WESTMINSTER

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Output 1 (Design)

LEMON FACTORY

Martin, Andrei + Yau, Andrew (2007)
Lemon Factory Extension, near Messina, Siciliy

General Description:

This architectural project by Urban Future Organisation (UFO) - in which both Andrei Martin and Andrew Yau are senior design figures - is currently on site and is scheduled for completion in Spring 2008. As a new detached building for the Simone Gatto corporation, it creates a separate administrative wing being added to an existing factory on the fringes of San Pier Niceto, a small village in the hills which lie inland from Messina in north-eastern Sicily. UFO's project sits adjacent to a production building which is actually the largest producer in Italy of lemon juice and lemon extracts / essences. The project brief was for a sequence of flexible spaces in which to house the reception area, staff offices, meeting spaces and canteen, along with a in-house swimming pool and a fitness centre. The interior of the building reacts to the requirement to keep the spaces fluid and able to change their use over time. Since the Lemon Factory Extension sits on a highly volcanic island that is also susceptible to earthquakes, its structure was carefully designed to incorporate an innovative anti-seismic strategy.

Urban Future Organization is an internationally networked architectural practice which is actively involved in advanced digital design and fabrication. Thus in terms of its design, the Simone Gatto Lemon Factory Extension needs to be understood as part of a line of projects currently being carried out by UFO and by like-minded designers – such as UN Studio, Foreign Office Architects or Plasma Studio – which use free-form, fluid and linear architectural forms. This aim is being pushed forward by the search for new methods of digital design and manufacturing in architecture. UFO is also known for being a relatively loose collaborative practice that operates as a network in many countries across Europe, with both Martin and Yau deeply involved in all these fascinating initiatives. Indeed, Yau is one of the three founder members of UFO, which was first set up in 1996, while Martin joined the practice around five years ago.

Research Questions:

The primary research issues in the Lemon Factory Extension include:

(1) How to develop new techniques of modulation design and structural design for a building in what is a highly active earthquake zone.

(2) Given the above crucial structural demand, then how to use this to create a new kind of flexible spatial organisation for a rapidly evolving company.

(3) How to utilise the latest digital design innovations in order to create highly advanced technological building within a globalised setting.

Thus the core of the research work behind the Lemon Factory Extension lies in how to create a fluid, open architectural form that can more easily adapt to organisational changes, and also make best advantage of current advances in computer-aided-design and global communication systems.

Aims/Objectives:

(1) To pursue the idea of a fluid and flexible spatial design in architecture, so as to conceive a new model of corporate headquarters to suit emerging businesses.

Here the idea behind the Lemon Factory Extension is of creating what UFO calls a 'negotiable' spatial structure. As few of the internal spaces as possible are given specific functions, with many others - meeting spaces, relaxation spaces, fitness centre, etc. - are seamed into an open-plan arrangement such that they could easily be used for different purposes in future. This open flexibility and adaptiveness in the design program is intended to suit the expanding nature of the business, hence making it better able to respond to changes in the market or the composition of its workforce. The interior of the building hence reacts to the requirement of the brief to keep the spaces flexible and able to change in use over time. Indeed, it is always a constant aim of UFO to try to democratize the use of spaces in whichever building it designs - attempting thereby to find adaptive, non-hierarchical solutions that can give a sense of unity for the contemporary use, but likewise do not militate against the spaces being changed in program in future.

(2) To investigate innovative techniques of structural design in order to conceive a new integrated anti-seismic strategy that can be expressed visually in the building.

Working closely with a local structural engineer in Italy, who is well versed in designing for areas like Sicily, and also drawing on the international expertise of the Seismic Design division within Arup Engineers, what was evolved was a novel solution that made the building less vulnerable to collapse in the case of an earthquake in Sicily, and also gave clues for the structural expression and visual aesthetics of the Lemon Factory Extension. Hence its columns are canted both in plan and section so as to provide integral rigidity and self-bracing to the building's reinforced concrete structure; furthermore, all of its intermediary concrete floors are designed as wrapped surfaces which tie into the canted columns and act as continuous flat-slab beams; and all of this structure sits on individual, specially designed dampers in the foundations which can take up any excessive ground movement in the case of seismic activity. Together it generates a striking visual aesthetic, one which seems if anything to have already collapsed; the irony of this as a structural reponse to earthquakes is one which the architects openly sought.

(3) To utilise the open network and collaborative approach of the UFO practice so as to enable what is only a relatively small firm to design a substantially sized building at some distance away in Italy, as part of its ongoing goal of establishing a globalised mode of architectural practice.

Urban Future Organization was founded in the wake of the so-called 'first generation' of networked architectural practices, as set up in the early-1990s and epitomized by Ocean. There are now members of UFO spread out across Europe (Italy, Netherlands, Greece, Spain and Britain) all working from their home cities but collaborating though digital means. As a result of projects like the Simone Gatto Lemon Factory Extension, UFO has evolved into a truly international network that is organised around a common design philosophy, a belief in intense collectivity, and a shared interest in the development of cutting-edge urbanism. UFO thus runs a highly democratic structure with a series of small independent offices which collaborate closely on large-scale projects and international competitions. Intensive use of the internet makes the need for physical proximity unnecessary. A joint portfolio of work is sent back and forth across the digital network, optimising the input of UFO's individual members and providing mutual support.

Context:

In its operations, the approach which is adopted by Urban Future Organisation can be seen as a rejection of the 'star system' and the overly visualised culture of current international architecture, preferring instead to seek a degree of anonymity and a closer attention to whichever design project is in hand. It thus forms part of the growing sub-culture within globalisation that is trying to work against the dominance of big corporations, which in the architectural sphere are now typified by mega-commercial practices like Foster & Partners or Skidmore Owings & Meriill. By adopting its counter-strategy, UFO is thus able to punch well above its weight, using relatively few members of staff to do so. Its emphasis is instead on the use of the internet and up-to-date telecommunications as devices to improve efficiency and design productivity. Whereas earlier firms like Ocean have been largely changed in nature over the years, becoming more conventional, UFO remains as true as any practice to the globalised networking ideal.

In cultural terms, the design ideas of UFO - like other practices such as Foreign Office Architects or Plasma Studio - are deeply rooted in current Deleuzian concepts as applied to architecture. Their preference for smooth flowing spaces and folded structures, which hint at filmic representations, plus the accompanying theoretical discourse, all appear to argue the case for a contemporary concept of architectural space whose fluid and mobile conditions suggest perhaps an escape from the mechanistic and fractured rhythms of modernity - together with a corresponding freedom of movement for the persons who use these free-flowing spaces. Through this alliance with the philosophical concepts of Deleuze and Guattari, and with the physics of complexity and current ecological paradigms, UFO are undoubtedly searching for some degree of liberation from modernity's overarching rationality, its instrumentalising logic and its systematic organisation. Of course, as UFO themselves openly admit, there remains a problematic in all this: any intellectual and cultural connections can be stretched only so far between the formal, visual qualities of flow and mobility and wider progressive currents in our social reality. Indeed, an alternative reading of Deleuze might suggest that contemporary manifestations of fluidity are the most effective and invasive means of social control yet devised within capitalism. Ultimately it is about the political stance within the design process.

Research Methods:

As well as visiting the Lemon Factory site several times, UFO began to test out various programmatic solutions and layout permutations digitally to create the fluid office spaces seen as needed. As in all their projects, the use of advanced and extensive 3D physical modelling and visualisations using Studio Max, Rhino and Maya, and their testing out against local conditions, formed the core of their research and design approach.

The wider goal, as noted, is to achieve the 'creative efficiency' demanded by cutting-edge architectural practices. In this way, the philosophy of intensive collectivity and group collaboration extends itself into UFO's research methods; in the same way as a wiki network, the multinational members of the practice help each other out with design solutions, and can also bring in experienced local consultants like the structural engineer on the Lemon Factory Extension, helping thus to facilitate future developments in architectural production and urban development. Hence the very nature of UFO seeks to provide sensitive design responses to both context and use, in that it consciously pursues an international agenda in its projects, yet by its dispersed organisation it also maintains the specific qualities of local diversity.

Dissemination:

The Simone Gatto Lemon Factory Extention, although it is yet to be finished on site, has still been exhibited publicly, along with other UFO projects, in such important events as the 2004 Venice Biennale and 2006 Beijing Biennale, as well as in books and the architectural press. Indeed the work of Urban Future Organization has been published quite extensively on the international scene, including in journals such as *Ottagono* (Italy), *Concept* (Taiwan), *Contemporary Architecture* (Japan), *World Architecture*, as well as the *Architects' Journal* and *Building Design* in Britain. Perhaps the most useful commentaries on UFO's output in general are contained in the following sources:

- Forster, Kurt. *Metamorph: 9th International Venice Architectural Exhibition, Projects*. New York: Rizzoli, 2004, p. 70.
- Hadid, Zaha et al (eds.).*10 x 10_2: 100 Architects, 10 Critics*. London: Phaidon, 2005, pp. 380-3.
- Long, Kieran. 'Digital Generation', *Building Design*, 7 March 2003, pp. 12-15.
- Puglisi, Luigi Prestinenza. *Tre Parole per il prossimo futuro*. Milan: Babel, 2002, pp. 20-1.
- Thijssen, Wouter. 'Negotiable, adaptive and non-hierarchical: The future according to Urban Future Organization', *Archis (Open Source)*, no.3, July 2003, unpaginated.

As key members of Urban Future Organization, Andrei Martin and Andrew Yau often get asked to talk about their work in architectural schools in Britain and abroad, and indeed they have been asked to run a number of workshops and seminars on digital design. These include those at the Architectural Association, University College London, London Metropolitan University, Royal College of Art - and, further afield, in places like Korea (July 2007) and in New York (November 2007).

Esteem Indicators:

The Lemon Factory Extension will be entered for a RIBA European Design Award once it is completed, but in lieu of that, a number of recent factors can be cited to indicate that UFO are indeed now engaging on an internationally acclaimed level. These include:

- Runners-up in *Building Design* Young Architect of the Year Award (2003)
- Won major international competition for Linguaglossa leisure resort, Amalfi (2003)
- Exhibited at 2004 Venice Biennale and 2006 Beijing Architectural Biennale
- Specially selected by Zaha Hadid for inclusion in *10 x 10_2* (2005), this being a survey of the world's most promising architectural practices
- Part of team that was awarded the HOLCIM Foundation's European Gold Prize (2005) + Global Silver Prize for Sustainability (2006)
- Specially invited to run a digital workshop at the Korean National University of Art, Seoul (July 2007)

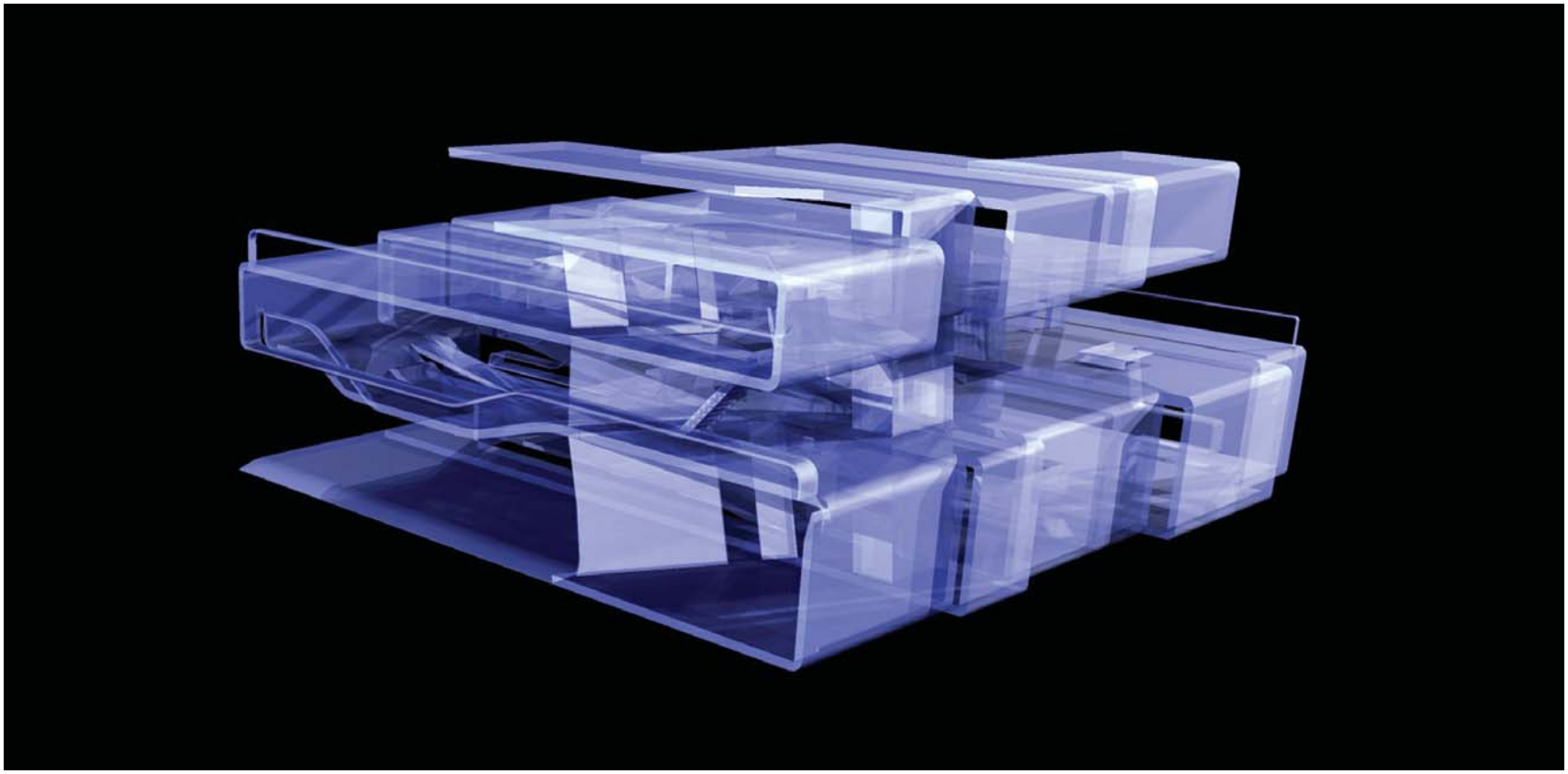


Image 1: Digital model of structural composition of Simon Gatto Lemon Factory, near Messina

Image 2: Rendered views of the extension to the Simone Gatto Lemon Factory

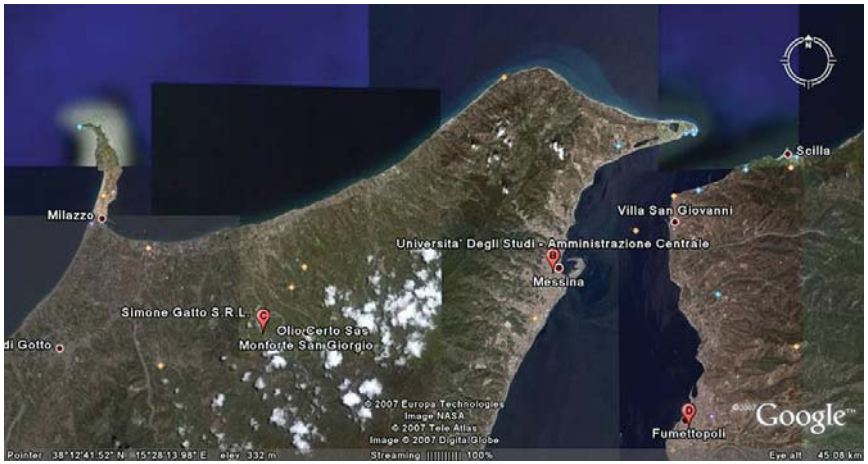


Image 3: Google Earth maps to show the location of Simone Gatto Lemon Factory in hills inland from Messina, Sicily - and also the location of the plant on the fringes of the village of San Pier Niceto

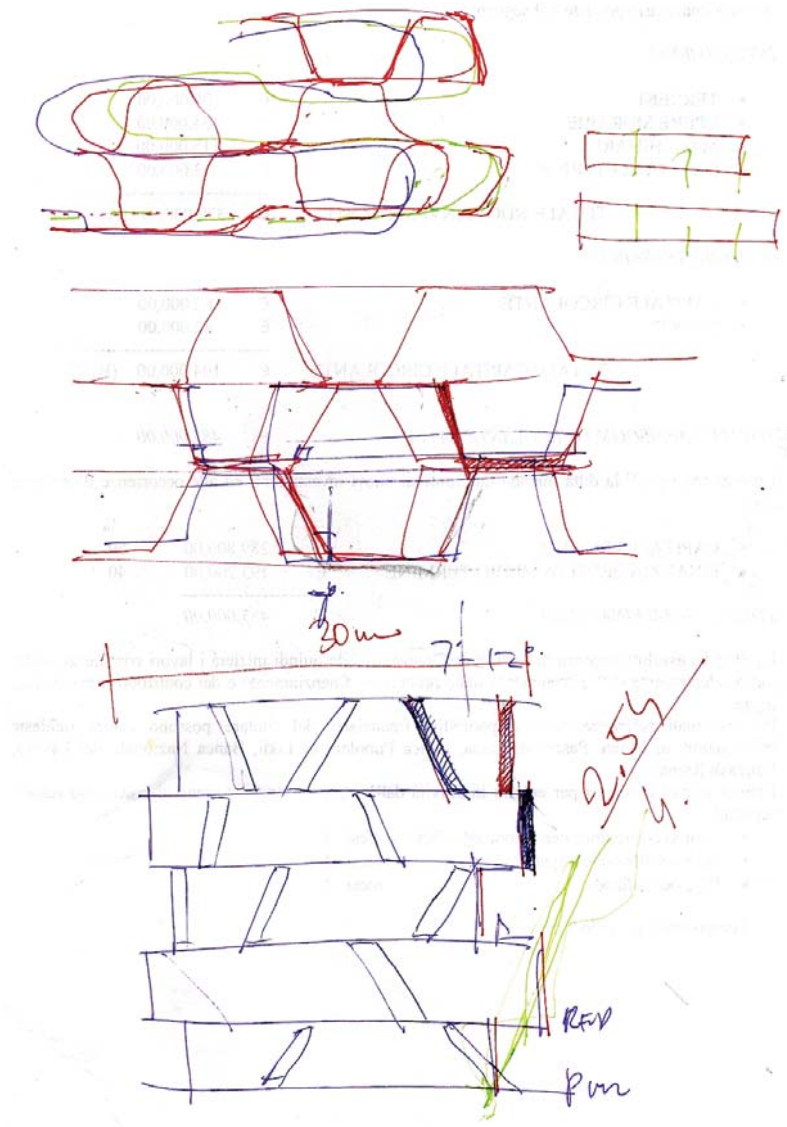
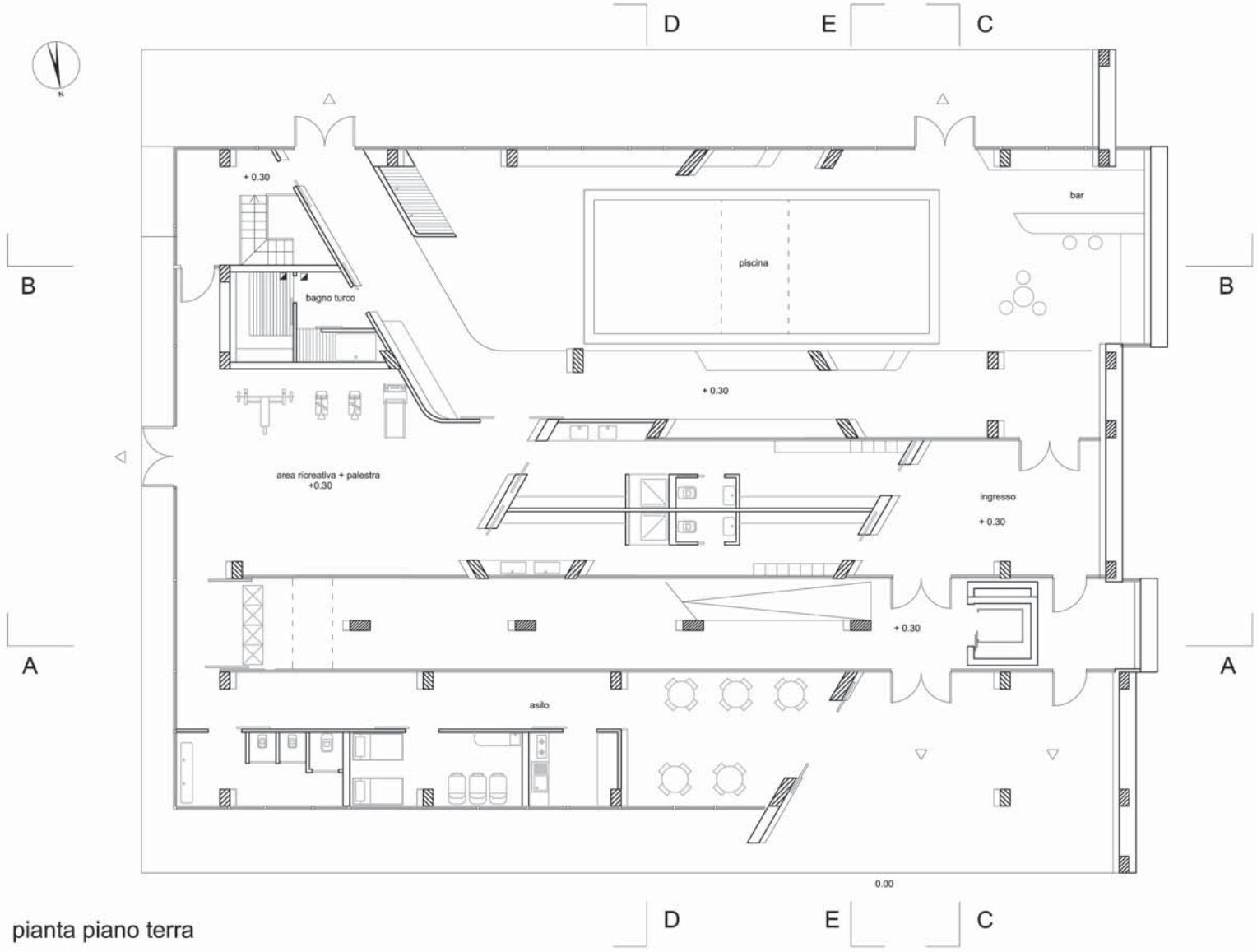
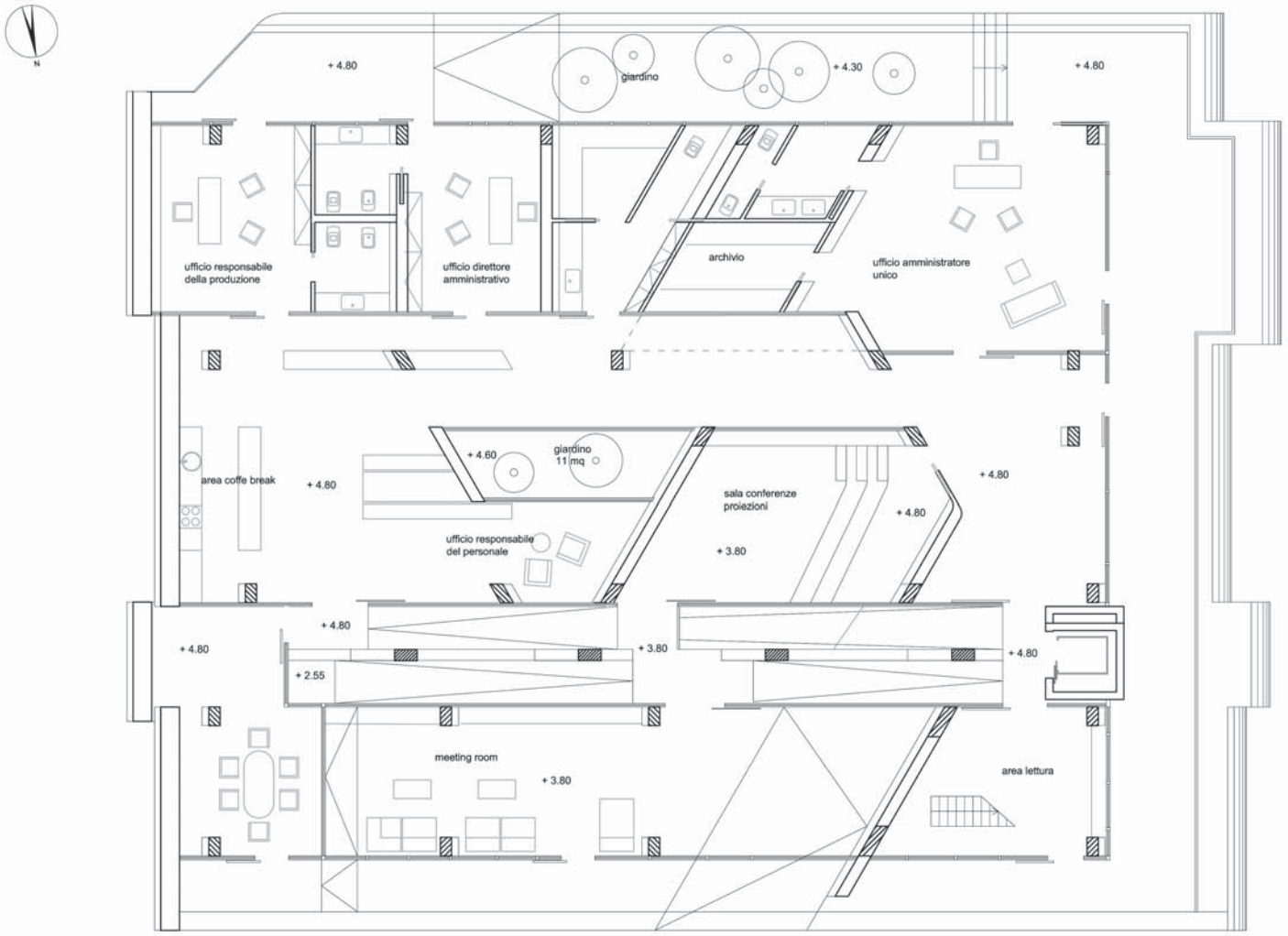


Image 4: Initial design sketch, showing dual concept of free-flowing spatial forms and self-bracing anti-seismic structure of raked columns and wrapped floor plates in cellular arrangement



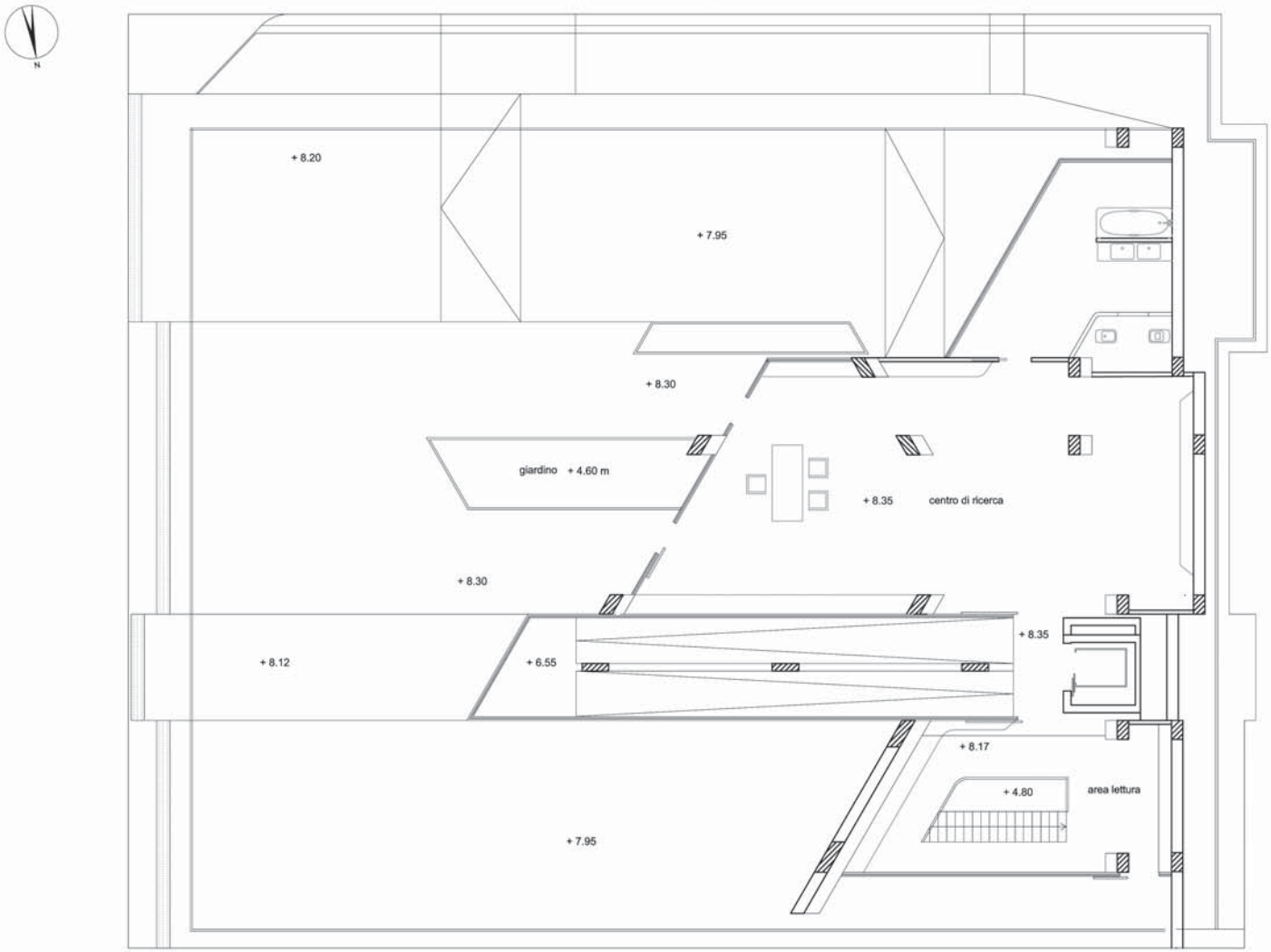
pianta piano terra

Image 5: Ground Floor plan



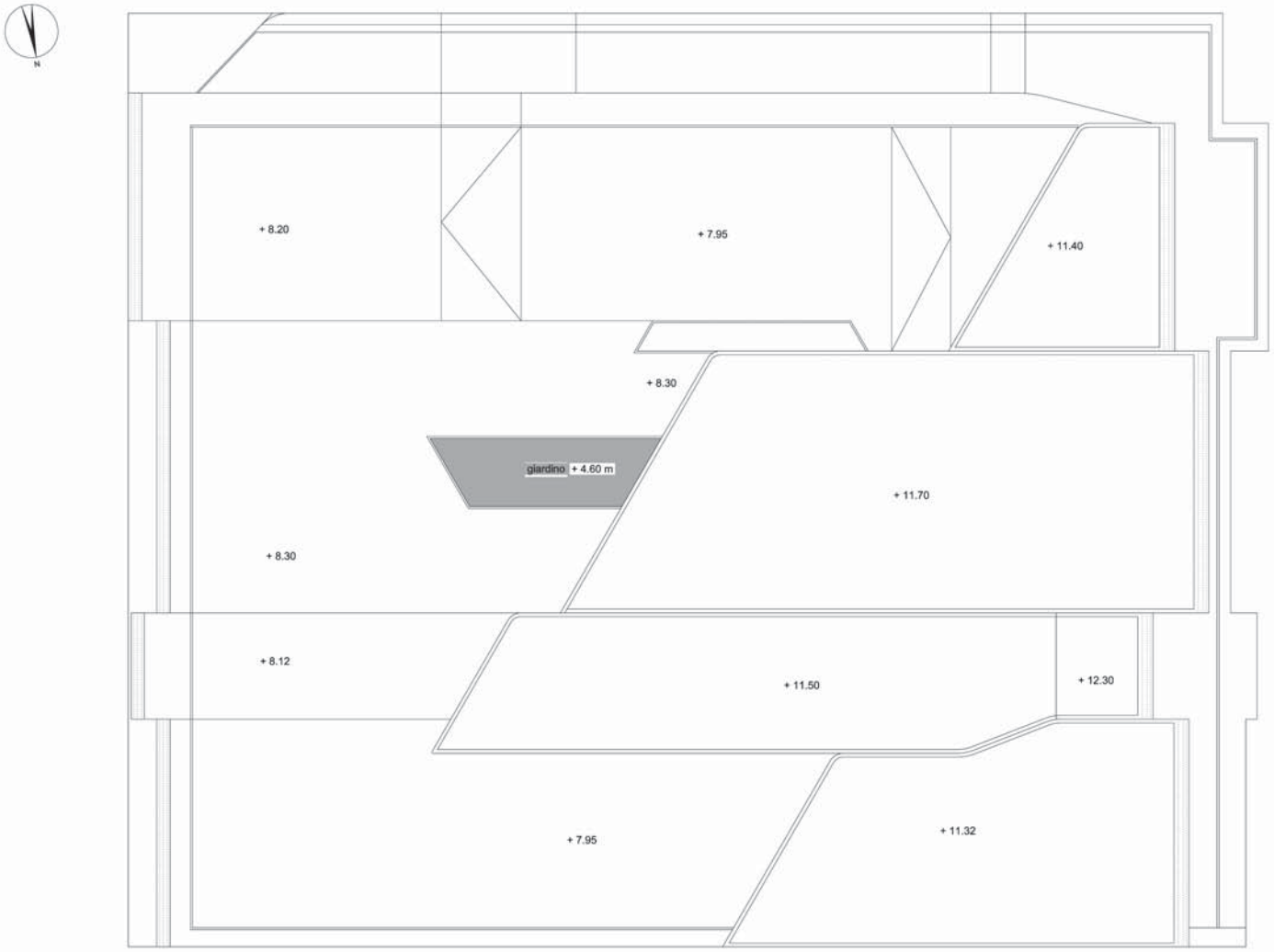
pianta piano primo

Image 6: First Floor plan



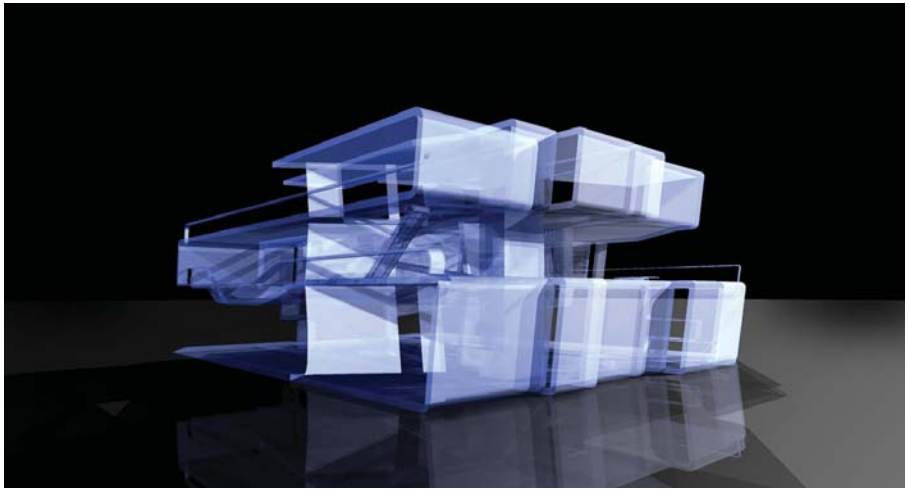
pianta piano secondo

Image 7: Second Floor plan



pianta piano copertura

Image 8: Roof plan



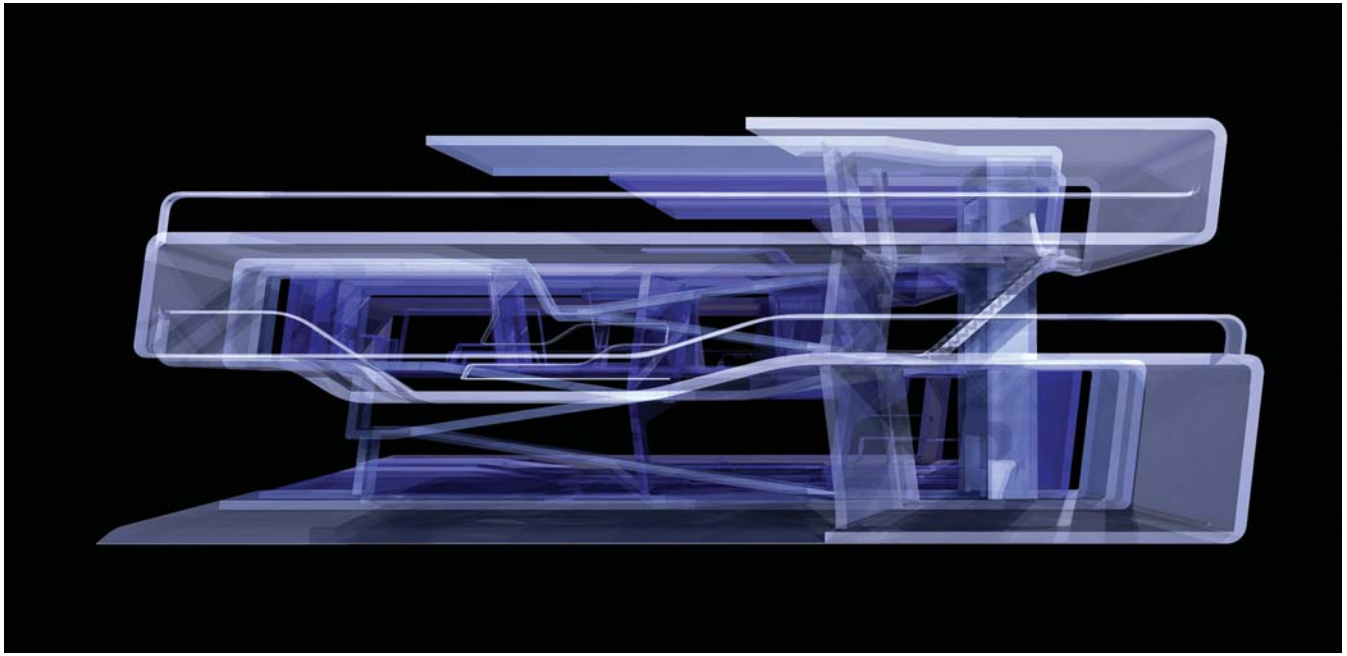
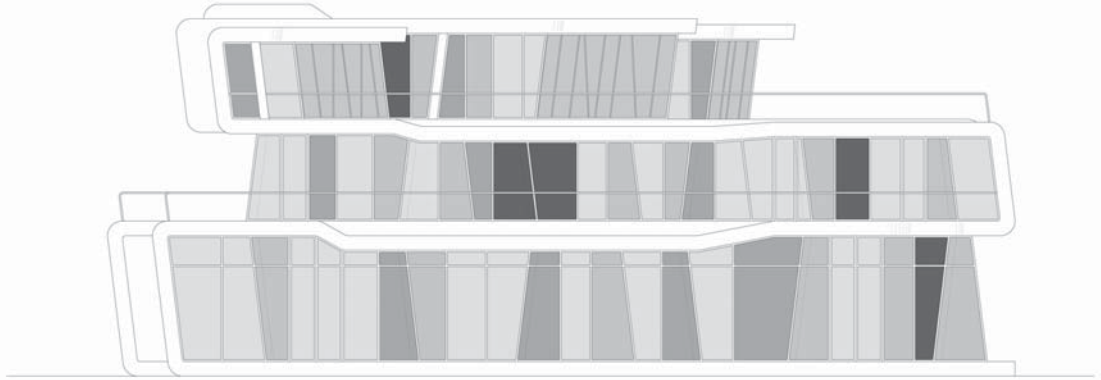
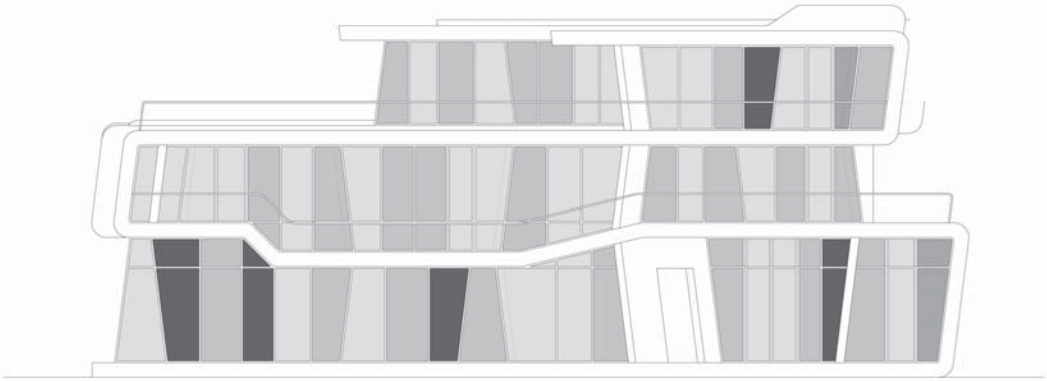


Image 9: Digital models showing the free-flowing spatial forms and raking anti-seismic structural elements

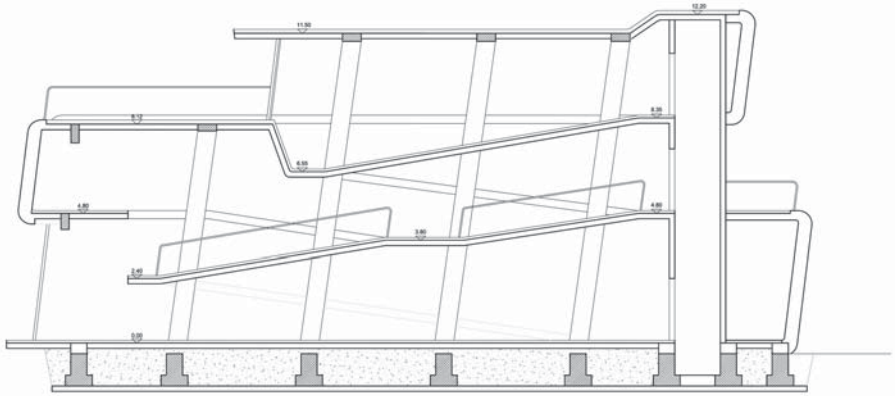


prospetto sud

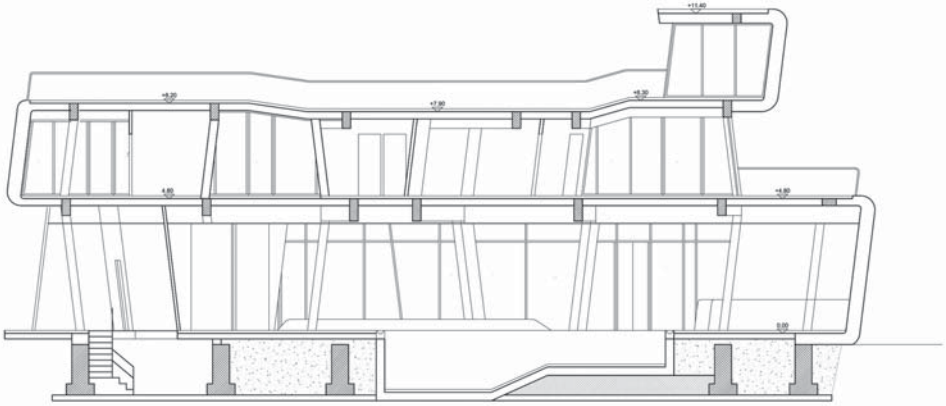


prospetto nord

Image 10: Main north and south elevations



sezione A - A



sezione B - B

Image 11: Cross sections showing raking columns and specially designed anti-seismic dampers for the foundations

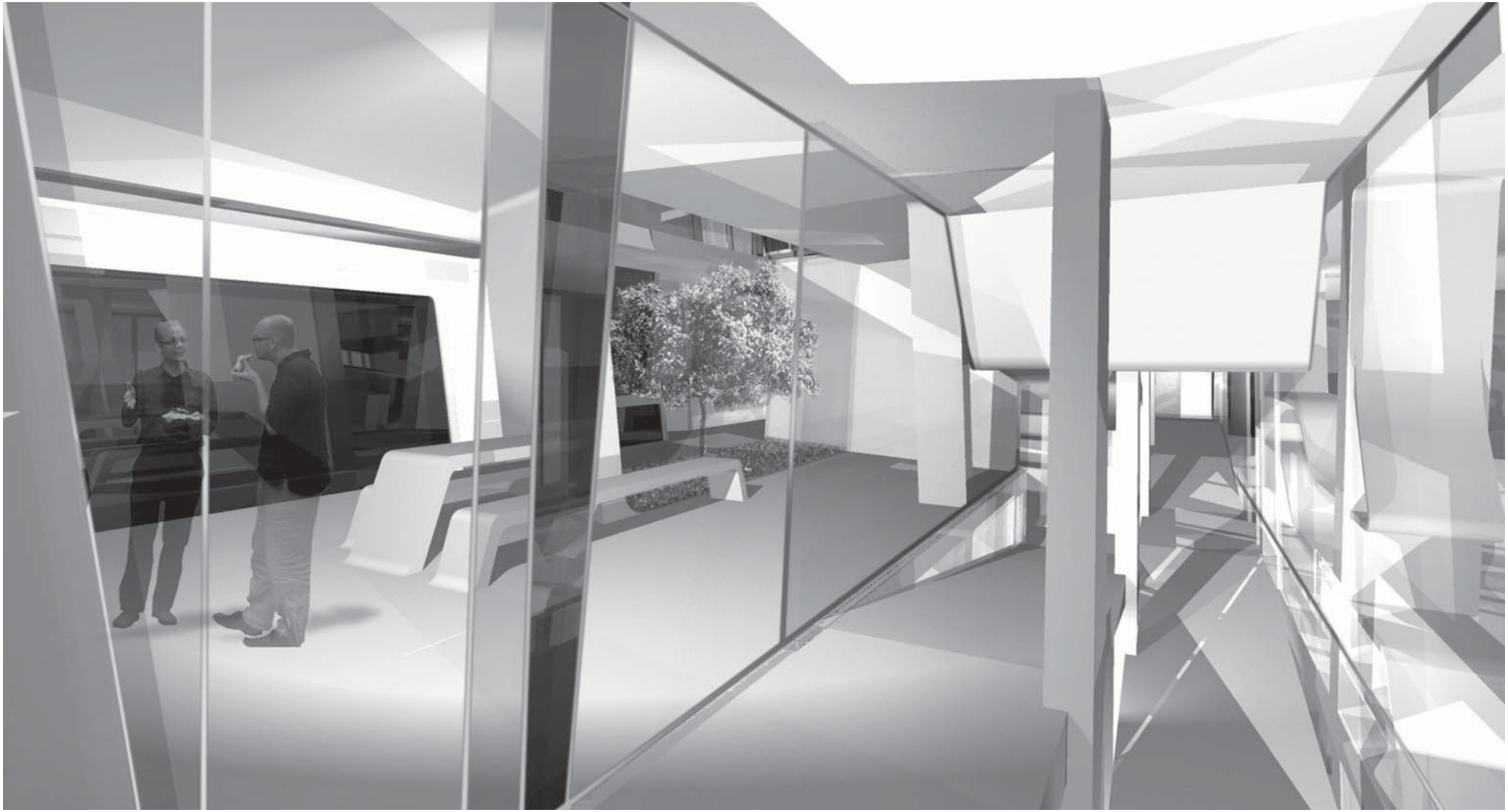
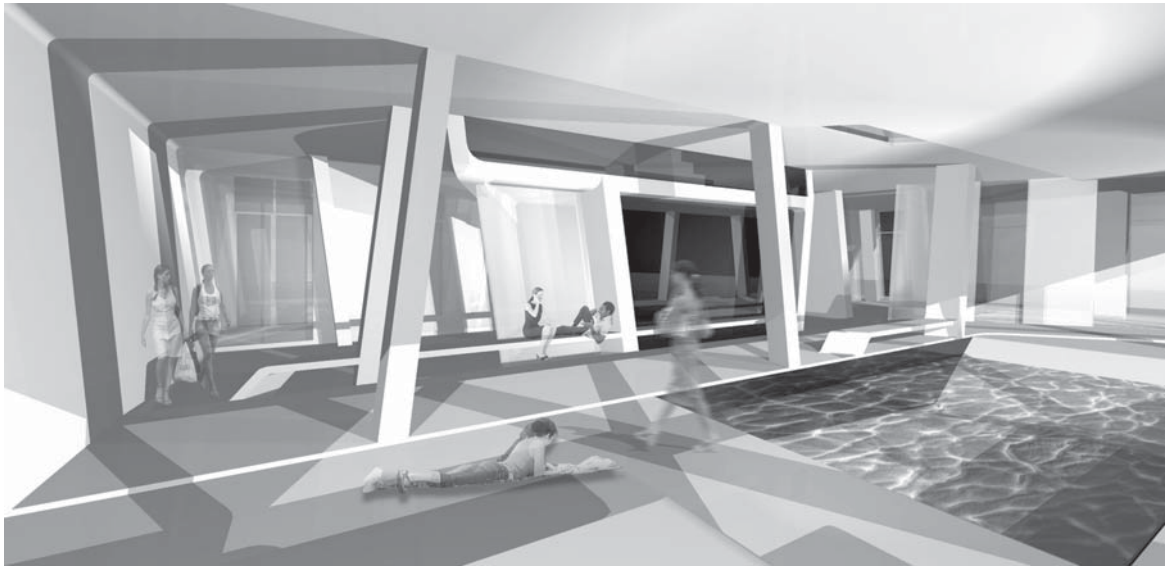


Image 12: Interior perspective of work break area



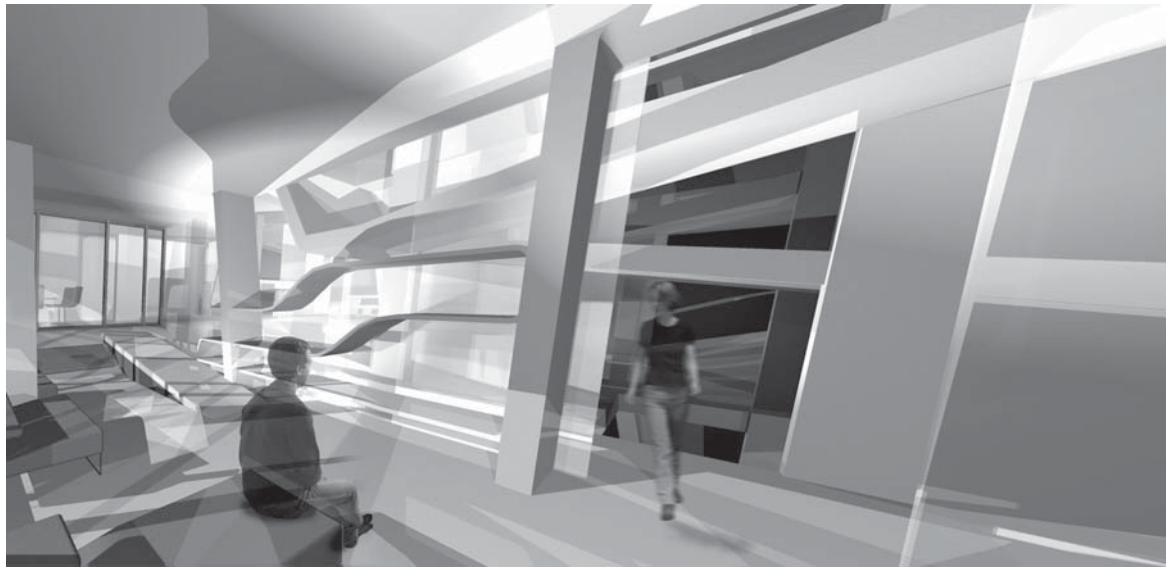
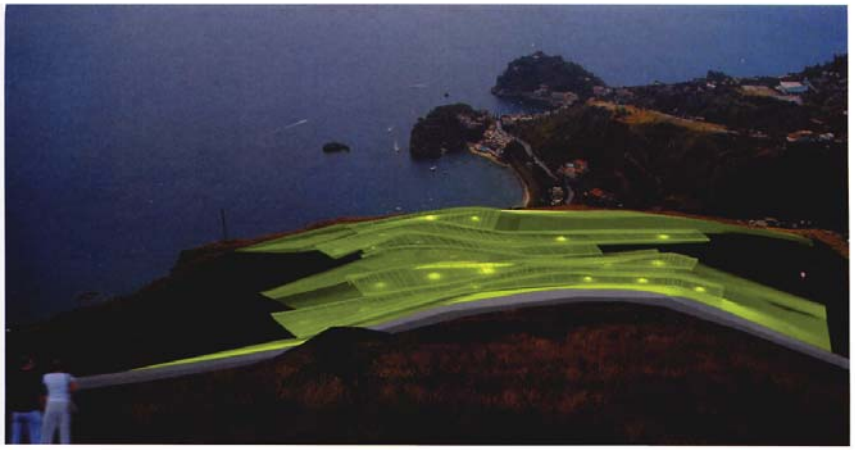


Image 13: Interior perspectives of health spa and meeting areas

Image 14: Simone Gatto Lemon Factory extension under construction

Image 15: Construction photos showing raking anti-seismic columns and wrapped concrete floor plates

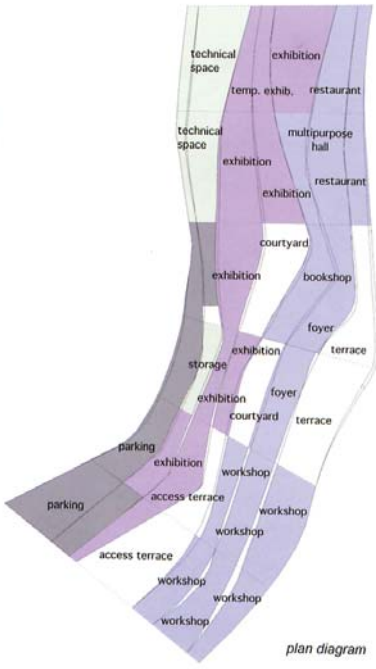


We are considering the evolving nature of the surrounding architectural characteristics, not so much as works still to be finished, but as works in progress. Most of the houses are continually in a state of formation flux,..once one floor is finished the next is commenced and so forth.

The proposal examines the random dynamics of landscaping events and the traditional terraced farms, which also reveals a surface-maximization that works with instead of against the existing terrain. The project formulates a prototypical strategy of flexible and adaptive topological matrix to organise the museum activities as an artificial terrain transforming part of the natural terrain.

The museum redefines the slope of the hillside and functions as a series of cascading sections guided and controlled by the contours of the site in various lengths. With the consideration of the economical constraints, the overall organisation of the project remains flexible and adaptive, and cascading prototypes can be added or restructured in different phases over time.

The building will be visible from both sides of the ridge as subtle undulations emerging from the landscape. Inside, the building sections vary in size, height, relationship, and spatial continuity to provide multiple spatial conditions for exhibiting different works of art.



plan diagram

Image 16: UFO proposal for a Contemporary Art Museum in Castelmola, Messina, using similar wrapped surface and anti-seismic structural design