

CAODURO COMPANY PRESENTATION

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11th May 2023



WHO WE ARE



WHO WE ARE

SOME NUMBERS

1951	year of foundation
24,000 sqm	land area
16,000 sqm	factory size
100	team members
140	trademarks and patents



We offer our services throughout the Italian territory and beyond.

We export to various European countries, to Russia, to Arab countries, and North Africa.

WHO WE ARE

COMPANY CERTIFICATIONS

ISO9001

Since 1998, the first company in its sector to obtain it.

PRODUCT CERTIFICATIONS

CE marking

According to product standards such as:

- **EN 1873**, Prefabricated accessories for roofing – Individual rooflights of plastics – Product specification and test methods;
- **EN 12101-1**, Smoke and heat control systems – Part 1: Specification for smoke barriers;
- **EN 12101-2**, Smoke and heat control systems – Part 2: Natural smoke and heat exhaust ventilators;
- **Directive 2006/42/EC** on machinery;
- **Directive 2014/35/EU** on the market of electrical equipment designed for use within certain voltage limits;
- **Directive 2014/30/EU** on electromagnetic compatibility;
- Etc



WHO WE ARE

OUR VALUES

Experience

The years spent discovering the properties and uses of plastics have made us unbeatable in the field.

Expertise

We truly care about human relationships because there is no better guarantee than mutual trust.

Innovation

Create means giving birth to new products. We never stop, looking towards the future.

Passion

The love for our work defines us. And our team believes in it, management and collaborators work together to get the most out of each project.

Reliability

For us, quality is expressed throughout the production cycle. Our team of professionals controls all phases, including the installation and periodic monitoring of each system.

Sustainability

We recycle almost 95% of the waste coming from the procession of our products thanks to agreements with specialized companies.



WHAT WE DO

WHAT WE DO

OUR MAIN FOCUSES

Natural zenital lighting



Daily ventilation systems



Smoke and heat control systems



We manufacture monobloc domes and continuous skylights in polycarbonate material to bring light into the rooms.

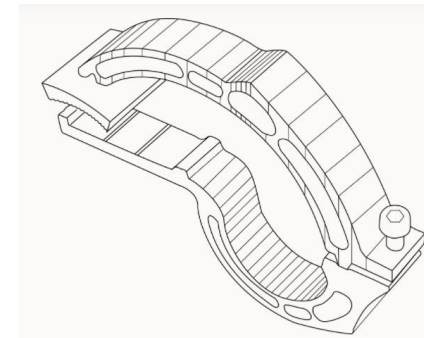


POLYCARBONATE FEATURES

- Clear transparent, opal white or climate control sheets
- UV rays protected material in order to ensure great mechanical and optical (against yellowing) durability
- Reaction to fire classification B-s1-d0 according to EN 13501-1 Standard

THE FASTENING WITH CAODURO® PATENTED CLAMP

- It can resist up to 200 kg tear-off load
- Installation without drilling in order to guarantee the integrity of the products and ensure water tightness and thermal expansion



MONOBLOC DOMES



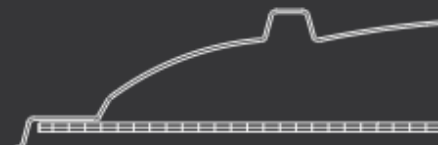
CONTINUOUS SKYLIGHTS



035 FX - single skin



035 FX - double skin



M35 FX - double skin



M35 FX - triple skin



RIBBED STRUCTURES



SELF SUPPORTING DOMES AND TUNNELS



We believe in the importance of the daily ventilation system, which makes every space livable and healthy, allowing constant air circulation and improving general comfort.

All of our domes and skylights can be equipped with an electric or manual ventilation system.



Our opening devices can be provided with the patented weather detection system GUARDIAN™, which allows skylights automatic closing in case of wind and rain.



Always careful to safety and fire prevention issues, we have specialized in one of the most important active fire protection systems: smoke and heat control.

We have designed and we produce natural smoke and heat exhaust ventilators (NSHEV), smoke curtains, fresh air intake devices and control boxes.



Why should we be so concerned with smoke?



- Most fire deaths are not caused by burns, but by smoke inhalation [*nfpa.org*],
- smoke reduces visibility thus causing panic effects on people,
- close to flashover temperatures (400-600 °C), fire spreads due to smoke movement,
- smoke damages buildings and the goods which buildings contain, thus leading to business interruption.

Smoke vents create and maintain a smoke free layer in the buildings and thus improve the conditions for the safe escape and/or rescue of people.

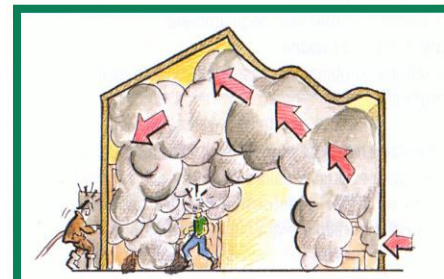
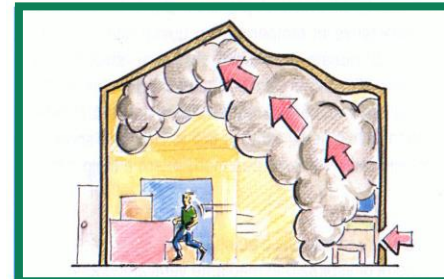
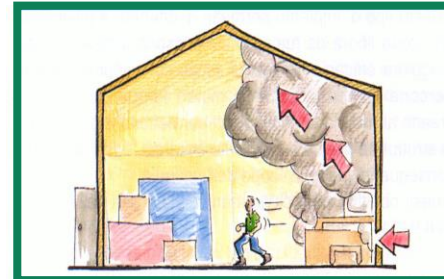
Their value in assisting the evacuation of people from construction works is firmly established.

“They help to:

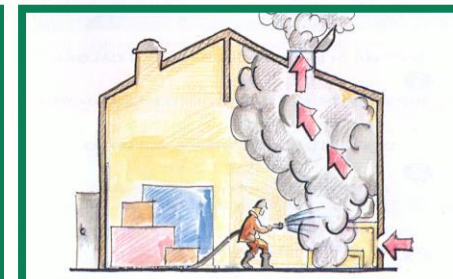
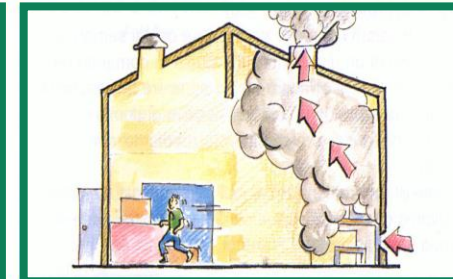
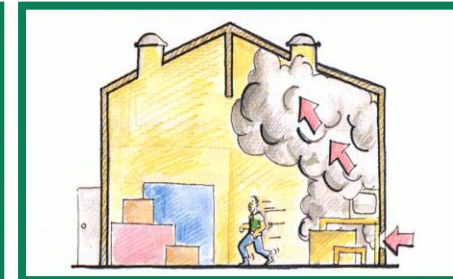
- keep escape and access routes free from smoke
- facilitate firefighting operations
- delay and/or prevent flashover phenomenon
- protect equipment and furnishings
- reduce thermal effects on structural components
- reduce damage due to thermal decomposition products and hot gases.”

[ISO 21927-4]

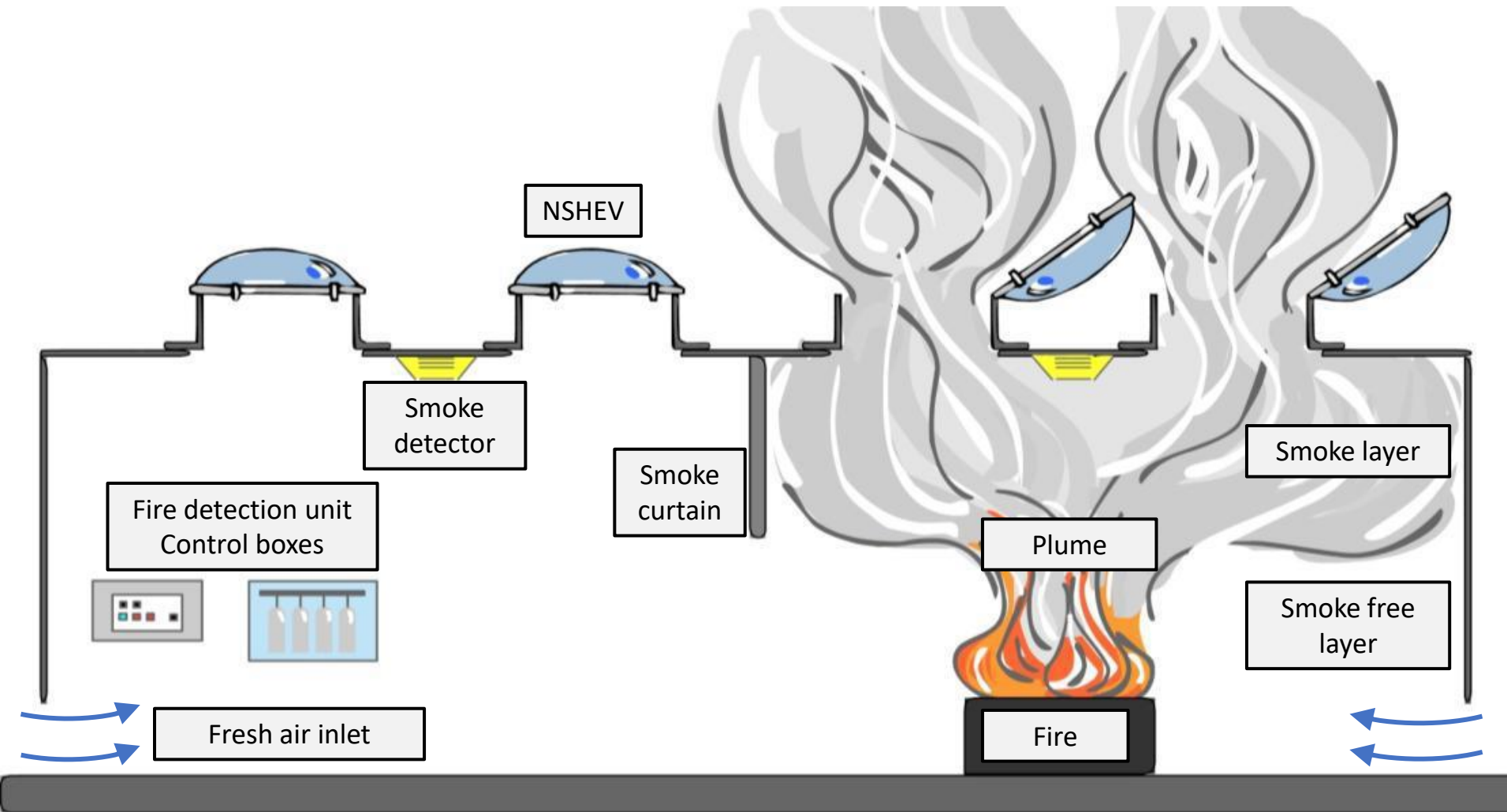
Without NSHEV



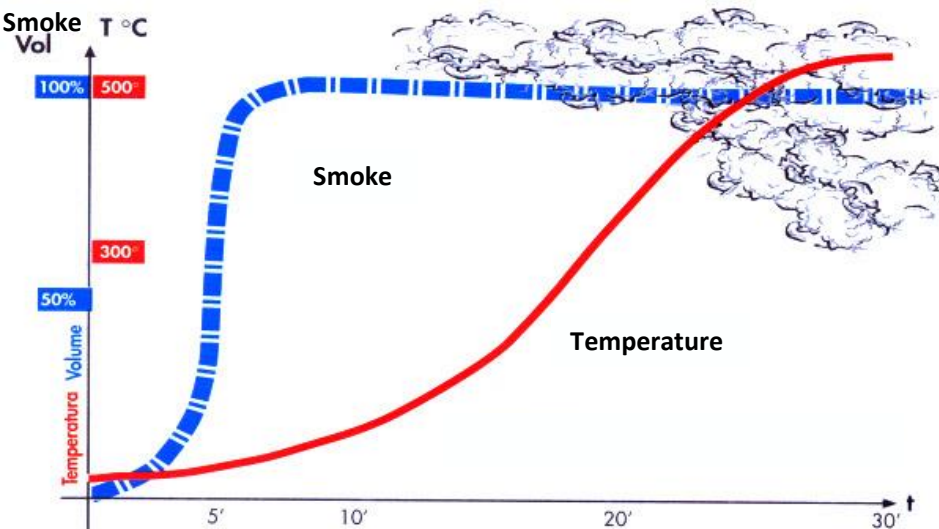
With NSHEV



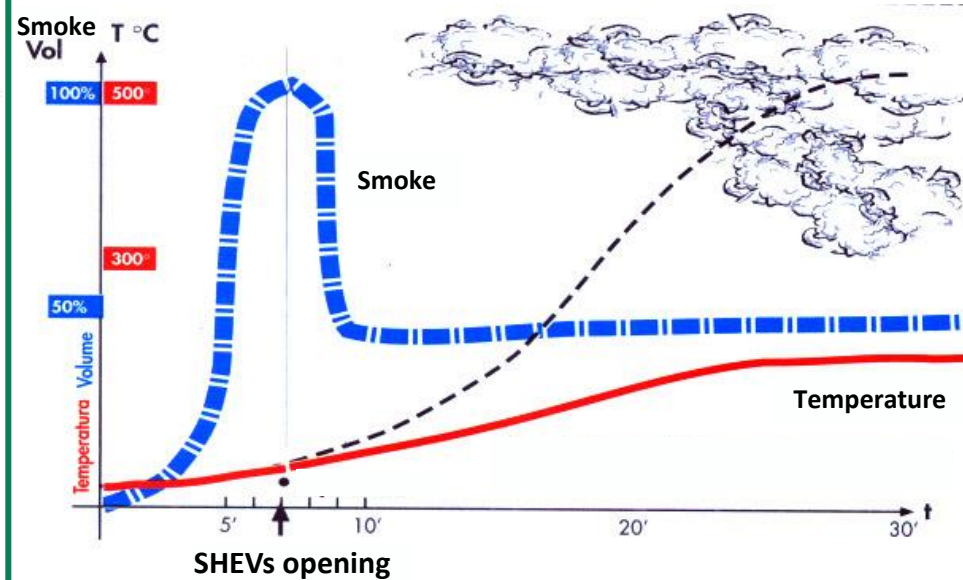
NATURAL SMOKE AND HEAT EXHAUST VENTILATION SYSTEM SCHEME



Smoke and temperature curves without SHEV



Smoke and temperature curves with SHEV



- Slower fire development
- Lower smoke volume
- Flashover temperatures avoided

A Natural Smoke and Heat Exhaust Ventilator (NSHEV) is an active fire protection device specially designed to move smoke and hot gases outside of a building in the event of fire by means of upward forces.

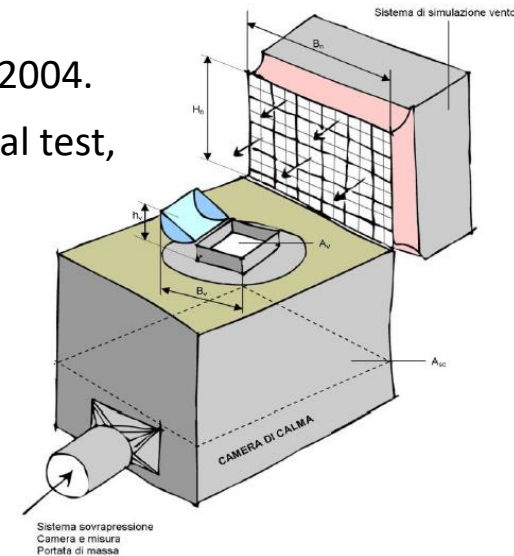
The device must be CE marked according to the product Standard EN 12101-2:2004.

The aerodynamic free area A_a of the NSHEV is determined with an experimental test, in accordance with Annex B of the Standard.

The standard allows to classify the NSHEV with some performances.

Performance requirements and classification	
Reliability	Re
Opening under load	SL
Low ambient temperature	T
Wind load	WL
Resistance to heat	B

Each NSHEV is provided with an individual thermosensitive actuating device normally calibrated at 68°C, unless otherwise indicated.





Smoke and heat exhaust ventilators for roof are produced with the SMOKE OUT® brand, in compliance with Regulation (EU) No. 305/2011, with CE marking, tested and certified according to EN 12101-2 by a notified body.

They can be applied both on monobloc domes and on continuous skylight.

The operation energy is pneumatic.

SMOKE OUTs® can be integrated with 230V electric opening for daily ventilation, certified for 10,000 cycles.





The new born SMOKE ARIES® exhaust ventilator, patented and with registered trademark, joins the current and efficient line of pneumatic ventilators, but is characterized by its electric operation.

SMOKE ARIES® is tested and certified according to EN 12101-2 by a notified body, fully designed and realized in Italy.

SMOKE ARIES® highlights:

- Single electric motor both for smoke exhaustion and for daily ventilation;
- No more manual intervention on the roof in case of accidental opening: it can be closed from the floor without any safety risk;
- No maintenance costs since there aren't any consumables such as CO2 cylinders.





Smoke and heat exhaust ventilators for walls SMOKE OUT VERT™ and SMOKE SHED™ comply with Regulation (EU) No. 305/2011, with CE marking, tested and certified according to EN 12101-2 by a notified body.

SMOKE SHED™ are designed and patented with suitable retractable aerodynamic spoilers, which are activated only when the device opens in case of fire.

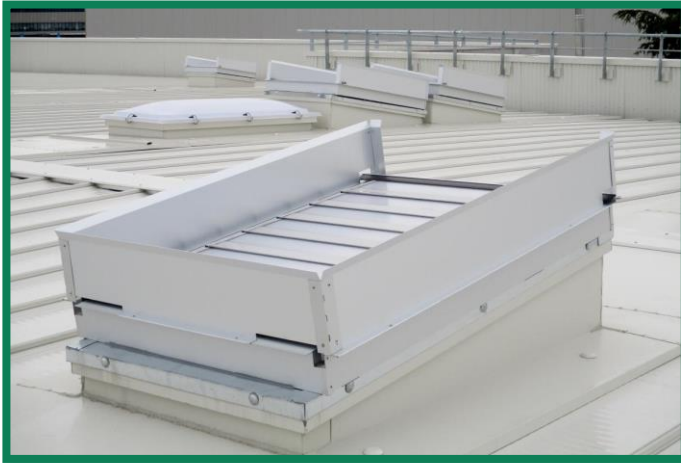
SMOKE SHED™ differs from SMOKE OUT VERT™ because it guarantees Aa value in presence of front and side wind.

The operation energy is pneumatic.

SMOKE OUT VERT™ can be used for daily ventilation, certified for 10,000 cycles.

Both SMOKE OUT VERT™ and SMOKE SHED™ can receive electric and pneumatic impulse remote control.





Smoke and heat exhaust ventilators SMOKE LAME™ TT (for roofs) and SMOKE LAME™ PT (for walls), comply with Regulation (EU) No. 305/2011, with CE marking, tested and certified according to EN 12101-2 by a notified body.

The structure is made up of a perimeter frame and slat holder profiles in extruded aluminum, complete with EPDM stop gaskets. The slats can be insulated, in transparent neutral, opal white, or blind colors.

SMOKE LAME™ TT and PT can be used for daily ventilation, certified for 10,000 cycles.

The operation energy can be pneumatic or electric.





SMOKE HOLD™- SHF fixed smoke curtains comply with Regulation (EU) No. 305/2011, with CE marking, tested and certified according to EN 12101-1 by a notified body.
SMOKE HOLD™- SHF curtains are certified up to: DA 180.



SMOKE HOLD™- SHA active smoke curtains comply with Regulation (EU) No. 305/2011, with CE marking, tested and certified according to EN 12101-1 by a notified body.
With fail safe operation (in absence of power supply), they consist of a galvanized metal box containing a curtain in flexible glass fiber fabric, coated with gray aluminum polymer on both sides, rolled up on a winding roller with 24V motor and with almost unlimited lengths.



In order to create and maintain a smoke free layer, Italian and international standards require that the building protected by a NSHEVS is equipped with openings for fresh air intake, which should come into operation automatically and simultaneously with the activation of the NSHEVS.

This is why we have developed the AIR FLOW™ louvered opening device, for wall applications in the lower parts of the buildings. It can be connected to CAODURO® smoke vents and can also be used for room ventilation. The operation energy can be both pneumatic and electric.



Each component of the Natural Smoke and Heat Exhaust Ventilation System (NSHEVS) can be provided with control boxes and emergency buttons.



Caoduro System: Lighting, Ventilation, Smoke and heat control system (SHCS)

SOME PROJECTS REALIZED

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YAS MARINA FORMULA 1 CIRCUIT – ABU DHABI (UAE)

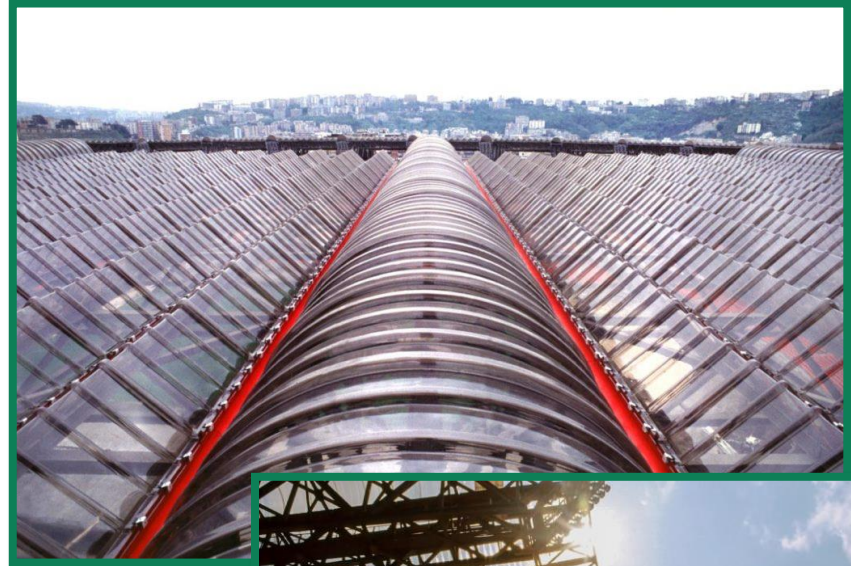
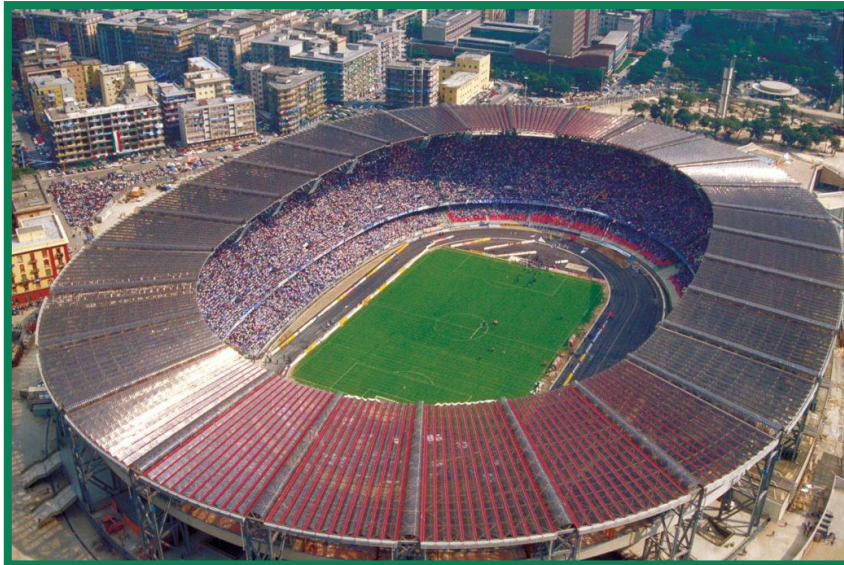
040FX series continuous skylights and openable monobloc domes on the roofs of grandstands, team paddocks, press rooms, offices, medical centre.



PROJECTS REALIZED

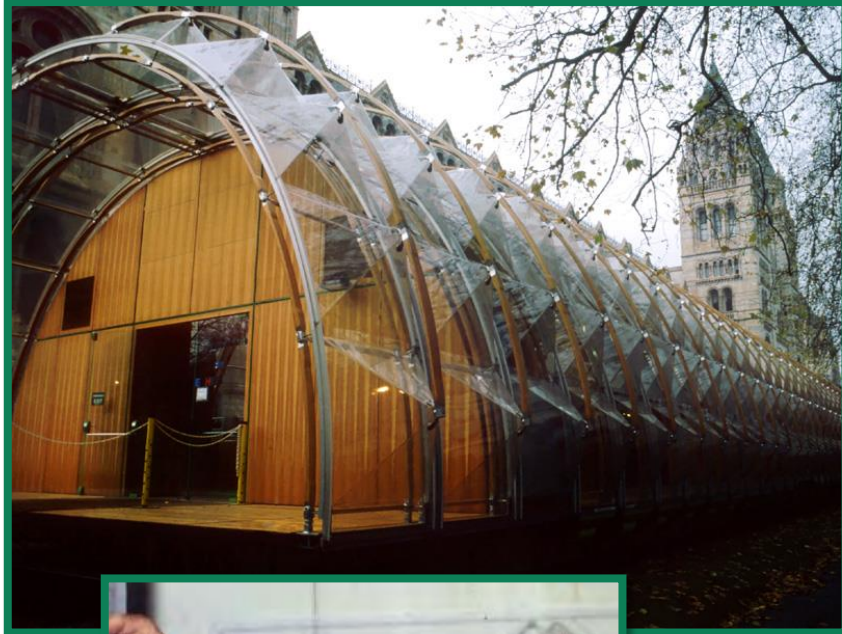
DIEGO ARMANDO MARADONA STADIUM – NAPLES (ITALY)

Entire grandstands covering thanks to the biggest thermoformed polycarbonate pieces all over the world with over 15 sqm surface.



PROJECTS REALIZED

IBM TRAVELLING PAVILION, DESIGNED BY ARCHITECT RENZO PIANO – PARIS, LONDON, ROME
34 arches each one composed of four modules. A single piece consists of three transparent PC diamonds.



PROJECTS REALIZED

BRIDGE OVER MOSKVA RIVER – MOSCOW (RUSSIA)

Covering of the 265 meters long bridge with pre-painted aluminium profiles and cold bended double skin transparent polycarbonate.





THANK YOU

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