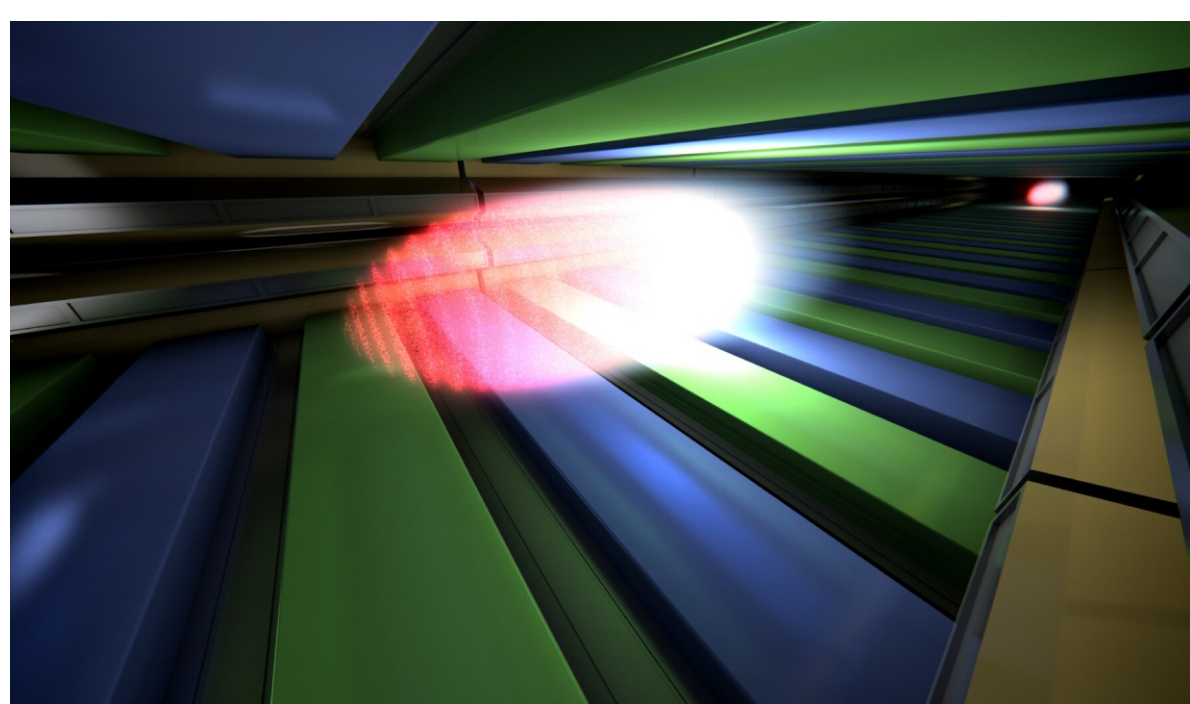




Overview

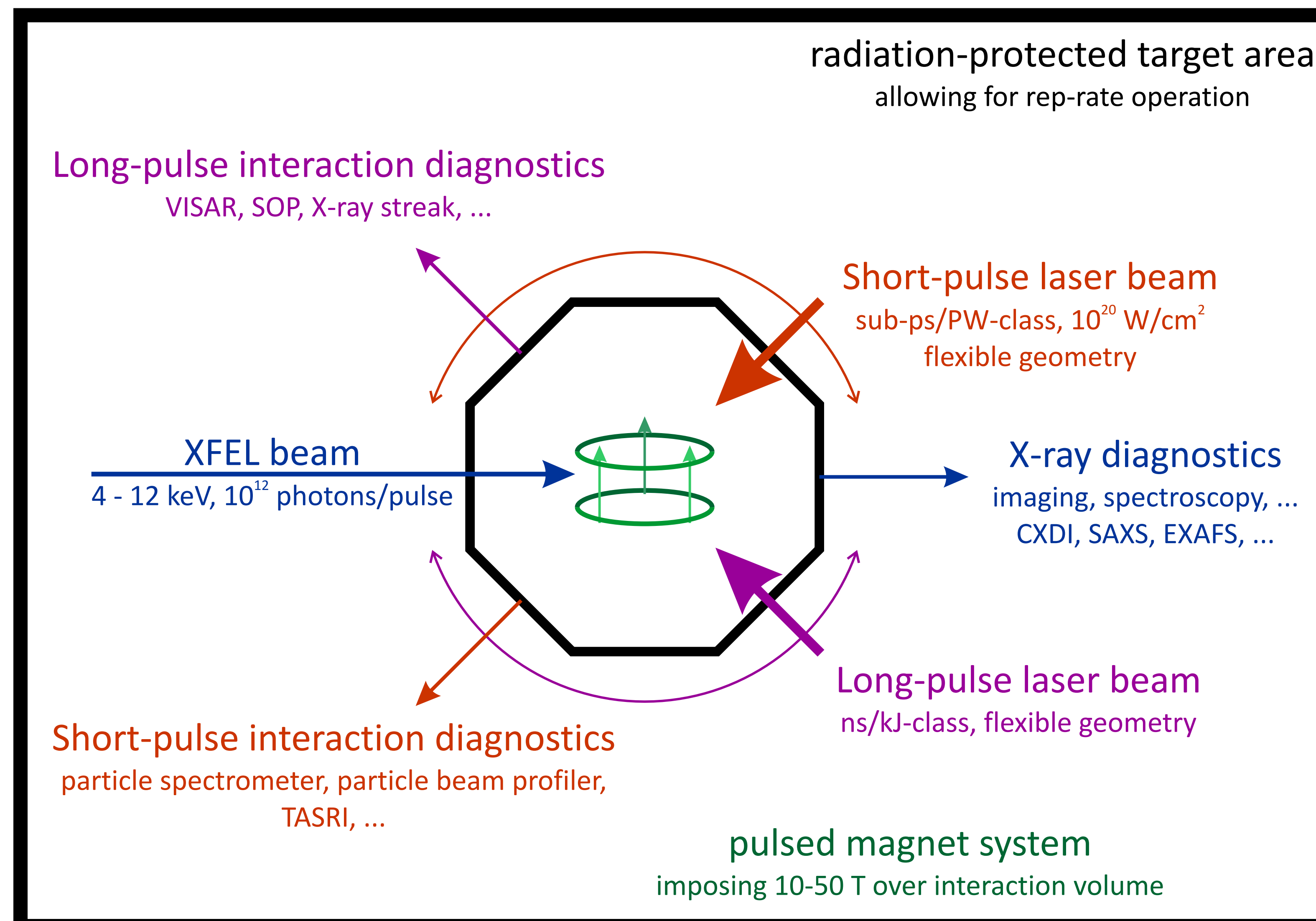
XFEL beam

- SASE2 south beam
- 4–12 keV, 0.1% BW
- linearly polarized (h)
- coherent



Lasers and diagnostics

- developed by partners in User-Consortium
- remain as contribution at HED instrument



Short-pulse laser system

- starting 2016 with 100 TW-class Ti:Sa (5 J, 30 fs)
- extendible to PW-class, ongoing with operation
- option for diode-pumped PW CPA system or other
- open for future developments driven by User-Consortium

Long-pulse laser system

- starting 2016 with 100J-class
- possibly extendible to higher energies
- option for kJ-class laser
- open for future developments driven by User-Consortium

Radiation protection

- massive concrete bunker
- due to short-pulse interaction
- areas outside will not be affected

Pulsed magnet system

- technology of high-field lab of HZDR
- recent coil development for experiments in vacuum at LULI (France) can be a precursor

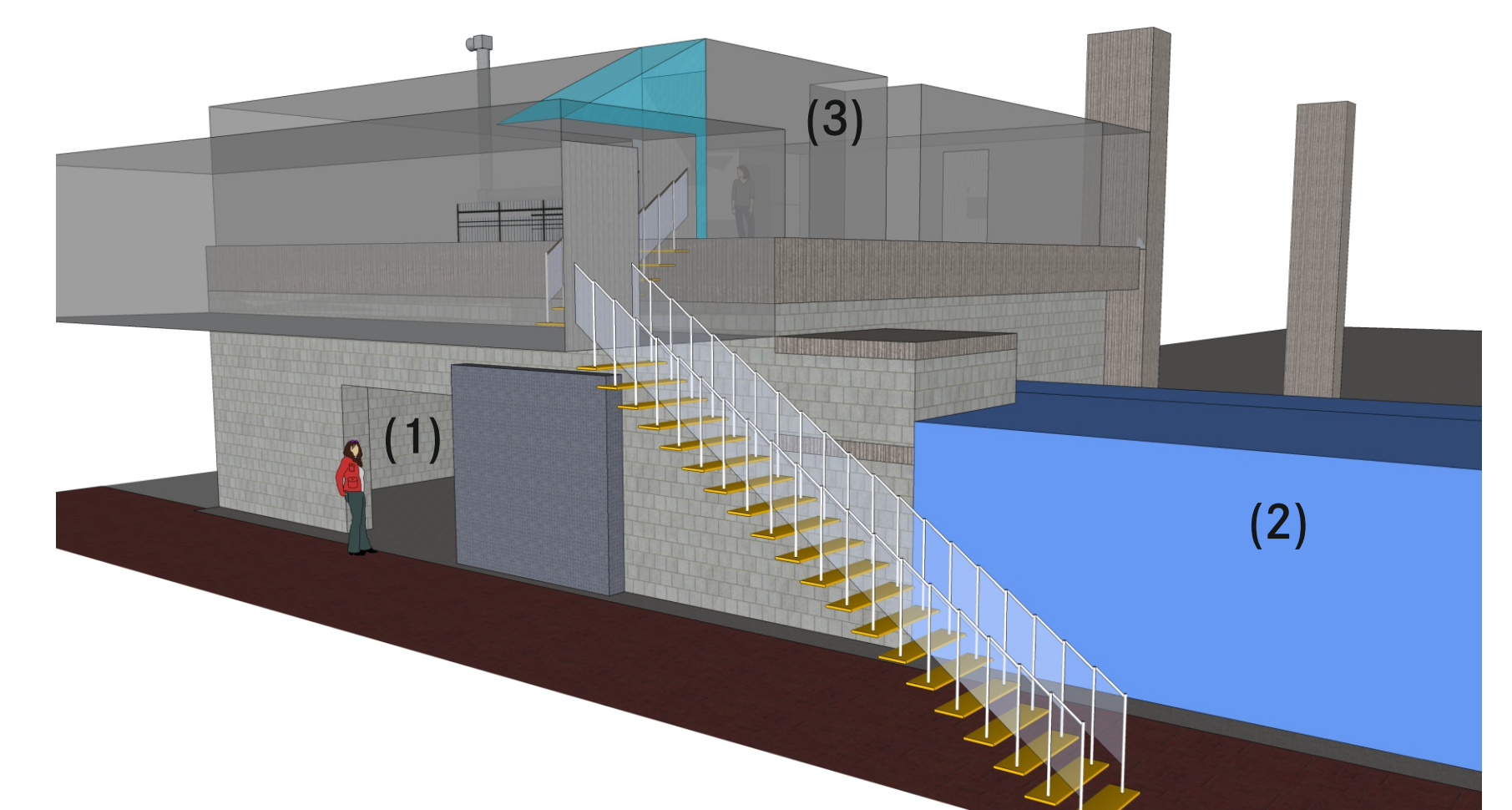
Current[†] design idea

Basic design

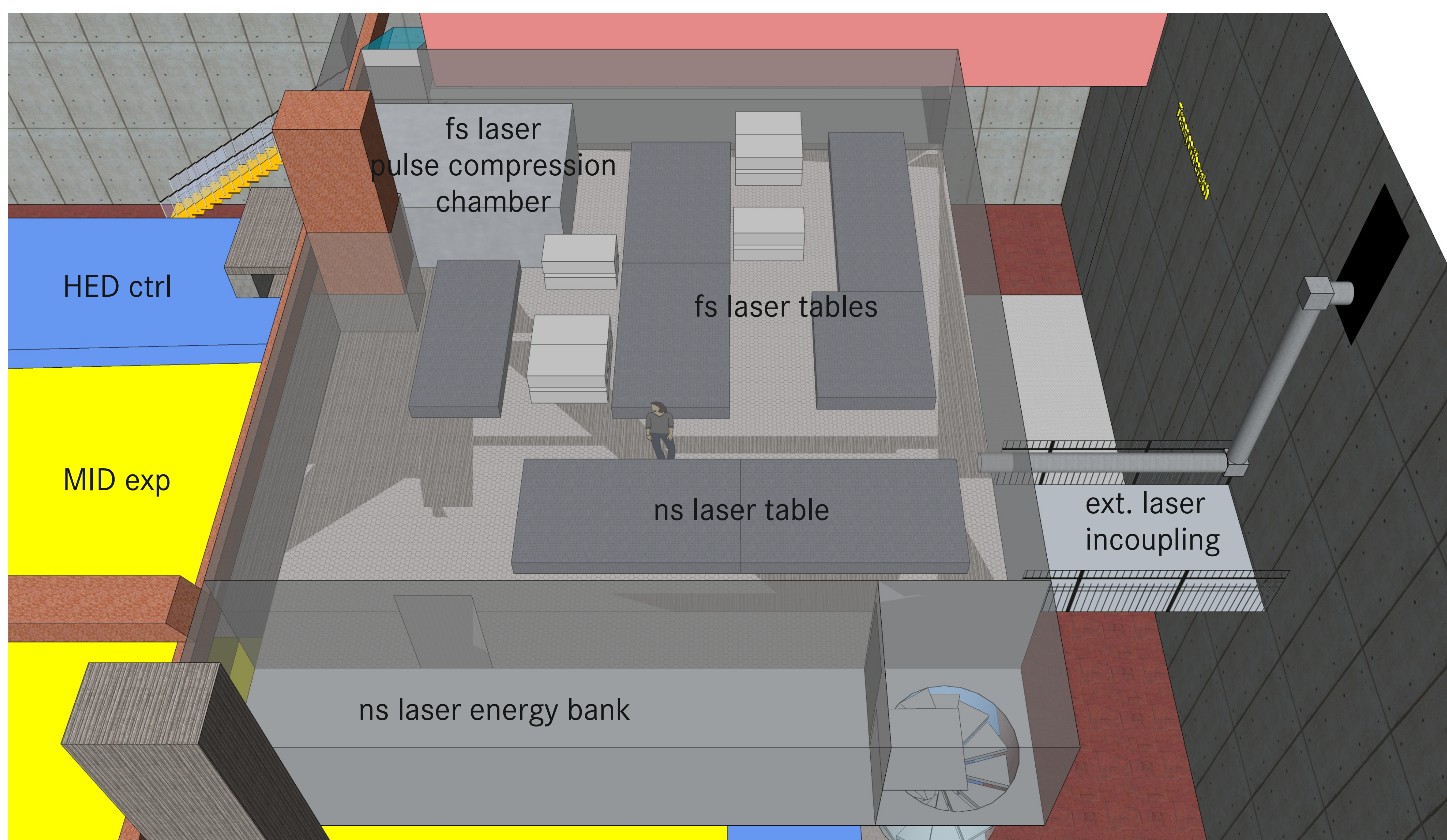
- use roof plate of radiation bunker for laser installation
- option for external laser building with tunnel link into hall

Bunch of constraints

- beam paths of other instruments
- all infrastructure (crane, air, ...)
- safety rules, transportation paths
- optical stability

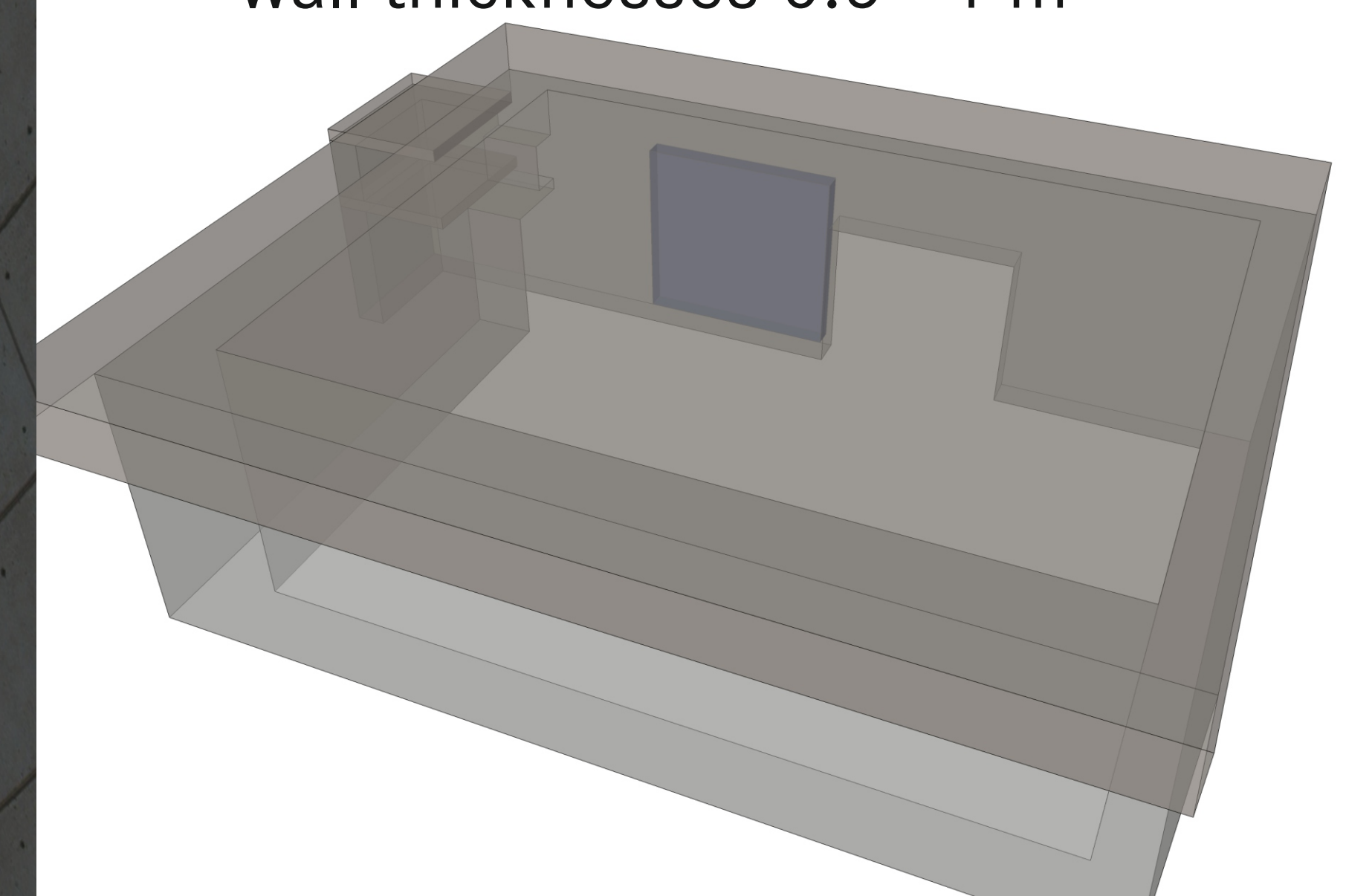


Experimental room (1), control room (2) and laser lab (3)



View of experimental area

- inner surface ca. 95 m²
- wall thicknesses 0.5 - 1 m



†: January 2013