

## Leisure / Hospitality / Exhibition\_Three mixed-use projects for Milan, Olbia, Sanya, at the frontier of teaching, researching and professional design

### Fabrizio Leoni, Dastu, Politecnico di Milano, IT

#### Introduction

This poster introduces the comparative study of the generative process of three architectural and landscape projects which share compositional logics, technological choices and morphological approaches. This contribution is aimed at investigating and making explicit, through diagrams and schemes, the mutual relations of necessity between construction systems, topographic context and its manipulation, morphogenesis of the artifacts, as elaborated on the frontier between academic research and professional practice.

#### Research

The three projects investigate and represent the transition between theoretical speculation, teaching themes in Design Studios at the University and potentially direct applications into the operative professional realm of architecture. Developed between 2012 and 2016, they concern three sites prompted by complex functional programs pivoting around atypical contemporary mixes such as leisure/tourism/exhibition, in Milan (Italy), Olbia (Italy) and Sanya (China). Some common principles are imprisoned in the design process of these three works, although articulated in different yet comparable ways:

1. The ground as a matrix of the morphological operations applied to generating the geometry of the building.
2. The clear distinction between: a) the main building body shaped as a massive opaque block, b) a secondary cladding acting as a skin meant to both protecting from atmospheric agents and providing a compelling figure of the building, c) a variety of visible structural elements that convey and reveal the construction methods and procedures.
3. The assembled nature of the „independent“ objects that animate the interiors and exteriors of the three complexes, from prefabricated parametric façade elements to interior design and urban furnishings, enhancing and confirming the character of a building constructed by successive layers, as a manufactured and mounted catalogue of industrially controlled pieces.

CCH, Capo Ceraso Hub, is the winning entry of an open competition on the radical reuse of an abandoned hotel in Sardinia. Entirely prepared simulating some typical Design Studio activities: rotational groups of interns and students alternatively focused on topography manipulation, Boolean control of volumes (by subtraction, addition, move) of the existing derelict building, intense digital and physical prototyping, parametric study of façade skin.

The unbuilt scheme of the Leisure center for the Chinese island of Hainan, Sky Court, came as a professional test on the findings of a semester of deep academic investigation carried within the frame of a Design Studio devoted to hospitality and related fields, eventually configured as a handy manual of practices, methodologies, design operations. Later on, a selected number of thesis students, set as a more operative research group, built upon such findings to update the result of informal, pedagogical exercises into a real world project.

The 2015 Milan Expo Cluster Design Workshop held at the Politecnico di Milano, a hybrid academic/professional platform commissioned to prompt three tentative schemes for the Expo clusters, has been managing the design activity of a multidisciplinary team of students from Architecture, Engineering, Landscape Architecture, Interiors and Urban Design coming from international Universities. Groups of students were asked to investigate potential plans and 3D spatial schemes based on a reinterpretation of a tropical jungle, to come up with graphic metaphors on how the cocoa seeds are grown, processed and turned into final packed products. Such diagrams, conceptual models and texts served as a consistent basis for further professional development and the final implemented project.

The present study is aimed to explore and clarify how the following themes are covered under the umbrella of such a hybrid environment and how design process constantly commutes back and forth from academy to professional realm:

- a>the topics of the planned construction sequences, unveiling how the construction methodologies and technologies would influence the flow of the design process.
- b>the main tools of form generation (form to program oriented), such as boolean operations, additions, subtractions, parametric developments of the „independent skin“, transferred masses, varied geometries, perceptions, figures, image processing.
- c>the overlapping research areas of leisure, tourism, food, sport, hospitality, exhibition and their respective demands of spatial and compositive configurations; and how their apparently colliding needs produce emerging patterns of placemaking and livability.

	EXPO - COCOA CLUSTER	CCH	SKY COURT
<b>GROUND</b>	<p>main paths</p> <p>main &amp; secondary paths with deformations</p> <p>height deformations with triangulations</p>	<p>existing ground / existing building footprint</p> <p>ground excavation / ground movements</p> <p>swimming pool (level -1)</p> <p>bar terrace</p> <p>restaurant terrace</p> <p>multi level plaza</p> <p>water mirror</p>	<p>existing ground / existing building footprint</p> <p>main &amp; secondary paths with deformations</p> <p>water</p> <p>bar terrace</p> <p>events patios</p> <p>car park</p> <p>water</p> <p>terrain height deformations with triangulations</p>
<b>BUILDING + SKIN</b>	<p>external skin in nautical material</p> <p>pavilions</p> <p>unfolding operations to create protected spaces / reveal construction process</p>	<p>existing building</p> <p>completion of shape</p> <p>penthouses addition</p> <p>volume removal</p> <p>add of technical wood boxes</p> <p>rebalance of volume with terraces</p> <p>unfolding parametric light filtering skin</p> <p>unfolding operations to reveal construction process</p>	<p>existing buildings</p> <p>add of wood boxes</p> <p>add of walls for private spaces</p> <p>add of glass walls for public spaces</p> <p>unfolding perforated metal skin</p> <p>unfolding operations to reveal construction process</p>
<b>OBJECTS</b>	<p>clusters of schematic trees</p> <p>benches</p> <p>benches and tables</p> <p>exhibition desks</p> <p>food court</p> <p>events area / theatre</p> <p>exhibition paths</p> <p>taste and relax area</p>	<p>fixed furniture</p> <p>internal space</p> <p>intermediate space</p> <p>external space</p>	<p>schematic trees / benches / exhibition desk</p>
<b>final scheme</b>			
<b>existing / render / realization</b>			
<b>legend</b>	<ul style="list-style-type: none"> <li>a: construction sequences</li> <li>b: form generation</li> <li>c: areas</li> </ul>	<p><b>credits / biography</b></p> <p>Projects Credits:</p> <ul style="list-style-type: none"> <li>_CCH: Fabrizio Leoni Architettura</li> <li>_Sky Court: Fabrizio Leoni Architettura</li> <li>_Cocoa Cluster: Fabrizio Leoni, Mauricio Cardenas, Cesare Ventura</li> </ul> <p>_Interpretative diagrams: Luca De Stasio</p>	<p><b>Biography:</b></p> <p>Fabrizio Leoni, founder and principal of Fabrizio Leoni Architettura, started his independent practice while receiving his Master Degrees and PhD from SCI-Arc, Los Angeles and Politecnico di Milano, back in the 1990s. Currently teaching Architectural and Urban Design at School of Architecture, Urban Planning and Construction Engineering of Politecnico di Milano, he leads the research group AIP Architettura Infrastruttura Paesaggio at Dastu, Dipartimento di Architettura e Studi Urbani. (<a href="http://www.polimi.it">www.polimi.it</a>)</p>