

KÉSZ Building and Construction Company

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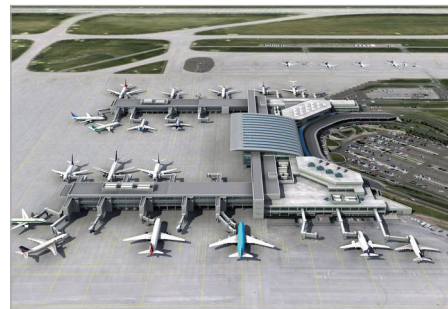


KÉSZ Group

More than a quarter century ago KÉSZ was founded as a family enterprise; today it is a holding, which employs more than 1,300 people in Hungary and neighbouring countries; its income has reached 70 billion HUF. Through its member corporations, KÉSZ Group is present on the building construction market, building element manufacturing, property development, facility management, fleet management and last but not least, the environment industry. The KÉSZ Building and Construction Company is a member of the KÉSZ Group.

KÉSZ Building and Construction Company

The KÉSZ Building and Construction Company is the flagship of the KÉSZ Group. They provide full-scale services in the building industry, more precisely in general construction, design, structure building, building mechanical and electrical execution and technological erection. Among our more than 3.600.000 m² of references we can mention industrial halls, logistic centres, power plants, offices, public buildings, stadiums, hypermarkets, shopping centres, hotels etc.



Software: Allplan Engineering

Reconstruction and Extension of Ferihegy Airport - Budapest, Hungary

In 2008 the KÉSZ Building and Construction Company won the public procurement tender for the reconstruction and development works on the Budapest Airport, a strategic project for Hungary.

The most important parameters of the project and the structure

The tasks of our company included the preparation of the construction plan for the operating airport, the demolition and reconstruction of the existing terminals 2A and 2B, the general construction of the airport's monitoring buildings, the Sky Court commercial area and landing stage B. The project includes the assembly of 52 elevators, 42 escalators, package handling technology and manufacturing and assembly of a 70 metres wide steel roof structure.

The Sky Court building will get its usage permission on 30th November 2010. We built about 7.000 m³ of concrete with about 190 tons of rebar. We drew 190 plans with the highest revision index is 8, and this just for the superstructure.

The structure was designed according the Eurocode, so we had to check the building for impacts of earthquake. Therefore the basement is just a "box", but we divided the superstructure into 3 dilatation units.

The project approach

The deadlines were very short and our capacity was limited, so the reinforcement plans were made by a subcontractor. Our tasks were to make the formwork and the positioning as well as the detailed reinforcing plans (for example the force transmission joints of the T pillars). The requirements of the architects and of course of the customer were continuously changing. We had to be ready for a lot of issues.

The drawings were made by Allplan Engineering. We used the Modelling 3D, Views and sections, Reinforcing and the Mesh reinforcing modules. To keep immediate track of changes without mistakes, "3D modelling" was used. To get the sections, the "Views and sections" modules were extremely useful. For the reinforcement details we modelled the rebars in 3D, because the pulling force was about 2.000 kN, to resist this force we had to use a lot of rebars in order to ensure that the

joint was able to be constructed. The anchoring bars of the steel roof structure made our task even more challenging. The heads of the T pillars had no parallel planes, so all of the stirrups had different sizes.

It was essential to pay a lot of attention to calculate and construct these bars and stirrups. The design of the big span beams in unit PL3 Arrival and Departure level was also difficult. These beams had to support 2 levels, because the pillars in the Arrival levels were pulled pillars. The main reinforcing is 46Ø32. We had to investigate if the rebars of the pillar could be positioned across these bars.

The added value of the software

Allplan Engineering made our work a lot easier.

We used the following features to make the detailing faster and more effective:

- Automatic dimensioning
- Region reinforcement
- Welded mesh reinforcement
- Compare old and new DWG
- Helpful automation of Views and sections (in dimensioning and labels)
- Hot keys
- Batch PDF printing (as archive)
- DXF import

This project also contains a lot of steel structures and we had to check the clashes between RC and steel structures. The DXF import proved to be a great solution for this issue.

All the structures have been built with success, without serious, unsolvable constructing issues.

Please feel free to visit the construction in Hungary or have a look at the photos!

Reconstruction and Extension of Ferihegy Airport

Budapest, Hungary

Project information

Owner KÉSZ Building and Construction Company
Architect Zoltán Tima
General Contractor KÉSZ Building and Construction Company
Engineering Office KÉSZ Building and Construction Company
Construction Period From November 2008 to November 2010
Location Budapest, Hungary



Short project description

The project is about the preparation of the construction plans for the Budapest airport, including the demolition and reconstruction of the existing terminals 2A and 2B, the general construction of the monitoring buildings, the Sky Court commercial area, as well as landing stage B. It includes the assembly of 52 elevators, 42 escalators, package handling technology and manufacturing and assembly of the 70 meter wide steel roof structure. We used about 7.000 m³ of reinforced concrete and more than a thousand tons of steel.

