FUTURE READY UNIVERSITIES
Universities will need to address a series of megatrends

- Universities face a series of challenges over the coming decades. With 22,000,000m² of estate already in existence and a series of economic, demographic and technological changes anticipated, how does the modern university address these challenges? What do we need to do to make the estate fit-for-purpose over a 50-80 year design life?
- How can universities meet the changing needs of employers and deliver effective life-long learning?
- How will technology affect how teaching and learning is undertaken?
- How will UK universities compete in the global research market?
- How will the estate deliver a productive environment as the climate changes?

The university of the future?

- **Society and economy** – life-long learning
- **Technology** – changing how we learn and how universities operate
- **Weather** – adapting to change
- **Global development** – the changing face of research
Life-long learners and customers
Life-long learning

• For the first time in human history our whole way of life can be expected to change within a lifetime. The pace of change in what we do and how we do it is increasing exponentially and the concept of the university, developed nearly 1000 years ago, will need to change with it.
• Key attributes of graduates will be: critical thinking; assimilation of data and; effective team working. Depth of subject knowledge will be less important.
• Multi-disciplinary teaching and research will be the norm rather than the exception.
• Universities will work more closely with industry, with shared programmes and assets.
• Estates will need to respond to learning that takes place on a 24/7 basis.

Future Ready Universities

Life-long learning

- Spaces fit for all abilities
- Guided learning becomes the norm
- Life-long learning
- Multi-functional / cross-departmental working
- 24/7 campus

Shared facilities between university / industry / community

Fusion Building, Bournemouth: flexible space | natural light | biofilic design | big spaces, big ideas |

UWE technology centre: rapid / low impact reconfiguration | detailed BIM model for future refit

Moulsecoomb, Brighton: flexible external space | maximum internal leaning spaces |

Salford Estate Masterplan: fibre backbone | 5G testbed & wifi | design around autonomous and e-vehicles

Wilkins Terrace, UCL: fully accessible | mixed mode future-ready cooling | flexible social and cultural spaces

Life-long learning Future Ready

Future Ready Universities What if we can?
Technology will change how we learn, teach and research.
Technology and the smart campus

Technology will and already is changing everything about how universities deliver teaching, how their academic staff work and how research is delivered.

- Remote and on-line learning will increase the reach and capabilities of universities.
- Campuses will become a data-rich and deeply networked environment.
- Technology will reduce dependency on bespoke facilities.
- Technology in the workplace will drive cross-discipline training at university.
- Estates will be controlled and operated much more efficiently.

Creating a network and community

Data-rich, deeply networked campuses

Smart campus and technology

Complex buildings and systems

Delivering more flexible and productive campuses

Estate efficiency embedded

Creative Arts, Leeds Beckett separate specialist services | expandability of IT systems designed in

Research Hub, Glasgow | flippable labs | "loose fit" central infrastructure | migration to simulation

14th @ Irving, NY

software-based solutions | adaptive heating/cooling | all building assets optimised for use

Keele University

Smart Energy Network fully integrated energy system | car to grid storage | learning networks

Data Science, Swansea

low visibility security | column and vibration-free design – AI research ready

Technology and the smart campus

Future Ready

Future Ready Universities What if we can
Dealing with society’s big issues and the global marketplace
Dealing with society’s big issues and the global marketplace

• Universities will reshape their campuses to address this changing requirement.
• Innovation quarters bring together a range of academic, institutional and other organisations in close proximity.
• Estate will be developed to meet the shared expectation of the research community and corporate partners.
• Investment in the physical estate will be needed to address the challenges of loneliness and reduce attainment for researchers and students.
• The academic, social and cultural mix will be more important in competing for global talent and students.

Creating the T-shaped thinker

Loneliness and productivity

Big issues and the global marketplace

Enabling STEM subjects

Meeting the corporate expectations - research and environment

Enabling the assembly of the research community

Dealing with society’s big issues Future Ready

IAAPS, Bath corporate feel | research space shaped round future needs |

WSP Birmingham fit-out for multiple tiers of communication | café at the heart of business activities

Knowledge Quarter, Liverpool sub-regional accessibility | long-term sustainable movement | local permeability and networking

Science Gallery, London creating hybrid spaces | linking great buildings of the past with future thinking

CTAR, Leeds research facilities isolated from building services | zoning of research to address cooling requirements

Society’s big issues

Enabling the assembly of the research community

Meeting the corporate expectations - research and environment

Enabling STEM subjects

Big issues and the global marketplace

Loneliness and productivity

Creating the T-shaped thinker
Planning for future weather is dull, but important.
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• Our climate is changing and only the pace of change is uncertain. More extreme weather events, higher summer temperatures and increasing costs of carbon-based energy will drive change.

• Whole estate strategies will allow optimised estate efficiency strategies.

• Adoption of new technologies and approaches will create an estate that works efficiently and can respond more easily to future changes.

• Retro-fitting the existing estate will realise value and deliver high value, low carbon solutions.

• Design for the weather in 50 years time will require flexible engineering today.
Future Ready Universities

*Design for the future, as well as today*
*Engineering teams have a key role*
*Purposeful briefs rather than codes are essential*

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