Novità Allemandi settembre 2013

GreenUP / a Smart City

GreenUP project focuses on a green sprawling vertical infrastructure in order to contaminate the current glob & glam *Smart City* idea. Both a visionary and an effective tool for metropolis challenge governing, it deserves space for safe pedestrian walkways, while hosting community farming or Co2 balancing + dust-retaining shrubbery.
Conceived by CrossingLab / Crossing Research On Site Specific, INnovation, Globalization, a think-tank Lab for culture crossing begun at the School of Architecture, University of Florence / *GreenUP* has been first discussed at *Governing the Metropolis* international conference in Paris, 2012. Granted by the Regional Government of Tuscany (Research Dept.) for applied research after a 4-year theoretical work, GreenUp's 8½ case-studies – a numeric reference to Federico Fellini's glorious movie – represent a choice between the several others developed jointly with students and senior colleagues, according to a holistic and hybrid *learning-by-doing* methodology.
GreenUP is a 4-word acronym: **G**reen sprawl, **R**ecycling/renewable, **E**nergy, **EN**vironment.
Other Key-words include: Carbon Footprint Reduction, Co2 balancing, Tiers Paysage (by Gilles Clement), Urban Farming, Walking City (by Archigram), Zero Entropy.
The entire GreenUP bundle (book+ebook with links+website) is currently implemented jointly with stakeholders, enterprises and multi-discipline researchers.
Preview + multimedia: www.crossinglab.com

GreenUP - a Smart City

Edited by Giacomo "Piraz" Pirazzoli and Bianca Maria Rulli with Lenny Valentino Schiaretti
Text and projects by CrossingLab, with Paolo Grossoni, Alberto Giuntoli, Carlo Taliani and Mara Bruzzi

- ❑ Sectors *Architecture, City Planning, Eco-sustainability*
- ❑ Readership *Architects, Students, Stakeholders, Public Administrators*

76 pp., 16 x 22 cm
Paperback, € 25,00
ISBN 978-88-422-2226-2

Augmented ebook + links etc. € 8,90
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Regione Toscana/European Social Fund
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INDEX

GreenUP! A smart city + Fundamentals/References 4
Giacomo Pirazzoli

Green & Food 14
Paolo Grossoni_Alberto Giuntoli

INTERNATIONAL COMPETITION Bronx NY 16
Giacomo Pirazzoli

WORKSHOP Re-Using by Re-Greening 22
Giacomo Pirazzoli

INTERNATIONAL WORKSHOP The Green Uffizi 30
Giacomo Pirazzoli

RESEARCH GreenUP & Con-Temporary Social Housing/Central Italy 38
Bianca Maria Rulli

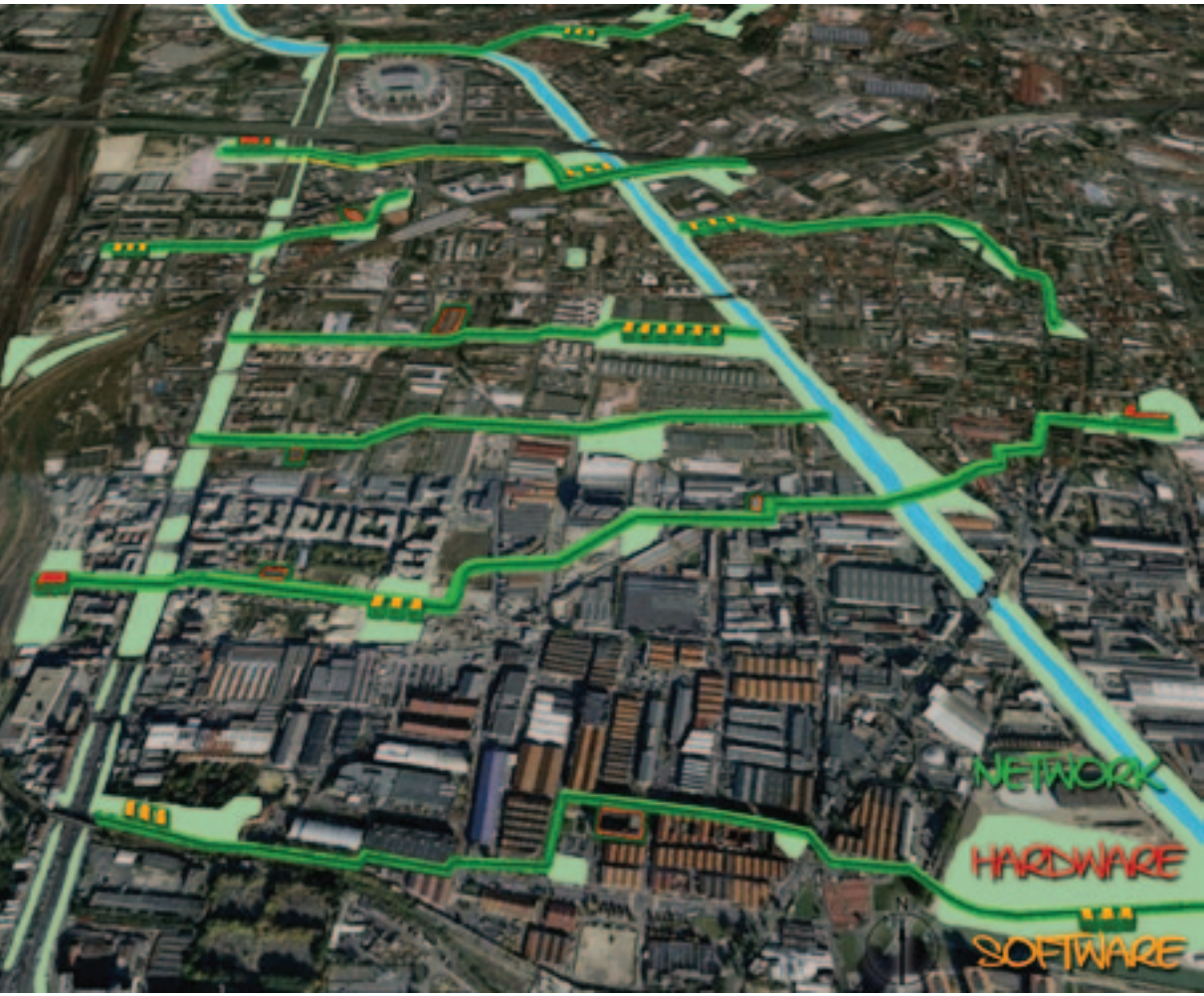
RESEARCH GreenUP & Con-Temporary Social Housing/Southern Italy 46
Lenny Valentino Schiaretti

INTERNATIONAL WORKSHOP ZESS@MTP 54
Giacomo Pirazzoli

INTERNATIONAL COMPETITION Re-Connect/Re-Use 60
Giacomo Pirazzoli

RESEARCH Saint Francis and Filippo Brunelleschi 68
Giacomo Pirazzoli

GreenUP!
a Smart City



Conceived by CrossingLab – Crossing Research On Site Specific, INnovation, Globalization, a think-tank Lab for culture crossing begun at the School of Architecture, University of Florence – the *GreenUP - a Smart City* project focuses on "viral green" multipurpose settlement as a visionary but effective tool for metropolis challenge governing. The 8 ½ case-studies – a numeric reference to Federico Fellini's glorious movie – represents a choice between the several other themes developed jointly with students and senior colleagues, according to a holistic and hybrid *learning-by-doing* methodology. Worth to add that the *GreenUP - a Smart City* 4-year research theoretical plot had a preliminary discussion at Governing the Metropolis International Conference in Paris, 2012. After that, the entire bundle (book+ebook with links+www.crossinglab.com preview website) has been developed as a kind of cross-media job to share, in order to open a dialogue with stakeholders, enterprises and multi-discipline researchers. Last, CrossingLab & partners are actually working on the applied research release, since the Region of Tuscany (Regional Government, Research Area) has granted **GreenUP**; as a matter of fact, the outstanding culture belonging to Tuscan landscape at large – itself a wolrdwide known example thanks to the *Grand Tour's* artists, poets and writers – is the research starting point after the Smart-Green-City we want. **GreenUP** is a 4-word acronym:

Green sprawl: among the many issues related to contemporary global urban crisis, green can be considered a constant need for each community. Since free ground is not available any longer in the majority of urban cases – due mostly to density and related costs – vertical gardens may be designed to become the new green, pedestrian and safe circulation system. For linking formerly derelict fragments and new/recovered buildings, *GreenUP* virally sprawls within the urban fabric – a kind of **NETWORK**, or the new Smart City green backbone.

Renewable/Recycled: traditional building LCA (Life Cycle Assessment) always highlights a great amount of demolition waste; in case of urban refurbishment, costs deriving from demolition are equally enormous. To avoid this problem, *GreenUP* provides the NETWORK connecting walk to a second scale system, based on renewable /recycled. Existing buildings to be retrofitted became the **HARDWARE**, jointly with renewable cross-laminated timber pavilions, which may host complementary common services. **SOFTWARE** temporary units based on recycled shipping container-boxes – on purpose re-converted as high-flexibility modular structure for social housing settlement – can be added; container boxes can be in fact de-placed and re-utilized in different places, according to new needs. Finally, a significant carbon footprint reduction will be achieved thanks to three factors: no demolition; lifecycle extension for both pre-existing traditional

buildings and container boxes; no high-entropy reinforced concrete use.

Energy: *GreenUP* vertical megastructure hosts outdoor heating district pipes (plus water, sewage, cables etc.) in order to avoid problems related to digging and permanent ground consuming, at the same time offering a simple maintenance. Moreover, both active and passive energy option can be optimized: various size wind-captors and silicon nanostructured photovoltaic+Graetzel cells both for horizontal surfaces (roofs) and vertical (façades) will produce energy – estimated self-efficiency up to 60%, depending on seasonal conditions. Concerning passive items and energy saving, a green insulation layer will wrap around the buildings, while innovative eco-bio components will be utilized for interior design.

ENvironment: *GreenUP* has been designed to play a relevant CO2 balancing role within the metropolis, giving a proper answer to climate change issues. A truly flexible and site-specific environmental care device, *GreenUP* vertical megastructure may have different goals, kind of maintenance and costs: then a **low-tech** entry release, for Developing Countries facing slums ground consumption matter etc., may be modularly upgraded towards a **high-tech** one, for Western Urban+Environmental requalification. As a consequence, depending on the particular task, *GreenUP* may be the place for community-run urban farming to grow vegetables, groceries, fruits and different colour flowers changing all the year long. In order to eventually respond to polluted contexts issues, *GreenUP* may contribute to decrease noise; appropriate dust-retaining species may be planted to reduce PM10.

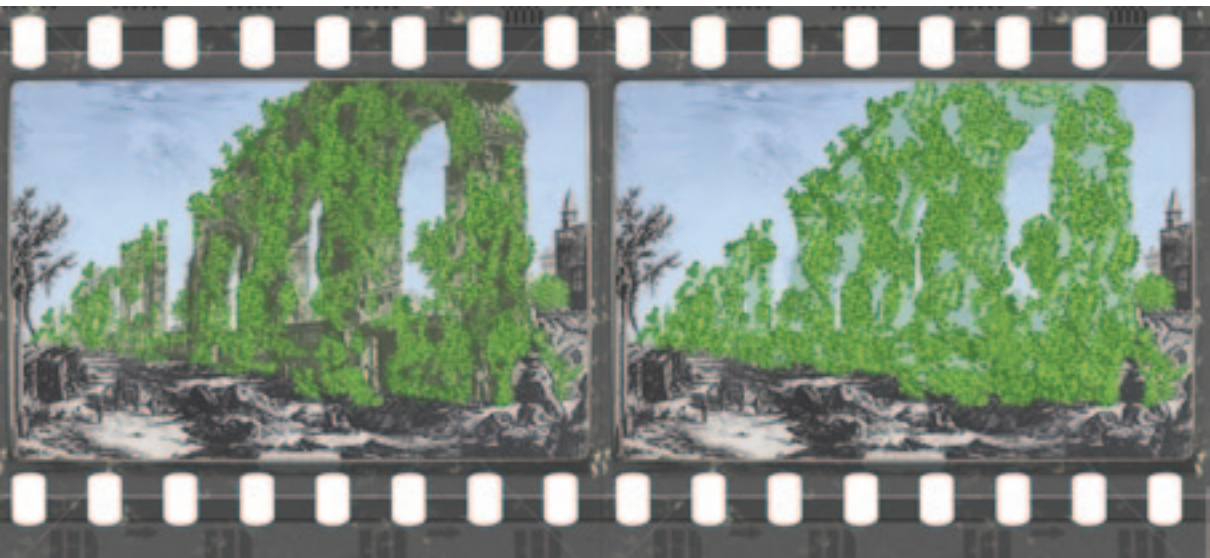
References aka Fundamentals

"The Past is for Shakespeare a part of a living tradition […] every time worth both being altered and modified, although without thinking about being abused." Nadia Fusini, Introduction to William Shakespeare's *A Midnight Summer Dream*, It. Ed., 2006

After a fascinating engraving by **Giovan Battista Piranesi** with ruins of a Roman aqueduct (1761) we began to slightly hide the structural part of the aqueduct, while adding green (up) to the monument **(1)**. A four stills sequence reveals the potential conceptual inversion between what is considered to be Permanent (solid: walls) and what is usually called Temporary (living: green) – this is **GreenUP!**

Archigram/Ron Herron's ***Walking City***, 1966 **(2)** suggested the paradigm of a constantly changing settlement principle. *GreenUP* does not make the whole town moving, but single and specific parts (SOFTWARE); like fragments belonging to a complex metropolitan framework.

Ulaanbaatar (3) For centuries, the Mongolian State capital has stood as a worldwide example for temporary settlements: the gher tent belongs to the local nomadic culture (SOFTWARE) jointly with permanent buildings (HARDWARE). By chance we discovered, via the web, **(4)** a kind of green/glam upgrading (Star Architects, 2011) after the Late Sixties cult-megastructure



Adolfo Natalini SuperStudio's ***Monumento Continuo*** (1966) which can pave the way to an intriguing question: since horizontal surfaces are rarely available in metropolitan areas, should the green walk remain horizontal?

Alvaro Siza's brilliant aqueduct concept for **Quinta da Malagueira** Social Housing district (Evora, 1977) - a budget project after the revolution in Portugal: plants and ducts are linking buildings to each other, like a NETWORK.

Going back a couple of Centuries, when people needed fruit and vegetables for a decent quality of life, a socially-sensible solution was the **Schrebergarten (5)** - nowadays PAC-Public Access Community garden. Why not re-design it vertically through the *GreenUP* megastructure, a wonderful place for **urban farming** indeed?

"Let's fight the filth with forks and flowers" says **Guerrilla Gardening (6)**, a significant group of independent Urban Activists and volunteers. Then, according to Gilles Clement's stimulating shift from former esthetic gardening, ***Third Landscape* (7)** fragments as well as interstices are resources towards a subversive new vision of the environment.

The **CanYaLove's Growing Pillars (8)** upgraded for dOCUMENTA(13) by artist Claire Pentecost jointly with the Department of Organic Agricultural Science (University of Kassel) are filled with soil and designed for the intensive production of vegetables in dense, land-poor


2.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communities. They refer to Kibera's sack gardens, and they can easily be adopted as a subsystem under the *GreenUP* framework.

LCA – Life Cycle Assessment. A very special reference on this topic is the famous **WOBO** (World Bottle, **10-11**) by John Habraken "a pioneering example of industrialized recycling and adaptive reuse of materials" (Wiki). Designed in 1960, a long time before the LCA was codified, the WOBO extended further the bottle's Life Cycle, by recycling it as a "brick" to build a single house **(11)**. Then, should we conceptualize recycled container like kind of "brick" to re-build the townscape?

GreenUP & Community Design. Finally, not just empty words, but a real task: a Green&Flexible vertical garden can be settled after democratic discussion and decision by the inhabitants. Certainly, Community Design is something from the past; today's bottom-up process – a nice Community Design's heritage – needs appropriate tools...

GreenUP is a ***NoLogo*** building concept, after Naomi Klein's cult book **(9)**. Unlike the very expensive LogoBuildings signed by ArchiStars - generally resembling the author's style and out of date in a short time – *GreenUP* varies in terms of form and quantity.

Resilience: *GreenUP*'s SOFTWARE may be easily and partially placed/replaced/displaced with little energy consumption - especially if compared with dismantling costs

for traditional constructions. Being **Site Specific** as a contemporary artwork, *GreenUP* will adapt itself to every kind of planting, according to different climates, humidity conditions etc.

Promptness is an additional crucial factor in the Urban Renewal process: since it's largely prefabricated indoors, and it needs almost no foundations, the *GreenUP* system allows both public and private developers to reasonably reduce construction time. This may help face the contemporary "Instant City" issue.

Design & Default: resources are limited, while the global crisis is galloping. *GreenUP* has been developed to deal with the social (housing) issues in a growing metropolitan complexity, requesting little in terms of costs while offering a lot in terms of efficiency. When economic conditions are difficult, design has to give both appropriate and affordable answers. No doubt *GreenUP* may offer solutions ranging from a fashionable target (since a vertical garden is now considered to be very glamorous too) to a very inexpensive but not trashy one.

It is worth while to mention two other opportunities for research sharing with esteemed, visionary and reputed colleagues: 1. the **Estonian Academy of Arts** in Tallin (Estonia), an International Competition project, 2008 **(12-14)** designed in cooperation with Michelangelo Pistoletto – one of the most open-minded and appreciated Italian contemporary artists – and


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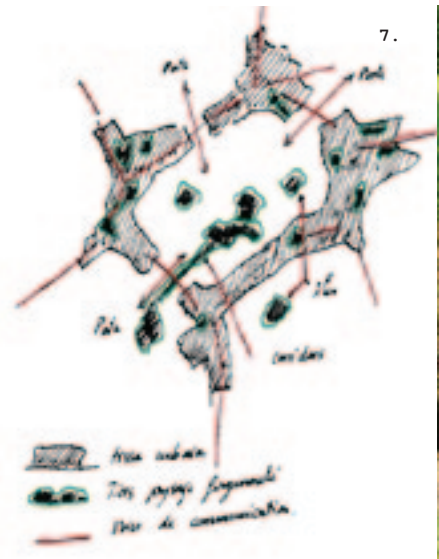
the fantastic group around him. A joint workshop held both at CittadellArte – Pistoletto's Art Foundation – and in Florence at CrossingLab allowed us to share thoughts and concepts on both sustainable and bioclimatic issues such as the dialogue among artists and architects when a new Art Academy building is to be designed. The project – although not accepted for bureau-crazy reasons – consists of: HARDWARE_The basic reinforced concrete structure on loadbearing pillars: it consists of floors, vertical circulations and main plant ducts. SOFTWARE_The façade: conceived as a renewable wood+low emission glass modular skin, it can be easily moved after the requested second phase construction. All the interior partitions orthogonal to the façade are composite drywall done with renewable wooden structure, triple plasterboard and biofiber acoustic natural insulator. For the same high-flexibility criteria, internal drywall may join the external façade on any further development of the EAA spatial program, or even any re-configuration due to the 1st and 2nd construction phase. The whole building ground surface is optimized according to a specific reference to the external surface, in order to face the Estonian climate with an energy efficient answer. THE GREEN WORLD_The Glasshouse introduces within the core town a real forest fragment, with *Betula fastigiata* and *Humulus lupulus betula* together with Estonian threatened species such as *Cephalanthera longifolia*, *Cephalanthera rubra*, *Coeloglossum viride*, *Cypripedium calceolus*,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Dactylorhiza sambucina, *Epipogium aphyllum*, *Orchis morio*, *Orchis ustulata* in order to enhance a site specific sense of the building and, at the same time, to promote public consciousness about bio-diversity and environmental-friendly architecture. On the ground floor, the auditorium's Southern façade is covered with a special skin made of filtered mud coming from the digging, a tool for enhancing solar accumulation effect in a bioclimatic architecture context.

2. a **joint workshop with Stephen Kendall** (Ball State University, USA) held in Florence at CrossingLab, 2010 **(16-19)** enabled us to better direct the previous research both on flexible and sustainable architecture. Kendall was a John Habraken's Assistant at MIT, before becoming a leader at OpenBuilding, the international network inspired by Habraken's theory, now consecrated to research on building flexibility. As a consequence, a wild kind of mix ranging from the **WOBO** World Bottle **(10-11)** small-scale component to the recycled container – comparable as a matter of fact, in terms of LCA prolonging – entered the workshop. A video directed by Lenny Schiaretti and produced by CrossingLab adds complexity by displaying temporary social housing designed with new container units, in The Netherlands. Nevertheless, OpenBuilding design strategy points out a basic structure (sort of HARDWARE) to be completed with variable/light interior components (kind of SOFTWARE) such as cardboard walls etc.; with a particular attention to plant devices, cables, insulation etc. (15).

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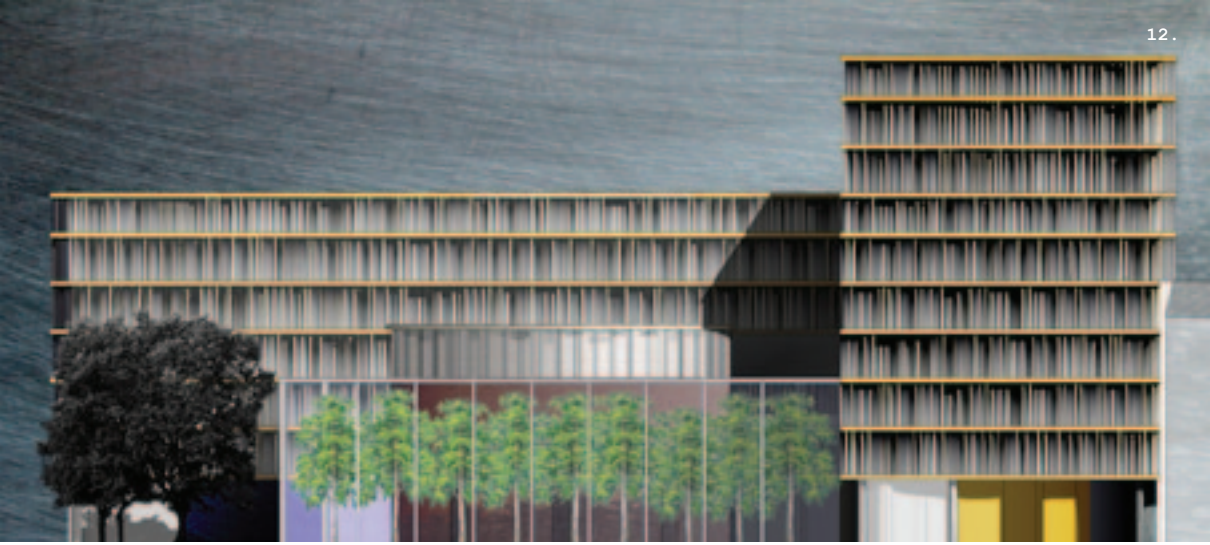
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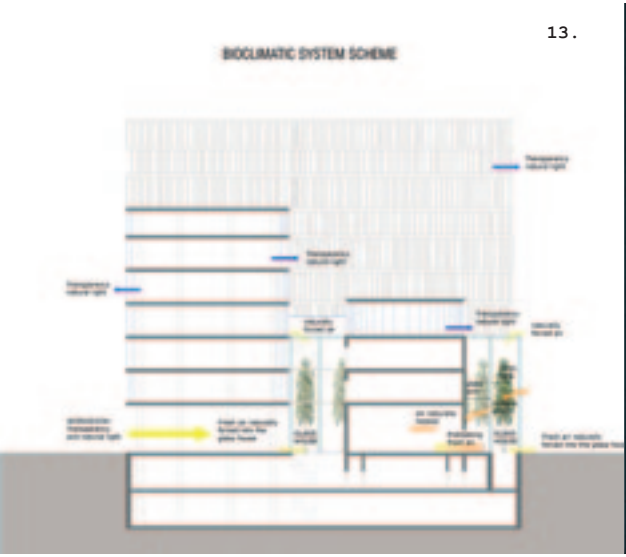


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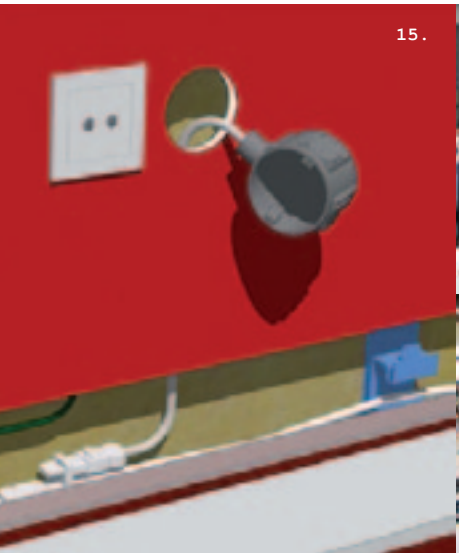
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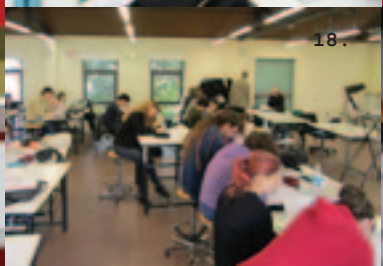
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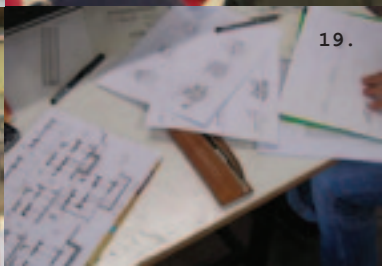
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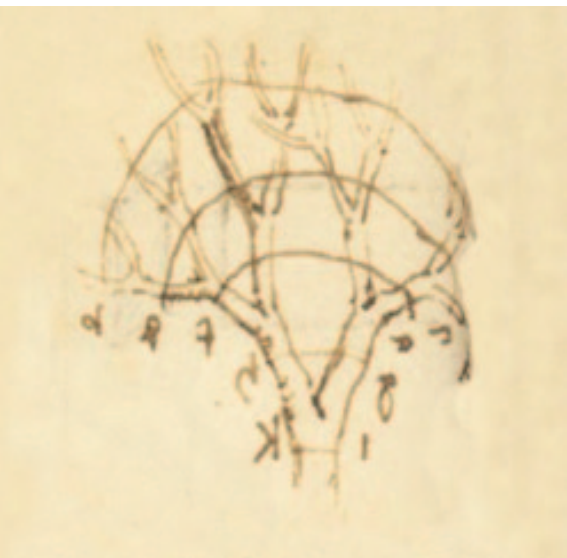
Green & Food

Paolo Grossoni
Alberto Giuntoli

Partial or total covering of a building's façade by means of climbing plants has been mostly used with ornamental or aesthetic purposes to beautify buildings not so interesting in themselves: Ercole Silva, in his "Dell'arte de' giardini inglesi" writes: "In sito solingo e campestre giace una modesta dimora [...] Il casamento, in parte tappezzato d'ellera [...]"[1]. Until a few years ago, plant coverings were used – with the exception of projects and experiments aimed for roof insulation purposes – for an improvement of the façades that became in this way a significant mix between the Natural and the Artificial environment.

Since the end of the 20th century the interest in green walls, living walls and green roofs has been greatly enhanced, both to seek new forms of urban green furniture and/or to improve the quality of urban life. Then, not just the psychic benefit, but – especially for green roofs – the mitigation (biofiltration, bioattenuation, etc.) of the negative physical and chemical effects that may cause serious damage to human health became crucial. Some aspects of these techniques, which still require extensive research, are concerned with the evaluation of

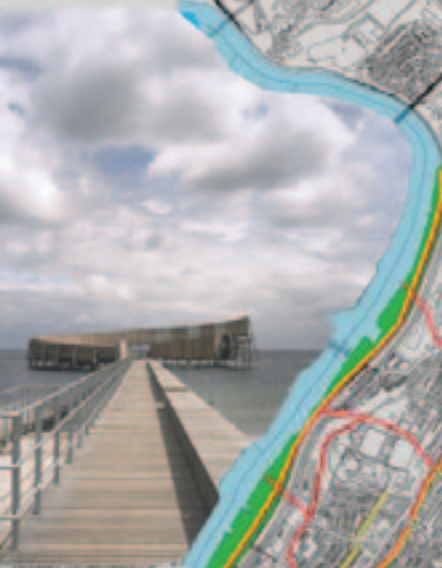


the species most suitable for a given microclimate, but also for precise types of roofs and walls because – to date – much has been improvised. Beside this aspect – which mostly concerns urban pollution (noise, gas depletion and retaining fine dusts, PM10 etc.) another emerging green item, merging both social and environmental aspects, is the urban farming. A vertical garden may in fact provide innovative opportunities by boosting community awareness about healthy attitudes towards a short chain food production and consumption. Indeed, hydroponic and soilless agriculture can be a perfect solution for GreenUP structures, which will, in this way, include some small vegetable gardens that can help the family budget, while reducing environmental costs due to food transportation. The development of high technology systems which use plants makes it possible to create structures for food production over artificial substrates or corresponding filtration/attenuation processes.

When varying the level of artificiality/ energy dependence of the urban environment in which the GreenUP system is installed, costs will also vary. Topic of future researches is the upgrading of cultivation techniques with the aim of enhancing the benefits, reducing the input levels of these systems and thus making the environmental balance even more effective, efficient and sustainable.

[1]E. Silva, 1813: "In the countryside in a solitary site lies a modest home [...] The tenement, partly upholstered in ivy [...] - Dell'arte de' giardini inglesi. Anastatic edition by G. Guerci, C. Nenci, L. Scazzosi, Leo S. Olschki, Florence 2002, p.192.

the Alternative Green Network



Green transport Lanes

Pedestrian

Water bus

Bronx, NY

Draining the Grand Concourse: the Alternative Green Network

Giacomo Pirazzoli
Ferdinando Adorno
Marco Gennai
Eric Medri

In order to achieve the competition goal – a significant answer to the substantial relevant traffic problem that the Gran Concourse Bronx main road is now facing – the project has been focusing on a preferably soft and time-changing approach. Network, Software and Hardware are three main issues proposed for the intervention, according both to a CO2 reductive green strategic-scale and to a low cost vision.

INTERNATIONAL COMPETITION

1.

2.

1. The settlement principle for Community Design Units, after Louis Kahn's Adler House (1953-1954).

2. HARDWARE, the Core Sustainable Park, concept.

The alternative green NETWORK – Open spaces, paths and little squares are interstitial resources for green urban rehabilitation towards a new leisure-like vision for minimal transportation. An innovative way for healthy daily commuting will then be provided by carefully redesigning internal transversal networks (either pedestrians or multi choice like rollerblade, skate and bicycle) and the river bank side - which will be served by boats. This last peculiar and natural border will be converted into a joyful LINEAR PARK simply by planting trees and by creating a number of connecting micro-pavilions and wooden platforms for people walking and jogging. Thanks to these mutually connected but simple tools, the interior Bronx vehicle circulation will decrease considerably, while the Grand Concourse axis will be drained and turned back working in a proper, user-friendly and safe way.

SOFTWARE – The temporary infrastructures for Community design (recycled shipping containers) are fundamental. As a first step, a specific social employment program

3 .

3. Community Design Unit (sample) as a tool for variable town.

will fully involve local people in the rehabilitation of a certain number of derelict containers. After being recovered, the containers will be placed around the Bronx district, according to suggestions given by an abacus designed after L.I.Kahn's famous sketch for the Adler House (1954-1955). As pioneering Community Design Units, they will also describe the peculiar relationship between empty spaces and solid buildings, at the same time becoming the basis for a full-scale assessment of the planning principles. The recycled containers will in fact host planning-related activities and forums, meeting points and light-commerce in order to temporarily modify the urban environment. This will be a first step for time-thinking and decision-making design based on direct experience by the neighborhood. SOFTWARE itself is a low-cost, sustainable tool allowing both for interaction between people and to modify in progress the Network and the Hardware.

HARDWARE – The core sustainable park for Social Housing undoubtedly represents the

4 .

4. Community Design Unit (sample) as an open source for variable town.

most "traditional" part of the project. In order to provide a well-balanced critical mass to the whole intervention, the central area actually occupied by dismantled factories and garages will be recovered and transformed into the CORE SUSTAINABLE PARK. As a part of a new skeleton perfectly linking the pre-existing urban fabric, two green parking areas will be provided, in order to serve one office building each. The planning principle, in order to properly host Social Housing on one hand and small commerce/ retail on the other (see transversal section), will follow the design criteria of a green town, with a fully pedestrian, safe and pleasant central lane. Then Bronx will finally have a green heart and the majority of the paths will be pedestrian. Housing will utilize renewable materials (cross-laminated timber), while stepped roof-gardens with independent rainwater storage will increase self-sufficient community vegetable production. Energy standard resources will be integrated both by nanostructured photovoltaic façades and

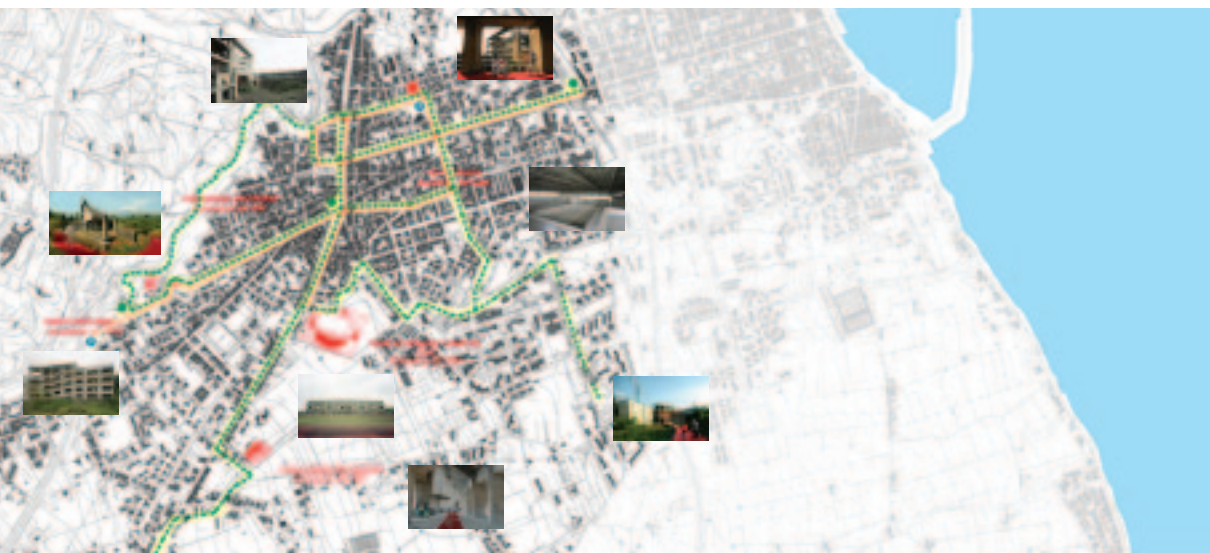
5 .

5. The Core Sustainable Park, cross section and a photovoltaic façade's detail.

wind micro-captors. An advanced waste recycling system will decrease the Hardware's impact.

Green & Glocal

Far from Global Archistar's time & money wasting attitude - which mainly consists of shaping every building in any fashionable and glamorous way, often making the media value of a short-lasting image tangible – this project focuses on meshing up tangible and intangible strategies as the main tool to deal with metropolitan complexity. For this task, Network, Software and Hardware reproduce the global metaphor of work too. New York City and namely the Bronx's social fabric itself – thanks to its outstanding tradition on urban knowledge belonging to contemporary art and music – is a great resource as well as a wonderful opportunity. Not least, we're glad to affirm that this project has been very much inspired by reputed Sustainable South Bronx – a local development agency founded, jointly with others, by Majora Carter, an urban activist we would be very glad to work with.



Re-Using by Re-Greening

Unaccomplished Buildings

Giacomo Pirazzoli
Alessio Galasso, Aura Gnerucci, Luca Mannucci, Leonardo Martini,
Dania Marzo, Iacopo Mascelloni, Eric Medri, Bianca Maria Rulli,
Michela Saddi, Iolanda Bianchi, Carla Petrelli
AlterazioniVideo
(Paololuca Barbieri Marchi, Alberto Caffarelli, Matteo Erenbourg,
Andrea Masu and Giacomo Porfiri)

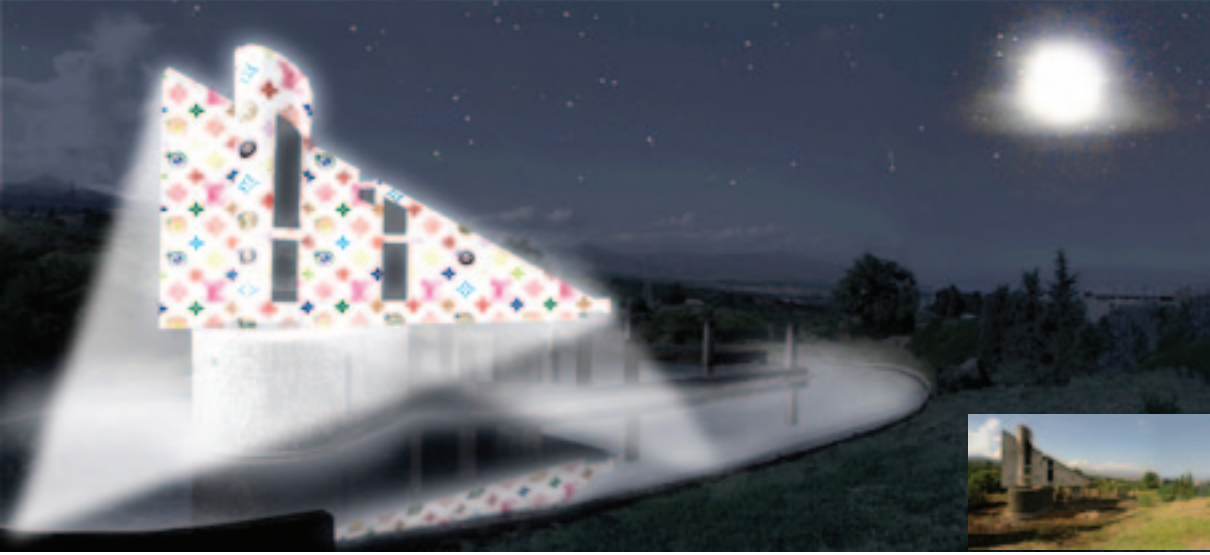
In 2009 CrossingLab was invited by CCCS (Contemporary Culture Centre Strozzina, Florence) to hold a joint workshop with Alterazioni Video, an Italian artists group. The exhibition GREEN PLATFORM - Art, Ecology, Sustainability curated by Lorenzo Giusti and Valentina Gensini took place in Palazzo Strozzi, Florence, from 24.04 until 19.07.2009. "Unfinished Italy" (2011) by Benoit Felici/ZeligFilm has re-launched the topic towards such Italian matters.

1 .

1. Nightlife at the Open-air Multipurpose Building after Re-Greening: cinema and theatre.

An architectural upgrading of a previous art project "Incompiuto Siciliano" (Unfinished Sicily) offered by Alterazioni Video group was the workshop subject. The project originally focused on several unaccomplished but somehow paradoxical buildings and expensive infrastructures made in the little town of Giarre (Sicily). The huge Stadium for Polo (in Italy a rarely practiced sport), the swimming pool 1 meter shorter than a regular one (which measures 50 meters), the track for model car races, the huge open-air multipurpose theatre etc. are undoubtedly strange tools. Particularly for a village where unemployed people are triple the national average, while it's difficult even to think about a proper economy. As often happens in Italy, years ago a scandal exploded about the kind of money misappropriation strategy which might have been behind. Subsequently, discussions, articles, debates and even Tv talks took place, but no action was undertaken, while several low-quality "contemporary ruins" remained, as

Page 22. UP: Open-air Multipurpose Building after Re-Greening. DOWN: the NETWORK*, town map with the Unaccomplished Buildings.*



2 .

concrete witnesses after such an activity. Whenever our artist partners wanted us to design a proper "style" to highlight those unfinished buildings, we just quoted Le Corbusier's "Architecture is not a matter of a style". Since we do not need one more style - beyond Vitruvius' Five Orders as well as the more recent Post-Modernism and Deconstructionism - we openly and ironically criticized the actual Logo-Style shared by contemporary Global ArchiStars; then we simply tattooed a LV brand on the unfinished but ugly-shaped "Chico Mendes" building. As an architectural research unit we are much more interested both in keeping the sprawl fragments together by linking each other (NETWORK) as well as in finding out sustainable and affordable purposes for the unaccomplished buildings (HARDWARE). By the way, an ethical distance from the perverse condition which led to the unaccomplished building affair being accepted is crucial, also to understand how to deal with such non-archeological traces/recent ruins.

2. The Tattooed LV Brand - the New Monument to a Global Archi-Star, Chico Mendes Park, Giarre.

3 .

4 .

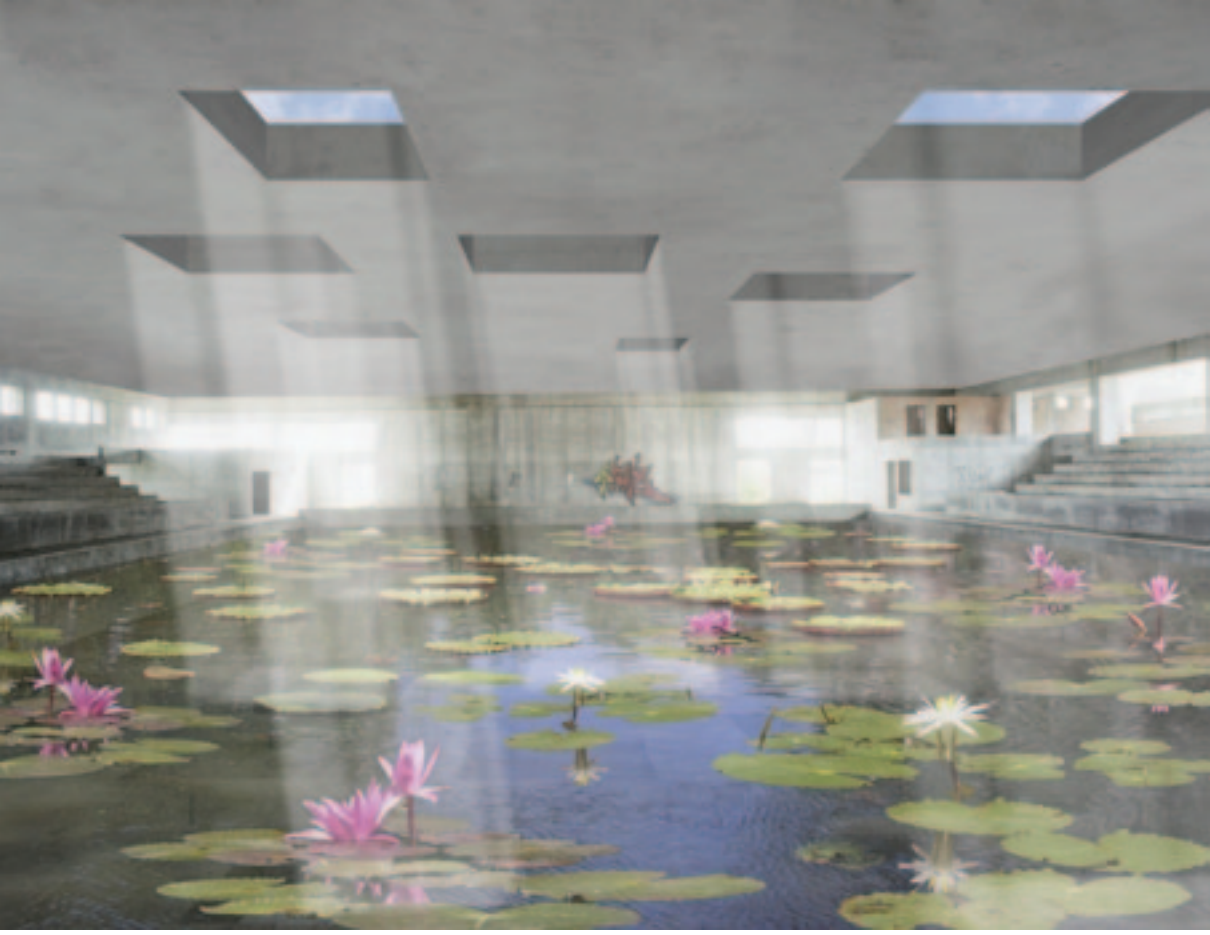
According to this preliminary statement a bike + pedestrian track has been designed as the main strategic infrastructure or NETWORK to keep together the system of unfinished buildings. Due to such "less-esthetic but more-ethic" matters after the former unbelievable money wasting, we agreed on a no-demolition principle. New functions were found by operating only a few

3.-5. A new green life at the Open-air Multipurpose Building!

6.

6. The swimming pool, current state.

minor money-saving changes on the HARDWARE, which consists of the buildings themselves. Indeed, the only relevant structural intervention regards the 49 meter swimming pool, to be reconverted into a challenging and spectacular bio-filtering plant – itself a kind of manifesto, a covered square (piazza) where citizens may go to sit, to meet and to get emotionally involved in such a marvelous re-naturalizing process. Then we designed several site specific but minimal SOFTWARE adaptations like handrails and other basic safety tools for the other unaccomplished



7.

buildings in order to allow people to enter them. Nevertheless, the main focus is once again a green concept waiting for participatory processes and public involvement; something completely different from a traditional and personal architectural solution. As a sort of ”green aggression”, the peculiar condition of artifacts stepping back to nature gets kindly visualized. A bit ironic, a bit conceptually romantic, vertical gardening/farming became the inexpensive but rich way to recover while making all those contemporary ruins alive and friendly.

7. The swimming pool, after being reconverted into a challenging and spectacular bio-filtering plant.

The Green Uffizi:

Social, Sustainable and Temporary Housing

Giacomo Pirazzoli
Ferdinando Adorno (Assistant)
Moisés Casasola, Ramón Fernández, Guillermo Fernández, Alessio Galasso, Susana González, Luca Mannucci, Julia Muñoz, Enrique Navarro, Eladio Paniagua

Mara Bruzzi, Carlo Taliani (Photovoltaic)

In order to explore the possibility of a joint International Summer School, in 2009 Carmen Diez Medina, Juan Garcia Millan and Javier Saenz-Rodriguez (CEU-San Paulo, Madrid), Monica Alberola and Luis Diaz Maurinho (ETSA, Madrid), Giulio Barazzetta and Simona Pierini (Politecnico, Milan), Francesco Collotti and Giacomo Pirazzoli (School of Architecture, University of Florence) proposed a joint workshop in Florence. Social Housing was the main theme, while the historical Florentine context became the under-topic to deal with, to merge both environmental-friendly and cultural heritage design strategies.

1 .

2 .

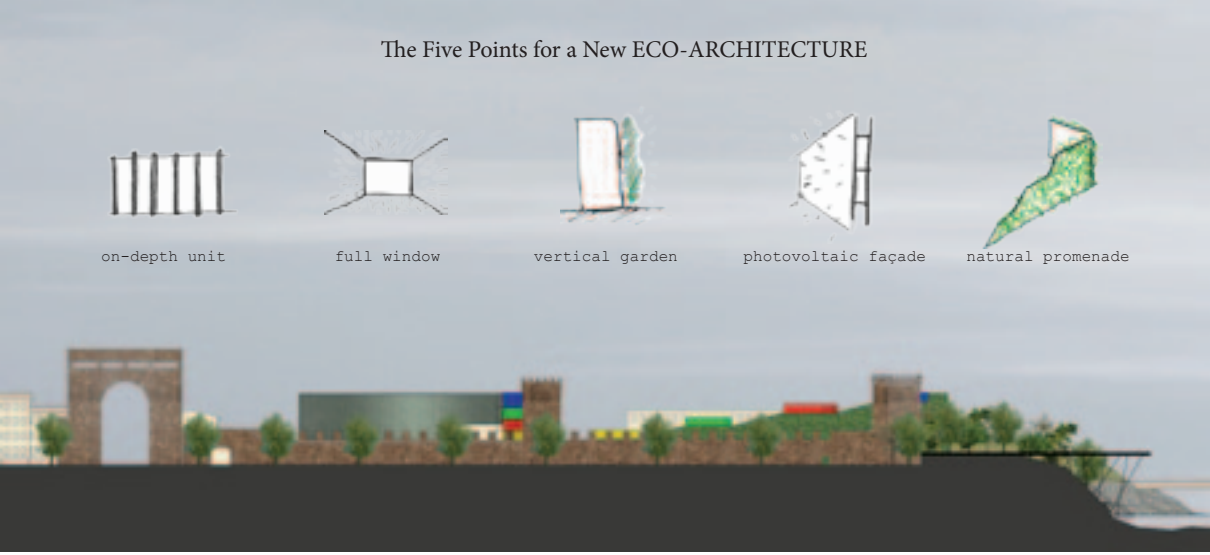
1. City scale, relation between the Ancient Stone-done Uffizi and the New Green Uffizi.

2. The concept.

In Italy, because of the underdeveloped contemporary architecture, Social Housing rarely over-jumps the very outdated way traced by Low Cost State housing "Edilizia Popolare". The "sustainable" matters are often transferred into architecture as a thicker insulating layer (and nothing more) to be glued over the prevailing old design model - often done by non-graduate professionals. Luckily in Spain a significant part of prominent contemporary architecture is based on a refined rethink ranging from the so-called "Italian Way to Modern Architecture" (Gardella, BBPR etc. before WW2 until late '50) including Aldo Rossi's "Architecture of the City" (1966). Ten days of Mediterranean interaction, daily conferences and project discussions with guests (Lisa Ariani, Belén Hermida Rodriguez, Fondazione Michelucci) produced seven imaginative projects, later displayed in Florence at the Festival della Creatività meeting, and presented to the public client, the Municipality of Florence.

Page 30. The photovoltaic façade and the Green Wall.

The site is near San Frediano's Gate, in front of a city wall fragment that survived after the demolitions to make

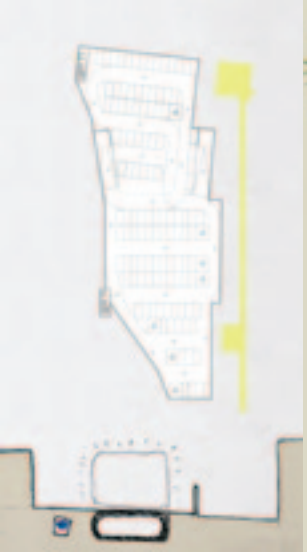


3 .

3. UP: the Five Points for a New Eco-Architecture. DOWN: view along the city wall.

Florence the modern capital of Italy (1865). The area to be settled is partly orthogonal to the Arno river, while partly flanking the water, being the very first green border near the historical centre, looking West. Although the bankside should be left unbuilt according to the Italian laws – mostly after the Florence flood 1966 - some spontaneous junk-pavilions are actually present there.

Like a *Grand Tour* fragment, the workshop opens with a guided walk focusing on selected Florentine top-historical buildings, acting as figures of an urban tale. Back to classes after the in situ walk, we display the Bronx-NY just accomplished project [see hereby], while a further interdisciplinary research perspective on Energy is offered by Prof. Mara Bruzzi and Anna Vinattieri (Energy Department and Physics Department, for transparent Graetzel photovoltaic cells) and Prof. Carlo Taliani (National Research Council, for nanostructured photovoltaic film). Then, a kind of chemical reaction starts amongst such ingredients as History, Hi-tech and personal background in a cross-cultural context. Let's list key-words and doubts. For



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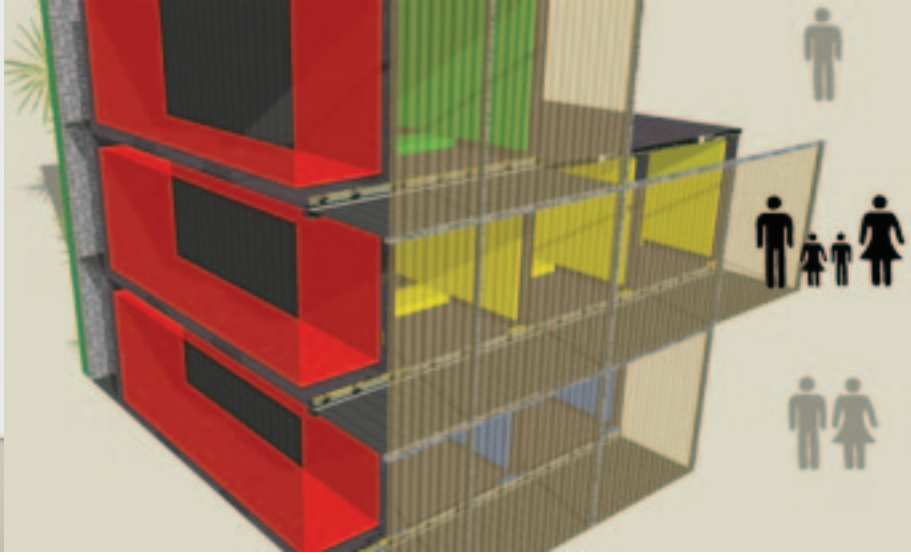
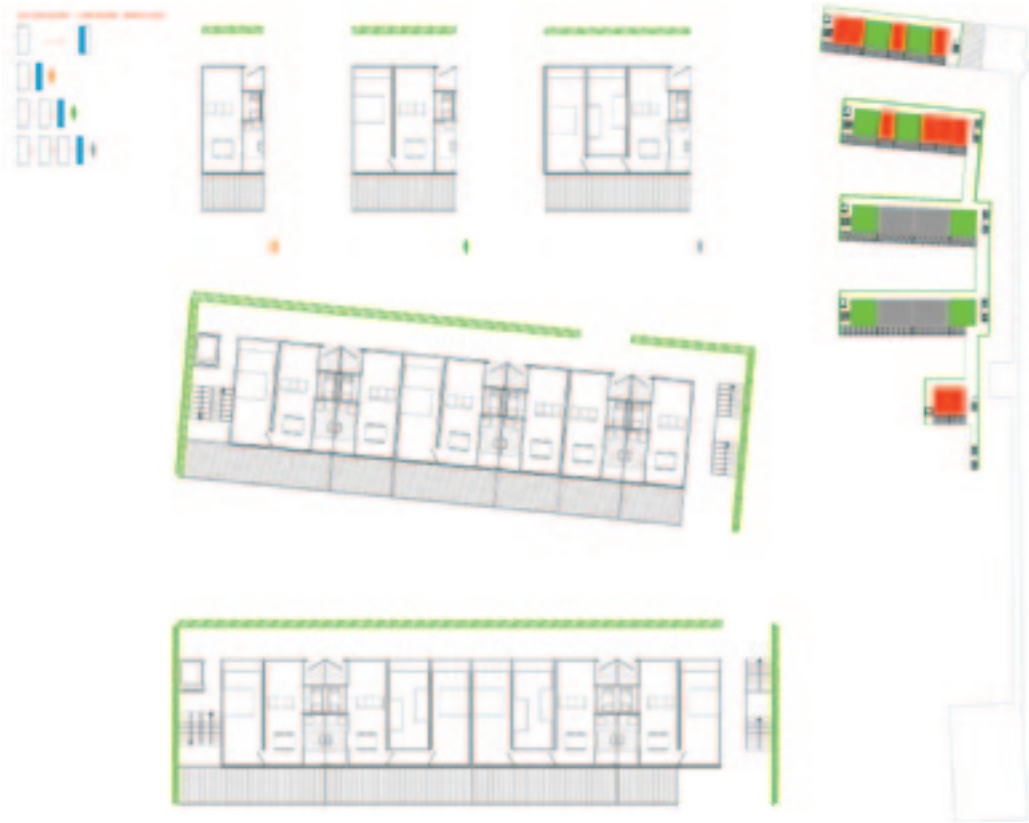


5 .

4. UP: underground parking (HARDWARE) DOWN: section with HARDWARE and SOFTWARE (temporary buildings).

5. Overlapping of the different typologies.

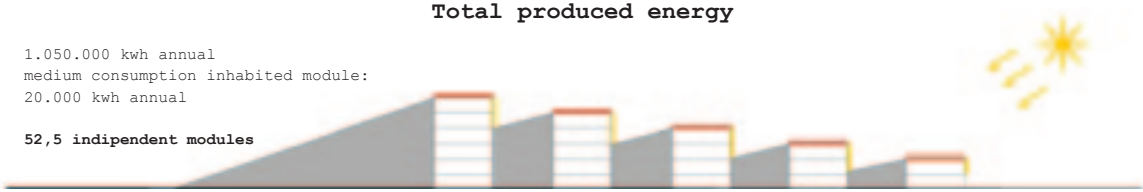
instance, might SUSTAINABLE be stressed until it becomes FULLY REVERSIBILE – itself a very problematic question for architects? The most regular construction material is reinforced concrete, obtained by mixing cement, sand, gravel, iron and water; once dry - a typical high-entropy material – it cannot be turned back to its single components. A further key-word, TEMPORARY, might be the answer, while evocative images like "nomadic" Ulaanbaatar Mongolian State Capital or the *Walking City* by Ron Herron/Archigram (1966) circulate jointly with our Bronx-NY recycled containers project. Reasonably, the shipping containers refurbished for Temporary Housing are the SOFTWARE, lying on such a HARDWARE as the pseudo-archaeological trace of the underground parking area, a non reversible basement. The NETWORK will be a large scale sustainable system for the recovery and the logistics of containers to be rescued and refurbished. Being site-specific, the SETTLEMENT PRINCIPLE derives from the late-Renaissance Uffizi building, a masterpiece designed by Giorgio Vasari. There a non-continuous linear element — a porch for Vasari, the Green Wall for us — links all the parts. Parallel to the historical



6 .

city walls, a proper "natural promenade" links the many levels of the dwellings, up to the restaurant-cafe on the top of the unit facing the Arno River. The staircase and the metal grilled balconies, Northern side, protect dwellings thanks to the vertical garden; Southern side the same metal grilled balcony system works as a ventilated façade, making air move up all along the vertical photovoltaic eco-bio (Graetzel cells) on the exterior and insulating glass on the interior. This transparent photovoltaic facade together with the thin nanostructured film on the roof ensures more than 30% of the total energy needed by the buildings.

6. General plan with the three different units' typologies.



7 .

8 .

7. Total produced energy after vertical façade (GRAETZEL) and horizontal panels (nano-structured).

8. Dwelling cross-section: green façade (right) and photovoltaic façade (left).

At ground floor the boxes host the local market open to the pedestrian courtyards. At the upper levels there are different size dwellings; toilets, heating/cooling plants, kitchen and entrance zones are in specially featured refurbished units. The whole system responds to the quick change of the town, and it may be transferred anywhere else without direct energy loss and demolition cost. Unlike the traditional building process, the containers refurbishment consists of clean and safe indoor work. The ground surface occupied

9 .

9. The green wall now facing the ancient city wall.

by the buildings is definitely less than the vertical one created by the Green Wall: it's a success for CO2 balance!

"The Five Points for a New ECO-ARCHITECTURE" is the new manifesto after Le Corbusier's Les Cinq Points d'une Nouvelle Architecture.

1. on pilotis unit **> on-depth unit**
2. horizontal window **> full window**
3. architectural promenade **> natural promenade**
4. free facade **> photovoltaic façade**
5. roof garden **> vertical garden**

GreenUP & Con-Temporary Social Housing

A case study in central Italy

Bianca Maria Rulli

Supervisor: Giacomo Pirazzoli
Green Advisors: Paolo Grossoni, Alberto Giuntoli
(University of Florence)

A GreenUp case-study is located in the suburbs of Florence: temporary buildings are achieved after the recycling process developing a low-cost and "LCA friendly" project, while the green becomes the main goal of the design. The fringe spaces of the site and an innovative feature like a linear green wall are merged, to set up a newer outlook of the suburban areas. A temporary settlement has to be flexible over time, being modified whether added or subtracted, always preserving its GreenUP structure.

1 .

1. NETWORK (GreenUP) and SOFTWARE (container units).

SITE_According to the 1990 Masterplan, the suburban area has to be re-used for collective facilities by demolishing a preexisting building. A canal cuts the site, which is the southern boundary of the urban/residential area facing cultivated fields.

PROJECT_The aim of the project is to re-connect the green sites with each other by creating a vertical park – a nice place to meet, growing and changing over time. A kind of footbridge across the two parts previously separated by the canal, it is in fact a sort of overhead park, with terraces to enter the balconies and the dwellings.

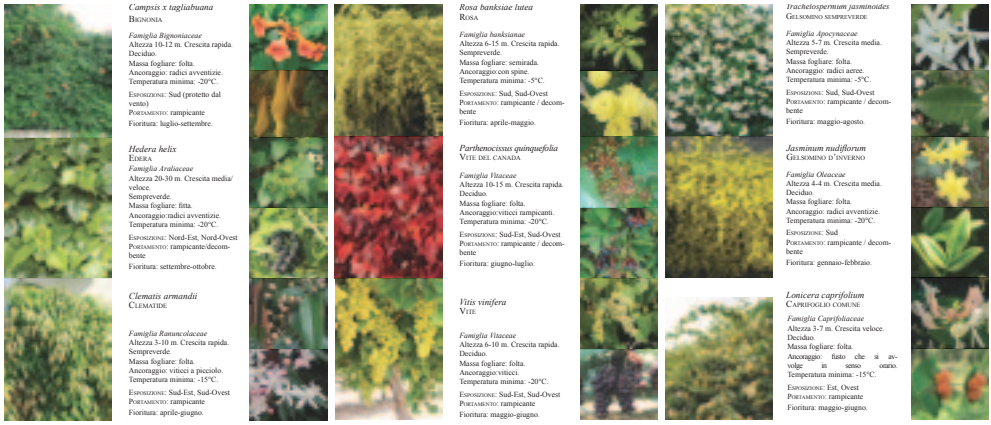
Page 38. Phases of urban requalification: aerial photo of the current state and GreenUP timeline hypothesis.

GREEN_The core of the project is the green infrastructure, connecting the various settlements, which offers all the benefits of the green in terms of CO2 and particulate matter reduction. Environment: GreenUP brings a large number of positive effects in the urban area, such as the environmental quality enhancement for the whole site, the microclimatic natural control

2 .

2. NETWORK (GreenUP) and SOFTWARE (container units).

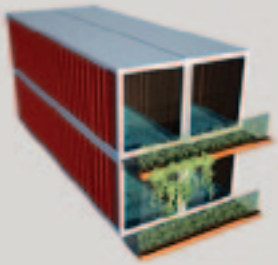
associated with water saving, the decrease of fine dusts, a huge amount of oxygen production and the preservation of biodiversity. Esthetic: trees and creepers are the two kinds of plants utilized for the project. While the first is planted on the ground setting up a park, the latter is in pots, arranging the green façade and the green wall. For this purpose, after studying the assembly phases, a detailed technical solution for the decumbent and the ascendant plants is enhanced with specific data sheets. Detailed files show the type of leaf, flower and fruit of the diverse species. Therefore the design highlights the opportunity to organize plants and flowers according to a specific knowledge of the right period of the year. Green is then thought into a specific context: flowers of different colors are chosen because of their different blooming time, while plants are carefully studied according to their style of growth. Ethic: since the countryside boundary is one more agricultural thematic aspect we focused on, several

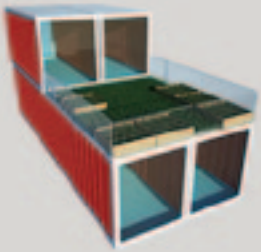


3.

3. Specific data sheets showing the type of leaf, flower and fruit of the selected plants.

kind of fruit trees like espalier pears, vines and mulberry trees are planted. As an essential feature of this research two kinds of greenery are provided: "public" trees for common spaces and "private" plants for kitchen gardens: this is a strong tie-up with the genius loci of the Florentine plain. The farming gardens are located on the top of the buildings hence the roofs become a true green space for domestic use. Therefore the kitchen gardens with seasonal vegetables are very useful in reducing the need for transport and related problems, while they improve family-life quality.





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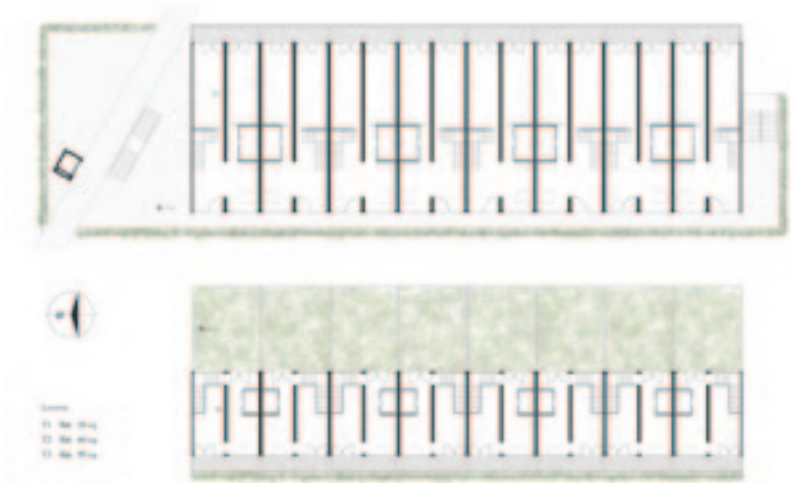
LCA (LIFE CYCLE ASSESSMENT)_ Short duration is the biggest problem about LCA on traditional temporary building, because of the heavy impact factor due to the production of materials. The idea of re-using shipping containers – previously considered exhausted to be dismantled at the end of their life-cycle – to design new dwellings radically changes this perspective. Moreover, the possibility of moving the re-cycled containers units as needed to different places significantly decreases permanent landfilling, while prolonging the environmental life-cycle.

4. Assembling phases of the green façade and view of the kitchen gardens.

5. General view.



6 .

6. Plan of the dwellings (type 2).

Page 45. Green façade and vertical section.

TEMPORARY_While GreenUP becomes the NETWORK fitting to the ground and re-connecting different places, once-upon-a-time heavy and standing buildings are now the temporary SOFTWARE. After such an overturning of the current relationship between architecture and landscape, the old way of the ground consuming process is deeply revised. It's a new type of space quality re-thinking which erases the large amount of metropolis' asphalt and concrete excess by giving space to sprawling green. For the dwellings linked to the GreenUP wall, it's an arrow fired towards the future. A full immersion in a green life is a task not only for today's inhabitants, but a large scale concept for the metropolis to come.

And... do you perhaps like farming at the top of your five stairs recycled dwelling and to receive the products of your work for your family, while being in the centre of the urban jungle?
Well, this is the right place!

GreenUP & Con-Temporary Social Housing

A Mediterranean case study

Lenny Valentino Schiaretti

Supervisor: Giacomo Pirazzoli
Structure Advisor: Luisa Rovero

The GreenUP case-study in a Mediterranean area is located near Copertino (Lecce, Southern Italy), where a Nursing Home is needed to integrate the town Hospital district. Being a new settlement in a flat land outside the historical centre, peculiar attention is devoted to the relationship with the landscape. Moreover, both housing high-flexibility and the use of renewable/recyclable materials are considered to be crucial targets for a sustainable architecture.

1 .

2 .

1. General plan.

2. Ground floor plan.

Since public hospitals in Italy are unfortunately but frequently designed without any attention to open spaces such as gardens and parks, an alternative but integrated proposal has been designed on a complexity framework. A GreenUP infrastructure fits perfectly into this case, since it may provide (vertical) green while re-connecting functions; in fact, as a proper NETWORK, it links the existing Hospital with its surrounding services. Although the whole neighborhood is not a very polluted, nevertheless a green benefit is now provided by GreenUP; thanks to its carefully studied variety

Page 46. Aerial view.

3.

3. Section.

of plants and shrubbery it contributes successfully to a broader scale oxygen level enhancement, jointly with fine-dust reduction. A promenade on two levels, the porch overlooks the patios between the units, shaded by olive trees and ash trees at the ground-floor. The upper level is a walking garden, fully available to the public, planted with jasmine, honeysuckle and bougainvillea. The three species have been selected according to such essential factors as the weather, the growth time and the maintenance requirements. They are usefully decorative while reasonably common throughout the Mediterranean

4 .

4. View of the model.

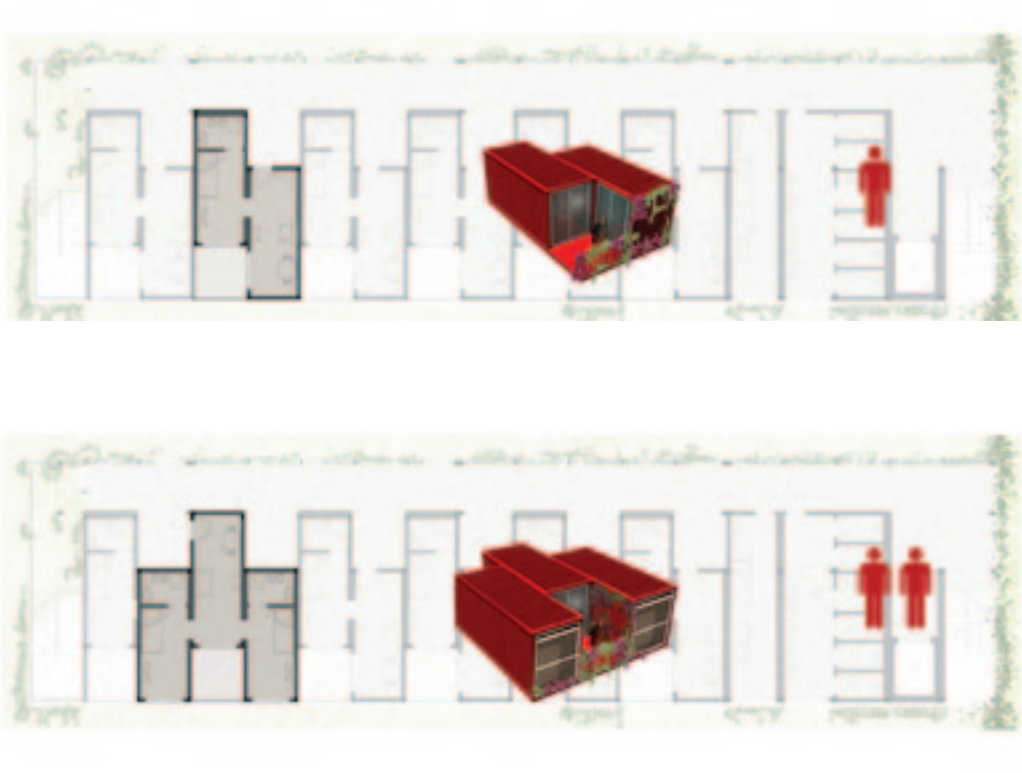
basin because they prefer warm climates and they tolerate wind and dry terrain for long periods. All of this makes GreenUP infrastructure a peculiar part, well connected with the main area of the Nursing Home which consists of an entrance, common rooms+services, offices and circulation. As a consequence of the many targets adopted under the general strategy, this HARDWARE main area is entirely designed with environmental friendly, renewable and/ or organic materials. Such a CrossLamm wooden structure emphasizes the kind of semi-temporary role of both the patio pavilions for public purpose. Technically, the vertical elements of the structure consist of four 20 x 20cm pillars with merged laminated beams, 20 cm high to form a Vierendeel beam spanning 6 meters. According to relevant national regulations the three properly residential areas are respectively for Senescence, Mental Illness and Disability. High Cube recycling container type - 289 cm (9’6”) height - are adopted as housing units or SOFTWARE, suitable for being further additions or variations in quantity, while the HARDWARE pavilions do not need to change.

6 .

The ground floor is made with in-dept 20’ boxes, while the first and second floors host single or double dwellings, all with balconies. Reused containers are shifted with respect to each other in order to create balconies both for living areas and circulation; large windows can easily be installed without expensive modifications to the previous container structure. Correct exposure to sunlight, proper relationship between interior and external spaces, brise-soleil façade on the West side jointly with efficient thermal insulation of the units, provide proper bio-climatic environment. Photovoltaic nanostructured panels lay

5. General view.

6. Cross section.



7.

7. One people and two people units.

on the roof both to capture clean energy and to project a shadow on the building frame. All plants, ducts and devices are designed for high-efficiency, while permanent traces such as foundations on the ground are reduced, in order to allow future land re-use. Less amazing but more green+flexible+sustainable than Archigram's *Walking City*, GreenUP doesn't move all together like a giant space-scrabble, although its own dwelling units may be easily de-placed and re-utilized wherever another similar structure needs more space. At a closer view, this kind of intrinsic flexibility – which comes

8 .

8. The green merging HARDWARE + SOFTWARE.

straight after a contemporary Smart-city concept – is significantly important on the regional network scale. In actual fact, since Regional Administration is the executive body responsible for Health and Welfare, a substantial and effective re-setting of the entire Nursing Home room availability plan on a 3/5-year average calculation is now possible. By the way, this is a great opportunity in terms of economy and management, and it allows provision of more appropriate services at micro-local level. At least costs are low, even incomparable with those for traditional building/rebuilding/demolishing process.

1 Hôtels, Centre d' Affaires et Brasserie
2 Bureaux, Commerces et Logements
3 Pole d' échange **multimodal** (interconnection de 4 lignes de tramway, TER et TGV, bus, velos), Commerces, Bureaux, Salle de réunion et de conference
4 Bureaux, Résidence étudiante
5 EHPAD, Logements
6 Parc public

ZESS@MTP

Zero Entropy Site Specific at Montpellier, France

Giacomo Pirazzoli

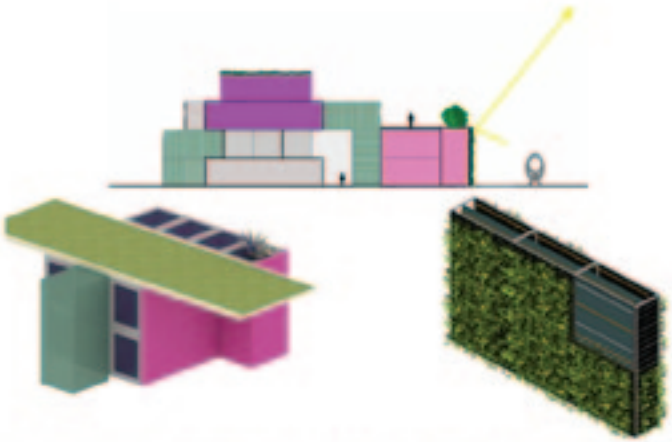
Andreani_Gravier_Vitali/Andriantsimalia_Capdepuy_Desfonds/Batten_Fonda_Pontet/Capelier_Natali_Newlovew/cozon_Guiraud_Teboul/Chalony_Guemene_Peytavi/Alami_Casteran_Karabulut/Delih_Lastres_Marzo/De Coninck_Enjalric_Maurice/Baillod_Raini_Weyckmans

Giulia Sangiuolo

E.T.S.A.M.-Atelier S6: Gilles Cusy, Luc Teotoing – coord. Maxime Rouad

photo and video by Francesco Polidori

After being invited jointly by Gilles Cusy and Elodie Nouriggat for a semester intensive workshop to be held at Ecole Nationale Superieure d'Architecture – Montpellier, we proposed to develop a project on temporary, sustainable and green Social Housing. Such a complexity framework helps to explore a non-traditional approach – deeply different from the one typical of permanent architecture, which mostly consists of concrete-built, high-entropy non-reversible buildings.



1 horizontal .

2 horizontal.

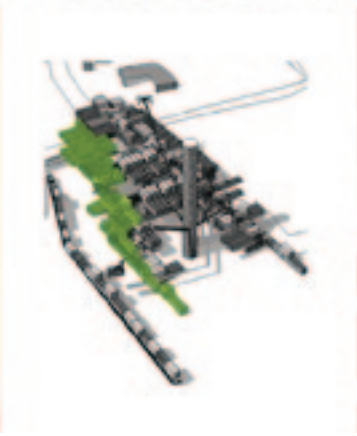
1 horizontal. Delih, Lastres, Marzo.

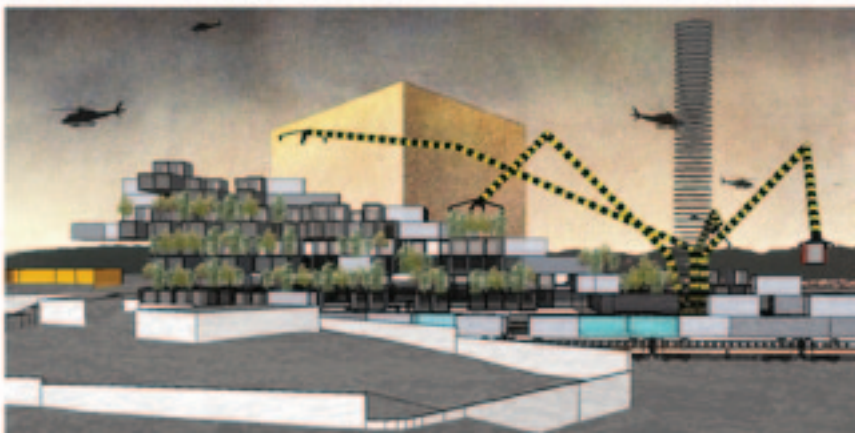
PROJECT SITE_According to the general City Planning Document, the former Montpellier's railway area has to be refurbished completely, together with a boundary green area. Then, in order to rapidly focus urban connections and scale matters, we share very useful suggestions from the recently adopted masterplan designed by Emmanuel Nebout - himself a reputed colleague at ENSAM.

Page 54. UP: aerial view and photos of the site.

DOWN: Masterplan (E. Nebout).

REFERENCES_By the way, it is relatively easy to offer historical but permanent references on Social Housing ranging from Godin's Familistére de Guise, to Ernst May's Neue Frankfurt, to Le Corbusier's

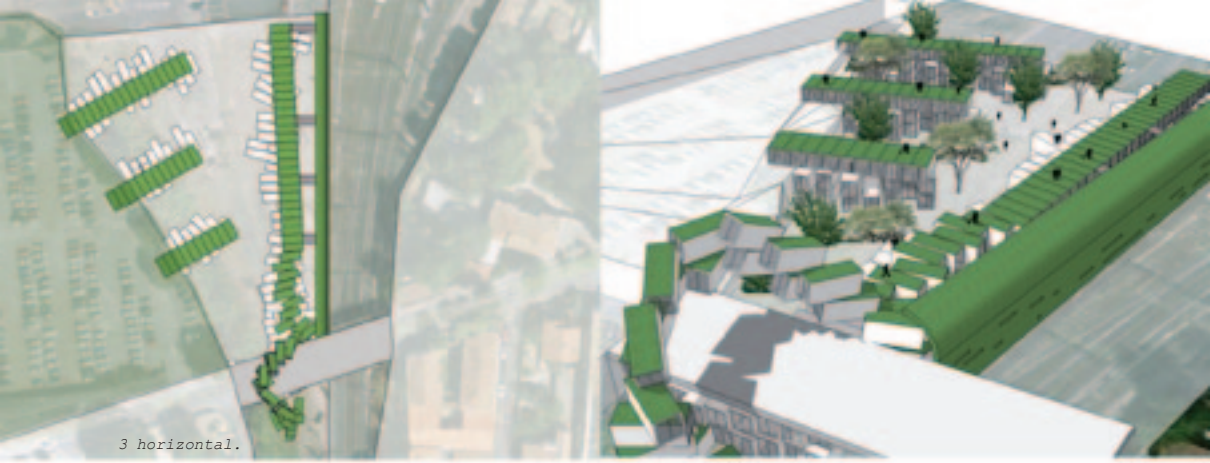




2 horizontal. Capelier, Natali, Newlove.

Unité d'Habitation (Marseille etc.) - with a very special focus on the Unitè de Camping (Cap Martin) - to several contemporary architectures. It is far more difficult to find examples for low-entropy and non-permanent buildings; container recycling once again seems to be a way to inductively discover new paths.

DESIGN STRATEGIES_A significantly peculiar design approach has been developed both because of the temporary settlement principle and for the green and environmental standards. Relevant case-studies on container recycling were displayed and discussed to

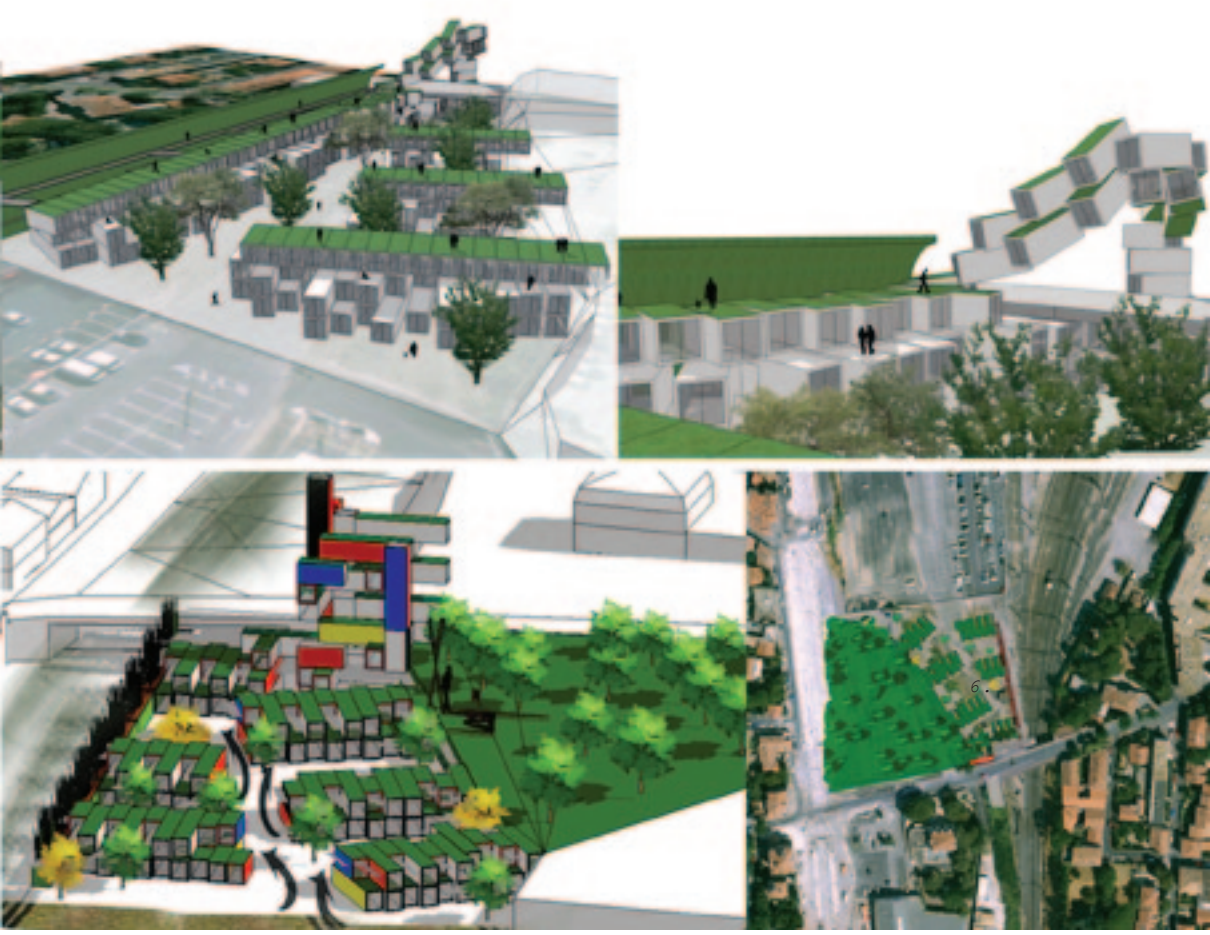


3 horizontal.

4 horizontal.

3 horizontal. Baillot, Raini, Weyckmans.

pave the way for a new vision dealing with movement. On this topic - since the project site itself is a railway area to be redesigned – the train may be considered again as a tool to bring containers around; a vision to merge with Archigram's *Walking City* (1966) in order to evoke a time-by-time changing town. Concerning the green topics, a double technical matter due to railroad pollution - both for noise and fine dust - has to be faced in Montpellier. As a consequence, the Green Wall structuring element has been assumed as a concept and a highly flexible resource to be further interpreted. Then each design group turns the generic



Green Wall into a site-specific work where the main outcomes may be considered: a boundary walk equipped with wind-captors to recover energy from trains; a large scale urban element for interconnection; a place to host public gardens on private responsibility; a panoramic site to climb on; a place for fruit trees and vegetables to be grown to enhance individual food self-sufficiency. At least a crucial conceptual overturning is clear: the Green Wall is the permanent tool to provide quality and livability for the site, while recycled container housing may support both growing and de-growing process, being displaced and brought somewhere else, without energy loss.

4 horizontal. Alami, Casteran, Karabulut.

Vancouver (Canada) ReConnecting by ReUsing:

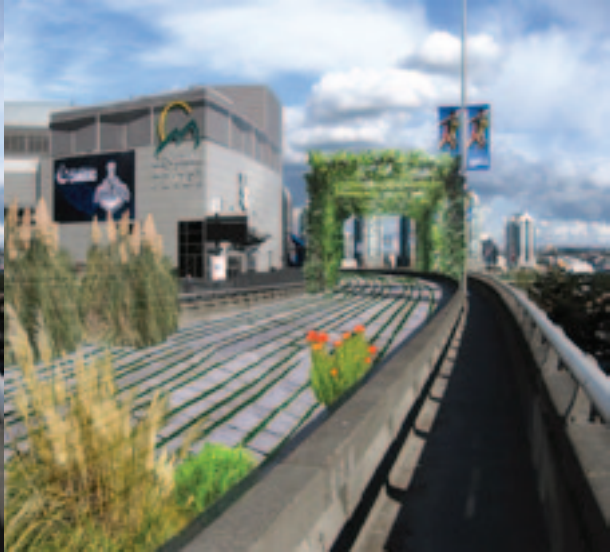
a pre-existing GreenUP

Giacomo Pirazzoli
Bianca Maria Rulli
Lenny Valentino Schiaretti
with Francesco Pizzorusso

Nearly three Centuries ago Italian world famous architect Giovanni Battista Piranesi made plenty of wonderful engravings about ancient Roman aqueducts. Since their own function was lost centuries ago, we have learnt to call them RUINS, while waiting for the moonlight, to walk around them, being seduced or rather trying to seduce.

INTERNATIONAL COMPETITION

1 .



2 .

1.-4. Greening phases.

Although both romantic poets and artists made us pay attention to the secret long time struggle between Nature and Architecture, Vancouver's case-study apparently hasn't got anything to do with poetry or art. In this case a double bridge should be dismantled, tons of bulk to be brought somewhere and a huge amount of energy wasting after a kind of functional urban device loses its function. Then, how to deal with Piranesi's cool reference to the aqueduct, which is undoubtedly describing a "monument" - a specific issue related to long time history? How to re-conceptualize the powerful meaning of such an intriguing image? How to handle it with a 30 year reinforced concrete urban bridge? Whenever interpreted to its hidden meaning, Piranesi's engravings help to discover how defeated Architecture loses little by little its permanent and solid body, while revealing itself as an intrinsically temporary + human tool. Then the fragile soul belonging to what we used to call "monument" becomes clear even to blind eyes. Then the next step: forget about monuments, forget about such long-lasting buildings, forget about Granite, Marble, Brick and Concrete! Nowadays, let's be sustainable

Page 60. Aerial view and green areas re-connected by GreenUP.

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Page 64-65. Greening phases.

and stop being so arrogant; stop designing and even thinking of everything in terms of permanence. GreenUP paves the way to a straight subversion, since it is conceptually based on such a triumph of Nature. In Vancouver we do effectively help Nature replacing Architecture. Kind of boosting green to sprawl around, kind of encouraging plants to play their own role in a short time. A few steps for a Gilles Clemént's *Third Landscape* to take place. We basically provide site specific conditions for plants to grow wildly enough, simply having chosen the right ones. It's not a proper garden, decoration is not needed, "green design" neither.

Since Vancouver's double bridge involves several low density surrounding areas to be re-connected, a pedestrian strategy may expand towards the entire site, exactly like a typical GreenUP infrastructure, by linking different urban fragments. To say it better, the double bridge may be conceptually regarded as a kind of pre-existing GreenUP park to be filled with plants, trees and eventually energy devices. According to this fact, its previous Life Cycle Assessment changes radically, while the whole

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9. Before GreenUP.

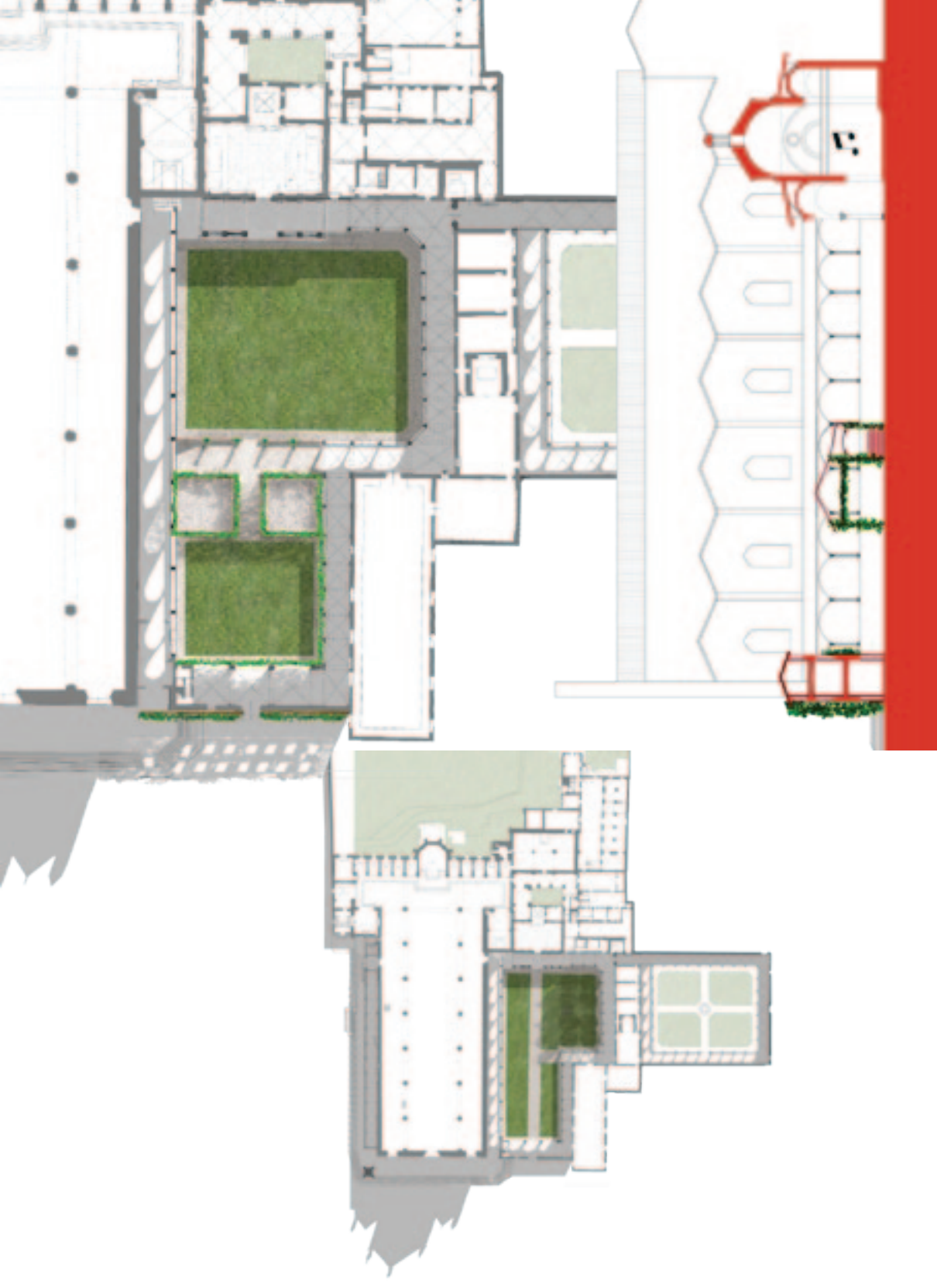
intervention becomes properly a matter of re-cycling, a turning point in terms of energy saving and economy.

Significantly merged with the historical one belonging to Piranesi's engravings, the successful and well-known High-Line NY is considered to be the main contemporary reference. Although a kind of isolated ground flying over the city, since it mainly consists on the surface of the suspended pathway itself – the High-Line has been developed according to a brilliant governing policy thanks to the full involvement of the citizens. In a totally similar way, GreenUP needs its own participatory

10.

process, which unfortunately this booklet cannot describe. GreenUP is not in fact a "monument" signed by an artist or a glamorous building by an ArchiStar; then both community design and social networking are crucial options for the project to become real, mostly for increasing the complexity level. Jointly with the very few but inexpensive HARDWARE works, a basic education on self-maintenance principles has to be provided as a SOFTWARE for this sustainable urban renewal action, which largely depends on the kind of plural involvement. By the way the new NETWORK-park linking the several border sites is fully available for leisure, sport and urban farming towards a dynamic social inclusion policy.

10. After GreenUP.



Saint Francis and Filippo Brunelleschi:

Green Traces over a Dialogue (2008-2012)

Giacomo Pirazzoli with Noemi Casula, Giada Cerri, Eric Medri
Survey: Maria Teresa Bartoli, Nevena Radojevic
History: Amedeo Belluzzi, Emanuela Ferretti
Representation: Giorgio Verdiani, Andrea Pasquali
GreenUP advisors: Paolo Grossoni, Alberto Giuntoli

A Green Wall becomes a temporary tool to explore one of the most famous historical sacred complexes all over the world after rather unknown but significant demolitions have occurred. A research intrinsically referring to notable cultural heritage approaches like both Giorgio Grassi's Sagunto Theatre and Rafael Moneo's Cartagena's one, this reconstruction merges esthetics with environmental and ethical aspects. The fully reversible/ low entropy "architecture vivante" monitors CO2 and provides food, while the pre-existing architectural shape is recalled.

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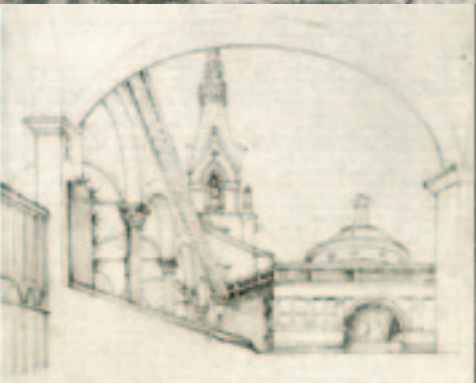

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1-2. Pazzi Chapel (red), the demolished buildings (yellow).

3-4. Views from the demolished porch towards Brunelleschi's Pazzi Chapel (Borrani 1869 and Anonymous).

Although being visited by nearly 1 Million people a year, and despite such architects/artists like Arnolfo di Cambio, Giotto, both Angiolo and Taddeo Gaddi, Brunelleschi, Michelozzo, Vasari, Bronzino, Canova and others having worked there, current studies both on Architectural History and Art History rarely pay attention to the entire Santa Croce Franciscan complex. That said, in 2008 Art Historian Andrea De Marchi and myself began a cross-discipline joint research (De Marchi, Piraz, 2011). Among several topics, we investigated the heavy demolition of cloisters and circulation during

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the second half of the 19th Century. At that time, after Florence had been proclaimed the Capital of Italy (1860), Santa Croce became the memorial temple to many national prominent artists, scientists and heroes (Dante, Galileo etc.). The façade – still unaccomplished since the Renaissance, like the church of San Lorenzo's façade – was rapidly completed, while the voids system consisting of two main cloisters plus one little courtyard was reduced to two cloisters, one of them unbelievably "P" shaped in plan. Five porch units facing Filippo Brunelleschi's early Renaissance masterpiece, the Pazzi Chapel, were in fact demolished jointly with the highly significant Inquisition building in order to open a transversal perspective view from the square straight to the Chapel itself. Which had been set aside for about four Centuries within the main cloister, mostly unseen since the preexisting cloister was reserved for friars to pray in a continuous procession, according to the Franciscan Rule. Because of that radical redesign, scale perception has vanished and sacred function has changed since

5. A view of the demolished porch.

6. A view from the demolished porch towards Brunelleschi's Pazzi Chapel.

Page 68. UP: Project - plan and section. DOWN: Survey - plan.

7.

7. UP: Santa Croce, Project views. The square with the green façade; the first little courtyard towards Pazzi Chapel (+zoom); the cloister after reconstruction, with the vertical farming.

friars get an interrupted path so they cannot pray in procession anymore. But a new meaning has been attached to the sacred complex, in order to celebrate Brunelleschi, the world-famous perspective inventor, although towards a perspective view which he certainly would have disagreed with. Nevertheless, after having carefully inquired in order to build such a long time complexity framework, the answer cannot be anything else than a multitask one. Perhaps a breathing and temporary Green Wall can at the same time either scientifically monitor today's global issues like CO2 balance, or visually restore

the perception of the two cloisters plus one courtyard. Other suggestions deriving from the newly peaceful inner spaces might be related to the symbolic value of such a green heaven, where contemporary art practice meets science – even a spotlight on current research on agricultural resources and large scale feeding, specially for disadvantaged countries. We cannot say how this last issue – which once again regards matters of richness/poverty very much belonging to Saint Francis – may eventually deal with the mystic sense of the spiritual project having linked Saint Francis and Filippo Brunelleschi in Santa Croce.

7. DOWN: Santa Croce as it appears today.

Credits:

FUNDAMENTALS/REFERENCES
1-4 Giovan Battista Piranesi, engraving, graphic re-design by Giacomo Pirazzoli and Bianca Maria Rulli.

7. STAR Architects, after Adolfo Natalini/Superstudio.

10. Gilles Clement, *Third Landscape*, re-designed by Bianca Maria Rulli.

13.-15. International Competition (2008), the Estonian Academy of Arts in Tallin (Estonia)
Project: Giacomo Pirazzoli (Department of Architectural Design, University of Florence), Eric Medri, Dania Marzo, Niccolò Campanini, Georgina M. Lalli, Laura Bartolini, Rachele Bandoli, Jacopo Sbolci, Aura Gnerucci, Federico Biava, Caterina Bini, Lisa Ariani.
Art & bioclimate: Michelangelo Pistoletto, Juan Esteban Sandoval, Margarita Vasquez Ponte, Matteo Ferrario, Tiziana Monterisi, Emanuele Bottigella (Cittadellarte/Pistoletto's Foundation, Biella).
Green design: Paolo Grossoni (Department of Agricultural Biology, University of Florence)
Energy issues: Fabio Sciurpi e Cristina Carletti (Department of Technology, University of Florence).

18. © Stephen Kendall, Infill Systems US, http://www.infillsystemsus.com.

19.-22. International workshop *Social Housing: Sustainable and Temporary?*, 2010
prof. Stephen Kendall (Ball State University, USA), with prof. Giacomo Pirazzoli, prof. Maria Chiara Torricelli, prof. Giacomo Tempesta, arch. Cristiano Balestri, Francesco Pizzorusso, Bianca Maria Rulli, Lenny Valentino Schiaretti.

GREEN & FOOD
Page 14 LEFT: Leonardo da Vinci's sketch, diagram of the growth of trees.
Page 15 LEFT: photography by Bianca Maria Rulli. RIGHT: graphic by Ines Vučetić.

RE-CYCLING BY RE-GREENING
1. Photo Alterazioni Video, graphics by the Authors.

SAINT FRANCIS AND FILIPPO BRUNELLESCHI
1. Painting, Museo dell'Opera di Santa Croce, 1718.

2. P. Jacks, W. Caferro, *The Spinelli of Florence. Fortunes of a Renaissance Merchant Family*, The Pennsylvania State University 2001.

3. O. Borrani, Gabinetto Disegni e Stampe degli Uffizi, 1869.

4. C. Sisi, *Le tombe di Santa Croce*, in Timothy Verdon (a cura di), *Alla riscoperta delle chiese di Firenze* - vol.3 Santa Croce, Centro di, Firenze 2004.

5-6. G. Fanelli, *Firenze in stereoscopia*, Octavo, Firenze 1999 (Archivio Hauptmann 67, 68).

"What a pleasure to read this book: so many times we have just accounts of what is not working, or lists of aims and abstract goals of sustainability. Actually population density and building concentration require appropriate solutions, but too many actors voice standing still. On the contrary here we have ideas, visions and real perspectives. Feasible, sustainable projects are available to *GreenUP* urban and metropolitan developments."

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ISBN 978-88-422-2263-7