

National Science Conservation Centre
Twycross Zoo

Design & Access Statement Addendum_P02

December 2024

HLM
Architects

1.00

Introduction

1.01 Introduction
Overview

This document has been prepared on behalf of Twycross Zoo and Hinckley & Bosworth Borough Council (HBBC) as an addendum to the Design and Access Statement (DAS) submitted with the Full Planning Application for the proposed development to the south west of the Twycross Zoo site (App Ref: 23/00948/FUL), to support a Section 73 application.

Since approval of the Full Planning Application, the Design Team have undertaken the following exercises:

- Further development of the structural and building services strategies, which has allowed the technical designs of each building to become more efficient (ie. reduced building height).
- Rationalisation of glazing apertures and louvre openings in response to daylighting and overheating analysis.
- Review of external wall and roof materials, composition and proportionality to address subsequent changes in building shape and form.
- Review and testing the access, servicing, operation and animal management of the Orangutan House with the Zoo's curator and keeper teams, allowing design changes to enhance the overall building efficiency whilst improving the internal animal facilities.
- Review of the external animal habitats with the Zoo's curator and keeper teams to ensure the designs are optimized with regard to animal welfare and prioritise animal behaviour.
- Review of the planting, with a particular focus on the strategy for achieving Biodiversity Net Gains for the site.
- Review of the visitor flow, viewing opportunities and general experience throughout the landscape to enhance the education, conservation and overall visitor offering.
- Review of the site levels strategy to develop a more sustainable strategy (i.e. re-using on site soil rather than importing or exporting).
- Review the external containment for the Orangutans, considering best practice precedents from other zoos.

In addition to the above, there are also some aspects of the scheme previously included in the Full Planning Application, which have been omitted from the project. In summary, the Section 73 Application proposes the following changes:

- Minor amendments to the NSCC and Residential Buildings' height and elevational compositions.
- Change to layout, building form, elevational design and

- siting of Orangutan Habitat Building.
- Design amendments to the location, size and landscape proposals of the Additional Habitats located to the north of the Orangutan Building
- Omission of the Songbird Aviary
- Omission of the split-level Outdoor Classroom with boardwalk interface, instead introducing a covered ground level viewing canopy structure
- Changes to the type of containment being used for the main habitats to maximise borrowed landscape principles and enhance visitor viewing as well as keeper observation of these outdoor habitats
- Alterations to the levels strategy for the site to better tie into existing site levels and achieve a cut & fill balance and reduce the need for retaining elements throughout
- Changes to the location, length and siting of the elevated boardwalk providing visitors access to the Orangutan building
- Changes to the location, form and layout of the Indonesian village to better interface with ground level viewing for the Orangutan external areas, whilst creating a focal visitor node, which enhances the visitor experience, flow and storytelling narrative.
- Omission of 1 x themed shelter from the visitor space
- Further commentary and details of the proposed changes are explained in the following paragraphs.

NSCC and Residential Buildings

Refinement of the M&E and structural strategy has led to reducing the building height, which in turn has prompted a review of the elevational design to reconsider the new building proportions. A simplification of brick details and patterns to better suit the resulting fenestration arrangement and reduced height was required. The same brick type is proposed, but in two colours remaining consistent with the original design intent, previously attained through complex brick bonds and terracotta coloured concrete.

The main entrance to the NSCC building has been amended to following development of the technical design and improvements to the internal layout.

The lecture theatre block of the NSCC building is proposed to be all brick, corresponding to the simplification of the adjacent elevations.

Orangutan Habitat Building

The principals of the internal layout of the Orangutan Habitat Building remain the same, if not improved, with regard to functionality. The altered form and adjusted orientation allows for the visitor boardwalk to adjoin and provide access to the first floor (visitor centre) of the Orangutan Habitat Building without overhanging the external male habitat. This mitigates issues concerning the male orangutan being overlooked when moving between his internal and external habitat spaces, and without compromising the visitor experience.

As a result of the above building reconfiguration, the siting of the external habitats have been altered, to enhance the animal external environment and maximise visitor viewing opportunities.

In addition, the energy efficiency of the building is improved by rationalising the form. Following further development of the building services design, it has also been established that much of the plant can be located internally, which has enabled the plant and zookeeper areas at the upper levels to be consolidated. Effectively, this removes a storey and allows a pitched roof to be incorporated, which relates better to the NSCC and Residential Buildings. With the changes in form, it was also appropriate to re-evaluate the materiality, for which it is now proposed the building be brick corresponding with the NSCC and Residential Buildings.

Section 73 Application Response and Action

Since the submission of the Section 73 application, we have looked to address comments raised the LPA.

We have looked to address the Theatre Block of the NSCC building and its principal elevation (Elevation A), which, in the Section 73 application, was changed and proposed to be all stretcher brick bonding with two brick colour bandings corresponding to the simplification of the adjacent elevations.

In response to the LPA comments, the following materiality is now proposed to the Lecture Theatre Façade:

- All elevations (4no) - Double soldier coursing to the head of parapets.
- Principal elevation (1no facing car park) – Single Soldier course header to 2no doors and projecting Flemish bond brickwork to upper third.

In addition to the above, there are also some aspects of the scheme that the LPA requested further context and detailed information. Since the Section 73 Application, however, the scheme has undergone further changes in response to design development and/or changes in Client Brief. In summary, the revised Section 73 Application proposes the following changes:

- Additional louvres added or adjusted to NSCC and Residential Buildings following development with the Services Engineer. Sizes aligned with structural openings and/or proportions of adjacent openings.
- Additional windows added to Residential and NSCC stair cores following request from Building Control to satisfy Approved Document B. Sizes to align with structural openings and/or proportions of adjacent openings.
- NSCC and Residential eaves and verge treatments added following development of stage 4 building models.
- Omission of Otter Habitat House and associated outdoor habitat areas. Replaced with ground floor viewing shelter and Babirusa Habitat Housing and associated habitat outdoor area. Note, the new Babirusa Habitat House design now differs to the proposed design provided in the original Full Planning Application. Details of the new proposal has been provided separate to the revised Design and Access Statement Addendum (P02) but are included within the revised Section 73 package – Refer to Dearadh Zu information for design intent.
- Omission of building to Service Yard (former Babirusa House location) and replaced with Annoa Habitat ‘stable’ and associated outdoor habitat space. Details of the new proposal has been provided separate to the revised Design and Access Statement Addendum (P02) but are included within the revised Section 73 package – Refer to Dearadh Zu information for design intent.
- ‘Camp’ area relocated east next to the Entrance Gateway; former camp area now designated as ‘Market’ area. Details of the new proposal has been provided separate to the revised Design and Access Statement Addendum (P02) but are included within the revised Section 73 package – Refer to Dearadh Zu information for design intent.
- Viewing Structures – Details of the Orangutan Viewing Structures have been provided separate to the revised Design and Access Statement Addendum (P02) but are included within the revised Section 73 package – Refer to Dearadh Zu information for design intent.

1.02 Proposal Development
Site Masterplan

The Market

Area for future Lodge
development

Anoa Habitat

Service / Keeper Access

Indonesian Village
Centre

Visitor Viewing Canopy

Babirusa House and
Outdoor Area

External Dining
Shelters



1.02 Proposal Development
Concept Elevation Study: NSCC Building



The intention is to break up the relatively simple elevation through use of two brick types.

Pitched roof with terracotta colour tiles to reflect the local vernacular.

Brick recesses further break up the elevation and mirror the fenestration arrangement.

Pleached trees further activate the facade and reinforce the grid,

Hit and miss brickwork creates a secure line but also helps visually tie the buildings together.

Where possible, existing trees from the site to be power washed to remove the bark and reused in the pergolas and other landscape structures around the site.



© Image copyright HLM Architects



© Image copyright 2023
Wienerberger Ltd



© Tomm Ross



© Mika Pollari

1.02 Proposal Development
NSCC Concept Entrance View



Flemish bond brick with projecting header adding high quality detail to the lecture theatre elevation

An indicative view of the main entrance to the NSCC building.

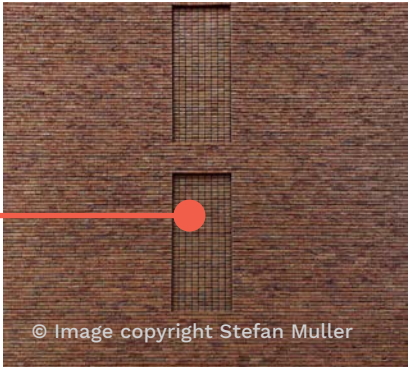
Neat eaves detailing, completing the clean gable end elevations



Musée Yves Saint Laurent, Marrakech
Studio KO

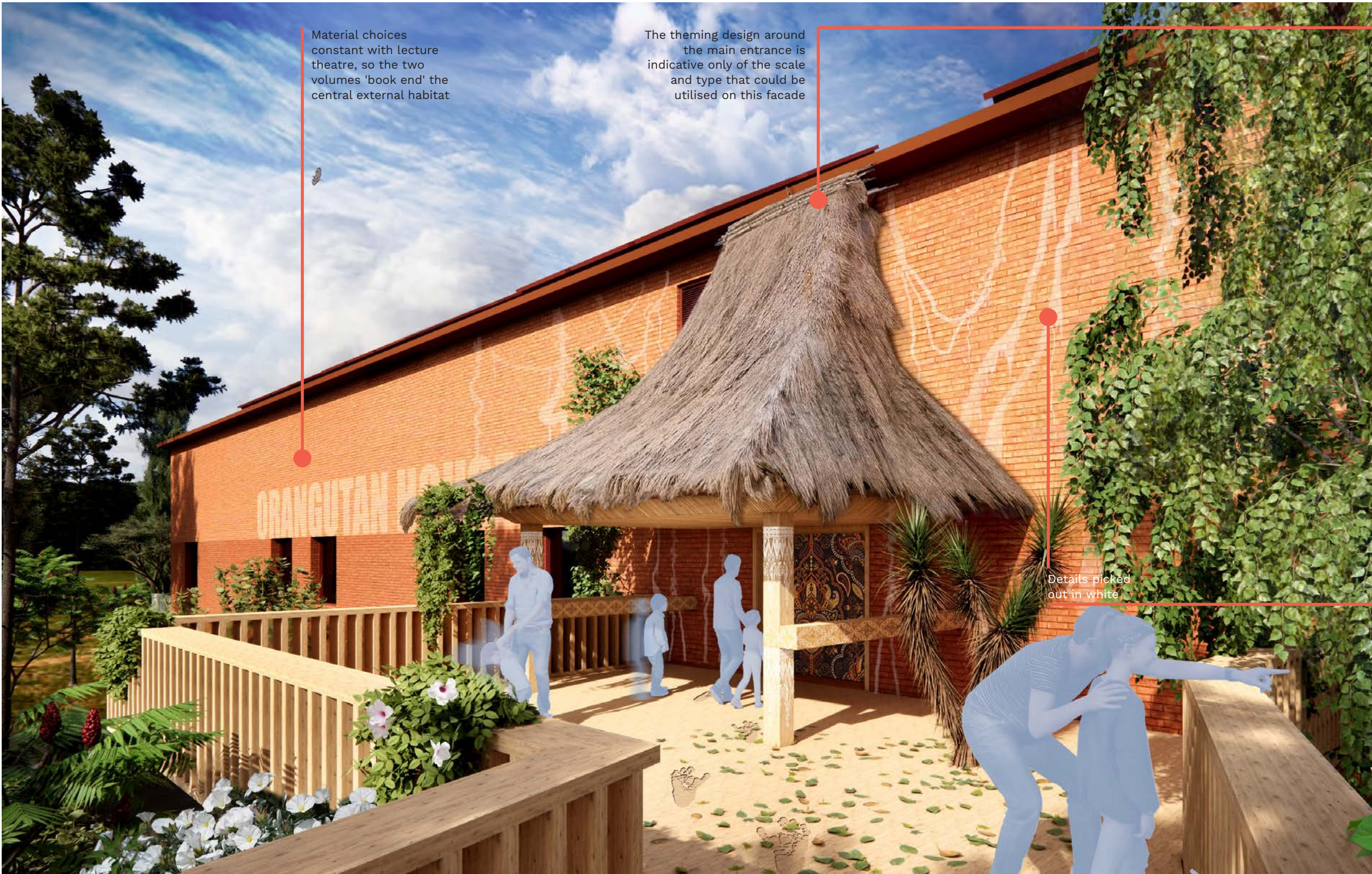


Residence Drayton Pointe-Clare, Quebec
Durand Courcheane



Houses with Two Doors, Rotterdam
Hans van der Heijden Architect

1.02 Proposal Development
Concept Elevation Study: Orangutan Habitat



Material choices constant with lecture theatre, so the two volumes 'book end' the central external habitat

The theming design around the main entrance is indicative only of the scale and type that could be utilised on this facade

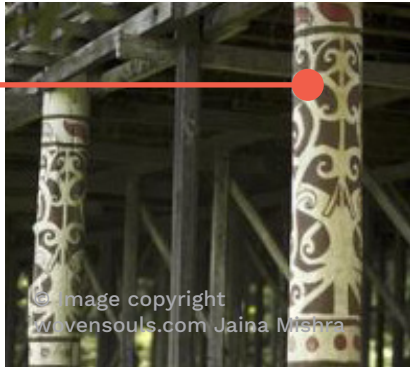
Details picked out in white



Thatched roof



Two-tone Brickwork



Indonesian Vernacular Detail

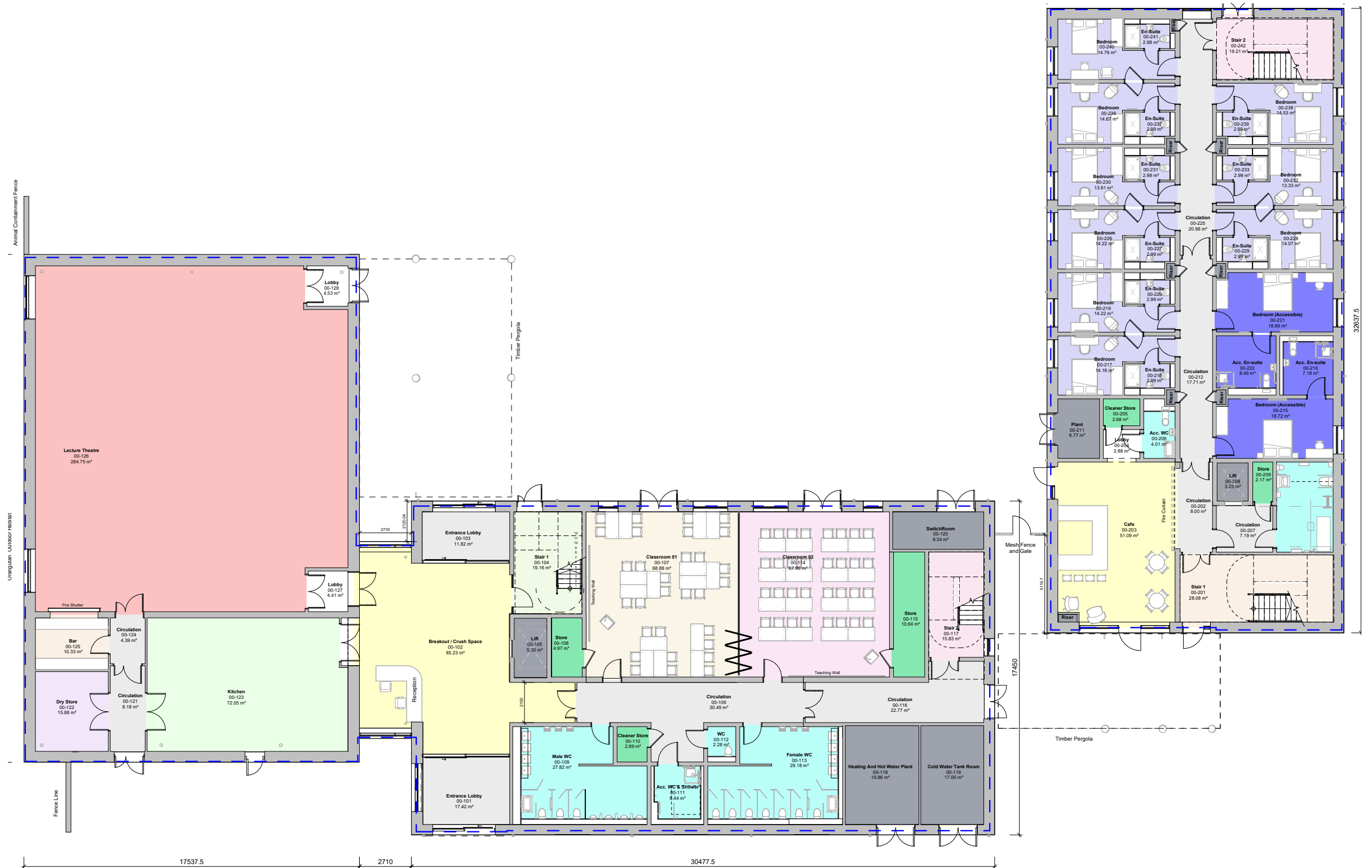
2.00

Design Proposals

2.01 Design Proposals

NSCC Proposed Plans - Ground Floor

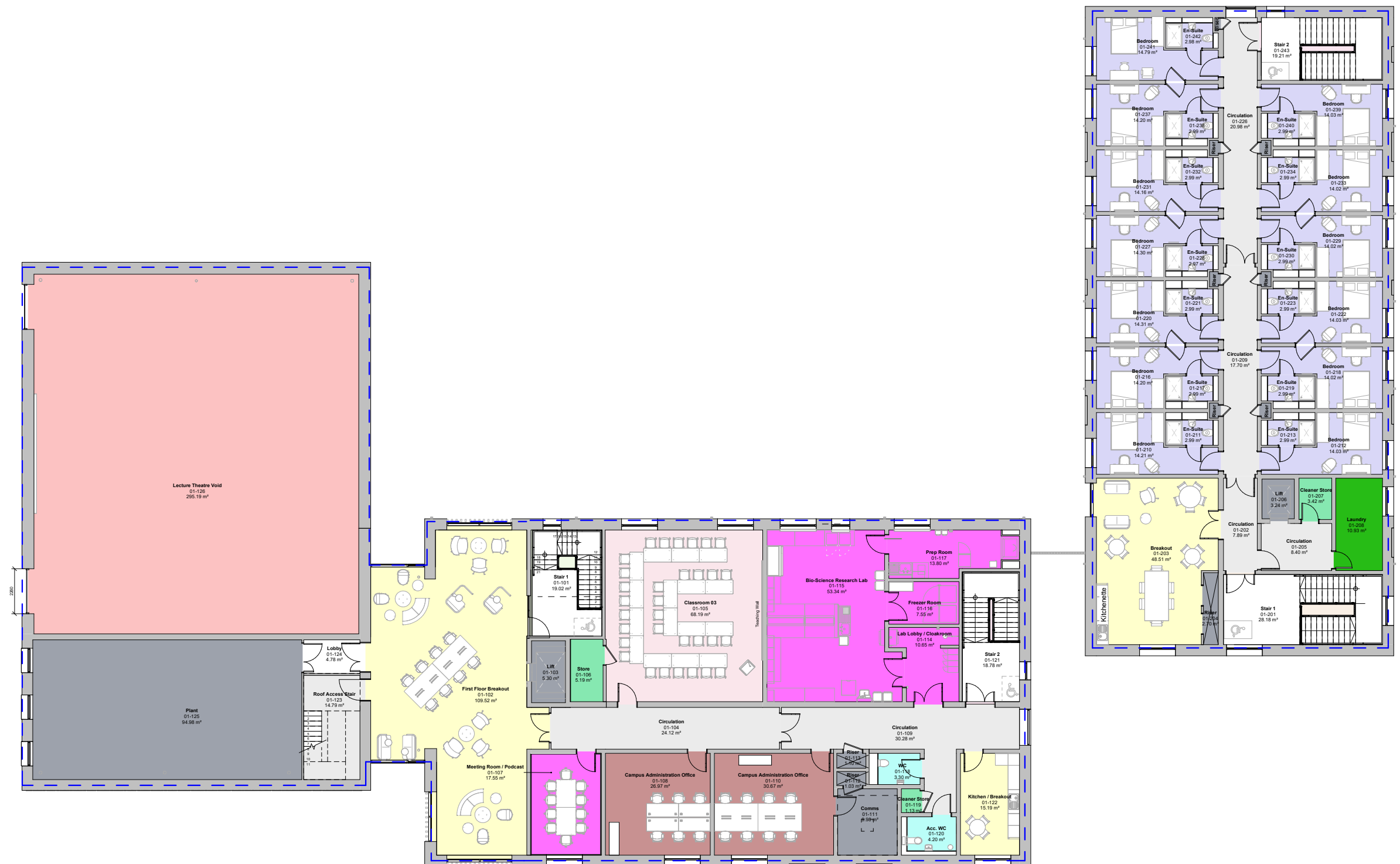
Zone Key	
	Bedroom
	Bedroom (Accessible)
	Research
	Breakout
	Campus Admissions Office
	Circulation
	Classrooms
	Kitchen
	Laundry
	Lecture Theatre
	Plant / Risers
	Reception / Site Security
	Sanitary Facilities
	Stores



2.01 Design Proposals

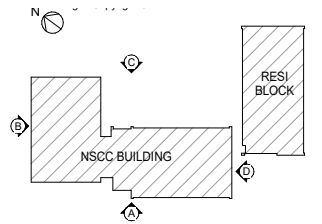
NSCC Proposed Plans - First Floor

Zone Key	
	Bedroom
	Bedroom (Accessible)
	Research
	Breakout
	Campus Admissions Office
	Circulation
	Classrooms
	Kitchen
	Laundry
	Lecture Theatre
	Plant / Risers
	Reception / Site Security
	Sanitary Facilities
	Stores



2.01 Design Proposals

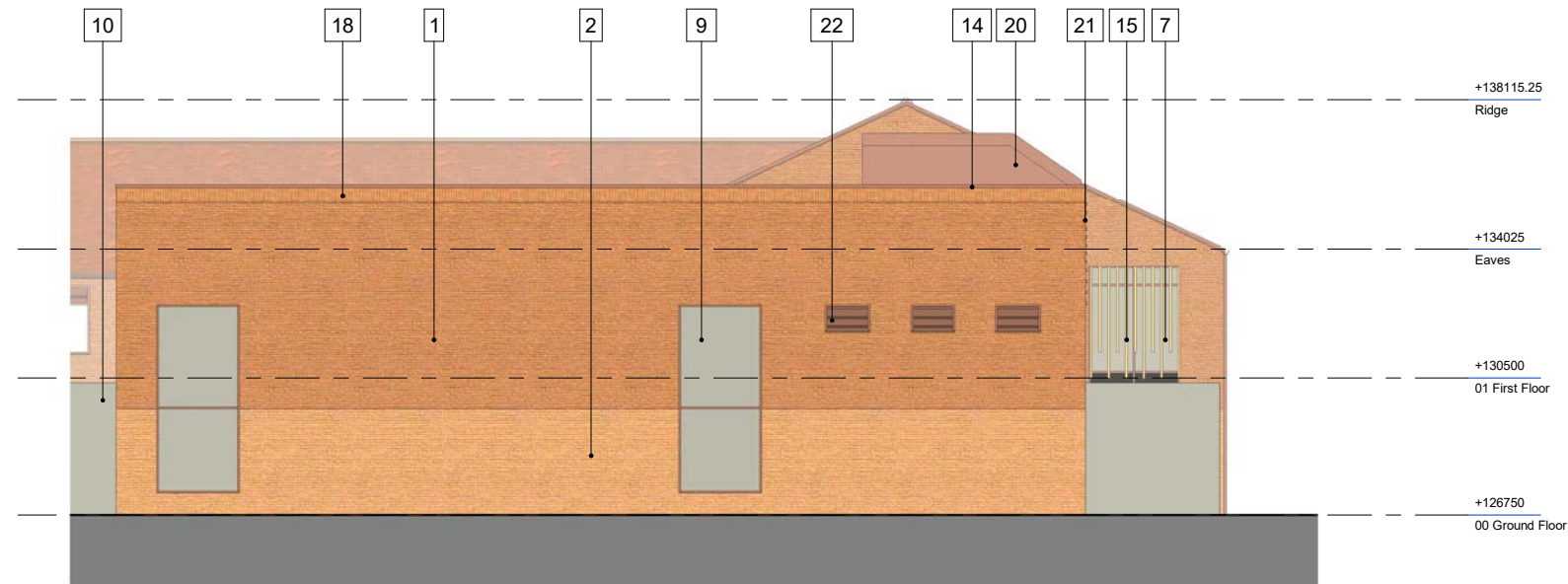
NSCC Proposed Elevations



1	Stretcher Course Brick / Mortar Type 1
2	Stretcher Course Brick / Mortar Type 2
3	Feature Brick Recess
4	Down Pipe
5	Gutter
6	PPC Aluminium Door
7	PPC Aluminium Curtain Walling
8	PPC Aluminium Windows with Louvres
9	PPC Aluminium Windows
10	Animal Habitat Containment
11	Concrete Roof Tiles
12	Feature Bat Boxes
13	Existing site trees, power washed to remove bark
14	PPC Aluminium Coping
15	Curtain Wall Shading Device
16	Timber Pergola
17	Hit and Miss Brickwork
18	Double Soldier Course Brick
19	Ridge Tile
20	Terracotta Metal Cladding
21	Flemish Bond Brick with Projecting Header
22	PPC Aluminium Louvre



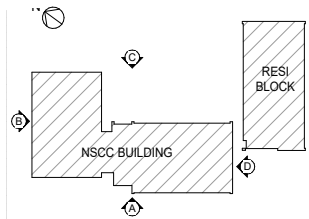
Elevation A



Elevation B

2.01 Design Proposals

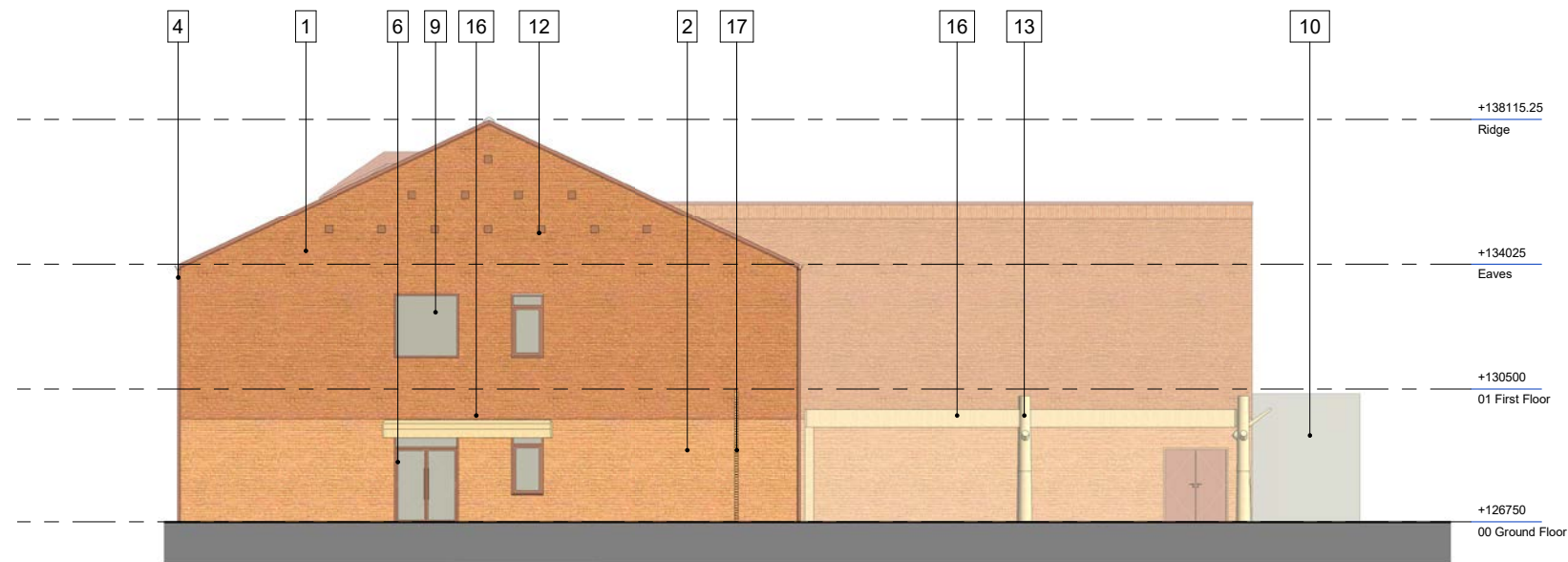
NSCC Proposed Elevations



1	Stretcher Course Brick / Mortar Type 1
2	Stretcher Course Brick / Mortar Type 2
3	Feature Brick Recess
4	Down Pipe
5	Gutter
6	PPC Aluminium Door
7	PPC Aluminium Curtain Walling
8	PPC Aluminium Windows with Louvres
9	PPC Aluminium Windows
10	Animal Habitat Containment
11	Concrete Roof Tiles
12	Feature Bat Boxes
13	Existing site trees, power washed to remove bark
14	PPC Aluminium Coping
15	Curtain Wall Shading Device
16	Timber Pergola
17	Hit and Miss Brickwork
18	Double Soldier Course Brick
19	Ridge Tile
20	Terracotta Metal Cladding
21	Flemish Bond Brick with Projecting Header
22	PPC Aluminium Louvre



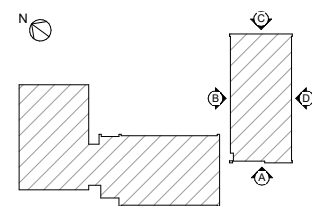
Elevation C



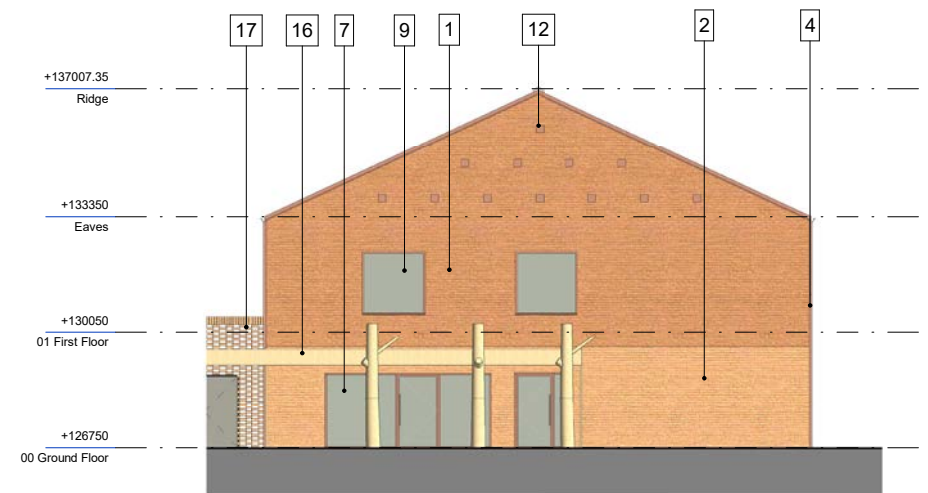
Elevation D

2.01 Design Proposals

Residential Building - Proposed Elevations



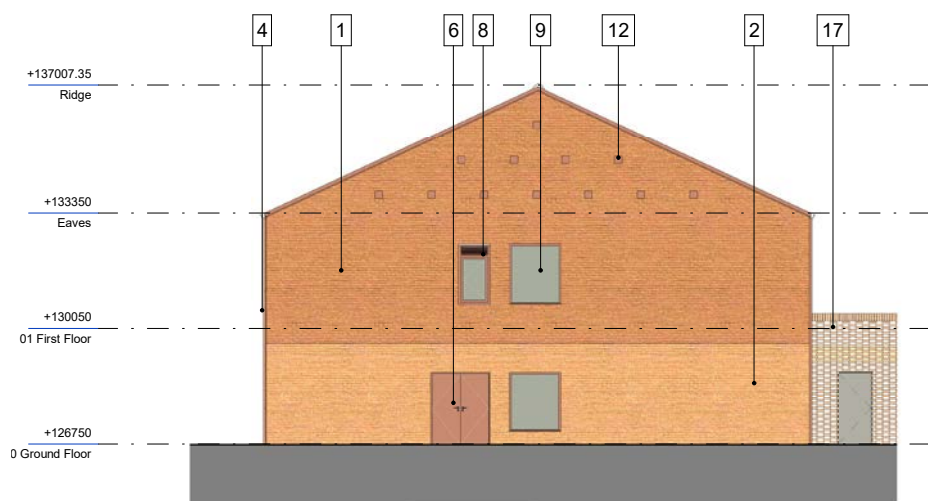
1	Brick / Motar Type 1
2	Brick / Motar Type 1: Soldier Course
3	Brick/ Mortar Type 2
4	Brick / Motar Type 2: Soldier Course
5	Terracotta Tinted Concrete
6	Aluminium Curtain Walling
7	Powder Coated Aluminium Door
8	Aluminium Windows
9	Steel Mesh Habitat Walls
10	Clay Rooftiles - incorporating red solar tiles
11	Feature Bat Boxes
12	Existing site trees used where possible; power washed to remove bark
13	Cement Cladding Panels
14	Curtain Wall Shading device
15	Timber pergola
16	Hit and miss brickwork
17	Feature protruding brickwork
18	Louvres colour matched to brickwork



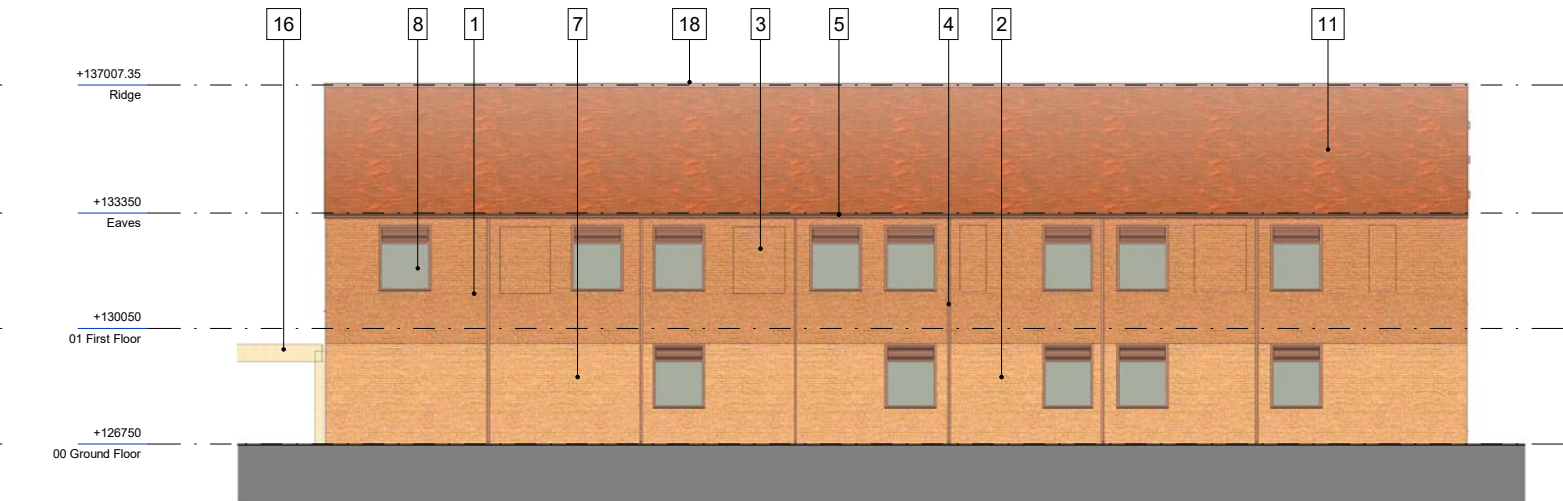
Elevation A



Elevation B



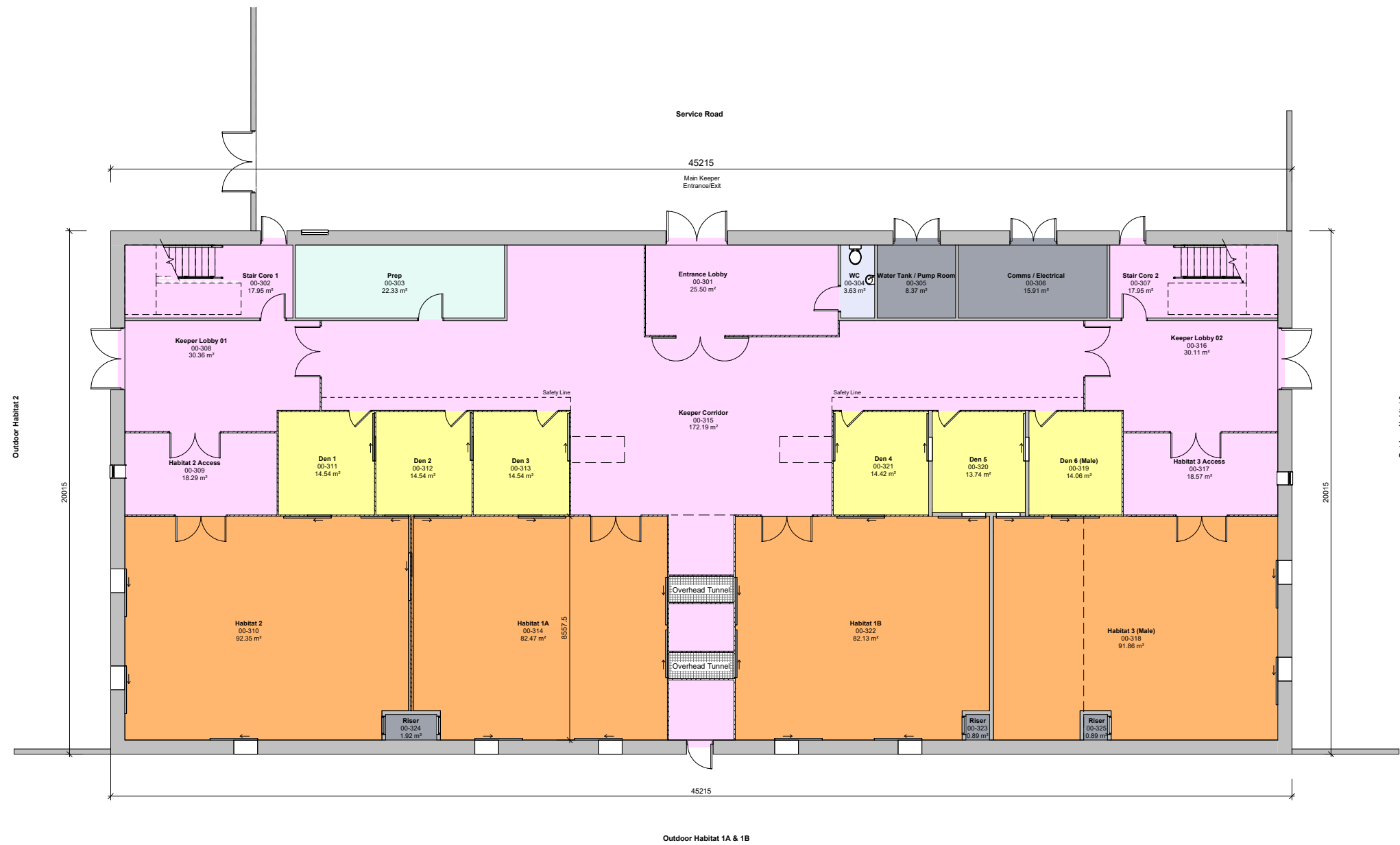
Elevation C



Elevation D

2.01 Design Proposals
Orangutan Habitat Ground Floor Plan

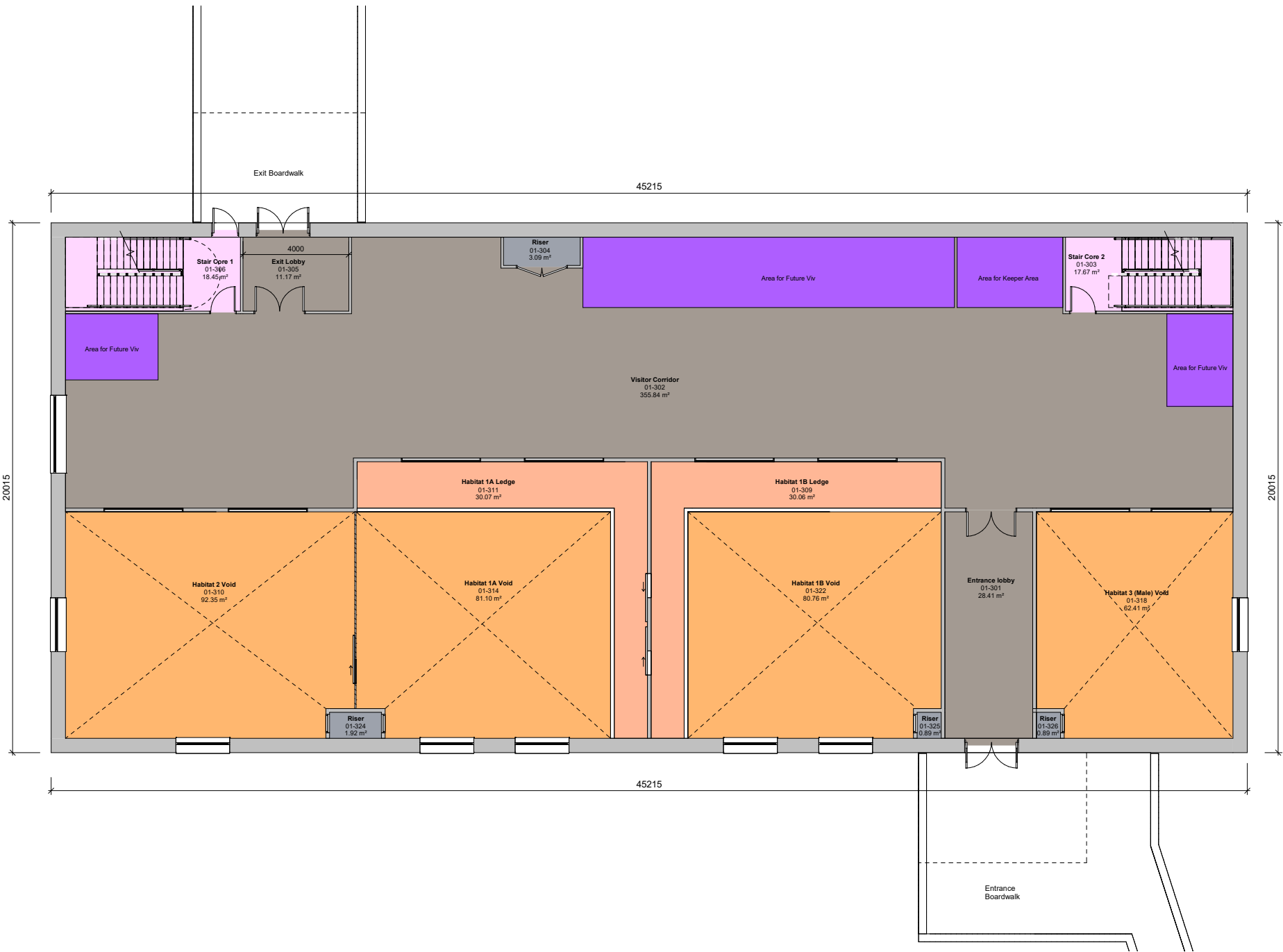
Zone Key	
	Dens
	Habitats
	Keeper Access Areas
	Planter
	Research
	Stores
	Visitor Corridor
	Vivarium
	Plant Areas



2.01 Design Proposals

Orangutan Habitat First Floor Plan

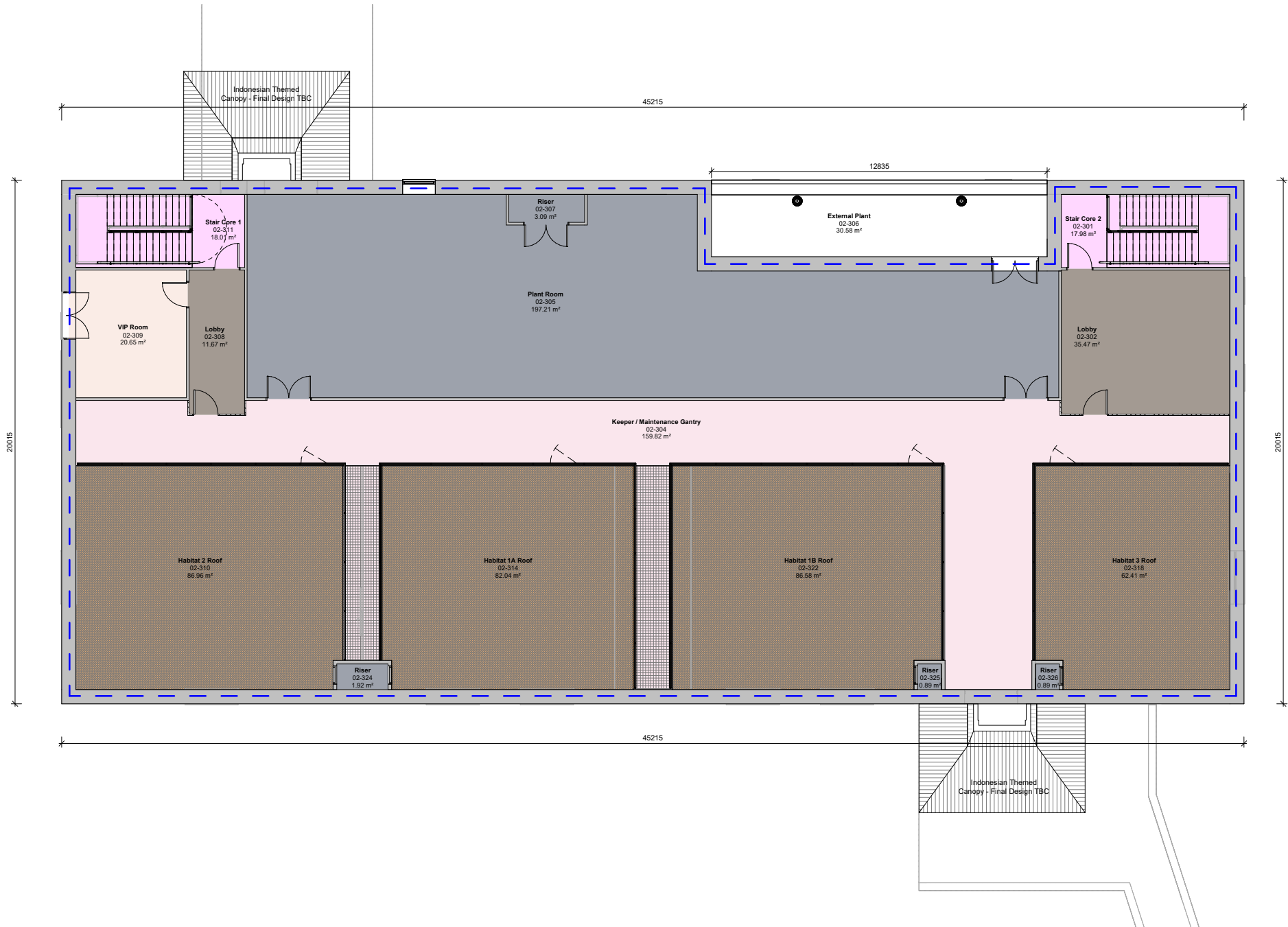
Zone Key	
	Dens
	Habitats
	Keeper Access Areas
	Planter
	Research
	Stores
	Visitor Corridor
	Vivarium
	Plant Areas



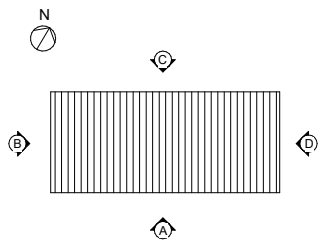
2.01 Design Proposals

Orangutan Habitat Second Floor Plan

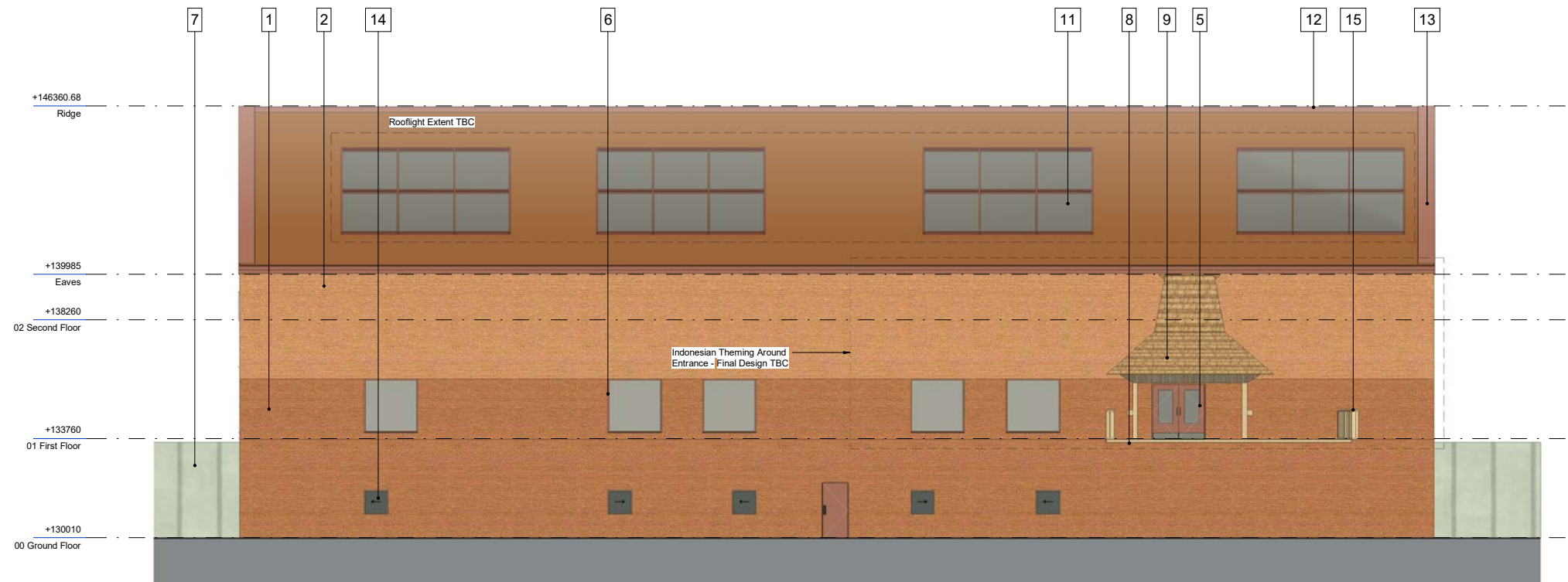
Zone Key	
	Dens
	Habitats
	Keeper Access Areas
	Planter
	Research
	Stores
	Visitor Corridor
	Vivarium
	Plant Areas



Orangutan Habitat Proposed Elevations 1



1	Brick / Motor Type 1
2	Brick/ Mortar Type 2
3	PPC Profiled Metal Roof
4	PPC Aluminium Louvre
5	PPC Aluminium Door
6	PPC Aluminium Windows
7	Animal Habitat Containment
8	Timber Boardwalk
9	Themed Timber Entrance Structure
10	Plant Screen
11	Rooflights - type and size TBC
12	Ridge Tile
13	PPC Aluminium Verge/Closure Flashing
14	Hydraulic Hatch
15	Timber Railing
16	Juliet Balcony

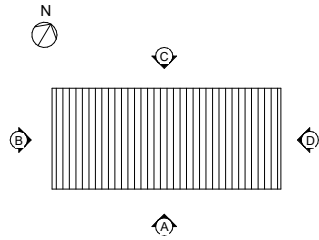


Elevation A

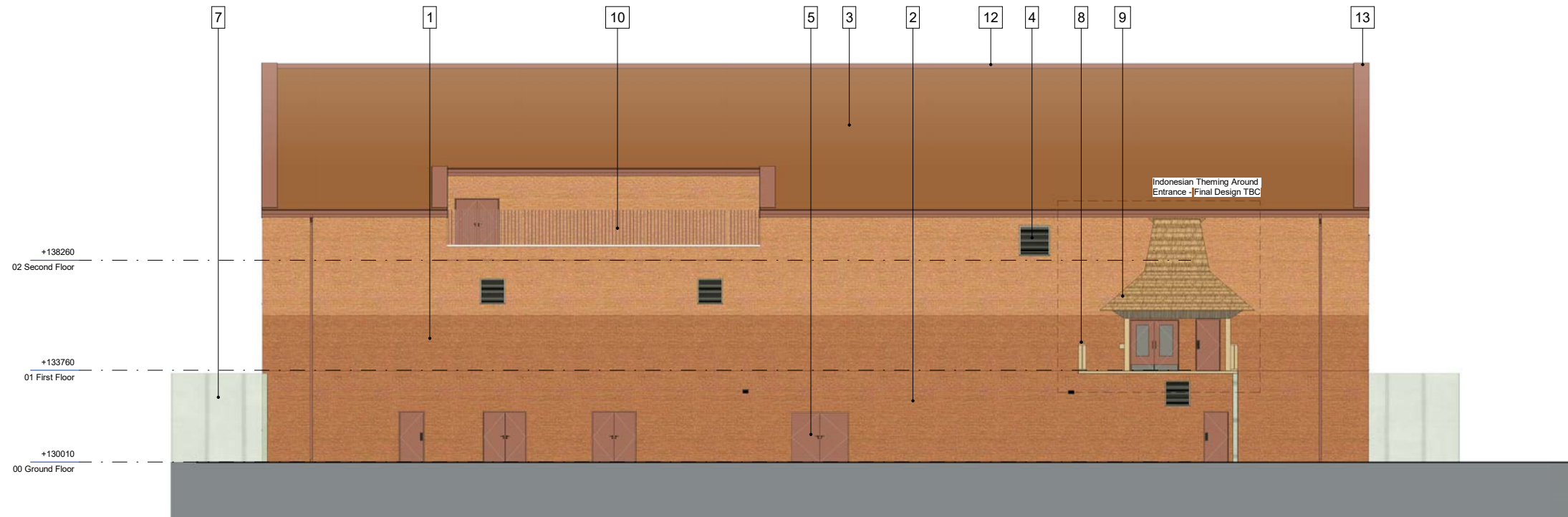


Elevation B

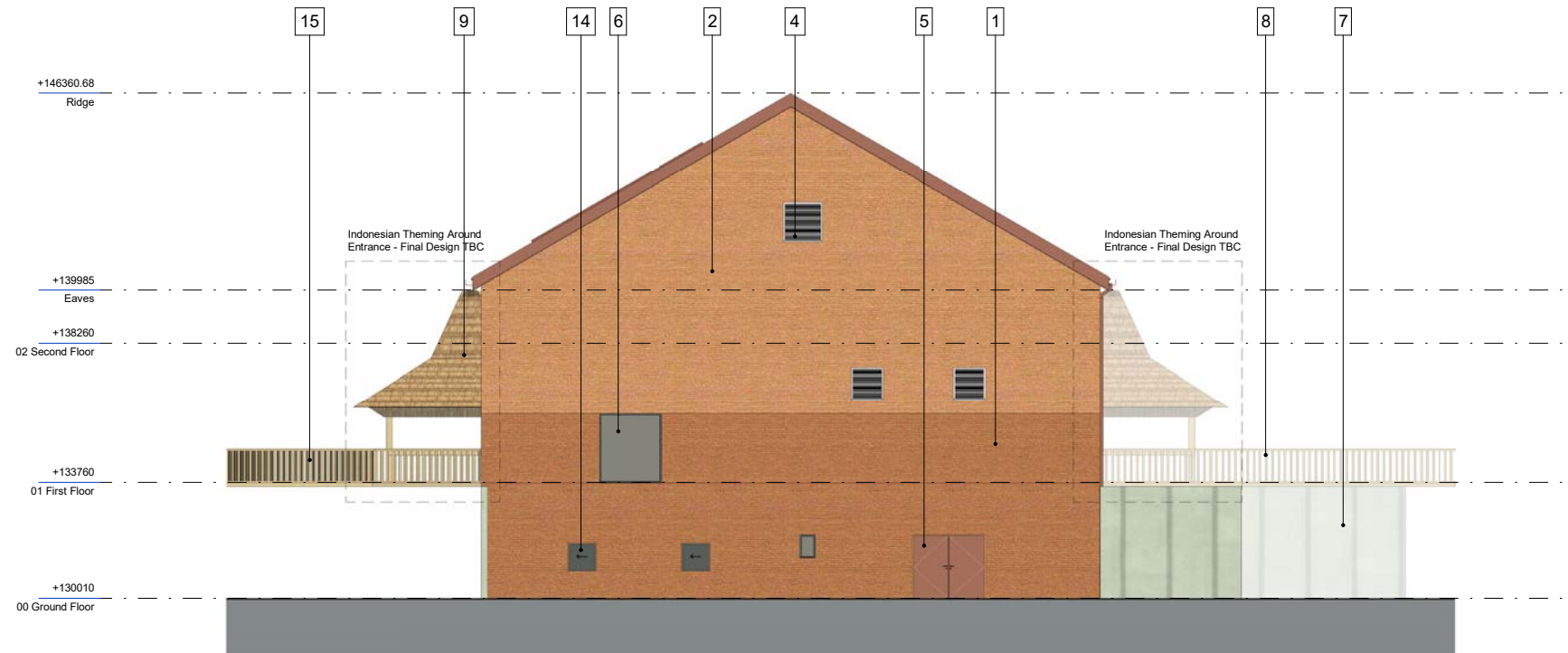
Orangutan Habitat Proposed Elevations 2



1	Brick / Motar Type 1
2	Brick/ Mortar Type 2
3	PPC Profiled Metal Roof
4	PPC Aluminium Louvre
5	PPC Aluminium Door
6	PPC Aluminium Windows
7	Animal Habitat Containment
8	Timber Boardwalk
9	Themed Timber Entrance Structure
10	Plant Screen
11	Rooflights - type and size TBC
12	Ridge Tile
13	PPC Aluminium Verge/Closure Flashing
14	Hydraulic Hatch
15	Timber Railing
16	Juliet Balcony



Elevation C



Elevation D

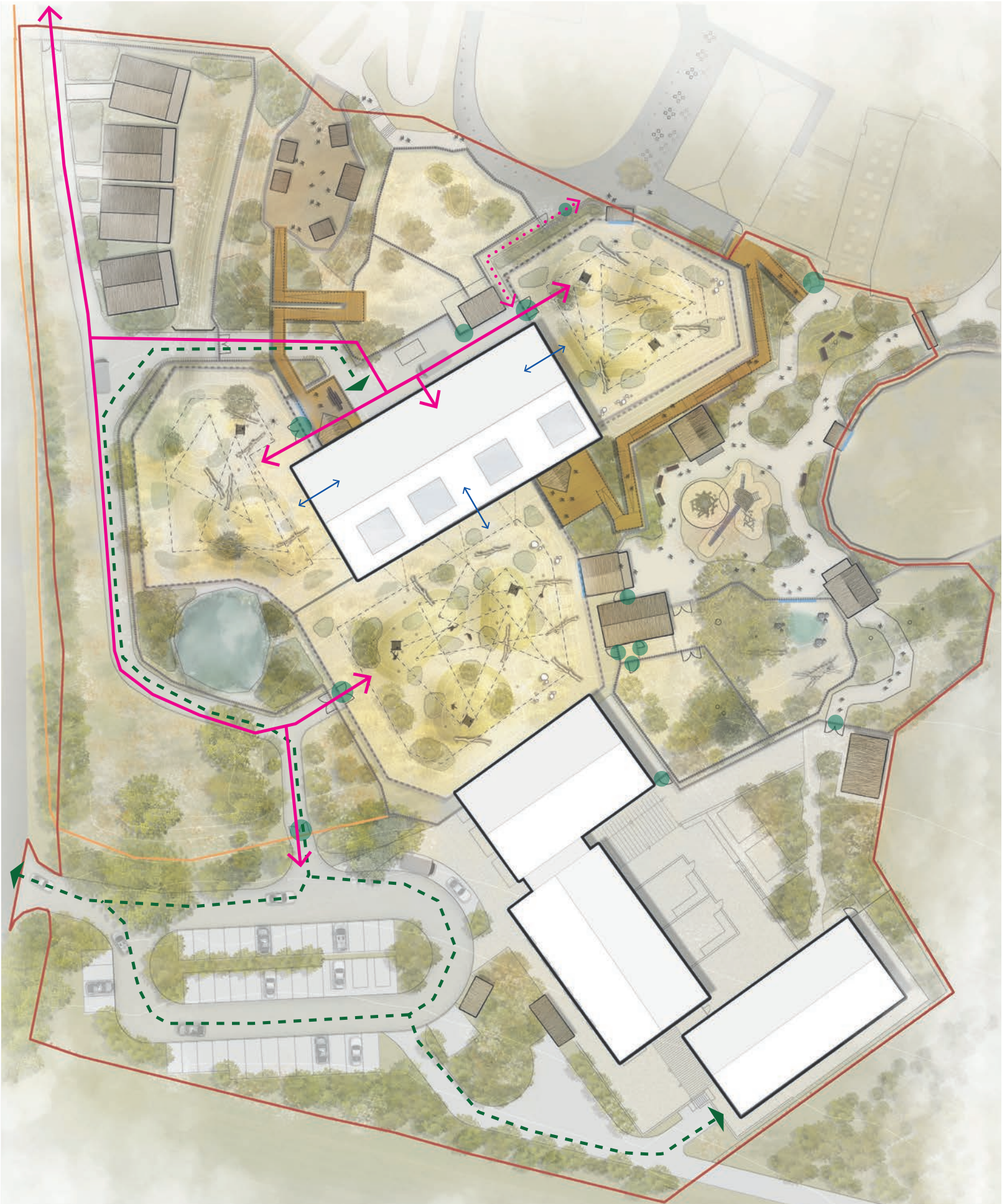
2.02 Access and Servicing
Access Strategy around the Proposed Habitat Areas

- Gate
- Visitor Pathway
- Elevated Boardwalk
- NSCC Access



2.02 Access and Servicing
Servicing and Keeper Access

- Controlled Gate
- Service Access
- Keeper Access
- Fire Access
- Internal Access



2.02 Access and Servicing
Containment Strategy

- Standoff Gate
- Enclosure Gate
- Zoo Licence Gate
- Standoff Fence
- Animal Containment Fence
- Zoo Licence Fence



