



PA/VA

Bus station Kielce

Introduction

The Bus Station in Kielce was built to celebrate the 40th anniversary of the Republic of Poland, designed by the famous architect Edward Modrzejewski and can accommodate 1500 buses a day on the nearly 10 acre site. The unusual architectural shape of the building has led to it being identified as a flying saucer or UFO and it has become a landmark and designated monument in Kielce.

It has recently undergone a major restoration re-opening in 2020 after a full refurbishment. The **new communication centre with 3 577 m² floor space** will be an important transport interchange as well as a cultural centre.

Ambient-System has been set the challenge of **designing a passenger information and voice alarm system in this difficult acoustic environment.**



Challenge

Key technical requirements of the project included:



Provide **clear announcements** in the acoustic environment



Combine **passenger information and voice alarm messaging**



Zoned and flexible **sound scaping music** for passenger areas



Solution

For this project, the main challenge was for the Ambient acoustic engineering team to design a speaker set up that could **achieve intelligible voice reproduction in this enormous circular building with many concrete surfaces.**

Working with the local integrator ZSK of Krakow, Ambient made an acoustic simulation using EASE modelling software to allow different speaker choices and placements to be trialed in software for optimum results. The **Ambient LA60 column speaker** was the main speaker specified in the open areas, supported by **wall and cabinet speakers** in the ancillary areas.

This modelling service gave predictions of the system performance which also enabled the client to be informed of any acoustic treatment they might need to make to improve the building performance.

With the modelling results all submitted, the choice of electronics to match was straightforward, using the **Ambient MULTIVES system.** The MULTIVES has powerful DSP audio processing on-board to give variable delay and equalization on inputs and outputs to implement the recommendations from the acoustic model.

Passenger announcements with bus arrival and departure information are streamed via TCP/IP network to reach passengers across the bus waiting areas as highly intelligible messages, automatically overriding the background music in the required zones.

However, despite all the user-friendly functions, the primary function is **ensuring passenger safety with an EN 54 voice evacuation system** to conduct the evacuation in case of an emergency and this Ambient designed MULTIVES system will deliver as required.

