

1. **Instructor:** Cristina PARDAL, Esther GIANI
2. **Title:** Double skin façades for dismissed industrial façades' refurbishment and for Porto Marghera's enhancement.
3. **Semester:** First semester (fall semester)
4. **Training objectives**

The design studio's main aim is to provide students with those analytical and critical tools necessary to propose and develop an Architecture Project intended as a logical sequence of choices and assessments arising from the Vitruvian constraints of *Firmitas* and *Utilitas*. The functional and technological aspects will go along the entire experience; the *Venustas* will be the initial pretext to be confirmed in the final phase.

The work will be developed by means of an inductive process: from the detail to the overall, from data gradually verified through different disciplinary paradigms until a complete definition.

The form's meaning lies in the adequacy to the activities held outside and inside the building, the energetic (energy?) efficiency and the constructive process. These principles will be the backbone of the integration process between the disciplines of the studio: Architecture Technology and Design.

The architectural design will be managed focusing on its main aspects, which are technical-constructive and figurative-formal.

Goal of the Studio is to develop, in the student-architect, the awareness that a project has historical references, a physicality, functions (namely: *Firmitas*, *Utilitas*) and a figurative-formal coherence (namely: *Venustas*).

At the end of the studio students will be more aware of:

Substance

- Strategies for the energetic refurbishment of industrial buildings in the Mediterranean climate;
- Double skin façades systems: construction and performances;
- Media facades strategies;
- The concept that ephemeral and art are an elective activator of regeneration process within dismissed area.

Form

- Capacity to be analytical and critical of pre-existences and references;
- Ability to propose, develop and defend their own work;
- Capacity to understand, be critical and apply different technological systems.

5. Prerequisites

Students must be curious and interested in the theme proposed, in the design experience proposed development mode, in the proposed schedule and references.

Students must have basic knowledge of architecture technology, especially on frame-structures and double skin façades.

Students should have familiarity with digital programmes both for photomontages and video making.

The course is open to students asking for hybridisation and experimentation: technology, built-scape, heritage, art and theory.

It is required an active presence and willingness to participate in the activities.

6. Course programme

In Porto Marghera's vast extension, there still are spot areas with ongoing industrial activities (and also expanding), alternated with areas where lie abandoned and unused wrecks. Large buildings, containers, silos, warehouses; architectures distinguished by large size and for the presence of extended continuous surfaces.

The treatment of large cases, of rhythmical skeletons, of dismissed architectures is a theme that engages and concerns both research and didactic. How to intervene not only for a functional rein-

tegration (1) but also for a first rehabilitation, even temporarily, so to allow the regeneration of urban parts and of redefined outdoor spaces, by mean of beautification (2).

The 'Porto Marghera issue', aside the vast literature (partly produced also by our School) goes along with its future and possible (read: compatible) uses.

The aim of this Course, that sees a visiting professor and a luav researcher together, is not to give the *Answer* to the Porto Marghera Issue, rather to foresee *intermediate* lives for abandoned and polluted area. Therefore, this Course main goal is to figure out potential temporary uses, namely ephemeral possibilities (scenarios) but with pragmatic consequences.

Scenarios and proposals will refer to the definition of *unexpected* 'urban spaces' by using the industrial skeletons and cases (in this instance, cylinders) as stage wings. Porto Marghera is already rich of suggestive and impressive panoramas, captured by famous photographers and film makers, but the task proposed to students is to implement those potentialities by inventing new 'urban' scenes, new ephemeral machines for a temporary and alternative second life of both the architectures and the area, which are industrial in origin.

The study-area is that of ex Agrimont (45.46777, 12.25394), very close to Venice, facing the back of Vega complex, where two arched concrete skeletons define a corner, a series of different size cylindrical silos (in width and height) pins the opposite corner, which main sides are traced by a canal and a street.

The area is pre-composed, the task is to invent a new light façade when missing, overlapping and juxtaposing a second *built* envelope, surfaces, and to infill the outdoor/s (that can also be modified but only by elevating not by digging due to the polluted soil) with new life. A topic only apparently superficial and figurative: it is about new surfaces and the space they can perform. What we previously called *urban scene*.

Therefore we can refer to this project as of urban scenes driven from an industrial one, from an industrial to a civil rehabilitation and usage. It is not only about the built-scape beautification rather the forecast of an in/out-door wunderkammer (3).

The surfaces treatment, the façades, the space in between (the given and the proposed one), need of technological requirements to re-enter the site into the urban cycle

The use will be time limited, it will be open and inclusive so to offer the new urban space to the many exhibitions and performing events scheduled in town.

Frame-structures to be juxtaposed to the industrial skeletons for extra surface or volume; Light technologies for the double skin façades, which will be safe and steady once anchored to the existing; extra-light technologies for surfaces capable of hosting performances; static or dynamic ones, given by the façades themselves or by integrated media (*plastica urbana*).

Students will deal with those experiences, widely documented, of *Camouflage* (4), of external remodelling, of media façades, etc. they will cross visual art, macro-graphic (5) etc. with the so-called *plastica urbana*, urban-installations (6) by means of any material the students like and – especially – they know how to perform (lights, tissue, green, plastic, tiles, wood, metal, concrete, bricks etc.).

Caution though. The façade itself, when existing, is not dematerialized and turned into a huge medium. The building that moves into the background should not be used only as a background for a possible show. Media façades are tailored and fit perfectly together specific buildings – existent and media façade – should evoke the most different emotions, from a big city annoyance feeling to light pollution, from diving into a luxuriant green to the scare of darkness, from sharing Tintoretto's decision of moving into a Guardi's panorama, etc.

Architecture tends to use media façades more and more as a stylistic feature. What used to be applied to façades offers new scope for visionary design. The ex Agrimont astonishing buildings, is the most suitable space to host visionary designs.

We ask students to go beyond their architecture experience, to experiment the redrawing of external surfaces by means of colors, of *trompe l'oeil* (7), of perspective illusion (think at Borromini's work), media façades, built-in lightning, led, overlapping and projection (8) etc.

Uses proposed by students for regenerating the industrial space should involve both the buildings' inside and outside in order to assign them with new meaning by means of the new façades ... it can't be only media.

The Course, the process, will start from the detail: how to frame the built-scape, what consolidation and refurbishment of the old built façades can be made by using low impact strategies. These strategies may be of different kinds, among them efficiently designed double skin façades considering the possibility (possible convenience for stakeholders) of generating intermediate urban spaces. Façades will be designed considering the building/structure they belong to, the comfort strategies for the inside users, etc. Therefore, even though the building's use may change later on, it should be flexible and polyvalent. Designing buildings or open spaces involves perfectly equivalent mental attitudes (as well as cultural ones!): *esprit de geometrie*, respect of material's characteristics, study and control of the stresses and forces involved, compatibility between form and functions, coherency of composition etc. etc.

To conclude and citing one of Le Corbusier masters, Auguste Perret: «the mother tongue of Architecture is construction.»

Lessons on technology, on double skin façades, on media façades, on figurative façades will be held.

Analysis of possible strategies for temporary use, for performing in-between spaces, will be shared. The strategies developed by students will be collected and ordered into an abacus of potentialities (collective panel).

The public presentations, which are the review and critic of the work in progress, will show:

- how technology shapes the form, how the double façades physically refurbishes the existing (first presentation);
- how the industrial scene becomes an urban scene by means of site-specific performances allowed by the previous choice of double façade, how the ephemeral machine works (second presentation);
- the video: story, timing, first trials (third presentation).

For the final exam students will produce a maximum 5 minutes video where the urban scene building process is shown (from the existing to the double façade, to the surfaces) and the performance of the open-air wunderkammer during day and night time, in winter and in summer. The video will, therefore, show how to build the urban scene and what performance it can host.

(1) a masterplan for Porto Marghera is surely a priority theme, but it requires a broad and integrated overview, involving a reclamation plan, proposals on urban scale, a long-awaited master plan etc. which is not the case for an elective course.

(2) The Course proposal is based on E. Giani's research on Porto Marghera, especially on her latest work related to mapping the industrial district of Venice.

(3) A wunderkammer is literally translated as Cabinets of curiosities, were encyclopaedic collections of objects whose categorical boundaries were, in Renaissance Europe, yet to be defined. The *Kunstkammer* – the cabinet of art – was regarded as a micro cosmos or theatre of the world, and a memory theatre.

Simplifying extremely and shifting a bit the original meaning, a wunderkammer is a place where something is performed for some purpose for beginner voyeurs. Metaphorically we propose this meaning for the scenario requested: it is the urban scene which allows viewers/users to encounter work from across all disciplines, ranging from technological performances to intimate installation to thought-provoking video and highly skilled drawing... even punctuated by live performances... for extension the Wii games are contemporary wunderkammers: an hyper and virtual reality is offered to players as embracing backcloth for playing, despite players interact and place themselves in a physical and real context nevertheless they modify the virtual one with their movements and actions.

(4) The *camouflage* topic in architecture is surely known, in deed: Diller and Scofidio, R. Piano, H & DM, E. Ambasz, the Site only to mention few examples.

(5) On macrografica the memory goes back to the Studio Nizzoli and his experiments on industrial buildings.

(6) Amongst the first architectural installations we recall B. Taut and the project 'Coloured Magdeburg' (1921-24), a futuristic urban renewal through re-colouring of the spoiled façades by engaging artists.

(7) Amongst the projects of urban regeneration through the reformulation of façades, there is the latest project in Rome, curated by the varsi Gallery and the V municipality, which is an attempt to transform the Torpignattara area into the central pole of street art. The M.U.Ro (the wall) project is an opportunity to overcome the recent criminal events which involved the district.

(8) There are extraordinary experiences of dynamic overlapping: the three-dimensional graphics L. Agnani is, amongst the Italians, the best known and award-winning (project for Fermo's center in 2013 and the last project for Trieste's municipality in 2015).

7. Didactic Methods

Educational forms tend to favour a "contamination" in learning.

The design project should be developed in pairs or as group.

Lessons are held in classroom, but the 4th lesson will be conducted in situ (visiting the study-area).

In addition to public presentations of the works' progress (reviews), there will be two sets of lectures: a disciplinary one closely tied to the design theme (technologies for the Double skin façades, references media façades and insights critical-theoretical), the other one on phenomenological readings of forms (held by invited guests, mostly artists).

An intensive seminar is scheduled to conclude the experience. On this occasion the Studio will work full time, continuously supported by teachers, in order to reach a meaningful projects' definition to be fixed into a common panel and a 5 minutes video. Each exam session has two dates; there are three sessions in a year (the last one is in September 2016).

Students are given the opportunity of a four-day study trip to the Milan Expo (an alphabet for ephemerals and of double façades), which results will be evaluated in an extra 2 CFU of D type (elective). It will take place in an intermediate period, previously shared with students and compared with the Department's calendar and the Expo closing (therefore presumably the 3rd week of October).

Finally: the panel and the videos developed by students will be proposed for an exhibition at Luav and at Etsab (Barcelona) where prof. Pardal comes from; and later collected into a publication.

Fundamental concepts on consolidation and refurbishment of façades by using low impact strategies will be provided. Lessons on possible strategies will be held: how technology and different materials shape the form; the façade skeleton; double skin façade as a rain screen (*ombrello*) and double skin façade as a radiation protection (*parasol*)

More details on functions, the expected outcomes, the final exam (panels and video), on the trip etc. will be provided the first day we meet.

8. Learning assessment procedures

The Studio includes at least three collective presentations, not individual ones, corresponding to the different progress states: from the embryonic (the frame-structure choice) to the more mature (the video attempt).

The dialectical interaction among students will be encouraged in every way, bearing in mind that the forms of learning are transversal.

The training purposes' highest moment is certainly the final test: the examination. On that occasion, the student's learning growth will primarily be evaluated: namely, the difference between the initial skills and the awareness achieved.

The project's representation (video's quality), far from being an instrumental phase, will be considered as the ability to describe rationally the proposal and the critical valorisation of one's work.

9. Reference Texts

A text on contemporary architecture

Articles On performing façades

G. Carnevale, E. Giani (2014), *Il nuovo che arretra*, Milano: Gangemi (Italian and English)

Le Corbusier (2012), *Le Poème de l'Angle Droit // Il poema dell'angolo retto*, Milano: Electa (riedizione) (English version: *The Poem of the Right Angle*)

R. Koolhaas, B. Mau (1995), *S.M.L. XL*, New York: The monicelli ed. (English only)

E. Ford (2011), *The architectural detail*, New York: Princeton Architectural Press

I. Paricio (2010), *La piel ligera. Maduración de una técnica constructiva*. Barcelona: Grupo Folcrá

B. Addis (2007), *Building: 3,000 Years of Design, Engineering and Construction*. London: Phaidon
C. Pardo, I. Paricio (2006), *La fachada ventilada y ligera*. Barcelona: Editorial Bisagra
A. Deplazes (2005), *Constructing Architecture (Detail)*, Basel: Birkhäuser
H. Krippner Lang (2004), *Façade construction manual (Detail)*, Basel: Birkhäuser
R. Serra (1999), *Arquitectura y Climas*, Barcelona: GG Básicos
P. Rice (1994), *An Engineer Imagines*, London: Ellipsis

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