

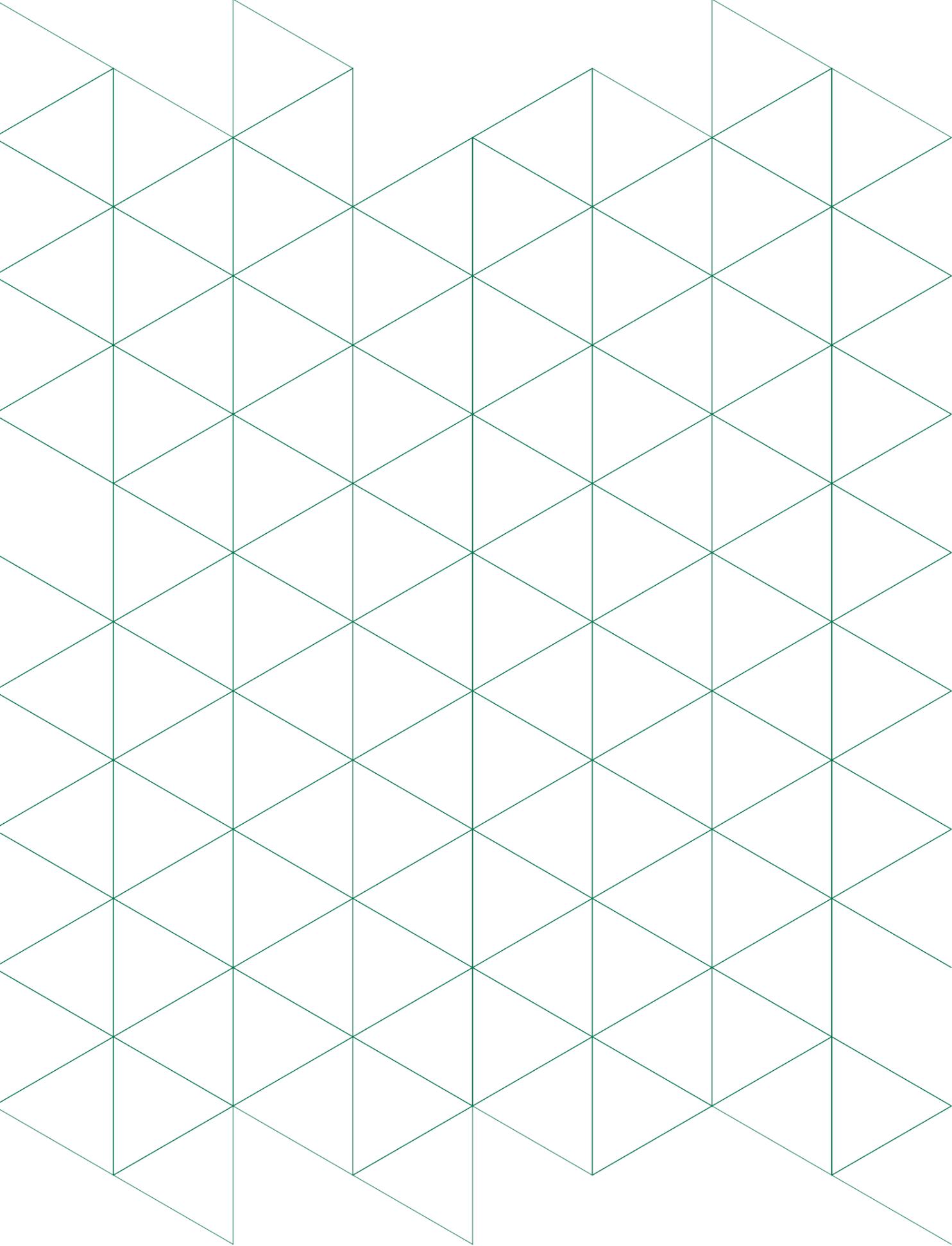


PART OF
MANNI
GROUP

SOLUTIONS PORTFOLIO
BUILDING A SUSTAINABLE FUTURE



MANNI **GREEN TECH**®



INDEX

Introduction MANNI GREEN TECH IN THREE WORDS: EVOLUTION - TECHNOLOGY - INTEGRATION	5
THE OPINION OF PROFESSOR MARCO IMPERADORI	6
THE ADVANTAGES OF STEEL: THE FUTURE OF BUILDING FOR MANNI GREEN TECH	8
MANNI GREEN TECH CONSTRUCTION SYSTEM, 10 REASONS TO CHOOSE IT	10
THE MANNI GREEN TECH CONSTRUCTION SYSTEM QUALITY AND PRODUCTION	12
SERVICES: TECHNICAL SUPPORT THROUGH EVERY PHASE OF THE PROJECT	14
THE MANNI GREEN TECH STRUCTURE	16
REGULATORY REFERENCES	17
BUILDING SOLUTIONS FOR MANNI GREEN TECH	18
FROM CONCEPT TO REALITY: FREE TO CHOOSE	34
INNOVATION AND EXPERIENCE: THE STRENGTH OF A GROUP	50
SUSTAINABILITY	54
PARTNERSHIPS AND COLLABORATIONS	57



MANNI GREEN TECH IN THREE WORDS: EVOLUTION TECHNOLOGY INTEGRATION



Dry construction is the most modern and reliable system for building safe and high performing buildings with defined times and costs. Dry construction system has very ancient roots, but the innovations in product and process over the last two decades has helped it become popular and more performing to the point of making it irreplaceable for an increasing number of applications, in all geographical and climatic areas.

Lightweight, quick execution and reduced environmental impact of the entire supply chain, safety in case of earthquake and fire, energy efficiency, acoustic comfort. From the procurement of the raw materials to the production of the construction materials, the advantages of Dry Systems are clear, such as the transportation of lightweight materials and their optimization, the extreme reduction of waste in the construction site, the recycling of materials and the minimisation of energy consumption over the course of the life cycle of the building.

What is even more fascinating about this way of designing and building is the high level of freedom it offers; it is like having a large box of elements that can be assembled together, freely choosing the most suitable components for the best possible combination to achieve the required performance, from "basic" but essential solutions, such as emergency constructions, or without the need to meet particular legal and comfort-related standards, to complex

and high performing buildings to meet the most diverse needs.

Today Manni Green Tech represents the perfect combination of the most innovative dry construction systems, taking the integration of components to the maximum level and getting to the heart of the building: the structure. The Manni Green Tech system offers all of the advantages of Dry construction, starting from the load-bearing structure of the building: latest generation fine metal profiles, cold formed with structural steel, are used to build residential and non-residential buildings very quickly, completing them with slab and panel systems for the outer envelope, internal partitions, floors and roofs.

Manni Green Tech technical office works alongside the Designer, Investor and Builder from the very early designing stage of the project, for both the structural part, produced and, if necessary, pre-assembled in the factory (off-site) as well as the definition of all of the complementary systems.

Manni Group has over 75 years of experience in construction, across the globe. Working by project, guiding the most demanding Customers through their choices and adapting to the local standards and habits, is a must for the Group. This is why the Group is able to tackle each project like a new challenge, always counting on extensive experience and consolidated know-how.

THE OPINION OF PROFESSOR MARCO IMPERADORI



Full Professor of Building Production, professor of Design and Technological Innovation, Acting Chairman for the Far East Polytechnic University of Milan.

Member of the sustainability commission of Fondazione Promozione acciaio.

Photo by A. Avezù

"Industry's interest in dry construction system has been growing in Italy over the past decade and is accelerating with a view to 2020. This is due to a number of factors such as the need to have light and elastic constructions, due to the seismic risk, able to withstand and dissipate the stresses, with high physical-technical, acoustic performance and with an increasingly marked level of prefabrication (which would be more elegant to define as "industrialisation").

In this case, Manni Group's strategy with its Manni Green Tech division is strongly focused on frame bearing systems made with low-thickness cold-formed steel structures, for the composition of both vertical and horizontal structural members and roofs.

The external envelope is then completed with a series of panels, dry insulating mats and with a second internal envelope, detached from the load-bearing one to avoid static stresses, thermal bridges and acoustic bridges.

Through interaction with other divisions of Manni Group it is possible to complete the system with sandwich panels or to make it hybrid, where necessary, with hot-

rolled profiles, creating "universal and flexible construction system" for what we would call "4.0 homes", designed in CAD/CAM and BIM environments, which can be industrialised without ever losing the originality of the architectural-formal project, both for new buildings and for renovations.

From an academic point of view, the research and operational relations between Manni Group and the team that I lead at the Politecnico di Milano are already intense and I hope that they will continue to be so in the future, shifting the "vision" of how we build the buildings that we live in well beyond the upcoming 2020, towards "active" buildings... for a future of innovation, comfort and respect for the environment."



THE ADVANTAGES OF STEEL: THE FUTURE OF BUILDING FOR MANNI GREEN TECH



100% RECYCLABLE

Steel is one of the most recycled materials in the world and, once it has been decommissioned and recycled, it does not lose its qualities. The single components can easily be transported to collection centres to be melted in electric furnaces to create new steel without losing its initial properties. If the steel structure is designed specifically, it may be reusable in other places and for other purposes.



LIGHTWEIGHT AND EARTHQUAKE-PROOF

The high resistance/weight ratio of steel makes it possible to create very small profiles with very high resistance levels; this leads to a considerable reduction in weight of the structure with subsequent benefits for the entire building, right from the very foundations. Lower weights mean lower entity of the inertial forces generated by an earthquake on the structure. Ductility is another key characteristic, whereby unlike other construction materials, steel can bend greatly before breaking; this is a fundamental characteristic in the design of truly earthquake-proof structures. These characteristics, contained in a single material, make steel the best choice for buildings in seismic areas.



RESISTANCE TO FIRE INCOMBUSTIBILITY

Steel is the only non-combustible material, namely in case of fire it does not feed the flames, it does not produce smoke or toxic gases and does not collapse within a few seconds, thereby offering the certainty of leaving an escape route even over a relatively long amount of time. It is known that its mechanical characteristics gradually decrease as the temperatures increase during a fire and, to delay this process, structural steel elements can be covered with slabs, plaster or paint to slow the rise in temperature.



DURABILITY

One of the main advantages of steel buildings, including economic, is the low to nil maintenance requirements. Most construction materials, as time goes by often deteriorate. Steel preserves its technical and structural characteristics for the entire life cycle; for special uses, steel structural components can be treated with galvanising, painting and other special treatments that make them long-lasting, even to particularly aggressive agents, for the building's entire life cycle. This characteristic means that it is a material particularly suitable for design purposes with left visible elements and those exposed to weathering. Also, thanks to its physical characteristics, steel is not attacked by micro-organisms such as mould, fungi and bacteria which would deteriorate the material. Steel structures are also immune to rising damp, unlike most traditional and wood constructions.



ARCHITECTURAL FLEXIBILITY

Steel can be used in various forms, finishing, assembly and installation methods that make it extremely flexible and usable in various types of purposes. For very broad spans and large spaces, exposed structures become an architectural and characterising element of the building, defining it as design at the same time. This exceptional flexibility makes it possible to tackle any type of construction, and is also achievable thanks to the extreme mechanical precision of steel constructions. Expressive freedom and the possibility of being installed by coupling the most diverse cladding materials means that the designer can explore all of his expressive freedom in the architectural project.

MANNI GREEN TECH CONSTRUCTION SYSTEM, 10 REASONS TO CHOOSE IT

01 SPEED

Speed is one of the strong points of the Manni Green Tech construction system. The building is engineered, produced and assembled according to harmonised and interconnected processes.

Thanks to new technologies and evolved software we are able to guarantee defined timelines. The industrialised process radically reduces construction time, unlike traditional brick or cement methods. Pre-assembling parts of the structure at the manufacturing site guarantees the reliability of the single components, increasing the levels of performance and maintaining the work schedule. The assembled materials are installed on site by trained and specialised assembly teams.

02 LIGHTWEIGHT

The construction system and its technological features are based on the concept of lightweight, which makes possible to reduce the concentrate loads on the foundations. The result is immediate: a significant reduction in reinforced concrete and savings in raw materials, water and energy. The characteristic of lightweight components facilitates the installation, avoiding the use of large lifting machinery and making it easy to handle the components.

03 MILLIMETRIC PRECISION

Thanks to new technologies, to the digital tools connected to the production phase, to the dedicated software and to the BIM programs, we are able to create a virtual model that is a perfect replica of the project before the product is manufactured. Finding criticalities in advance and developing construction details simplifies the work on site and eliminates the possibility of error.

04 SPACE GAIN

Attaining and exceeding the thermal and acoustic performance of traditional systems with limited thicknesses of system elements (floors, walls and roofs). This is the strong point that characterises buildings constructed with Manni Green Tech structure, clearly distinguishing them from traditional constructions: the technologically high performing Light Steel frame system is flexible and adaptable to all market needs.

High performing and compact internal and external walls that also make it possible to increase the net floor area of the building while minimising any waste of indoor area.

05 WATER SAVINGS

Our idea of a dry building is to reduce the environmental impact to the minimum during both the construction phases as well as the end of the service life of the building organism, thanks to the high percentage of recovery of the single components, assembled mechanically and not with wet method. This means that a fundamental resource such as water or binding agents is not used (as in most cases) and the entire system is held together by single elements bolted or screwed together to make the system both rigid and flexible at the same time.

06 INTERNATIONAL TRACEABILITY

Speedy execution, precision and easy assembly, efficient shipping of the entire structure anywhere in the world, absolute traceability of the materials and operations are actions promoted by the introduction of an unequivocal code that marks each structural element. Large structural elements and small finishing pieces are marked to standardise identity, recognition, localisation and correct positioning in the assembly phase.

07 THERMAL AND ACOUSTIC PERFORMANCE

The dry construction system with Manni Green Tech light steel frame structure offers optimal thermal-acoustic performance and characteristics thanks to the variety of possible combinations of insulating and cladding materials. The systems can be inserted inside the gap created in the steel structure and fit easily without interfering with the architecture.

08 ELASTIC AND RESISTANT AGAINST SEISMIC ACTION

The low resistance/weight ratio of steel guarantees a system that withstands the loads generated by earthquakes. Manni Green Tech structures made with light steel frame and covered with slabs and dry components are particularly lightweight, resistant and flexible all at once, therefore an excellent solution for new builds in seismic areas. Each structure is sized according to its location to guarantee the statics of the building in observance of the local regulations.

09 PROTECTION AGAINST FIRE

The dry construction system in addition to the steel structure, it is considered one of the most resistant in fire resistance ratings. Thanks to the characteristics of steel and the flexibility of the system and the properties of the materials associated with each other, they achieve some of the highest performing fire resistance characteristics for various uses.

10 OPEN SYSTEM

Thanks to our construction technology, we respond to the diverse demands of the building market, meeting the needs of our customers. The solutions can be developed and applied for various performance levels and applications. The choice may vary in terms of combinations of different types of material, thereby changing the end characteristics of the outer wall, of the partition wall, of the pitched roof and of all the components of the building.

THE MANNI GREEN TECH CONSTRUCTION SYSTEM

The Manni Green Tech light steel frame construction system is characterised by flexibility of compositions and technical solutions that promote modularity.

The solutions presented herein meet the various technical and economical needs that can apply to various uses, from residential building to hotels, from cultural centres to educational centres, to the tertiary-industrial sector.



QUALITY AND PRODUCTION

The production process, strictly connected to design, makes it possible to have certified and optimised products. The executive design, prepared with digital instruments, makes it possible to accelerate the production phase and guarantee the quality of the product. Solutions and technologies developed precisely from these concepts making the combination possible between quality and industrial production in the construction sector.

Quality is further guaranteed thanks off-site pre-assembly activity within the manufacturing site.

The construction of the Manni Green Tech structures observes the requirements for the execution, the production and the installation of cold-formed structural steel elements as set forth by the European standard EN 1090-4:2018 "Execution of steel and aluminium structures - Part 4: Technical requirements for cold-formed structural steel elements and cold-formed structures for roof, ceiling, floor and wall applications".

All Manni Green Tech structural components observe the requirements set forth in standard:

EN 1090-1:2012

"Execution of steel structures and aluminium structures - Part 1: Requirements for conformity assessment of structural components". **Obtain CE marking according to CE** European Regulation No.305/2011 (CPR, Construction Products Regulation)



SERVICES: TECHNICAL SUPPORT THROUGH EVERY PHASE OF THE PROJECT

PHASE 1

DESIGN



Supporting the customer from the first design stages to find common solutions and define concepts, also through the use of software and technical solutions to support architecture design.

PHASE 2

STRUCTURE ENGINEERING



Precision, quality and digitalisation of processes are the basis for a well-structured project. The architecture of the buildings evolves with innovative construction technologies to meet all market needs, encouraging innovation in traditional construction techniques such as brick or concrete, and the digitalisation of processes to make the workflow fluid and flexible. Every single project is taken care of by the Manni Green Tech team of specialists and technicians to develop the details and optimal solutions that need to be built, backed by the experience and knowledge of the system tested over the years.



PHASE 3

MANUFACTURING SPEED AND QUALITY

Construction times can be significantly reduced thanks to the millimetric precision of factory production. Each component of the structure and the cladding is studied in detail by the latest technology system to match up perfectly. The synergy between the phases and the actors involved in the process is aimed at offering the best service for the selection and procurement of materials.



PHASE 4

FACTORY OR ON SITE ASSEMBLY

Observing the schedule and quality of the work thanks to a network of qualified professionals in the assembly of CFS constructions. The construction phase on site allows for a clean and safe site, on time with the pre-established deadlines. Thanks to the accurate project management service and the coordination of activities with production, the integrated logistics service can follow the various construction phases according to the customer's needs.

The assembly phase can be supported by off-site pre-assembly activities: in a manufacturing and controlled site the components are assembled together to reduce construction time and facilitate work on site where logistics and storage are not facilitated.

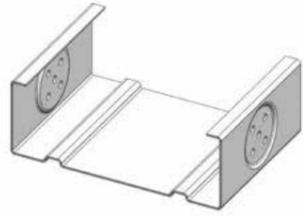


PHASE 5

SUPERVISION AND LOGISTICS

Continuous assistance from the team of specialised technicians to verify the correctness of the activities and form the installation teams. Furthermore, the integration of building monitoring systems is possible thanks to the design in BIM, for the entire life cycle of the building and facilitating ordinary and extraordinary maintenance works.

THE MANNI GREEN TECH STRUCTURE



The elements that compose the Manni Green Tech Light Steel Frame system are the result of research that led to the development of a customised construction solution based on a single construction component.

Thanks to the “Know-how” and the many decades of international experience in steel construction, Manni Green Tech engineering developed a 140mm C-profile with 40mm wing height with 10 mm stiffening of the wings at 90°, all duly ribbed and stiffened to achieve a completely reagent section.

The connections and couplings were designed to respond to the stresses that apply to the components of the structure and to increase the versatility of use. The constant use of S350GD high resistance steel contributes to this.

The connections of the components were accurately modelled and entered into the structural calculation system, so that the connections between the rods have a calculated number of screws or rivets for every single connection, in every project. This makes every Manni Green Tech structure safe, efficient and effective, from design to construction, where the connections are perfectly described in the design and facilitated by the drawing of the profile which features markings for screws and rivets.

The uniqueness of Manni Green Tech engineering lies in its capacity to combine cold-formed steel elements with heavy structural steelwork structures (hot rolled) and optimise them in a single structure; this special characteristic allows the Manni Green Tech engineers to design structures for different types of buildings.

REGULATORY REFERENCES

The elements of the construction system are named as CFS (Manni GreenTech Cold Formed Steel). The described steel structures are constructed using the stick built system composed of a single profile and integrated with metal structural steelwork where necessary to meet the needs of various types of buildings.

For each project the load-bearing structures are sized based on the loads according to the technical standards for construction in force in the country of installation.

The resistance ratings of the CFS structural elements are determined in accordance with Eurocodes:

EN 1993-1-3:2005 Eurocode 3

Design of steel structures -
Part 1-3: General rules -
Supplementary rules for
cold formed members and
sheeting

EN 1993-1-5:2007 Eurocode 3

Design of steel structures -
Part 1-5: Plated structural
elements



BUILDING SOLUTIONS FOR MANNI GREEN TECH



1

ENVELOPE SYSTEM

The system is composed of a load-bearing structural core with Manni Green Tech Cold Formed Steel technology. The outer cladding can be built with various finishes which include the composition of fibre cement panels, ETICS, ISOPAN sandwich panels that guarantee quick and easy assembly.

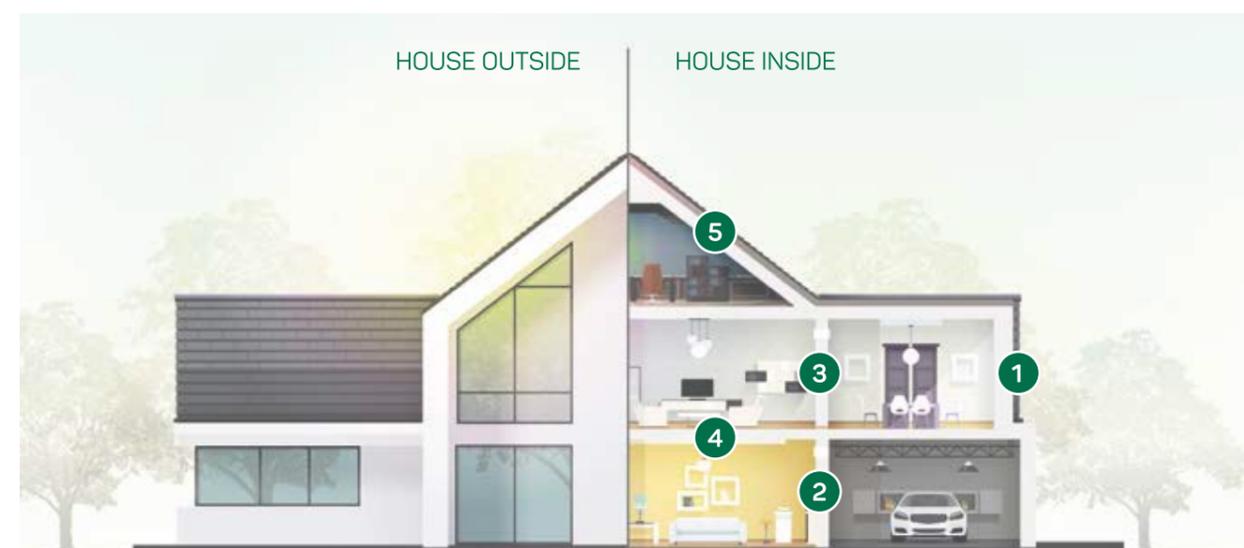
The inner cladding is usually built with plasterboard panels, stacked and coupled to meet the project requirements.

2

3

SYSTEM FOR INSIDE PARTITION WALLS

The structural walls allow rapid installation, easy fitting of the systems while maintaining a clean site. All in compliance with the acoustic requirements between two or one unit(s) thanks to a system of counter-walls and stratifications of suitable materials.



4

SYSTEM OF DIVIDING FLOORS BETWEEN TWO UNITS OR THE SAME UNIT

The floor between one or two units is differentiated with modular solutions depending on the intended use, with different stacking of materials. It is possible to combine the false ceiling system with secondary metal frame and soundproofing material to improve living comfort. According to the design choices, the gap space between the Manni Green Tech floor profiles can be used to install ceiling systems or to implement the insulation of the structures.

5

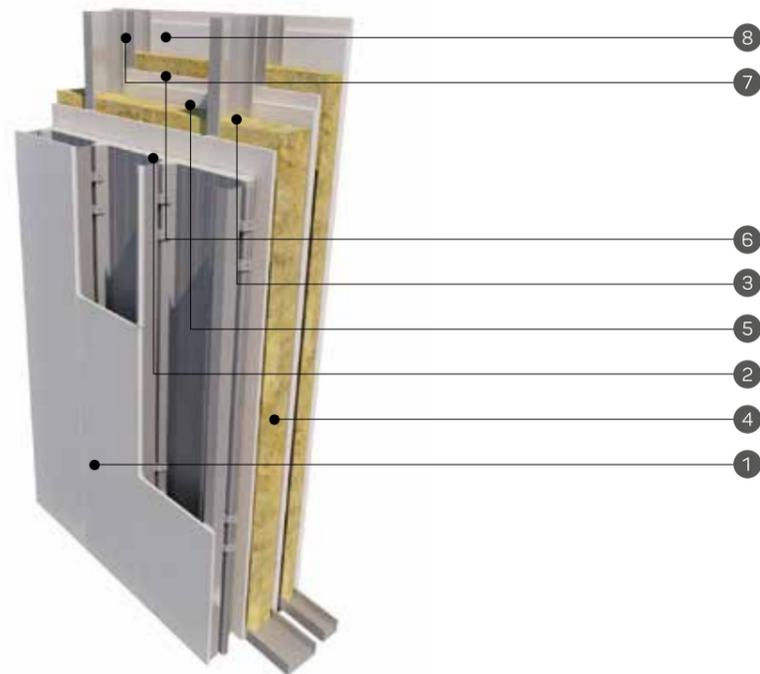
SYSTEM OF PITCHED ROOFS, FLAT ROOFS, INDUSTRIAL ROOFS

The system was designed to meet the most diverse needs: from classic solutions with pitched roofs covered with flat or curved tiles, to solutions with flat roofs also for industrial buildings. This was possible thanks to the use of Isopan roofing solutions, which guarantee waterproofing and resistance to weathering.

MGT-WE 1

EXTERNAL WALL

GLOBAL VALUE PERFORMANCE



ISOPAN
ISOCOP Panel

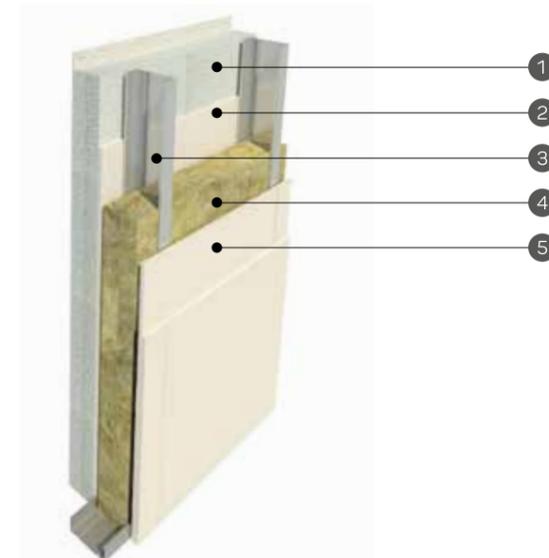
- 1 **ISOPAN - Ark Wall® System**
Cover panels + air ventilation
ISOCOP vertical panel thk.40mm
- 2 **Board**
thk.12.5mm cement board
- 3 **Manni Green Tech® Profile**
thk.140mm - high resistance steel S350 GD
- 4 **Internal insulation**
2x60mm minarl wool panels d. 70kg/mc
- 5 **Double board**
2x12,5mm plasterboard + Steam barrier
- 6 **Insulation**
Mineral wool panel d.40kg/mc thk. 60mm
- 7 **Internal wall structure**
U Channel 40x 75x40x0,6 mm, C profile 40x 75x40x0,6 mm
- 8 **Interior with double board**
thk.12.5mm plasterboard reinforced fiber
thk.12.5mm plasterboard hight density

MGT-WE 1		POINTS	VALUE
	Sound performance	●●●●●	Rw 75dB
	Thermal performance	●●●●●	0.10 W/m²K
	Thermal lag	●●●●●	12h47'
	Thicknees	●●●●●	36,8cm

MGT-WE 2

EXTERNAL WALL

GLOBAL VALUE PERFORMANCE



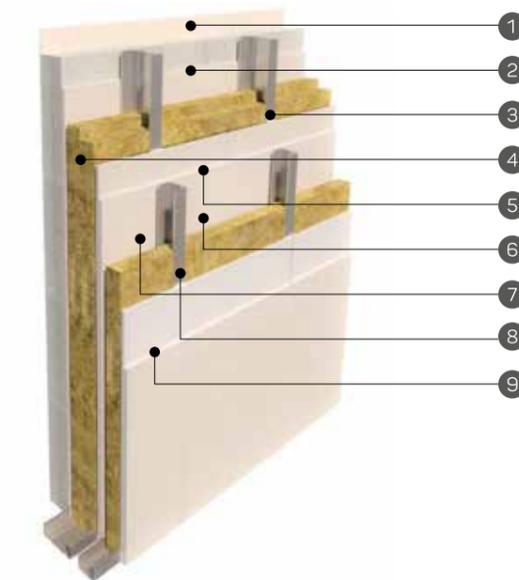
		POINTS	VALUE
	Sound performance	●●●●●	Rw 57dB
	Thermal performance	●●●●●	0.15 W/m²K
	Thermal lag	●●●●●	8h2'
	Thicknees	●●●●●	29,00 cm

- 1 **ETICS**
Colour + armouring +
thk. 100mm EPS panel
- 2 **Board**
thk.12.5mm cement board
- 3 **Manni Green Tech® Profile**
thk.140mm - high resistance steel S350 GD
- 4 **Insulation**
2x60mm minarl wool panels d. 70kg/mc
- 5 **Interior with double board**
thk.12,5mm plasterboard + Steam barrier
thk.12.5mm plasterboard reinforced fiber

MGT-WE 3

EXTERNAL WALL

GLOBAL VALUE PERFORMANCE



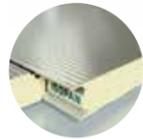
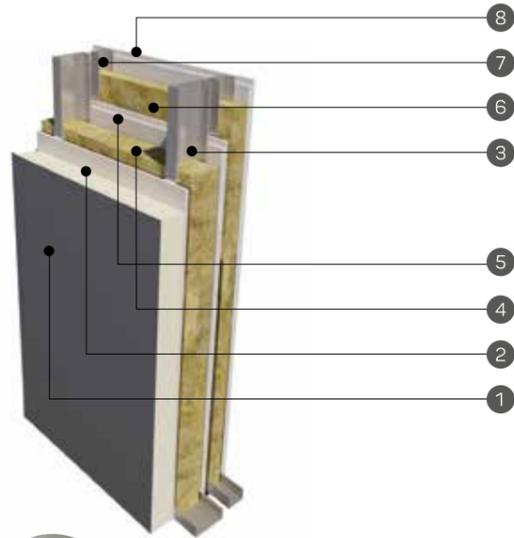
		POINTS	VALUE
	Sound performance	●●●●●	Rw 82dB
	Thermal performance	●●●●●	0.11 W/m²K
	Thermal lag	●●●●●	12h40'
	Thicknees	●●●●●	40,00 cm

- 1 **ETICS**
Colour + armouring +
thk. 100mm EPS panel
- 2 **Board**
thk.12.5mm cement board
- 3 **Manni Green Tech® Profile**
thk.140mm - high resistance steel S350 GD
- 4 **Insulation**
2x60mm minarl wool panels d. 70kg/mc
- 5 **Double board**
2x12,5mm plasterboard + Steam barrier
- 6 **Dead - air space**
thk. 10mm
- 7 **Insulation**
Mineral wool panel d.40kg/mc thk.60mm
- 8 **Internal wall structure**
U Channel 40x 75x40x0,6 mm, C profile 40x 75x40x0,6 mm
- 9 **Interior with double board**
thk.12.5mm plasterboard reinforced fiber
thk.12.5mm plasterboard hight density



MGT-WE 4

EXTERNAL WALL
GLOBAL VALUE PERFORMANCE



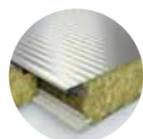
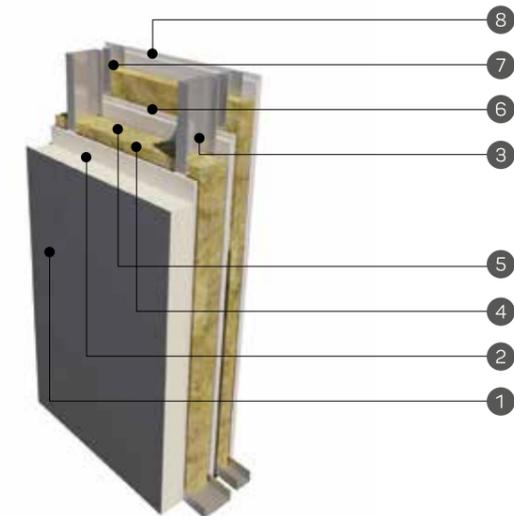
ISOPAN
Isoparete Plissé and Plissé
Compact panels

	POINTS	VALUE
Sound performance	●●●●●	Rw 76dB
Thermal performance	●●●●●	0,126 W/m²K
Thermal lag	●●●●●	11h39'
Thicknees	●●●●●	33 cm

- 1 **ISOPAN - Isoparete Plissé Panel**
thk. 40mm - interval panel 1000mm
(Plissé Compact panel interval 600mm)
- 2 **Board**
thk. 12.5mm cement board
- 3 **Manni Green Tech® Profile**
sp.140mm - high resistance steel S350 GD
- 4 **Internal insulation**
2x60mm minarl wool panels d. 70kg/mc
- 5 **Double board**
2x12,5mm plasterboard + Steam barrier
- 6 **Insulation**
Mineral wool panel d.40kg/mc thk. 60mm
- 7 **Internal wall structure**
U Channel 40x 75x40x0,6 mm, C profile 40x 75x40x0,6 mm
- 8 **Interior with double board**
thk.12.5mm plasterboard reinforced fiber
thk.12.5mm plasterboard high density

MGT-WE 5

EXTERNAL WALL
GLOBAL VALUE PERFORMANCE



ISOPAN
Isofire Wall Plissé
Panel

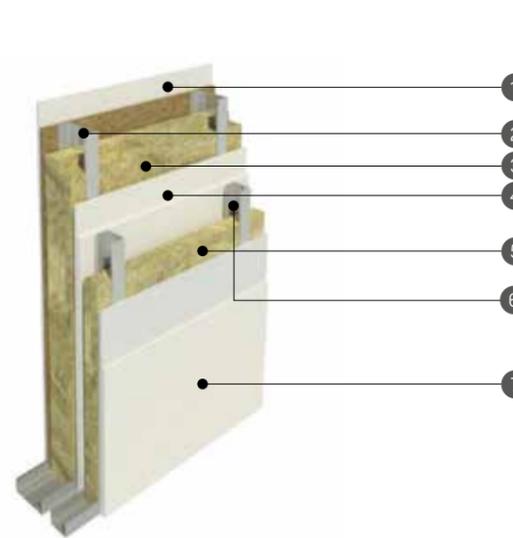


	POINTS	VALUE
Sound performance	●●●●●	Rw 79 dB
Thermal performance	●●●●●	0,086 W/m²K
Thermal lag	●●●●●	13h57'
Thicknees	●●●●●	40cm

- 1 **ISOPAN - Isofire Wall Plissé Panel**
thk.120mm
- 2 **Board**
thk. 12.5mm cement board
- 3 **Manni Green Tech® Profile**
thk. 140mm - high resistance steel S350 GD
- 4 **Insulation**
2x60mm mineral wool panels d. 70kg/mc
- 5 **Double board**
2x12,5mm plasterboard + Steam barrier
- 6 **Insulation**
Mineral wool panel d.40kg/mc thk.60mm
- 7 **Internal wall structure**
U Channel 40x 75x40x0,6 mm, C profile 40x 75x40x0,6 mm
- 8 **Interior with double board**
thk.12.5mm plasterboard reinforced fiber
thk.12.5mm plasterboard high density

MGT-WE 6

EXTERNAL WALL
GLOBAL VALUE PERFORMANCE

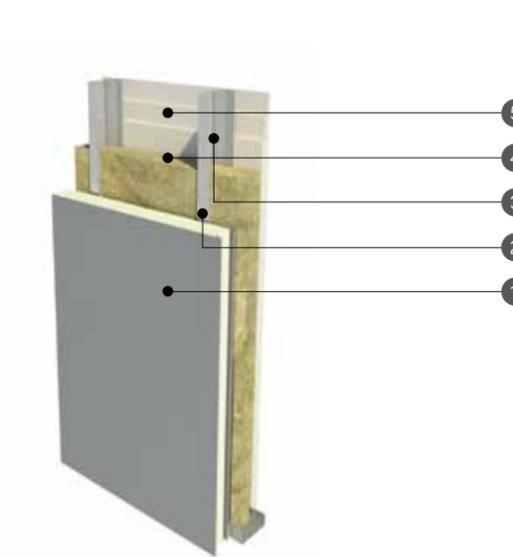


	POINTS	VALUE
Sound performance	●●●●●	Rw 74dB
Thermal performance	●●●●●	0,161W/m²K
Thermal lag	●●●●●	8h40'
Thicknees	●●●●●	30,6 cm

- 1 **Board**
thk. 12.5mm cement board
thk. 13.0mm OSB3 panel
- 2 **Manni Green Tech® Profile**
thk. 140mm - high resistance steel S350 GD
- 3 **Insulation**
2x60mm minarl wool panels d. 70kg/mc
- 4 **Double board**
2x12,5mm plasterboard + Steam barrier
- 5 **Insulation**
Mineral wool panel d.40kg/mc thk. 60mm
- 6 **Internal wall structure**
U Channel 40x 75x40x0,6 mm, C profile 40x 75x40x0,6 mm
- 7 **Interior with double board**
thk.12.5mm plasterboard reinforced fiber
thk.12.5mm plasterboard high density

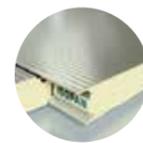
MGT-WE 7

EXTERNAL WALL
GLOBAL VALUE PERFORMANCE



	POINTS	VALUE
Sound performance	●●●●●	Rw 54 dB
Thermal performance	●●●●●	0,208W/m²K
Thermal lag	●●●●●	6h41'
Thicknees	●●●●●	23,1 cm

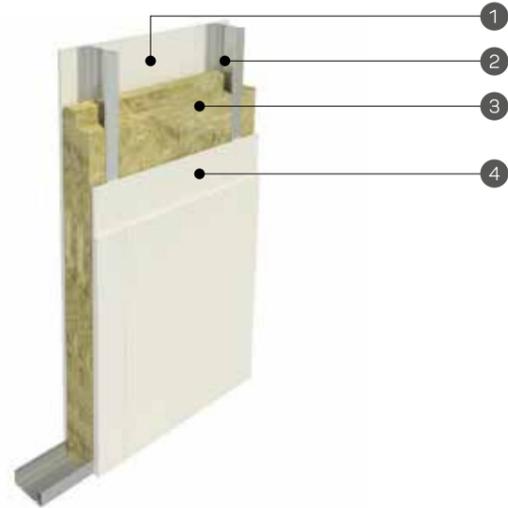
- 1 **ISOPAN - Isopan Wall Plissé panel - PU**
thk.40mm
- 2 **Board**
thk.12.5mm cement board
- 3 **Manni Green Tech® Profile**
thk.140mm - high resistance steel S350 GD
- 4 **Insulation**
thk.80mm minarl wool panels d. 70kg/mc
- 5 **Interior with triple board**
thk.12.5mm plasterboard + Steam barrier
thk. 12,5mm plasterboard high density
thk. 12,5mm plasterboard reinforced fiber



ISOPAN
Isoparete Plissé Panel

MGT-WINT 1

INTERIOR WALL
GLOBAL VALUE PERFORMANCE

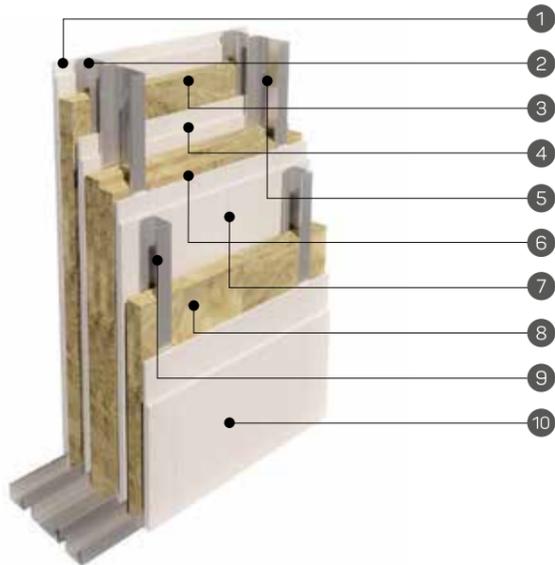


	POINTS	VALUE
Sound performance	●●●●●	Rw 55 dB
Thermal performance	NA	NA
Thermal lag	NA	NA
Thicknees	●●●●●	19 cm

- 1 **Board**
thk.12.5mm plasterboard
- 2 **Manni Green Tech® Profile**
thk.140mm - high resistance steel S350 GD
- 3 **Insulation**
2x60mm mineral wool panels d. 70kg/mc
- 4 **Board**
thk.12.5mm plasterboard

MGT-WINT 2

INTERNAL WALL BETWEEN TWO HOUSING UNITS
GLOBAL VALUE PERFORMANCE



	POINTS	VALUE
Sound performance	●●●●●	Rw 70dB
Thermal performance	NA	NA
Thermal lag	NA	NA
Thicknees	●●●●●	33,5 cm

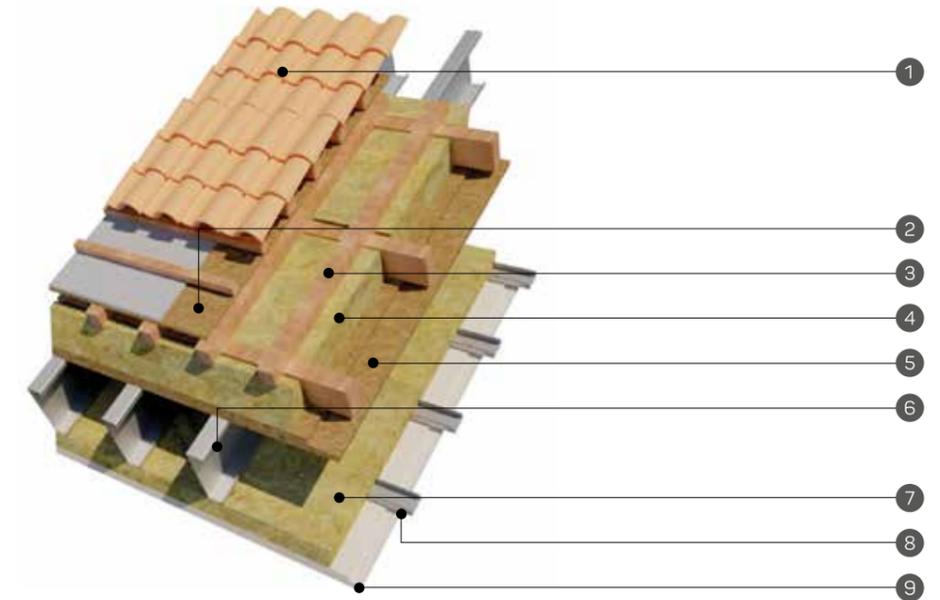
- 1 **Interior with double board**
2x12.5mm plasterboard
- 2 **Internal wall structure**
U Channel 40x 75x40x0,6 mm,
C profile 40x 75x40x0,6 mm
- 3 **Insulation**
Mineral wool panel d.40kg/mc thk.60mm
- 4 **Double board**
2x12,5mm plasterboard
- 5 **Manni Green Tech® Profile**
thk.140mm - high resistance steel S350 GD
- 6 **Insulation**
2x60mm mineral wool panels d. 70kg/mc
- 7 **Double board**
2x12,5mm plasterboard
- 8 **Insulation**
Mineral wool panel d.40kg/mc thk.60mm
- 9 **Internal wall structure**
U Channel 40x 75x40x0,6 mm,
C profile 40x 75x40x0,6 mm
- 10 **Interior with double board**
2x12.5mm plasterboard



Fire resistance

MGT-RP 1

PENT ROOF
GLOBAL VALUE PERFORMANCE



- 1 **Roof**
Roof covering
- 2 **OSB Panel**
18mm OSB panel + Wood frame
- 3 **Air ventilation**
thk. 50mm + Breathable waterproof sheet
- 4 **Insulation**
thk.120mm mineral wool panels d. 150kg/mc + Steam barrier
- 5 **Rigid layer**
2x15.5mm OSB panels
- 6 **Manni Green Tech® Profile**
Press-formed steel structure
- 7 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm
- 8 **Ceiling structure**
Profile 50x27mm
- 9 **Interior**
2x12.5mm plasterboard

MGT-RP 1	POINTS	VALUE
Sound performance	●●●●●	Rw 59dB
Thermal performance	●●●●●	0,18 W/m²K
Thermal lag	●●●●●	11h5'
Thicknees	●●●●●	57,9 cm

MGT-RP 2

PENT ROOF
GLOBAL VALUE PERFORMANCE



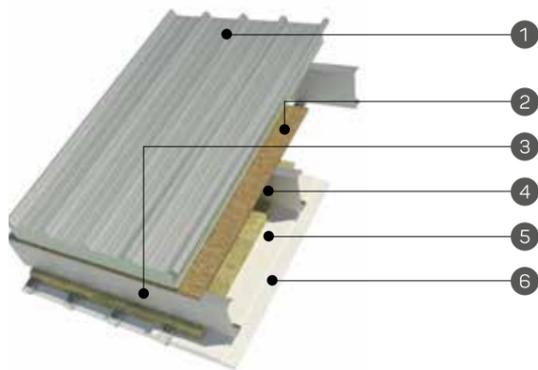
ISOPAN
ISODOMUS Panel

	POINTS	VALUE
Sound performance	●●●●●	Rw 60dB
Thermal performance	●●●●●	0,094 W/m²K
Thermal lag	●●●●●	13h47'
Thicknees	●●●●●	61,0 cm

- 1 **Roof**
ISODOMUS panel thk. 100mm
- 2 **Insulation**
thk.120 mm mineral wool d.150kg/mc + Steam barrier
- 3 **Rigid layer**
2x15.5mm OSB panels
- 4 **Manni Green Tech® Profile**
Press-formed steel structure
- 5 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm
- 6 **Ceiling structure**
Profile 50x27mm
- 7 **Interior**
2x12.5mm plasterboard

MGT-RP 3

INDUSTRIAL PITCHED ROOF
GLOBAL VALUE PERFORMANCE



ISOPAN
ISOFIRE ROOF Panel



	POINTS	VALUE
Sound performance	●●●●●	Rw 29dB
Thermal performance	●●●●●	0.186 W/m²K
Thermal lag	●●●●●	8h45'
Thicknees	●●●●●	53,0 cm

- 1 **ISOFIRE ROOF panel**
thk. 150mm
- 2 **Rigid layer**
thk. 15.5mm OSB panel
- 3 **Manni Green Tech® Profile**
Press-formed steel structure
- 4 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm
- 5 **Ceiling structure**
Profile 50x27mm
- 6 **Interior**
2x12.5mm plasterboard

MGT-RP 4

INDUSTRIAL PITCHED ROOF
GLOBAL VALUE PERFORMANCE



- 1 **ISOFIRE ROOF FONO panel**
thk.150mm wool
- 2 **Manni Green Tech® Profile**
Press-formed steel structure

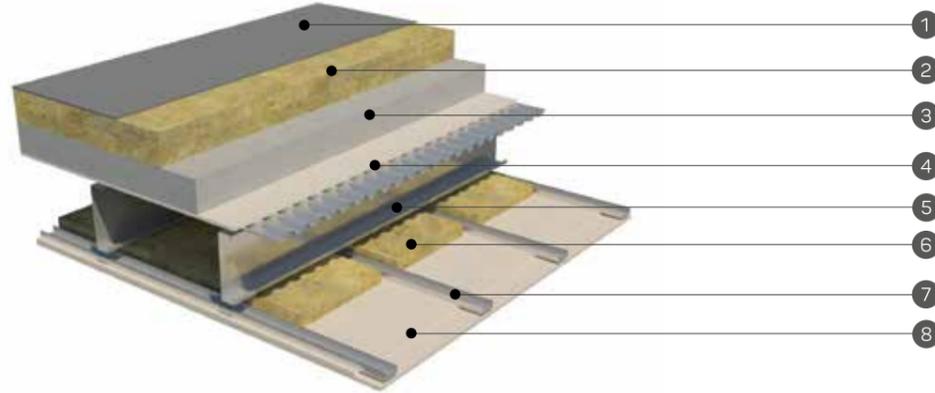


ISOPAN
ISOFIRE ROOF FONO panel

	POINTS	VALUE
Sound performance	●●●●●	Rw 29 dB
Thermal performance	●●●●●	0,27 W/m²K
Thermal lag	●●●●●	8h45'
Thicknees	●●●●●	22,20 cm

MGT-R 1

ROOF
GLOBAL VALUE PERFORMANCE

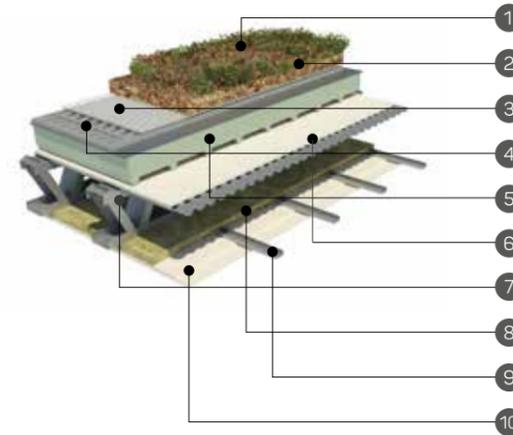


- 1 **Roof**
thk.4+4mm non woven fabric + waterproof membrane
- 2 **Insulation**
thk.120 mm mineral wool d.150kg/mc + steam barrier
- 3 **Screed**
thk.0-120 undercoat in polystyrene and cement of variable thickness
- 4 **Rigid layer**
thk.0-120mm Undercoat with beton and polystyrene
Corrugated metal LG20 thk.20mm
- 5 **Manni Green Tech® Profile**
Press-formed steel structure
- 6 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm
- 7 **Ceiling structure**
Profile 50x27mm
- 8 **Interior**
2x12.5mm plasterboard

MGT-R 1		POINTS	VALUE
	Sound performance	●●●●●	Rw 66dB
	Thermal performance	●●●●●	0,178 W/m²K
	Thermal lag	●●●●●	11h43'
	Thicknees	●●●●●	59,0 cm

MGT-R 2

ROOF
GLOBAL VALUE PERFORMANCE



EXTENSIVE GREENROOF



INTENSIVE GREENROOF



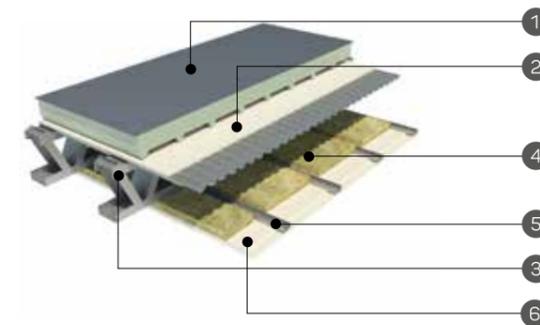
ISOPAN
ISODECK PVSTEEL®

		POINTS	VALUE
	Sound performance	●●●●●	Rw 61dB
	Thermal performance	●●●●●	0.116 W/m²K
	Thermal lag	●●●●●	12h18'
	Thicknees	●●●●●	68,0 cm

- 1 **Exterior**
Sedum mixture
- 2 **Substratum**
thk. 80mm DAKU ROOF SOIL 2
- 3 **Geotextile filter**
thk. 1.30mm DAKU STABILFILTER SFE
- 4 **Drain component**
thk. 47 DAKU FSD 10
- 5 **PVSteel® PU panel**
Root barrier layer + thk. 150mm panel
- 6 **Rigid layer**
thk. 12.5 cement board + Corrugated metal LG20 thk. 20mm
- 7 **Manni Green Tech® Profile**
Press-formed steel structure
- 8 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm
- 9 **Ceiling structure**
Profile 50x27mm
- 10 **Interior**
2x12.5mm plasterboard

MGT-R 3

ROOF
GLOBAL VALUE PERFORMANCE



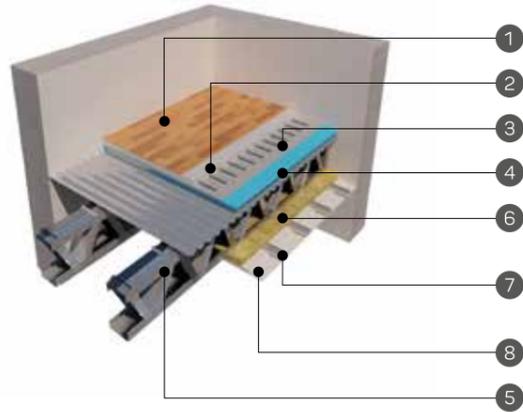
ISOPAN
ISODECK PVSTEEL®

		POINTS	VALUE
	Sound performance	●●●●●	Rw 64dB
	Thermal performance	●●●●●	0.121 W/m²K
	Thermal lag	●●●●●	7h23'
	Thicknees	●●●●●	53,0 cm

- 1 **ISODECK PVSTEEL® panel**
thk.150mm
- 2 **Rigid layer**
thk.12.5mm cement board + Corrugated metal G20 thk. 20mm
- 3 **Manni Green Tech® Profile**
Press-formed steel structure
- 4 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm
- 5 **Ceiling structure**
Profile 50x27mm
- 6 **Interior**
2x12.5mm plasterboard

MGT-SL 1

SLAB BETWEEN TWO HOUSING UNITS
GLOBAL VALUE PERFORMANCE

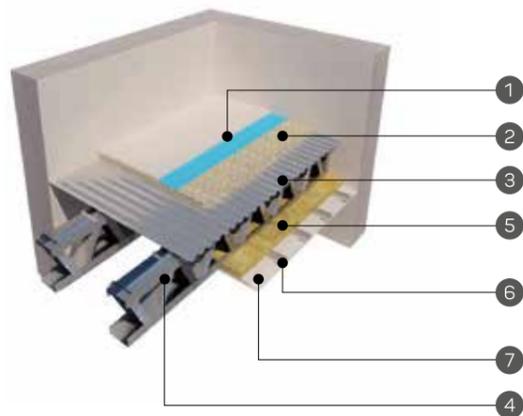


	POINTS	VALUE
Sound performance	●●●●●	Rw 74dB
Thermal performance	●●●●●	0.80 W/m²K
Thermal lag	NA	NA
Thicknees	●●●●●	48,3 cm

- 1 **Floor**
- 2 **Floor heating**
thk.40+10mm
- 3 **Acoustical material**
thk.8mm
- 4 **Rigid layer**
thk.60mm Undercoat with beton and polystyrene +
Corrugated metal LG20 thk. 20mm
- 5 **Manni Green Tech® Profile**
Press-formed steel structure
- 6 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm
- 7 **Ceiling structure**
Profile 50x27mm
- 8 **Interior**
2x12.5mm plasterboard

MGT-SL 2

SLAB BETWEEN TWO HOUSING UNITS
GLOBAL VALUE PERFORMANCE

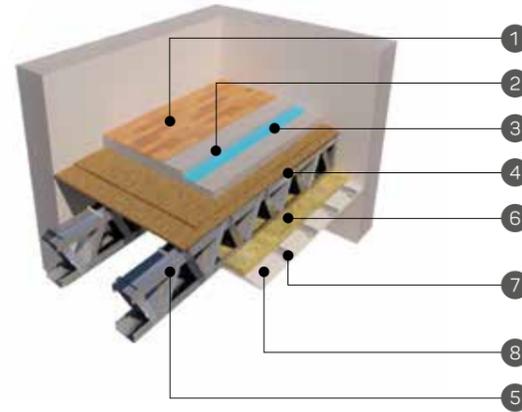


	POINTS	VALUE
Sound performance	●●●●●	Rw 59dB
Thermal performance	●●●●●	0.80 W/m²K
Thermal lag	NA	NA
Thicknees	●●●●●	45,7 cm

- 1 **Board**
thk. 22mm plasterboard reinforced fiber with sound reduction
- 2 **Dry screed**
thk. 20mm crushed stone
- 3 **Rigid layer**
Corrugated metal LG20 thk. 20mm
- 4 **Manni Green Tech® Profile**
Press-formed steel structure
- 5 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm
- 6 **Ceiling structure**
Profile 50x27mm
- 7 **Interior**
2x12.5mm plasterboard

MGT-SL 3

SLAB BETWEEN TWO HOUSING UNITS
GLOBAL VALUE PERFORMANCE

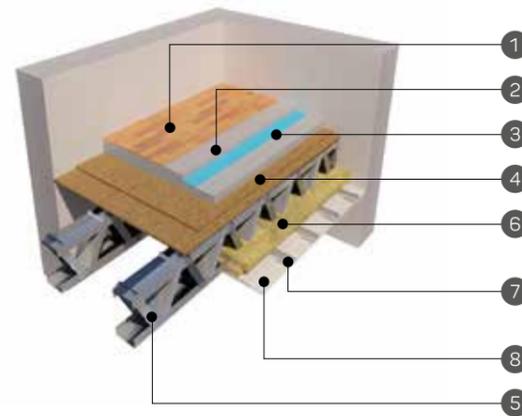


	POINTS	VALUE
Sound performance	●●●●●	Rw 71dB
Thermal performance	●●●●●	0.80 W/m²K
Thermal lag	NA	NA
Thicknees	●●●●●	47,1 cm

- 1 **Floor**
- 2 **Screed**
thk. 40mm
- 3 **Acoustical material**
thk. 5mm
- 4 **Rigid layer**
thk.60mm Undercoat with beton and polystyrene
2x18mm OSB panels
- 5 **Manni Green Tech® Profile**
Press-formed steel structure
- 6 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm
- 7 **Ceiling structure**
Profile 50x27mm
- 8 **Interior**
2x12.5mm plasterboard

MGT-SL 4

SLAB HOUSING UNIT
GLOBAL VALUE PERFORMANCE



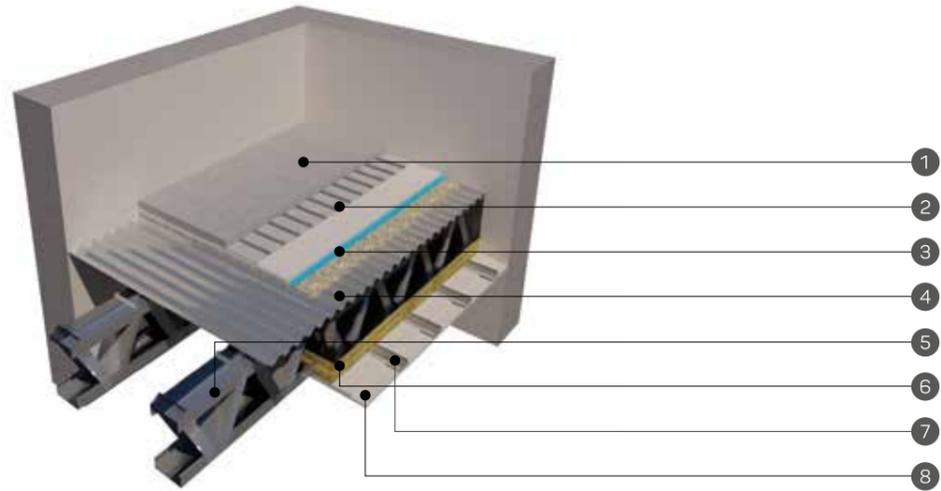
	POINTS	VALUE
Sound performance	●●●●●	Rw 73dB
Thermal performance	●●●●●	0.80 W/m²K
Thermal lag	NA	NA
Thicknees	●●●●●	47,6 cm

- 1 **Floor**
- 2 **Screed**
thk. 50mm
- 3 **Acoustical material**
thk. 5mm
- 4 **Rigid layer**
thk.40mm Undercoat with beton and polystyrene
2x18mm OSB panels
- 5 **Manni Green Tech® Profile**
Press-formed steel structure
- 6 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm
- 7 **Ceiling structure**
Profile 50x27mm
- 8 **Interior**
2x12.5mm plasterboard

MGT-SL 5

SLAB HOUSING UNIT

GLOBAL VALUE PERFORMANCE



- 1 **Floor heating**
thk.40+10mm

- 2 **Board**
thk. 22mm plasterboard reinforced fiber with sound reduction

- 3 **Dry screed**
thk. 20mm crushed stone

- 4 **Rigid layer**
Corrugated metal LG20 sp.20mm

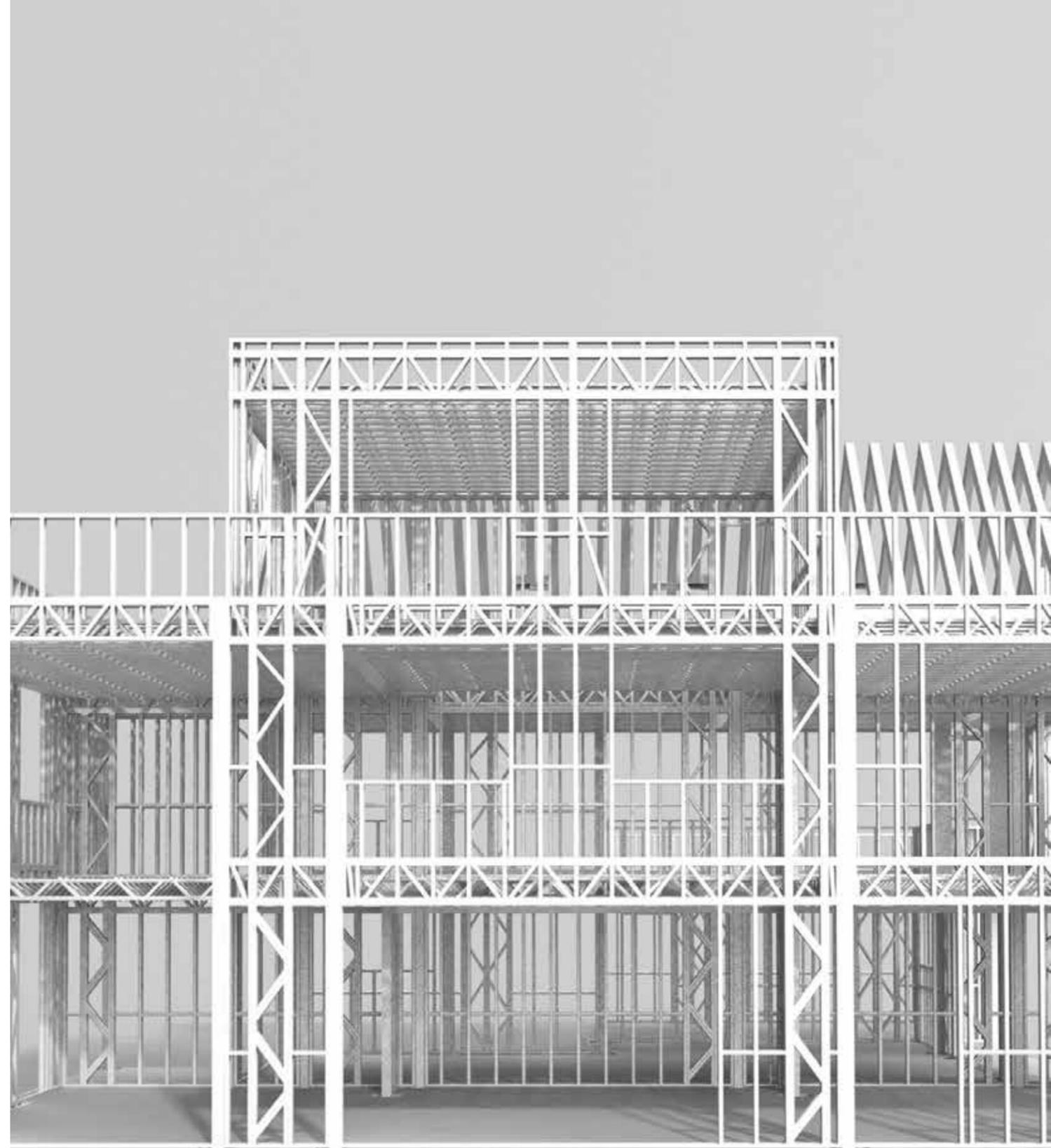
- 5 **Manni Green Tech® Profile**
Press-formed steel structure

- 6 **Insulation**
Mineral wool panel d.40kg/mc thk. 50mm

- 7 **Ceiling structure**
Profile 50x27mm

- 8 **Interior**
2x12.5mm plasterboard

MGT-SL 5		POINTS	VALUE
	Sound performance	●●●●●	Rw 59dB
	Thermal performance	●●●●●	0.80 W/m²K
	Thermal lag	NA	NA
	Thickness	●●●●●	45,3 cm



FROM CONCEPT TO REALITY: FREE TO CHOOSE



The follow case history show the different construction system by Manni Green Tech, together with hot rolled steel and different cladding solutions. The dry system construction together with flexible system light steel frame is a complete solution for load bearing structure and curtain wall, for slab and roof and truss and interior wall. Extensions and elevations are easily achievable on the existing building. Here some examples of buildings and construction details.



SINGLE HOUSE
Treviso



CAMPUS
Suriname



SHOP
Austria



WHAREHOUSE
Vittorio Veneto

TWO-FAMILY VILLA
Luxemburgo



BOX IN BOX
Lombardia



LABORATORY
Milan



HOME GHION

BUILDING TYPE	Residential - Villa
FLOORS	1
AREA	120 mq
LOCATION	Treviso, Italy
ENGINEERING TEAM	Technical office Manni Green Tech
CUSTOMER	Private
REQUIREMENT	Design new private home with a balanced ratio between quality-efficiency and price

DRY CONSTRUCTION SYSTEM	●●●●●
STRUCTURAL SYSTEM	●●●●● Light Steel Frame LSF
FINISHING SYSTEM	ETICS insulation
ENERGY PERFORMANCE	Class A4



Work site photo



Work site foto and assembly phase

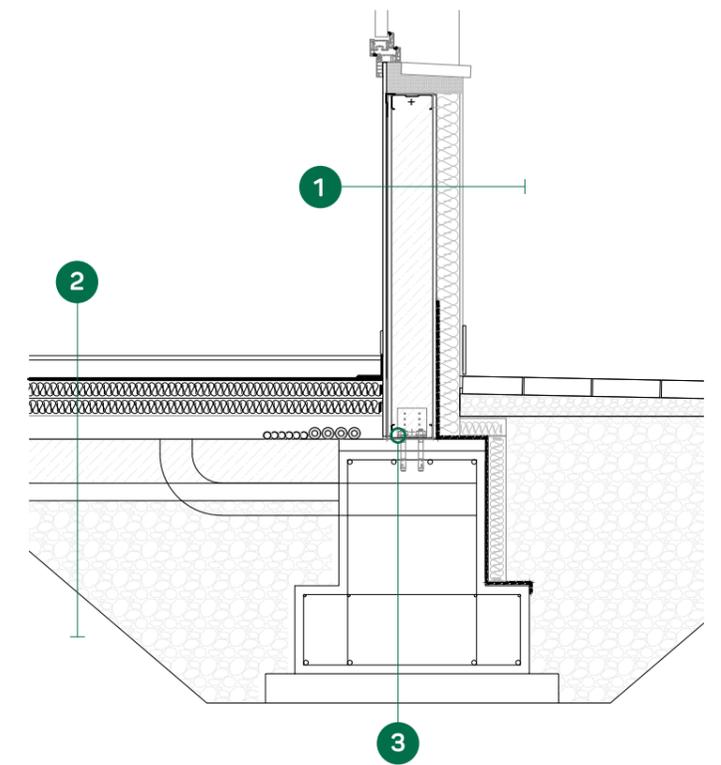
1

- 12.5mm plasterboard
- 12.5mm plasterboard
- 140mm Manni Green Tech profile + Insulation
- Cellulose fiber or mineral wool panel
- windproof membrane
- 18mm OSB panel
- 80mm ETICS
- 10mm wall system coat

2

- 15mm ceramic floor
- 2mm sound reduction panel
- 60mm screed
- 8mm insulation panel
- 60mm insulation panel
- 60mm insulation panel
- 80mm undercoat
- 150mm foundation underpinning
- 60mm crushed gravel
- 250mm gravel
- natural ground

3



Work site photo with wall and foot connection detail (detail 3)



Photo with Wind bracing and vertical profile (detail 3)



Foot point detail of Manni Green Tech system (detail 3)

DOMAINE DU CHATEAU

BUILDING TYPE	Residential - Luxury villa duplex
FLOORS	2
AREA	600 mq
LOCATION	Luxemburg, L
ENGINEERING TEAM	Technical office Manni Green Tech + technical details
CUSTOMER	Real estate Steel Home Sarl
REQUIREMENT	Luxury villa for a real estate investment to achive the best energy performance. The villa was desined with accuracy on every interior and exterior details.

DRY CONSTRUCTION SYSTEM	●●●●●
STRUCTURAL SYSTEM	●●●●○ Light Steel Frame LSF ●●●●○ Hot rolled steel
FINISHING SYSTEM	ETICS insulation
ENERGY PERFORMANCE	nZEB Nearly Zero Energy Building

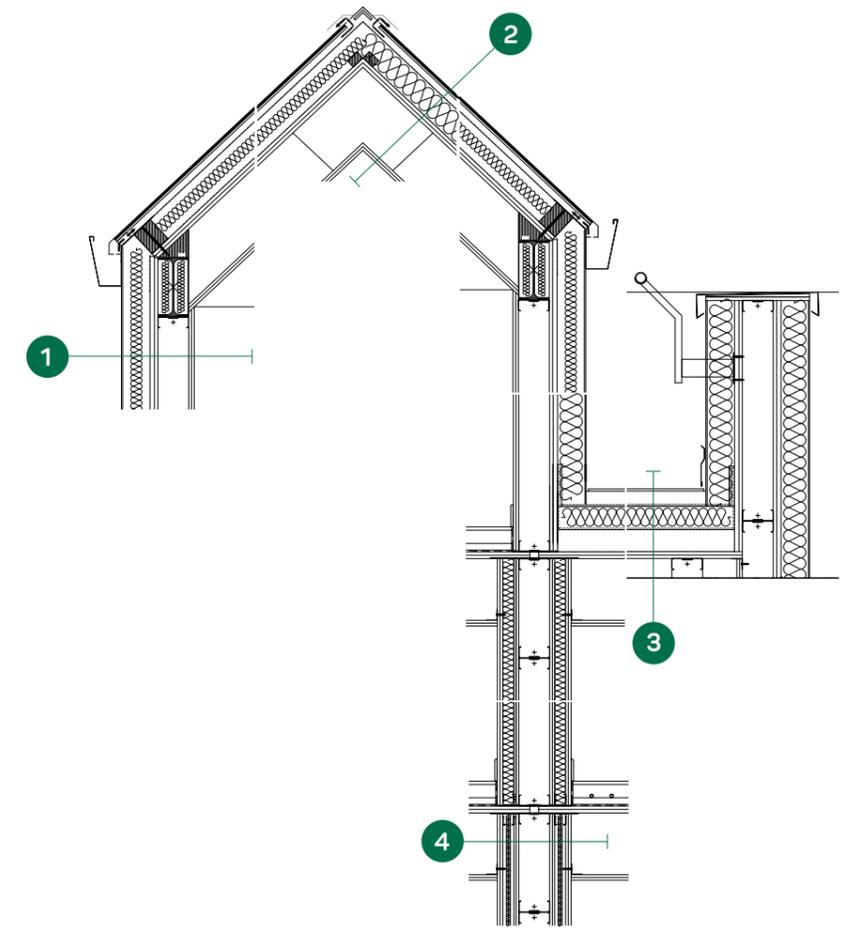


- 1**
- 130mm ETICS (glue-eps panel-armouring 4+120+6)
 - 12.5mm cement board panel
 - 7.5mm smoothing
 - 15.5mm panel OSB-3
 - 15.5mm panel OSB-3
 - 250mm Manni Green Tech profile
 - + Glass fiber insulation
 - 12.5mm Plasterboard
 - 12.5mm Plasterboard
 - + Steam barrier

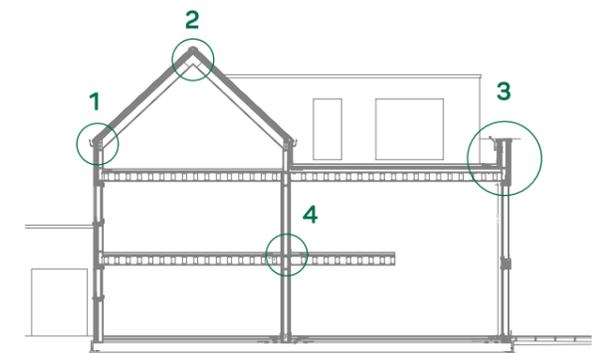
- 2**
- Metal cover
 - 9.0mm antifoam cloth
 - 9.0mm panel OSB-3
 - 30mm ventilation
 - + waterproof and breathable sheet
 - 120mm rockwool d.150kg/mc
 - 15.5mm panel OSB-3
 - 15.5mm panel OSB-3
 - 250mm Manni Green Tech profile
 - + Insulation
 - 12.5mm Plasterboard
 - 12.5mm Plasterboard + Steam barrier

- 3**
- 60mm floating floor
 - 4.0mm polyester membrane
 - 4.0mm polyester membrane
 - 50mm fiberglass
 - 50mm fiberglass + steam barrier
 - bituminous glass veil
 - 10-100mm sloping screed with thermally insulating material
 - pvc sheet
 - 15.5mm panel OSB-3
 - 15.5mm panel OSB-3
 - 280mm MGT beam + glass fiber insulation
 - 12.5mm Plasterboard
 - 12.5mm Plasterboard + steam barrier

- 4**
- 12.5mm Plasterboard
 - 12.5mm Plasterboard
 - 50mm steel structure + Glass fiber insulation
 - 12.5mm Plasterboard
 - 140mm MGT structure + Glass fiber insulation
 - 12.5mm Plasterboard
 - 50mm steel structure + Glass fiber insulation
 - 12.5mm Plasterboard
 - 12.5mm Plasterboard



STRUCTURE SECTION



Work site photo and assembly phase

BOX IN BOX

BUILDING TYPE	Retails - Offices
FLOORS	2
AREA	60 mq
LOCATION	Lombardia, Italy
ENGINEERING TEAM	Technical office Manni Green Tech
CUSTOMER	Private enterprise
REQUIREMENT	Design new office space inside the industrial bulding. Quickly and interference free.

DRY CONSTRUCTION SYSTEM	●●●●●
STRUCTURAL SYSTEM	●●●●● Light Steel Frame LSF
FINISHING SYSTEM	Cement boards panels
ENERGY PERFORMANCE	NA



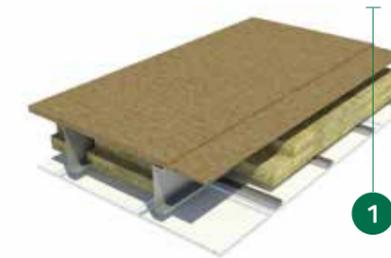
Works site photo - inside cladding



Works site photo of Manni Green Tech construction system

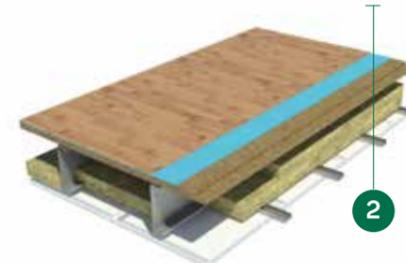
1

18mm OSB panel
18mm OSB panel
270mm Manni Green Tech profile
80mm mineral wool panel d40kg/mc
80mm mineral wool panel d40kg/mc
50x27mm ceiling structure
Sheet panels



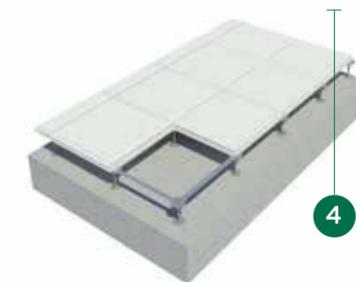
2

pavement
5mm anti-impact
18mm OSB panel
18mm OSB panel
270mm Manni Green Tech profile
80mm mineral wool panel d40kg/mc
80mm mineral wool panel d40kg/mc
50x27mm ceiling structure
Sheet panels



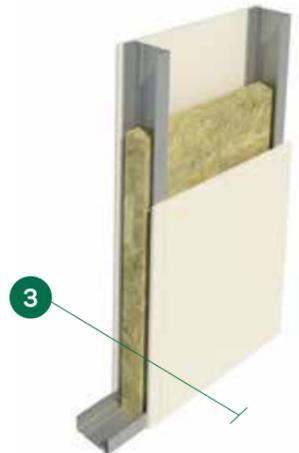
3

12.5mm cement board
140mm profilo Manni Green Tech
60mm mineral wool panel d.70kg/mc
60mm mineral wool panel d.70kg/mc
12.5mm cement board



4

600x600mm floating floor panels
floating floor system
existing floor



PHASE 1

PHASE 2

PHASE 3

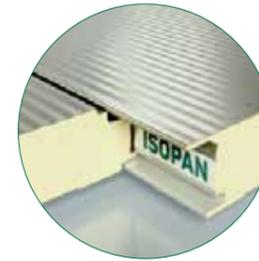
PHASE 4

ANTON DE KOM UNIVERSITY

BUILDING TYPE	Residenzial - Campus
FLOORS	3 - 4
AREA	1500 mq
LOCATION	Paramaribo, Suriname
ENGINEERING TEAM	Technical office Manni Green Tech + Technical details
CUSTOMER	International investor
REQUIREMENT	Student dormitory with simple architectural lines but it designed to be durable. Energy performance for humid and hot climate.
DRY CONSTRUCTION SYSTEM	●●●●●
STRUCTURAL SYSTEM	●●●●● Light Steel Frame LSF ●●●●● Hot rolled steel
FINISHING SYSTEM	Sandwich panels
ENERGY PERFORMANCE	NA
PRODUCTS	Vertical structure Isoparete PLISSÈ panels Roof covering ISOCOP panels



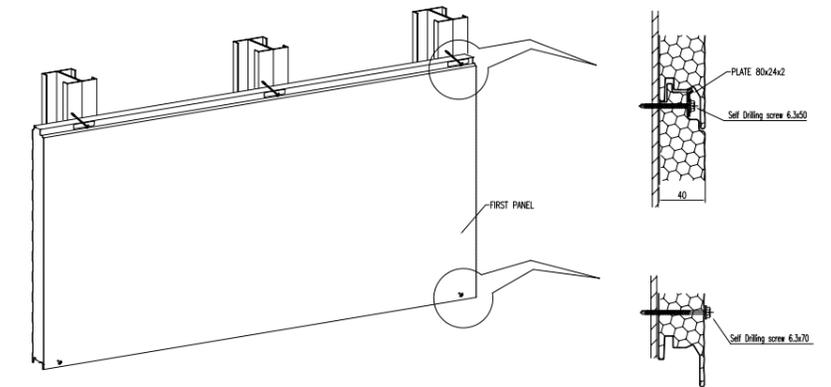
ISOPAN Isoparte Plissè Panel



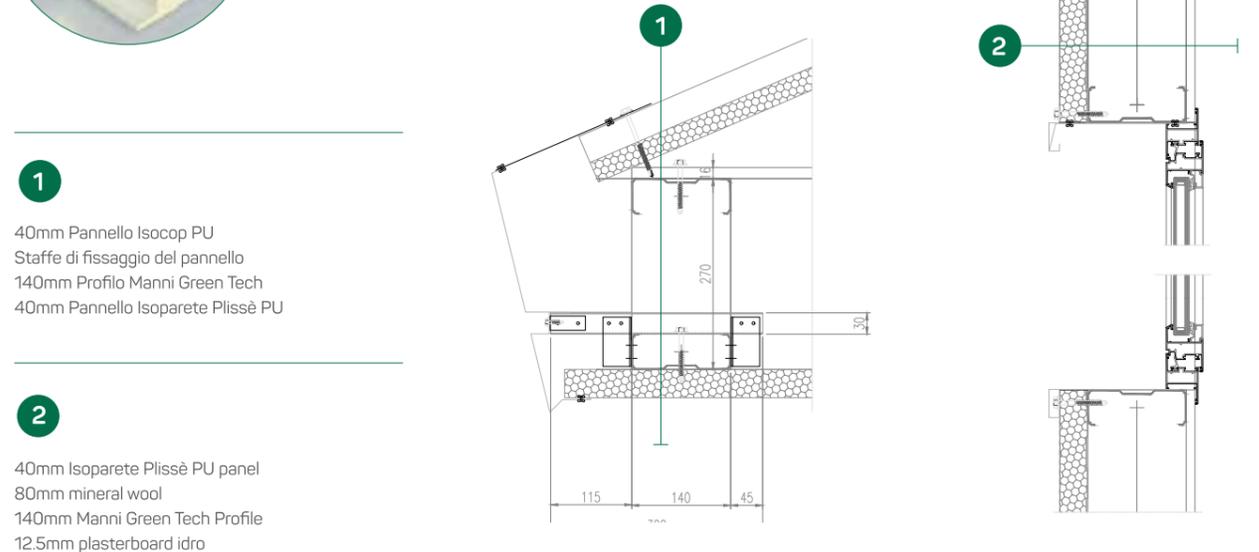
ISOPAN Isocop Panel



DETAIL SANDWICH PANELS FIXING SYSTEM



ASSEMBLY OF PANELS AND FIXING TO STRUCTURES



1
40mm Pannello Isocop PU
Staffe di fissaggio del pannello
140mm Profilo Manni Green Tech
40mm Pannello Isoparete Plissè PU

2
40mm Isoparete Plissè PU panel
80mm mineral wool
140mm Manni Green Tech Profile
12.5mm plasterboard idro

STRUCTURE SECTION



Work site photo with sandwich panels connection

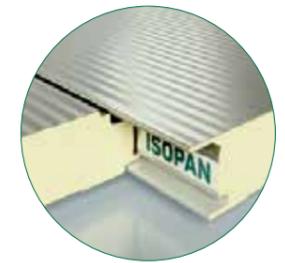
NTC Motorcycles

BUILDING TYPE	Retails
FLOORS	1
AREA	NA
LOCATION	Klagenfurt, Austria
CUSTOMER	NTC Motorcycles
REQUIREMENT	Construction of the new shop and offices in short time thanks to the easy installation of the steel structure and the ISOPAN sandwich panels.

DRY CONSTRUCTION SYSTEM	●●●●●
STRUCTURAL SYSTEM	●●●●○ Light Steel Frame LSF ●●●●○ Hot rolled steel
FINISHING SYSTEM	ISOPAN Panels
ENERGY PERFORMANCE	NA
PRODUCTS	External walls with ISOPARETE EVO PLISSÉ Roof cover ISOCOP panels



ISOPAN
Isoparte Plissé Panel



ISOPAN
Isocop Panel



Photo of the facade of the building with ground and roof connection of the sandwich panels

DETAILS OF THE FIXING SYSTEM PANELS ON FACADE AND ROOF STRUCTURE

1. Isoparete Panels
2. Protection flashing
3. Rivet
4. Fastening system for roof panels
5. ISOCOP roofs panel
6. Custom drip edge flashing
7. Drainpipe
8. Custom insulated drain with proper insulation
9. Fix screw
10. Steel support

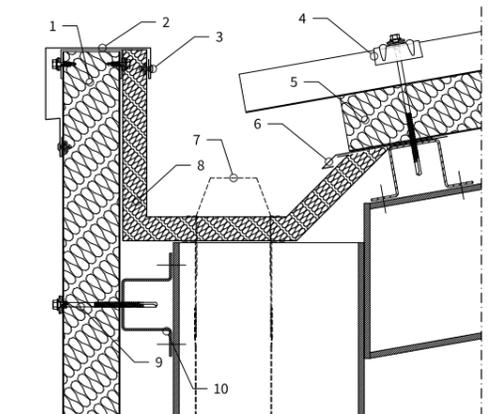
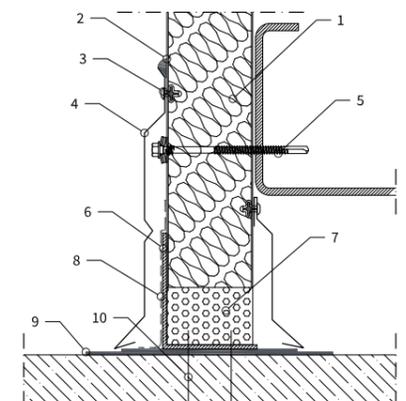


Photo of roof details and focus on the steel structure and ISOCOP panels.

DETAILS OF THE FOOT CONNECTION OF THE SANDWICH PANELS

1. ISOPAN Wall panel
2. Silicone
3. Rivet
4. Protection flashing
5. Fixing screw
6. Steel support
7. Polystyrene
8. Waterproof liquid membrane
9. Double Waterproof membrane
10. Steel dowel



Details of hook panels on facade and roof structure

VELUX LAB

BUILDING TYPE	Research and education
FLOORS	1
AREA	105 mq
LOCATION	Milan, Italy
MAIN SPONSOR	VELUX Italia
TECHNICAL SPONSOR	Politecnico di Milano, VELUX Italia, Vanoncini S.p.a., Manni Group, Isopan, RENOLIT, Daku, Knauf
REQUIREMENT	Reconstruction of roof system with new panels and green roof system extensive type on some roof parts.

DRY CONSTRUCTION SYSTEM	●●●●●
STRUCTURAL SYSTEM	NA
FINISHING SYSTEM	ISOPAN Panels
ENERGY PERFORMANCE	nZEB Nearly Zero Energy Building
PRODUCTS	Roof cover ISODECK PVSTEEL® Green Roof system with ISOPAN GREEN ROOF



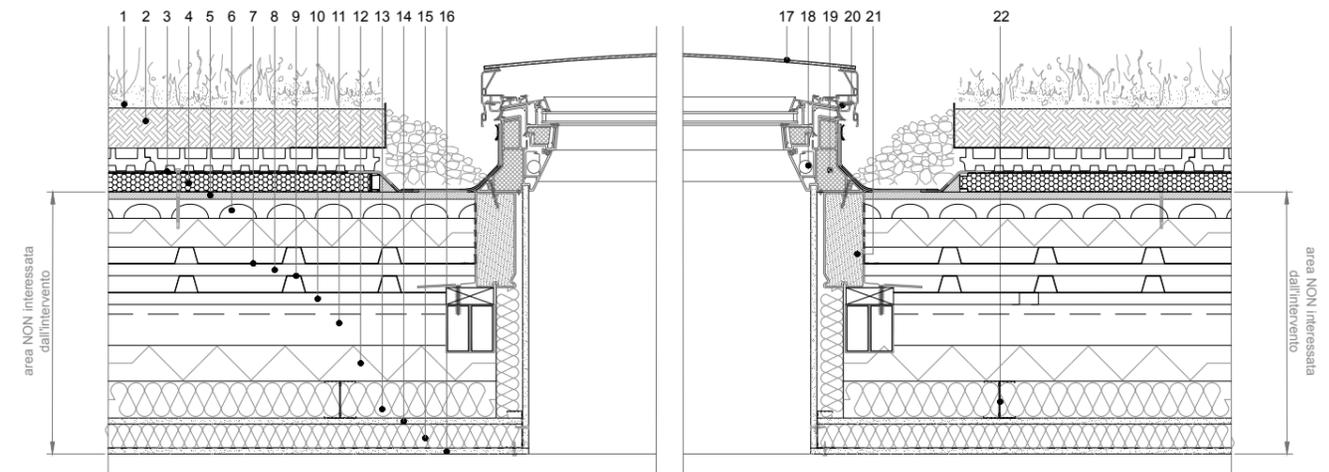
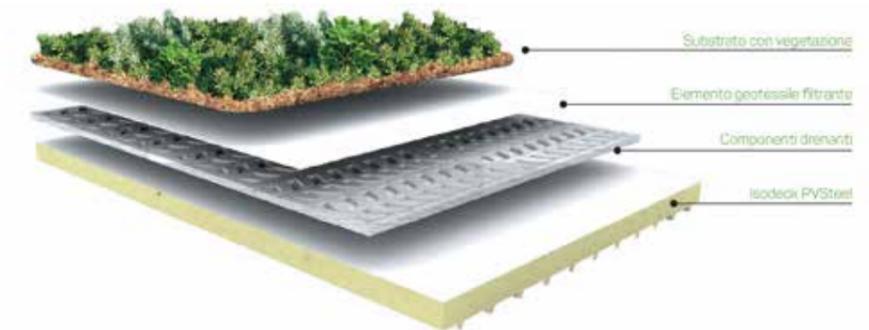
Credits Marco Bossi



Credits Marco Bossi

Photo of details of Green Roof system

ISOPAN Isodeck PVSTEEL®



1. Extensive culture
2. Green roof system (Type Daku Extensive Base), sp. 130mm, compose:
 - Terrain (Type Daku roof soil 2), sp. 80mm
 - Separation filter with polypropylene fiber (Type Daku Stabilfilter SFE), sp.1.35mm
 - Drainage panle for water stock (Type Daku FSD 10), sp. 47mm
 - Waterproof and anti roots sheet
3. Fix with screw and plate
4. Sandwich roof panel (custom panel Isopan Isodeck PVSteel), sp. 40mm
5. OSB panel sp.15mm
6. ISOTEC panel micro ventilated with polyurethane sp.60mm
7. Corrugated galvanization steel sheet to stiffen ISOTEC panel h 30mm sp.8/10mm
8. Steel profile to support corrugated sheet sp.25mm
9. Corrugated galvanization steel sheet sp.30mm
10. Steel bending sheet profile
11. C Steel bending sheet profile h 160mm existit
12. Insulation minerlwool type Celenit N75 sp. 75mm
13. Minerlwool panel d=40kg/mc
14. Lasterboard sp.12.5mm with steam barrier
15. Felt sound absorbent with mineral wool sp.40mm (Type Knauf) with light galvanization steel structure type Knauf E for ceiling 50x50mm
16. Plasterboard micro perforated (Type Knauf Cleaneo)
17. Curve glass (Type Velux ISD 1093)
18. Air sealing membrana
19. Support (Type Velux ZCE 1015), sp.150mm
20. Block seal profile (Type Velux Kit ZZZ 210)
21. Support basement (Type Velux ZCE 0015) sp.150mm
22. Light galvanization steel structure type Knauf E for ceiling self support D116, double profile U75x40 wheelbase max 60cm

IMA plant

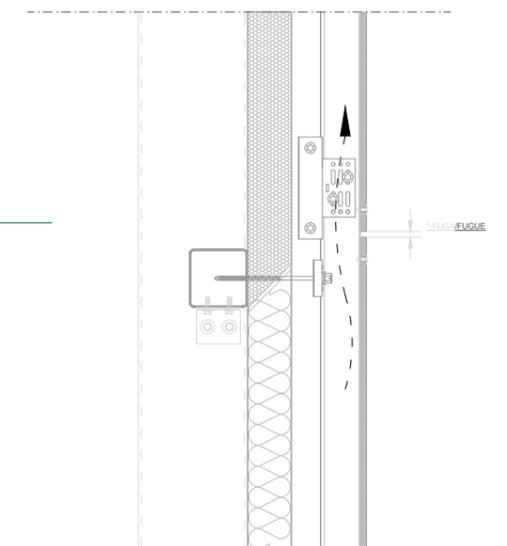
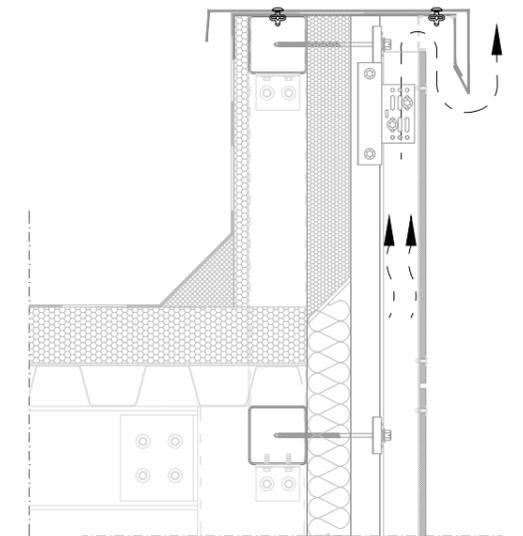
BUILDING TYPE	Commercial building - offices
FLOORS	1 + Warehouse
AREA	130 mq
LOCATION	Vittorio Veneto (Treviso)
CUSTOMER	I.M.A. Srl.
REQUIREMENT	Retrofit of office building and the warehouse
DRY CONSTRUCTION SYSTEM	●●●●●
STRUCTURAL SYSTEM	●●●●● Light Steel Frame LSF ●●●●● Hot rolled steel
FINISHING SYSTEM	ISOPAN Panels
ENERGY PERFORMANCE	NA
PRODUCTS	Office area: ISOPAN ARKWALL® System + ISOCOP panels Warehouse: ISOPARETE PLISSÉ panels



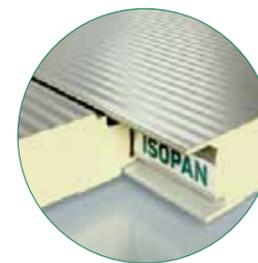
Photo of ventilated facade details with ArkWall System



Photo of new facade with ArkWall System panels



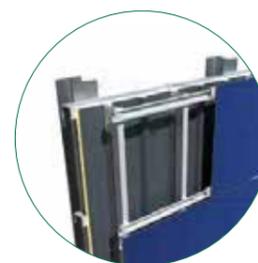
ISOPAN
Isoparete panels Plissé



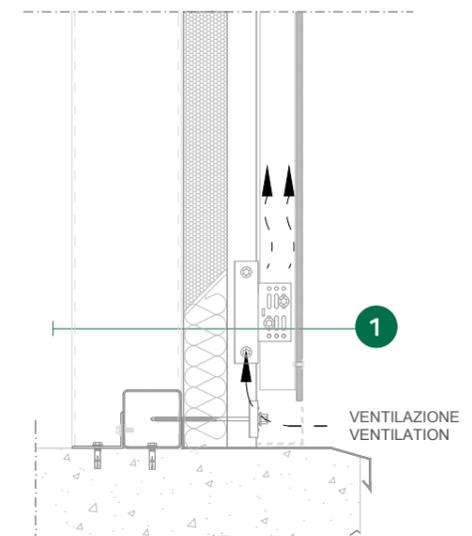
ISOPAN
Isocop Panel



ISOPAN
ARKWALL® System



- Panel Facade
 - 50x40mm system support bracket L
 - Support steel structure
 - Ventilation
 - 40mm Isocop panel this case use for facade
 - Main steel structure





INNOVATION AND EXPERIENCE: THE STRENGTH OF A GROUP



Manni Group promotes innovation in the processing and use of steel in all its applications, developing solutions and engineering services to meet structural, energy efficiency and sustainability requirements. Through these actions, the Group is able to encourage companies, users and consumers in different markets, from large infrastructures to Oil&Gas and mechanics, to pursue sustainability in their actions and choices.

Manni Group is committed to promoting sustainable, safe and efficient construction through constant efforts in the research and development of products, services and solutions for steel constructions, renovation of buildings, reduction of consumption and emissions and promotion of renewable energy sources.





Manni Energy is the company dedicated to engineering, the construction of renewable energy plants and energy efficiency interventions. In recent years, Manni Energy has focused on the development and implementation of large photovoltaic systems for the sale of clean energy on the free market. Operations & Maintenance (O&M) services for renewable energy plants have been developed using advanced remote-control systems. Through its structure, Manni Energy serves over 220 customers with 85MW of photovoltaic, bio-gas and mini-wind plants. The MEVision platform currently monitors over 425 plants.



For over forty years now, Isopan SpA has been contributing to the global challenge of improving the construction sector with a view to environmental sustainability. Thanks to strong synergies with other Group companies, Isopan has always been committed to the innovation of construction products and services, with a particular focus on improving the performance of buildings in terms of the environment, safety and energy efficiency. Isopan products help to obtain the prerequisites and credits needed for the most common building sustainability rating standards, such as LEED, BREEAM or Living Building Challenge.



Maetrics focuses primarily on solutions engineering systems for energy management and building automation. The current trends and the ability to use the latest technologies allow Maetrics to provide Cloud solutions and IoT platforms for increase the energy efficiency of buildings, as well as skills in large-scale real estate, retail, industry and entertainment. Maetrics created 4things, a platform Advanced Building Management System (Building Management System), designed for the integrated management of all the technological functions of a building which include systems for energy management (electrical / thermal), air conditioning, lighting and security.



Manni Sipre works alongside companies involved in the metal structure construction, responding to the needs of companies working in the following sectors: mechanical constructions, heavy carpentry, earth moving, oil & gas plants, shelving, automated warehouses, offshore plants, light and heavy plant engineering. Thanks to seven divisions organized across four locations in Italy, Manni Sipre supplies the retail market and fulfils large international orders, also through its own direct export activities.



SUSTAINABILITY THE FUTURE OF THE CONSTRUCTION INDUSTRY: CHOOSING SUSTAINABLE PREFABRICATION



3 GOOD HEALTH AND WELL-BEING

Ensuring healthy lives and promoting the well-being at all ages.



7 AFFORDABLE AND CLEAN ENERGY

Ensure access to affordable, reliable, sustainable and modern energy.



8 ECONOMIC GROWTH

Promote inclusive and sustainable economic growth, employment and decent work for all.



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote sustainable industrialization and foster innovation.



11 SUSTAINABLE CITIES AND COMMUNITIES

Make cities inclusive, safe, resilient and sustainable.



12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Ensure sustainable consumption and production patterns.



13 CLIMATE ACTION

Take urgent action to combat climate change and its impacts.



17 PARTNERSHIPS FOR THE GOALS

Revitalize the global partnership for sustainable development.



The impact of human activity on the Earth is drastically impoverishing essential life resources, endangering the existence of future generations. Indeed, every year the amount of resources employed is higher than the amount the Earth is able to regenerate.

Today's global challenges set a goal for businesses: maintaining values, materials and resources for as long as possible. Companies play a decisive role by choosing a circular "life cycle" approach in place of the old linear "take-make-dispose" system.

The future objective is to extend the life of products and a design that ensures an easily reuse and recycling of the material in order to minimise the production of waste and improve efficiency in using resources.

Sustainability in the construction market means paying particular attention mainly to two environmental aspects: energy consumption and the resulting greenhouse gas emissions, the consumption of raw materials and resources.

In fact, in Europe the construction industry consumes about 36% of energy, contributes to 40% of annual CO2 emissions, is responsible for 50% of raw material extraction and the consumption of 1/3 of the drinking water: it is therefore a crucial sector for achieving the sustainable development goals set by the United Nations for 2030 and the climate objectives defined by the Paris agreements.

Sustainability is also the ability to meet various needs and to be potentially able to do so indefinitely. This feature proves to be fundamental in order to be present in markets that also differ greatly from each other globally, guaranteeing the possibility for all individuals to access a basic service

SUSTAINABILITY

it is also the ability to meet varied needs to be able to do it for a potentially indefinite time.

(essential for human dignity) such as living.

Sustainable development is one of the fundamental drivers for Manni Group, along with internationalisation and innovation. Thanks to its work, Manni Group contributes to various areas that are considered by the Sustainable Development Goals defined by the United Nations and are taken into consideration in decisions and development covered by corporate strategies.

Manni Green Tech is the synthesis of the skills and experiences gained in almost 75 years of business and the presumption of having an answer to the puzzle of sustainable building development. To discover more about Manni Group's journey through sustainability follow us at www.mannigroup.com and download the annual report.

The sustainability program, launched in 2016 with the publication of the Group Sustainability Policy, is also focused on the impacts generated by the business on the environment, an aspect which is most urgent on a global level.



PARTNERSHIPS AND COLLABORATIONS

Manni Group strengthens its commitment to the search for sustainable and innovative solutions thanks to the launch and consolidation of strategic partnerships with projects, entrepreneurial initiatives and innovative companies in the creation of sustainable supply chains and the development of green and circular economic models. This goal is also pursued through participation in important networks of socio-environmental nature, leading associations and initiatives for the benefit of the territories where they carry out their activities supporting cultural, social and humanitarian projects internationally.



REbuild

Event sharing platform, magazine and updates on new technologies that anticipate and predict the future of the construction world. Through various actors such as technicians and professionals, Rebuild compares specific skills and know-how.



ILFI International Living Future Institute

A non-profit association that operates with the aim of spreading and consolidating the principles of environmental sustainability, towards a world without fossil fuels. ILFI promotes a series of programmes with high quality standards for buildings and the producers of materials, with the common goal of protecting the environment and creating better places to live.



UNISMART

It is the Foundation of the University of Padua which proposes a networking service and innovation support for companies and investors. The foundation aims to enhance scientific-technological synergies between the University of Padua and the business world, from a small age local start-up to the large multinational. A "Community" of companies in continuous expansion, which actively promotes the development of projects innovative, future-oriented and characterized by immediate applicability, exploiting all the potential made available by the University.



HABITECH

Trentino Technology District for Energy and the Environment, puts all its energies into environmental sustainability with innovation and development in the building sector. In particular, it works alongside companies in innovation projects and in the enhancement of real estate assets throughout their entire life span.



ANIT Associazione Nazionale Isolamento Termico e Acustico

The objective of the association is to promote and disseminate thermal and acoustic insulation in the world of construction and industry through the creation of technical and regulatory content staying abreast of the construction sector.

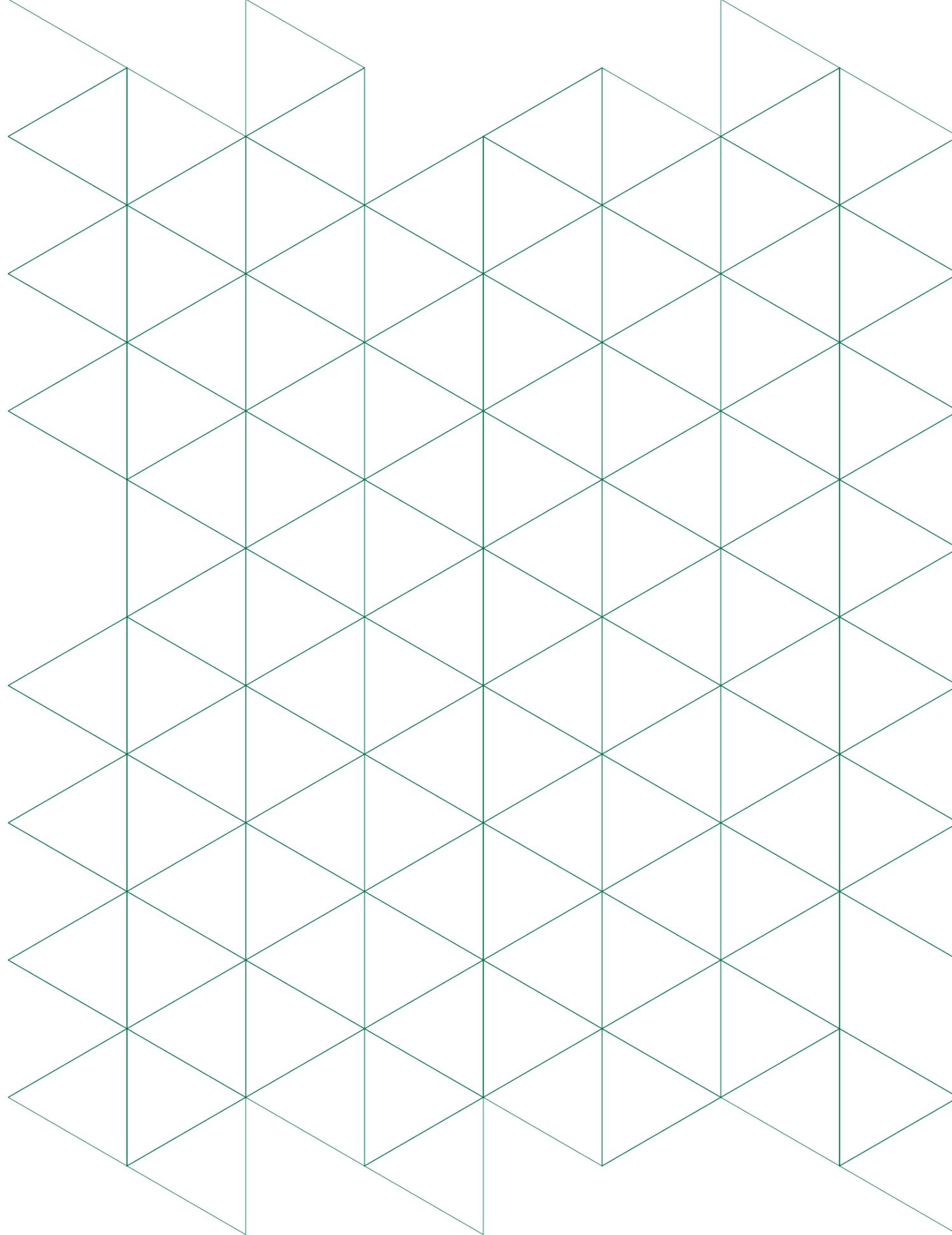


Promoting partner of GBC Italia

GBC Italia is part of a wider network that includes over 70 countries, one of the biggest associations in the world of sustainable construction. The association establishes precise parameters and criteria for planning in the field of sustainability. Qualified companies, Italian professional communities and associations in the construction industry collaborate within the association for sustainable construction.



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and other controlled material.





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