FACTS AND FIGURES

Gap Closure between existing US and U5 / Length:
2.2 kilometres

Three new Underground Stations:
- Rotes Rathaus (Red City Hall Station)
- Museumsinsel (Museum Island)
- Unter den Linden

Timeline:
- 2010 Ground-breaking ceremony
- 2012 Start of construction
- 2020 End of construction

Final New US:
- Total length of US after completion of the gap closure: 22 kilometres
- The first fully accessible underground line in Berlin
- New connections for round about 150,000 passengers per day
- Significant reduction of carbon emissions in Berlin-Mitte with up to 3,500 fewer car trips per day

THE NEW U5

The ‘U5 gap closure’ will extend the existing underground line US from Alexanderplatz to Brandenburger Tor. There, it will be connected to the already completed line U5. The lines of US and U5 will merge into one line only: the new U5. The U5 gap closure will provide a direct connection to the historic city centre, the government district and the central station for the major residential areas in the east of Berlin. Additionally those parts of the city that were previously served by the US only (i.e. central train station and government district) will gain full connection to the underground network.

The U5 gap closure will also make it easy to access a huge number of the city’s landmarks using just one underground line: from Berlin TV Tower via Red City Hall, St Mary’s Church, Neptune Fountain, the historic Nikolaiiviertel, the Museum Island and Berlin Cathedral, the Humboldt Forum, the German Historical Museum and the Staatsoper Unter den Linden, Humboldt University and the Berlin State Library to the Brandenburg Gate – and others.

IMPRINT

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www.projekt-U5.de/en
THE TUNNEL
Approximately 1.6 kilometres of the 2.2 kilometre connection from Alexanderplatz to Brandenburg Tor were constructed using a Tunnel Boring Machine (TBM, pressure balanced hydro-shield). Two separate tunnel tubes were built for the future underground line; first the north tunnel tube, followed by the south tunnel tube. The parts of the TBM were delivered by ships via the river Spree in early 2014 and lifted into the 20-metre-deep launching shaft at the Marx-Engels-Forum where the TBM was finally assembled. A TBM is actually a rolling factory which bores through the subsoil, creating a tunnel at the same time. ‘Bärlinde’, as the machine was christened, was 74 metres long, weighed 700 tons and provided a boring diameter of up to 6.7 metres. ‘Bärlinde’ crossed under the Spree river, the Humboldt Forum and the Palace Bridge in front of the Red City Hall. The shaft for the Rotes Rathaus underground station was built using the cut-and-cover top-down method just like Unter den Linden station. It is worth mentioning that the cover of the shaft also serves as roof for the station. Therefore the top of the supporting columns were completed first; the lower column sections were built only afterwards. This underground station was designed by the Berlin architectural firm Collignon Architektur. The idea was inspired by the vaulted roof of the medieval Berlin town hall which was rediscovered at the site during archaeological excavations. Seven centre columns support most of the roof load. The funnel shaped tops of the columns are reminiscent of the old vaulting. Combined with the platforms at the outer sides, the concourse is spacious and airy. In terms of colour, the station features a modern black and white design.

ROTES RATHAUS STATION
The future Rotes Rathaus underground station is located directly in front of the Red City Hall. The station consists of two levels: the tracks and platforms for the new U5 at the upper level and sidetracks at the lower level. The shaft for the Rotes Rathaus underground station was built using the cut-and-cover top-down method just like Unter den Linden station. It is worth mentioning that the cover of the shaft also serves as roof for the station. Therefore the top of the supporting columns were completed first; the lower column sections were built only afterwards. This underground station was designed by the Berlin architectural firm Collignon Architektur. The idea was inspired by the vaulted roof of the medieval Berlin town hall which was rediscovered at the site during archaeological excavations. Seven centre columns support most of the roof load. The funnel shaped tops of the columns are reminiscent of the old vaulting. Combined with the platforms at the outer sides, the concourse is spacious and airy. In terms of colour, the station features a modern black and white design.

MUSEUMSINSEL STATION
Museumsinsel underground station runs south of the Palace Bridge, under the Spree canal between its eastern bank and Crown Princes’ Palace. The station provides direct access to some of the city’s most important sights and cultural highlights. Due to its proximity to surrounding buildings and its location under the Spree canal, construction of the station is a major technical challenge. Two different construction site was established, one on each side of the Spree canal. The platform concourse will be built using the sequential excavation method. This is done while the soil around the tubes is frozen solid for structural support and waterproofing. But first, ground freezing pipes have been drilled around the tunnel tube. Cold brine flows through the pipes freezing the ground to its required shape and thickness. Museumsinsel underground station was designed by Professor Max Dudler. He wanted to establish a link to the surrounding buildings that were designed by the Prussian architect Karl Friedrich Schinkel (1781-1841). Professor Dudler was inspired by a Schinkel opera stage design. The vaulted station ceiling designed in dark blue with countless lights gives the impression of a starry night sky.

UNTER DEN LINDEN STATION
Unter den Linden underground station is the most spacious of the three stations, designed as an intersection structure for interchange between lines U5 and U6. It consists of three levels. The U6 line runs at the top, while the middle level is a concourse where passengers can change from the platforms of one to the other line. The U5 line runs on the bottom level. In the first phase the U6 platform was built by November 2013. Since then, the U6 line has been operating without any interruption. The structural works of the U5 level have been finished. Finishings have started in summer 2017. The shaft for Unter den Linden underground station was built using the cut-and-cover top-down method. Reinforced concrete slurry walls served as watertight retaining walls. The bottom plug was made with deep jet grouting. Unter den Linden underground station was designed by the architects Ingrid Hentschel and Axel Oestreich. The architects previously designed Brandenburger Tor underground station. They wanted to create a strong link between both stations so that the designs are based on similar concepts and comprise identical materials.

| Length of the new tunnel: | 1,620 metres |
| Diameter (internal) of the TBM: | 5.7 metres |
| Length of the TBM: | 74 metres |
| Weight of the TBM: | 700 tonnes |
| Length: | 120 metres |
| Depth: | up to 16 metres |
| Platform depth: | 7 metres |
| Size of the column heads: | 7 by 9 metres |
| Length: | 180 metres |
| Depth: | up to 20 metres |
| Platform depth: | 16.5 metres |
| Number of ceiling lights: | around 7,200 |
| Length: | 152 metres |
| Depth: | up to 17 metres |
| U5 platform depth: | 14 metres |
| U6 platform depth: | 5 metres |