



# NORTH WEST **cambridge**

Section 73  
Design Statement  
September 2013







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North West Cambridge I Section 73  
Introduction





# 1.1 Overview

This Design Statement accompanies a Section 73 application made by the North West Cambridge Project Team on behalf of the University of Cambridge in relation to the outline consent for North West Cambridge scheme (11/1114/OUT and S/1886/11).

Section 73 of the Town and Country Planning Act 1990 allows applications to be made for permission to develop without complying with condition(s) previously imposed on a planning permission. As part of this Section 73 application, we are seeking to vary one planning condition associated with the outline consent, this is Condition 69 - Drawing Numbers. All other conditions previously provided to the outline consent shall remain unaltered. Conditions that have been formally discharged and or submitted will not require re-submission as they are not influenced by the changes associated with this Section 73 application.

This proposed Section 73 application seeks to vary the following condition in the outline consent:

- Condition 69: Drawing Numbers –revised Parameter Plans will be submitted as part of the Section 73 Application, to address amendments to the heights in the local centre and revised positioning of the Community Centre through detailed design.

The Proposed Development involves updates to the following parameter plans:

- NWC/OPA/PAR/05/A (Development Building Zones Parameter Plan: Zone B) Date stamped 3rd April 2012
- NWC/OPA/PAR/06/A (Building Heights Parameter Plan: Zone B) Date stamped 3rd April 2012
- NWC/OPA/PAR/03/A (Open Land and Landscape Areas Parameter Plan: Zone B) Date stamped 3rd April 2012.
- NWC/OPA/PAR/04/A (Land Use (Built Development and Ancillary Space) Parameter Plan: Zone B) Date stamped 3rd April 2012.
- NWC/OPA/PAR/07/A (Topography Parameter Plan: Zone B) Date stamped 3rd April 2012.

This Application does not seek any changes to the overall quantum of development through additional floorspace or number of units therefore the overall density of development approved through the outline

consent remains unaltered and development quanta are unchanged. Detailed justifications for each of the changes to the existing parameter plans are provided within Chapter 4 of this Design Statement. A full Landscape & Visual Impact Assessment also accompanies this Section 73 application that demonstrates there is no additional effect on the landscape and visual impact that has previously been assessed.

Permission was granted for the outline scheme in North West Cambridge in February 2013. Following this, pre-application discussions began with officers at both Cambridge City Council and South Cambridgeshire District Council on the first phase of development to come forward on the site. Since the beginning of April 2013, discussions have taken place with officers on a monthly basis to discuss the overall vision for Phase 1, alongside the emerging detailed proposals for the lots in the Local Centre. Through this process, designs have been presented for each lot in order to achieve a series of requirements:

- Parameter Plan Compliance
- Design Code Compliance
- Design Vision alignment
- Technical requirements:
  - Code for Sustainable Homes Level 5 for residential uses
  - BREEAM excellent for non-residential uses
  - Daylight and sunlight requirements
  - Noise attenuation from surrounding roads and the M11
  - Biodiversity requirements
  - Drainage requirements

As the detailed design has developed, architectural responses to the above requirements have sought to reconcile these issues. In the limited areas where the designs have not been able to address the parameters, the University has led detailed discussions with officers to discuss where requirements might need to be altered in discrete areas and on an exceptional basis.

In addition, consultation has taken place with a range of stakeholder groups including the North West Community Forum, the North West Cambridge University Community Group, the Cambridgeshire Quality

Panel and the Disability Access Panel in relation to the forthcoming proposals. Where changes have been put forward as part of this application, they have been proposed only the basis of robust justifications and a degree of understanding from Officers on why these are required.

The purpose of this Design Statement is to explain why we are seeking to modestly amend the heights in Phase 1 of the North West Cambridge scheme. The justifications relate either to technical justifications in relation to the items listed above or in relation to anticipated design of forthcoming buildings within the Market Square.



## 1.2 Phase 1 Design process

In September 2011, the University submitted an outline planning application, establishing the principles for development and seeking permission for the North West Cambridge development. The planning application established a series of development parameters within which future development would come forward. The Development Parameters were designed to provide the framework within which the University's vision and core principles for the Proposed Development could be delivered. The parameter plans were based on principles and not on specific design proposals.

A Design Code (Planning Condition 7) was then produced for the Proposed Development. The purpose of the Design Code was to set out clear guidance to designers and developers and to provide a framework within which the Local Planning Authorities would assess Reserved Matters Applications. The intention of the Design Codes is to ensure that design quality is maintained throughout the entire development and that the vision for North West Cambridge is delivered. The Design Code was approved in April 2013

Prior to the granting of outline consent in February 2013, a series of Architects were appointed to work on each of the Phase 1 development Lots, together with the appointed buildings and infrastructure engineers and landscape architects. Since 2013 the teams have developed their designs for Phase 1 to RIBA Stage D design detail. This process has defined a series of detailed technical requirements including:

### Infrastructure:

- Utilities network and energy infrastructure, including the technical requirements for the Energy Centre;
- Drainage and the surface water drainage network has had impacts on the levels of roadways and the ground levels of development Lots;
- The horizontal and vertical alignment of the roads has been developed with reference to existing site levels and to ensure the drainage strategy can be accommodated. These levels have set ground floor levels within the development Lots.

### Development Plots:

- All residential must meet Lifetime Homes requirements and Code for Sustainable Homes Level 5, a standard that has not been tested on this scale before. This has had an impact on:
  - ground floor levels and maintaining level access from the public realm;
  - day lighting - defining floor to floor heights;
- In mixed use buildings the definition of ground floor uses have informed floor to floor heights;
- Specific functional requirements such as the Hotel have defined development heights;
- Acoustic and ventilation requirements, such as within the Community Centre has had an effect on the overall building height.

In addition and with reference to the Design Codes, the design development of Phase 1 has aimed to create a visually distinctive but coherent and legible place. The design decisions have resulted in a clearer definition of the key ordering elements within the urban realm, such as:

- The location of the tallest buildings within the Local Centre, the densest part of the site;
- The location and nature of landmark elements and building accents which terminate key views, key approaches and locate key spaces such as the Market Square in the urban realm;
- The forming of a distinctive and sympathetic frontage to Storey's Field/Girton Gap;
- Creation of variation and interest in building lines, roofline and roofscape.



Illustrative Masterplan, Design, Access and Landscape Statement, February 2013



Illustrative Diagram of the Character of Local Centre, Design Code, April 2013



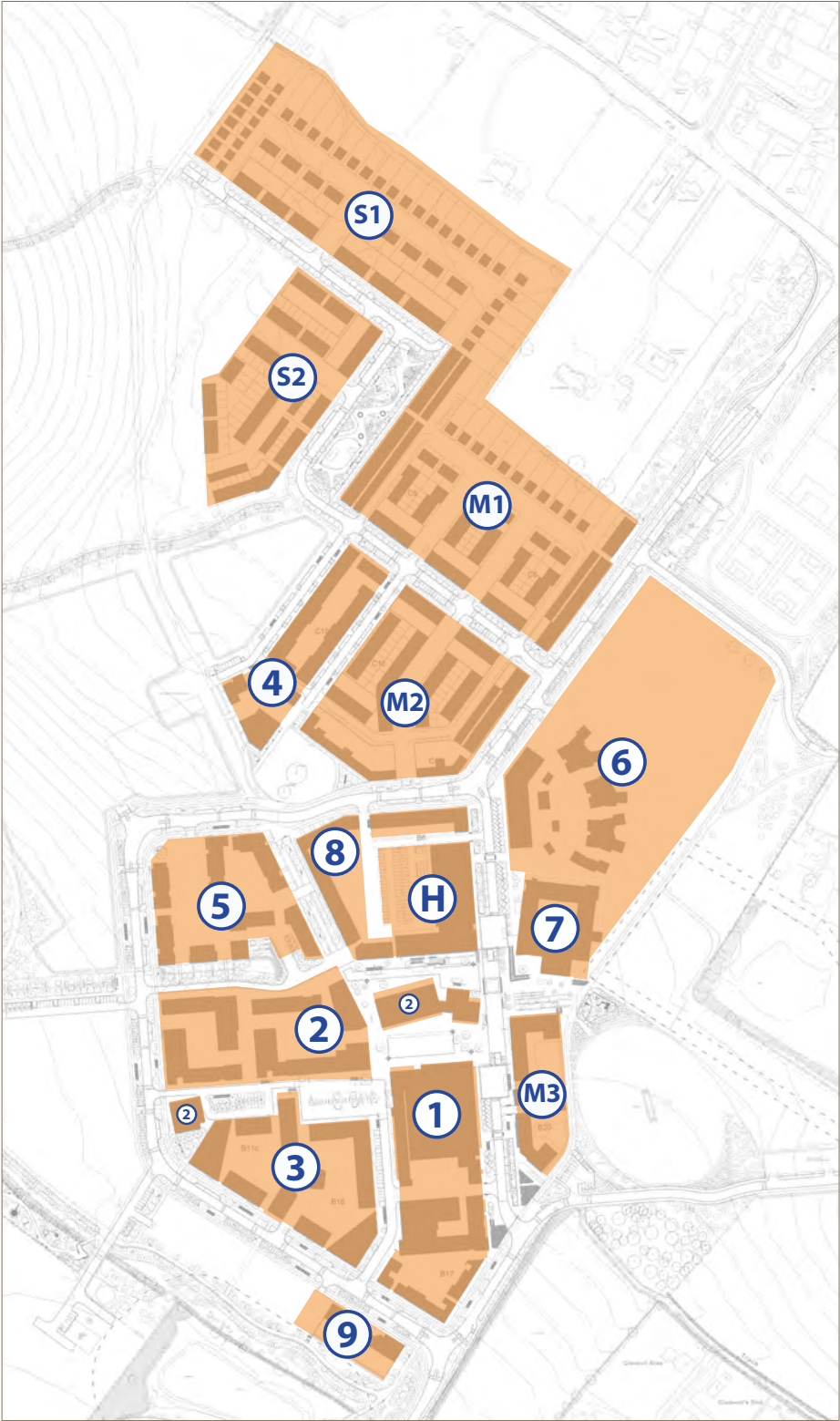
Illustrative Plan of Phase 1 with current proposals, September 2013



**Development Lots**

Current Proposals:

- Lot 1: Key Worker Residential, Foodstore, Retail, Healthcare, Police Office, Energy Centre
- Lot 2: Key Worker Residential, Retail, University / Estate Management Office, Social Spaces
- Lot 3: Key Worker Residential, Social Spaces
- Lot 4: Key Worker and Market Residential
- Lot 5: Student Accommodation
- Lot 6: Primary School
- Lot 7: Community Centre, Nursery
- Lot 8: Key Worker Residential
- Lot 9: Market Residential
- Lot A: Phase 1 Landscape (exc. Local Centre)
- Lot B: Local Centre Landscape
- Lot H: Hotel
- Lot M1: Market Residential
- Lot M2: Market Residential
- Lot M3: Market Residential
- Lot S1: Market Residential
- Lot S2: Market Residential



Phase 1 - Development Lot Boundaries



View of Storey's Field, Ridgeway Place, Market Square and Residential Squares





View of North West Cambridge Phase 1 with current proposals from South







## Chapter Content

- 2.1 Extent of Phase 1
- 2.2 Phase 1 and its Context
- 2.3 Key Streets and Spaces

North West Cambridge I Section 73

Phase 1 Proposals





## 2.1 Extent of Phase 1

The North West Cambridge development will be delivered over many years, anticipated to be completed by 2026. It is therefore critical that the first phase of development establishes a strong sense of place, builds community and ensures that the development is linked to existing neighbouring places and communities. Phase 1 of North West Cambridge will include the key components to establish a critical mass of development and make a significant start in meeting the University's objectives of delivering affordable housing for its staff.

Phase 1 will establish both the Ridgeway Village and the Local Centre neighbourhoods and define the character of each. The inclusion of the Local Centre in the Phase 1 development is crucial to establish and support the emerging community of residents. The Local Centre will incorporate the key community uses such as the Primary School and Community Centre as well as the foodstore, local retail, a hotel and the Energy Centre.

Just as important is the role the Local Centre plays in forming the visual identity of the whole of North West Cambridge and key spaces such as the Market Square and Ridgeway Place are located here. These spaces will form the heart of the development and will be key in forming the sense of place and a memorable character for the wider development.

Key elements of public open space will be established in phase 1 including Storey's Field and the Western Edge. These will be established to support the new community through providing outdoor recreation and amenity and will also incorporate necessary functions such as the surface water drainage network and playing fields. Another important function of this landscape is to maintain and enhance the ecology present on the site. The new public realm and parklands aim to retain as much of the existing landscape features as possible, contributing a visual uniqueness to the development. The establishment of this extensive landscape from the outset will make a significant contribution to the overall character of the new place and will provide a high quality visual setting for the new development.

Phase 1 infrastructure includes the Ridgeway strategic cycle route and the whole length of the north-south running Primary Street that links the Local Centre to the access points at Maddingley and Huntingdon Roads. These links are crucial in connecting the new community to its surroundings and the wider city through all modes of transport, including public transport.



Phase 1 with current proposals - view from South East



Phase 1 with current proposals - view from South West



Huntingdon Road East Junction

Playing Fields

Family housing

The Ridgeway

Western Edge

Storey's Field

Primary School

Bus-gate Street

Primary Street

Community Centre

Hotel

Ridgeway Corner

Ridgeway Place

Market Square

Foodstore

Residential Squares

Proposed Cricket Pitch

Energy Centre

Green Corridor

to Madingley Road

Madingley Road Park and Ride



Plan of Phase 1 with current proposals

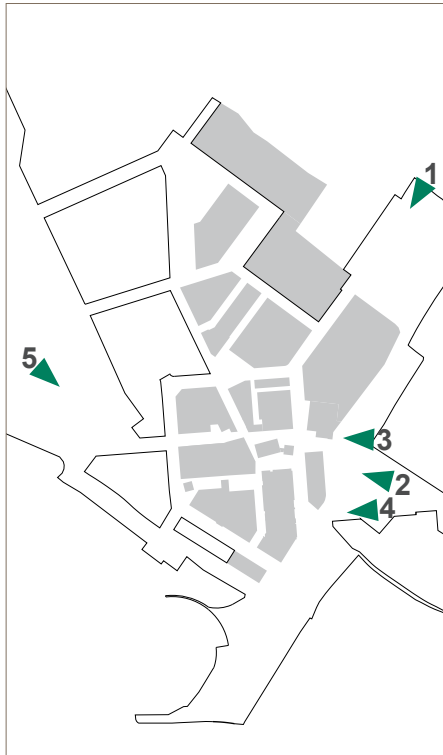


# 2.2 Phase 1 and its Context

It is key that North West Cambridge relates to and respects its surrounding context and neighbouring communities. It is important that the development also has a strong presence and becomes identifiable as a new part of the City of Cambridge. Views from outside the development site, such as from the M11 and from Huntingdon Road have been carefully considered and are addressed in the accompanying landscape visuals. In addition the character and quality of the development depends on the relationship of built form and landscape elements and the setting of the development within this strong, new landscape is considered crucial.

Landmarks and frontages have been carefully considered at the key entrances and approaches to the development in accordance with the Design Code. Taller elements of development have been located to terminate the long distance views along the northern and southern approaches. This ensures that the development is visible and present in the wider townscape.

An important element of Phase 1 is the park frontage to Storey’s Field. Key buildings such as the Community Centre are located on this frontage - this key community building is considered to be an iconic built form element and has been carefully located and designed to terminate views from the eastern and western approaches of the Ridgeway pedestrian and cycle route. Other building elements have been formed to create a varied frontage to the park and residential use have been located to provide overlooking and passive surveillance of the space.



Key plan - View 1 to 5



View 1 - View from Huntingdon Road



View 2 -View across Storey's Field





View 3 - Community Centre from Storey's Field



View 5 - View from Western Edge



View 4 - View towards Bus-gate Street from East



## 2.3 Key Streets and Spaces

Development proposals aim to reflect and interpret the informal and human scaled qualities of the existing streets and spaces of Cambridge. The arrangement of built form elements together with the landscape structure intends to create picturesque qualities and a constantly changing experience. Built form, the public realm and landscape work together to create qualities, such as:

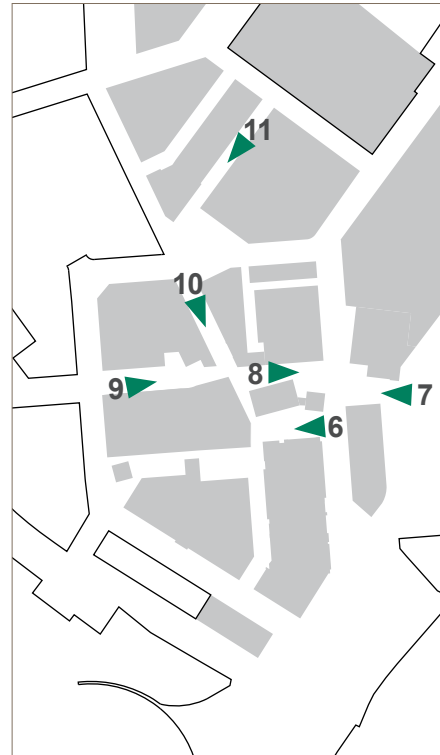
- a high degree of variation in building height and building line along streets, typically between 3 to 5 storeys;
- an unfolding experience of the street formed through the use of gentle curves and deviations in street alignment and frontages;
- informality - using landscape and built form in combination to create an informality and a picturesque quality;
- landmark buildings are located only at key locations, terminating views or identifying a key space or building use;
- a pedestrian orientated series of spaces which are at a human scale and are comfortable and consider sunlight and shelter, materials and furniture, overlooking and enclosure.

The contribution of the built urban structure to these qualities is crucial, strategic landmarks and building accents are established to create a high degree of variation and environmental legibility, while also responding to and terminating key views and approaches to the development. Landmarks and building accents are also located to indicate the key public spaces such as Ridgeway Place and the Market Square.

Frontages create a gradually unfolding urban realm, describing the network of public spaces and streets within the development. Frontage types are established to describe the different spaces and streets and again to provide legibility in the built environment.

Building heights have been carefully considered to create enclosure where required, and also to add to the legibility, with the highest development at the Local Centre neighbourhood and lower development in the Ridgeway Village.

The intention is to create a varied roofscape throughout the development. This is both to respond to long distance views to the development from the M11 and farther west, but also to create a rich interesting experience within the development.



Key plan - View 6 to 11



View 6 - The Market Square - looking West



View 7 - Ridgeway Place from Storey's Field





View 8 - Ridgeway Place - looking East



View 10 - The Ridgeway - looking South towards the Market Square



View 9 - The Green Corridor - looking East



View 11 - Residential Street in Ridgeway Village







## Chapter Content

- 3.1 Parameter Plans Amendments - Overview
- 3.2 NWC/OPA/PAR/03 - Open Land and Landscape Areas  
Parameter Plan: Zone B
- 3.3 NWC/OPA/PAR/04 - Land Use (Built Development and  
Ancillary Space) Parameter Plan: Zone B
- 3.4 NWC/OPA/PAR/05 - Building Zones Parameter Plan: Zone
- 3.5 NWC/OPA/PAR/06 - Building Heights Parameter Plan
- 3.6 NWC/OPA/PAR/07 - Topography Parameter Plan: Zone B

North West Cambridge I Section 73

Section 73 Proposals





# 3.1 Parameter Plans Amendments - Overview

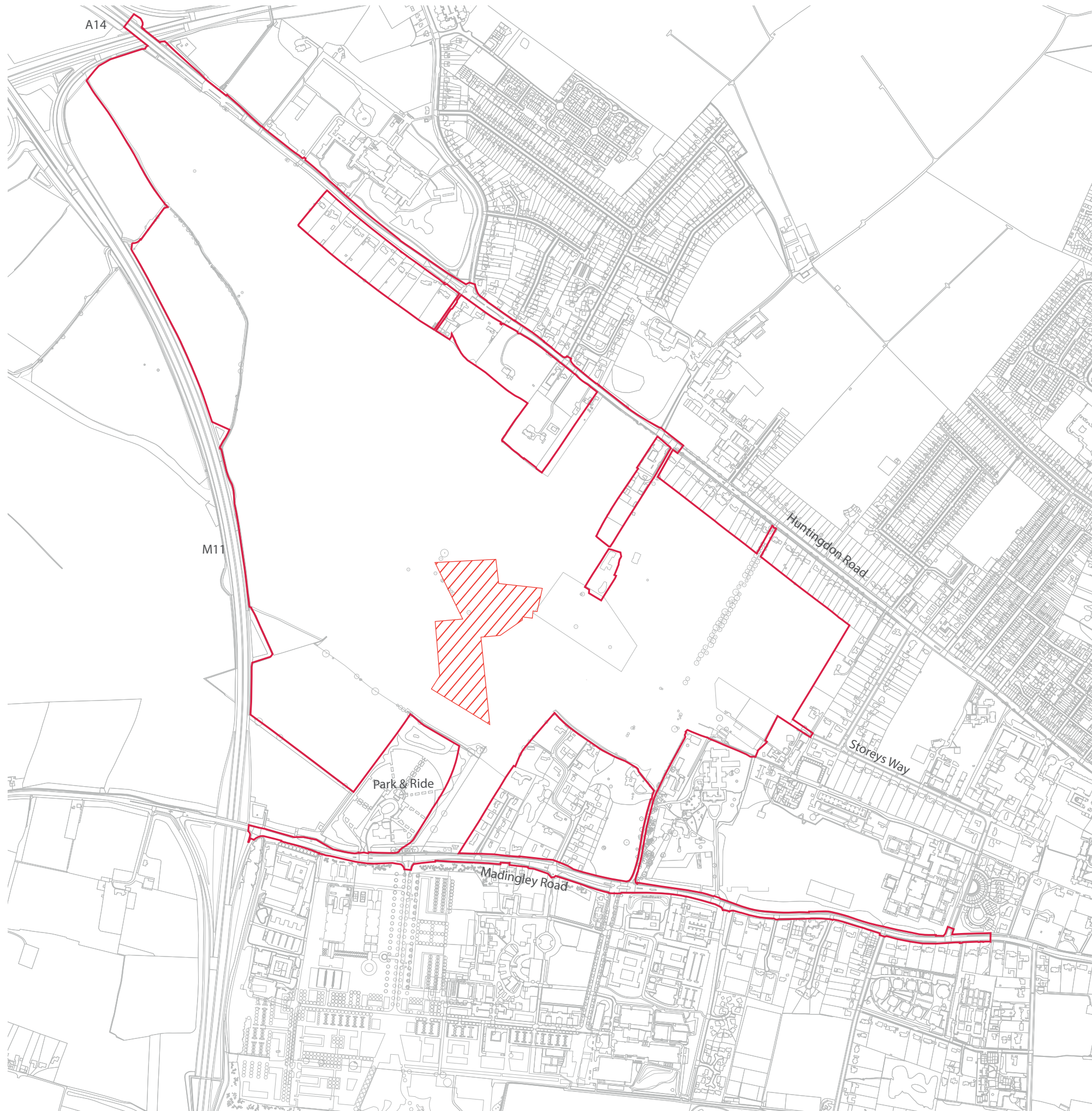
The Phase 1 design proposals require updates to the following parameter plans:

- NWC/OPA/PAR/03/A (Open Land and Landscape Areas Parameter Plan: Zone B) Date stamped 3rd April 2012.
- NWC/OPA/PAR/04/A (Land Use (Built Development and Ancillary Space) Parameter Plan: Zone B) Date stamped 3rd April 2012.
- NWC/OPA/PAR/05/A (Development Building Zones Parameter Plan: Zone B) Date stamped 3rd April 2012
- NWC/OPA/PAR/06/A (Building Heights Parameter Plan: Zone B) Date stamped 3rd April 2012
- NWC/OPA/PAR/07/A (Topography Parameter Plan: Zone B) Date stamped 3rd April 2012.

The changes to the Parameter Plans are proposed to respond to the development within the Local Centre in Phase 1. The proposed changes to the approved parameter plans are set out below.

Parameter Plan	Status	Reasons
01 Zones; Zone B	Not to be amended	NA
02 Access; Zone B	Not to be amended	NA
03 Open Land and Landscape Areas; Zone B	To be amended	Technical Considerations. Please also refer to Section 4.1.2 and 4.1.6 of this document for a detailed explanation.
04 Land Use (Built Development and Ancillary Space); Zone B	To be amended	Consistency and alignment with other amendments. Please also refer Section 4.1.2 and 4.1.6 of this document for a detailed explanation.
05 Development Building zones; Zone B	To be amended	Technical Considerations. Please also refer to Section 4.1.2 and 4.1.6 for a detailed explanation.
06 Building Heights; Zone B	To be amended	Technical Considerations. Please also refer to Section 4.1.2, 4.1.4, 4.1.5, 4.1.6 and 4.1.7 for a detailed explanation.  Urban Design Considerations. Please also refer to Section 4.1.3 for a detailed explanation.
07 Topography; Zone B	To be amended	Consistency and alignment with other amendments. Please also refer to Section 4.1.2 and 4.1.6 of this chapter for a detailed explanation.
08 Huntington Road Highway and Utilities Works; Zone A	Not to be amended	NA
09 Madingley Road Highway & Utilities Works; Zone C	Not to be amended	NA






KEY

For Approval:

— Application site boundary

 Section 73 Location

# North West Cambridge

## Section 73 Location Plan

September 2013



0 10 50 100m  
Scale 1:5000@A1





3.2 NWC/OPA/PAR/03  
Open Land and Landscape Areas Parameter Plan: Zone B  
Date stamped 3rd April 2012

The Primary Open Land around the Community Centre is proposed to be amended as part of this Section 73 Application.

Design development for the Community Centre for North West Cambridge requires that the building extends into a small area of Primary Open Land immediately to the south of Lot 7. Therefore it is proposed to amend the parameter plan to reflect this. This building also requires a building height parameter that will be modified on the heights and zone parameter plans as described above. Please refer to Chapter 4, Section 4.1.6 for documentation of the consultation and evolution of Lot 7 design.

All other components of the Outline Planning Consent remain unchanged.

This amendment to Primary Open Land does not affect the University's ability to meet its S106 obligations to deliver informal open land. The proposals for open space and landscaping continue to exceed the open space standards as set out in the NWCAAP.

The following page shows an enlarged image of the area of change proposed as part of this Section 73 Application, and its relationship to the Green Belt Boundary.

Reasons for Amendments:

Please refer to Chapter 4, Section 4.1.6

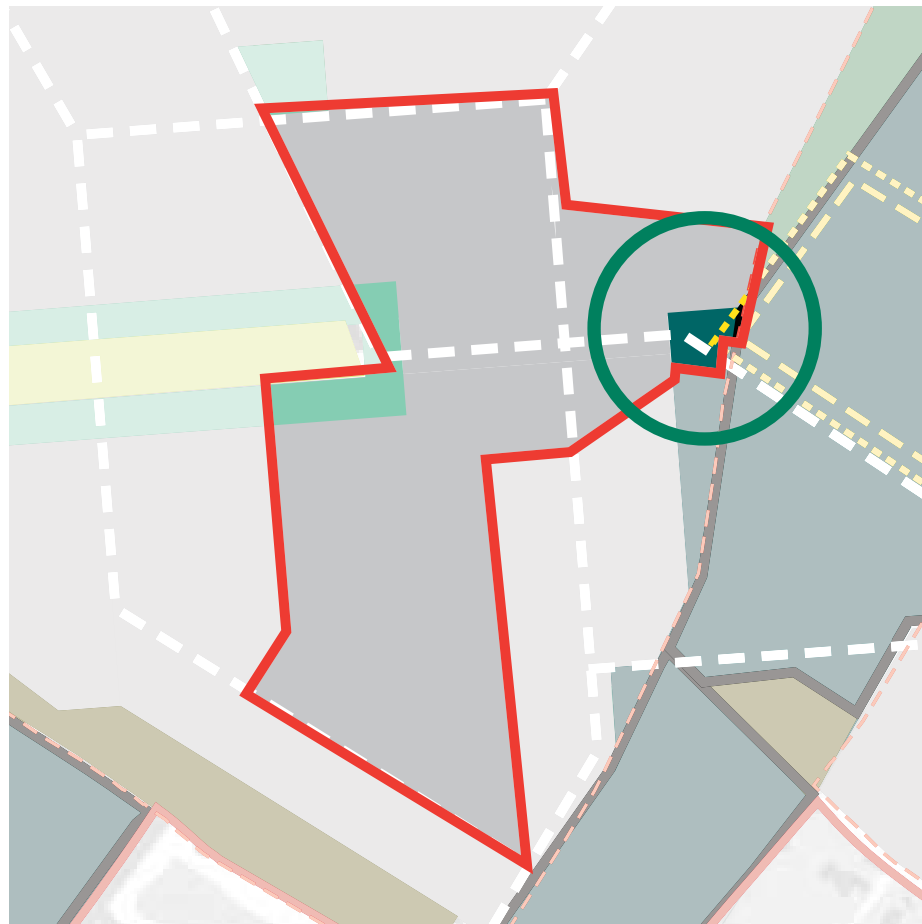


Approved Parameter Plan 03/A, February 2013



Proposed Parameter Plan 03/B, September 2013





Comparison of the proposed changes in Section 73: Approved Parameter Plan 03/A, February 2013



Illustrative Plan of Phase 1 with Current Proposals, September 2013



Comparison of the proposed changes in Section 73: Proposed Parameter Plan 03/B, September 2013

Contextual Information:

- AAP Development Footprint / Green Belt Boundary
- Existing and retained buildings
- Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
- SSSI boundary
- SSSI 10m buffer
- Washpit Brook
- Areas of existing open land, woodland & treecover to be retained
- Secondary open land

For Approval:

- Application site boundary
- Primary open land (1-5)
- Primary open land boundary
- Open land within school site
- Secondary open land zone
- Zone for works to Washpit Brook
- Zone for location of flow control structure



3.3 NWC/OPA/PAR/04  
Land Use (Built Development and Ancillary Space) Parameter Plan: Zone B  
Date stamped 3rd April 2012

The extent of Residential and Complimentary Mixed Uses and the Land Use Flexibility Zone around the Community Centre is proposed to be amended as part of this Section 73 Application.

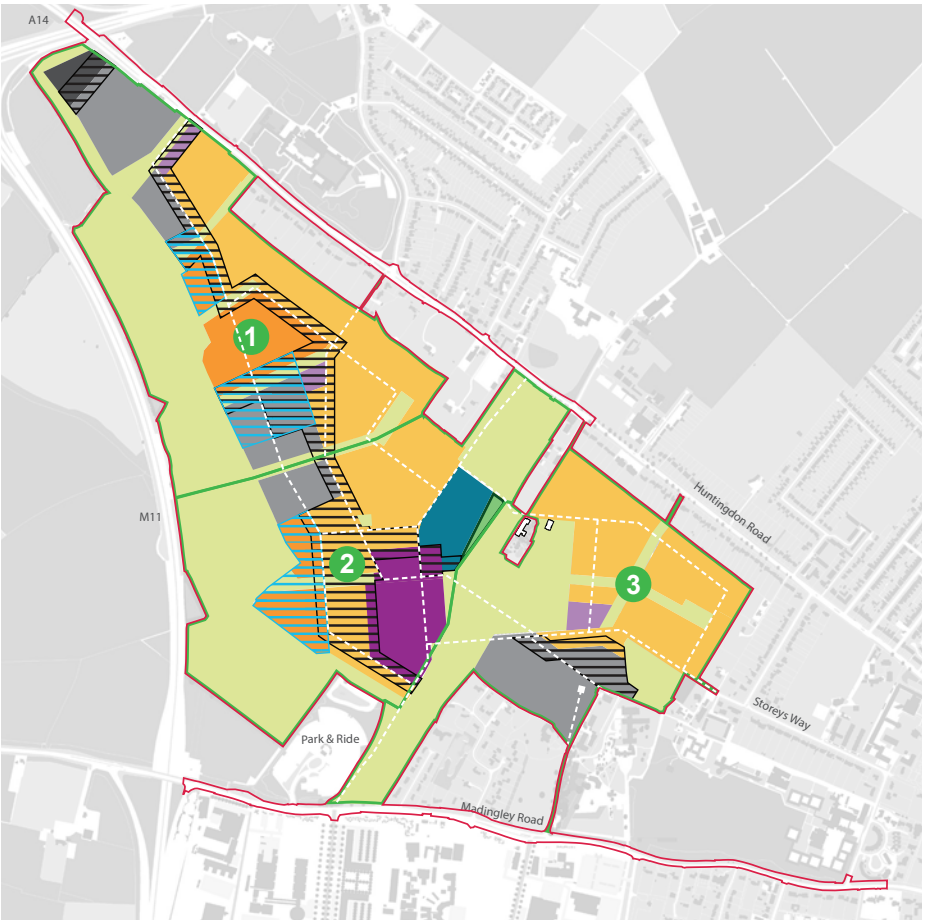
Design development for the Community Centre for North West Cambridge requires that the Community Centre building extends into a small area of primary open land immediately to the south of Lot 7. Therefore it is proposed to amend the parameter plan to reflect this.

All other components of the Outline Planning Consent remain unchanged.

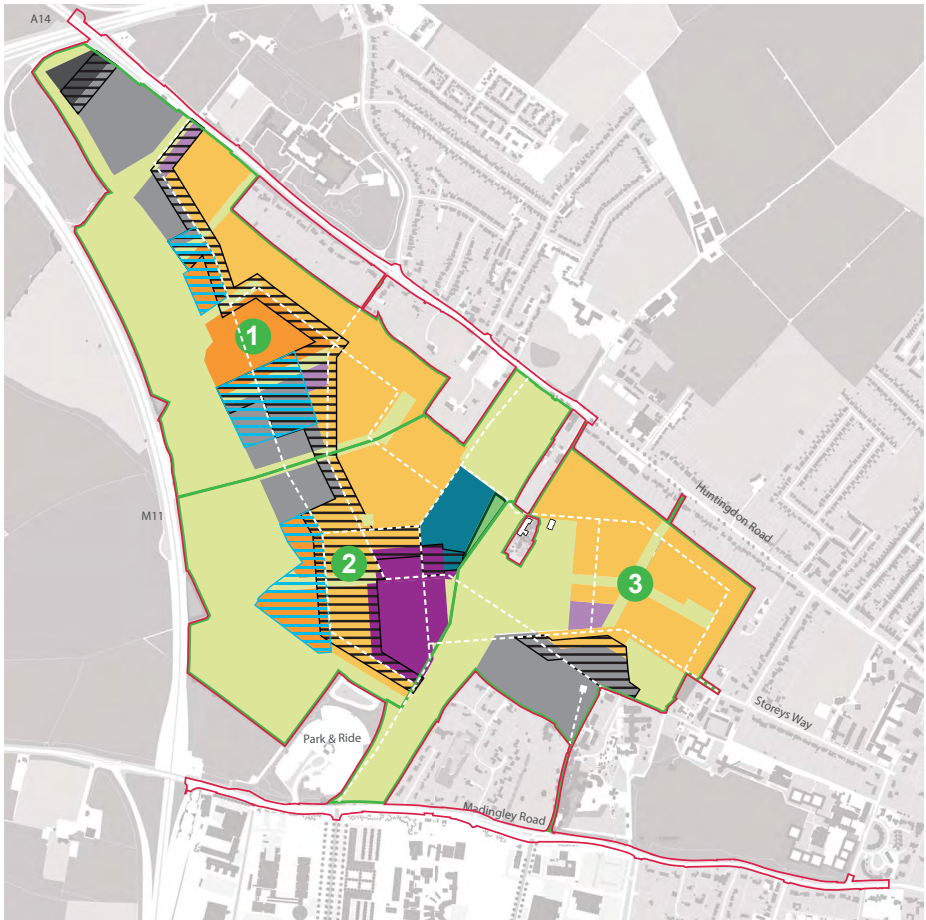
The following page shows an enlarged image of the area of change proposed as part of this Section 73 Application.

Reasons for Amendments:

Please refer to Chapter 4, Section 4.1.6

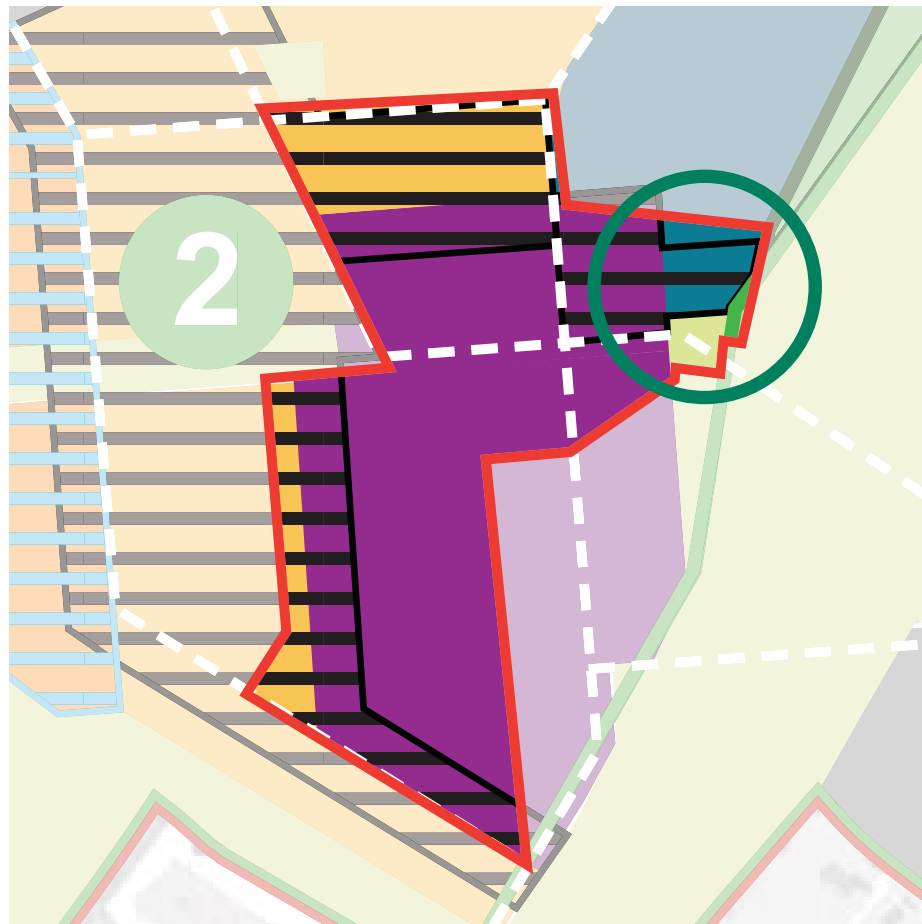


Approved Parameter Plan 04/A, February 2013



Proposed Parameter Plan 04/B, September 2013

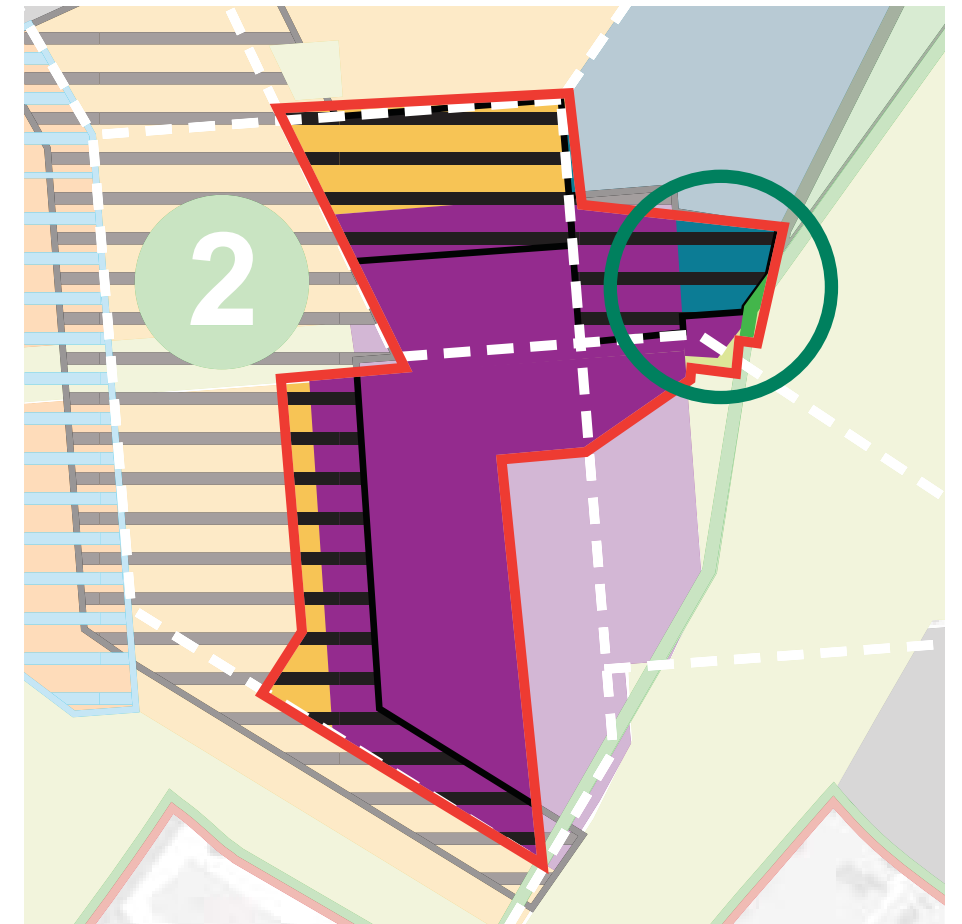




Comparison of the proposed changes in Section 73: Approved Parameter Plan 04/A, February 2013



Illustrative Plan of Phase 1 with Current Proposals, September 2013



Comparison of the proposed changes in Section 73: Proposed Parameter Plan 04/B, September 2013

Contextual Information:

- Existing and retained buildings
- Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
- Open land (reference NWC/OPA/PAR/03)
- Open land within school site (reference NWC/OPA/PAR/03)
- Potential reserved Energy Centre site: sui generis (B2)

For Approval:

- Application site boundary
- Development areas
- Residential: C3, C4
- Collegiate Housing: C2
- Academic/Research: D1, B1(b), sui generis
- Residential and complementary mixed uses: A1, A2, A3, A4, A5, C1, C2, C3, C4, D1, D2, sui generis (B2, Energy Centre)
- Residential and complementary mixed uses: C3, C4, D1, A1, A2, A3, A4, A5
- School
- Land use flexibility zone
- Western Edge land use flexibility zone



3.4 NWC/OPA/PAR/05  
Building Zones Parameter Plan: Zone B  
Date stamped 3rd April 2012

The extent of Zone K around the Community Centre and to the west of Local Centre bordering Zone J is proposed to be amended as part of this Section 73 Application.

It is proposed that Zone K will need to extend to the west to accommodate a proposed residential building that previously crossed the zone boundary into Zone J. Zone K is also increased to the east to allow for the Community Centre.

All other components of the Outline Planning Consent remain unchanged.

The following page shows an enlarged image of the area of change proposed as part of this Section 73 Application.

Reasons for Amendments:  
Please refer to Chapter 4, Section 4.1.5  
Please refer to Chapter 4, Section 4.1.6



Approved Parameter Plan 05/A, February 2013



Proposed Parameter Plan 05/B, September 2013

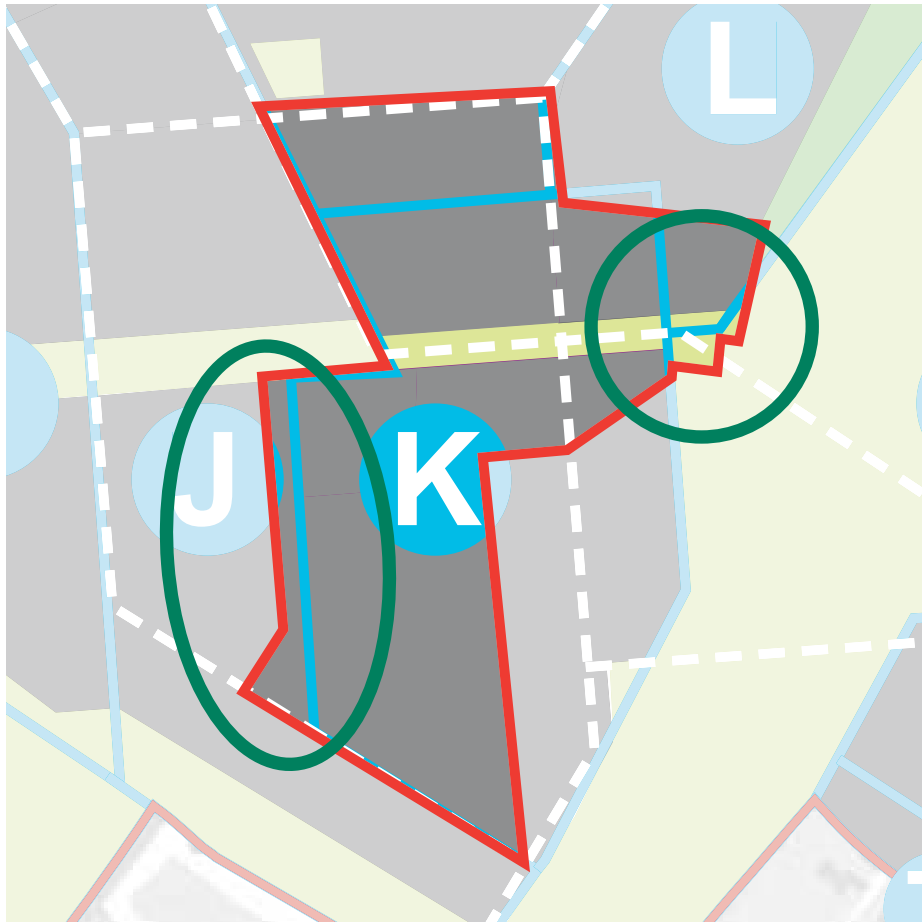
Contextual Information:

- Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
- Open land (reference NWC/OPA/PAR/03)
- Open land within school site (reference NWC/OPA/PAR/03)

For Approval:

- Application site boundary
- Building zones

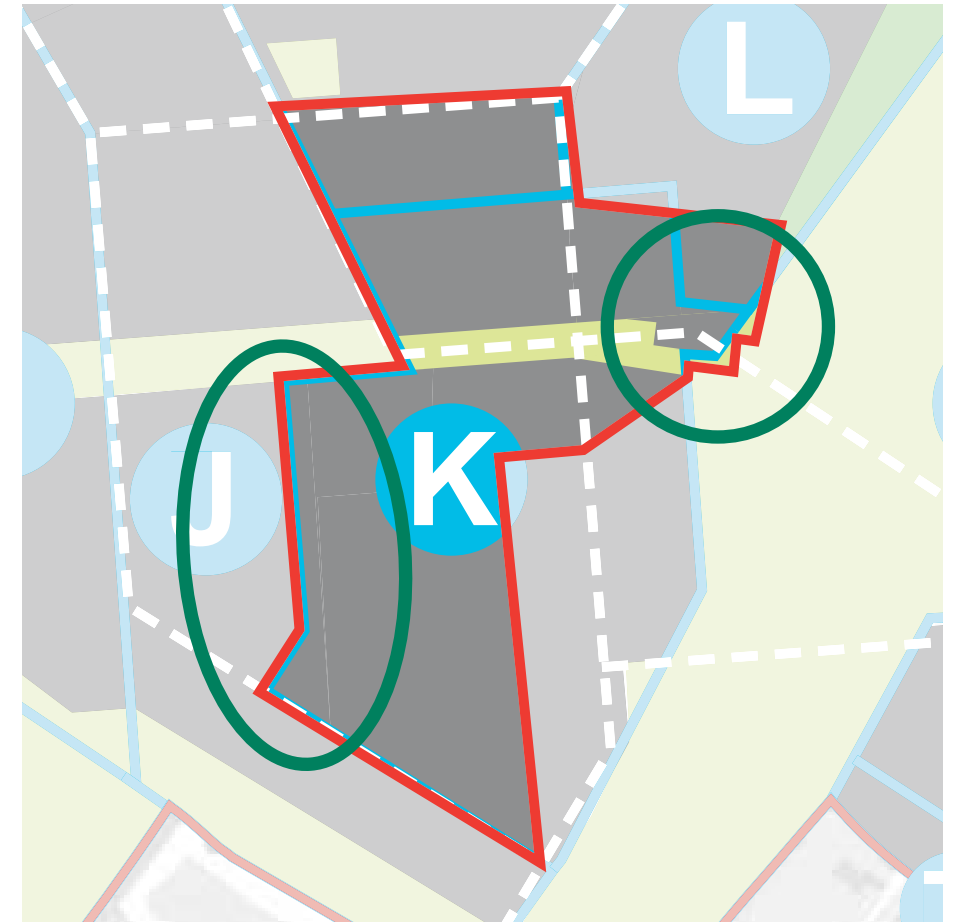




Comparison of the proposed changes in Section 73: Approved Parameter Plan 05/A, February 2013



Illustrative Plan of Phase 1 with Current Proposals, September 2013



Comparison of the proposed changes in Section 73: Proposed Parameter Plan 05/B, September 2013



3.5 NWC/OPA/PAR/06  
Building Heights Parameter Plan: Zone B  
Date stamped 3rd April 2012

The building heights within the Local Centre is proposed to be amended as part of this Section 73 Application.

There are 5 areas where it is proposed that the AOD building heights parameters are increased to accommodate buildings that due to design development and technical requirements are required to be taller than the parameters set out in the outline application. The height increases are between 2 and 4 metres.

In addition, due to the detailed design of the Community Centre (Lot 7), its location now extends into the Primary open land set out in the Open Land and Landscape Areas Parameter Plan (NWC/OPA/PAR/03). The building heights parameter plan therefore includes a new discrete area of development with a maximum building height of 38.5m.

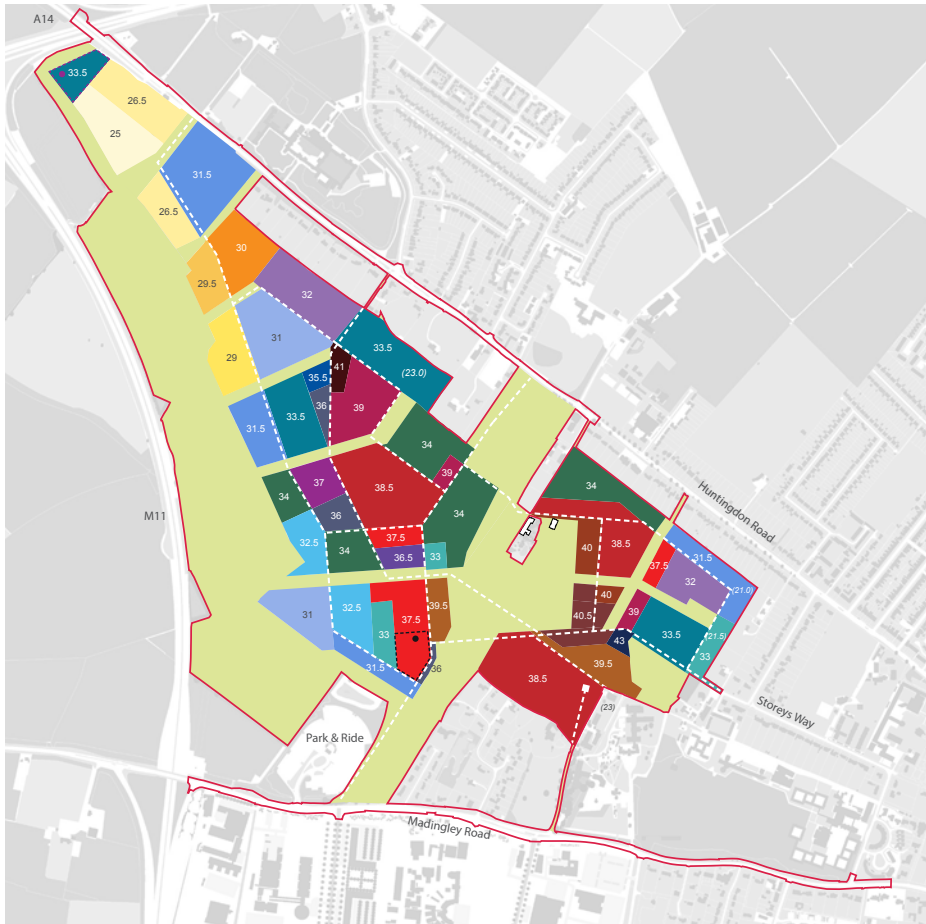
Due to technical requirements the energy centre flue size is required to be larger than previously anticipated. It is therefore proposed that the height for the energy centre flue on the parameter plan is increased by 2m, with an increased dimension of 5.0 x 5.8m, which reflects a square chimney rather than a circular chimney.

All other components of the Outline Planning Consent remain unchanged.

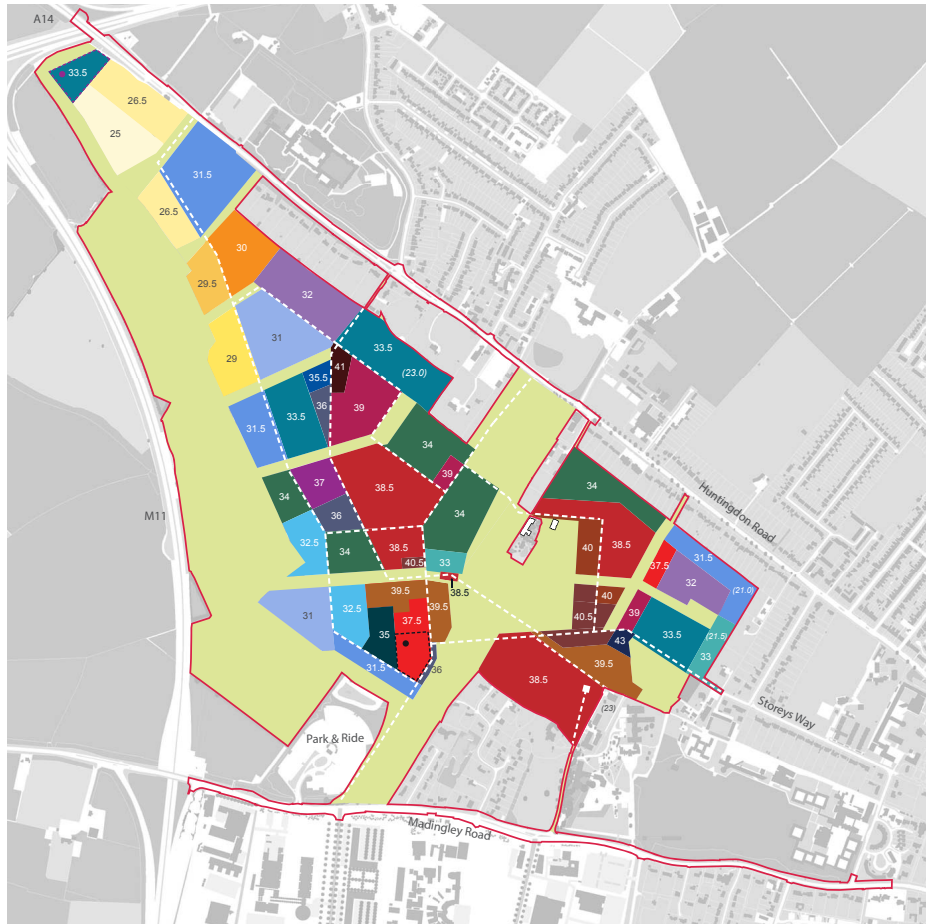
The following page shows an enlarged image of the area of change proposed as part of this Section 73 Application.

Reasons for Amendments:

- Please refer to Chapter 4, Section 4.1.4
- Please refer to Chapter 4, Section 4.1.5
- Please refer to Chapter 4, Section 4.1.6
- Please refer to Chapter 4, Section 4.1.7
- Please refer to Chapter 4, Section 4.1.8



Approved Parameter Plan 06/A, February 2013



Proposed Parameter Plan 06/B, September 2013

Contextual Information:

- Existing and retained buildings
- Indicative primary and secondary routes (reference Access Parameter Plan NWC/OPA/PAR/02)
- Open land (reference NWC/OPA/PAR/03)
- Indicative location of Energy Centre flue
- Indicative potential reserved location of Energy Centre flue
- (x.x) Existing ground level metres AOD
- Reserved Zone for Potential Energy Centre flue of 1.5m diameter and 53.5m AOD

For Approval:

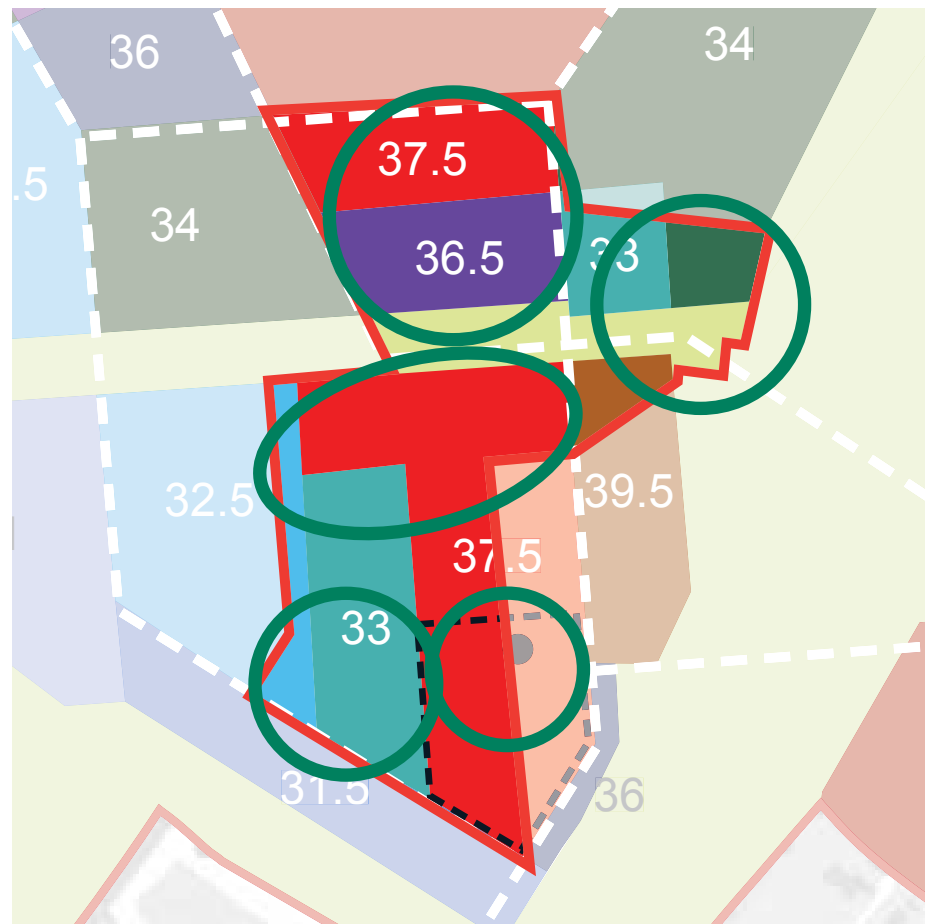
Application site boundary

**Maximum building heights**

25.0 metres AOD	35.5 metres AOD
26.5 metres AOD	36.0 metres AOD
29.0 metres AOD	36.5 metres AOD
29.5 metres AOD	37.0 metres AOD
30.0 metres AOD	37.5 metres AOD
31.0 metres AOD	38.5 metres AOD
31.5 metres AOD	39.0 metres AOD
32.0 metres AOD	39.5 metres AOD
32.5 metres AOD	40.0 metres AOD
33.0 metres AOD	40.5 metres AOD
33.5 metres AOD	41.0 metres AOD
34.0 metres AOD	43.0 metres AOD
35.0 metres AOD	

Zone for Energy Centre flue of 5.0 x 5.8 m in plan dimension and height 44.5m AOD

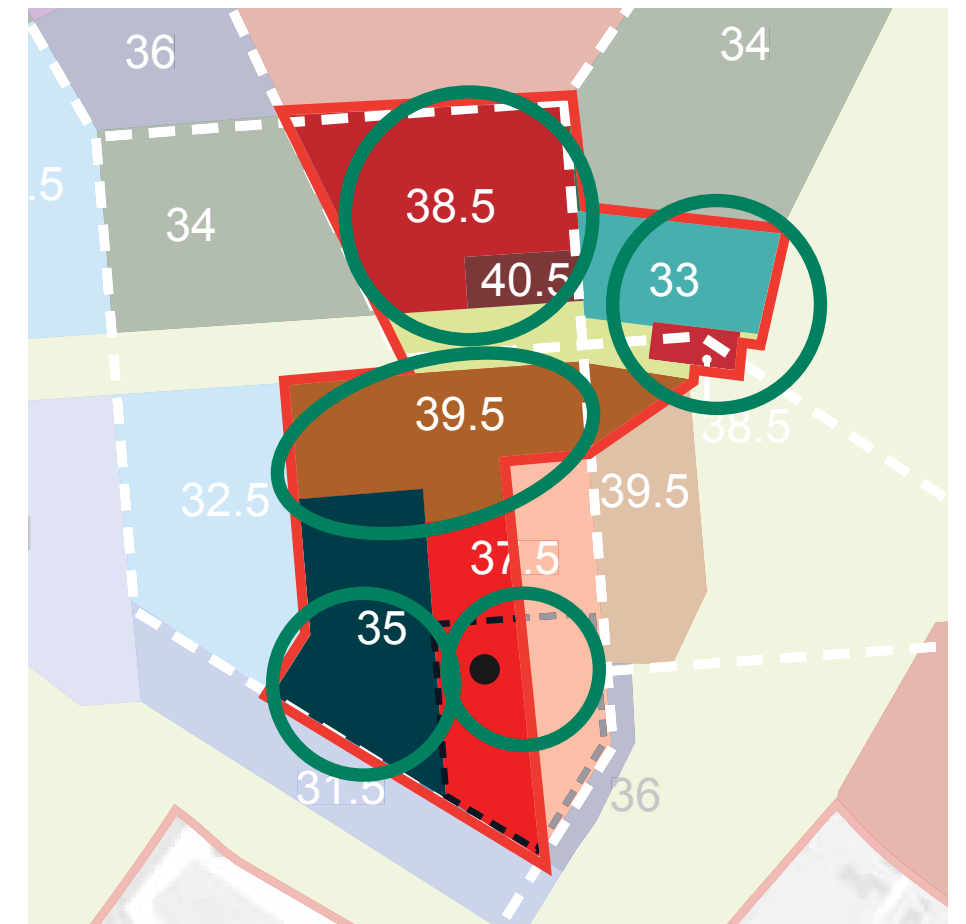




Comparison of the proposed changes in Section 73: Approved Parameter Plan 06/A, February 2013



Illustrative Plan of Phase 1 with Current Proposals, September 2013



Comparison of the proposed changes in Section 73: Proposed Parameter Plan 06/B, September 2013



3.6 NWC/OPA/PAR/07  
Topography Parameter Plan: Zone B  
Date stamped 3rd April 2012

The extents of the Development Area around the Community Centre is proposed to be amended as part of this Section 73 Application.

Design development for the Community Centre for North West Cambridge requires that the Community Centre building extends into a small area of primary open land immediately to the south of Lot 7. Therefore it is proposed to amend this parameter plan to reflect an extended development area around Lot 7 to include the Community Centre building in its entirety.

All other components of the Outline Planning Consent remain unchanged.

The following page shows an enlarged image of the area of change proposed as part of this Section 73 Application.

Reasons for Amendments:  
Please refer to Chapter 4, Section 4.1.6



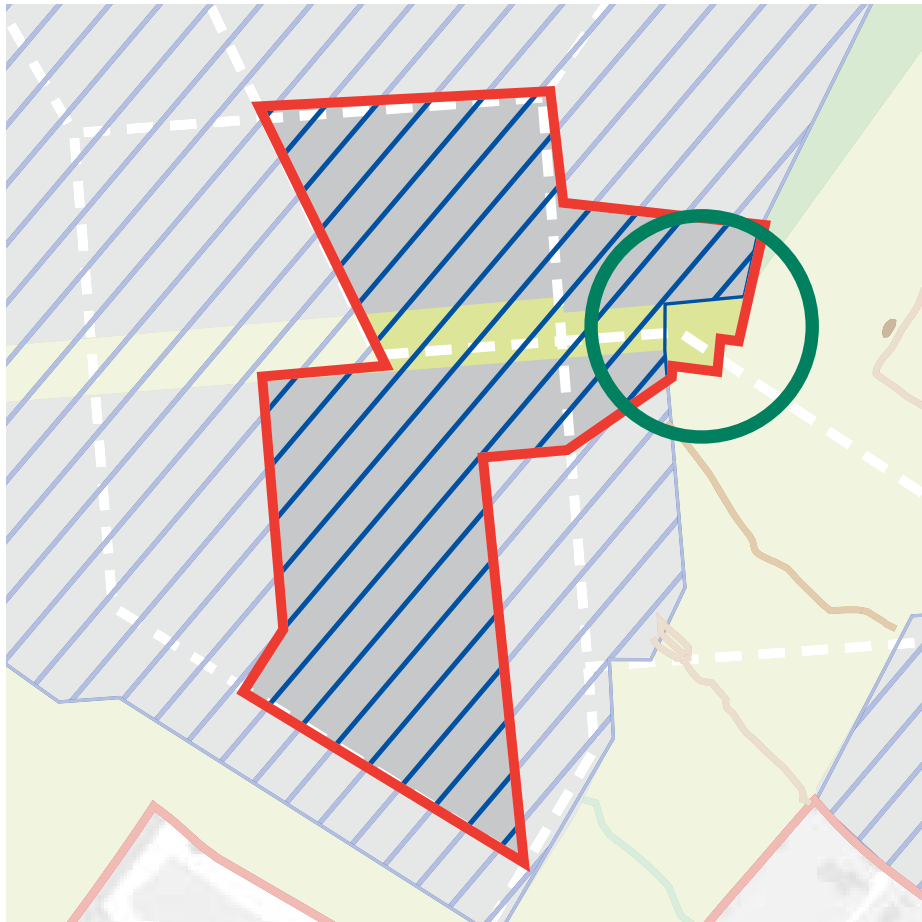
Approved Parameter Plan 07/A, February 2013



Proposed Parameter Plan 07/B, September 2013

Contextual Information:		For Approval:	
	Indicative primary and secondary routes (reference NWC/OPA/PAR/02)		Application site boundary
	Open land (reference NWC/OPA/PAR/03)		12.5 metres AOD
	Open land within school site (reference NWC/OPA/PAR/03)		15 metres AOD
			17.5 metres AOD
			20 metres AOD
			22.5 metres AOD
			25 metres AOD
			Development area

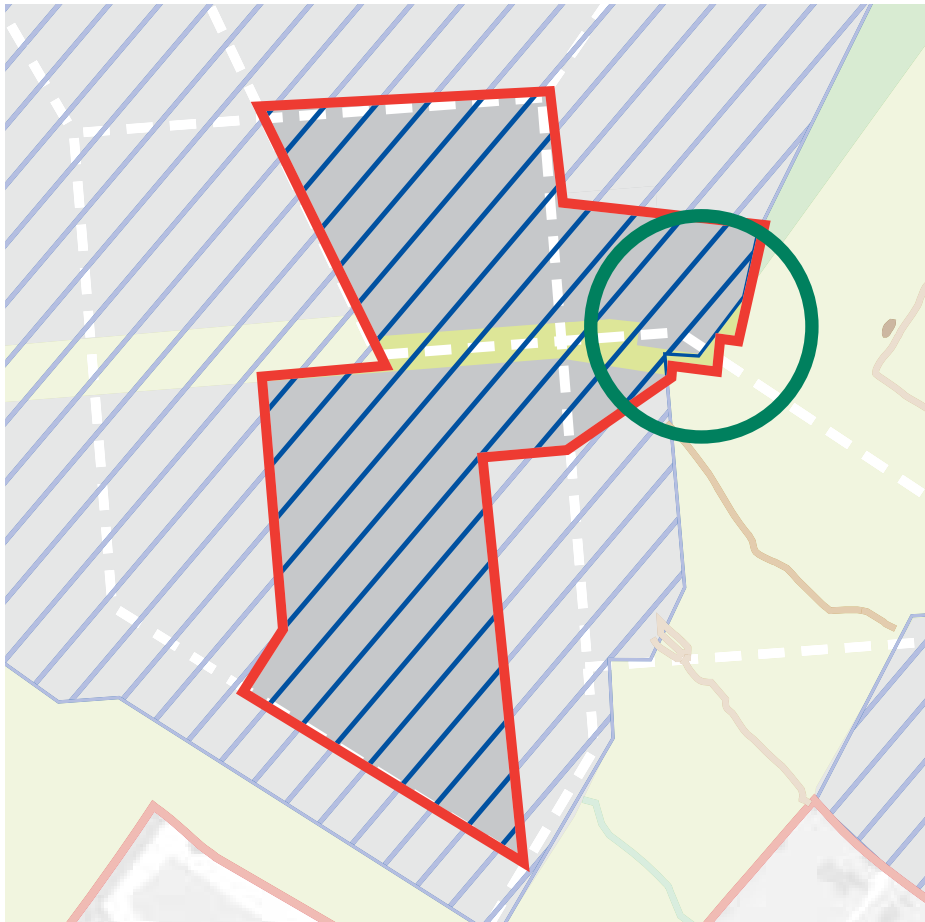




Comparison of the proposed changes in Section 73: Approved Parameter Plan 07/A, February 2013



Illustrative Plan of Phase 1 with Current Proposals, September 2013



Comparison of the proposed changes in Section 73: Proposed Parameter Plan 07/B, September 2013







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# North West Cambridge I Section 73 Rationale for Amendments





## 4.1 Design Rationale

### 4.1.1 Introduction

As part of the Outline Planning Permission of February 2013 a set of Parameter Plans were submitted to provide a framework within which the University's vision and core principles for the proposed development could be delivered. Under these Parameters, development could come forward with the appropriate scale, form, use and relationships to open space and access and movement.

The parameter plans were based on principles and not specific design proposals and, as stated, through the design development of Phase 1, a limited number of development Lots have not been able to achieve the criteria set out in the Parameter Plans while meeting the challenging technical constraints and design considerations as set out in the Design Codes, the Design, Access and Landscape Statement and the Area Action Plan for North West Cambridge.

This section outlines the extent of the changes to the parameter plans. However, the design principles and concepts that originally applied to the development are still valid and the proposals coming forward ensure that the original University of Cambridge's vision is retained.

Various iterations have been tested to arrive at this scenario. Appropriate consultation has been undertaken to discuss and address issues and minimise the changes to the Outline Planning consent. The following is a detailed description of the rationale for the current proposals and the required changes to the Parameter Plans.



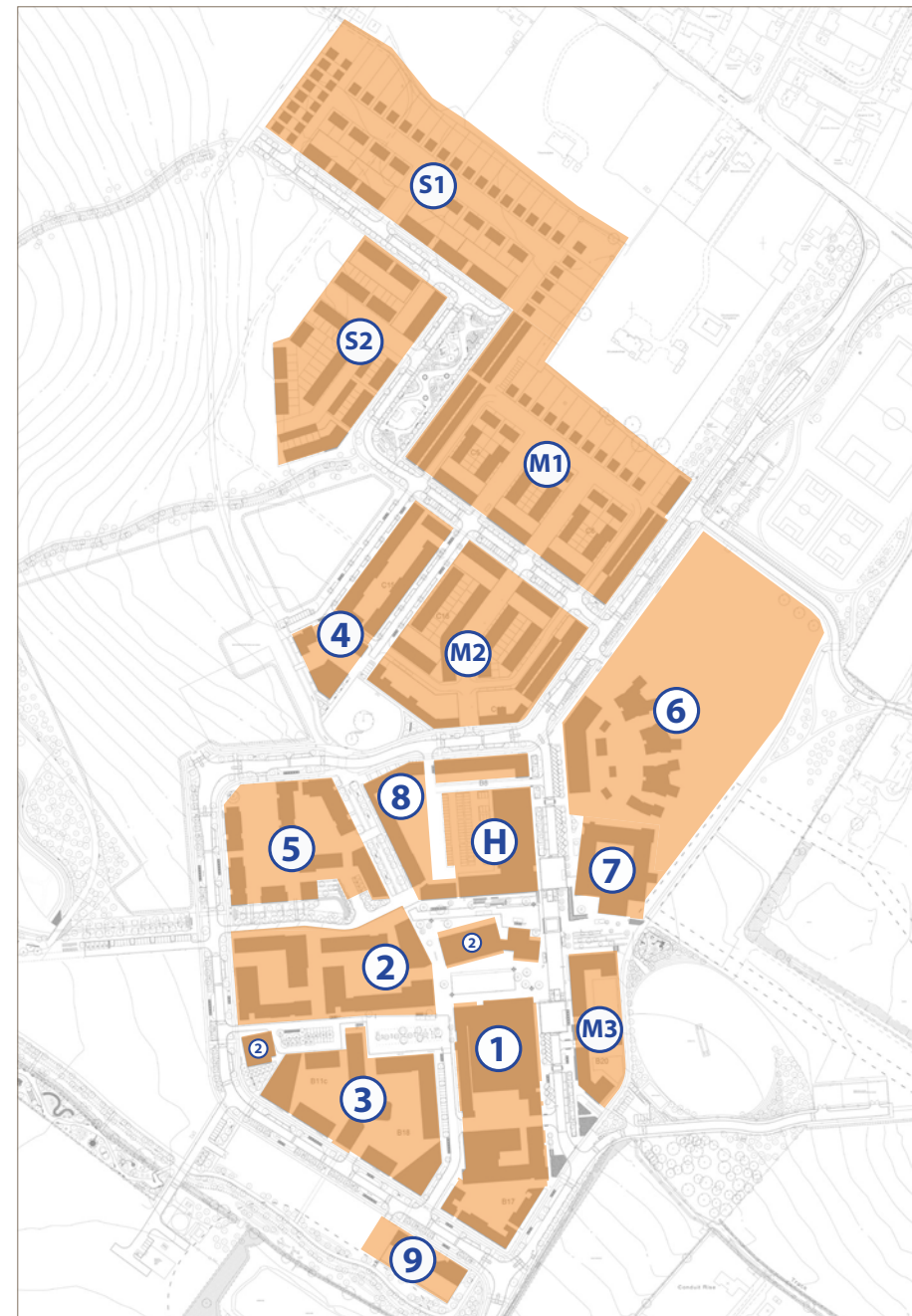
Illustrative Plan of Phase 1 with Current Proposals, with Market Square area highlighted



### 4.1.2 Overview - Technical Constraints

Summarised below are the technical constraints that have resulted in the proposed revisions to the related Parameter Plans. Further detail on these constraints and their affects is provided within this chapter. The lots that have been affected are also listed in brackets.

- Levels as per detailed design. Existing site levels defined the development Lot ground floor AODs in the first instance, but subsequent design iterations through the Phase 1 design process in regard to site drainage, roadway design, landscape design, utilities infrastructure and servicing have led to a refined understanding of the necessary ground floor AODs (Lots 8, H, 7, 2, 3).
- Energy Centre detail design requirements (Lot 1) in relation to the requirement for catalytic converters and associated space requirements.
- Acoustic requirements (Lot 7) – in relation to the main hall in the community centre requiring specific acoustic paneling to allow a variety of events to take place in the hall.
- Natural ventilation requirements (Lot 7) to ensure that the building meets BREEAM excellent requirements, whilst again allowing for a variety of events to take place in the hall.
- Code for Sustainable Homes Level 5 – which requires certain daylighting standards to be met, which ultimately requires greater floor to ceiling heights to allow daylighting into rooms (Lots 3, 1, 2, H,8).
- Code for Sustainable Homes Level 5 - other requirements such as views to sky, floor aspect ratio, (Lot 3).
- Ground floor height - to be increased to allow for the opportunity of a greater number of uses/types of spaces to come forward in ground floor units in the future without the need to alter the building fabric (Lots 1, 2, 8, H).
- Operational model for the hotel – hotel operators will hold high expectations for a Lot that can provide sufficient efficiency in terms of access and servicing, room size and layout, number of rooms per floor, etc. For a 120 bed hotel this model would typically extend to 5 storeys – incorporating 4 floors of rooms with public uses such as restaurant/café/bar at ground floor.(Lot H).



Phase 1 - Development Lot Boundaries



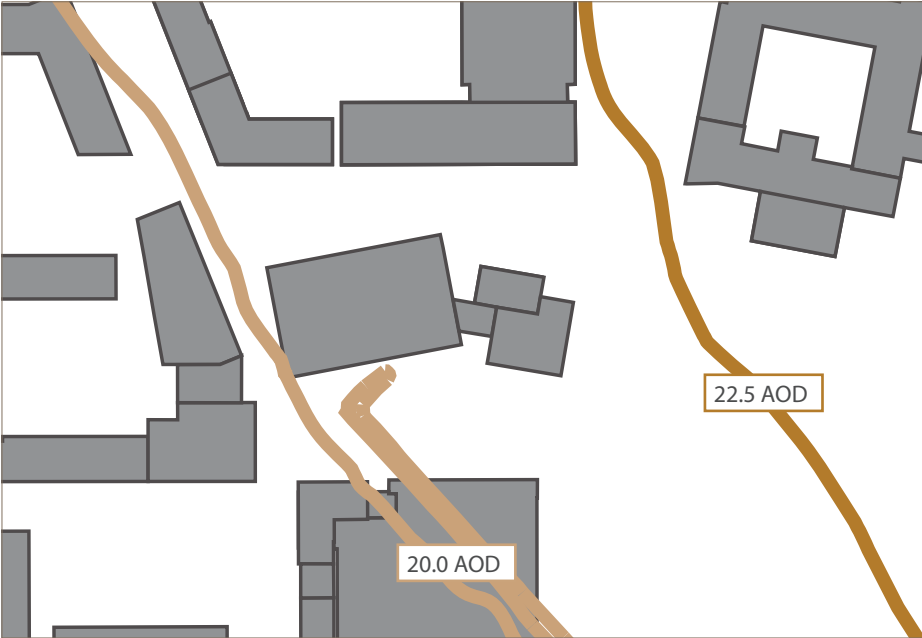
Levels

Existing site levels defined the ground floor AODs of the development lots in the first instance, the diagram below shows the existing topography overlaid with the development proposals around Market Square.

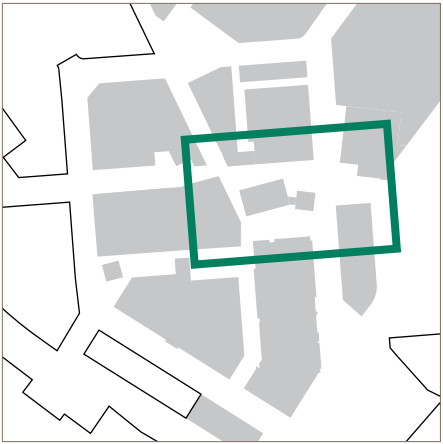
Subsequent design iterations through the Phase 1 design process in regard to site drainage, roadway design, landscape design, utilities infrastructure and servicing have led to a refined understanding of the necessary ground floor AODs (Lots 8, H, 7, 2, 3), this is illustrated on the levels plan of the Market Square area on the right.

The development proposals sought to create a level and accessible environment around the Market Square, Ridgeway Corner and Ridgeway Place as this is the central core of the Local Centre, an important focal point of the North West Cambridge development community. It is also specified in the Design Code that this space should be level where possible to maintain accessibility for all users.

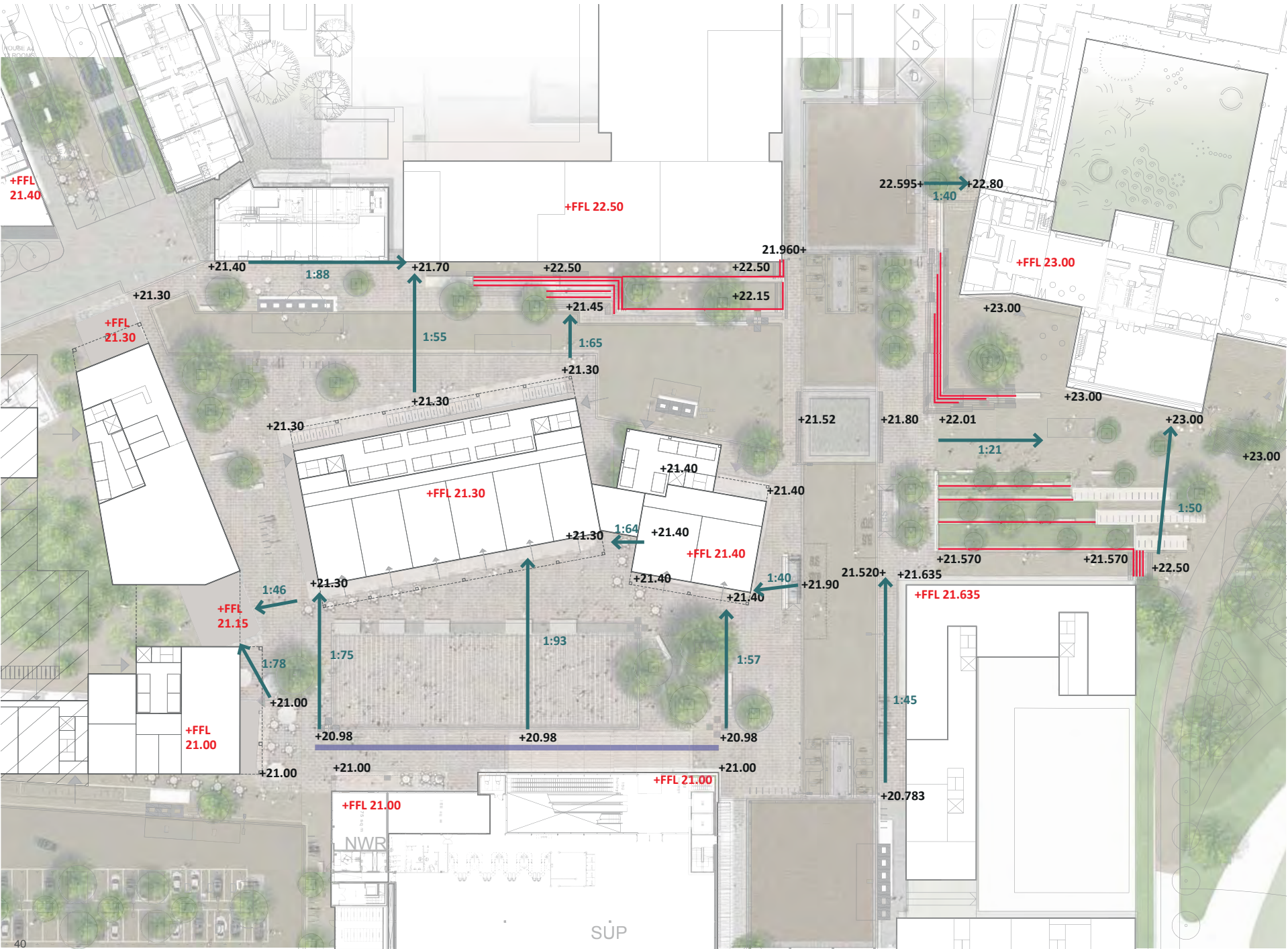
As a result, the area around the Market Square has to be raised from the existing topography to achieve the design aspiration described in the Design Code, which has had an effect on the increased building AOD height around the area.



Existing topography overlaid with current proposals



Key plan - Market Square area



Proposed levels around Market Square, Ridgeway Corner and Ridgeway Place

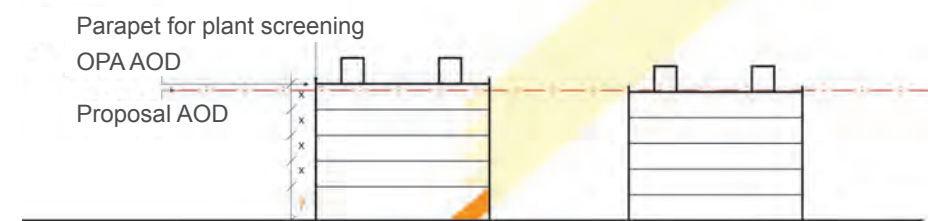


## Code for Sustainable Homes – HEA1 Daylighting

Residential floor to floor height was assumed to be the same for all levels in the OPA:



Increased ground floor residential floor to floor height resulted in the exceedance of the OPA AOD:



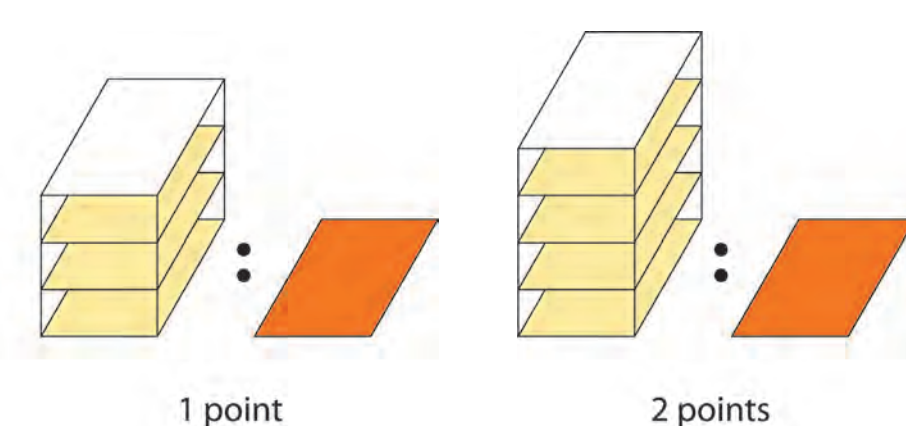
Increased ground floor residential floor to floor height caused a limited number of proposal exceeded the AOD specified in the Outline Planning Application.

The University holds a commitment to achieve Code for Sustainable Homes Level 5 across all of the residential units within the North West Cambridge site. In order to achieve Code Level 5 the following requirements must be met on all units:

- kitchens must achieve a minimum Average Daylight Factor of at least 2%;
- all living rooms, dining rooms and studies (including any room designated as a home office under Ene 9 – Home Office) must achieve a minimum Average Daylight Factor of at least 1.5%; and
- 80% of the working plane in each kitchen, living room, dining room and study (including any room designated as a home office under Ene 9 – Home Office) must receive direct light from the sky.

The placement of Phase 1 buildings has been carefully considered to create the right enclosure to streets and a strong definition between public and private spaces. To maintain this relationship of building to building and building to space, while at the same time achieve this technical constraint, ground floor residential floor to floor heights have had to be increased.

## Code for Sustainable Homes – Eco 5 Building Footprint



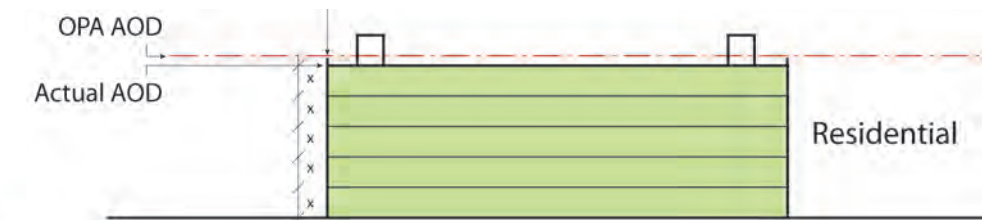
For blocks of flats, where the net internal floor area: net internal ground floor area ratio is greater than or equal to 3:1 = 1 point

For blocks of flats, where the net internal floor area: net internal ground floor area ratio is greater than or equal to 4:1 = 2 points

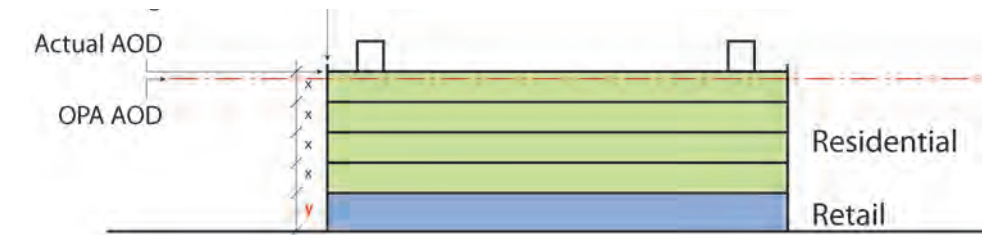
This criteria is intended to promote the most efficient use of a building's footprint by ensuring that land and material use is optimised across the development. To achieve this principle it is necessary to maintain higher densities to enable greater optimisation of land within the North West Cambridge site. This principle is easier achieved in the higher density areas of the North West Cambridge development such as in the Local Centre.

## Ground Floor Land Use Flexibility

In some locations, the OPA AOD height was based on the assumption of residential uses on all levels:



Increasing the floor to floor height to allow for flexible ground floor uses in the future resulted in the exceedance of the OPA AOD:



Increasing the floor to floor height to allow flexible uses on the ground floor in the future caused a limited number of proposal exceeded the AOD specified in the Outline Planning Application.

To ensure that the proposed mixture of ground floor uses can be accommodated in the first phase of development, floor to floor heights at certain locations have been increased.

Within the mixed use development areas it is necessary to build in flexibility at ground floor so that additional mixed uses can be brought forward as the development expands and the community at North West Cambridge grows. The key area where ground floor uses need to be accommodated is in the Local Centre and specifically around the Market Square, Ridgeway Place, Ridgeway Corner and Bus-gate Street. This greater flexibility would allow for these units to be used as shops, cafes, bars, restaurants, common rooms or community facilities.

These locations are also where higher development heights have been located to describe the Local Centre (see Urban Design Considerations), and in combination these two factors have led to an increase in heights beyond the Development Parameters.



4.1.3 Overview - Urban Design Considerations

Phase 1 includes the Local Centre Character area and all the changes to the Development Parameters are located here. The Local Centre proposals represent the convergence of the most complex set of site conditions, technical constraints and design considerations. The Local Centre needs to be visually distinctive within the wider development and visually apparent from the extents of the development and the existing surroundings. In addition it is located on high ground at the top of the ridgeline. Being the only area with proposed mixed use development, ground floor heights are larger to allow for flexibility of use, while the need to provide density, vibrancy, good enclosure of the streets and spaces as well as the daylighting requirements for Code for Sustainable Homes Level 5 have meant some residential floor to floor heights need to be higher in specific locations.

The massing for the Local Centre is designed to accommodate the mix, density and quantum required to fulfil the vision and make it a successful, vibrant place. The density of this development plus the convergence of key routes and modes of transport where deliberately located to achieve footfall and a thriving heart of the development. The Local Centre has always been seen as the location of the tallest development.

The school and Community Centre, although not identified as landmarks, are expected to form a distinctive frontage to Storey’s Field and form a series of high quality accent buildings. These are important buildings for the community and should be highlighted as such within the urban realm. A hotel also forms a key part of the Local Centre, with a publicly accessible restaurant/pub on the ground floor to utilise the south facing aspect and lend activity and overlooking to Ridgeway Place. This occupies a highly visible corner within the Local Centre, at the point where Bus-gate Street and the Ridgeway cross.

The diagram on the right is an extract from the Design Code which shows the massing strategy with buildings ranging from 2 to 4 storeys generally with landmarks in various locations within the Local Centre. These landmarks were carefully planned in key locations to relate to key vistas and terminating long distance views as well as to make the location of the Market Square.



Extract from Design Codes - Heights and Massing

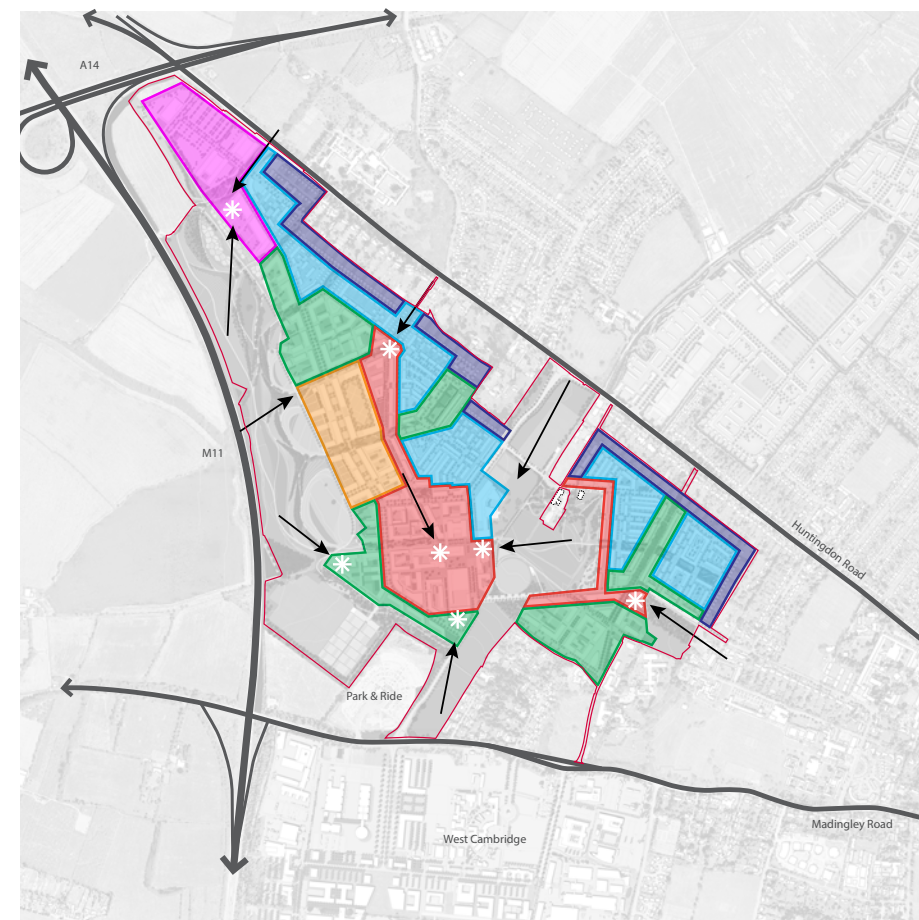


In addition the following text and diagrams are extracts from the design principles as detailed in the Site Wide section of the Design Code, April 2013. These principles reinforce the need to form an urban hierarchy and create legibility of North West Cambridge:

- higher massing on key routes such as The Ridgeway and along key spaces such as Storey's Field;
- lower massing along development edge, especially along the rear of properties along Huntingdon Road;
- alignment of key views identified on diagram must be respected;
- a landmark can refer to a taller element within the massing composition; but they can also be formed by special building features, public art or other medium without being expressed by height;
- land use floor-to-floor heights are not fixed but daylight access requirements within Code for Sustainable Homes Level 5 (Code 5) must be achieved;
- rooftops must be optimized for PV integration to achieve the requirements within Code 5; and
- the principle of urban hierarchy and thus relative heights must be respected, though exact heights in AOD are subject to detail design and co-ordination.

And in relationship to the Local Centre urban structure the following principles were stated in the Design, Access and Landscape Statement of February 2013:

- active frontage at ground floor to the Market Square, the Ridgeway and orbital route.
- primary frontage to the key primary and secondary streets - 4 storeys generally with 5 or 6 storeys at key landmark locations - high degree of overlooking to streets, strong enclosure.
- key landmarks respond to and terminate primary views and vistas such as views from approaches.
- other landmarks or 'accents' respond to more local views.
- frontage to major green spaces - a high degree of communication between inside and outside - balconies and terraces fronting green spaces.
- Storey's Field western frontage - consists of school and community hall - forms distinctive frontage to main space within the development



Extract from Design, Access and Landscape Statement - Massing and Landmarks

- Existing vehicular routes
- Application Boundary (Zone B)
- Retained buildings
- 1/2 storeys generally
- 2 storeys generally
- 2/3 storeys generally
- 3 storeys generally
- 3/4 storeys generally
- 4 storeys generally
- landmarks - up to 6 storeys or differentiated by architectural style



Extract from the Design, Access and Landscape Statement - The Local Centre - Urban Structure

- Retained buildings
- Secondary frontage
- Primary frontage
- Ridgeway frontage
- Western Edge frontage
- Storey's Field frontage
- Open Space frontage
- Active frontage
- Residential frontage
- Long distance views
- Primary views & vistas
- Secondary views & vistas
- Accent buildings
- Landmark buildings
- Primary vehicular access (with pedestrian/cycle access)
- Secondary vehicular access (with pedestrian/cycle access)
- Primary pedestrian/cycle access



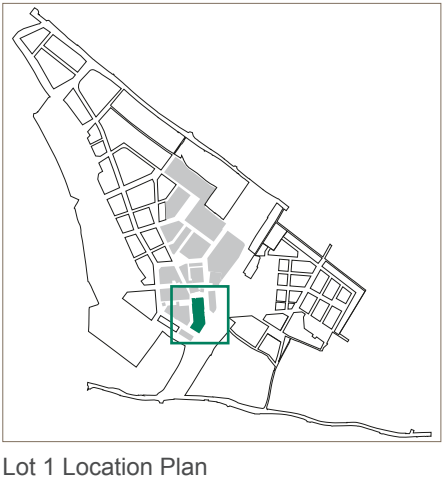
4.1.4 Current Proposals - Lot 1

Lot 1 is located at the heart of the North West Cambridge scheme and therefore is key to the development of a successful community. This Lot contains a variety of uses to provide the appropriate community functions required at the centre of the development. This includes a Foodstore, key worker residential, health centre, police office and the Energy Centre that will serve the entire site.

Lot 1 has been developed through detailed design work, pre-application discussions with officers, consultation with stakeholders and negotiations with a future operator for the Foodstore.

The buildings proposed within this Lot comply with Parameter Plan 05 with the maximum building height less than 18m above ground level. However, in two locations the buildings do not comply with Parameter Plan 06 with the maximum breach being 1.35m over the AOD in both these locations. These areas are demonstrated on the plans below:

- the North West Corner building
- the Energy Centre flue



Lot 1 - Current layout overlay on February 2013 Building Heights Parameter Plan



Lot 1 - Illustrative Plan with current proposals, September 2013



Lot 1 - Current layout overlay on proposed changes to Building Heights Parameter Plan

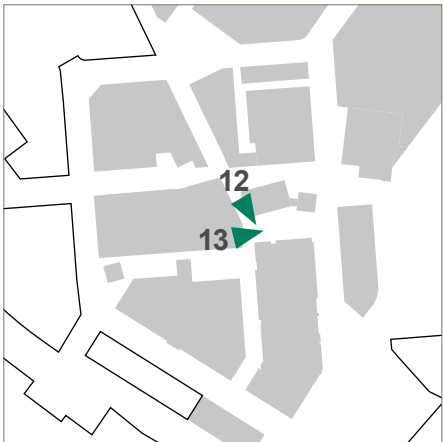




View 12 - North West corner of Lot 1 facing Market Square



View 13 - Overall the ground floor heights work together to create an appropriately scaled frontage to the Market Square.



Key plan - View 12 & 13

### The North West Corner

The North West corner of Lot 1 allows for generous floor to floor height on the ground floor to allow flexibility to incorporate commercial spaces in this building should demand in the Local Centre require it in the future. In addition, the more generous floor to floor heights also contribute to the Code for Sustainable Home requirements to improve daylighting to the ground floor units.

Overall the building height work together to create an appropriately scaled frontage to the Market Square. A higher element at the North West corner of Lot 1 responds to the vision of creating greater massing in the Market Square around the Local Centre. This building also plays a key role in providing a strategic view termination as viewed from the approach from the South, travelling along Ridgeway.



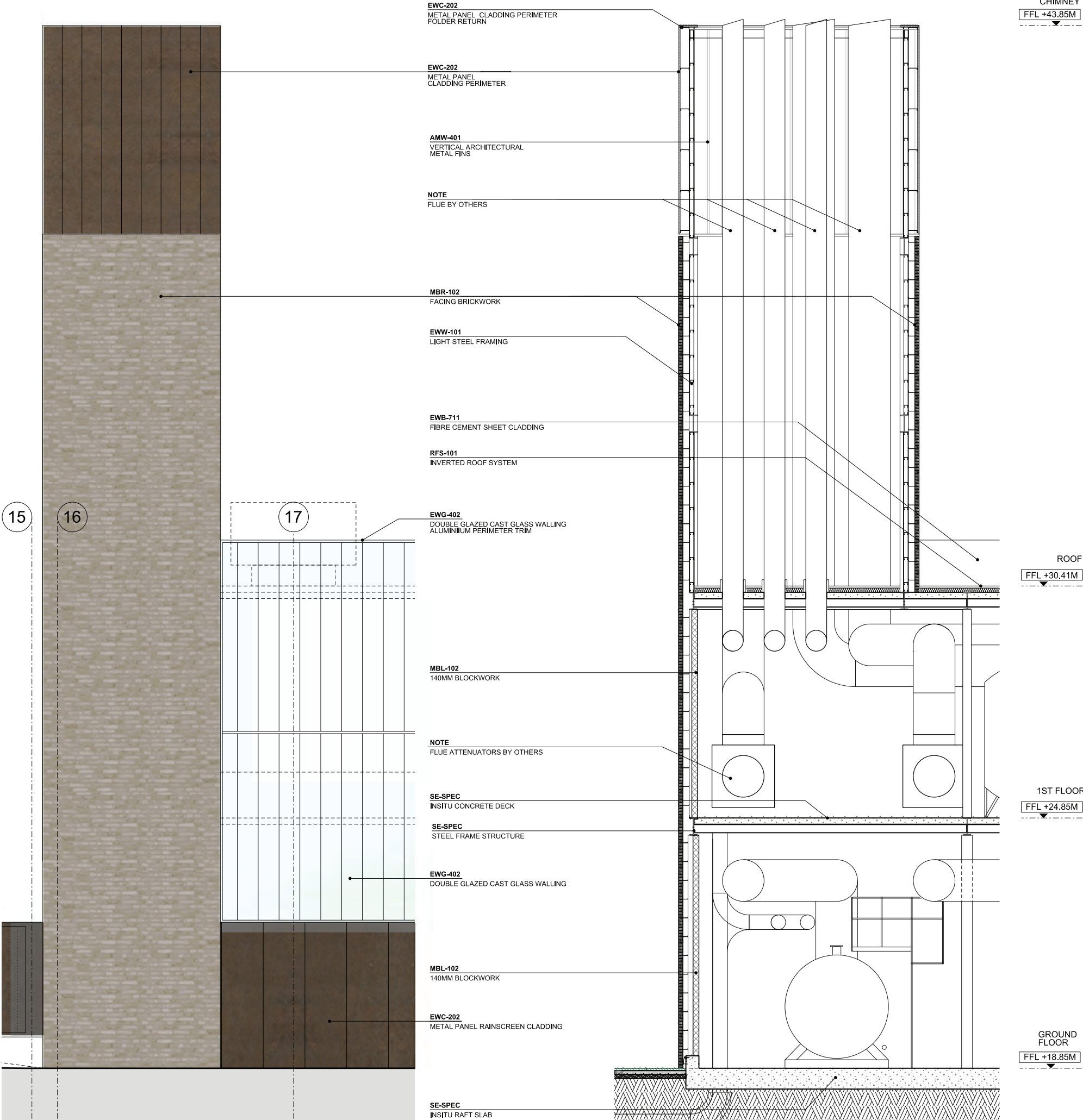
The Energy Centre flue

The flue, which forms part of the Energy Centre, is the second area in Lot 1 where the height parameter plan is breached. This exceedance is driven by the detailed technical and design work which has been undertaken following the granting of permission into what is exactly required for an Energy Centre serving this size of development. It was found that not only would this flue be required to be slightly higher than the previously approved height parameter of 42.5m AOD, it would also have to be considerably wider and a square rather than a circular shaped chimney. Various studies were undertaken to ascertain whether a slimmer design could be implemented.

As part of the design of the Energy Centre on the North West Cambridge site, all flue gas emissions will be in accordance with BREEAM Pol 2 and will achieve a gross output no more than 40mg NOx/kWh. This can be implemented by incorporating a selective catalytic system to be designed and installed overall regardless of flue height.

In addition to this technical element, the flue height has been determined by a background air quality assessment. An outline design has indicated that a minimum height of 20m is required from ground level.

The flue height would need to be a minimum of 25m above ground level and even then to ensure the emissions are in accordance with the BREEAM requirements, careful monitoring of the operation would be required.

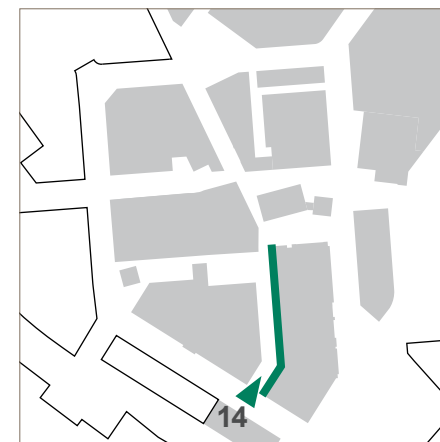


Chimney elevation and section details





View 14 - View of Energy Centre, looking north from Primary Street



Key plan - View 14 and Lot 1 West Elevation

The physical geometry of a flue follows the type of technology within the Energy Centre and the proposed phased installation of that technology. Each flue diameter is then based on the volume of flue gas it emits under operations, rather than based on height alone. The proposed flue arrangement is as follows;

1. Common flue header for modular systems to be installed at Energy Centre inception (approx. year 0)
2. Flue to suit 1MWe CHP – this cannot be mixed with other technologies due to operation requirements of the equipment (approx. Year 1-2)
3. Dedicated flue to future 6MW boiler as project develops (approx. year 5-7)
4. Flue to suit 1MWe CHP – this cannot be mixed with other technologies due to operation requirements of the equipment (approx. Year 5-9)
5. Dedicated flue to future 6MW boiler as project develops (approx. year 9-12)
6. Flue to suit 1MWe CHP – this cannot be mixed with other technologies due to operation requirements of the equipment (approx. Year 9-12)

Reduction in flue diameters would increase exhaust gas velocities resulting in additional fan energy (unable to achieve without fans) and noise.

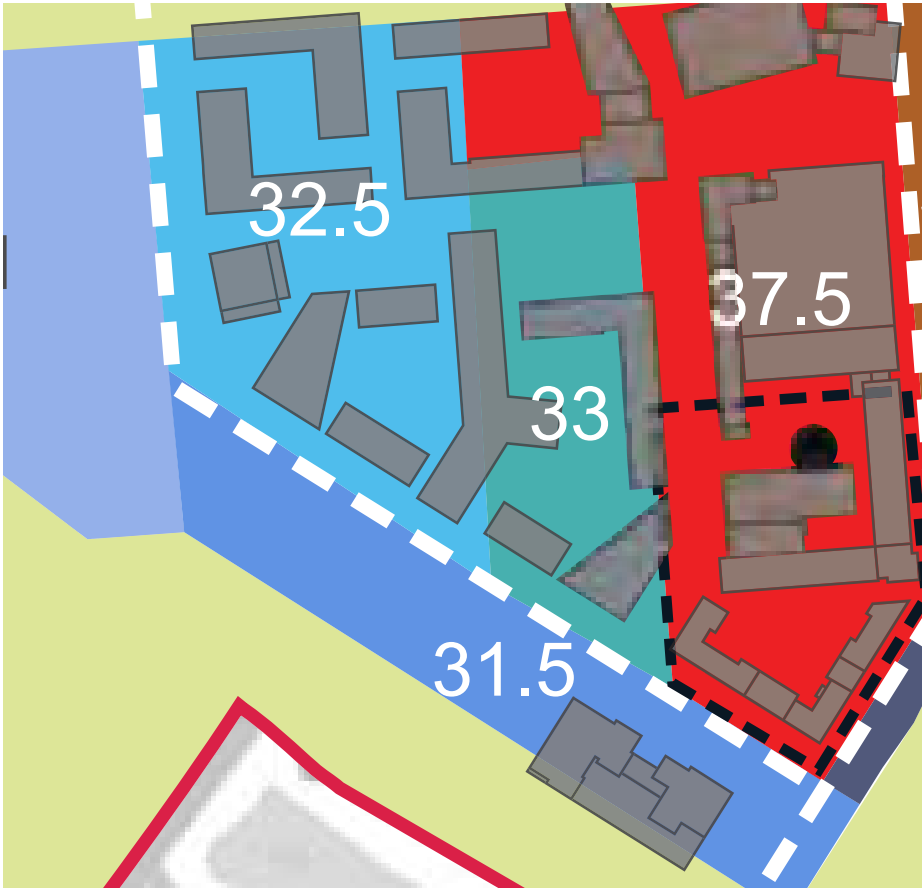


West Elevation: the two locations where the parameter plan was exceeded is shown above, to the North West Block and the Energy Centre chimney. Both locations exceeded the permitted height by approximately 1.35m.



4.1.5 Current Proposals - Lot 3

Lot 3 comprises a range of key worker dwellings provided at the heart of North West Cambridge. The Lot 3 proposals introduce a new interpretation of the public and private realm within and outside of the urban block, including active inner open spaces and a direct connection between the dwellings and the open spaces. Galleried access will surround courtyards, providing a large threshold between the private space and the collective space. Lot 3 has been developed through detailed design work, pre-application discussions with officers and consultation with stakeholders.

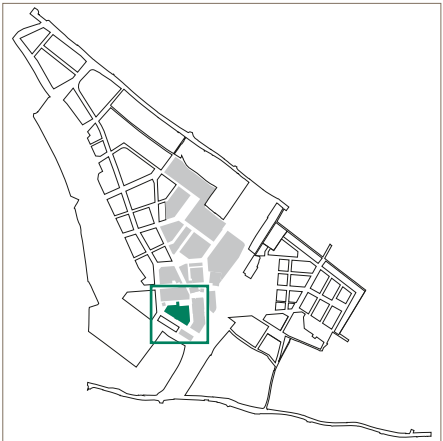


Lot 3 - Current layout overlay on February 2013 Building Heights Parameter Plan

The buildings within this Lot currently comply with Parameter Plan 05 with the maximum building height less than 15m above ground level. However, these buildings do not comply with Parameter Plan 06. There are two AOD levels on Lot 3 (33m to the east and 32.5m to the west), and only part of the central Spine Building, which is currently proposed at 5 storeys, breaches the western zone by 1.9m. The eastern corner block breaches the eastern zone by 1.4m.



Lot 3 - Illustrative Plan with current proposals, September 2013



Lot 3 Location Plan

These parameter plan changes are proposed for a number of reasons:

Firstly, ground levels across Lot 3 have been raised above those envisaged at the outline application stage. This is due to ongoing public realm design work which has sought to create a smooth transition from the highest contour on Busgate Street, through the Market Square and onto the tertiary lane that lies between Lots 1 and 3. This has resulted in higher than anticipated ground levels adjacent to the Lot. To ensure that the public realm is fully accessible to everyone and to improve walkability, step changes have been avoided where possible. As a result of these raised ground levels, buildings in Lot 3 now sit at a higher level to the approved parameter plan.

Secondly, in order to comply with the Code for Sustainable Homes (Level 5), a combination of requirements need to be met. This includes daylight requirements, in terms of average daylight factor and the view



Lot 3 - Current layout overlay on Proposed changes of Building Heights Parameter Plan





Key plan - View 15 & Lot 3 East elevation

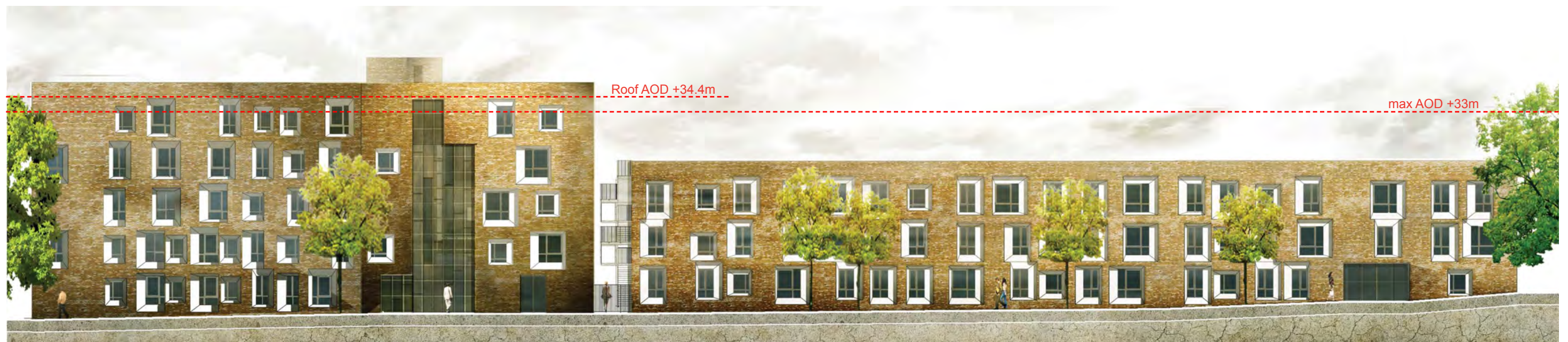
of sky, and the Fabric Energy Efficient Standards (FEES) requirements. This confirms there is a strict balance between solid (closed) facades and glazing, and where there is too much glazing, the FEES requirements cannot be met. This means that the window size is driven by the FEES requirements. The position of the window is driven by the view of sky. In the design of the buildings in Lot 3, the windows are located in critical positions against the ceiling level, to be able to just achieve the optimum view of sky. This required the ceiling heights in the Spine Building in Lot 3 to be raised to ensure these standards were met.

Finally, in order to meet an additional credit for Code for Sustainable Homes Level 5 (Eco5), the footprint to floor area ratio needs to be maximised.

The approved Design Codes from the Outline Permission describe the area around Lot 3 development as '4 stories generally', allowing variation between 3 to 5 stories. The proposed design for Lot 3 is a good interpretation of the Code as it provides variable massing, which in turn leads to an appropriate scale of development to address the spaces within the block as well as interest and variation to the elevations addressing the surrounding streets and spaces.



View 15 - Varied building height across the Lot 3.



Lot 3 - East elevation on Tertiary Street facing Lot 1, the eastern corner block exceeded Parameter Plan 06 AOD by 1.4m.



4.1.6 Current Proposals - Lot 7

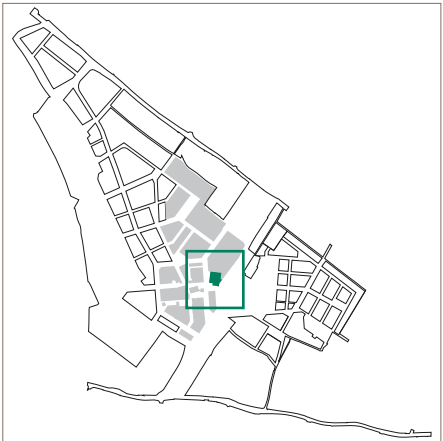
Lot 7 comprises a new Community Centre and Nursery for the new North West Cambridge Development. The Community Centre will serve the new community, as well as the surrounding existing residential areas, providing a place of gathering, a venue for events and allow the opportunity for the community to meet each other.

Lot 7 has been developed through detailed design work, pre-application discussions with officers, comprehensive consultation with stakeholders and the local community and extensive discussions with existing community centres and nurseries in and around Cambridge.

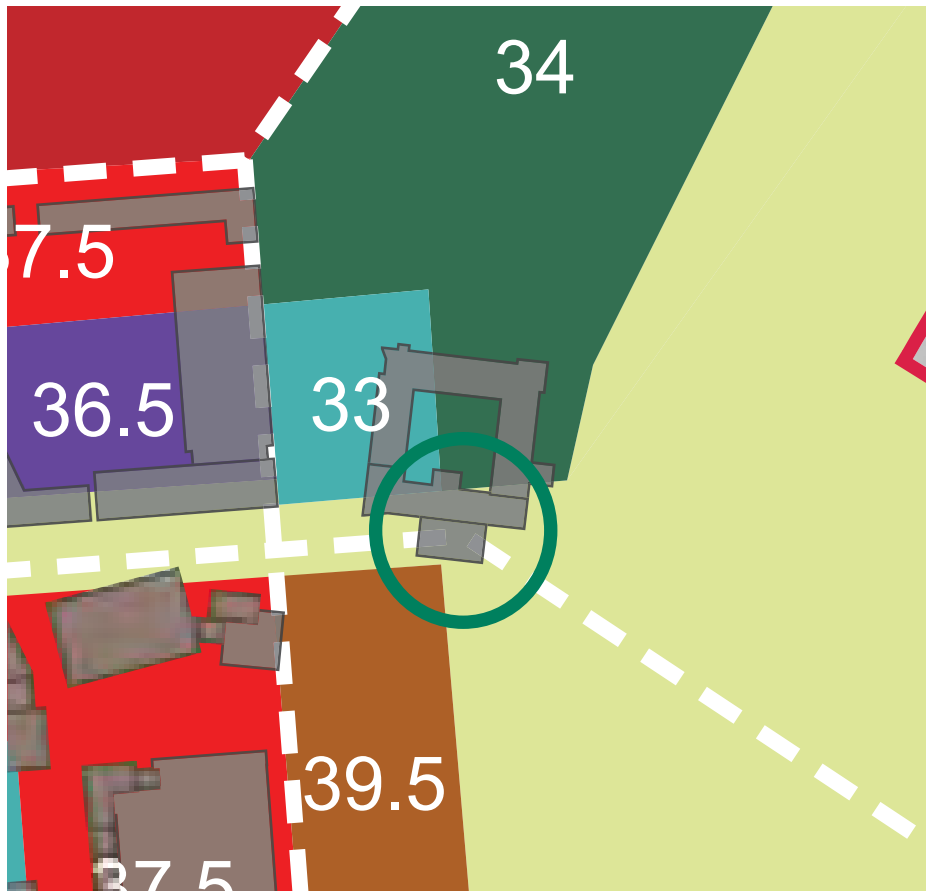
In relation to heights, the majority of Lot 7 complies with the approved height parameter plans. However, the Main Hall within the Community Centre does not comply with Parameter Plan 05 most of which falls within three zones O(8m), L(10m) and K(18m). Parts of the building which are within Zone K are compliant. Furthermore the Main Hall does not comply with Parameter Plan 06 as shown in the section on the next page, with a maximum breach of 5m over the AOD. These breaches in height are a direct result of the design of the building which has been developed to maximise the number and type of activities which could take place within the Community Centre.

Therefore the increase in height is proposed to accommodate the acoustics and natural ventilation requirements for a comprehensive list of activities from professional music performances, to dance classes, to intimate music recitals, to film screenings, to weddings to martial arts, all within a naturally ventilated space.

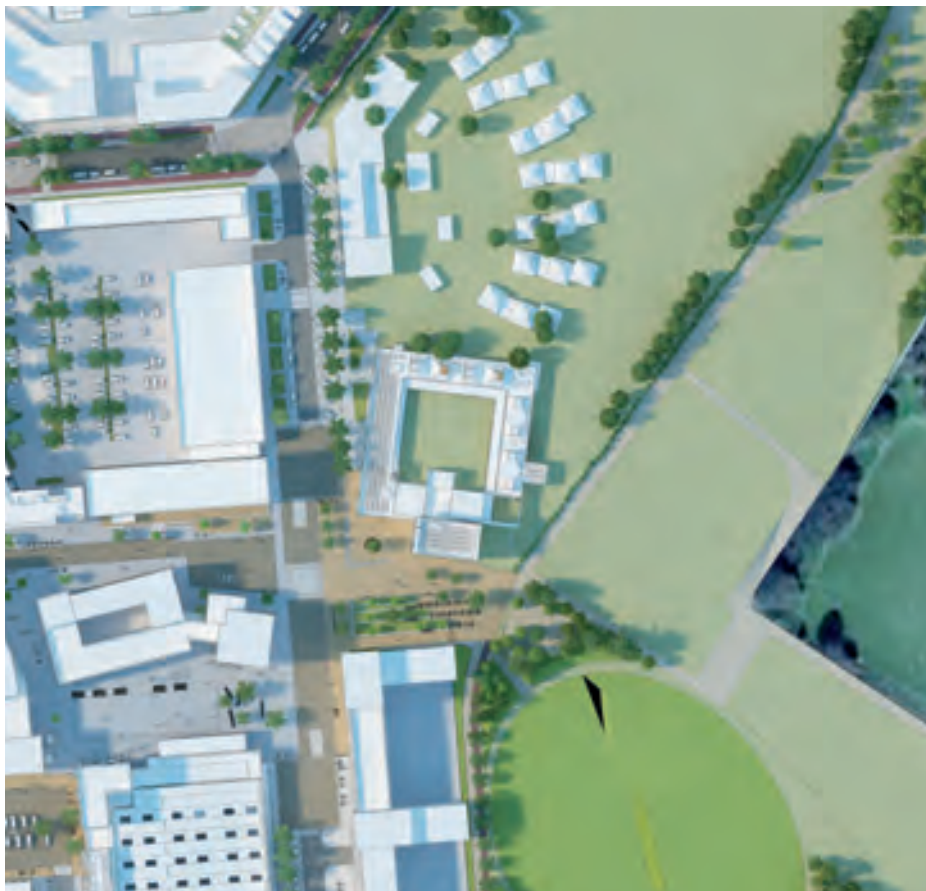
The other key consideration for the increase in building heights in this location is the existing ground levels, which are at the highest point of the site with the AOD at 23m. This results in increased AOD heights in this location.



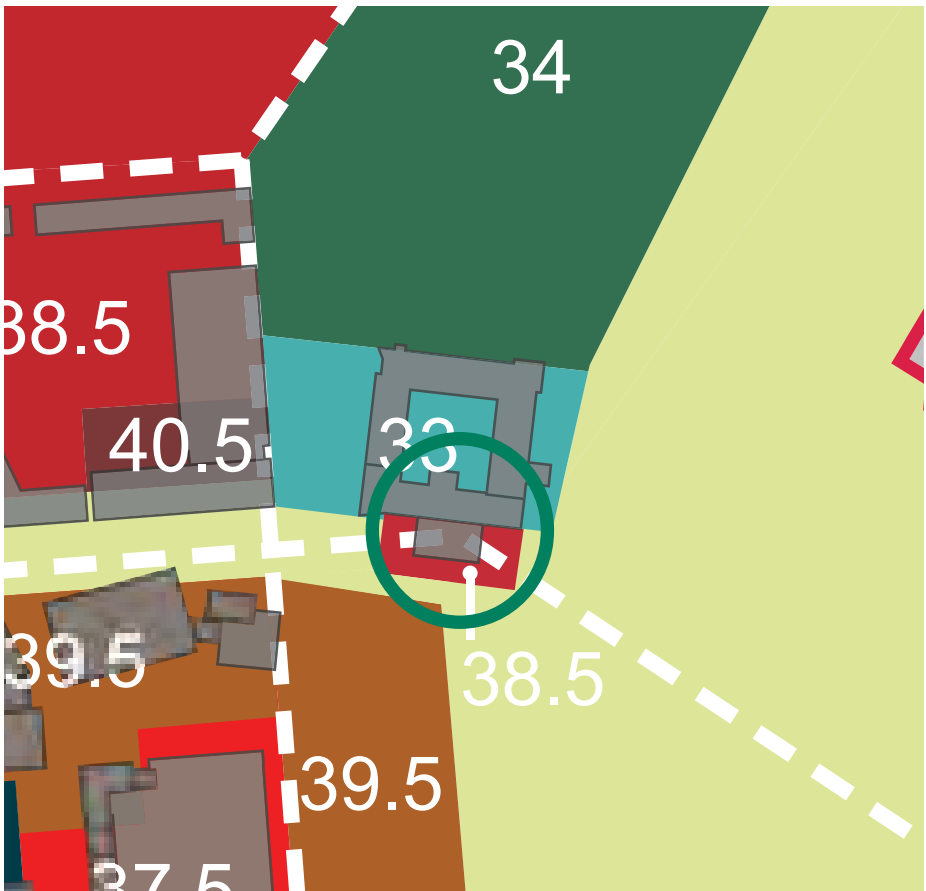
Lot 7 Location Plan



Lot 7 - Current layout overlay on February 2013 Building Heights Parameter Plan

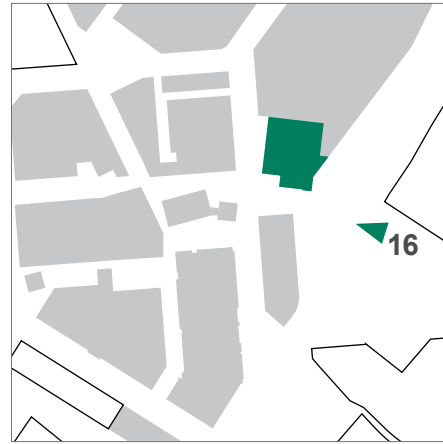


Lot 7 - Illustrative Plan with current proposals, September 2013



Lot 7 - Current layout overlay on Proposed changes of Building Heights Parameter Plan



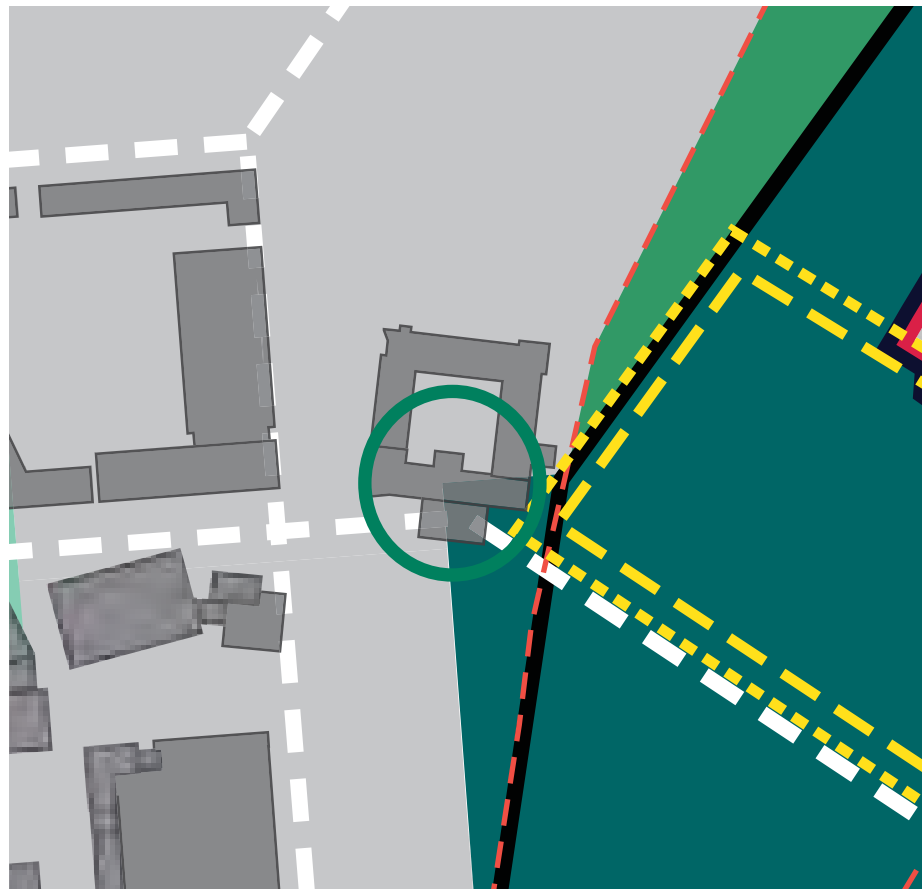


Key plan - View 16

The second amendment to parameter plans relates to the re-alignment of the Community Centre. Given its role in the community, Lot 7 is presented as a key focal point in the Local Centre around the Market Square and for those entering the site along the Ridgeway from the West arriving from Storey's Field. The Community Centre is identified as a landmark building within the approved Design Code and therefore it was felt that by pivoting the building this landmark would be emphasised. (See layout overlay on the diagrams below). Therefore, as a result its location now extends into a small area of Primary Open Land. This Section 73 Application seeks to amend those parameter plans to which this relates.



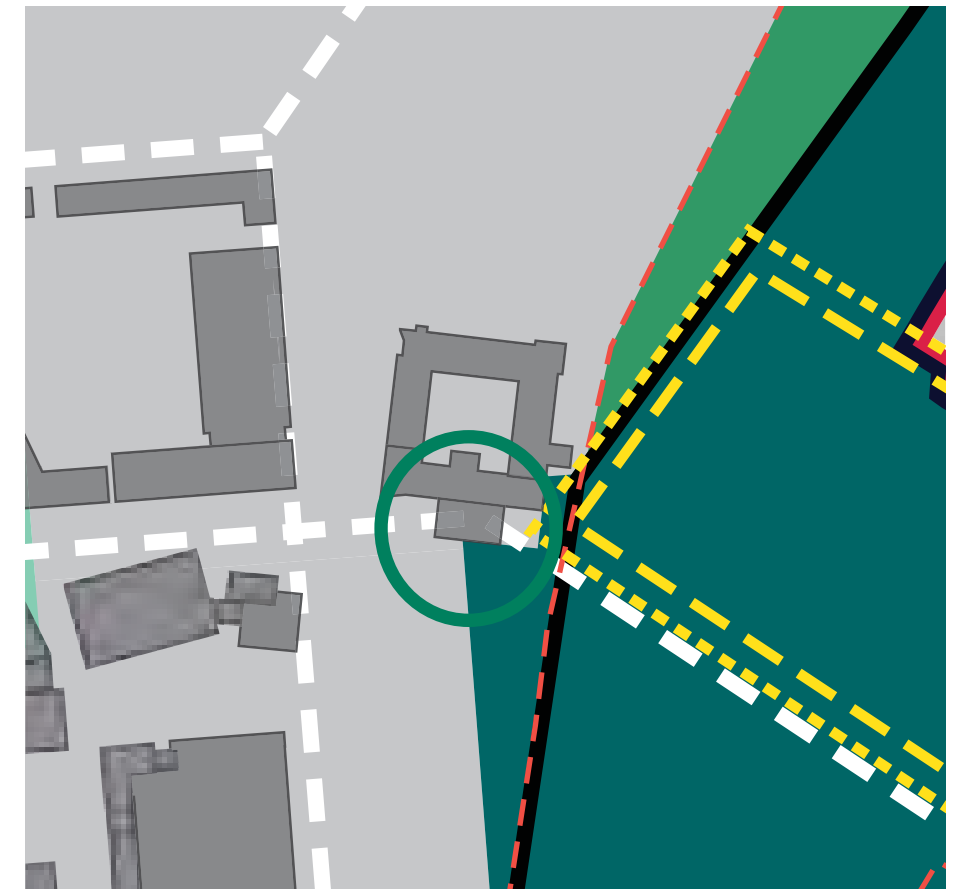
View 16 - View of Lot 7 from across Storey's Field



Lot 7 - Current layout overlay on February 2013 Open Land and Landscape Areas Parameter Plan



Lot 7 - Illustrative Plan with current proposals, September 2013



Lot 7 - Current layout overlay on Proposed changes of Open Land and Landscape Areas Parameter Plan



### Design Development of the Lot 7 Community Centre

Taking a holistic approach the design considers issues such as creating a sense of place and identity, the role of a gathering space in a community and a community space in the urban realm, through to sustainability, function and orientation. The design has been influenced by local historical precedents, together with the technical demands of acoustics and passive environmental control. Whilst the height and volume of the hall has an effect on all these considerations, the precise height was established by the confluence of the technical requirements of acoustics and natural ventilation.

The implications of lowering the height to within the AOD height parameter plan are discussed in more detail on the following pages, with comment from the acoustician and the building physics engineer. In summary, the consequences would be a very significant compromise on the acoustic experience for the majority of uses and that the passive ventilation strategy would be unworkable.

As an introduction, it is worth setting out the building components that contribute to the technical aspects of the design - there are four 'zones' to the strategy and the overall height is established by three of these zones:

- The parapet - The parapets conceal both the PV array and allow the air to vent from the main hall as part of the passive ventilation strategy.
- The acoustic attenuation zone - This space is required in order to allow the warm (and stale) air to escape without noise breaking in or out of the Main Hall.
- Height and volume within the room itself - The height is required to generate the stack effect which drives the natural ventilation system and, in addition, the volume was established to enable a full range of acoustic performance.
- Labyrinth - A below ground 'labyrinth' takes advantage of the mass of the foundations to supply tempered air to the Main Hall through an acoustically attenuated route. This in itself does not affect the Main Hall's height but it is the stack effect working within the high volume above that draws the air through the labyrinth.



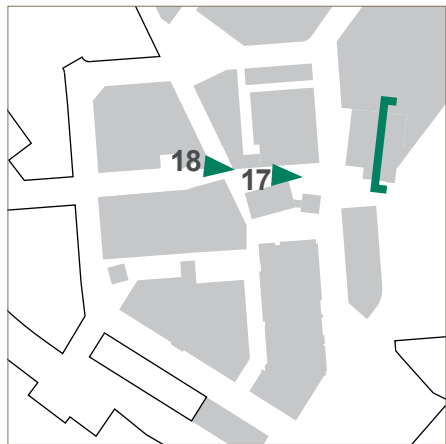
View 17 - Viewing East from Ridgeway Place towards Lot 7



Heights

The underside of the structural portal frame coincides with the +33m AOD level. This represents the internal volume of the room experienced by building users. This height is generated by both the passive ventilation strategy and the acoustic requirements.

Above this is the acoustic attenuation zone - a technical space unavailable to building users. The roof parapets allow the air to escape (via louvres on the inside face) and conceal the zone for a PV array.



Key plan - View 17, 18 and Lot 7 Section



View 18 - Viewing East from Ridgeway Corner towards Lot 7

ZONE K +18M max  
As per Parameter Plan 05 -  
Building Zones

+33M AOD max  
As per Parameter Plan 06 -  
Building Heights

Roof level slopes from  
approx +36.6m to  
+36.9m AOD



Lot 7 - Cross section through the nursery and community centre, with Parameter Plan 06 breaches highlighted



Natural Ventilation Strategy

The Main Hall is intended to be naturally ventilated, and given that its potential range of uses includes loud events such as musical performances or a wedding, the implications of this, upon acoustic isolation, must be considered.

Air is supplied, from voids within the adjacent garden wall, to the below ground labyrinth through a carefully designed route that achieves acoustic attenuation, without interrupting the air flow.

Warm air will escape via an acoustic attenuation zone created within a roof void - the configuration of this has been developed to ensure acoustic isolation whilst allowing the air to escape without mechanical assistance. The design takes account of the prevailing wind direction and when the wind changes, with simple dampers, the system can reverse.

The Acoustic Need

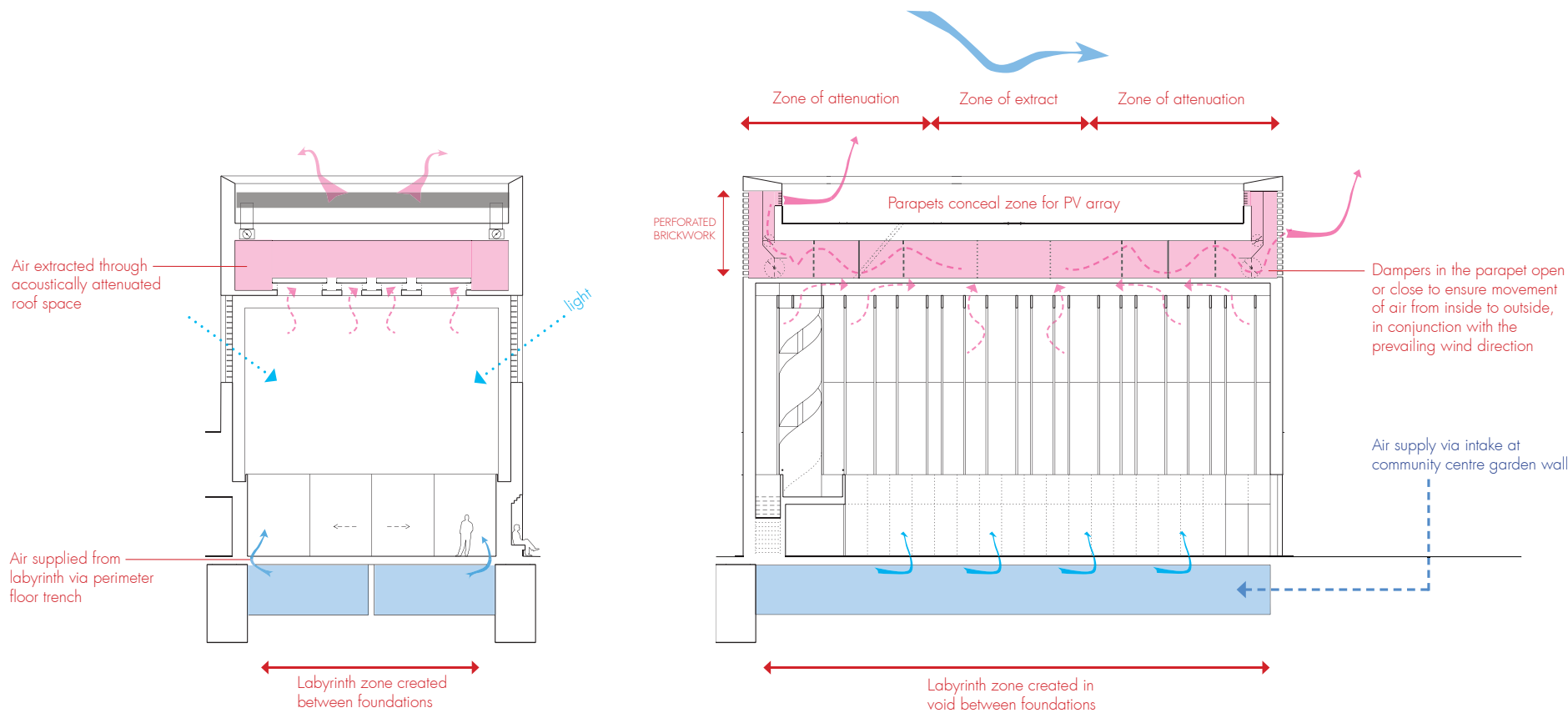
Each room in the Community Centre will cater for a range of users and therefore flexibility is important. For places of gathering and communication, acoustics are critical. There is a range of uses likely within the 3 rooms within the Community Centre, as established through the consultation period. The acoustics required within the 50 person and 20 person rooms are relatively similar to each other and so achieving an appropriate design is not difficult.

However, the range of potential uses of the Main Hall is considerable and the associated range of acoustics quite extreme. The consequence is that for many functions, in typical community rooms of this scale, the acoustics of the space are less than ideal. This was a common point of concern raised during the consultation period. To address this, we developed a design that provides a flexible acoustic for the Main Hall.

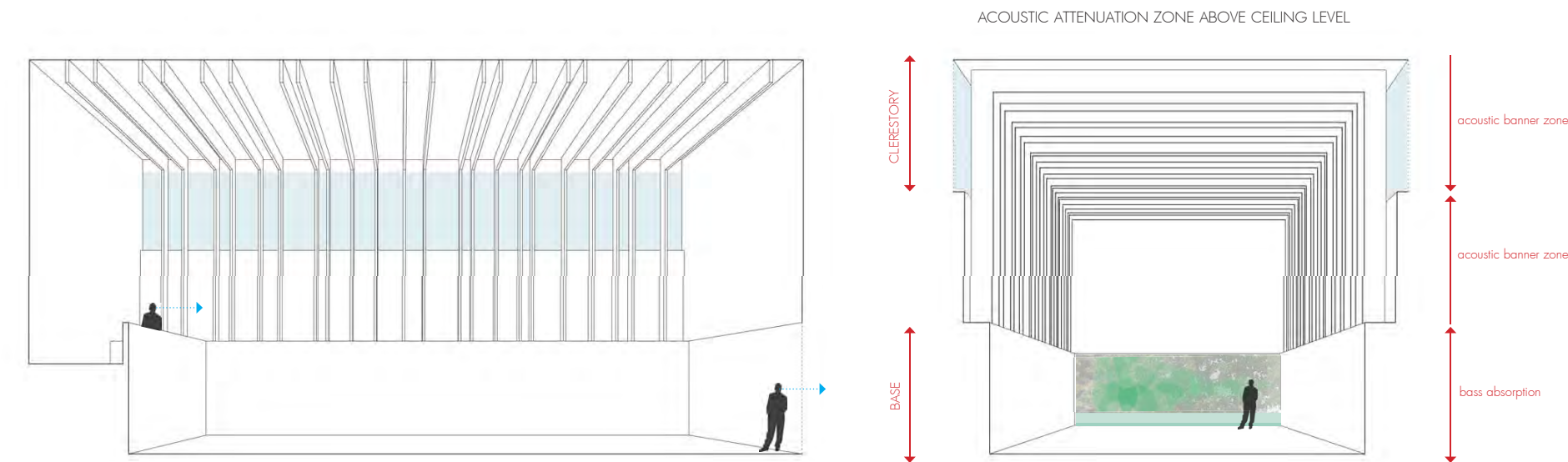
Given sufficient volume, it is possible to adjust a space down the acoustic scale (from ‘resonant’ towards ‘dry’), by adding absorption through the likes of simple curtains or banners, but it is not so simple to adjust the other way without adding volume. With that in mind, we have designed a room with a natural acoustic at the top end of the range – suitable for concerts, chamber music, weddings, prayers etc, and then, with adjustable banners and curtains, we can lower the reverberation time to suit other events.

Without the volume of the space, achieved by the height, this would not be possible.

The height also allows clerestory lighting to the space, which can be maintained for the majority of uses.



Lot 7 - Main Hall Sections Showing Ventilation



Lot 7 - Sectional Study through Main Hall - the height is established by the correct acoustic volume and required to facilitate the natural ventilation strategy. The random spacing of the portal structure was developed to better suit acoustics



**Incorporation of Acoustic Devices**

Within the Hall acoustic banners are integrated within the design. Above the room there is an acoustic attenuation zone which is required in order to enable natural ventilation without sound breaking in and out of the space. This is discussed on the following pages that address natural ventilation.

The timber base to the room, influenced by the historic precedents, provides a durable surface but critically allows the acoustic to be further developed providing side reflections and bass absorption.

**Main Hall**

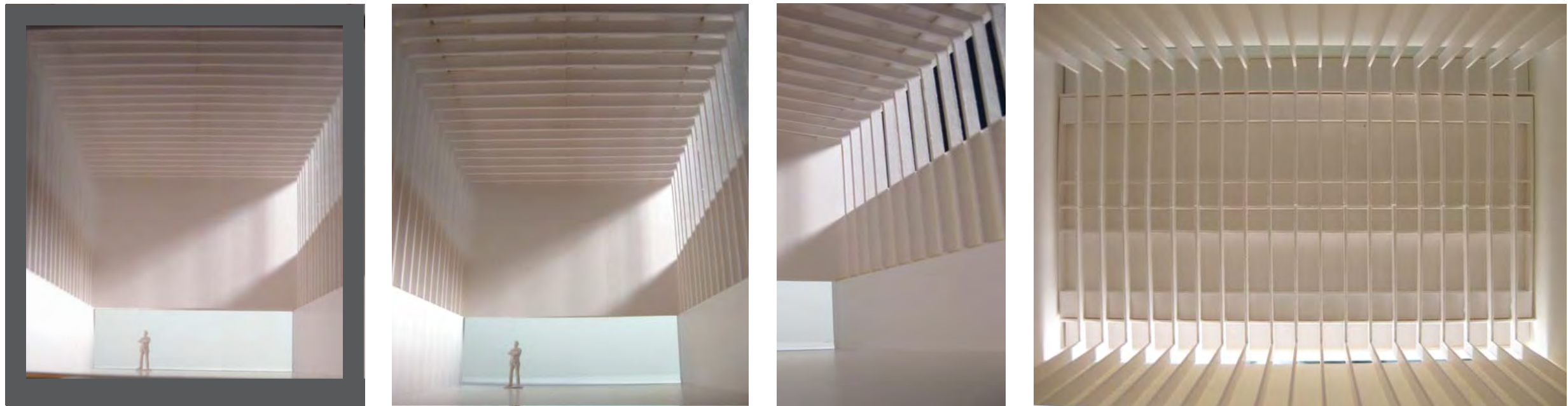
The Main Hall is intended to be a simple, calm, dignified space, focused on (and opening to) a garden terrace with views of the landscape beyond. Continuous clerestory light is introduced along both long sides of the room. A further window at balcony level provides views towards the urban realm. Whilst the clerestory light is influenced by historical precedents, and the quality of natural light achieved, the intention is to, on occasion, be able to provide privacy by closing blinds on the lower windows whilst maintaining the daylight space. A need for such privacy was raised during consultation.

As a place of gathering for 180 persons, height creates a sense of place and is essential to achieving an acoustically attenuated natural ventilation strategy. The precise volume has been established to achieve the flexible acoustics required for the range of acoustics for the potential different uses of the space.

The Main Hall is articulated by the structural rhythm of a simple timber portal frame. A timber lined base mediates the scale of the space, provides a practical, durable surface, and for acoustics, provides side reflections and bass absorption.

Above the portal frame, the soffit is articulated. Whilst this is a conscious reference to the articulated decorative soffits in the historic precedents, the articulation of the soffit conceals the air extract routes.

The floor is a timber sprung dance floor with air supplied around its perimeter through continuous floor grilles. The air is routed via a 'labyrinth' below, bringing natural cool air from the mass of the foundations and ground slab.



Lot 7 - Main Hall model studies



4.1.7 Current Proposals - Lot 8

Lot 8 is a central lot within the first phase of development, and provides key worker affordable housing within the Local Centre. Lot 8 plays an important role in the establishment of the Local Centre, providing a critical mass of University affordable housing within the Local Centre community. The Lot also forms key frontage to the Ridgeway, Ridgeway Corner, Veteran Oak Gardens and the Primary Street. The Lot forms part of a larger urban block which also includes the Hotel and Senior Living facility.

Lot 8 has been developed through detailed design work, pre-application discussions with officers and consultation with stakeholders.



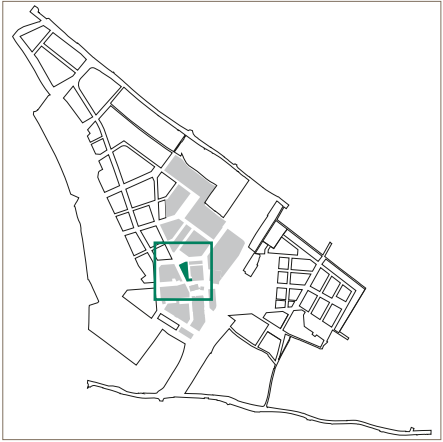
Lot 8 - Current layout overlay on February 2013 Building Heights Parameter Plan



Lot 8 - Illustrative Plan with current proposals, September 2013



Lot 8 - Current layout overlay on Proposed changes of Building Heights Parameter Plan



Lot 8 Location Plan

The Buildings within Lot 8 comply with Parameter Plan 05 with the maximum building height less than 18m above ground level. However, the buildings do not comply with Parameter Plan 06 as shown in the elevation on the opposite page, with the maximum breach of 1.535m over the AOD. The buildings are predominantly 3 storeys along the Ridgeway, with 4 and 5 storey buildings to the north and south, addressing open spaces at Ridgeway Corner and Veteran Oak Gardens. These are two areas where this parameter is breached in Lot 8.

Firstly, the north end of Lot 8 sits above the AOD height parameters as a response to the ground floor levels which are higher in this location. Furthermore, in design terms, it was felt that a strong frontage was required in this location to respond to the adjacent Veteran Oak Gardens and provide enclosure to the Primary Street and therefore the increased height in this location seemed appropriate.

Secondly, the southern corner of Lot 8 onto Ridgeway Place breaches the AOD height parameter. The reason for this is that the design has built in flexibility in the floor to floor heights to allow for the opportunity in the future to incorporate a wider range of commercial spaces within this unit, should demand require it. The higher ceiling heights in this location also improve daylighting into the residential units on the ground floor and for the residential units above.

The design principles set out in the approved Design Code describe the appropriate scale of buildings along Ridgeway, the Market Square and Storey's Field. The Lot 8 buildings have been designed to create a strong perimeter to the surrounding open spaces, addressing and responding appropriately to the changing external conditions moving from the more urban Market Square along the Ridgeway to the more 'village green-like' Veteran Oak Gardens.

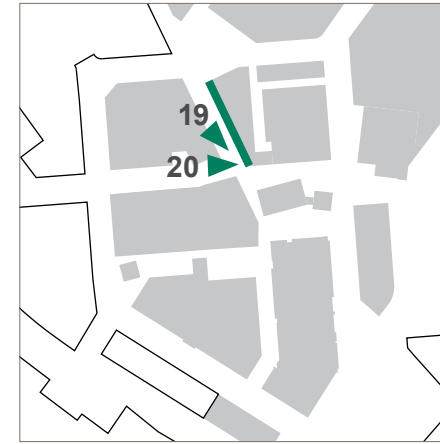


The Lot 8 building along its southern edge is part of a wider consideration of Market Square and Ridgeway Place at the heart of the Local Centre. Building A (south) defines the northern edge of the centre along with Lot H, the proposed hotel. Building A's key role in defining the public space has been responded to through the 'future-proofing' of the change of use on the ground floor fronting Ridgeway Place. This is currently included for cycle parking but can accommodate modestly scaled retail uses in the future. The increased floor to floor height of the ground floor to facilitate such a change of use has contributed to the increased height of Building A.

The following is an extract from the Character Area section of the Design Code, describing the urban structure of the Local Centre:

Local Centre comprises a range of block types, form and frontage to:

- form the heart of the development with maximum density and uses within site - the block typologies and frontages respond to this character
- create good scale urban forms around key spaces
- set up clear distinction between public and private domain through the use of a variety of perimeter block



Key plan - View 19, 20 and Lot 8 West Elevation

The Code continues to describe the urban structure in further details, breaking down into different elements:

#### Frontage

... Local Centre is the densest character area in the development. Strong street frontages create a legible and urban environment...  
...towards the interior squares, Green Corridors and Ridgeway are shaped by strong built form.

#### Height and Massing

Local Centre is urban and dense, with maximum building heights within the development. Landmarks and accents are situated in strategic locations to terminate a vista and provide a legible environment for people navigating the area. Interest is created with varied massing and roof articulations.



View 19 - View of Lot 8 and Ridgeway Corner from the Ridgeway



View 20 - Higher floor to floor height on ground floor will allow flexible uses to address Ridgeway Corner and Ridgeway Place in the future.



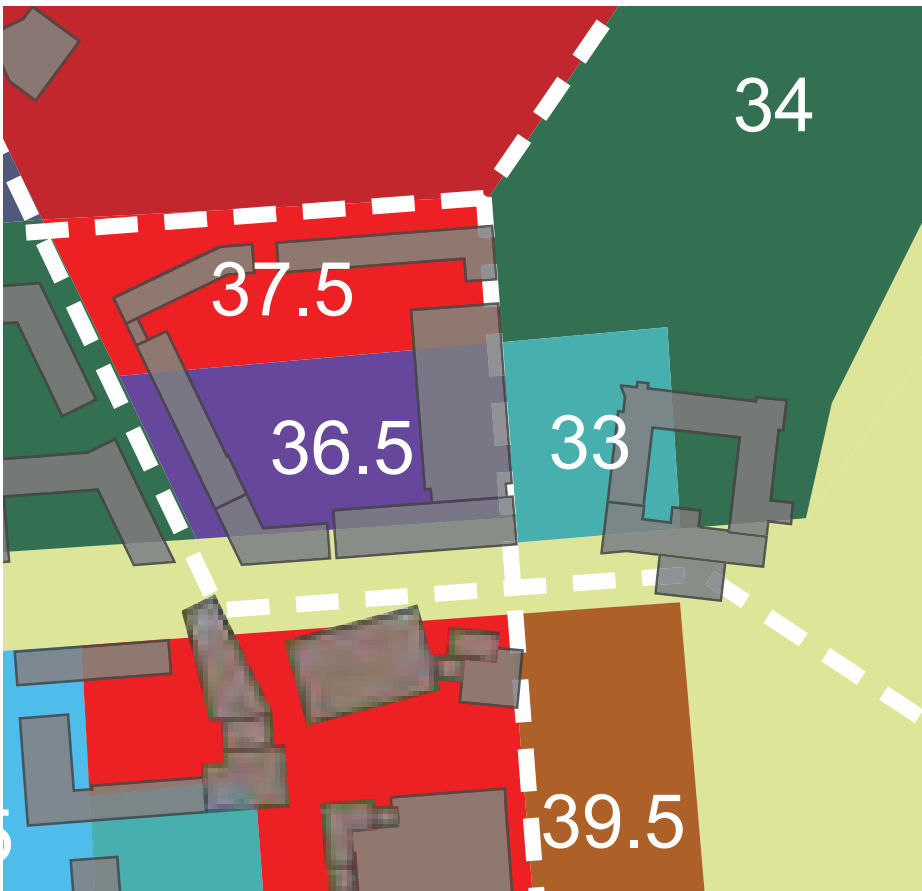
Lot 8 - West Elevation with breach of Parameter Plan 06 highlighted



4.1.8 Anticipated Proposals

Hotel Lot

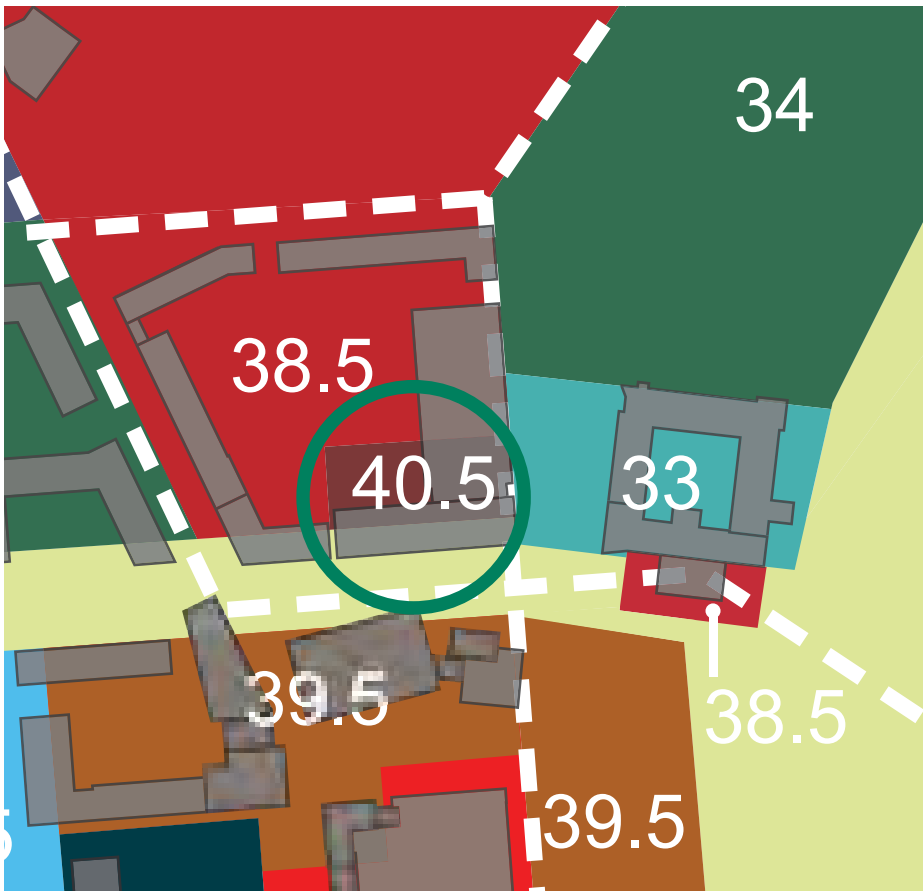
The design of the hotel Lot has not yet been undertaken and therefore detailed building designs are not available to measure against the approved parameter plans. However, given the Hotel’s role in the Local Centre, some masterplanning work has been undertaken to test what could come forward in this Lot.



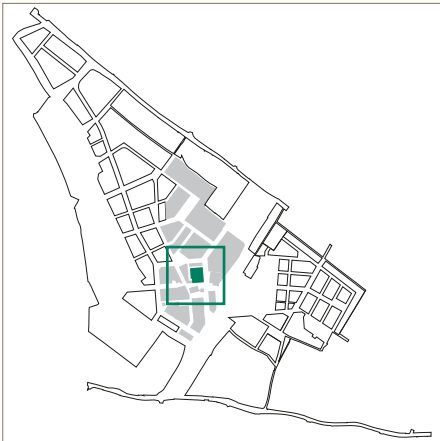
Hotel plot anticipated layout overlay on February 2013 Building Heights Parameter Plan



Illustrative Plan with hotel plot anticipated layout, September 2013



Hotel plot anticipated layout overlay on Proposed changes of Building Heights Parameter Plan



Lot H Location Plan

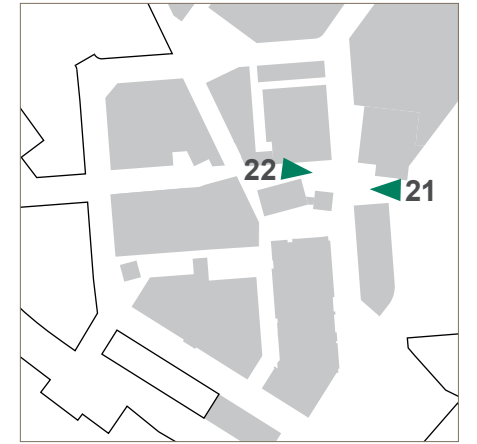
The North West Cambridge approved Design Code describes Lot H which is the hotel development as ‘4 stories generally’, allowing variation between 3 to 5 stories. This Lot is in an area of greatest density within the Local Centre, being located at a key focal point where the Ridgeway and Bus-gate Street meet. It has a strong relationship to Ridgeway Place and the future buildings within the adjacent Lot 2 and shares the southern frontage onto Ridgeway Place with Lot 8 (designed at 5 storeys).

In the Outline Application material, the hotel use was envisaged to be in a different location in the masterplan, but has now been relocated to this focal point to compliment Local Centre uses and play a key role in activating Ridgeway Place.

As this Lot occupies such a focal point it is envisaged that there should be active, public uses at ground floor, addressing and overlooking Ridgeway Place and facing south. It is anticipated that these types of uses will require a higher floor to floor height as demonstrated by other designed proposals for Phase 1 (Lot 1 for example).

Through masterplanning analysis, it is anticipated that the parameters needs to allow for a further 4 storeys above the ground floor. This scale of development has been confirmed through discussions undertaken with potential hotel operators and provides for the requirements of a hotel of the right scale in this location, namely good efficiency of floor layout and the optimum number of rooms per floor.





Key plan - View 21 & 22

In addition to the technical constraints outlined above, some urban design considerations have also influenced this revision. The block is envisaged to be lower on the eastern frontage to respond to the school building opposite, and higher fronting onto Ridgeway Place to continue the frontage height set by the neighbouring design proposals in Lot 8.

It is therefore envisaged that any hotel building will comply with Parameter Plan 05 with the maximum building height of less than 18m above ground level. However, it is anticipated that it is unlikely that the building will comply with Parameter Plan 06 and will breach the AOD.

As such we propose a new height parameter set at 40.5m AOD in this location (see diagrams opposite). This AOD is dependent on setting the ground floor level of the hotel at 22.5m AOD. This is the level of the service lane to the rear of the Lot from which the car park and hotel functions need to be serviced (servicing and car park access should be located away from Ridgeway Place). The 40.5 AOD allows for a ground floor of 5m floor to floor and 4 floors of 3.25m floor to floor. These heights provide for flexibility of use on all floors.

A hotel on this plot is the strongly preferred option, but if this were not to come forward this 40.5 AOD height parameter would also allow for other uses to occupy this Lot, such as residential, while also retaining the crucial ground floor uses and retaining the servicing arrangements as described.



View 21 - Hotel plot anticipated massing viewed from Ridgeway Place as approaching from Storey's Field



View 22 - Hotel plot anticipated massing with front terrace providing a gathering point on Ridgeway Place



### Lot 2

The design of Lot 2 has not yet been fully developed and therefore detailed buildings are not available to measure against the approved parameter plans. However, given Lot 2’s key role in the Local Centre as one of the main focal points and its relationship to the Market Square, a significant amount of masterplanning and design work, by both the masterplanning team and the architects initially appointed, has been undertaken to test what could come forward in this Lot.

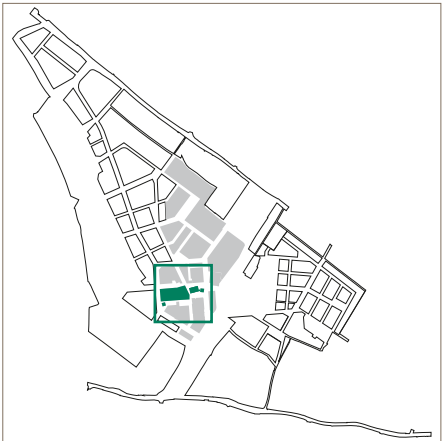


Lot 2 anticipated layout overlay on February 2013 Building Heights Parameter Plan

The North West Cambridge Design Code describes Lot 2 as ‘4 stories generally’, allowing variation between 3 to 5 stories. The Design Code also proposes two landmark locations within Lot 2 (see page 34). The eastern end of the Lot is visible in long views from both the northern and southern end of Bus-gate Street. This point is also visible from the Ridgeway on approach from Storey’s Field. A second highly visible location is further to the west, at the intersection of Ridgeway Place, the Ridgeway and the Green Corridor. These landmark locations, arguably the most important in the development, are specifically located to terminate these key approaches to the Local Centre, and to mark the location of the Market Square - the heart of the development.



Illustrative Plan with Lot 2 anticipated layout, September 2013

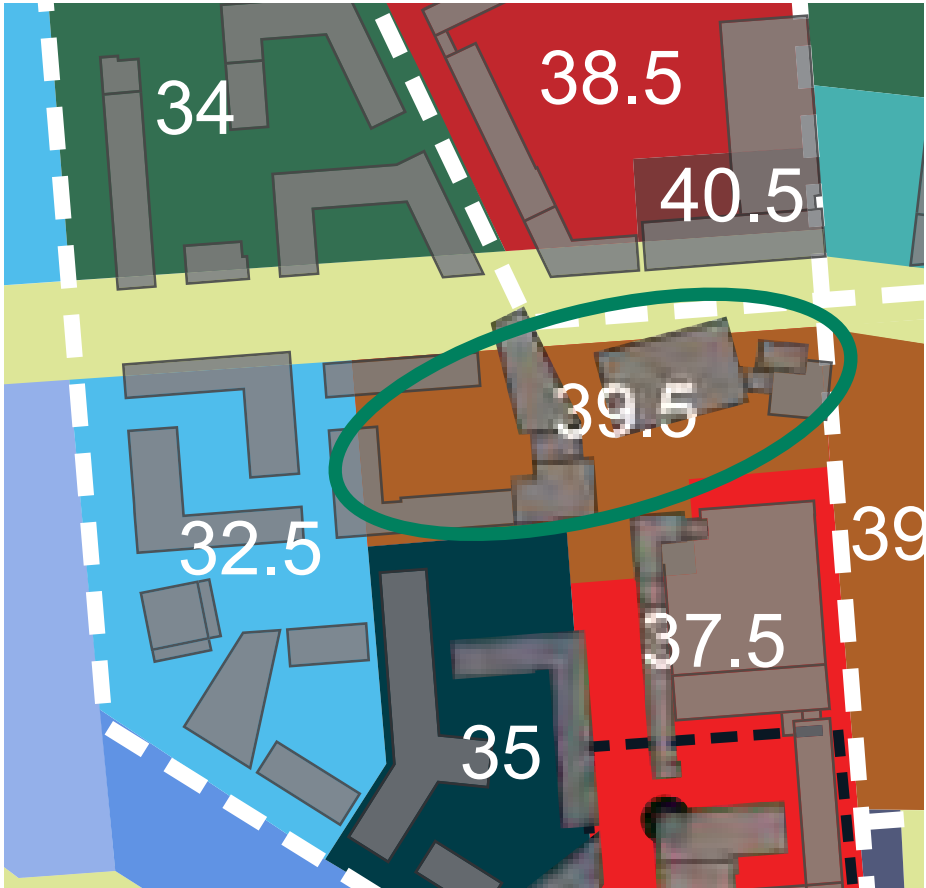


Lot 2 Location Plan

Both these locations are proposed as 5 storeys to fulfill their role as primary landmarks. In addition, considering their locations addressing the key spaces such as the Market Square and Ridgeway Place, it is anticipated that the ground floors would need to provide flexibility to accommodate mixed/public uses to activate these spaces and as such would need to have a higher ground floor to floor height.

It is therefore envisaged that the building will comply with Parameter Plan 05 with the maximum building height of less than 18m above ground level. However, is it anticipated that it is unlikely that the building will comply with Parameter Plan 06 and will breach the AOD.

As such we propose a new height parameter around the Market Square to be set at 39.5 AOD. This AOD is dependent on the setting of the ground floor level of 21.4m. This ground level has been set through



Lor 2 anticipated layout overlay on Proposed changes of Building Heights Parameter Plan





Key plan - View 23 & 24

extensive detailed public realm design work (Lot B Architects) and allows for a seamless public realm around the Market Square and Ridgeway Place and level access to ground floor uses from the public realm. The 39.5 AOD allows for a ground floor of 5m floor to floor and 4 further floors of 3.25m floor to floor. These floor heights provide for flexibility of use on all floors.

As illustrated in the design principles section of the Design, Access and Landscape Statement this is also the most dense and active area within the NWC site with mix of uses and flexible uses on ground floor such as retail/ food and beverage. Generous floor to floor height on the ground floor allows flexibility to incorporate commercial spaces and improves daylighting for meeting the Code for Sustainable Homes 5 requirements.



View 23 - Southeast aerial view of Lot 2 anticipated massing articulation



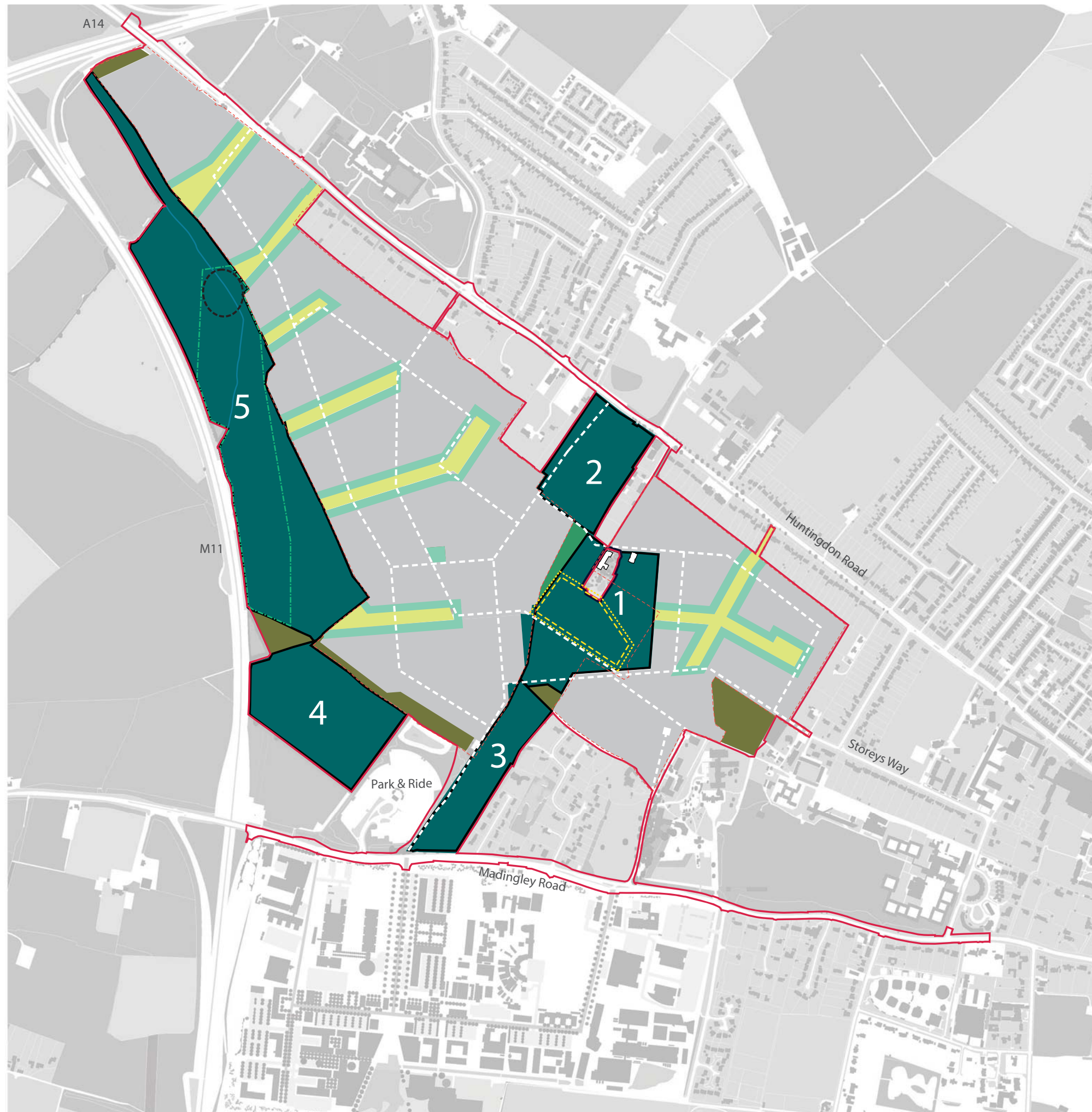
View 24 - Southwest aerial view of Lot 2 anticipated massing articulation



## 4.2 Proposed Parameter Plans - September 2013

The following are the 5 Parameter Plans that are proposed to be amended as part of this Section 73 Application.





## KEY

### Contextual Information:

- AAP Development Footprint / Green Belt Boundary
- Existing and retained buildings
- Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
- SSSI boundary
- SSSI 10m buffer
- Washpit Brook
- Areas of existing open land, woodland & treecover to be retained
- Secondary open land

### For Approval:

- Application site boundary
- Primary open land (1-5)
- Primary open land boundary
- Open land within school site
- Secondary open land zone
- Zone for works to Washpit Brook
- Zone for location of flow control structure

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

### NWC/OPA/PAR/03/B - Open Land and Landscape Areas

#### Parameter Plan: Zone B

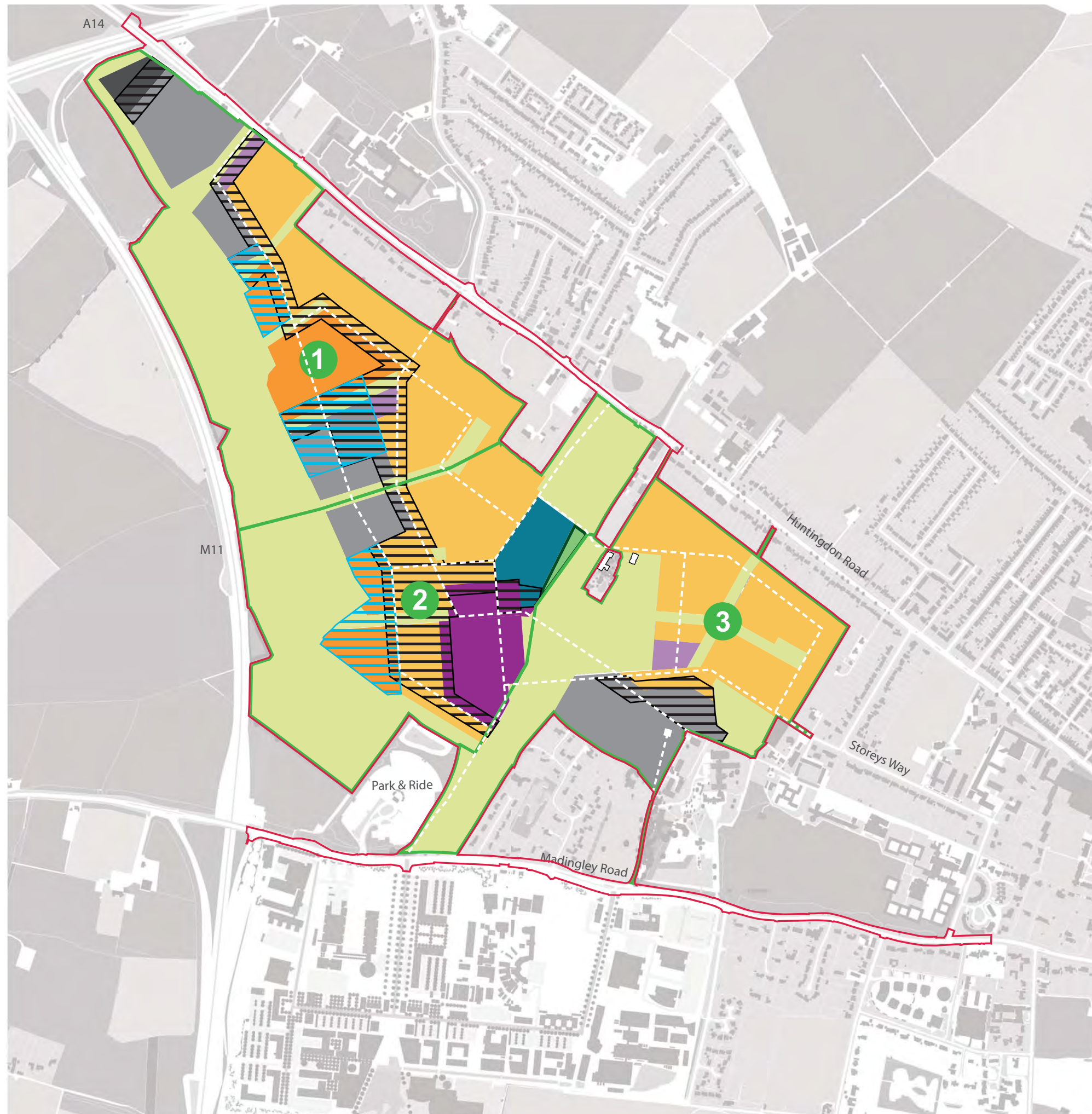
September 2013



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Scale 1:5000@A1












## KEY

### Contextual Information:

-  Existing and retained buildings
-  Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
-  Open land (reference NWC/OPA/PAR/03)
-  Open land within school site (reference NWC/OPA/PAR/03)
-  Potential reserved Energy Centre site: sui generis (B2)

### For Approval:

-  Application site boundary
-  Development areas
-  Residential: C3, C4
-  Collegiate Housing: C2
-  Academic/Research: D1, B1(b), sui generis
-  Residential and complementary mixed uses: A1, A2, A3, A4, A5, C1, C2, C3, C4, D1, D2, sui generis (B2, Energy Centre)
-  Residential and complementary mixed uses: C3, C4, D1, A1, A2, A3, A4, A5
-  School
-  Land use flexibility zone
-  Western Edge land use flexibility zone

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

**NWC/OPA/PAR/04/B - Land Use (Built Development and Ancillary Space) Parameter Plan: Zone B**

September 2013



0 10 50 100m  
Scale 1:5000@A1












## KEY

### Contextual Information:

-  Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
-  Open land (reference NWC/OPA/PAR/03)
-  Open land within school site (reference NWC/OPA/PAR/03)

### For Approval:

-  Application site boundary
-  Building zones

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

**NWC/OPA/PAR/05/B - Development Building Zones**  
Parameter Plan: Zone B

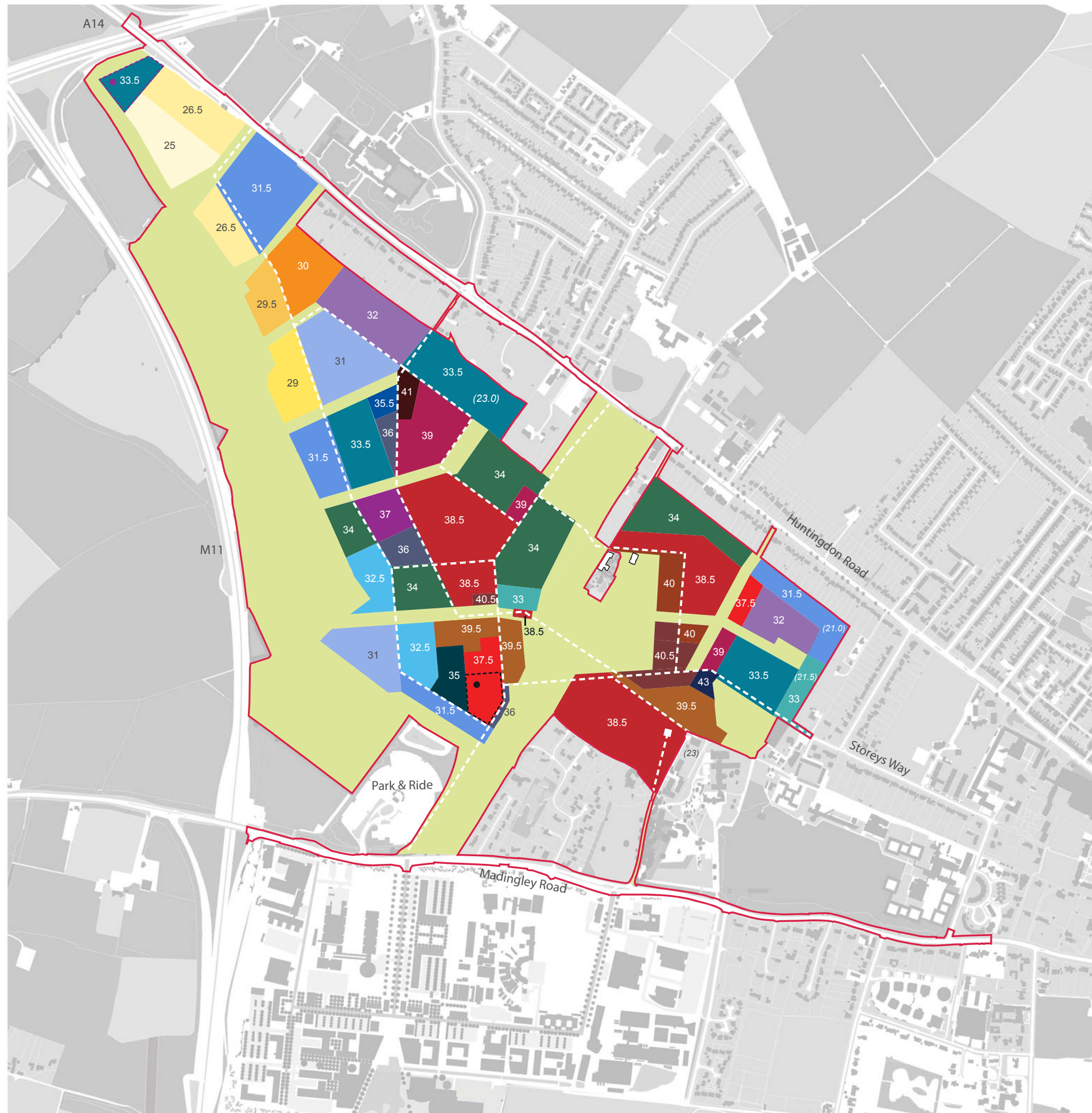
September 2013



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Scale 1:5000@A1











### KEY

## Contextual Information:

-  Existing and retained buildings
  -  Indicative primary and secondary routes (reference Access Parameter Plan NWC/OPA/PAR/02)
  -  Open land (reference NWC/OPA/PAR/03)  
  - Indicative location of Energy Centre flue
  - Indicative potential reserved location of Energy Centre flue



























(x.x) Existing ground level metres AOD

 Reserved Zone for Potential Energy Centre flue of 1.5m diameter and 53.5m AOD

## For Approval:

- Application site boundary

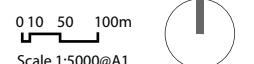
### Maximum building heights

- |   |   |   |                 |
|---|---|---|-----------------|
|    | 25.0 metres AOD   |    | 35.0 metres AOD |
|   | 26.5 metres AOD   |   | 36.0 metres AOD |
|  | 29.0 metres AOD   |  | 36.5 metres AOD |
|  | 29.5 metres AOD   |  | 37.0 metres AOD |
|  | 30.0 metres AOD   |  | 37.5 metres AOD |
|  | 31.0 metres AOD   |  | 38.5 metres AOD |
|  | 31.5 metres AOD   |  | 39.0 metres AOD |
|  | 32.0 metres AOD   |  | 39.5 metres AOD |
|  | 32.5 metres AOD   |  | 40.0 metres AOD |
|  | 33.0 metres AOD   |  | 40.5 metres AOD |
|  | 33.5 metres AOD   |  | 41.0 metres AOD |
|  | 34.0 metres AOD   |  | 43.0 metres AOD |
|  | 35.0 metres AOD   |   |                 |
|  | Zone for Energy Centre flue of 5.0 x 5.8 m in plan dimension and height 44.5m AOD |   |                 |

## North West Cambridge

**NWC/OPA/PAR/06/B - Building Heights Parameter Plan:  
Zone B**

September 2013


















## KEY

### Contextual Information:

-  Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
-  Open land (reference NWC/OPA/PAR/03)
-  Open land within school site (reference NWC/OPA/PAR/03)

### For Approval:

-  Application site boundary
-  12.5 metres AOD
-  15 metres AOD
-  17.5 metres AOD
-  20 metres AOD
-  22.5 metres AOD
-  25 metres AOD
-  Development area

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

**NWC/OPA/PAR/07/B - Topography Parameter**  
Plan: Zone B

September 2013



0 10 50 100m  
Scale 1:5000@A1









## Appendix Content

### A.1 Approved Parameter Plans - February 2013

North West Cambridge | Section 73

Appendix





# A1      Approved Parameter Plans - February 2013

The following are the approved 5 Parameter Plans that were submitted as part of the 2012 Application.





## KEY

### Contextual Information:

- AAP Development Footprint / Green Belt Boundary
- Existing and retained buildings
- Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
- SSSI boundary
- SSSI 10m buffer
- Washpit Brook
- Areas of existing open land, woodland & treecover to be retained
- Secondary open land

### For Approval:

- Application site boundary
- Primary open land (1-5)
- Primary open land boundary
- Open land within school site
- Secondary open land zone
- Zone for works to Washpit Brook
- Zone for location of flow control structure

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

### NWC/OPA/PAR/03/A - Open Land and Landscape Areas

#### Parameter Plan: Zone B

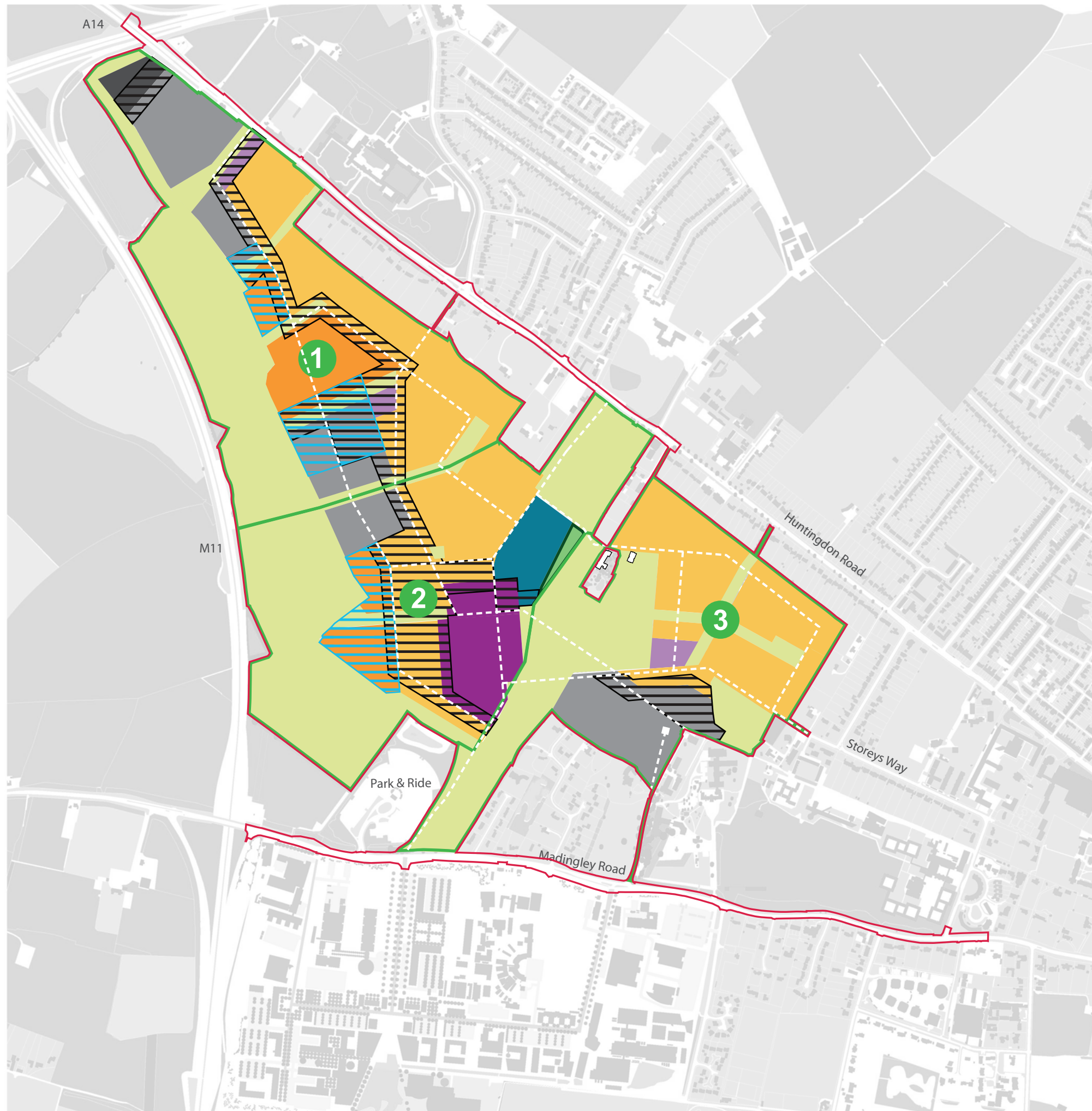
February 2013



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Scale 1:5000@A1







# KEY

## Contextual Information:

- Existing and retained buildings
- Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
- Open land (reference NWC/OPA/PAR/03)
- Open land within school site (reference NWC/OPA/PAR/03)
- Potential reserved Energy Centre site: sui generis (B2)

## For Approval:

- Application site boundary
- Development areas
- Residential: C3, C4
- Collegiate Housing: C2
- Academic/Research: D1, B1(b), sui generis
- Residential and complementary mixed uses: A1, A2, A3, A4, A5, C1, C2, C3, C4, D1, D2, sui generis (B2, Energy Centre)
- Residential and complementary mixed uses: C3, C4, D1, A1, A2, A3, A4, A5
- School
- Land use flexibility zone
- Western Edge land use flexibility zone

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

NWC/OPA/PAR/04/A - Land Use (Built Development and Ancillary Space) Parameter Plan: Zone B

February 2013



0 10 50 100m  
Scale 1:5000@A1







# KEY

## Contextual Information:

- Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
- Open land (reference NWC/OPA/PAR/03)
- Open land within school site (reference NWC/OPA/PAR/03)

## For Approval:

- Application site boundary
- Building zones

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge NWC/OPA/PAR/05/A - Development Building Zones Parameter Plan: Zone B

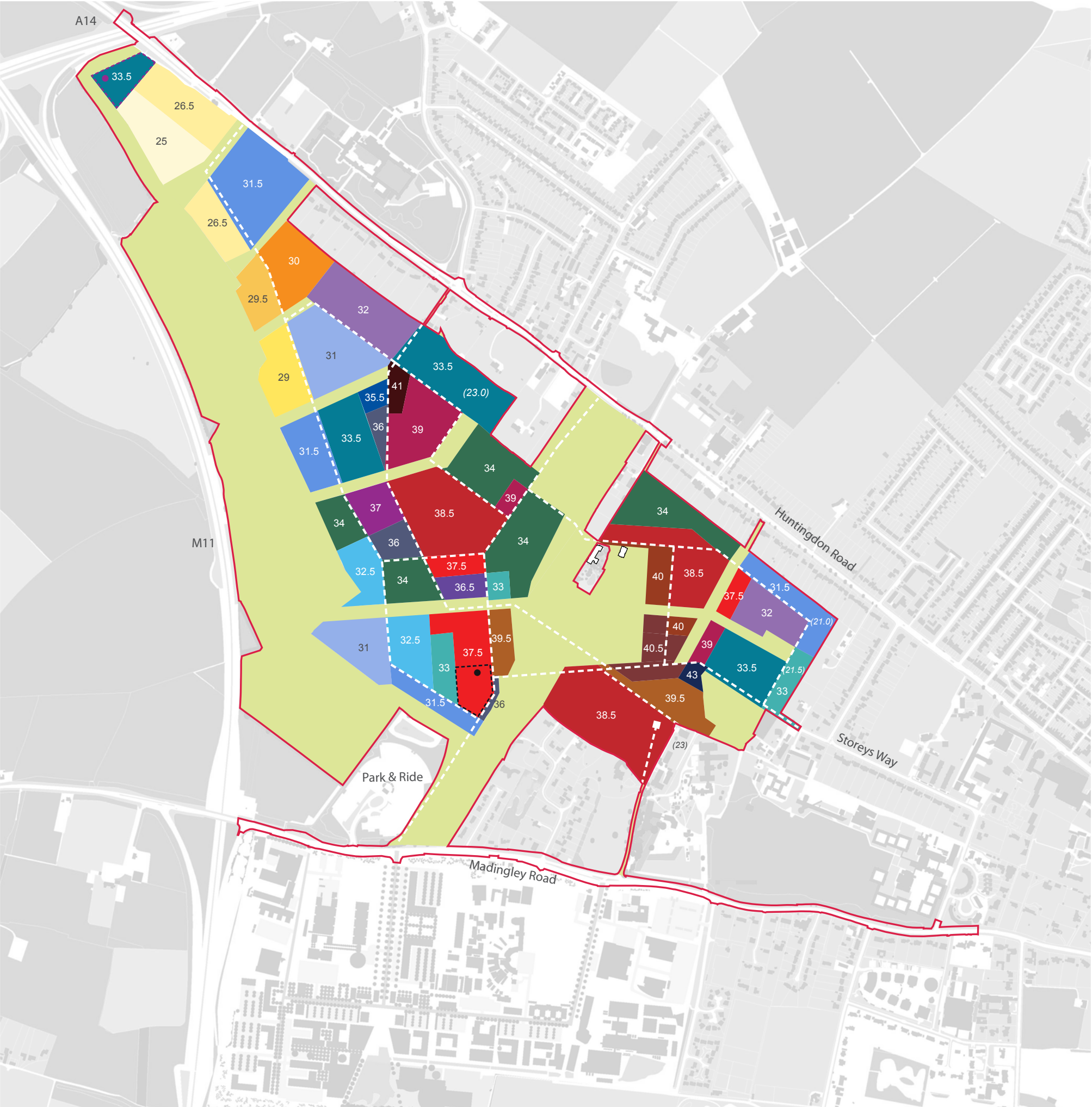
February 2013



0 10 50 100m  
Scale 1:5000@A1







KEY

Contextual Information:

- Existing and retained buildings
- Indicative primary and secondary routes (reference Access Parameter Plan NWC/OPA/PAR/02)
- Open land (reference NWC/OPA/PAR/03)
- Open land within school site (reference NWC/OPA/PAR/03)
- Indicative location of Energy Centre flue
- Indicative potential reserved location of Energy Centre flue
- (x.x) Existing ground level metres AOD
- Reserved Zone for Potential Energy Centre flue of 1.5m diameter and 53.5m AOD

For Approval:

Application site boundary

Maximum building heights

- |                 |                 |
|-----------------|-----------------|
| 25.0 metres AOD | 35.5 metres AOD |
| 26.5 metres AOD | 36.0 metres AOD |
| 29.0 metres AOD | 36.5 metres AOD |
| 29.5 metres AOD | 37.0 metres AOD |
| 30.0 metres AOD | 37.5 metres AOD |
| 31.0 metres AOD | 38.5 metres AOD |
| 31.5 metres AOD | 39.0 metres AOD |
| 32.0 metres AOD | 39.5 metres AOD |
| 32.5 metres AOD | 40.0 metres AOD |
| 33.0 metres AOD | 40.5 metres AOD |
| 33.5 metres AOD | 41.0 metres AOD |
| 34.0 metres AOD | 43.0 metres AOD |

Zone for Energy Centre flue of 0.6m diameter and 42.5m AOD

North West Cambridge  
NWC/OPA/PAR/06/A - Building Heights Parameter Plan:  
Zone B

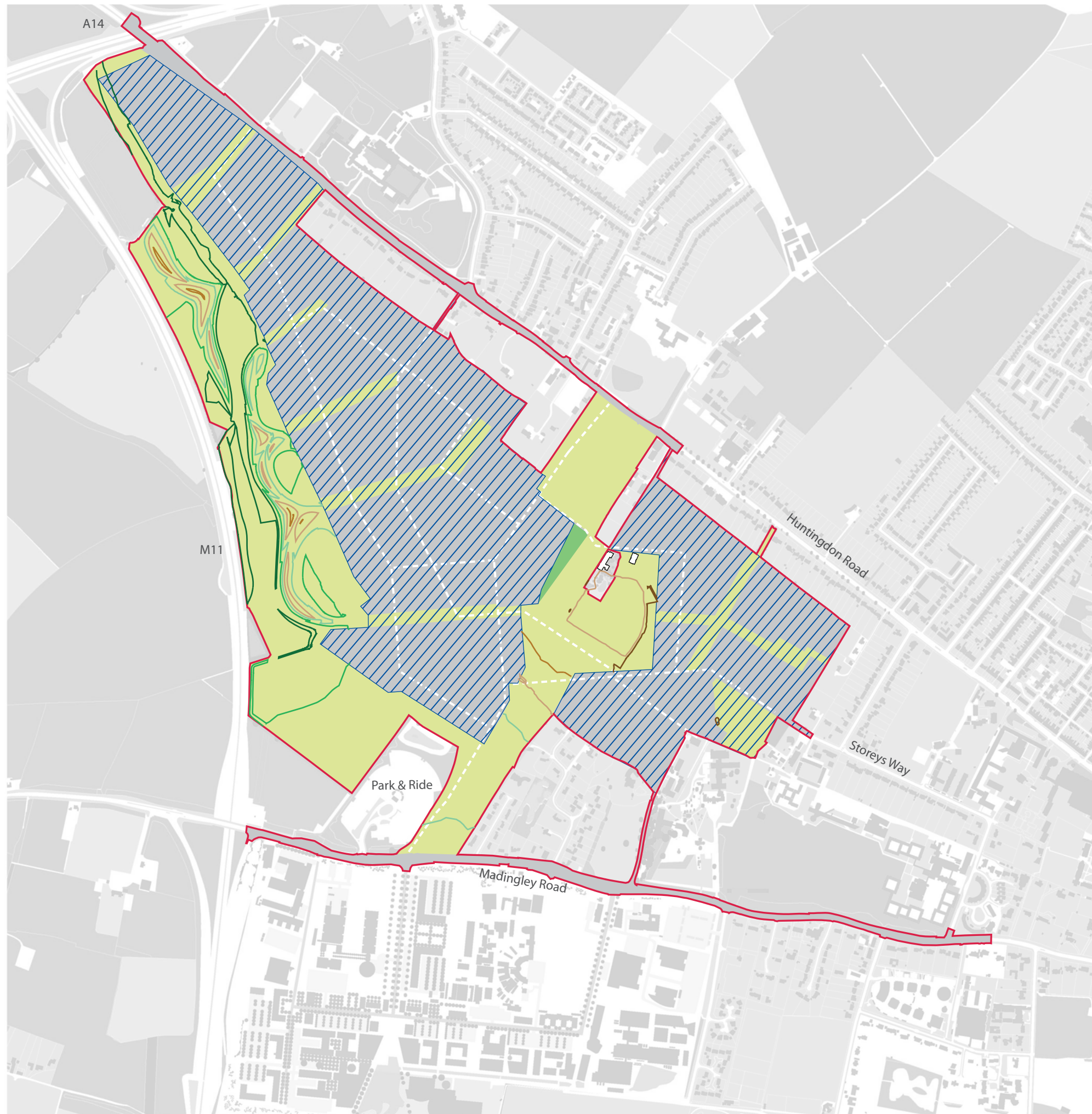
February 2013



0 10 50 100m  
Scale 1:5000@A1







## KEY

### Contextual Information:

- Indicative primary and secondary routes (reference NWC/OPA/PAR/02)
- Open land (reference NWC/OPA/PAR/03)
- Open land within school site (reference NWC/OPA/PAR/03)

### For Approval:

- Application site boundary
- 12.5 metres AOD
- 15 metres AOD
- 17.5 metres AOD
- 20 metres AOD
- 22.5 metres AOD
- 25 metres AOD
- Development area

All information other than that identified as being for approval is shown for contextual purposes only.

## North West Cambridge

NWC/OPA/PAR/07/A - Topography Parameter  
Plan: Zone B

February 2013



0 10 50 100m  
Scale 1:5000@A1





