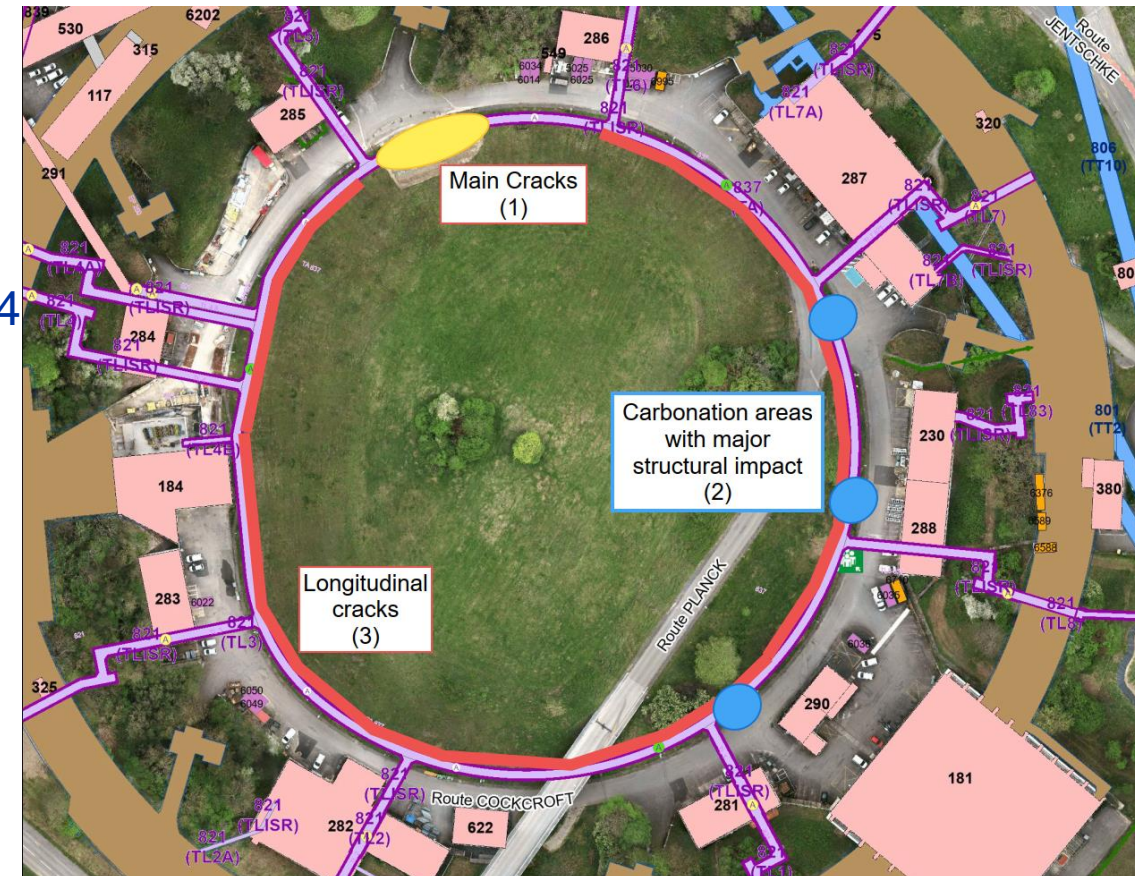




TG CONS – Civil Engineering – ISR Area

ISR Area – Structural disorders

- **Main Cracks (1)**
 - Emergency actions – 90kCHF – Done in 2023
 - Geotechnical studies – 17kCHF – Done Q1 2024
 - Civil Engineering execution studies – 35kCHF – Q3 2024
 - Repairs works – Cost to be determined
- **Important disorder due to carbonation (2)**
 - Method and cost to be determined
- **Cracks along the ring (3)**
 - Method and cost to be determined



ISR Area – Main Cracks

Main cracks located between metric markers 470 to 490



ISR Area – Main Cracks

Urgent Actions

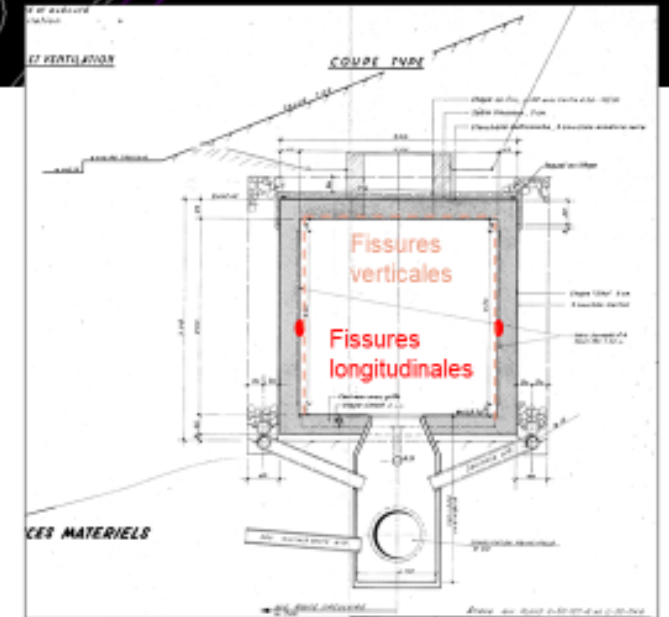
ISR Gallerie – 837

- Year of construction: 1967 – 1969
- Infrastructure:
 - High voltage electrical network
 - Low voltage electrical network
 - Low current network
 - Optical fiber
 - Chilled Water / Superheated water
 - Potable water
 - Sanitation
 - etc...

Urgent Actions

ISR Gallerie – 837

- Horizontal cracks
 - Longitudinal cracks of 1 to 2 mm all around the gallery
 - Important cracks larger than 1cm between B285 (TL5) et B286 (TL6) causing rebars break
- Vertical Cracks
 - Ponctual and non-critical
 - Works as expansion joint



ISR Area – Carbonation

At least 3 areas of important disorder due to carbonation

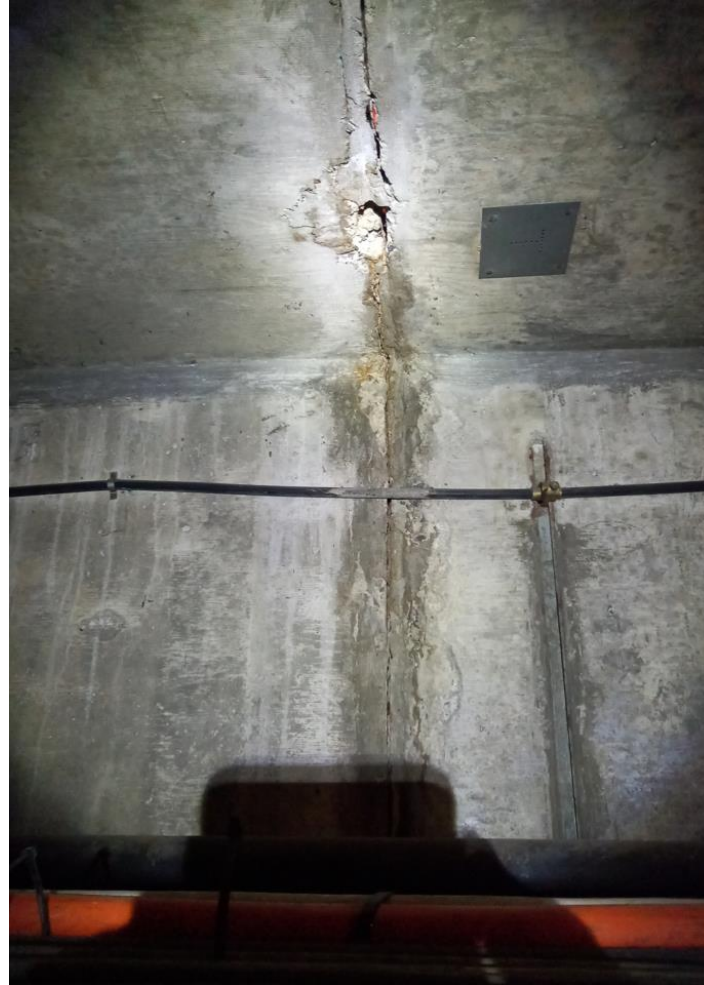


GT825 – Carbonation

«Standard»
Carbonation in 825

For comparison

Before and after
renovation



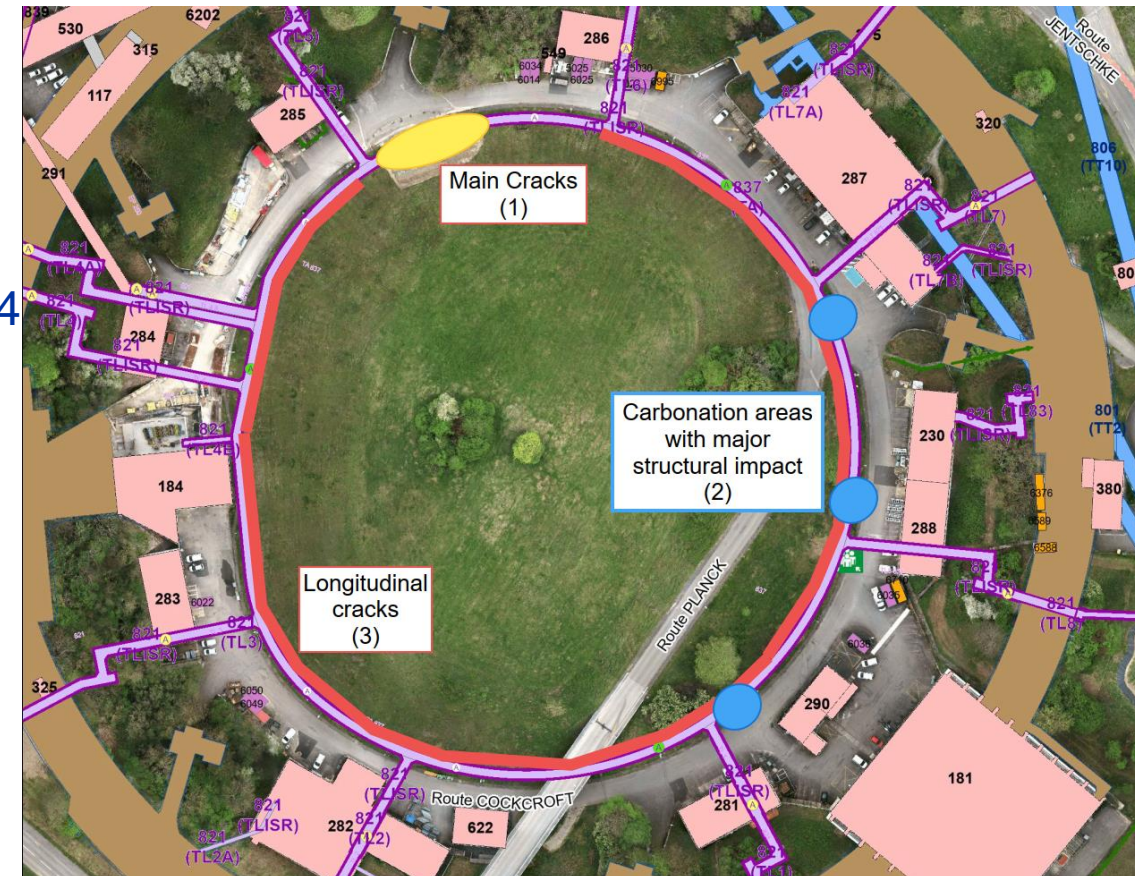
ISR Area – Longitudinal cracks

Longitudinal Cracks – All along the inside wall



ISR Area – Structural disorders

- **Main Cracks (1)**
 - Emergency actions – 90kCHF – Done in 2023
 - Geotechnical studies – 17kCHF – Done Q1 2024
 - Civil Engineering execution studies – 35kCHF – Q3 2024
 - Repairs works – Cost to be determined
- **Important disorder due to carbonation (2)**
 - Method and cost to be determined
- **Cracks along the ring (3)**
 - Method and cost to be determined



ISR Area – Structural disorders

Before launching any large-scale work inside the gallery, the following roadmap could be followed:

- Carry on with the execution design for remedial works for point (1).
- Launch surveys of the gallery to check the current state of the concrete, the rebars, and the drainage.
- Determine repair solutions for points (2) and (3)
- Evaluate the costs and impacts of remedial works for the overall ring
- Depending on the outcome, find extra funding to execute remedial works during LS3
- Launch an IT and coordinate with other work package

