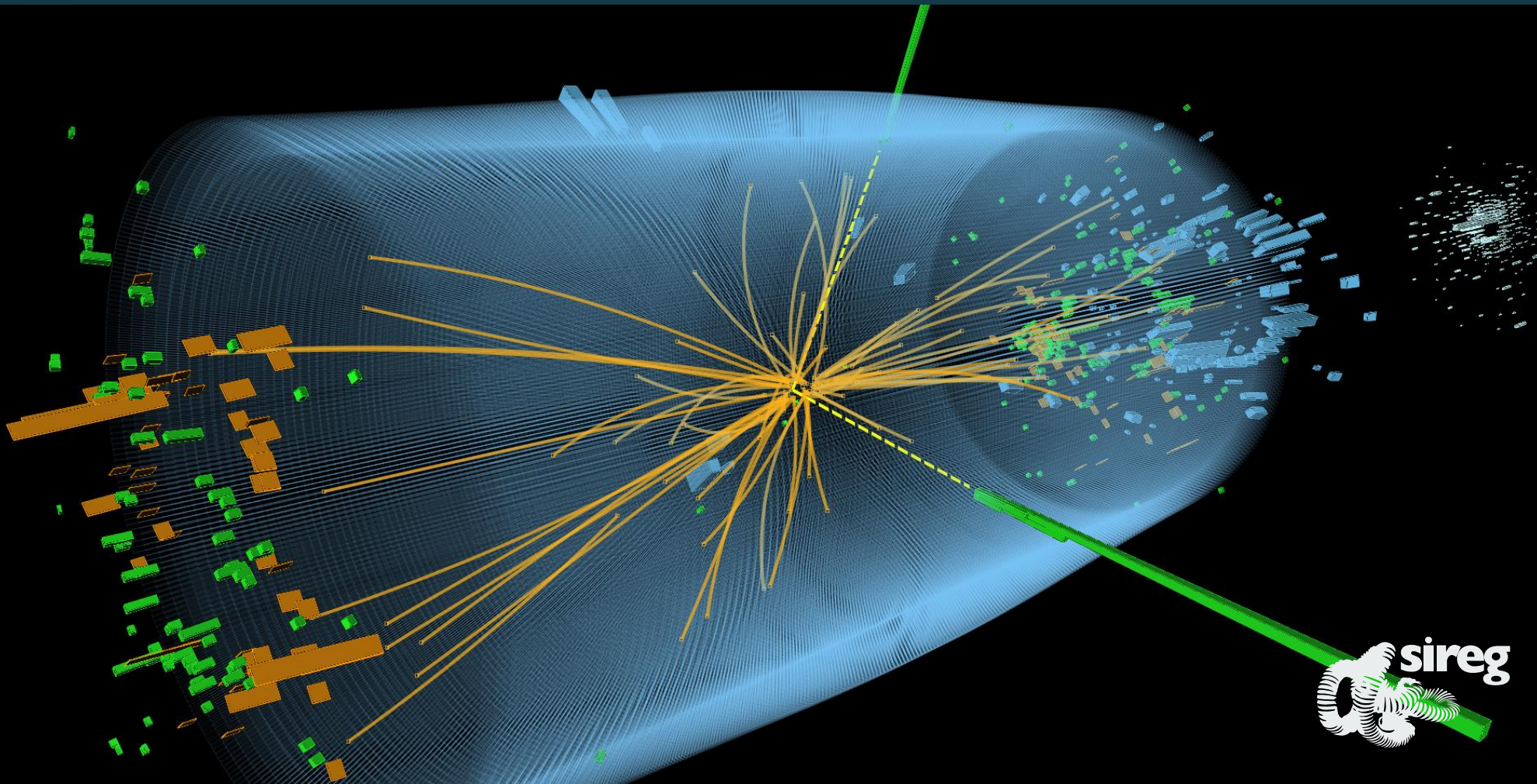


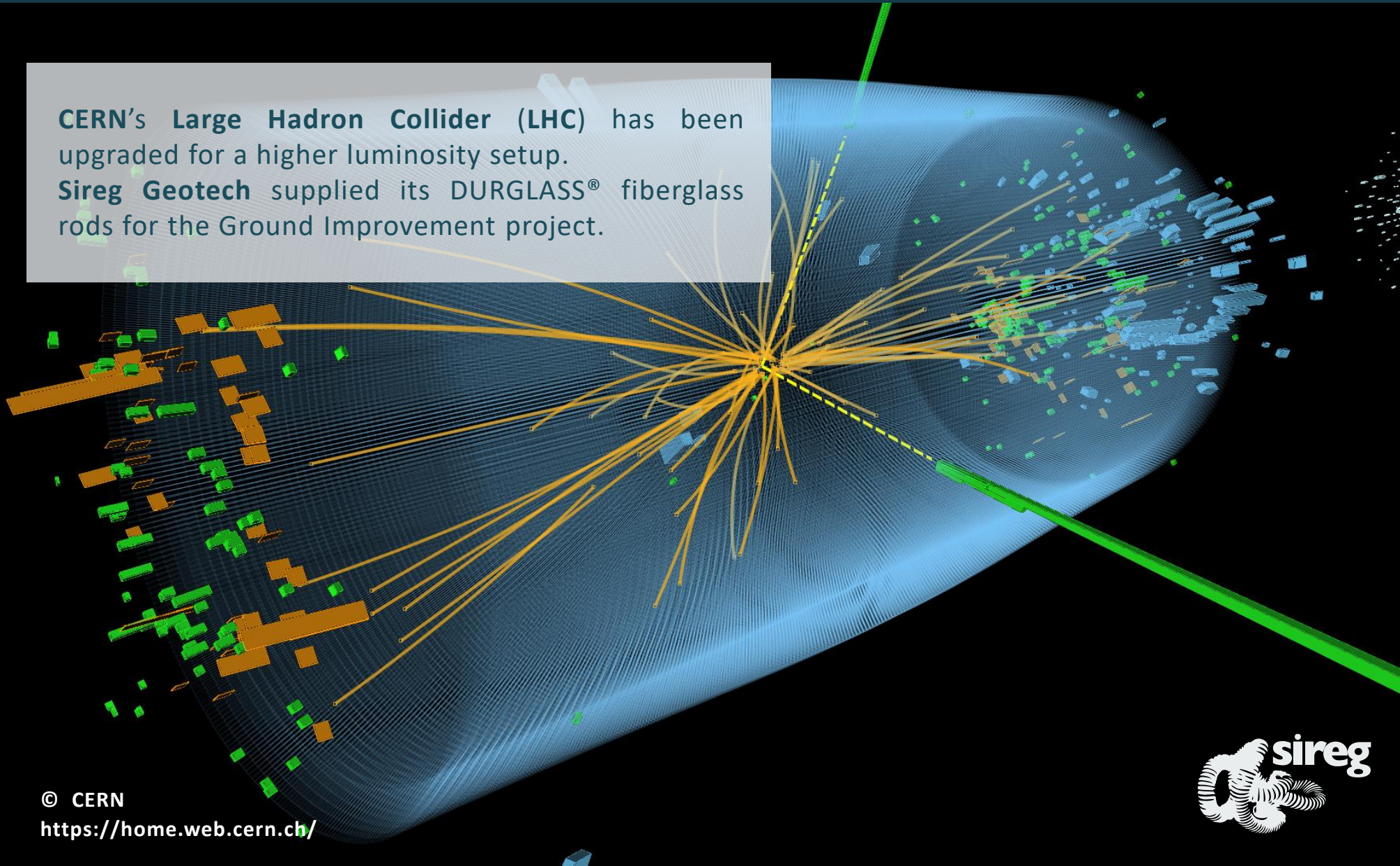
# Historical Sireg

CERN – High Luminosity LHC (Switzerland-France)

*A review on world Historical Buildings and Great Civil Monuments strengthened by Sireg solutions*

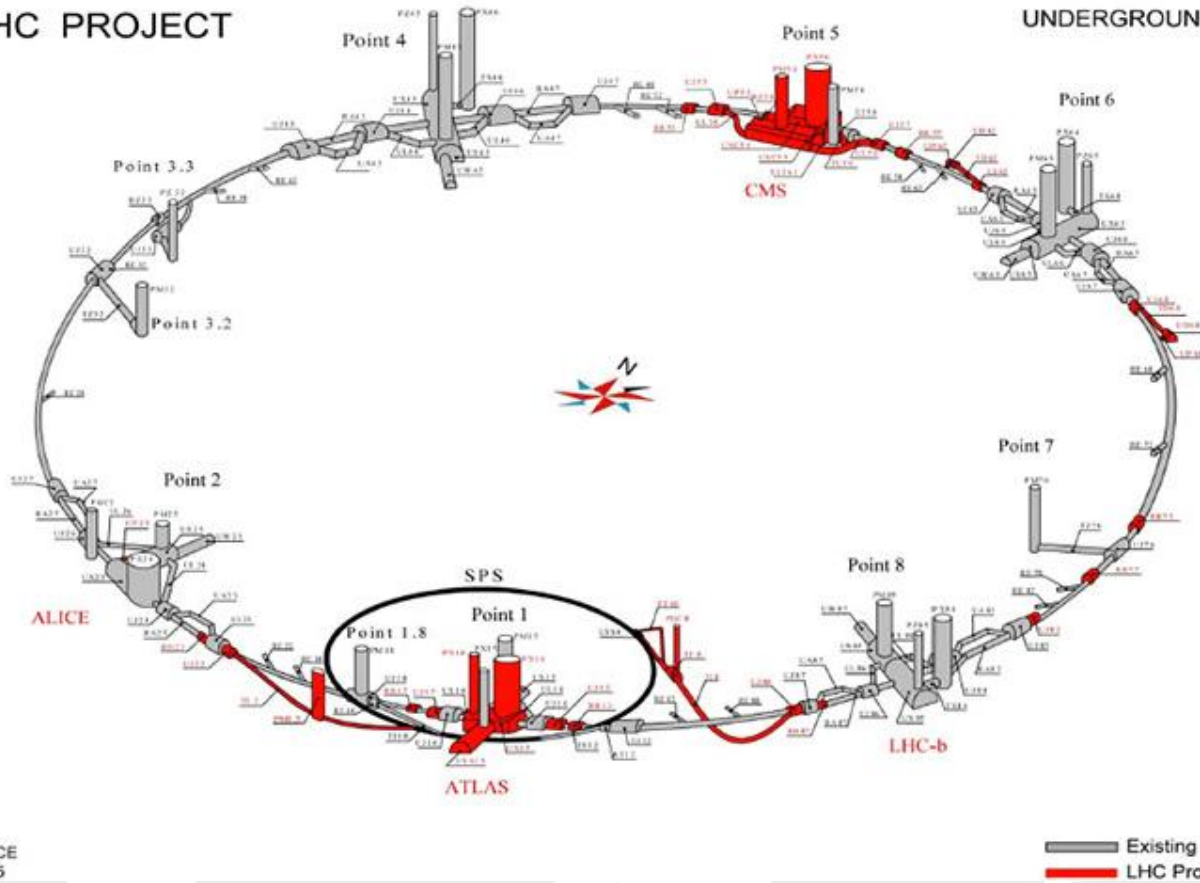


CERN's Large Hadron Collider (LHC) has been upgraded for a higher luminosity setup. Sireg Geotech supplied its DURGLASS® fiberglass rods for the Ground Improvement project.



### LHC PROJECT

### UNDERGROUND WORKS



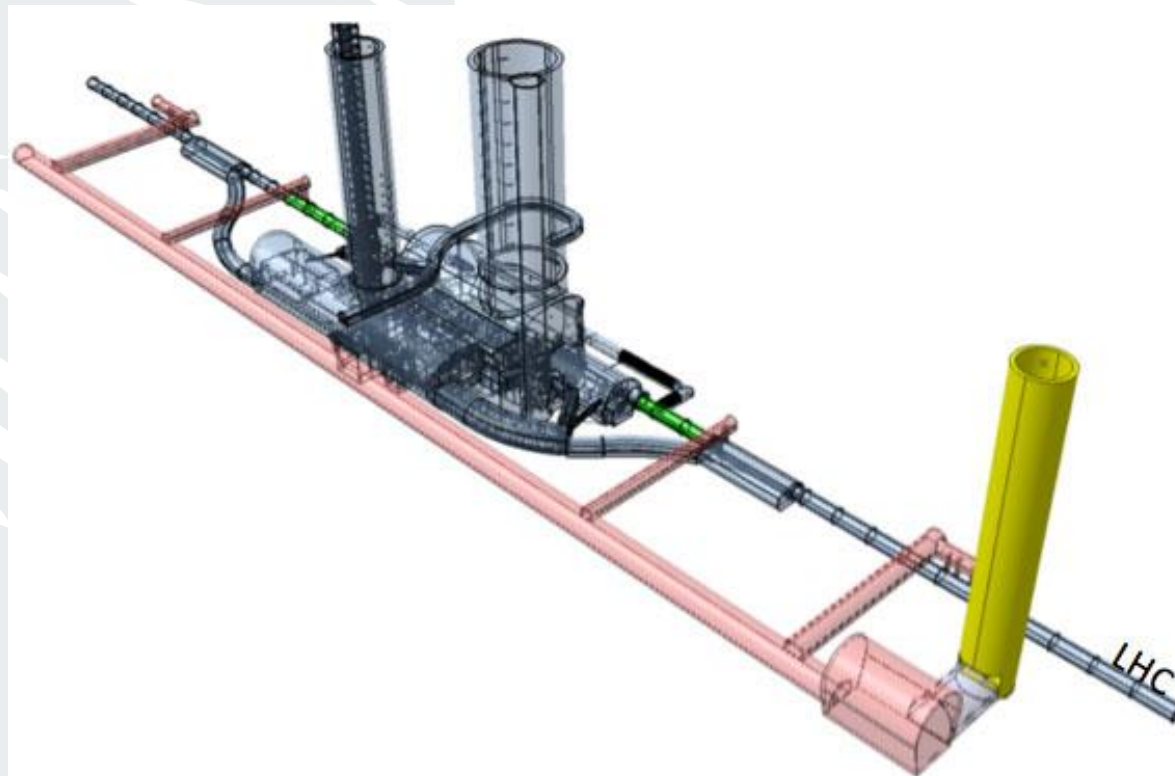
The international nuclear research organization – CERN – has recently improved its underground structures located on the Switzerland-French border.

A system of new tunnels, shafts, galleries and caverns was needed as part of an **upgrade program** to its particle accelerator, the **Large Hadron Collider (LHC)**.

Recent works on the CERN Research Institute plants have included the **excavation of two new 12 m diameter shafts**, roughly 100 m deep.

New base caverns have been prepared for the installation of extra hi-tech machinery, together with a total of 800m associated tunnels. Such underground works have involved the already existing deep-level experimental hall caverns of Atlas and CMS. These have been engineered to service critical upgrades to all their facilities and detection equipment.

**CMS detection Hall, upgrade design plan for the High Luminosity - LHC**





Atlas detection Hall, a high-span underground space during the construction works for the High Luminosity Large Hadron Collider (LHC). Sireg Geotech's **Glasspree® Non-Metallic permanent rocks bolts** have been applied during the construction stage of this Hall (yrs 2019-2020).

