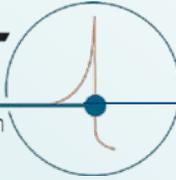


**HIT**

Heidelberg Ionenstrahl-Therapie Centrum



**HIT**

# The Heidelberg Ion Beam Therapy Centre

*How we do business*

WAO 2012, SLAC

*Rainer Cee,*

HIT Betriebsgesellschaft mbH  
(HIT Operating Company Ltd.)

HIT Betriebsgesellschaft mbH  
am Universitätsklinikum Heidelberg

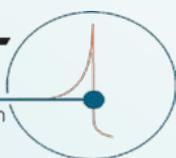
[www.hit-centrum.de](http://www.hit-centrum.de)

# Location



**HIT**

Heidelberg Ionenstrahl-Therapie Centrum

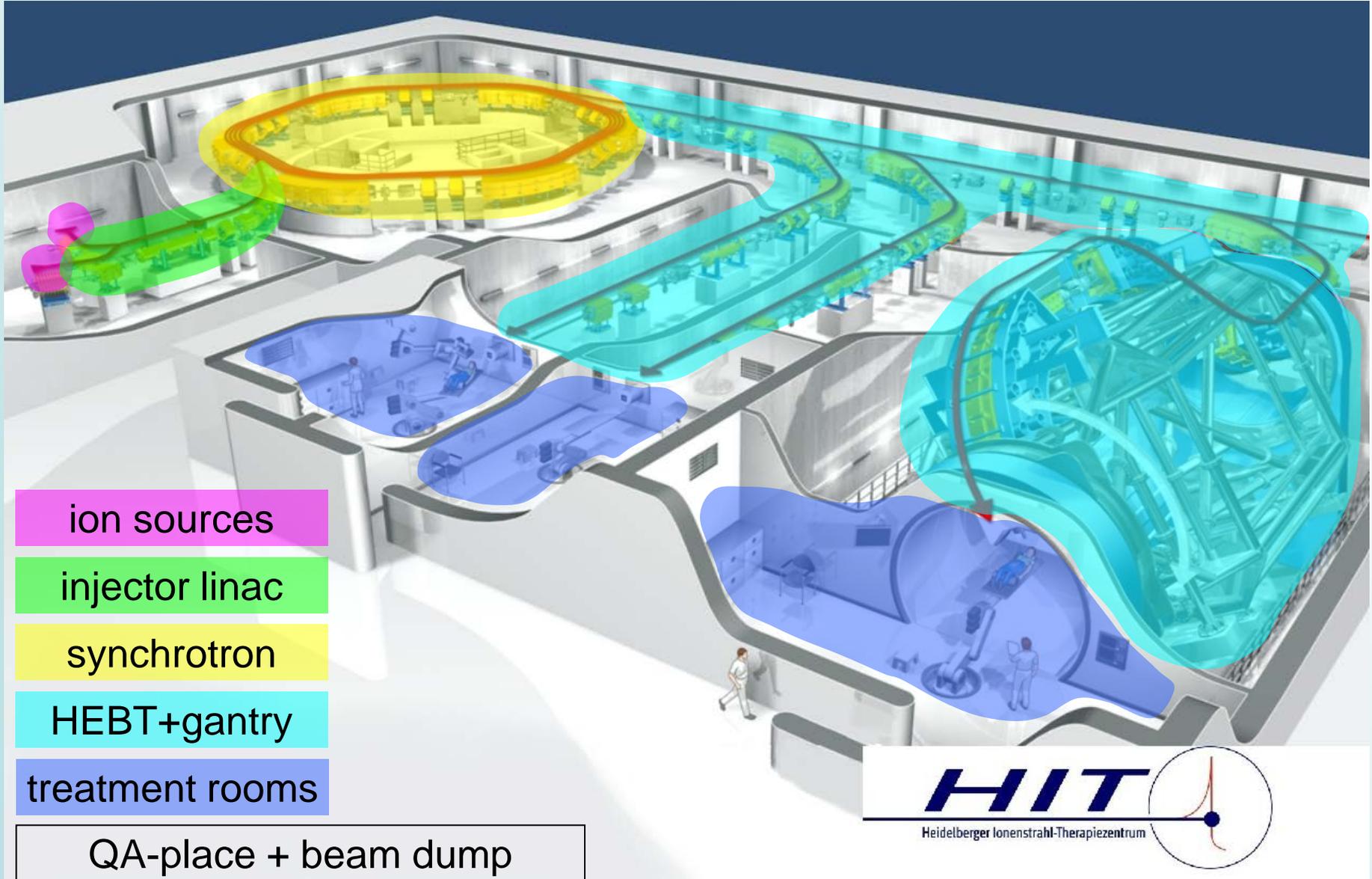


# Site and Building



photo by R. Cee

# Accelerator



ion sources

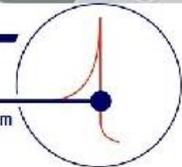
injector linac

synchrotron

HEBT+gantry

treatment rooms

QA-place + beam dump



# Gantry

Worldwide first heavy ion gantry!

Gantry Structure



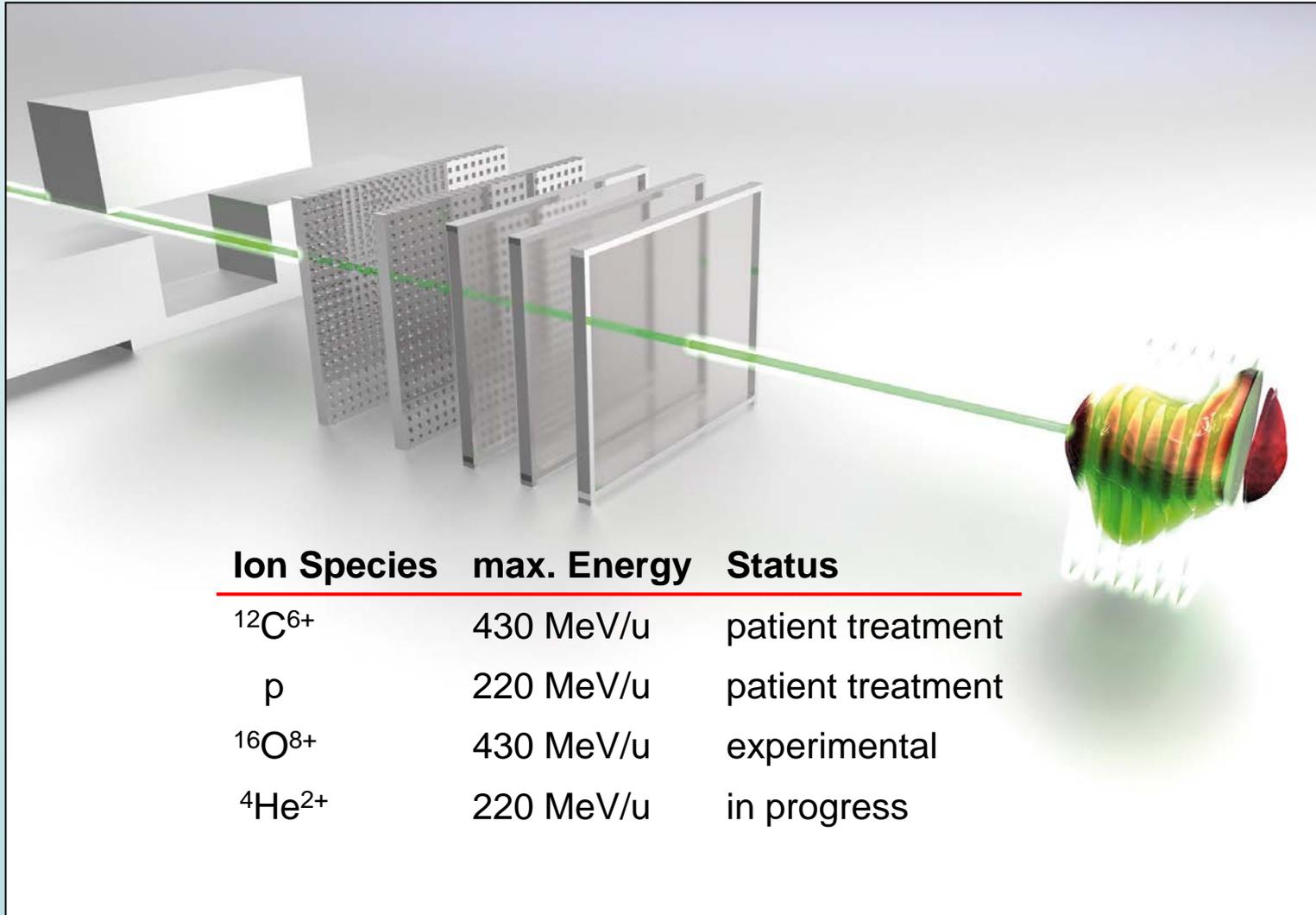
- length: 25 m
- diameter: 13 m
- weight: 673 tons
  - thereof 600 t moving parts
- first-time integration of the rasterscan technique

Treatment Room



- optimal dose application by arbitrary beam direction
- positioning tolerance at the isocentre:  $\pm 0.5$  mm
- first patient treatment scheduled for October 2012

# Beam Products



<b>Ion Species</b>	<b>max. Energy</b>	<b>Status</b>
$^{12}\text{C}^{6+}$	430 MeV/u	patient treatment
p	220 MeV/u	patient treatment
$^{16}\text{O}^{8+}$	430 MeV/u	experimental
$^4\text{He}^{2+}$	220 MeV/u	in progress

# HIT Beam Time Schedule 2012 (July – December)

Legend:

patient treatment	maintenance	beam other than patients	shutdown
-------------------	-------------	--------------------------	----------

Juli		August		September		Oktober		November		Dezember	
So	1	Mi	1	Sa	1	Mo	1	Do	1	Sa	1
Mo	2	Do	2	So	2	Di	2	Fr	2	So	2
Di	3	Fr	3	Mo	3	Mi	3	Sa	3	Mo	3
Mi	4	Sa	4	Di	4	Do	4	So	4	Di	4
Do	5	So	5	Mi	5	Fr	5	Mo	5	Mi	5
Fr	6	Mo	6	Do	6	Sa	6	Di	6	Do	6
Sa	7	Di	7	Fr	7	So	7	Mi	7	Fr	7
So	8	Mi	8	Sa	8	Mo	8	Do	8	Sa	8
Mo	9	Do	9	So	9	Di	9	Fr	9	So	9
Di	10	Fr	10	Mo	10	Mi	10	Sa	10	Mo	10
Mi	11	Sa	11	Di	11	Do	11	So	11	Di	11
Do	12	So	12	Mi	12	Fr	12	Mo	12	Mi	12
Fr	13	Mo	13	Do	13	Sa	13	Di	13	Do	13
Sa	14	Di	14	Fr	14	So	14	Mi	14	Fr	14
So	15	Mi	15	Sa	15	Mo	15	Do	15	Sa	15
Mo	16	Do	16	So	16	Di	16	Fr	16	So	16
Di	17	Fr	17	Mo	17	Mi	17	Sa	17	Mo	17
Mi	18	Sa	18	Di	18	Do	18	So	18	Di	18
Do	19	So	19	Mi	19	Fr	19	Mo	19	Mi	19
Fr	20	Mo	20	Do	20	Sa	20	Di	20	Do	20
Sa	21	Di	21	Fr	21	So	21	Mi	21	Fr	21
So	22	Mi	22	Sa	22	Mo	22	Do	22	Sa	22
Mo	23	Do	23	So	23	Di	23	Fr	23	So	23
Di	24	Fr	24	Mo	24	Mi	24	Sa	24	Mo	24
Mi	25	Sa	25	Di	25	Do	25	So	25	Di	25
Do	26	So	26	Mi	26	Fr	26	Mo	26	Mi	26
Fr	27	Mo	27	Do	27	Sa	27	Di	27	Do	27
Sa	28	Di	28	Fr	28	So	28	Mi	28	Fr	28
So	29	Mi	29	Sa	29	Mo	29	Do	29	Sa	29
Mo	30	Do	30	So	30	Di	30	Fr	30	So	30
Di	31	Fr	31			Mi	31			Mo	31

# Typical Day at HIT

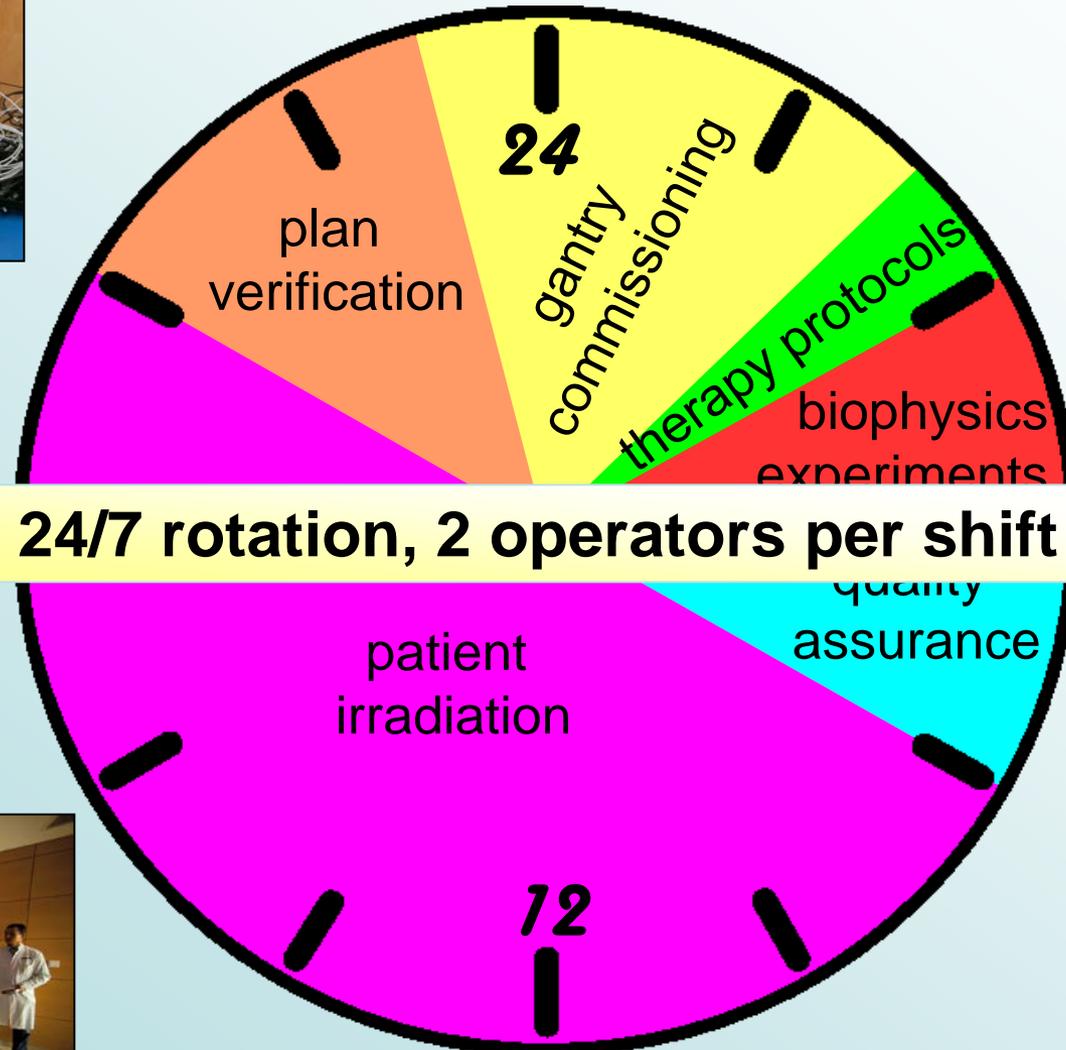
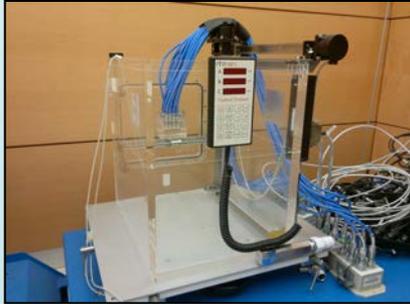
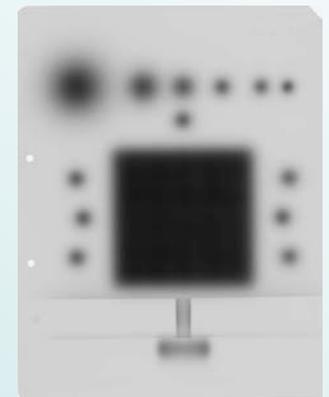


photo by R. Cee



film by P. Heeg

# Accelerator Staff

**Head Accelerator Operations**  
(Physicist)

**3 Expert-Teams**

<b>Expert-Team IS/BD/VC</b>	
<i>Systems:</i> Ion Sources, Beam Diagnostics, Vacuum, Magnets, Gantry	<i>Infrastructure:</i> Operating Gases, Detector Gases, Compressed Air
<i>Personnel:</i> 1 Physicist, 3 Engineers, 1 Technicians	

<b>Expert-Team RF/PS/CV</b>	
<i>Systems:</i> Radiofrequency, Power Supplies, Cavities	<i>Infrastructure:</i> Cooling System, Electricity Supply
<i>Personnel:</i> 2 Engineers, 3 Technicians	

<b>Expert-Team CS/IL/RP</b>	
<i>Systems:</i> Accelerator Control System, Interlock System, Personnel Safety System	<i>Infrastructure:</i> Timing-System, Computer-Network
<i>Personnel:</i> 3 Physicists,  3 Technicians	

**In total 19: 7 Physicists, 5 Engineers and 7 Technicians**

# HIT Staff



photo by R. Vay-Meyer

# Visit us on our homepage!

[www.hit-centrum.de](http://www.hit-centrum.de)

