

ISA  [®]



EUROSKY TOWER

Castellaccio - Rome EUR



SKYSCRAPERS



AFTER NAPLES AND MILAN WE WILL TOUCH THE SKY ALSO IN ROME

Eurosky, a residential tower of thirty floors with five additional floors intended for technical units, will be one of the tallest buildings in Rome. Set in the Castellaccio Europarc, one of the eighteen new 'metropolitan centres', and located close to the Eur, it was designed as a simple volume inspired by the unique architecture of the medieval towers that dot the city centre and amongst which the mighty Torre delle Milizie stands out. The laminated skyscraper in granite cladding over a concrete and steel frame, measured by the regular inset of the balconies, creates a deep, dense play on shadows. Although it has a strongly unitary architectural configuration, the *Eurosky* tower is divided into two vertical prisms, each served by two blocks of staircases and elevators which are connected by bridges that house some of the technical plants. Other areas used for plants are placed at the top of the building, which is crowned by a large structure that supports a wall of photovoltaic panels. A helipad is projected over the edge of the roof. The photovoltaic panels support structure creates a kind of fold in the external façade, whose vertical pressure is absorbed and transformed into a striking expressive form, a huge cavity with a fluid shadow that contrasts with the serial composition of the tower. The image of the *Eurosky* tower promotes itself in the Rome surroundings, where it stands as an easily recognizable element, an influential and enduring metropolitan icon that will give a different sense to the vertical exigency of the Eur and a new and more significant visibility.

Purini Franco, Architect
(2005)

TECHNICAL DATA SHEET

Construction start year:	2009
Design:	Prof. Arch. Franco Purini (Team Leader) Prof. Arch. Laura Thermes
Collaborators:	Arch. Massimiliano De Meo Arch. Carlo Meo Colombo
Company:	Europarco S.r.l.
Usable area:	25,000 m ²
Total height:	approx. 130 m (to the antenna)
Floors:	28 floors for housing + 3 technical floors
ISA Supply and installation:	façade of stone and aluminium cells. Prefabricated modular system with dry anchorages. Slabs of Grey Sardinian Granite.
Supply quantity:	façade of approx. 24,000 m ²



PALAZZO LOMBARDIA

Other Milan - Regione Lombardia Headquarters



The Milan complex of the Regione Lombardia, called "Other Headquarters" to distinguish it from the historic Pirelli skyscraper which is the current headquarters of the regional authority, is an example of quality building, structural efficiency and environmental compatibility. It covers an area of 33,700 square metres in the Porta Nuova surroundings and can accommodate around 3,000 employees of the Regional Government. The building complex consists of five 9-storey blocks and a tower that reaches a height of 161.30 m, making it the tallest building in Milan. The sinuous bodies that form the base create completely pedestrianised open-air areas, such as the large covered civic square. This work fits perfectly into the Milan context, thanks both to the particular architecture of curved surfaces and to its ability to communicate seamlessly with our mountains, lakes and the diamond structure of the "Pirelli" Skyscraper.

The façade system of the Regione Lombardia Other Headquarters, designed by the ATI (temporary consortium of companies) Technical Service Srl and Gisam SpA, has been transformed and installed on behalf of the Torre Consortium, by the ATI, composed of ISA SpA and CNS SpA.

The project comprises:

- approx 55,000 square meters of double-skin transparent façade, which represents the so-called "Climate Wall".
- approx 2,000 square metres of photovoltaic cells façade placed on the southern head of the Tower.
- approx 2,000 square metres of façade made of serigraph glass cells placed on the northern head of the Tower.
- approx 12,000 square meters of grating façades on the lower buildings ground floor area, for offices and shops.

Climate Wall

The creation of a "climate envelope" was achieved by installing an exterior curtain wall and an interior one in layered glass, separated by a 950 mm gap for natural ventilation which allows the energy consumption in winter and summer to be dramatically reduced and user comfort conditions to be optimised.

The external façade is made entirely of a cell system that allows the absorption of deformations due to settling, temperature variations and/or earthquakes, leaving the building structure free to expand in the absence of forced connections between cells that make up the façade, released by telescopic joints isolated with suitable EPDM seals, both vertically and horizontally.

The measurements of the individual cells are 1800x3650 H mm for the lower structures and 1800x3600 H mm for the tower. The cells are composed of: main structure in thermal-break extruded aluminium alloy 6060, with a variable thickness of 2.5 to 3.5 mm and glazing consisting of a tempered monolithic selective

TECHNICAL DATA SHEET

Construction year:	2010
Purchaser:	Lombardy Region
Management:	Infrastrutture Lombarde S.p.A.
Progetto definitivo:	Pei Cobb Freed & Partners di New York (capogruppo) Caputo Partnership di Milano Sistema Duemila di Milano.
Final project:	ATI Consorzio Torre Impregilo (Leading Company) Consorzio Stabiel Techint Infrastrutture Sirti; Consorzio Cooperative Costruzione CMB - Cooperativa Muratori e Braccianti from Carpi; CILE - Compagnia Italiana Edili; Costruzioni Giuseppe Montagna; Pessina Costruzioni
Process manager:	A. G. Rognoni, Eng.
Director of Works:	R. Pasinetti, Arch.
Security Coordinator:	D. Romeo, P.I.
Project Manager:	M. Lo Giacco, Eng.
Executive Design:	L. Pecchio, Eng. (C.S. Techint Infrastrutture)
Architectural Project:	R. Grotti, Eng.
Tower height:	161.30 m (no. 32 floors)
Façades Project:	ATI (Associazione Temporanea di Imprese) Technical Service Srl GISAM S.p.A.
Transformation and setting of façades:	ATI (Associazione temporanea di imprese ISA S.p.A. from Calcinelli (PU) CNS S.p.A. from Milano
Project figures:	75,000 m ² of mounted façades 33,700 m ² total area 9,000 m ² garden 87,000 m ² usable gross floor surface area

Daniele Domenicali Fotografo - www.ddpfoto.it



exterior glass, 16 mm cavity with argon gas and layered internal glass with variable thickness from 44.2 to 88.2 with 32% solar factor, thermal transmittance $U = 1.1 \text{ W / mqK}$ and spacers in stainless steel able to significantly reduce the linear dispersions along the glass perimeter.

The cells of the façade are designed to be anchored to the floors of the building by using special brackets, forged with Fe510 galvanized steel, hardened after forging to restore the original mechanical features of the Fe510. The pin is made of the same steel as the 10.9 class bolts.

The “cell” system applied has the advantage of extremely fast installation in coordination with the building site working phases. The cells are fully prefabricated in the workshop, complete with accessories and systems that facilitate installation. Once the fastening brackets are positioned and fixed the individual cells for the outside of the building can be inserted, using a mobile crane, which directs them to the correct position where they are subsequently manoeuvred by operators in order to be juxtaposed and grafted with adjacent cells, performing the proper alignment and telescopic coupling.

The size of the cells and the system for attaching them to the load-bearing structure is the result of careful analysis of wind pressure and, above all, the maximum peaks recorded in wind tunnel simulations, in which a 1:400 scale model of the building was created.

As mentioned, the cells that make up the exterior façade, are separated from the internal structure by an air gap of about 1 metre on the inside, provided with vertical sun protection strips and a metallic floating floor which functions as a technical walkway platform for maintenance of the elements. Before being expelled, the primary renewal air directed into the “office” areas, is passed through the cavity to moderate the temperature in the gap both during the summer and winter.

The inner façade, which matches the design of the outer façade, is formed of layered 88.2 glass that complies with legal safety standards, and is supported both at the top and the bottom by tubes of extruded 6060 aluminum alloy.

In the inner façade is the housing for the doors, which can be opened by authorized personnel only in order to access the service walkway for the cleaning and maintenance of the entire climate wall.

The combination of the high performance thermal-break and double glazing has resulted in an average transmission of individual cells of 1.49 W/mqk and a total transmittance of the climate wall of just above 1 W/mqK , significantly below the limits set by the Lombardy standards in force regarding the content of the energy used for cooling or heating the workplace.



Foto Piero Mollica per archivio Infrastrutture Lombarde SpA



The photovoltaic façade

The building is equipped with an integrated photovoltaic façade that provides a portion of its energy needs. Along the lower sides of the tower (south elevation), the windows have been integrated with photovoltaic cells with a total capacity of approximately 170KWP for an estimated energy production at 170,000 kWh/year and CO₂ savings of around 94 tons/year. The photovoltaic generator is integrated into both façades of the central tower exposed to the south and southwest and occupies over 100 metres in height from the 40-metre point. Each of the 500 modules consists of 120 high-efficiency monocrystalline cells with a power of 350 Wp per module.

The whole modular structure is designed to cope with dynamic wind loads and the turbulence induced by the shape of the tower and to maximize the electrical power production consistent with the need for translucence.

High-efficiency SunPower A300 (21% Eff.) cells

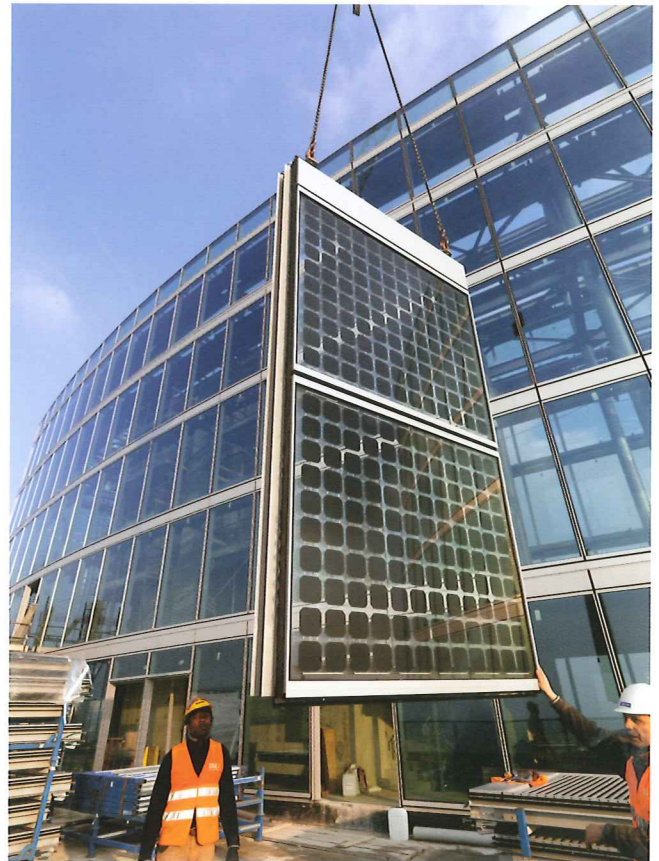
500 PV Glasses of 350 Wp for a total of 170 KWP

Incorporated in Insulating Structural glazing

With Ug coefficient =1.1 W/(m²/K)

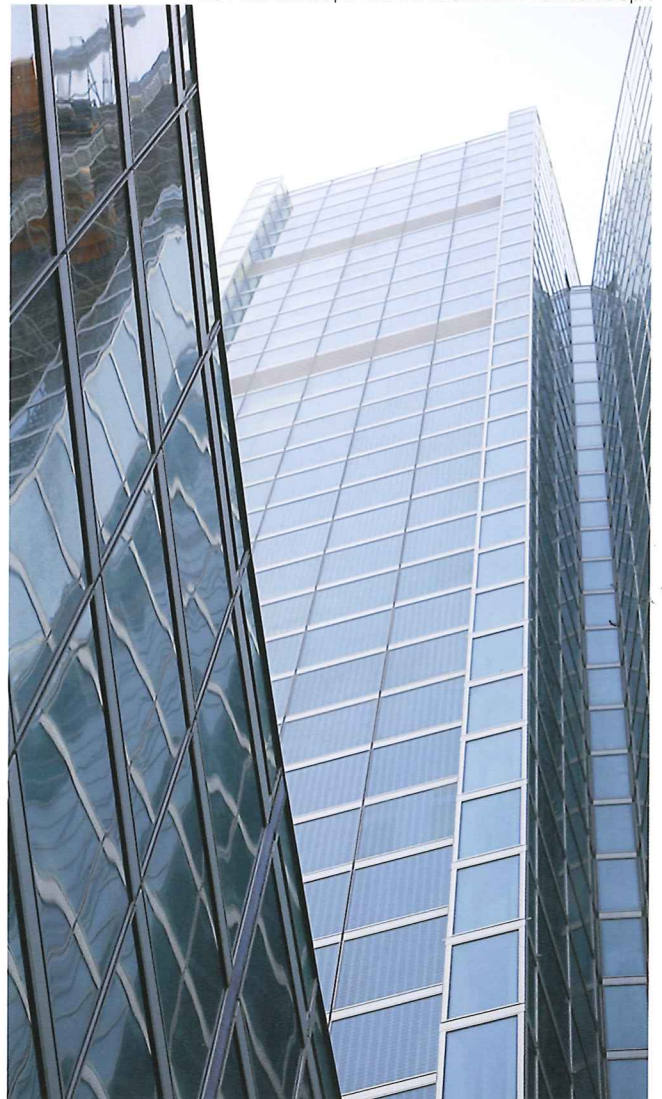
Estimated Annual production: 170,000 KWH

Daniele Domenicali Fotografo - www.ddphoto.it



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Foto Piero Mollica per archivio Infrastrutture Lombarde SpA



Restoration of the PIRELLI skyscraper

Regione Lombardia Headquarters-Milan



The Pirelli building, ownership of Regione Lombardia, stands out as a unique image and an unmistakable figurative element of the Lombard city skyline. Located in a strategic area opposite Milan's central railway station, it is about 130m high, with the two main glass elevations enclosed in the 'tips' and structural elements made in reinforced concrete covered with ceramic tiles mosaic.

Following the aeroplane crash of 2002 that destroyed floors 25 to 27, a restoration project came to life, based on the knowledge that the Pirelli building is really a true monument of contemporary architecture, a seamless integration of art, architecture, engineering, technology and construction knowledge, the fruit of past masters, such as Gio Ponti and Pierluigi Nervi. Based on this assumption it was decided to preserve, where possible, all the monument's technical value even in regards to the recovery of the original materials.

The aluminium and glass curtain walls of the tower were dismantled and each item numbered with care; the sections were subjected to reanodisation and releading processes in order to restore their weather resistance and structural efficiency. Glass, seals and gaskets that had lost efficiency were replaced with new materials that in no way affected the appearance and operation of the windows. The reintegration of irreparably damaged or lost items was achieved by extruding the missing pieces and using new moulds made from the original existing profiles.

The occasion also saw the restoration of the two canopied entries and the new suspended shuttle for cleaning operations, all with about 32,000m² of scaffolding.

Particular attention was paid to the creation and production of a rich supply of new certifications, in order to verify and certify the quality of works, through investigations, complex sampling and laboratory tests, according to contract specifications.

TECHNICAL DATA SHEET

Construction year:	2004
Owner:	Lombardy Region
Designer:	Arch. Gio Ponti (1956/1961)
Restoration design:	R.S.G. Renato Samo Group - Arch. Samo Corvino+Multari Associated Architects Arch. Multari, Arch. Corvino <i>BMS Architecture and Engineering Designs</i> Arch. Bottini, Arch. Fabbri
Dir. of Works :	Grassi&Crespi S.r.l. - Geom. Bertini
Height:	127.10 m (no. 31 floors)
Façades:	ISA S.p.A. (Leading Company)
Restoration figures:	11,680 m ² upgraded façades 1,070 m ² façades rebuilt ex-novo 45,000 restored original features 7,000 replaced glass volumes 28,000 ml replaced trimming 50,000 kg extruded aluminium

Fotografia Digitale di Architettura ©2004 Federico Brunetti



TORRE 130

ENEL Headquarters - Naples



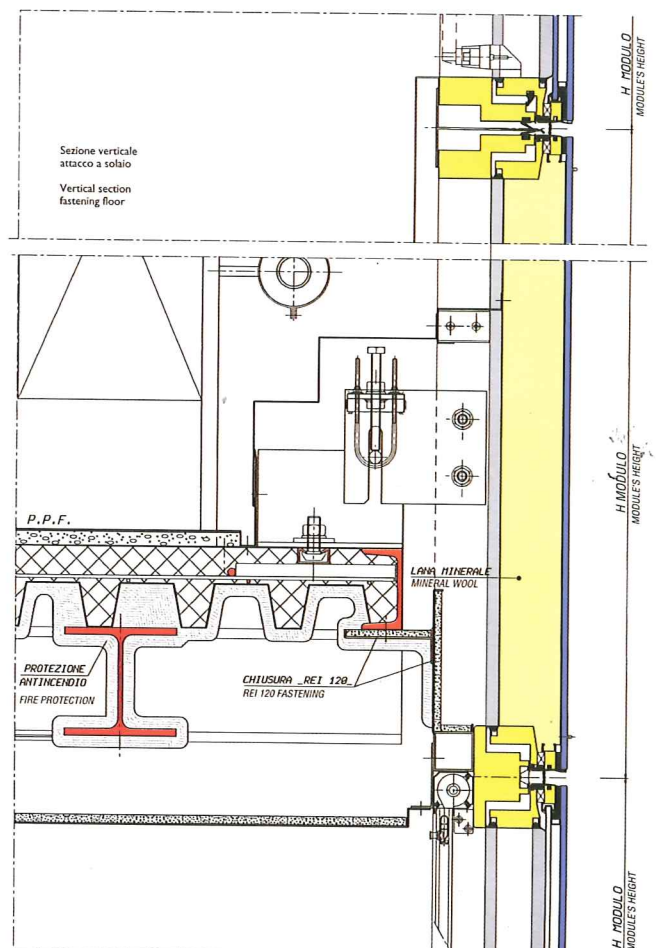
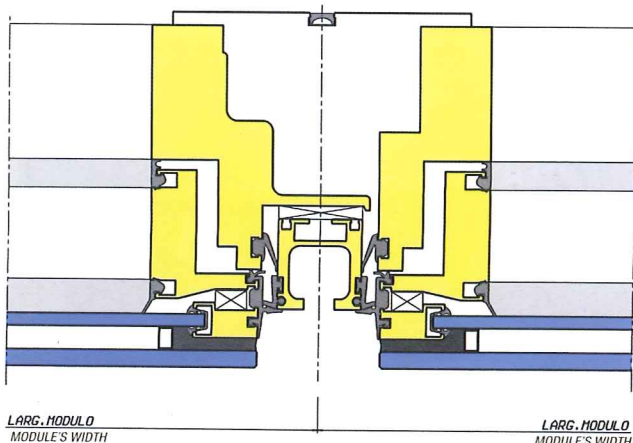
In 1990 ISA Spa built the ENEL Headquarters ATI skyscraper, named the 130 Tower, at the beginning of Corso Malta, right at the entrance of the Neapolitan City Executive Centre, on behalf of the Torre130 Consortium Company.

The design was supervised by the A.D.H. Studios of architects R. and F. Avolio De Martino, Professor Giulio De Luca and Associates and Professor M. Pica Ciamarra and Associates.

The building measures approximately 130 meters in height, has a rhomboidal plan, a 45° axis inclination in the direction of the Corso and is positioned as the admission gateway to the Headquarters. With 32 floors above ground, it has a total volume of approximately 126,000 cubic metres.

The long fronts are characterized by all-glass façades, excluding the stairwells, the elevator shafts and the triangular roof structures, and have Alucobond panel cladding. The façade system, called "S160", was specially designed by ISA Spa and includes a thermal break façade structure with prefabricated cell elements, a system that allows for extremely fast installation without the use of external scaffolding. All front uprights are equipped with a special guide in integrated aluminium extrusion, able to accommodate the shuttle sliding trolleys for façade maintenance and cleaning. Fire protection is provided by Promabest calcium silicate fibre fireproof barrier slabs with galvanized sheet steel to close on the façade at the intrados slabs.

Particular attention has been devoted to the study of the system for attaching the ventilated façade lining, with ISA Spa made extruded aluminium uprights and also to the internal reinforcing substructure of the Alucobond panels, considering both the height of the building and the significant height dimensions of the modules (3,000mm).



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