

## ISTD & ESTD/ M-18-01

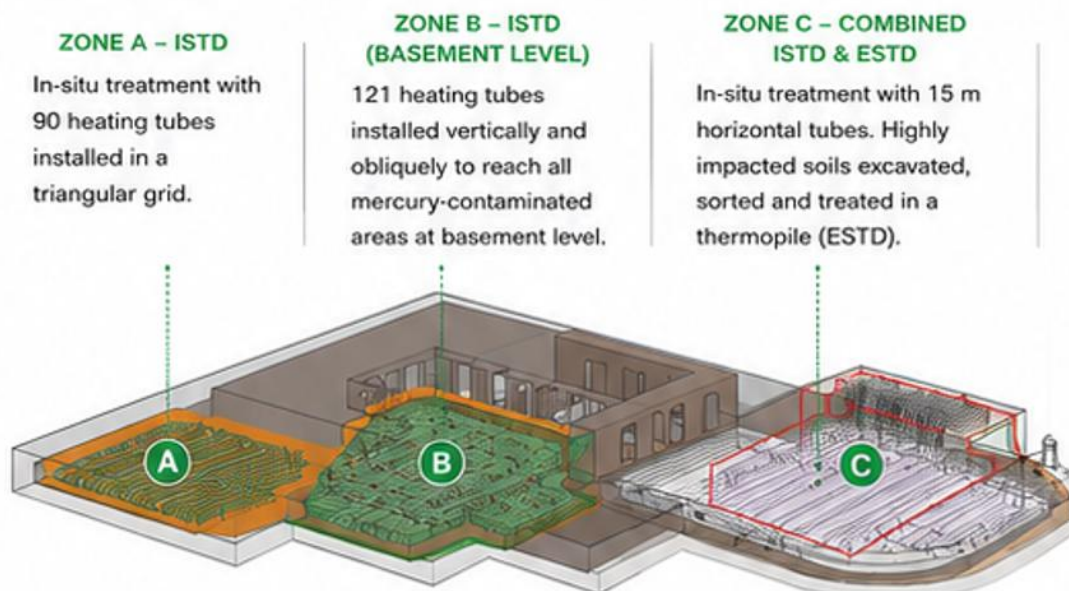
### IVRY SUR SEINE (FR)

#### Context & Project Description

The site was located on a land covering an area of about 1100m<sup>2</sup> where a college was built, not in operation at the time. The technical constraints related to the presence of the building and the proven presence of pure Mercury led to the consideration of in situ treatment of the contaminated areas. The project involved the treatment of 3 in situ areas and 1 ex situ treatment area.

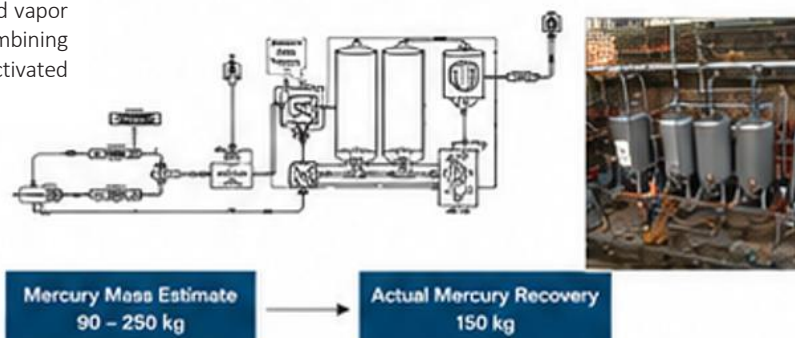
- The first zone A involved the installation of 90 heating tubes in a triangular grid.
- Zone B, at the basement level, was dimensioned with 121 heating tubes placed vertically and obliquely in order to reach all the zones impacted by mercury.
- Zone C, part of the soil was excavated and treated with thermopile while the other part was treated in situ with 15m horizontal tubes. The zone was also treated with thermopile. The pile in this area was assembled as the highly mercury loaded soils were sorted.

#### REMEDIATION APPROACH



#### VAPOR TREATMENT & MERCURY RECOVERY

Mercury vapors were captured and directed to a dedicated vapor treatment unit combining condensation and Activated carbon absorption



Contaminants  
Hg, HgCl<sub>2</sub>

Volume  
2,500 m<sup>3</sup>

Tonnage  
4,500 Tons

Nb of heating tubes  
322

Temperature Target  
350°C

Heating Duration  
180 days

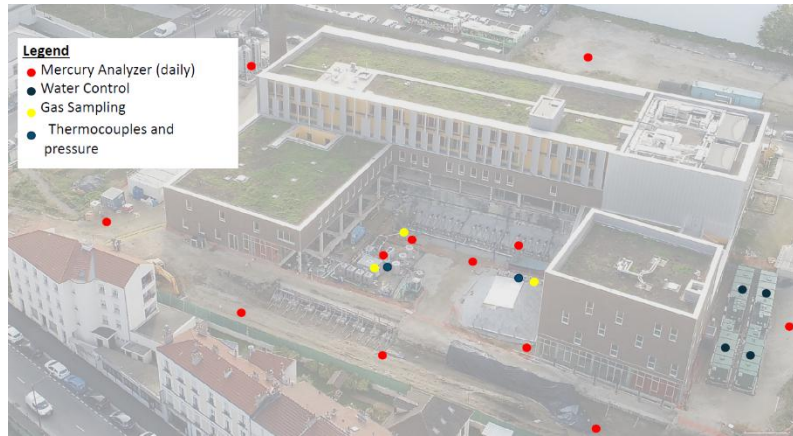
Location  
Ivry-sur-Seine, France

Client  
Biogénie

Date  
2017

## MONITORING & SAFETY

- Soil temperature monitoring
- Soil pressure monitoring
- Temperature monitoring around building structures
- Mercury analyzer (daily)
- Gas Sampling
- Water control
- Thermocouples & pressure



## Conclusion

The combined ISTD and ESTD remediation strategy successfully addressed highly mercury-contaminated soils in a complex urban environment. Despite the presence of existing structures and the proximity of neighboring buildings, the project was completed safely while maintaining strict environmental and emission controls. Thermal desorption proved highly effective for both elemental and chlorinated mercury contamination, achieving the remediation objectives across the majority of the treated soils and enabling the recovery of approximately 150 kg of mercury. This project demonstrates the reliability of thermal technologies for the treatment of heavily contaminated mercury sites where conventional excavation is technically challenging or economically unfavorable.