bathroom pods

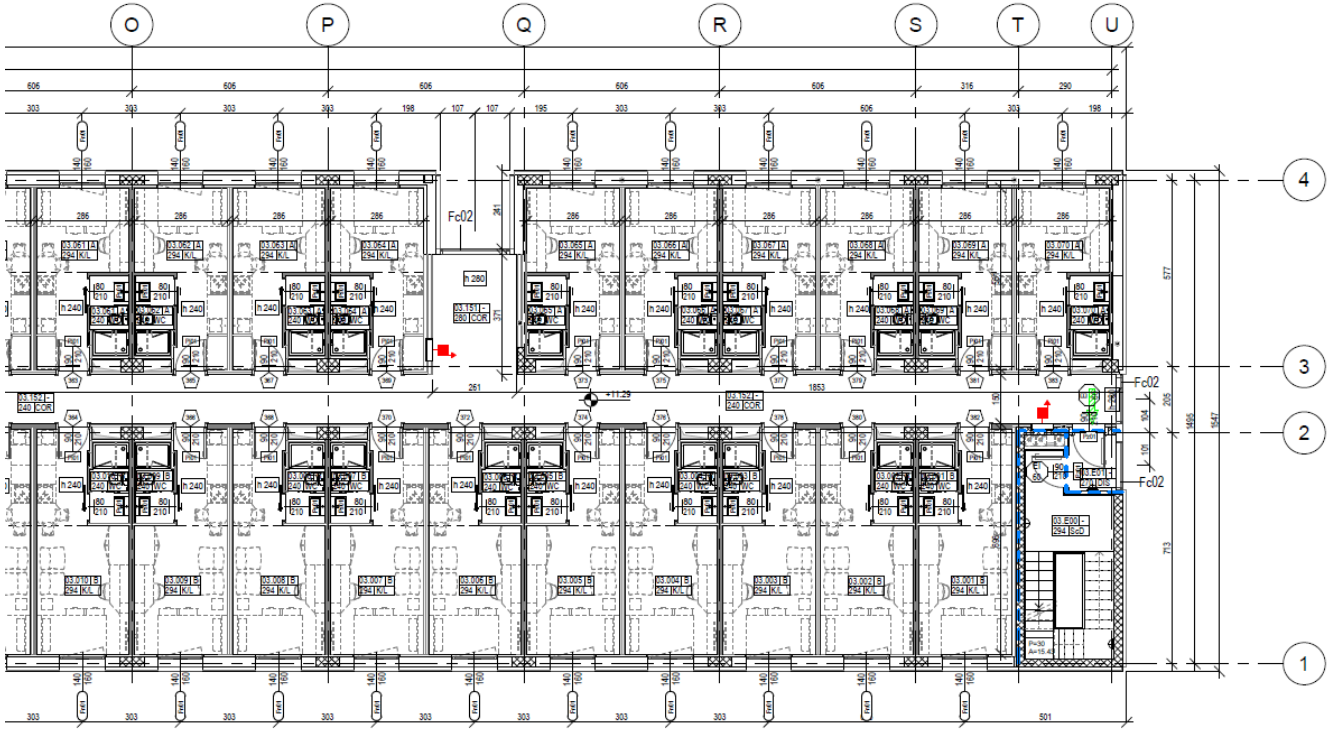
BY STERCHELE GROUP

DESIGN GUIDELINES

FOR THE IMPLEMENTATION OF BATHROOMS PODS

IN NEW CONSTRUCTIONS

When using prefabricated bathrooms in newly built projects, it is essential to pay attention to certain technical aspects to ensure proper structural and systems integration between the bathroom pod and the building.



Below are some design requirements to be taken into consideration.

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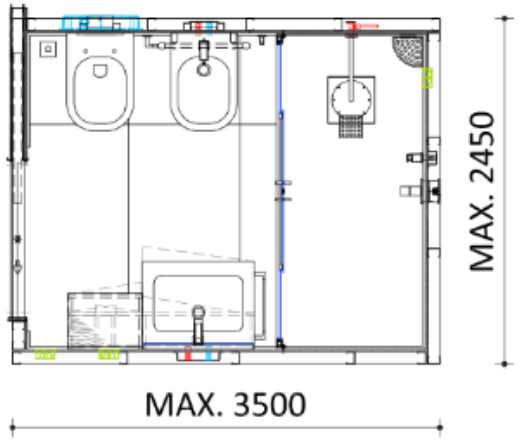
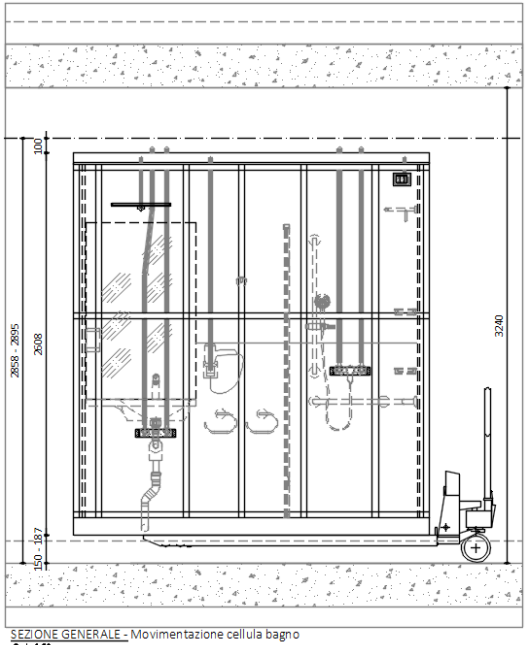
Dimensions

In most cases, bathroom pods are delivered to the construction site using standard trucks (semi-trailers). For this reason, it is preferable that at least one of the pod's external dimensions is less than 245 cm. The second dimension can reach a maximum of 350 cm.
In certain situations, larger dimensions may be considered and/or the bathroom environment can be recreated using two adjacent pods, or alternatively, by employing special transport solutions.



An internal height of 240 cm is normally guaranteed. When added to the floor build-up and the space required for MEP installations above the pod ceiling, this allows for smooth transport and placement within the clear height between building slabs. Greater internal heights will require specific checks regarding both building insertion and transport feasibility.



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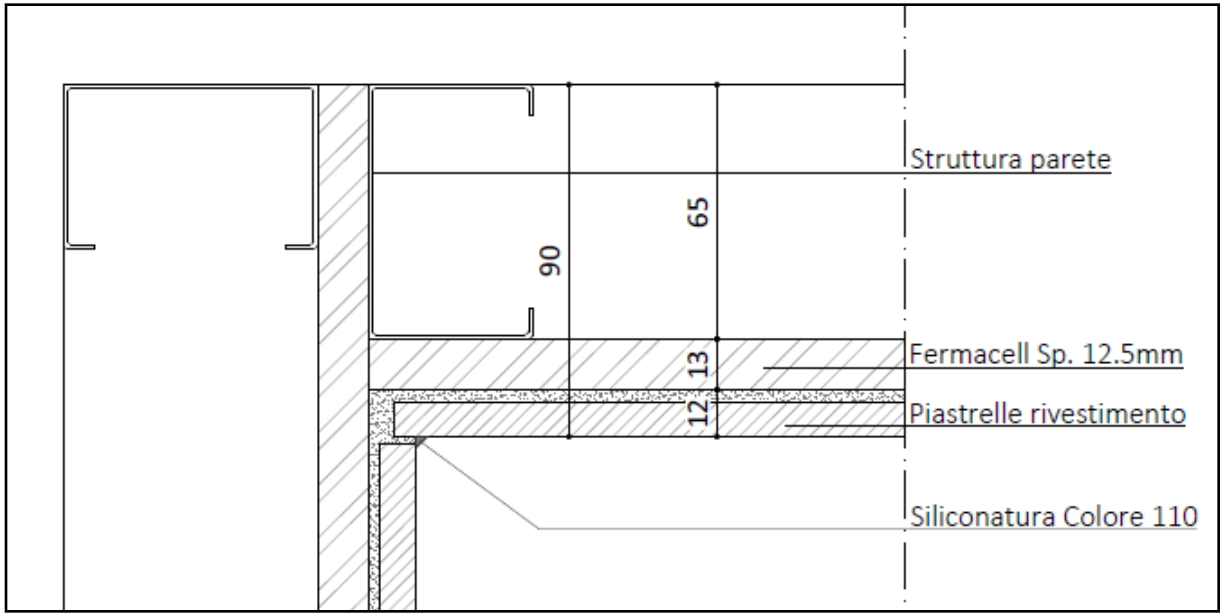
Wall thickness

The galvanized steel profile used for the walls has a thickness of 65 mm and is typically lined on the inside with 12.5 mm thick gypsum fiber boards.

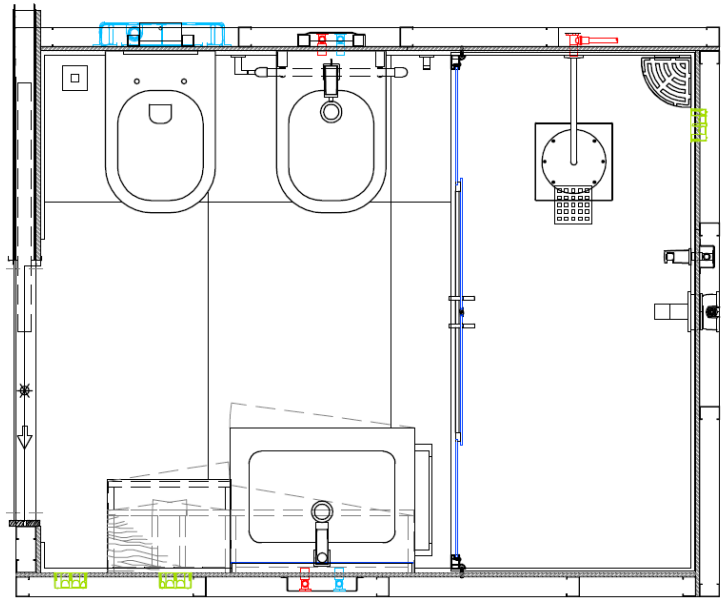
The thickness of the interior finishes must be added to the assembled wall thickness.

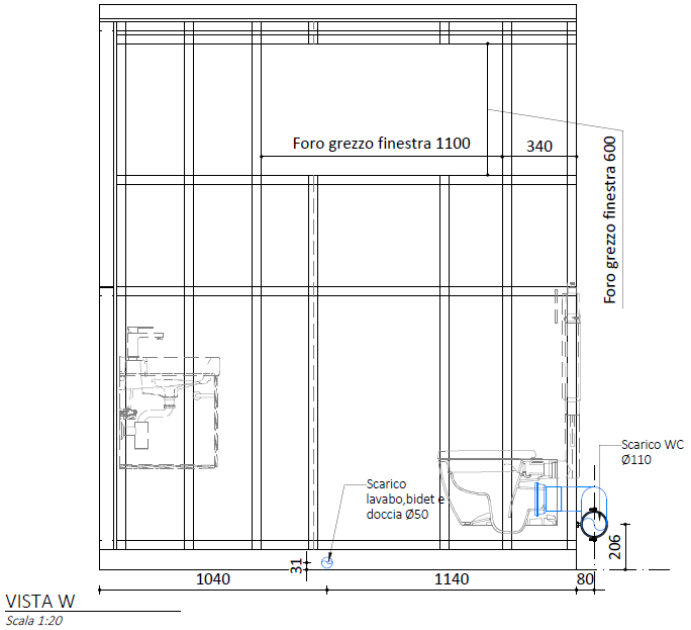
The external walls of the bathroom pod can be lined with one or more layers of plasterboard or gypsum fiber board.



Door and Window Openings

The bathroom pod walls can accommodate any type of door, including full-height doors.
It is also possible, during the manufacturing of the pod, to install only the frame for a sliding door inside the bathroom wall.
Rough openings for the installation of windows can also be prearranged in the pod walls.





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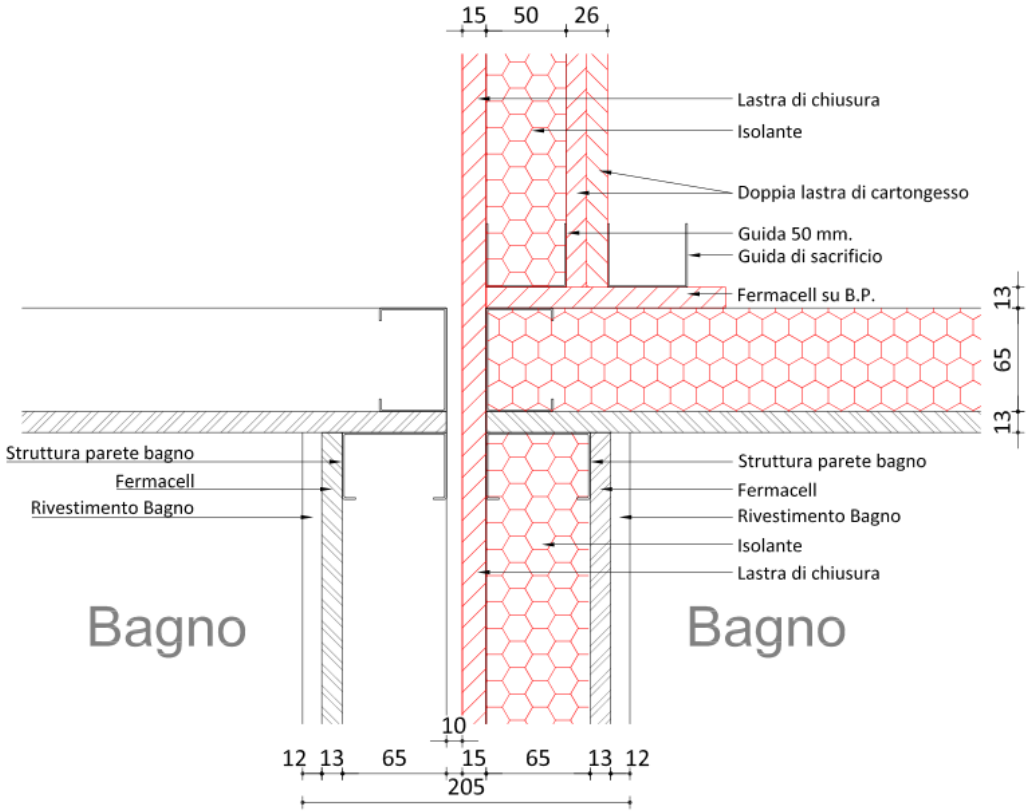
Acoustic Compartmentation

Acoustic compartmentation between two adjacent bathroom pods can be achieved by constructing a full-height dividing wall on site before positioning the pods, which will then be placed against it.

Alternatively, the bathroom pod wall assembly itself can be used, with an on-site extension of the wall built between the pod ceiling and the underside of the floor slab above. In this case, the first bathroom pod is placed in its final position, the vertical wall extension is completed on site, and then the second pod is placed adjacent to it.



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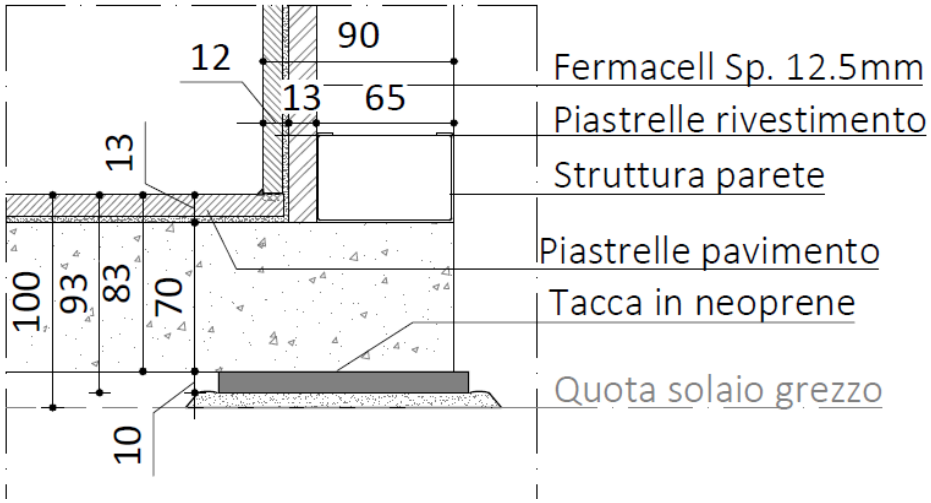
Floor Build-up

The bathroom pod base is normally made of standard concrete (2400 kg/m³).

If there are weight constraints, lightweight concrete (1800 kg/m³) can be used as an alternative.



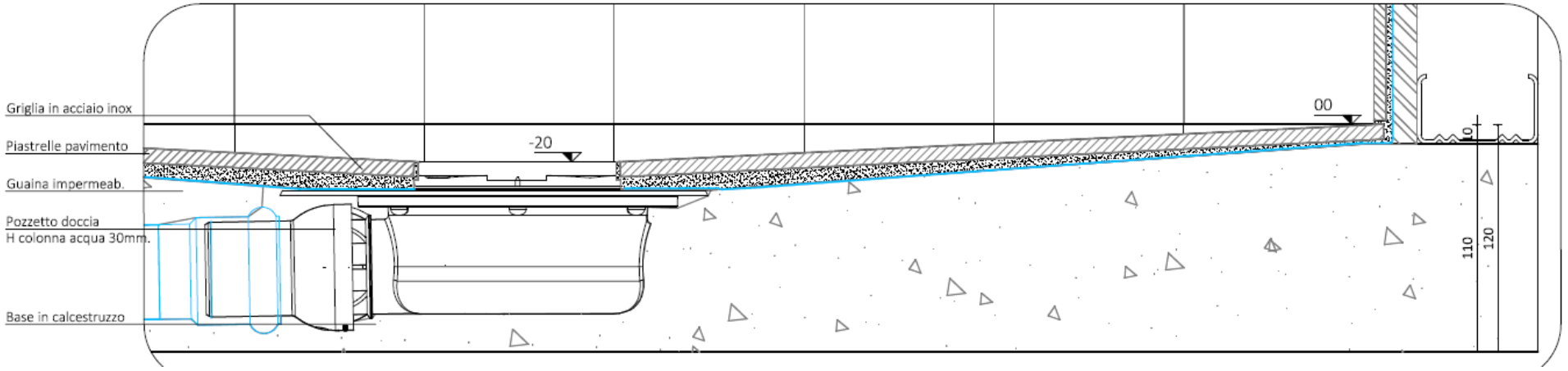
Bathroom pods are generally designed with wall-mounted sanitary fixtures.
In the case of bathrooms with raised shower trays, bathtubs, or no drainage pipes to be embedded within the concrete base, the minimum floor build-up of the pod will consist of 60 mm of concrete, to which the thickness of the tile system (e.g., 15 mm) must be added.

Additionally, 10 mm for the rubber support layer and at least another 5 mm for its leveling must be considered.

The screed thickness above the structural slab should therefore be at least 90 mm. (In exceptional cases, the screed can be reduced to 80 mm.)If, however, the installation of some drainage pipes (excluding the WC) requires embedding Ø 40/50 mm pipes within the pod's floor build-up, the concrete base thickness must be increased to 80 mm.In this case, the total floor build-up will be 110 mm.

Floor build-up

If a floor-level shower is to be installed, the floor slope will be created within the concrete base thickness. The slope, along with the space required for the drain and the slope of the drainage system (approximately 1%), will require a greater floor build-up thickness. Depending on the selected drain model and the distance from the technical shaft, this thickness may range from 110 to 130 mm.



It is also possible to integrate underfloor heating systems (both water-based and electric) within the concrete base.

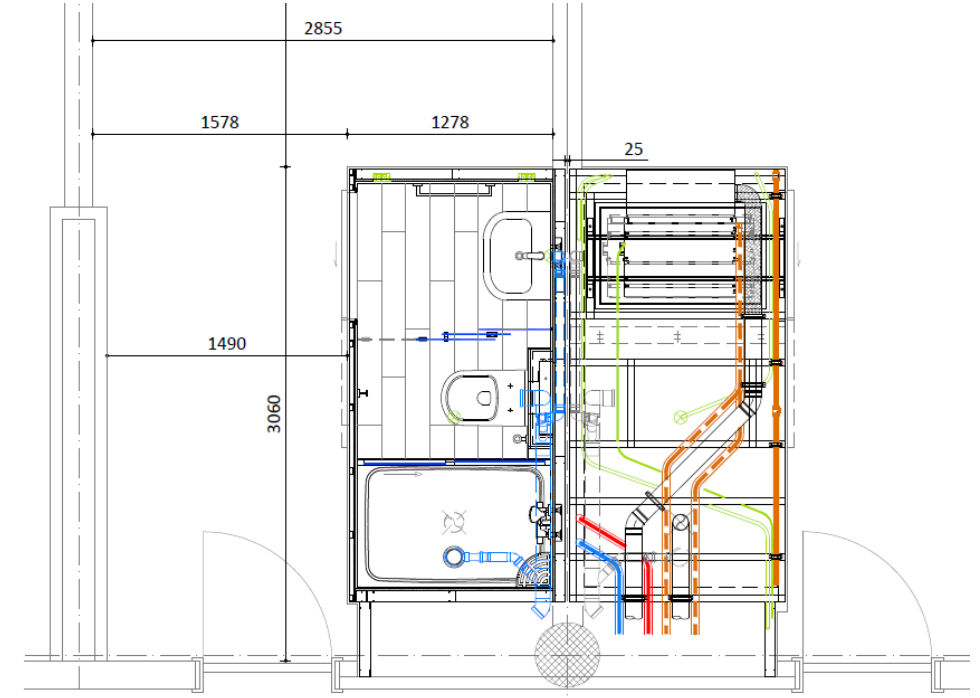
Technical Duct

Regarding the drainage connections, a technical duct adjacent to the bathroom pod is typically required, where all drainage pipes will converge.

The WC drain (Ø90/110 mm) cannot be accommodated within the wall thickness of the prefabricated bathroom.

Therefore, the ideal solution is to position the sanitary fixture directly on the wall where the technical duct is located.

An alternative is to route the WC drain through furniture or ducts placed behind the fixture inside the bathroom, leading to the wall of the technical duct.



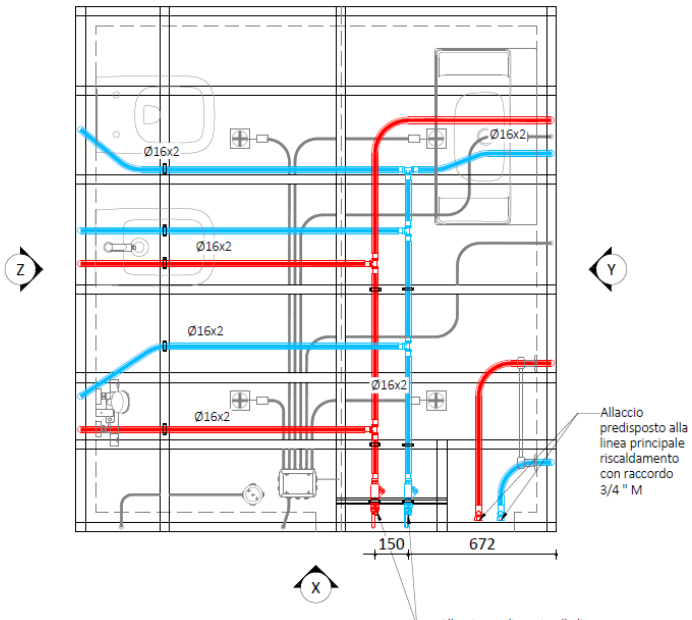
PIANTA GENERALE - Inserimento su impalcato

Scala 1:30

Mechanical System

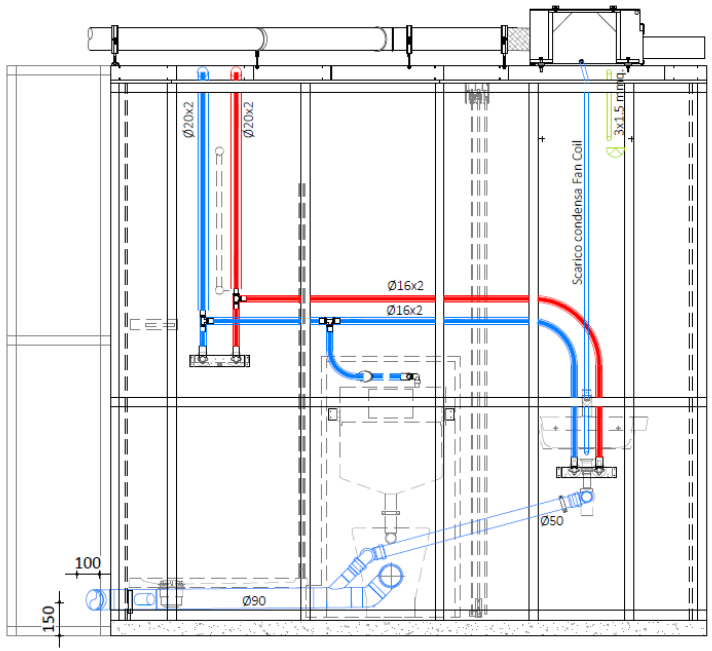
There are no particular restrictions on using any type of system for the supply of domestic hot water. The pipes will run within the wall profile of the bathroom pod, without adding extra bulk, while at the ceiling, they will be installed outside the thickness of the pod (approximately 10 cm of clearance).

The connection to the building's main network is generally made in the technical shaft (if accessible) or above the bathroom ceiling, always in an accessible position, as in most cases, the connection is made directly to the shut-off valves provided in the prefabricated bathroom.



PIANTA SOFFITTO - Impianto meccanico

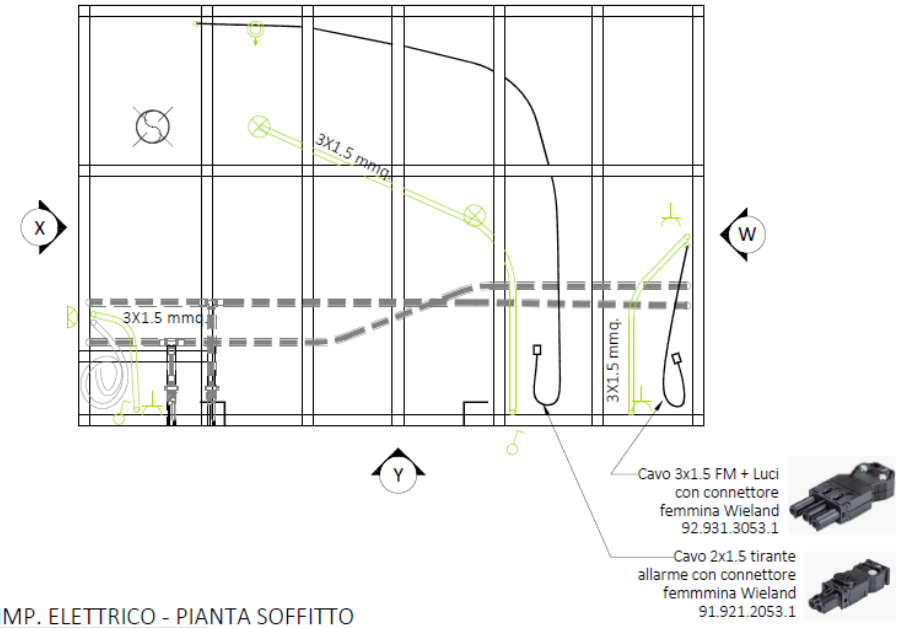
Scala 1:20



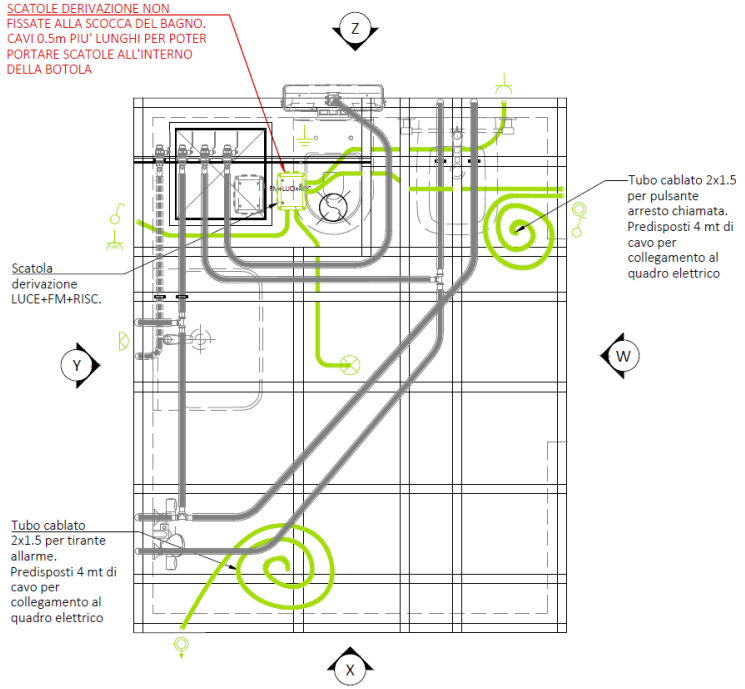
Electrical system

There are no particular restrictions.
The corrugated pipes and associated electrical cables will run inside the profiles of the bathroom pod, both in the walls and ceiling, without increasing the pod's overall bulk.

The general connection to the building can be made within a junction box placed in an accessible location on the ceiling or alternatively using male-female connectors.



IMP. ELETTRICO - PIANTA SOFFITTO
Scala 1:20



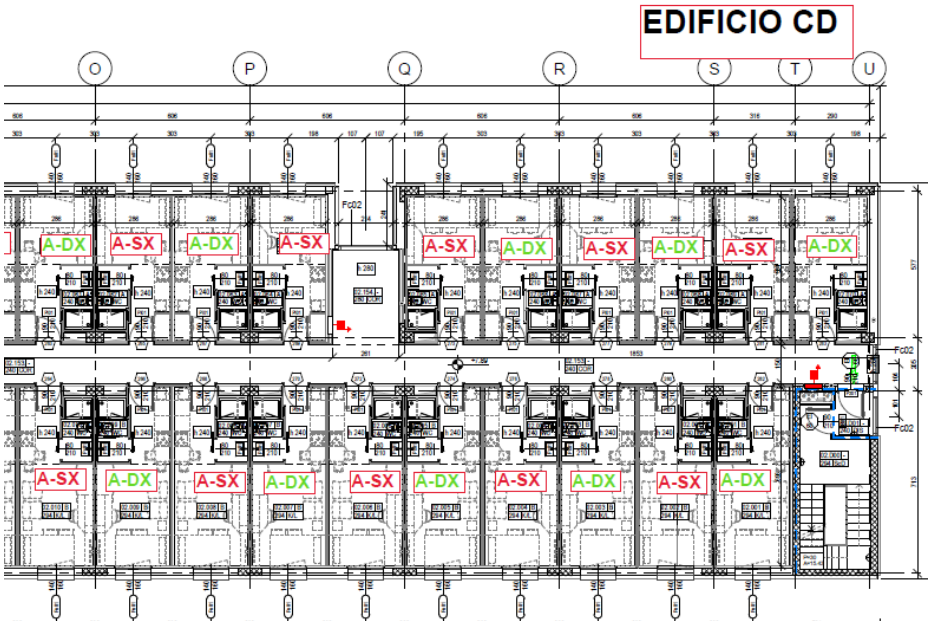
PIANTA SOFFITTO - Impianto elettrico
Scala 1:20

Installation of Prefabricated Bathrooms

From Above

The bathrooms are installed during the building's structural construction and positioned directly on the floor before the placement of the upper slab.

This solution is easily achievable when using self-supporting slabs that do not require temporary props.



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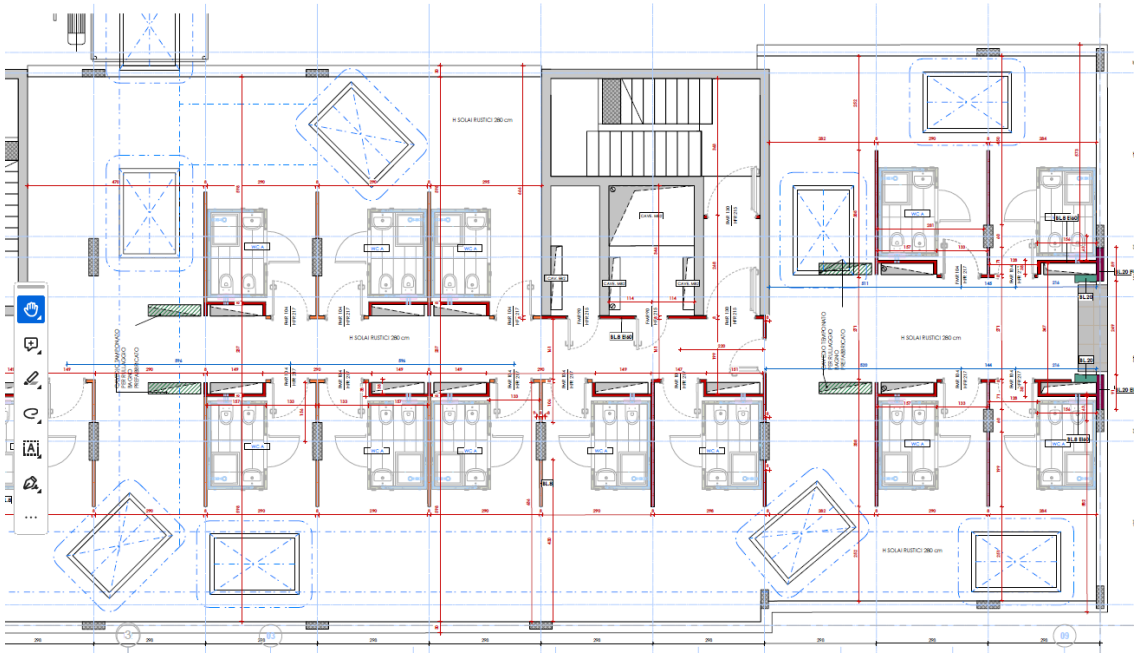
Installation of Prefabricated Bathrooms

Rolling System

The bathrooms are installed after the building's structural construction. The bathroom pod is transported to the floor using external platforms, and then rolled into its final position. In this case, the height clearance and minimum passage width along the route must be verified.



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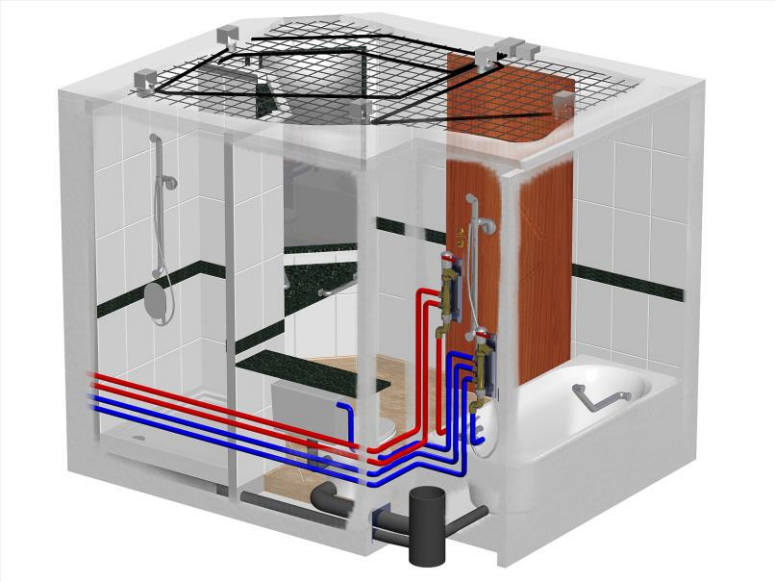
Collaborative Interaction

The decision to use prefabricated bathrooms from the early design stages of a building results in the full involvement of all professional figures.

This approach aims to anticipate all possible interferences between the various disciplines involved in the building's design and to find the best resolution from the outset.



The Technical Office of StercheleGroup Bathroom Pods is available for any clarifications or additional implementations.