



## Newsletter 3/2014

### From the "stars" to the "stalls" .... or the other way around!?

The last few months have been particularly intense and busy for CMW Engineering as we have executed two very important projects: the setup of the finish area structures at the UCI-Road World Championships held in Florence September 22-29 as well as the design and setup of scaffolding for the restoration of the Church of the Nativity in Bethlehem Palestine. In these days we are working on the second phase of this project...



## UCI Road World Championships 2013

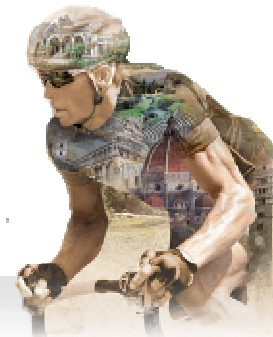
We received this important commission not only directly from the Organization Committee of the event, but also from logistics and TV coverage providers working on the event (Egidio Logistica Srl and Infront Italy Srl). All was coordinated by Architect Antonio Travascio and his staff at IDEae20:

- 3 covered spectator grandstands for 1497 people in the Finish area as well as standing area for 328 in Fiesole;
- "special" press bleachers with horizontal desktop panel for computers and single electrical outlet for each seat;
- 7 arrival area platforms (4x4 m) for sportscasters, 4 of which with coverings;
- 4 mono-block containers for VIP luxury bathrooms;
- 5 mono-block containers for foreign TV-coverage use with AC, refrigerator and tables;
- 1 free-standing tower 5x4 m (base 9x8m), H 35 m for TV antennas and repeaters;
- 8 LED stands with 30x30 panels in Finish area;
- 3 LED stands: VIP area / TISSOT LED - Finish area / LED Start area, Lucca;
- 22 access platforms in aluminum for TV coverage
- Various stands for crossing areas / disabled access / photographers / podiums / sponsor use



**UCI ROAD WORLD CHAMPIONSHIPS**  
TOSCANA 2013 | ITALY

**TOSCANA 2013**  
22-29 SETTEMBRE



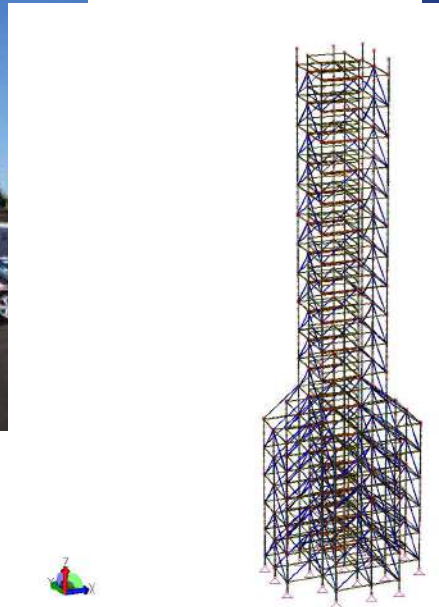


All work was completed according to the established timeline despite the very tight turnaround and unplanned additional work that was necessary during setup without causing any difficulties to any other parties involved, Italian or foreign. Setup was completed in 4 days and takedown in 3, requiring a number of vehicles and considerable manpower. The client and the involved authorities officially expressed great appreciation and satisfaction at the results of our work, as did the media and UCI President Brian Cookson:

<http://www.feder ciclismo.it/notizie/index.asp?mcode=17674>

<http://www.uci.ch/Modules/ENews/ENewsDetails2011.asp?id=OTY4Mw&MenuId=MTYzMjQ&LangId=1&BackLink=%2Ftemplates%2FBUILTIN-NOFRAMES%2FTemplate1%2FLayout.asp%3FMenuId%3DMTYzMjQ%26LangId%3D1%20>

From a technical point of view the most noteworthy construction was the 35-meter “Infront Tower”, constructed entirely in Pilosio-MP multidirectional scaffolding. The tower used 20 tons of counter-weight and had a deformation of only 4 cm under conditions of 130 km/h winds.



Without even considering all of the detailed structural tests that were run and are guaranteed by the calculation programs run, a great deal of care and consideration went into the planning, the creation of the materials prospectus and the assembly phases.

In particular the study of the subsequent assembly of segments, the position of diagonals so as to not cause interference between those on the façade and those at the base as well as use of double vertical uprights in the narrowed area, even though not structurally required, in order to reduce possible oscillation to a minimum both at the middle and at the top of the structure, to the great pleasure of not just the client but also the technicians in charge of satellite dishes and repeaters on the AV tower at a height.

The Engineers of the Civil Engineering Department and the local health agency who checked the work site a number of times also particularly appreciated this method of working. They were able to verify that the speed with which the work was completed in no way compromised the safety of the workers, but rather reduced to a minimum the amount of time required to complete higher risk tasks.





The press bleachers were a great success. Designed and created on order upon request of the Organizing Committee, these bleachers had a single electrical outlet for each spot, which before was believed to be something that could only be done in permanent structures.

On the right: Sportscaster Areas.

Below: Covered press bleacher.







## CMW Engineering Srl

Hire – Planning – Technical assistance for construction and venues

Some of access platforms used by TV crews for filming were made in Multidirectional MP but we used mostly lightweight and easy-to-assemble Lama Pulosio “Quick System” aluminum parts, which are ideal for structures that have to be modified or moved in real time between one live broadcast and another.



The finished LED support systems and mono-block containers for office and VIP restroom areas.





# CMW Engineering Srl

Hire – Planning – Technical assistance for construction and venues







Given the particular nature of the jobs to be undertaken and the various technical and administrative figures who had to be involved, particular attention was given to mediation and finding shared solutions that worked for all parties involved.



Assembly of coverings.

Changes and adjustments were often made, even during the actual event thanks to the extreme professionalism and readiness of the personnel, who often worked to complete the changes during the night and on weekends.

Mutual respect between all professionals involved made all of this possible and without delay...

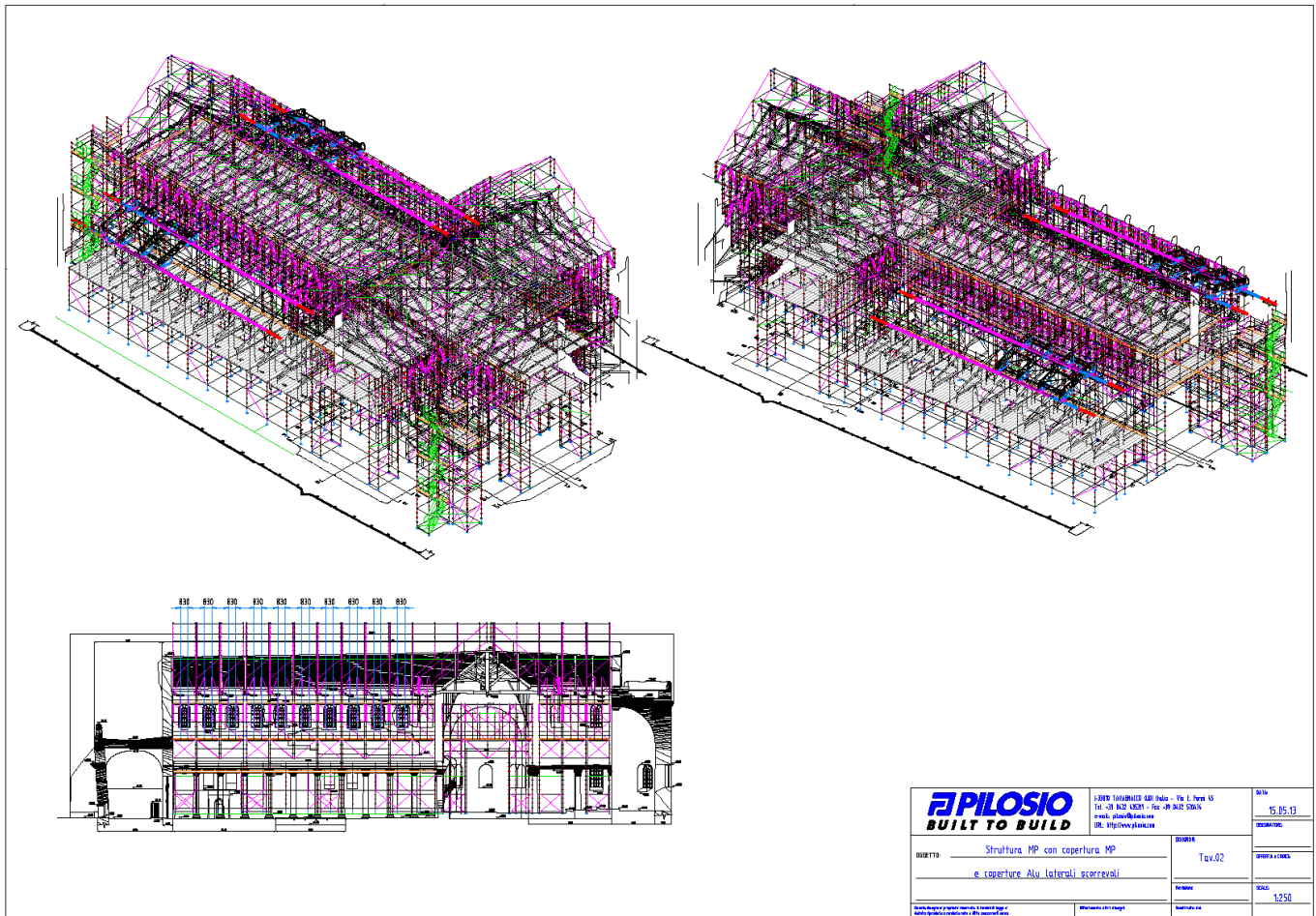




## Restoration of the Church of the Nativity – Bethlehem Phase 1

Together with Piacenti SpA in May 2013, we undertook the analysis of work to be done in order to find the most suitable solution in order to win the bid thanks to the best solution for costs, benefits and completion time. The contract with the Presidential Committee for the Restoration of the Church of Bethlehem was signed in August and the first containers of materials went out in September.

The first solution, studied with the technical office at Pilosio SpA foresaw a single work phase with both fixed and mobile outer coverage (MP multi-directional scaffolding on the central nave and Lama aluminum in the aisles) in addition to the platforms and walkways on the inside.

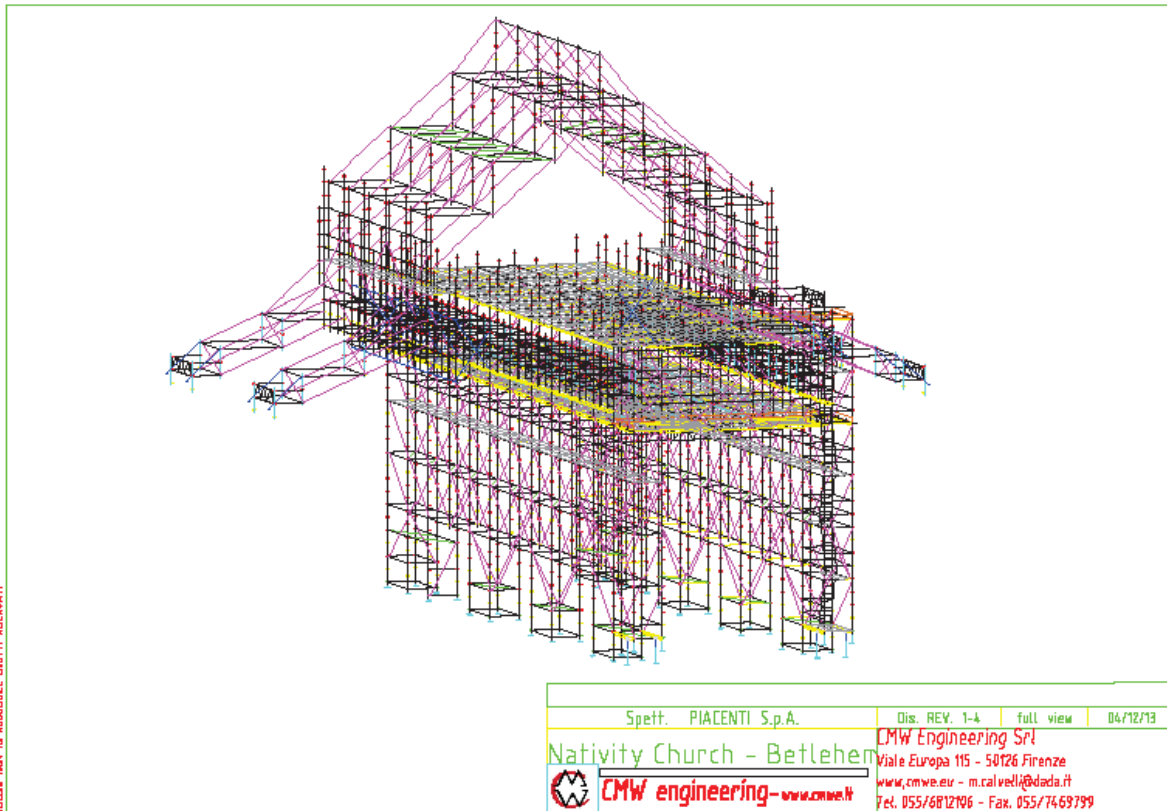


This solution, however, required an enormous amount of workforce and transportation and scaffolding assembly. The setup time in this case was incompatible with the rest of the restoration project and the daily functioning of the Basilica as a destination for pilgrims visiting the "Nativity Grotto" as well as normal religious function.



That being said, during the actual execution of the project, we then completely revolutionized the project and came up with a sleeker solution. The new plan had quicker assembly and disassembly and yet was structurally sound and can guarantee the safety for those specialized workers who would complete the actual set up as well as those completing the restoration itself.

The structure designed for the first and current phase of restoration includes internal double platforms at 9 and 12 meters of height with a free span of 6.5 meters between the two supporting walls. This internal structure is directly connected, through the openings of the church windows, to the external one made by two slopes that follow the inclination of the roof of the basilica.

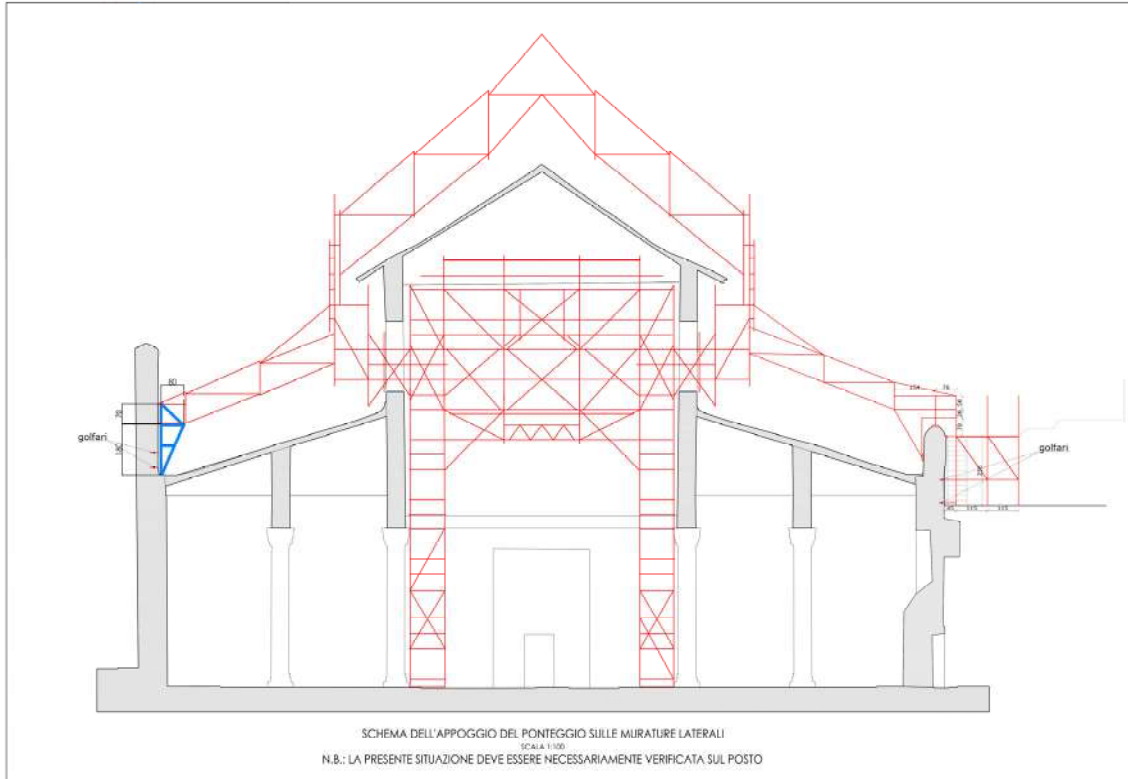


The first platform has an office and areas where work is done on the windows. The second platform is for work to be done directly on the beams that must be repaired or, in some cases, shored up or replaced.

The platforms are connected with the external scaffolding structure through the windows. The scaffolding system outside of the windows has been constructed with the same modular sections that correspond exactly to the internal platforms.

The two 6 m long "arms" on each side of scaffolding structure transfer the weight of the covering (able to support snow and winds up to 120 km/h) on to the perimeter walls, to which the structure is connected by four supporting wall plugs for each arm. These are the only anchors allowed by the Consortium that oversees the project. Great care must be taken, as it is not possible to determine the exact weight the church walls can bear and, above all, it is impossible to exclude that layers of paint are not hiding important frescoes that could be seriously damaged by load being transferred to the wall.





The fire-retardant white PVC covering guarantees the mechanical stability (in case of wind and snow) as well as waterproofing thanks to the innovative system of strips that overlapping lengthwise and laid across each other ensure via an anti-lift stretch which allowed for the airtight and contiguous placement of the panels.





Below you will find the complete version of an interview published in the newspaper “Sole 24 Ore” as well in television, radio and other media during the 2013 Christmas holidays that gives a brief summary of the work completed:

“This is a very important project both for its symbolic value as well as for the technical implications,” explains Marco Calvelli, owner of CMW Engineering, the company responsible for the project and over 50 years Pilosio partner. “The particular nature of the event and the unforeseen issues that technicians had to face almost every day forced us not only to supply the scaffolding needed with the related design studies, but also actively participate in the assembly. The structure is almost completely self-supporting as we must ensure that the existing church walls not be disturbed in any way because we cannot exclude the presence of precious mosaics under layers of paint. The area where the standing legs touch the floor of the church has been reduced by using multidirectional scaffolding so as to not bear excessively on the existing flooring and reduce to an absolute minimum any additional wear on the same.

The innovative covering made of MP scaffolding and PVC panels is supported almost completely by the internal one, to which it is connected through the windows of the central nave. Given the great number of professionals, both Italian and non, that participated in the project and the unforeseen challenges that will surely come up, we have been asked to continue to provide on-site assistance during subsequent disassembly and assembly, both of which should happen about another 5 or 6 times. This is to reduce to a minimum not only the sustained pressure on this ancient structure but also to reduce the esthetic impact and disturbance to visitors to the site.”

CMW Engineering Srl  
Chief Executive Officer  
Marco Calvelli