



AVANTI ARCHITECTS

‘Make-do and Mend’

Healthcare architecture in the age of austerity

Presentation to EuHPN 2012 Workshop

23rd October 2012

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Avanti Architects

Founded 1981

6 directors and 6 associates

Current staff 60+

QA certified ISO 9001:2008

EMS certified ISO 14001:2004

Total work value

building projects £500m +

advisory services £2bN +

Range of clients

local authorities

private developers

housing associations

government agencies

educational institutions

voluntary bodies

health authorities & trusts

Range of services

new build

regeneration & conservation

masterplanning & urban design

feasibility studies

interior design

project supervision





Health Urban Regeneration Housing Education Commercial Conservation/Refurbishment Leisure/Culture



Range of Work

AVANTI
ARCHITECTS

- healthcare projects
- offices

Locations

●
Sao Paulo, Brasil



Our Approach – Develop flexible and adaptable designs with low environmental impact that encourage growth



ISO 14001:2004



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Problems that emerge on hospital sites over time

- Hospital grows to fill the entire site
- Insufficient budget for maintenance results in decrepitude
- Layers of 'improvements' degrade the environment

Effects:

- Accommodation not fit for purpose
- Fire strategy compromised or unknown
- Piecemeal additions result in:
 - confusing environment,
 - doubling-up of services,
 - poor adjacencies
- Lack of storage – equipment and beds clogging corridors
- Services (AHUs, chillers etc.) spread



Parking, waste storage and service access share space

Poor visibility of entrance

Existing hospitals: external environment



Disorientating environment



Restricted views and natural light



Storage in corridors



Confusing wayfinding

Existing hospitals: internal environment

The impact of short-term thinking in hospital design

- Closed forms compromise flexibility
- Views and light blocked (e.g. infilling courtyards)
- Access compromised
- Internal circulation compromised
 - introducing level changes
 - mixing flows
 - complicating security arrangements
 - inadequate privacy and dignity
- Negative impact upon context

Existing hospitals: what to avoid...

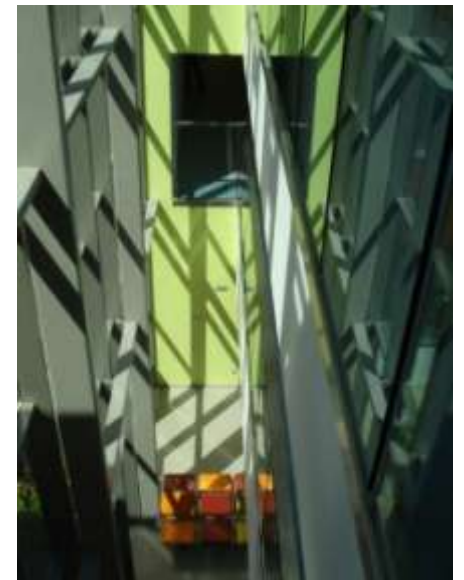
Our approach



the importance of the public face



welcoming, light and easy to use



designing for health and wellness

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Case Study: Southmead Hospital, Bristol



Southmead Hospital: the existing site



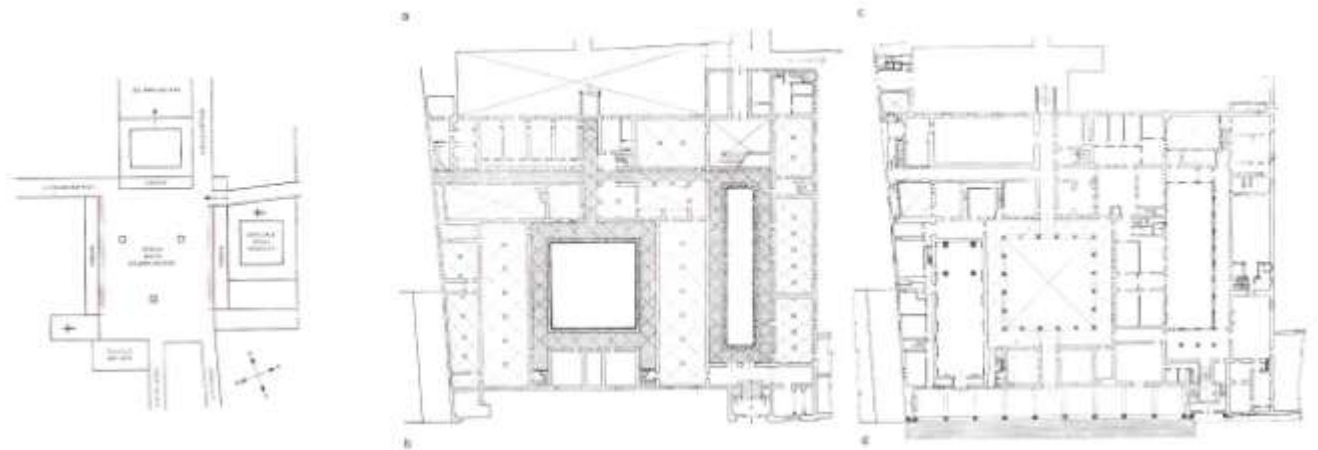
Southmead Hospital: the constraints



Southmead Hospital: inflexible – scorched earth



Foundling Hospital by Brunelleschi



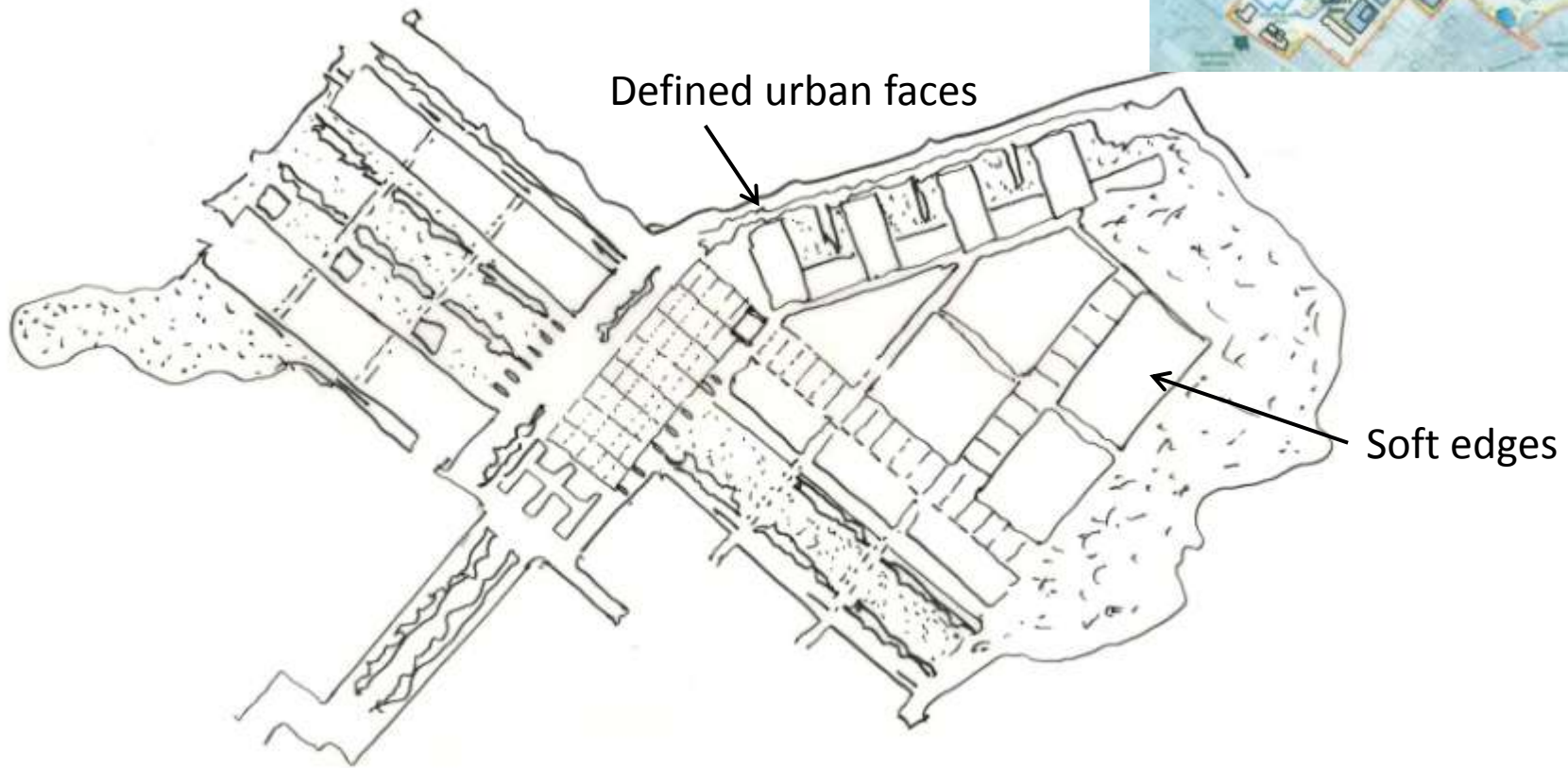
Southmead Hospital: precedent for urban approach

The site figure inverted; i.e. thought of as a sequence of places / spaces defined by buildings:

The antithesis of buildings as objects surrounded by residual space.



Original PSC



Southmead Hospital: applying an urban approach

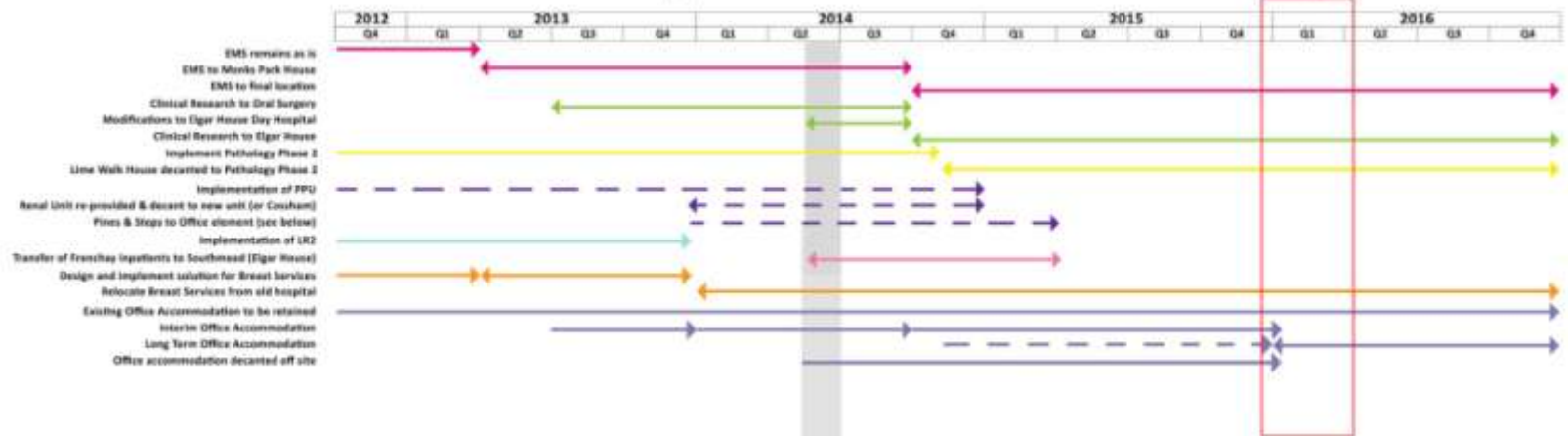


Southmead Hospital: applying an urban approach



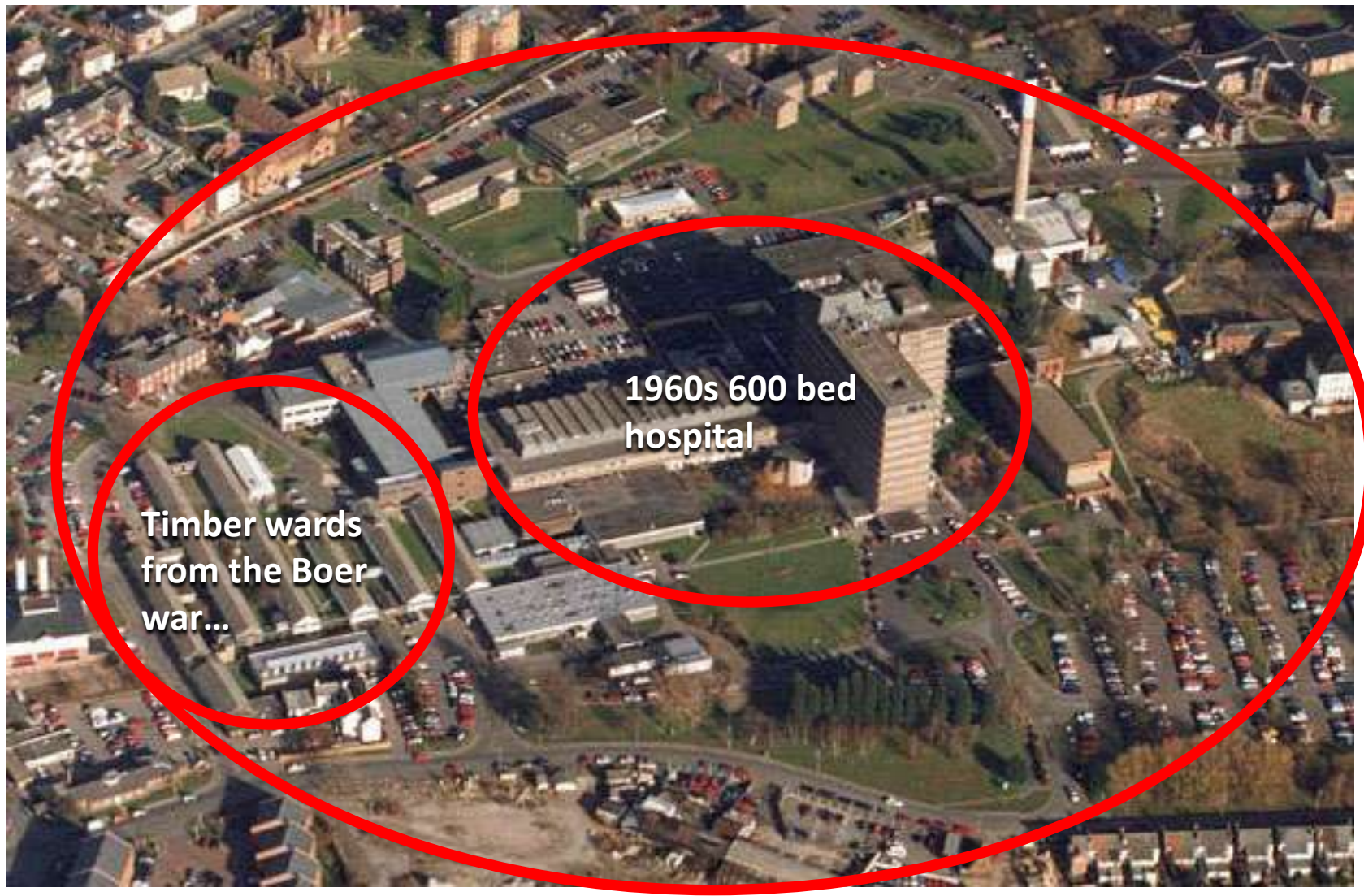
Southmead: masterplan principles implemented & proposed

Quarter 1 2016



Southmead: assembling the remaining jigsaw puzzle...

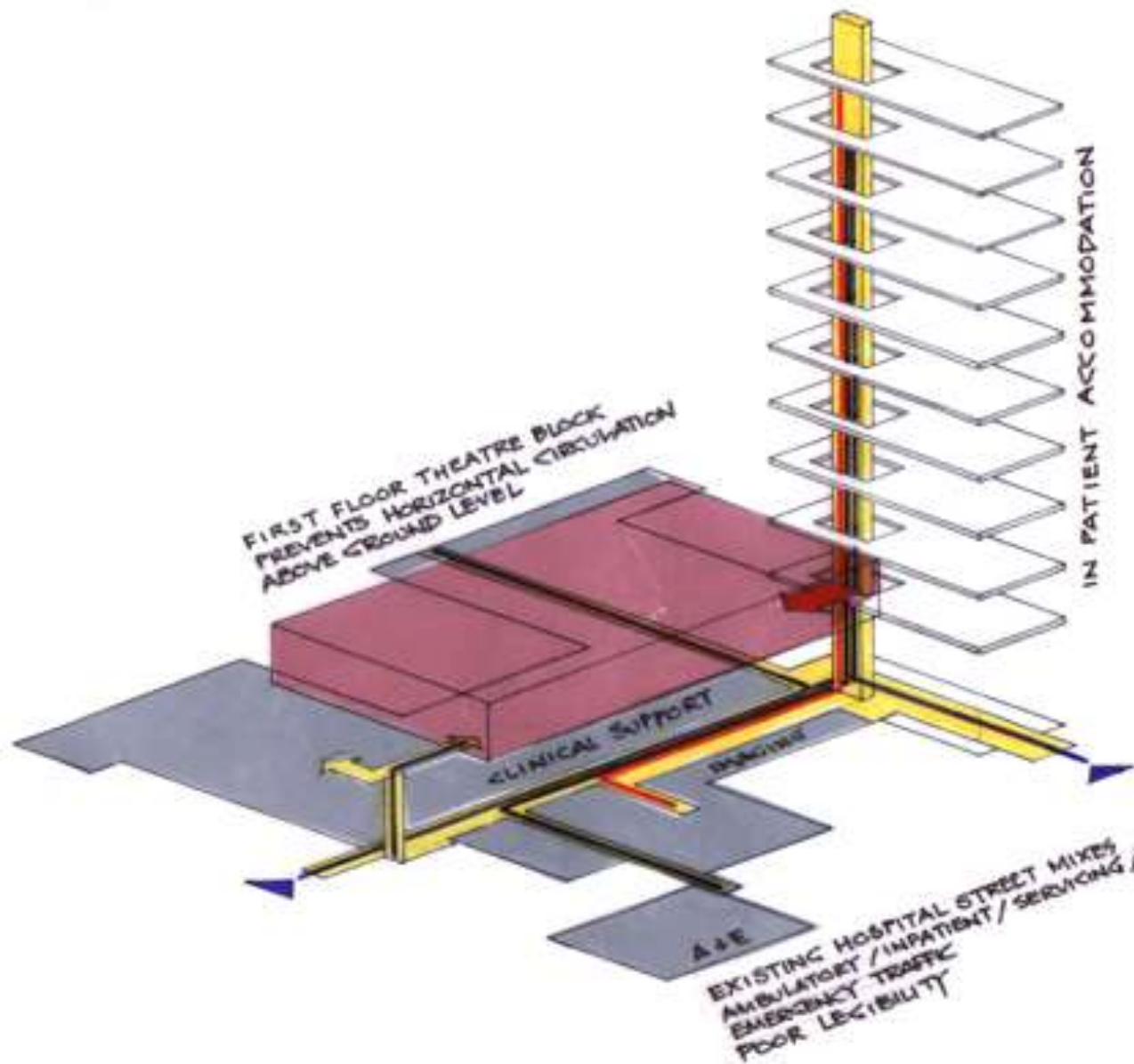
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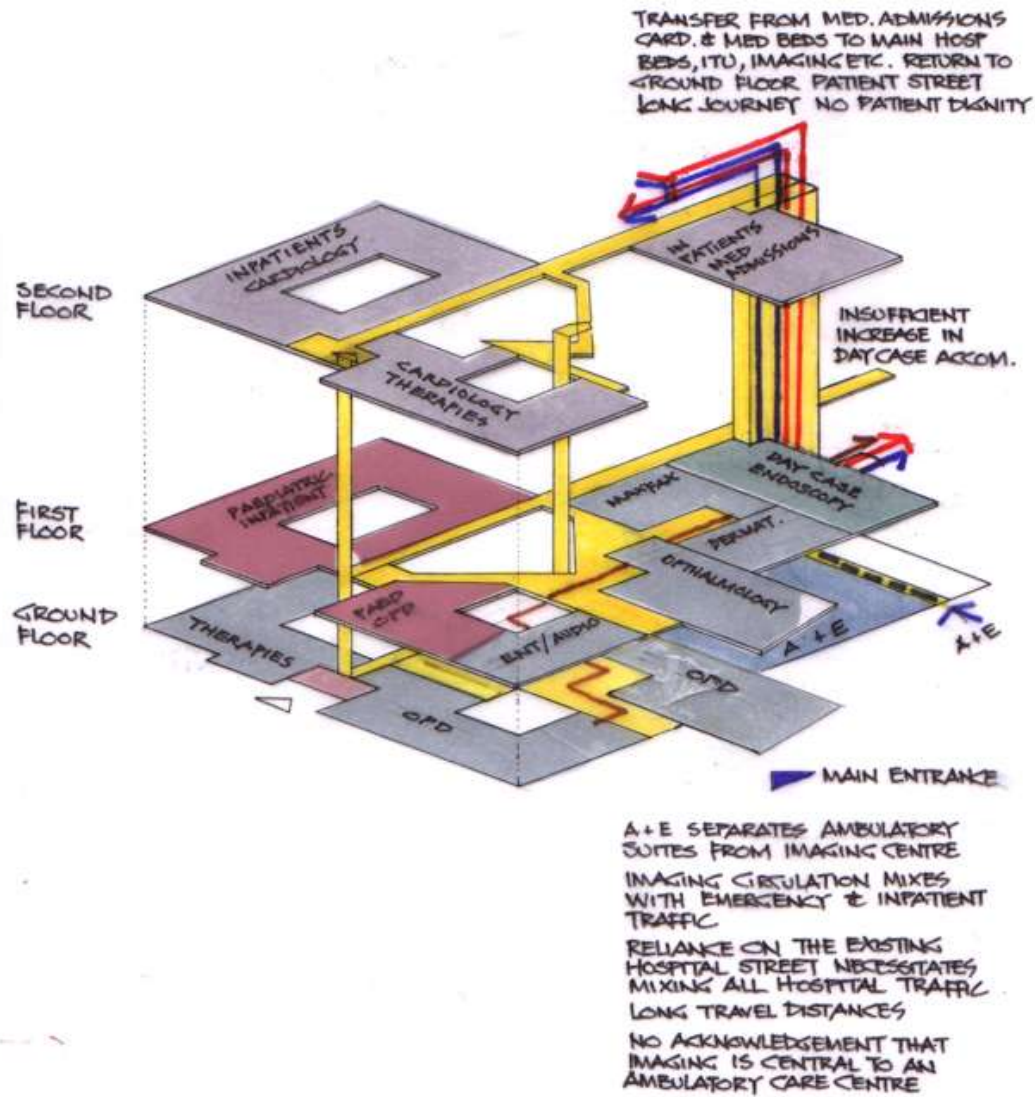
Timber wards
from the Boer
war...

1960s 600 bed
hospital

Gloucester: the existing site



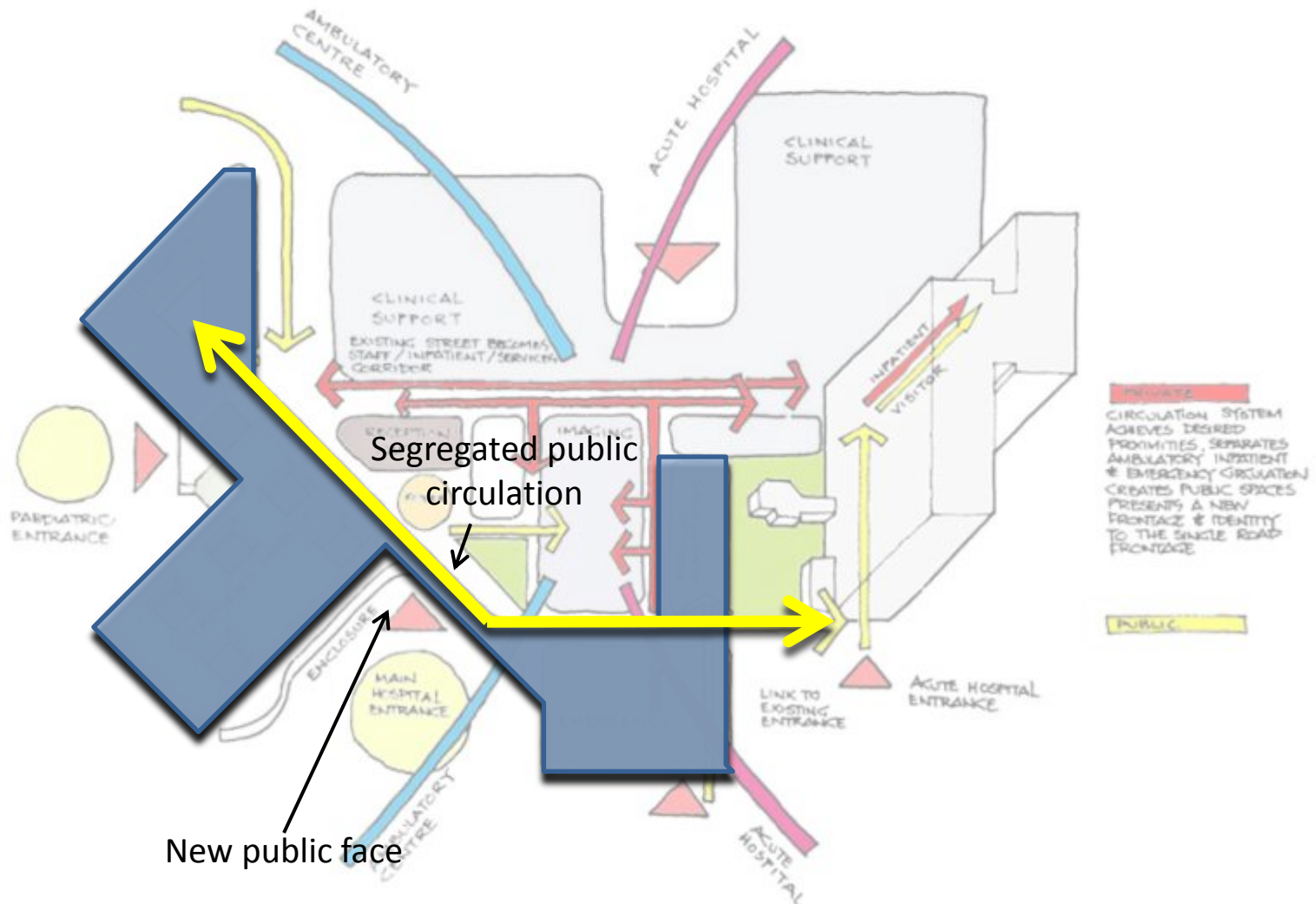
Gloucester: problematic circulation



Gloucester: the PSC exacerbates the problem...



Where?



Gloucester: making the most of the opportunity



Gloucester: the strategy implemented

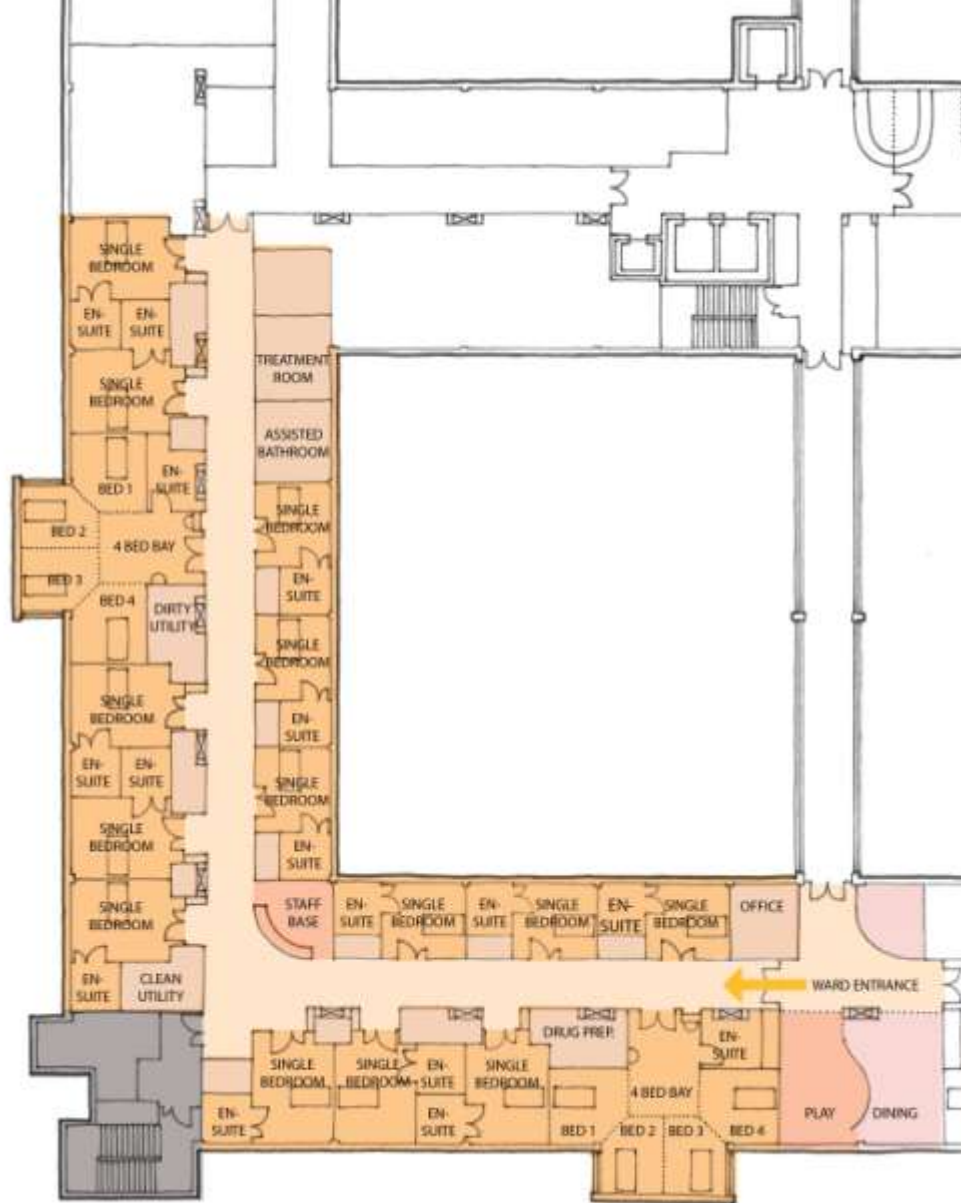


Gloucester: internal and external environment

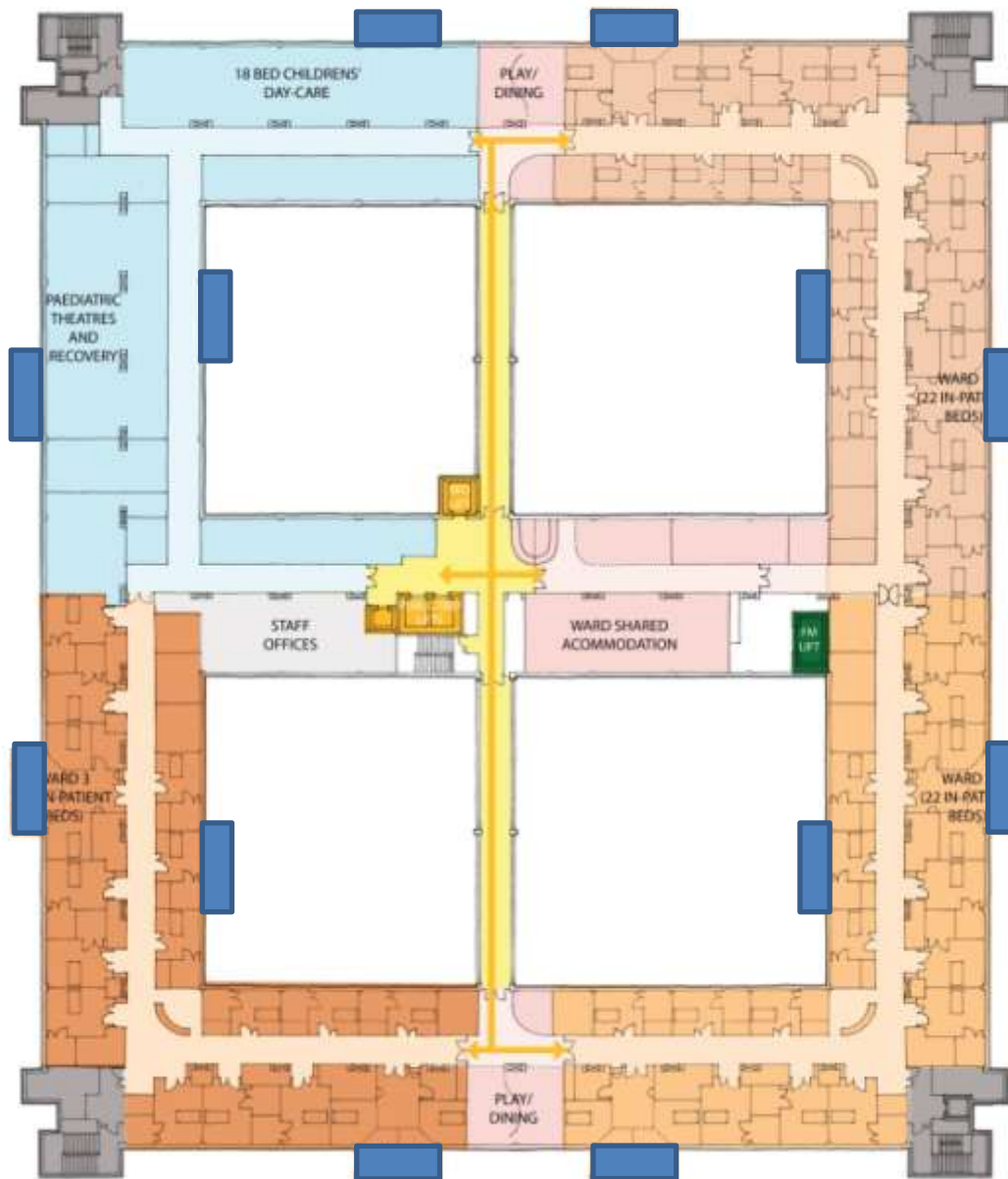
Case Study: St George's Hospital, London



St. George's Hospital: 1970s ward block



St. George's Hospital: ward concept

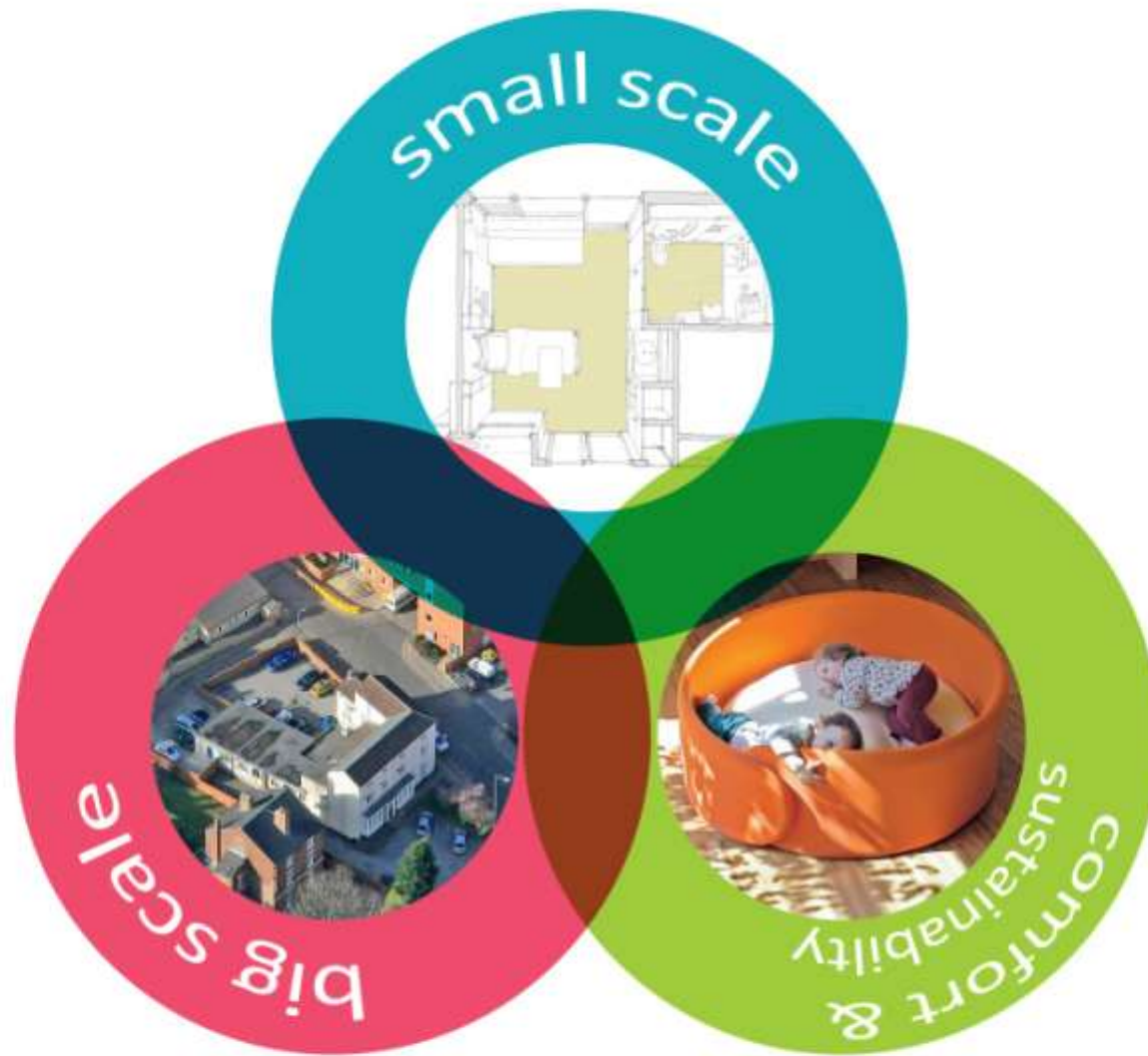


St. George's Hospital: small extensions transform use



St. George's Hospital: future change enabled

Case Study: The Children's Hospital, Sheffield



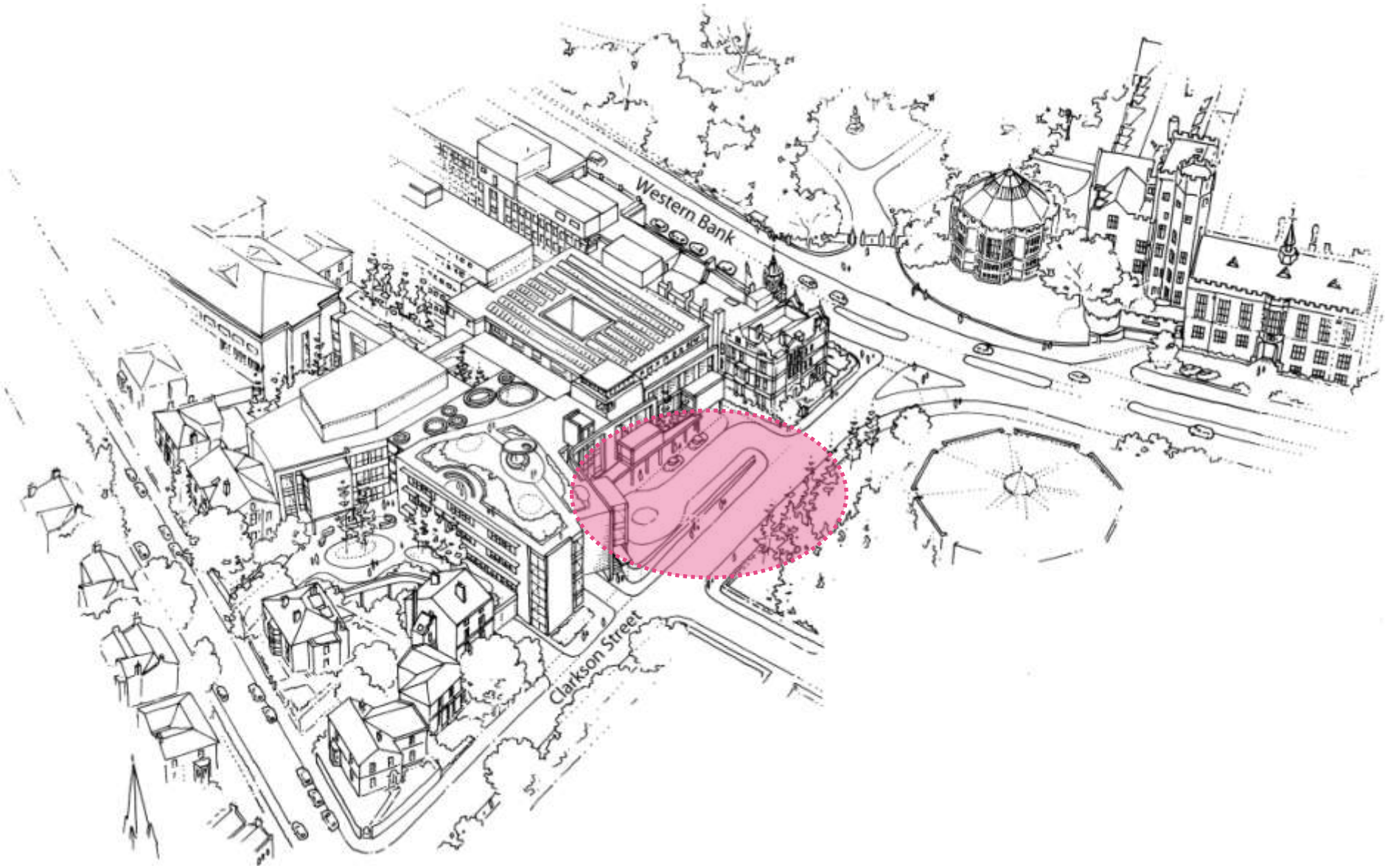
Our approach



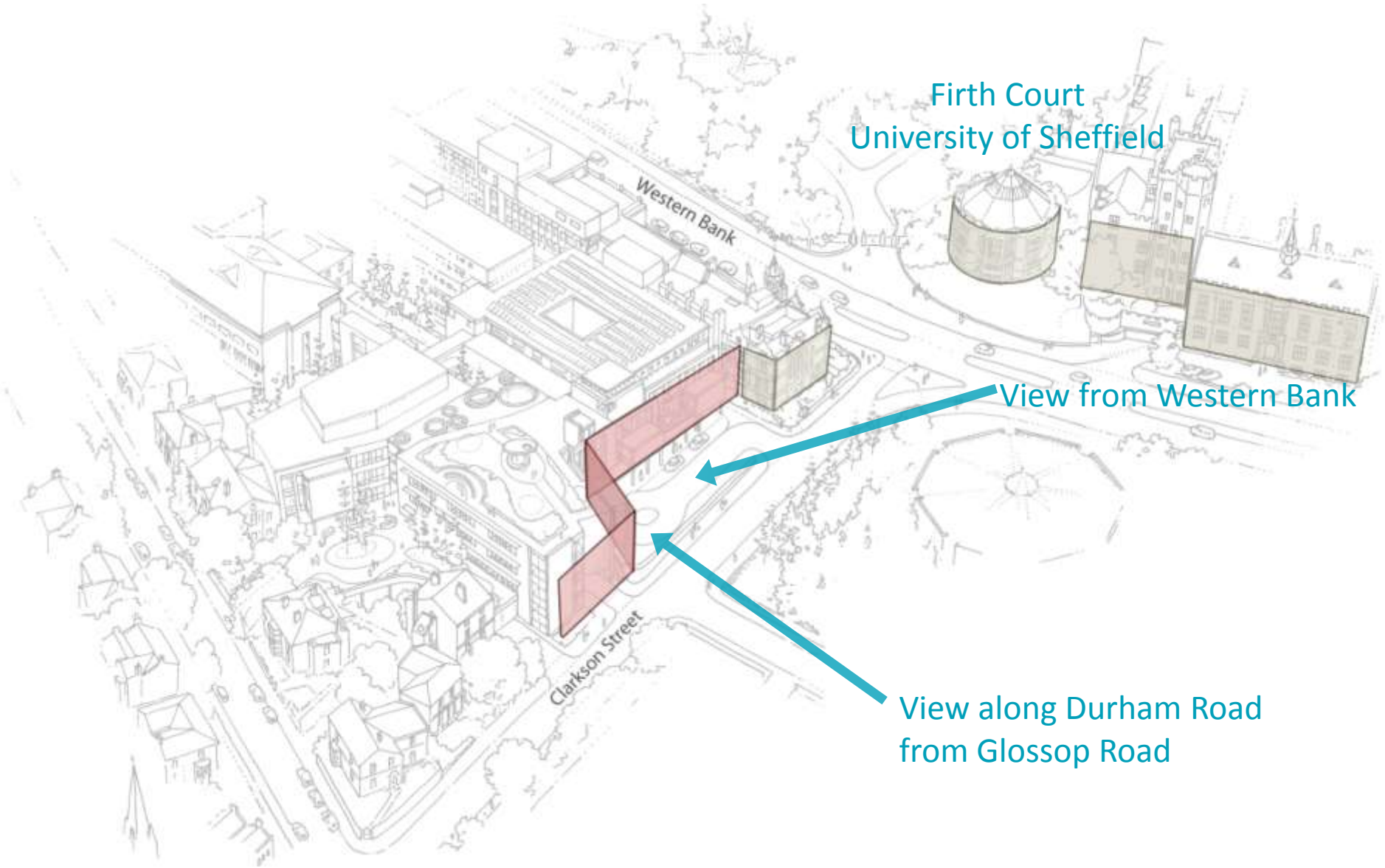
Sheffield: site zones



Sheffield: urban context



Sheffield: urban context New main entrance

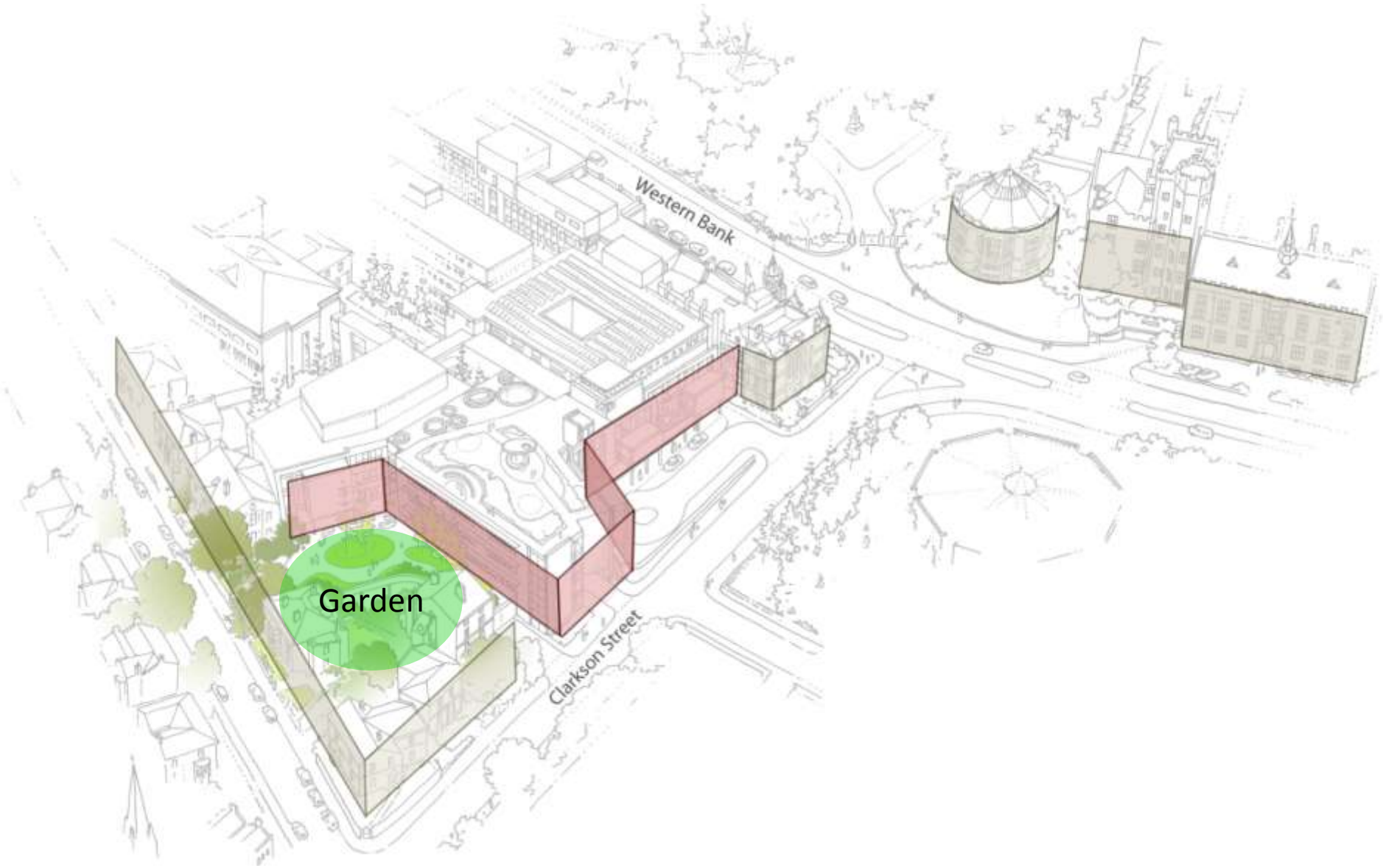


Sheffield: urban context New main entrance



Northumberland Road Conservation Area

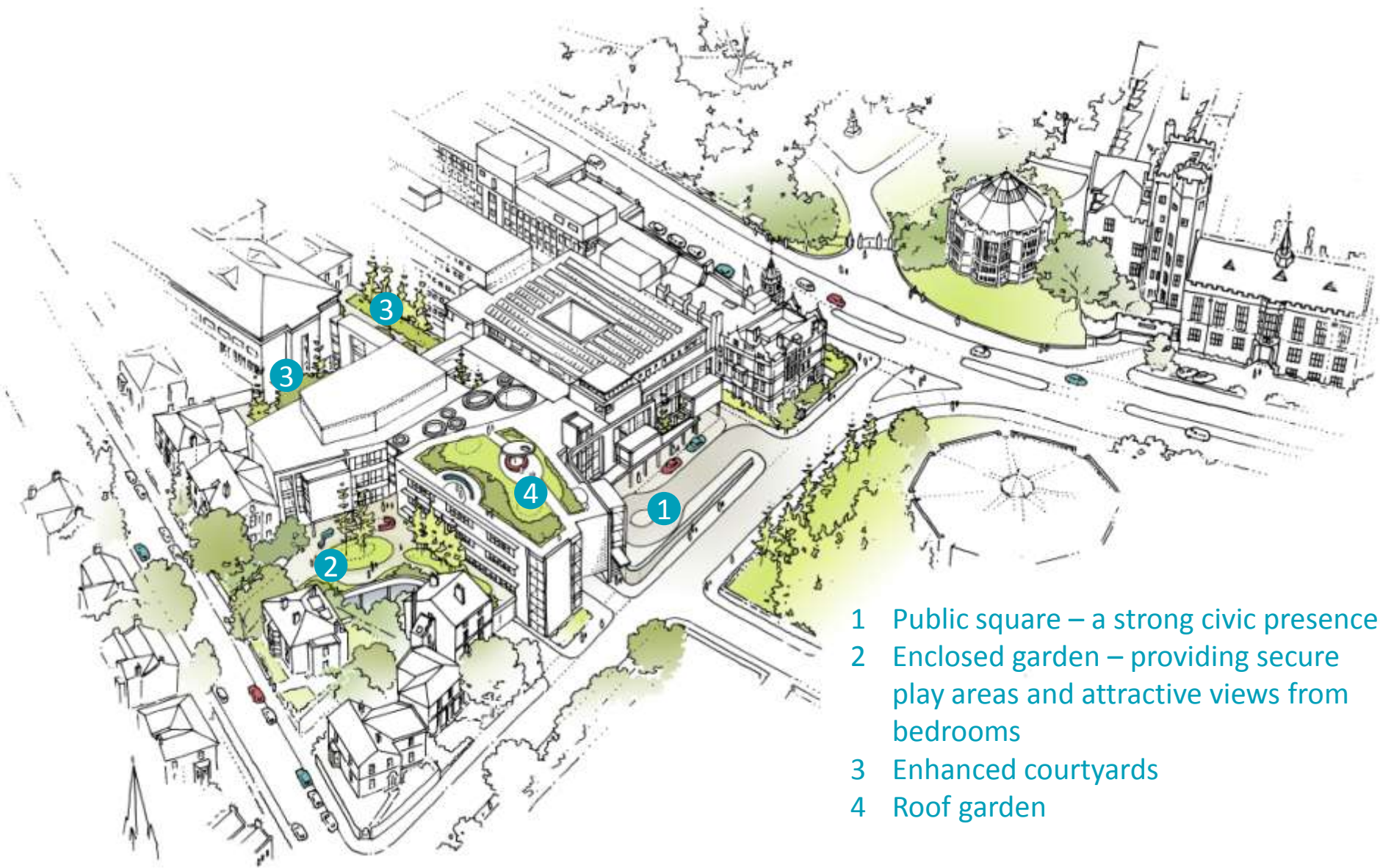
Sheffield: urban context Conservation Area



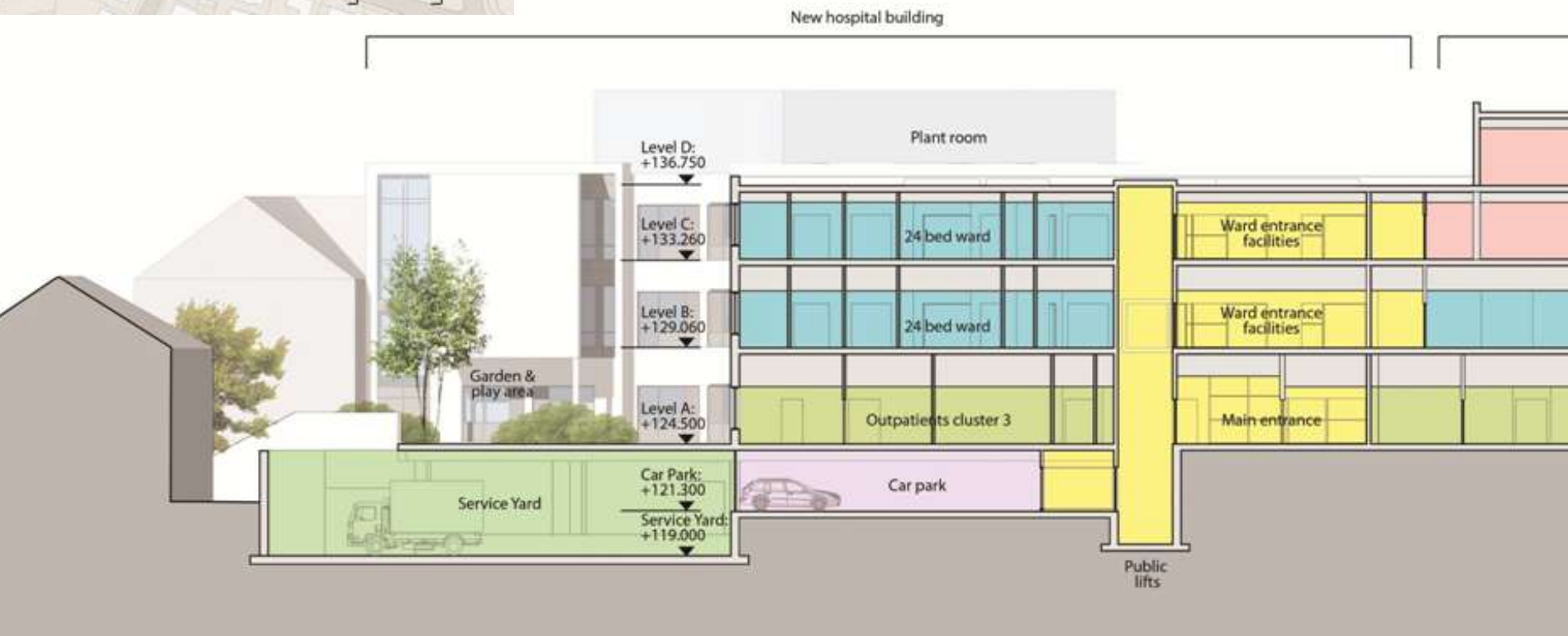
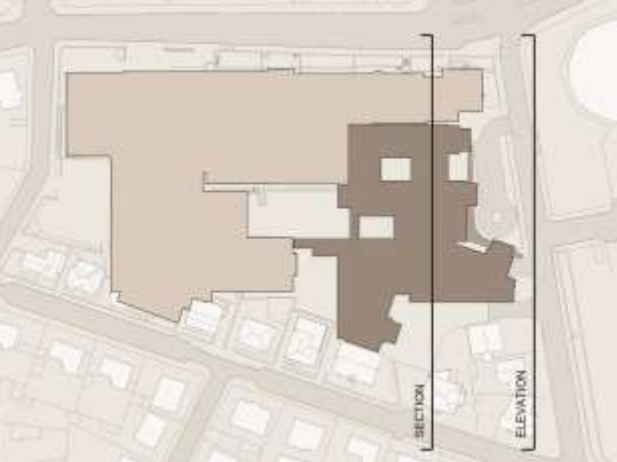
Sheffield: urban context Conservation Area



Sheffield: main entrance elevation



- 1 Public square – a strong civic presence
- 2 Enclosed garden – providing secure play areas and attractive views from bedrooms
- 3 Enhanced courtyards
- 4 Roof garden



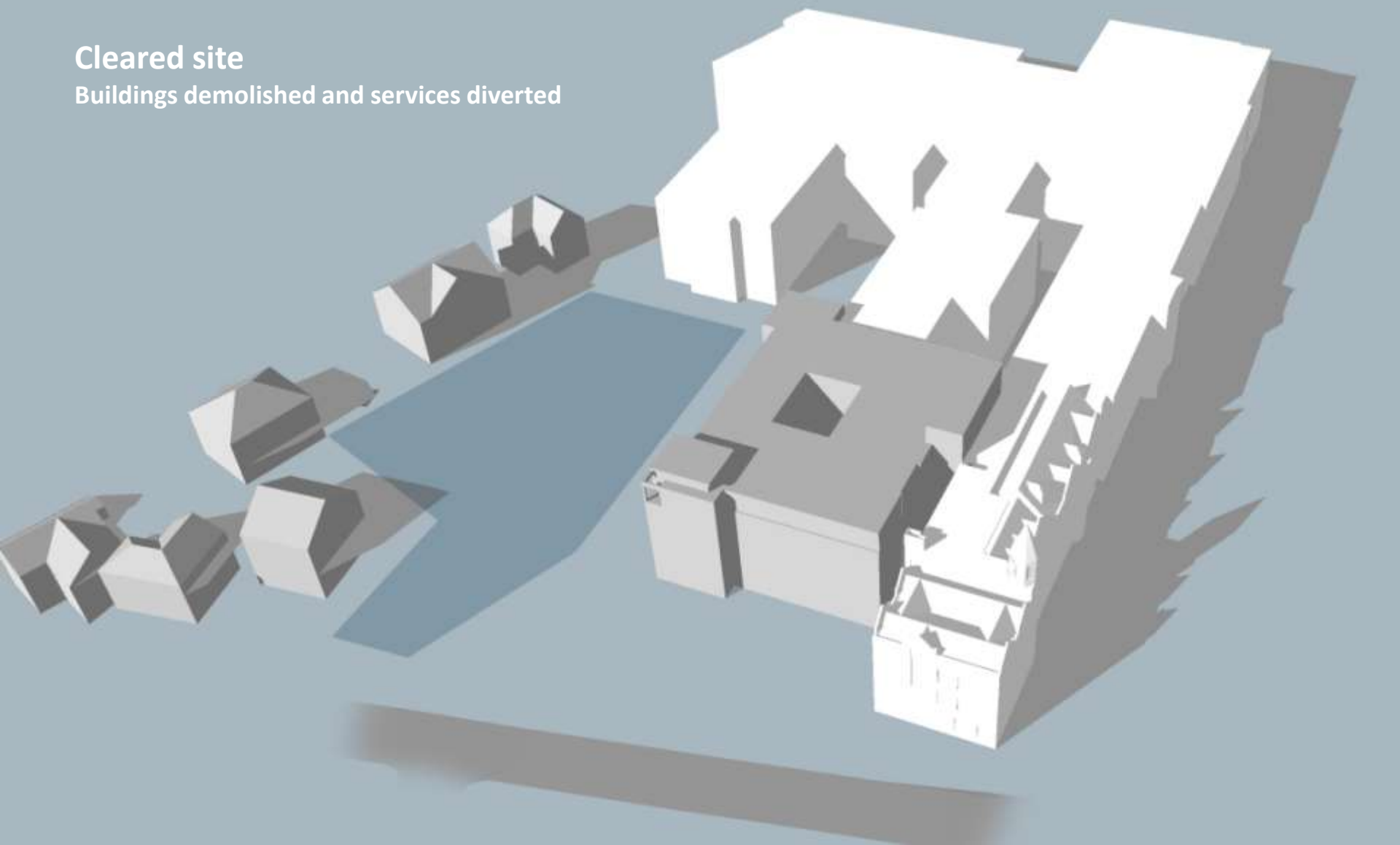
Sheffield: detailed level study



Sheffield: access & connectivity

Cleared site

Buildings demolished and services diverted

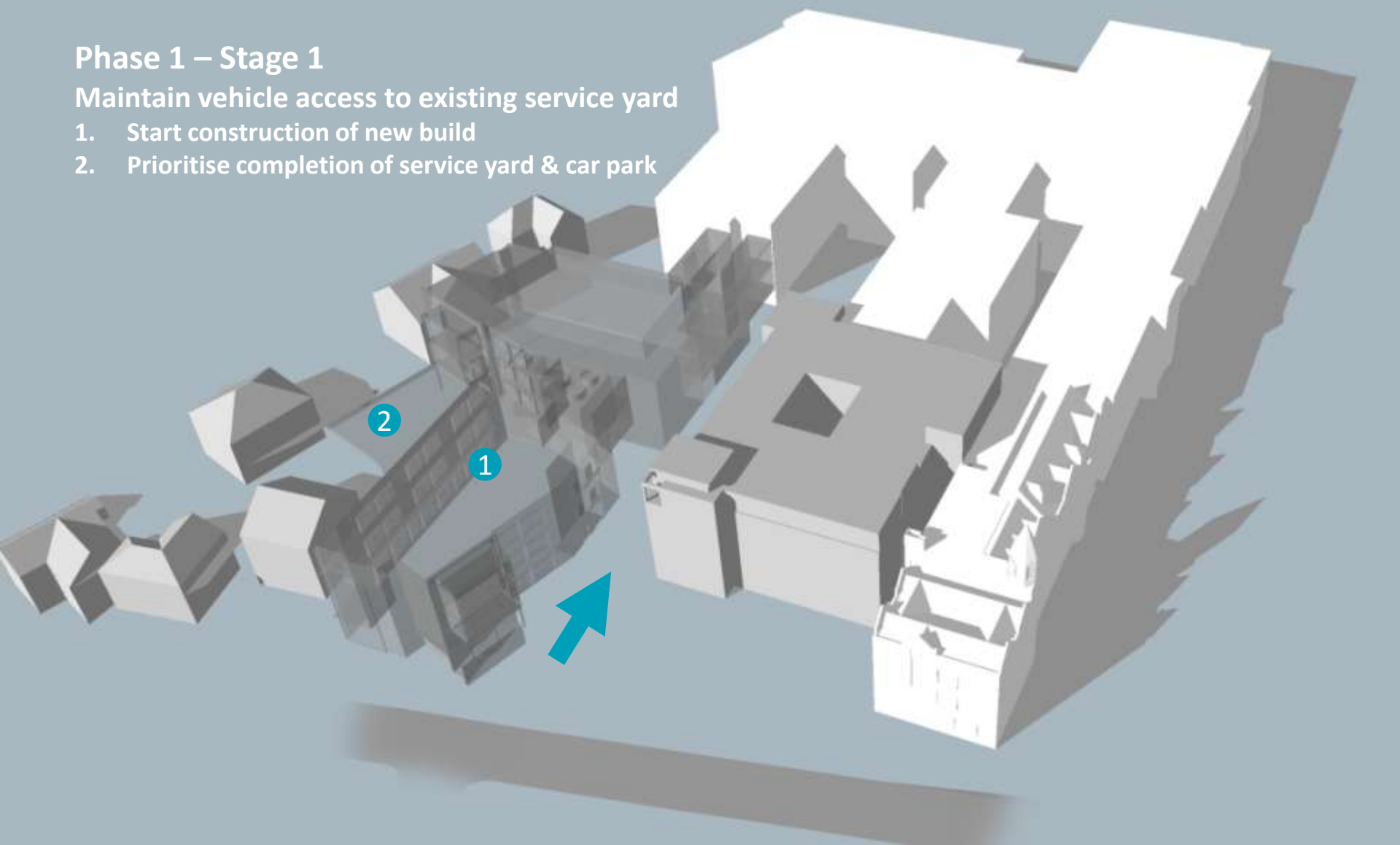


Sheffield: deliverability

Phase 1 – Stage 1

Maintain vehicle access to existing service yard

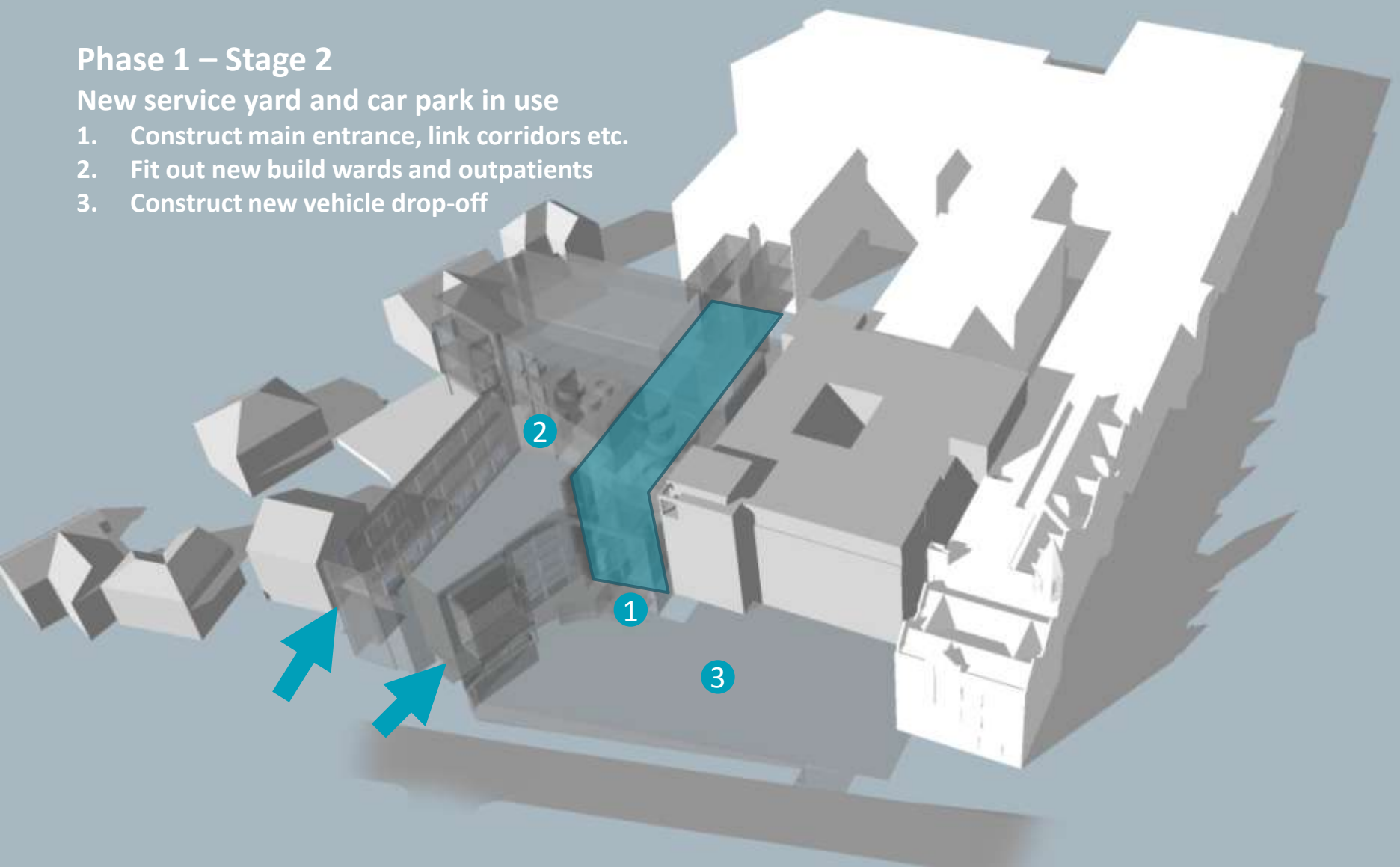
1. Start construction of new build
2. Prioritise completion of service yard & car park



Phase 1 – Stage 2

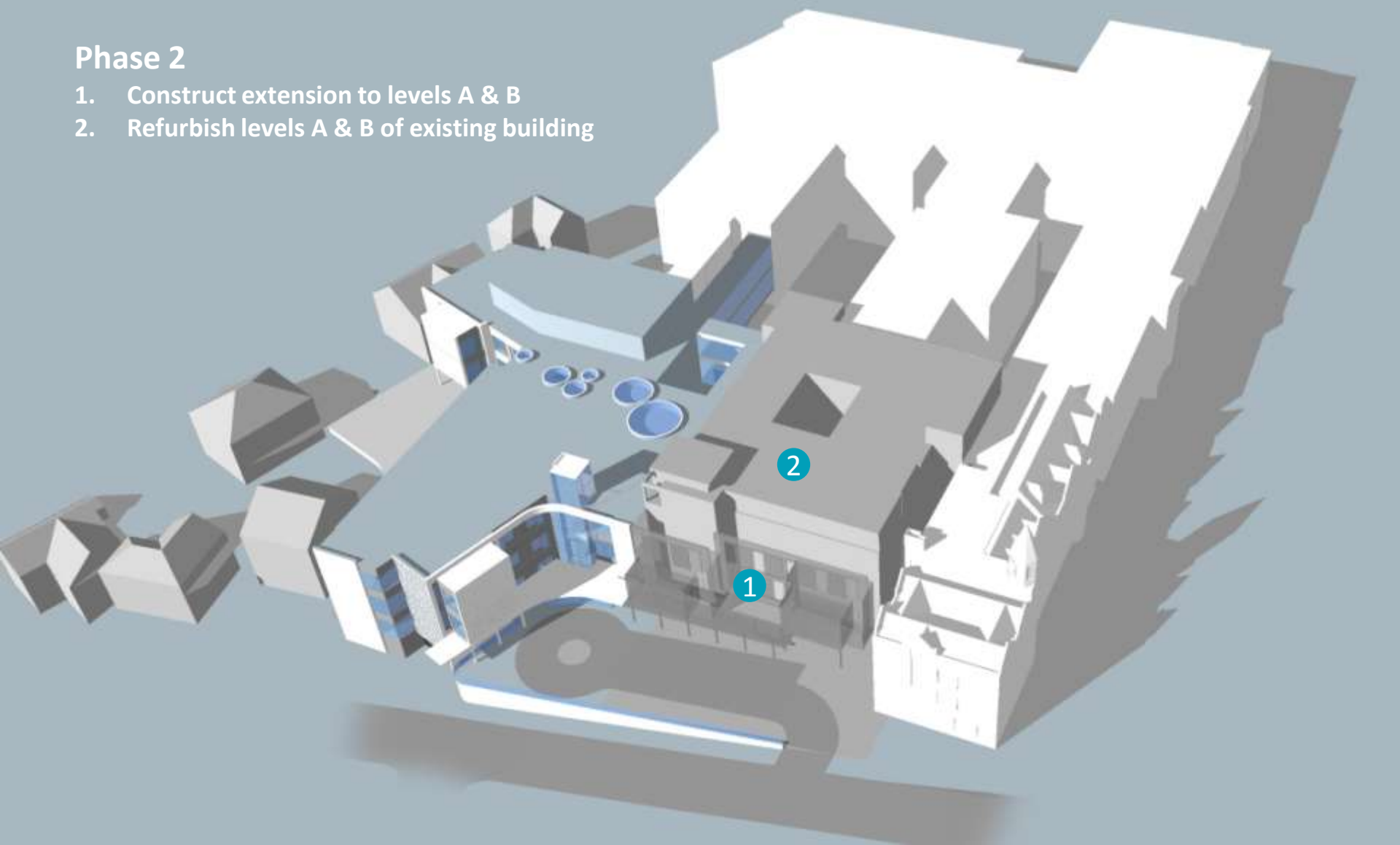
New service yard and car park in use

1. Construct main entrance, link corridors etc.
2. Fit out new build wards and outpatients
3. Construct new vehicle drop-off

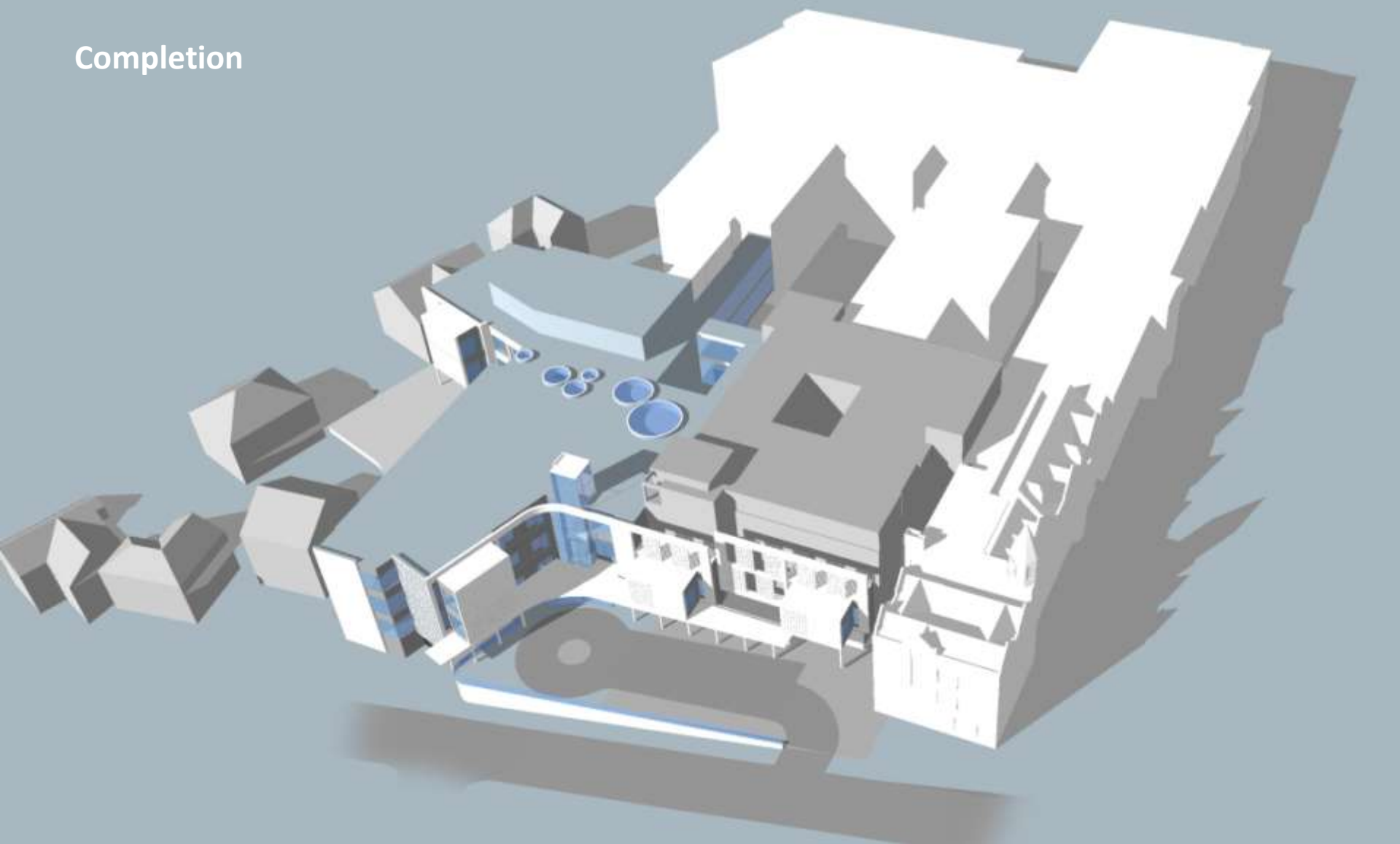


Phase 2

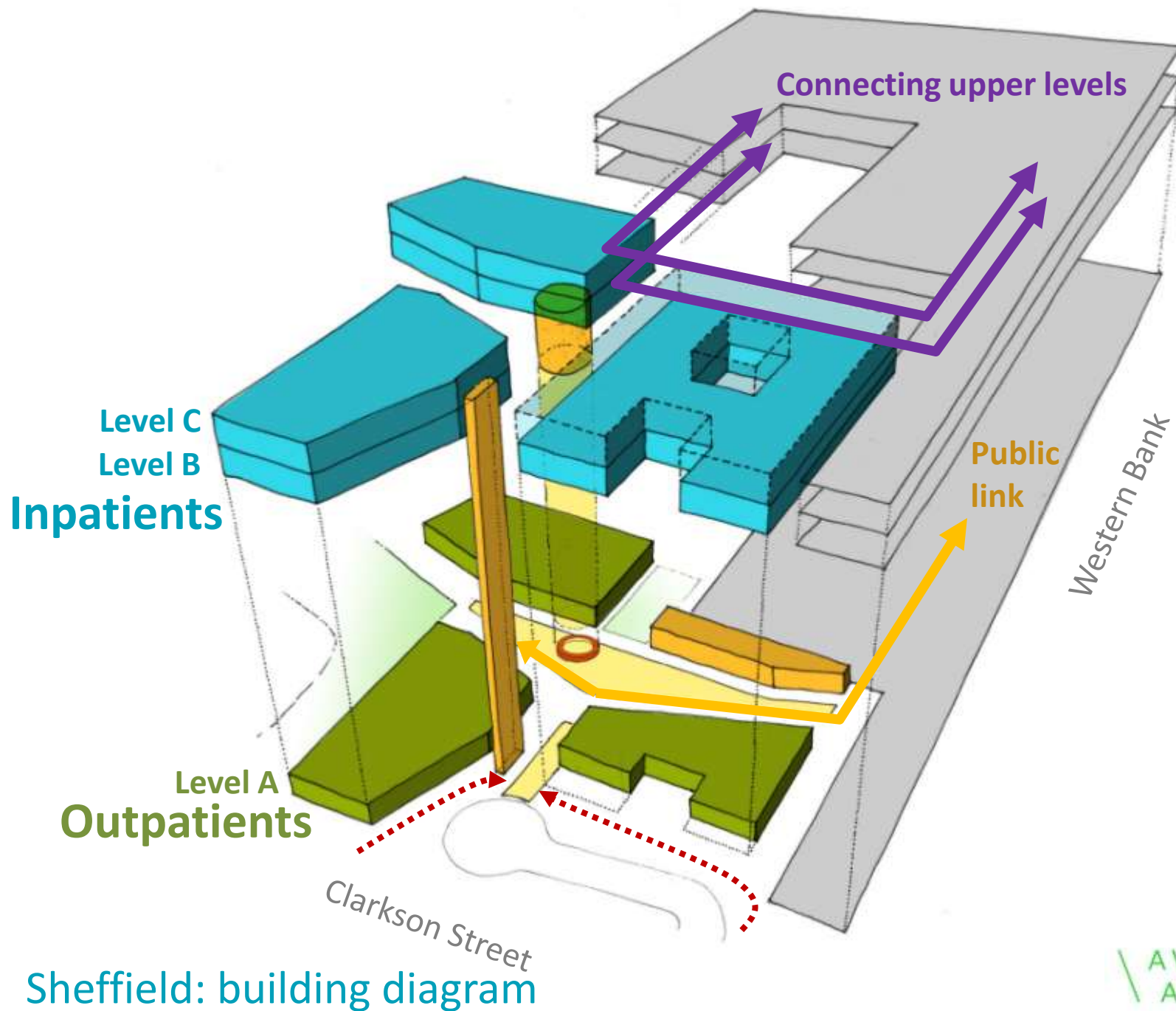
1. Construct extension to levels A & B
2. Refurbish levels A & B of existing building



Completion



Sheffield: deliverability



Sheffield: building diagram







Public Access to other departments



Sheffield: Level A - Outpatients



Sheffield: Level A Stairs and lifts

Ward 2

12-bed cluster

12-bed cluster

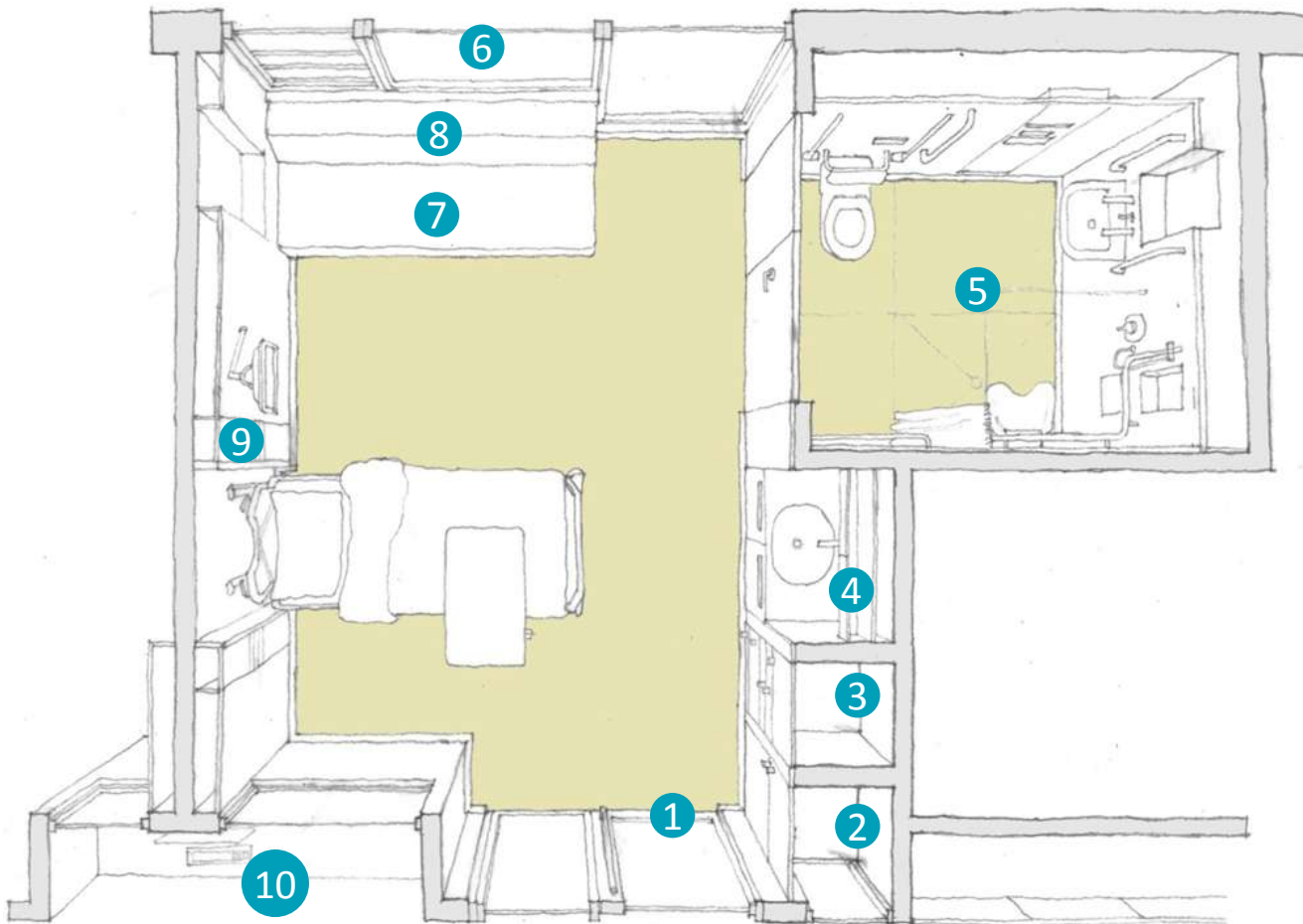
Ward 1

12-bed cluster

12-bed cluster

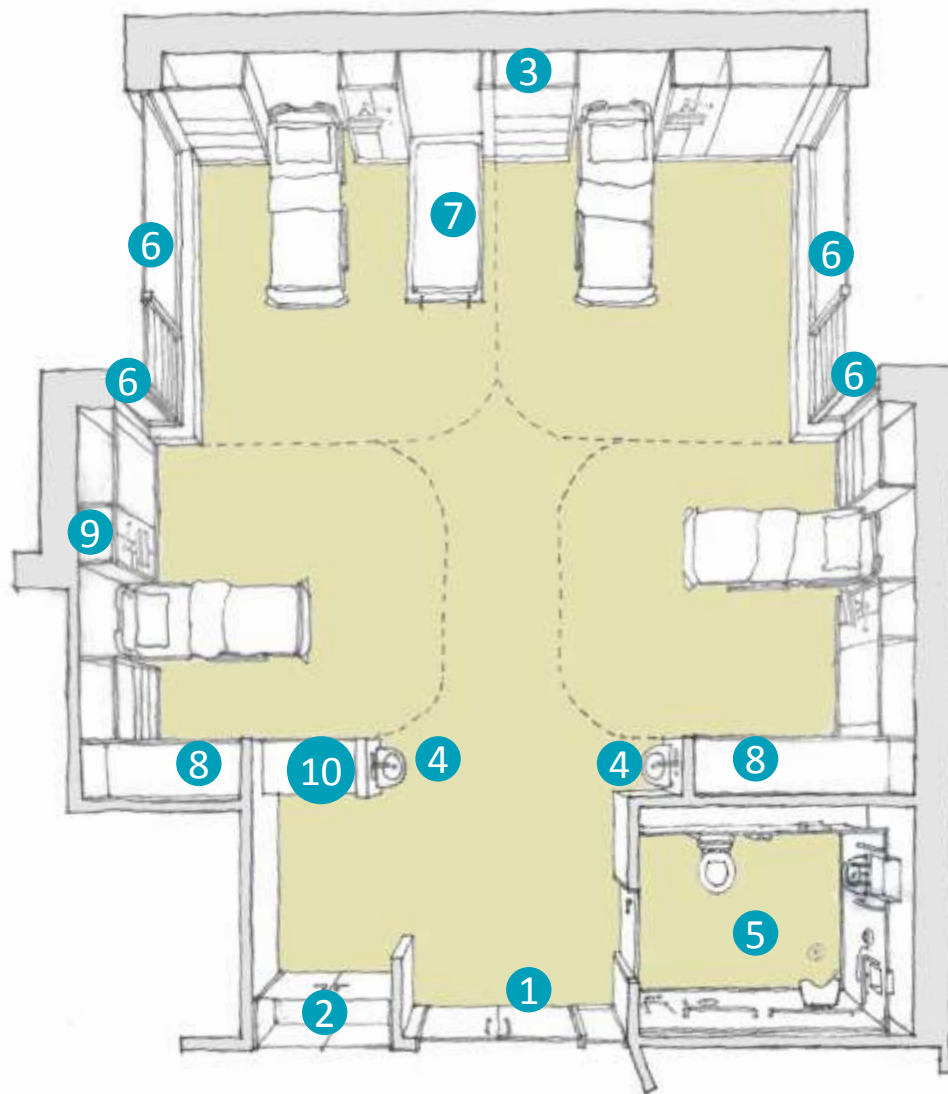
- Standardised rooms
- Daylight and views
- Observation
- Patient Safety
- Fire escape





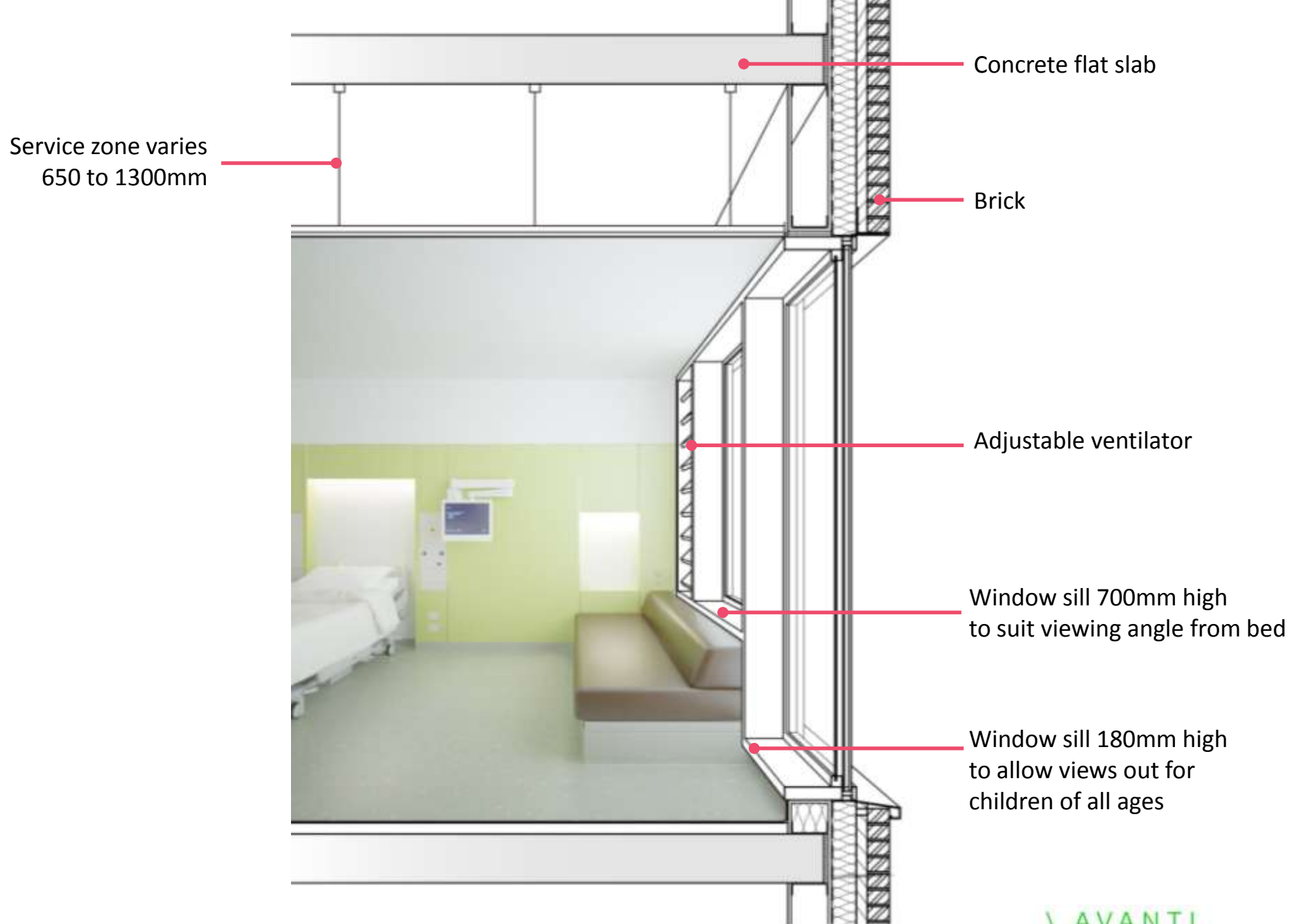
- 1 Glazed doors with privacy option
- 2 Pass-through cupboard
- 3 Patient wardrobe
- 4 Clinical station
- 5 Fully accessible en-suite
- 6 Daylight, views, ventilation
- 7 Day bed
- 8 Removeable cushion creates relative's bed
- 9 Bedhead services
- 10 Touch down base with clear view of patients

Sheffield: single bedroom concept



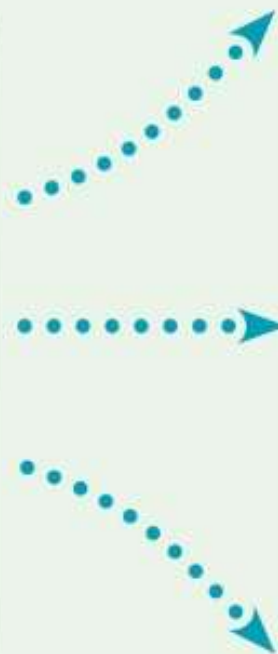
- 1 Glazed doors with privacy option
- 2 Pass-through cupboard
- 3 Patient wardrobe
- 4 Clinical station
- 5 Fully accessible en-suite
- 6 Daylight, views, ventilation
- 7 Relative's foldaway bed
- 8 Cupboard
- 9 Bedhead services
- 10 Touch down base with clear view of patients

Sheffield: 4 bed room concept





Touch screen control at
nurse base and admissions
Simplified control to reduce energy
use for non-occupied rooms



Unoccupied
Full BMS control
to minimise
energy use

Occupied
Manual control
with BMS Override
to ensure
maintenance of
comfort conditions

Purge
Purge ventilate
room via BMS
override for up to
five minutes

AUTUMN / SPRING

VENT LOUVRE:
OPEN
~ 400 l/s

AIR EXTRACTED
FROM ENSUITE
50 l/s

AIR FROM
CORRIDOR
(19°C)
25 l/s



WINTER + HIGH SUMMER

VENT LOUVRE:
CLOSED
10 l/s (trickle vent)

AIR EXTRACTED
FROM ENSUITE
35 l/s

AIR FROM
CORRIDOR
(19°C)
25 l/s



PURGE

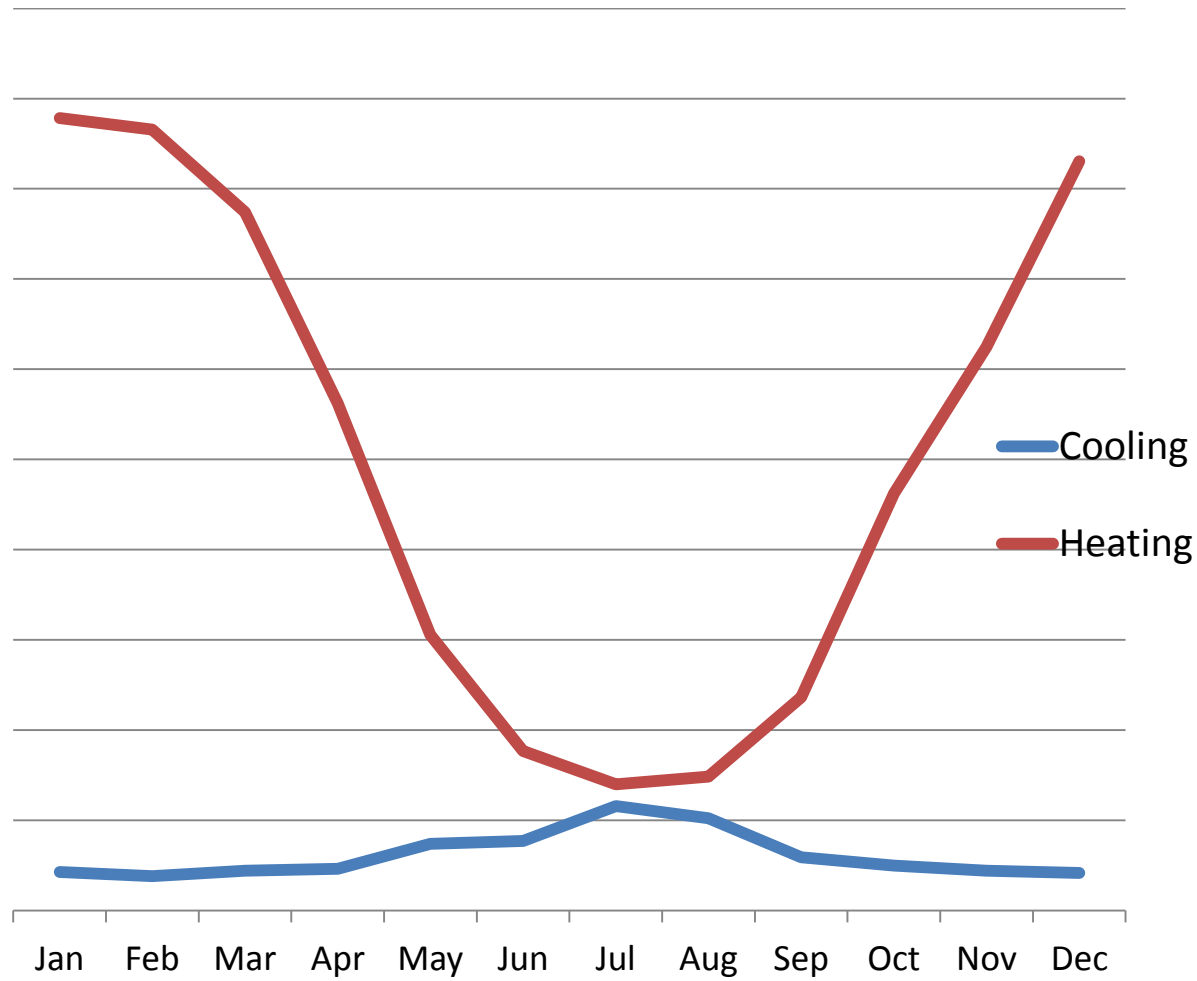
VENT LOUVRE:
OPEN
50 l/s

AIR EXTRACTED
FROM ENSUITE
75 l/s

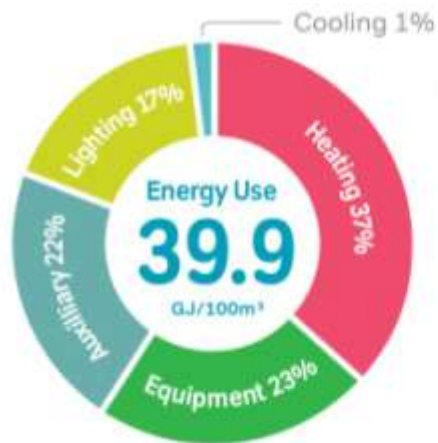
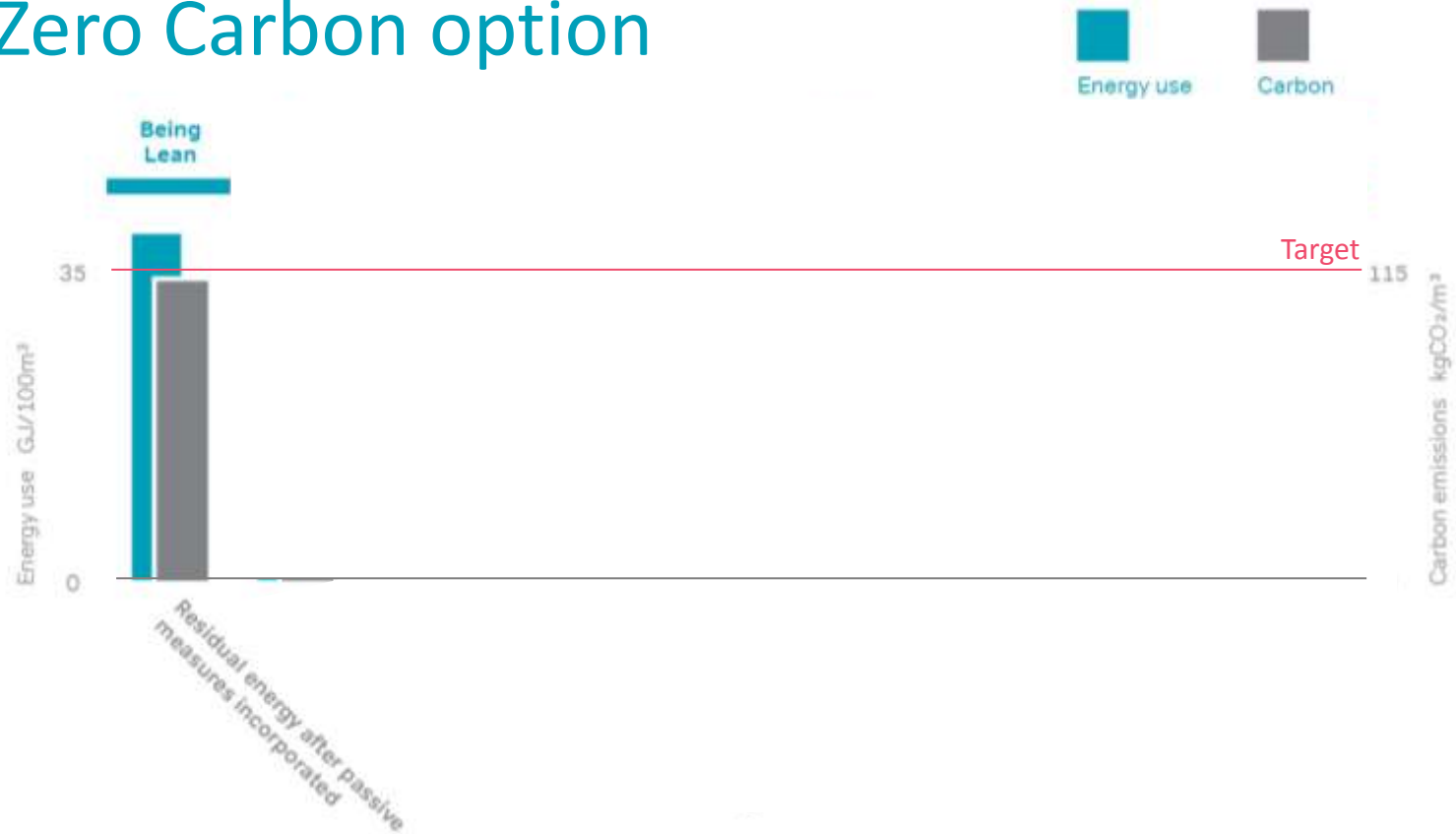
AIR FROM
CORRIDOR
(19°C)
25 l/s



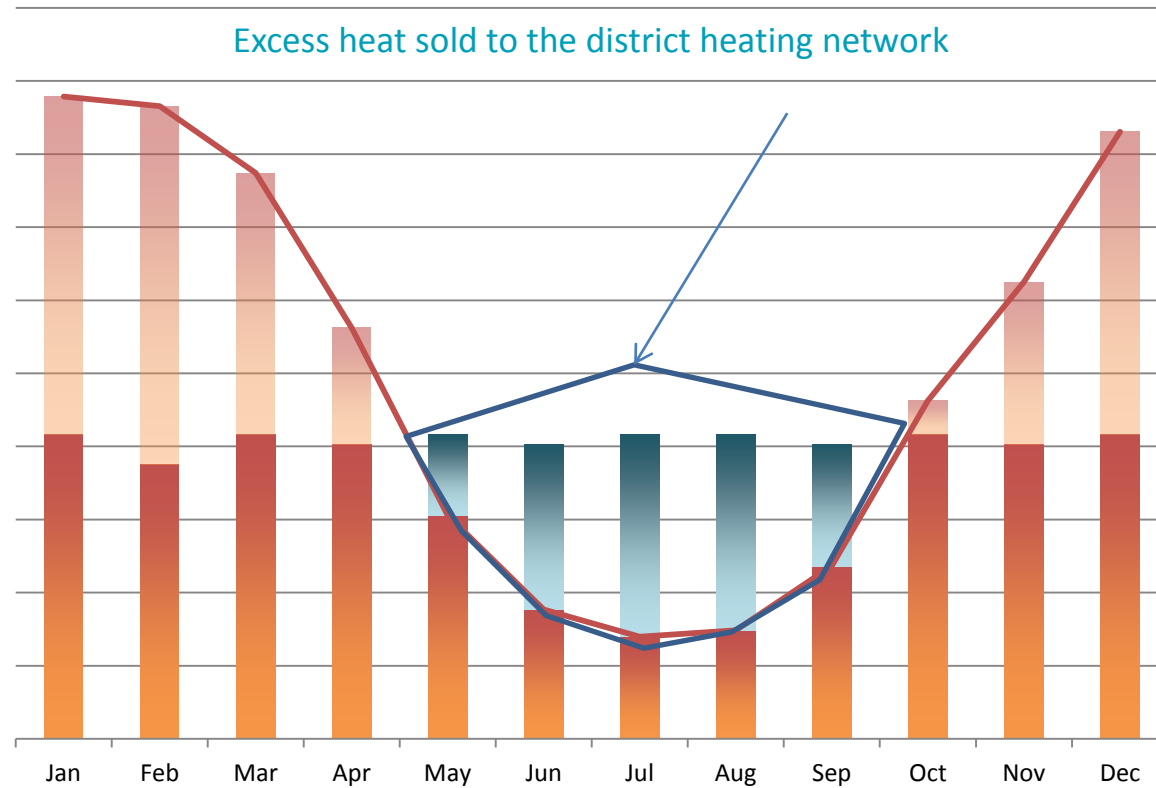
Annual heating and cooling profile



Low Zero Carbon option



Low Zero Carbon option



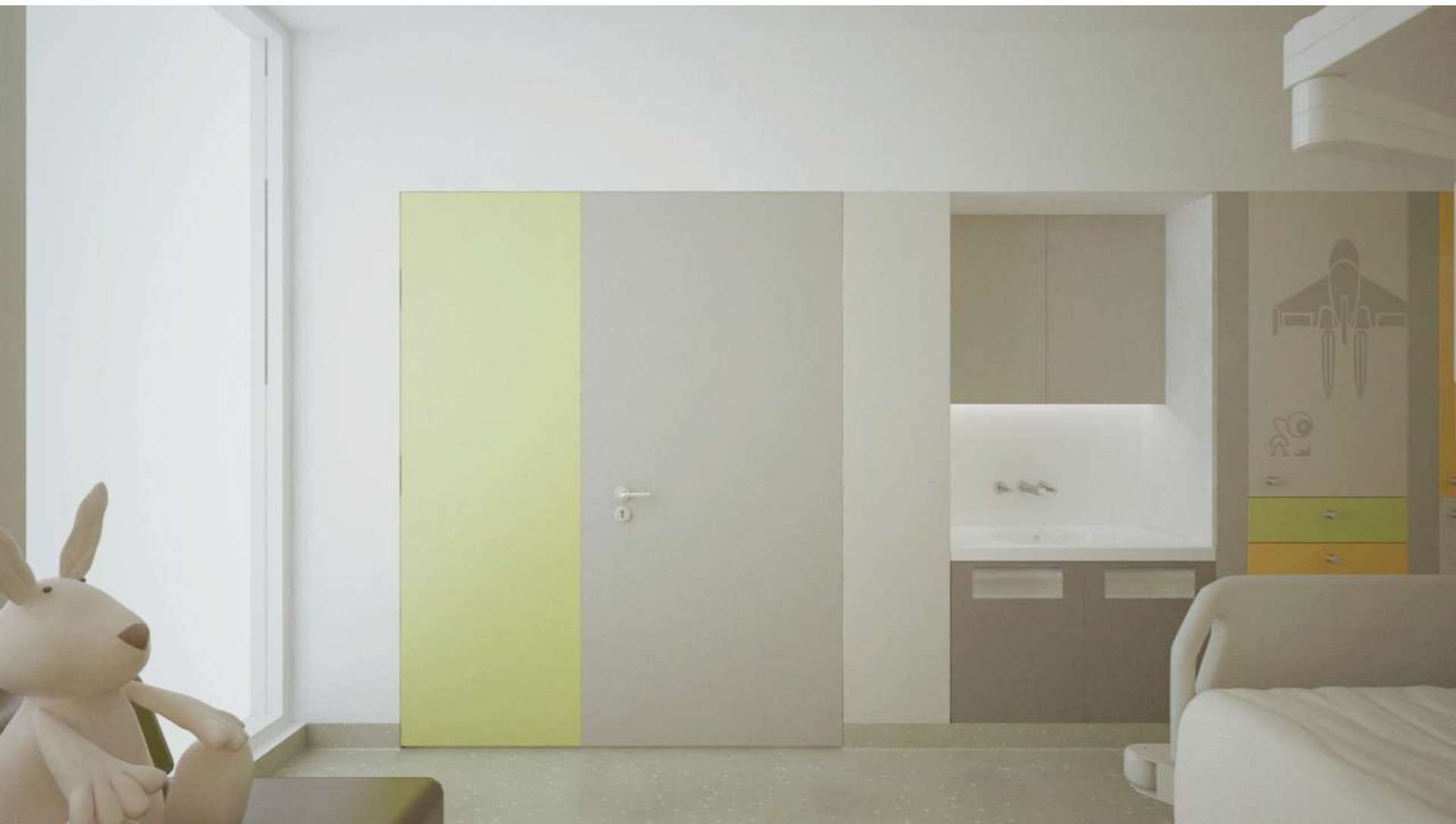






















- Wholly delivers clinical brief
- Contextual
- Accessible
- An all ages internal environment
- Comfortable, simple & sustainable
- Safe
- Deliverable

