2021

O1 INTELECTUAL OUTPUT
Output type: Studies / analysis –
Best practice guidelines / report

REVIEW

BEST PRACTICES
In Educating Sustainability
and Heritage

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Enhancing of Heritage Awareness and Sustainability of Built Environment in Architectural and Urban Design Higher Education

HERSUS

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REVIEW: Best Practices In Educating Sustainability and Heritage

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HERSUS

Content

In current time, as a society, we face multiple challenges and dualities: enable growth yet prevent disruption of the existing urban structure, give a response to the needs of the present without compromising the ability of future generations to meet their own needs, preserve the unique architectural and urban heritage that testifies about our past yet innovate within the architectural and urban design for our present.

With the architectural profession's ongoing stratification between architectural theory and praxis, future architects must take both critical and constructive positions regarding future spatial development. A contemporary built environment will have to balance heritage awareness and sustainable approaches while creating new shapes and conditions for new realities. In this complex scenario, a profile of future architects is under question, along with the institutions' structures and programs that are educating them.

Bearing this in mind, HERSUS partners strive to reassess these dualities in the educational process, hence enhancing and testing innovative and creative teaching practices in the field of sustainability of the built heritage. The project strives to improve educators' and researchers' competence and motivation to include curricula elements that will have tangible results, preparing architectural students and educators to become real actors of the environmental change.

Previously mentioned challenges require vital research and continuous improvement of curricular and extracurricular activities in higher education. To have a successful outcome, they must be transnationally carried out and need to achieve a balance between theory (research and education) and practice (institutional and professional). Both locally and globally alternative practices are developed parallel to institutional architectural education, creating different methodologies and built structures. Within this arena, HERSUS research project is striving to explore new perspectives and challenges regarding the teaching-learning of heritage awareness and sustainability.

This publication presents the results of the first four months of the project and is structured in three main parts:
• Built Architectural and Urban projects (20 projects, four from each of the five partner organizations)
• Pedagogical and Educational Models (20 courses, four from each of the five partner organizations)
• Influence of National Policies on the Sustainability of Heritage (one report per each partner organization)

The applied approach balanced between different geographies, cultures, and scales provides new insight into the complexity of the definition of heritage in the contemporary context, testifying that heritage transposes from an urban artifact to the urban landscape. It confirms the increasing complexity of thinking about urban and architectural heritage, representing a growing challenge for both researchers and educators to implement such topics in curricula.

The prepared publication's quality was contributed by architectural offices and individuals from five different countries, public bodies, and students whose works were used to illustrate the specific course methodologies.

Vladan Djokić, HERSUS project leader

Built Architectural & Urban Projects

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Serbia (Belgrade)

×

Italy (Venice)

×

Cyprus (Nicosia)

×

Greece (Thessaloniki)

×

Spain (Seville)

Università Iuav
di Venezia

ITALY

Emanuela Sorbo
Sofia Tonello

project 01

Punta della Dogana - François Pinault Foundation

IDENTIFICATION

Designations
- Contemporary Art Museum and Private Foundation

Information about the location
- Historic centre
- Coastal

Address
- Dorsoduro, 2, 30123 Venezia VE

Country / Region
- Italy

Coordinates
(GIS: ETRS89 / Google Maps: WGS84)
- 45.432012038799826, 12.335707615341548

City size
- Urban area 414,6 km² / Venice is the regional capital of Veneto, North-east of Italy

Website
- https://www.palazzograssi.it/en/about/sites/punta-della-dogana/

Accessibility
- Private with public Access

Public visits
- Yes

Category
- Architectural project
  Reuse (Adaptive)
  Restoration / Reconstruction
- Preservation
- Installations & Structures
- Cultural planning

Deliberative and participatory planning
- Yes

The building of "Punta della Dogana" had been empty for decades before François Pinault's cultural project started. Some investors had expressed their interest in the building to convert it into a hotel or an apartment building. However, it was not an acceptable reuse for the people.

Figure 1. Location map
Orthophoto extract from Map 2012-2018 by Apple Inc

Figure 2. View from Bacino San Marco
source: Photo by the author

Current use

- Contemporary Art Museum - François Pinault Foundation in Punta della Dogana

Year (period) of the project renovation / restoration

- 2007: project
  2008-09: building

Area of the building (m^2)

- space exhibition area: 3750 m^2

Current owner

- public: State Property – grant to François Pinault Foundation

Architects

- Tadao Ando (chief architect) with Kazuya Okano and Antoine Muller Moriya;
- Equilibri srl. Eugenio Tranquilli (general coordinator);
- Verdiana Durand de la Penne (project contact);
- Nicolò Vistosi (project assistant)

Other designers / engineers

- A. Lagrecacolonna (construction management and system design) with S. Rigato. R. Garavello, G. Bianchin;
- Tecnobrevetti, G. Cocco (structural design and construction supervision);
- L. Cocco (executive project and construction supervision) with N. Bernardi,A. Sìmioni, A. Anseimi, M. Frighi, A. Guida, M. Maschio;
- Ferrara, Palladino srl, P. Palladino e C. Ferrara (lighting design) with P. Spotti

Other agents

- Marc Desportes; Raimondo Ferrara; Venezia Ingegneria, F. Frezza (technical consultant and tester);
- C. Fulin (safety coordinator) with S. Semenzato and M. Chinellato;
- F. Merizzi (functional project) and F. De Marchi;
- G. Orsoni and M.G. Romeo (legal consultant);
- A. Mazzuccato (geological consultant)
- Fiel srl (electrical systems);
- Fiorin srl (mechanical systems);
- Sat Survey srl (geometric and topographic surveys);

KEY FEATURES

//

Remarkable attributes / Singularities / Specific Values

The Punta della Dogana restoration project involved urban and landscape aspect. The historical building is located in “Bacino di San Marco” and is part of Venice's culture and economic network.

Scope of application / necessity of the project:

The architectural and restoration project consisted in a 4-steps path::
1) the assumption of control of Palazzo Grassi by François Pinault, favored in 2005 by the mayor of Venice at the time, Paolo Costa, and by the Director of the Venetian Civic Museums, Giandomenico Romanelli.
2) the agreement between the Venetian Municipal Administration and the State Property granted new uses to the warehouses of “Punta della Dogana” that had long been abandoned.
3) the partnership agreement between the mayor, at the time Massimo Cacciari, and François Pinault was signed in 2007. It aimed to create an Art Center where was once the “Dogana da Mar”;
4) in 2009 the restoration work ended.

- Geotecnica Veneta srl (geognostic surveys);
- G. Driussi (non-destructive surveys);
- Ismes Cesi spa (monitoring);
- M. Bortoletto (archaeological consultant);
- A. De Spirt (restoration consultant).

Developer
- Palazzo Grassi - Pinault Collection

Building contractor
- Dottor Group spa

Cost of the project / execution time
- 2007-2009

Previous studies (Ex. Archaeological, historic, structural, materials, etc.)
- All studies and analysis were mainly done between 2007-2009
- The “Università di Architettura Venezia: Istituto di Rilievo e Restauro” (University of Architecture Venice: Survey and Restoration Institute) did in 1975 the survey of the ground floor, from the tip of the “Dogana da Mar” to the Rialto Island.

HISTORY OF THE BUILDING/SITE

Original use
- Civil
- Industrial
- Commercial

HISTORIC USES

Warehouse

CONSTRUCTION PERIOD

Early 15th century

SUMMARY OF MAJOR FUNCTIONAL AND STRUCTURAL CHANGES / YEAR OF INTERVENTION

- Early 15th century: “Magazzini del Sale” was built (Sea Customs House);
- 1450s: construction of Dogana da Mar;
- 1677: refurbishment of "Punta della Dogana";
- 18th-19th century: additions and renovations "Magazzini del Sale" for new industrial uses;
- 2007-2009: the opening of the restoration and exhibition areas "Punta della Dogana" (Pinault Collection)

ARCHITECTS / AGENTS

Arch. Giovanni Alvise Pigazzi

PHYSICAL CONDITION BEFORE RESTORATION / RENOVATION

Before the restoration project, the historic building was in bad conservation state. The external stone surfaces showed a poor state of conservation attributable to the abandonment and materials aging. Concerning the static issue, the ancient building before the restoration was characterized by the presence of differential subsidence of the foundations and the truss and roof system's materials were damaged.

STATUS OF PROTECTION

Historic Architecture of Declared Cultural Interest

GENERAL DESCRIPTION OF THE BUILDING BEFORE ITS RENOVATION / RESTORATION

The complex was built on a triangular-shaped island in the Dorsoduro insula. The interior space consisted of 8 «Tesoni» (warehouse) arranged on two floors. The tower was crowned by “The Palla de Oro” (The Gold ball) on the top of the insula.

PROJECT DESCRIPTION

DESIGN PROJECT IDEA FOR THE RENOVATION / RESTORATION

The building's architecture has been restored. The surface imperfections and stucco had been repaired, and the damaged parts of the facade had been reinforced with stainless steel brackets.
The interior masonry was repaired using 'cuci-scuci' techniques and treated on a bare surface. The architectural additions were enhanced using concrete, typical for Tadao Ando's work. The concrete walls disguised the technological equipment necessary for a modern exhibition space. They changed the building's circulation, focusing on the large square room in the centre of the building. The truss system was restored, and a similar one replaced the roof with new skylights.

DESCRIPTION OF THE CHANGES AND ADDITIONS

The restoration design by architect Tadao Ando included different types of intervention:
- high water protection;
- structural consolidation and restoration of masonry works;
- new technological and electrical systems;
- new architectural concrete elements;
- flooring consolidation and reconstruction;

Figures 3 and 4. Tesa 1: The new architecture addiction by Tadao Ando from the entrance and controcampo.
Source: Photo by the author

Figures 5, 6, 7 and 8. The new architectural addiction by Tadao Ando, stairs and concrete walls.
Credit: Photos by Francesco Bianchi

- new external opening frames;
- consolidation and addition on the roofing system.

BUILDING MATERIALS

Along with other industrial buildings in Venice, "Punta della Dogana" is an example, of using common construction techniques and traditional materials. These materials and techniques are the brickwork for foundations and masonries, Istrian stone with iron for punctual resistant elements in the façade or the floorings, and wood for floors and roofs built as light as possible.
The restoration project maintained and enhanced the Venetian construction techniques in an idea of sustainability of materials and cultural transmission. The architectural and restoration design added new materials and modern building techniques to ensure the museum system's smooth operations.

Figure 9. Exterior: evidence of cuci-scuci techniques
Source: Photo by the author

Figure 10. Interior: evidence of cuci-scuci techniques
Source: Photo by the author

Figure 11. Restoration of the wooden trusses and evidence of cuci-scuci techniques.
Credit: Photos by Francesco Bianchi

Figure 12. Exterior: surface imperfections and stuccos repaired.
Source: Photo by the author

PROJECT IN RELATION TO THE SUSTAINABILITY

Social aspect:
The "Punta della Dogana" project was designed according to a participative process. The Venetian community played an essential role in identifying the most suitable proposal for the city and place. The building's position in a relevant part of the city, such as the "Bacino di San Marco", asked for adaptive reuses aimed to create new cultural values to the local cityscape.

Economic aspect:
François Pinault Foundation's cultural project began in 2005 with the restoration and museum design of Palazzo Grassi. The owner's main purpose (Municipality of Venice) and François Pinault Foundation was to create a new cultural and economic pole in Venice.

Environmental aspect:
Tadao Ando and his team have sought to give the old building a new life that meets the values of sustainability, gentle mobility, and the relationship with the city.

SPECIAL METHODS OR TECHNIQUES USED IN THE PROJECT WHICH REFLECT THE SUSTAINABLE DESIGN

The special techniques used in the project aimed to protect the historic building from humidity and high tides. The protection of the site against rising groundwater, a phenomenon concomitant with the sea level rise, was also part of the “aqua Alta” system’s design. The mezzanines' restoration required the implementation of the floor’s strength by using compatible materials as a technique of double-crossed wood boards.

DIGITAL DATA EMPLOYED FOR THE DOCUMENTATION (3D SCANNING, PHOTOGRAMMETRY, ETC.)

✕ No data

Figure 13. The Tadao Ando concrete box in the center of the project.
Credit: Photo by Francesco Bianchi

Figure 14. The Tadao Ando concrete box in the center of the project.
Credit: Photo by Francesco Bianchi.

TOOLS/TECHNOLOGIES USED FOR THE IMPLEMENTATION OF THE NEW USE

The project for "Punta della Dogana" used different technologies for the implementation of the new use adaptive reuse, such as:
- the work of waterproofing and water containment tank to prevent high water from coming into the building;
- the use of micropile to consolidate the foundation system;
- the scuci-cuci technique to reinforce the damaged masonry;
- the new wooden additions and iron elements to implement the strengthening of the 130 wooden trusses;
- the architectural additions were planned to contain and improve technological facilities.

DISSEMINATION / PROMOTION ACTIVITIES (WORKSHOPS, CONGRESS, PUBLICATIONS, PRIZES)

- Promotion activities:
- “Punta della Dogana”and François Pinault Foundation have a regular calendar of cultural activities (exhibition, workshops, conferences, and courses). https://www.palazzograssi.it/en/events/ archive/
- 2015-ongoing : The “Gallerie dell’Accademia”, the “Galleria di Palazzo Cini”, the “Peggy Guggenheim Collection”, and “Palazzo Grassi – “Punta della Dogana”District” are connected in the “Dorsoduro Museum Mile” project. https://www.palazzograssi.it/ en/visit/tickets-and-hours/dorsoduro-museum-mile/

Prizes:
- 2012 – Equal Gold Medal at “Premio Domus Restauro e Conservazione – Fassa Bortolo” https://www.premiorestauro.it/en/opere- realizzate

REFERENCES

- R. Codello, Contemporary Architecture in Venice, Marsilio, Venice, pp. 60-65, 2014

- P. Jodidio, Ando, Complete works 1975-2012, Taschen Koln, pp. 548-557, 2012

- D. Longhi, Novecento. Architetture e Città del Veneto. (20th Century. Veneto Architectures and Cities), Il Poligrafo, Padua, p. 309, 2012

- D. Longhi, Novecento. Architetture e Città del Veneto. (20th Century. Veneto Architectures and Cities), Il Poligrafo, Padua, p. 309, 2012

- C. Colombo, Tadao Ando, Hachette Milan, pp.48-51, 2011

- P. Jodidio, Tadao Ando, Venice: the Pinault Collection at the Palazzo Grassi and the Punta della Dogana, Skira Rizzoli, New York, pp. 10-39, 2010

- J. Gonchar, Punta della Dogana, in "Architectural record" n. 897, pp. 86-90, 2010

- G. Romanelli, Dogana da Mar: la Punta dell'arte (Dogana da Mar: Art point), Electa Milan, 2010

- F. Dal Co, Tadao Ando, volume 2, 1995-2010, Electa, Milan, pp. 530-543, 2010

- L. Molinari, Tadao Ando. Museum, Skira, Milan, pp. 148-151, 2009

Tadao Ando, Punta della Dogana, Venice (Italy), in "AV Monografias" n. 139, pp. 56-63, 2009

- Punta della Dogana, François Pinault Foundation, in "Beaux Arts Magazine", Paris, 2009

- F. Dal Co, Tadao Ando for François Pinault: from Ile Séguin a Punta to Dogana, Electa, Milan, 2009

- F. Dal Co, Tadao Ando e l'eredità del tempo (Tadao Ando and the time heritage), in "Casabella" n. 778, pp. 16-35, 2009

- T. Ando, Aura-Tadao Ando Architect & Associates, in "Lotus International" n. 134, pp. 32-47, 2008 for a better understanding of the project:

for a better understanding of the project:

http://architetturecontemporanee.beniculturali.it/architetture/architettura_dettaglio_per.php?idArchitettura=%2029904

ACADEMIC WORKS / STUDENTS RELATED PROJECTS / PUBLICATIONS

The project of restoration of “Punta della Dogana”is an architectural reference for IUAV students. Specifically, this project by Tadao Ando and the building itself was critical analysed within the courses of "Restoration Theory and History" (2019/2020), "Integrated Design Lab – Focus 3: Regeneration and Conservation of Historic Buildings and Environments" (2020/2021)," Restoration Studio" (2019/2020), and "Restoration theories and techniques" (2019/2021 - 2020/2021) led by Professor Emanuela Sorbo.

OTHER SIMILAR PROJECTS AS A REFERENCE

✕ N/A

REFERENCE TO WORLDWIDE EXAMPLES

✕ N/A

Università Iuav
di Venezia

ITALY

×

Emanuela Sorbo
Sofia Tonello

project 02

Ca' Tron Real Estate - H-Farm

IDENTIFICATION

Designations
- X Start-up and educational incubator

Information about the location
- X Rural
- X Other: Natural Regional Park

Address
- X Via Adriano Olivetti 1, 31056 Roncade (TV)

Country / Region
- X Italy

Coordinates
(GIS: ETRS89 / Google Maps: WGS84)
- X 45.56529224798999 12.407202513524782

City size
- X Roncade is a rural country area in the urban municipality of Treviso, North-east of Italy

Website
- X https://www.h-farm.com/en/ecosystem/campus/project/

Accessibility
- X Private with public Access

Public visits
- X Yes

Category
- X Architectural project
  Reuse (Adaptive)
  Restoration / Reconstruction
- X Landscape
  Intervention
- X Installations and structure
- X Cultural planning

Deliberative and participatory planning
- X No

Figure 1. Location map
Source ZanonAssociati Firm

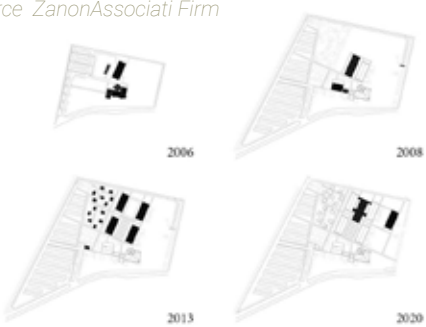

Figure 2. H-Farm spaces' flexibility (from 2003 to 2020)
Source ZanonAssociati Firm

Figure 3. Location map
Orthophoto extract from Map 2012-2018 by Apple Inc

Current use
- education and research, hospitality, office, restaurant, culture

Year (period) of the project renovation / restoration
- H-Farm: 2004-2013
- H-Campus: 2016-2020

Area of the building (m^2)
- H-Farm: area: 37.500m²
- H-Campus: 30 ha territorial area – 27.000 m² gross floor area – 94.000 m^3 volume

Current owner
- Private: Ca' Tron Real Estate

Architects
- Zanonarchitettiassosciati
- RSHP Rogers Stirk Harbour + Partners

Other designers / engineers
- general contractor: Carron Cav. Angelo S.p.A.
- structural engineer: Studio di ingegneria RS S.r.l.
- services engineer: Manens-Tifs S.p.A. – DBA progetti S.p.A.
- environmental impact assessment: ALIA ss
- hydraulic compatibility assessment: Aequa Engineering S.r.l.
- infrastructure: Sinergo S.p.A.
- acoustic engineer: Manens-Tifs S.p.A.
- BIM: DVA DVisionArchitecture

Other agents
- RSHP Rogers Stirk Harbour + Partners work team: Richard Rogers, Stephen Spence, Ed Hiscock, Jo Murtagh, Joseph Park, Mariana Garza, Richard Black, Yuting Cheng

Developer
- Fund "Ca 'Tron H-Campus" - International Financial Investments
- Investments Management Company S.p.A.

Building contractor
- DBA progetti S.p.A.

Cost of the project / execution time
- N/A

Previous studies (Ex. Archaeological, historical, structural, materials, etc.)
- N/A

KEY FEATURES

Remarkable attributes / Singularities / Specific Values

The project interrelated the architectural and landscape design to enhance rural and ancient buildings and landscapes. The project area is a sensitive landscape located at the border of the Unesco Site "Venezia e la sua Laguna" and within the "Parco Regionale del Sile". According to the main idea of the "zero volume purpose ", the team's attitude toward built heritage has integrated the conservation and new buildings design.

Scope of application / necessity of the project:

Starting from 2005, the two companies H-Art and H-Care, founded the actual H-Farm. They established in the Ca' Tron Estate buildings. The restored abandoned farm was the base for the first venture incubator in the world. So, starting from 2016 and up to 2020, H-Farm based its high educational campus in restored rural abandoned buildings in Treviso countryside.

HISTORY OF THE BUILDING/SITE

Original use

- [x] House
- [x] Residential
- [x] Other: buildings with agricultural uses

HISTORIC USES

Residential and buildings with agricultural uses

CONSTRUCTION PERIOD

Starting from the 16th century until 2020

SUMMARY OF MAJOR FUNCTIONAL AND STRUCTURAL CHANGES / YEAR OF INTERVENTION

Cà Tron estate consisted of a set of buildings that resulted from a construction process developed over the years. The typological aspects and cultural values of the building complex have determined different design approaches by the architects. They used an evaluation method that considered the original form as expression of the rural activities and the historical period's built techniques.

ARCHITECTS / AGENTS

The name of the architect who built the Ca' Tron Villa isn't known.

PHYSICAL CONDITION BEFORE RESTORATION / RENOVATION

There is not enough information for a description of the state prior to the restoration.

STATUS OF PROTECTION

The building doesn't have any declaration of public interest. Nevertheless, it is located in a sensitive area according to the "Codice dei Beni Culturali e del Paesaggio" (Cultural Heritage and Landscape Code, Legislative Decree 42/2004) because the area of intervention is within the "Parco Regionale del Sile" (Regional Park of the Sile) and on the border of the UNESCO Site "Venezia e la sua laguna".

GENERAL DESCRIPTION OF THE BUILDING BEFORE ITS RENOVATION / RESTORATION

There is not enough information for a description of the state prior to the restoration.

Figures 4,5 and 6. Ca' Tron estate before the intervention.
Credit: ZanonAssociati Firm

PROJECT DESCRIPTION

DESIGN PROJECT IDEA FOR THE RENOVATION / RESTORATION

The first part of the project was the conservation of the abandoned farm buildings. The second phase started in 2016 and provided the construction of new buildings with the "zero volume purpose" to reduce the soil's exploitation. The design project involved a 30-hectare sized park designed for sports services and slow mobility.

Figure 7. Aerial view of H-Farm buildings.
Credit: ZanonAssociati Firm

Figures 8 and 9. H-Farm ancient building conservation and transormation.
Credit: Marco Zanta

Figures 10. H-Campus new H-School Building.
Credit: Marco Zanta

Figures 11. H-Campus the Students House and the Bistrò.
Credit: Marco Zanta

DESCRIPTION OF THE CHANGES AND ADDITIONS

The architects' purpose was the main rural building's conservation design and the enhancement of the identity and the cultural values of rural Veneto buildings. In the design process, as the architects stated, the approach toward the buildings with no evident cultural or historic values allowed a high level of transformation of the forms. The design project gave a new shape to the buildings and integrated the use of sustainable and reversible technologies with the conservation of the places' cultural identity. The alternative forms of mobility and green energy supplies were the most crucial design choices to minimize the environment's impact.

BUILDING MATERIALS

The traditional rural materials (such as brick and timber) and the recent agricultural-industry ones (such as the metal of the silos) have been preserved and integrated with modern materials. The introduction of sustainable and reversible technologies is related to the project's aim including sustainability, space flexibility and reversibility as architectural values.


Figures 12. a) H-Campus new H-School Building, and b) H-Farm Sport Center
Credit: Marco Zanta

PROJECT IN RELATION TO THE SUSTAINABILITY

Social aspect:
The idea of the H-Campus project was “a campus on a human scale”. The main architectural purpose was the introduction of new space for H-farm cultural events, sport and green areas and open services to the citizen and the territory.

Economic aspect:
The creation of digital projects that could make life easier for people and companies is an H-Farm goal. The start-up spaces, the educational areas and the cultural event rooms answer the H-Farm needs.

Environmental aspect:
H-farm and H-campus are based on the "zero volume purpose". The new buildings originated from the renovation or reconstruction of the original ones, and the green area continued to be destined for woods, meadows and vegetable gardens. The energetic renewable sources, including photovoltaic, geothermal and other green technologies, were the main tools to design a self-sufficient campus from the energy point of view.

SPECIAL METHODS OR TECHNIQUES USED IN THE PROJECT WHICH REFLECT THE SUSTAINABLE DESIGN

The architectural design project used renewable energy, the spaces' flexibility, and enhancing the cultural landscape as the main expression of environmental, economic, and social sustainability.

DIGITAL DATA EMPLOYED FOR THE DOCUMENTATION (3D SCANNING, PHOTOGRAMMETRY, ETC.)

✕ N/A

TOOLS/TECHNOLOGIES USED FOR THE IMPLEMENTATION OF THE NEW USE

✕ N/A

DISSEMINATION / PROMOTION ACTIVITIES (WORKSHOPS, CONGRESS, PUBLICATIONS, PRIZES)

Promotion activities:
- H-farm is a place of culture and innovation, it has a regular calendar of activities (workshops, conferences, and courses).
Prizes:
- 2020: the project H-CAMPUS was awarded in 2020 with Architetto Italiano Award.
- 2016: the project was elected as case study at the exhibition "TAKING CARE - Designing for the Common Good": 2016 Architecture Biennale

REFERENCES

https://zanonassociati.com/en/project/h-campus
https://www.h-farm.com/en

ACADEMIC WORKS / STUDENTS RELATED PROJECTS / PUBLICATIONS

✕ N/A

OTHER SIMILAR PROJECTS AS A REFERENCE

✕ N/A

REFERENCE TO WORLDWIDE EXAMPLES

✕ N/A

Università Iuav
di Venezia

ITALY

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Sofia Tonello

project 03

Restoration of the military bakery of Santa Marta at the university in Verona

IDENTIFICATION

Designations
- Santa Marta University Center

Information about the location
- Urban centre

Address
- Via Cantarane, 24, 37129 Verona VR

Country / Region
- Italy

Coordinates
(GIS: ETRS89 / Google Maps: WGS84)
- 45.43986993807477, 11.012683415112326

City size
- Urban area 206,6 km² / Verona is an urban municipality of Veneto, North-east of Italy

Website
- https://www.univr.it/main?ent=bib-lio&id=247

Accessibility
- Public building with public Access

Public visits
- Yes

Category
- Architectural project
  Reuse (Adaptive)
  Restoration / Reconstruction
- Preservation
- Urban revitalization
- Installations & Structures
- Cultural planning

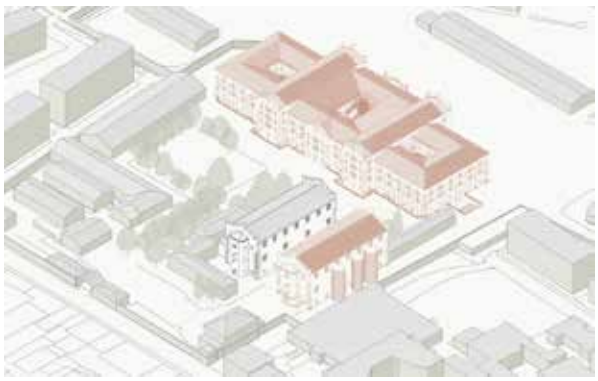

Figure 1. Intervention location of the former military Bakery of Santa Marta - Università di Verona
Source: http://www.carmassiarchitecture.com

Figure 2. The former military Bakery of Santa Marta University Center. 2021
Credit: Photo by the author.

Figure 3. Location map
Orthophoto extract from Map 2012-2018 by Apple Inc

Deliberative and participatory planning
- No

Current use
- University center

Year (period) of the project renovation / restoration
- 2006-2014

Area of the building (m^2)
- 25.000 m^2

Current owner
- public: State Property – grant to Università degli Studi di Verona

Architects
- IUAV STUDI E PROGETTI - [ISP] composed by:
- scientific coordinator: Marino Folin,
- architectural project: Massimo Carmassi with Gabriella Ioli Carmassi;
- consolidation project: Paolo Faccio with Paola Scaramuzza and Alvise Miozzo
- structural design: Roberto Di Marco with Gianluca Mannucci
- plant design: Mauro Strada with Andrea Crivellaro, Marco Gradizzi, Marco Dianin, Marco Donnola, Dario Turolla

Other designers / engineers
contract managers:
- Marco Scanferlin (architectural project, engineering and fire protection plan);
- Stefano Giorgetti (conservation and structural consolidation project);
- with Massimo Marchetti (responsability of general documents);
- Enrica Coppo and Sara Di Resta (investigations on decay and project conservation);
- Cristina De Nardi (investigations on the instability and consolidation project);
- Guido Ometto and Matteo Disarò (structural drawings);
- Giuliana Fassari (engineering plant); Silvia Fontana (metric calculation);
- Luca Borsa and Jacopo Gaspari
- (modeling three-dimensional); Barbara Rossi (calculations);
- Marjan Sokota, Giulia Sartore, Valentina Apollonio;
- coordination for safety in the design phase: Domenico Ferro Milone;

KEY FEATURES

Remarkable attributes / Singularities / Specific Values

The project team aimed to design a new architecture in close relationship with the existing structures. The project team developed different solutions to preserve the building from degradation and "musealization", such as recovering original materials, preserving the original spaces' cultural values, and approaching new adaptive reuses with a respectful purpose.

Scope of application / necessity of the project:

The necessity of a strategy of reuse and conservation project of the two Austrian military artefacts of the “Santa Marta” compendium in Verona started from the need for transformation of the former military buildings in a strategic opportunity for historical, architectural, and urban enhancement for Verona City.
The design of new spaces for the Università di Verona Faculty of Economics in a cultural-historical building was the architectural project's goal by IUAV STUDIO E PROGETTI. The former military complex's adaptation to a modern university structure, as professor Alberto Farlenga stated, guaranteed to enhance the historical building and was the opportunity to return a part of Verona City to the citizens.

- geothermal plant consultant: FadiSalvatore Onza.

Other agents
- foundation work investigations and design: Alberto Mazzucato, with Massimiliano Maron
- geometric survey: IUAV - CIRCE photogrammetry laboratory (Francesco Guerra, with Caterina Balletti (coord.), Giovanni Auditore, Luciano Comacchio, Silvia Dandria, Francesco Gerbaudi, Marco Gnesutta, Silvia Mander, Marco Mason, Fausto Randazzo, Cecilia Stevanin
- environmental study: Giovanni Campeoi with Sandra Carello
- technical director: Mario Spinelli
- technical coordination: Maria Rosaria Pastor

Developer
- Università degli Studi di Verona

Building contractor
- Construction Cooperative S.c., Modena (main company);
- Gelmini Cav. Nello Spa, San Martino Buon Albergo, Verona (mechanical systems);
- ITI Impresa Generale Spa, Modena (electrical systems);
- Cooperativa Archeologia S.c., Florence (restoration);
- Resin Proget Srl, Rovigo (structural consolidation);
- CO. FER Srl, Verona (metal structures); Siro Marin Costruzioni Metalliche,
- Correzzola, Padua (metal frames and structures);
- MOGS Srl, Treviso (FerroFinestra profiles for fixtures);
- Virgo Srl, Lippo, Bologna (stained glass).

Cost of the project / execution time
- N/A

Previous studies (Ex. Archaeological, historical, structural, materials, etc.)
- 2001-2012: research by the group IUAV STUDI E PROGETTI

HISTORY OF THE BUILDING/SITE

Original use
- Military
- Industrial

HISTORIC USES

The silos and the bakery belong to an ensemble built shortly after the mid-nineteenth century by the Austro-Hungarian army near Verona's urban center.

CONSTRUCTION PERIOD

1863 – 1865

Figure 4 and 5. Northen façade, before the intervention. Nothen wing slab demolition. 2011-2012
Credit: Prof.ssa Emanuela Sorbo

SUMMARY OF MAJOR FUNCTIONAL AND STRUCTURAL CHANGES / YEAR OF INTERVENTION

1863: the original project (two silos and a bakery) was drawn up by Lieutenant Colonel Andreas Ritter Tunkler von Treuimfeld (collaborator Anton Naredi-Reiner and Ferdinand Artmann).
1865-1989: The area was military complex and used as a warehouse for food, storage, milling of grain, packaging, and baking of bread and cakes (the bakery activities stopped in 1945).
1989: The entire area from the military property passed to the Municipality of Verona.
2014: the Municipality of Verona granted the area to Università di Verona, Faculty of Economics.

ARCHITECTS / AGENTS

1863-1865: Lieutenant Colonel Andreas Ritter Tunkler von Treuimfeld (collaborator Anton Naredi-Reiner and Ferdinand Artmann)
2001-2014: group IUAV STUDI E PROGETTI

PHYSICAL CONDITION BEFORE RESTORATION / RENOVATION

The building suffered random creation of no compatible additions inside and outside the courtyards when it was a general warehouse.

On the inside:
- the damage of some floors for excessive loads;
- the addition of numerous partition walls;
- the reconstruction of the original wooden structure of the roof (east wing) after the damage suffered by the building in the last war;
- the layers of whitewashing hide the original internal plaster.

On the outside:
- Incompatible additions filled the courtyards;
- the external plasters were mostly incomplete due to decay.

Figure 6 and 7. Basement, diamond blade enlargement of the opening, 2011-2012, before the intervention.
Credit: Prof.ssa Emanuela Sorbo

Figure 8. Attic trusses system before the intervention. 2011-2012.
Credit: Prof.ssa Emanuela Sorbo

STATUS OF PROTECTION

Historical Architecture of Declared Cultural Interest

GENERAL DESCRIPTION OF THE BUILDING BEFORE ITS RENOVATION / RESTORATION

The former Bakery is composed of the main body with a central courtyard flanked by two transversal wings. Two C-shaped bodies define two courtyards. The internal spatial structure is made up of square cells measuring 5 x 5 meters, covered by rib vaults. Barrel vaults with lateral lunettes the sleeves cover of the ovens. The attic is characterized by the complex mesh of the wooden roof structure, with large trusses and rafters protected by bricks in “terracotta” and tiles

PROJECT DESCRIPTION

DESIGN PROJECT IDEA FOR THE RENOVATION / RESTORATION

The introduction of new architectural elements expressed the necessary new adaptive reuses. The design thought is based on the acknowledgement of the values of the ancient building and the idea of constant adaptation to contemporary uses.

DESCRIPTION OF THE CHANGES AND ADDITIONS

The need to introduce new uses for collective activities (such as classrooms for teaching, laboratories, library, etc.) modified the former Bakery building system. The general unitary and coherent changes in the environments were the design aims. The opening systems in the basement and attic were inappropriate for the new uses, and then new wider openings were proposed to solve the lighting and ventilation problems. The distribution system changed, according to the new uses. New stairs, a new circulation system, and elevators were inserted in courts or other parts of the building. The new design for the former Silos attempted to enhance the unitary perception of space.

BUILDING MATERIALS

The "Ex-Panificio Santa Marta" complex was built by the Austro-Hungarian army. The materials and construction techniques belong to the military tradition and are aimed for inexpensive and long-lasting buildings. The materials used were local, as the Adige's stones and brick masonry, and cheap, such as the iron tie rods instead of wooden ones in the truss system.
During the years (the buildings were used until the 1960s), partition elements, demolition, and changes passed. The purpose of the design is to preserve the idea of the layering of history, including the present. It has preserved traces and used new distinctive materials in architectural addictions (brushed steel and glass). Moreover, all structures have been enhanced by innovative and traditional technologies

Figure 9 and 10. Interiors of Silos. Office boxes, study spaces and stair systems. 2012
Credit: Prof.ssa Emanuela Sorbo

PROJECT IN RELATION TO THE SUSTAINABILITY

Social aspect:

The “ex-Panificio Santa Marta” project considered the building complex as a new potential area open to the community. The cultural destinations, such as the University center and library, created new values in an urban dismissed area and to the local cityscape.

Economic aspect:
The plan of the area creates a new economy for the Center of Verona, for example the new student’s income in Verona and new social and cultural events related to the city.

Environmental aspect:
The project guarantees a new life to the building in compliance with the values linked to sustainability, soft mobility, and the coexistence of city and architecture.

Figure 11 and 12. “Silos di Ponente” exteriors emergency exit system. 2021.
Credit: Photo by the author.

SPECIAL METHODS OR TECHNIQUES USED IN THE PROJECT WHICH REFLECT THE SUSTAINABLE DESIGN

The project re-organized the former industrial building adding new uses and implemented new technological systems and constructive solutions. Generally, all the interventions involved the relationship between sustainability, new uses, and cultural heritage preservation.

Figure 13 and 14. Former Bakery interior: ground floor. 2021.
Credit: Photo by the author.

DIGITAL DATA EMPLOYED FOR THE DOCUMENTATION (3D SCANNING, PHOTOGRAMMETRY, ETC.)

✕ No data

TOOLS/TECHNOLOGIES USED FOR THE IMPLEMENTATION OF THE NEW USE

✕ No data

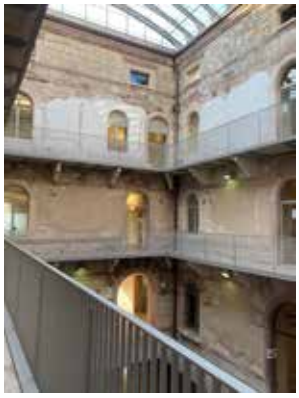

Figure 15 and 16. Former Bakery interior stairs systems. 2021.
Credit: Photo by the author.

DISSEMINATION / PROMOTION ACTIVITIES (WORKSHOPS, CONGRESS, PUBLICATIONS, PRIZES)

Promotion activities:
- Polo Univerisitario Santa Marta has a regular calendar of cultural activities (workshops, conferences, and courses). (http:// comunicazione.univr.it/santamarta/index.html)

Prizes:
- 2015: "Medaglia d'Oro all'Architettura" (https://ilgiornaledellarchitettura.com/2015/12/12/un-restauro-doro/)

Publications:
- Massimo Carmassi with IUAV STUDI E PROGETTI – [ISP] srl, Recupero del Panificio di Santa Marta a sede universitaria, Verona (The renovation of the Santa Marta bakery as a University Center, Verona), in "Casabella" 858 p. 4, 2016
- Marco Mulazzani, L'architettura mostra il trascorrere del tempo, in "Casabella" 858 p. 5, 2016
- Mulazzani, Marco, L'architettura di Massimo Carmassi: la nuova sede dell'università di Verona: restauro e riuso (Massimo Carmassi's architecture: the new University Center of Verona: conservation and reuse), Electa Architettura, Milan 2016
- Massimo Carmassi, Gabriella Ioli, Silos di Ponente, ex Caserma Santa Marta Verona, in "Casabella" 794 p. 58, 2010
- Massimo Carmassi: conservazione e architettura : progetto per il campus universitario di Verona, Carmassi, Massimo, 2007

REFERENCES

Massimo Carmassi with IUAV STUDI E PROGETTI – [ISP] srl, Recupero del Panificio di Santa Marta a sede universitaria, Verona (The renovation of the Santa Marta bakery as a University Center, Verona), in "Casabella" 858 p. 4, 2016

Marco Mulazzani, L'architettura mostra il trascorrere del tempo, in "Casabella" 858 p. 5, 2016

Maria Luisa Ferrari, Santa Marta, Past and present, Cierre Edizioni, 2016

Valerio Terraroli, Santa Marta, Dalla Provianda al Campus universitario (Santa Marta, From Provianda to University campus), 2016

- Mulazzani, Marco, L'architettura di Massimo Carmassi: la nuova sede dell'università di Verona: restauro e riuso (Massimo Carmassi's architecture: the new University Center of Verona: conservation and reuse), Electa Architettura, Milan 2016

- Scimemi Maddalena, Un restauro per Verona. Massimo Carmassi: la nuova sede universitaria di Santa Marta. (A restoration for Verona. Massimo Carmassi: The new university center of Santa Marta), Electa Architettura, Milan 2011

- Massimo Carmassi, Gabriella Ioli, Silos di Ponente, ex Caserma Santa Marta Verona, in "Casabella" 794 p. 58, 2010

- Mario Spineli e Maria Rosaria Pastore, Dal master-plan per la città agli spazi per la didattica, pp. 25-30 in Architettiverona 85, 2010

- Massimo Carmassi: conservazione e architettura : progetto per il campus universitario di Verona, Carmassi, Massimo, 2007

http://www.carmassiarchitecture.com

ACADEMIC WORKS / STUDENTS RELATED PROJECTS / PUBLICATIONS

2002 - 2004, the Iuav Studi e Progetti carried out surveys and preliminary studies on the distribution hypotheses and intervention methods for the western silos and the bakery.

2012: Master's thesis in "Architettura per la conservazione" (Architecture for conservation) by Brichese, De Rossi, Tenti.

2011 – 2012: The building was assigned as case study at the Workshop of restoration led by Massimo Carmassi at "Laboratorio di Recupero" (Recovery Lab) at the IUAV Master degree.

Dicembre 2010: MASSIMO CARMASSI, didactic journal (http://www.iuav.it/Ateneo1/ chi-siamo/pubblicazi1/Catalogo-G/pdf-giorna/ Giornale-Iuav-97.pdf)

OTHER SIMILAR PROJECTS AS A REFERENCE

✕ N/A

REFERENCE TO WORLDWIDE EXAMPLES

✕ N/A


HERSUS