

First class electrical planning

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Germany's largest airport expands with WSCAD

Frankfurt Airport, Germany's largest international airport and Lufthansa's global hub, is expanding with the assistance of WSCAD's E-CAD software platform. Fraport Aufbau Süd GmbH, responsible for planning the new Terminal 3 including its building automation system, selected the WSCAD SUITE for its speed and flexibility in implementing 150,000 automation functions across the entire 403,000 m² structure.

Frankfurt Airport's new Terminal 3, expected to go into operation in 2026, will eventually comprise five upper and two lower floors, hosting 25 million additional travellers each year. Planning the building automation, air conditioning, heating and ventilation is a vital requirement, managed by CANZLER GmbH on behalf of Fraport. Specifically, retail spaces need sufficient cooling capacity to deal with fluctuating passenger numbers, regardless of external climatic conditions. Fraport also required environmental sustainability features such as recycling waste heat from the baggage handling system to heat the terminal.

With function lists according to the German standard VDI 3814, creating a unified basis to simplify planning, management and operation, and features to speed up the design process while maintaining accuracy, Fraport selected the WSCAD SUITE with its Building Automation module. The E-CAD software was also adopted by CANZLER.

“To avoid data errors and time delays, we paid special attention to the consistent planning of the building and room automation from the beginning,” says Uwe Eckardt, Planning Coordinator for Building Automation, Fraport Aufbau Süd GmbH. “BACnet object-related function lists according to VDI 3814 can be implemented perfectly with WSCAD and it was the only system with the performance features required by Fraport.”

CANZLER planned the building automation system for the terminal that involved the regulation of heating, air conditioning and cooling systems as well as the monitoring of sanitary and sprinkler systems. In total, this included approximately 1,500 rooms and the smoke control of the entire terminal. With 240 controls and components, the system comprises around 90,000 data points and 150,000 automation functions, all of which have been designed and placed with WSCAD.

A key feature of WSCAD’s E-CAD software is the item referencing that enabled the entire air conditioning system to be designed in accordance with IEC 81346. Systematic structuring from the outset significantly accelerated and simplified the planning as well as development process. WSCAD enabled the scalability to duplicate then customise areas of design according to location and required function. For example, the drive of a ventilation system including motor, protection and control can be quickly replicated for use in the same form in another building area by drag and drop of the desired macro.

To ensure accurate and rapid referencing of duplicated areas, all stored labels are automatically inserted into the new structure. This also means that correctly structured, error-free cable or parameter lists for individual system parts can be generated very easily when required. With around 200 ventilation systems involved in the Terminal 3 design, this was a significant advantage in time saving.

“When planning building automation projects, the automatic generation of data point keys as well as the ability to change them quickly and easily afterwards is very important,” says Heike Frommhold, CANZLER GmbH.

The system key developed for the project, including user address and data point, consists of a total of 31 digits. The automated creation of data point keys is also possible with WSCAD for projects using existing keys. When changes are made, the software automatically updates the system key across all data points. The plugins for building automation-specific data point keys supplied with WSCAD’s software, as well as the extensive symbol library with article data, also increased the speed of design with no need for manual or bespoke generation.

Fraport and CANZLER also benefitted from WSCAD’s database that enables simple export of all project data, and project-specific article databases can be easily created to bespoke standards and formats. For both design and data management, CANZLER found the software intuitive to use from the start. The next step in the development of Frankfurt’s Terminal 3 is to implement the building automation itself.

“Airports are complex and technically sophisticated buildings that require a special planning,” says Uwe Eckhardt, *“and thanks to WSCAD we are on track to deliver the project to schedule.”*

Image captions:

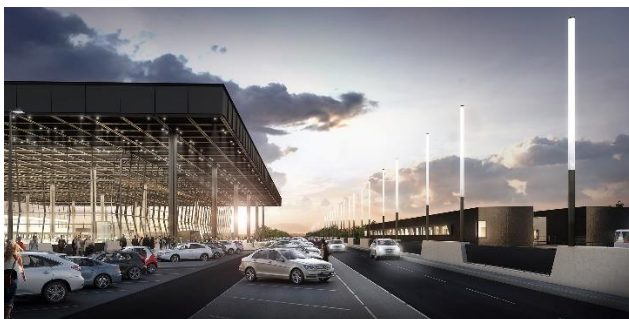
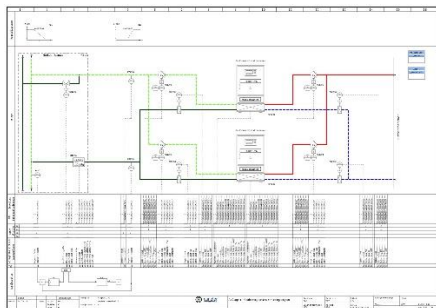
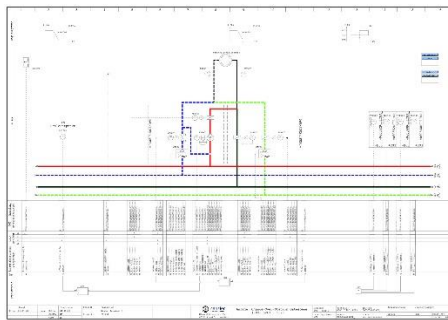




Image 1: The building automation system in Frankfurt Airport's new Terminal 3 is being planned using WSCAD's E-CAD software platform. [Source: Fraport AG]

Image 2: With 240 controls and components, the system comprises around 90,000 data points and 150,000 automation functions, all of which have been designed and placed with WSCAD. [Source: CANZLER]

Image 3: A key feature of WSCAD's E-CAD software is the item referencing that enabled the entire air conditioning system to be designed in accordance with IEC 81346. [Source: CANZLER]

Image 4: Outside view of Frankfurt Airport's new Terminal 3 where WSCAD's software platform is being used to plan the building automation system. [Source: Fraport AG / © Christoph Mäckler Architekten]

Image 5: Check-in area at Frankfurt Airport's new Terminal 3 where WSCAD's software platform is being used to plan the building automation system. [Source: Fraport AG]

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About WSCAD

WSCAD is part of the Buhl group with more than 700 employees. WSCAD has been developing electrical CAD solutions for three decades. Customers include medium-sized companies, international corporations and engineering service providers. More than 35,000 users rely on WSCAD as their electrical CAD solution. The software is based on one core platform that covers six engineering disciplines: Electrical Engineering, Cabinet Engineering, Piping and Instrumentation, Fluid Engineering, Building Automation and Electrical Installation. Any change made to a component in one discipline immediately reflects in all the other disciplines saving time and raising quality. WSCAD methodologies for standardization, reuse and automation significantly reduce engineering time from several weeks to just a few hours or even minutes. At the same time, these practices also ensure a much higher quality of work.

wscaduniverse.com is by far the largest electrical CAD data library on the market offering over 1.4 million parts from more than 370 manufacturers. It is the only digital library that supports WSCAD, EDZ, DWG and 3D CAD data. Use and data provisioning is free of charge for all users and manufacturers of components and equipment. WSCAD also offers apps for mobile devices: maintenance engineers and service personnel are now able to scan components within the control cabinet by using the WSCAD Cabinet AR App. This way they get instant access to the schematics, device tags, part data, 3D views and even the original data sheets from the manufacturers. Building engineers can use the Building AR App on site to scan rooms and then edit the scanned floor plans in WSCAD for building automation and electrical installation.

The WSCAD portfolio is completed by eleven seamlessly integrated service offerings from WSCAD Global Business Services. Engineering and migration check-ups, consulting and training, digitization of paper

documents and conversion of third-party electrical CAD formats quickly help to shorten engineering times and increase productivity.

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