



ergodomus

the art of timber engineering

Portfolio





Everyone knows me as Franco Piva the **'Italian Timber Engineer'**, as I founded Ergodomus Timber Engineering in 2007, and have been blessed with work from across the world. This has given me the opportunity to harness my training and experience as a Structural Engineer and focus on my passion, which is the world's best known renewable building material... **wood**.

We offer **turnkey services**: design, calculations, modeling, digital technology, fabrication tickets, manufacturing, assembly, construction, and detailing. Sustainable excellence on over 300 buildings. We support design professionals to help

them realise their dreams and details. We can guarantee entrepreneurial developers optimal structures that cost less and are easier to construct on site. We are the critical link between the design team and the manufacturer, as we collaborate with all stakeholders in the project team throughout every stage of development, from design through production to the erection on the construction site.

Innovative thinking allows us to overcome limits and unlock opportunities through simulation models, finite element analysis, and performance mock-ups. Optimised engineering simply means that we can **'do more with less'** and thus save your Client

money, and provide minimalist structures by creating novel solutions from first principles.

Our international experience on **over 300 buildings** has taught us that a holistic design approach is the key to unlocking efficiencies to minimize cost, and effectiveness by practically checking for ease-of-buildability to maximise productivity. This collaborative design approach has opened doors for us to grow in Northern Europe, Canada, Asia, and South Africa.

**Want to know more?**

Visit our website and check out our company profile, project references, and sign up to our newsletter.



Franco Piva





## Our projects all around the world.

The collaborative design approach and our open-mind creativity have opened doors for us to grow in **Northern Europe, Canada, Asia, and South Africa.**

Discover our projects over the world.

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- Sports Hall "Salvador Allende"
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- Kindergarten in Gravellona Toce
- Primiero's Secondary School
- Obsidian Rain pavilion
- Ital Gas HQ
- G124 pavilion
- 6 CLT Storey in Parma



## ABOUT US

# We are wood addicted

Timber engineering is, for all of us, a creative discipline that is made by our education, knowledge, skills and experience.



### The Italian Timber Engineer

Everyone knows me as Franco Piva the 'Italian Timber Engineer', as I founded Ergodomus Timber Engineering in 2007, and have been blessed with work from across the world.

This has given me the opportunity to harness my training and experience as a Structural Engineer and focus on my passion, which is the world's best known renewable building material... wood.

Since then, we have engineered hundreds of timber buildings of varying types and scale in different parts of the world from our base near Trento in the north of Italy.

This experience has placed us amongst the leading companies in the global market for timber engineering skills and the quality of our services.

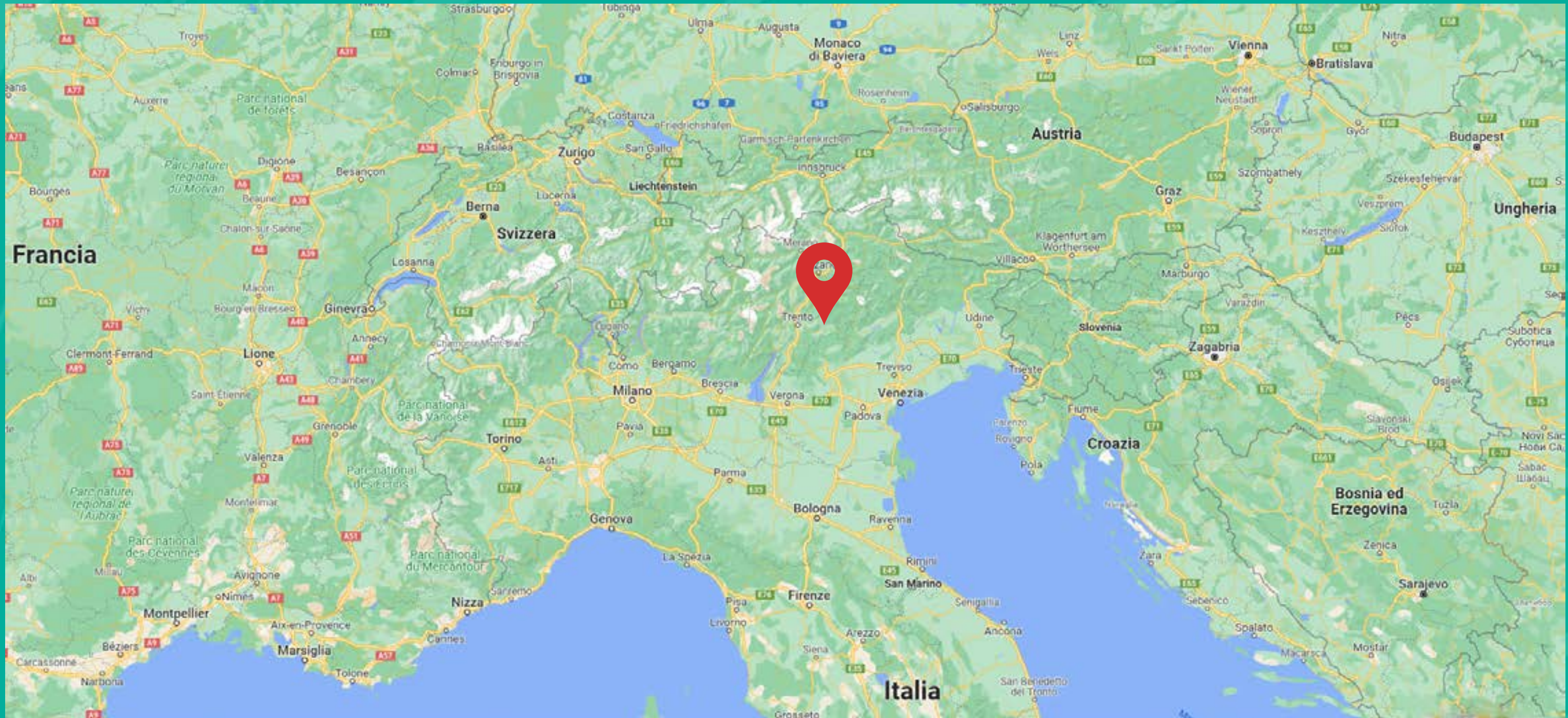


We have worked in over 11 countries, engineering more than 300 mass timber buildings for a total of about 15.000 tons of CO2 stored each year.



# ABOUT US

## Where are we?





## WHAT WE DO

# The Art of Timber Engineering

Ergodomus is where holistic approach to design meets unique turnkey technical and managing services, far beyond static calculation.



### Why Ergodomus?

Our international experience on over 300 buildings has taught us that a holistic design approach is the key to unlocking efficiencies to minimize cost, and effectiveness by practically checking for ease-of-buildability to maximise productivity.

#### Efficient & innovative projects: our must

We can guarantee entrepreneurial developers optimal structures that cost less and are easier to construct on site.

We are the critical link between the design team, entrepreneurs and the manufacturer, as we collaborate with all stakeholders in the project team throughout every stage of development, from design through production to the erection on the construction site.

#### One approach, many services

Moving from a holistic approach, the Ergodomus working method employs a 'one-stop, comprehensive service'. We not only design effective, elegant timber structures, we also provide value engineering analysis, preliminary & feasibility study and all the necessary static calculations, building physics, computational design and DfMA production drawings.



### Wood & hybrid systems

Although Ergodomus is familiar with all forms of engineered wood, CLT, glulam, LVL, LSL, Dowel-Lam or Nail-Lam, it is not always possible to develop engineered proposals from wood-based systems alone.

Many building designs necessitate the additional use of other structural materials, principally reinforced concrete and steel. The Ergodomus team has considerable experience of the engineering challenges involved in delivering hybrid structures formed from timber/concrete/steel.





# WHO WE WORK WITH

## Designers, Builders, Developers, Manufacturers: everyone has a good reason to prefer Ergodomus!

### Designers

We know how important your ideas are and we want you to feel comfortable working with us: we will help you to build what you're dreaming. We like the challenges and we speak the same language. You'll have just one company to talk to and we will take care of the feasibility study, structural analysis, value engineering and production drawings in a BIM/DfMA workflow. We can even work together in developing algorithms for complex geometries using the computational design and we're sure that with Ergodomus you will spread your creativity!



### Developers and real estate investors

Why are you not using timber yet? It's not Ergodomus, it's not the timber industry; the market and the environment where we all live are asking the building industry to go for more sustainable materials. It's not an option anymore.

It won't be an easy transition, we know it. But we know that we can help you by offering you highly innovative solutions for large-scale buildings: whether they are commercial or residential buildings, single-storey or multi-storey. It doesn't matter how big they are, we can help you to find the most cost-effective solution: what about a hybrid solution combining LVL, CLT, GLT and perhaps steel and concrete? Optimization also means to get the most out of different structural materials to make the building cheaper. We work in a BIM/DfMA workflow and we can easily become part of your own workflow, no extra worries for you.

### Builders and General Contractors

Wood is a noble and versatile material and knowing how to use could bring you new opportunities!

We've been engineering timber buildings all over the world for more than 13 years and Value Engineering is part of our workflow. We know how to optimize the structures and how to find the most cost-effective solution. Whether you win a public/private tender or your client asks you to use timber as much as possible for the building in order to reduce its carbon footprint, we can help you.



### CLT-GLT-LVL Manufacturers

We work with many producers and therefore "we speak your own language": DfMA. Whether you're a CLT, GLT, LVL, or other timber-based structural material producers, we can work together. We can be easily part of your workflow and be the "missing link" between you and designers, developers, builders.

We got used to dealing with different building codes: Europe, Canada, US, South Africa, Singapore, etc... Complex geometries? No problem, our computational design department is at your service to find new workflow compatible with your materials and CNC machines. Perhaps we're using the same software (HSBcad) which makes the process easier, but perhaps not (CadWork, Dietrich's, Sema, etc...). Don't worry we can customize our output files: .ifc, element by element .dxf-.pdf part list, .btl and .bvn files. Yes: btl and bvn are included, we do it daily!



# SERVICES



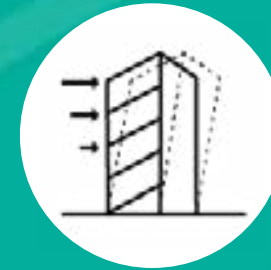
## Preliminary/Feasibility Study

In timber structures the feasibility study is a complex job, but at the same time indispensable and it requires an in-depth and wide knowledge of the material. The most common questions we receive are, how much does it cost? Is it feasible in timber?



## Value Engineering

“Value Engineering” or “Optimization” service is dedicated to builders, general contractors and manufacturers who, after having acquired an order, must look for solutions with the best cost, benefit and buildability ratio. Importantly, early engagement with us can provide benefits in determining what value engineering options are available.



## Structural Analysis

The Structural Analysis allows us to calculate the forces acting on a structure and to size the load-bearing elements to ensure the safety of occupants and the general public. This is the reason it is an extremely important engineering discipline.



## Computational Design

Computational design remains the future of design. By adopting these new computational methodologies taken from programming, it is possible to create algorithms that analyse and process data by generating 3D models. Ergodomus uses these new digital tools to: easily manage the design and manufacture of complex shapes, automate repetitive tasks, and explore a series of design solutions in a short space of time.



## DfMA

DfMA stands for “Design for Manufacture and Assembly” which means the creation of detailed and perfect drawings that can be used for programming CNC machines without errors/problems.



## Building Physics

To engineer timber buildings, it is not enough to know structural analysis. It is necessary to have good knowledge of building physics to understand and foresee the behavior of the material in situ. Did you know that wood expands due to moisture changes but not temperature?



## Research & Development

Constant research allows us to tease out and solve every problem, even the most complex. We could summarize our motto in two words “never stop!”: We are not happy with the “off-the-shelf solution”, as we strive to optimize and make the impossible possible, but then we need to go beyond the regulations and the “standards” knowledge.





Heimdalsporten is a modular residential project in Trondheim (NOR).

**Project info:**

Client: Heimdals Porten  
Builder: UniHouse

**Technical data:**

Project's type: Modular Building  
Residential  
Material: Platform Frame  
Workflow type: BIM

Area: building A (8-Storey) = 4845 mq  
building C (7-Storey) = 4213 mq  
**Total = 9058 mq**

**Ergodomus' scope of work:**



Value Engineering



Structural Analysis



20016



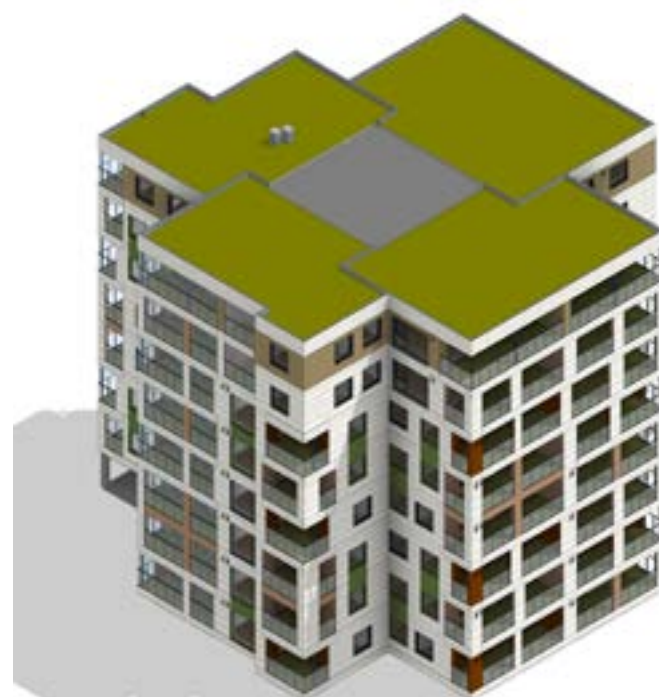
South Façade



West Façade



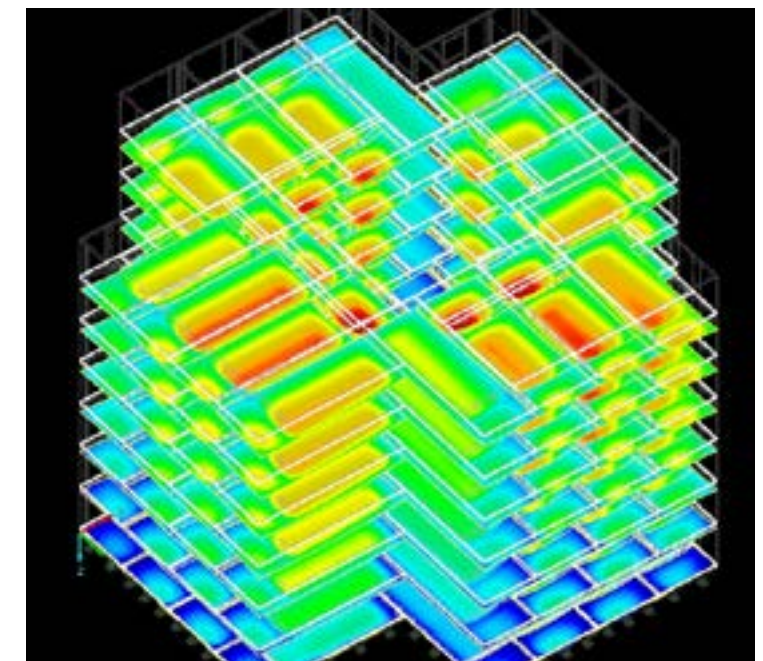
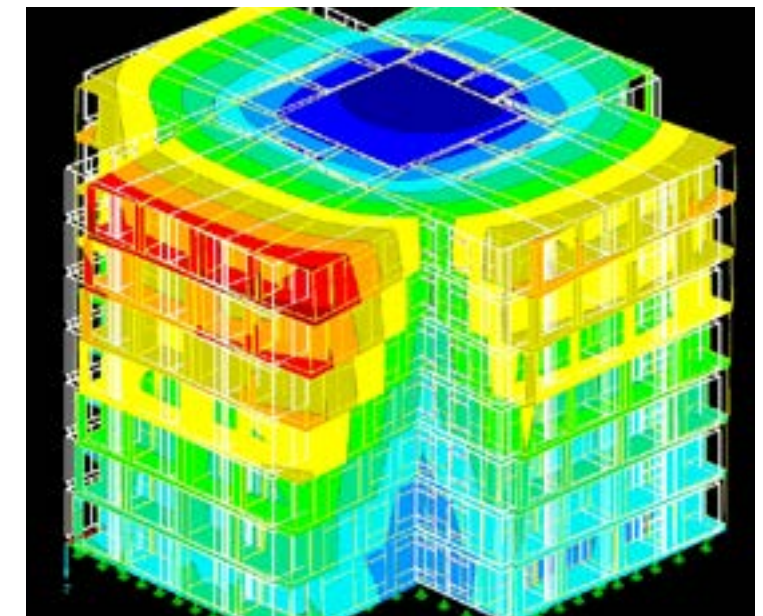
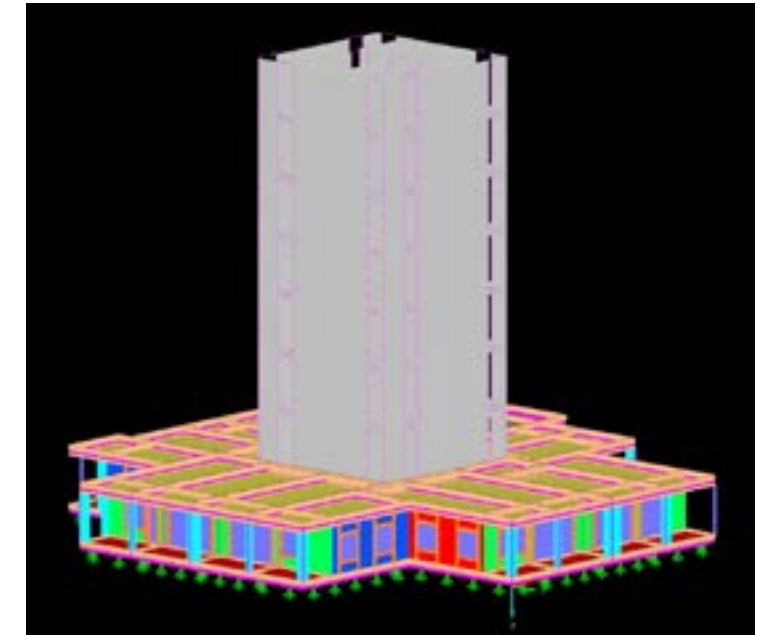
Building A - Typical Floorplans



Building A



Building C







Heimdalsporten is a modular residential project in Trondheim (NOR).

**Project info:**

Client: Heimdals Porten  
Builder: UniHouse

**Technical data:**

Project's type: Modular Building  
Residential  
Material: Platform Frame  
Workflow type: BIM

Area: building B (8-Storey) = 4515 mq  
building D (7-Storey) = 3211 mq  
**Total = 7726 mq**

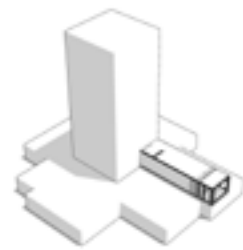
**Ergodomus' scope of work:**



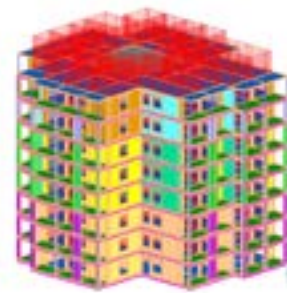
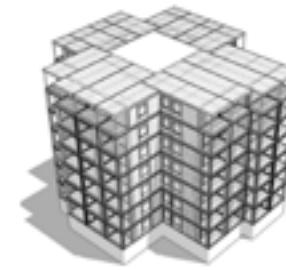
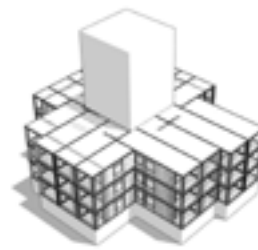
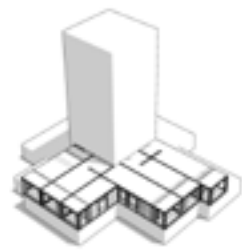
Value Engineering



Structural Analysis



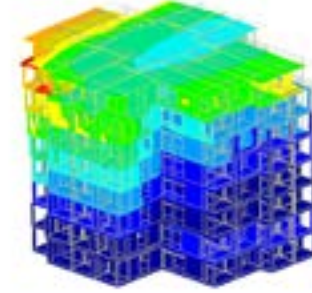
Assembly sequence



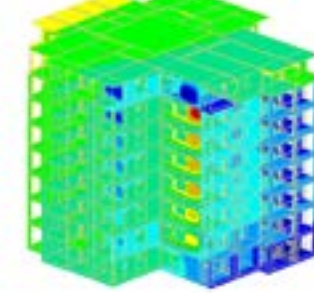
Vertical Loads



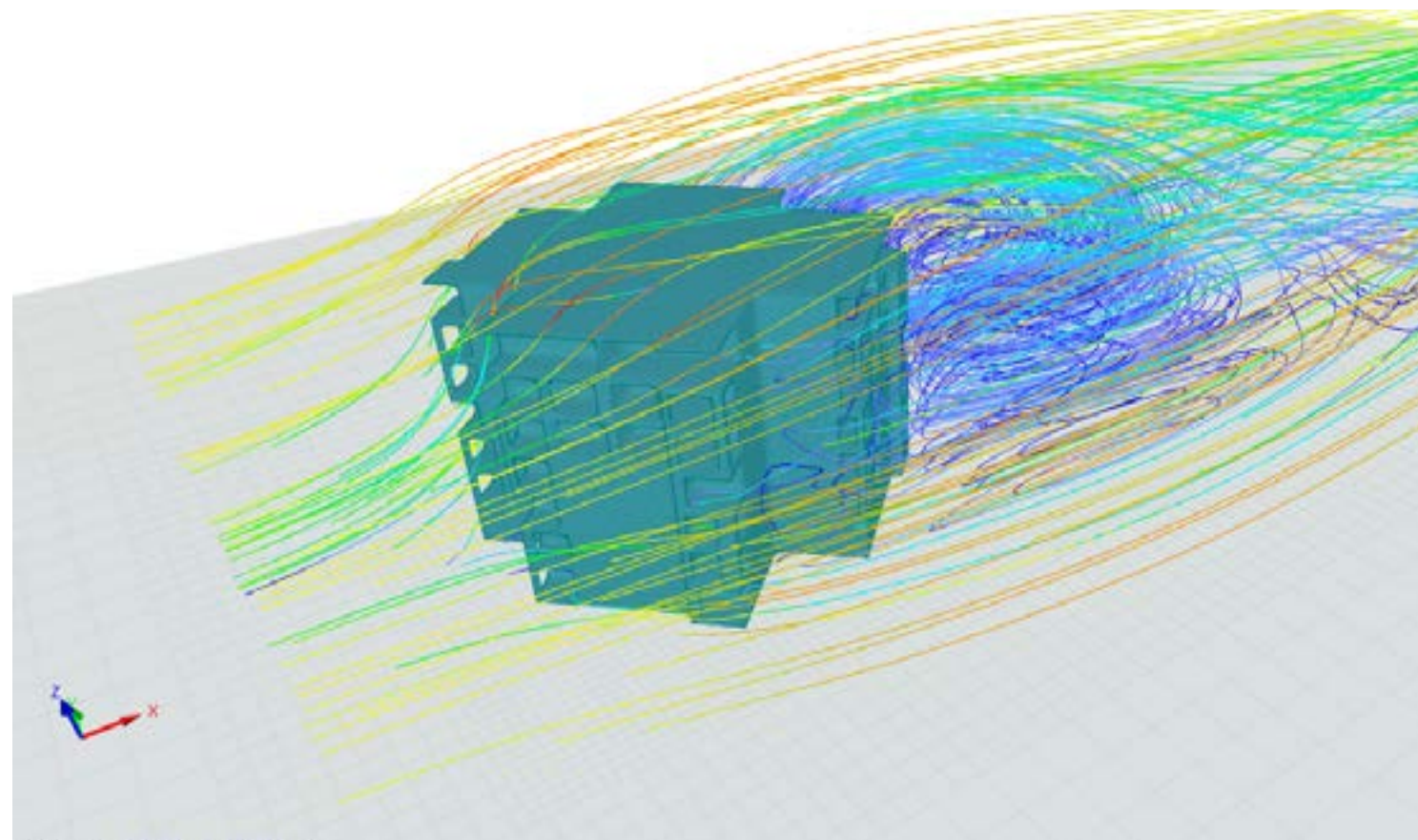
Vertical Deformation



First Mode of Vibration



Wind Deformation



CFD Analysis







Vestbyen is a modular residential project in Oslo (NOR).

## Project info:

Builder: UniHouse

## Technical data:

Project's type: Modular Building  
Residential

Material: CLT, Platform Frame

Workflow type: BIM

Area: building A (6-Storey) = 3465 mq  
building B (6-Storey) = 3083 mq  
building C (6-Storey) = 3083 mq  
building D (6-Storey) = 3465 mq

**Total = 13096 mq**

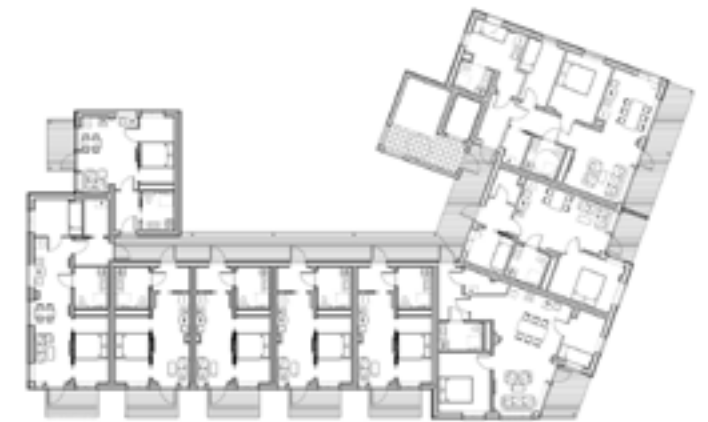
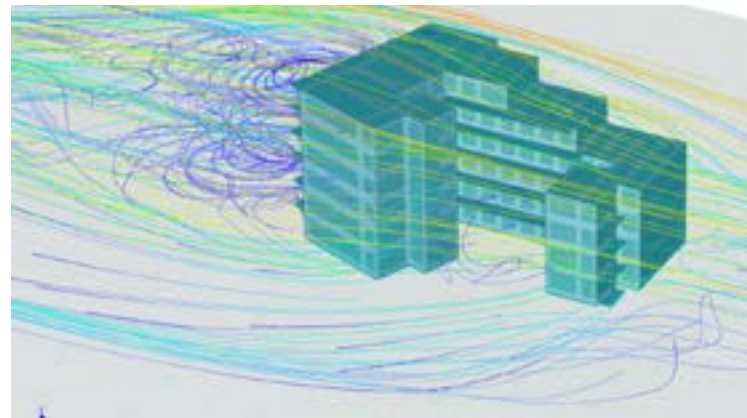
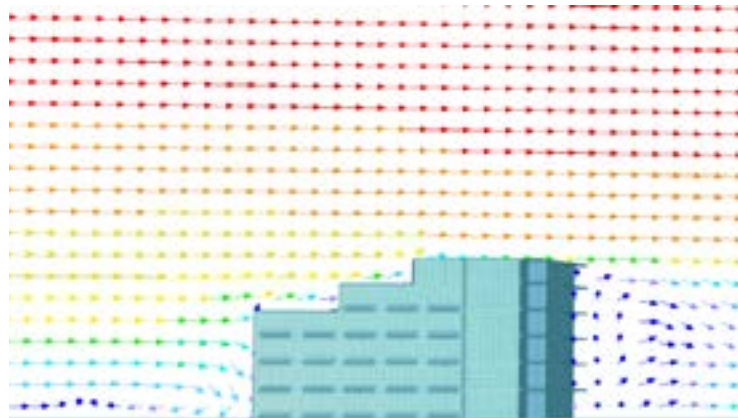
## Ergodomus' scope of work:



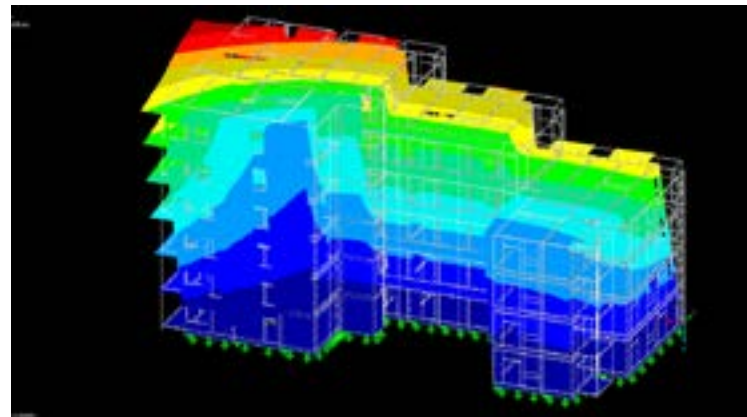
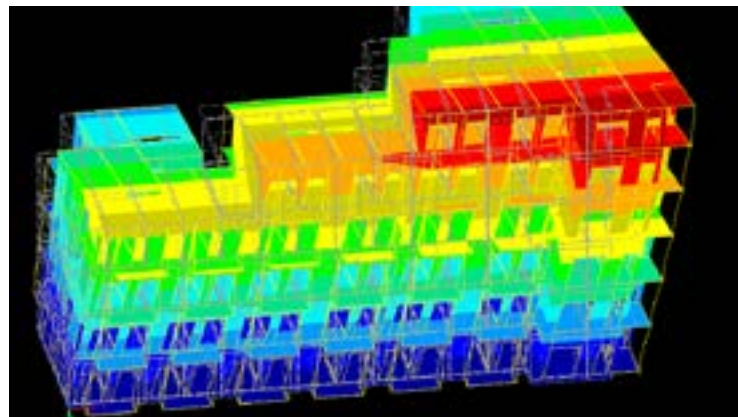
Value Engineering



Structural Analysis



Typical Floorplans







A hybrid construction, the main structure is made of concrete, the building's auditorium from steel and its undulating facade from CLT.

**Project info:**

Client: Durst

Architect: Monovolume - architecture

Facade: Frener & Reifer

**Technical data:**

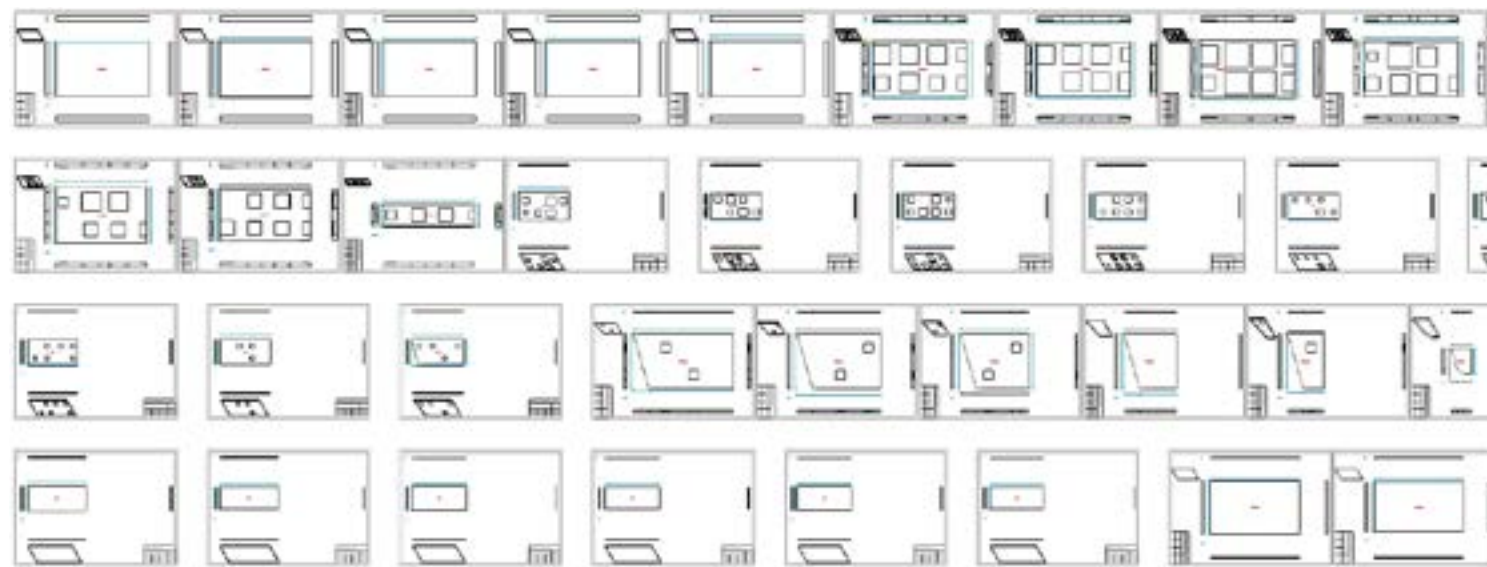
Project's type: Facade, Office

Material: CLT, Hybrid

**Ergodomus' scope of work:**



DfMA







The RUIMHUIS is a flexible apartment model, whereby a selection of unit types are interchangeable within the modular CLT frame.

**Project info:**

Architect: De Hoven

**Technical data:**

Project's type: Residential

Material: CLT

**Ergodomus' scope of work:**



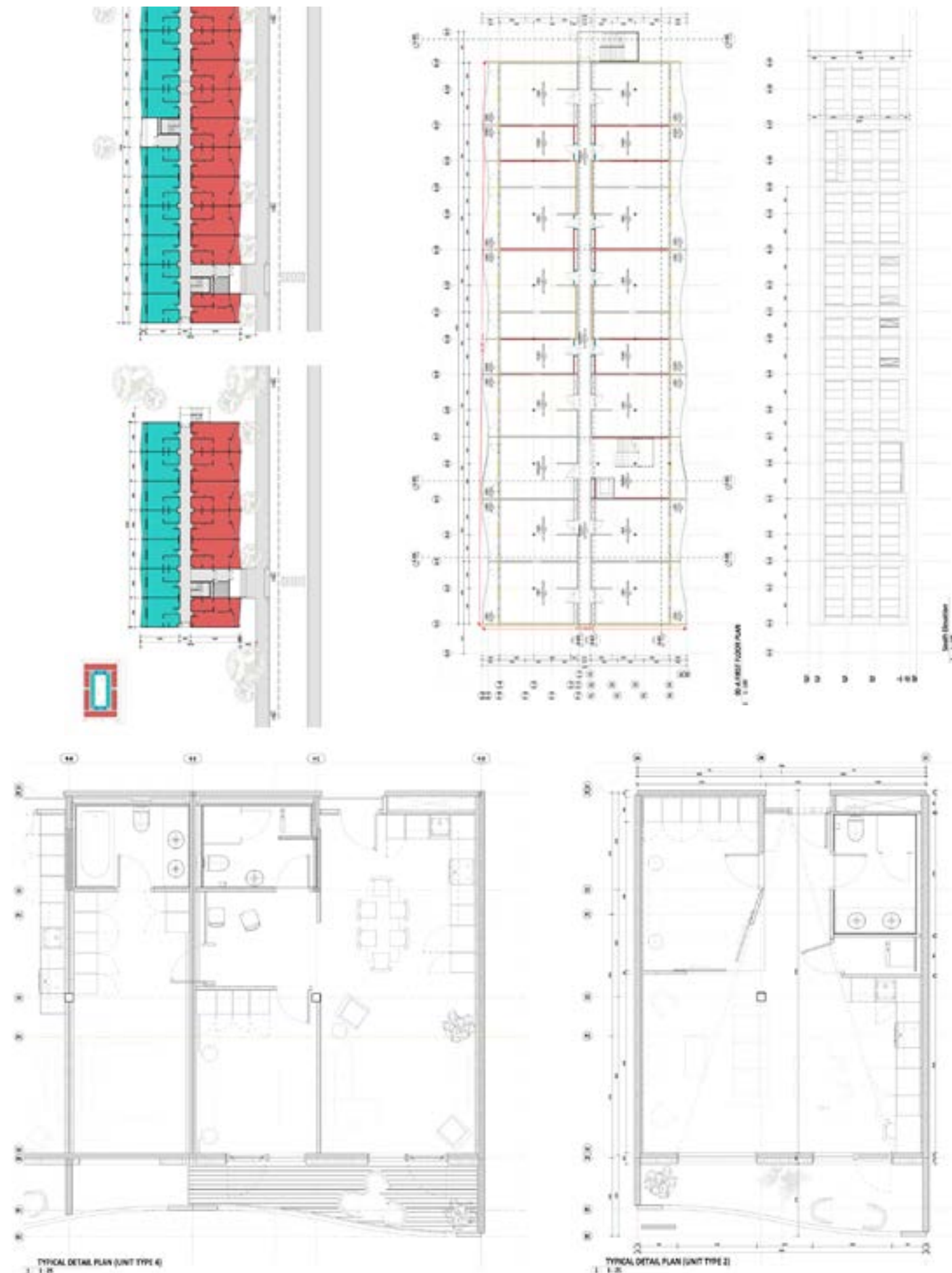
Feasibility Study



Structural Analysis



20009







The goal of this project is to promote the advantages of using CLT in buildings through a multifunctional and dynamic space.

**Project info:**

Client: InnovHousing  
Architect: Alessandro Zuanni

**Technical data:**

Project's type: Office, School  
Material: CLT

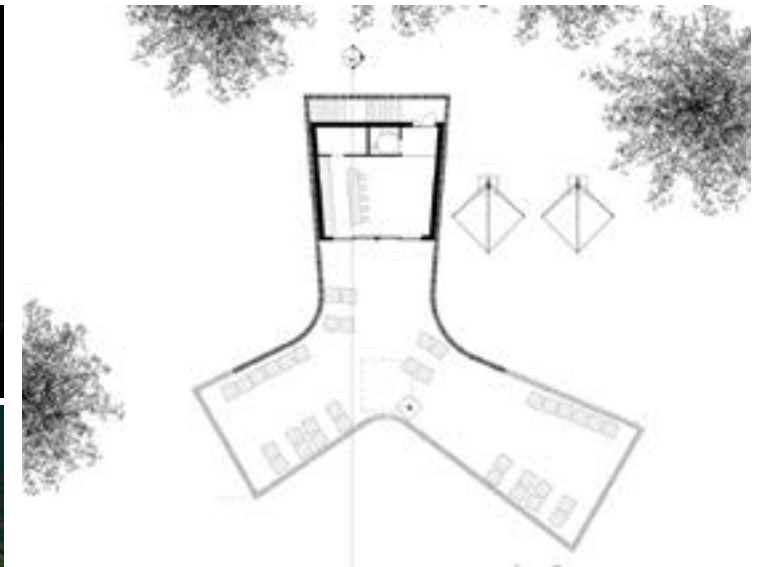
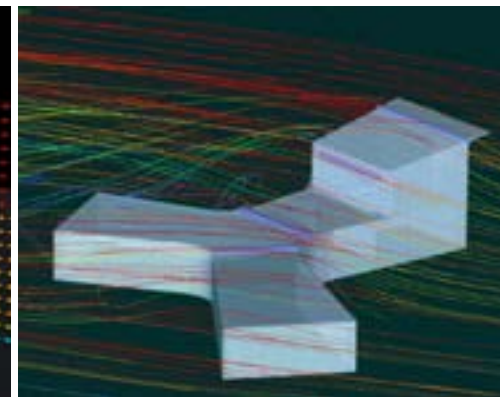
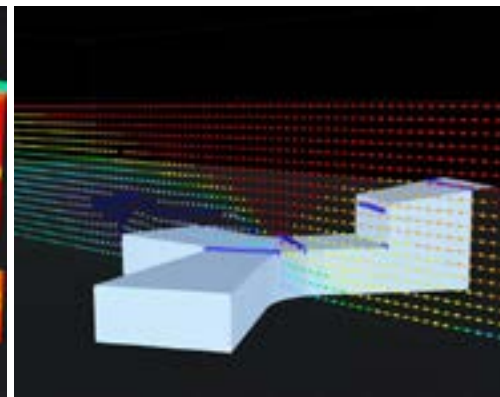
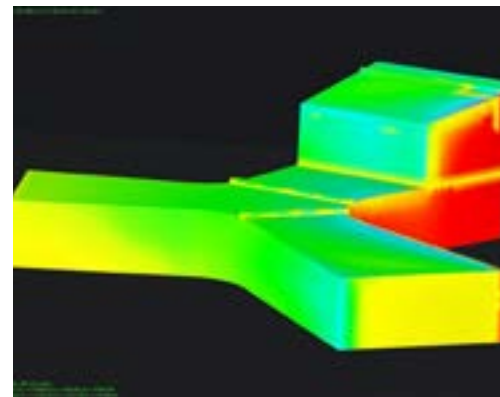
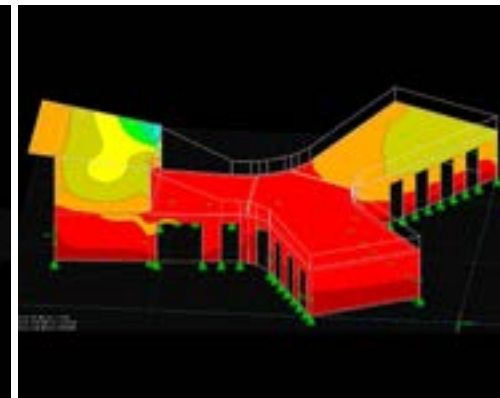
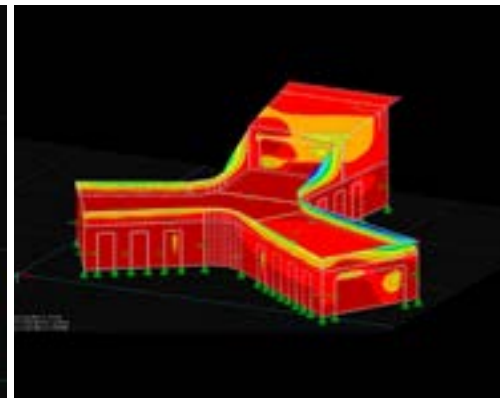
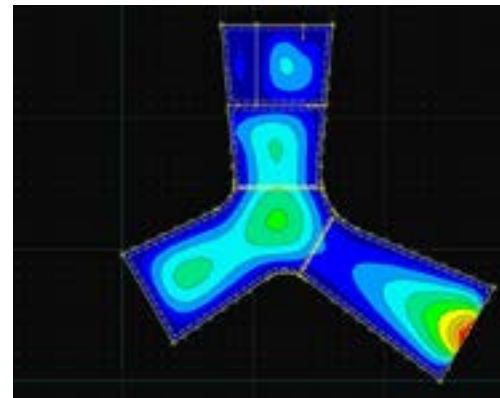
**Ergodomus' scope of work:**



Structural Analysis



DfMA







The new building will be the city centre's first large-scale Mass Engineered Timber (MET) and is also its first On-site Net Zero Energy Building.

**Project info:**

Client: Lian Ho Lee

Architect: MKPL Architects Pte Ltd

**Technical data:**

Project's type: School

Material: CLT

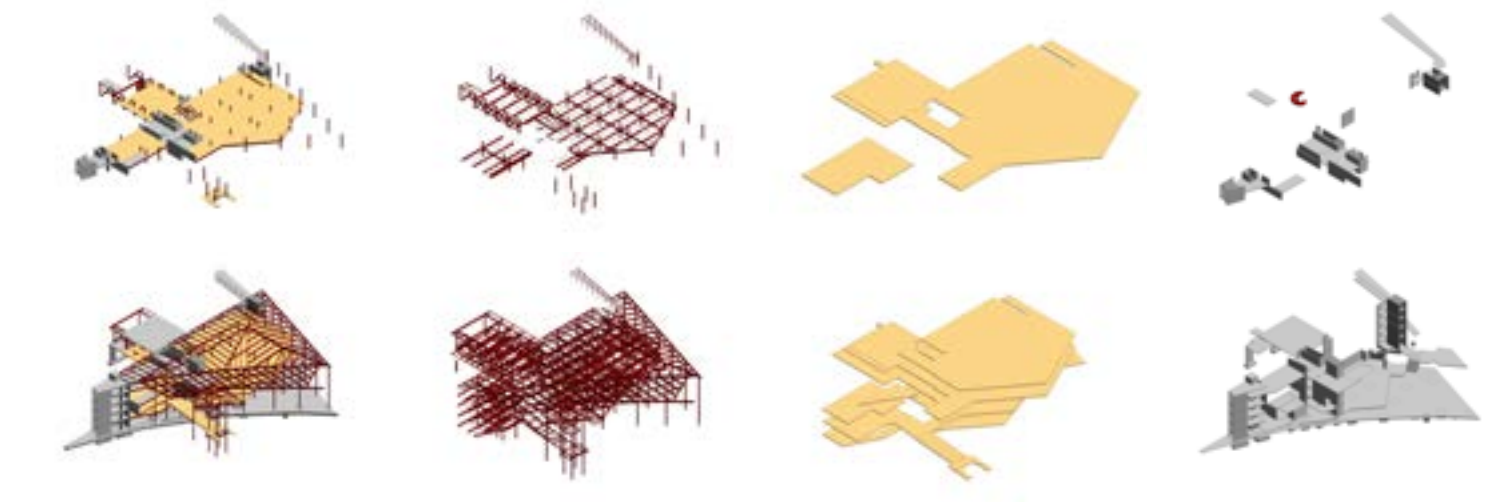
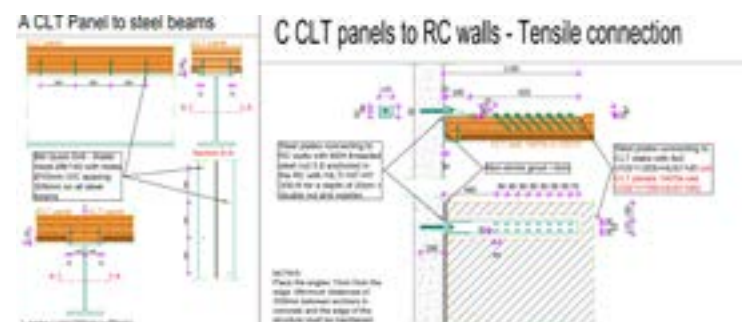
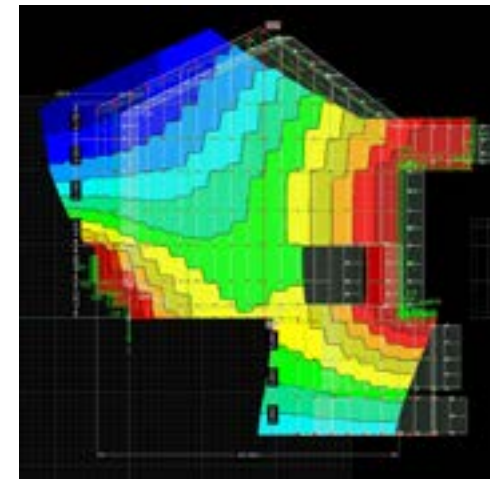
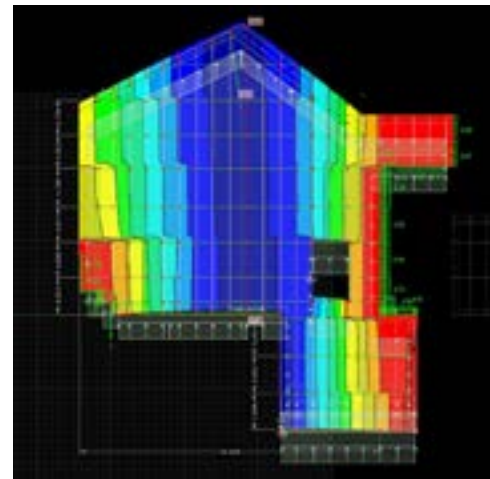
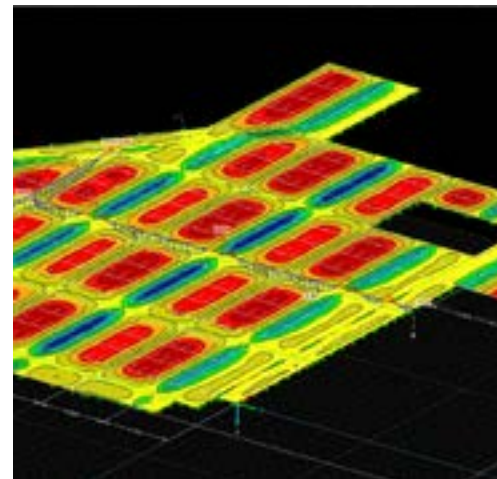
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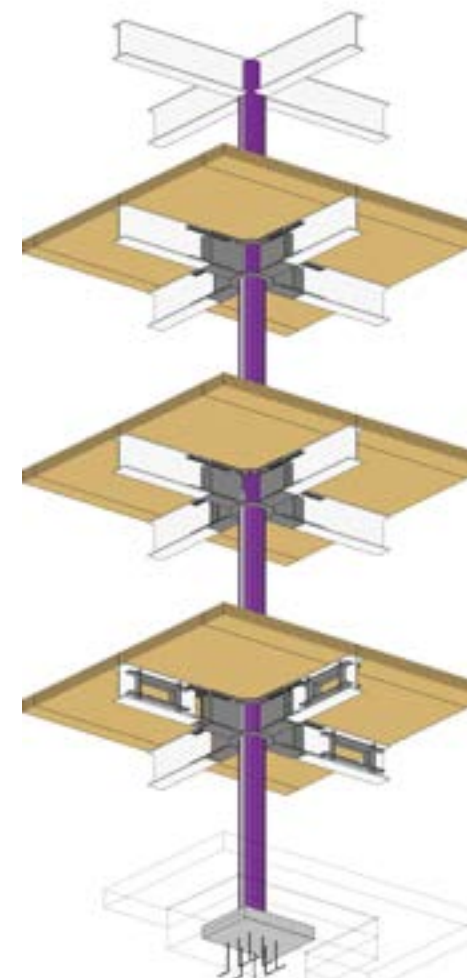
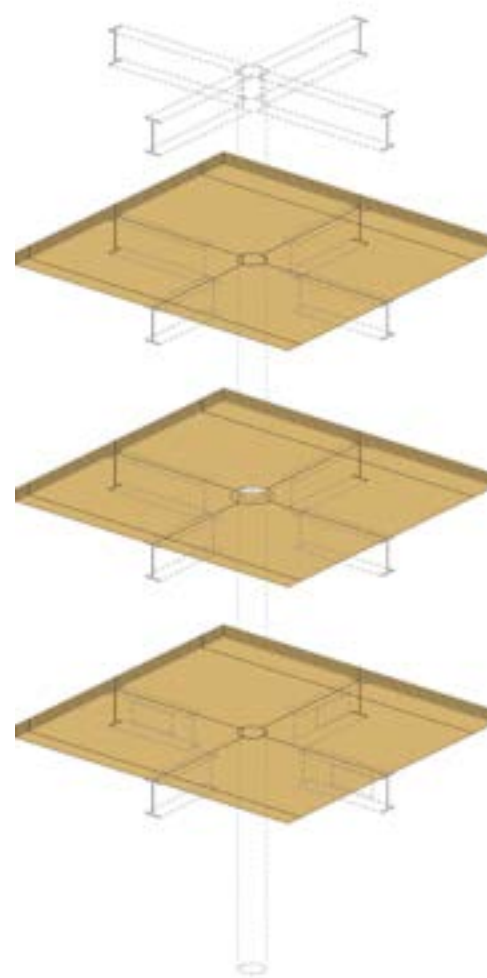
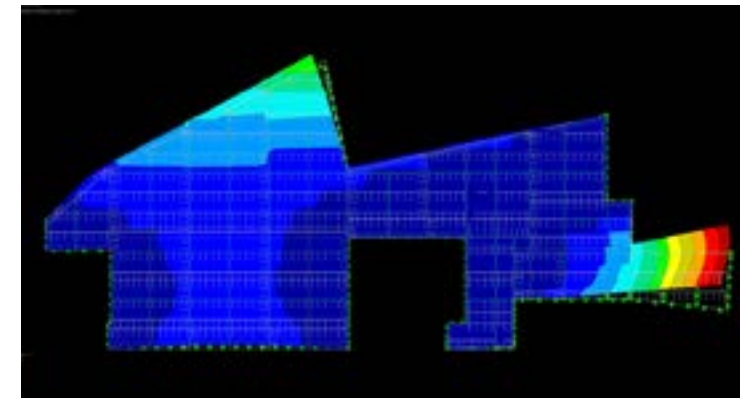
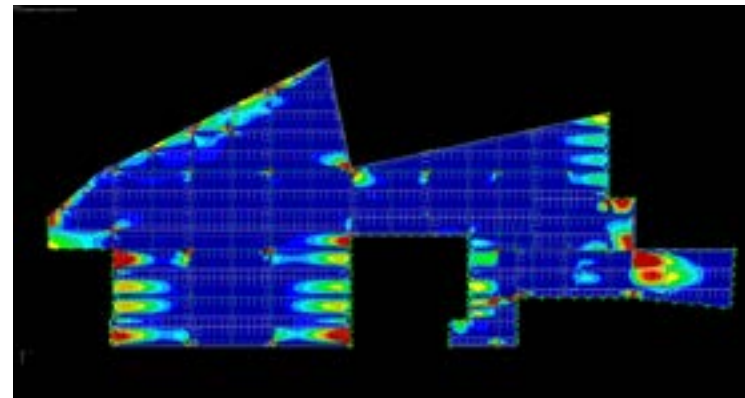
**Ergodomus' scope of work:**



Structural Analysis



DfMA







The municipality of Castelvetro (close to Modena, Italy) was in the need of having more school rooms for the students. So they decided to extend the existing school building and the natural choice was to go for timber.

## Project info:

Client: Castelvetro Municipality

Architect: Fabbriart

## Technical data:

Project's type: School

Material: CLT, GLT

## Ergodomus' scope of work:



Value Engineering



Structural Analysis

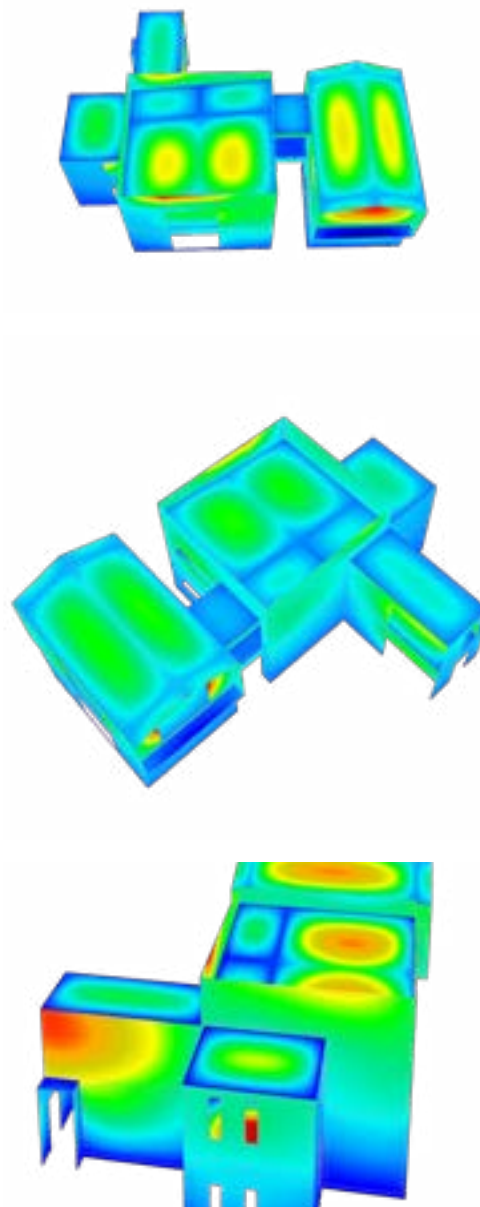


DfMA

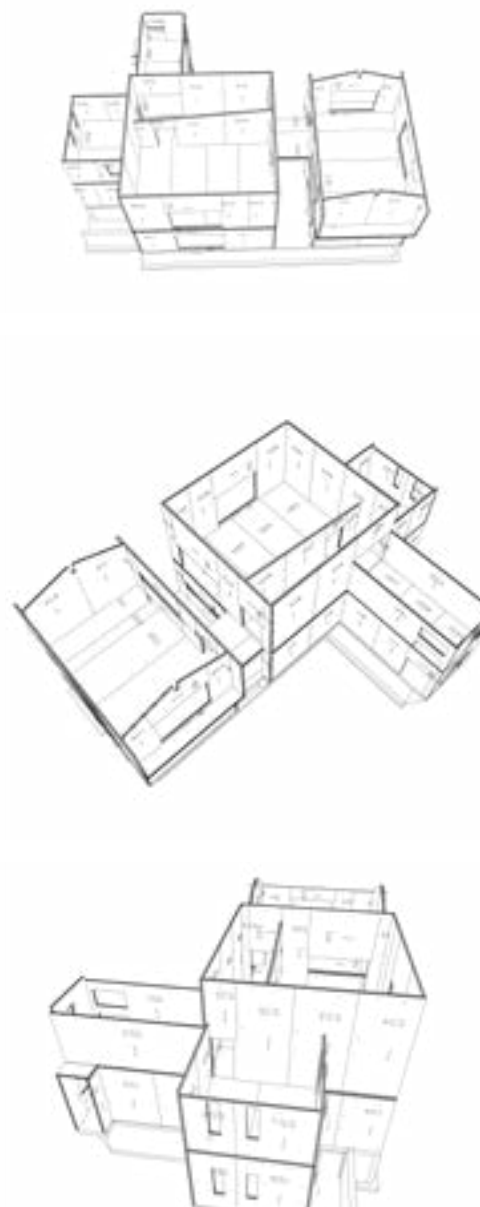


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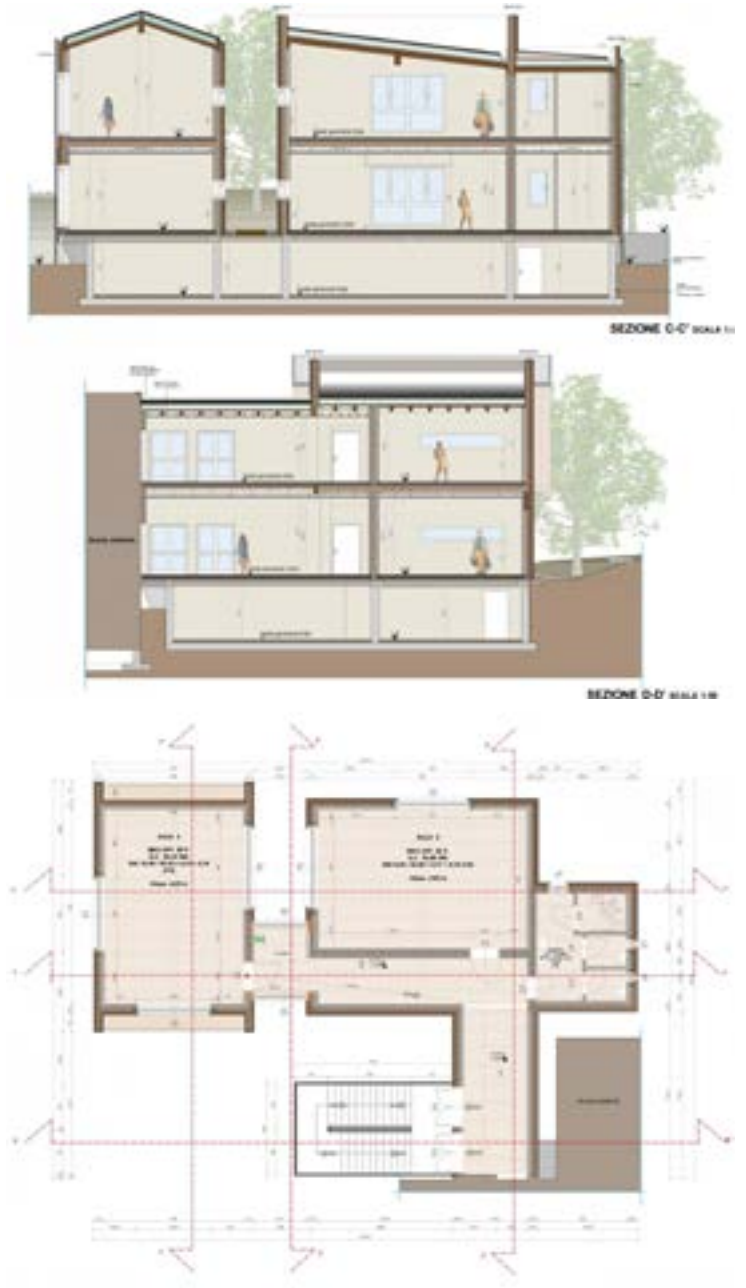
FEM Analysis



DfMA



On-Site







For this project, the high resistance and stability of CLT panels made it possible to build large, multistorey wooden buildings, even in a region with high seismic activity.

**Project info:**

Client: Private

Architect: Fabbricart

**Technical data:**

Project's type: Residential

Material: CLT

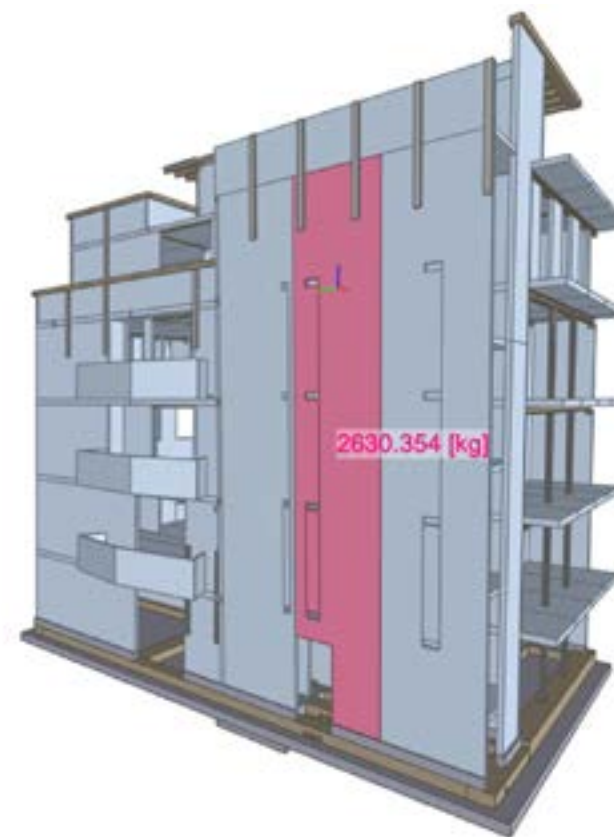
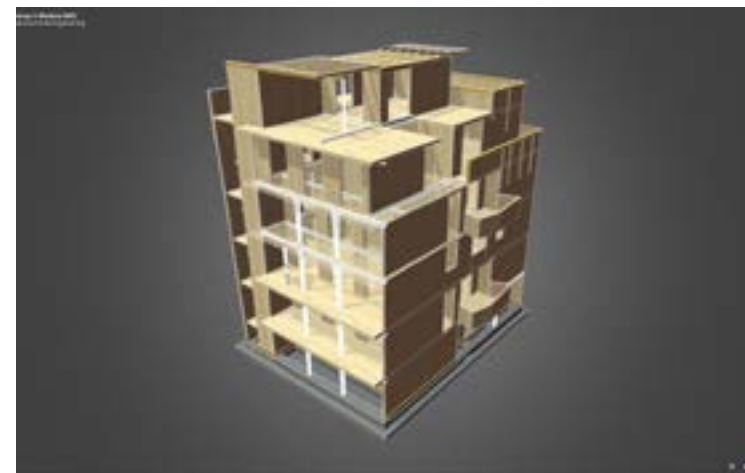
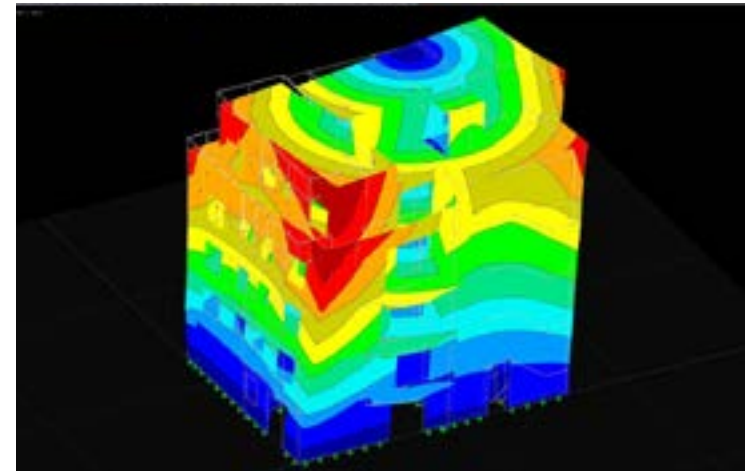
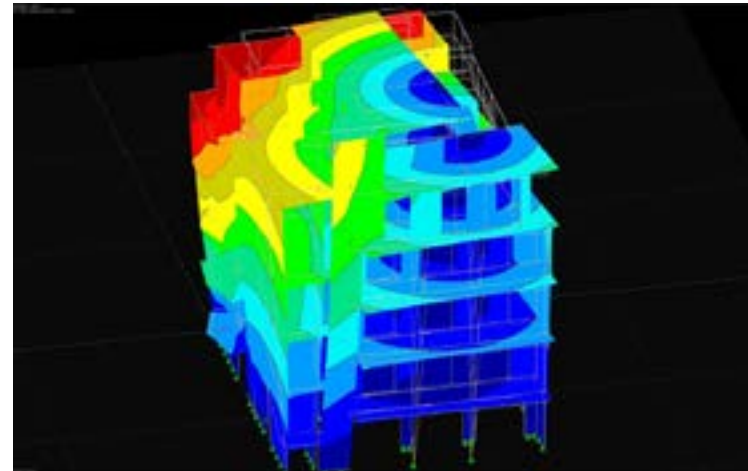
**Ergodomus' scope of work:**



Structural Analysis



DfMA







TRCA's new headquarters will contribute to the uptake of improved methods and technologies that demonstrate zero carbon features and green infrastructure restoration.

**Project info:**

Client: Toronto and Region Conservation Authority

Architect: ZAS Architects

Bucholz McEvoy Architects

Builder: Eastern Construction (ON)

Manufacturer: Element 5

**Technical data:**

Project's type: Office

Material: CLT, GLT

**Ergodomus' scope of work:**

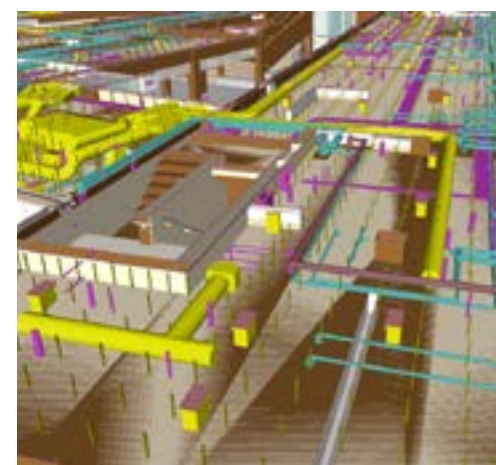
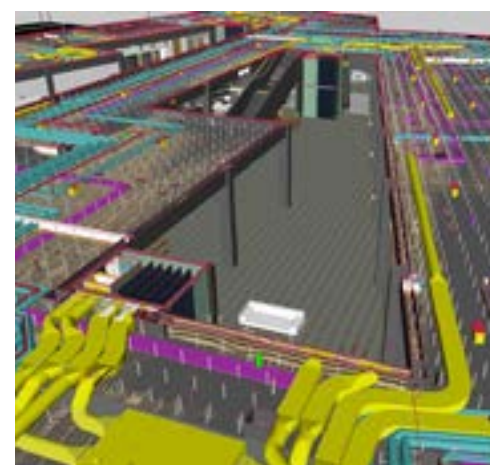
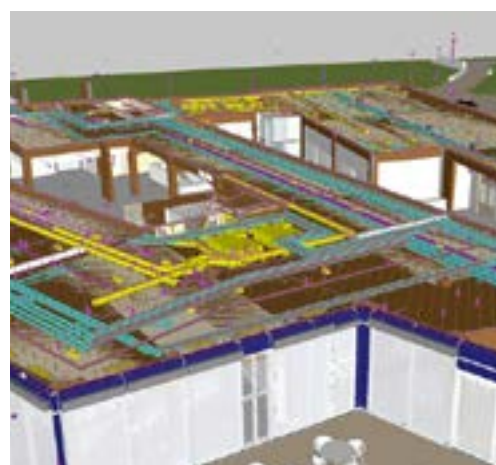
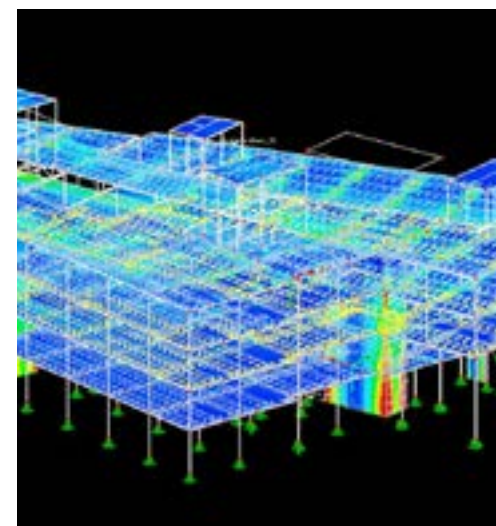
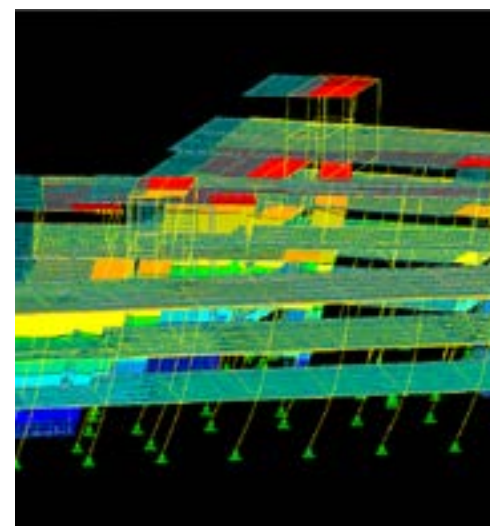
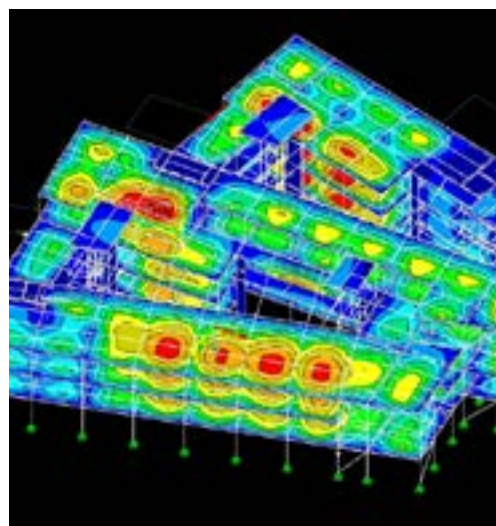
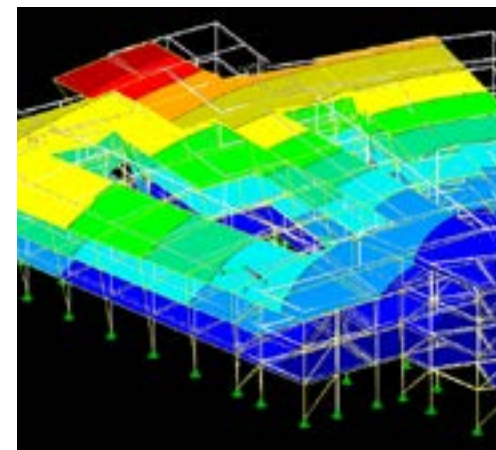
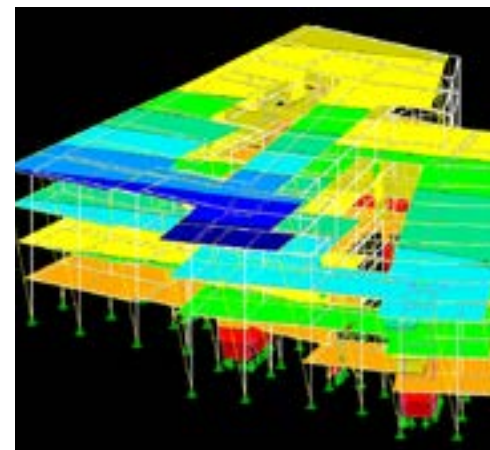
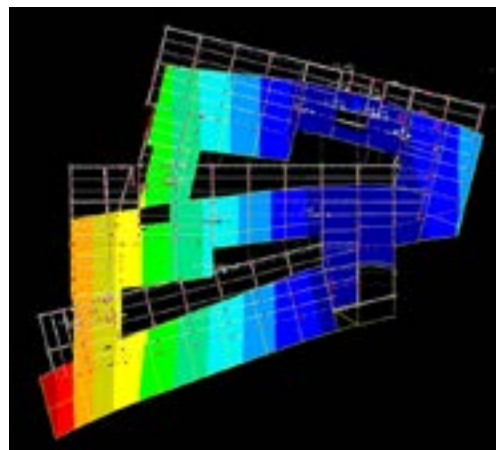
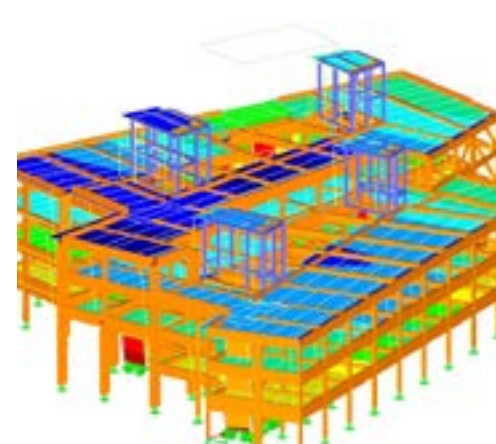
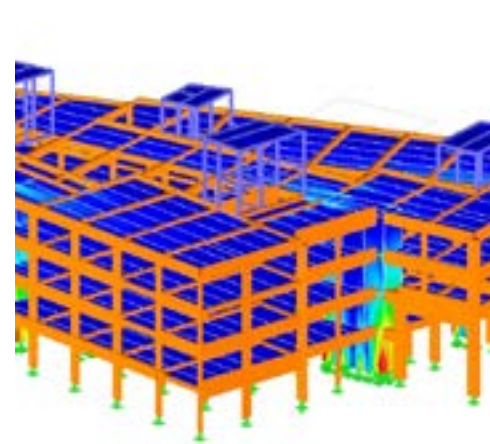
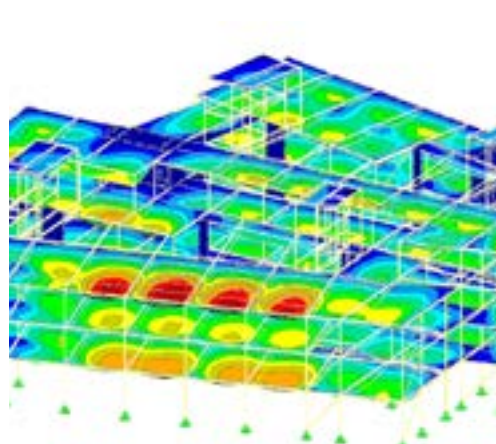


**Value Engineering**

in collaboration with Thonton Tommasetti



**Structural Analysis**







New headquarter for Vislab, a world leader in artificial intelligence and self-driving vehicles. The 3.5 storey building is entirely made from CLT and Glulam. The 8m-span, T-shaped floor slabs are a hybrid of these two engineered timber products, prefabricated offsite using variably spaced screws to save time and money.

**Project info:**

Client: VisLab

**Technical data:**

Project's type: Office

Material: CLT

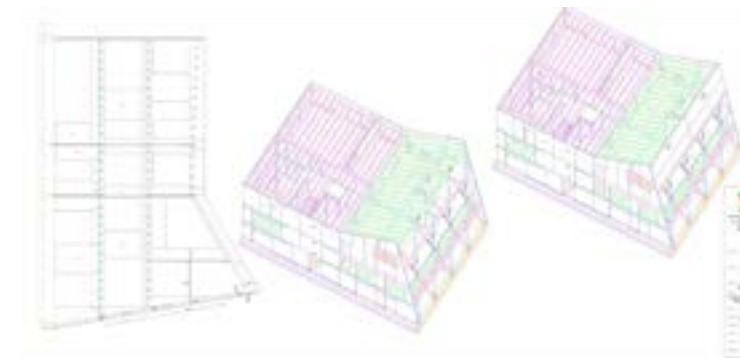
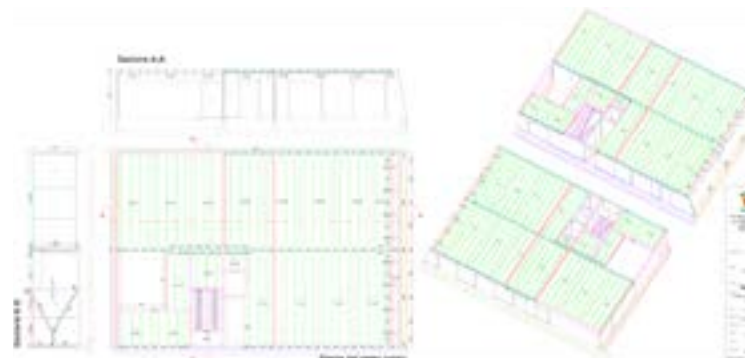
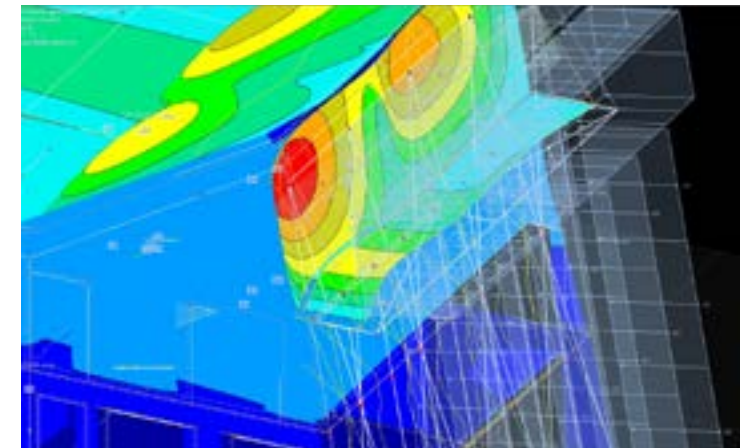
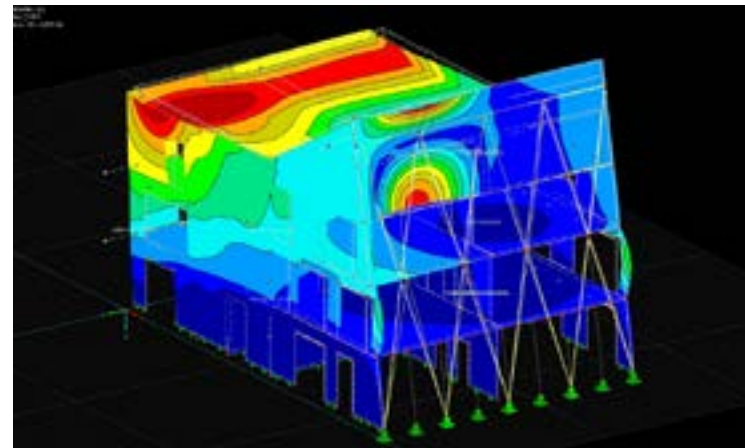
**Ergodomus' scope of work:**



Structural Analysis



DfMA







MFS II is an improved, prefabricated, and industrialised iteration of Makoko Floating School in Lagos (Nigeria). Adapted for easy prefabrication and rapid assembly, it's more robustly engineered and built! It was assembled in 10 days by 4 builders on the mainland, and then lifted by a crane and transported to the exhibition "La Biennale di Venezia" on a boat.

**Project info:**

Client: La Biennale di Venezia  
Architect: NLE

**Technical data:**

Project's type: Pavilion, School  
Material: Platform Frame

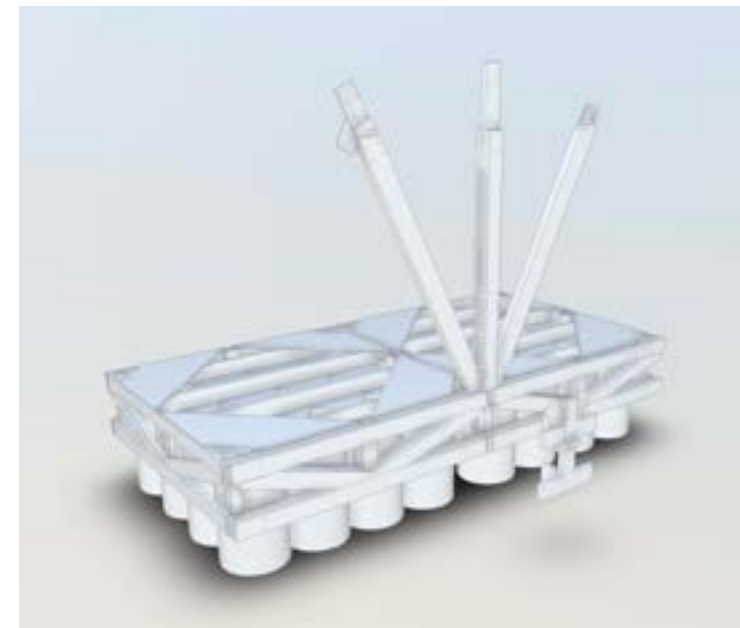
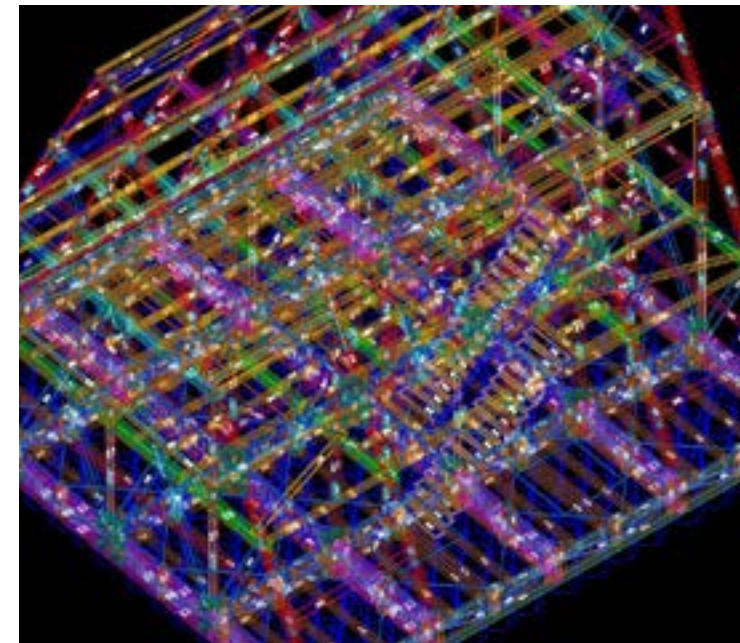
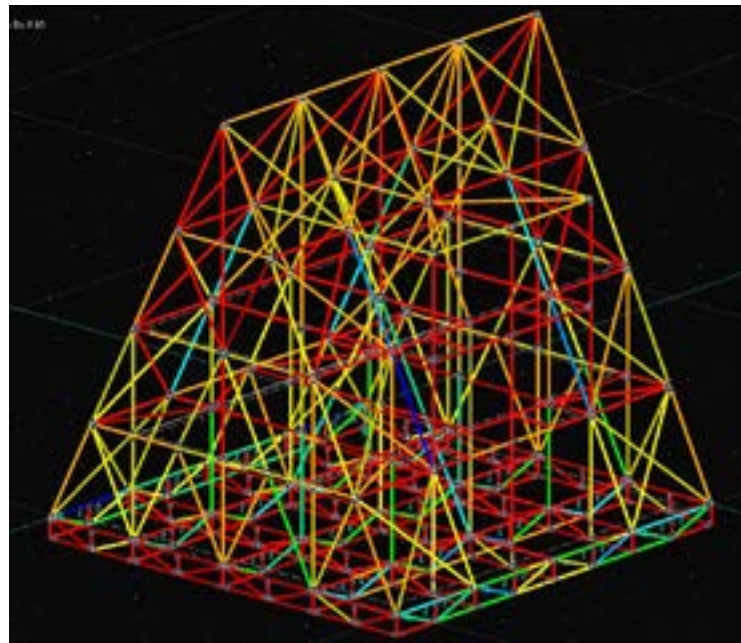
**Ergodomus' scope of work:**



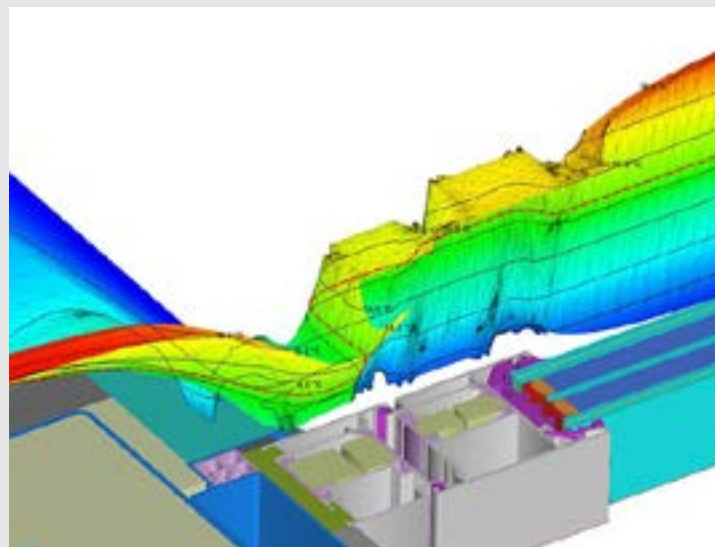
Structural Analysis



DfMA







In this renovation project, with the use of 3D Thermal FEM analysis, we verified the absence of the thermal bridge in the windows frame.

## Project info:

Client: Private

Architect: Architect

## Technical data:

Project's type: Modular Building, Residential

Regulations: UNI EN 13788 : 2013

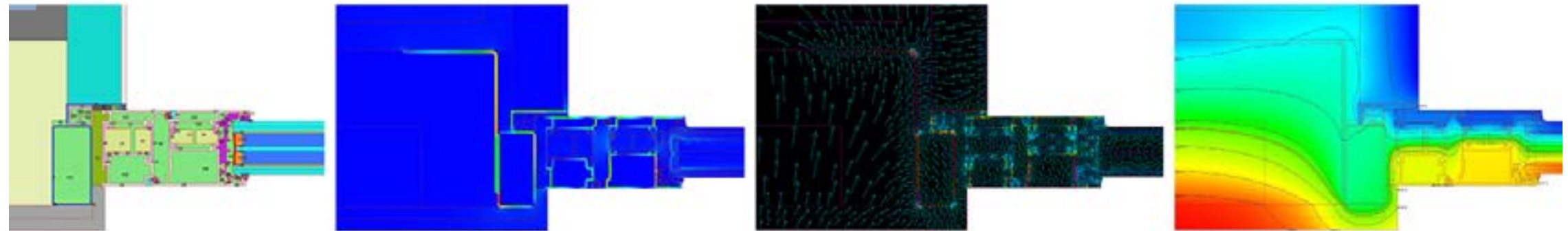
## Ergodomus' scope of work:



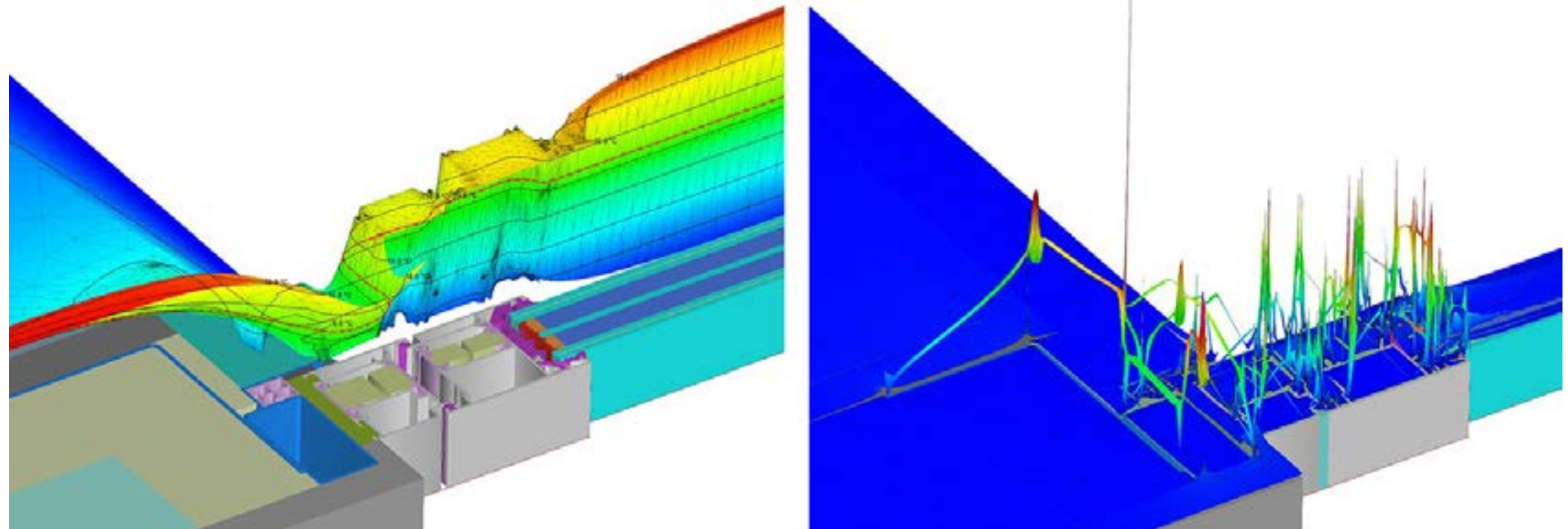
Building Physics



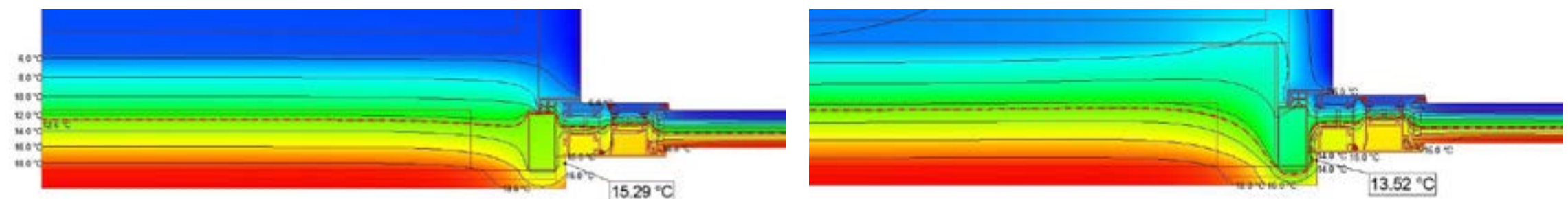
## Analysis



## 3D simulation results



## 2D simulation results







Design Competition for a Multi-Storey Mass Timber Building.

## Project info:

Client: IPES

Architect: MFa\_Mauro Frate Architects

## Technical data:

Project's type: Social Housing, Residential, Facade

Material: CLT, GLT

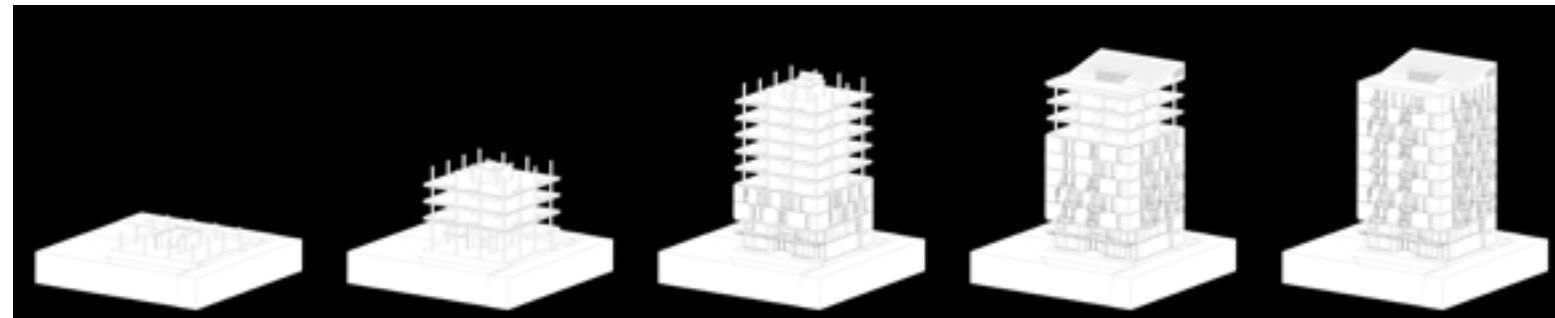
## Ergodomus' scope of work:



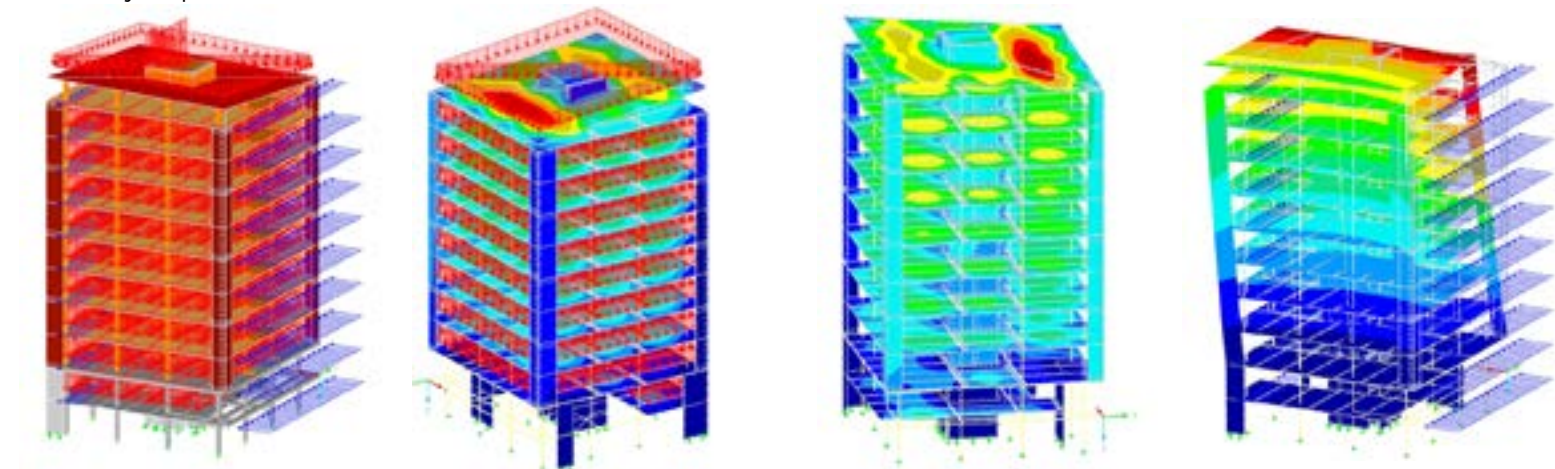
Value Engineering



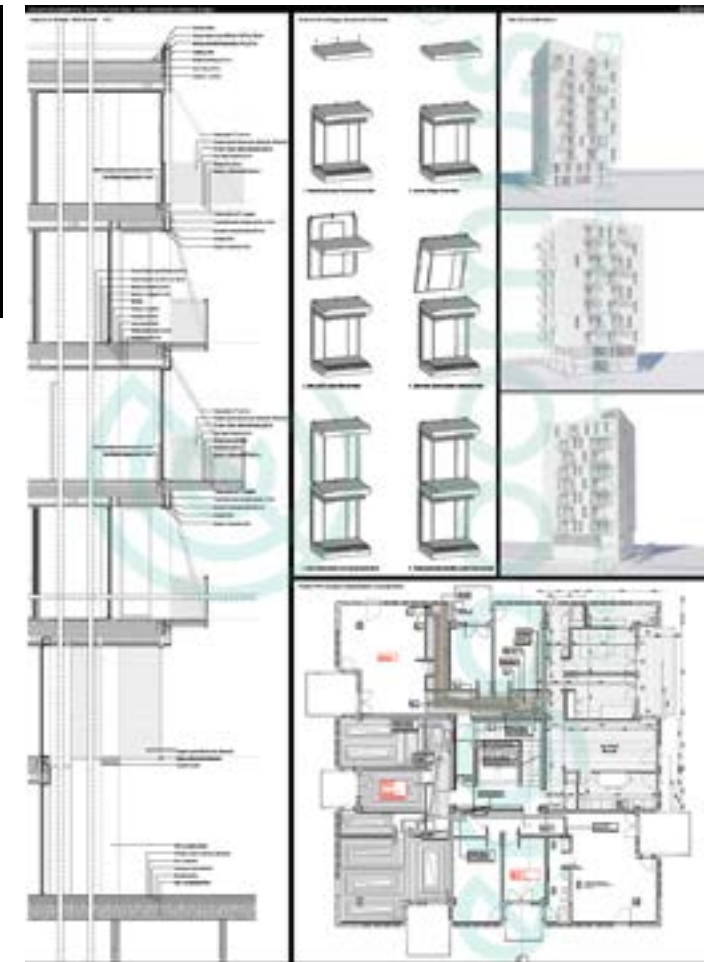
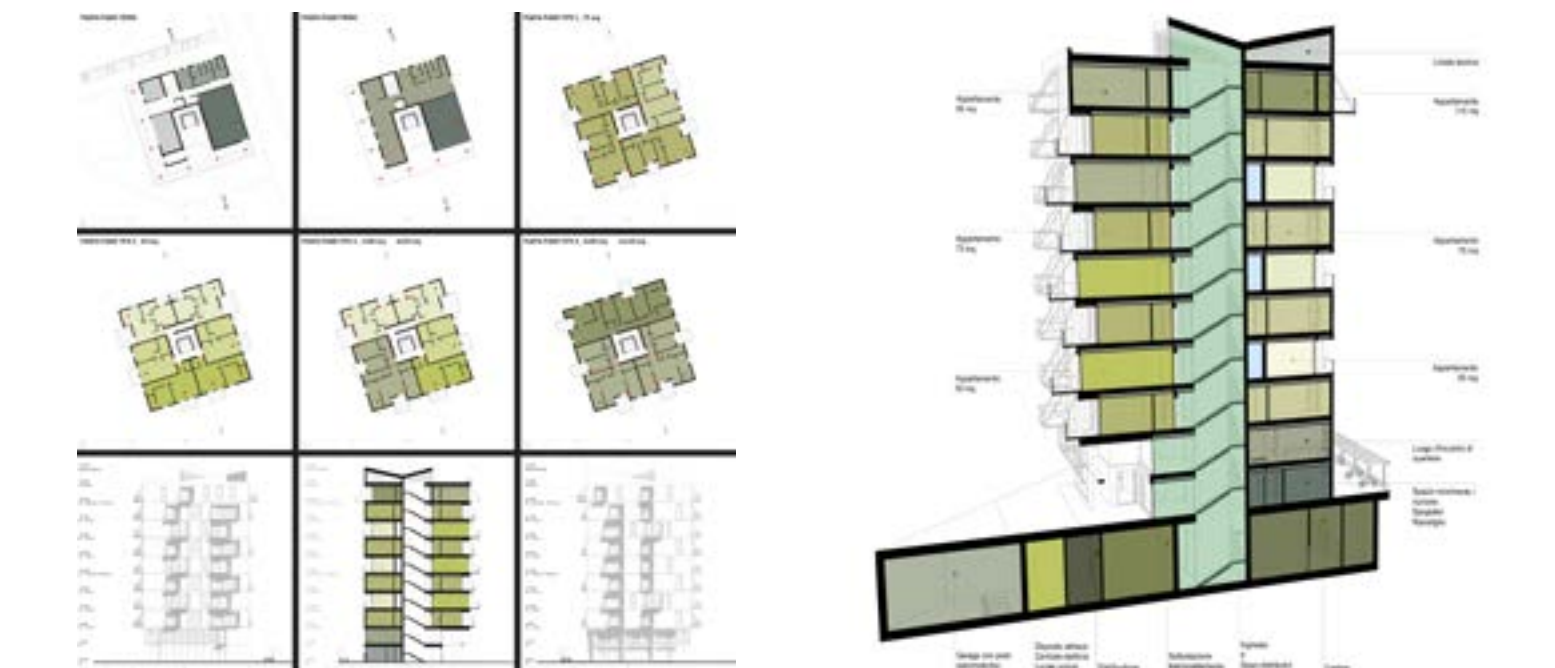
Structural Analysis



Assembly sequence



Structural Analysis







This project is a structure of about 680 mq composed of 4 rectangular bodies interacting with each other and the surrounding greenery. Each rectangular body occupies two floors and has a double-sided roof cover up with a maximum height of 10.5 m.

## Project info:

Architect: MCA\_Mario Cucinella Architects

## Technical data:

Project's type: Receptive Structure, Relief Structure

Material: CLT

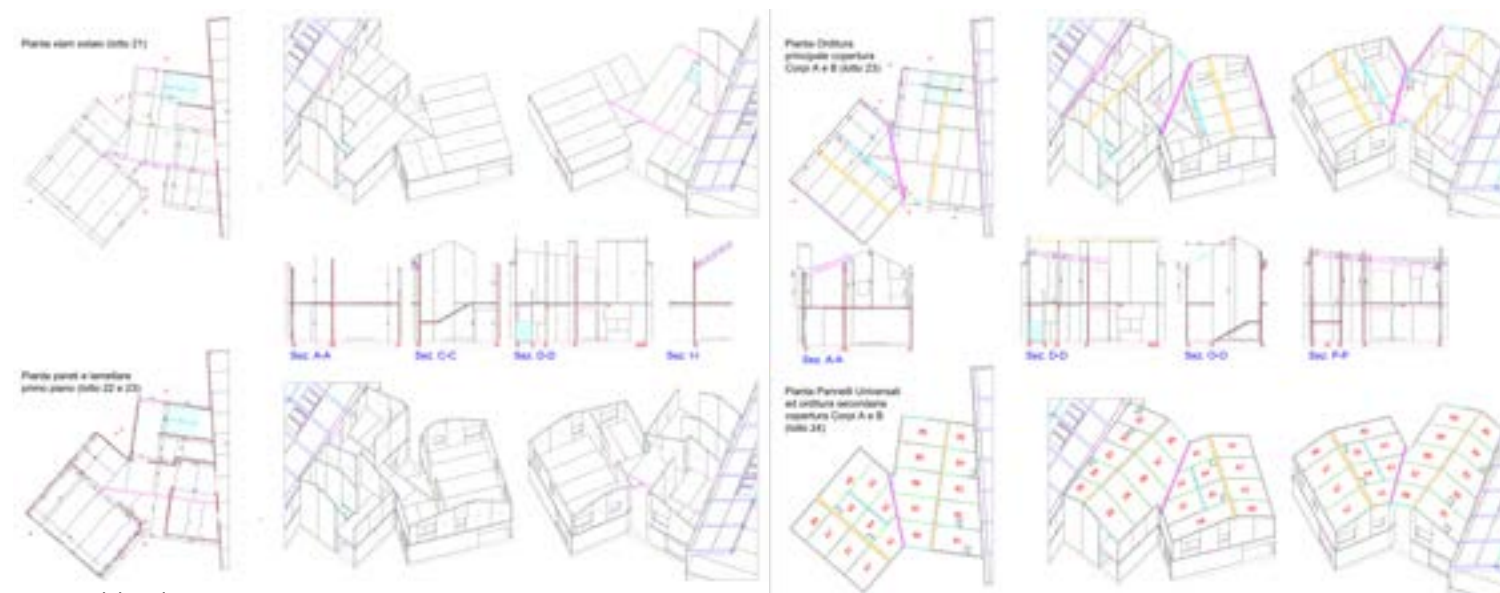
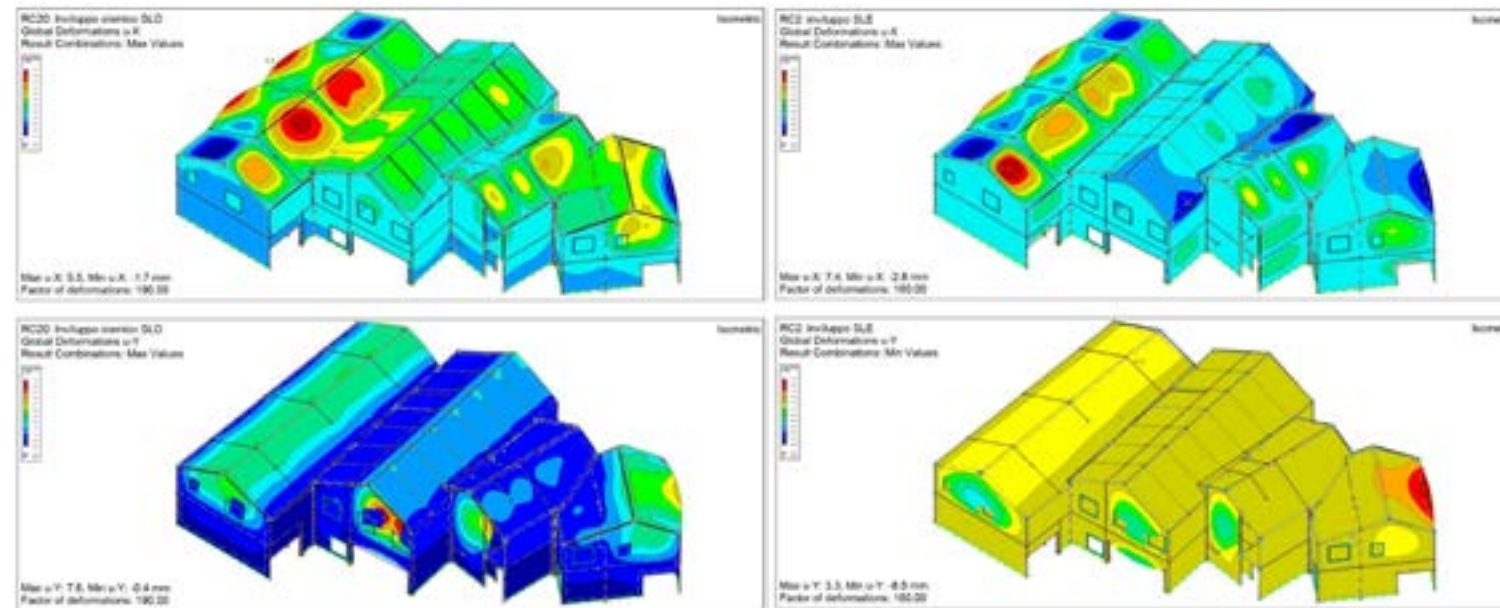
## Ergodomus' scope of work:



Structural Analysis



DfMA



Assembly plans







“Bamboo, as a possible and future answer to build temporary structures, but also real houses.” This is the material used to create Bamboo Stalactite, representing Vietnam at the 16th Venice International Architecture Exhibition.

**Project info:**

Client: La Biennale di Venezia

Architect: VoTrong Architects

**Technical data:**

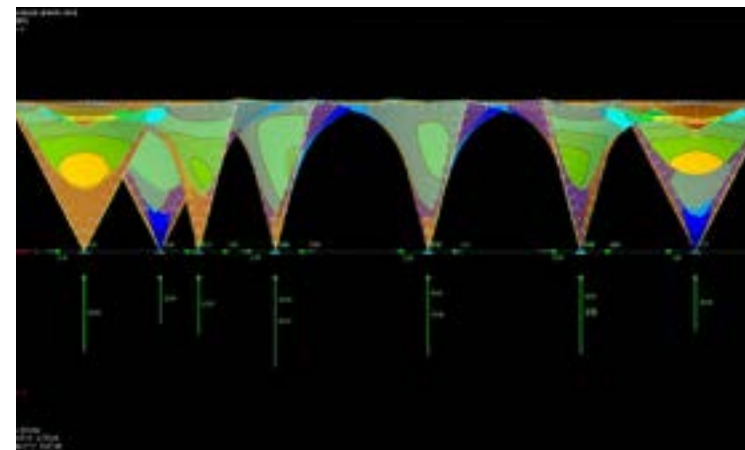
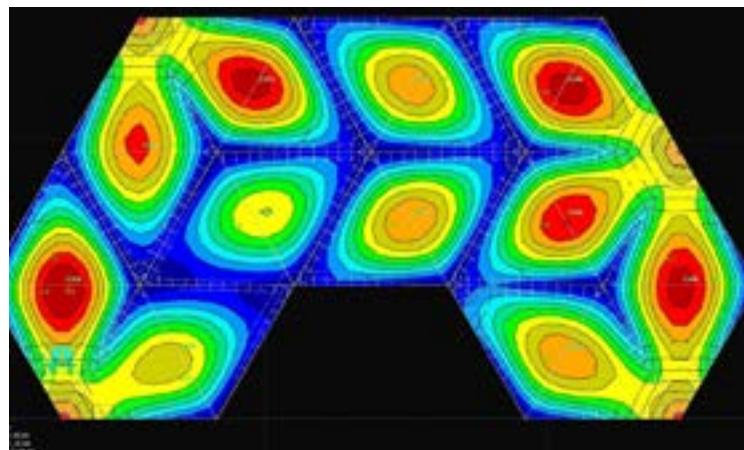
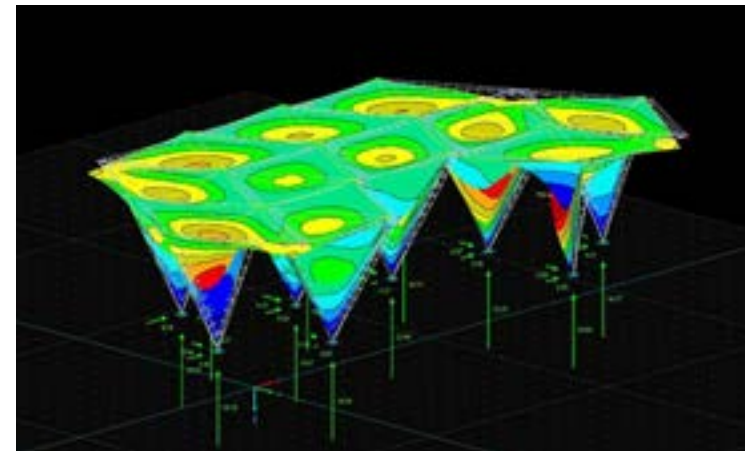
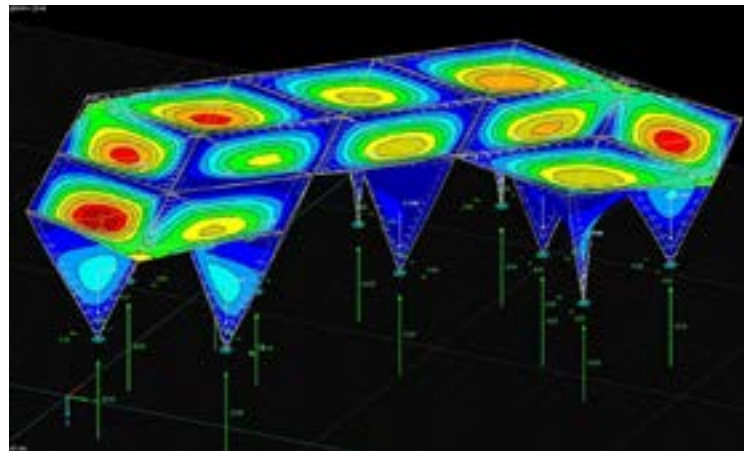
Project's type: Pavilion

Material: Bamboo

**Ergodomus' scope of work:**



Structural Analysis







The new Eunoia Junior College has a hybrid structure composed of reinforced concrete and prefabricated slabs timber-cls. The facade is made of CLT prefabricated elements, on which fire-retardant coating and Rothoblaas waterproofing membranes have been pre-assembled.

## Project info:

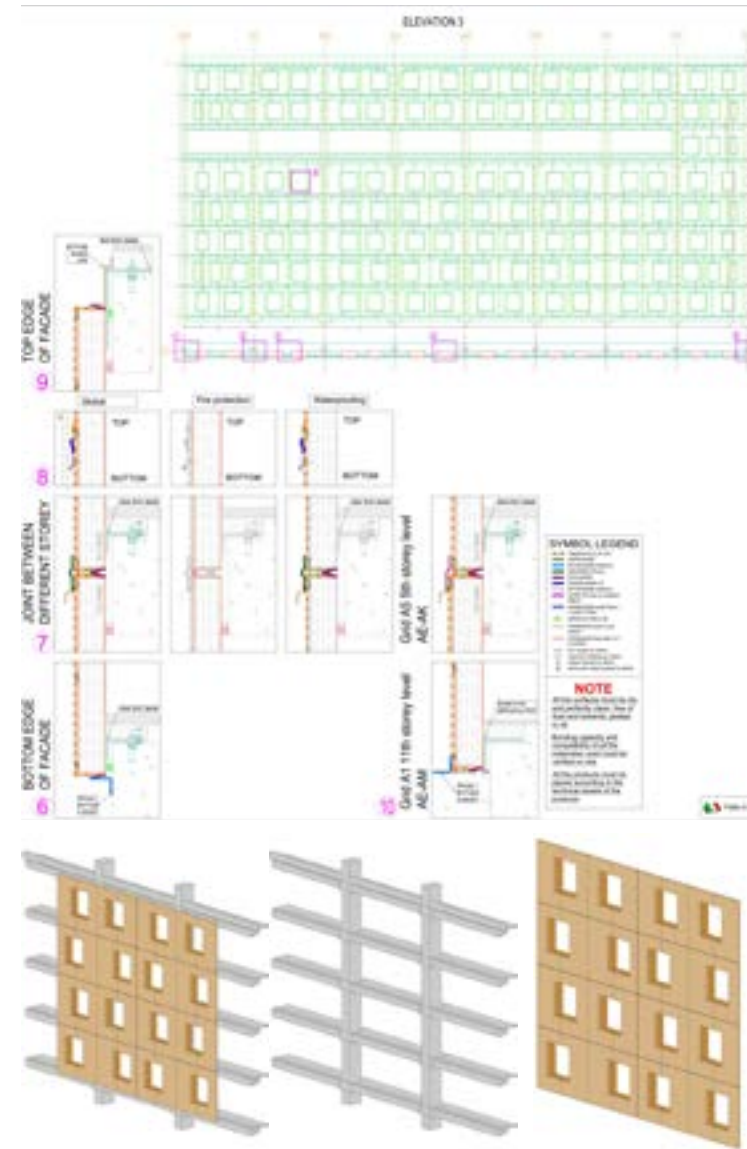
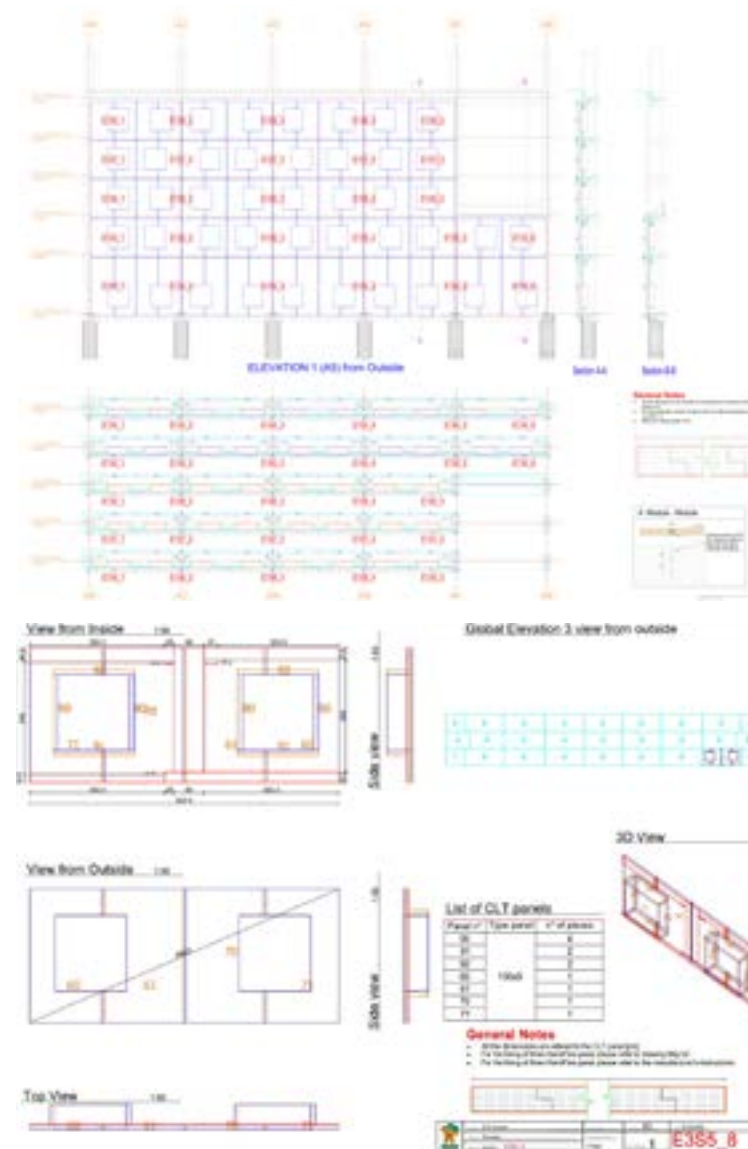
Client: Eunoia Junior College

Architect: Architect

## Technical data:

Project's type: School building, Facade

Material: CLT



## Ergodomus' scope of work:



Structural Analysis



DfMA







The structure is completely made of wood with perimeters and internal walls in CLT panels -5 layers- with a thickness of 120mm and 160mm respectively. Both are fixed to the foundation concrete by means of steel brackets and plates locked with appropriate screws.

## Project info:

Client: Comune di San Marcello Piteglio (PT)

Architect: Alessandro Bernardini

## Technical data:

Project's type: Receptive Structure

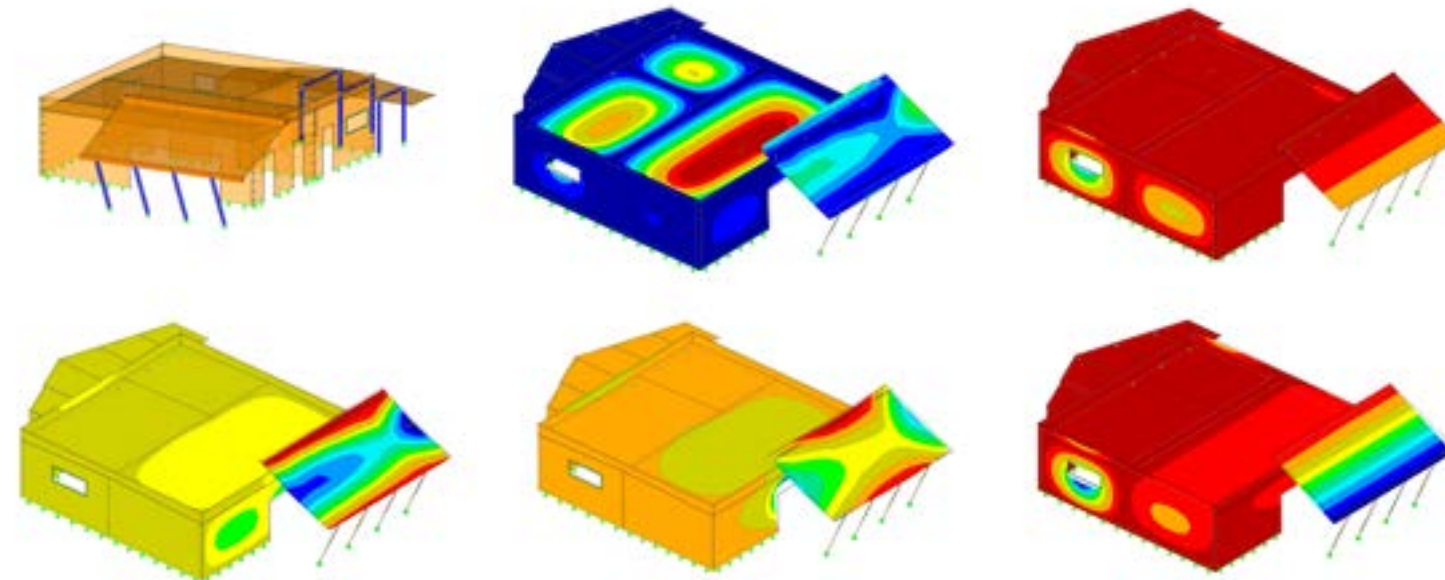
Material: CLT, GLT

## Ergodomus' scope of work:



Structural Analysis

## Structural Analysis







The Arimondo's office are situated in Cervo (Liguria): a single storey building with 1200 square meters of surface. It's a platform frame timber building with steel columns and bearing system on the internal courtyard.

**Project info:**

Client: Arimondo

Architect: Architect

Builder: Marlegno

**Technical data:**

Project's type: Office

Material: CLT

**Ergodomus' scope of work:**

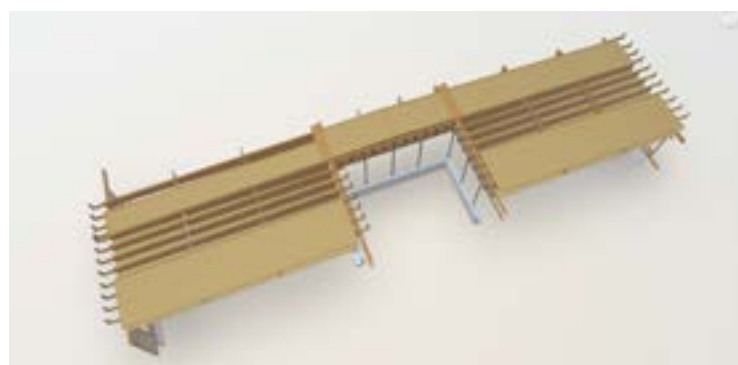
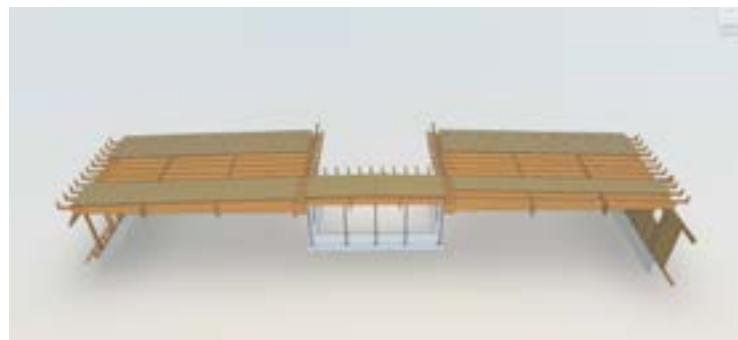
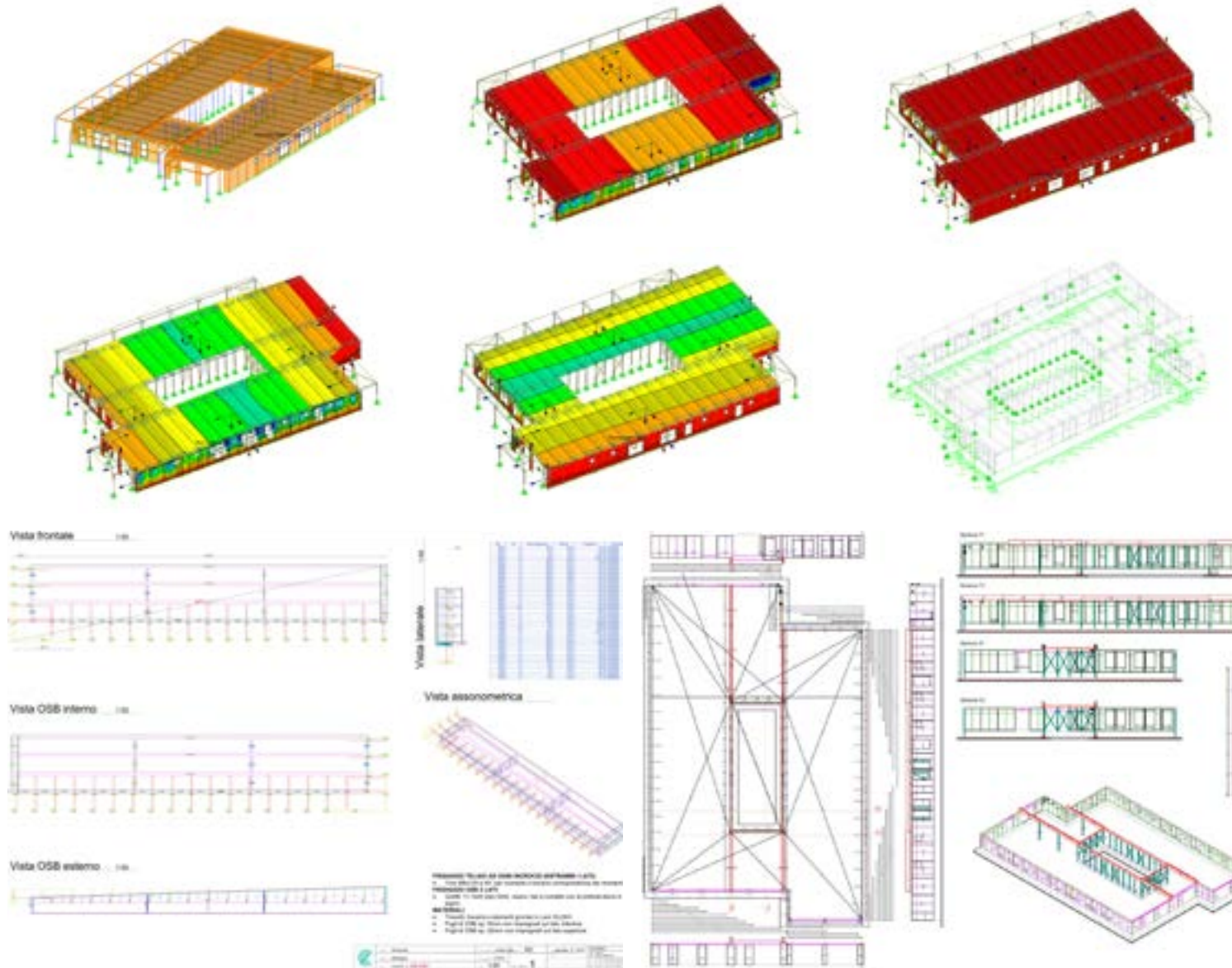


Structural Analysis



DfMA

**Structural Analysis**







Project of a modular parametric staircase in CLT. Ergodomus developed this algorithm to create a parametric spiral staircase made up of CLT modules.

## Project info:

Client: Private

## Technical data:

Project's type: Computational Design

Material: CLT

## Ergodomus' scope of work:



Computational Design



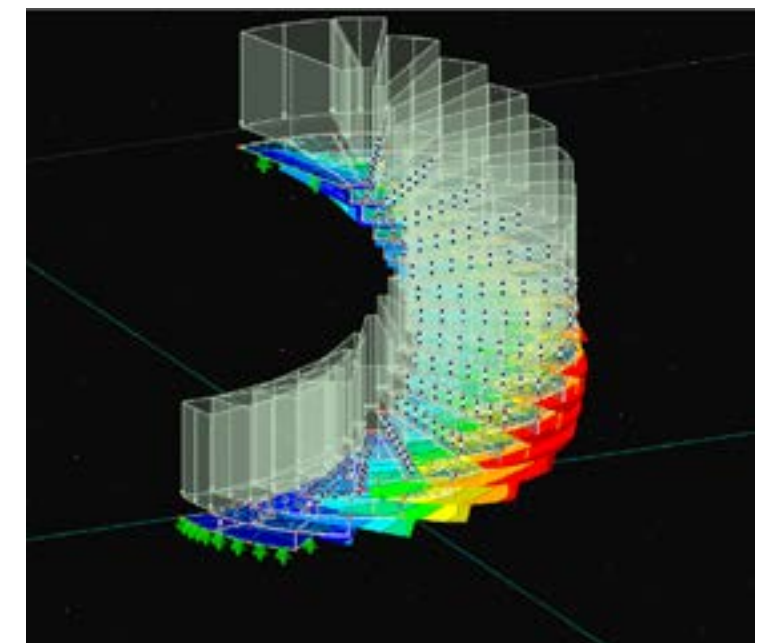
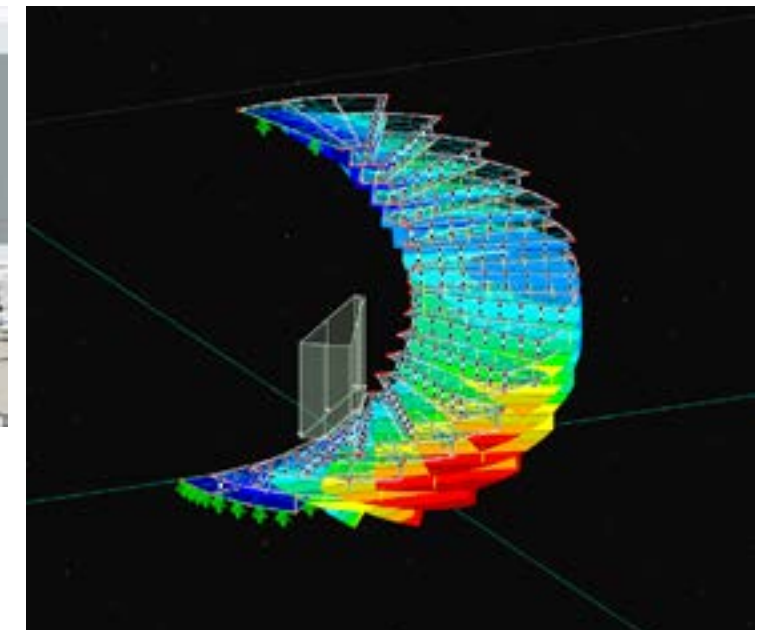
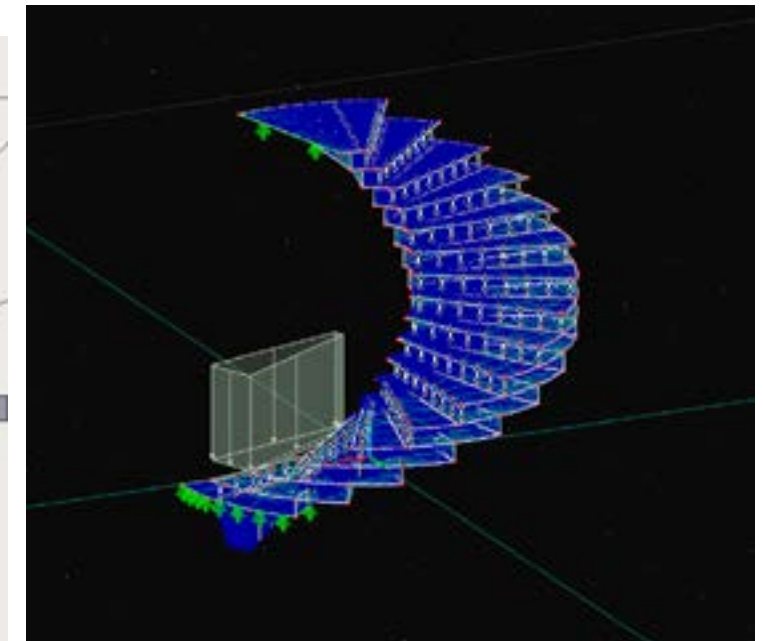
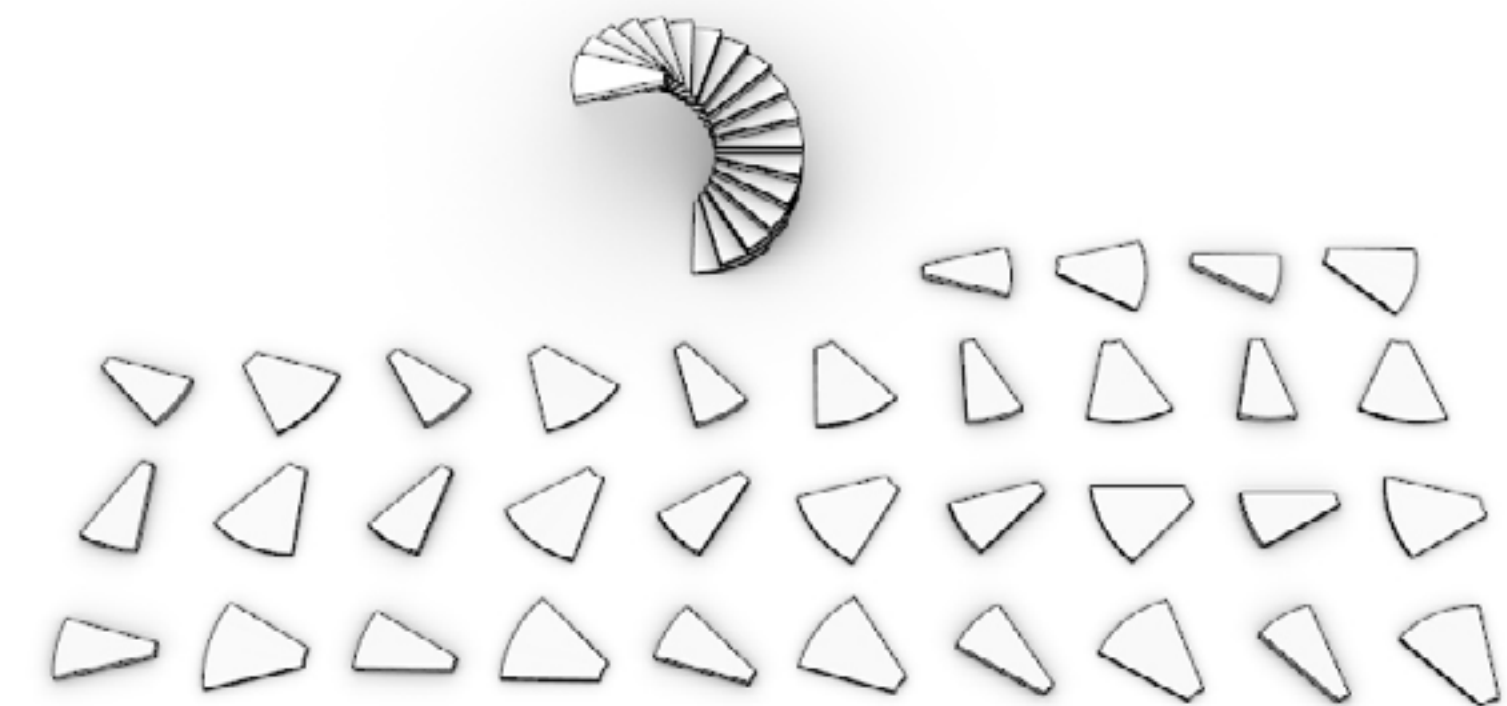
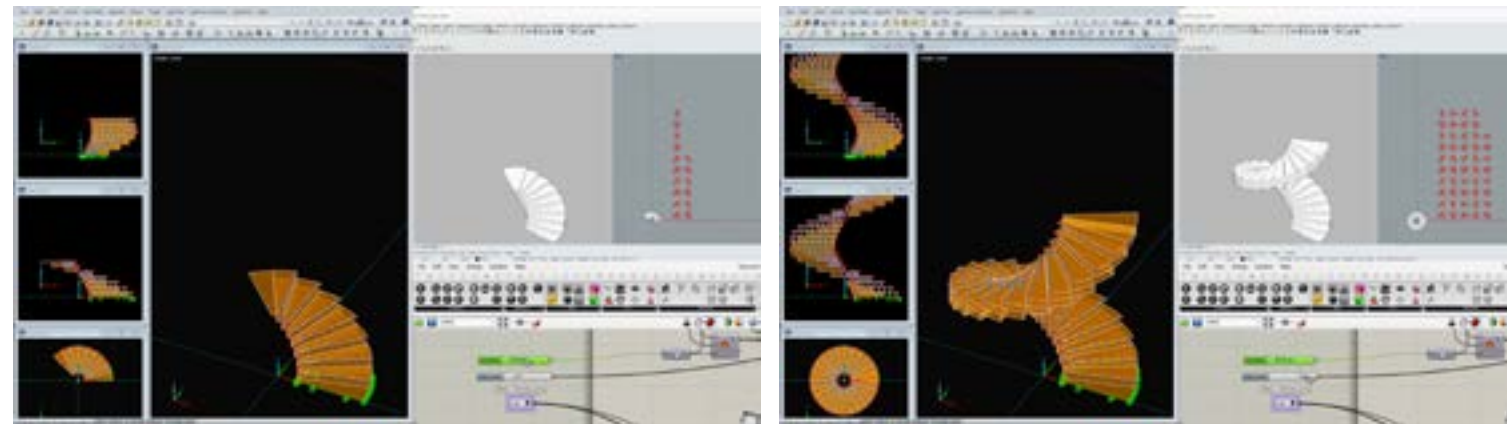
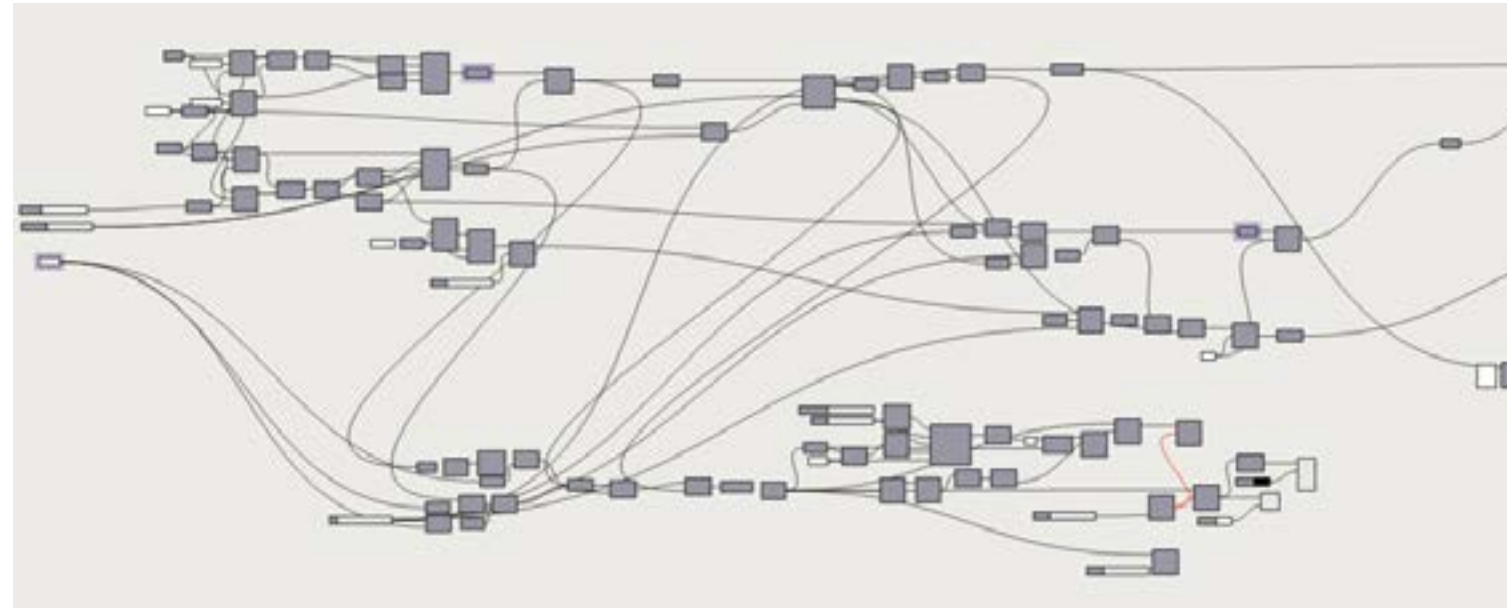
Structural Analysis



DfMA



Algorithmic Modeling of staircase geometry







Prototype of a double-curved facade, discretized by linear wooden beams. This prototype of a double-curved self-supporting facade, discretized by linear wooden beams, is an INDEXLAB project to which Ergodomus provided support for the type of joint with flat connecting plates and FEM analysis.

## Project info:

Client: INDEXLAB

## Technical data:

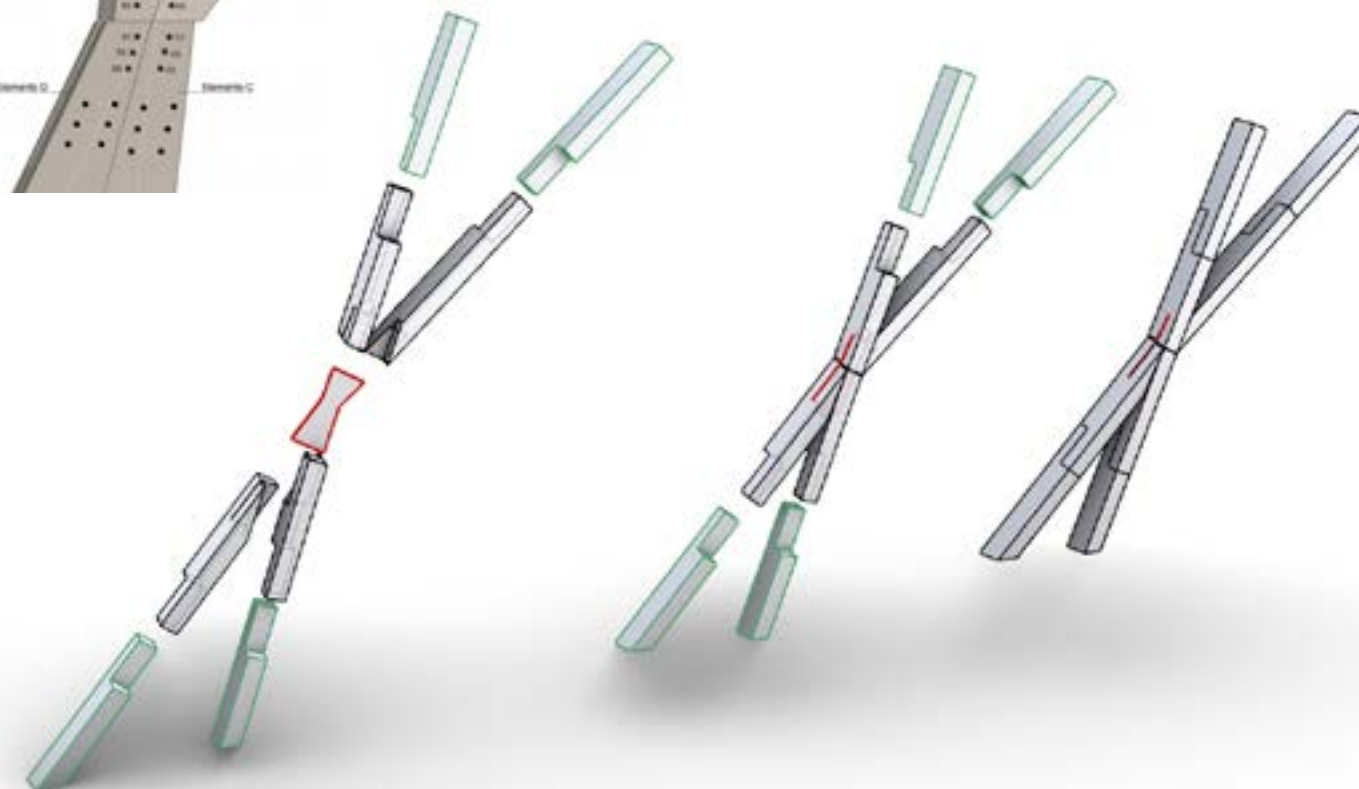
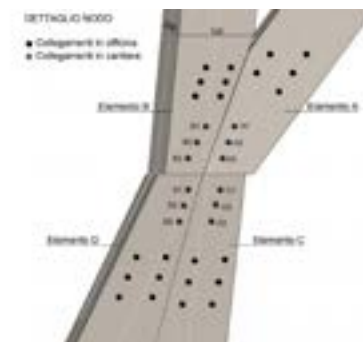
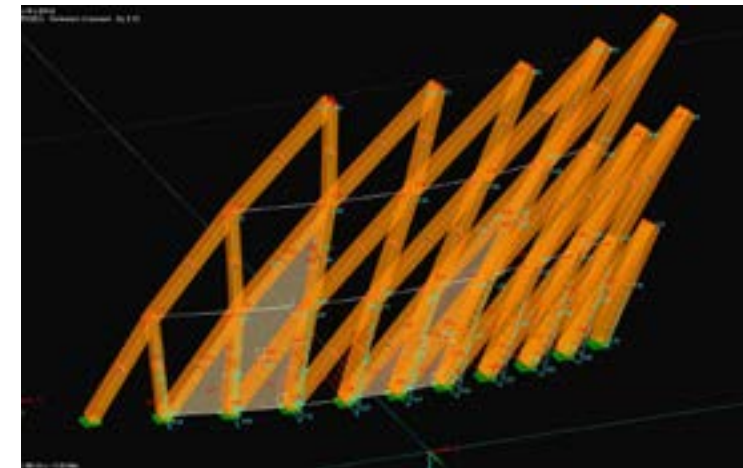
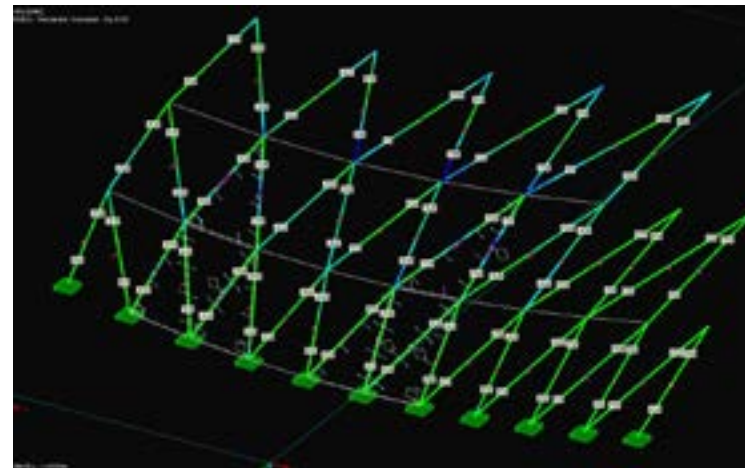
Project's type: Computational Design,  
Facade, Pavilion

Material: Hybrid

## Ergodomus' scope of work:



Structural Analysis







This wall decoration technique clearly shows the characteristics of this new computational aesthetic:

- fluid forms generated by mathematical functions
- discretization with non-standard repetitive elements
- customized compositions, mass-customization
- use of digital manufacturing techniques for production.

## Project info:

Client: Private

## Technical data:

Project's type: Computational Design, Office

Material: Plywood

## Ergodomus' scope of work:



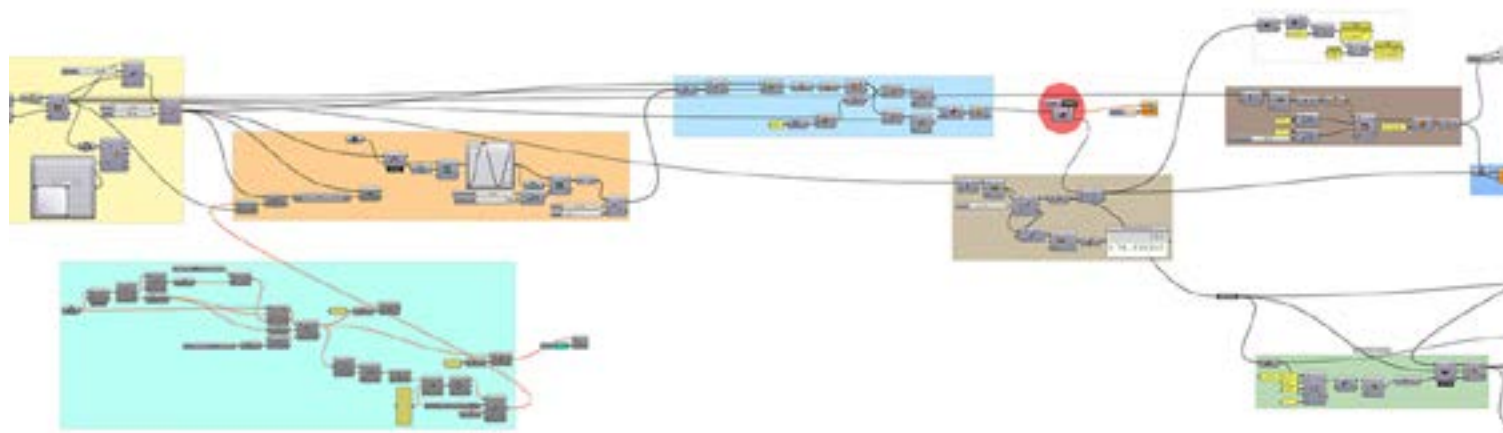
Computational Design



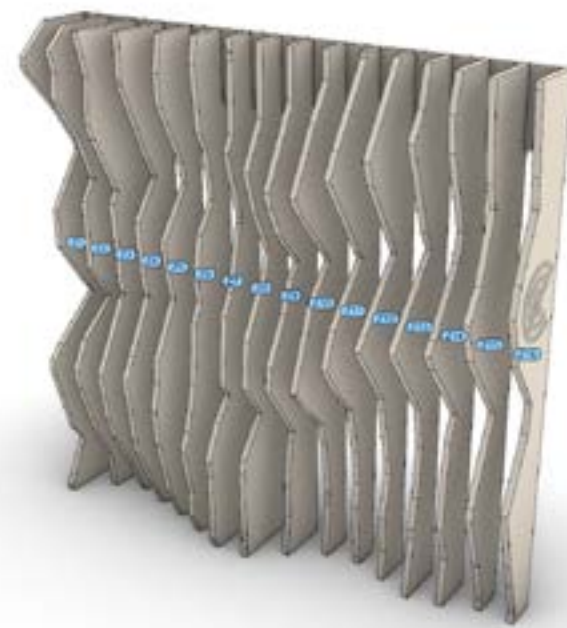
DfMA



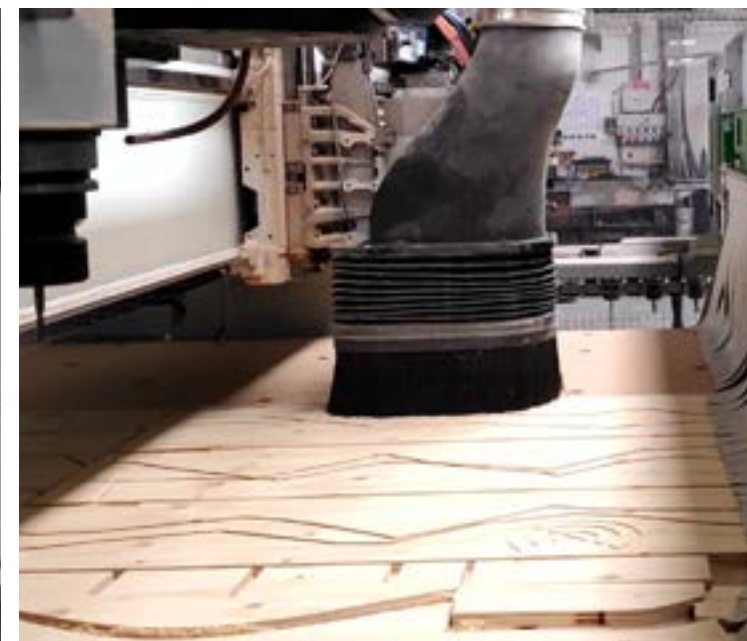
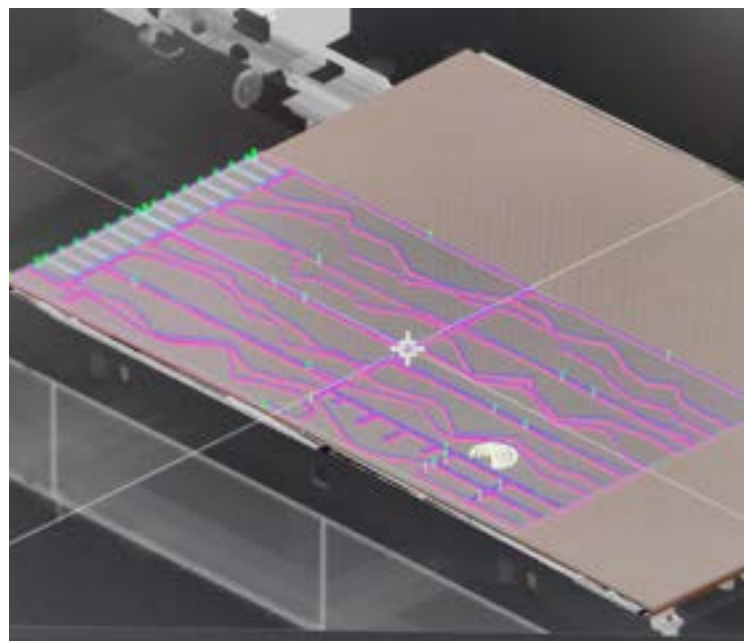
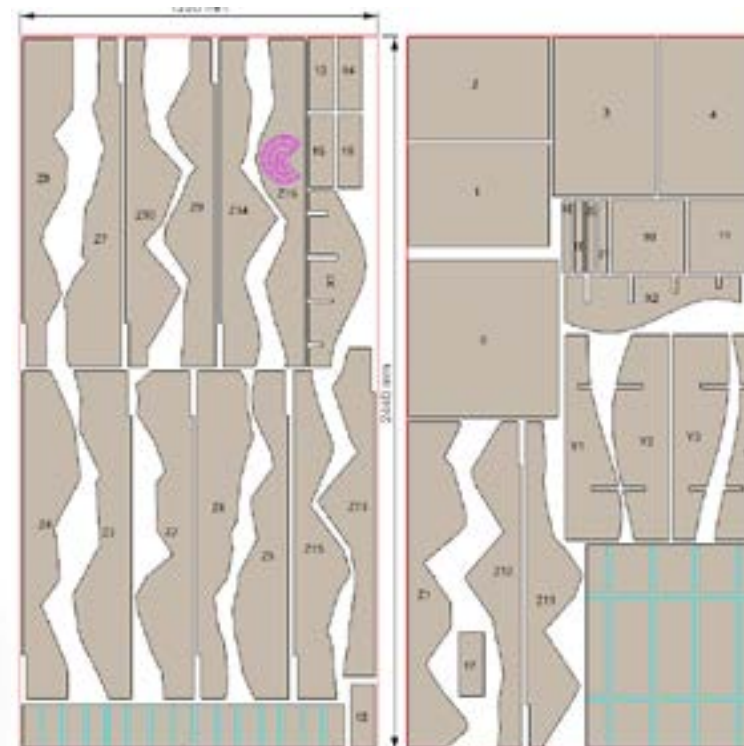
Algorithmic Modeling of parametric wall



Parametric 3D model with tagged items



Nesting







A very special client asked us to design a wonderful and full of technology suspended ceiling using LVL. Our computational design department is doing great!

## Project info:

Client: Private

## Technical data:

Project's type: Computational Design, Office

Material: LVL, Plywood

## Ergodomus' scope of work:



Computational Design



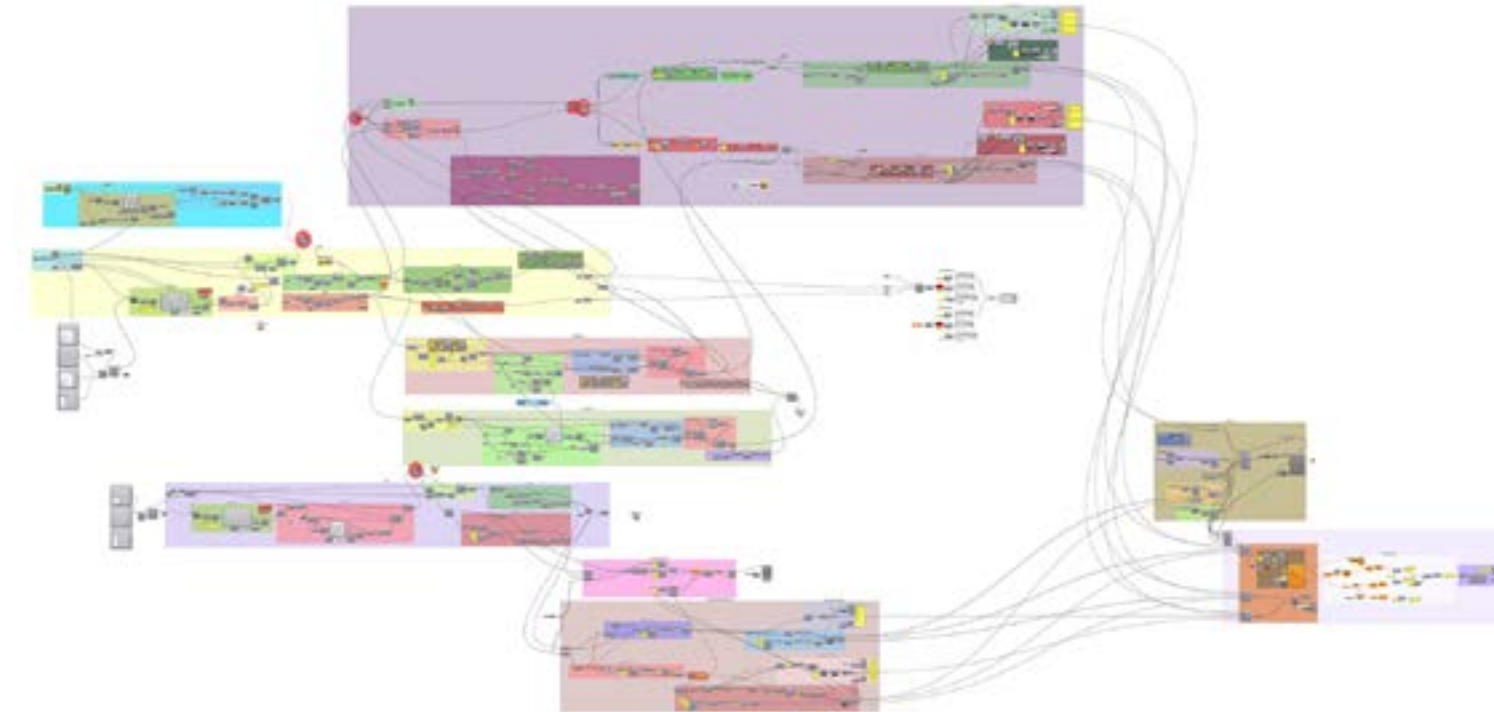
Structural Analysis



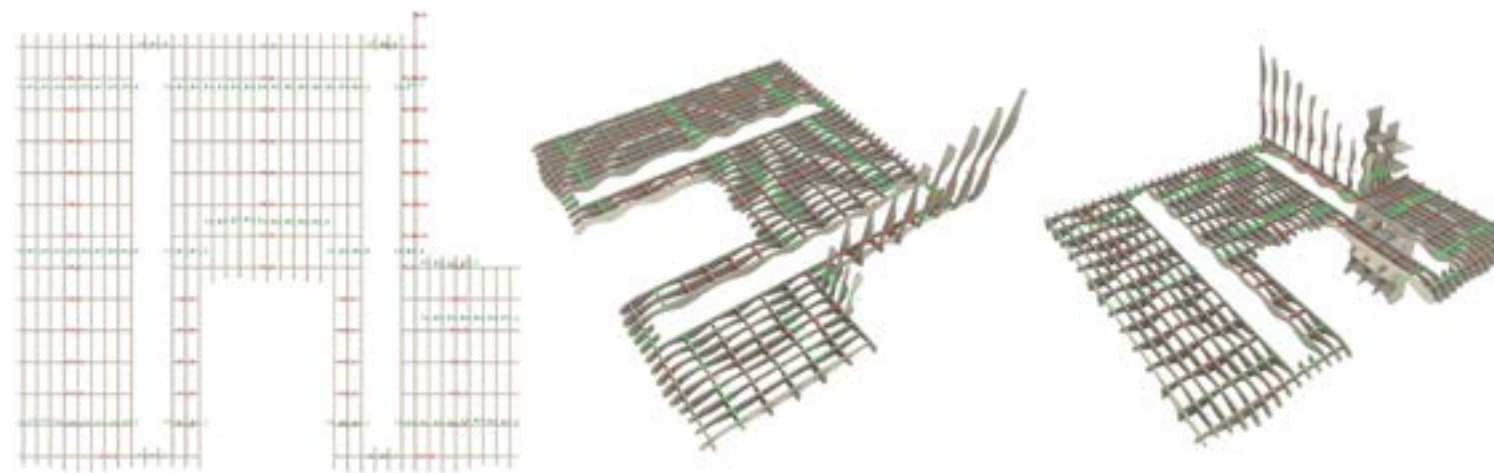
DfMA



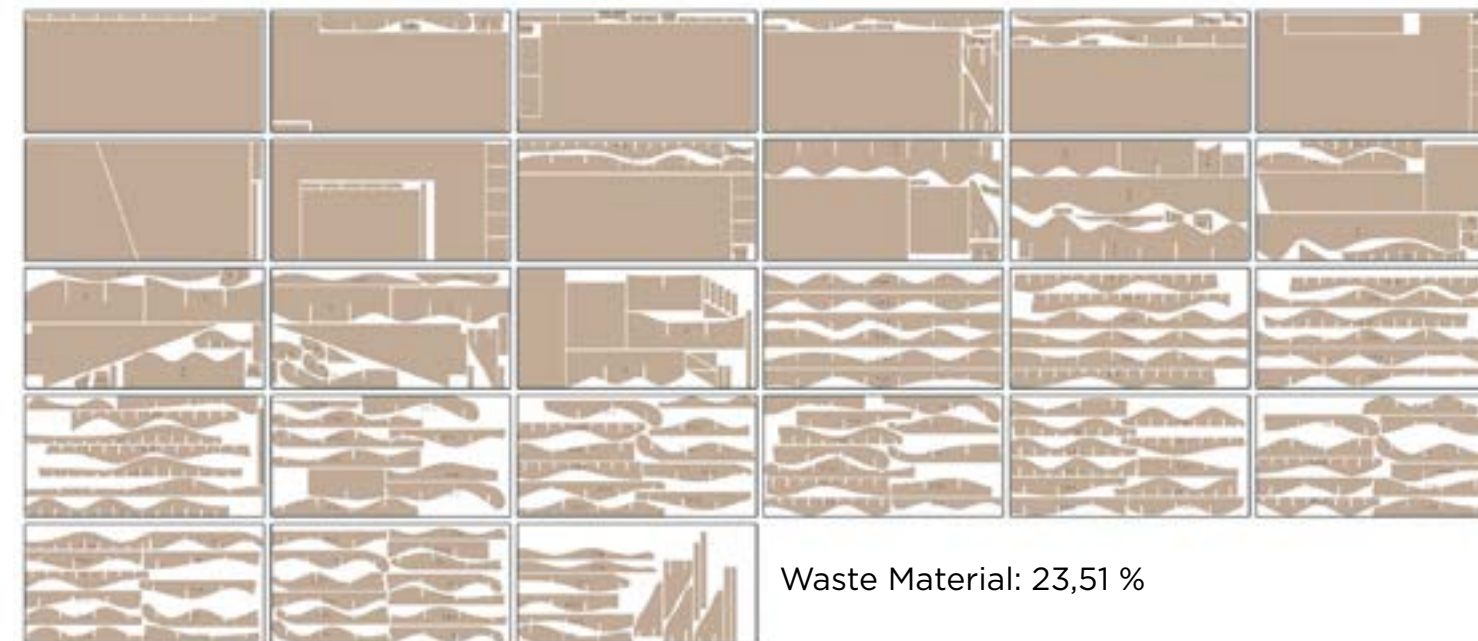
Algorithmic Modeling of parametric ceiling



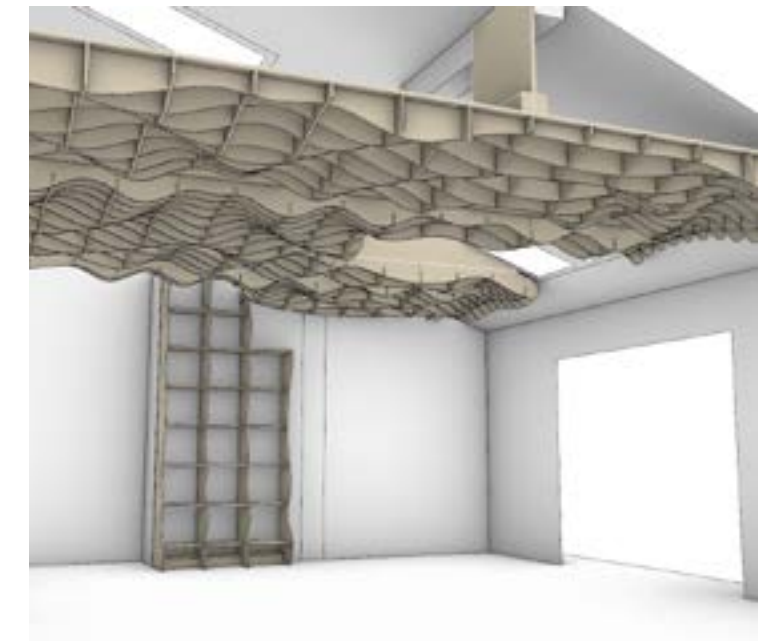
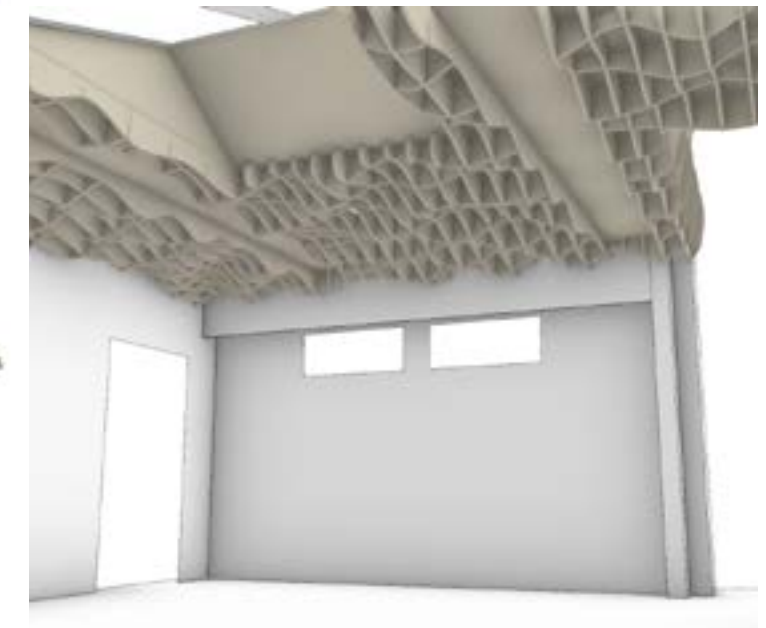
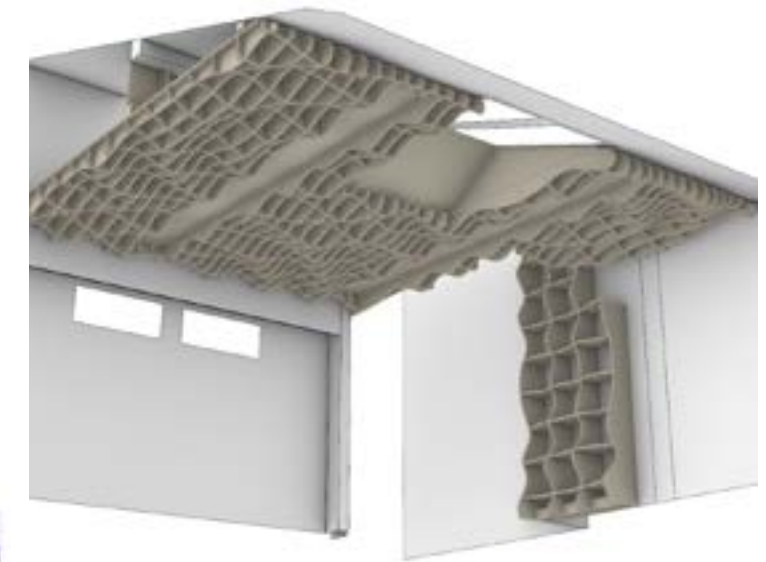
Parametric 3D model with tagged items



Nesting



Waste Material: 23,51 %







The San Felice Daycare Center is a rectangular structure of 350mq. The elevation structure is built with CLT panels and has three curved roofs made of GI24h classed spruce beams. The exterior cladding is made with special, unplastered cork panels that greatly improve the overall sustainability of the project. The whole structure was assembled in less than 3 weeks.

**Project info:**

Architect: MFa\_Mauro Frate Architects

**Technical data:**

Project's type: Receptive/Relief Structure

Material: CLT

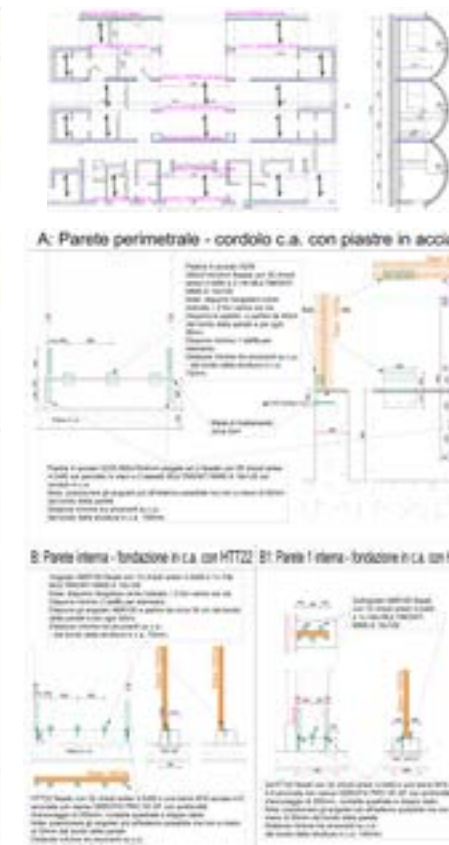
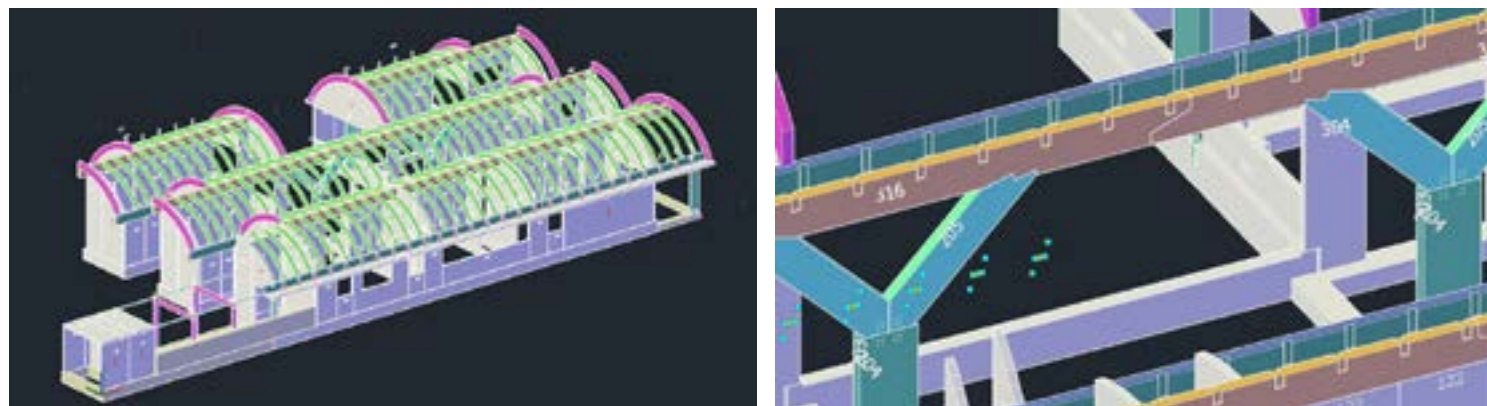
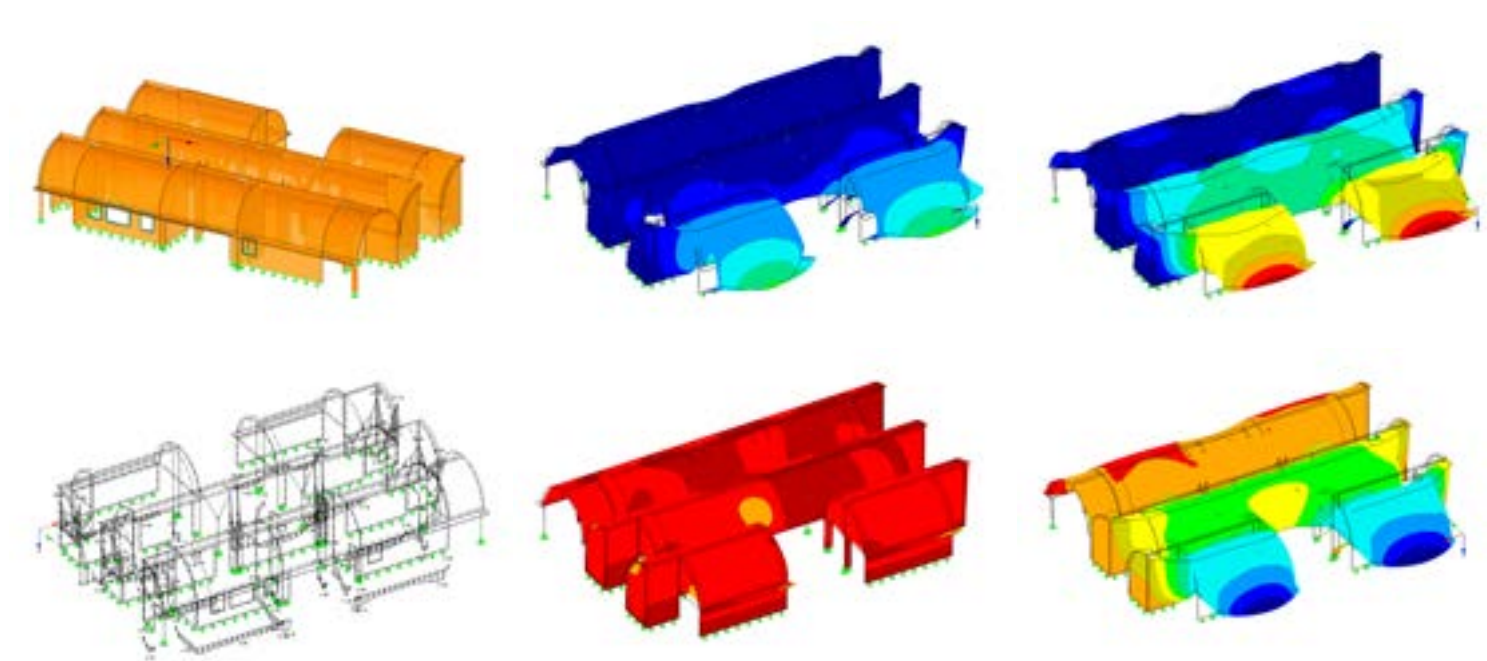
**Ergodomus' scope of work:**



Structural Analysis



DfMA







This project is completely made of wood: the “boundary conditions” and the customer requirements are very stringent and therefore it’s an exciting engineering challenge.

## Project info:

Client: Municipality

Architect: Architect

## Technical data:

Project's type: Sport/Recreational

Material: CLT

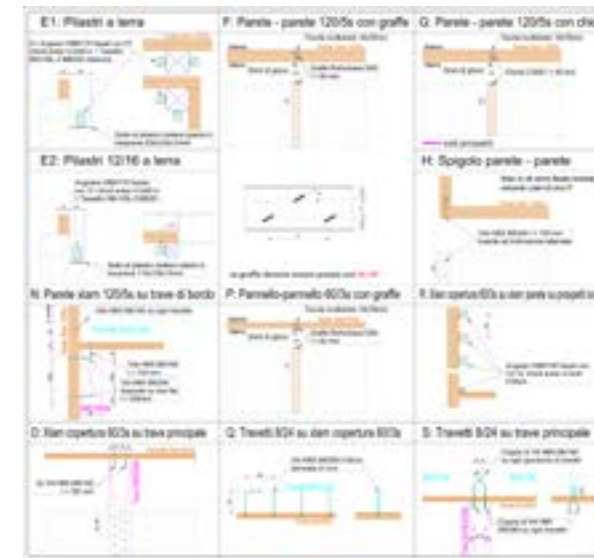
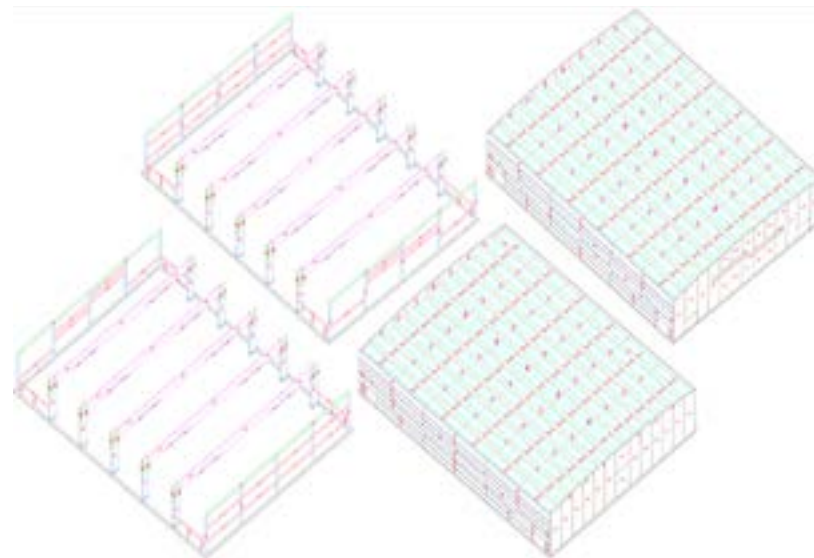
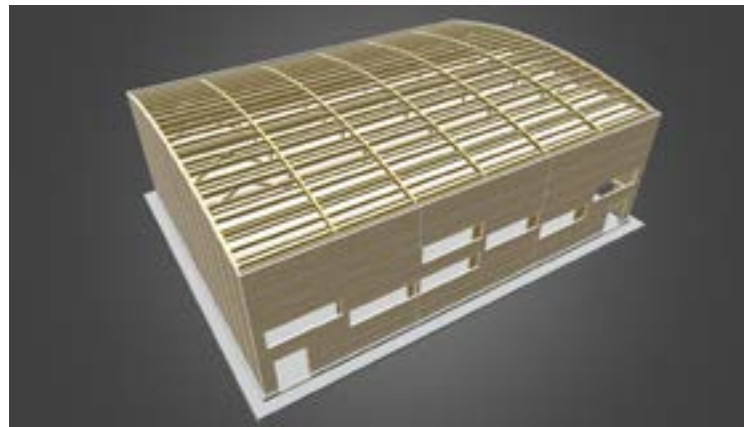
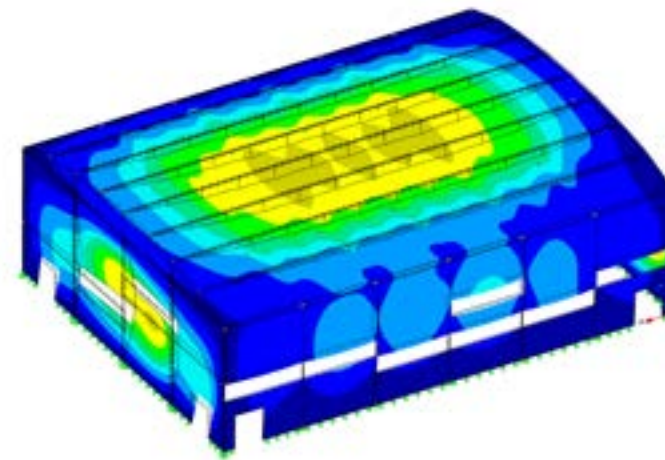
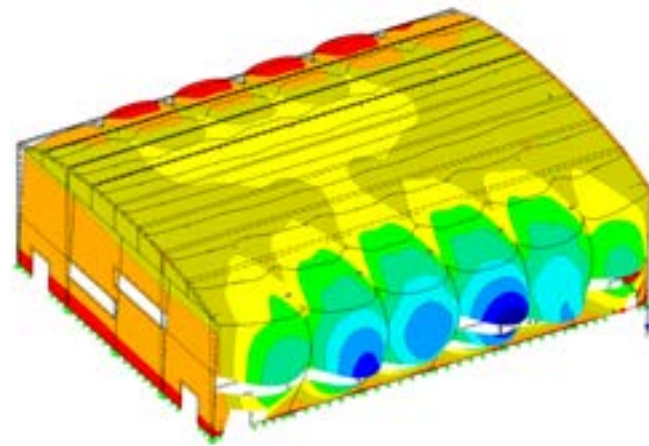
## Ergodomus' scope of work:



Structural Analysis



DfMA







The aim of this project was the renovation of the original headquarters of the historical car body shop Scaglietti, which had been out of operation for decades. All of the external existing walls were maintained, while, on the inside, a CLT panel structure made it possible to create a highly performant building, both statically and energetically.

**Project info:**

Architect: Fabbriart

**Technical data:**

Project's type: Office

Material: CLT

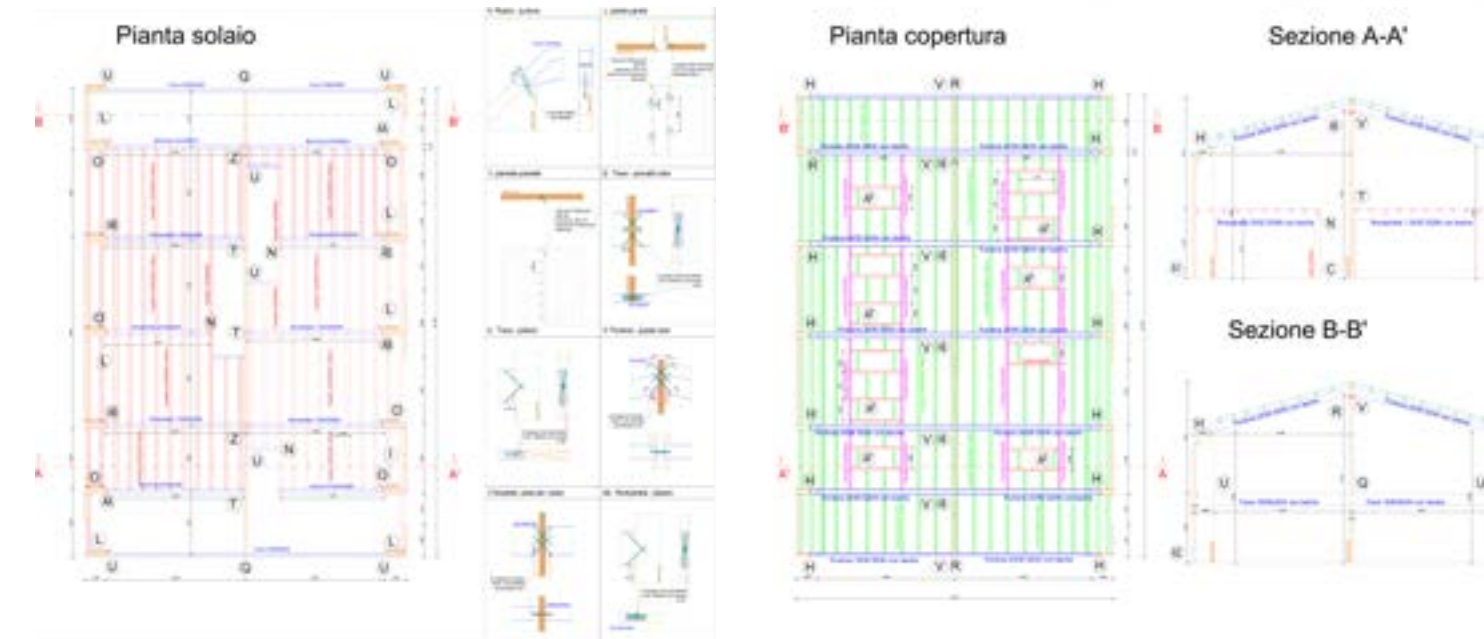
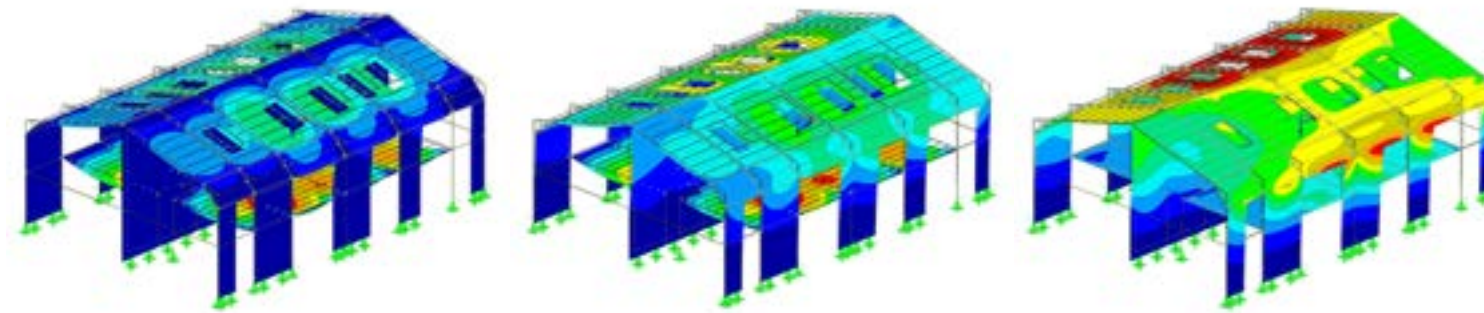
**Ergodomus' scope of work:**



Structural Analysis



DfMA







Cavezzo (MO) is one of the many Emilia villages hit by the 2012's earthquake: as a result of this event many public and private facilities have been heavily damaged and made inaccessible. The municipal gym is one of these: the damage reported was so severe that the total demolition of the existing structure made in the 1950s was necessary.

## Project info:

Client: Municipality

Architect: Architect

## Technical data:

Project's type: Sport / Recreational

Material: GLT, CLT

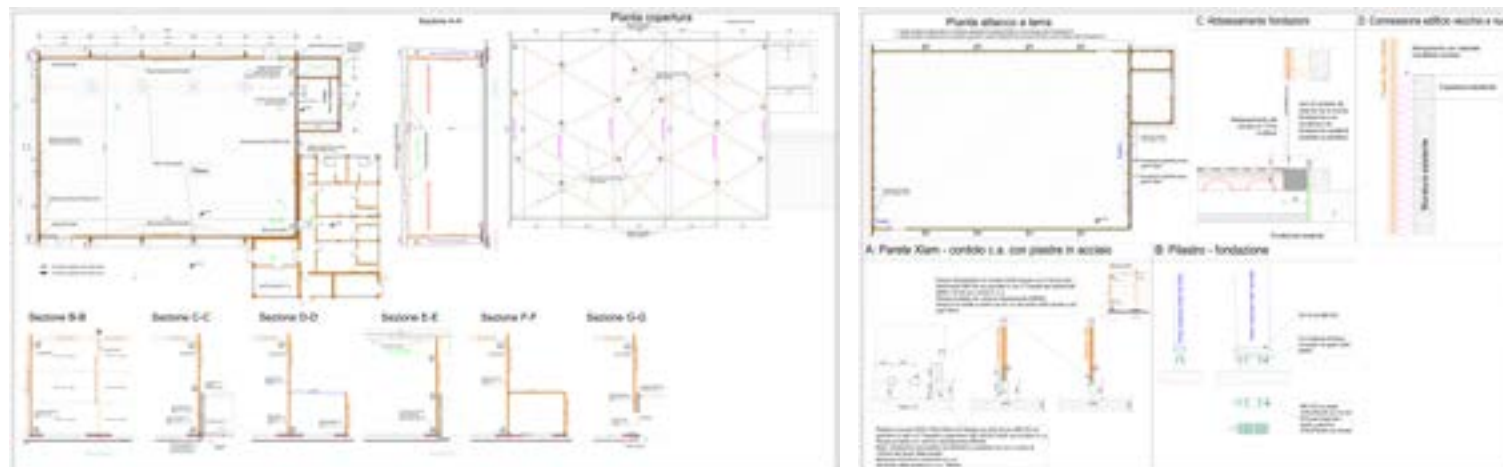
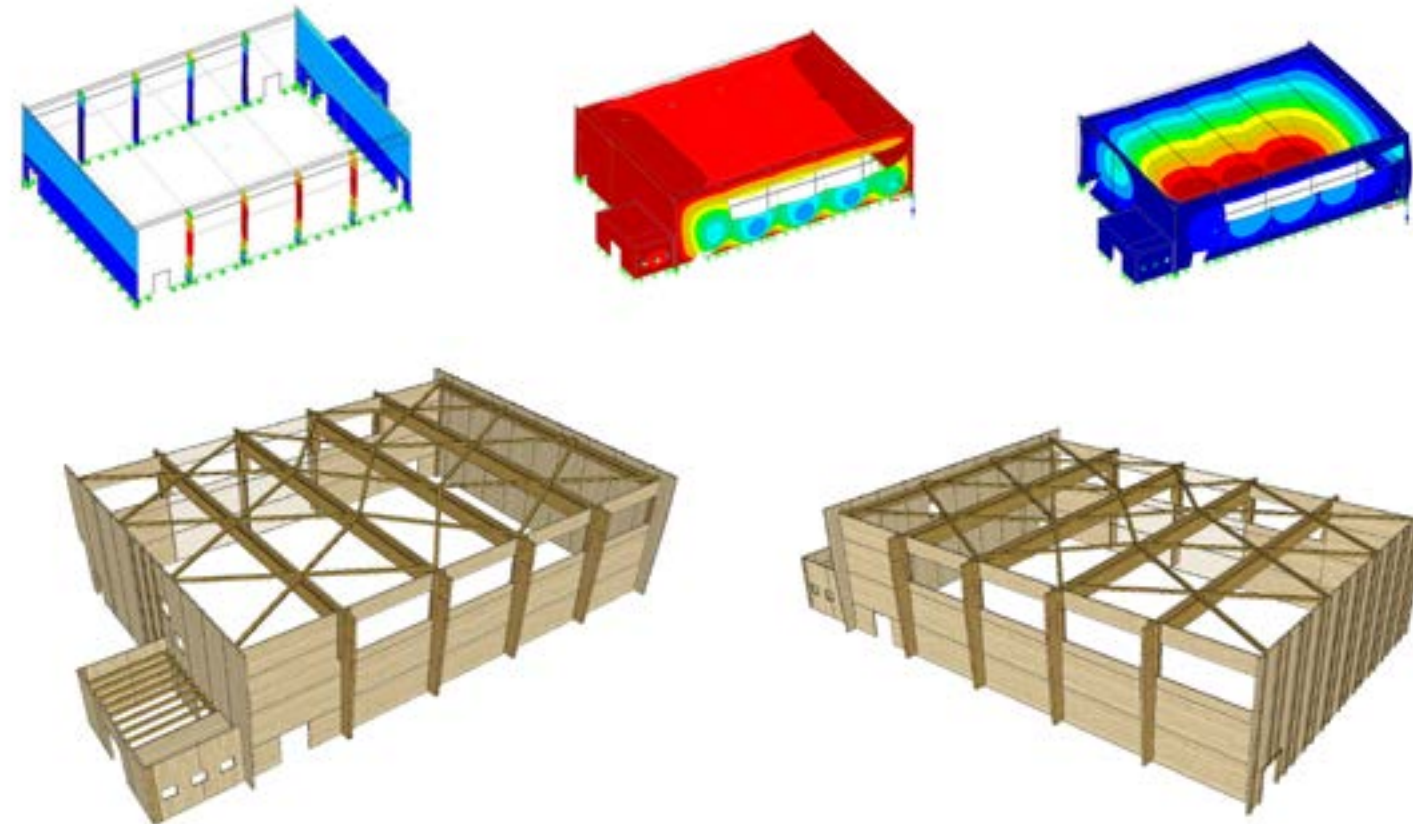
## Ergodomus' scope of work:



Structural Analysis



DfMA







The music school in the municipality of Mirandola is a structure of about 600 mq with a rectangular body of 46.5x14m.

## Project info:

Client: Municipality of Mirandola

Architect: Fabbricart

## Technical data:

Project's type: School

Material: CLT

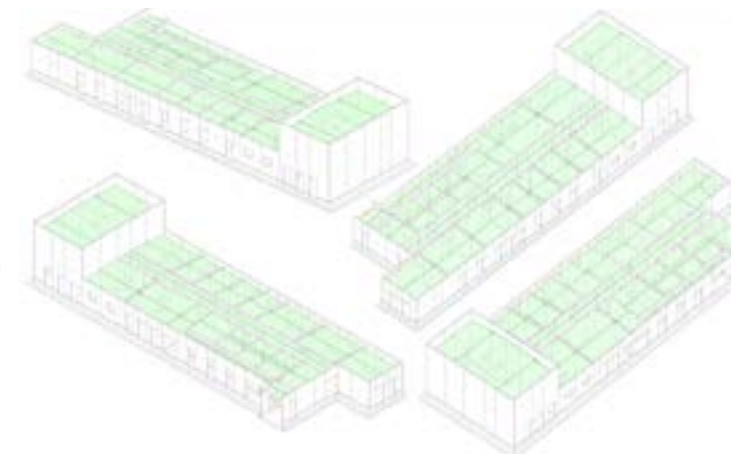
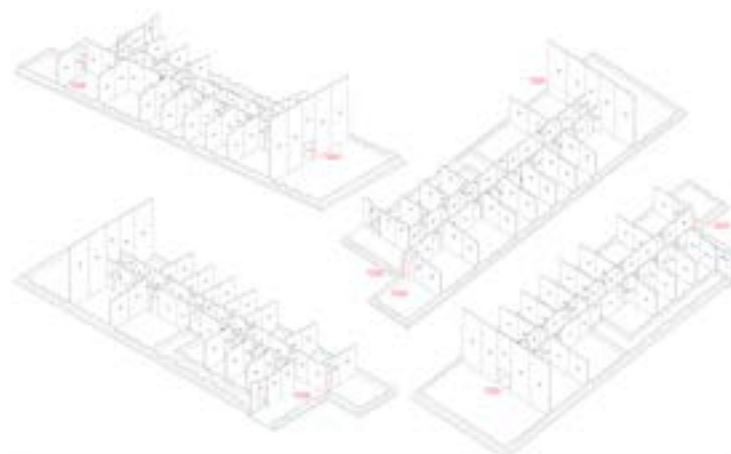
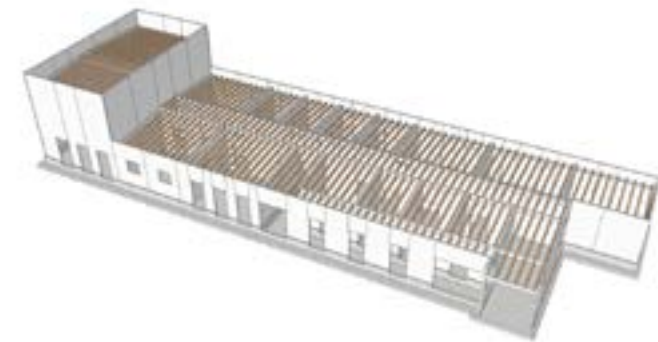
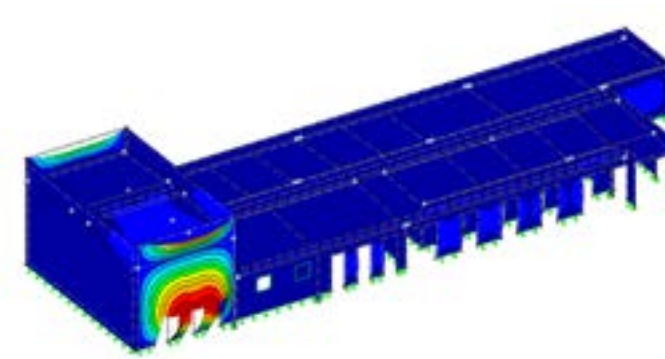
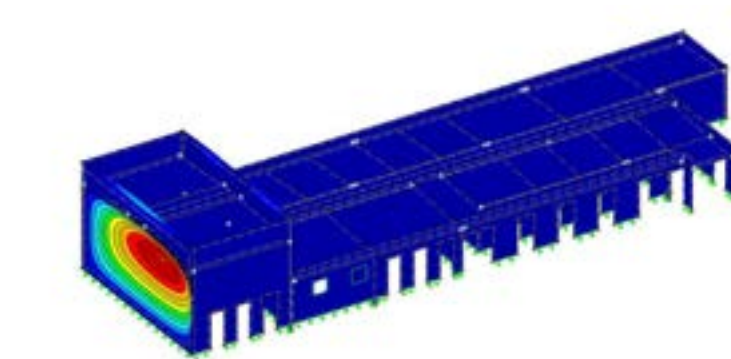
## Ergodomus' scope of work:



Structural Analysis



DfMA







The primary school in the municipality of San Possidonio was built urgently after the earthquake of May 2012 that hit Emilia Romagna.

**Project info:**

Client: Municipality

Architect: Fabbricart

**Technical data:**

Project's type: School

Material: CLT

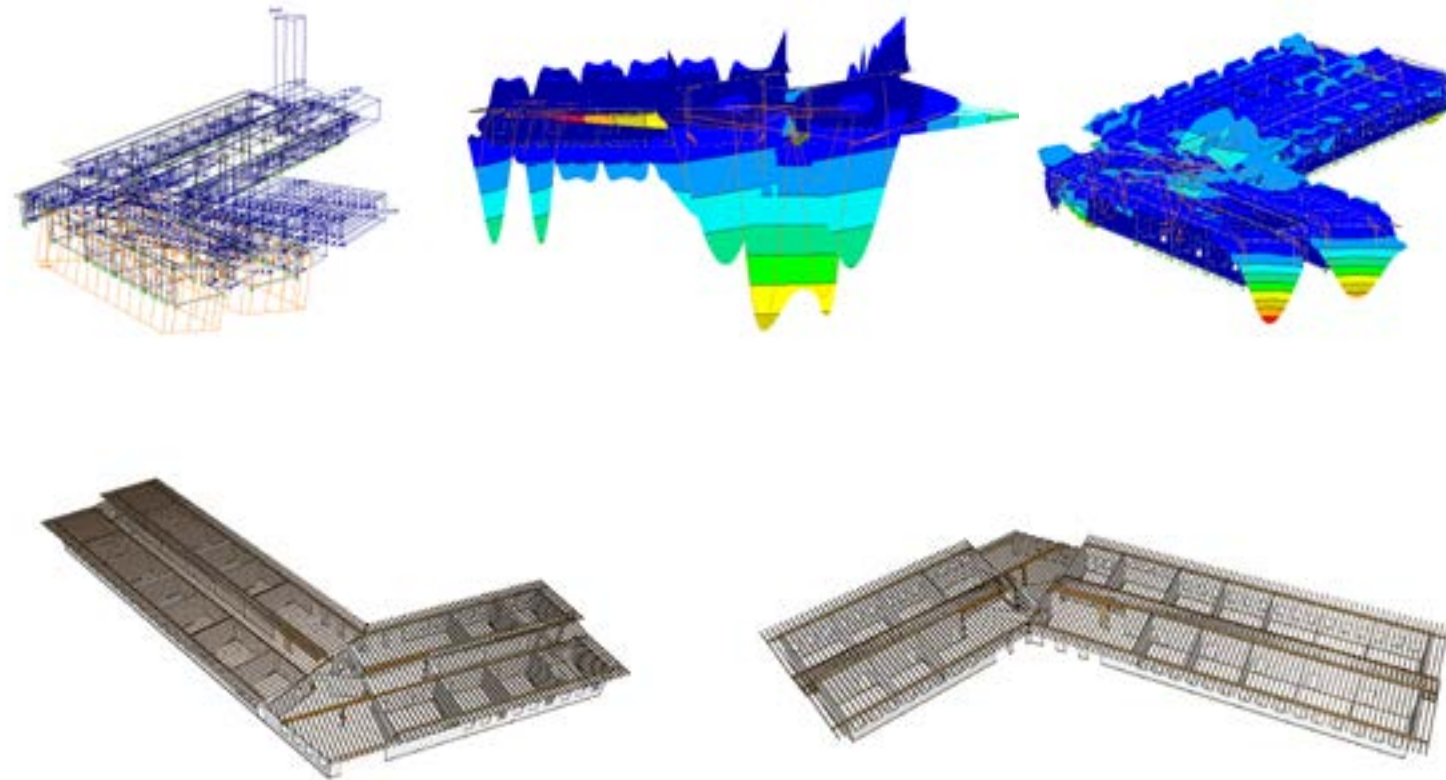
**Ergodomus' scope of work:**



Structural Analysis



DfMA







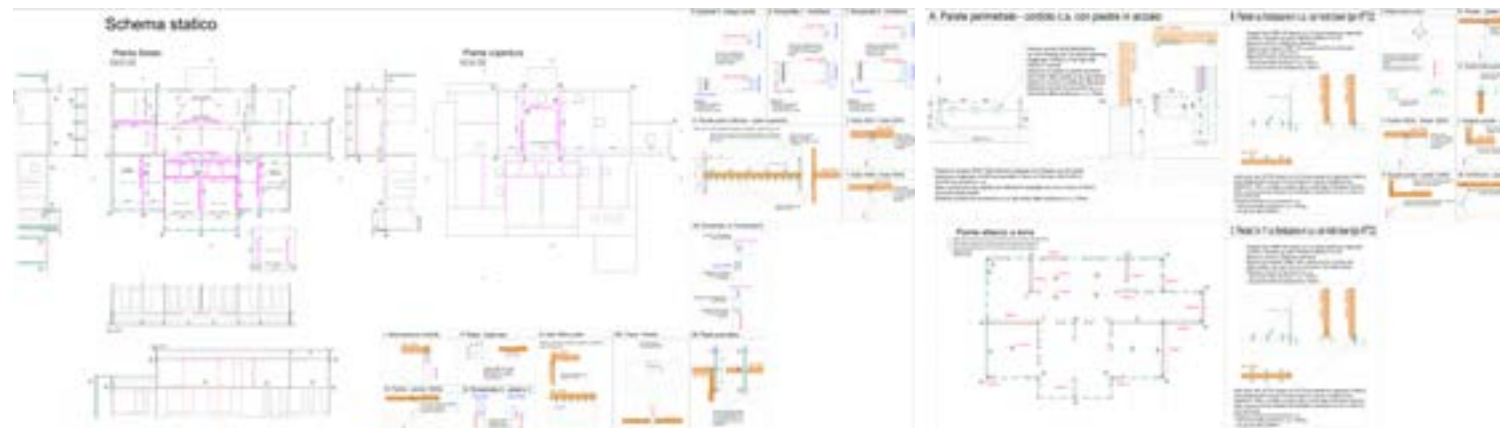
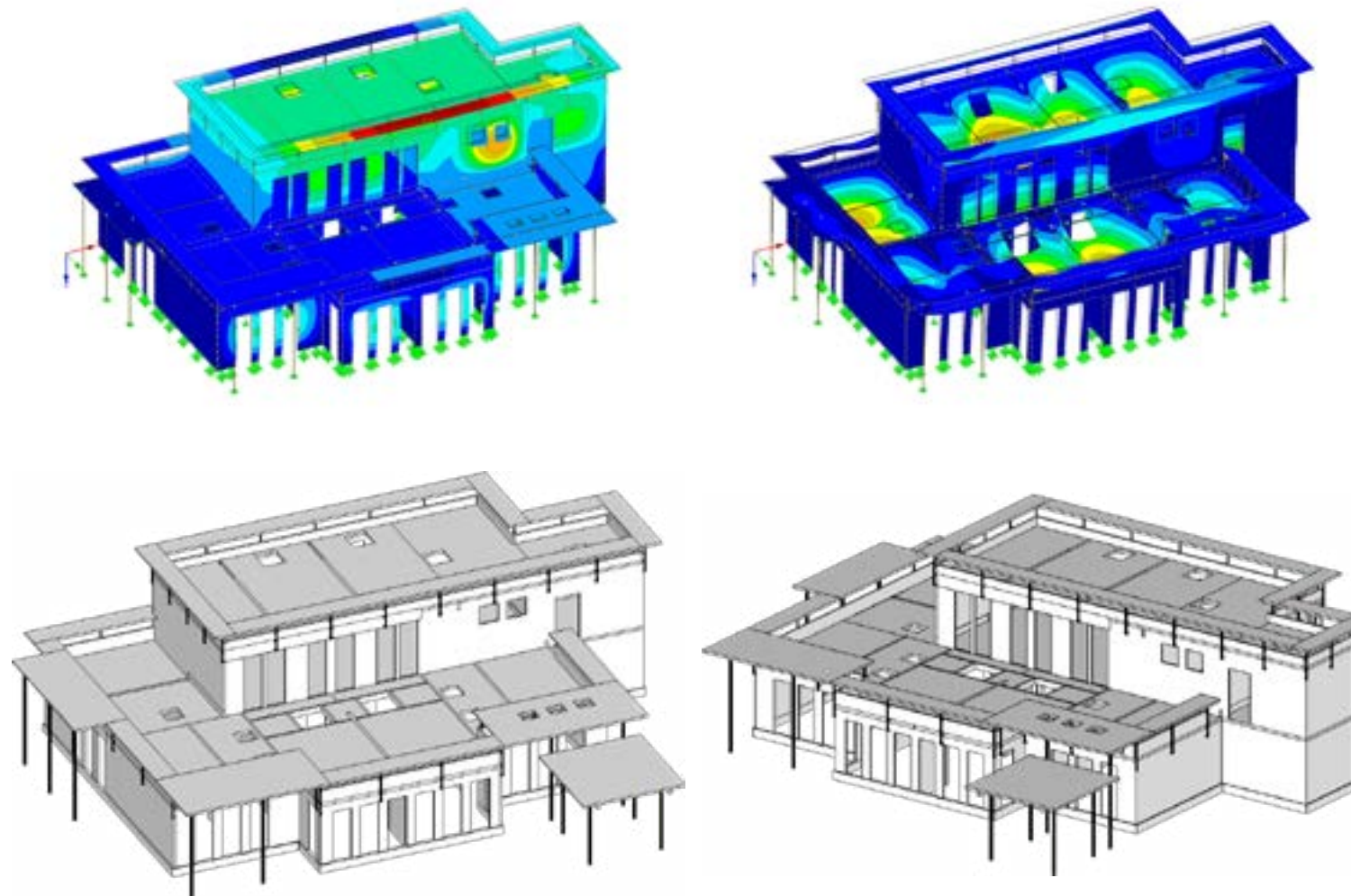
Wooden structure of a prefabricated school building with a body of 9.9x22.7m. It develops on two floors for a maximum height of 9.3m with flat roof.

**Project info:**

Client: Municipality  
Architect: Architect

**Technical data:**

Project's type: School  
Material: CLT



**Ergodomus' scope of work:**



Structural Analysis



DfMA







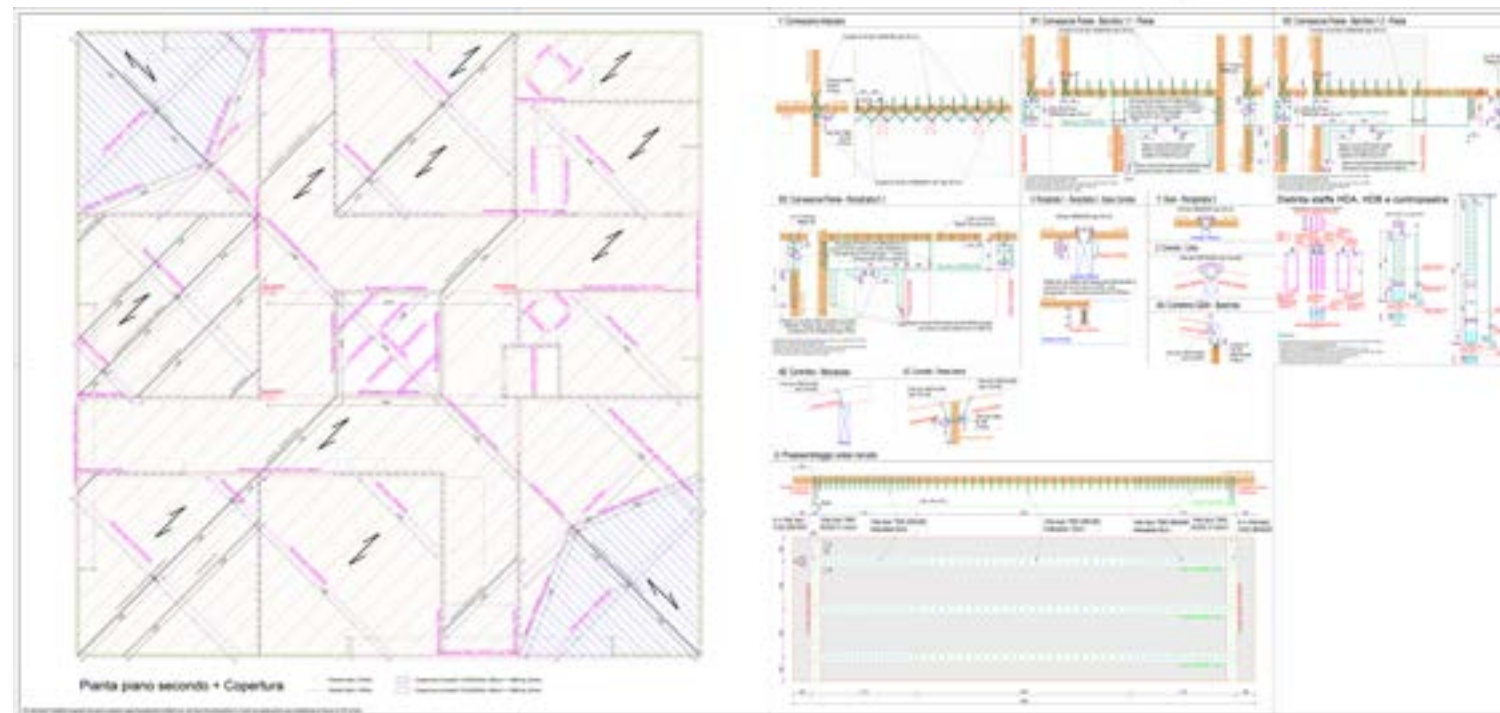
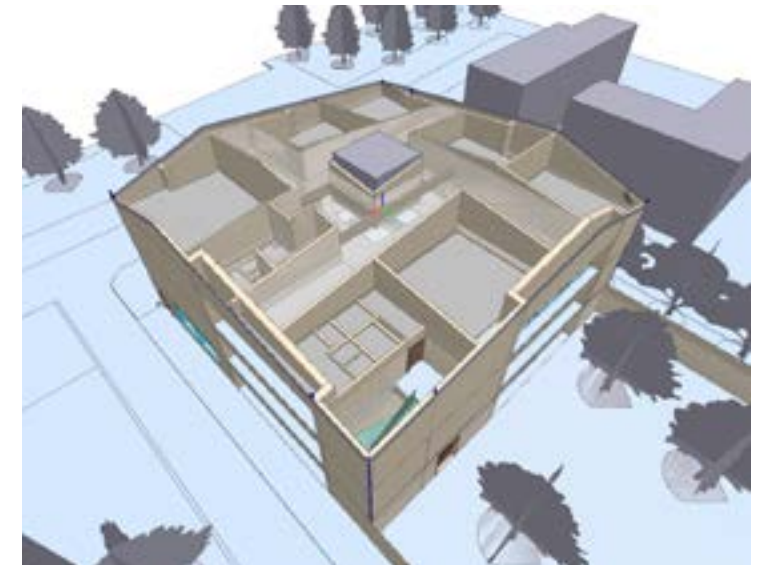
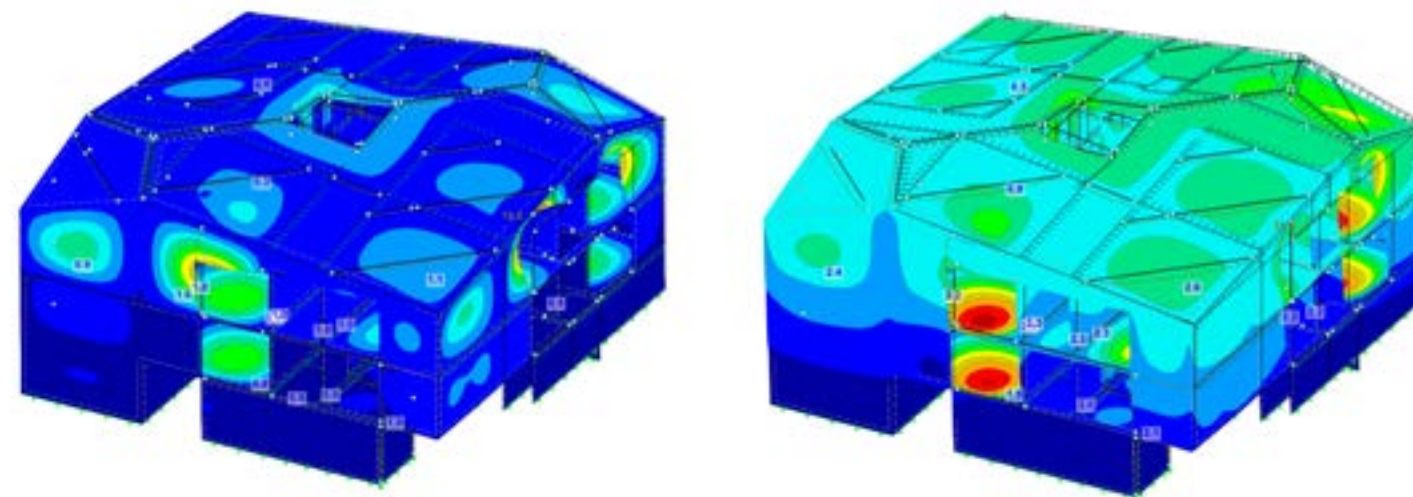
The project involves a wooden structure of a prefabricated building for school use that is spread over four floors with a maximum height of 14.76 meters and with a four-pitch roof.

## Project info:

Client: Municipality  
Architect: Architect

## Technical data:

Project's type: School  
Material: CLT



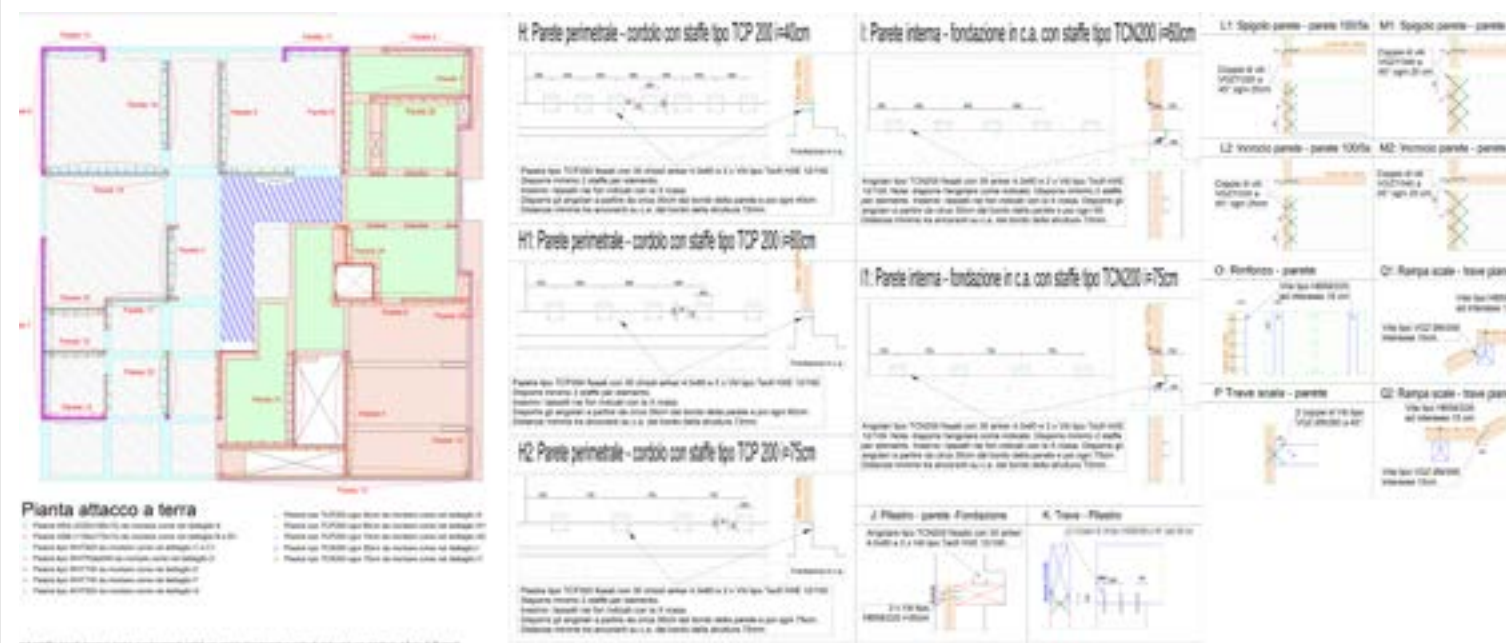
## Ergodomus' scope of work:



Feasibility Study



Structural Analysis







Ergodomus engineered the “Obsidian Rain” pavilion, which is one of the main attractions since it is located at the entrance to the Biennale Gardens.

## Project info:

Client: Fondazione La Biennale di Venezia  
Architect: cave bureau

## Technical data:

Project's type: Pavilion  
Material: LVL (Kerto)

## Ergodomus' scope of work:



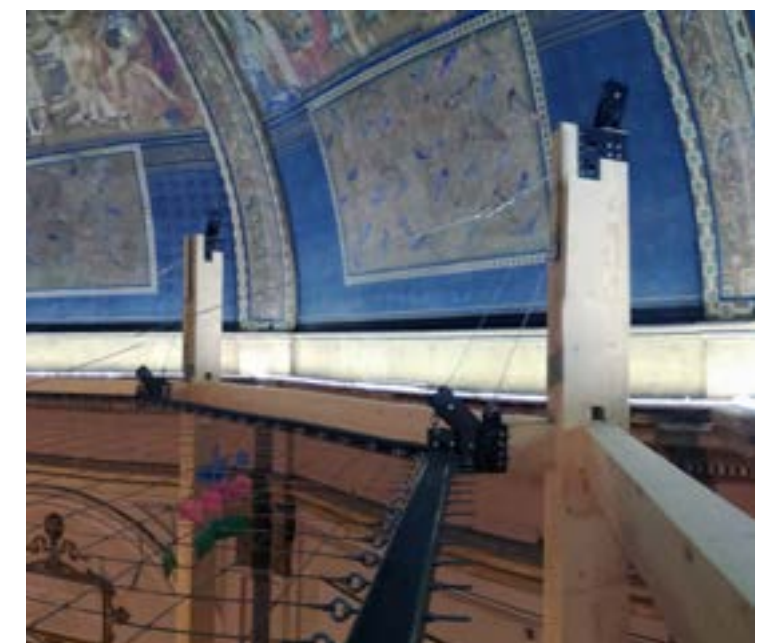
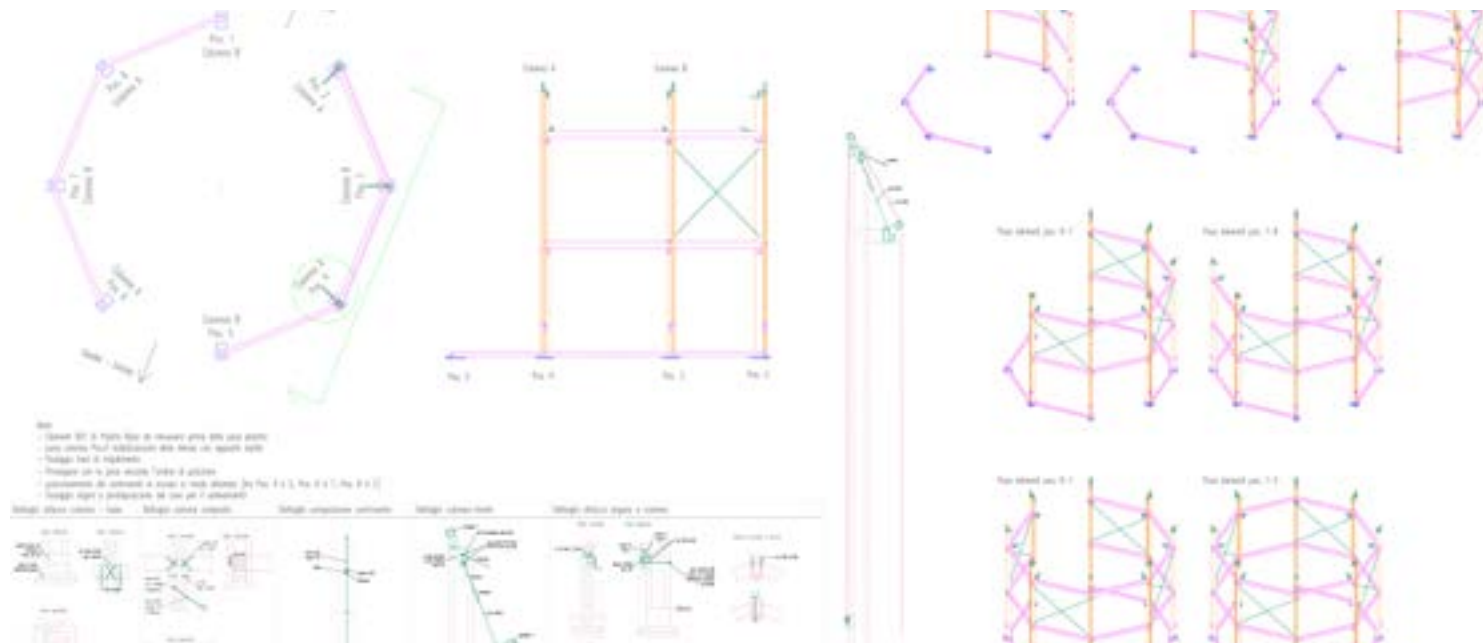
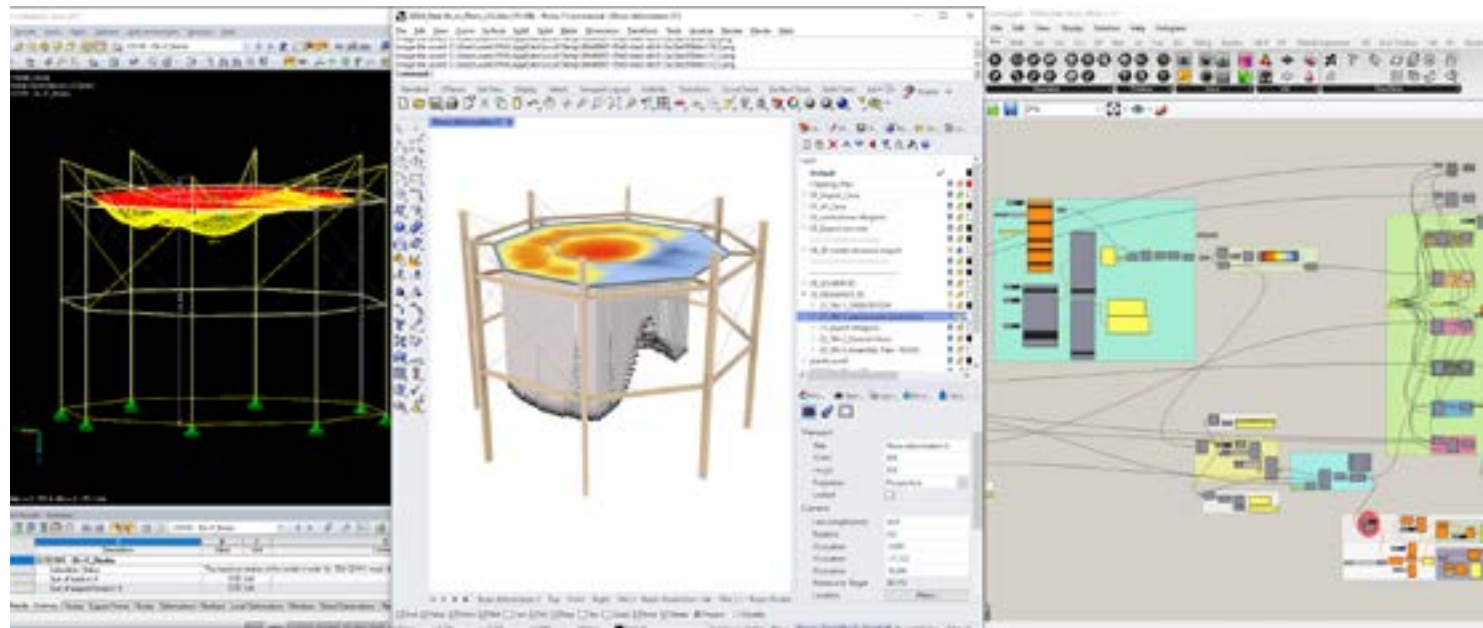
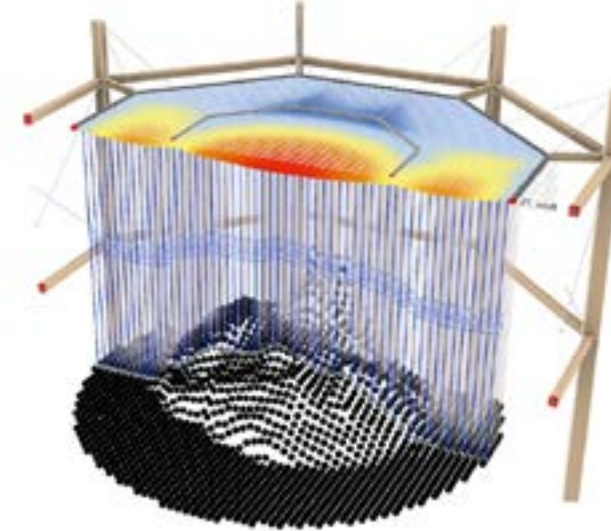
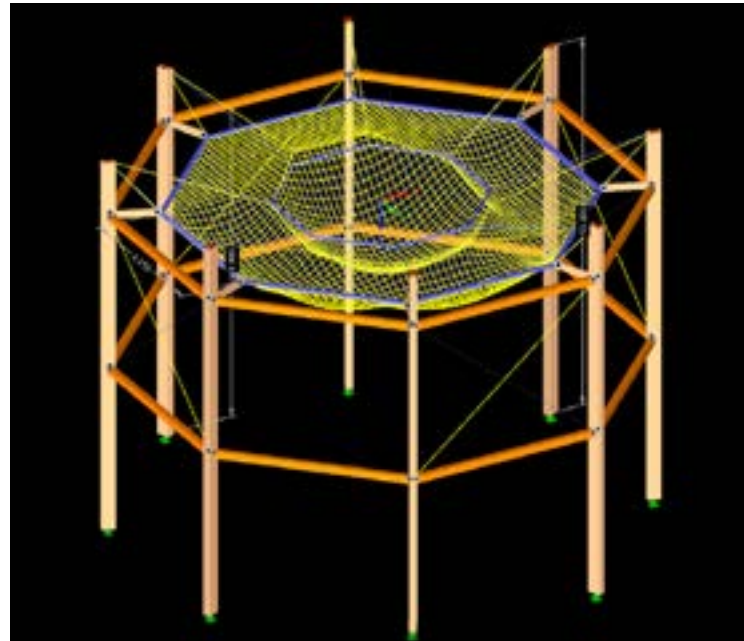
Structural Analysis



Computational Design



DfMA







The shelter will be composed of modular and repeatable elements, each consisting of four vertical supports, a permeable covering (slatted/perforated) that acts as a sunscreen and a continuous cover.

**Project info:**

Client: Municipality of Modena

Architect: Renzo Piano, G124 Team

**Technical data:**

Project's type: Pavilion

Material: GLT

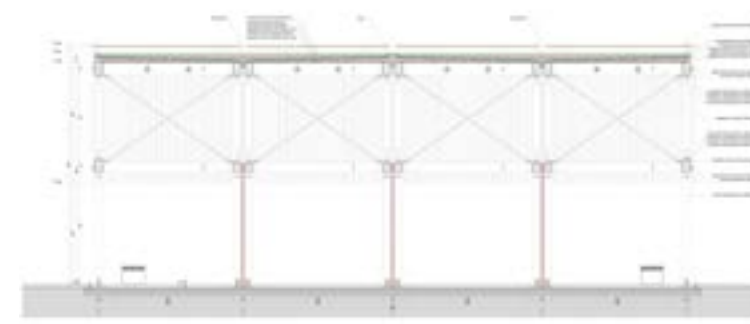
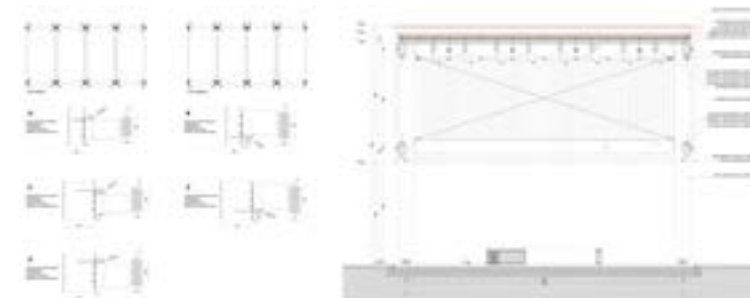
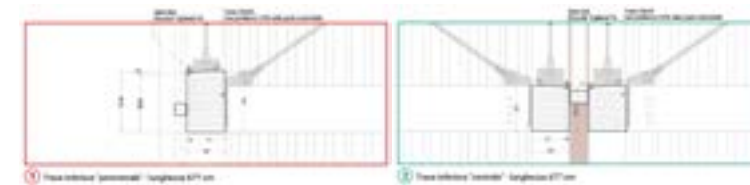
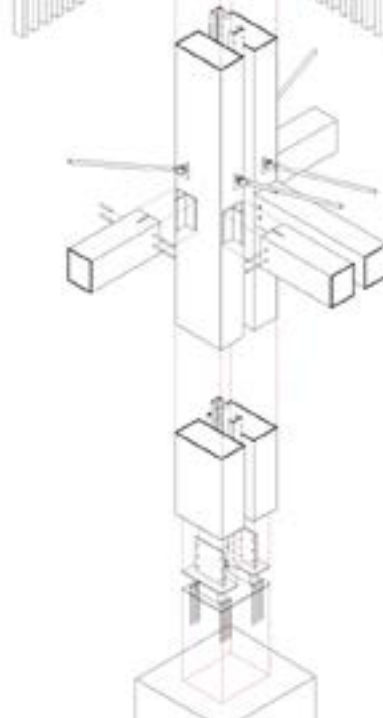
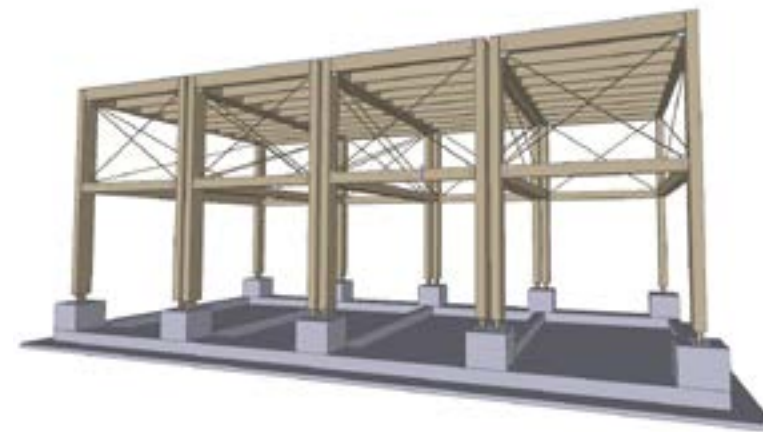
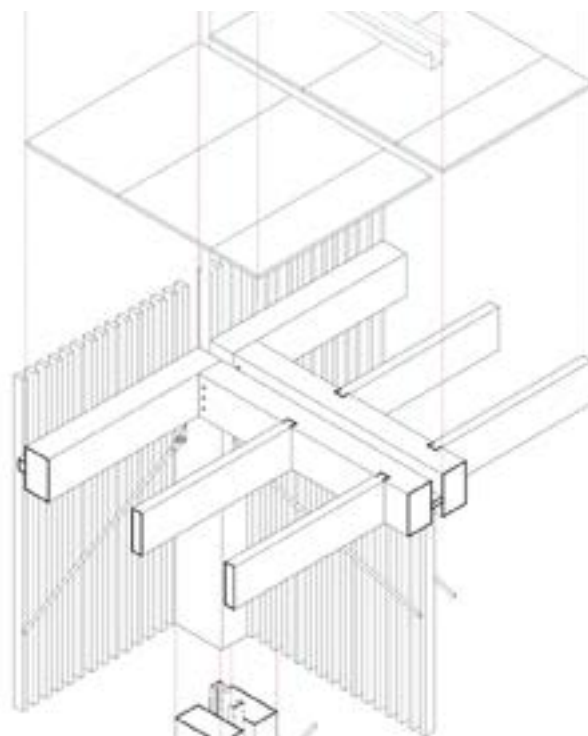
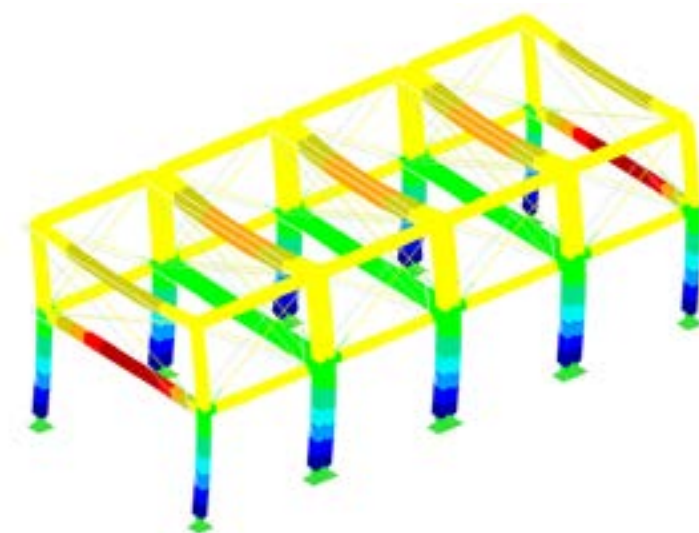
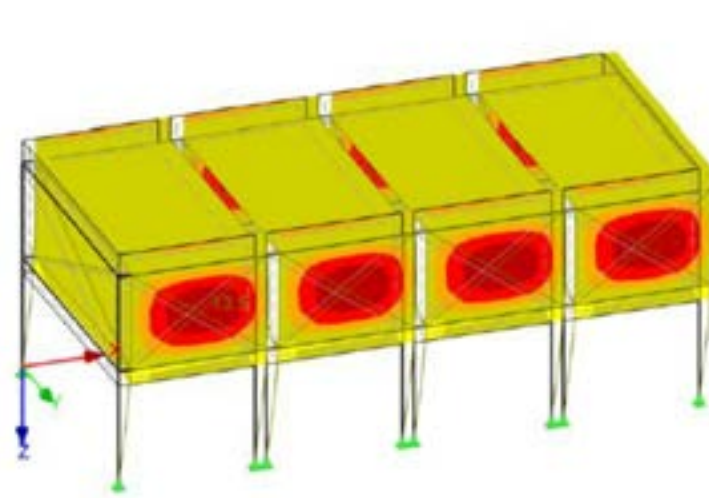
**Ergodomus' scope of work:**



Structural Analysis



DfMA







The building located in the central area of Parma, consists of 6 residential floors in Timber. The floors, walls and stairs are made using Xlam cross-layered panels.

## Project info:

Client: Case in Legno Boraschi srl

Architect: Mauro Frate architects

Manufacturer: Case in Legno Boraschi srl

## Technical data:

Project's type: Residential

Material: CLT, GLT

## Ergodomus' scope of work:



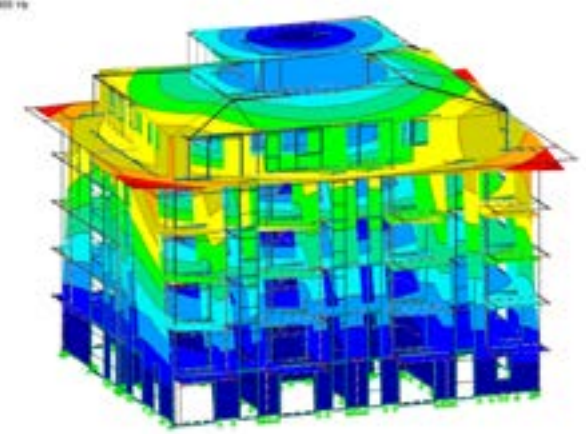
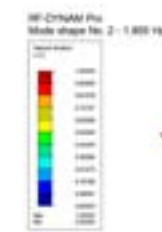
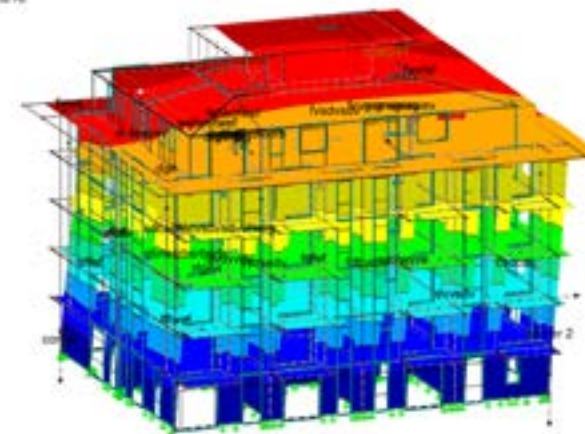
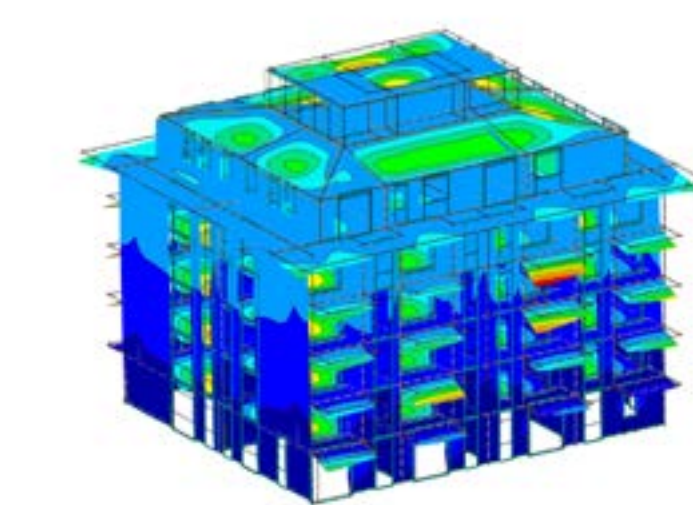
Value Engineering



Structural Analysis

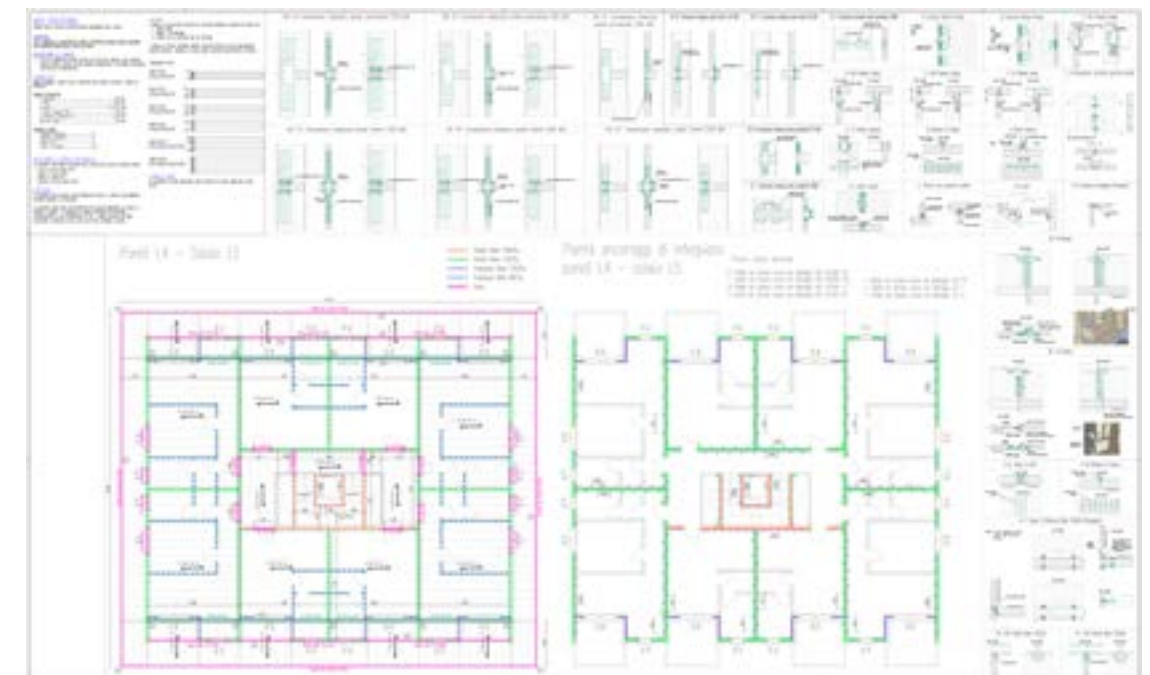
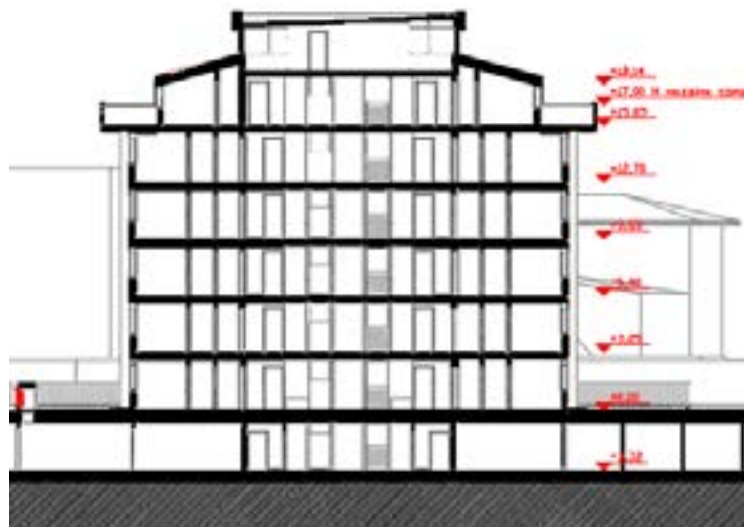


DfMA



Coefficiente di deformazione: 1.75  
Max u: 0.86277, Min u: 0.00000

Coefficiente di deformazione: 1.75  
Max u: 1.00000, Min u: 0.00000





Projects Urban  
GLT Timber Engineering  
Skyscrapers Network  
CO2 reduction NTL Ideas  
Sustainable Building Physics  
Parametric Architecture Green FEM  
Skyscrapers Timber  
DfMA Engineering Production Drawings  
Urban Digital Holistic design Steel CNC  
DLT Creativity Renewable Education  
Enthusiastic





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