

# Sustainable Development at Aalto University Campus



Antti Säynäjoki, Aalto CRE

# Aalto University Campus & Real Estate

- Service company within Aalto University, which is responsible of campus properties
  - development
  - construction
  - maintenance
  - renting
  - support services
  - etc
- Combined roughly 400 000 sqm indoor spaces in Otaniemi & Töölö
- Mission is to provide top class premises for high quality research & teaching and space for business sector and university interaction
- Aalto CRE develops campus into a common meeting hub and innovation ecosystem with our customers and partners



# ACRE

Aalto University  
Campus & Real Estate

# Smart Otaniemi R&D

## WP8 Thermal Energy Storage

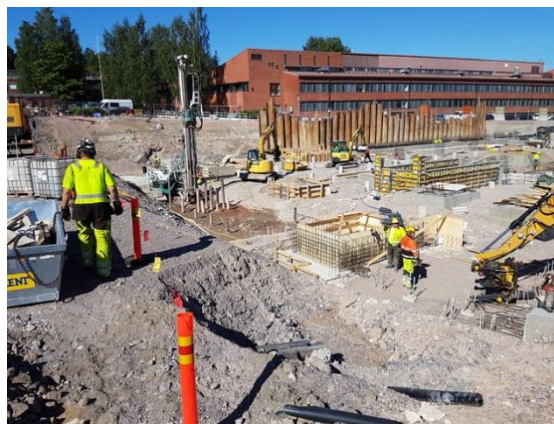
### Background

- Large scale geothermal energy solutions are widely used already, but their capabilities are not thoroughly understood
- Large scale geothermal heat solution, modern building automation and varying building use form a complex system
- Research of the complete system is required to be able to better benefit of its potential

# Smart Otaniemi R&D

## Case: The New campus building

- Aalto ARTS
- Aalto BIZ
- A Bloc Shopping Center
- Combined 48 000 sqm
- **Energy solution:**
  - 74 pcs 320 m boreholes
  - Energy production 750 MWh
  - Covers 80% of heating and most of the cooling
  - District heating as a power reserve, also used for DHW



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# Smart Otaniemi R&D

- **Research in co-operation with**
  - Geological Survey Finland (GTK)
  - Aalto ENG
- **The expected results**
  - A model of seasonal energy storing capabilities in bedrock
  - A simulation of the energy streams in the building during all seasons
  - Conclusions and recommendations how to use the system to decrease the need for external energy



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# Thank you!



More information: [antti.saynajoki@aalto.fi](mailto:antti.saynajoki@aalto.fi)