" International Prize for Sustainable Architecture "
Fassa Bortolo

Tenth Competition 2013

Introduction by the Jury Chairman

During the last ten years since the first edition, the International Prize for Sustainable Architecture has grown constantly in international popularity and the number of participating works and countries. But the most significant growth has been in the quality of the projects presented and competing for the Prize.

During its first decade, the initiative has been crowned with the hoped-for success, helped by a fundamental criterion which characterises the “model” of this competition:

the composition of the Jury, entrusted by the honorary Prize sponsor, Fassa Bortolo (an important Italian company in the building sector) to Ferrara University Department of Architecture. It represents a mix of continuity and renewal functional in every way to a system able to learn and open to change.

The two faculty professors and the Chairman who have served as permanent members over the years are flanked by the invaluable contribution of a further two internationally known architects from different cultures who change each year. This demonstrates:

- that this is a theme of global importance as it concerns management of the planet’s resources and the effects on the climate and society at international level, and

- that the key aspect is not a given architectural orientation, let alone a certain style, but rather a competent responsible response to the specific characteristics and options of each individual site. This produces completely different results as a contribution to the culture of the place.

In assessing the quality of the projects and coming to a decision, the Jury attributed fundamental importance to environmental and climatic aspects.
The prizes have therefore been awarded to architectural projects with high standards of formal quality achieved also through in-depth analysis of environmental variables, defining buildings fully integrated into the surrounding context.

In the “completed projects" category, the Jury has drawn up a final shortlist of 13 projects, including three gold and silver medal winners and seven considered worthy of an honorable mention.

In the “degree theses” category, seven projects have been selected and put on a shortlist, including three gold and silver medal winners and two considered worthy of an honorable mention.

Thomas Herzog

COMPLETED PROJECTS BY PROFESSIONALS

Gold Medal

Hathigaon – Housing for mahouts and their elephants

Designers
RMA Architects, Mumbai (India)
Client
ADMA (Amber Development Management Authority)
Location
Amber, Rajasthan (India)
Completion
2011

The project involves construction of new housing for 100 elephants and their mahouts in the arid region of Rajasthan in north-west India. The design strategy is based on the need to improve an area devastated by indiscriminate exploitation of sand quarries, capitalising on the potential offered by the artificial orography created by the quarrying. The quarries thus become reservoirs to collect rainwater, an extremely precious resource and fundamental tool for improving the entire environs in terms of the environment and microclimate.
The various water reservoirs are designed to guarantee an adequate monsoon rainwater storage capacity and to cover the water requirements of the new settlement.
A number of reservoirs have been designed to provide an ideal place for elephants to bathe, essential for their health and a ritual which reinforces the emotional bond with their mahouts.
The resulting water was available to initiate an extensive planting programme involving local plant species, fundamental to create a habitat to develop biodiversity and a suitable environment to accommodate the new settlement.
The individual housing units are arranged in a number of groups integrated into the redesigned natural areas and organised around central courtyards which represent areas of expansion for the essential living space and an important place for socialising. The simultaneous presence of both elephants and humans is resolved with a clear functional division of the respective living spaces, while maintaining a sense of community and genuine sharing of spaces between the animals and their mahouts.
The limited budget available to construct the housing led to use of simple building techniques and common materials available on site. The distribution of the plan and volumes of the built spaces provides an effective response to the need to guarantee a high level of natural ventilation and cooling.
The project represents an extraordinary example of sustainability on both landscape and architectural scale and identifies a settlement development model with high social qualities.

Silver Medals

Cookery school in an old abattoir

Designers
SOL89 (Maria Gonzalez & Juanjo Lopez de la Cruz), Sevilla (Spain)
Client
Fundación Forja XXI
Location
Medina Sidonia, Cádiz (Spain)
Completion
2012

The school of Medina Sidonia is a successful example of the functional recovery and improvement of an old building and related areas.
The strictly public and reception areas of the school have been obtained by restoring the existing abattoir, while the more functional areas have been created by an extension using part of the external area of the lot. The teaching areas (classrooms and kitchens) are distributed around small inner courtyards covered with a roofing system of a modern morphology, but merging harmoniously with the surrounding context thanks to the use of traditional materials such as cotto. The system of roof openings, together with the presence of small patios, ensures adequate lighting and natural ventilation in the internal rooms.
From a bioclimatic point of view, the building is inspired by the traditional functioning of the local architecture of southern Spain, based on the high thermal inertia of the shell and optimisation of air circulation.
The designers' sensitivity is reflected through the in-depth reinterpretation within the historical context in a contemporary way through scale morphology materiality and context, establishing a stimulating dialogue between the historic existing and the new, one reinforcing the quality of the other.

Roberto Gritti Civic Center

Designers
DAP studio (Elena Sacco & Paolo Danelli) + Paola Giaconia, Milano (Italy)
Client
Municipality of Ranica
Location
Ranica, Bergamo (Italy)
Completion
2010

For the plurality of public functions it accommodates (library, auditorium, kindergarten, dance and theatre school) and for its strategic location between the historic city centre and expansion areas, this building represents an important new urban catalyst.
The distribution of the internal spaces is resolved rationally according to the various requirements of the functional plan, including through the inclusion of a number of internal courtyards, also fundamental for the natural lighting of the rooms and creation of adequate natural ventilation.
The extreme internal complexity of the spaces is contrasted by unifying suspended external volumes with strong visual impact which give the project an interesting scale relationship with the urban context. This result is achieved through a continuous

translucent iridescent shell which unifies all the volumes on the top floor, leaving the rooms and activities on the ground floor permeable to the view.
The open spaces included within the perimeter act as filter and interface with the city and establish a relationship between the urban and architectural scales. The morphology and distribution of the volumes thus resolve architectural aspects and those associated with the building's relationship with the context, while at the same time providing a passive solution to controlling the building's microclimate.
The high thermal properties of the shell, combined with the use of high efficiency installations, in part powered by renewable sources, ensure high standards of energy efficiency and autonomy.

Honourable Mentions

Morerava Cabins

Designers
AATA Arquitectos, Santiago de Chile (Chile)
Client
Cabañas Morerava
Location
Hanga Roa, Easter Island (Chile)
Completion
2009

The Cabañas Morerava provide tourist accommodation with minimal environmental impact in the delicate natural context of Easter Island.
The designers have conceived the structure as a balanced group of a number of identical units, built with a highly rational wood structure which optimises the dimensions of the standardised components and speeds of assembly, helped by partial prefabrication off-site. This construction technology also makes the structures easy to remove, guaranteeing the complete reversibility of the site occupied. The materials are reduced to the essential, while nevertheless guaranteeing comfortable spaces and the highest possible standard of function and quality.
The internal distribution is rational and the presence of two strip windows on opposite sides ensures adequate lighting and natural cross-ventilation without requiring mechanical installation. The particular arrangement of the openings guarantees full visual privacy between the various units.
Rainwater collection, treatment systems and solar thermal panels support the hot water requirements of the units, underlining the maximum attention paid to the site.

LifeCycle Tower One

Designers
Architekten Hermann Kaufmann ZT GmbH, Schwarzach (Austria)
Client
Cree GmbH
Location
Dornbirn (Austria)
Completion
2012

The LCT ONE office block is a pioneering project experimenting the feasibility of a tower block (eight storey) with a prefabricated wooden load-bearing structure with the aim of verifying its functional efficiency, including through monitoring during use.
The extreme rationalisation of the building and assembly process allows construction times to be greatly reduced, while the potentially flexible configuration of the system enables the technology to be used in different contexts. Close attention to joints and the constituent components enabled the building to obtain the fire resistance certification for multi-storey buildings. These characteristics suggest that the construction model has wide potential, highlighting the value of the experimentation.

Sugoroku Offices
Designer
met architects, Gifu (Japan)
Client
Private
Location
Gifu (Japan)
Completion
2011

The building is a prototype deriving from research aimed at defining a method for wide-area intervention on urban scale for temporary use of the empty spaces resulting from the demolition of derelict buildings. Often in extremely degraded conditions, these sites may be abandoned for lengthy periods given the economic impossibility of constructing new buildings. The use of an economical dry construction system based on the reutilisation of used shipping containers and ground anchorage structures with surface foundations allows the construction of temporary buildings, easy to dismantle, remove and used elsewhere.
The project's value lies in definition of a method combining reuse within the city and reutilisation of abandoned materials, a forerunner of an urban development strategy able to bring new life to abandoned fragments of the urban fabric, encouraging regeneration and urban vitality in harmony with the socio-economic context in which it is applied.

Andalusian Energy Agency Premises
Designers
Ruiz-Larrea & Asociados, Madrid (Spain)
Client
Agencia Andaluza de la Energía
Location
Sevilla (Spain)
Completion
2012

Partly for its intrinsic institutional value, the building for the new Andalusian Energy Agency premises is a potential point of reference and stimulus for the development of ever more efficient energy and bioclimatic strategies.
The volumes of the building are designed so as to optimise the relationship between the distribution required by the functional plan and the energy requirements, thus guaranteeing maximum usage of the floor surface area available for construction.
Maximum natural light levels in the various rooms in the building are obtained through the perspicacious use of light tubes and reinterpretation of traditional Andalusian bioclimatic

strategies, such as the "*mocárabe*", a skylight which diffuses light inwards while providing protection against overheating and delivering the hot air outwards.
The experimentation of a new approach to the architectural integration of active solar systems in the façade is particularly interesting. The design of the external skin is based on a flexible system enabling different types of wall surface to be configured, integrating and combining modular elements of traditional cladding with sophisticated systems (photovoltaic panels, LED displays, etc.). The surface of the building is thus structured like the skin of a living organism able to be adapted and configured according to the climatic and physical conditions of the context.
The building's passive functioning is integrated by the use of low consumption active systems, giving it a high level of sustainability, including in terms of management.

RMIT Design Hub
Designers
Sean Godsell Architects, Melbourne (Australia)
Client
RMIT University
Location
Melbourne (Australia)
Completion
2012

The building accommodates the RMIT University research, development and training centres in the various design sectors such as architecture, town planning, aeronautical engineering, industrial design and fashion. Definition of communal areas and exhibition spaces open to the public promotes spontaneous interaction between the different disciplines, together with direct contact between the research centres, the world of industry and the community in general.
From a design point of view, the most interesting element is the outermost skin of the building shell, consisting of a number of circular translucent glass shading devices. An automatic mechanism enables these elements to rotate around the vertical axis to maximise interception of the sun's rays. The heat input can thus be limited, while at the same time providing effective diffusion of natural light in the interior spaces. The conceptual and construction simplicity of the individual shading devices enables them to be replaced with circular photovoltaic cells currently being studied and which will be able to cover the building's entire energy requirement. In short, the shell is conceived as a sort of genuine skin able to react to the variability of the external conditions, confirming the designers' great attention to climatic aspects and environmental sustainability.

The Galileo Pavilion
Designers
Studio 804, Lawrence (USA)
Client
Johnson County Community College Center for Sustainability
Location
Overland Park, Kansas (USA)
Completion
2012

The Galileo Pavilion adds additional teaching and public reception areas to the school. The process by which it was conceived and constructed also makes it an important educational model.
Through the work of Studio 804, a non-profit association of final year students, and under the supervision of an enlightened professor, students are given the opportunity to gain first-hand experience of the entire design and construction cycle of an architectural project. In recent times, each year Studio 804 undertakes the construction of a building with high standards of construction, energy efficiency and environmental sustainability, but always based on concrete analysis of economic and building feasibility. The Pavilion was therefore designed and constructed by the students using mainly recycled materials or materials recovered from abandoned buildings. It has excellent energy performance and combines passive functional efficiency with high performance mechanical installations powered by active solar and wind systems. A system to recover and reuse rainwater further emphasises the determination to pursue the objective of sustainability.

Social housing in Mieres
Designers
Amann, Cánovas, Maruri (Temperaturas Extremas SLP), Madrid (Spain)
Client
OCA, Construcciones y Proyectos SL - Ministerio de la Vivienda
Location
Mieres, Asturias (Spain)
Completion
2012

The project implements an urban improvement process in which the new buildings redefine the morphology of incomplete urban blocks. The design solutions adopted, a reinterpretation of traditional local strategies, use contemporary language and materials to resolve the introduction of the project into a context with poor architectural quality, providing the basis for more widespread regeneration of this urban area.
The plan involves a double façade for each unit, with a system of continuous loggias on both façades acting as a filter element to optimise the building's bioclimatic functioning. The loggias incorporate a system of sliding panels satisfying the need for interior comfort (in both summer and winter), while at the same time providing extreme flexibility of use and levels of privacy and protection varying according to the needs of the inhabitants. The different configurations of this external skin also give the façades an interesting dynamism which animates the urban perception of the buildings.

Shortlisted

Laguna El Rosario House
Designers
frías+tomchinsky arquitectos, Buenos Aires (Argentina)
Client
Private
Location
Laguna El Rosario, Pinamar (Argentina)
Completion
2011

Art Stable
Designers

Olson Kundig Architects, Seattle (USA)
Client
Point 32 Development
Location
Seattle, Washington (USA)
Completion
2010

The Brick Kiln House
Designers
SPASM Design Architects, Mumbai (India)
Client
Private
Location
Munavali, Alibaug, Maharashtra (India)
Completion
2011

DEGREE THESIS PROJECTS

Gold Medal
(4000,00 €)

Architecture of salt
Students
Alberto Maria Ficele, Francesco Garofoli, Sara Lagna, Vincenzo Salierno, Daniele Spirito, Francesco Vurchio
University
Politecnico di Bari (Italy)
Faculty
Faculty of Architecture
Supervisors
Ariella Zattera, Rossana Carullo
Academic Year
2011-2012

The project involves redevelopment of the salt works area of the city of Cagliari, abandoned almost 30 years ago following pollution of the aquifers. The study examines the possibility of attributing a new production function to the salt works area, identifying in the breeding, processing and selling of shrimps an economic flywheel able to underpin the high costs of safeguarding and maintaining the area's vegetation and water resources, avoiding environmental degradation and the hygiene problems deriving from abandonment of these areas. Through the appropriate water cycle, the project aims to generate renewal of the plant and animal ecosystem, now in critical conditions.
As well as considering the theme of landscape improvement, the thesis also examines architectural reclamation, with a proposal for the functional reutilisation of the salt warehouse (a significant building designed by Pier Luigi Nervi), now in a state of abandonment and complete dereliction. The building is conceived as a strategic link with the proposed production system - a place for processing, selling and also direct consumption of the shrimps and also the starting point for an itinerary visiting the improved areas along the San Bartolomeo Canal leading from the sea to the salt works and the Lake of Molentargius.

Silver Medals
(2000,00 € each)

Living the city. Strategies for redevelopment of ATER neighbourhoods in Pescara

Students
Alessandra Alimonti, Vincenza De Vincenziis
University
University "G. D'Annunzio" Chieti-Pescara (Italy)
Faculty
Faculty of Architecture
Supervisors
Susanna Ferrini, Massimo Angrilli
Academic Year
2011-2012

The thesis analyses the theme of improving the built heritage represented by social housing constructed in the mid-20th century, an important subject for many Italian cities. Today, this social housing is often in conditions of obsolescence with inadequate quality standards and its reclamation would appear to be a responsible course of action to satisfy the need for access to low-cost housing by ever larger sections of population.
The value of the research lies mainly in the proposal of a reclamation strategy also applicable to other Italian cities and regions. The process involves in-depth preliminary analysis of the actual conditions with the aim of defining various strategies at different levels (from simple maintenance to the transformation and expansion of the original buildings), with the final objective of achieving adequate quality standards and an increase in the usable surface area.
The process for intervening on the existing buildings appears clear, coherent and convincing, with the possibility of implementation in phases and incorporating methods designed to limit inconvenience to the occupants of the accommodation.
The completeness of the design approach is complemented by the proposal for improving the urban surroundings of the buildings, thus promoting a new urban regeneration process able to involve the surrounding urban and social fabric more extensively.

Brindisi 2050: desedimenting time/resurfacing hydrology

Student
Irene Toselli
University
Harvard Graduate School of Design (USA)
Faculty
Landscape Architecture
Supervisors
Anita Berrizbeitia
Academic Year
2011-2012

The research consists of a redevelopment proposal for the port and industrial area of the city of Brindisi, taking as its starting point a wider analysis of the municipality and defining a strategy of action which includes the themes of conserving and regenerating the vegetation, controlling and regulating the waters and protecting the numerous archaeological sites.

With clear-sightedness, these themes are considered to be fundamental to boosting the city's vocation for tourism and as driving forces for the necessary urban transformation. The port area thus redeveloped is considered as the arrival point for the tourist flow and a launch pad for exploring the city and local area.
The thesis proposes an interesting possible process for the economic and social relaunch of these places, although (given that this is a degree thesis) further in-depth verification of the technical and economic feasibility of measures of such significance in terms of size and implications for the local area is necessary.

Honourable Mentions

Improvement and functional reorganization of the port area of Ancona and focus on a residential district in the ex-Fincantieri area

Student
Margherita Gavazzi
University
Università degli Studi di Roma “La Sapienza” (Italy)
Faculty
Faculty of Architecture
Supervisor
Roberto A. Cherubini
Co-supervisors
Anna Esposito, Sergio Fabio Zevi
Academic Year
2011-2012

The project involves redevelopment of the port area of the city of Ancona as a strategy for recovering the urban area, in contrast to the widespread trend towards extensive consumption of undeveloped areas.
The project involves redefinition of the designated uses, with the inclusion of residential and tourism spaces, in order to bridge the gap between the port area and the historic city centre, with a planning synergy able to induce mutual regeneration and urban improvement.
The thesis also pursues the objectives of sustainability on an architectural scale, by designing the new buildings according to appropriate bioclimatic criteria with high standards of energy efficiency.

Lightweight protection. Design of a temporary, adaptable and reversible shelter for the archaeological site of Nora

Students
Elia Tomat, Marco Zerbi
University
Politecnico di Milano (Italy)
Faculty
Faculty of Architecture and Society
Supervisor
A. Campioli, E. Rosina, A. Zanelli
Academic Year
2010-2011

The thesis considers design of a modular structure to protect the archaeological discoveries, characterised by extreme ease of installation, adaptability to various contexts

and full reversibility. These objectives are obtained through use of a tensile structure consisting of a membrane with air space and tensioners able to respond to the predictable environmental stresses.
The possibility of modifying the membrane's level of solar protection through the superimposition of a number of layers makes it possible to offer appropriate shelter for the precious historical artefacts in different environmental situations, thus making the system potentially adaptable and able to be utilized in different sites.

Shortlisted

Tools for achieving urban rights
Student
Matteo Baldassari
University
Università degli Studi di Roma “La Sapienza” (Italy)
Faculty
Faculty of Architecture
Supervisor
Alessandra Battisti
Co-supervisors
“Arquitectos sin fronteras” Madrid
Academic Year
2011-2012

The metamorphosis of the industrial north-east of Italy. A case study in Villorba
Students
Alberto Brunello, Marco Salvador
University
Università Iuav di Venezia (Italy)
Faculty
Faculty of Architecture
Supervisor
Marco Ferrari
Academic Year
2011-2012

Ferrara, March 11th/12th 2013

The Jury

Thomas Herzog
Chairman

Erik Bystrup

Glenn Murcutt

Nicola Marzot

Antonello Stella

Gianluca Minguzzi
Secretary