New SRF Facility at KEK

H. Hayano, KEK, 10072014

Outline of proposed Program

2012 supplementary budget,
Industry-University cooperation, Center Of Innovetion (COI) program

Targeting 10-20 years future social needs, innovative technology development center based on Industry-University cooperation is to be facilitated.

KEK and industries proposed:
(1) Pollution removal with electricity generation technology,
(2) International electricity network,
(3) New alternative resource material generation,
(4) Ozone layer generator,
In the futer. To make innovation to solve above subject,
Seeds technologies are;
(a) superconducting accelerator technologies
(b) technologies of quantum-beam utilization
(c) cryo-technologies

Energy
Environment
Resource

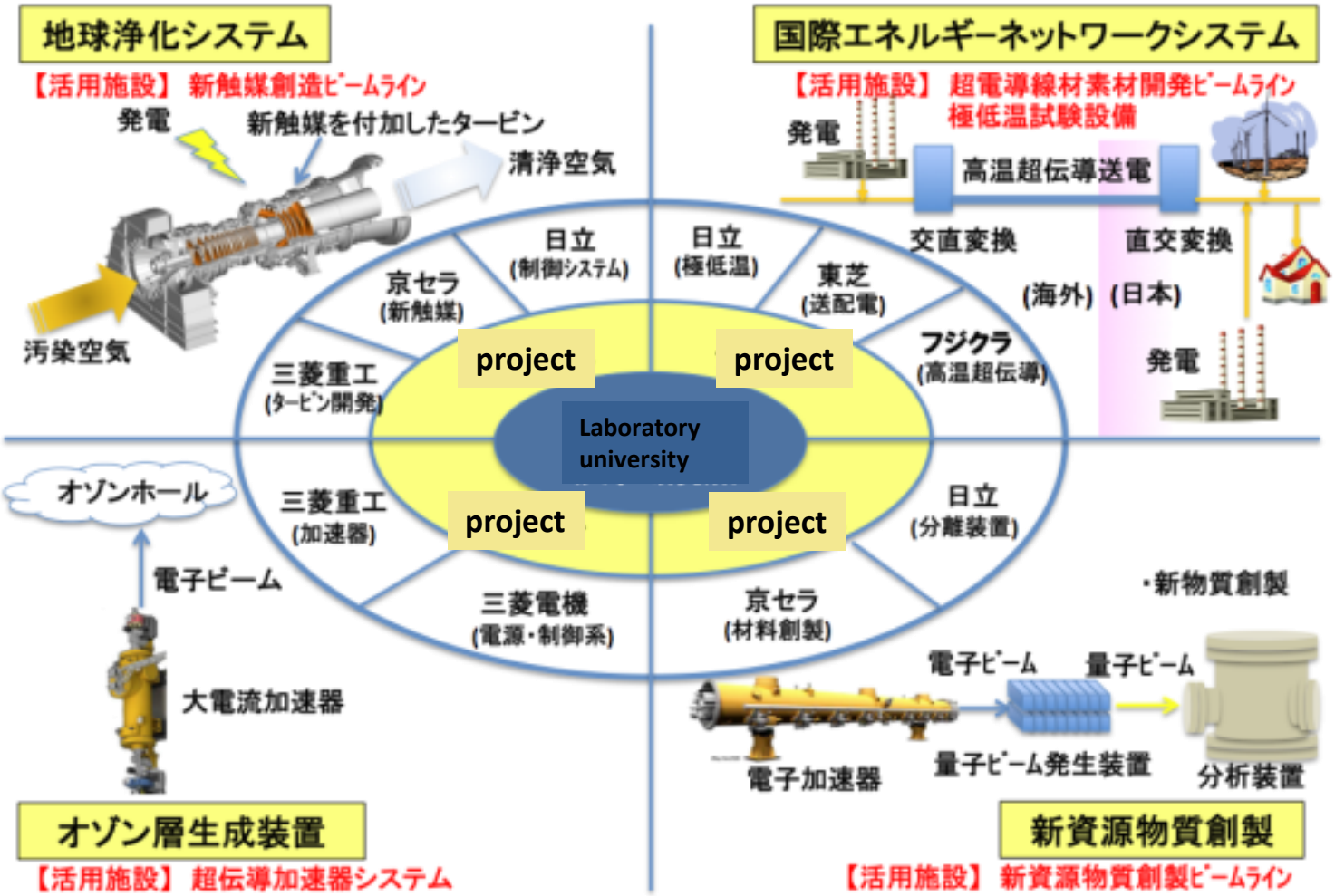
SC accelerator

Industrialization of, compact sized of, SC accelerator = ILC

Overall view of proposal

Earth Cleaner

International Energy Network



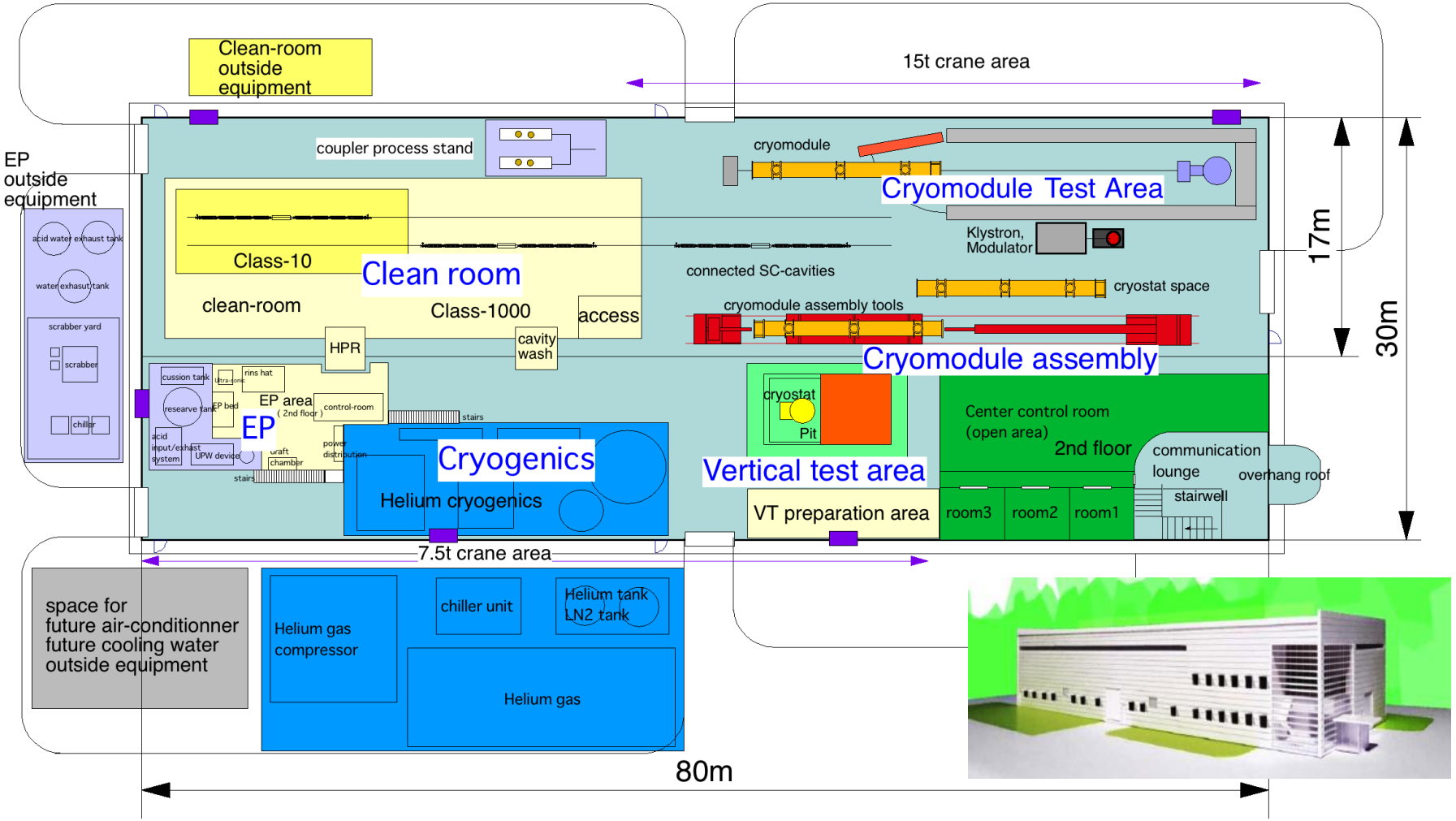
Ozone layer generator

Compact material analyzer for new resource material

New SRF facility : promotion of superconducting accelerator utilization

New building (80m x 30m) is under construction at North of STF

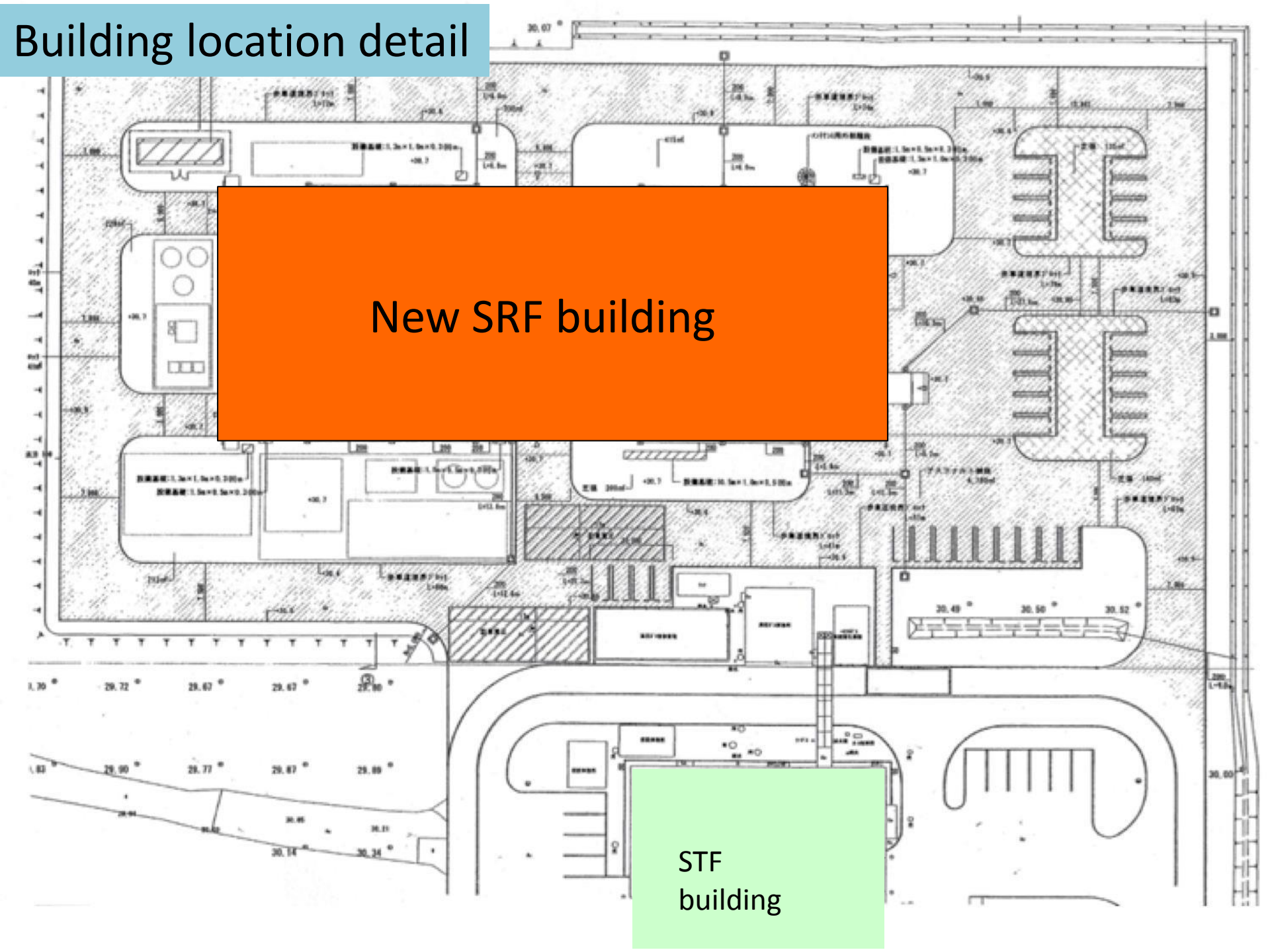
Superconducting Accelerator Development Hall



SC cavity inspection & process, vertical test, cryomodule assembly, cryomodule test

Satellite View of new building location

Building location detail



Construction status of new building

Construction compeletion will be end of Jan. 2015

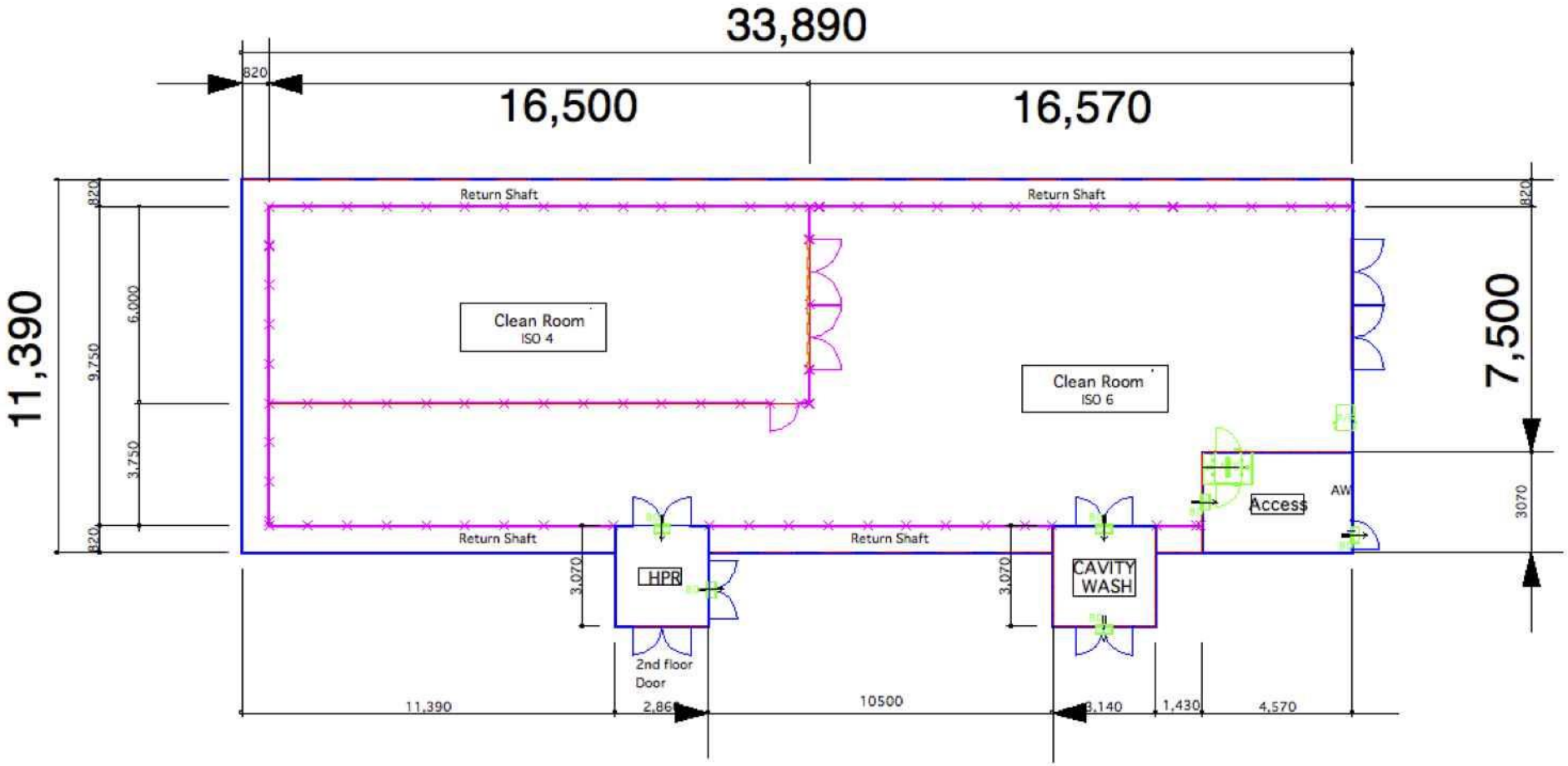
List of new device to be installed

(1) A large size clean room for ILC cryomodule assembly
(2) EP facility to develop industrial EP
(3) 4-cavities Vertical test stand
(4) ILC Cryomodule assembly tools
(5) Helium Cryogenics
(6) Cryomodule test stand (to be installed later)

with

(1) Center control room
(2) KEK researcher room
(3) Industry room
(4) Small meeting room
(5) Exhibition space

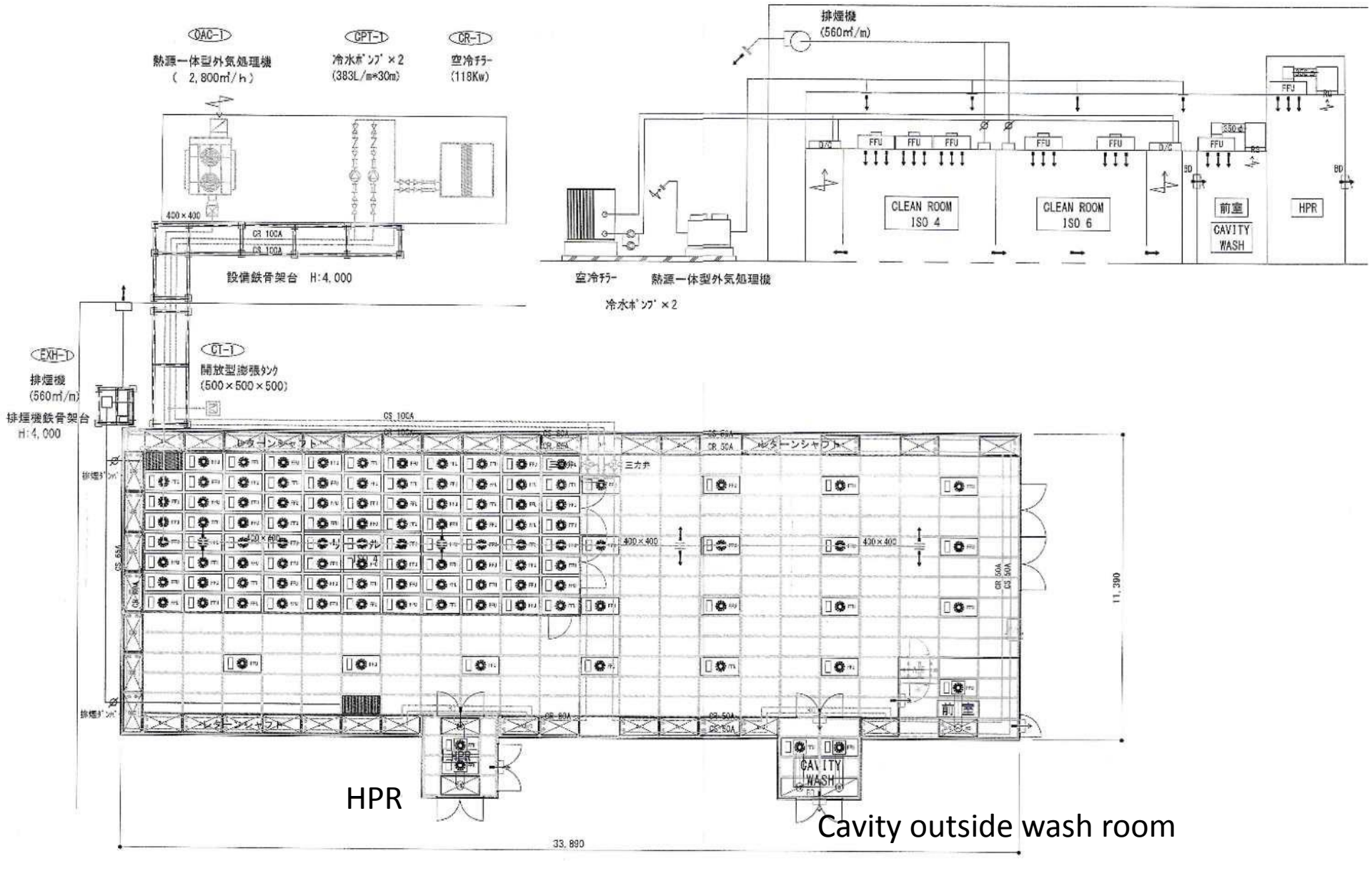
ISO4 & ISO6 Clean Rooms for ILC cryomodule assembly



ISO-4, ISO-6 clean rooms, with dual cavity rail

Flat-floor Clean Room, ventilating to side wall

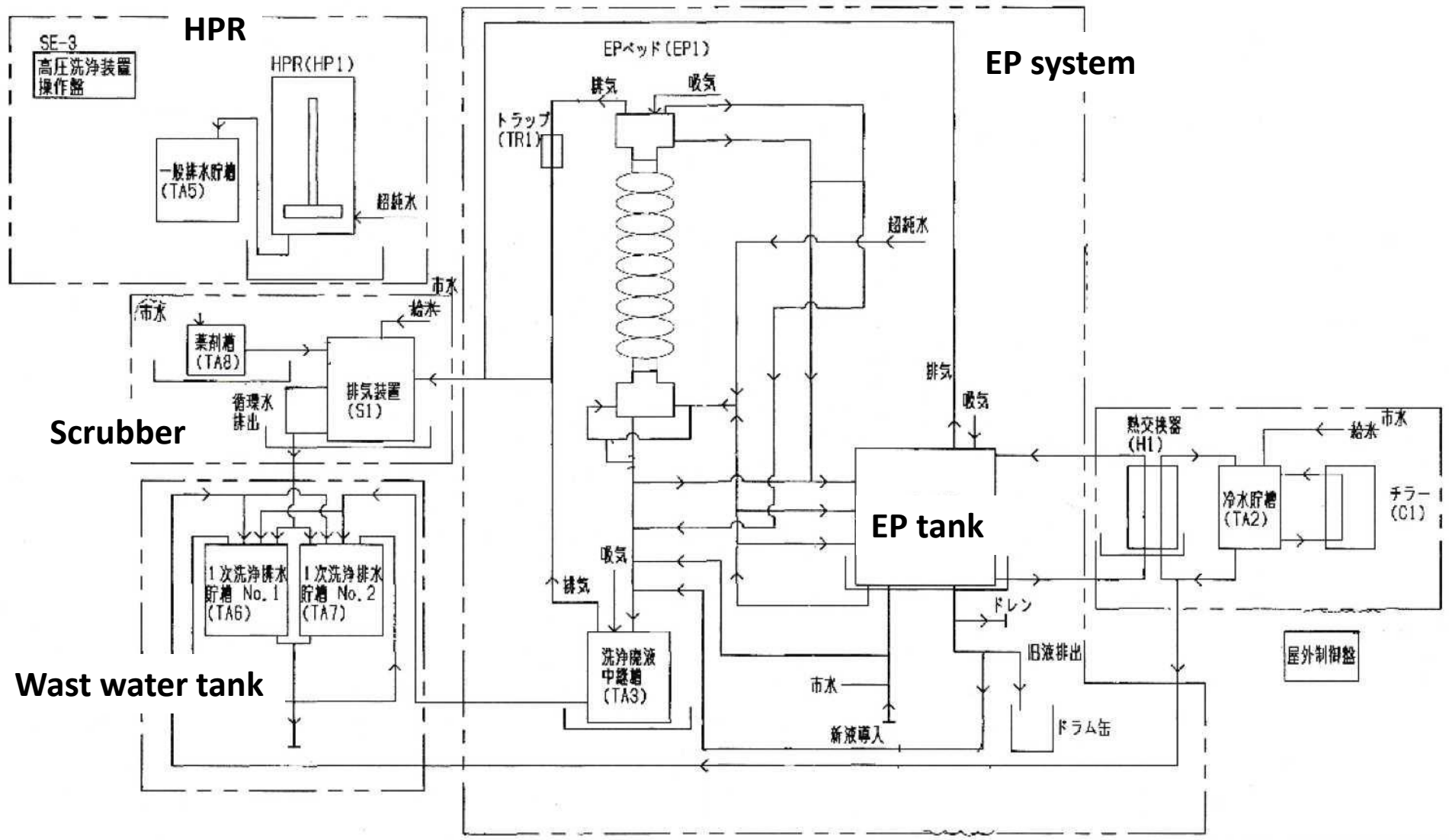
For easy floor cleaning, easy rail dip cleaning



HPR

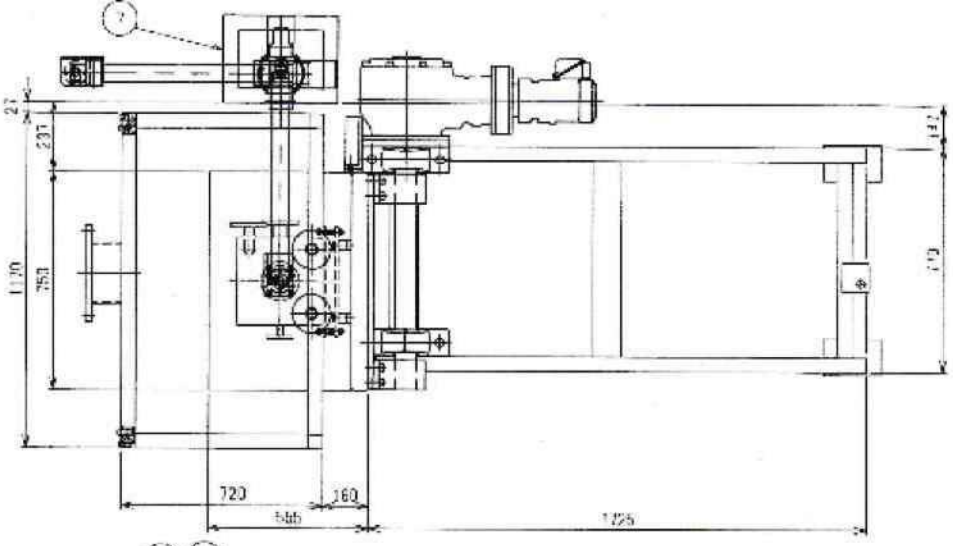
Cavity outside wash room

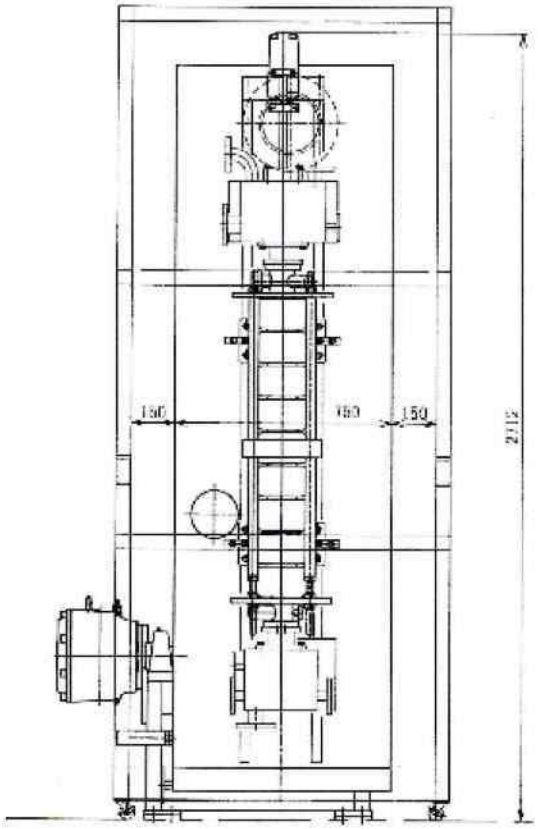
Block diagram of vertical EP system (VEP)

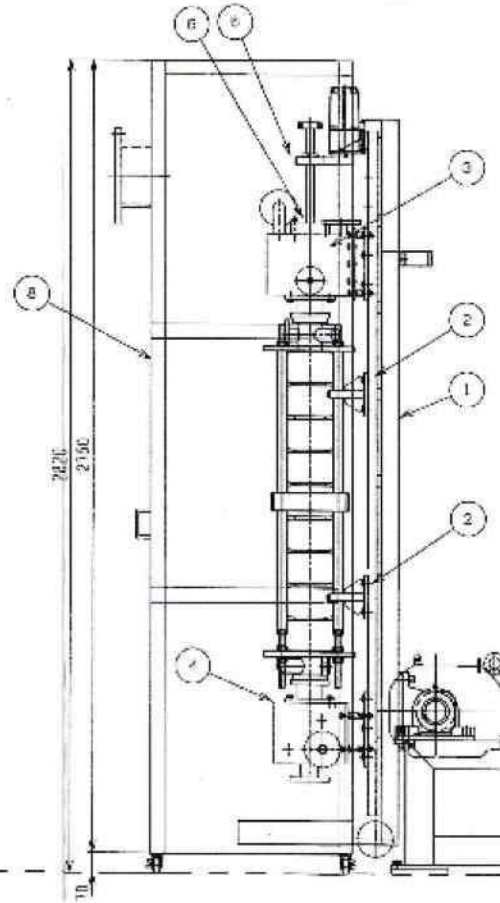


Vertical EP (VEP)
Cavity mount stage

Mounting at horizontal,
Electrode insertion in vertical,
EP at vertical.







Cavity:fixed
Electrode: rotation
EP acid flow:vertical
H2 gas flow:suction from top

vertical

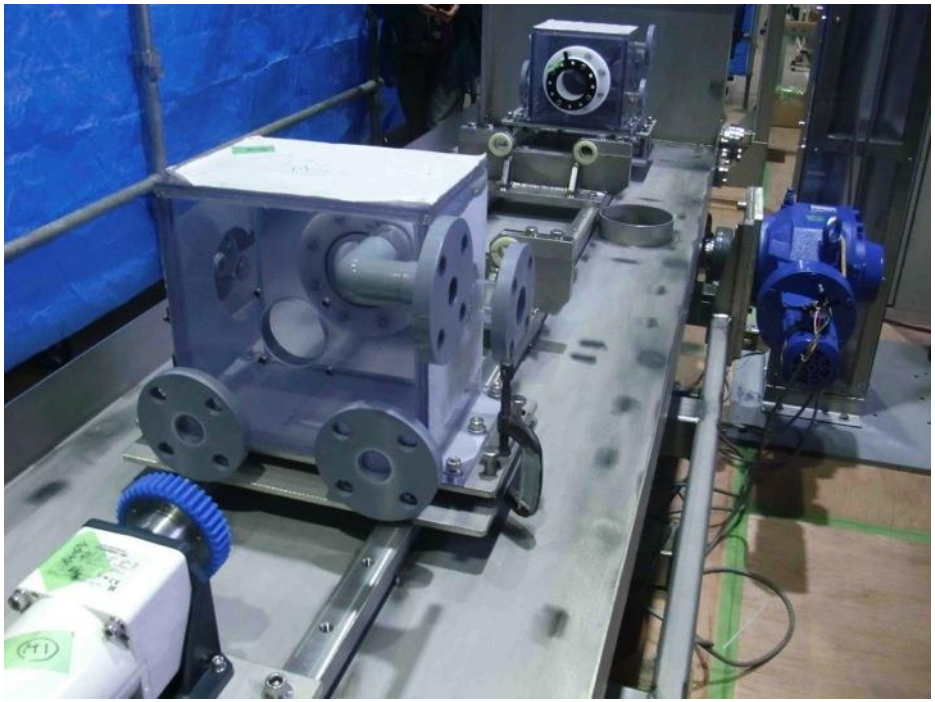
horizontal

Motor driven

VEP

Cavity vertical position
during electrode insertion and EP

Cavity horizontal position
during cavity and EP header installation



Use as a horizontal EP is also possible.

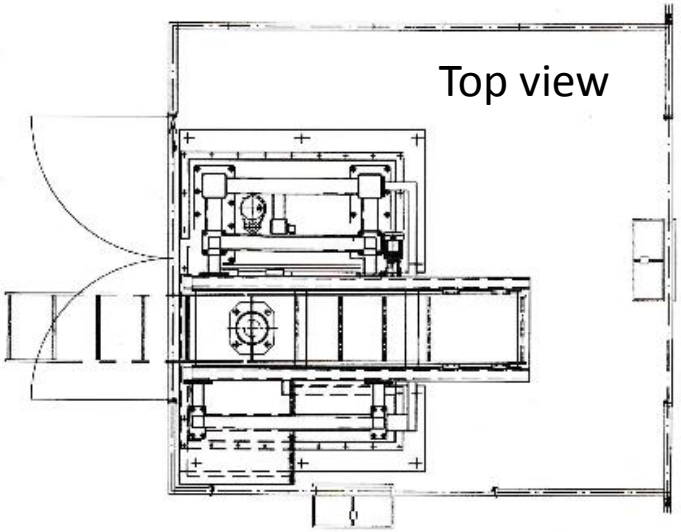
VEP

VEP Electrode Insertion

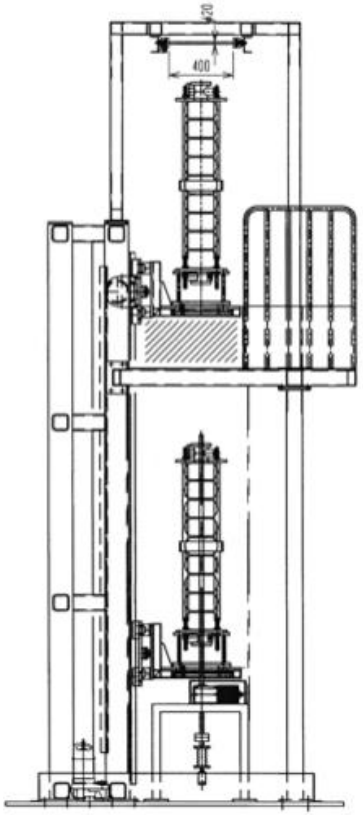
HPR (Nozzle rotation type)

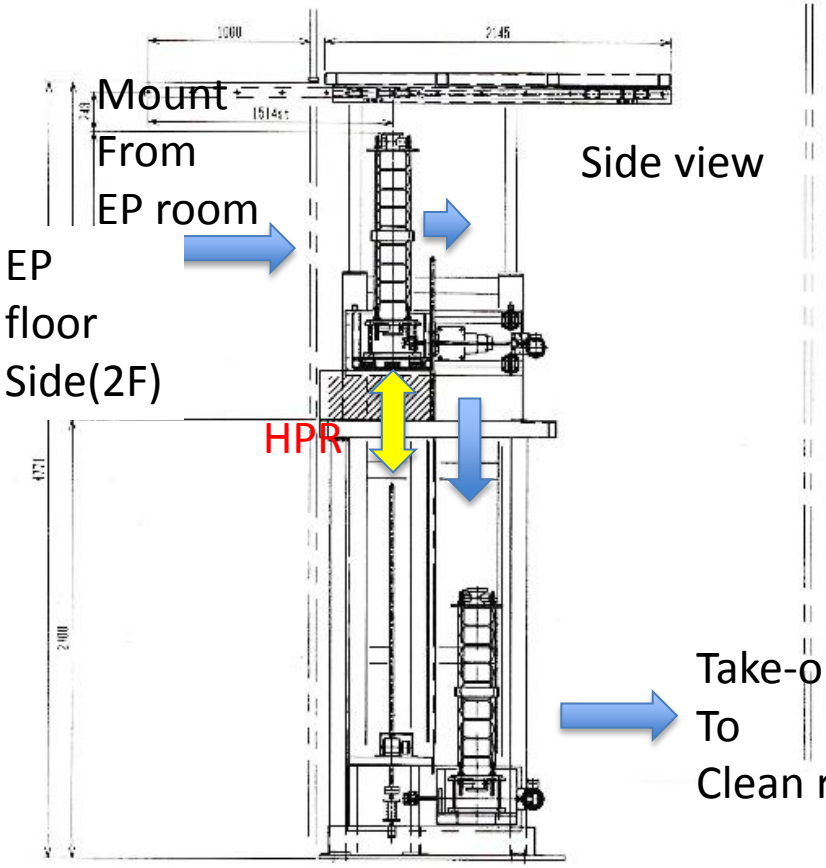
HPR
(High Pressure water Rinsing)

Cavity: no rotation, but up and down
Water nozzle: rotation



Front view from EP floor



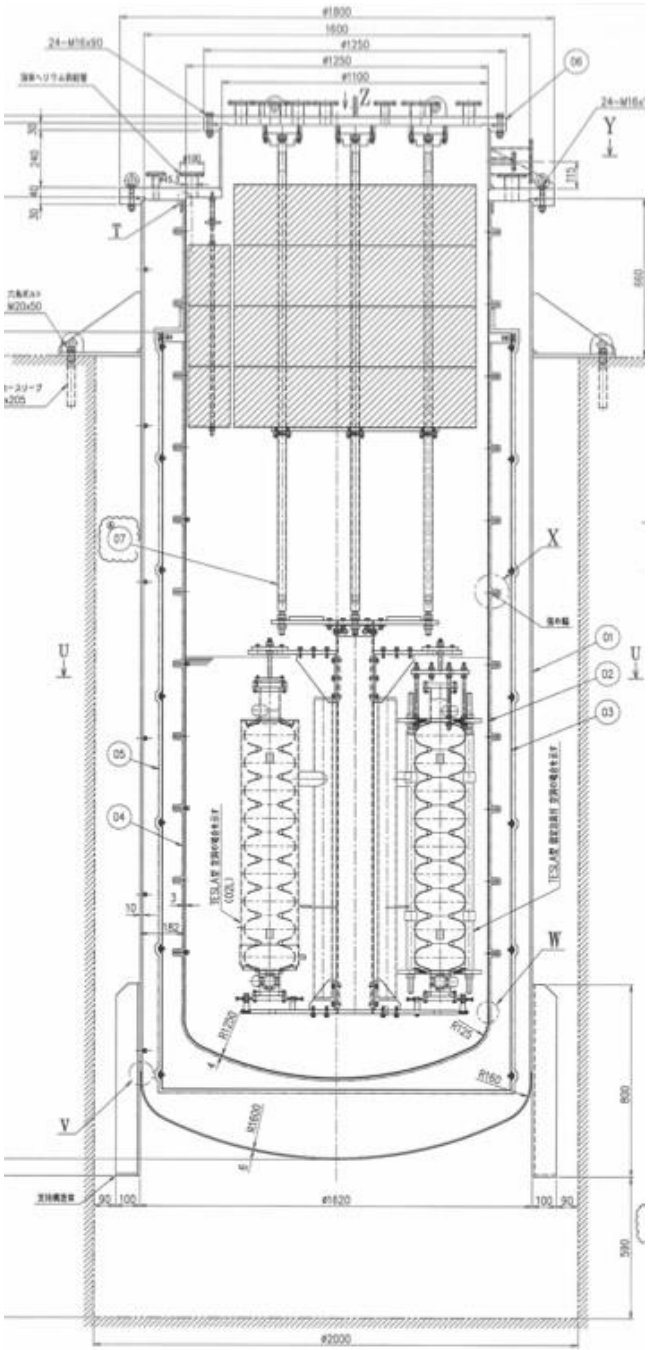


Vertical Test

Under Building 4-cavity Vertical Test Stand, following DESY AMTF

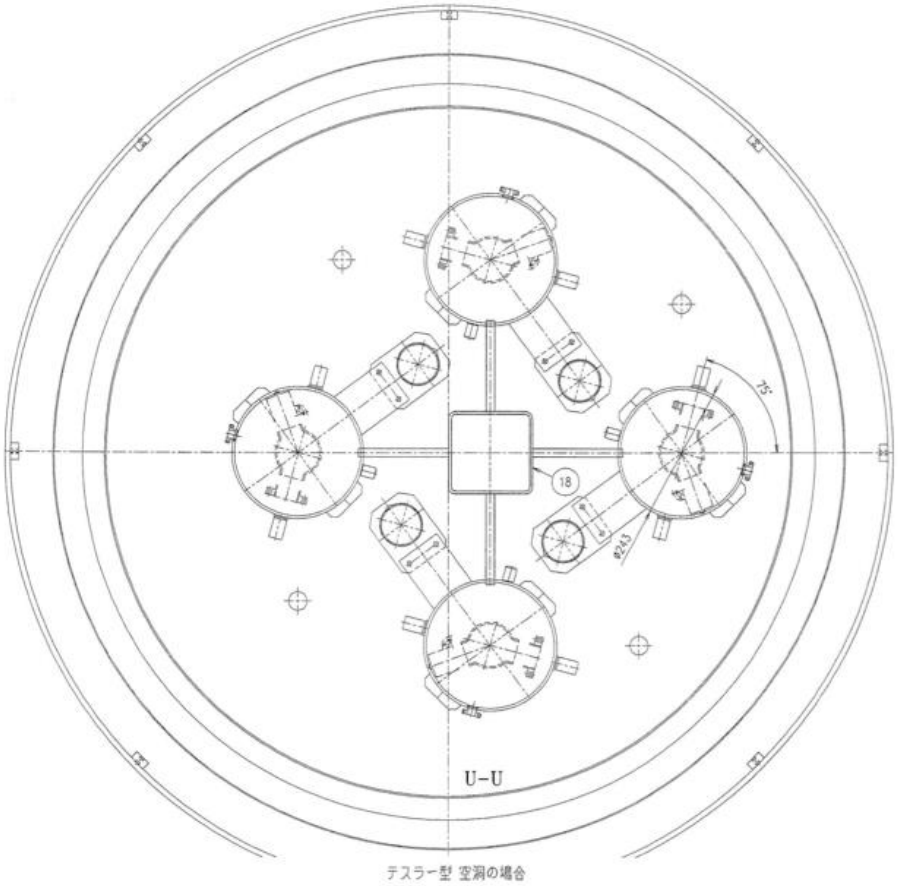
DESY AMTF

KEK new vertical test cryostat

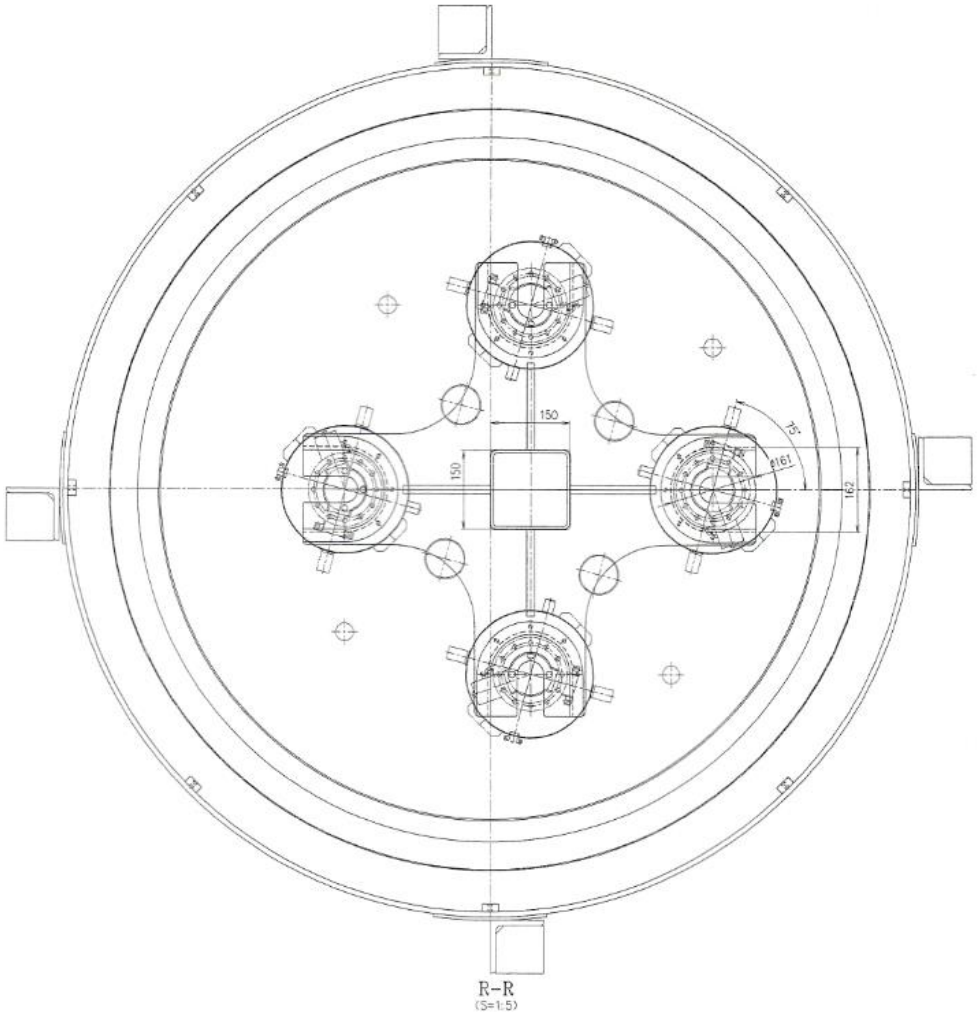


Vertical Test

Hanging 4 cavities with jacket and pipe

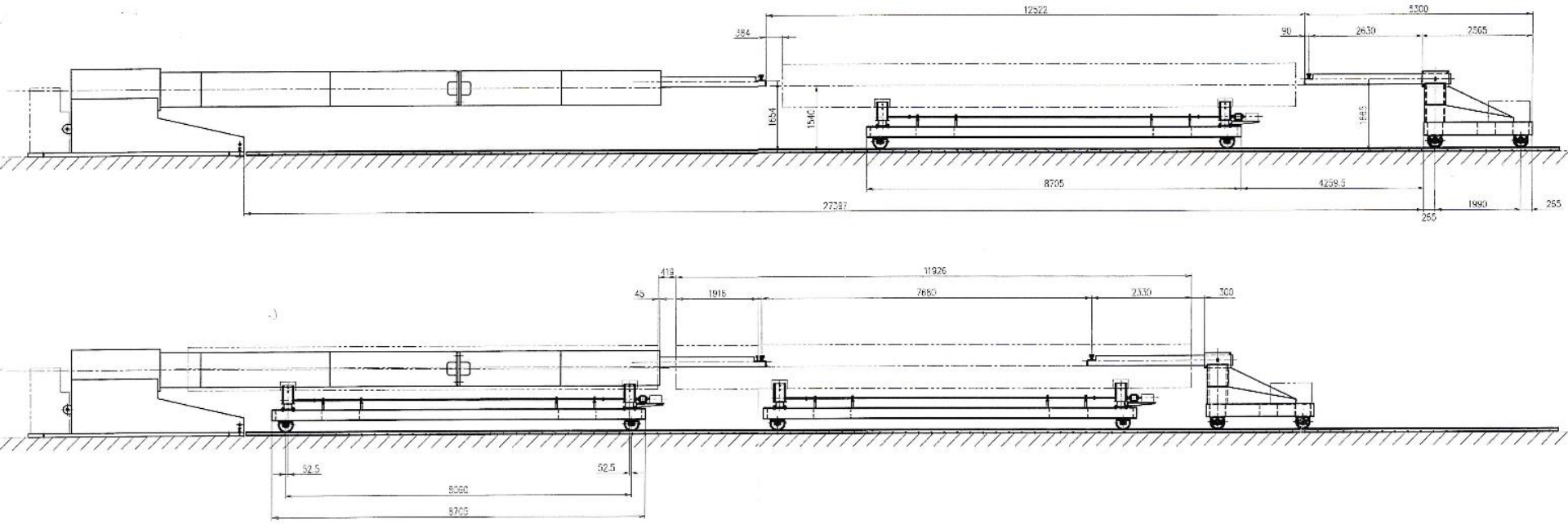


TESLA cavity with jacket



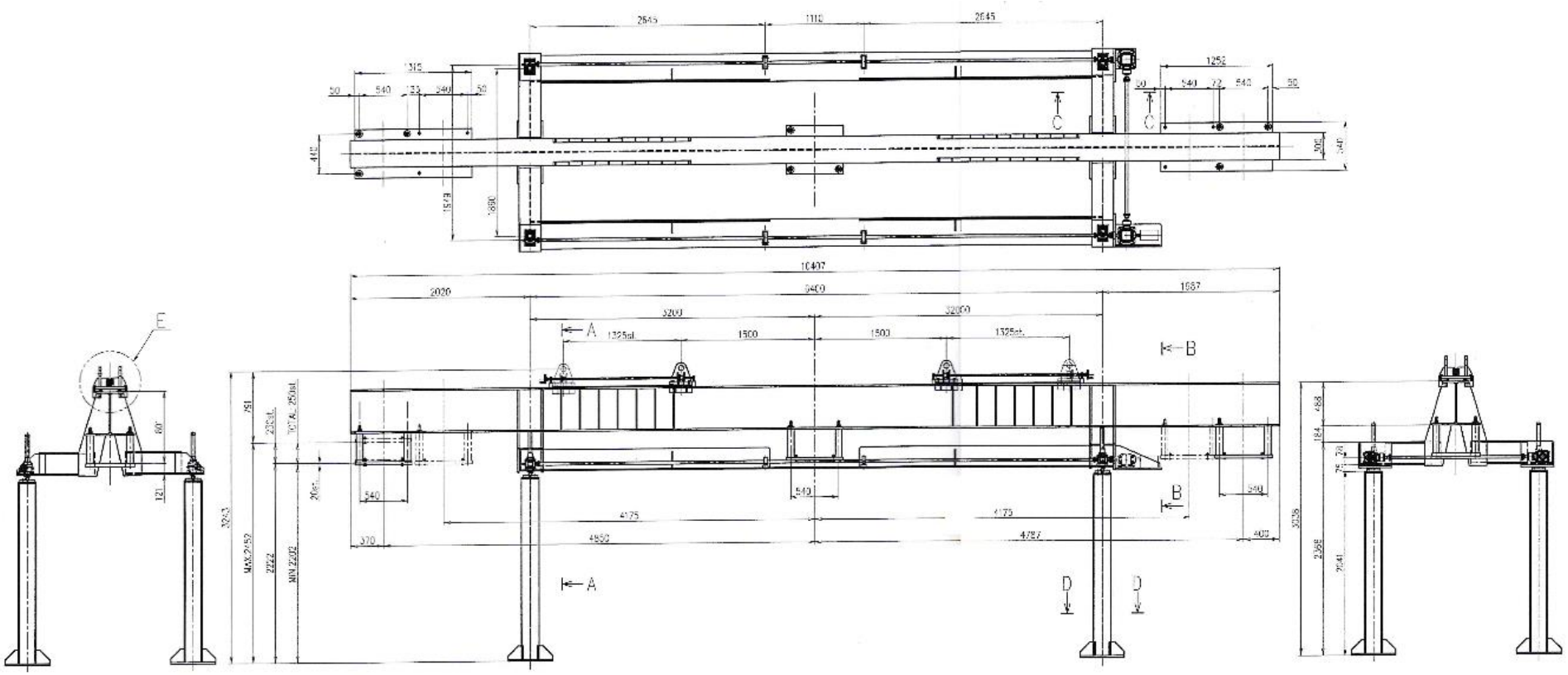
TESLA cavity w/o jacket

Cryomodule assembly tool



Cryomodule Assembly tools, following to DESY/Saclay XFEL facility

Cryomodule assembly tool



Cryomodule Assembly tools, following to DESY/Saclay XFEL facility

Cryomodule Assembly tools, following to DESY/Saclay XFEL facility

Experiment Hall

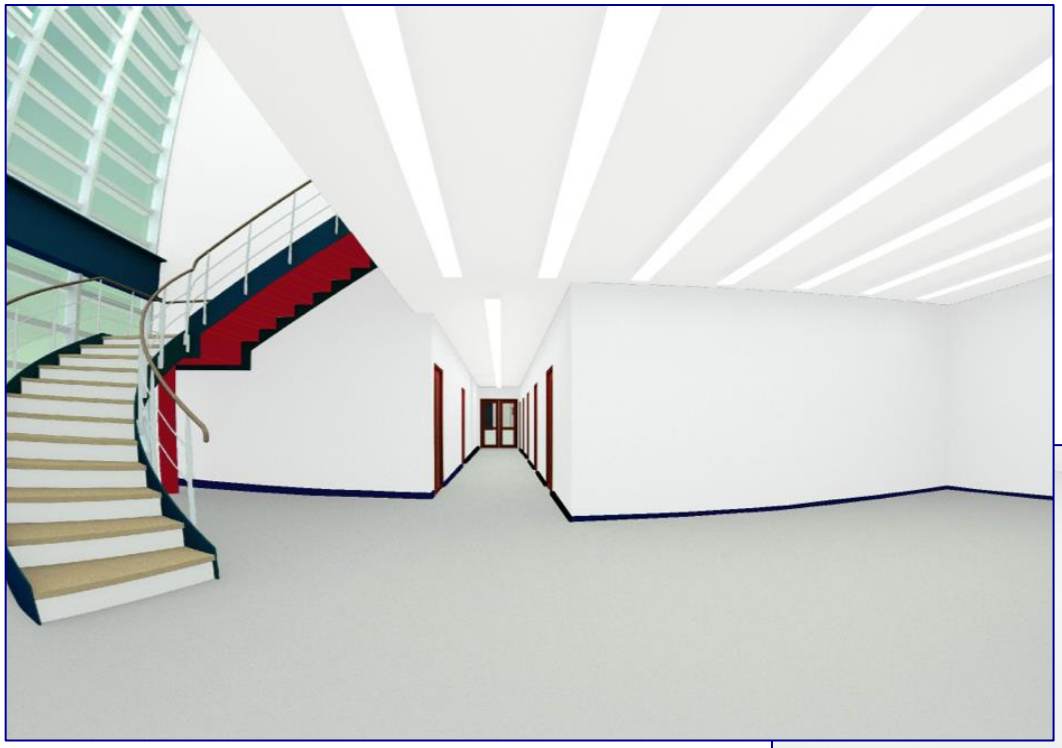
South half-side
7t crane

View from control room

North half-side
15t crane

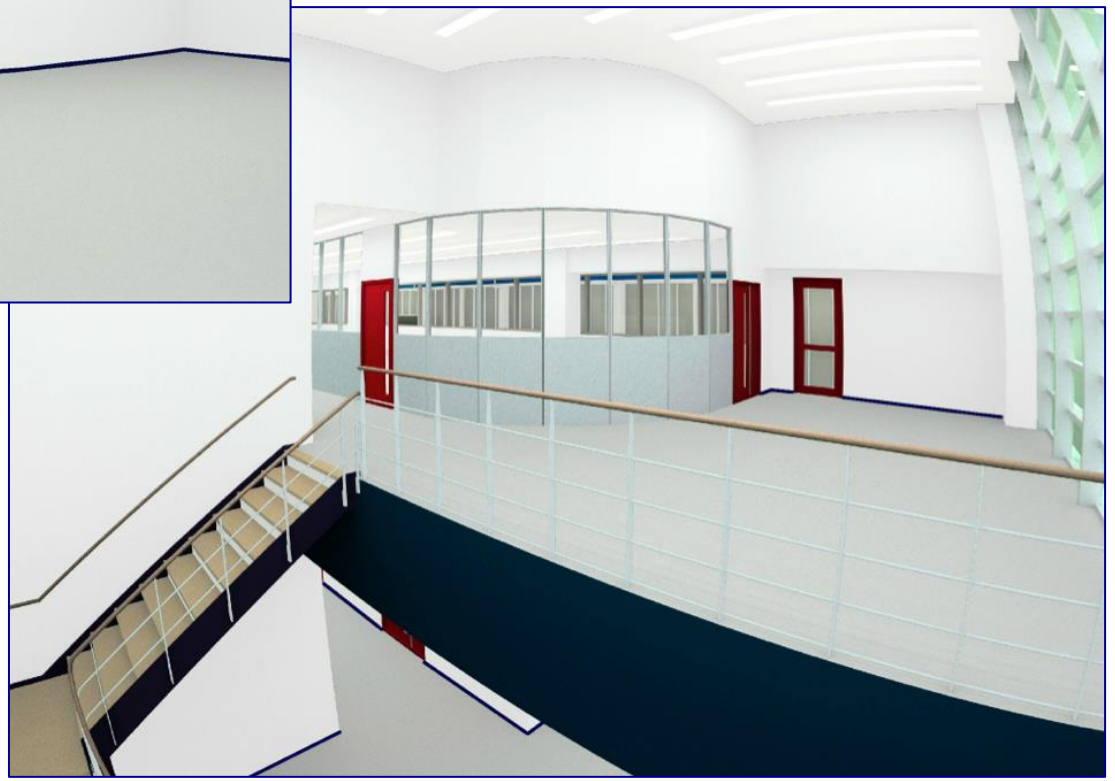
View from east to west

Resident space

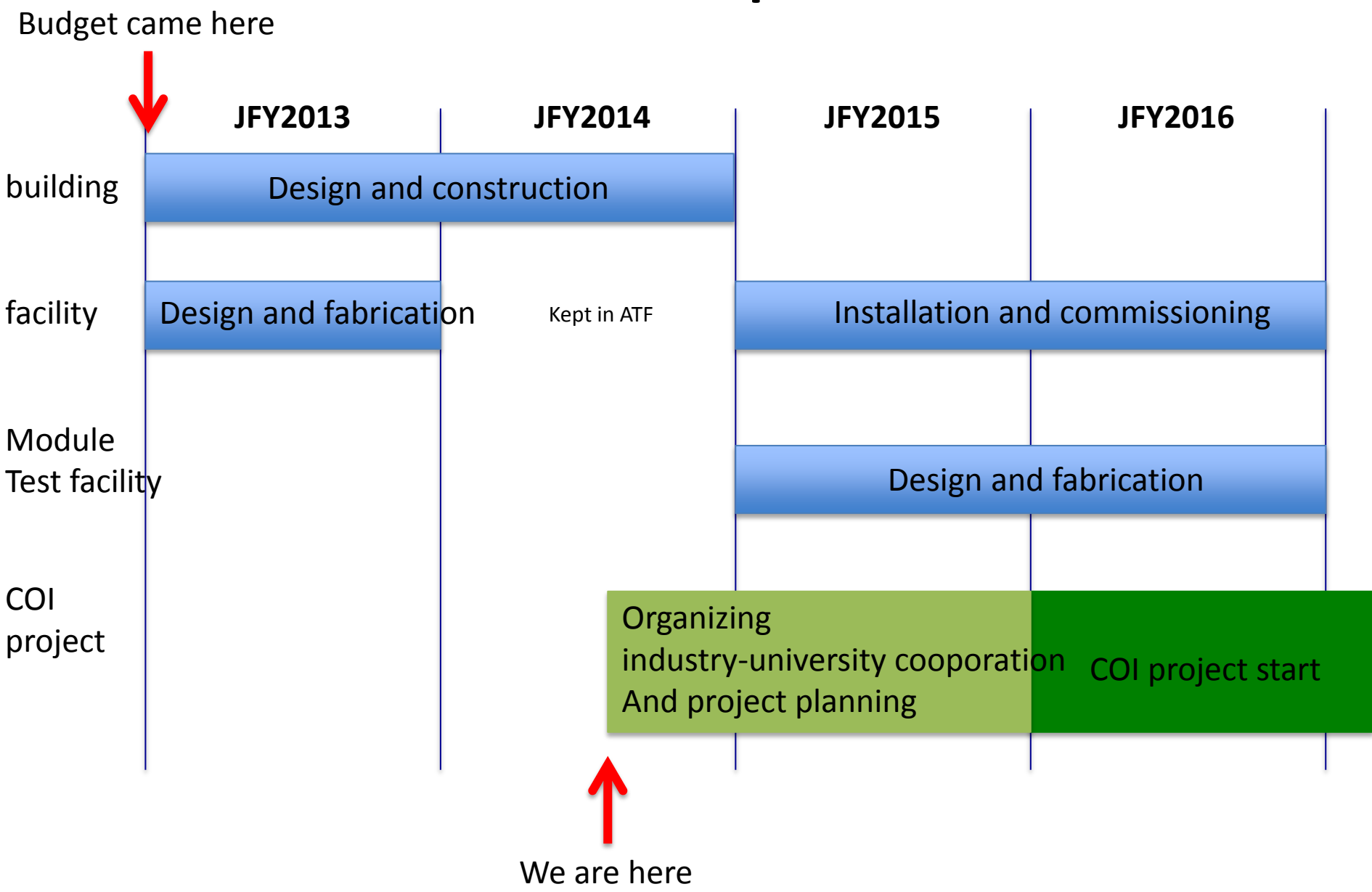


1st floor, exhbition space and stairs, view from entrance

2nd floor, open space and control room



Plan of Start-up schedule



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