

# Cranfield University Masterplan

November 2017





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# Vice-Chancellor's foreword

Cranfield is an exclusively postgraduate university that is a global leader for education and transformational research in technology and management.

The Corporate Plan identifies our priorities to take forward our core mission of education and research and to invest in our people and infrastructure in a sustainable way.

This Cranfield Masterplan lays out the principles which will shape the development of the estate over the coming years.

The Masterplan builds on the University's distinctive strengths and will enhance our close engagement with business and Government. It will provide the best possible experience for our students together with new opportunities for interdisciplinary working.

Turning this Masterplan into reality will require substantial capital investment and we will achieve this through growth in our education and research portfolio and through greater leverage of external funds, including attracting inward investment as a centre for the UK's future economic growth.

The plans for this future investment in our facilities have been displayed at various consultation and exhibition events, where several hundred staff, students, key partners and local councillors attended. Their feedback has informed this document.

This Masterplan will help meet the University's aspirations for growth and will support the strategic priorities set out in the Corporate Plan.

Professor Sir Peter Gregson  
Chief Executive and Vice-Chancellor



# Executive summary

The Cranfield Masterplan signals the University's development objectives for its estate and establishes a detailed framework within which future development proposals are to be brought forward.

The Masterplan builds upon a significant body of work undertaken by the University to determine how its Cranfield campus will continue to develop and prosper in the future, responding to the University's Corporate Plan which sets the following clear mission statement for the University:

**'To be an exclusively postgraduate university that is a global leader for education and transformational research in technology and management.'**

This mission statement is supported by four key strategic priorities which shape the basis of this masterplan document:

1. To provide a premier learning experience that enhances the capabilities of individuals and their organisations.
2. To be recognised for outstanding transformational research that meets the needs of business, government and wider society.
3. To grow an efficient, effective and sustainable enterprise.
4. To be renowned for our impact and influence - regionally, nationally and internationally.

To achieve this, the physical form of Cranfield campus and the wider Technology Park has never been more important and must respond and evolve in line with challenges facing the higher education sector. It is our belief that the Masterplan will accelerate the opportunities for economic development on campus associated with the original vision for the Technology Park.

The Masterplan contains proposals with the potential of delivering a net increase in floorspace of c.77,000m<sup>2</sup> across the campus, which includes 400 new bed spaces. This net increase excludes the renewal of existing buildings which are no longer fit for purpose. Although the total floorspace on site is increasing, this is made up of a mixture of research, development and commercial spaces which tend to be large floorplate buildings with relatively low occupancy levels. There will be some conventional academic teaching space and an appropriately sized retail hub to support the campus.

All proposals in the Masterplan sit within local and national policies while also being compatible with the University's academic and development aspirations.

In order to respond to the priorities of the Corporate Plan, a series of initial principles were derived for the Cranfield campus through an internal review by the University in 2014. This review firstly set out strategic drivers and then interrogated these through detailed placemaking principles:

## Strategic drivers

- Taking a more thematic approach to development.
- Aligning the campus experience with the reputation of Cranfield University.
- Fostering the development of a learning community.

- Considering buildings as 'part of research.'
- Identifying opportunities for interdisciplinary working and shared facilities.

## Masterplan objectives

- Improve the campus arrival and navigation experience to align it with the reputation of the University.
- Create high-quality pedestrian environments, including a central core to promote interaction and a sense of place.
- Deliver a connected and walkable campus that prioritises sustainable transport choices.
- Use wayfinding and clear design aesthetic in urban design to provide a safe and consistent campus experience.
- Provide high-quality facilities for our students, staff, commercial partners and visitors that meet the technological and sustainability objectives of the University.
- Structure the campus around the University's key research and teaching themes.
- Enhance biodiversity across the site by linking key streets to the surrounding landscape.

These objectives will be physically expressed in the Masterplan through over-arching guiding principles and their supporting Masterplan components to drive change on the campus in the years ahead.

# Chapter one

## Introduction – about the Masterplan

**The Cranfield Masterplan defines a vision for the University's physical estate, delivering a comprehensive programme of construction and renewal and importantly addressing the way the estate is structured and occupied.**

The Masterplan is a significant step forward for the University, reflecting the aspirations set out in its Corporate Plan which recognises the need for continued investment in the built environment in order for the institution to remain competitive and successful within the higher education sector.

The Cranfield Masterplan is intended to provide an integrated development strategy for the University's academic and Technology Park estate, providing a framework for physical and development opportunities totaling £330 million, significantly derisking future development projects whilst guiding future planning proposals.

The Masterplan also acknowledges the important role of Cranfield University within the local economy, being one of the three biggest employers. The Masterplan seeks to support this role and enhance the offering of the campus and align with National Infrastructure Commission proposals which places great emphasis on promoting the Oxford - Milton Keynes - Cambridge growth corridor as a knowledge-intensive cluster for the UK. The development programme within the Masterplan seeks to enhance the academic, research, commercial and industry capacities of the campus to promote growth and inward investment.

The key feature of the Masterplan is the blurring between academic research and commercial-facing activity. Although a long-held objective in all

knowledge-transfer strategies, this can be difficult to realise due to the physical separation between campus and technology park. This Masterplan will seek to restructure the greater campus area so that traditional distinctions between Technology Park and University campus will disappear in favour of a thematic plan. Cranfield is focused on eight cross-cutting themes that define the University's research mission. These thematic zones within the greater campus will play host to aligned commercial organisations and collaborations that traditionally have been situated within the Technology Park.

Although the term 'Technology Park' is evolving, this will be on the basis of further encouraging employment and economic activity. Innovation and technology will be subsumed into a wider campus community where the University's partners can enjoy a closer and more integrated relationship with academia. As such, there will be no loss of planned floorspace, indeed commercial opportunities will increase as the campus densifies. However, commercial ventures and collaboration will involve more active research spaces rather than a stock provision of office space. Therefore the overall employment levels will change across the existing campus and Technology Park area, and the innovation and research capacity of the University working with commercial partners will increase.

This process has already begun with the construction of the Aerospace Integration Research

Centre (AIRC), a collaboration between Rolls-Royce and Airbus. These collaborations reduce the cost of research and bring research, commercial organisations and supply chains together within an integrated campus setting.

At the same time as offering an integrated approach to applied research, the Masterplan intends to deliver this new model within a higher quality setting that is attractive and can offer a vibrant backdrop for a growing research and commercial community. This will cement the University as an important economic driver within the region as well as underpin the region's reputation, particularly in autonomous automotive design.

The vision behind the Masterplan is therefore as follows:

1. The Cranfield Masterplan will signal the University's development intent and objectives over the coming years and establish a detailed framework within which future development proposals are brought forward.
2. The campus and technology park will be restructured, focusing on Cranfield's key research strengths, increasing its appeal to industry and other potential partners, driving economic development and research excellence within Bedfordshire.
3. The Masterplan will use strategic and place making principles as a basis to meeting its aspirations for growth and development, enhancing opportunities for the University's staff and students as well as for the estate itself, supporting the strategic priorities of the Corporate Plan.

4. To develop the Cranfield Masterplan in partnership with Central Bedfordshire Council and receive Council endorsement for the Masterplan as Technical Guidance, providing certainty for forthcoming campus investment.

The production of the Masterplan document and supporting technical reports also respond specifically to planning policy DM11: Significant Facilities in the Countryside within Central Bedfordshire Council's adopted Core Strategy and Development Management Policies (2009). This policy requires such sites to bring forward management plans, development briefs or masterplans, to be agreed by the Council prior to significant expansion or redevelopment.

Cranfield campus is designated as one such site in the countryside, and given the University's development aspirations over the coming years, a Masterplan has been produced in line with the requirements of policy DM11.

The preparation of the Masterplan has been progressed in partnership with officers at Central Bedfordshire Council to aid collaboration, information sharing and transparency with the end objective of the Masterplan being endorsed by the Council as Technical Planning Guidance.

Ahead of presenting the University's development principles, the Masterplan document has been arranged to first set the context of the University, explain its history, identify the catalyst for change and finally culminate in the future proposals.

**Chapter one** is intended to provide the background to the Cranfield campus Masterplan.

**Chapter two** introduces the University today and summarises its position in the local planning framework.

**Chapter three** then details the historic development of the University illustrating the tradition of change over the decades.

**Chapter four** provides a site analysis and identifies opportunities for change.

**Chapter five** introduces the Masterplan concepts which have influenced how the campus is intended to evolve over time.

**Chapter six** sets out the indicative phasing of the Cranfield Masterplan projects.

This document should not be read in isolation but in conjunction with supporting Transport assessment, Planning and environmental statement and Statement of community involvement.

**400 new bed-spaces** will be provided in the Campus Masterplan

The Campus Masterplan will deliver **77,000m<sup>2</sup>** of new teaching, research and innovation floorspace

**Our oldest buildings date from 1935**

**250 hectares of land**

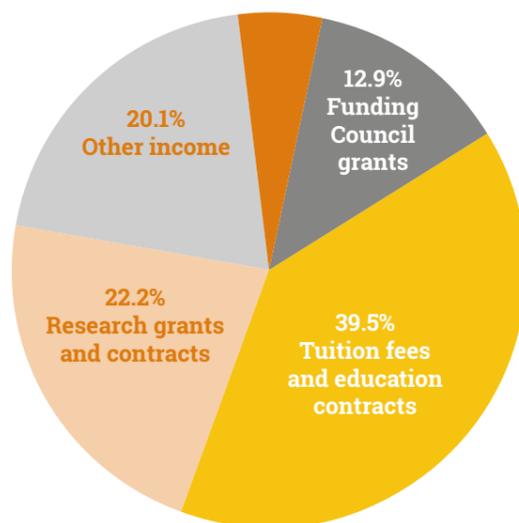
**Over 1,800 parking spaces on site**

**c.100,000m<sup>2</sup>** of academic floor space and **c.50,000m<sup>2</sup>** of residential space

The Research Excellence Framework 2014 (REF) has assessed that **81% of the research at Cranfield University is world leading or internationally excellent**

**As at year ending July 2015, income can be split as follows:**

**5.3% Donations and investment income**



**Over 4,300 students (2015/2016)**

**Over 1,600 staff (2015/2016)**

**Cranfield is a four-time winner of the prestigious Queen's Anniversary Prize**

Cranfield provide professional development to **20,000** individuals annually

**Over 75% of the UK's postgraduate aerospace engineers graduate from Cranfield University**

Cranfield is one of the UK's **top five** research-intensive universities, alongside Cambridge, Oxford, Imperial College and University College London

**Top 10 International Business School MBA in the UK**

# Chapter two

## Context

Cranfield University today is a world-leading, postgraduate teaching and research institution, operating from two sites. The main campus is situated in Cranfield, Bedfordshire, approximately 50 miles north of central London, to the west of Cranfield village. The second site is the Defence Academy of the United Kingdom at Shrivenham, southwest Oxfordshire. As the UK's only exclusively postgraduate university, Cranfield's world-class expertise, large-scale facilities and unrivalled industry partnerships creates leaders in technology and management globally.

The University as a whole supports a student body of over 4,300 students, of which over 50% are part time. Around 2,400 students graduate from Cranfield annually and the University awards around 4% of the UK's engineering and technology PhDs every year. Over 15,000 people come to Cranfield each year to benefit from the executive and professional development programmes.

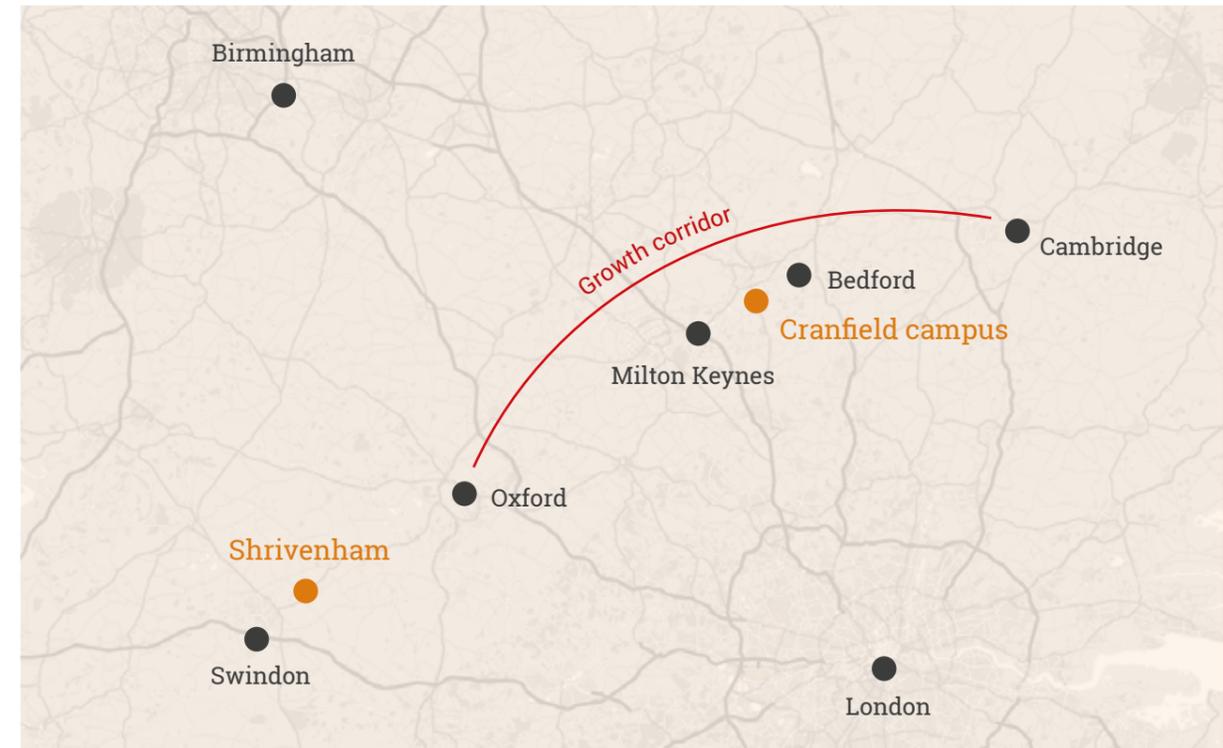
Cranfield University makes a significant impact on the regional economy. In 2014/2015 the University's turnover was around £165 million, it employs around 1,600 staff, making it one of the three biggest employers in Central Bedfordshire.

Alongside Millbrook Proving Ground, the University is a vital part of Bedfordshire's specialism in autonomous vehicles. Currently, the University is building an £9 million instrumented intelligent mobility road through the centre of the Cranfield campus, integrating autonomous vehicles with other traffic and pedestrians, co-funded by Government. The Multi-User Environment for Autonomous Vehicle Innovation (MUEAVI) facility at Cranfield will complement the work of the Intelligent Mobility Engineering

Centre (IMEC), a £10 million SEMLEP and HEFCE co-funded capital project also being constructed at Cranfield. IMEC will provide the region and the nation with a centre of excellence focused on developing and delivering education, training, skills and qualifications for the UK's burgeoning transport systems sector workforce.

Cranfield is a well-connected campus with good highway connections to Cranfield village, Milton Keynes and the wider region. National Cycle Route 51 of the National Cycle Network runs south of the campus and the University's cycle network links into this, providing a safe and direct cycle path to Cranfield village. Future strategic infrastructure proposals including the East West Rail route which comprises an upgrade to the Ridgmont Station four miles south of the campus and the separate Oxford-Cambridge Expressway both provide the potential to further improve the wider connectivity of the campus and should be supported where possible.

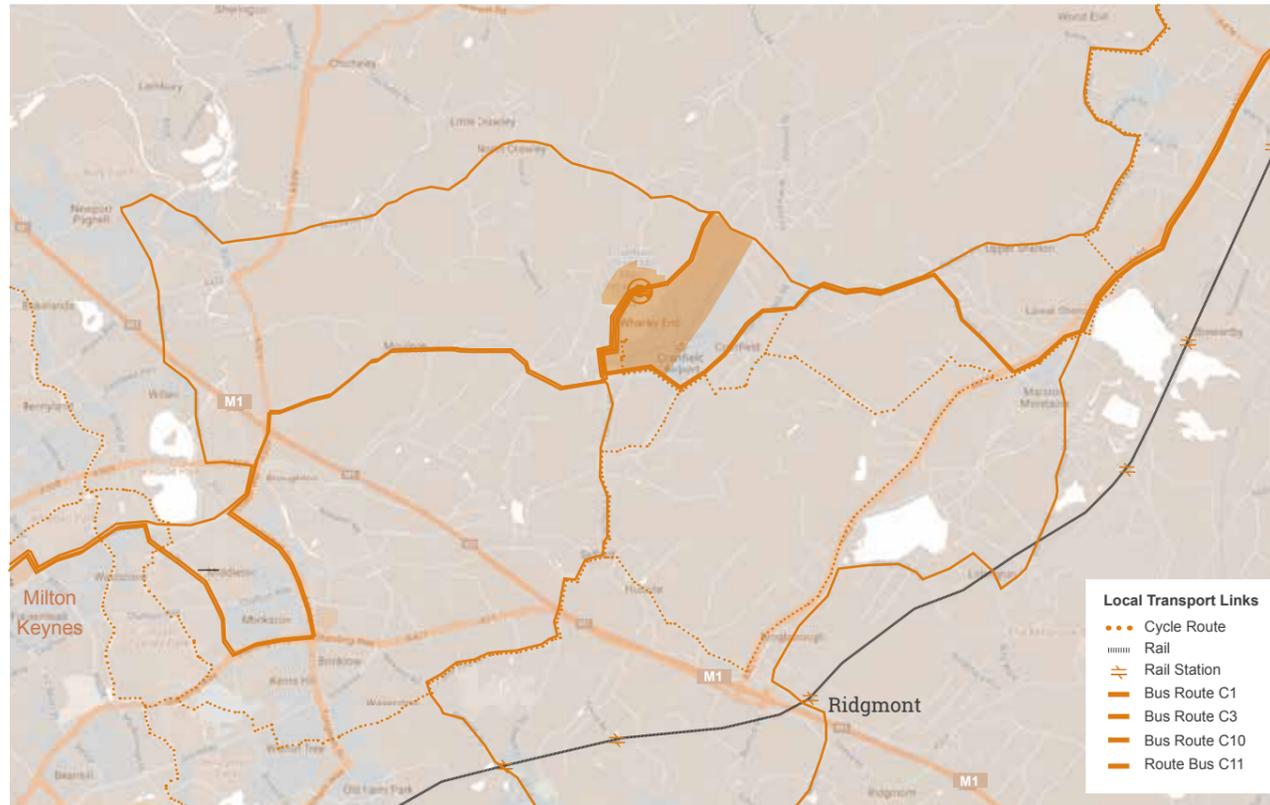
The entire Cranfield campus covers a site of 250 hectares currently accommodating approximately 150,000m<sup>2</sup> of floorspace, consisting of academic, administrative and non-domestic buildings together with on-campus student accommodation.



Cranfield University sites

The campus can currently be divided into the following areas:

- **Academic campus** – this covers the teaching, research and administrative focus for the schools, together with supporting facilities including retail and community resources.
- **Residential and recreational core** – to the west of the campus, this portion of the campus houses about 65% of full-time students, within both traditional halls of residences and family-style accommodation.
- **Cranfield University Technology Park** – The Technology Park, or more commonly known Tech Park, hosts over 50 businesses predominantly specialising in science and technology. A range of building types and sizes have been developed, with new businesses located in an Innovation Centre specifically designed for start-ups. The Tech Park is directly linked with the academic campus, reinforcing the link between the academic offering at Cranfield and industry.



Cranfield University local transportation connections

- **Airport** – an important and unique facility within the higher education sector, the Cranfield Airport provides a base for the National Flying Laboratory Centre which is directly supported by HEFCE. The Airport also features an Airpark for related business opportunities. The Airport is not the focus of this Masterplan, however its future potential is being looked at as part of a separate exercise. Any proposals for the development of the Airport will be brought forward separately, reviewing how its commercial opportunities and position in the south east can be exploited.

In addition there are also some 20 businesses embedded within the academic campus. These companies are either a result of the commercial progression of the academic research and development activities, or businesses that wish to be associated with the work of the University.

This ambitious £330 million Masterplan concerns the academic and residential campus and Technology Park areas and, will over the next 20 years, direct improvements to the University's research offering, teaching environments and student experience as well as creating jobs in the region and boosting the local economy.



Cranfield University functional zones

## Planning policy context

While responding to the growth aspirations of the University, development must also accord with national and local planning policy.

The planning policy framework informing this Masterplan and future proposals is predominantly made up of:

### Policy

- National Planning Policy Framework (NPPF) 2012.
- Central Bedfordshire Council Core Strategy and Development Management Policies 2009.
- Site Allocations Development Plan Document (2011).
- Proposals Map.

### Planning Guidance

- Central Bedfordshire Council Sustainable Drainage Guidance 2014, updated 2015.
- Central Bedfordshire Design Guide 2014.

### Additional Documents

- Central Bedfordshire Landscape Character Assessment (2015).

## National Planning Policy Framework

The NPPF was published in 2012 and communicates the Government's economic, environmental and social planning policies for England. It articulates the Government's vision for sustainable development and acts as guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications.

The NPPF establishes the presumption in favour of sustainable development. Specifically, paragraph 19 states that the planning system should do all that it can to promote sustainable economic growth in order to create jobs and prosperity and meet the challenges of global competition alongside a low carbon future. The NPPF states that significant weight should be placed on the need to support economic growth through the planning system.

The policy thrust of the NPPF very much aligns with the University's development aspirations and will continue to be taken into consideration as future proposals come forward.

## Local Planning Policy Framework

Central Bedfordshire Council's Adopted North Local Development Framework consists of the adopted Core Strategy and Development Management (CSDM) Policies Document, Site Allocations Document and Proposals Map.

The CSDM was adopted in 2009 and sets out the vision, objectives, spatial strategy and overarching policies to guide development in the north area of Central Bedfordshire up to 2026.

The adopted CSDM continually refers to Cranfield campus and Technology Park as significantly contributing to the economic prosperity of the region. Indeed Policy CS1: Development Strategy notes 'additional employment opportunities will be provided for at the University Campus and Technology Park, to help reinforce its importance as a sub-regional employment location.' The Vision for Cranfield in section 3 of the CSDM mirrors this stance and also emphasises that the 'continued aviation use of the Cranfield Airfield will be protected.'

Central Bedfordshire Council's current Local Plan designates Cranfield campus and Technology Park as 'Significant facilities within the countryside'. This policy necessitates

designated sites to bring forward a masterplan, in agreement with the council, prior to significant expansions/redevelopment taking place. The production of the Cranfield University Masterplan responds directly to this designation. In addition, the following policies and site designations are relevant and will need to be responded to where relevant by future proposals:

- CS1: Development strategy
- CS9: Providing jobs
- CS10: Location of employment sites
- CS13: Climate change
- CS15: Heritage
- CS16: Landscape and woodland
- CS18: Biodiversity and geological Conservation
- DM1: Renewable energy
- DM2: Sustainable construction of new buildings
- DM3: High quality development
- DM11: Significant facilities within the countryside
- DM14: Landscape and woodland
- DM15: Biodiversity
- E1: Safeguarded key employment sites
- EMP4(6): Cranfield Technology Park

Central Bedfordshire Council is currently embarking on a new Local Plan covering the period up to 2035. The Masterplan is considered to align with emerging policies and once adopted future proposals will be assessed against them.

Next page: Central Bedfordshire Council Adopted Proposals Map and Key, Cranfield Inset Map

	District Boundary	
	Area Outside Central Bedfordshire Council North Area	
	Inset Boundary	
CS1	South East Milton Keynes SDA Development Framework	
CS3/DM17	Open Space, Sports and Recreation (PPG17 Study) <small>Style may vary - area, line or point depending on type. Refer to study for clarification of individual sites.</small>	
CS12/DM7	Town Centre	
CS13	Floodplain (Floodplain on Side A&B is solid blue) <small>Source: Indicative Floodplain maps 2008 as published by the Environment Agency. Probability of Flooding 0.1 - 1.0%. www.environment-agency.gov.uk</small>	
CS15/DM13	Conservation Area	
CS15/DM13	Historic Parks and Gardens <small>Source: English Heritage. www.english-heritage.org.uk</small>	
CS15	Scheduled Ancient Monument <small>Source: English Heritage. www.english-heritage.org.uk</small>	
CS16/DM14	Chilterns AONB	
CS16/DM14	Forest of Marston Vale	
CS17	Bedford and Milton Keynes Waterway (Proposed)	
CS18/DM15	CWS/LNR <small>Source: LNR - Natural England. www.naturalengland.org.uk CWS - Biodiversity and Recording Monitoring Centre</small>	
CS18/DM15	SSSI/NNR <small>Source: Natural England. www.naturalengland.org.uk</small>	
CS18	Local Geological Sites (Previously RIGS Regionally Important Geological/Geomorphological Sites) <small>Source: Biodiversity and Recording Monitoring Centre</small>	
DM4	Settlement Envelope	
DM5a	Important Open Space	
DM6	Green Belt Infill Only Boundary	
E1	Key Employment Site	
EA	Employment Allocation	
HA	Housing Allocation	
MA	Mixed Use Allocation	
	Contingency Allocation	
RA	Recreational Allocation	
TC1	Biggleswade Masterplan Study Area	
TC2	Town Centre - Flitwick	
<b>Saved Local Plan Policies</b>		
CS21	Important Countryside Gap	
EMP4	Employment Allocation	
EMP12	Cranfield Airfield	
HO8	Housing Allocation	
TCS	Town Centre Opportunity site	
<b>National Policy</b>		
	Green Belt	

