



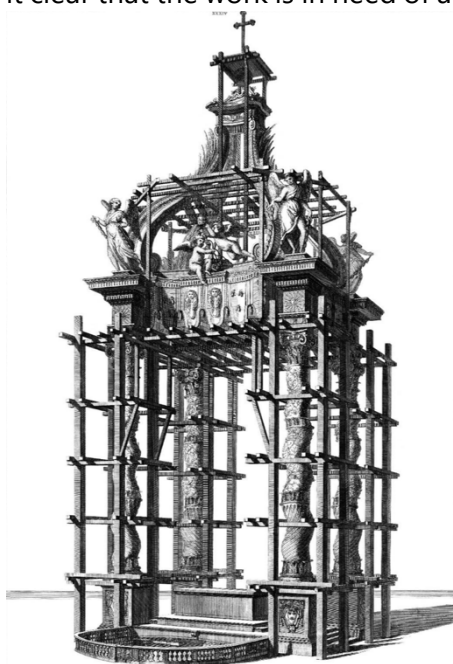
FABBRICA DI S. PIETRO
IN VATICANO

BALDACHIN ON THE HIGH ALTAR OF ST. PETER'S BASILICA IN THE VATICAN

THE PROVISIONAL WORKS IN SERVICE OF THE RESTORATION OF THE BALDACHIN

Table XXIV of the 1824 edition by *Castelli and Ponti* (= castles and bridges) – one of the earliest manuals in publishing that deals with provisional works – is dedicated to the prodigious wooden structure prepared in 1758 by the craftsmen of the Workshop for the restoration of the "metal machine made by Bernini above the Confessio of St. Peter."

The state of conservation of the Baldachin which is described in the historical documentation makes it clear that the work is in need of a comprehensive restoration intervention which cannot be delayed any further. This makes it necessary to prepare a prodigious provisional apparatus capable of serving every part and component of the Baldachin—reaching the Baldachin, reaching heights of almost 30 meters. The documents of the Fabrica state that "It was then that scaffolding was erected for all four columns with vines and also above the baldachin and of its ending part up to the cross".



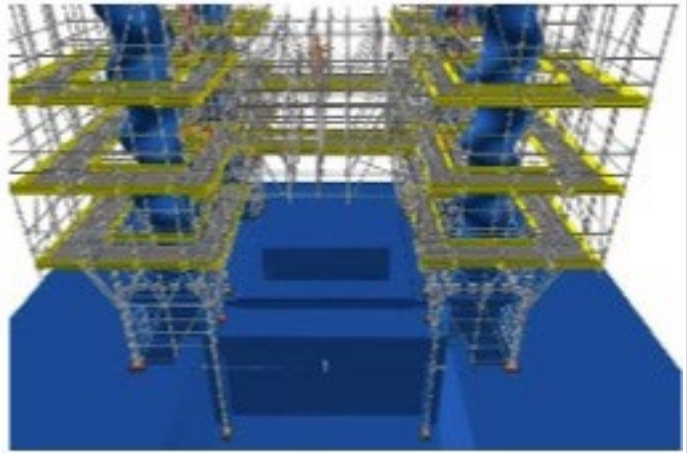
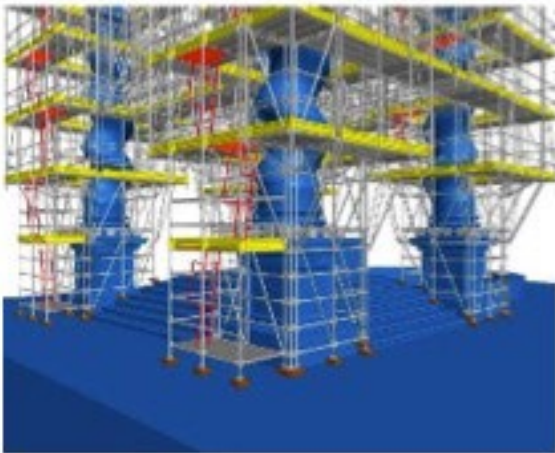
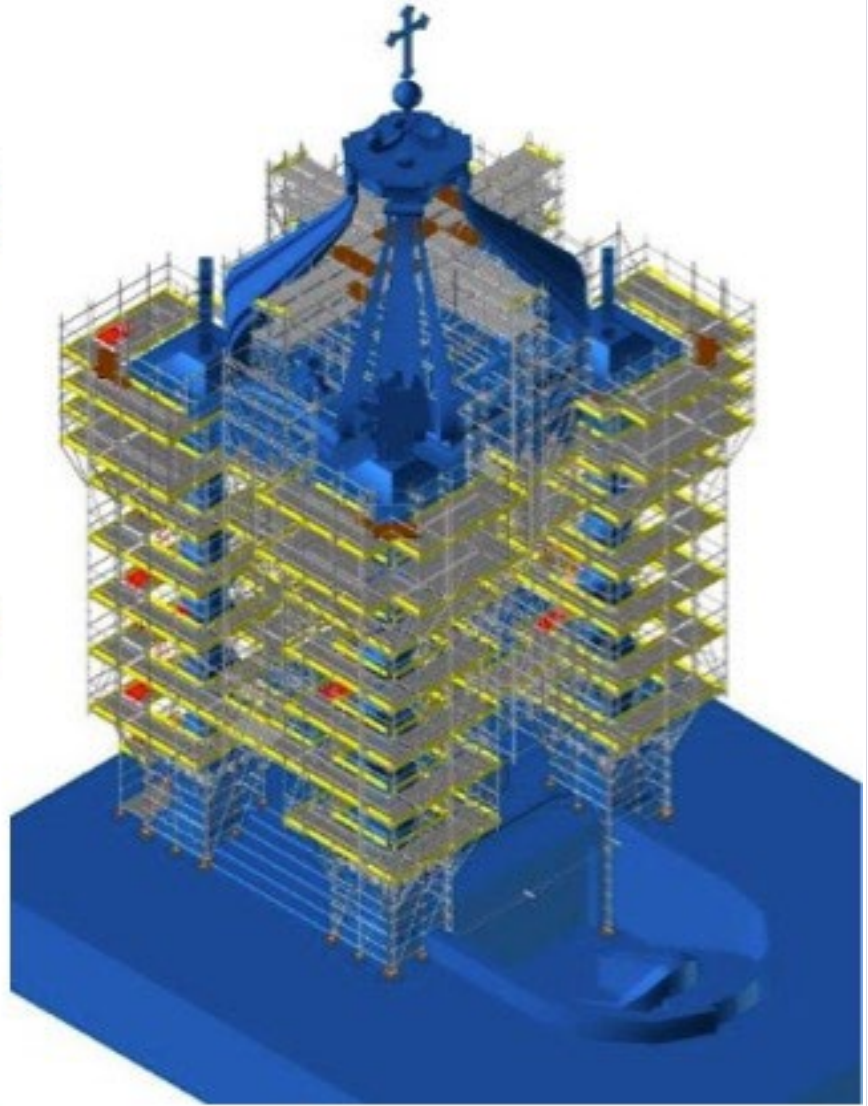
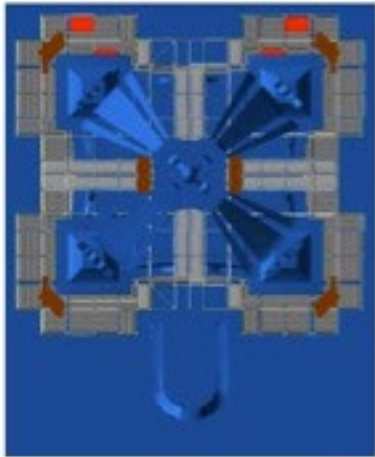
The metric data regarding the height – which is almost 30 meters – amply makes clear the consistency of the work. Adding the plan dimensions – 5.0 x 6.0 meters along the columns, 7.50 x 8.50 enveloping the capitals – makes it immediately clear how the "provisional" eighteenth-century structure can be attributed, then as now, the rank of "monumental."

Each column was served by one working platform approximately every 3 metres, and a continuous scaffold allowed work on the "sky" of the Baldachin, on the capitals, and on the wide band of the cornices. A second system of preparations, which was reasonably autonomous in terms of the way it stayed in place and in terms of its components, served the middle level of the volutes before branching out into a third, extending up to the globe and the cross.

The above drawing intentionally simplifies the pattern of the apparatus, reducing it to the most significant elements, and it is not possible to derive certain information about the static scheme of the structure, especially regarding balance in the horizontal planes. However, it is improbable for the wooden structure to have been created as statically independent from the Baldachin itself.

Nevertheless, it is clear that the projections of the vertical uprights are arranged only in correspondence with the columns and in close proximity to their stone bases, due to the limited size of the supporting surfaces at the base. The complex of the tomb of Peter, just as it posed a constraint for Bernini, has been equally challenging for those who, a century later, undertook the restoration.

More than 250 years after the restoration mentioned, nothing has changed regarding the need for intervention in terms of conserving the artefact, and similarly, the complexity of preparing provisional works remains the same. The images on the following page constitute a concise but comprehensive summary of the designed structure.



The chosen solution adopts a "multidirectional" metal system – which is a kind of scaffolding that relies on pillars and prefabricated (cross)beams. This kind of scaffolding combines the adaptability of tubes and joints with the ease of assembling prefabricated frames.

The central focus of the multidirectional scaffolding is represented by the "multidirectional connection rosette" which, firmly positioned on the uprights at intervals of 50 centimetres, constitutes as a highly reliable platform for connecting diagonals, ledgers, and crossbeams.

The main characteristics of this type of structure are:

- *versatility*: thanks to its modular design and multidirectional connections, it can adapt easily to complex geometries, irregular angles, and height variations;
- *flexibility*: components of the multidirectional scaffolding can be connected to different directions, allowing a high degree of flexibility in adapting the structure to the shape and size of the artifact. This aspect is of particular advantage when, as in this case, it is necessary to reach points which are difficult to access;
- *efficiency*: this feature translates into a significant amount of time saved while assembling and disassembling parts of the work, increasing the specific efficiency of the preparation and the overall efficiency of the restoration project.

As for the eighteenth-century wooden apparatus, the support framework is "pointed," meaning that it is centred on the axes of the bronze columns while tapering down towards the ground at the base block of the columns.

Each column will be surrounded by its own scaffolding with work platforms spaced at intervals of 2 meters. The four provisional towers will then be closed at the top by a continuous level that encompasses two levels, the higher of which will serve as the specific workspace for restoring the "sky" of the Baldachin.

A second tapering level, which can be opened, will then allow the structure to serve the wooden sides and capitals of the Baldachin and will enable the detachment of the spatial beam structure safeguarding the upper order. The latter are designed in order to make it possible to combine the overall stability of the upper parts of the scaffold and its adaptability to the geometric peculiarities represented by the statues and volutes in the most effective way possible.

To guarantee completeness of description, the four towers will be connected approximately at half their length by a double traversable truss. This is a functional connection occurring at half their height of the four "vertically developed" construction sites of the columns.

The adopted structural scheme is that of an "embedded spatial frame at the top." This scheme guarantees complete independence of the provisional structure from all components of the Baldachin, be they columns or the woods of the cornices, thus creating a "provisional baldachino" enveloping the Berninian Baldachin.

Once completed, the entire structure will be covered with light-coloured fabrics on both the vertical and horizontal surfaces - the extrados of the so-called "royal platform," at about 12 meters of its height. This will constitute the "sky" of the main altar throughout the duration of the works.