

## CASE STUDY

# MODERN, EFFICIENT AND SAFE: THE "LIFEBLOOD" OF STUTTGART'S NEW CITY LIBRARY

Since October 2011 the City of Stuttgart has a new, ultra-modern city library. Generating some of the "lifeblood" of this architecturally striking building are its powerful communications cabling and a reliable fire safety cable system, both of which owe their origins to Datwyler.

On 24th October 2011 the City of Stuttgart opened its new City Library on the Mailänder Platz. Its striking architecture which characterises the building is based on a design by the South Korean architect, Eun Young Yi. From the outside the newbuild, with its walk-on double facade made from concrete, glass blocks and glass, gives the impression of a shining cube and it is also brightly lit at night. In the centre of the building there is also a cube-shaped room around which various themed areas including reading and learning stations, a children's library, a music library, an art print library, a gallery, an art room and a 'literature café' are arranged. In the library visitors have access to multi-media learning facilities with in-house netbooks, in addition to which they are able to access the most modern media via WLAN. Some high-end computer stations even offer the chance to use 3D or virtual reality programs.

The physical basis for the large number of communication possibilities offered by the City Library to its visitors is a powerful data network using fibre optics (FO) in the riser area and high-quality copper technology at individual floor level. Construction of the communications cabling system was carried out by Siemens Building Technologies based on City planning guidelines.

### System solution in copper and glass

It was Project Manager Achim Matzka and the responsible site managers who made the network a reality, complete with a system solution from Datwyler. The server room in the basement was connected with the distributors on the individual floors via buffered fibre optic cables, each with 12 or 24 OM3 multimode fibres. The required optical fibre pigtails and connection cables were supplied by Datwyler, complete with pre-assembled SC connectors on both sides. On the individual floors the installation engineers laid halogen-free Category 7 type CU 7080 cable in flame-retardant construction. Together with the RJ45 MS-K modules and the corresponding patch panels and data outlets, Siemens laid a Class E<sub>A</sub> communications network up to 500 megahertz capacity which is in line with the current ISO / IEC Standard.

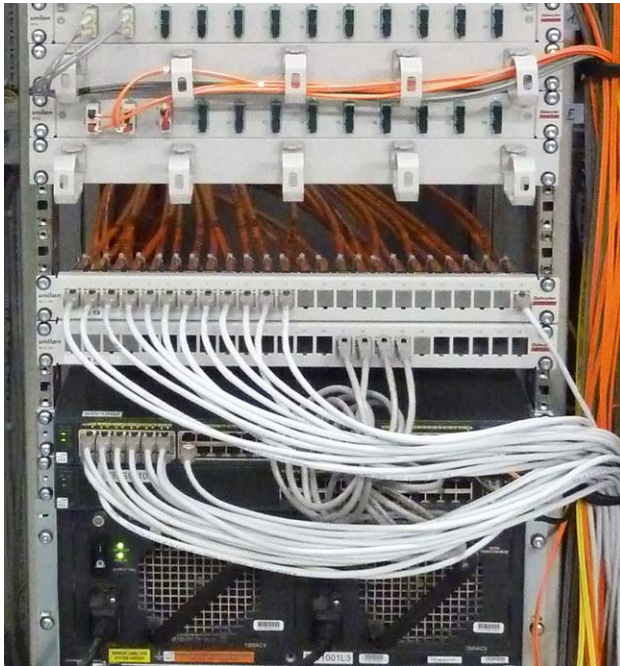
Overall the teams, under the direction of Martin Jakob, Thomas Kyll and Ralf Kohl, installed 126 kilometres of copper data cables in Simplex and Duplex construction together with 144 patch panels, each with 24 ports, as well as 6400 MS-K modules and 3200 data outlets which are protected by dust covers if not used. In the fibre optic cabling, there are a further 3200 metres of FO Indoor cable and 33 FO patch panels, each with 12 pre-assembled Duplex connections.

Today, it is not only the PCs, netbooks, telephones and WLAN access points that are connected to the new network, but also a number of other systems, for example, the VA/PA system, the book cataloguing and security installations and the electronic book issue and return systems. Physically, strict separation is maintained between the internal administration network and other networks, e.g. the connections accessible to the public.

### Safe and secure power supply in the event of a fire

Even where security lighting and the provision of an emergency power supply – both disciplines associated with central building services – are concerned, Siemens have made use of solutions from Datwyler. Here the installation engineers have fitted some 14 kilometres of safety cables, around 1000 Hermann clamps





and single clips as well as innumerable special pins – offering system circuit integrity E30 and E90. Naturally, all the components have the necessary test certificates. These confirm that entire cable installation can be relied upon to continue to supply the connected safety systems with power for up to 30 / 90 minutes in the event of a fire.

### **Future-proof to a major extent**

The installation took place between August 2010 and May 2011 and, in the main, things went smoothly. Prior to acceptance tests for the communications network in September 2011, Siemens carried out extensive and very thorough measurements and tests on all copper and FO links installed. Only four faults were identified out of a total of 3200 links – an excellent proportionate score for installations of this magnitude.

As Project Manager Achim Matzka is able to state with some conviction: “The Datwyler communications network is in accordance with the latest state-of-the-art technology; it offers high power reserves and can be extended at any time. To this extent, it may be said that the installation offers high levels of reliability for the future in every respect”.

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