

Four towers grow at once thanks to PERI systems

FOUR Frankfurt, Frankfurt am Main, Germany

Four up to 233-m-high futuristic towers will soon soar high into the heart of Frankfurt's skyline in keeping with the project's slogan "Feel the City". PERI is playing an instrumental and successful role in the FOUR Frankfurt inner-city project with a wide range of systems from the formwork, scaffolding and climbing technology segments subject to the most stringent safety regulations and a sophisticated logistics concept.

After its planned completion in 2025, the tower quartet will change the face of the German metropolis with its pioneering architecture and sustainable urban development concept. The tower quartet is a symbol of urbanity without compromise. At the heart of Frankfurt's skyline, new vibrant, international neighbourhoods are emerging that combine accommodation, office space and amenities in an impressive way.

Tower quartet designed for life, work and leisure

The four towers will differ in terms of their height and purpose. T1, the highest tower in the quartet, will scrape the sky at a height of 233.00 m and, on completion, will offer 56 floors of office space. T2 and T3 are two high-rise residential towers, with heights of 178.00 m and 128.00 m respectively. Tower T2 will be one of the highest residential towers in Germany when completed. Tower T4 is the smallest tower in the ensemble, with 25 floors and a height of 104.00 metres.

A total of around 600 flats with recessed balconies are being built in addition to a hotel, serviced flats and office space. With facades constructed from different materials and the clever layout of the towers, the tower quartet will also provide a pleasant residential and working atmosphere with a sophisticated light show and direct sensory exposure to the weather and clouds.

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Partnership-based project planning and execution

Cooperation between PERI and the contractor GP Con commenced at an early stage with the development of the construction concept in order to realise the demanding architecture and to enable efficient structural planning.

The comprehensive concept involves the use of diverse and innovative PERI system solutions, which are used on the construction site as part of a partnership-based cooperation and with the constant support of a PERI project manager. In addition to PERI climbing systems, this also includes numerous wall and slab formwork systems, solutions from the PERI UP Scaffolding Kit as well as a wide range of components.

Efficient solutions for partnership-based cooperation

All four towers are built on a multi-storey contiguous basement structure, which in turn supports a podium that forms the nucleus of the new district. The passageways with their retail and catering outlets provide direct links to Frankfurt's city centre and the surrounding neighbourhoods. The internationally-active-PERI team came up with cost-effective solutions for the erection of the basement structure and the podium as well as the adjoining towers, which ensured that the project ran smoothly.

Four towers, four PERI concepts

Due to the varying requirements of the four towers, the PERI solution used for this large-scale project comprised a range of different, optimally coordinated systems. For the inner cores of the four high-rise buildings, different variants of the ACS and RCS Climbing Systems were used, which in turn were supplemented with BR Shaft Platforms and PERI Panel Formwork.

SKYDECK Panel Slab Formwork, MULTIFLEX Girder Slab Formwork and, for T2 and T3, additional project-specific slab tables were used for the facade slabs. This meant that every ground plan could be formed efficiently and short cycle times achieved thanks to the SKYDECK early striking option.

PERI climbing protection panels were used to completely enclose the leading edges of the upper floors. As a result, the construction site staff were protected against fall hazards, falling objects and strong winds at all times.

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Systematic special solutions

Special solutions involving the PERI VARIOKIT Brace Frames and a PERI UP Facade Scaffold were required for the construction of the high storeys and the cantilevers for the forward- and backward-sloping slabs. In tower T1, a PERI UP shoring solution was also used for the double storeys with cast-in-situ concrete slabs. By using a MULTIPROP and PERI UP support, the outrigger assembly on the 43rd floor of T1 as well as on the 28th to 31st floors of T2 was carried out efficiently and safely.

Synchronised climbing of multiple platforms

The decision to use the RCS MAX Rail Climbing System on Tower T2 ensured a particularly high level of efficiency and safety. Synchronised climbing of several platforms, which was carried out by means of the RCS MAX Hydraulic Units and the Drive Rails C and CL, sped up the process of moving to the next section considerably. At the same time, this innovative concept kept the number of open leading edges and falling objects to a minimum. The platforms were firmly anchored to the wall at all times during this process.

PERI material catch fans-on the facade of T2 increased safety levels even further. Not only did these ensure that work operations on the shell of the building were safe, they also increased safety levels during the subsequent facade assembly process and in the immediate vicinity of the inner-city construction site.

Clear overview of project data, materials and costs at all times

The PERI project management team was available on site to advise the Groß & Partner construction site team on how to solve issues on a daily basis.

In addition to organising punctual delivery of the formwork and scaffolding materials, PERI also provided material forecasts. Lead times of up to six months were required for timely delivery of materials due to the scale and location of the project. Provision of up-to-date material and cost statements as well as important key figures on the project were the other support services provided.

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Photo 1

Four 233-m-high futuristic towers will soon soar high into the heart of Frankfurt's skyline in keeping with the "FOUR" project's slogan "Feel the City".

(Photo: PERI SE)

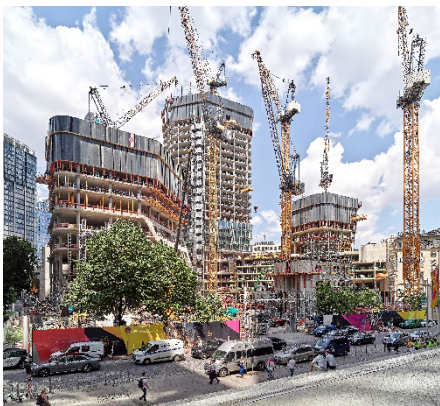


Photo 2

PERI is playing an instrumental and successful role in Groß & Partner's "FOUR Frankfurt" inner-city project with a wide range of systems for formwork and scaffolding applications, not to mention climbing technology that is subject to the most stringent safety regulations and a sophisticated logistics concept.

(Photo: PERI SE)



Photo 3

The comprehensive concept involves the use of diverse and innovative PERI system solutions, which are used on site as part of a partnership-based cooperation and with the constant support of a PERI project manager.

(Photo: PERI SE)

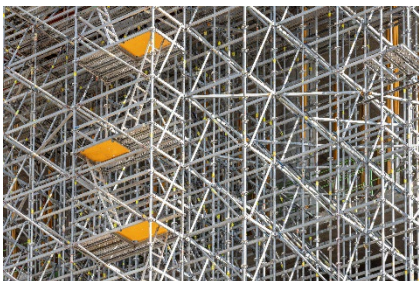


Photo 4

Solutions from the PERI UP Scaffolding Kit provided safe access points and ensured safe load transfer on the construction site.

(Photo: PERI SE)

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Photo 5

Due to the varying requirements of the four towers, the PERI solution used for this large-scale project comprised a range of different, optimally coordinated systems. Different variants of the ACS Climbing System were used for the inner cores of the four high-rise buildings.

(Photo: PERI SE)



Photo 6

The decision to use the RCS MAX Rail Climbing System on Tower T2 ensured a particularly high level of efficiency and safety.

(Photo: PERI SE)

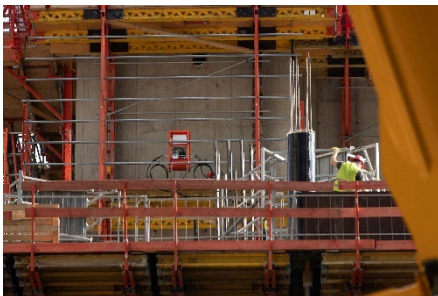


Photo 7

Synchronised climbing of several platforms, which was carried out by means of the RCS MAX Hydraulic Units and the Drive Rails C and CL, resulted in particularly short-repositioning times.

(Photo: PERI SE)

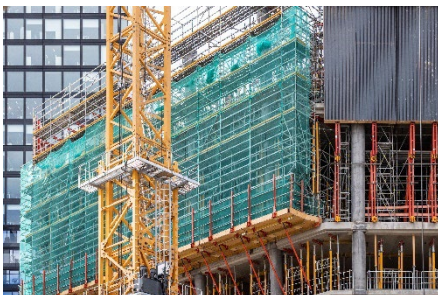


Photo 8

PERI climbing protection panels were used to completely enclose the leading edges of the towers' upper floors. As a result, the construction site staff were protected against fall hazards, falling objects and strong winds at all times.

(Photo: PERI SE)

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Photo 9

Cooperation between PERI and the contractor commenced at an early stage with the development of the construction concept in order to realise the demanding architecture and to enable efficient structural planning.

(Photo: PERI SE)



Photo 10

After its planned completion in 2025, the tower quartet will change the face of the German metropolis of Frankfurt with its pioneering architecture and sustainable urban development concept.

(Photo: PERI SE)



Photo 11

PERI provided support to the construction site team at all times, in this case at Tower 2. (Photo: PERI SE)

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