



METAL:RI

ADVANCED BUILDING SOLUTIONS



METAL.RI

THE RIGHT PARTNER TO SHAPE THE FUTURE

Since 1995, we have designed and produced composite steel and concrete structures supported by our engineers. Our experience allows us to be a **point of reference** for engineers and companies working in this sector.

Experience and competence allowed us to design innovative and target oriented products aiming to enhance the building sector. For this reason, we developed and patented the building system called **MTR® System**.



MTR® SYSTEM

THE INNOVATIVE CHOICE FOR THE ADVANCED CONSTRUCTION SITE

The **MTR® System** represents the most reliable system belonging to the composite steel-concrete structures.

The system comprises three types of trusses (type A, T and C). It is used to build horizontal structures and it can partially or totally replace the main and the secondary beams.

Thus preserving the setting of a typical building site for concrete structures, we do not use beams made on site, but only prefabricated composite steel beams which are delivered to the construction site ready for being assembled.

An industrialisation process for the certified building site and for “error-free” structures. Many advantages and high safety for the client, the structural designer and the contractor.

SISTEMA
MTR

WHAT IS THE MTR[®] SYSTEM?

The **MTR[®] System** is composed of three different types of trusses having their pertaining calculation system for the designing process:



MTR[®] A BEAM



is self-supporting during the assembly and casting phase of the floor. It has a steel bottom plate.

MTR[®] C BEAM



is self-supporting during the assembly and casting phase of the floor. It has a concrete bottom plate.

MTR[®] T BEAM



has to be shuttered and propped during the assembly and casting phase of the floor. It does not have the bottom plate and it is completely embedded in the cast-in place-concrete.



is the application software for the calculation and designing of the MTR[®] Beams. It is implemented in the specific production process used by Metal.Ri.

ADVANTAGES

WHY CHOOSE THE MTR® SYSTEM



1

> EXECUTION SPEED

The speed and ease of assembly of the structures reduce costs by 60% and the time required to build the floors:

MTR® A BY 70%

MTR® T BY 50%

MTR® C BY 70%



The MTR® steel structures are made in our factory so we deliver ready to cast product.

2

> ECO-SUSTAINABILITY

Reduced on-site processing and use of timber:

MTR® A BY 100%

MTR® T BY 60%

MTR® C BY 100%

3

> CONSTRUCTION SITE SAFETY

Prefabrication of slabs with MTR® beams improves safety on the construction site by 60%.

4

> PRODUCT GUARANTEE AND SEISMIC RESISTANCE

The MTR® beams are produced in the factory and arrive at the construction site ready for installation. This guarantees 100% certainty for the client, the structural designer and the contractor

5

> ARCHITECTURAL FREEDOM AND VERSATILITY

The reduction of the number of columns and their section and the increasing the column spacing, permit to optimize the interior spaces and realize complex architectural structures.

6

> CONCRETE REDUCTION

The section of the MTR® Beams are smaller than the ones in traditional reinforced concrete beams.

7

> FIRE RESISTANCE

The steel, coated or incorporated in the concrete, guarantees the resistance of the structure in case of fire, without additional costs and processing.

SOFTWARE MTR®

THE CERTIFIED SOFTWARE



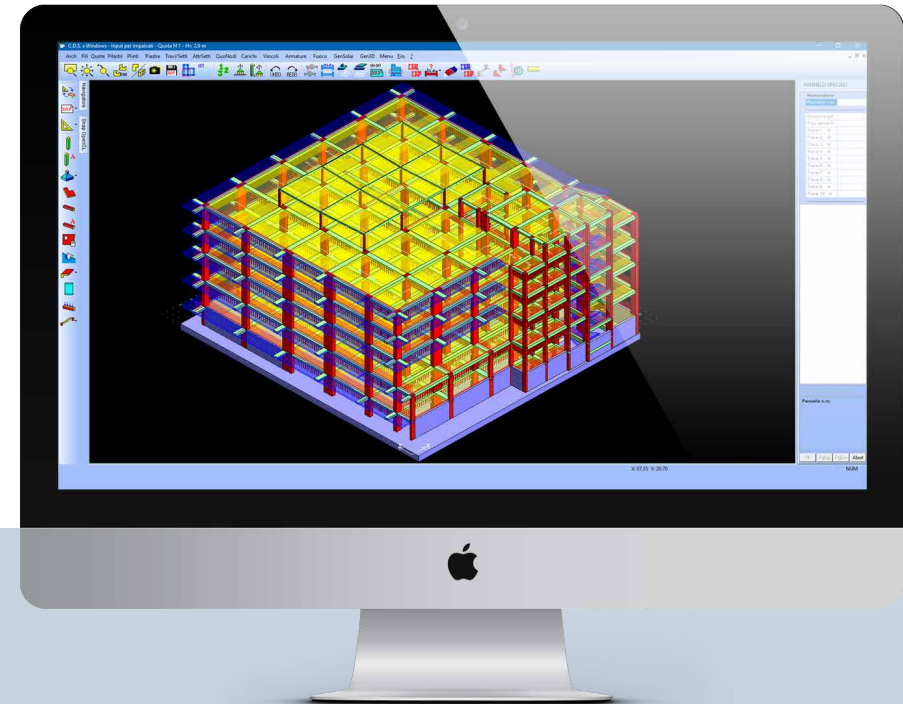
The building system of the MTR® beams is equipped with a specific structural design software. It has been designed taking into account the production process and the technical Italian and European law. The purpose of this software is to integrate the different existing structural design systems in order to plan works using the MTR® technology.

The **MTR® Software** has been developed by **INFO.MTR Srl**, the software house on which Metal.Ri relies on to develop, experiment and implement new technologies. The software is produced in a certified quality system in compliance with the **UNI EN ISO 9001** regulation.

OUR ADDED VALUE

The MTR® System can be designed to suit any purpose such as residential, commercial, tertiary and industrial buildings. Request a technical consultation: one of our engineers will become your reference **MTR®** designer and will support you in any activity required.

The designer will carry out the tests of details of the MTR® elements. He will also develop the mathematical model in three dimensions of the entire structure using the calculation software that is able to interact with the application **Software MTR®**.



A perfect synergy between our designers and your needs to offer you the best technical, practical and economical solutions

LEGISLATION AND CERTIFICATIONS

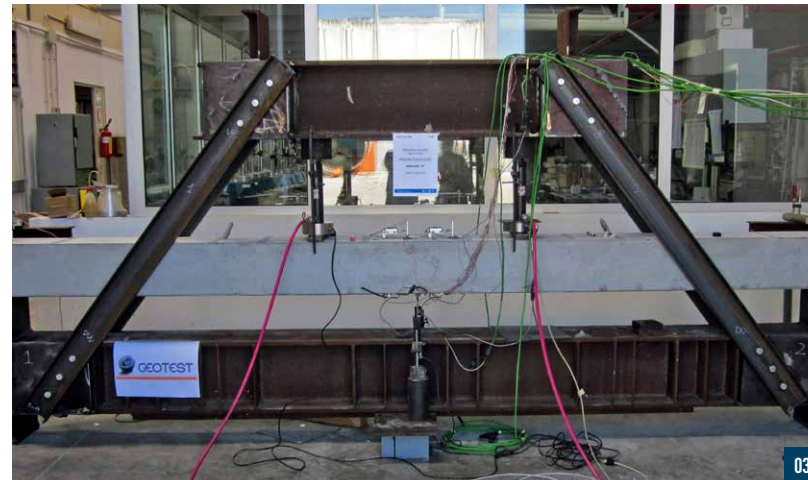
WE INVEST IN RESEARCH TO ENSURE THE BEST STANDARDS



Metal.Ri takes part in teamwork and belongs to different professional associations involved in specific research projects (*Universities, National and International Research Centres*).The company is making investment in research and development of products and in conforming to the law and to the European legislation in order to put on market new products which are made thanks to the most advanced technology and with controlled and certified quality.



The theories for calculating and verifying the MTR® System have been tested with the Polytechnic University of Bari, the University la Sapienza of Rome and the University of Basilicata.



- 01 Evaluation of the anti-seismic response by means of a 1:1 scale cyclic test of the reinforced concrete column node - MTR® beam
- 02 Static load test on a not poured MTR® beam - Phase 1
- 03 Static load test on a poured MTR® beam - Phase 2

The tests are carried out in collaboration with official and authorized laboratories according to the article 20 of the Law 1086/71, in order to verify the applicability of calculations theories. Tests, controls and structural inspections are also carried out in the case of non-common situations or of structures bearing higher loads.

In the pictures: place of worship where the MTR® beams slumps are monitored in order to verify that their behaviour replicate the theoretical values.



LEGISLATION AND CERTIFICATIONS



EUROPEAN UNION PATENT

Issued by EPO (European Patent Office)



CE MARKING

According to the EN 1090-1. The production control in the factory in conformity to the requirements of the Maximum Execution Class of EXC4.



CERTIFICATION OF BELONGING TO CLASS A

Issued by the C.S.LL.PP (Superior Council of Public Works- Central Technical Service)



QUALITY MANAGEMENT SYSTEM CERTIFICATION

According to the UNI EN ISO 9001 regulation



WELDING CERTIFICATION

According to the UNI EN ISO 3834-2 regulation

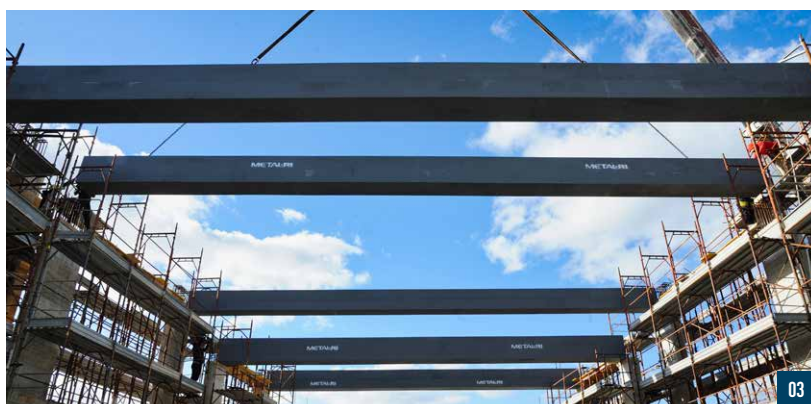
PRODUCT QUALIFICATION AND PRODUCTION PROCESS

Issued by the C.S.LL.PP (Superior Council of Public Works- Central Technical Service), as processing centre no. 2529/13

THE ADVANCED CONSTRUCTION SITE



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- 01 MTR[®] A beams with predalles slab floor
- 02 MTR[®] A beams with lightweight floor
- 03 Long span MTR[®] A beams
- 04 MTR[®] T beams on predalles slabs

THE ADVANCED CONSTRUCTION SITE



05 MTR® T beams placed on wooden formwork

06 MTR® C beams with predalles slab floor

07 MTR® C with hollowcore self-supporting floor

08 MTR® A curved beams

09 MTR® A curved beams

10 MTR® A beams shaped for staircase

USES AND COMPLETED BUILDINGS

FROM EACH OF OUR ACHIEVEMENTS, COMES A NEW CHALLENGE



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Over 20 years experience in the field of composite steel – concrete structures. We have built millions of square meters of structures in different fields of construction, from residential to commercial, from industrial to services and infrastructures.

The structural design using the **MTR® system** adapts to any intended use such as residential, commercial, tertiary and industrial buildings. Each building can be designed and built according to the technical characteristics of both a single type of the MTR® beam or combining the different beams. A range of options to get the best results and meet any technical and economical need.



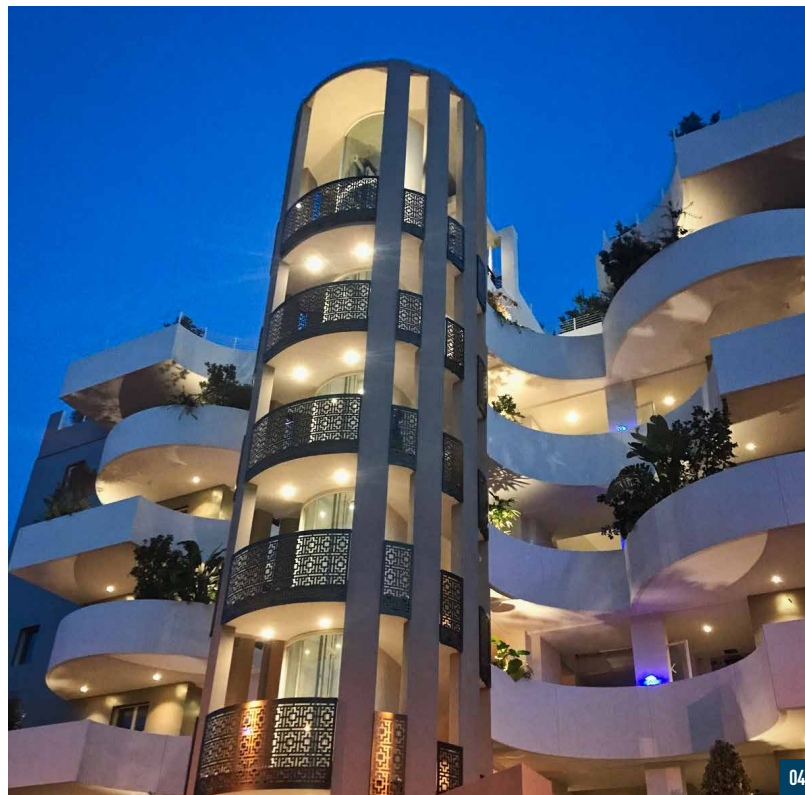
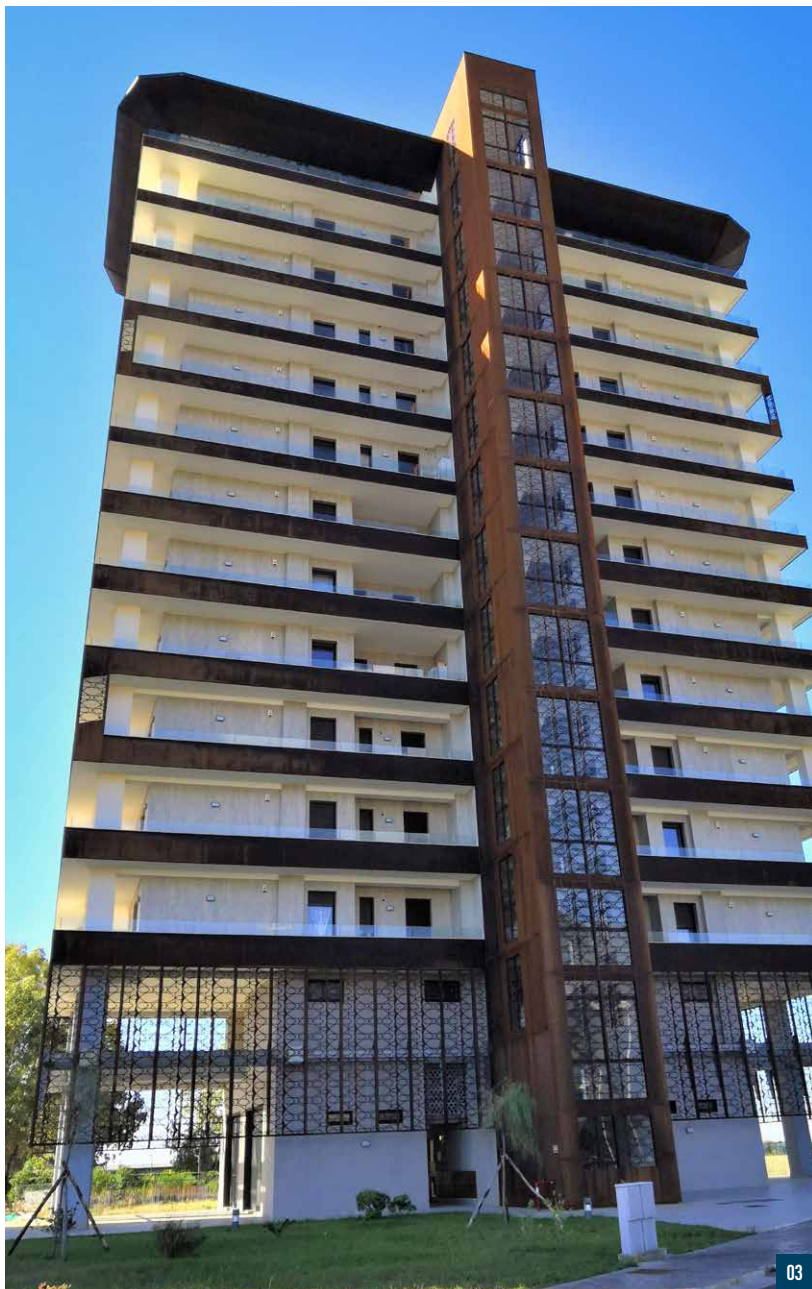
- RESIDENTIAL BUILDINGS
- COMMERCIAL AND TERTIARY BUILDINGS
- INDUSTRIAL BUILDINGS
- ACCOMMODATION FACILITIES
- PARKING LOTS
- BRIDGES
- INFRASTRUCTURE



01 Tertiary building with underground parking with **MTR® C** beams

02 Residential building with **MTR® A** and **MTR® T** beams

USES AND COMPLETED BUILDINGS



03 Residential building with MTR® T beams

04 Residential building MTR® A beams

05 Residential building with MTR® T beams

USES AND COMPLETED BUILDINGS



SISTEMA
MTR

06 Commercial building with MTR® A beams

07 Residential building with MTR® T beams

USES AND COMPLETED BUILDINGS



SISTEMA
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08 Wedding hall with long span MTR® A beams

09 Residential building with MTR® T beams



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