WI-FI DESIGN IN HIGHER EDUCATION

MATT SEYMOUR
HPE POINTNEXT

UNIVERSITIES ARE POSSIBLY THE BEST PLACE TO LEARN WI-FI

010A/001 010A/002
AFAP2
105
PWR ENET 11A/N 11B/G/N

UNIVERSITY
of York

Photo: Tim Green

Photo: John Robinson

Photo: Dearg Doom

Photo: Char

REQUIREMENTS

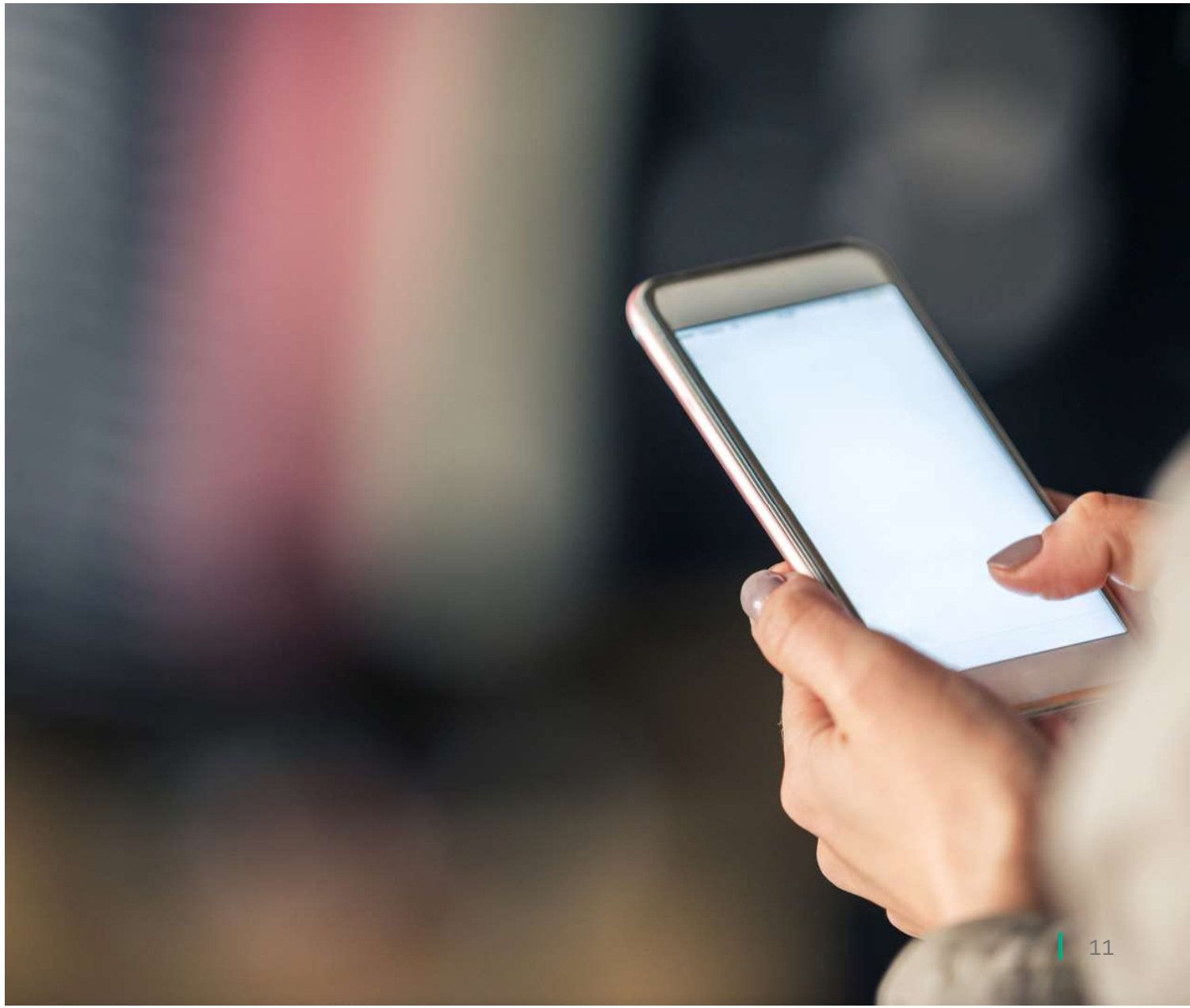
Which devices need to do what and where?

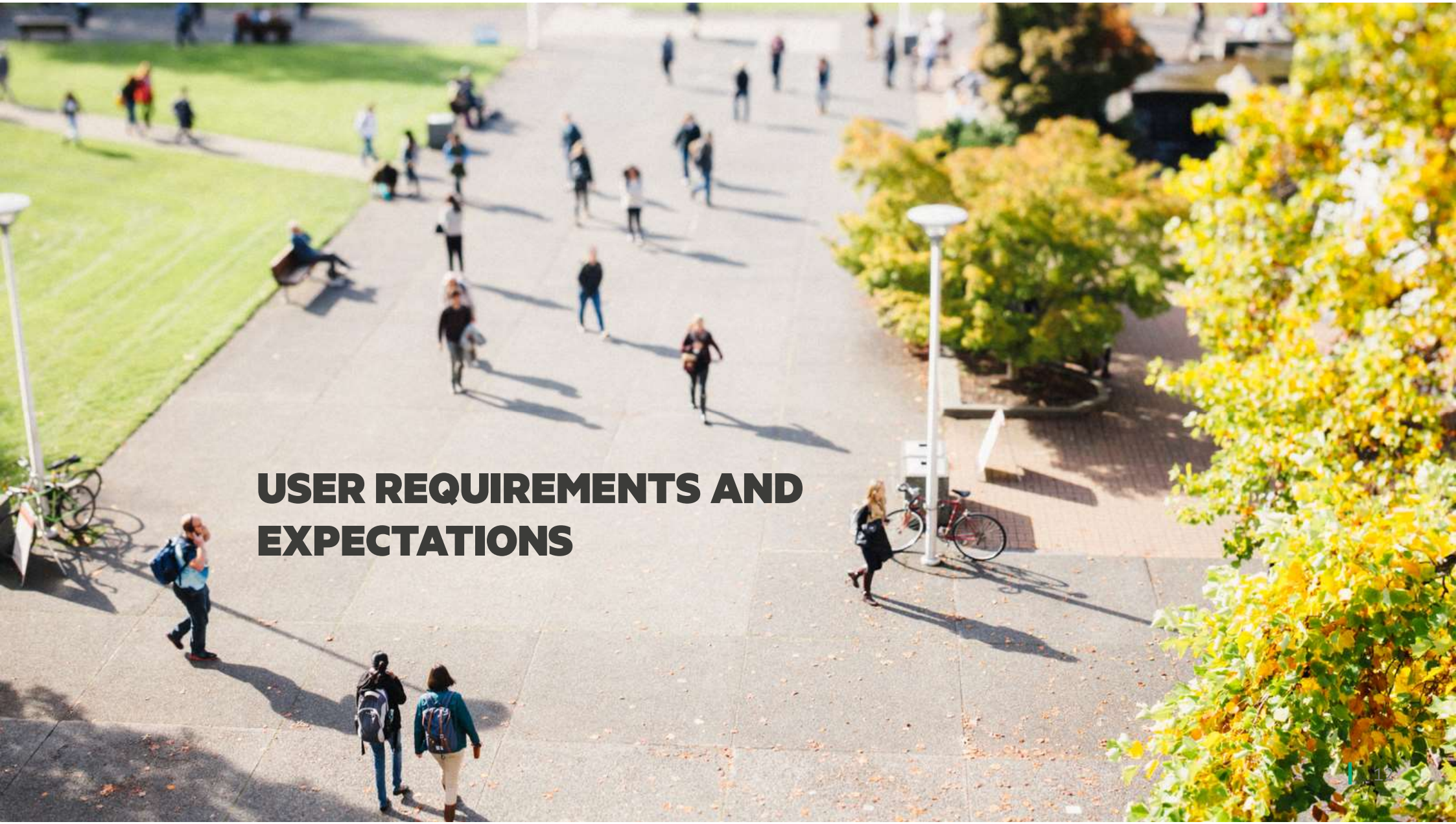
CLIENT DEVICES
YOU HAVE ZERO CONTROL
SAMSUNG
SAMSUNG
2.7 INCH TFT LCD MONITOR

MOST IMPORTANT, LEAST CAPABLE

- Cheap Chromebook?
- Raspberry Pi?
- Cheap smartphone?
- 2.4GHz only laptop?

- Target -60dB in Ekahau designs





USER REQUIREMENTS AND EXPECTATIONS

USER REQUIREMENTS AND EXPECTATIONS

Students in:

- Study bedrooms
- Shared study space
- Lecture theatre

Administrative staff

Researchers

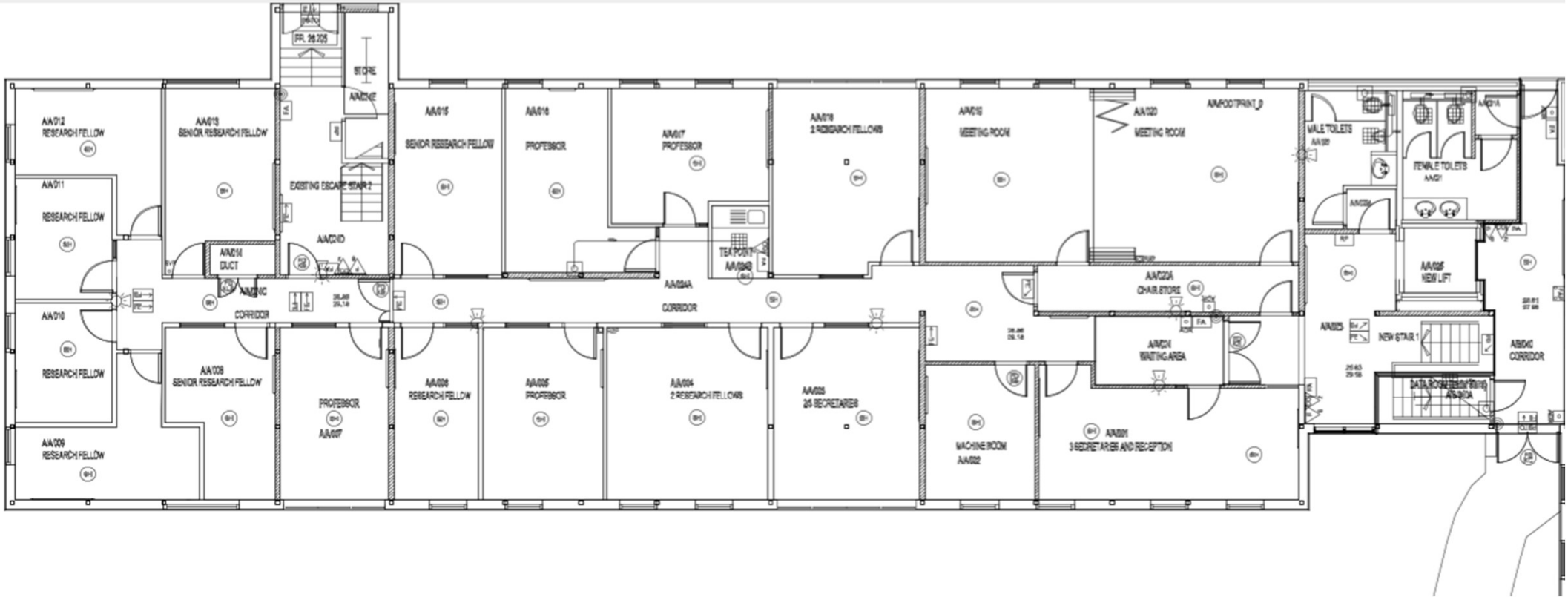
FOUR CATEGORIES

Administrative – baseline

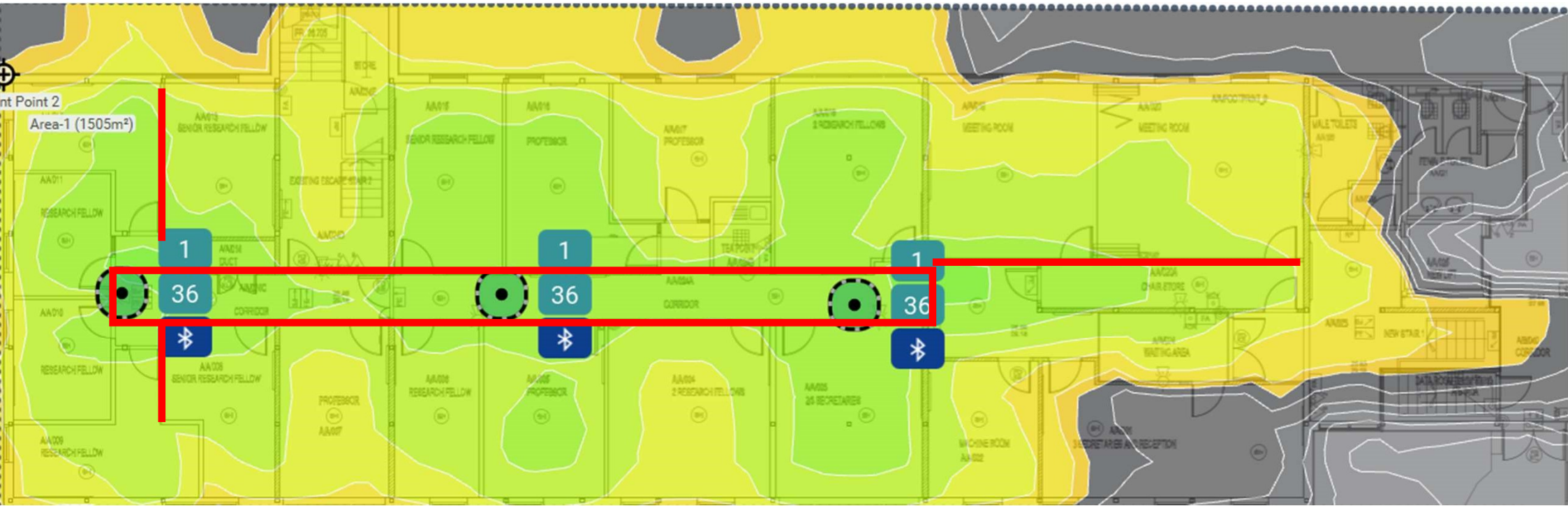
Domestic – high bandwidth

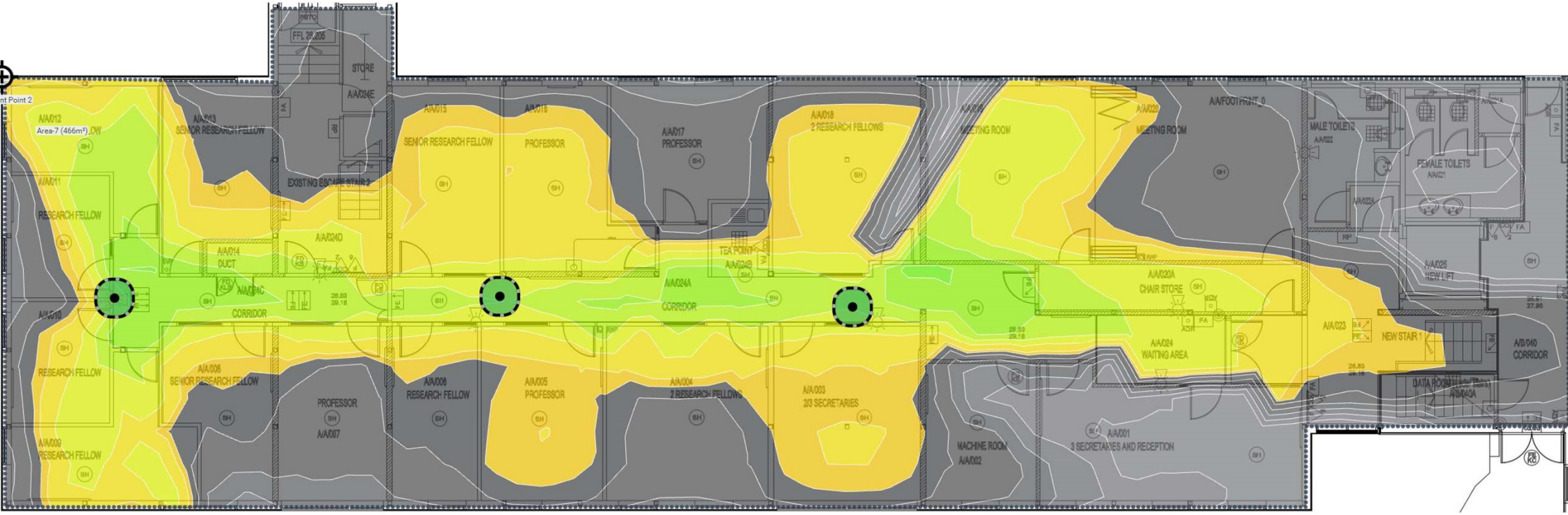
Research – anything goes

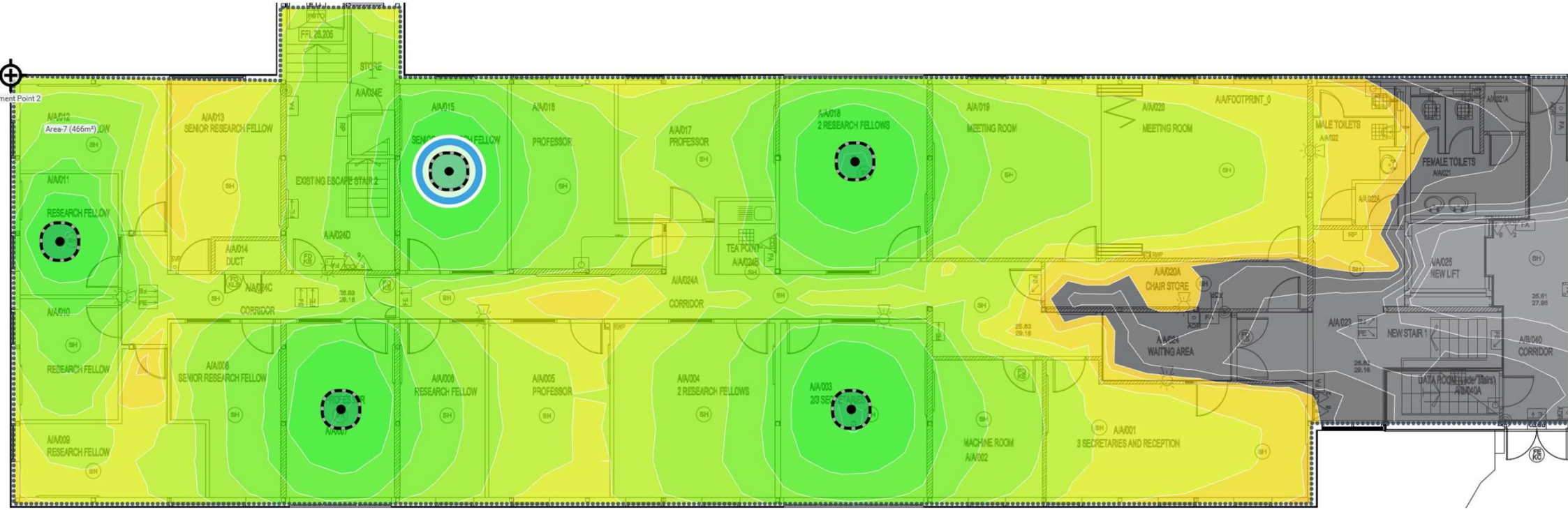
High density – numbers and/or throughput



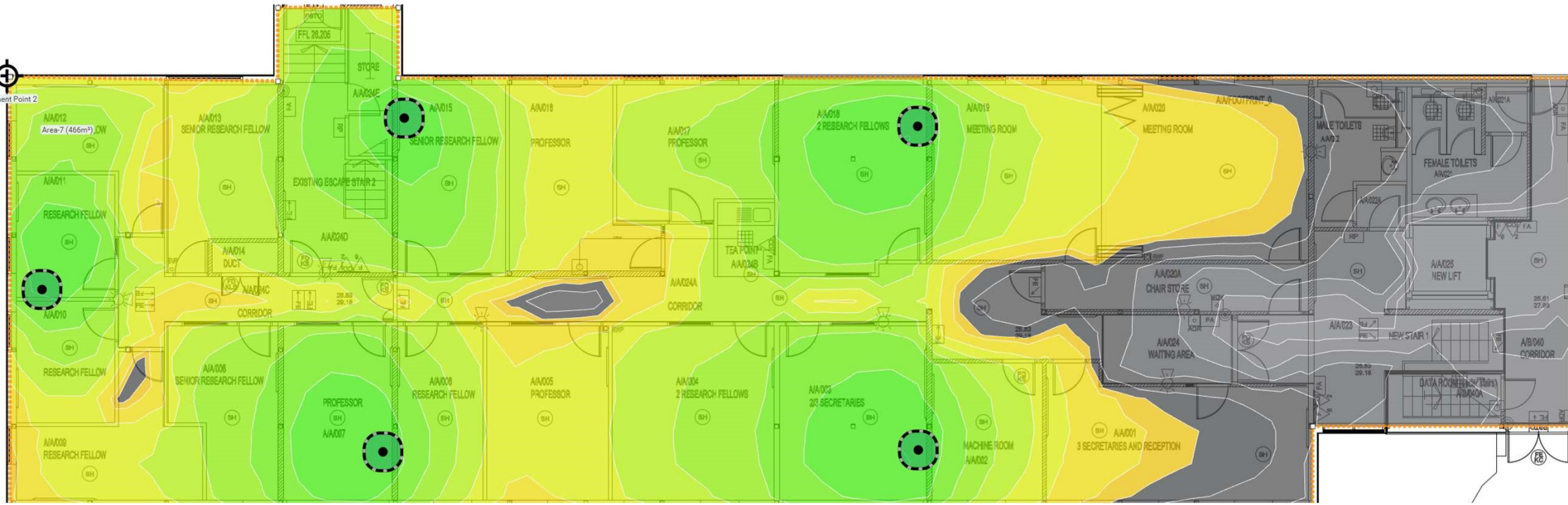
FR. 26.205
STORE
A/A/014E
A/A/012
RESEARCH FELLOW
A/A/013
SENIOR RESEARCH FELLOW
A/A/015
SENIOR RESEARCH FELLOW
A/A/016
PROFESSOR
A/A/017
PROFESSOR
A/A/018
2 RESEARCH FELLOWS
A/A/019
MEETING ROOM
A/A/020
MEETING ROOM
A/A/FOOTPRINT_0
MALE TOILETS
A/A/020
FEMALE TOILETS
A/A/021
A/A/011
RESEARCH FELLOW
EXISTING ESCAPE STAIR 2
A/A/014
DUCT
A/A/024D
TEA POINT
A/A/024B
A/A/024A
CORRIDOR
A/A/020A
CHAIR STORE
A/A/025
NEW LIFT
A/A/010
RESEARCH FELLOW
CORRIDOR
A/A/024
WAITING AREA
A/A/025
NEW STAIR 1
A/A/040
CORRIDOR
A/A/008
SENIOR RESEARCH FELLOW
PROFESSOR
A/A/007
A/A/006
RESEARCH FELLOW
A/A/005
PROFESSOR
A/A/004
2 RESEARCH FELLOWS
A/A/003
2/3 SECRETARIES
MACHINE ROOM
A/A/002
A/A/001
3 SECRETARIES AND RECEPTION
A/A/009
RESEARCH FELLOW

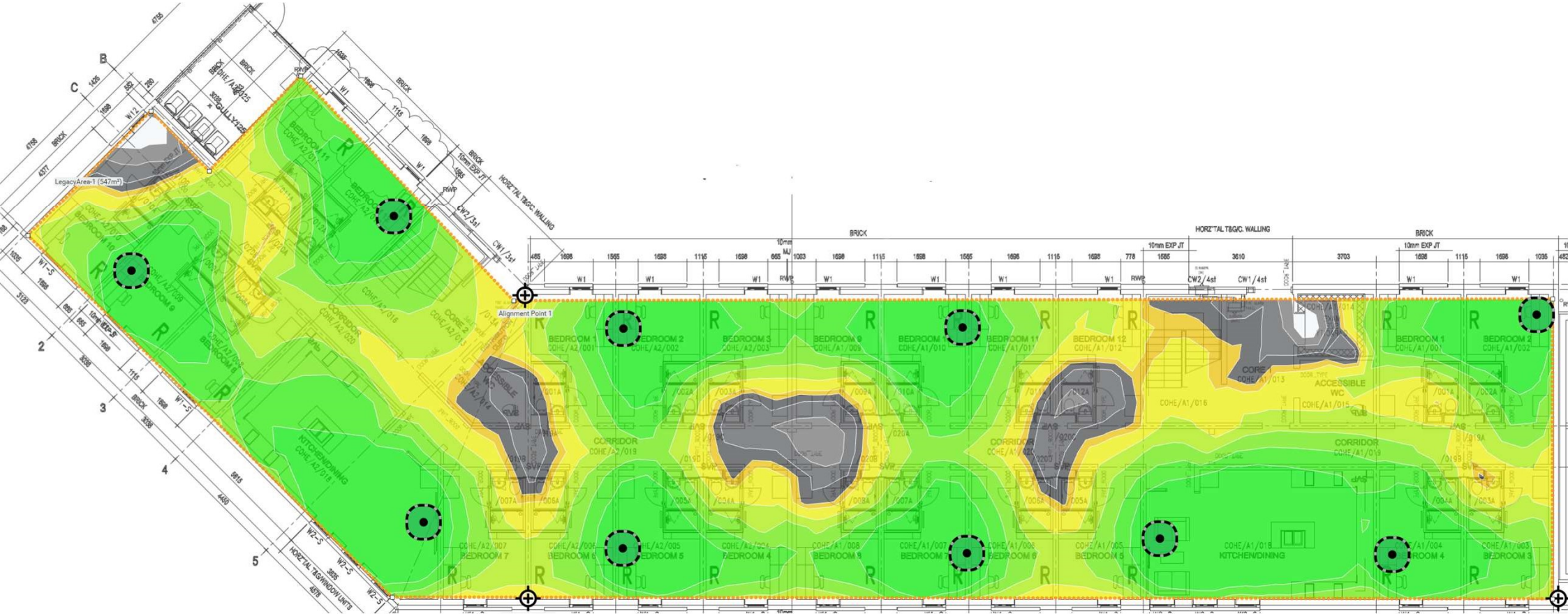

nt Point 2
Area-1 (1505m²)
1
36
1
36
1
36
CORRIDOR
CORRIDOR
RESEARCH FELLOW
SENIOR RESEARCH FELLOW
PROFESSOR
MEETING ROOM
WAITING AREA
MACHINE ROOM

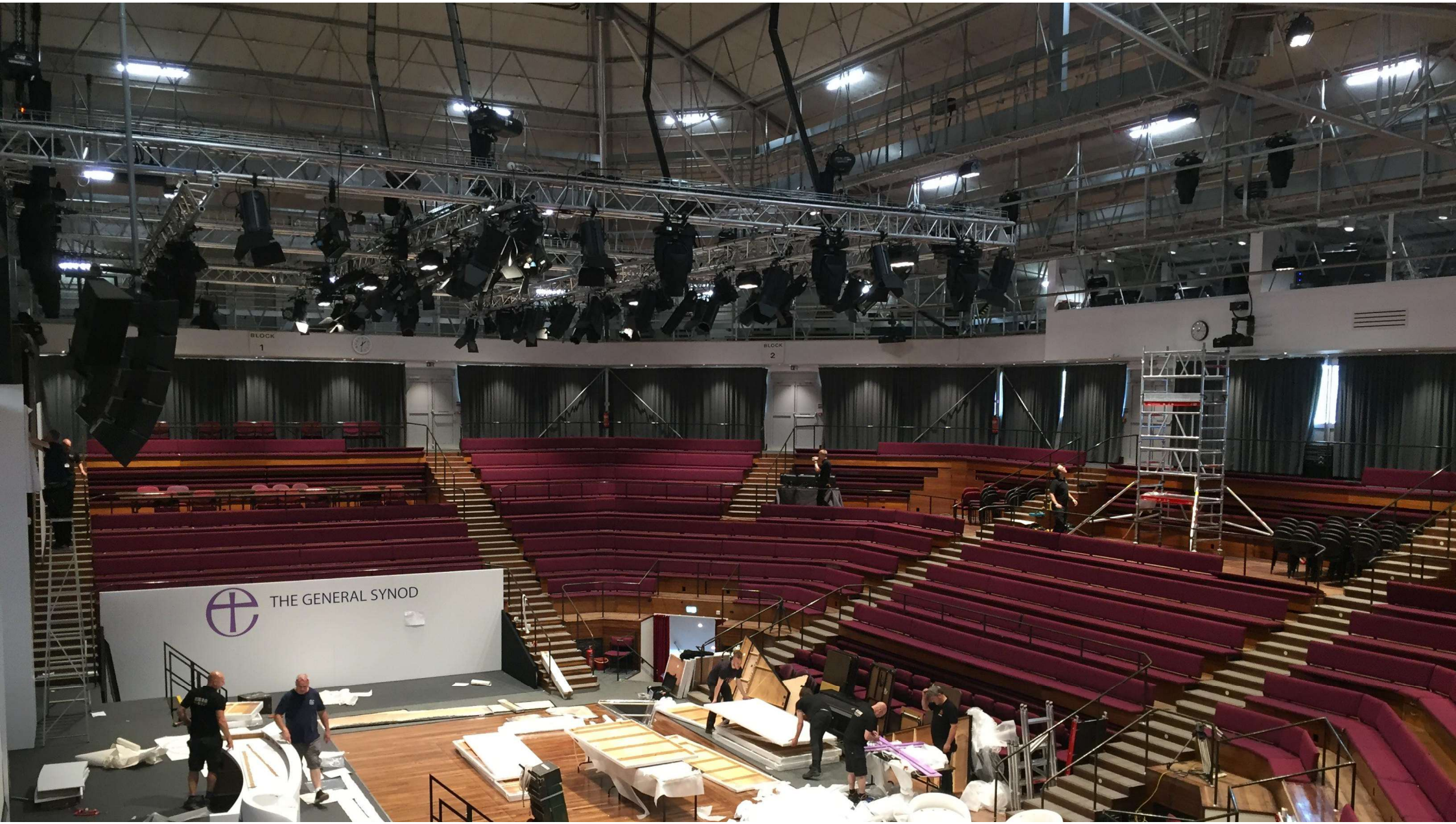

Area-7 (466m²)
A/A/012
A/A/013
SENIOR RESEARCH FELLOW
STORE
A/A/024E
A/A/015
SENIOR RESEARCH FELLOW
A/A/016
PROFESSOR
A/A/017
PROFESSOR
A/A/018
2 RESEARCH FELLOWS
A/A/019
MEETING ROOM
A/A/020
MEETING ROOM
A/A/FOOTPRINT_0
MALE TOILETS
A/A/022
FEMALE TOILETS
A/A/021
A/A/023A
A/A/011
RESEARCH FELLOW
EXISTING ESCAPE STAIR 2
A/A/024D
A/A/014
DUCT
A/A/024C
CORRIDOR
TEA POINT
A/A/024B
A/A/024A
CORRIDOR
A/A/020A
CHAIR STORE
A/A/024
WAITING AREA
A/A/023
NEW STAIR 1
A/A/026
NEW LIFT
A/B/040
CORRIDOR
A/A/010
RESEARCH FELLOW
A/A/006
SENIOR RESEARCH FELLOW
PROFESSOR
A/A/007
A/A/008
RESEARCH FELLOW
A/A/005
PROFESSOR
A/A/004
2 RESEARCH FELLOWS
A/A/003
2/3 SECRETARIES
MACHINE ROOM
A/A/002
A/A/001
3 SECRETARIES AND RECEPTION
DATA ROOM
A/B/040A
A/A/009
RESEARCH FELLOW


Area-7 (466m²)
A/A/012
A/A/013
SENIOR RESEARCH FELLOW
A/A/011
RESEARCH FELLOW
A/A/014
DUCT
A/A/024C
CORRIDOR
A/A/010
RESEARCH FELLOW
A/A/009
RESEARCH FELLOW
FFL 26.205
STORE
A/A/024E
EXISTING ESCAPE STAIR 2
A/A/024D
A/A/015
A/A/016
PROFESSOR
A/A/017
PROFESSOR
TEA POINT
A/A/024B
A/A/024A
CORRIDOR
A/A/018
2 RESEARCH FELLOWS
A/A/019
MEETING ROOM
A/A/020
MEETING ROOM
A/A/FOOTPRINT_0
A/A/020A
CHAIR STORE
A/A/023
WAITING AREA
A/A/008
SENIOR RESEARCH FELLOW
A/A/006
RESEARCH FELLOW
A/A/005
PROFESSOR
A/A/004
2 RESEARCH FELLOWS
A/A/003
2/3 SECRETARIES
MACHINE ROOM
A/A/002
A/A/001
3 SECRETARIES AND RECEPTION
MALE TOILETS
A/A/022
A/A/021A
FEMALE TOILETS
A/A/021
A/A/022A
A/A/025
NEW LIFT
A/A/024
NEW STAIR 1
DATA ROOM (Under Stairs)
A/B/040A
A/B/040
CORRIDOR

HOSPITALITY/ WALLJACK AP


FFL 26.206
STORE
A/A/034E
A/A/012
Area-7 (466m²)
A/A/013
SENIOR RESEARCH FELLOW
A/A/015
SENIOR RESEARCH FELLOW
A/A/016
PROFESSOR
A/A/017
PROFESSOR
A/A/018
2 RESEARCH FELLOWS
A/A/019
MEETING ROOM
A/A/020
MEETING ROOM
A/A/011
RESEARCH FELLOW
EXISTING ESCAPE STAIR 2
A/A/024D
A/A/014
DUCT
A/A/024C
CORRIDOR
TEA POINT
A/A/024B
A/A/024A
CORRIDOR
A/A/010
RESEARCH FELLOW
A/A/020A
CHAIR STORE
A/A/024
WAITING AREA
A/A/023
NEW STAIR 1
A/A/025
NEW LIFT
MALE TOILETS
A/A/022
FEMALE TOILETS
A/A/021
A/A/009
SENIOR RESEARCH FELLOW
PROFESSOR
A/A/007
A/A/006
RESEARCH FELLOW
A/A/005
PROFESSOR
A/A/004
2 RESEARCH FELLOWS
A/A/003
2/3 SECRETARIES
MACHINE ROOM
A/A/002
A/A/001
3 SECRETARIES AND RECEPTION
A/A/039
RESEARCH FELLOW
A/B/040
CORRIDOR


Alignment Point 1
LegacyArea-1 (547m²)
BEDROOM 1
BEDROOM 2
BEDROOM 3
BEDROOM 4
BEDROOM 5
BEDROOM 6
BEDROOM 7
BEDROOM 8
BEDROOM 9
BEDROOM 10
BEDROOM 11
BEDROOM 12
CORRIDOR
CORE
ACCESSIBLE WC
KITCHEN/DINING
BRICK
HORZ'TAL T&G/C. WALLING
10mm EXP JT


BLOCK
1
BLOCK
2
THE GENERAL SYNOD

A LIFE APART
LABOUR
IMPERIAL DESIRE
THE SHAPING OF MODERN BRITAIN
BRITAIN
POWER AND PLENTY
EUROPE 1783 – 1914
A LAND OF LIBERTY?
GAINFUL PURSUITS
Joanna De Groot
students to collect
An Introduction to
Lyreco
BUDGET

THAT ESSENTIAL NETWORK STUFF

- Users are highly mobile – layer3 roaming is highly problematic
- Backend infrastructure must be appropriately sized
  DHCP
  DNS
  Routing Switch tables

USER REQUIREMENTS BEFORE POLICY

Users in HE will ignore policy and implement their own solution if you don't help them

Temporary or ad hoc solutions present a risk to the network and create more of a support burden

By standardizing and templating as much as possible, unique requests can be accommodated