

Zukünftige Planungen bei FS

Bauaktivitäten in den nächsten Jahren auf dem DESY Campus

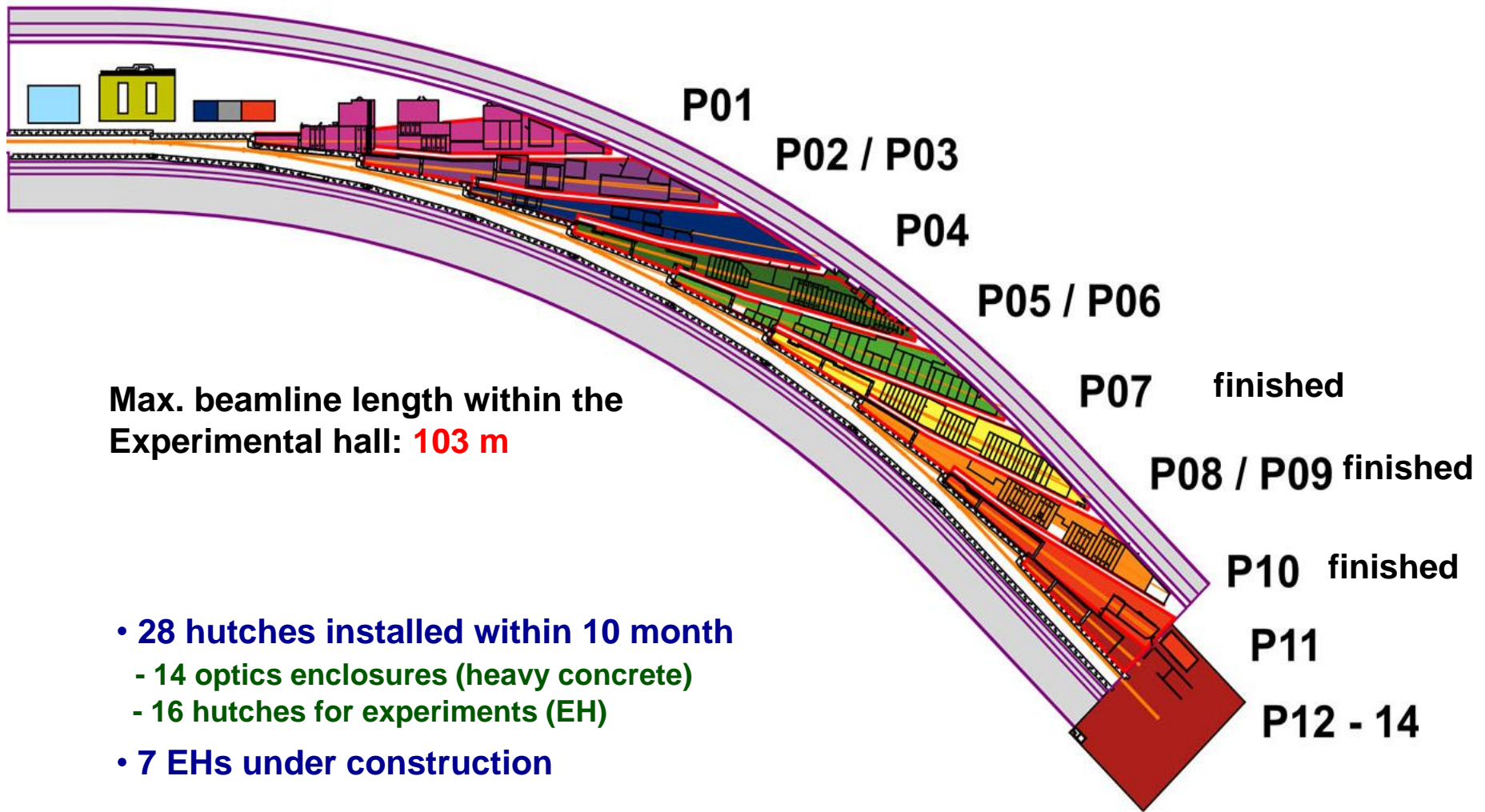


Edgar Weckert
WA, 14. Juli 2009

PETRA III: Experimentierhalle (gibt es schon !!)



PETRA III: Beamlines and radiation safety hutches



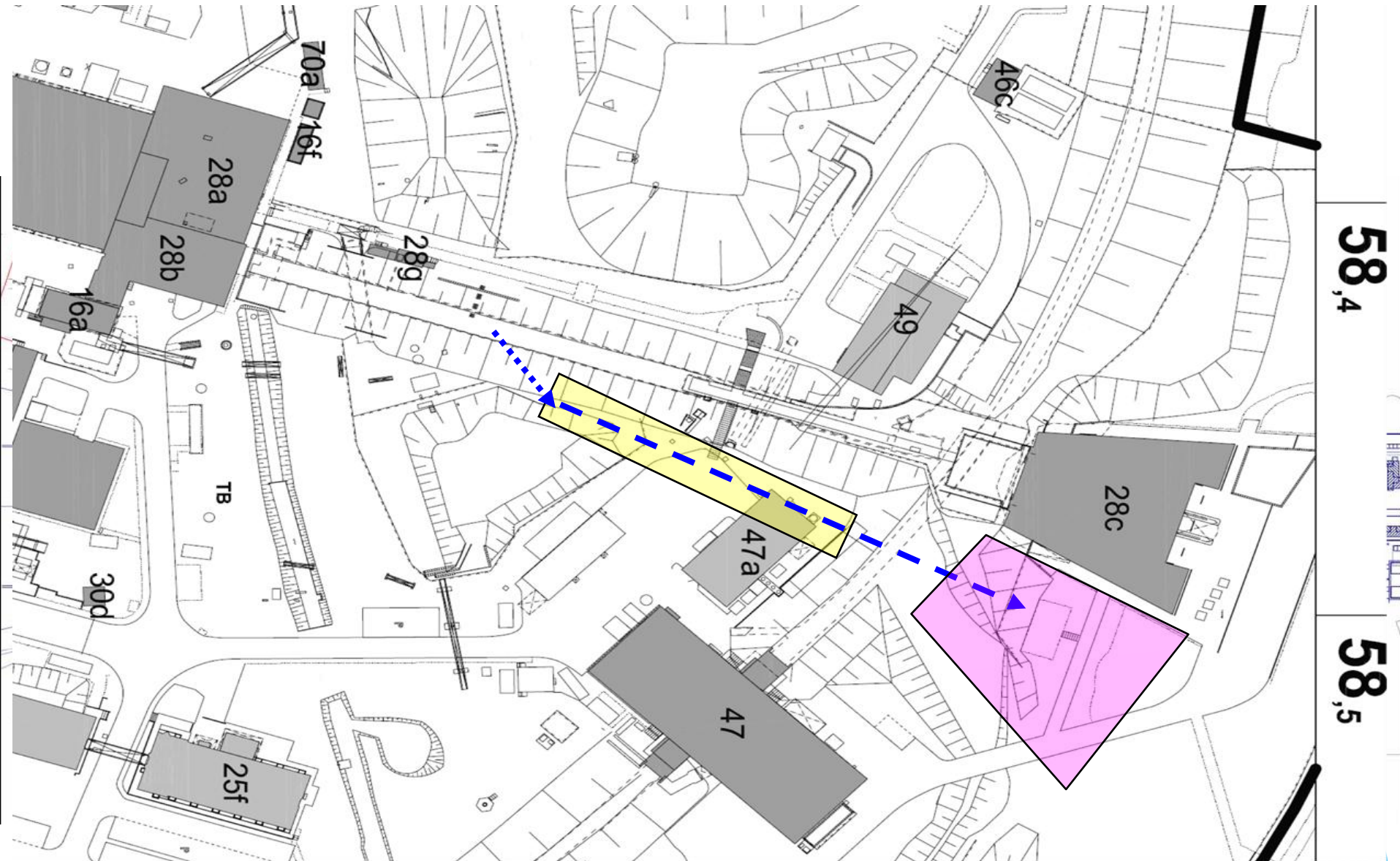
PETRA III: Experimental hall



FLASH: VUV free electron laser

electron energy:	1 GeV
wavelength:	6.5-47 nm
average pulse energy:	10-100 μJ
peak pulse energy:	170 μJ
pulse duration:	10-25 fs
average power (700 pulses / s):	20 mW
peak power:	3-10 GW
peak brilliance	1-10 $\cdot 10^{29}$
divergence (@13nm):	90 μrad
spectral width:	0.7-1%





European XFEL: Status

www.xfel.eu

European XFEL Betriebsgelände Schenefeld

Hier entsteht die
Röntgenlaseranlage European XFEL

Das European XFEL-Projekt wird finanziert von der Bundesrepublik Deutschland (Bundesministerium für Bildung und Forschung, Freie und Hansestadt Hamburg und Sächsische Botschaft) und 13 internationalen Partnerländern.

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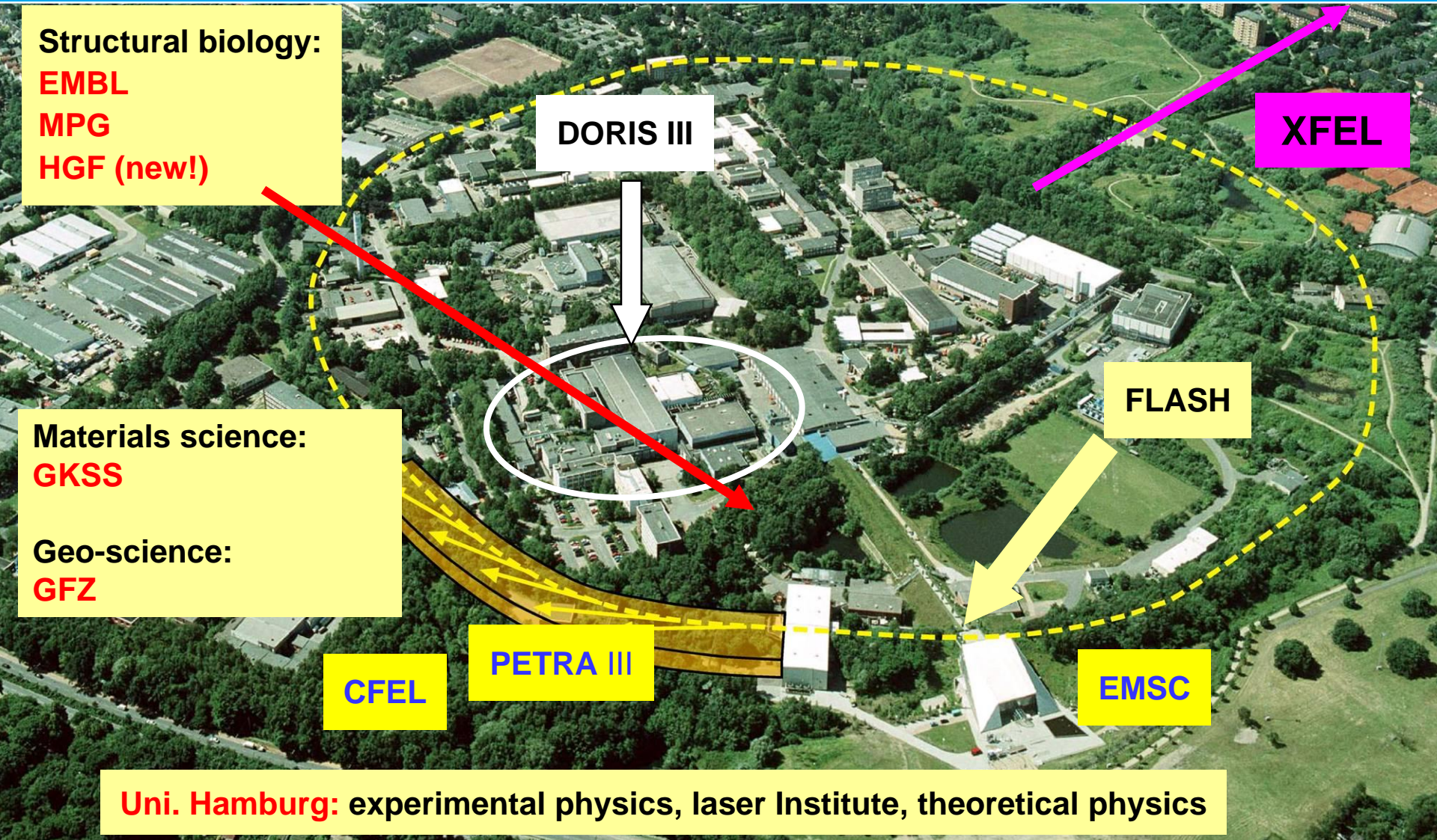
Entwurf und Planung:
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Bullendamm 17-2-20095 Hamburg
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DESY HELMHOLTZ GEMEINSCHAFT

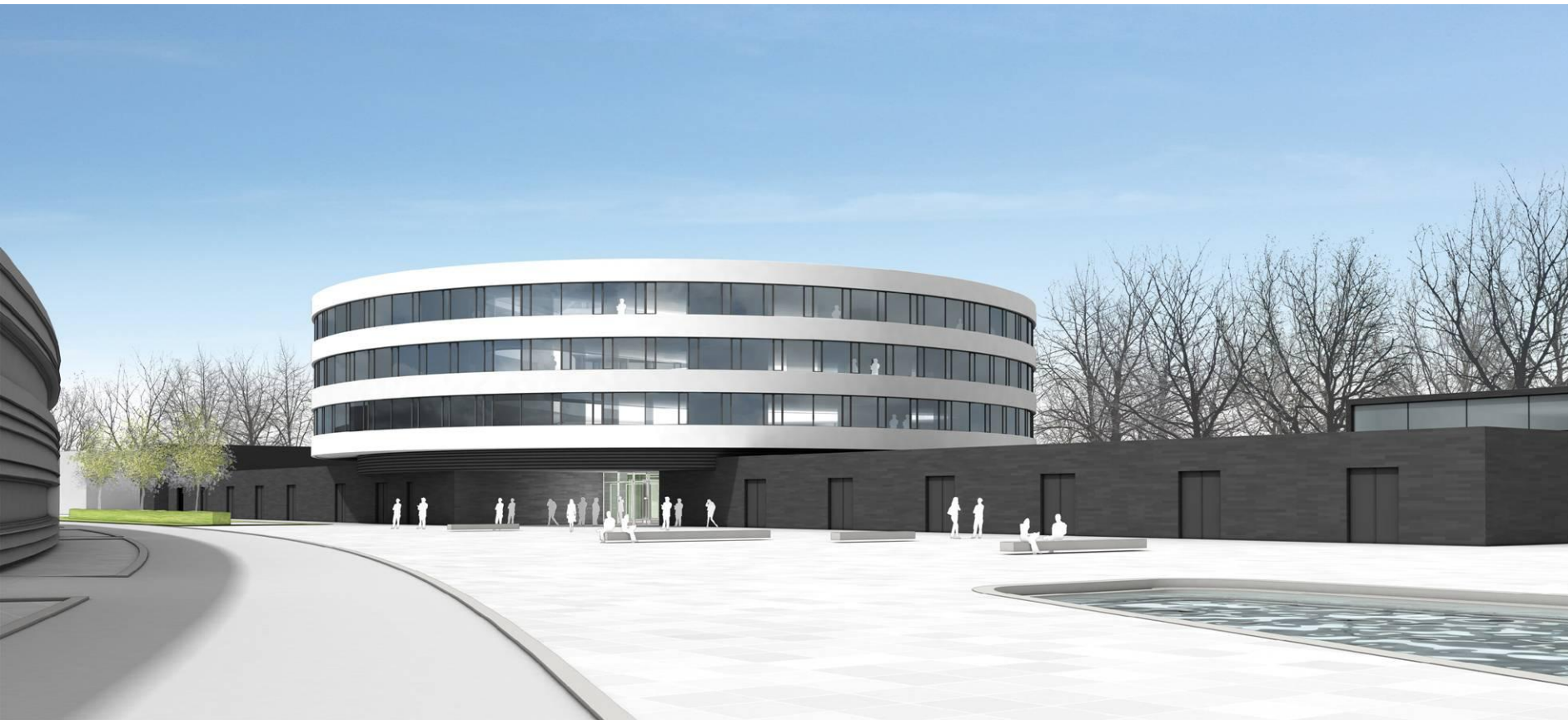
WTM AMBERG ENGINEERING



Facilities at DESY: Concept of Outstations



Research Platforms at DESY: CFEL



hammeskrause architekten

Building:

- positive funding decision last year by the Hamburg senate
- planning is in an advance stage
- site preparation has started
- laying of the foundation stone **mid 2009**, finished **May 2011**

Centre for Structural Systems Biology (CSSB)

Goal:

- Establishing a platform for structural biology at DESY
- Collaboration with all interested partners in this area in Hamburg and North Germany
- Direct and fast access to the experimental facilities at **PETRA III**

Partners:

- **Helmholtz:** HZI (Braunschweig), FZJ (Jülich)
- **Universities:** UniHH + TUHH (Hamburg), Lübeck, Kiel, Hannover, Göttingen
- **Leibniz:** Heinrich Pette Institute, Bernhard Nocht Institut, FZ Borstel
- **EMBL:** Outstation Hamburg

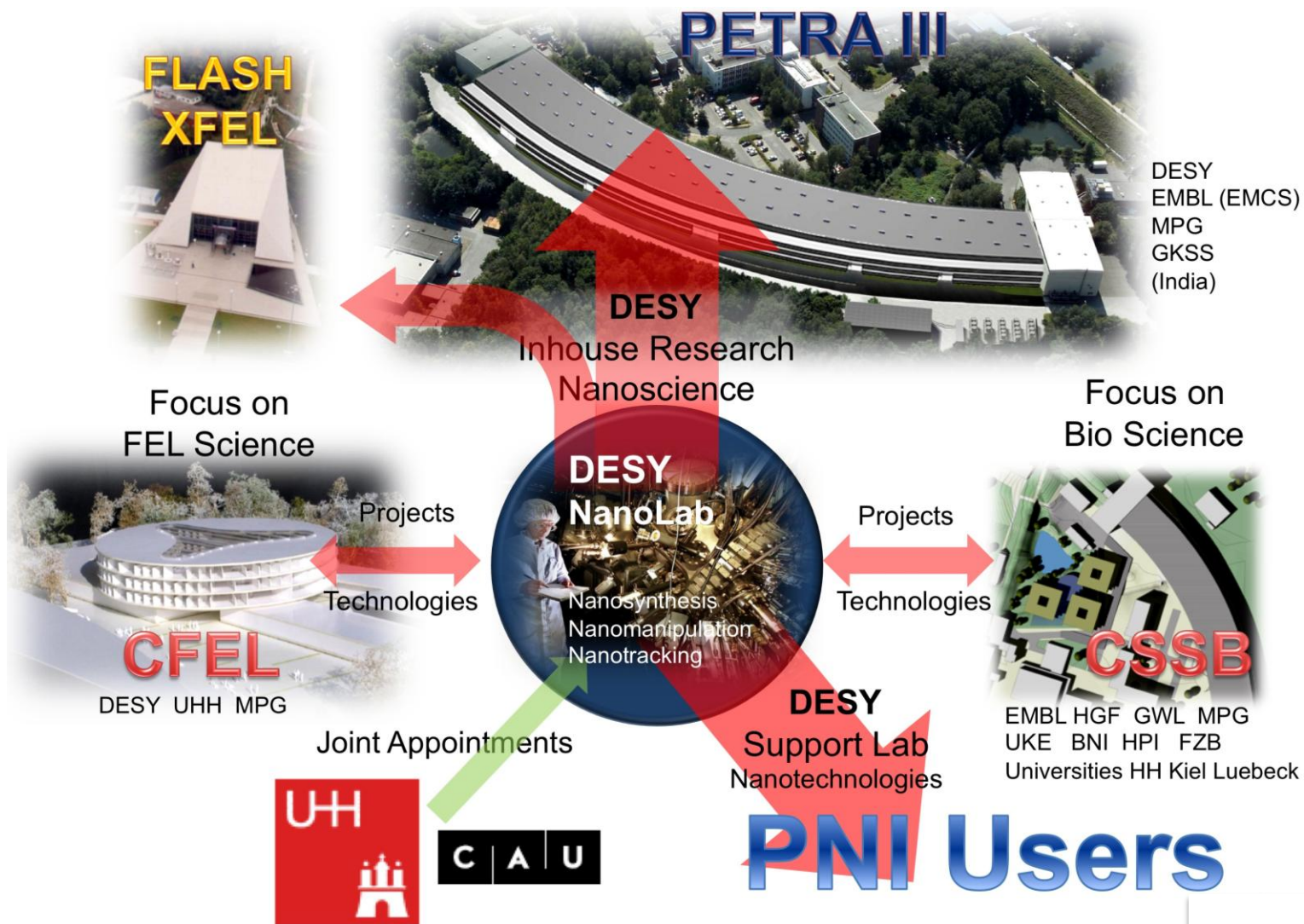
Discussion with Federal Government and Ministries in HH, SH and Lower Saxony is ongoing; strong statement that all parties would like to participate.



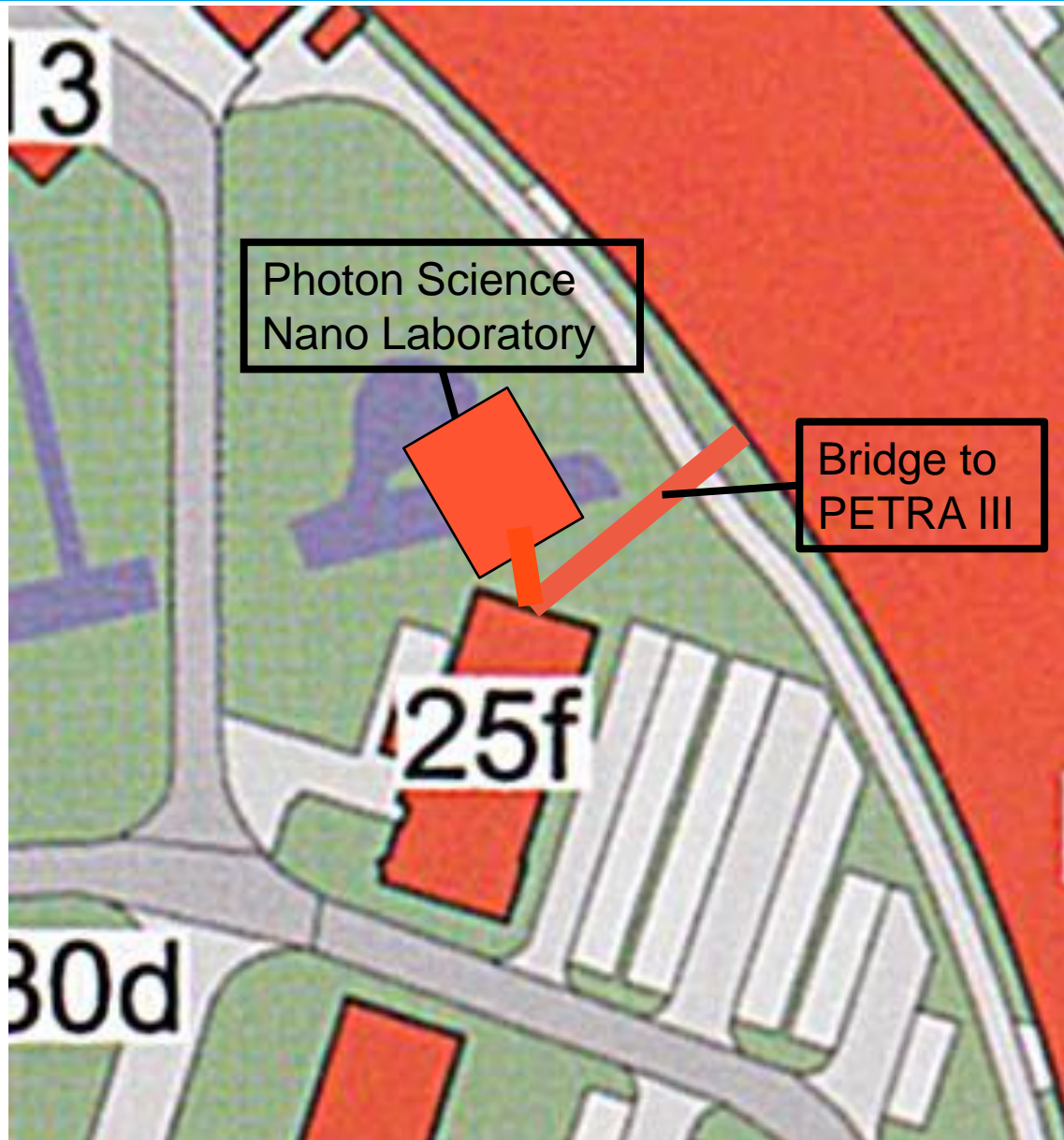
Center for Structural Systems Biology (CSSB)



Photon science nano laboratory



Photon science nano laboratory: First plans for realizations



Photon Science Nano Lab:

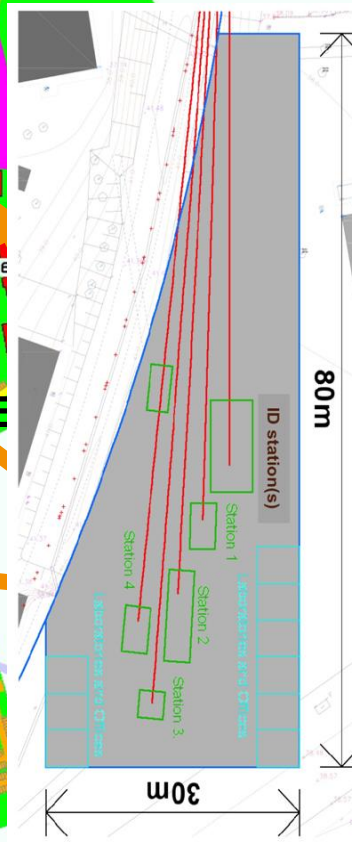
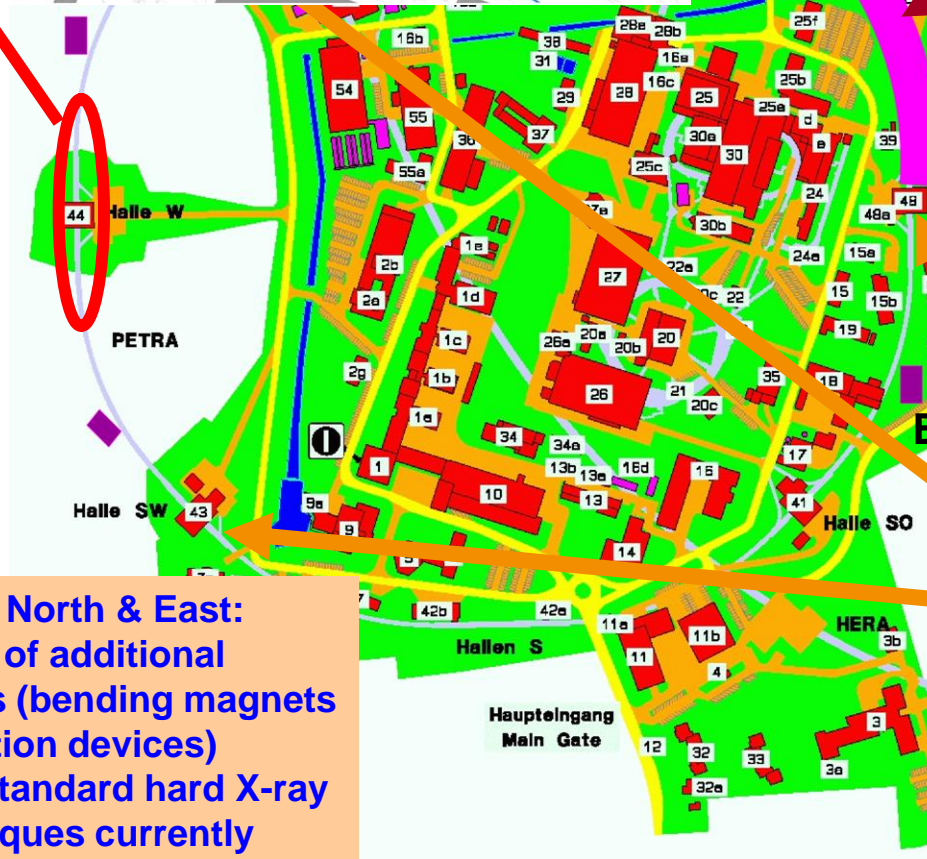
- 200 m² space per floor
- basement with very stable foundations
- 5 floors possible
- laboratories
- offices
- direct access to PETRA III

PETRA III: possibilities for future extensions

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wig



New experimental hall



sitions for long or
ertion devices
e need to change
of the storage
8m long straight

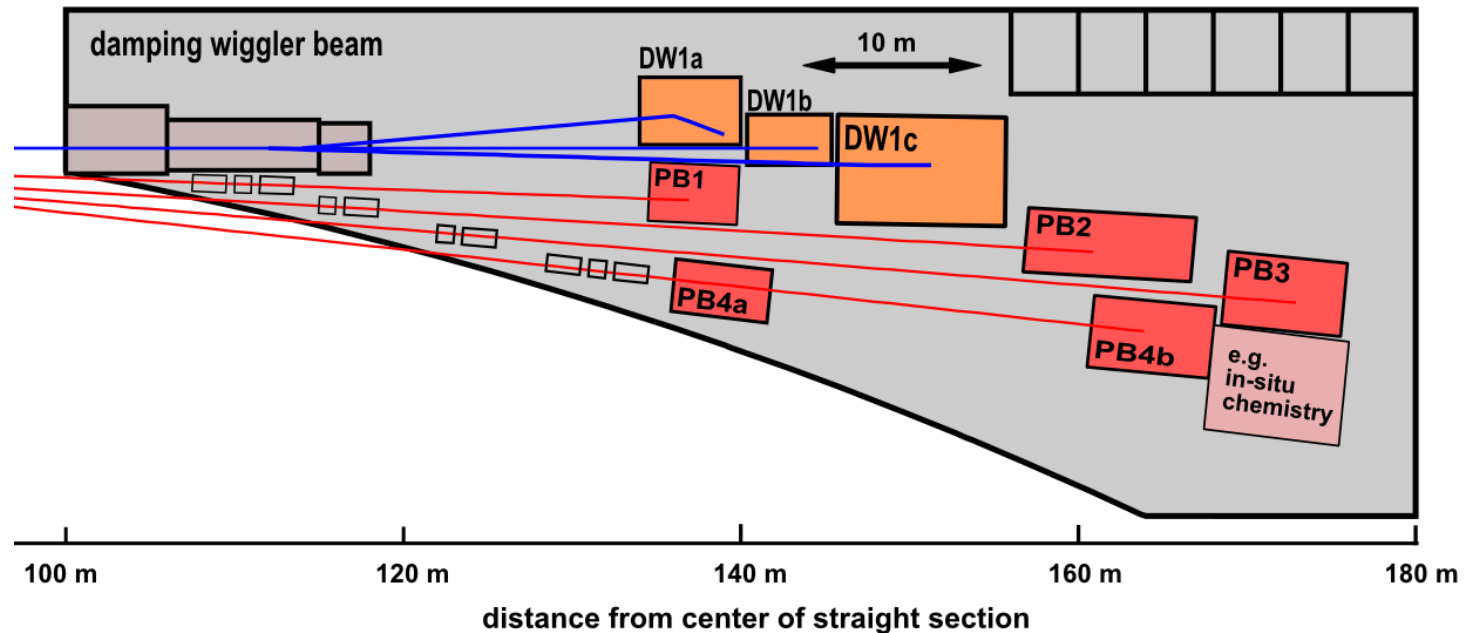
ible BL-length:
o 350 m

New halls North & East:
Provision of additional
beamlines (bending magnets
and insertion devices)
to serve standard hard X-ray
SR-techniques currently
provided at DORIS III



Proposed beamlines for PETRA III extension

PETRA III extension hall north



**Damping
Wiggler**

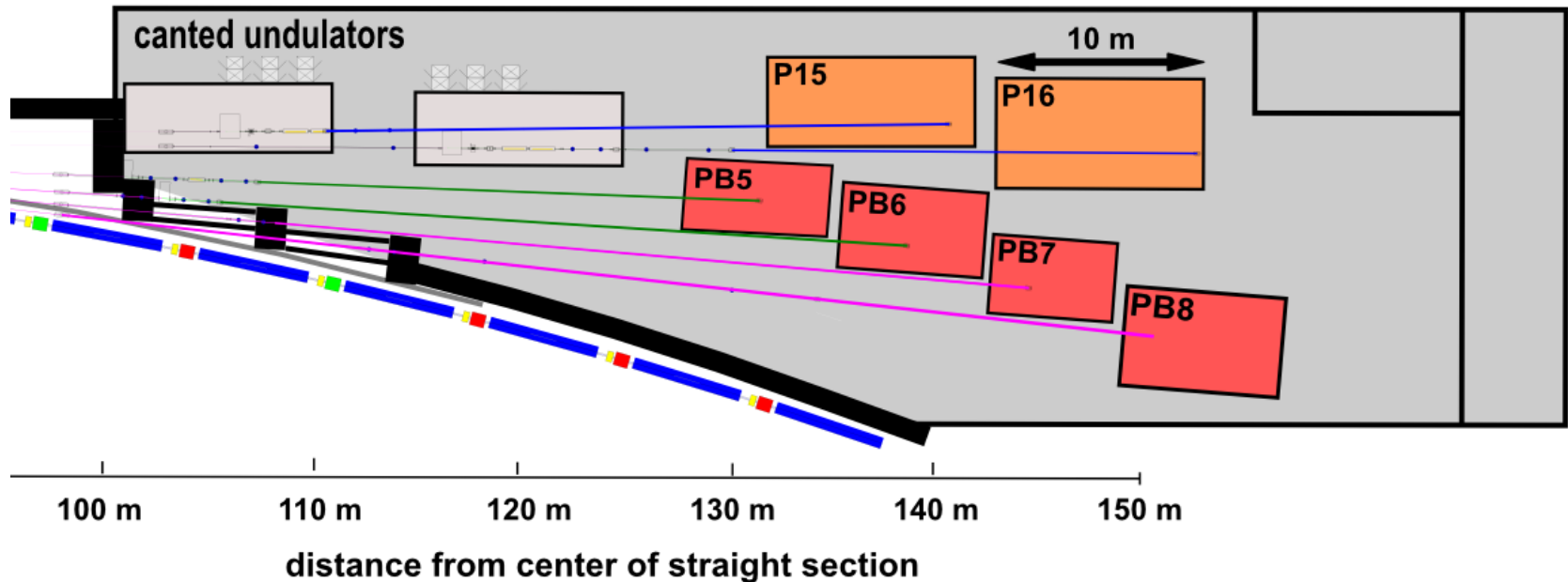
DW1a: hard X-ray applications (side station, e.g. 80 and 100 keV fixed)
DW1b: micro-tomography (GKSS) (straight, large beam > 30 keV)
DW1c: hard X-rays + engineering material science (GKSS) (side station)

**Bending
magnets**

PB1: chemical crystallography, (surface-) diffraction (6 – 44 keV)
PB2: (A)SAXS (up to 80 keV)
PB3: XAFS (focused, 4 - 23 keV)
PB4a: XAFS (unfocused, 6 – 44 keV)
PB4b: XAFS (focused, 2.4 – 8 keV)

Proposed beamlines for PETRA III extension

PETRA III extension hall east



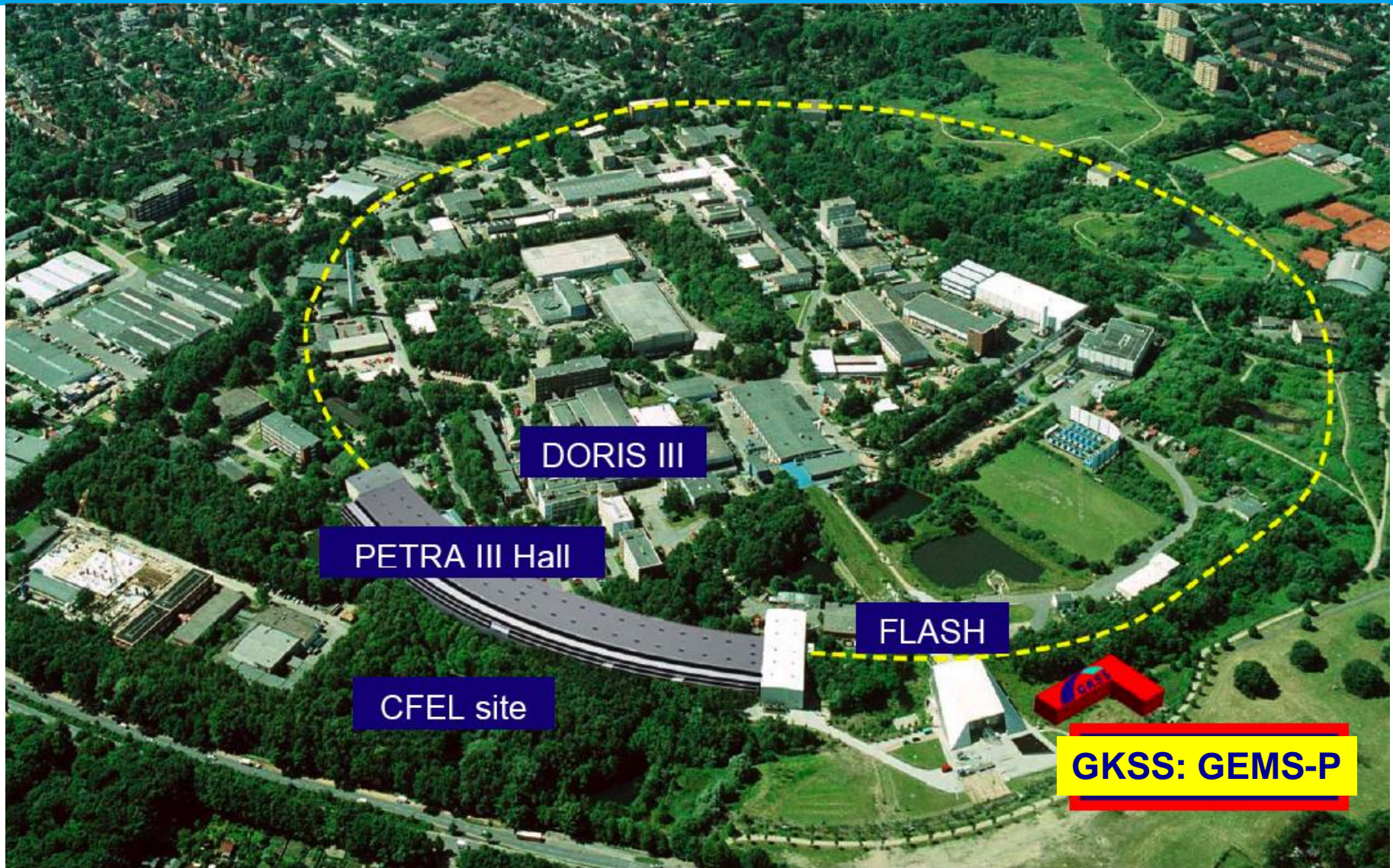
Undulators

P15: micro- and nano-diffraction
P16: micro- and nano-spectroscopy

Bending magnets

PB5: protein crystallography (screening)
PB6: micro fluorescence (2.4 - 80 keV)
PB7: test and education beamline
PB8: available for new developments

German Engineering Materials Science Centre for Research with Photons by GKSS



DESY site in the near future

