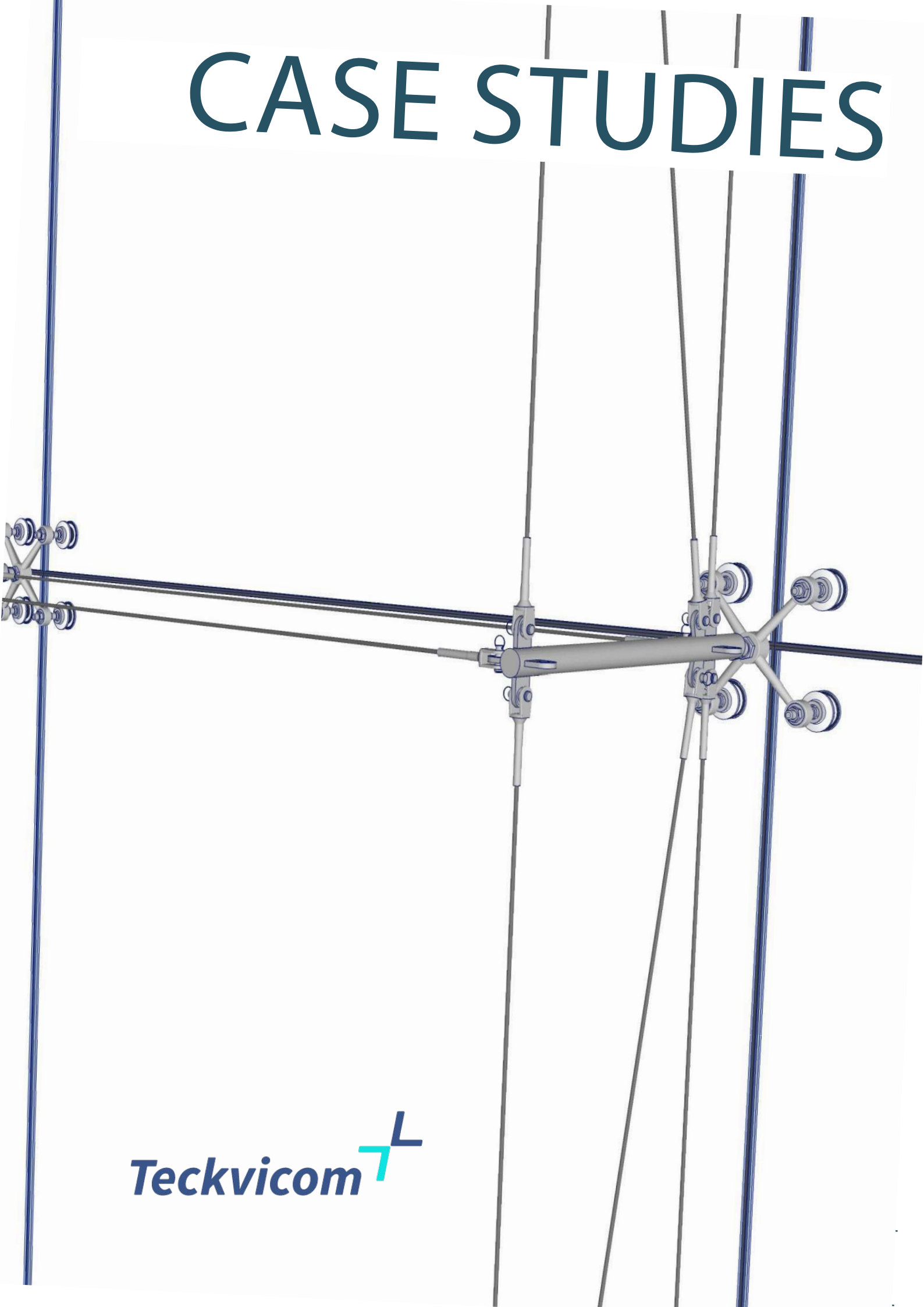
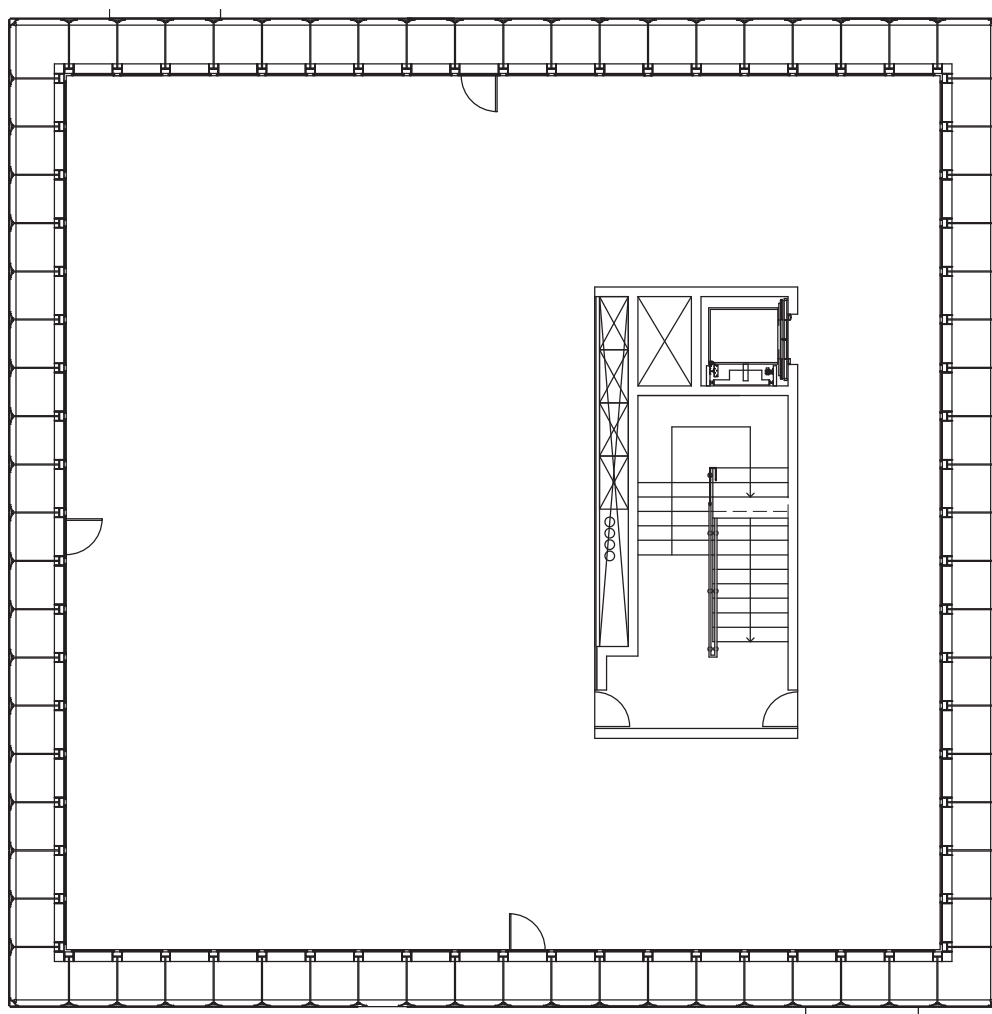


CASE STUDIES



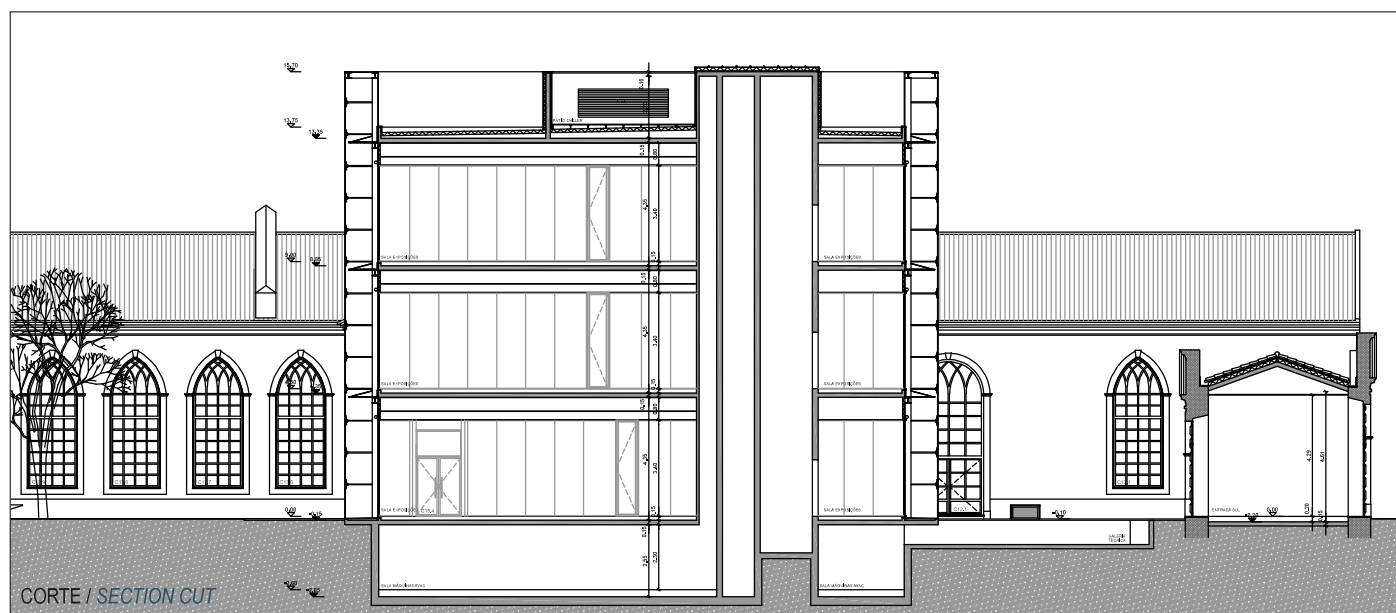
Teckvicom^{7L}



Projecto de reabilitação da antiga fábrica de resinagem da Marinha Grande que contou com a edificação de um novo museu, um cubo em vidro. Esta fachada foi realizada com o Sistema agrafado FITECHNIC .

Rehabilitation project of the old resin factory of Marinha Grande, which included the construction of a new museum, a cube in glass. The glass façade was performed with the FITECHNIC glass fitting system.

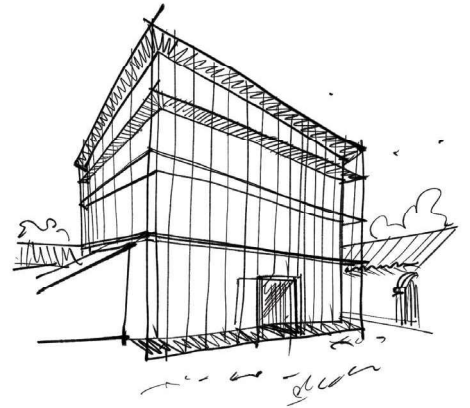
PLANTA / PLANT

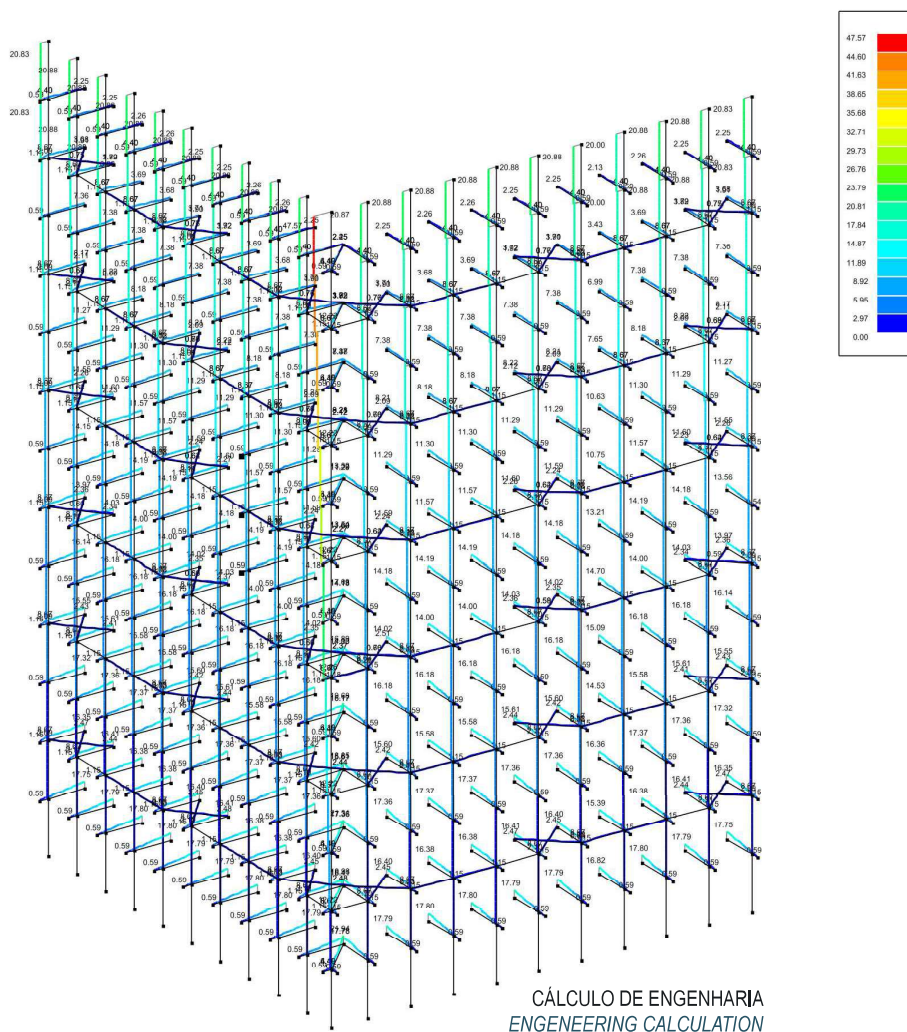
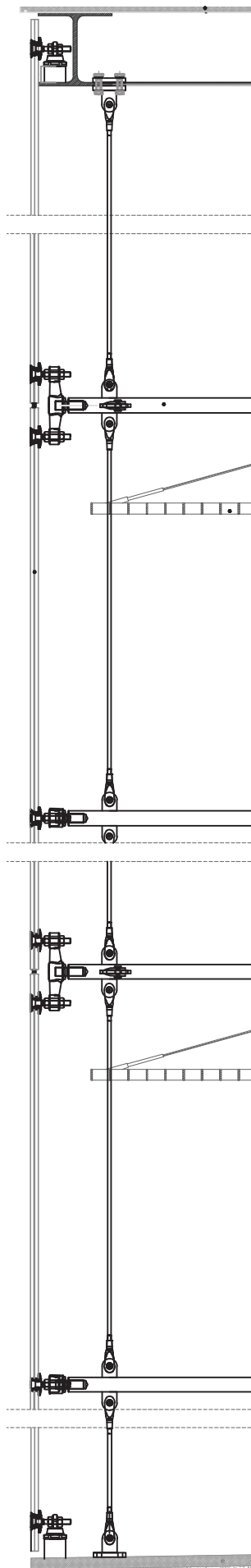


CORTE / SECTION CUT

MUSEU NAC

Marinha Grande, Portugal





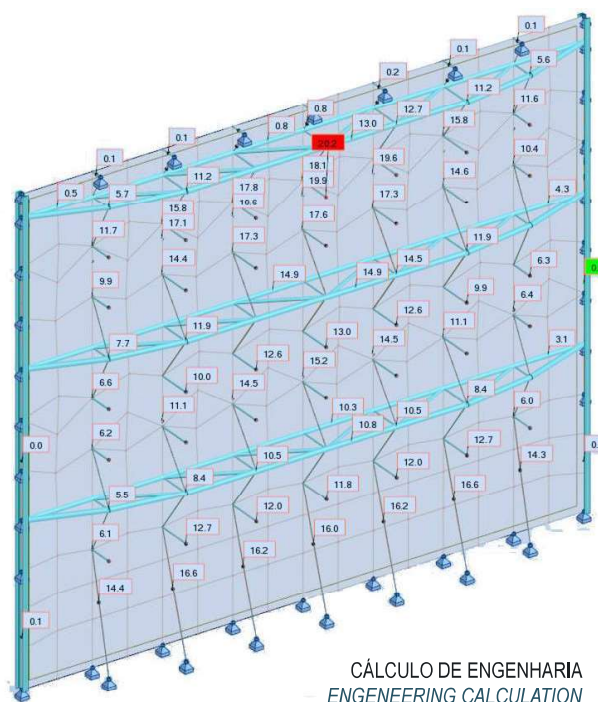
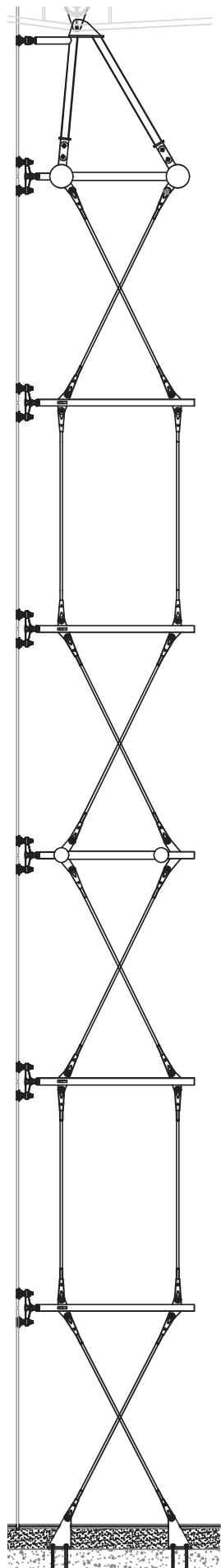
Concebeu-se um sistema de fachada ventilada que tem um afastamento considerável relativamente à primeira “pele” do edifício, estando suportada na estrutura envolvente do mesmo por meio de bielas e varões tensionados e produção de peças especiais pela FITECHNIC.

A ventilated façade system was developed with a considerable distance relative to the first “skin” of the building, being supported in the surrounding structure of the same building by rods and tensioned rods and produced special pieces this system were designed by FITECHNIC.

MUSEU NAC

Marinha Grande, Portugal





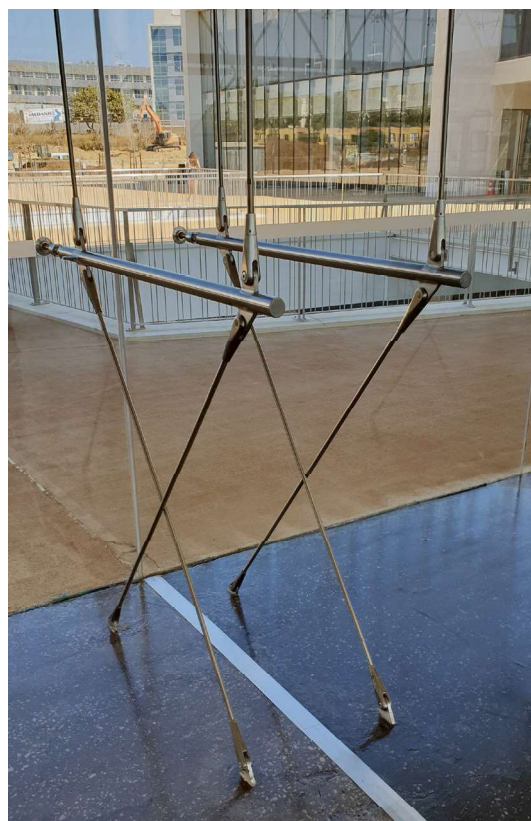
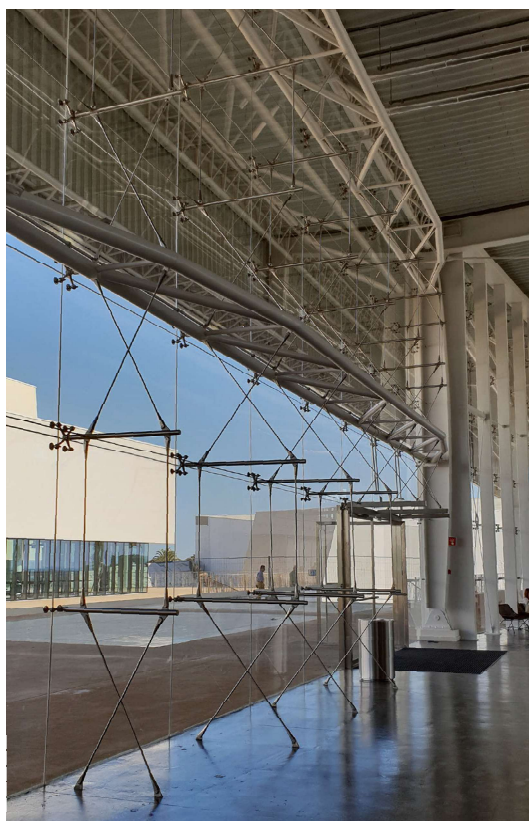
CÁLCULO DE ENGENHARIA
ENGINEERING CALCULATION

O estudo de engenharia das fachadas foi realizado pelo departamento técnico da PENTAGONAL-FITECHNIC para criar um sistema de estrutura “leve”.

O sistema utilizado FIX-ROD em aço inox 316 é uma estrutura tensionada de bielas e varões que através das aranhas FIX-170 com respectivas rótulas RE1221-M14 .

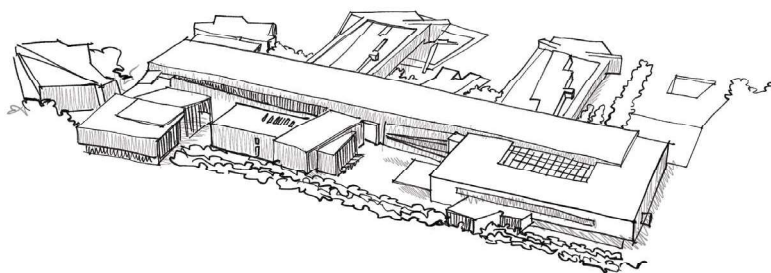
The development of façade engineering was carried out by PENTAGONAL-FITECHNIC technical department, to create a system with “lightweight” structure.

The system used FIX-ROD in 316 stainless steel is a tensioned structure of rods that through the spiders FIX-170 with respective articulated bolt RE1221-M14.



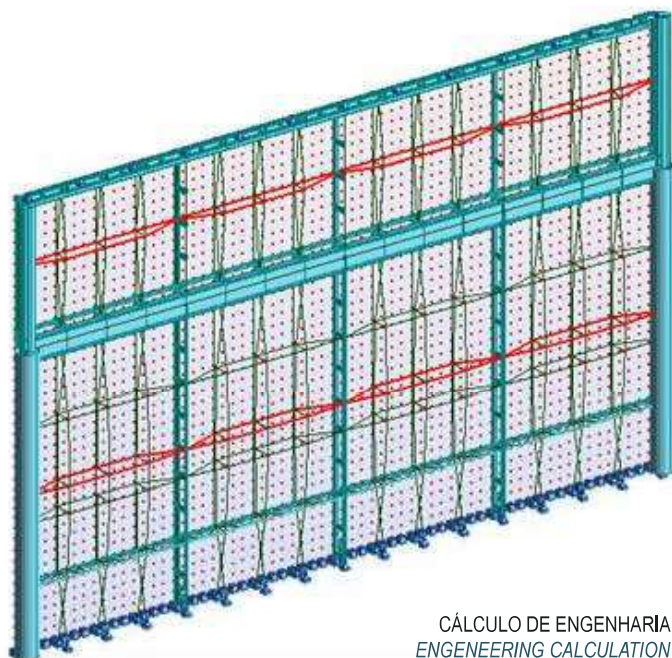
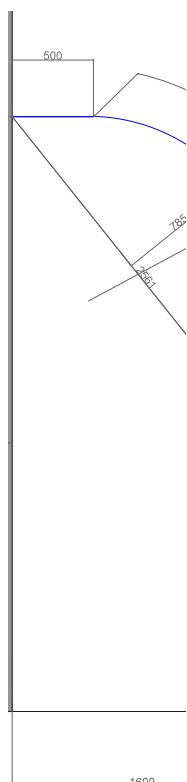
BUSINESS SCHOOL OF ECONOMICS

Carcavelos, Portugal



A Universidade NOVA Business School of Economics em Carcavelos distingue-se como uma das maiores obras de um campos universitário a qual tem cerca de 4.000m² de fachada em vidro agrafado Foi projectada pelos arquitectos Vitor Carvalho e o atelier Tetractys.

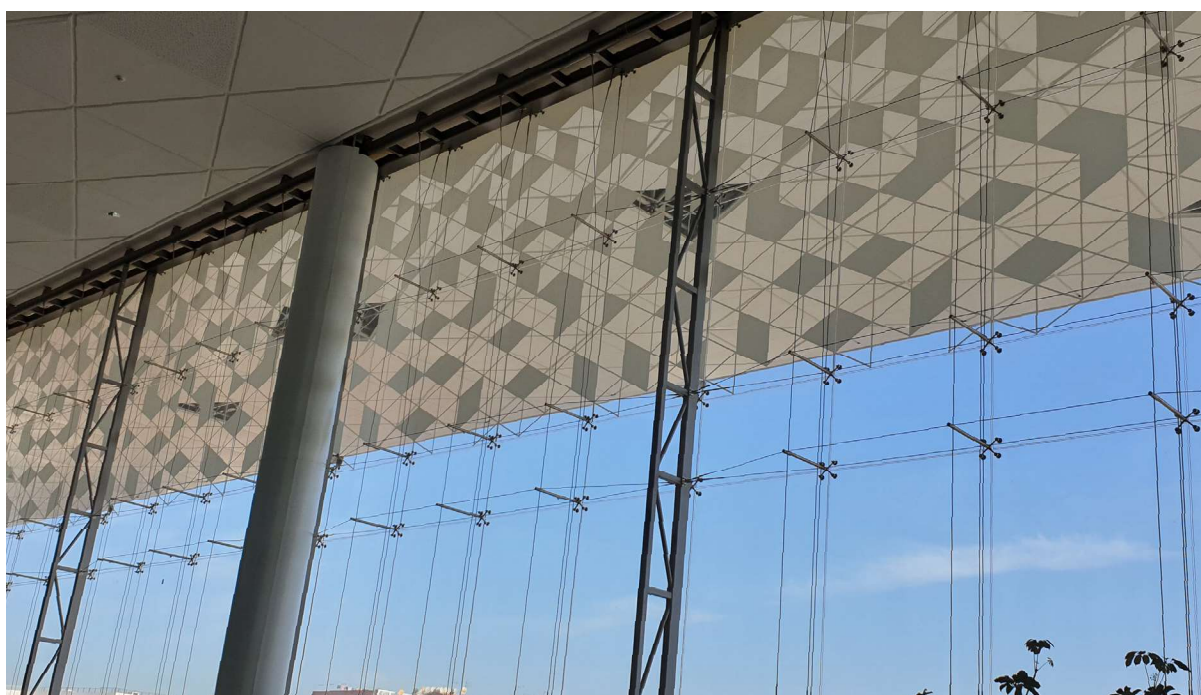
The University Business School of Economics in Carcavelos stands out as one of the greatest works of a university campus that has about 4.000m² of facade in structural glazing It was designed by the architects Vitor Carvalho and the Tetractys studio.



CÁLCULO DE ENGENHARIA
ENGINEERING CALCULATION

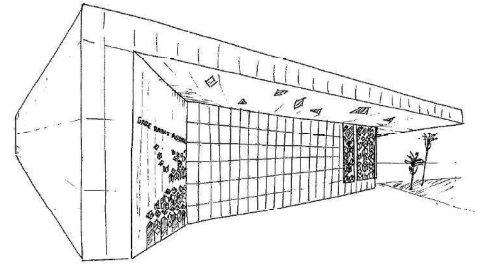
O sistema tem ensaios realizados de acordo com o Avis Technique em organismo notificado pela EOTA. Foram adicionalmente realizados ensaios de segurança de carga de vento e impacto assim como ensaios de estanquicidade de ar e água segundo a norma das fachadas leves EN13830.

The system has tests performed according to the Avis Technique in an organization notified by EOTA and also carried out wind load and impact safety tests, as well as air and water tightness tests according to the standard of the light façades EN13830.



GARE LGV RABAT

Agdal, Marrocos

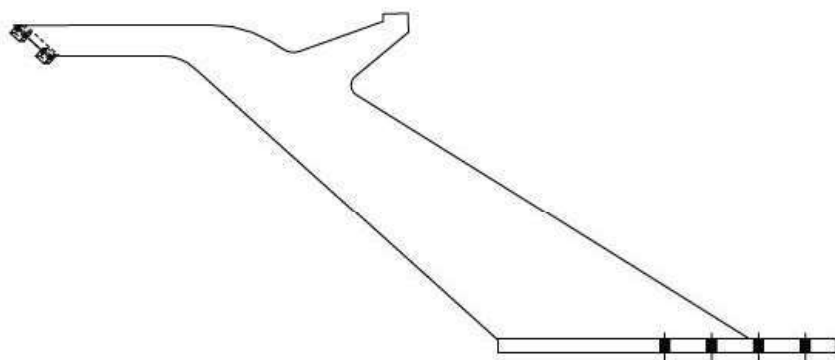


A nova estação de comboio Rabat-Agdal de alta velocidade (TGV) em Rabat-Marrocos é um projecto do arquitecto Youssef El Melehi com cerca de 16000m².

As fachadas das entradas principais e da esplanada têm uma área de cerca de 800m². O sistema FI-CAB com aranhas FIX-170 e rótulas articuladas foi usado de forma a cumprir com a pretensão de total transparência da fachada.

The new Rabat-Agdal high-speed train station (TGV) in Rabat-Morocco is a project of the architect Youssef El Melehi with about 16000m². The façades of the main entrances and the esplanade have an area of about 800m².

The FI-CAB system with FIX-170 spiders and articulated bolts was used to comply with the main purpose of total transparency.



PORMENOR / DETAIL SECCION



MODELO 3D / 3D MODEL

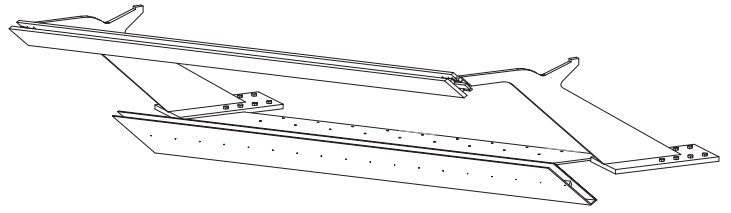
Os elementos estruturais de vidro e modelagem de software foram especificamente desenvolvidos, simulados e testados para garantir não apenas o seu desempenho estrutural, mas também enquadrar-se na estética estrutural, de acordo com o design proeminente e futurista da Zaha Hadid Architecture.

The glass structural elements and software modeling have been specifically developed, simulated and tested to ensure not only their structural performance but also to fit the structural aesthetics, according to the prominent and futuristic design of Zaha Hadid Architecture.



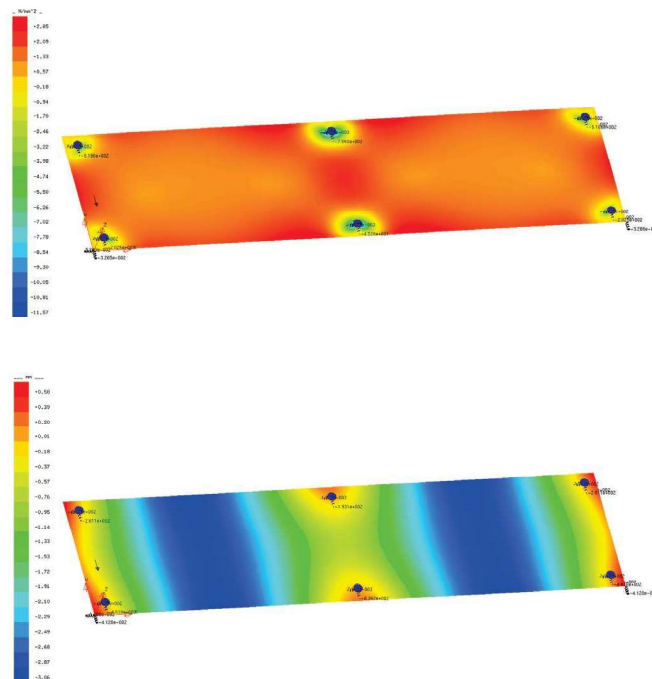
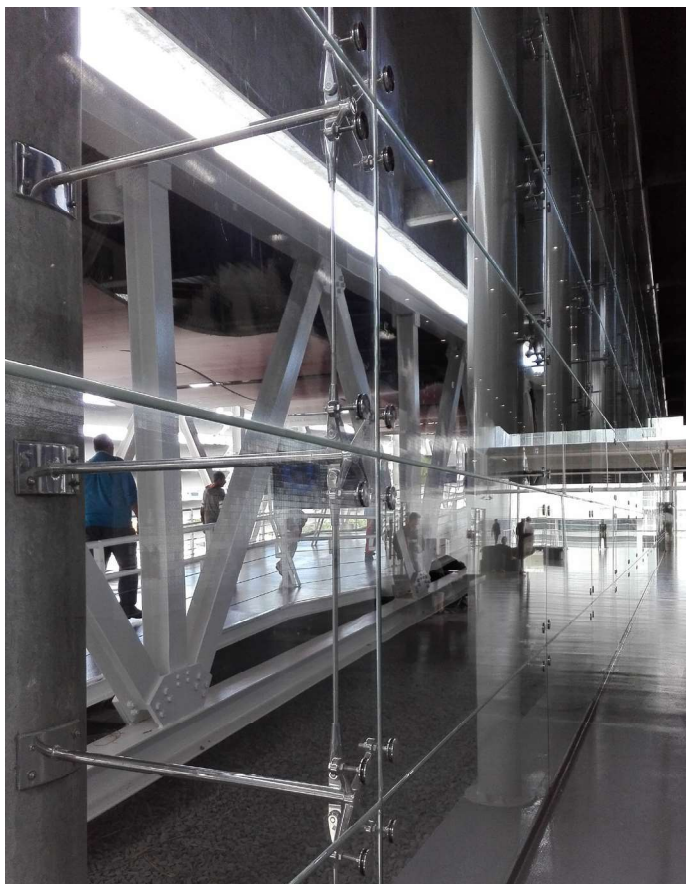
ELEFThERIA SQUARE

Nicósia, Chipre



Na Praça Eleftherias Nicosia, Chipre, a PENTAGONAL desenvolveu um sistema especial de balaustrada FITECHNIC, este foi desenvolvido através de modelagem 3D e com peças personalizadas e produzidas à medida das exigências do projecto. Esta balaustrada de vidro tem uma inclinação de 42,5° ao longo do seu comprimento com uma geometria curva, não regular.

At Eleftherias Square in Nicosia, Cyprus, PENTAGONAL developed a special FITECHNIC balustrade system, which was developed through 3D modeling and with custom pieces and produced to the requirements of the project. This glass balustrade has a slope of 42.5 ° along its length with a curved, non-regular geometry.



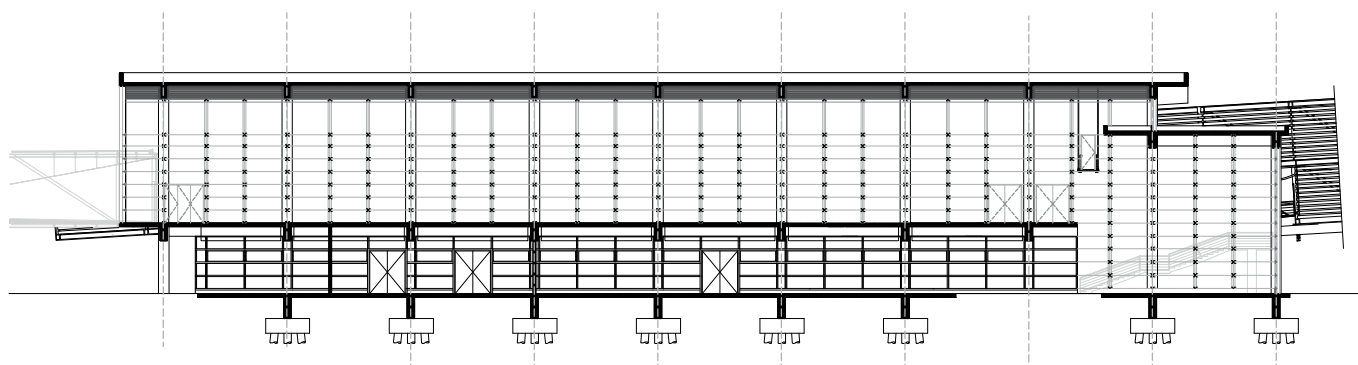
CÁLCULO DE VIDRO
GLASS CALCULATION

O estudo das fachadas da expansão do novo edifício #Seathefuture foram realizadas pelo departamento técnico PENTAGONAL-FITECHNIC de forma a realizar a fachada com a vista mais limpa possível para a área circundante.

The engineering study of the facades of the expansion of the new #Seathefuture building was carried out by the technical department PENTAGONAL-FITECHNIC in order to make the facade with the clearest view possible for the surrounding area.

O sistema utilizado FIX-ROD de bielas e varões em aço inox 316 fixas à estrutura através das aranhas FIX-204 modelo 1 com respectivas rótulas RT1225-M14 suporta o vidro laminado temperado, dimensionado para resistir às cargas de vento e de utilização associadas ao projecto.

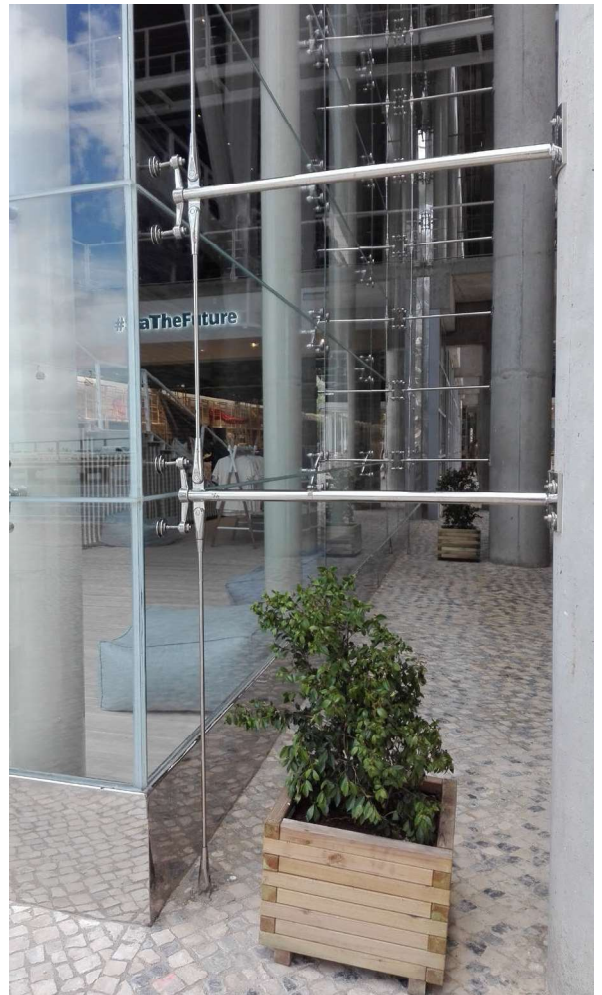
The FIX-ROD System of 316 stainless steel rods are fixed to the structure through the spiders FIX-204 model 1 with respective articulated rotules RT1225-M14 that supports the tempered laminated glass, dimensioned to resist wind loads and usage associated with the project.



ALÇADO / SIDE ELEVATION

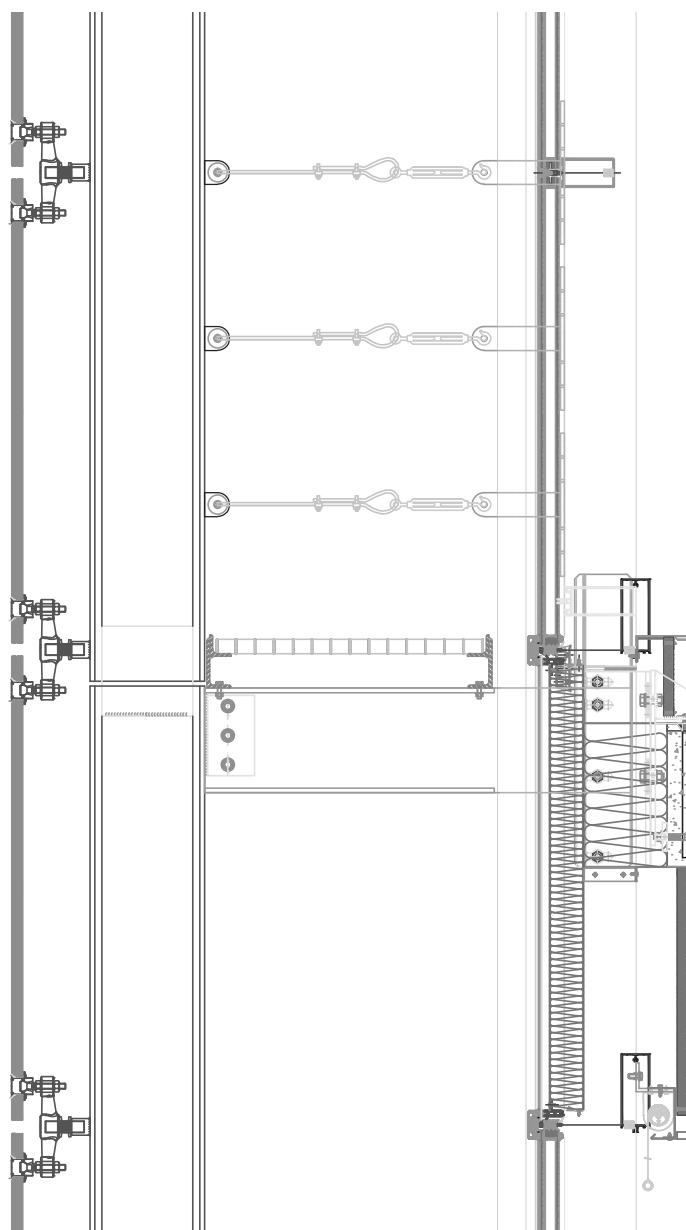
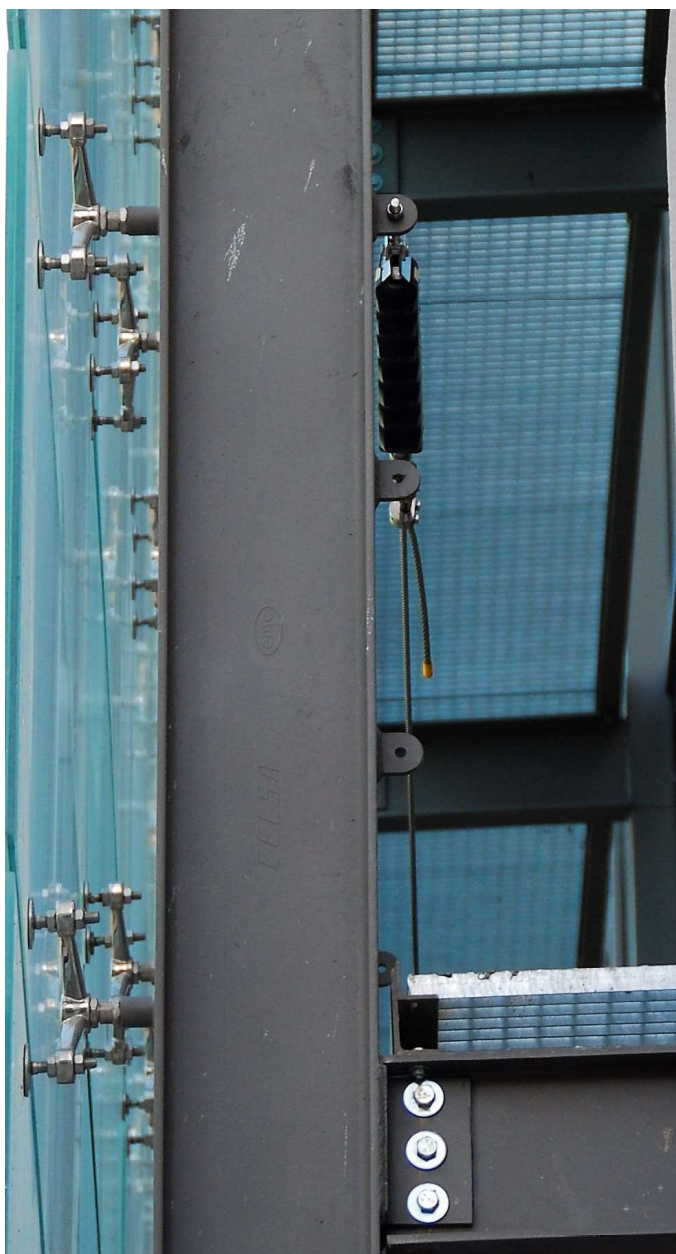
OCEANÁRIO

Lisboa, Portugal



Oceanário de Lisboa é um aquário público e instituição de pesquisa sobre Biologia marinha e Oceanografia e é o segundo maior oceanário da Península Ibérica. O design conceitual de arquitectura e de exibição são do arquitecto norte-americano Peter Chermayeff.

Lisbon Oceanarium is a public aquarium and research institution on Marine Biology and Oceanography and is the second largest oceanarium in the Iberian Peninsula. The conceptual design of architecture and exhibition are by the American architect Peter Chermayeff.



PORMENOR / SECTION DETAIL

O projecto de arquitectura do atelier L35 criou um edifício com dupla pele na fachada ventilada em vidro criando a protecção térmica e acústica .

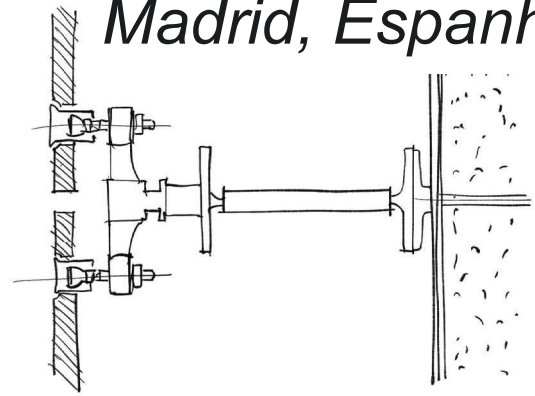
A equipa PENTAGONAL-FITECHNIC calculou e dimensionou o vidro laminado temperado 10+12mm com 4 furos para resistir às acções de utilização e do vento, com sistema de aranhas FIX-170 modelo 1 com respectivas rótulas RT1221-M14 .

The L35 atelier's architectural project created a building with double skin on the ventilated facade in glass creating the thermal and acoustic protection.

The PENTAGONAL-FITECHNIC team calculated and sized the Tempered Laminate 10 + 12mm glass with 4 holes to withstand the actions of use and the wind, the spiders system FIX-170 model 1 with respective articulated rotules RT1221 -M14.

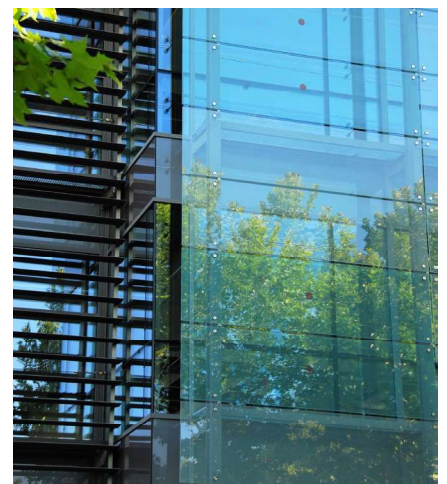
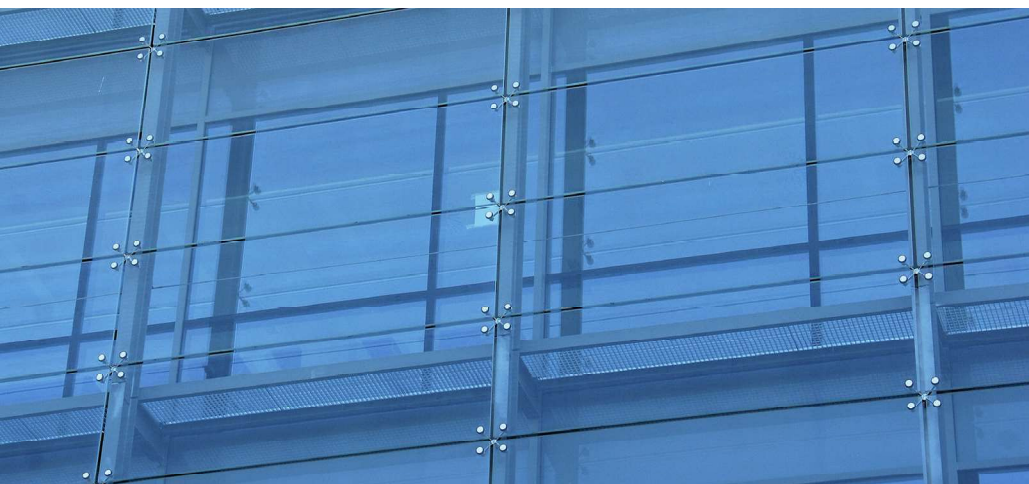
AXA PRADO BUSINESS PARK

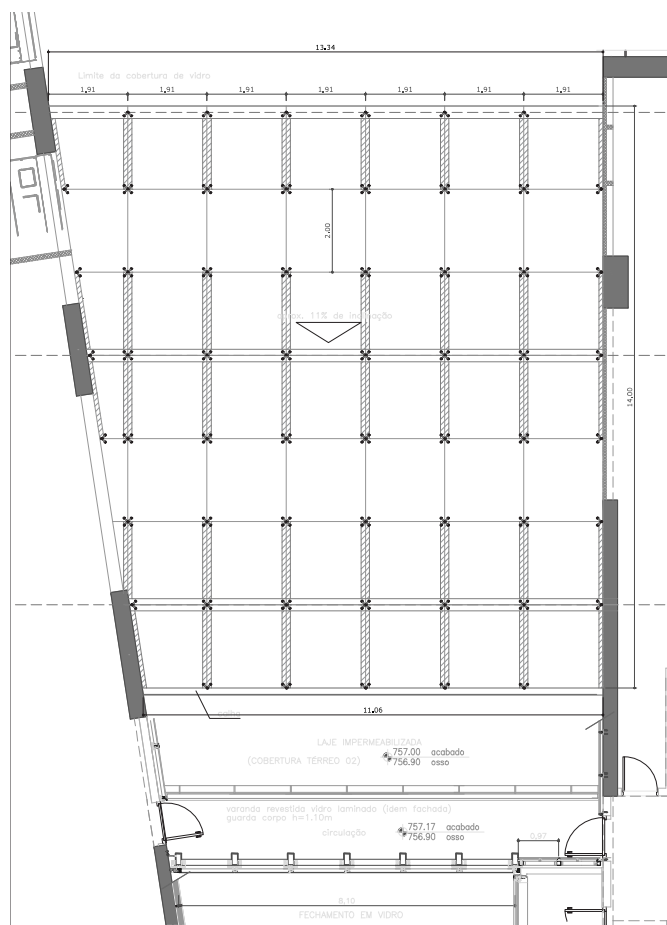
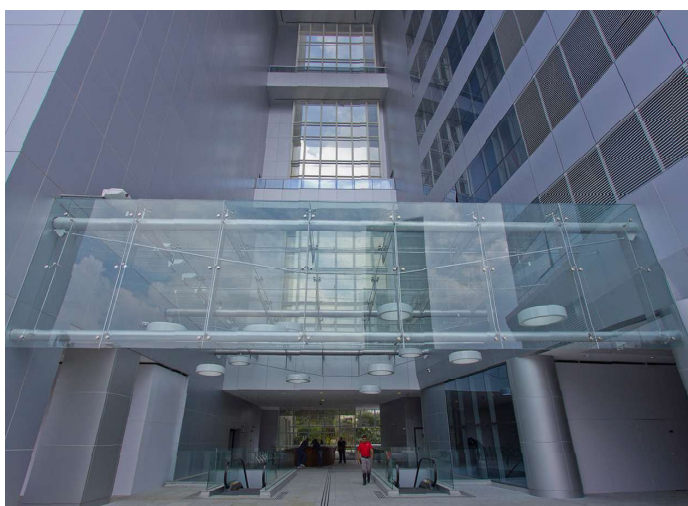
Madrid, Espanha



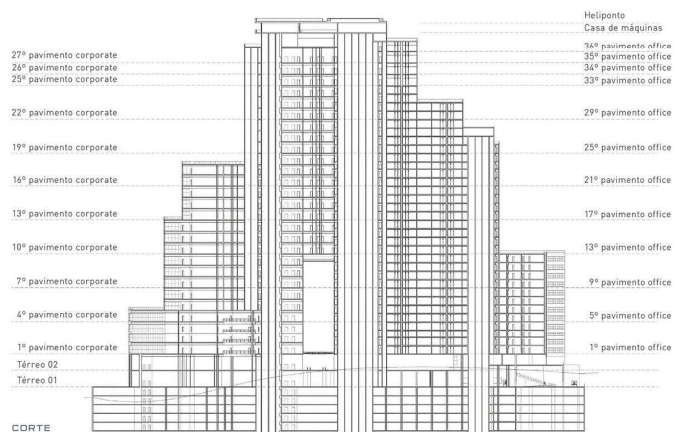
O projecto de reabilitação total de um dos edifícios industriais históricos Ramirez del Prado do princípio do século XX chamado Ensanche Sur-Manzanares em Madrid, Espanha tinha o objectivo de adaptar-se às necessidades dos espaços de trabalho actuais, mantendo e reforçando as qualidade intrínsecas das edificações históricas do edifício.

The project of total rehabilitation of one of the industrial buildings Ramirez del Prado of the beginning of the 20th century called Ensanche Sur-Manzanares in Madrid, Spain had the objective of adapting them to the needs of the present workspaces but maintaining and reinforcing the intrinsic quality of historic buildings.





PLANTA / PLANT



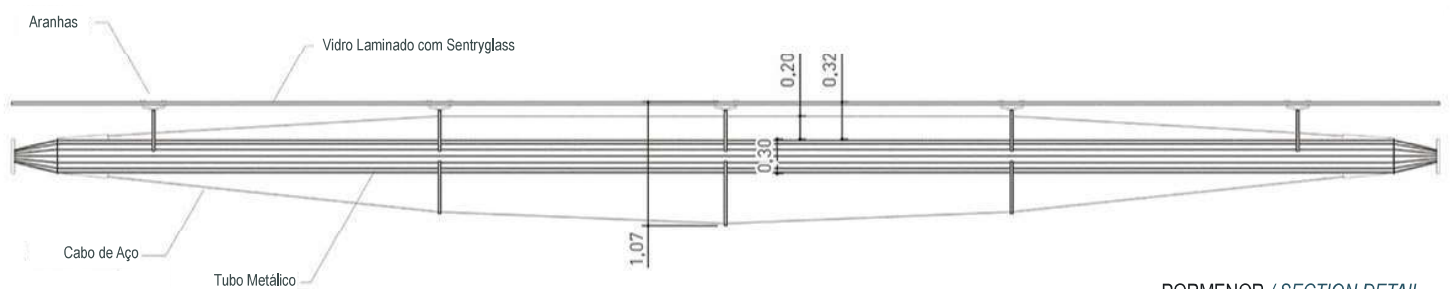
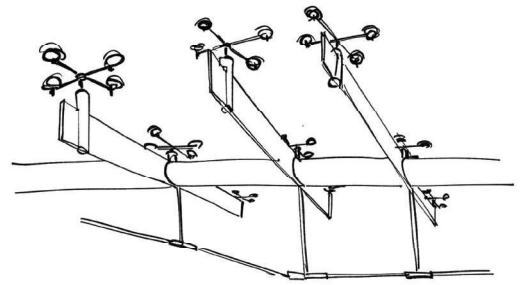
ALÇADO / SIDE ELEVATION

Para protecção do lobby existente entre a receção do complexo e a área de comunicação do shopping, foi projetado uma cobertura de vidro com máxima transparência e leveza visual. A Pentagonal foi responsável pelo Projecto e cálculo de engenharia dos painéis de vidros, estes eram suspensos com o apoio de estruturas rígidas e estruturas tensionadas e fixos com Sistema Agrafado Fitechnic®.

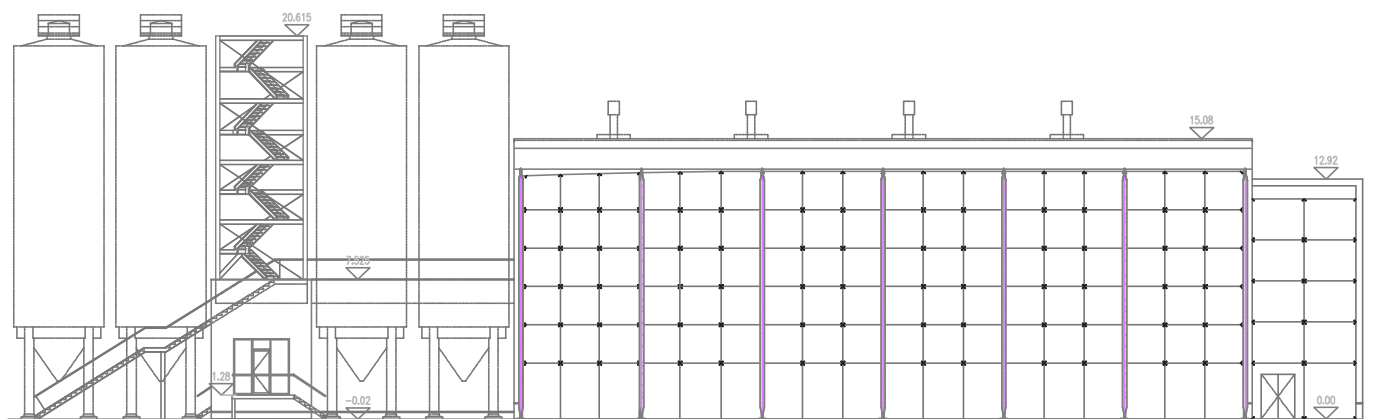
For protection of the lobby between the reception of the complex and the area of communication between the mall, a glass cover was designed with maximum transparency and visual lightness. Pentagonal was responsible for the design and engineering calculation of the glass panels, these were suspended with the support of rigid structures and tensioned and fixed with Fitechnic® Glass fixing System.

ALPHAVILLE

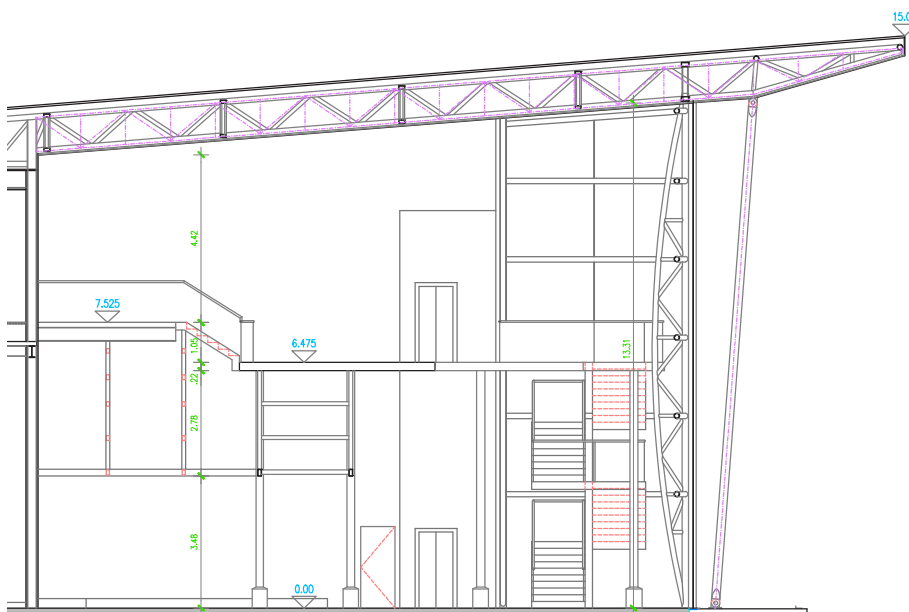
São Paulo, Brasil



PORMENOR / SECTION DETAIL



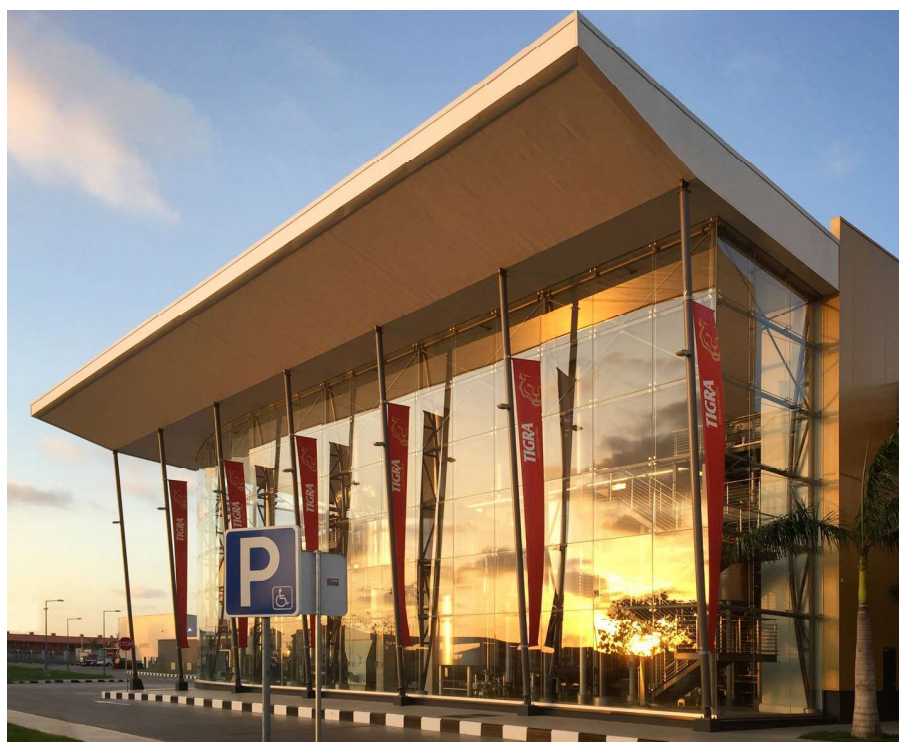
ALÇADO / SIDE ELEVATION



CORTE / VERTICAL SECTION

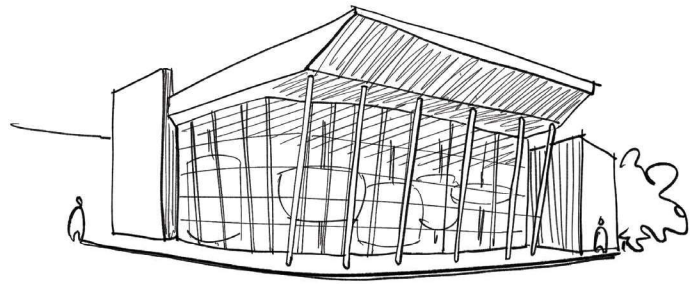
O projeto conta com uma fachada em vidro agrafado FITECHNIC, usando o modelo 1 que permite a regulação de distâncias através de um conector ajustável.

The project has a FITECHNIC Spider glass façade, using model 1 that allows the adjustment of distances through an adjustable connector.



REFRIANGO

Luanda, Angola



A fábrica de cerveja da Refriango é um dos projetos realizados pela FITECHNIC em Angola, da autoria da Tall & Taller arquitectos e inaugurado em 2016. Este projecto destaca-se pela sua incrível transparência e pela sua comunicação com o exterior, através da sua fachada, apresentando assim o processo de produção deste complexo industrial.

The Refriango brewery is one of the projects carried out by the FITECHNIC in Angola, authored by Tall & Taller architects and opened in 2016.

This project stands out for its incredible transparency and its communication with the outside, through its façade, thus presenting the process of production of this industrial complex.



Mirador de Abrante é um ícone de referência turística para a ilha Santa Cruz de Tenerife. A localização no topo da serra do Abrante, apresentou-se como um verdadeiro desafio para a execução da obra.

O sistema de fixação da fachada e balaustrada foi desenvolvido em conjunto com a nossa equipa de engenharia, resultando no desenvolvimento de peças especiais à medida do projecto.

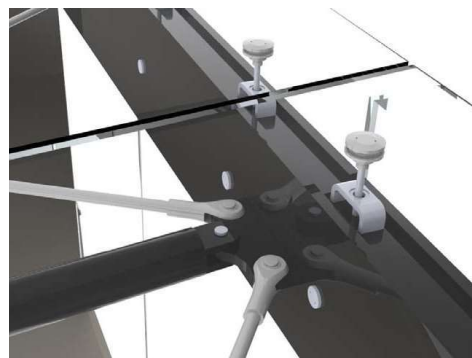
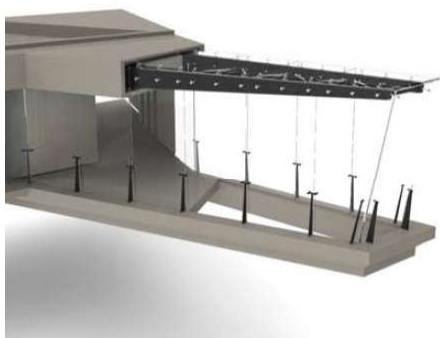
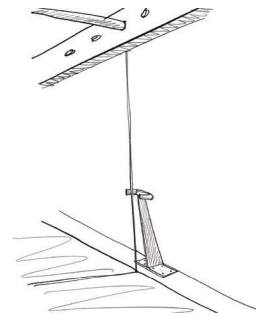
The Abrante gazebo is an icon for tourist reference for the island Santa Cruz de Tenerife. Its location at the top of the Sierra of Abrante, presented as a real challenge for the execution of the work.

The facade and balustrade fixation system was developed jointly with our engineering team, resulting in the development of special pieces to fit the project.



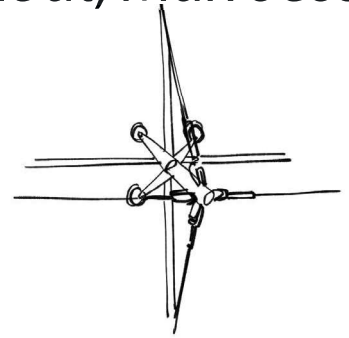
MIRADOR ABRANTE

La Gomera, Ilhas Canárias



MUSEU MOHAMED VI

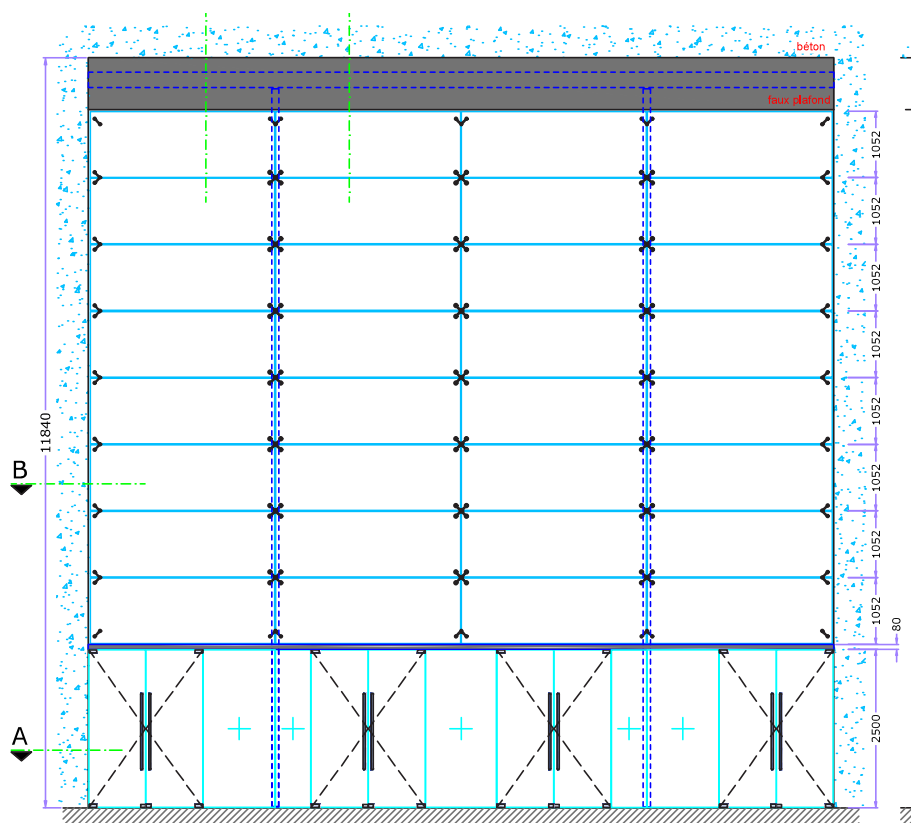
Rabat, Marrocos



Museu de Arte Moderna e Arte Contemporânea Mohammed VI é um edifício moderno, com muita luz natural e espaçosas salas de exposição remodeláveis. A fachada principal foi desenvolvida e estudada pela nossa equipa de engenharia, com estruturas tensionada e sistema agrafado Fitechnic® FIX-ROD.

Museum of Modern Art and Contemporary Art Mohammed VI is a modern building with plenty of natural light and spacious exhibition halls.

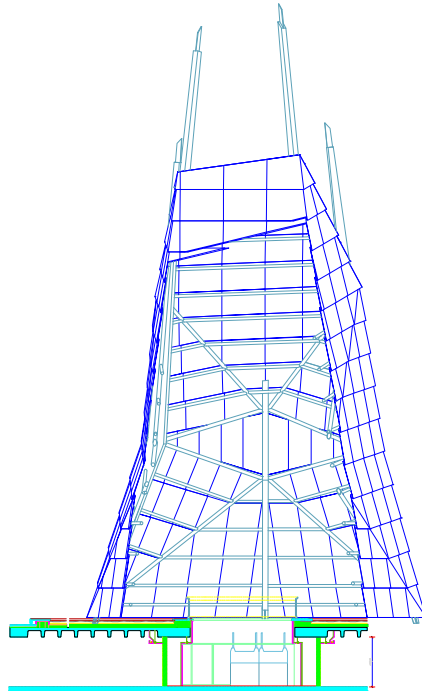
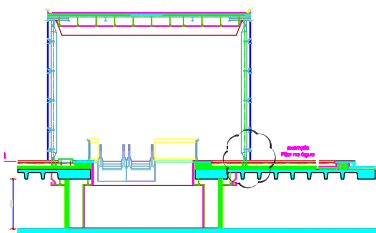
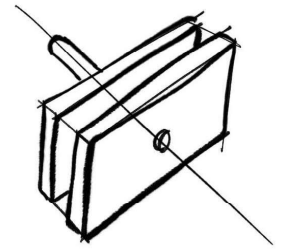
The main façade was developed and studied by our engineering team, with tensioned structures and Fitechnic® glass fixing system FIX-ROD.



ALÇADO / SIDE ELEVATION

ALEGRO SHOPPING

Setúbal, Portugal



O Centro Comercial Alegro em Setúbal realizado em 2014 foi um projecto de referência para a FITECHNIC: foram desenvolvidas varias soluções técnicas para diferentes aplicações com vidro, todas inseridas num projeto de elevada exigência técnica. O projeto é da autoria dos Sua Kay Arquitectos.

Destaca-se a execução da Torre de entrada, onde o foi utilizado o sistema agrafado FITECHNIC para o revestimento em vidro.

The Alegro Shopping Center in Setúbal was carried out in 2014 and is a reference project for FITECHNIC: several technical solutions for different applications with glass, all inserted in a project of high technical requirements. The project is authored by Sua Kay Architects.

The main Tower stands out with different glass coatings supported with FITECHNIC system.



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