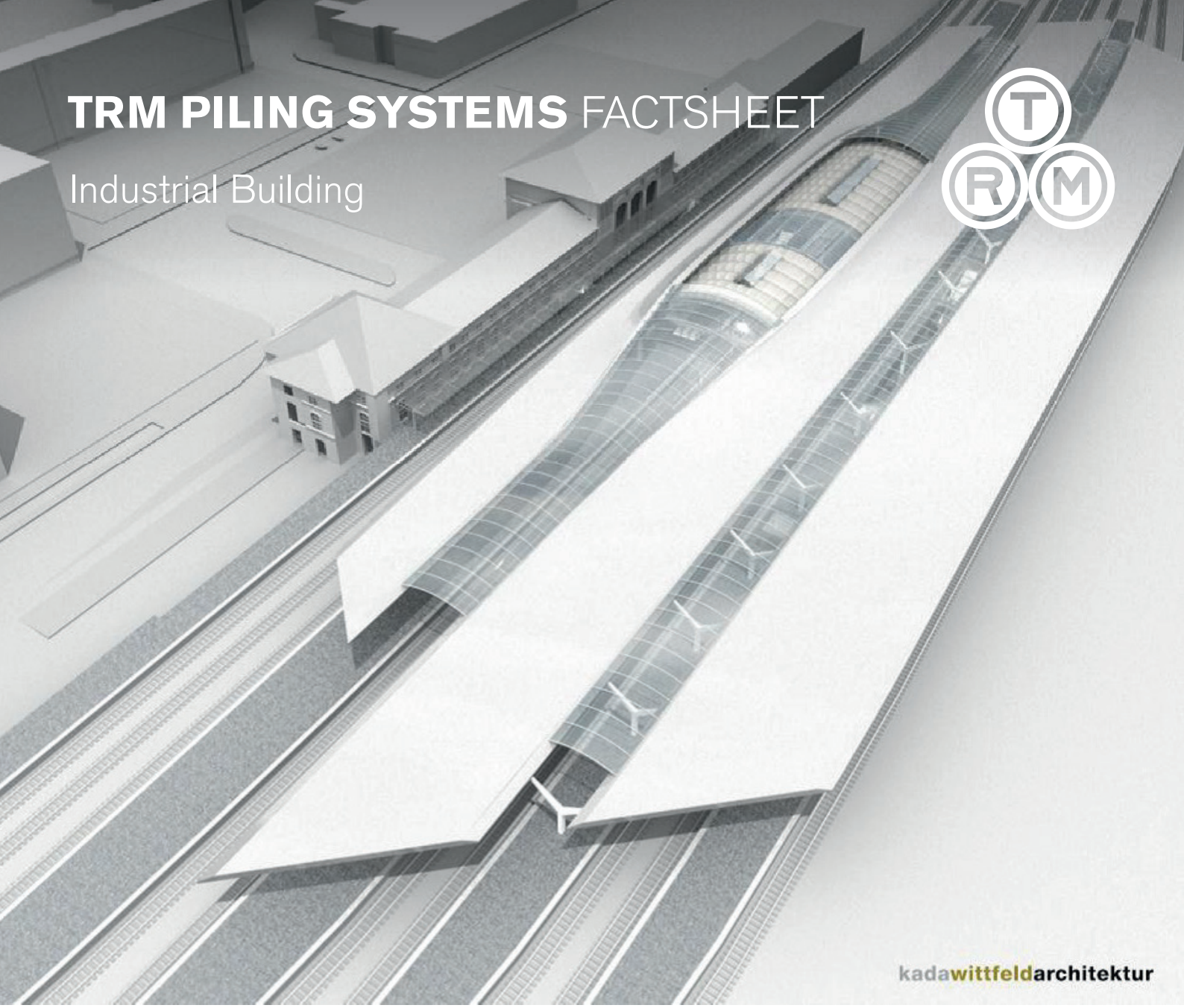
TRM PILING SYSTEMS FACTSHEET

Industrial Building



Conversion and extension Salzburg train station, Austria

+ ~ 440 pcs. ductile driven piles with a total length of 6,600 metres
+ Pile type TRM 170, wall thickness 9.0 with grouted pile shoe TRM 270
+ Foundation depth 15 m
+ The pile foundation was used for geothermal energy recovery
+ Extraction of cooling and heating energy
+ Implementation in 2010-2011

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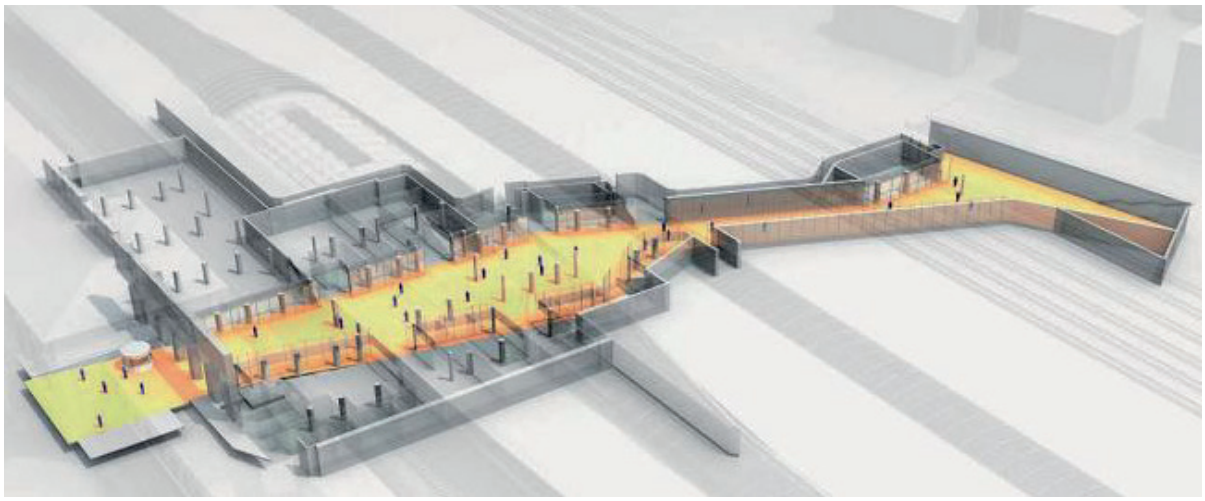
Initual situation

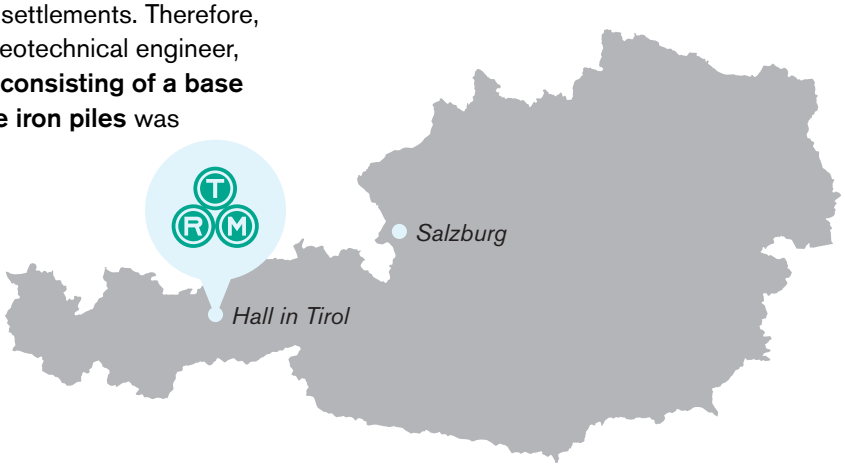
In 2010, Salzburg's main railway station was expanded. 25,000 passengers use the station every day, making it an **important transport hub for the state of Salzburg**. During the **conversion and extension**, a new through station was built and two parts of the city were connected by a central passage.

In order **to cover part of the heating and cooling requirements**, **440 energy piles of 15m each and 22 geothermal probes of 100m** each were installed. This **covers 55% of the annual heating energy and 80% of the annual cooling energy**. According to calculations of the additional costs, this additional use will have paid for itself in 7 years.



View of the future central passageway

A trench foundation in the Salzburg lake clay could not be implemented due to the **high soil pressures resulting from traffic loads** and the associated large settlements. Therefore, in consultation with the geotechnical engineer, a **combined foundation consisting of a base slab and grouted ductile iron piles** was implemented.



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Deep foundation

The main idea behind the energy pile technology from Nägele Energie- und Haustechnik, which is known under the name enercret®, is to extract heat from the ground **(geothermal energy)** via the required foundations and to make it available for **heating buildings** via suitable systems.

The **thermal use of pile foundations** is done by inserting **absorber pipes into the ductile iron piles**. For this project, 440 grouted ductile driven piles with a length of 15 m were installed with a pile shoe DN 270 and a TRM pile head plate 250 x 250 x 25mm.

Construction site with installed ductile iron piles and enercret® system

TRM ductile iron pile with the absorber pipes

Connection of the absorber pipes

Do you have any questions? Our experts will be happy to advise you.

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