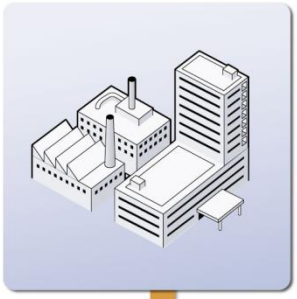
Swedish Nuclear Fuel and Waste Management Company

Svensk Kärnbränslehantering AB

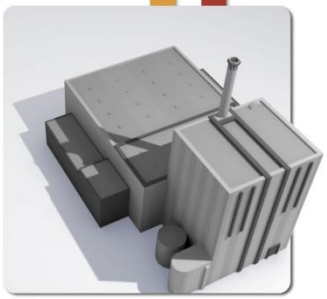
SKB's system

Medical care, industry and research



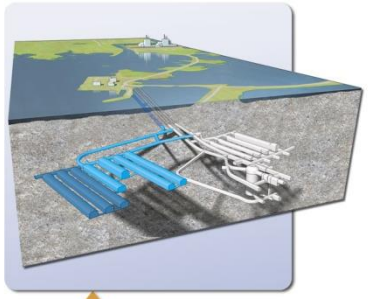
Operational waste

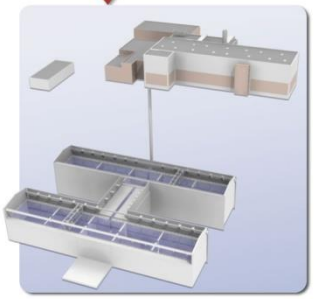
Spent nuclear fuel



Nuclear power plant

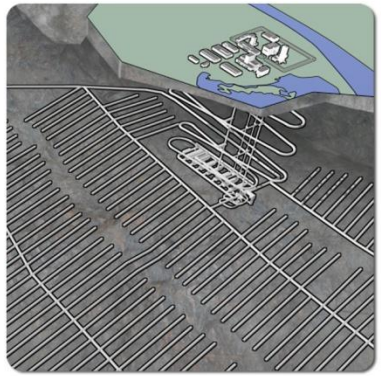
Final repository for short-lived radioactive waste

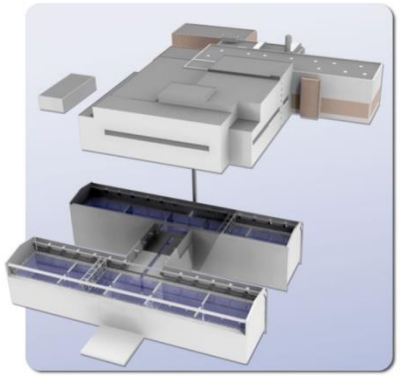




Interim storage for spent nuclear fuel (Clab)

Final repository for spent nuclear fuel in Forsmark





Encapsulation plant in Oskarshamn

Clear responsibility and financing

SKB's owners:

VATTENFALL

FORSMARKS KRAFTGRUPP

e·on

okg
- ett företag i E.ON koncernen

Financing:

The owners funds about 0.022 SEK per kWh of nuclear electricity

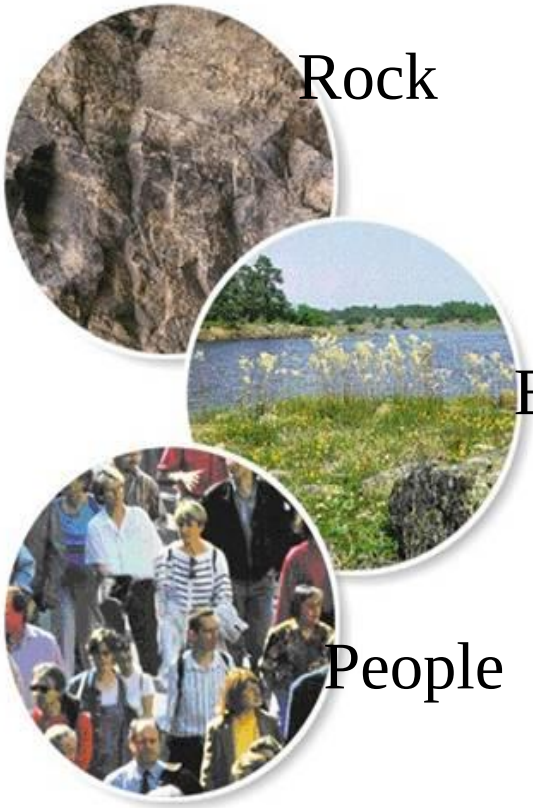
Around 50 billion SEK in 2014

SKB

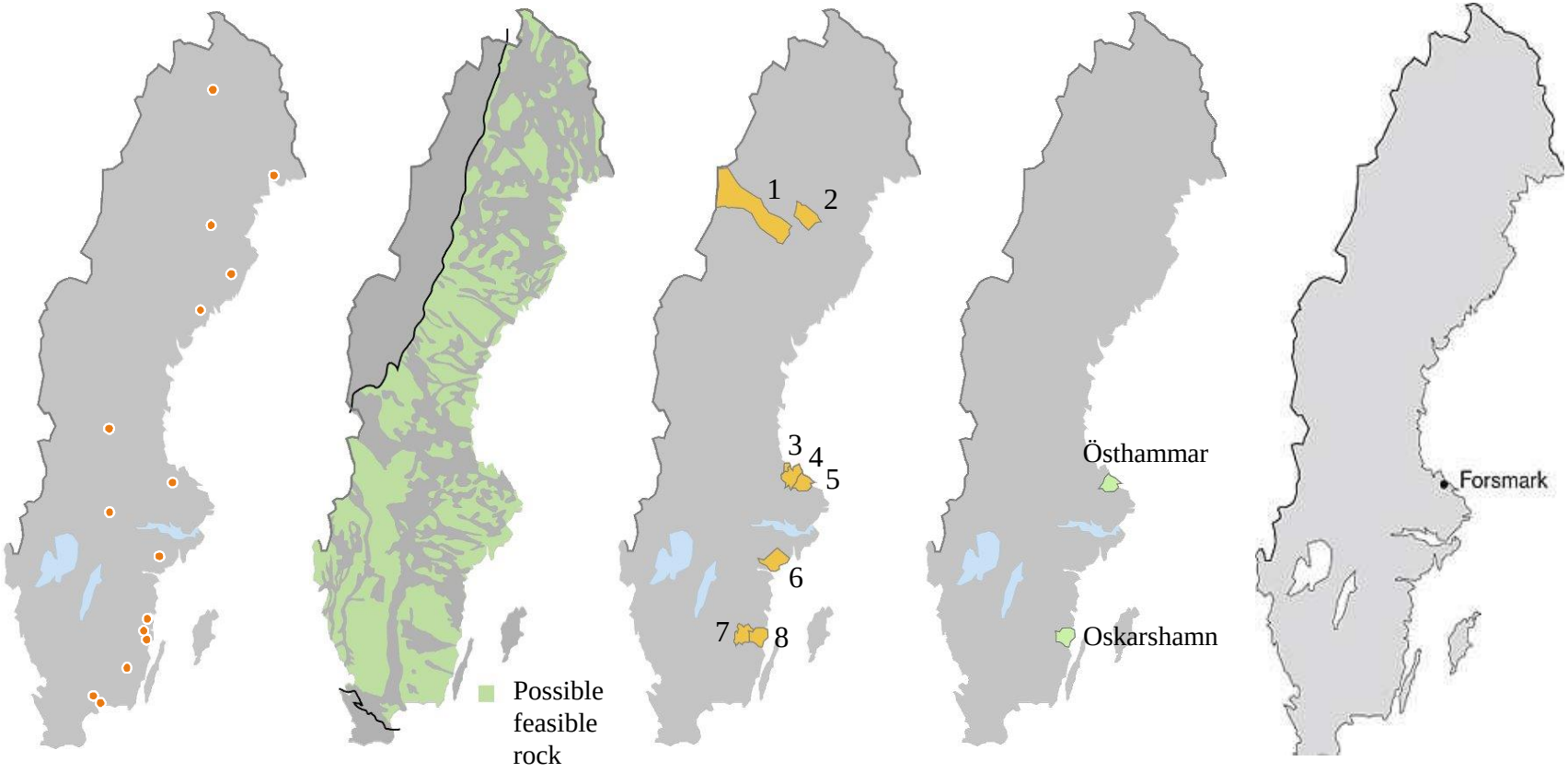
Site investigations

Focus on:

- Long-term safety
- The impact of the operations on the environment
- Impact on society



Finding a site



Type areas
1977–1985

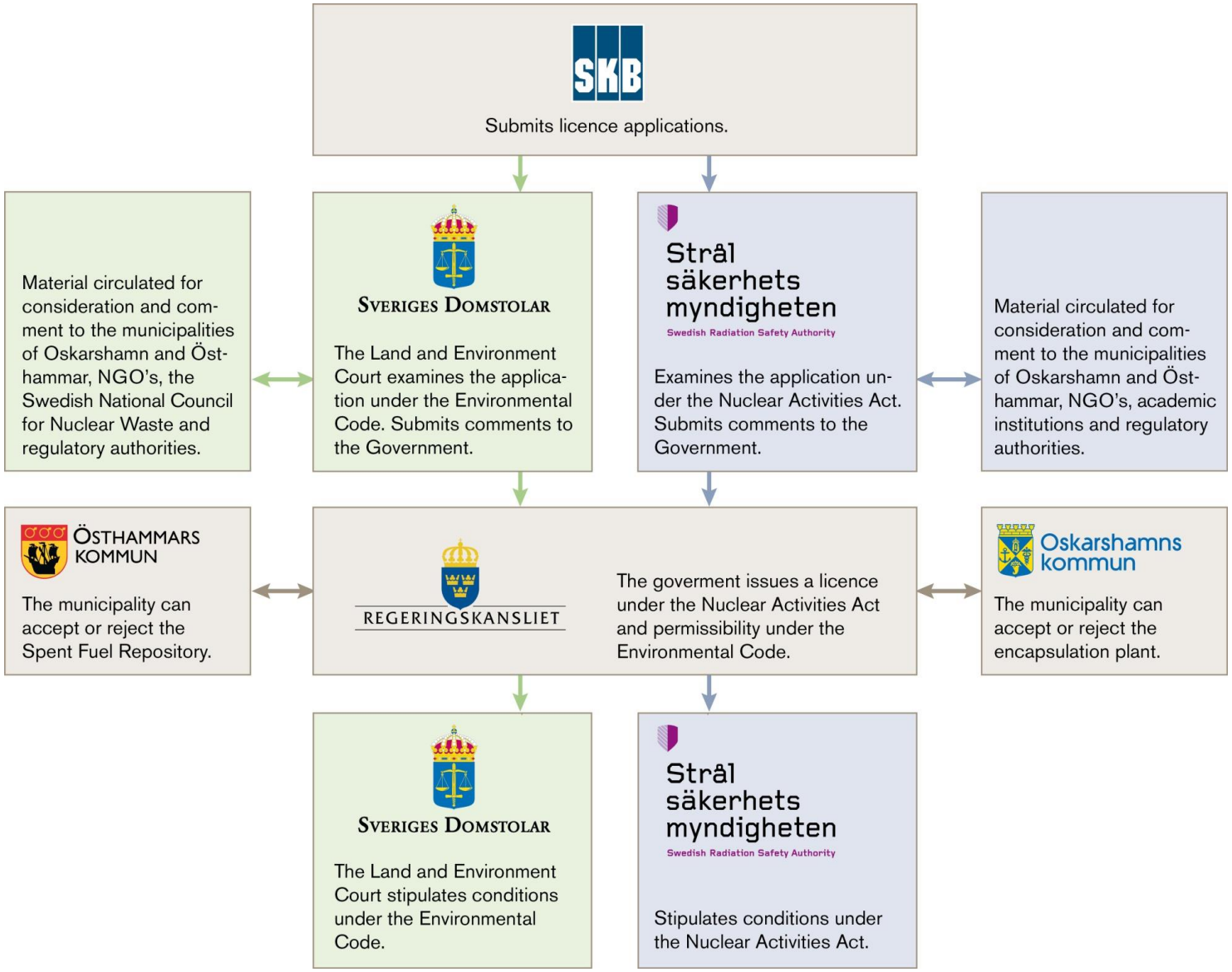
Regional studies
1990s

Feasibility studies
1993–2002

Site investigations
2002–2008

Building a repository
around 2020

Application process




SCANIA

Dialouge


” The best would of course be that we didn´t have to handle the radioactive waste or that it didn´t exist at all. But now we have it.”
Linnea Bayard

The trust

Köksmöte i Karö. Erik Rudolfsson och Inger Nordholm från SKB informerar byborna i Karö om djupförvar för använt kärnbränsle hemma i köket hos Eva och Stefan Ekman.

Foto: Pelle Johansson

Kärnkraftsdebatt vid köksbordet

Det lyser av marschaller utanför Eva och Stefan Ekmans gård i Karö. I övrigt är det mörkt, och stjärnhimlen lyser klart över byn, som ligger en bit utanför Forsmark. Men i köket hos Eva och Stefan sitter hälften av byns hushåll för att få information från SKB om förvaring av använt kärnbränsle.

Det för tankarna tillbaka till gamla tiders byaråd eller husförhör.

– Visserligen kommer vi med enkelriktad information, men det är ju så här modern demokrati ska fungera. I stället för att hålla en traditionell föreläsning, så vill vi föra en dialog. Och det gör man lättast i mindre sällskap där alla vågar säga sin mening, säger Erik Rudolfsson, informatör på SKB, Svensk Kärnbränslehantering, i Östhammar. Han jobbar även på kärnkraftverket i Forsmark.

Tillsammans med Inger Nordholm, informatör på SKB, åker han omkring bland byarna runt Forsmark för att informera om djupförvar för använt kärnbränsle.

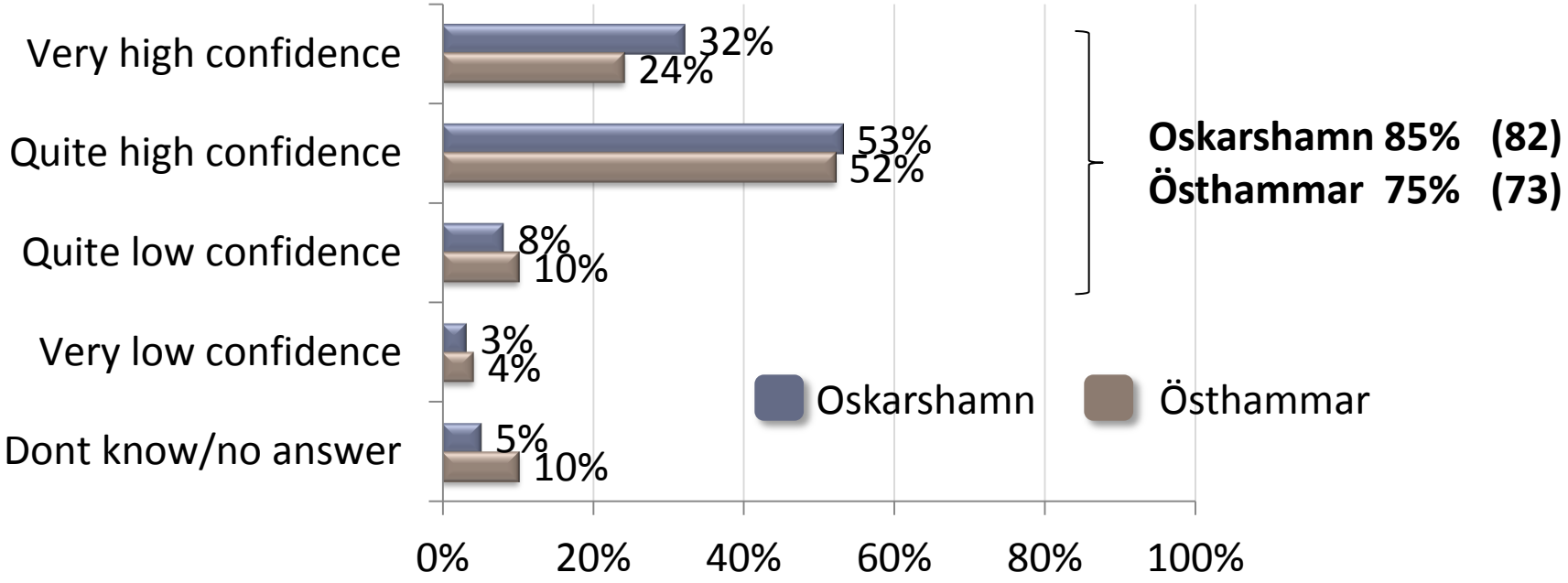
Uppland - 8

Local communication, Oskarshamn

Landowners (50)
Nearby residents (2 700)
Residents in the municipality (27 000)

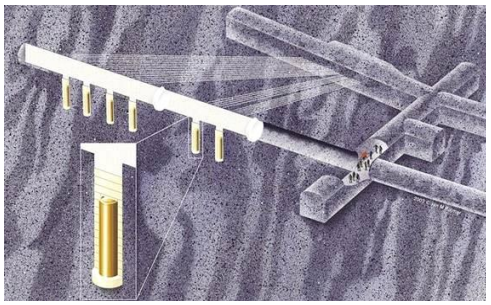
Why a geological repository?
The time perspective

Opinion 2014



- Steady progress in both municipalities
- High confidence in SKB
- SKB's future plans and activities will have a positive impact in the municipalities

Äspö Hard Rock Laboratory

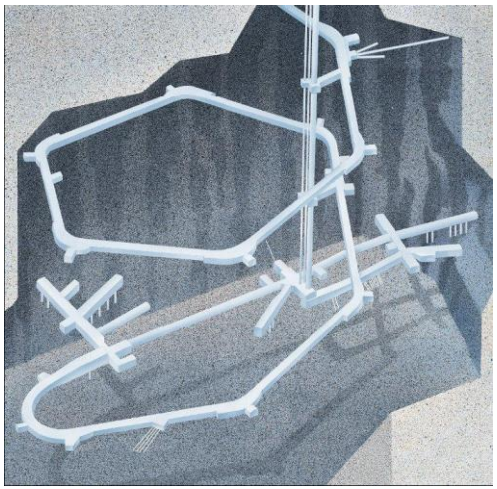
Äspö Hard Rock Laboratory

Background information

- In September 1986 SKB presented the first **Research Development and Demonstration Programme** according to the new Act on Nuclear Activities.

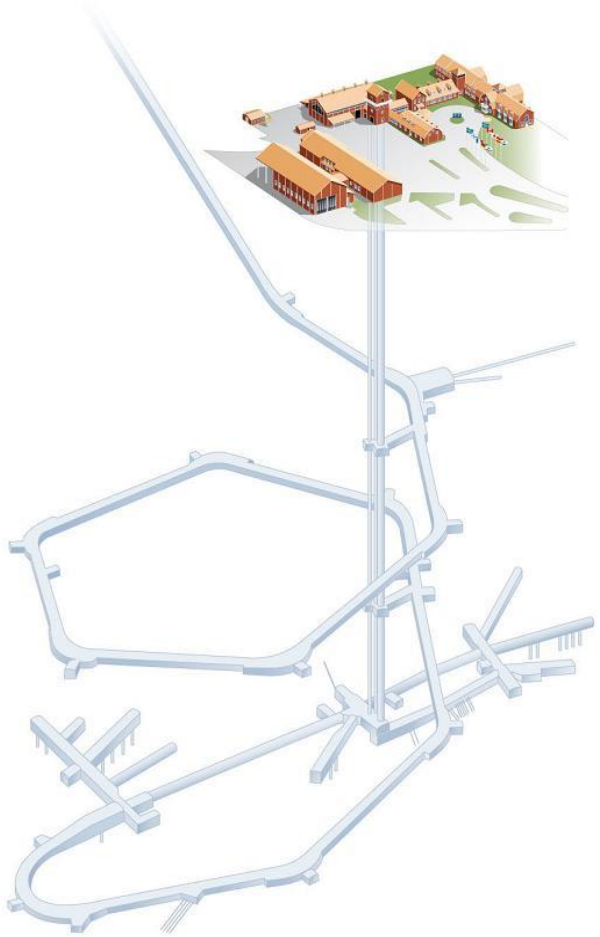
- One of the major highlights of the programme was the plan for the construction of **an underground research laboratory.**

- The main aim was to provide an opportunity for research, development and demonstration in **a realistic and undisturbed rock environment** down to the depth planned for the future final repository.



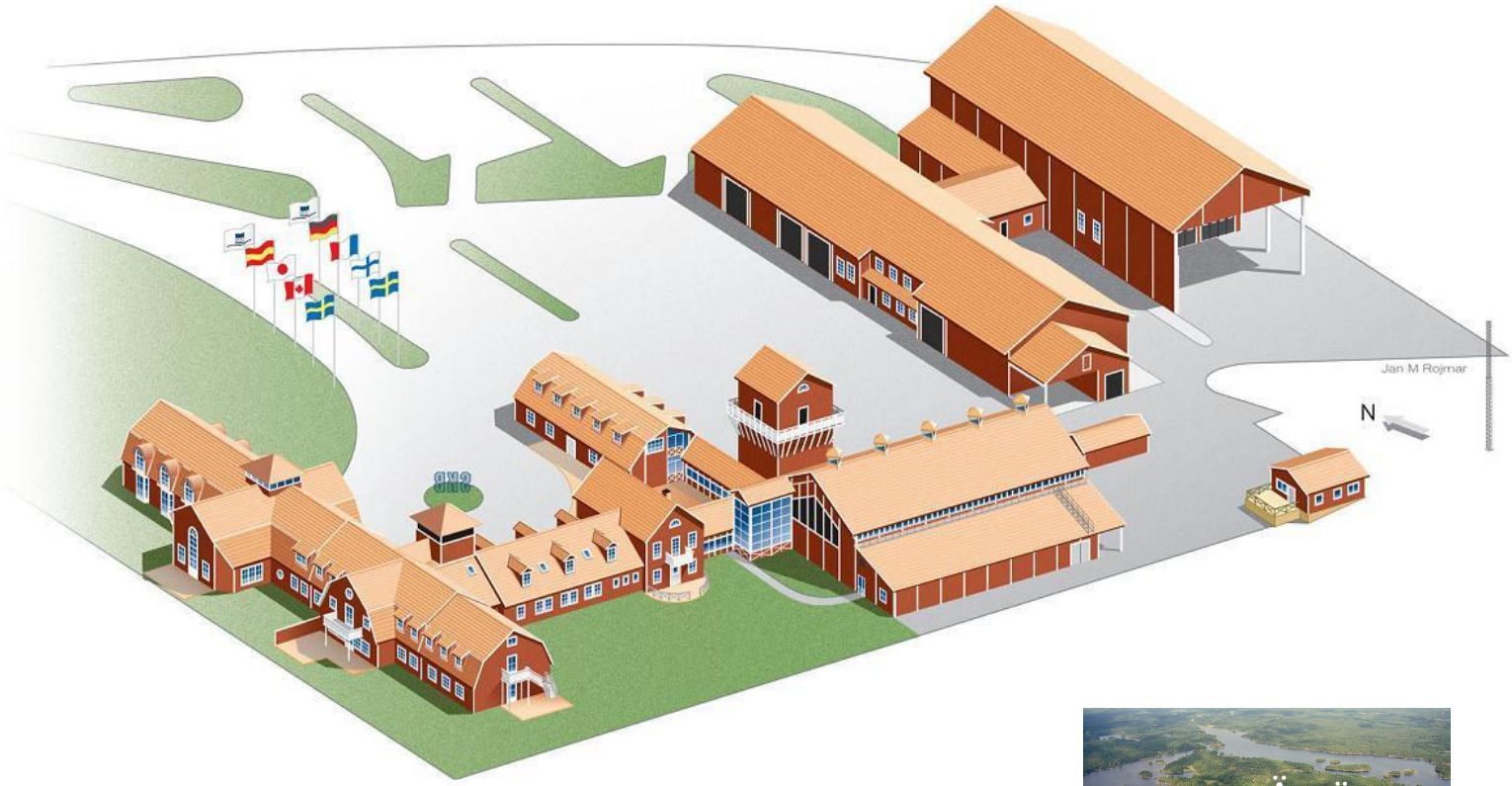
The role of the Äspö Hard Rock Laboratory

- Develop and demonstrate methods for construction and operation of the final repository.
- Test alternative technology that can improve and simplify the design of the final repository without compromising its high quality and safety.
- Increase the scientific understanding of the safety margins and provide realistic data for safety assessments of the long-term safety of the repository system.
- Provide experience and train personnel for various tasks in the final repository.
- Provide information to the general public on technology and methods that are being developed for the final repository.



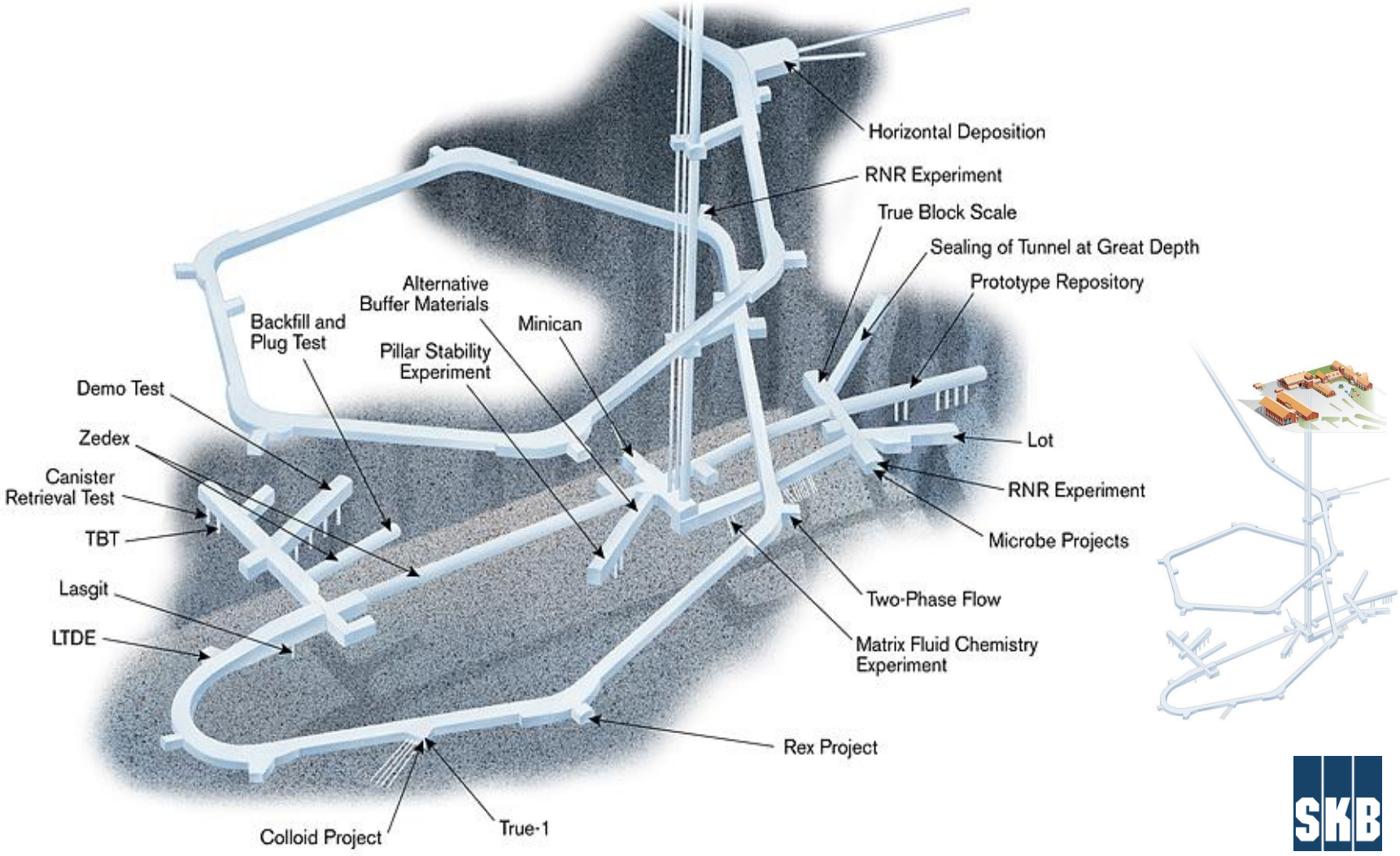
Äspö Hard Rock Laboratory

The research village on the island Äspö

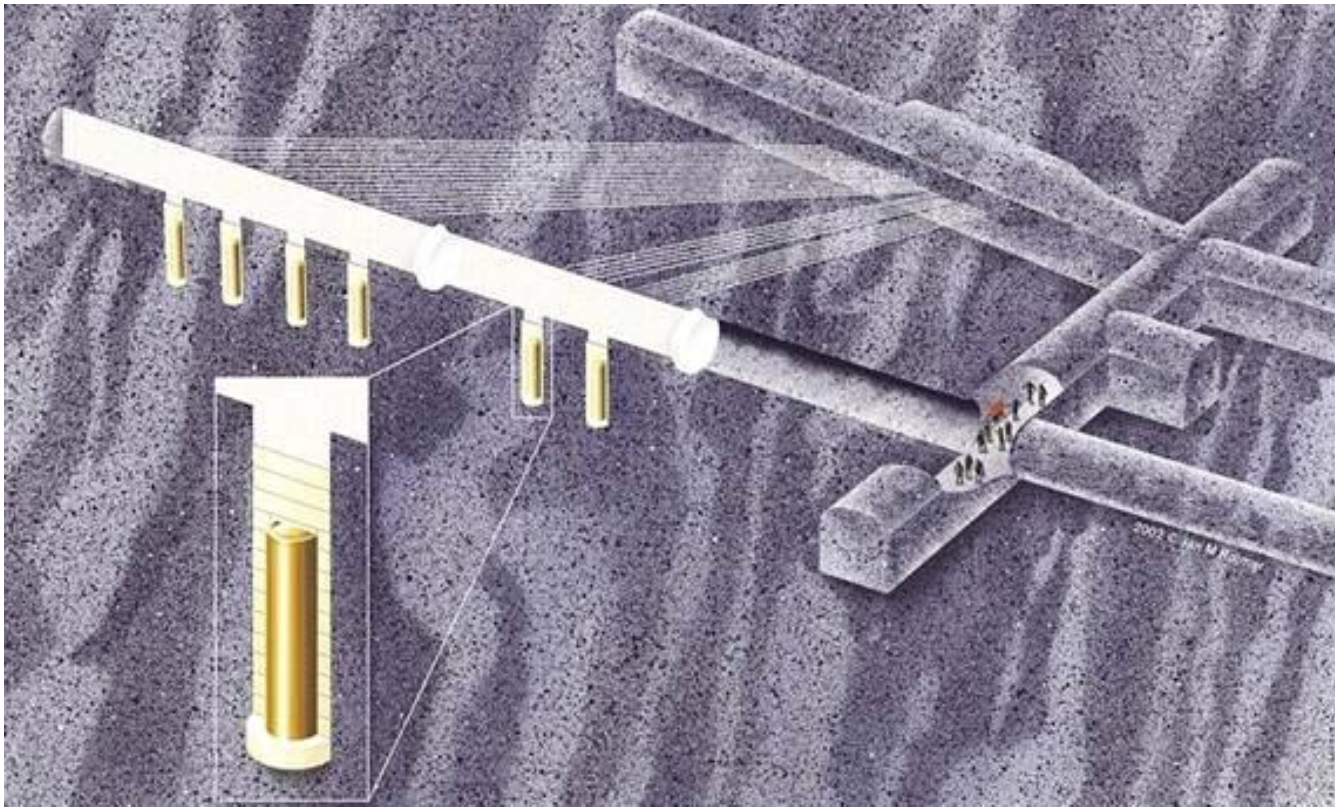


Äspö Hard Rock Laboratory

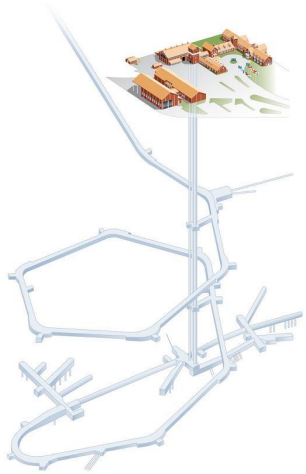
Allocation of experimental sites from -220 m to -460 m level



The Prototype Repository Experiment



Installed instrumentation is used to monitor processes and properties in the canister, buffer material, backfill and the near-field rock.

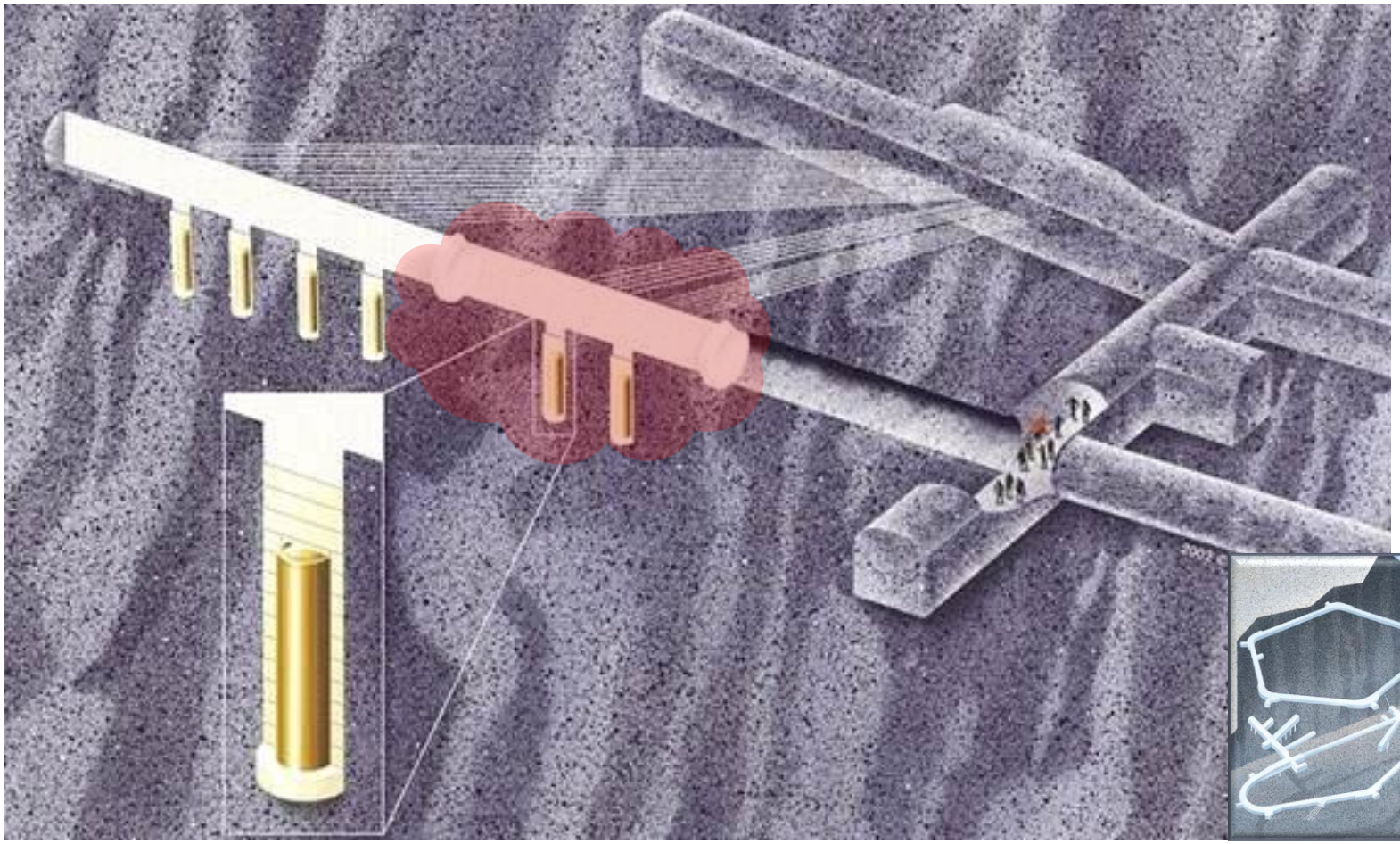


The inner section
- 4 full-scale KBS-3-canisters
- Backfilled and the plug cast in 2001

The outer section
- 2 full-scale KBS-3-canisters
- Backfilled and the plug cast in 2003

Dismantling of the Prototype Repository

2010-2013



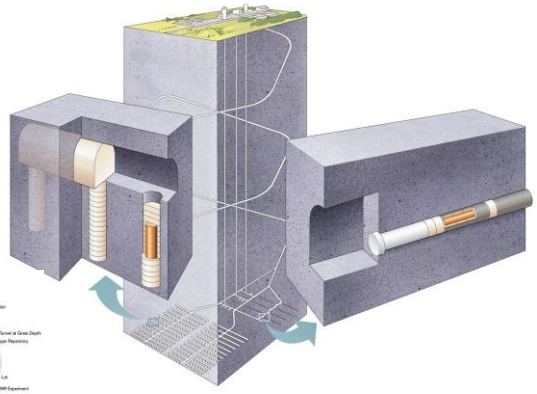
NUMO
NWMO

Andra
BMWi
NAGRA
NDA

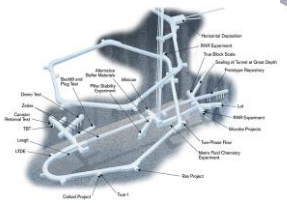
40 / 60

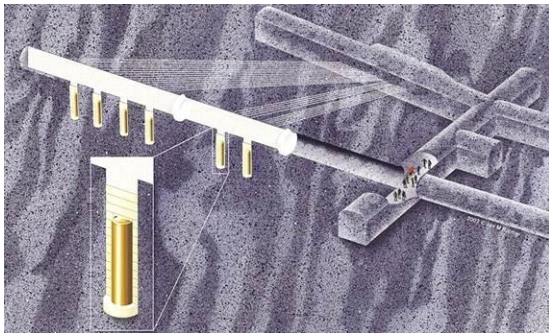
KBS-3, Alternative designs

Reference design KBS-3V

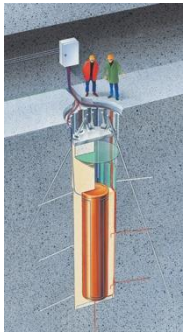


Deposition Machine



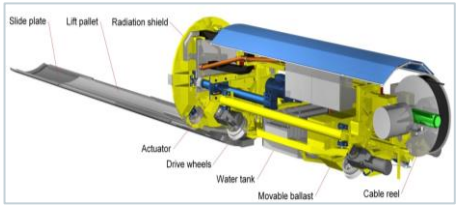


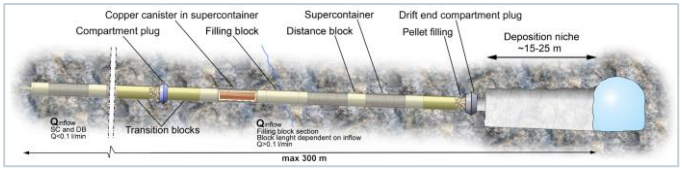
Prototype Repository



Canister
Retrieval
Test

KBS-3H Project





Äspö Hard Rock Laboratory

Mechanical and system engineering

Full scale prototypes of machines and equipments

Mechanical and system engineering

Full scale prototypes of machines and equipments

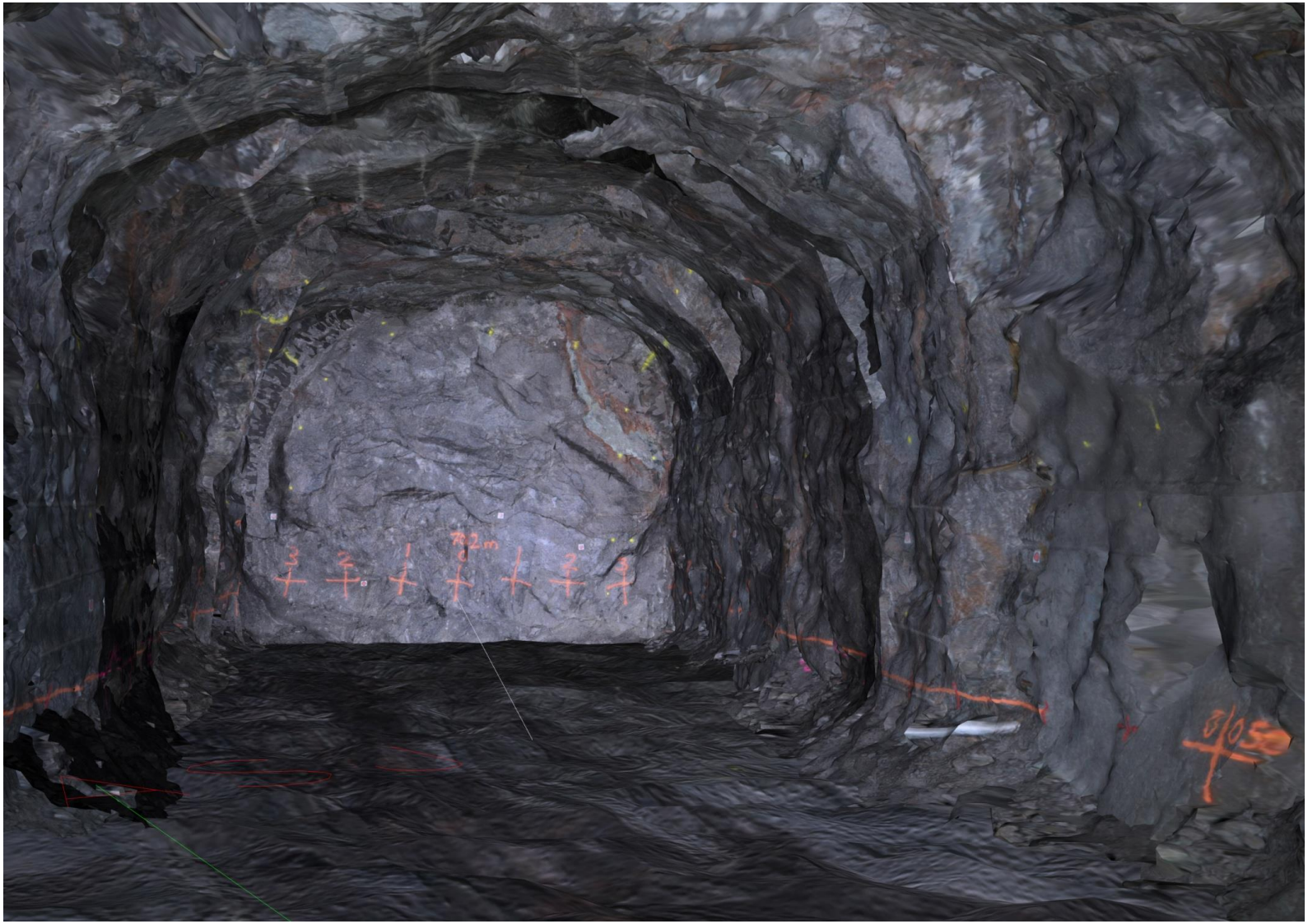
Deposition Machine

Self Propelled Modular Transporter

Robot (Backfilling of deposition tunnels)

Rock Engineering Research, will continue….

SKB´s Rock Characterization System (RoCS)



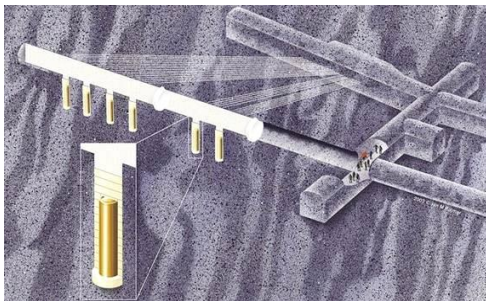
Äspö Hard Rock Laboratory

Future research activities

Is there any use for Äspö HRL beyond 2025?

Thank you for your attention!

Eva Häll & Roland Johansson
Public Relations and Visitor Services
roland.johansson@skb.se

Äspö Hard Rock Laboratory
25 years