building materials by regarding the entire lifecycle of the building. When the consumption of operational energy becomes extremely low due to passive strategies, the material energy becomes proportionally the most important CO2-factor. Thus, the long lifetime of the building and its materials are crucial in a resource-saving perspective.

The principles used were, firstly, a high degree of general usability which made functional conversions easy and, secondly, a hierarchical assembly structure, which allowed disassembly for purposes of maintenance and upgrade, change of identity, or installation of new technical facilities. In order to secure the highest possible transformation capacity of the building, every attachment is carefully defined in terms of its technical ability to be detached without material damage.

Image above:
Bolig +, Tegnestuen Vandkunsten

Almen+

The Almen+ proposal was developed in a close collaboration with a supplier of prefabricated room-sized wooden-frame elements. The project included 240 social housing units, mostly terraced houses in two to three storeys. The program demanded a maximal operational energy-consumption of 25 kWh/m2/year. Furthermore was the buildings demanded to be without need of exterior maintenance for a period of 30 years. A low-key everyday-architecture was wanted and, accordingly, the budget was extremely low.

The overall solution is a box-like volume containing all necessary service: access, installations, kitchen and bathroom. This basic element is combined with one, two or three generic box-elements without any dividing walls as the occupants are supposed to provide those themselves according to their individual needs. The rooms are generally usable and can be merged in pairs into larger spatial volumes. All openings for windows are alike but they can be filled out in various ways: With windows, doors or covered up as a part of the façade.

In order to increase the lifetime of the façade the overhanging roof was 'reinvented', not in search of a vernacular or pre-modern atmosphere but simply to protect the façade from rain. The overhang generates a spatial zone along the façade which is emphasized by adding a wooden terrace that gives level-less access to the entrances of the housing units.

The cladding of the façade is horizontally divided in self supporting boards of various materials. The boards can be dismantled when assembling the box-elements and for maintenance. The

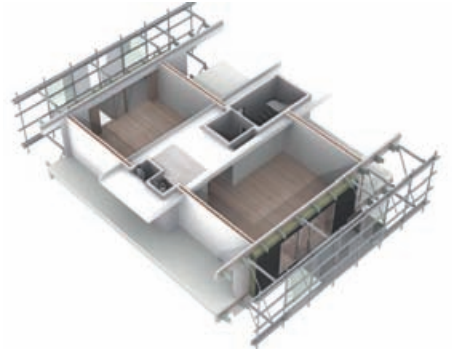


Image above:
Bolig +, Tegnestuen Vandkunsten

attachments are made with adjustable consoles to which the boards are tightened without penetration.

On the basis of an agenda focusing on reusability, the employment of disassembly strategies will be needed in a future industrial practise. As seen in the Bolig+ project, the implementation of such strategies in terms of process analyses have the ability to make the potential for distributed production become visible and concrete. When making the assembly/disassembly-processes an architectural discipline, a platform is established for a new evolution in industrialized building practise which regards the production system as well as the architectural appearance. The potential of planning for disassembly draws, together with the highly negotiable interface between systems and concepts, an optimistic perspective for a future resource-saving architecture which will be able to:

1. Escape the monotony of first generation industrialized building by being individually configurable and exchangeable at several levels.
2. Maintain a recognizable local identity if wanted.
3. Impart a high capacity for transformation by the buildings produced, which will in turn lead to a longer life-time and alluring visual aesthetics as the building has acquired the ability to be changed and therefore will develop in an unpredictable and dynamic way over time.

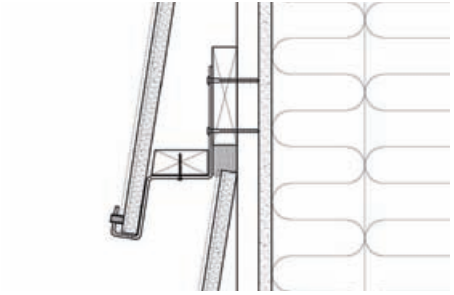


Image above:
detail of Almen +, Tegnestuen Vandkunsten

Image left page:
Almen+, Tegnestuen Vandkunsten

Anna Heringer

On sustaining beauty - local solutions for global challenges

Image above:
METI – Handmade School in Rudrapur
photo Anna Heringer

To me architecture is a tool to improve lives. The vision behind, and motivation for my work is to explore and use architecture as a medium to strengthen cultural and individual confidence, to support local economies and to foster the ecological balance. For me, sustainability is a synonym for beauty: a building that is harmonious in its design, structure, technique as well as in the use of materials and with the place, the environment, the user, the socio-cultural context - this, for me, is what defines its sustainable and aesthetic value.

My working area, Rudrapur lies in the north of most densely populated country. Poverty and the lack of job opportunities drives many people from the countryside into the cities. The local NGO Dipshikha attempts to give the rural population perspectives and support to understand the value of their place in all its complexity. Together with Dipshikha, the local craftsmen and teams of architects, craftsmen and students from Bangladesh, Austria and Germany several architectural projects have been
realised.
The intention of all projects was to use local energy resources, materials as well as skills and to offer a higher level of development regarding comfort, durability and elaborateness in craftsmanship and design. Through this approach the economical benefit remained within the immediate region and it's small markets, craftsmanship became more important and valuable and the local cultural identity was strengthened.

I believe that development only happens when you see the value in something. Then you are ready to invest your time, energy and passion to bring out the best of it.
It is a general dilemma everywhere worldwide, that the traditional building materials are not playing a serious role in the contemporary architecture besides being a material for the poor. They might be seen beautiful but old, maybe suitable for social housing when proper housing can`t be afforded, but not appropriate for modern architecture for all parts of the society. In fact these local, natural building materials have great potentials to contribute to a good climate, justice, self-sufficiency and identity.

A good climate in my working area the local building materials are earth and bamboo. Earth and bamboo do not need any fossil energy during production and construction. Bamboo even creates oxygen. Earth is a natural air conditioner and reduces energy consumption during the use of the building. Even regarding the decay, the building creates no harm to the environment since the building materials are fully compostable. It is not enough to focus on energy efficiency during use only as it is often the case in industrialized countries.

Built Justice

These materials are labour-intensive which means job opportunities, the profit of the project remains with the people not with big industries. Since centuries earth was a building material for everyone and every purpose: palaces, temples, mosques, farm houses, schools... The difference between a poor and a noble house was mainly the input of time, of elaborateness of the craftsmanship and the detailed design - not primarily the money. The social competition was towards enrichment of crafts and design and not in a flush of materials.

Self-sufficiency

Three aspects are needed for creation: material, energy, information. If these three parts are covered from local resources a high level of self-sufficiency and independence is the result. In architecture history it was a common practice to use the material and energy that was available. Only information got external input through travelling craftsmen. The new techniques were not blindly copied, but adapted to the local conditions, which was good for the improvement of local construction habits. The use of external building materials was limited due to the expensive transportation. The sustainable situation became fragile when greed and exploited resources made an import necessary. Slavery and colonialism were among the results. In my projects the material came from the direct surrounding, from local farmers. The most important energy source in Bangladesh is human labour. Besides four drilling machines the entire construction was built by hand. The construction techniques are optimized for human scale. They were developed upon local skills and knowledge but with an enhanced level regarding durability and thermal comfort.

Cultural and individual identity

Local materials requires specific details and construction methods. A dynamic dialogue with the cultural heritage this evokes an authentic regional style that reacts on the actual needs of the user. This requires a sensitivity in planning as well as humbleness where the aim of the design is not the building of an heroic, iconic monument but an answer to the dreams and the needs of the people. Developing countries have financial disadvantages. But their cultural wise is often a great richness. In general old cultures are in harmony with nature and

Image above:
Team Rudrapur
photo Anna Heringer

Image above:
Team Rudrapur
photo Anna Heringer

Image following page:
Stefanie Ragusa
photo Anna Heringer

ক্যামেলিয়া
তপনা
মইনুল

society and therefore sustainable. It is time to learn from developing countries and to reflect the lifestyles in industrialized countries.

"If you want to build a ship, don't drum up people together to collect wood and don't assign them tasks and work, but rather teach them to long for the endless immensity of the sea".
Antoine de Saint-Exupéry

There is a natural longing of human beings for beauty. It is not a privilege of the rich. To me it is the fuel, the energy towards development. Beauty makes the difference between poverty and misery. Beauty gives pride and self-confidence and thus it is a basis of development.

Image above:
METI – Handmade School in Rudrapur
photo Anna Heringer

Image left:
photo Anna Heringer

Student Workshop

Teaching Concept

photo Hans Drexler

Hans Drexler

A Joint Effort - Students Workshop During The COP15 / UIA Meeting

A sustainable developement is a challenge of high complexity. What makes it difficult is the fact, that a lot of aspect contribute to the impact or performance of our society. There are ecological questions (climate change, depridation of natural enviroments...), economic aspects (energy, resources, sub-prime-crisis...), and social criteria (affordability of housing, public infrastructure...). All those aspect are interconnected, intertwined, and depend on and influence eachother. Architecture and urban planning plays a central role for the overall performance of the society. Not only contribute buildings the mayor share of carbon-emissions, energy-consumption, material-input, and waste output, the built environment also influences our behaviour in a great deal: Cities are a frozen images of the social structure of society. To achieve an sustainable developement we not only have to get a few or some of the aspects right, but a least most if not all of them. This Herculian task we can not master as individuals but in a joint effort.

For the COP15 / UIA - students workshop we had two agendas: The first was to give the students an overview of the aspects and criteria of sustainable architecture. The second was the insight that we have to challenge this as a team. Since the complexity of the broadness of the knowledge and methods needed can be overwhelming to students that just started to deal with these questions the students were given specific topics:

1. Traffic in the city
2. Renewable energies
3. Urban energy and resource networks
4. Water
5. Resources and building materials
6. Recycling, reuses, waste-management
7. Demography
8. Changing landscape (sea level, nature, renaturation)
9. Social and cultural infrastructure 10. Public and private spaces in the cities
11. Revitalization

Image right page:
Sebastian El khouli, Jana Revedin, Anna Heringer, Per Arnold Andersen and Hans Drexler at the final presentation, photo Huihui Lü

12. Affordable living spaces
13. Flexibility and live cycle of buildings

Each team was taking one topic as a point of departure from which they started to explore a future of cities. As a common ground for their studies the students have been given specific sites to work on, so that all the separate ideas an approaches can be seen and understood by the students as being parts of bigger master plan, which integrates all the aspects of sustainable developement of the future city. What was especially helpfull for this integrative understanding was the set-up of the workshop in one big space in the The Royal Danish Academy of Fine Arts, School of Architecture. Sharing one studio the students had a constant exchange of their ideas and insight into the design process of other groups.
An international students workshop is as much about getting to know other culture and different appraoches as it is to learn in the actual projects. Therefore the workshop encourage this exchange by the setup of the team which consited of students from every participating schools.

The project were also meant to be a statement about what the future generation of architects wants to contribute to a sustainable future. During COP15 when all eyes were on Copenhagen we wanted to send a message to the world, that architects are aware of the future challanges and working on solutions.

Club of Rome-member Franz Josef Radermacher used Niklas Luhmann's application of ther biological term of the super-organism to the whole society to explain the systemic character of the humanity and its fundamental interconnectiveness with the environment . Only if we understand that our actions and our problems are global we can understand the magnitude of the effort we have to make. The super-organism humanity has a huge impact on the planet but at the same time it has an enormous potential to make thing better in the future. Through the knowledge-network we achieved an intellectual capacity that never before had been imagined. To use these possibilities in order to make things place we need people that through their knwoledge and experience are capable and willing of such a global effort.

Image left page:
students at the workshop
photo Hans Drexler

Brian Edwards

Copenhagen Site

The site in Copenhagen chosen for the Student Competition was an island known as Nyholm. It is about six hectares in area and shaped like a piece of a jigsaw puzzle. Nyholm lies just north of the larger island of Holmen where the Royal Danish Academy of Fine Arts, School of Architecture is located. Holmen has been designated by the City Planning authorities as the centre for education in the creative industries and it is here also that the new Copenhagen Opera House designed by Henning Larsen Architects is located.

Nyholm is currently in military use and is a naval base. However, its proximity to the city centre and the growing impact of education and tourism on its doorstep raises the issue of whether it will remain so in to the future. Across the inner harbour from Nyholm is Copenhagen's famous bronze statue on rocks known as the mermaid and the harbour water bus runs along Nyholm's southern boundary. So one issue raised by the students competition was that of the future use of the area in terms of planning policy and public use.

Nyholm is a man-made island formed in about 1820. It follows much defensive construction in the 17th and18th centuries to help defend Denmark's capital city from invasion by sea. However, it was not constructed just for defence: Nyholm was a working naval dockyard complete with wet and dry docks, barrack-type housing for sailors, a church, parade ground, and some interesting crane structures for lifting boats out of the water. Today several of the buildings are listed as architectural monuments and to add to the historic character a number of historic naval ships including First World War submarines are located at Nyholm.

For the student competition, Nyholm provided several interesting issues to consider. The first was the re-use of the many historic and more modern buildings on the island. Sustainability begins with recycling and at Nyholm there was much to re-use either as whole structures or as dismantled elements of construction. Related to this was the bigger question of a new use for the whole island on the assumption that one day its military use would cease. The Ministry kindly gave students access to the area for the sake of the competition.

Image right page:
historical map of Copenhagen,
source Royal Academy of Fine Arts, 1970

NORDRE TOLDBOD
SØNDRE TOLDBOD
INDERHAVN
FLÅDENS
LEJE
NYHOLM
AMALIENBORG
DOKØEN
HOLME

A second issue raised was that of sea level rise and its impact on Nyholm. The island like much of Copenhagen is at or below sea level. Nyholm was created by infilling the shallow area of sea which extends eastwards from the city towards Malmo in Sweden. For several kilometres the sea depth is only 3 or 4 meters and several natural islands or reefs already exist, some of which are utilised for wind-farms. The possibility of a 2 degree centigrade increase in global temperatures would have a major impact on Nyholm.

Dealing with water issues (sea and fresh) was a major concern of many students. Since much of Copenhagen, especially the larger area of Christianhavn of which Holmen and Nyholm form a part, is bisected and edged by canals, the raising of sea levels provided a chance to develop ideas of cities on water and buildings on stilts with mobility by boat rather than car. As many observed, the Viking culture was water based and the Nyholm site provided the chance to explore cultural sustainability.

Another major issue was that of energy. As the parallel COP15 conference was busy discussing (but not deciding) future energy supplies were crucial to human survival and by burning fossil fuels the global climate was being destabilised. Many students took the challenge of moving to a human eco-system based upon renewable energy and much greater energy efficiency. The Nyholm island offered many advantages: it was windy, there was access to good levels of solar energy outside the winter months, there was plenty of resource for seawater cooling and ground water heating via geothermal energy. Waste from the city was also readily available for composting or incineration. Added to this materials and waste could be transported by boat offering more benefit to 'cradle to cradle' ideas.

Nyholm offered many chances to integrated sustainability across scales of activities. It was a site which also posed a multitude of problems and this encouraged holistic and cross-disciplinary thinking. As such students exchanged ideas on the nature of sustainability as they battled to solve problems in a very tight time frame. Aware that COP15 was taking place across the city, and that the UIA had organised parallel lectures on many of the issues facing the architectural profession as it adjusts to the concepts of sustainable development, the students were kept informed and inspired.

One closing benefit of the site chosen was that it was not too small or too big. It allowed the imagination to search out big visions and the mind to tackle the details. With students from different traditions in architectural education and with varying levels of knowledge, the resulting team submissions showed the power of architecture to construct both places and common understandings across Europe.

Image left page:
view of the military site Nyholm
photo Brian Edwards

Nicoletta Trasi, Guendalina Salimei, Christiano Lepratti

L'Aquila Challenge

Cities are vulnerable.
In the world thousands of cities are located in seismic areas: they collapse, but then, they're almost systematically risen again in the same places.
Messina in the south of Italy has been completely destroyed by the earthquake of 1908 and it took over a century for it to be painstakingly reconstructed. Today only few know how dramatic the rebuilding process is in a city destroyed by an earthquake.
Faced with the tragedy of Haiti we are dismayed. In Port au Prince they are in the midst of a difficult emergency and the reconstruction of the city is far away.
L'Aquila is beyond the emergency and no real project for the future has been shaped yet. The violence of the catastrophe that quickly obliterates the time and history of a city, makes us unable to imagine its future identity.
Perhaps we know how to rebuild the buildings, but we certainly don't know yet how to manage the recovery process of the social and economical order of the city. This is undoubtedly the very issue in the reconstruction of L'Aquila. The historical city and its modern suburbs are abandoned; its economy, university, professional resources and institutions are in deep crisis.
For its future it's required a project, a dream, a strategy that brings in new resources and new town development structures. L'Aquila needs culture to produce a vision of the future for its community, a development model that pursues its rebirth. Starting from the negative, from the break up, we'll chart a course of rebirth.
The city is no longer defined just as a generator of cultural, social and economical processes, rather as a seismograph of conflicts and global development. L'Aquila, Port-au-Prince, and Kobe do not only come close because of their tragic doom: rather their vulnerability is paradigmatic of a challenge that plays along with the history of civilization and is now calling to an urgent debate on balance, instability and new order.
The goal is to use architecture to draw the attention to the complexities of urban reconstruction by involving local communities with innovative models of growth that can accelerate urban rebirth in the sense of quality and livability.
The future of these sites lies in the transition (*transition town*) with the chance to turn them

into experimental labs that bring together past and present in order to rebuild a sustainable, ecological city inclined to a smart use of the existing natural resources: a unique lab oriented to experimentation and knowledge.

Habitat of territories at risk of earthquake

The recent earthquake in Italy in L'Aquila, Abruzzo, (over 300 victims, 70,000 displaced, 50% of buildings uninhabitable, entire neighbourhoods and smaller towns destroyed) put forward again the urgent issue of how to re-build through the suggestion of new "Newtowns", decentralized from the main city.
Such an hypothesis doesn't take into the right account the issues of local identity and settlement system and fails to propose an intervention network model, capable of connecting the polycentric structure of L'Aquila to the system of small towns distributed in a few kilometres away from each other.
20% of the population of the main town L'Aquila, live in villages and spersed houses. The small towns affected by the earthquake, despite their small population (between 3000 and 200 inhabitants) were affected by appreciable increases due to the presence in the area of about 5,000 immigrants. The netlike structure of the territory is integrated with the road- and the hydrography-network, with the networks of enclosed fields and the decentralization of small and medium enterprises.
The settlement system has the characteristics of a polycentric city rather than an urban sprawl. The concentration of L'Aquila is counterbalanced by a network of small centres with low-density residential buildings (uniform houses, villas, irregular tissues of the old-towns etc.). The relationship among accommodation, connection and public spaces in this context is still significant. The risk for the traditional model of settlement is to be utterly cast off by alien settlement solutions. Whereas the existing model, if properly restructured and reorganized, would meet all earthquake-proof requirements. Low and medium density (habitat '*intermediaire*'),open spaces and let-outs, diversification of public spaces, network distribution of public structures (administration, universities, schools, culture, accommodation ...) will be the steps of a large-scale strategy aimed to redistribute populations at risk of earthquakes in the villages of L'Aquila and in the small towns.

Organization of the Seminar

The students organized in international groups within a high-quality integration environment, and assisted by a team of four young architects from L'Aquila as well as by experts and professors from either Rome or L'Aquila, they all worked for a week on these topics.
Faced with the complexity of the problem, they developed strategies of approach that combine the challenge of sustainable reconstruction with formal intuition and spatial imagination. Starting from the resources available – from the existing built heritage to the environmental resources

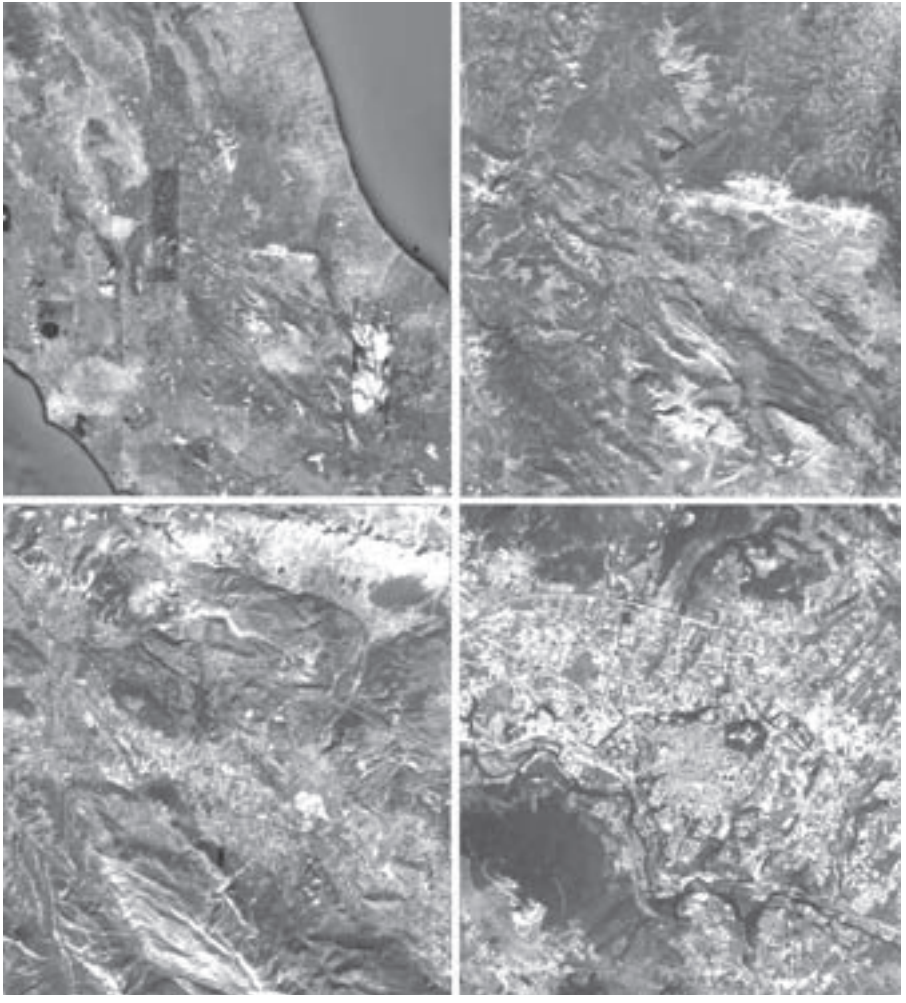


Image right:
L' Aquila and surrounding territories

– they conceived reconstruction as an opportunity to rethink means and priorities of the urban project. The use of the network model allows for testing and controlling the territorial intervention scale.
- The energy grid will use the best natural resources of the area, producing wind-, solar-, geothermal- and biomass-energy, in order to achieve full self-sufficiency.
- The infrastructure network will connect the territory with footpaths, cycle paths and a system of public transport in the sense of a sustainable mobility that will contribute to the reduction of private transport.
- The services network will extend to the whole territory, with a punctual as well as user-friendly relocation.
- The green areas network will protect the natural resources of the territory and connect them to national parks through green corridors that stretch out to the city.
The network model is not just a theoretical speculation model, thus its implications in the use of space and its role as shape generator are deepen in a further reflection. The energy networks have been fully integrated into the project, leading to a reconfiguration and a new set of physical space; the road network has been rethought in terms of urban sustainability, giving priority to public transport on private mobility, stressing the importance of "pedestrianness" and the centrality of communal areas. The role of electric cars powered by an integrated system of energy produced either by central or private residences has been redesigned in order to enable a self-sufficient energy system as well as a hospitable and porous urban space, where all in-between spaces are returned to the res *publica*, i.e. to the community as spaces for relationships and sharing.

The success of the Workshop is due to organizational wisdom as well as to the enthusiasm for a topic requiring huge efforts and research, ethical and moral awareness and imagination and it suggests that this experience is not to be considered complete yet.

The order, on request of UIA, has chosen to send us as young architects from 4 representative areas of the province of L'Aquila, in order to illustrate the realities of the territory affected by the earthquake to students who addressed the issue during the workshop.

Credits
4 architects from L'Aquila: Arch. Stefania D'Alessandro (Sulmona), Arch. Laura Guerrini (Castel di Sangro), Arch. Italo Iacobucci (Luco dei Marsi), Arch. Fabrizio Zonetti (L'Aquila)
UIA Delegate from Italy: Arch. Mauro Latini

Tutors
Arch. Teresa Granato, Arch. Mario Ferrari, Arch. Vincenzo Bernardi

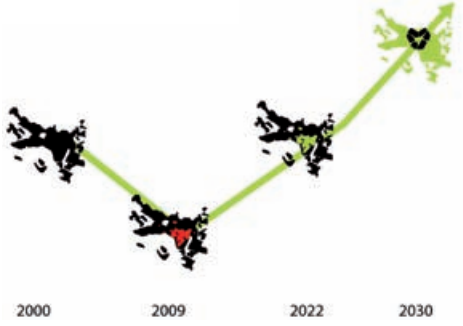
Student Workshop

Student Projects

photo Huihui Lü

Urban Energy Network
Energetic Heart L'Aquila - taking the earthquake as a chance to rebuild l'Aquila inside-out

Paola Andreozzi, Adelheid Henkel, Kerstin Janssen, Ole Storjohann



Sustainable By Design Award - 1 Prize

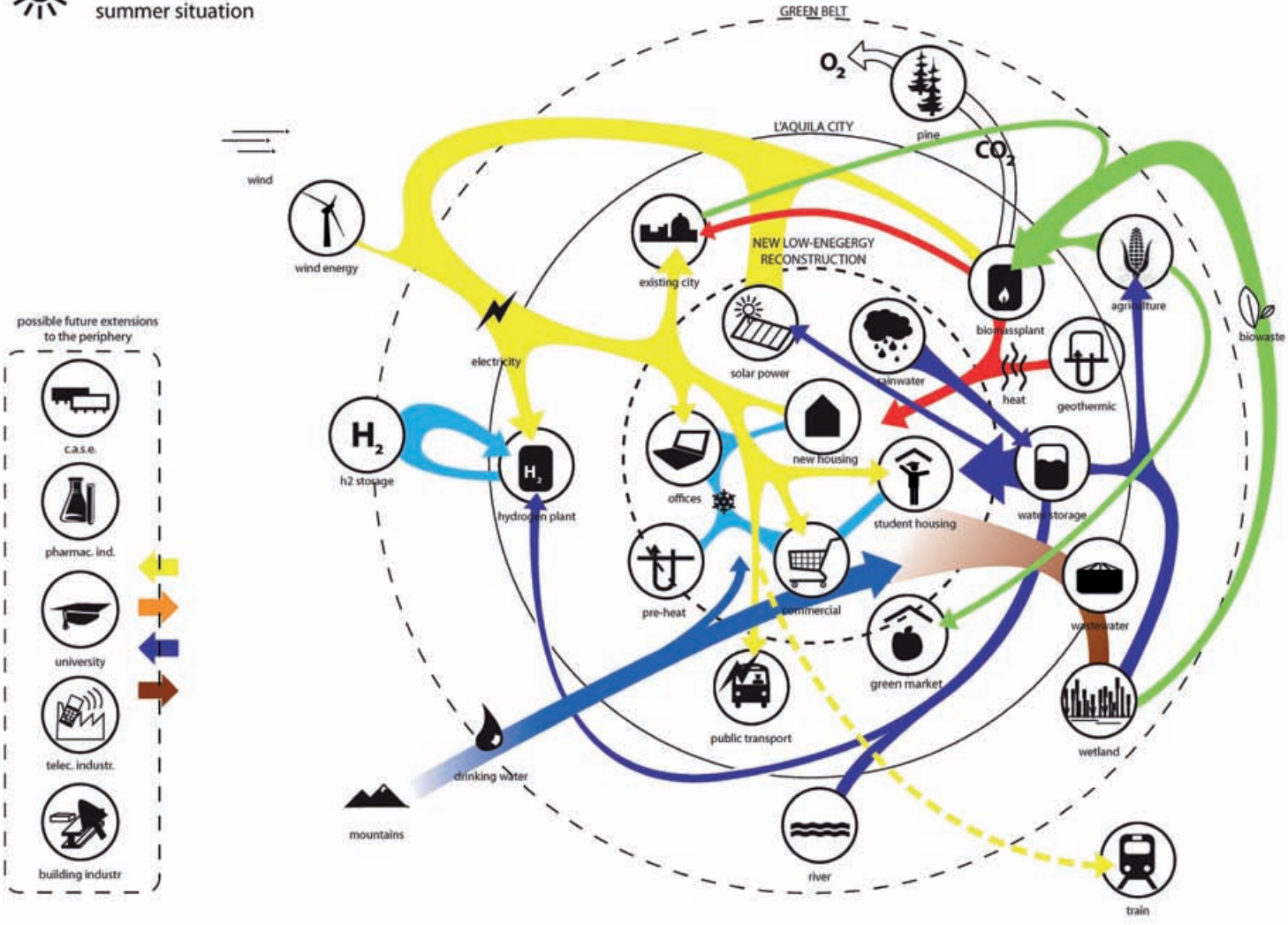
"A 1st prize for the perfect analysis of a "hard core topic" – urban energy cycles. Energy never gets lost. It just changes. And for the high actuality and the political importance of the selected topic for the region. This project should be developed further. For the region of L´Aquila but also for a more resource-sufficient future for all of us."

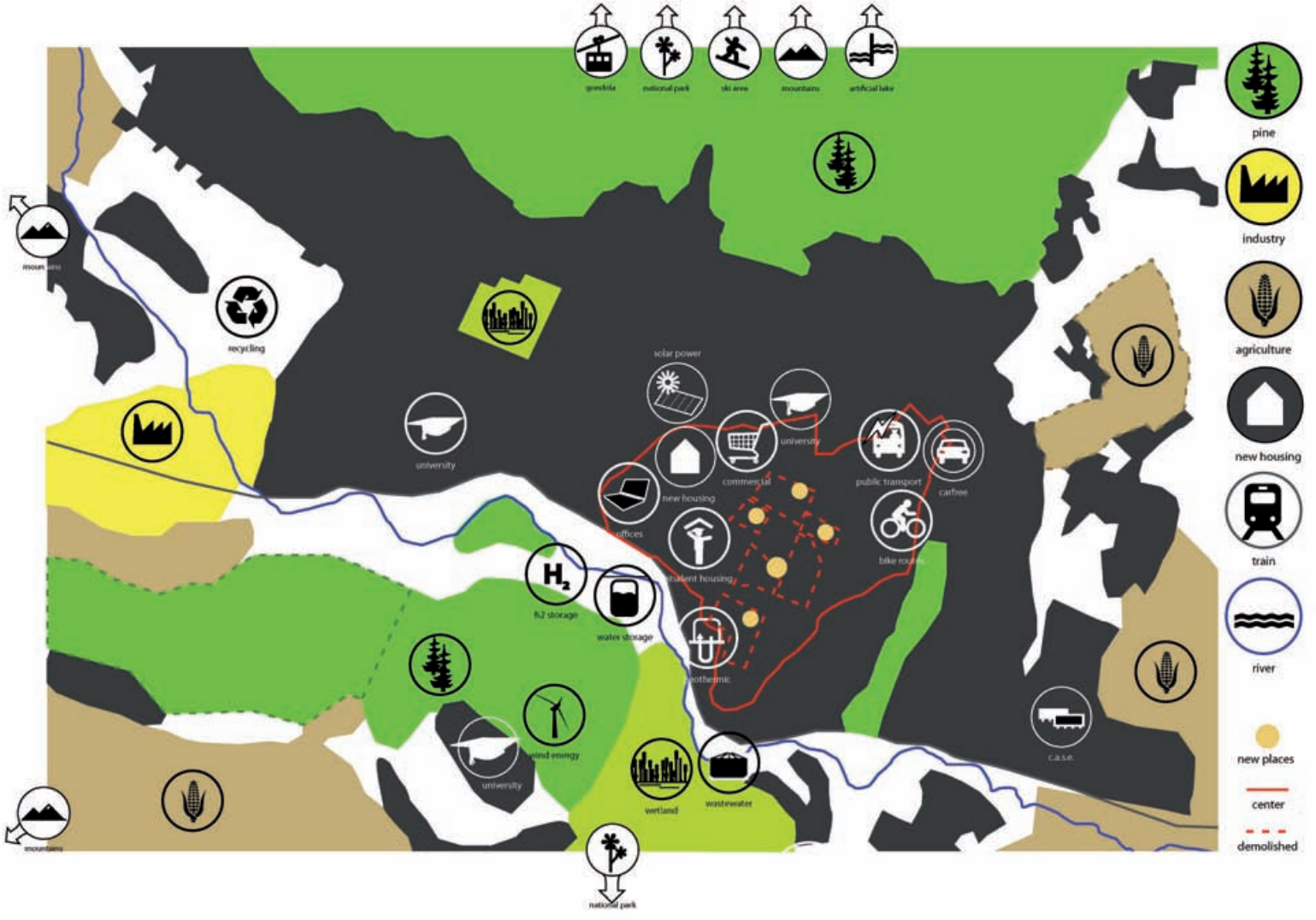
The term urban energy network refers to the concept of creating energy-independent cities through a decentralized "virtual power plant". Assigned to work with this approach, we created the concept "Energetic Heart L'Aquila".

We choose to work with L'Aquila out of two reasons; one was to prove that Mediterranean conditions have their own potentials for sustainable development. The second reason was that we saw the recent destruction of the historic center of L'Aquila as an opportunity to start with the right, sustainable approach from the beginning. Instead of re-establishing the unsustainable gas pipes we propose an intelligent network that utilizes L'Aquila's full potential through three steps: establishing energy-efficient buildings, benefitting from synergy effects of the mixed uses and finally integrating decentralized energy production.

In designing a system like this it is important to define the system boundary; we included the city periphery in our consideration, where we propose a green belt that can provide biomass and waste water treatment. Starting with the destroyed center and, in a later stage, extending the green network to include the whole city, L'Aquila can rebrand itself as a Phoenix that went from touristic historical city, to earthquake crisis, to a city of green innovation.

VIRTUAL POWERPLANT L'AQUILA
summer situation




gondola
national park
ski area
mountains
artificial lake
pine
industry
agriculture
new housing
train
river
new places
center
demolished
recycling
university
solar power
commercial
university
public transport
carfree
new housing
offices
student housing
bike routes
H2
h2 storage
water storage
geothermic
wind energy
university
wetland
wastewater
c.a.s.e.
mountains
national park

Public Spaces
Dynamic Spaces!!

Bianca Maria di Cola, Friederike Meier, Ting Liu, Eliška Stuchlá

Image above:
masterplan of summer and winter

Sustainable By Design Award - 1 Prize

"A 1st prize for a coherent process to develop with simple but surprising elements a long lasting and joyful living space, connecting two parts of a well kept urban system. And for the human and touristic approach to public and private activities in a condensed context."

Analyze

Our Group was a very rich mixture of cultures; Bianca Maria di Cola from Rome (I), Friederike Meier from Münster (GER), Ting Liu from Darmstadt (GER) Origin China and Eliska Stuchlá from Copenhagen (DK) Origin Prague (CZ).
First we had a lot of discussions about public and private spaces because of those different cultural backgrounds. We analyzed the differences in themes of responsibility, user, accessibility, atmosphere, winter-summer-situation, design.

Idea

As a result, we choose the characteristic about the winter-summer-situation of private and public spaces for main idea. In the summer, people need more space outside to enjoy the weather and the long days by for example sitting outside of the café, swimming and relaxing in the park. In the wintertime the semi-private space is compressed, because people spend more time inside, protected from the weather. We suggest a system, which reacts towards the needs of private and public space in different seasons.
After this general analysis, we concentrate on the genius loci, and considered, that the site Nyholmen can be upgraded by closing the former citadel fortification. Closing this green belt means also to close the public space on city-level.
The shape of the citadel looks like a pearl-necklace, with the ways and the regularly triangle extensions. We arrange the public spaces of Nyholmen in the same design: a main promenade with pearls of the necklace which create different types of public spaces, for children, for public viewing and market, for sport.

Implementation

We implement these two main ideas by creating these different public spaces, suggesting the possible building area, and showing the east-west-connection of the more private space, arranged in a second necklace, to the public space.

The identity marking Submarine-boat is moved to the children space and used as a big playground. It borders the space and can still be viewed from the city-centre.
Central to the channel is the market space, a community-center and public viewing space located. The existing extension is terraced to have a smooth tribune for big public-viewing events like concert, theater or soccer-match. Therefore, a swimming stage extends the public space on the water. Behind this tribune, the flat market place and the community-center, which contains services and shops serves for other events.In wintertime, the stage moves to land and the cultural events move into the community center, the hall with the photovoltaic-module-roof will be closed in that time.

The Northern part of the site, the sport-area, is enriched with a module of floating platforms and a floating pool. This new city-module gives more opportunities to go swimming in the channel or to take just a sun-bath. In wintertime, all the platforms, the stage and the pool are fixed together and connected to the land. The pool can be used for ice-skating.
The Highlight of the promenade will be the connecting point at the end of the promenade. We don't want a connection for traffic, only the function of the green-belt as a possibility for having a walk, jogging or cycling should be assigned on the connection. We suggest the "cycle-boat"; a float which runs like a pedalboat, people just keep on cycling. To shorten the distance, the existing quay will be extended by a pontoon bridge with windmills, so called "energy-tress", on it, the same installation on the other side of the channel.

Sustainability

The new installations mark a new sustainable lifestyle for this area and also for the city. People coming by ship to Copenhagen first see the landmark-installation of the energy-trees and the cycle-boat.
The well adapted system of extending and compressing public space has for result less land-use, so we can build with higher density. This generates more users for the functions in the area.
On a social level, we want to generate more responsibility towards the public space by establishing a project day and cooperating more with the habitants in questions of shaping their environment. The responsibility has for result less service and maintenance on the city-level and continuous development of the environment.

Social and Cultural Infrastructure

Erling Christoffer Forfang, Camilla Grappelli, Lena Piepkorn, Christian Zilisch

Sustainable By Design - Honorable mention

"An honourable mention for the light impact on the sensitive infrastructure of the bay and the urban context. The intervention is a missing link between the two city areas and will help the developed area to be requalified. And for the intelligent use of renewable energies and recycled elements."

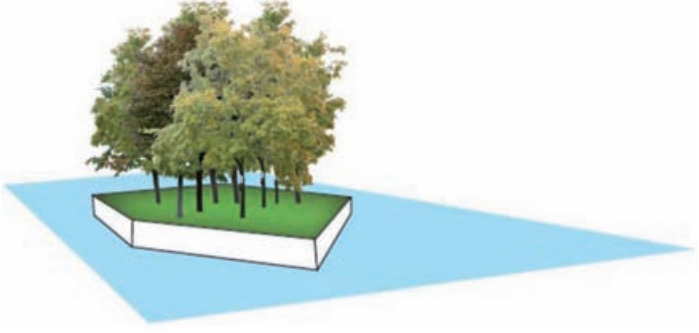
Natural or not natural climate changes have ever been a reason for people to keep living in moving structures. In former days usually first there were resources on a spot, then people came and built their houses. Today often when you find the conditions of people finding a spot, building houses and putting resources/ programmes into them, hoping that people would settle.

The ever ongoing movement today has gone deeper into the social and cultural life of people. Like modern nomads people have the possibility to change their state and place of living constantly. This creates a special character of society.

Our site in the north of the city is located on Holmen and actually is a connection to the outer areas of the eastern parts of the city.

To make the settlement attractive we first give the missing link and furthermore complete the string of cultural sites alongside the harbour of Copenhagen. The fixed platforms do assume the role of a supply unit and fundamentally give the basics for a growing structure. Seasonal market boats, restaurants, floating parksm small theatres, galleries and platforms bringing fresh fisch from the sea combine the connection to an infrastructure of cultural and social places by adaptation and flexible change through different influences.

conald's



BREAKFAST
American Breakfast-
Mexican Breakfast-
Pancakes-

Water
A Timeline of Protection and Preservation

Valerio De Angelis, Janae Futrell, Yesim Gülsular, Elisa Ottaviani

Special VELUX Student Award

" The special natural resources award for the choice of a core topic of the new millennium. For an economic and environmental approach to a sustainable resource management and a profound research of possible lightweight and landscape structures in coastal areas."

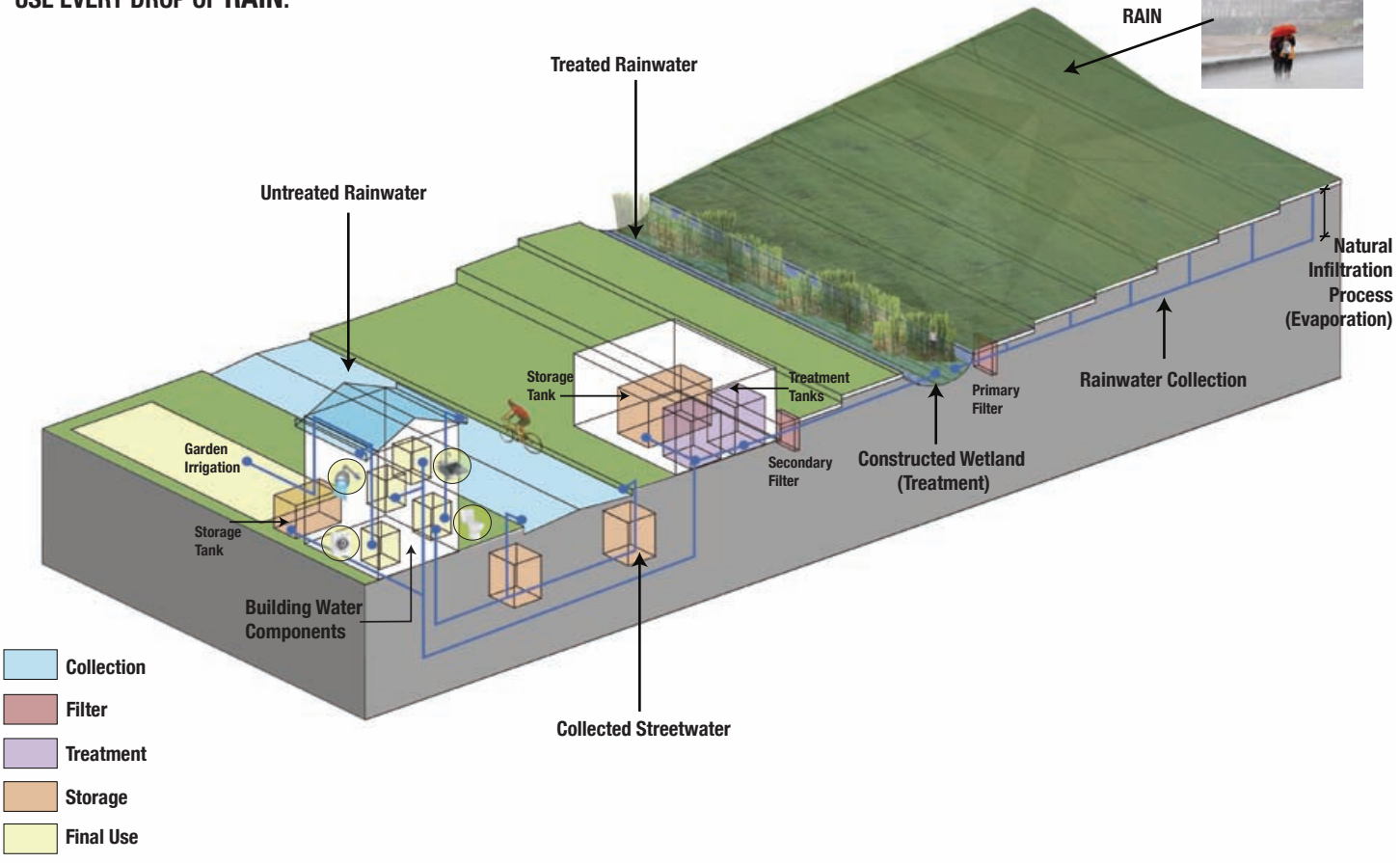
In a land once seeking protection from human invaders, Copenhagen's main need for protection now comes from rising water levels.
Because it is surrounded by salt water and large parts of the groundwater supply is contaminated, the collection of rainwater as a source of treated potable water is an excellent option to support the needs of the population. We suggest the creation of a landform wall that protects from water and preserves and treats water for potable water use

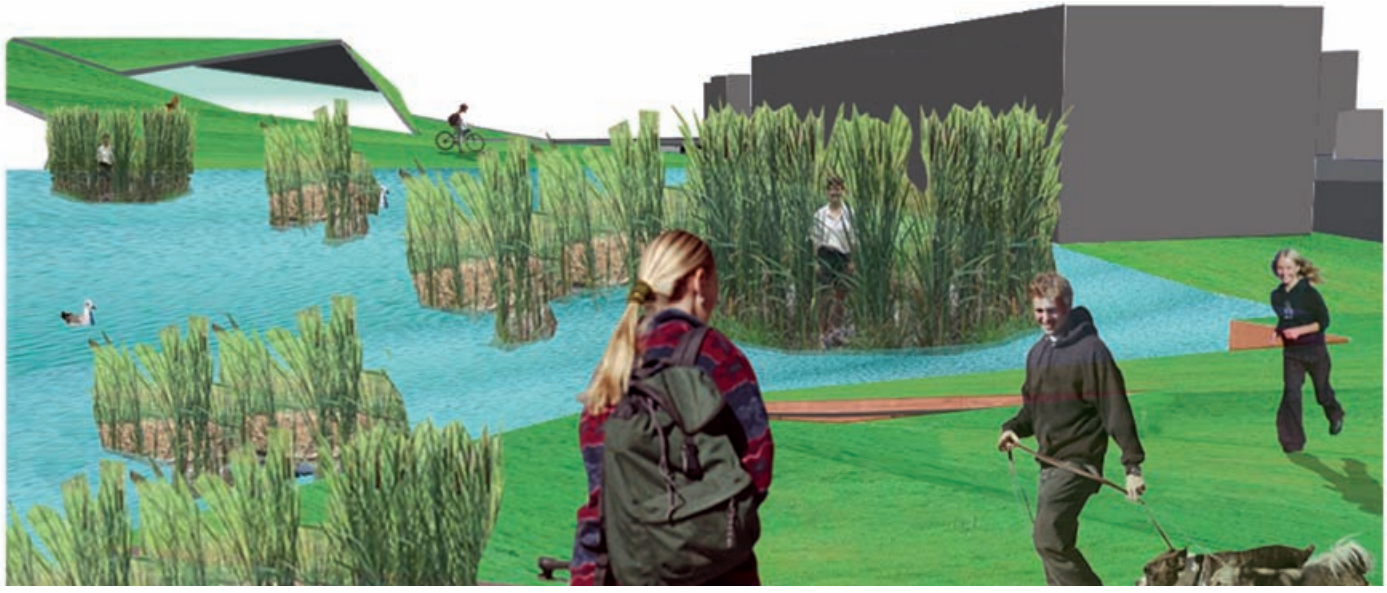
In addition we want to ensure that this space becomes a community space, aids the city of Copenhagen in its transition from an industrial harbor to a people-oriented coastline of leisure and living space. This involves a phasing component to the building process. There are more terraces built as the sea level rises. The structure should be built first, and the terraces can be inserted as they are needed. This allows marketing this project as a sustainable base (environmentally and economically) for urban development by supplying building sites, which are able to transit, with different program types. By that we secure either public or private investors for a large variety of mixed-use buildings.

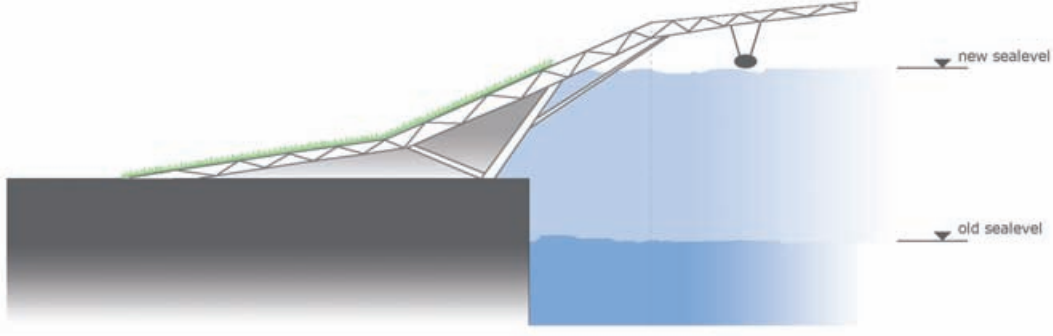
All that allows the project to become a visual reminder of the continual transition of Copenhagen from 2020 – 2200. Indeed Copenhagen will be a city of evolution as it continues to deal with water in terms of protection and preservation.

CLEAN DRINKING WATER IS A SCARCE RESOURCE.
WATER IS A HUMAN RIGHT.
USE EVERY DROP OF RAIN.

Land Terracing + Fractal Geometry Landform = "Land Roof"
Direct Water Towards Constructed Wetlands for Treatment






new sealevel
old sealevel

Traffic
TraFICtion
Sylvie Duvoisin, Heiko Habben, Ulrik Sludekilde

The main point of the subject "traffic", was to be clear about how the traffic will developed in the next 20-30 years. We think, that the car industry will develop new technology, what means, that we will still have a lot of cars. So we need something which give the car-driver a bad feeling, if we want them to stop drive trough the city.

We find out, that the people, who already do something for the environment are the one who also are the most punished one, the bicycle driver. They don't make any pollution, but breathe the smoke of the car in the street and get for example cancer. The car driver, who are making this pollution are the one who breathe good air in their cars.
So we need to inverse this situation or rather give the car driver the bad feeling, not the bicycle or pedestrian.

With a "city-filter" we thought, it may be possible. We create a small tube which give the driver the impression of darkness, narrowness, looniness and asphyxiate. This are all feeling, which nobody likes.
On this tube we create new public spaces and green-space. In this way we bring the street, which has in the big cities about 6 stripes ore more and are empty of people, back to the habitant of the street and also city. They don't see or hear the cars and can enjoy the new place, which can be use in many different ways.

With the tube we connect park-spaces, so the driver can let the car there and continue in public transport which are always next to a "city-filter".

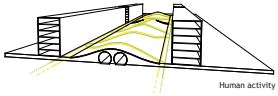
A "city-filter" are useful at points, where main-roads enter the cities and are not possible to be use be pedestrian or bicycle. This points have to be chosen carefully and you can have 6 or 10 of this "filters", depending on the necessarily of the city.

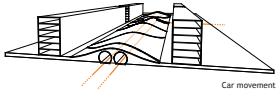
Flip of situation
Possible ?

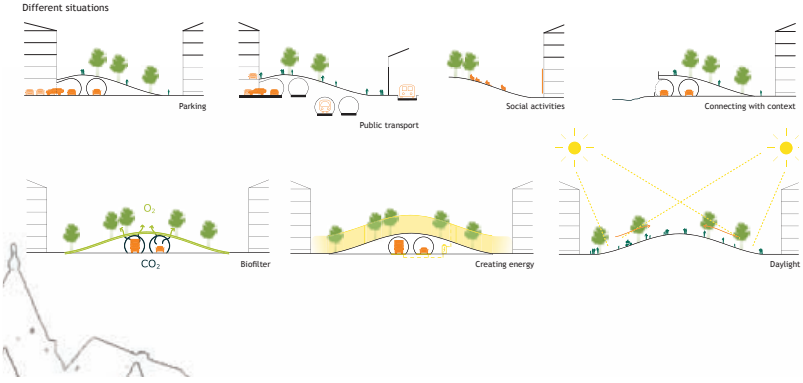
Current situation

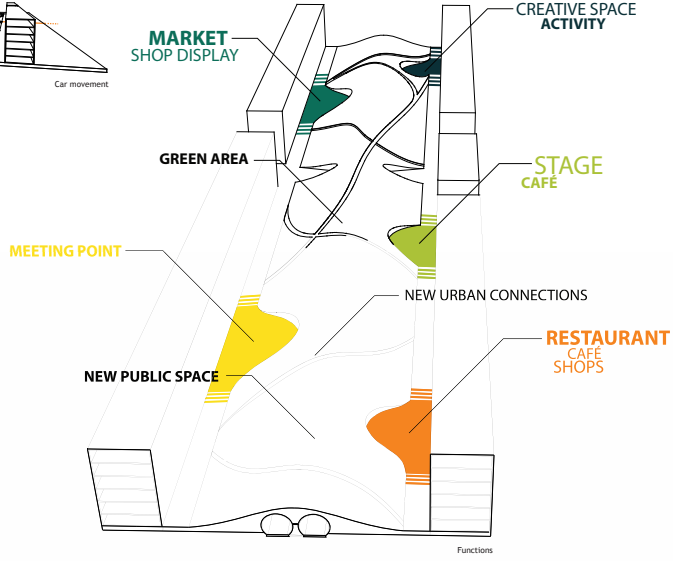
Aim

LESS
LESS
NEW
NEW
Quality


Human activity


Car movement


Different situations
Parking
Public transport
Social activities
Connecting with context
O_2
CO_2
Biofilter
Creating energy
Daylight


MARKET
SHOP DISPLAY
CREATIVE SPACE
ACTIVITY
GREEN AREA
STAGE
CAFÉ
MEETING POINT
NEW URBAN CONNECTIONS
RESTAURANT
CAFÉ
SHOPS
NEW PUBLIC SPACE
Functions

renewable energies
The Nyholm Energy Park

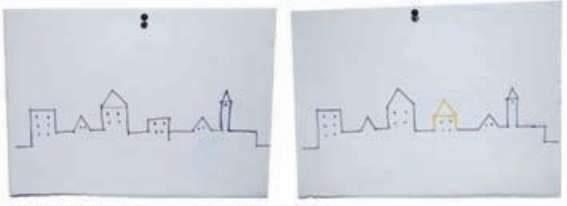
Huihui Lü, Ilja Maksimov, Marika Moscatelli, Giada Serra

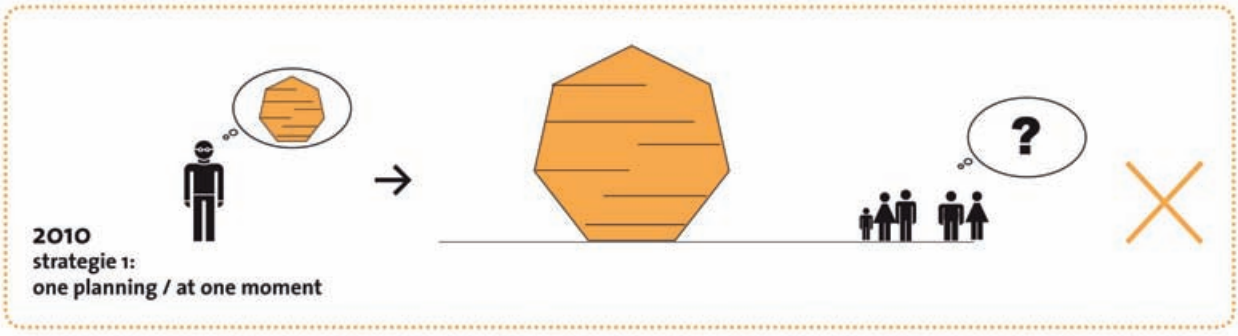
Image above:
Linking the Nyholm site to Copenhagen City

The Nyholm island as a former military base with its historic buildings has a great potential to be used for public functions as art, education and recreation.
As our topic was renewable energies, our idea was to spread that topic to a wide population. People shall get to know, how a sustainable life works. This is what the island will show in an educational way.
Visitors come to the site, going trough by visiting workshops, museum, hands and crafts dealing with recycling materials, they will learn about ecological agriculture, the footprint of themselves and of what the world can supports, the whole ecosystem - and all this by considering the energy consumption. The site will show how the consumed energy by the island and the visitors will be created in regenerative ways, by using the mix of energy which suits to climate and site and changes seasonally. In a way it will be an island with a self-sufficient supply. All sense of the visitors shall be activated (to feel the wind, to smell the seawater and the plants, to taste local ecological food, to see the visual information) and at the end be sensitized. And also what they have learned in the Energy Park, they will implement it in everyday life.
What happened on the island should also to be spread out to Copenhagen City. To enhance the tourism, our idea for that is for example sending a water boat which is either generated by the sun, or by algae, or just by wind to the opposite of the island, where the mermaid stands. The link to the City would also close the former city wall of Copenhagen, which is already currently used as a green belt of recreation. Another possibility is to spread out some pavilions in the City showing in a playful way the means of regenerative energy.

Revitalisation of the City and Buildings

Stephanie Eickelmann, Pascal Maas, Nazir Rahmaty, Isil Tanriverdi

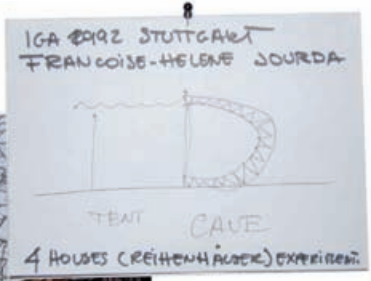




2010
strategie 1:
one planning / at one moment

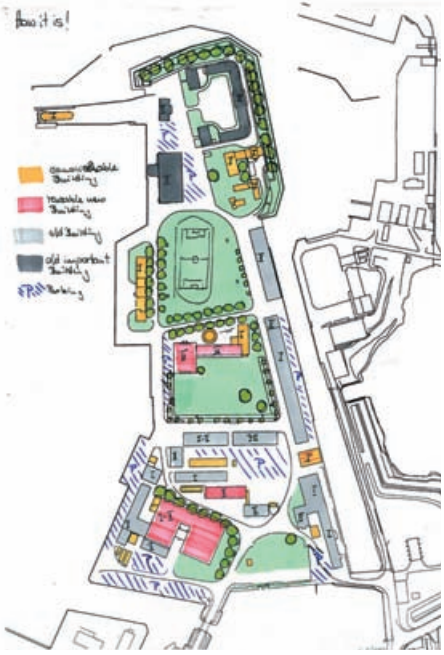
2010

2050
strategie 2:
planning depending on the needs of the people


IGA 1982 STUTTGART
FRANÇOISE-HELENE JOURDA
TENT
CAVE
4 HOUSES (REIHENHÄUSER) EXPERIMENT.

Affordable Living Spaces

Kerstin Burkhard, Stefania d'Alessandro, Mathias Hampe



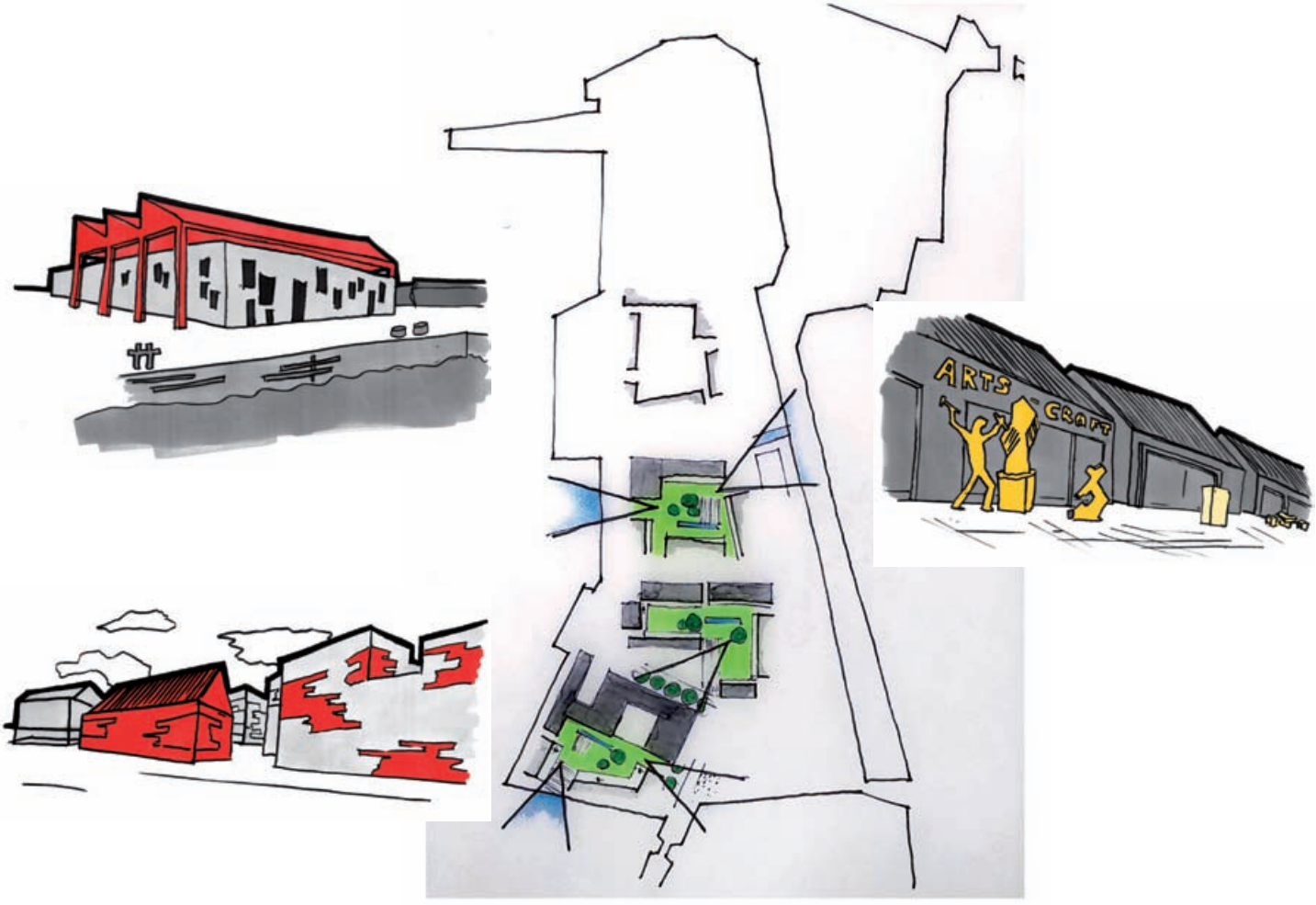
The main question of the project is how to reach affordable living in such a lucrative side of Copenhagen.

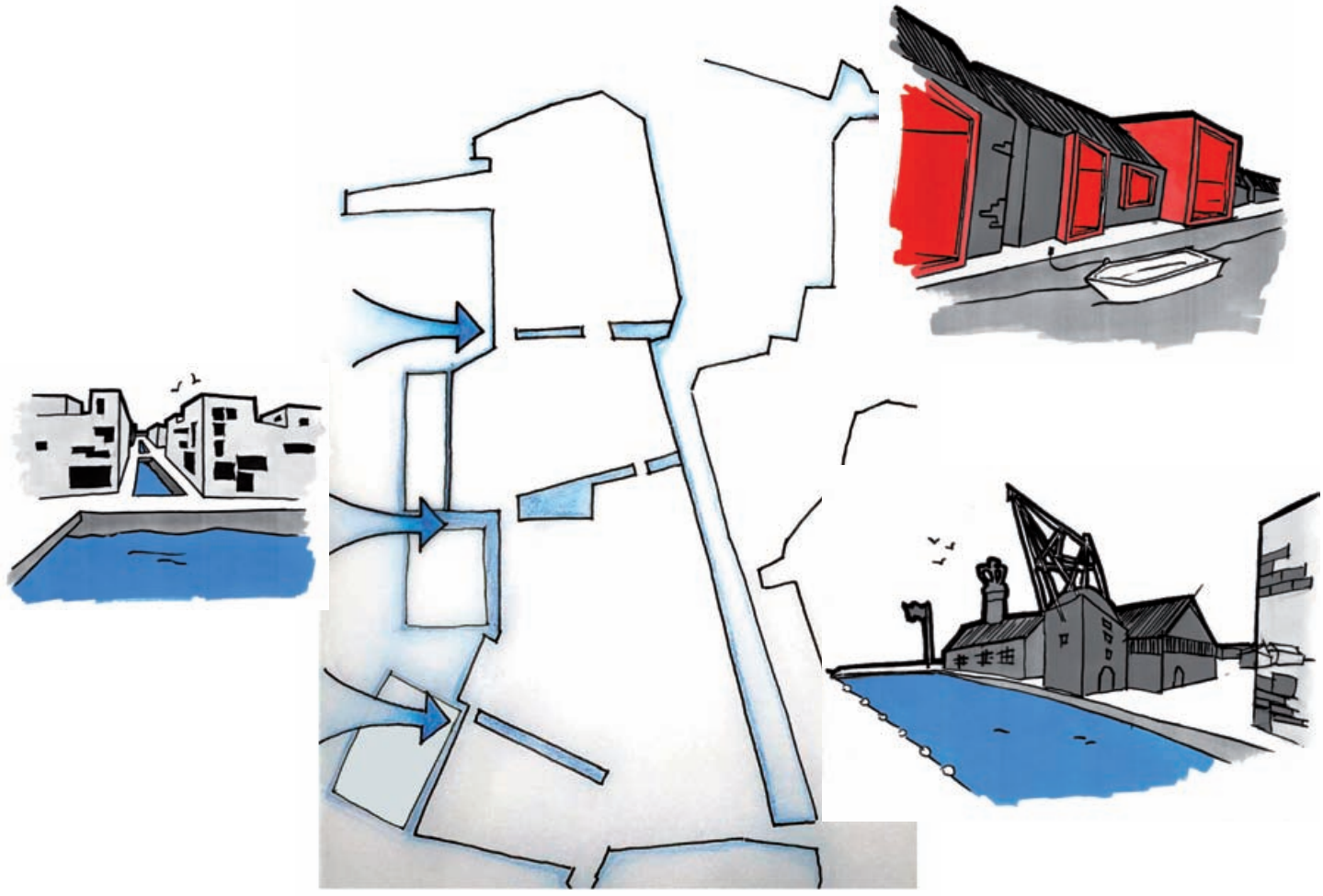
On the one hand the idea was to minimize the needed space and the construction- and the running costs of the area. By expand existing buildings, by filling the empty spaces and by reducing the space for traffic, we raised the density of the area. To lower the construction costs we reused existing buildings, and if the building cannot be used, at least the building materials such as bricks can be used for new constructions. The new buildings should be flexible, so it can react on changing needs. The running cost can be minimized by reducing needed energy and by building a good energy network contributing the produced solar energy of new buildings to buildings without energy production.

On the other hand we tried to generate possibilities to generate money resources to reach a minimum of financial support for the area from outside. Working space for startup-offices and craftsman, shops and cafés on the seaside will not only raise the attractivity of the area but also give people work. The area is also financed by building houses for middle and higher earning people on the attractive seaside. By a living association there will be a cashflow financing the supported affordable living space for lower earning people.

A social network is needed to connect the lower and higher earning people not only on an economic level. By raising the attractivity of the public space and by shared semi private space, we give a space for this.

During the project we recognized how many links planning affordable living space have to the other topics of sustainability.


ARTS
CRAFT



Student Workshop

Student Statements

photo Hans Drexler

Student Statements
In Future, Cities There'll Be...

Name:	Elisa Ottaviani
School:	Sapienza Università di Roma
Origin:	Italy
In future cities there will be...	*green spaces and a lot of bicycles.*

Name:	Heiko Habben
School:	MSA Münster School of Architecture
Origin:	Planet Earth
In future cities there will be...	*hopefully a „renaissance" of social life...caus in the end it's all about the people!*

Name:	Eliska Stuchla
School:	Royal Academy, Kopenhagen & Academy of Art, Prague
Origin:	Czech Republik
In future cities there will be...	*healthy people, protected nature, authonomous cities*

Name: Matthias Hampe

School: TU Darmstadt

Origin: Germany

In future cities there will be... *more responsability!*

Name: Lena Pipkorn

School: TU Darmstadt

Origin: Sweden

In future cities there will be... a lot of speed!

Name: Kerstin Burkhard B.A.

School: MSA Münster School of Architecture

Origin: Germany

In future cities there will be... *less ignorance about dealing with environment.*

Name: Lars Marquardsen

School: MSA Münster School of Architecture

Origin: Germany

In future cities there will be... *a lot of water*

Name: Huihui Lü

School: TU Darmstadt

Origin: China

In future cities there will be... *sustainable autonomous self-suppliement with its own identiy*

Name: Sylvie Duvoisin

School: TU Darmstadt

Origin: Europe

In future cities there will be... *a concience concerning the earth and its problems*

Name: Kerstin Janssen

School: MSA Münster School of Architecture

Origin: Kleve-NRW

In future cities there will be... *energy independent in a green way!*

Name: Yesim Gülsular

School: TU Darmstadt

Origin: Germany

In future cities there will be... *broad, comfortable bike lanes and healthy cars*

Name:	Bianca Maria Di Cola
School:	Sapienza Università di Roma
Origin:	Italy
In future cities there will be...	*too green*

Name:	Adelheid Henkel
School:	TU Darmstadt
Origin:	Germany
In future cities there will be...	*sustainable and independant energy*

Name:	Ole Storjohann
School:	Royal Academy, School of Architecture
Origin:	Germany
In future cities there will be...	*higher density of everything: people, build mass, nature and quality...*

Name:	Ulrik Sludekilde
School:	Royal Academy, School of Architecture
Origin:	Denmark, Copenhagen
In future cities there will be...	*architecture is for the people*

Name: Yisu Wang

School: TU Darmstadt

Origin: China

In future cities there will be... *less cars, less roads. but more traffic with clear energy.*

Name: Erling Christoffer Forfang

School: Royal Academy, School of Architecture

Origin: Stavanger, Norway

In future cities there will be... *greater possibilities for social interaction between people from different backgrounds, as a result of more friendly city environment.*

Name: Friederike Meier

School: MSA Münster School of Architecture

Origin: Germany

In future cities there will be... *fresh innocent air!*

Name: Sophia Vassiliadis

School: TU Darmstadt

Origin: Hellenic

In future cities there will be... *„intelligent optimism" Ode Magazine*

Name:	Ilja Maksimov
School:	MSA Münster School of Architecture
Origin:	Estonia
In future cities there will be...	*a very urban atmosphere. You can find most things for your living within a small area*

Name:	Pascal Maas
School:	MSA Münster School of Architecture
Origin:	Germany
In future cities there will be...	*a flexible growing compexity of layers, networks, information and change...*

Name:	Alberto Maiozzi
School:	Sapienza Università di Roma
Origin:	Italy
In future cities there will be...	:-

Name:	Marika Moscatelli
School:	Sapienza Università di Roma
Origin:	Italy
In future cities there will be...	*renewable.*

Name: Nazir Rahmaty

School: TU Darmstadt

Origin: Afghanistan

In future cities there will be... *a lot of people, which are living in harmonie with nature, without violence and there will be energy for everyone of us all over the world*

Name: Stephanie Eickelmann

School: MSA Münster School of Architecture

Origin: Germany

In future cities there will be... *density and social interaction! complex/multifunctional/open/growing buildings based on people's needs!*

Name: Sema Istl Tanriverdi

School: TU Darmstadt

Origin: Turkey

In future cities there will be... *may be more efficient systems established, making the spaces dynamic as well as providing opportunities for adaptability.*

Name: Janae Futrell

School: TU Darmstadt

Origin: USA

In future cities there will be... *sustainable urban infrastructure. It is not enough to create environmentally-friendly buildings only.*

Name: Chrisitian Dominikus Zilisch

School: MSA Münster School of Architecture

Origin: Germany

In future cities there will be... *a chance*

Name: Giada Serra

School: Sapienza Università di Roma

Origin: Italy

In future cities there will be... *„sostenibile“*

Name: Federica Benvenuto

School: Sapienza Università di Roma

Origin: Italy

In future cities there will be... *green energy*

Name: Ting Liu

School: TU Darmstadt

Origin: China

In future cities there will be... *easily to join it and comfortable to enjoy it*

Name: Camilla Grappelli

School: Sapienza Università di Roma

Origin: Italy

In future cities there will be... *Ecologia, rinnovabile, sostenibile anche socialmente*

Name: Paola Andreozzi

School: Sapienza Università di Roma

Origin: Italy

In future cities there will be... *chance*

Name: Valerio De Angels

School: Sapienza Università di Roma

Origin: Italy

In future cities there will be... *cities?*