

ITALY INSTALLATION OF 4 SECTIONS FOR THE ISOZAKI TOWER IN MILAN

PROJECT	EQUIPMENT	WEIGHT
CIVIL	STRAND JACK AND TOWER LIFT SYSTEM / BARGES	UP TO 112 TON

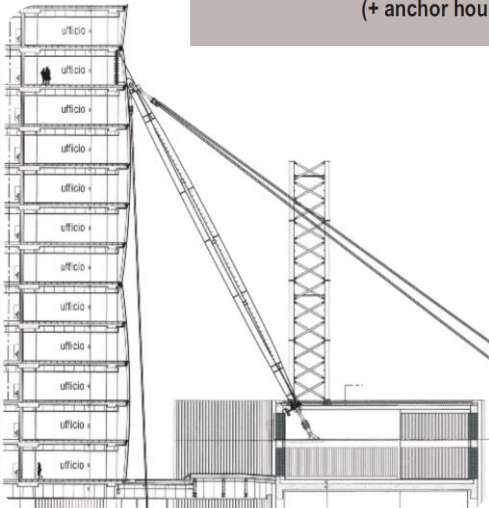
THE ISOZAKI TOWER

This project belongs to the re-qualification of the former historical trade fair area of Milan (Fiera di Milano). At 202 meters the tower, designed by the Japanese architect Arata Isozaki with Andrea Maffei Architects Associates, is one of Italy's tallest buildings. With its 50 floors, 46 of which to be used as office spaces, the building can accommodate up to 3.800 people, over a total floor space of about 53.000 m2. Inspired by Brancusi's Endless Column, it is a metaphor for a building stretching limitlessly towards the sky. Characterized by extreme flexibility in the floor plan modules for work spaces and completely illuminated by natural light, the building will also enjoy panoramic views of incredible charm.



EQUIPMENT USED

- 4 x L180 Strand Jacks (+ anchor housings)
- 4 x L180 Strand Jacks (+ anchor housings)
- 8 x L150 Strand jacks (+ anchor housings)



OPERATIONS

The particular structure of the building required No.2 connecting beams called P1 and P2 (72 ton in weight and 37 mts in length each) and No.2 connecting beams called P3 and P4 , 112 ton in weight and 59 mts in length (Two beams on each side of the building . Each beam was made of 2 sections which have to be lifted separately, called C1 and C2. Even though the sections are different in shapes and weights, they required the same installation plan, which means two by two. For this reason Fagioli used the same Tower Lifting System at two different heights: P1 and P2 were installed with a 48 meters high tower while P3 and P4 with a 72 meters high tower. The installation procedure was divided in several phases which were repeated for each section:

* Phase 0 - Fagioli provided the Tower Lifting System which was erected by the client under Fagioli supervision on the East side at a height of 21 mt.

*Phase 1 - Lifting and assembling of the two sections, C1 and C2, of the P1 connecting beam. On top of the tower, Fagioli prepared 4 + 4 rollers (pictures 1-2) provided with longitudinal and transversal beams, used to lift and shift the sections after the hoisting operations. A L100 Strand Jack was used for the lifting activities while no. 4 x L50 strand jacks were employed for the shifting operations. Picture 03 shows the lifting of C1 section. The peculiarity of this operation was that the section once lifted was shifted "inside" the tower and lowered into position after having removed the top barriers on one side of the tower (pict. 4). The section was then lowered and positioned inside a cement structure (pict. 5 - 6 show the insertion of the C1 section). The second part of Phase 1 operation was the lifting and connection of C2 with C1 (pict. 7).

* Phase 2 - After C1 and C2 sections were positioned inside the cement base, they were painted. The tower system was partially dismantled and 2 x L180 + 2 x L100 strand jacks were ready to be used as well as guy anchor points and systems were installed. Pictures 8 and 9 show a details of the anchor guy systems used and strand jacking system positioned at ground level.

* Phase 3 - Client provided a mobile crane to be used with the towering guy system to perform the final installation of the assembled connecting beam. The tower system was partially disassembled (picture 10) in order to allow the connecting beam assembled section (made of C1 and C2) to be lowered and taken into its final position.

*Phase 4 - The final operation was the lowering of the connecting beam to the building operated by the mobile crane and Fagioli guy system (attached to the strand jacks positioned at ground level). An extremely delicate operation of balance which allowed the connecting beam to reach the correct angle for the final insertion directly into the building structure. Picture 11 shows the final positioning of the connecting beams with the building. Once in position the guys were released. This operation was repeated also for the remaining three connecting beams.

