

Intelligent intralogistics for existing building of the Swiss Post

Zurich-Mülligen letter center: Grenzebach AGVs are used on specifically installed intermediate floors in the listed building of the Swiss Post. Intelligent, flexible, sustainable.

From Adliswil to Cyprus or from Andorra to Zurich: All international letter post items containing goods are customs-cleared at the letter center in Zurich-Mülligen. Every year, about 30 million foreign mailings reach their recipients via the Swiss Post. The automated guided vehicles (AGV) from Grenzebach work reliably as part of the intralogistics solution developed for the listed building by the general contractor Gilgen Logistics – so that the letters to family members or business mailings to customers reach their recipients as fast as possible. The AGVs L600 from Grenzebach move along their routes on a specifically installed intermediate floor, a so-called mezzanine.

Intelligent logistics meets historic architecture

With the new intralogistics concept, Swiss Post and customs have been working hand in hand in an automated system in the building since the end of 2018. For safety reasons, customs must work in a separate area. On top of that, there are time challenges to overcome: The Swiss Post in Zurich-Mülligen is busy seven days a week, the customs work from Monday to Friday. Gilgen Logistics, as the general contractor, developed, delivered and commissioned a storage concept in which incoming mail from weekends is prepared for optimal further processing. The items are stored based on processing priorities and processed accordingly by customs starting on Mondays. "The logistical restructuring of the intralogistics for the letter center in Zurich-Mülligen was an exciting and challenging task for us. We found a partner in Grenzebach, who is also continuously working on developing the world of intralogistics", says Daniel Gilgen, Head of Systems Business Division and deputy CEO of Gilgen Logistics.

More efficient ways between post and customs

"No day is like the other with the amount of mail reaching the sorting center every day. A standard logistics system would quickly fall short or be hopelessly overburdened", explains Renzo Pedretti, Head of Letter Center International at Swiss Post. Another challenge was the limited available space of the existing building, which could not be modified without restriction. An additional intermediate floor solved the problem, while maintaining the building structure. Grenzebach

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Success Story

supplied the respective infrastructure to efficiently interlink the Swiss Post and customs via the mezzanine.

The lean and intelligent automated guided vehicles from Grenzebach adapt themselves individually to the spatial conditions and thereby enable a smooth material flow between the working areas. The Grenzebach Fleet Manager, connected to the international mail center's warehouse management system, controls the corresponding travel commands. "The solution developed for the Swiss Post shows, that our logistics solutions can also be implemented in structurally demanding existing buildings. This enables the economic use of buildings in urban areas, in this case even listed buildings", says Alexander Gebelein, Key Account Manager 3PL and eCommerce at Grenzebach.

Mailing paths in detail

The items subject to customs duties are sorted into so-called palloxes (a combination of pallets and boxes) on the first floor at lifting/lowering stations based on processing priorities. The lifting stations move the palloxes to the mezzanine. The Grenzebach L600 AGVs pick up the palloxes, which can be accessed from the bottom, to store them sorted according to processing priorities. During customs working hours throughout the week, consignments on the mezzanine are tilted from the palloxes into a spiral conveyor by a tilting station and conveyed down to the customs area for further processing. Afterwards, empty palloxes are returned for refilling by the lifting/lowering stations.

The L600 receive their travel commands from the Fleet Manager. Via digital interfaces, the vehicles communicate with the lifting/lowering and tilting stations. They navigate through data matrix codes on the floor, which are read by the vehicle's camera. "During normal operation, no staff are present in the AGV area. Therefore, we were able to omit personnel safety measures in favor of this more cost-effective navigation method. If the facility has to be entered, for example during maintenance work, the vehicles are switched off via the included safety radio", Martin Demharter, Project Manager at Grenzebach, explains.

Clever system for restricted room heights

"The solution provided by Gilgen Logistics for the Swiss Post is a great example of a modern utilization concept of existing buildings. Our system solutions are

ideal for those Brownfield projects because they can be used even with very restricted room heights. We will continue to develop solutions along these lines and thus contribute to the further use of existing buildings in various industries or support the recycling of buildings. Reducing the amount of land used in logistics means practicing sustainability. On top of that, it enables our customers to be closer and thus faster in touch with their customers. Keyword: last mile", Alexander Gebelein explains. The distinctive building of the Zurich-Mülligen letter center was created by the renowned Swiss architect Theo Hotz. In 2005, only 20 years after its construction, the building was listed as a historical monument.

Innovative intralogistics systems like the one from Grenzebach and Gilgen Logistics can also be modified flexibly during operation: For instance, if Swiss Post decides to implement further structural changes in the future, the routes of the vehicles can be adjusted accordingly at any time. This shows more clearly: Intelligent intralogistics can be fully implemented even in challenging environments such as listed buildings with numerous columns and shafts. The processes of Swiss Post place great importance on delivery quality and the capacity for innovation. The intralogistics solution from Gilgen Logistics and Grenzebach contributes to this at a highly practical level.