The Mega Plan

What will probably be Europe’s biggest Logistics building site will soon be located at the heart of Frankfurt Airport. Lufthansa Cargo AG has decided to replace the freight handling system in Cargo City Nord, which in places is over forty years old. Miebach Consulting has been involved in the project since day one and is responsible for the complete process, logistics technology, and IT planning.

In the words of Dr. Karl-Rudolf Rupprecht, Executive Board Operations Lufthansa Cargo AG the new building will be the world’s most cutting edge, efficient air cargo hub. Planning, which has been under way since October 2010, is now completed as far as logistics and IT are concerned. Construction work will commence in early 2014. Lufthansa Cargo, following several preliminary studies, have decided in the summer of 2010 to completely revamp the current freight handling system in Cargo City Nord as part of its Strategy 2020. The logistics consultancy Miebach Consulting was the first planning partner to be selected for this major project. It soon became clear that planning needed to be conducted from within outwards, meaning that requirements relating to future processes and the sizing of the logistical infrastructure had to be defined, and in downstream planning steps the volume of the building, and outside facilities determined. To this end in late summer 2010, the joint Lufthansa Cargo and Miebach Consulting project team of began exploring the requirements the new cargo hub will have to meet. Clients as well as internal stakeholders are included in this.

As a result it was determined that among other things the new cargo hub:

- will lead to a drastic reduction in processing times,
- and as enables a considerably more attractive range of products for customers on the basis of increased connectivity,
- the “security processes” will be improved further still by implementing a security check at package level,
- which clearly reduces unit costs.

In order to play a pivotal role in the competitiveness of Lufthansa Cargo the new hub must meet these requirements.

Based on these and other stipulations, e.g. the integration of different
such that the impacts and requirements of both sides could be taken into considera-
tion in the process design. However, during the detailed planning phase, all logistics planner’s nightmare became reality. The ban on night-time flights at Frankfurt Airport, which was passed in the full of 2011 and finally came into force in spring 2012, primarily affected Lufthansa Cargo, whose cargo aircraft are operated at night. As such the company was forced to revise the original planned capacity and reduce the new hub’s annual capacity by approx. 20 percent, from 2 million tons to 1.6 million tons. This meant, however, that for the time being the whole dimensioning and layout design of the real-scenario planning was mixed, there was no getting round a planning rethink. This occurred in Q2-Q3 2012 and was rewarded with the approval in September 2012 by the Lufthansa Supervisory Board of the overall budget for the new hub.

With the Lufthansa Supervisory Board having given its approval, the next stage of the project could get under way. Logistics Technology and IT had the task of drawing up the tender documents and place orders on the market, which happened in April 2013. The search for a construction planner for the building and the outside facilities was intensified and completed in spring 2013, such that the project team now has nearly 100 internal and external experts. Over the next few years these people will be responsible for successfully completing the project – the plan is for the entire hub to go into service by about 2018.

Frank Weigl, a project manager on the Miebach Consulting side said of the project: “It’s a big team for a big task, currently the biggest in Logistics in Germany, probably in Europe. We are all proud to be part of it.”

Ban on night-time flights necessitates planning rethink

In September 2011 the Executive Board of Lufthansa Cargo approved the concept, and detailed planning could begin. The fine-tuning of the processes and engineering that now commenced was conducted in a manner that integrated Logistics Technology and IT, meaning that the details of the individual processes were worked out in mixed teams.

In the western section of the building, above the ramp for loading and unloading the ULD trucks, there is a separate “Cool” area. In future this is where, integrated in the entire hub, actively and passively cooled shipments will be buffered and traded. The work preparation and logistics operational areas adjoin the eastern section of the building above the belly hall. Here, the empty ULDs are inspected and cleaned, loading devices such as nets and reels are prepared for use, and reusable materials such as foils are recycled.

The southern end of the building houses the ULD stacker. This extends over five floors, is around 440 meters long and, measured from the upper edge of the Dolly lane around 30 meters high, and forms “noise barrier”, as it were, between the apron and the actual Lufthansa Cargo operations area. This ULD buffer replaces the approx. 100,000 m² of open space needed today and with its automated link to the production processes in the building, plays a major role in re-
ducing the level of on-site traffic.

The smart gates adjoin this area

These are installations which, on the one hand, identify the physical characteristics of the packages (length, height, stacking capability), with a view to the greatest possible ULD capacity util-
ization, and on the other feature integrated x-ray machines, which enable every single package to be screened, thereby enormously improving the quality of air cargo security processes. Behind the smart gates there are working stations for breaking down incoming ULDs, as well as smaller functional areas for secu-
ring and buffering small packages.

The other side: The project as seen from the south – including a view of the top floor.