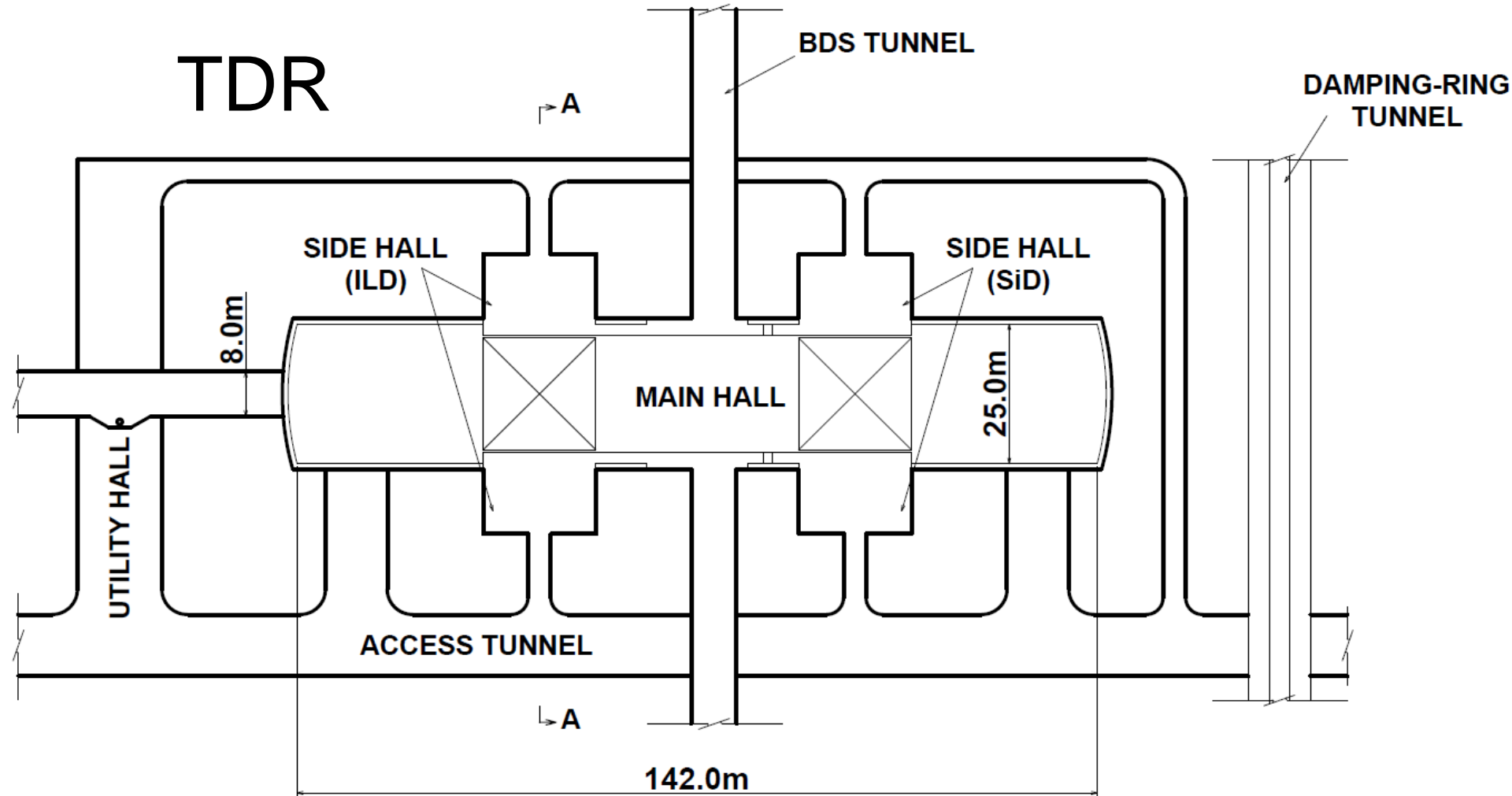


# Experimental Hall

Yasuhiro Sugimoto  
@ILD meeting in Krakow  
2013/9/26

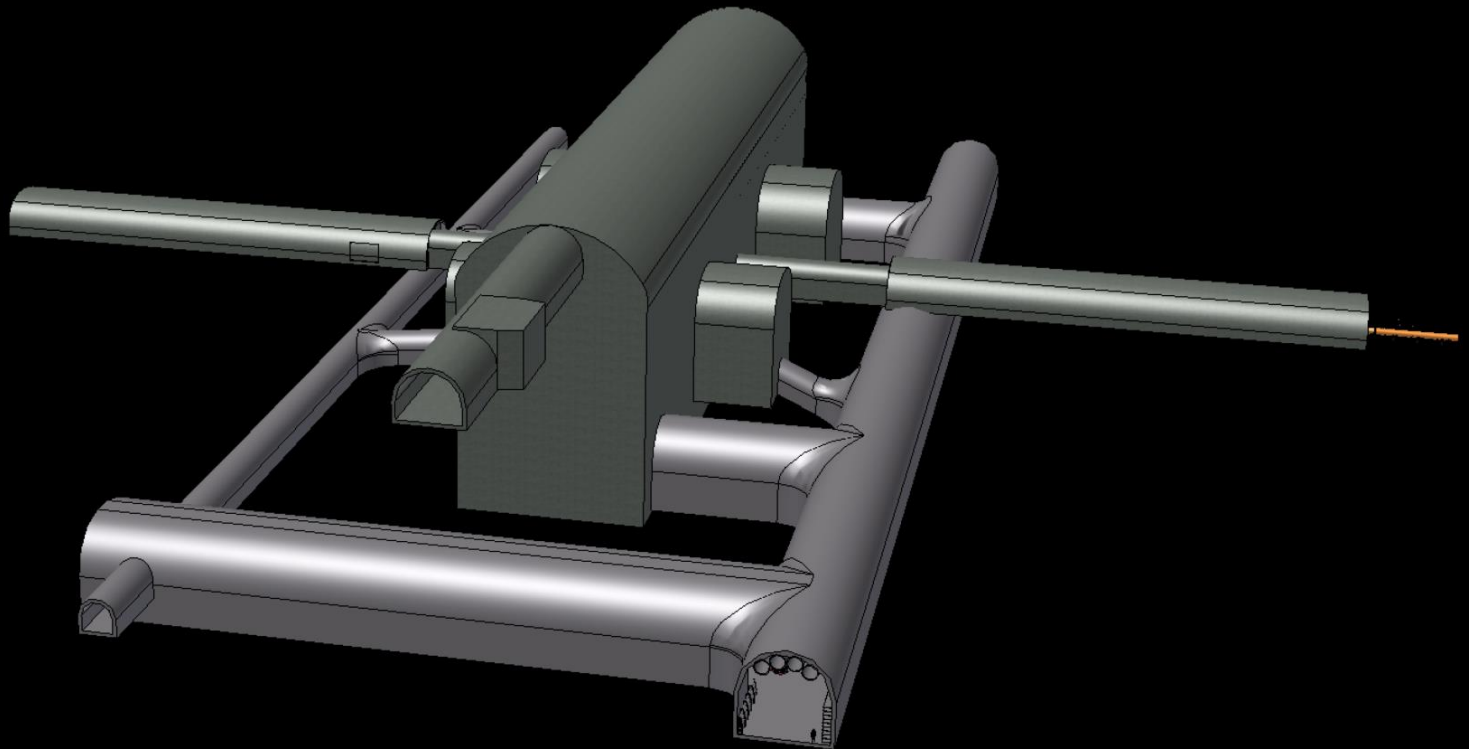


# Present design status



Plan

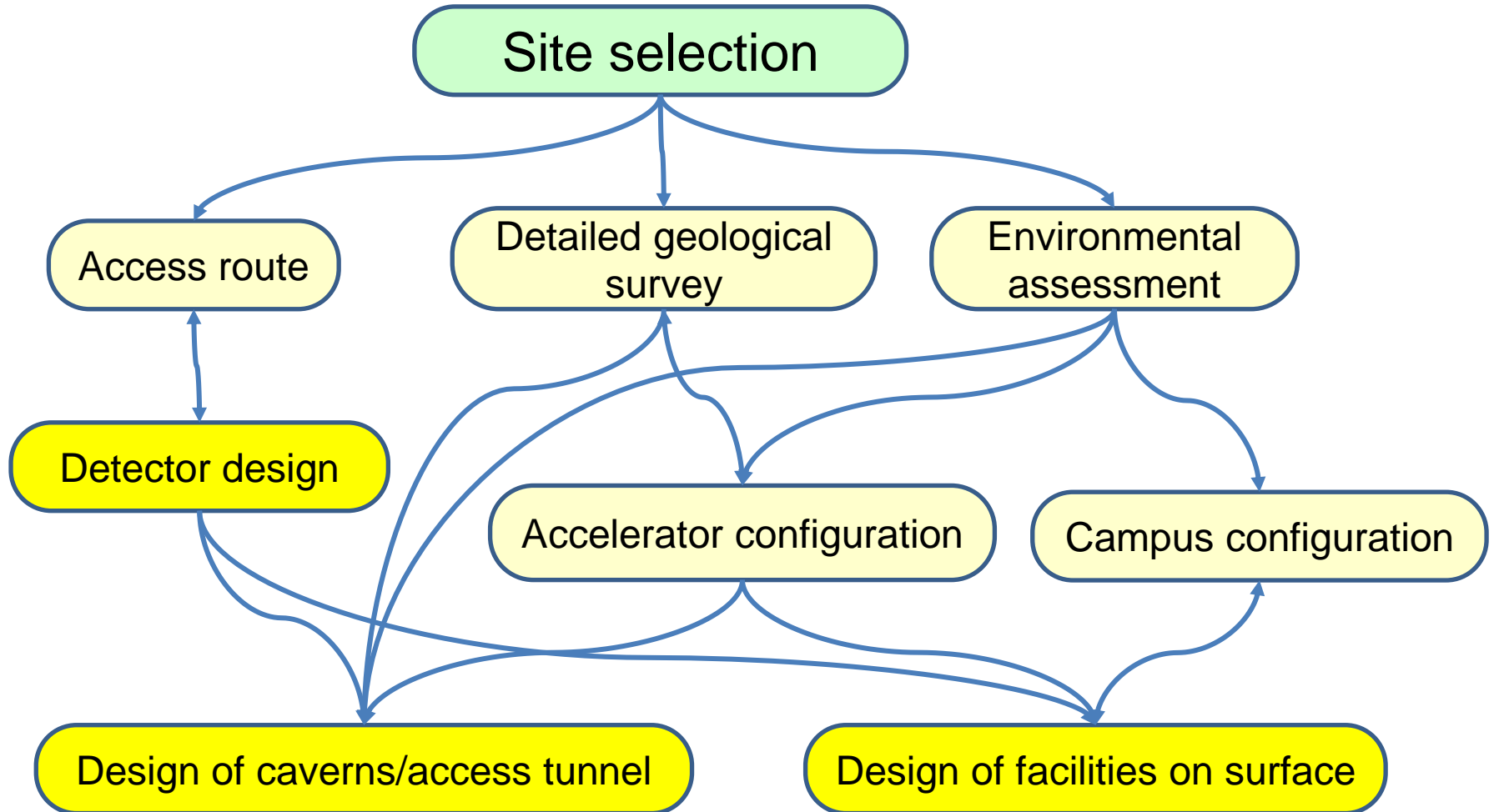
# Present design status



# Impact of site selection

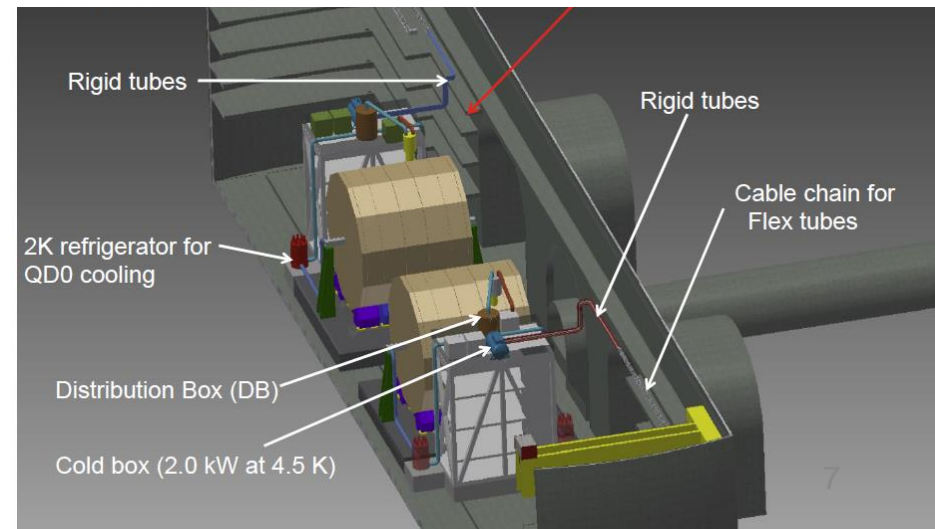
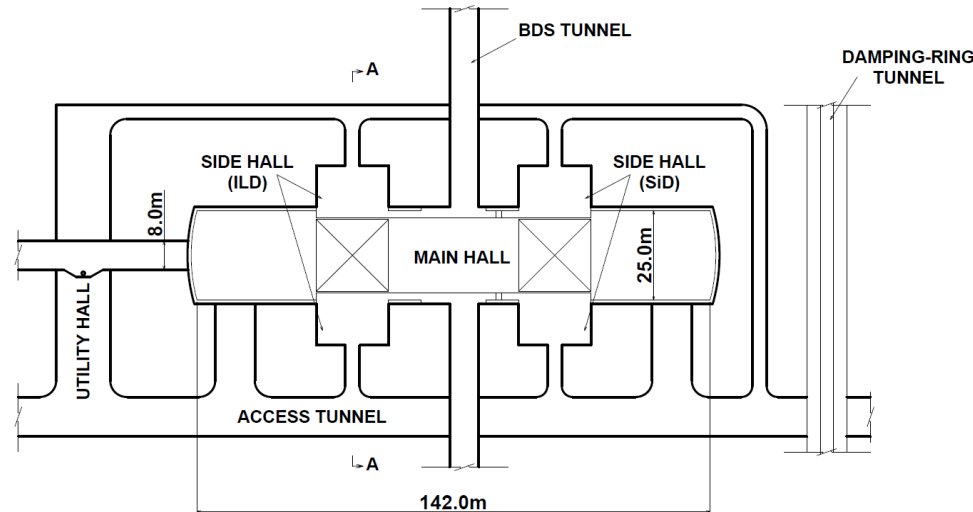
- Following studies can be started
  - Environmental assessment
  - Detailed geological survey
  - Study (and reinforcement?) of access route
- There are several site-dependent issues on the detector/experimental hall design
  - Underground temperature → Detector cooling
  - Access route → Magnet (coil and yoke) assembly strategy
  - Access tunnel length/slope → Transportation for heavy components between surface and cavern
  - Area/shape of the IR campus → Design of the facilities on surface
  - Ground water / elevation → Additional tunnel for drainage

# Impact of site selection



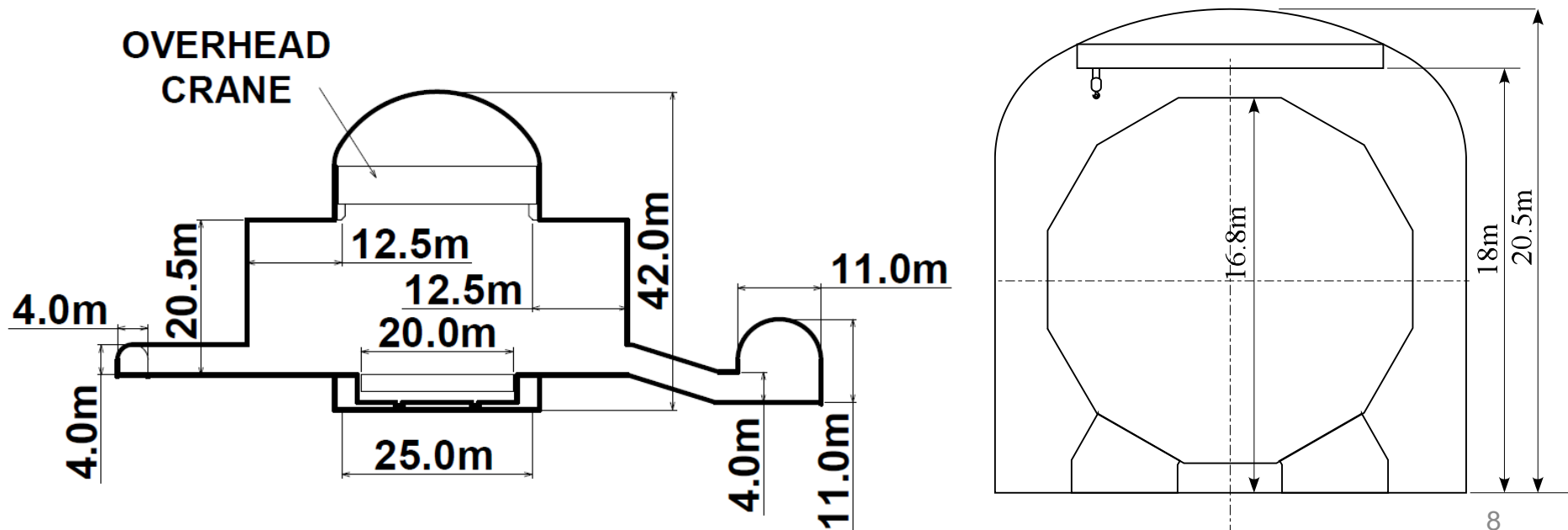
# Main cavern

- Design issues (to be worked with SiD and CFS group)
  - Electric power
  - Cooling (chilled) water
  - Air ventilation ← Radiation safety (Filter?)
  - Fire-extinguishing system
  - Platform
  - High pressure air for air-pads
  - Lighting
  - Cranes
  - Cable pit
  - Utility space on the wall (back-end electronics, PC farm (?), power supply, cryogenic apparatus,...)
  - Packman
  - Ground water drain
  - .....



# Alcoves

- 2.8 ton crane in the alcoves enough?





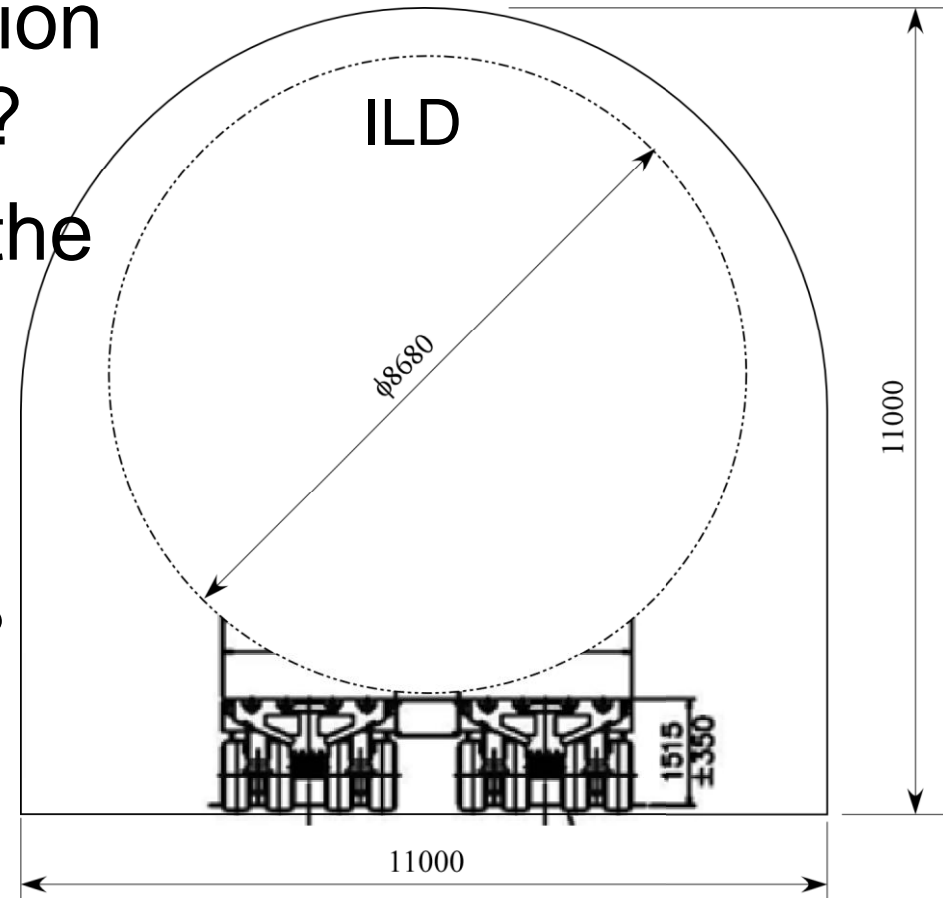
# Utility cavern

- What should be put in the utility cavern?
  - Air compressor and air storage tank
  - He tank for quench protection
  - Transformer (6.6kV → 400/200/100V)
  - Water pump for ground water
  - Detector cooling system (?)
  - Heat exchanger for chilled water
  - Rest room (?)
  - .....

Specifications (including size) of these utilities have to be defined

# Access tunnel

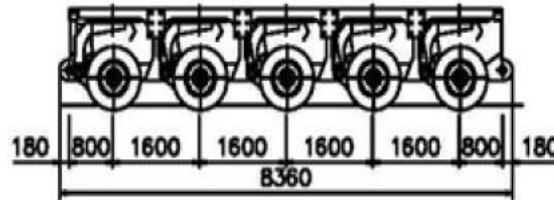
- Vehicle for transportation of heavy components?
- Additional facilities in the tunnel?
  - Jet fan?
  - Pipes for gas/air/water
  - Sub-tunnel for egress?



A trailer with lower deck height would reduce the tunnel size

# Access tunnel

- Trailer truck for transportation
  - 225t/5axles → 450t with 2 trailers
  - Capability of ~7% slope



- Gear track (Abt system) is also suggested



# Facilities on surface

- Assembly hall
  - Detailed design based on the detector assembly scenario has to be made
- Facilities for detector/accelerator
  - Cooling tower
  - Ventilation
  - Power station
  - Gas stock yard
- Parking: How many cars?
- Office building: How many rooms?
- Other facilities
  - Do we need restaurant?

# Comments on organization

- Sharing of the detailed information of the site
  - Collaboration with the local governments
  - Disclosure of the information collected by the site selection committee
- Campus plan
  - We need a scheme in which voices of those who will really work on site are conveyed
- Design of the common facilities
  - A design team which consists of members from accelerator, detectors, and CFS is necessary