

**Region Hovedstaden
Nyt Hospital Nordsjælland**

Revised Project Proposal Presentation, 02.06.2017



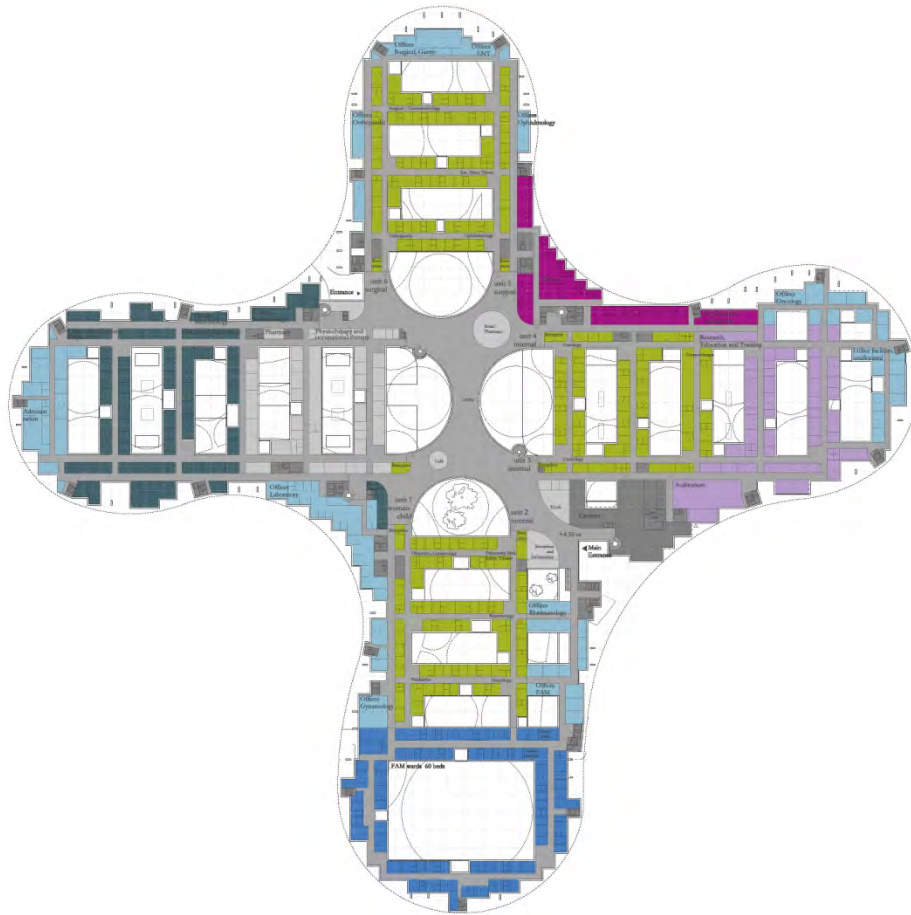




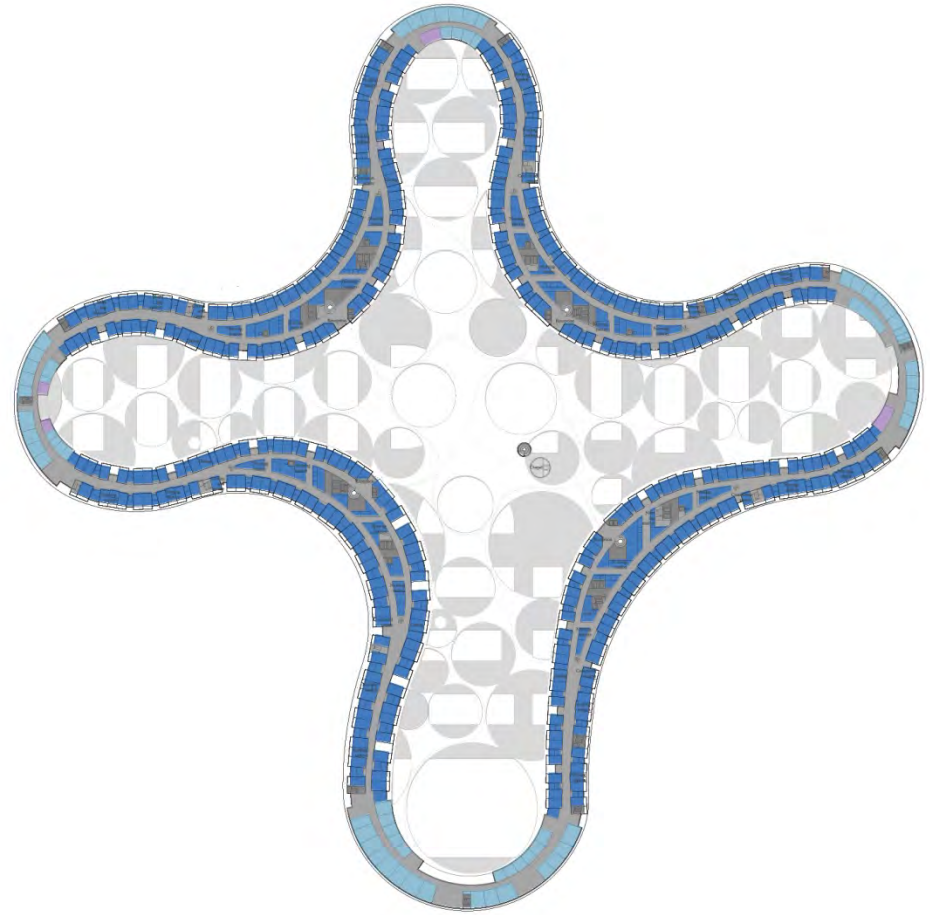


PLANNING EVOLUTION

Competition Plan

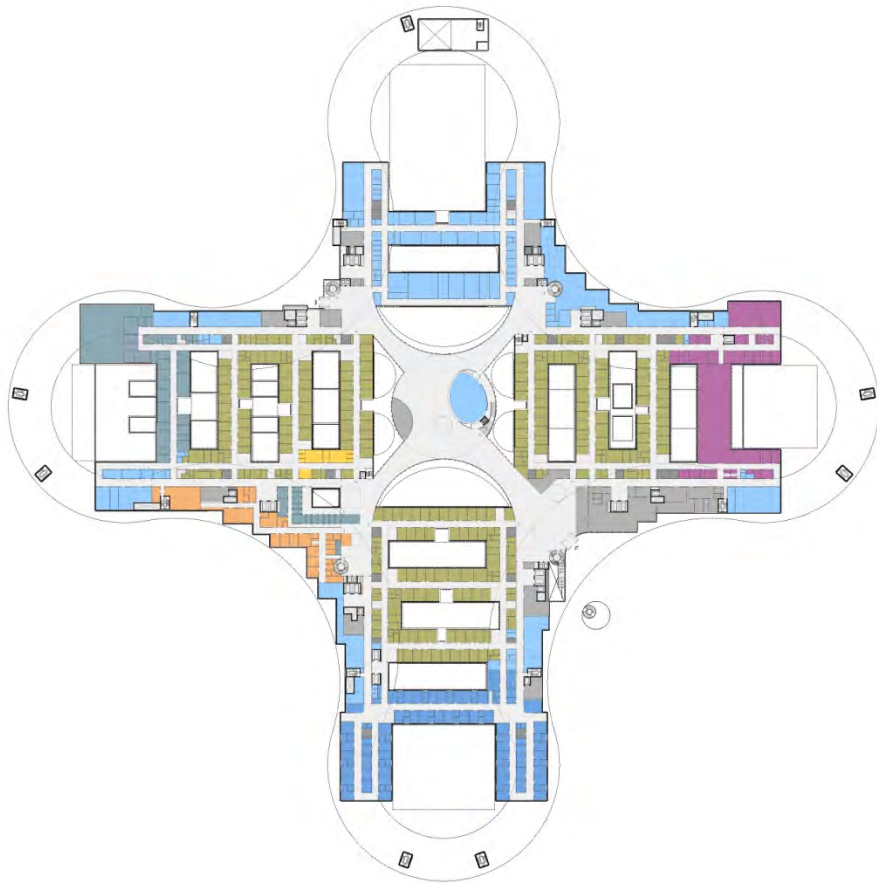


LEVEL 1

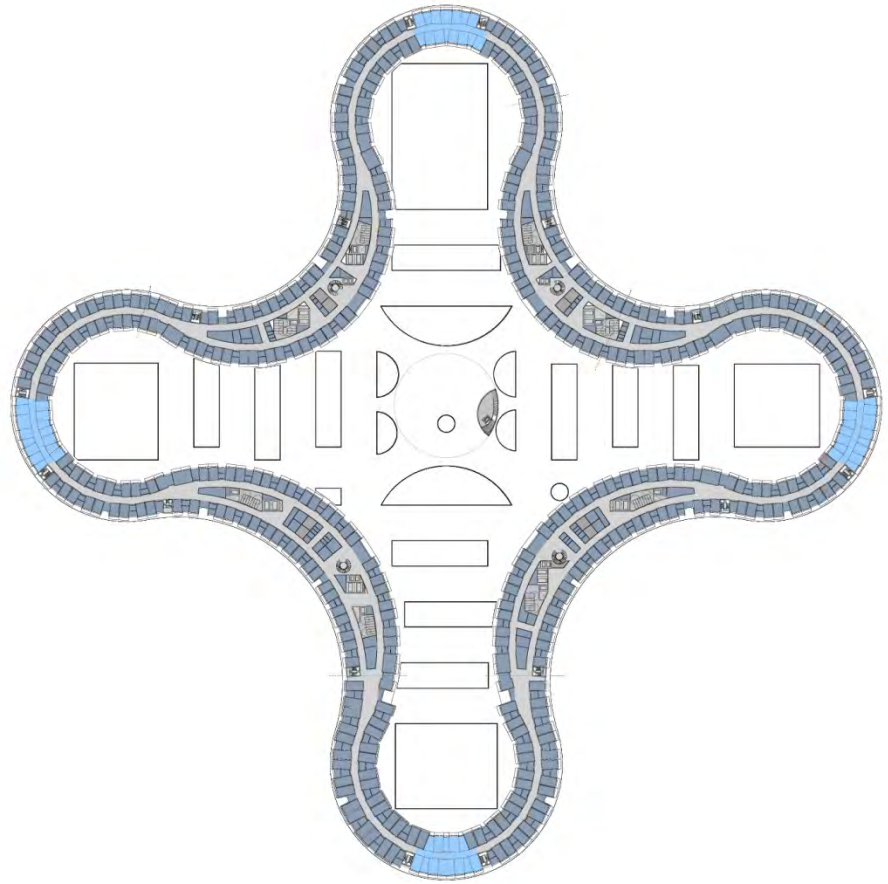


LEVEL 2/3

100% Outline Proposal Plan

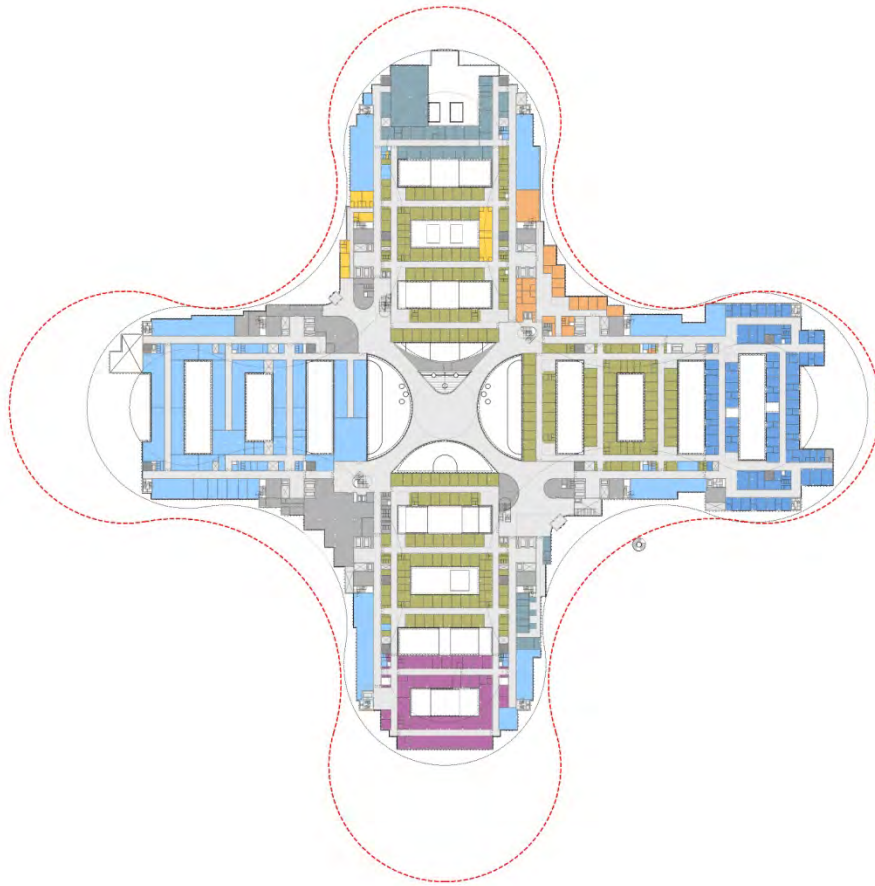


LEVEL 1

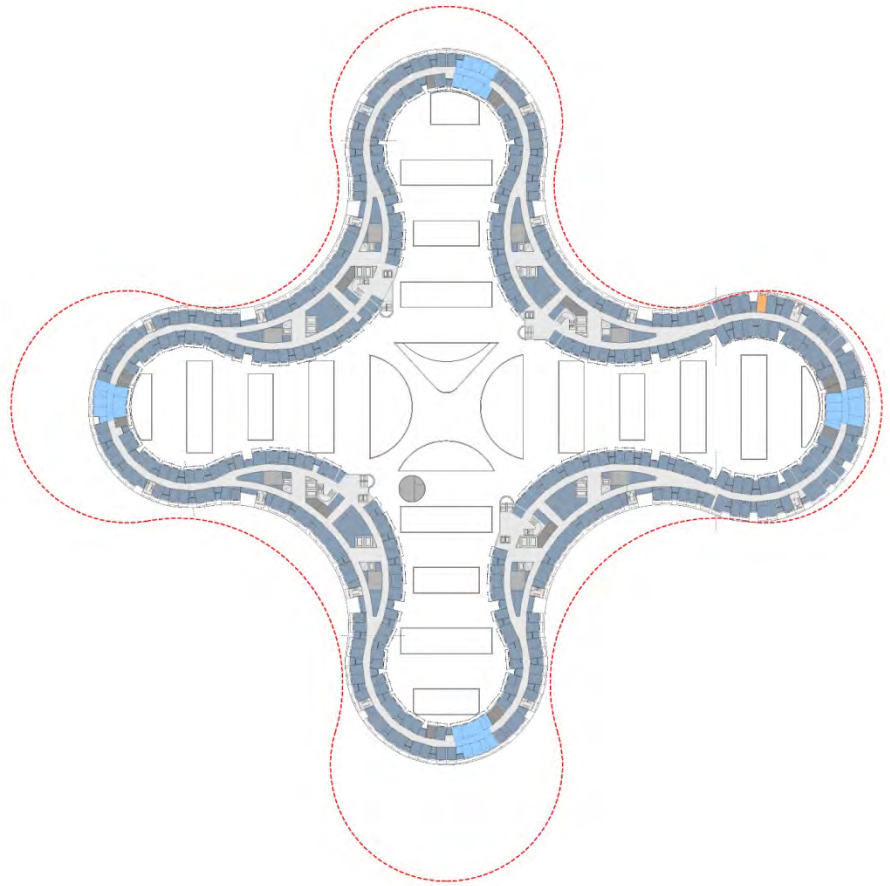


LEVEL 2/3

Consolidation Phase Plan

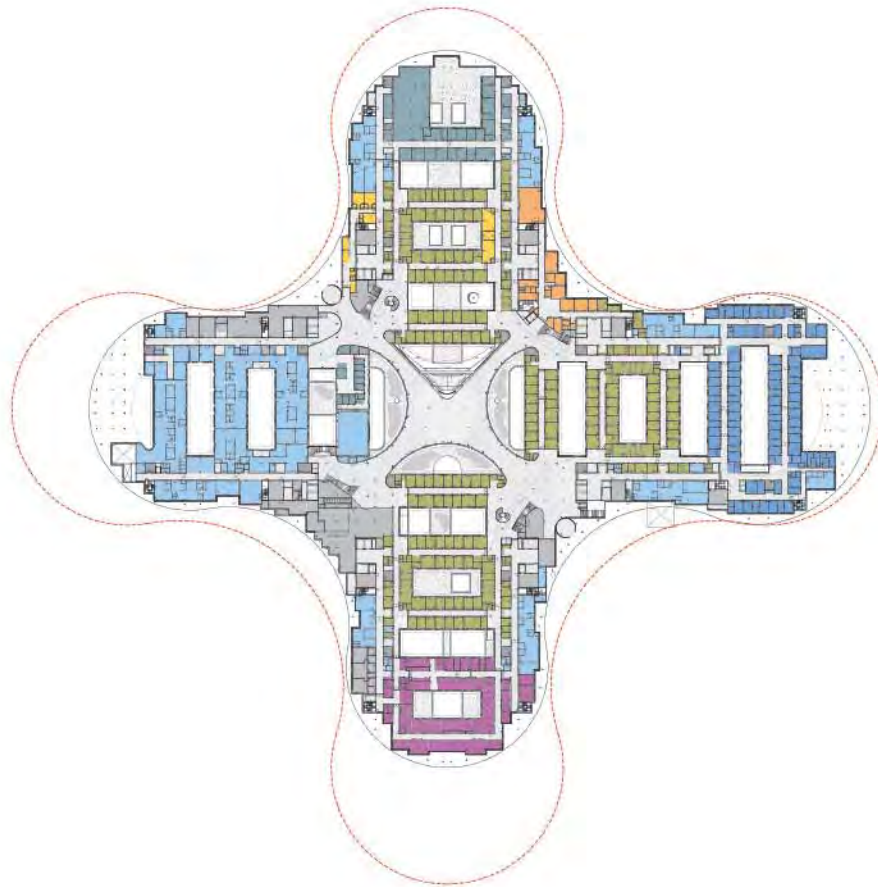


LEVEL 1

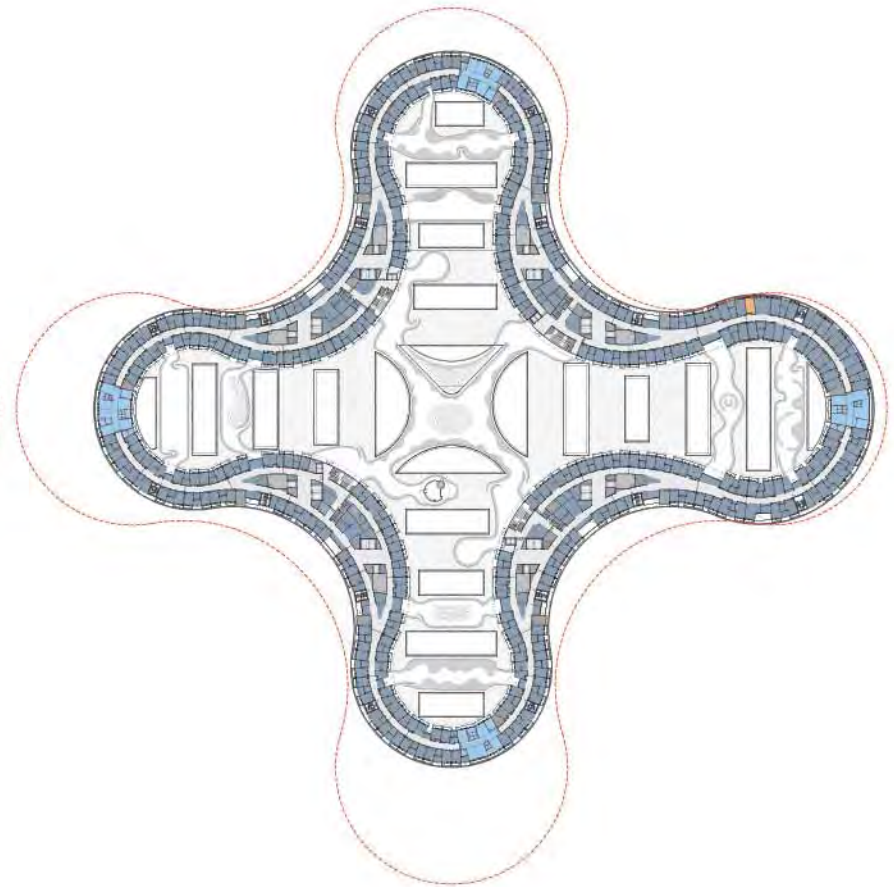


LEVEL 2/3

Revised Project Proposal Phase Plan

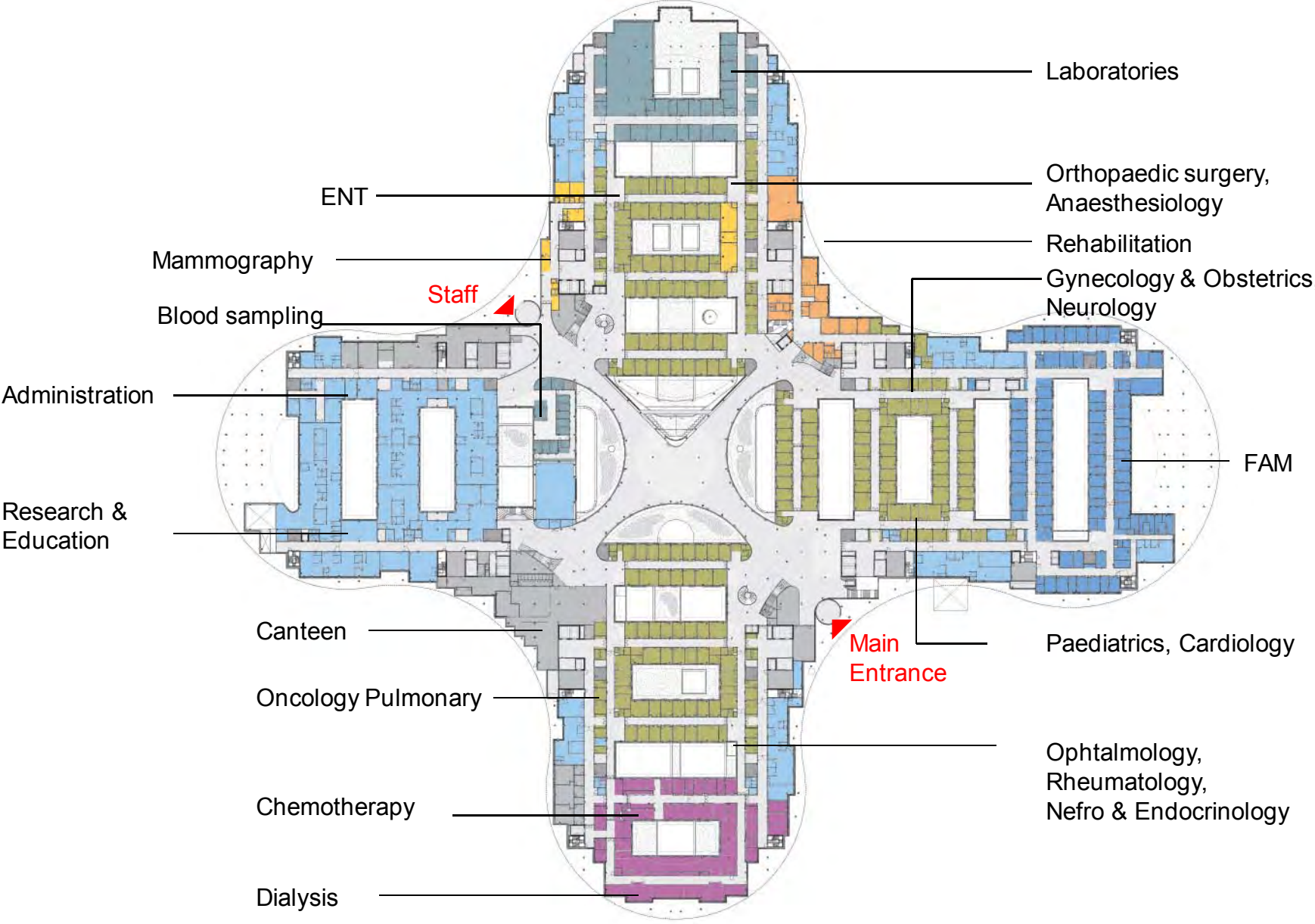


LEVEL 1



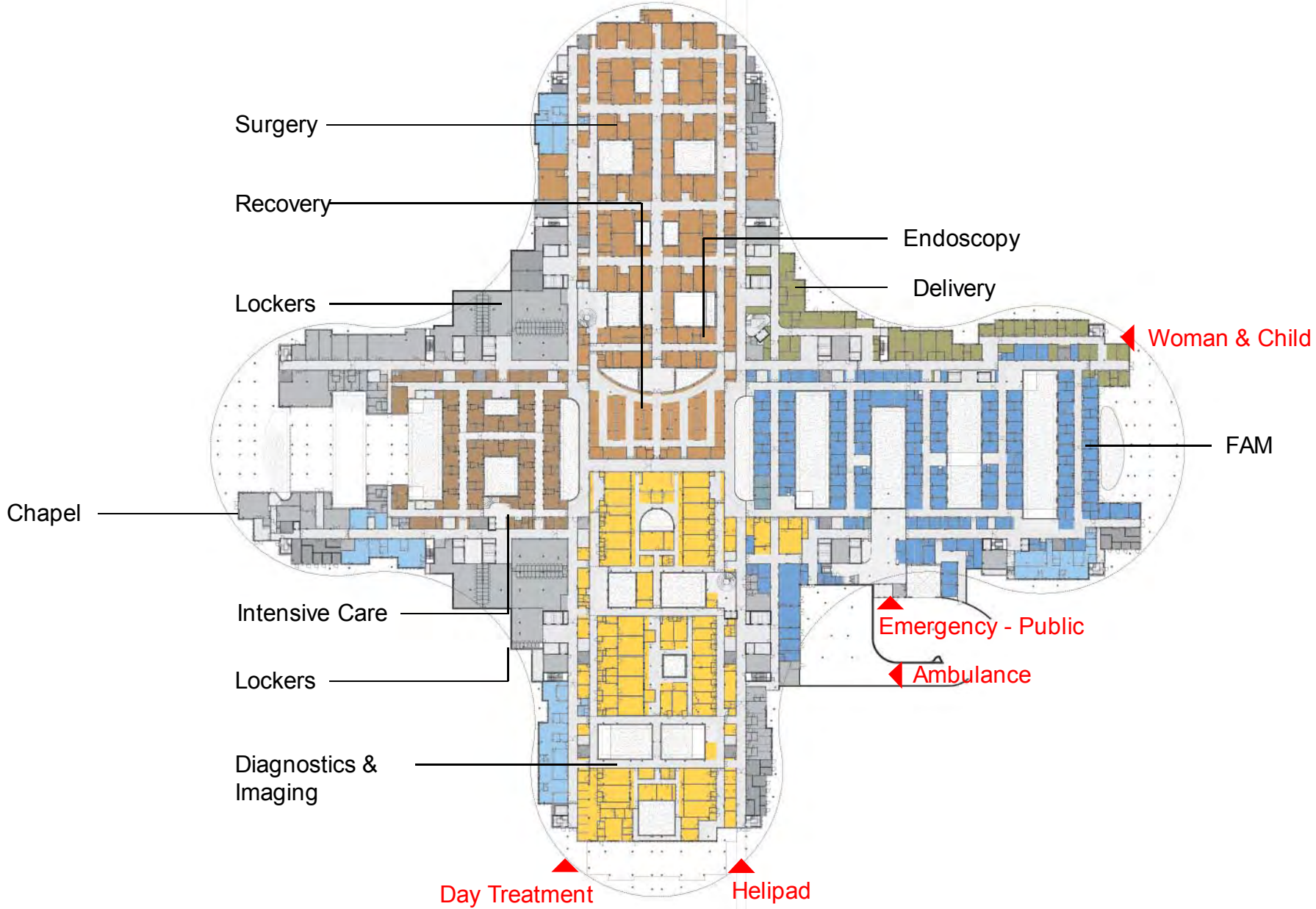
LEVEL 2/3

Level 1 Functions



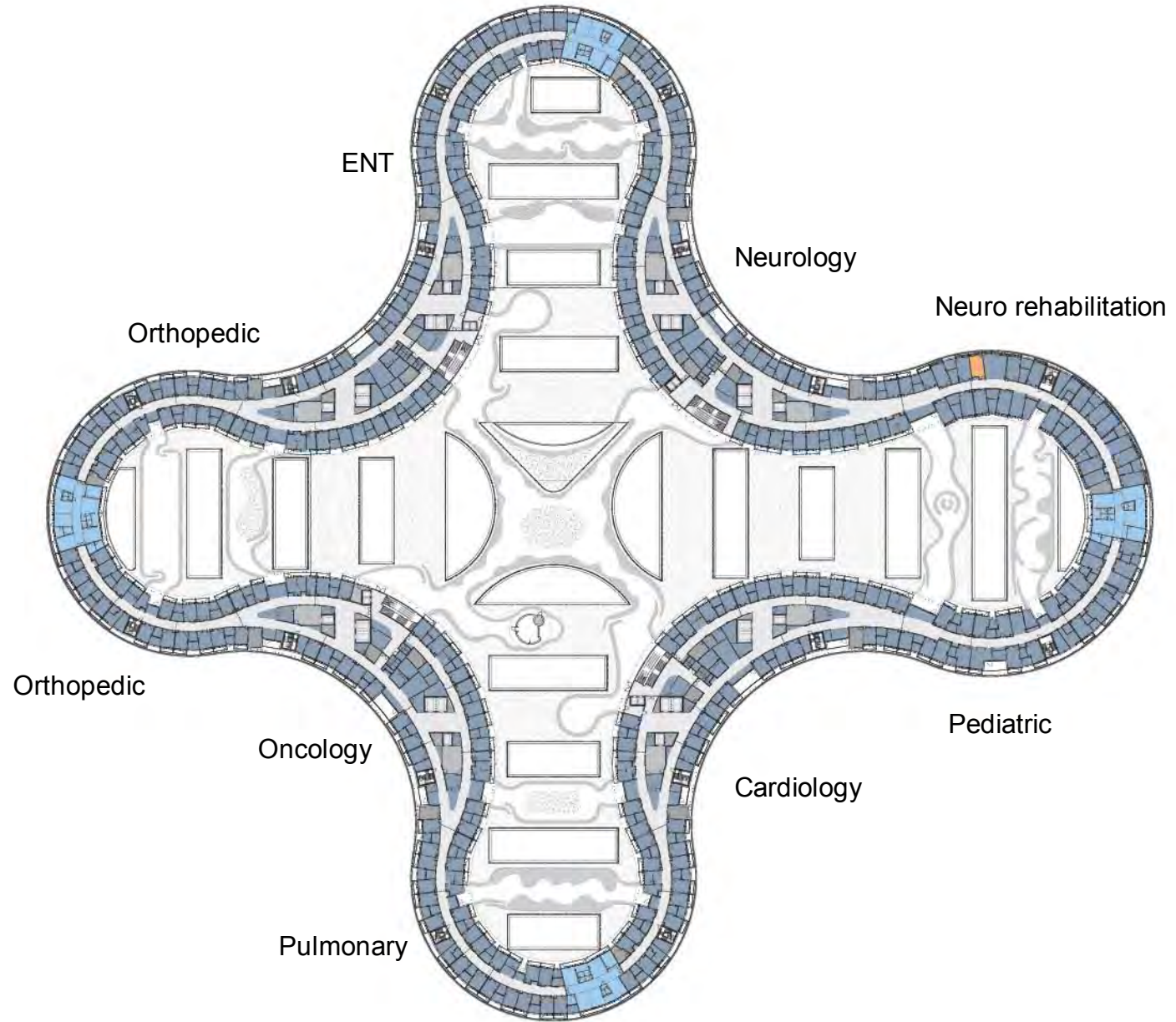


Level 0 - Functions





Level 2 functional plan



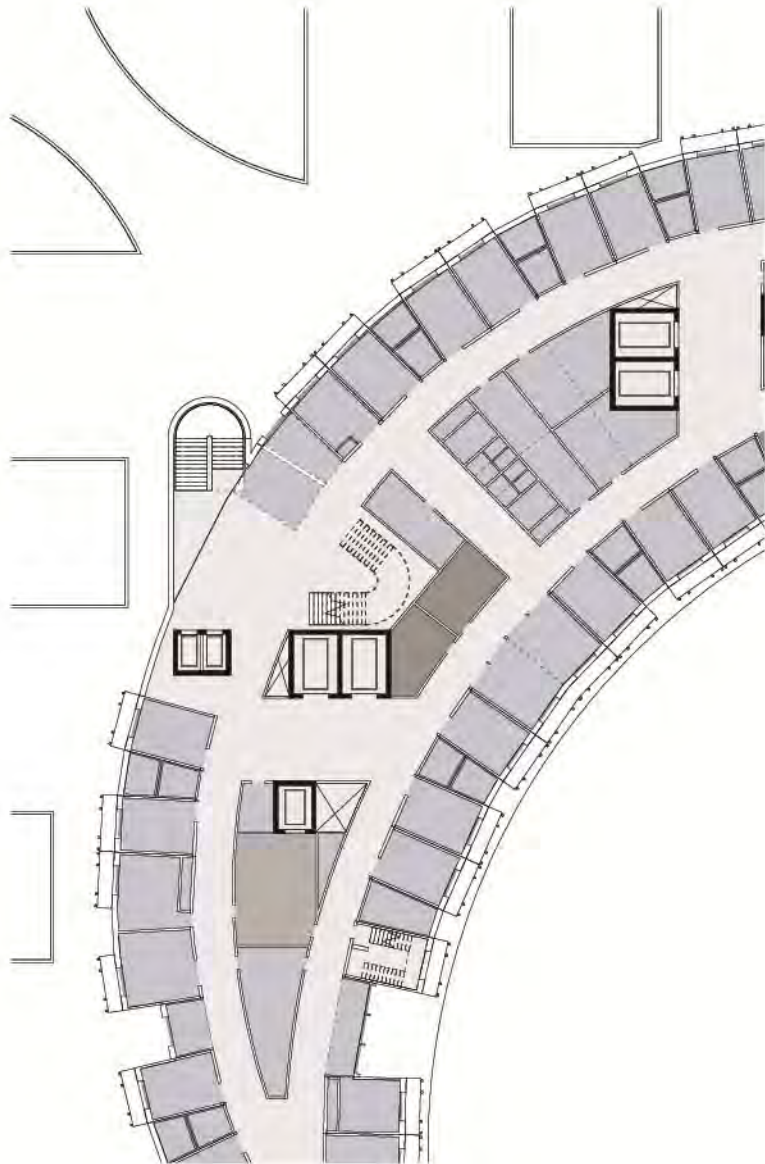


Bed Ward Support Functions

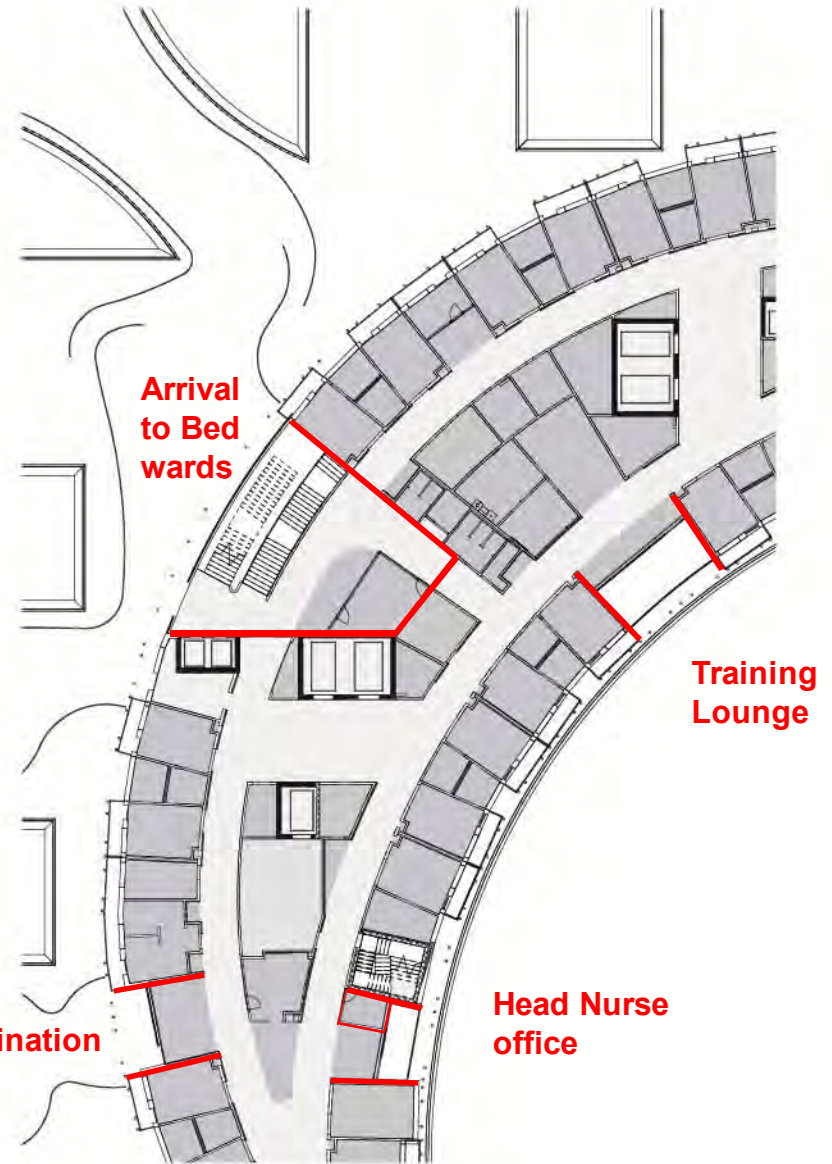


- RECEPTION ■
- LOUNGE ■
- ACTIVITY ROOM ■
- MILK KITCHEN ■
- TEAM BASE ■
- COORDINATION BASE ■
- SECRETARY ■
- STAFF ROOM ■
- UTILITY ROOM ■
- TRAINING ■
- EDUCATION (EXAMINATION) ■
- EDUCATION ■
- KITCHEN ■
- MEDICATION ■
- WASTE ■
- NICHE, LINNEN CART ■
- NICHE, CUPBOARD ■
- STORAGE, CLEAN ■
- STORAGE, EQUIPMENT ■

Bedward Improved Layout & Circulation

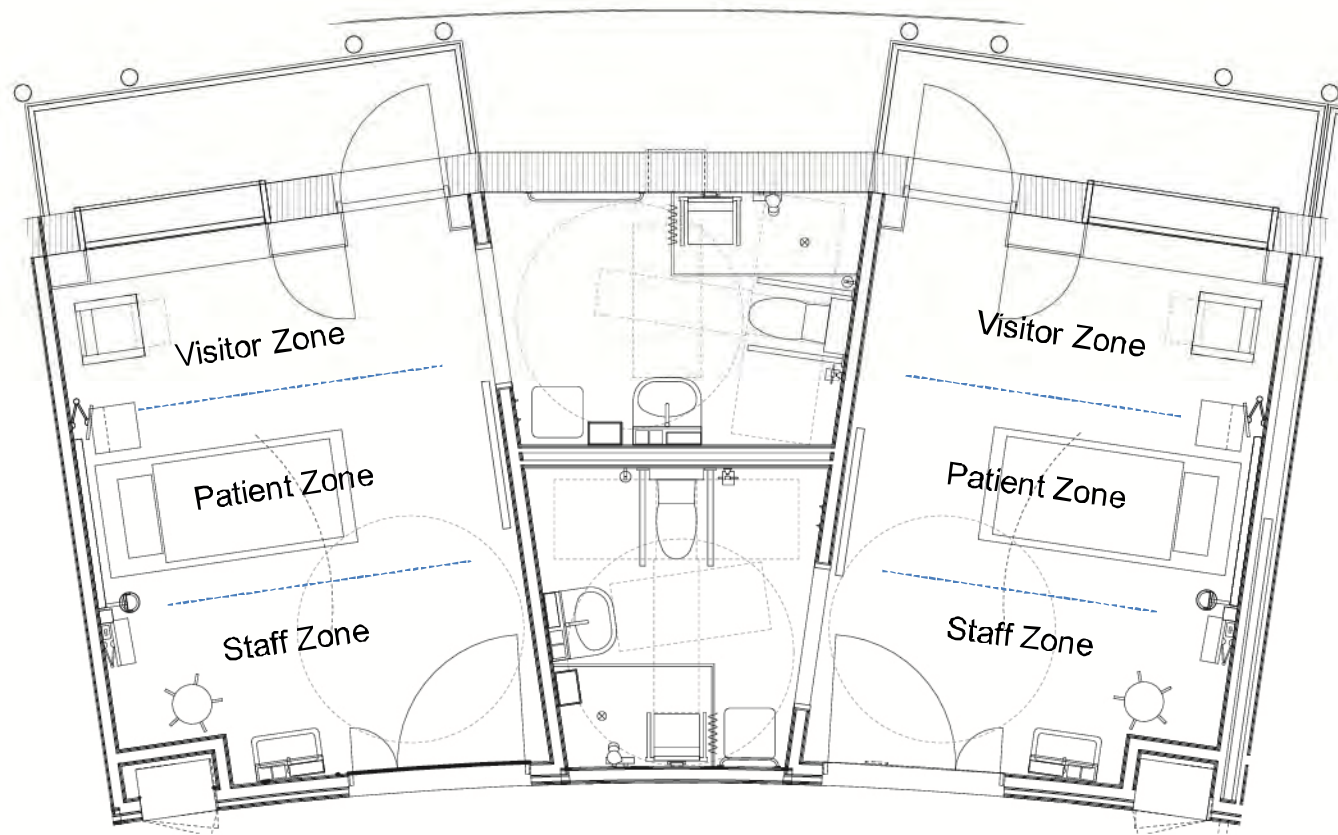


Revised Outline Proposal



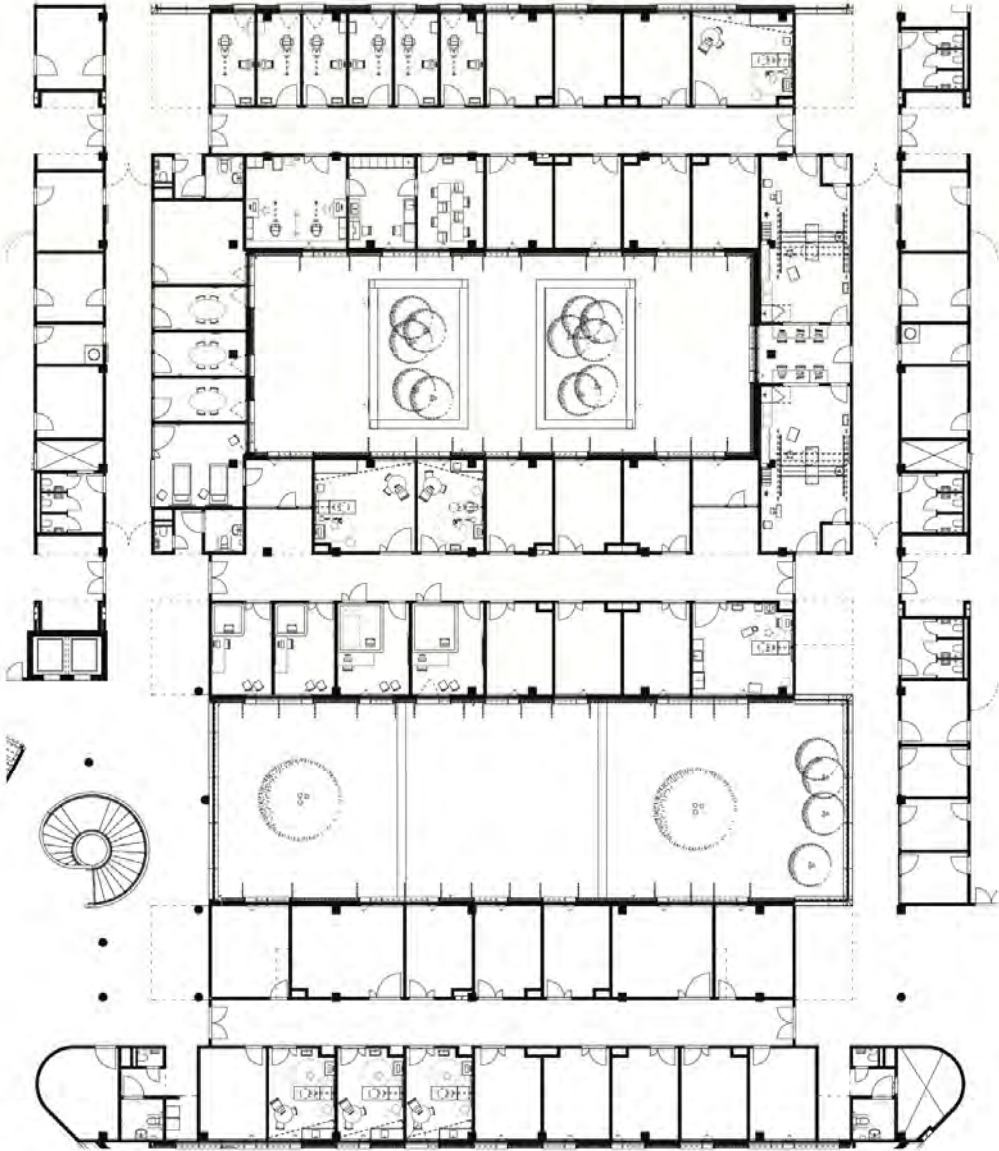
Revised Project Proposal







Outpatient Clinic
Typical Department Layout

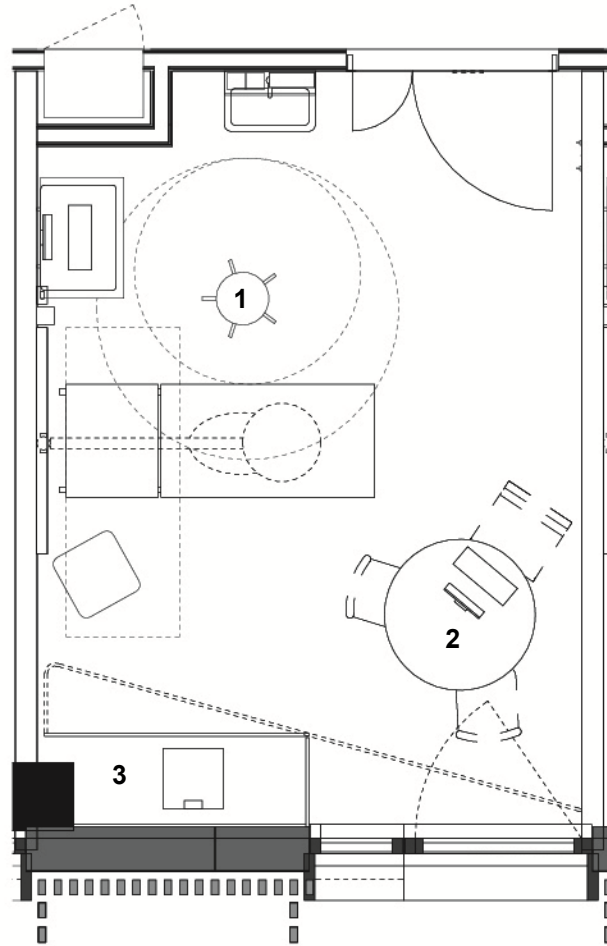


Outpatient Clinic
Team Base



Outpatient Clinic

Typical examination room

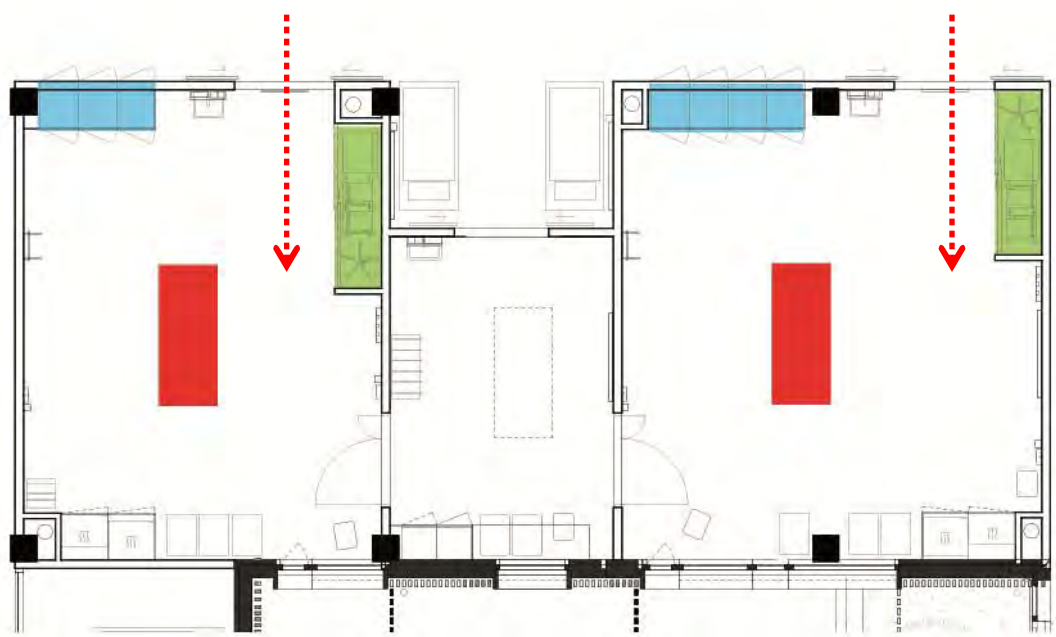
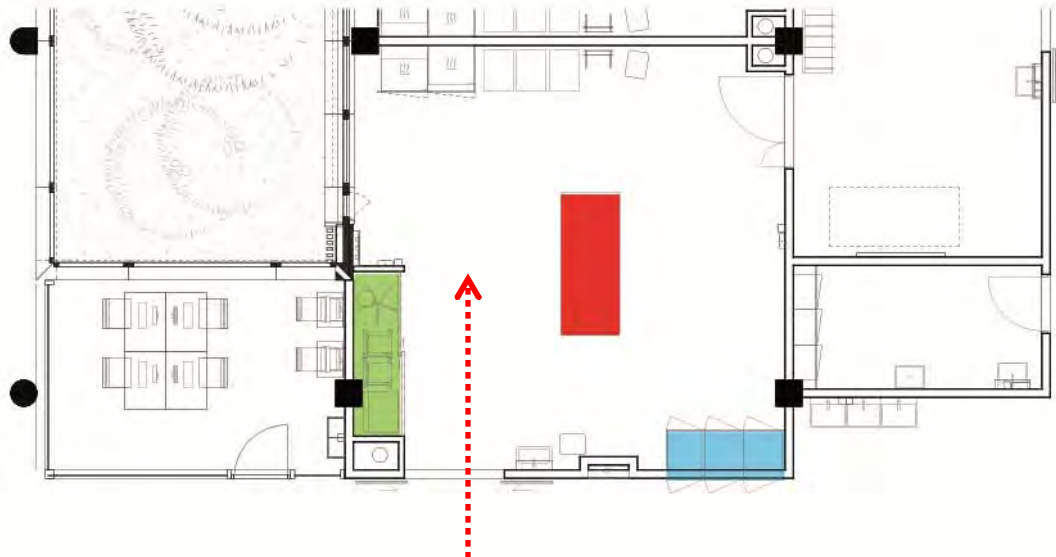






- 1 Examination Area
- 2 Conversation Area
- 3 Changing Area

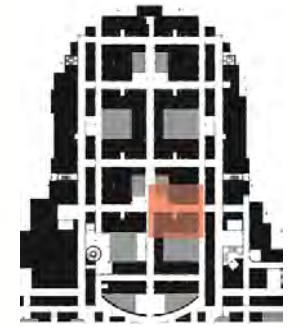


Surgery Theaters

8 Repetitive Clusters



-  Bed access
-  Pass-through cabinet
-  Equipment storage
-  Operation table





Key development during Project Proposal / Revised Project Proposal

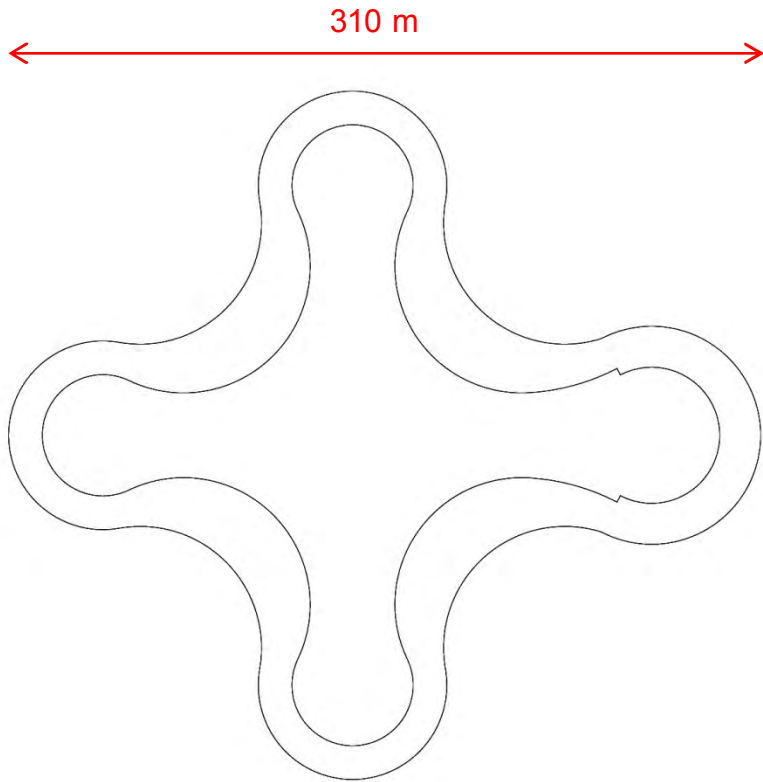
- ***Functional and architectural detailed development***
- ***Room planning and equipment definition w/NHN and users***
- ***Supply / Logistics development***
- ***Materiality development in accordance with hygienic, technical and financial requirements***
- ***Project optimization through Value Management to gain Contingencies***

Gross Area

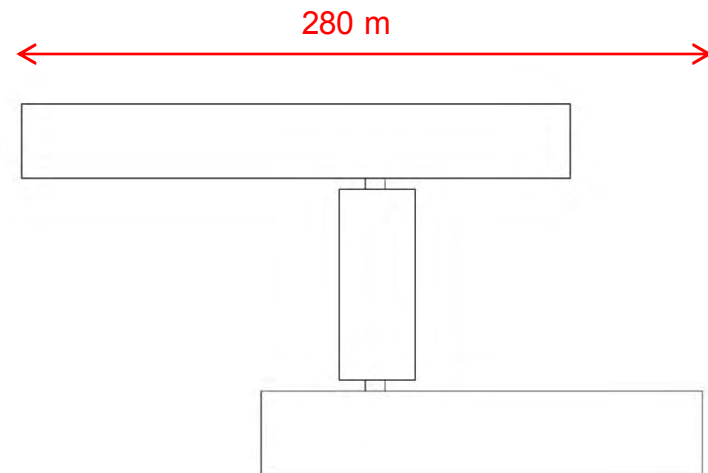
	Revised Project Proposal Gross Area (m2)
a) Main Building	
Basement	16,184
Level 0	30,860
Level 1	28,295
Level 2	17,246
Level 3	17,036
Subtotal Main building (A)	109,621
b) Service Village	
Level 0 including tunnel	5,077
Level 1	1,076
Subtotal Service Village (B)	6,153
Total Gross Area (A + B)	115,774

ACCESIBILITY

Scale Comparison



Level 2/3

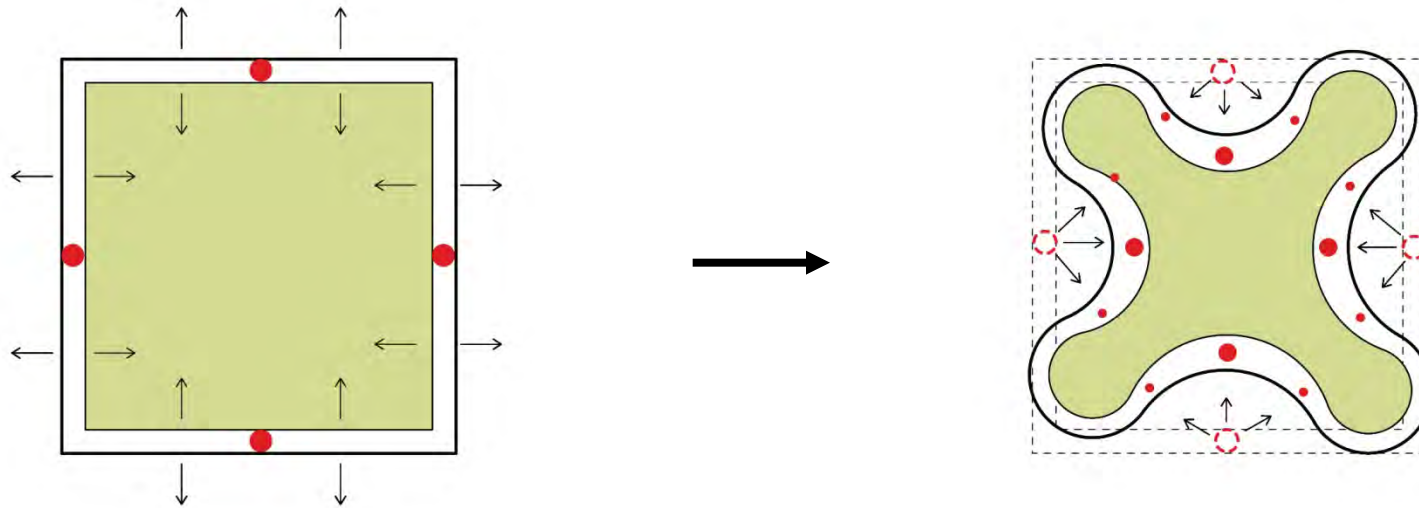


Rigshospitalet

Concept

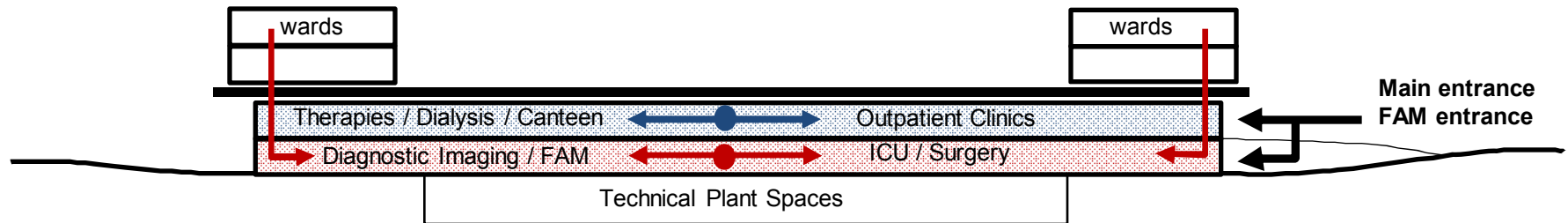
The plan is the marriage of two contradictory needs:

The desire for a large central garden and the necessity for short internal connections.

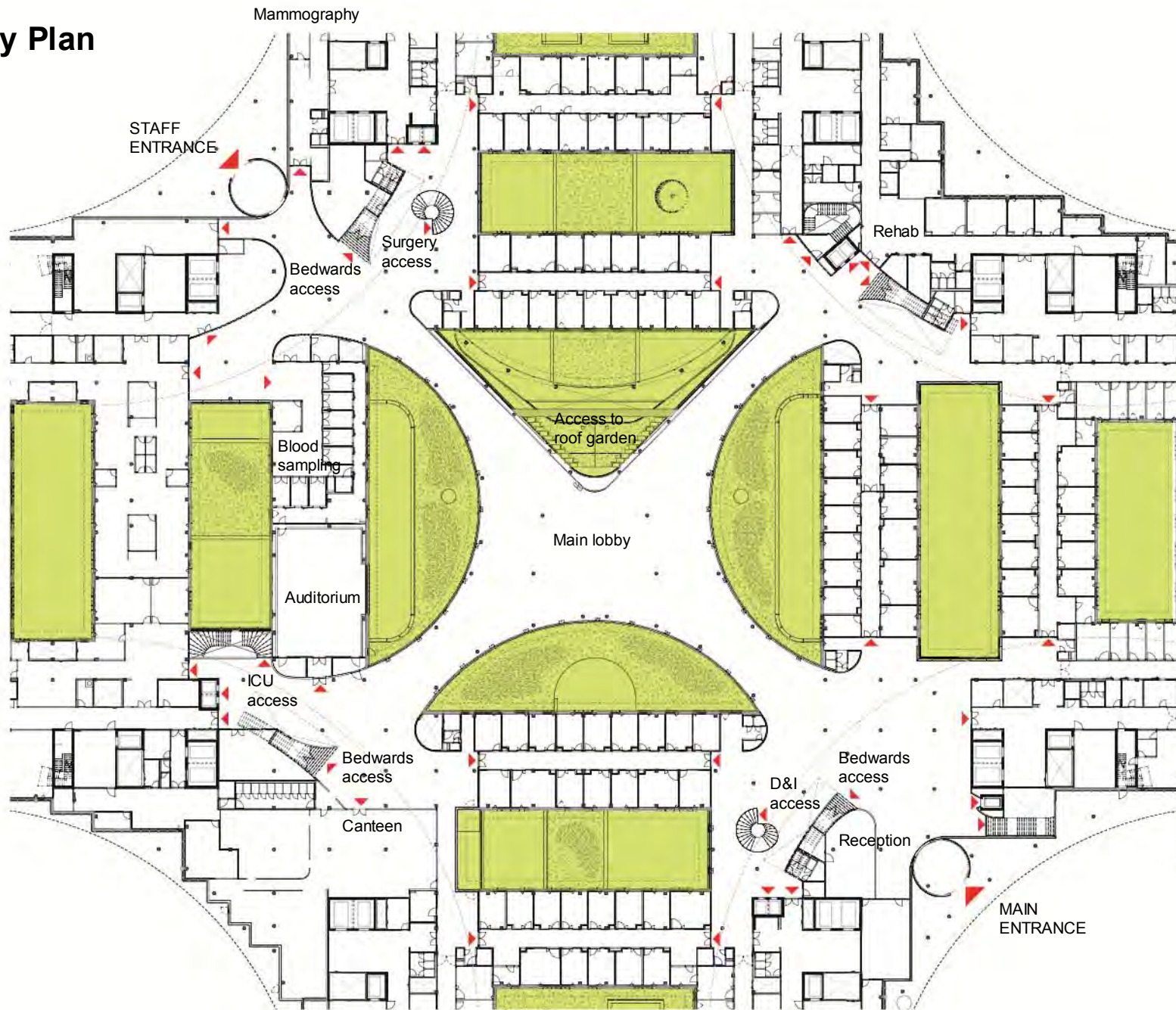


Circulation & Accessibility:

*The main flows (outpatient, inpatient) are separated vertically.
The two levels of the pedestal each serve a primary flow*



Lobby Plan





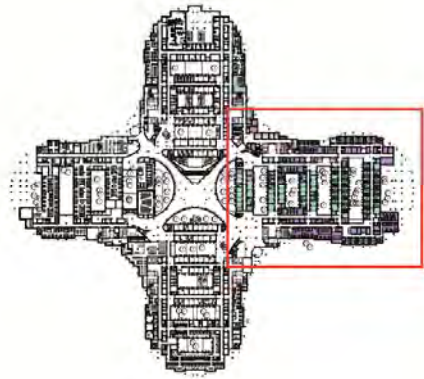














Accessibility - Level 0/1

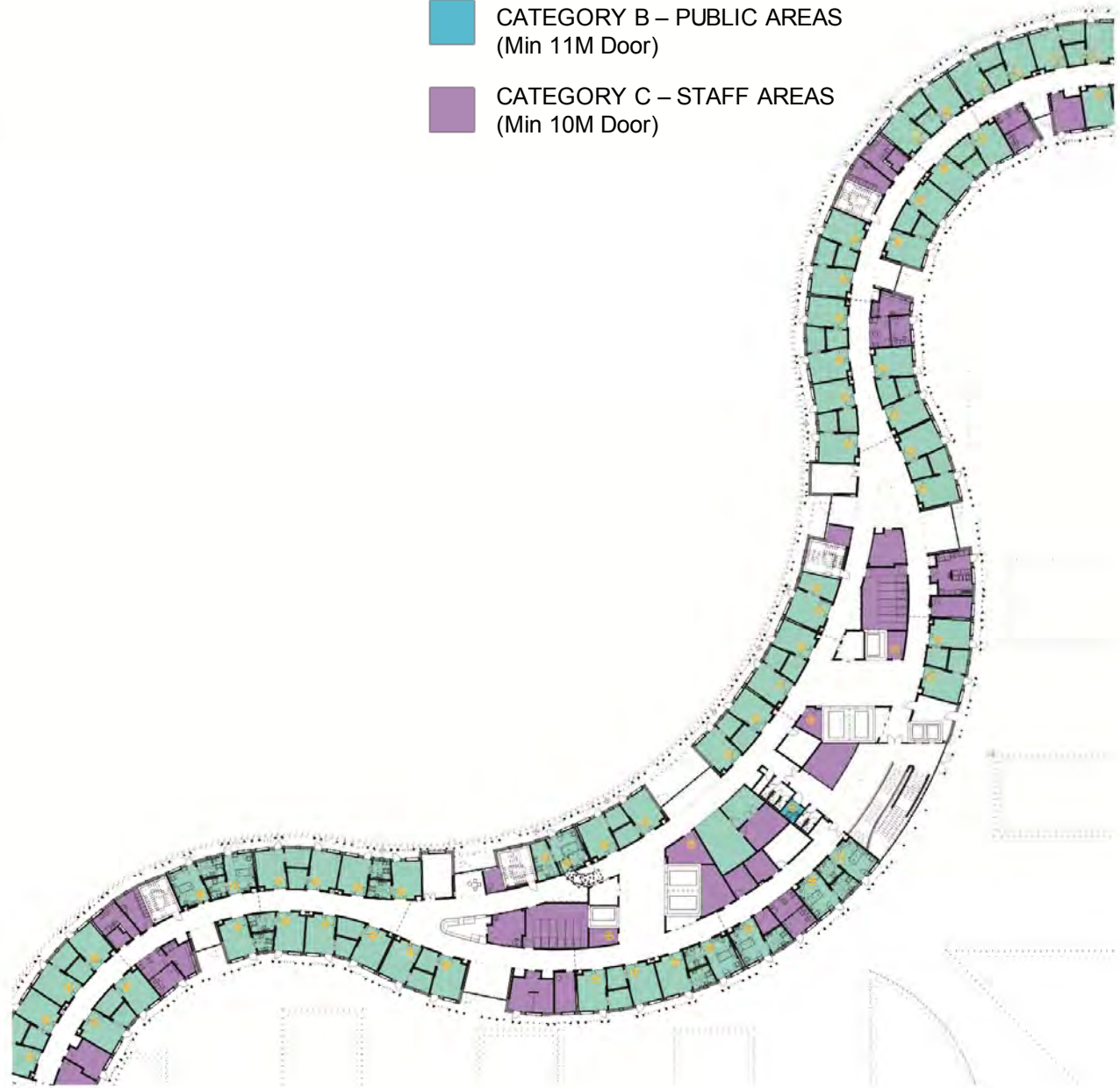
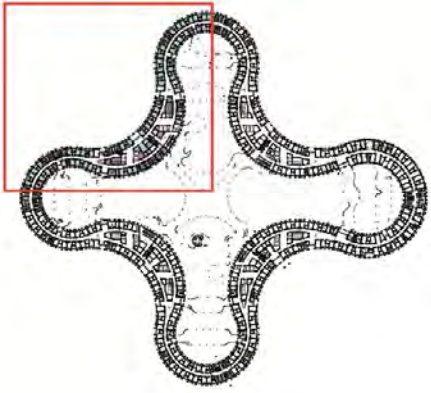


-  CATEGORY A – PATIENT AREAS
(Min 13M Door)
-  CATEGORY B – PUBLIC AREAS
(Min 11M Door)
-  CATEGORY C – STAFF AREAS
(Min 10M Door)



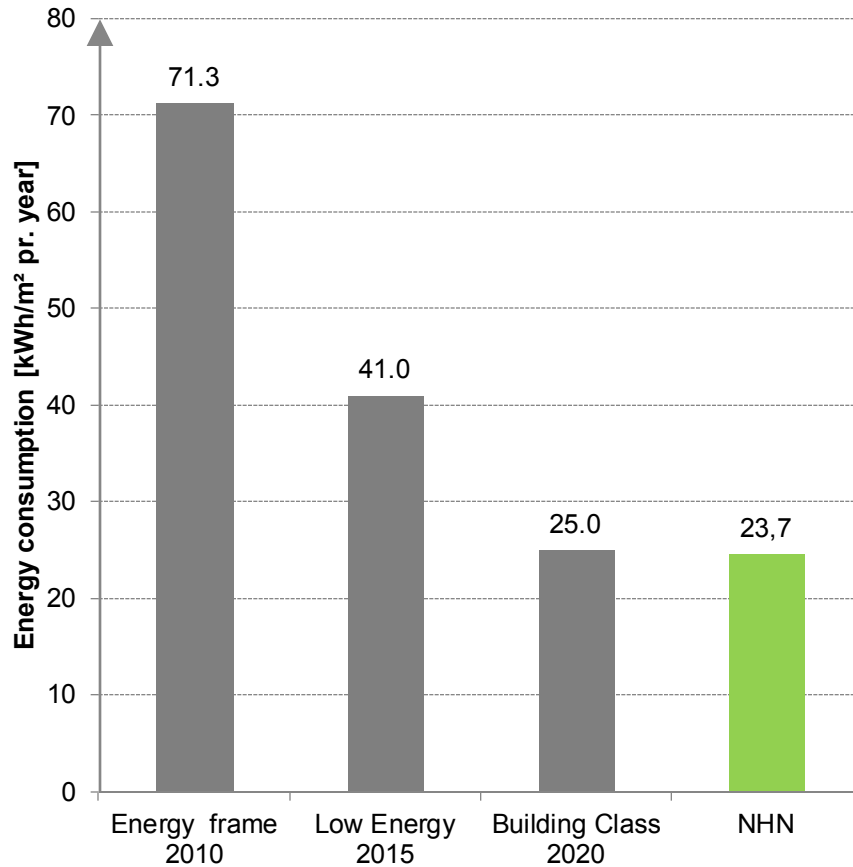
Accessibility - Level 2/3

-  CATEGORY A – PATIENT AREAS
(Min 13M Door)
-  CATEGORY B – PUBLIC AREAS
(Min 11M Door)
-  CATEGORY C – STAFF AREAS
(Min 10M Door)



SUSTAINABILITY

Energy Calculation



Energy consumption 40 % below current building code

We work with energy optimization at three levels:

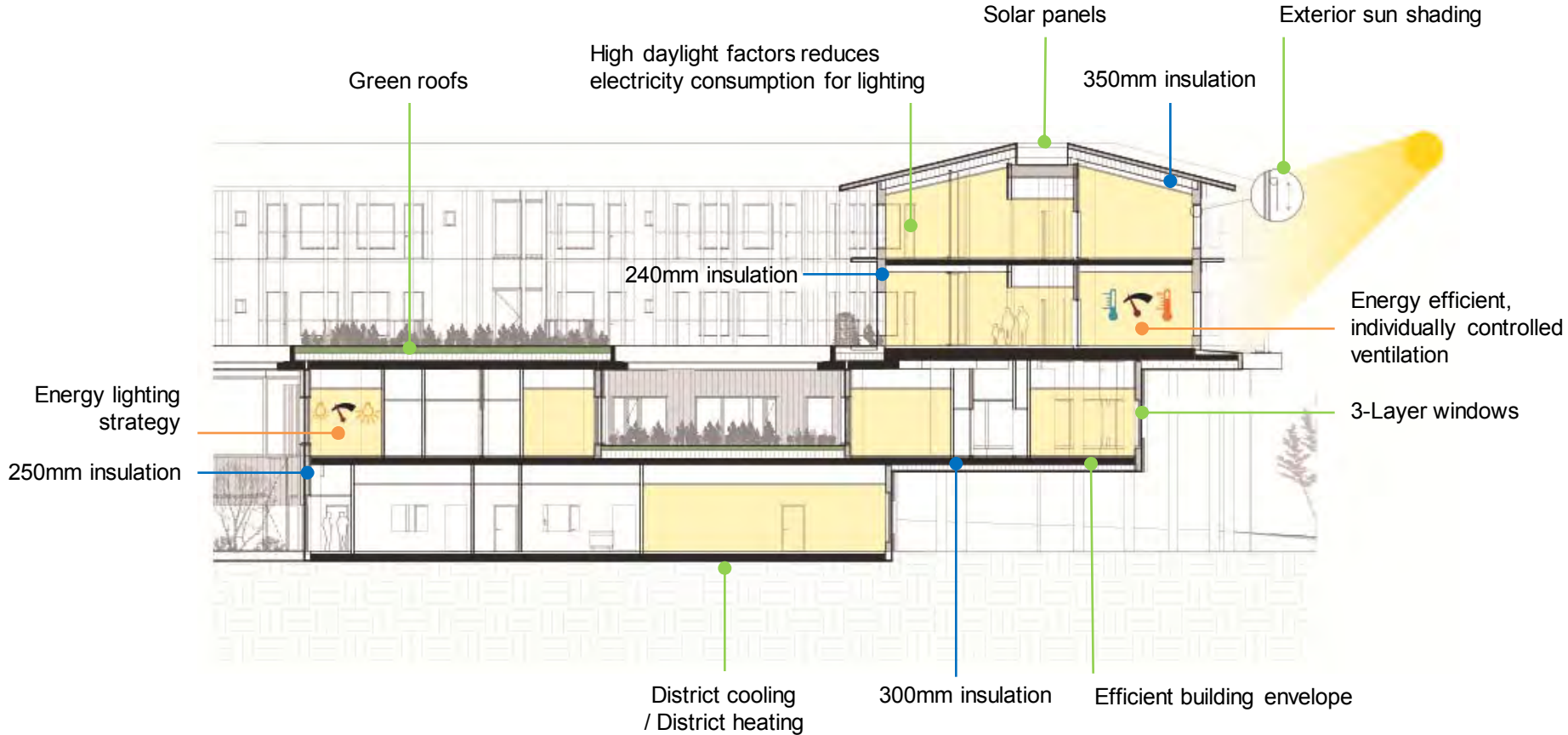
1. Minimize needs
2. Optimize operation
3. Renewable energy production

High focus on cost efficient solutions – Value for money

Key Sustainability Concepts

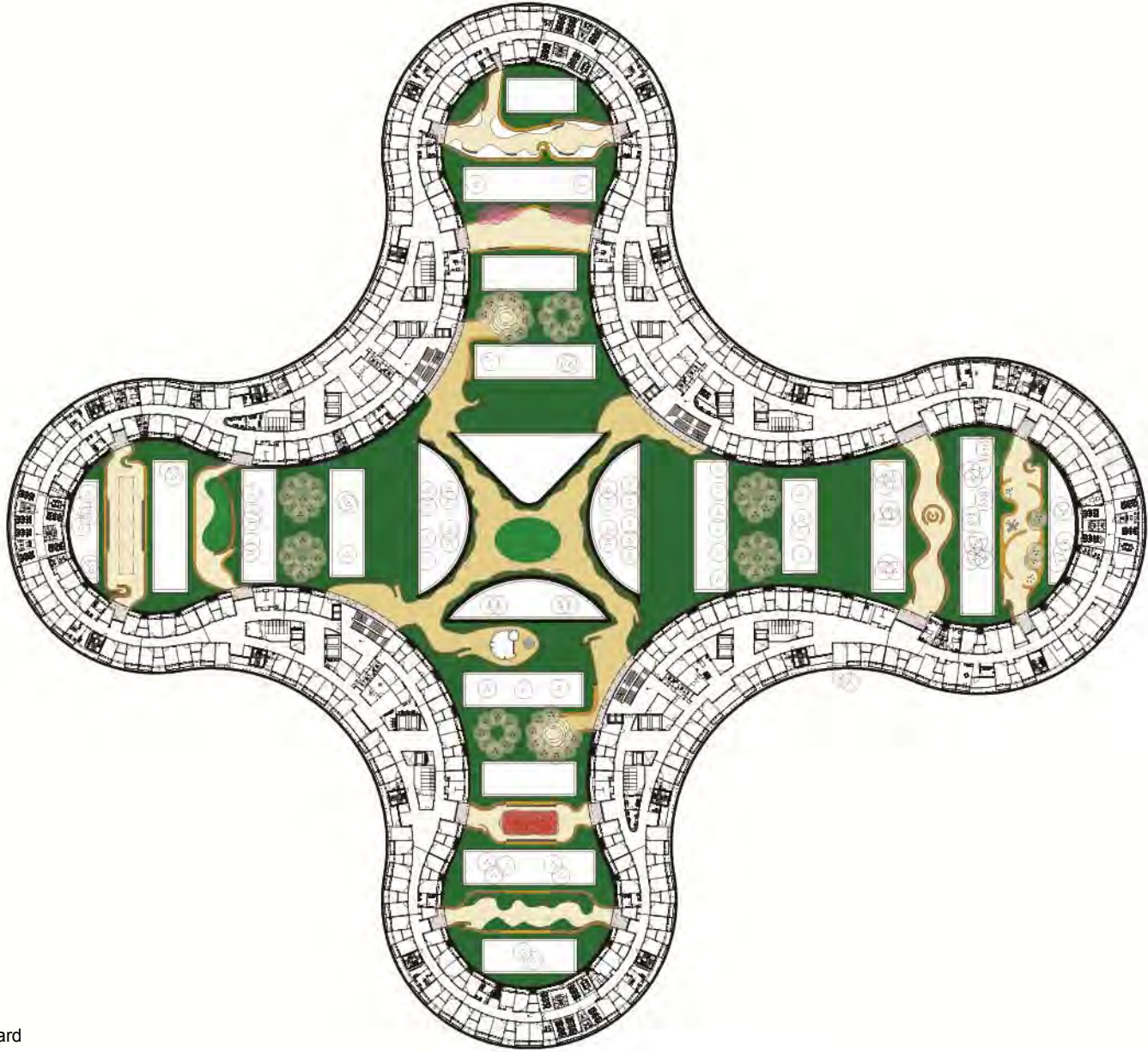
- *Site Analysis (Conservation)*
- *Program Review / Flexibility and Re-use*
- *Mobility Concepts*
- *Renewable Energy*
- *Day Light vs. Solar Protection*
- *Water Demand*
- *Air Quality*
- *User Interaction with the System (individual control / thermal comfort)*
- *Material Selection (Life Cycle Analysis)*



Sustainability Concept - Building



Sustainability Concept – Green Areas and Water Retention



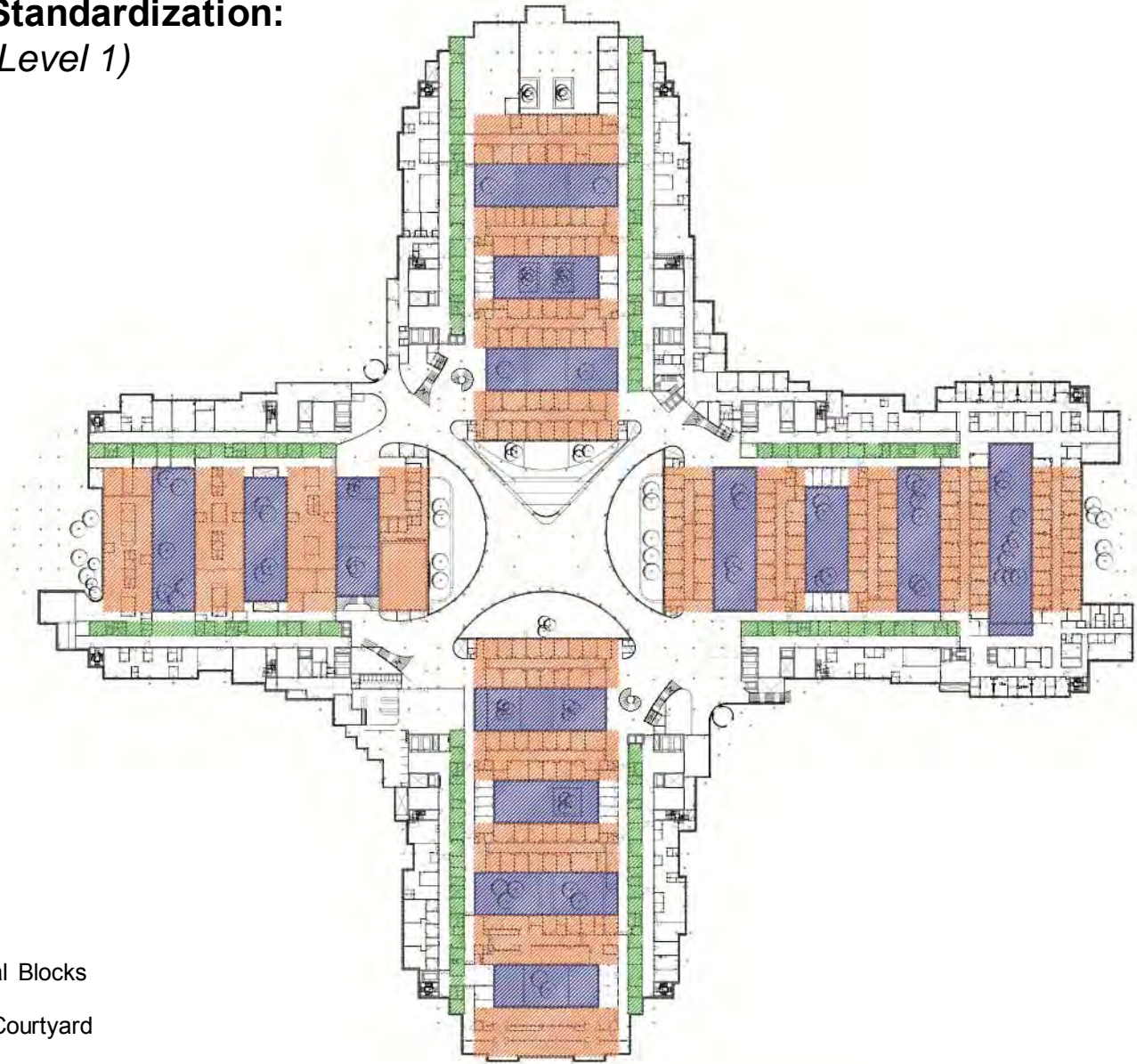





-  Public accessible courtyard
-  Patient accessible courtyard

Adaptable Building Design

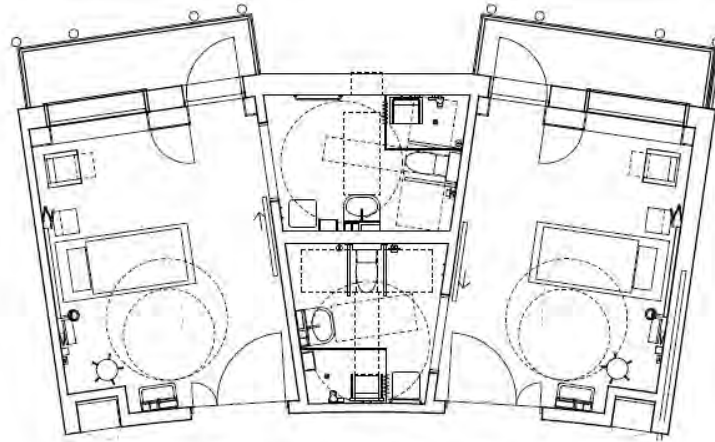
Symmetry & Standardization:

Departments (Level 1)

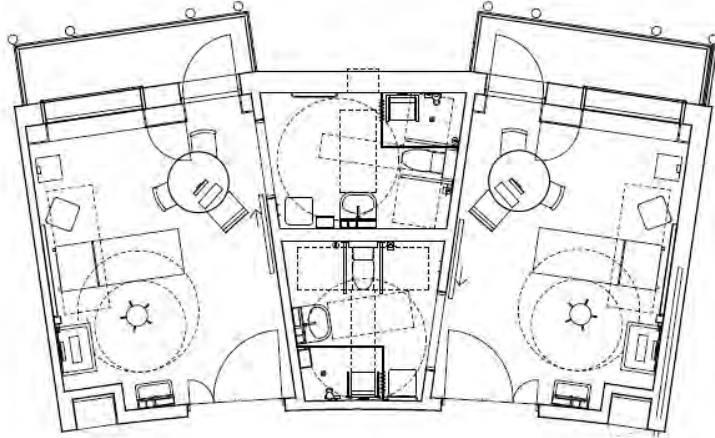


-  Central Functional Blocks
-  Standard Width Courtyard
-  Support Room Zone

Adaptable Building Design

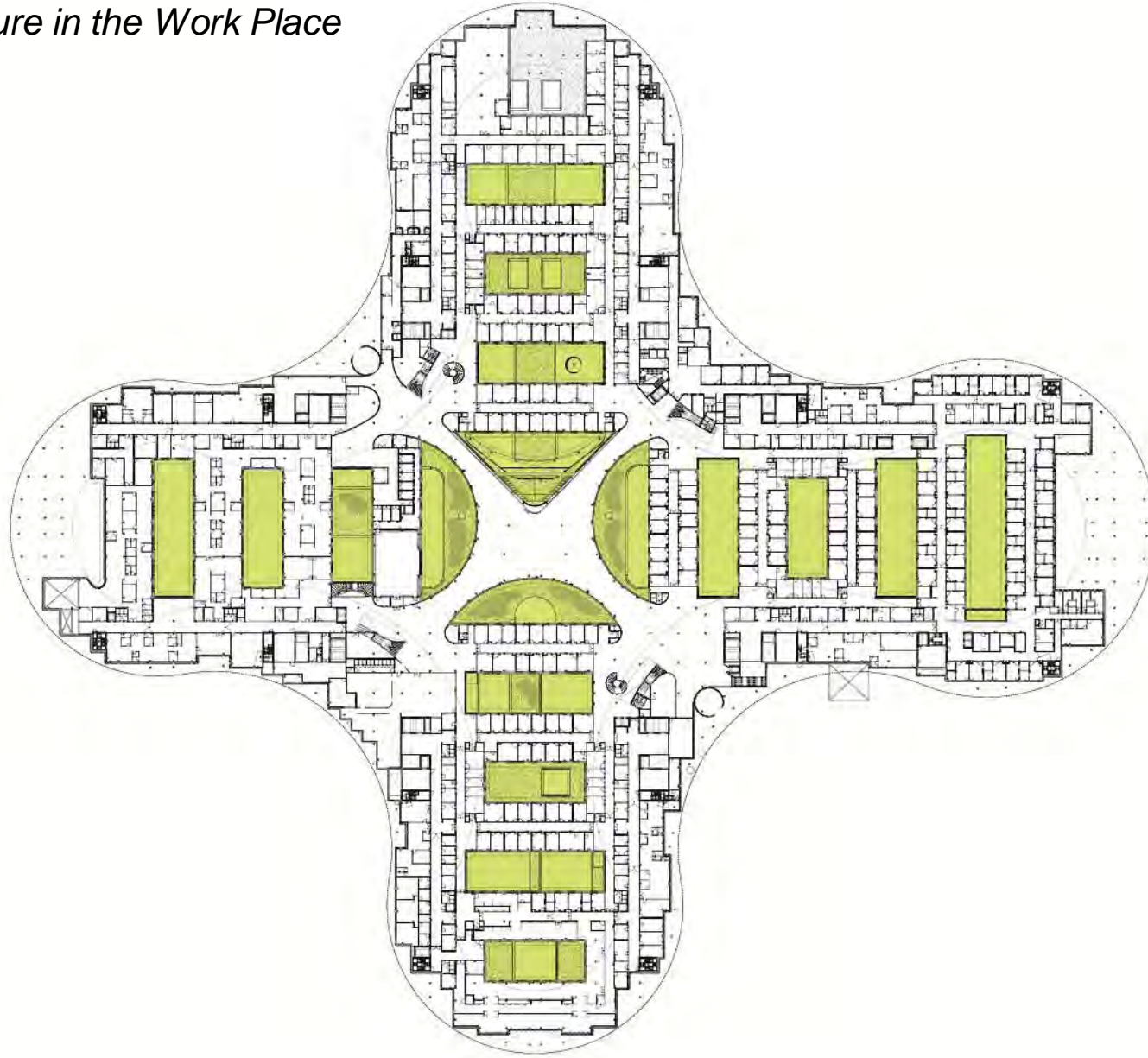


Patient Room



Examination Room

Natural Daylight - Courtyards
Light and Nature in the Work Place

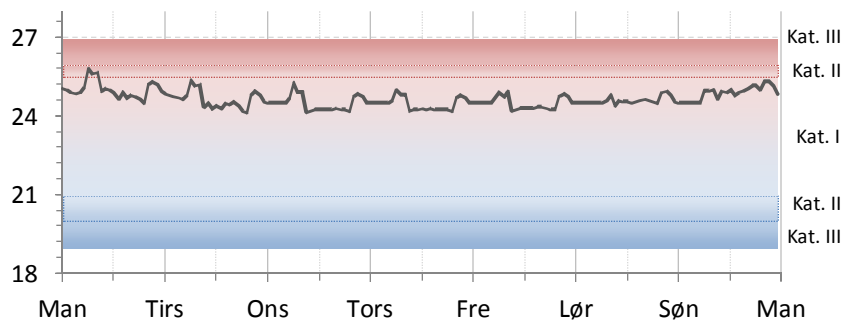






Indoor climate

- Enhanced control of the indoor temperature – particularly in the summer.
- High air quality ($\text{CO}_2 < 900 \text{ ppm}$)
- Daylight level according to Building code 2020 – and with a focus on good access to daylight in area of permanent working.



Sustainability Concept – outdoor materials

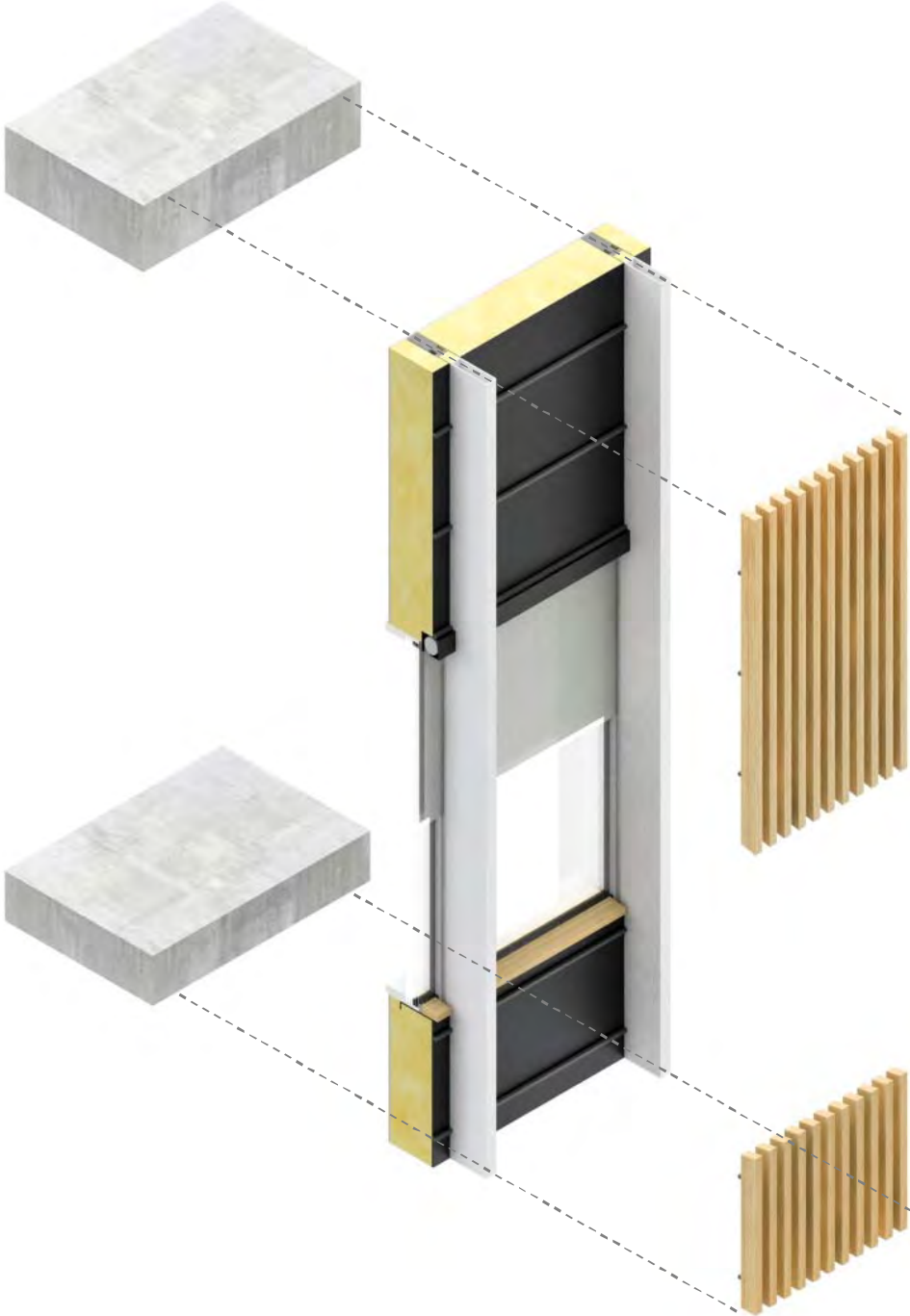


Sustainability Concept – indoor materials





Facade plinth



Timber Facade

Timber selection

Based on the design and maintenance requirements, as well as mechanical properties, sustainability and cost criteria:

- Western Red Cedar
- Thermowood D (modified wood – no biocides)
- Kebony Character (modified wood – no biocides)

Life expectancy for the 3 wood types selected (based on a report by Skog og Landskap (2014) in Norway)

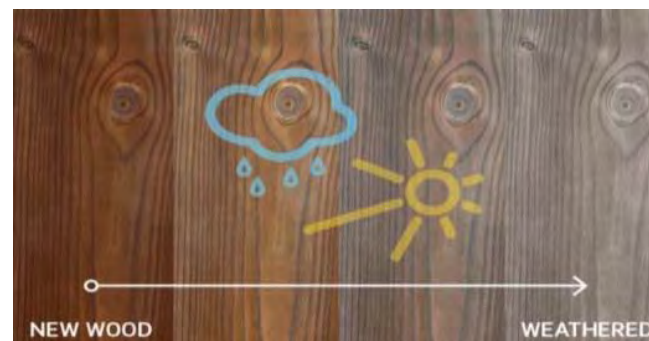
- 60 years

Maintenance

An annual inspection of selected façade elements secures that any damaged parts are replaced before they can negatively affect the performance.

Replacement

- *In a well constructed wooden façade, normally very few boards are replaced due to fungal decay damages.*
- *A limited number of boards are expected to suffer from mechanical damages due to collisions etc.*



“In conclusion it is without doubt that a number of selected wooden materials can be used with success in the façade elements on Nyt Hospital Nordsjælland.”

Ceilings in a hospital

PROJECT PROPOSAL SUBMISSION
16.12.2016



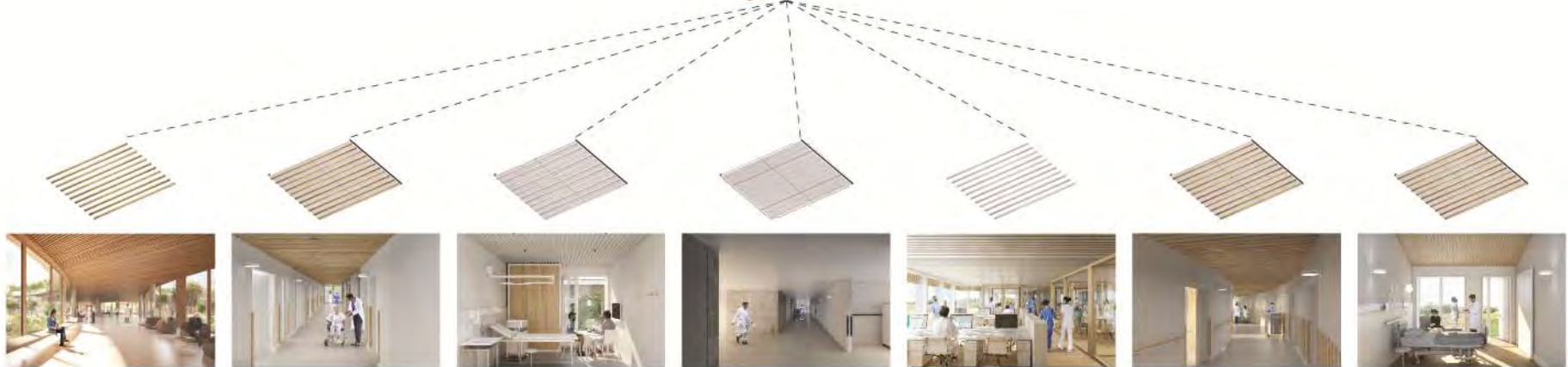
Micro-perforated wood board ceiling



REVISED PROJECT PROPOSAL SUBMISSION
5.5.2017



Acoustic ceiling tile system
+
Wood slats or profiles



Lobbies

On-stage corridors

Examination &
clinical rooms

Off-stage corridors

Offices

Bedwards
corridors

Patient rooms

Lobbies

Wood profiles open ceiling



Wood window frames & fixed furniture

Terrazzo flooring

Bedwards corridors / Onstage Corridors

Wood window frames & paneling in lounges

Acoustic panel ceiling with wood profiles



Linoleum flooring

White doors with wood corner & wall protection

Bedwards patient room

Acoustic panel ceiling with wood profiles

White window & door frames



Wood flooring

Off-stage corridors

Exposed concrete columns & cores

Acoustic panel ceiling



Linoleum flooring

HPL panel wall protection

Clinical Acute rooms



Material Testing - Wood flooring in patient rooms

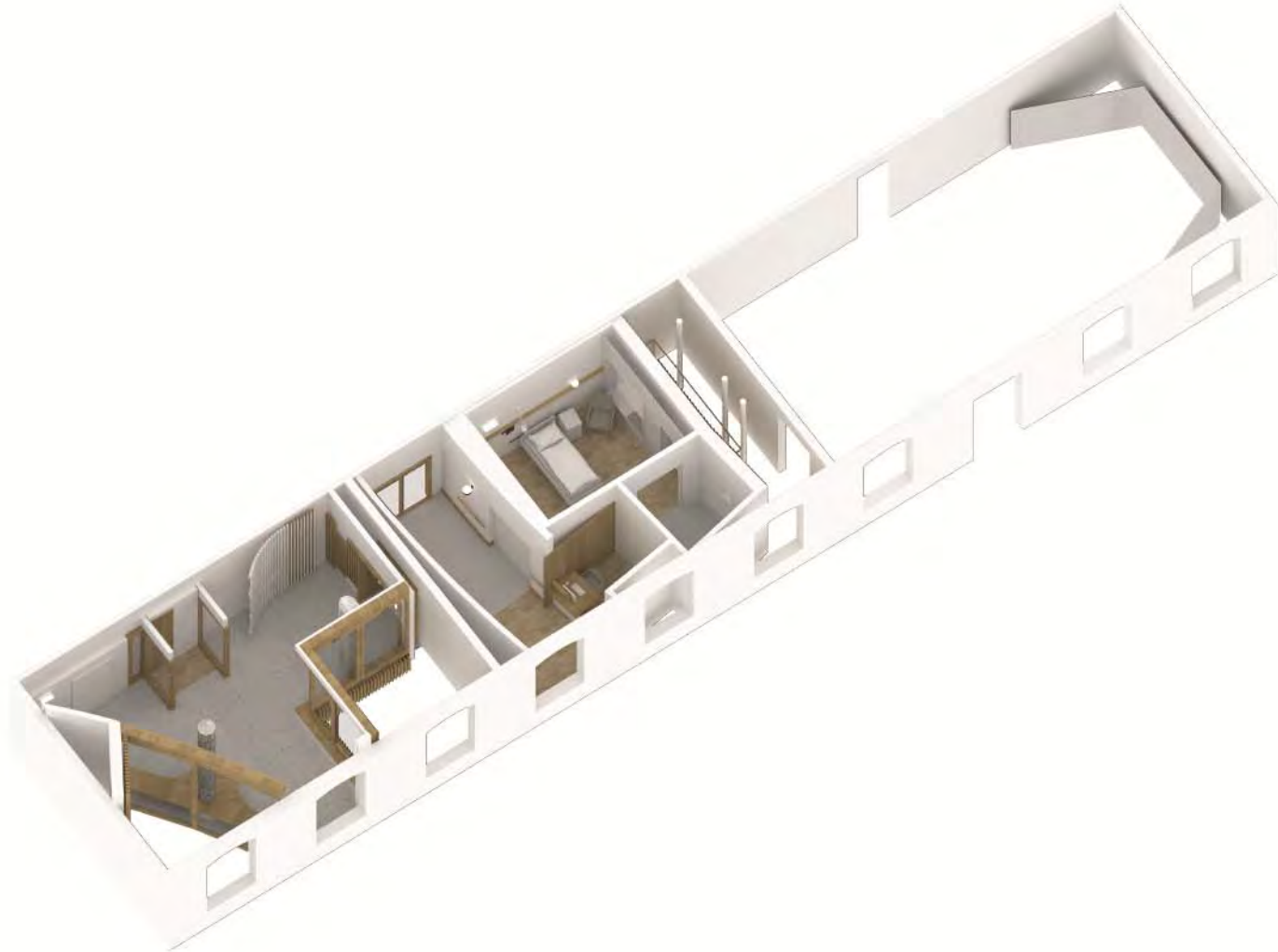


Hardwood flooring: local repair & stress tests

Reference: extensive use of hardwood flooring in nursing homes

Material Testing - Mockups in NHN project

OVERVIEW



SERVICE VILLAGE / BASEMENT

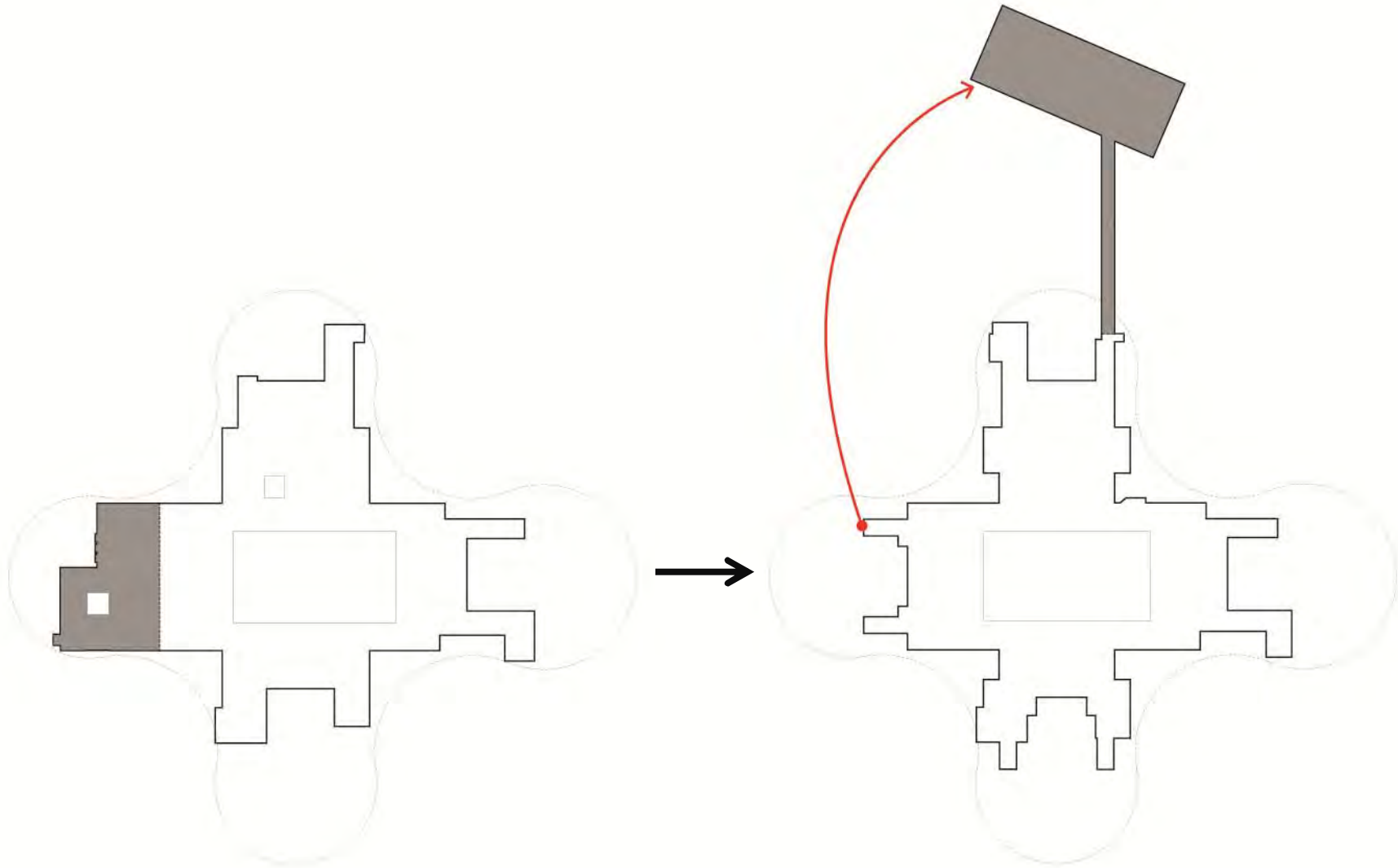
STATEMENT – MAY 2016

Service Village Moved Below Main Building

Service Village Relocation – Key Improvements

- *Logistics center access closer to main roads.*
- *Proximity to distribution ring improves logistics and overall function*
- *Distribution bottleneck at Tunnel removed*
- *Synergy between preparation kitchen for bedwards and canteen.*
- *Workshop in proximity to assistive aids and integrated in main building.*
- *Synergy of use – reduced duplication of staff rooms (uniform store, wardrobes and offices)*

Service Village Relocation – MAY 2017



Consolidation phase layouts

Consolidation phase layouts

NHN Hospital



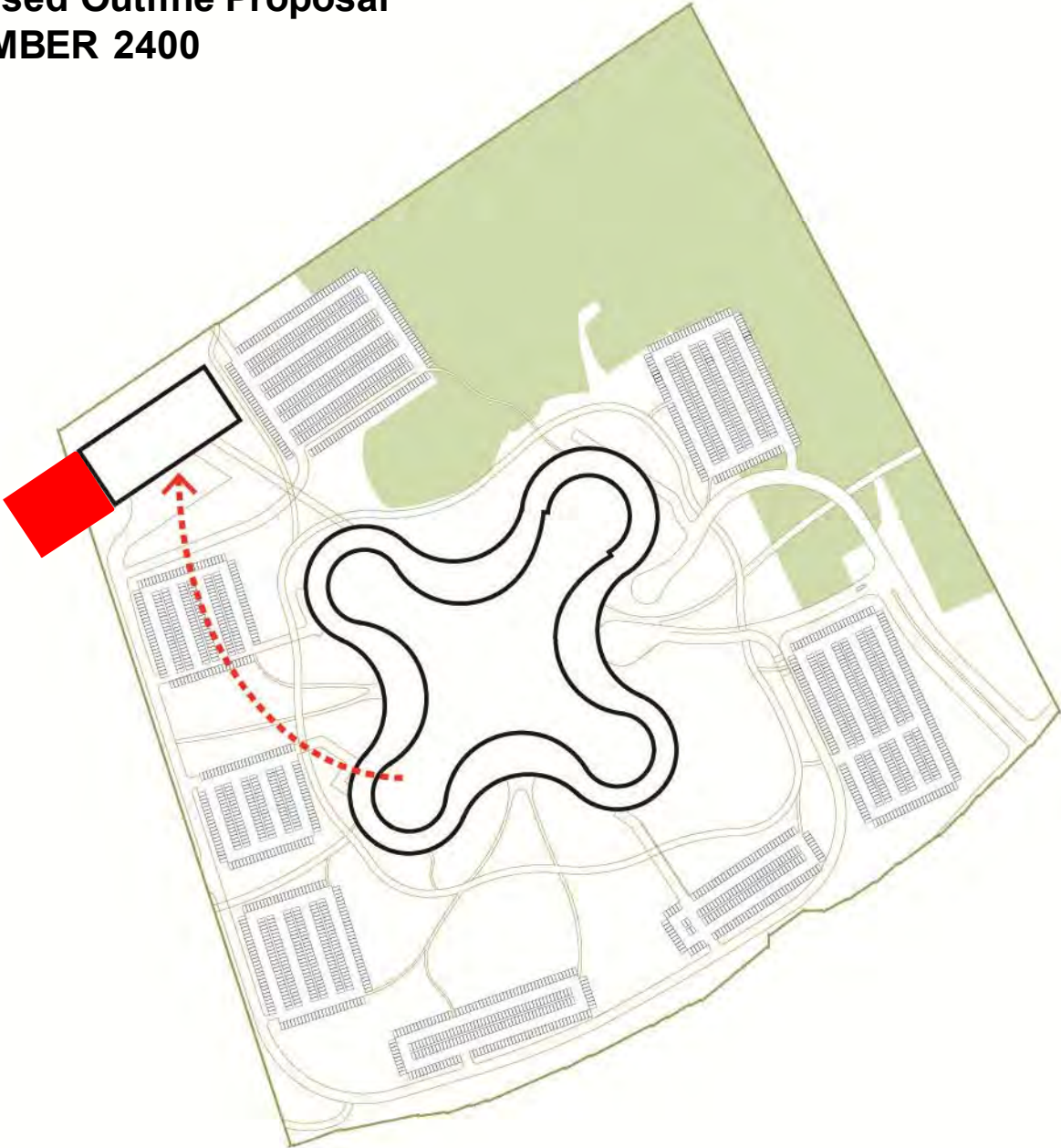
Site Plan before Consolidation
PARKING NUMBER 2800



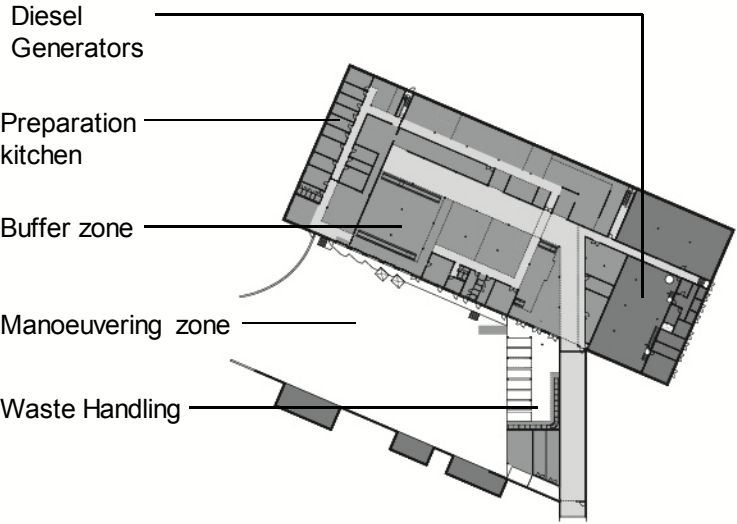
Site Plan after Consolidation
PARKING NUMBER 2800



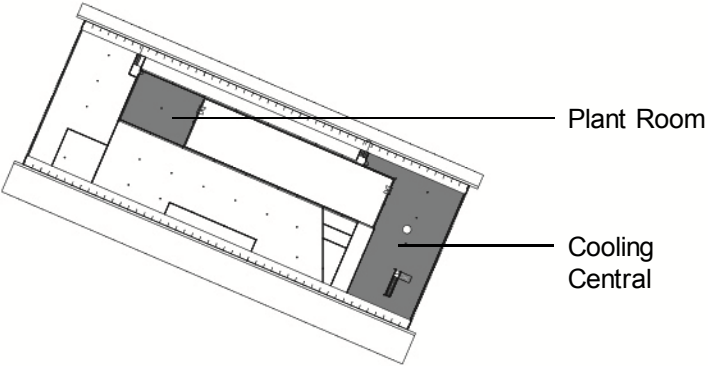
**Site Plan Revised Outline Proposal
PARKING NUMBER 2400**



Service Village



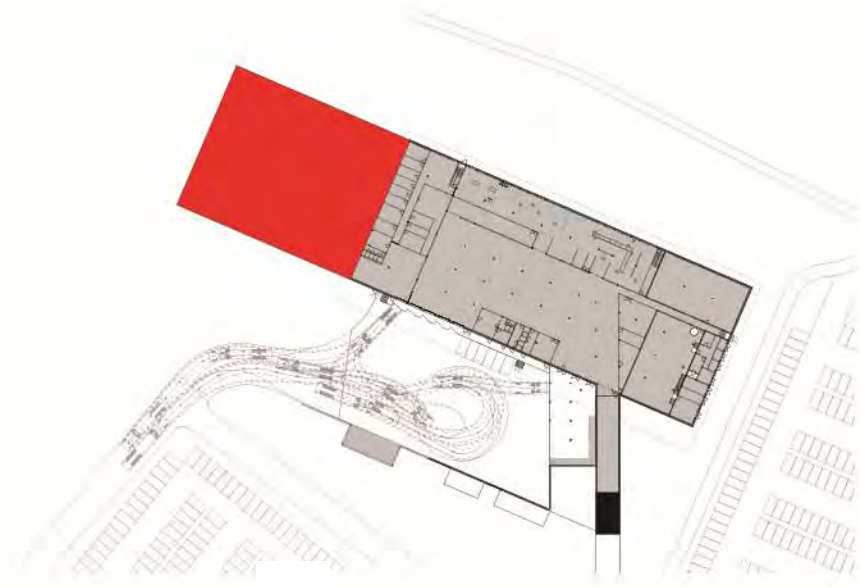
LEVEL 1



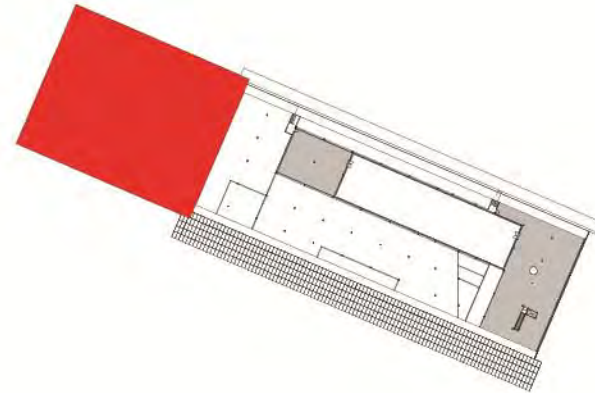
LEVEL 2/3

Service Village Expansion

2,000 m²




Level 0



Level 1

Expansion legend

 New build extension

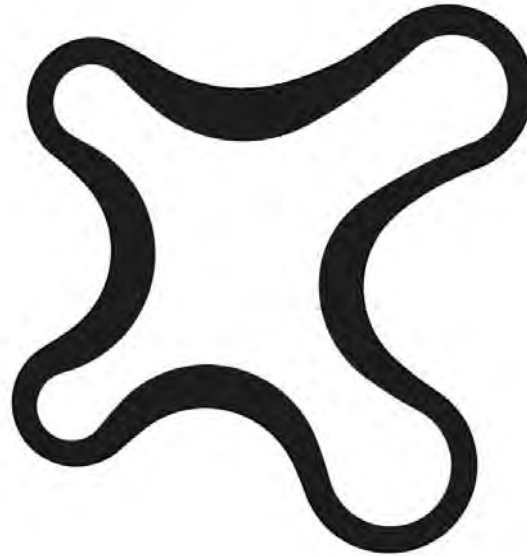
STATEMENT – MAY 2017

Service Village Moved Back above Grade

Service Village Relocation – Key Improvements

- *Logistics center access closer to main roads. ok: non critical*
 - *Proximity to distribution ring improves logistics and overall function ok: non critical*
 - *Distribution bottleneck at Tunnel removed ok: non critical*
 - *Synergy between preparation kitchen for bedwards and canteen. ok: non critical*
 - *Workshop in proximity to assistive aids and integrated in main building. workshops centralized in main building now*
 - *Synergy of use – reduced duplication of staff rooms (uniform store, wardrobes and offices) ok: non critical*
-
- *Civil planning improved as the conflict between ramps and drainage is avoided*
 - *Risk of flooding of Logistics Center Underground avoided*
 - *Trucks maneuvering in open air area - enlarged space*
 - *Noise from trucks away from building*
 - *Easier expansion of the service village*





New North Zealand Hospital Hillerød

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