

Capital Project Business Case Kent and Medway Engineering, Design, Growth and Enterprise (EDGE) Hub

This document provides the business case template for projects seeking funding which is made available through the **South East Local Enterprise Partnership**. It is therefore designed to satisfy all SELEP governance processes, approvals by the Strategic Board, the Accountability Board and also the early requirements of the Independent Technical Evaluation process where applied.

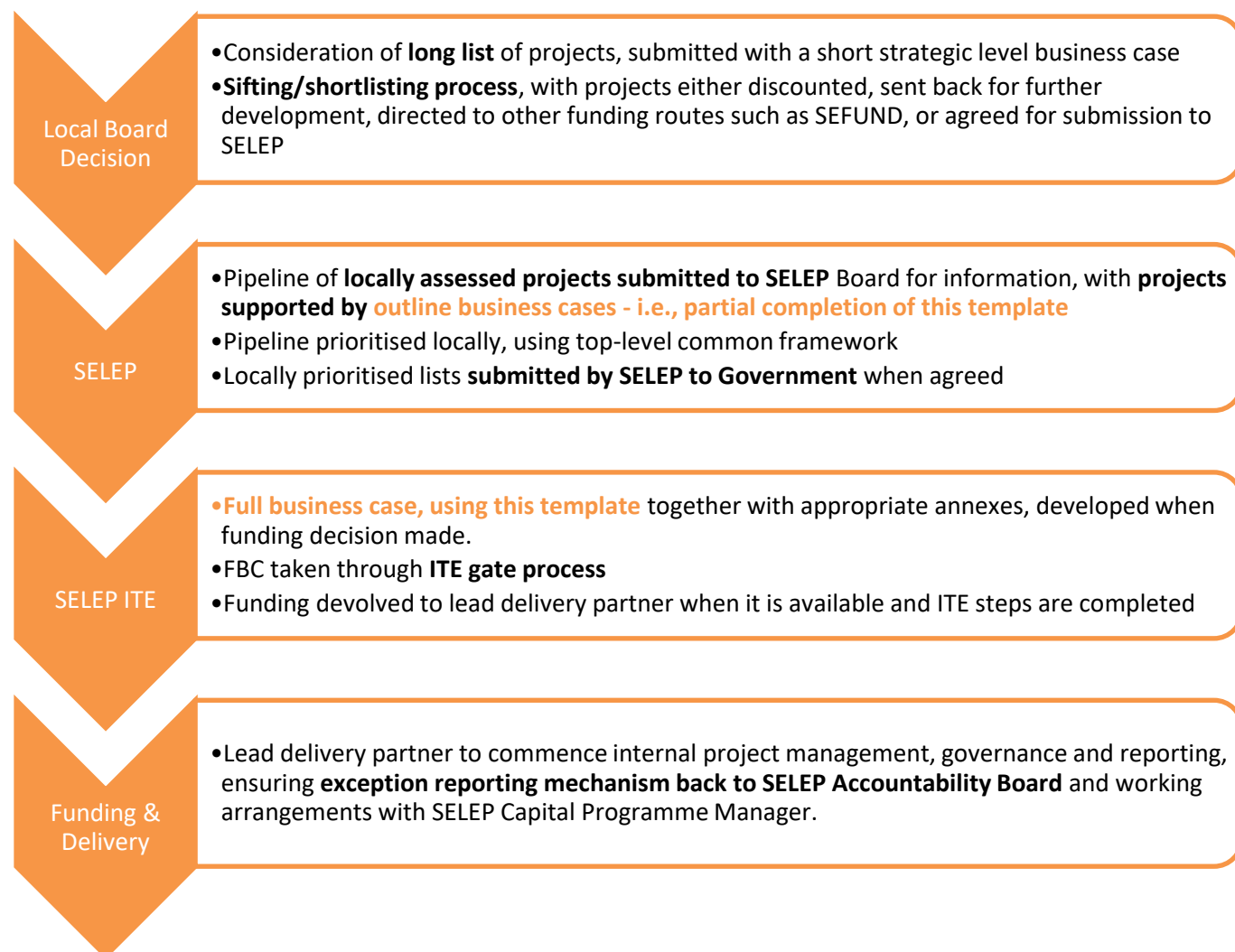
It is also designed to be applicable across all funding streams made available by Government through SELEP. It should be filled in by the scheme promoter – defined as the final beneficiary of funding. In most cases, this is the local authority; but in some cases the local authority acts as Accountable Body for a private sector final beneficiary. In those circumstances, the private sector beneficiary would complete this application and the SELEP team would be on hand, with local partners in the federated boards, to support the promoter.

Please note that this template should be completed in accordance with the guidelines laid down in the HM Treasury's Green Book. <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

As described below, there are likely to be two phases of completion of this template. The first, an 'outline business case' stage, should see the promoter include as much information as would be appropriate for submission though SELEP to Government calls for projects where the amount awarded to the project is not yet known. If successful, the second stage of filling this template in would be informed by clarity around funding and would therefore require a fully completed business case, inclusive of the economic appraisal which is sought below. At this juncture, the business case would therefore dovetail with SELEP's Independent Technical Evaluation process and be taken forward to funding and delivery.

The process

This document forms the initial SELEP part of a normal project development process. The four steps in the process are defined below in simplified terms as they relate specifically to the LGF process. Note – this does not illustrate background work undertaken locally, such as evidence base development, baselining and local management of the project pool and reflects the working reality of submitting funding bids to Government.



In the form that follows:

- **Applicants for funding for non-transport projects should complete the blue sections only**
- **Applicants for funding for transport projects should complete both the blue and the orange sections**

Version control	
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1. PROJECT SUMMARY						
1.1. Project name	Kent and Medway Engineering, Design, Growth and Enterprise (EDGE) Hub					
1.2. Project type	Economy, Innovation, Research, Education, Skills					
1.3. Location (inc. postal address and postcode)	Canterbury Christ Church University Canterbury Kent CT1 1QU					
1.4. Local authority area	Canterbury, with local facilities in Dover (Discovery Park), Medway (Medway Campus), Swale, Ashford and North Kent (to be determined)					
1.5. Description (max 300 words)	<p>LGF funding of £6.12m is needed alongside £7.2m invested by CCCU and £6.5m by HEFCE for the construction and equipment costs of Kent and Medway EDGE Hub. This will be a new 3,588m2 facility in Canterbury, with satellite facilities at Discovery Park, Kent Science Park, Medway Campus and other parts of Kent, to support high value employment, growth and investment in Engineering and Technology businesses. In addition, CCCU will be investing £10.5m and HEFCE £0.5m the delivery of the innovative educational programmes.</p> <p>The Hub will be worth an estimated £7.6m to £11.4m per year to the Kent and Medway economy once it is fully operational, with 1250 new learners with higher level Engineering and Technology skills coming into the labour market by 2024, plus a range of research and innovation benefits.</p> <div><p>Kent and Medway EDGE Hub</p><table><tr><td>Growth Oriented Services & Partnerships</td><td>Innovation Idea -> prototype -> deployment -> commercialisation</td><td>Research 'Pure' and applied: undergrad, postgrad, PhDs, commercial</td><td>Technical & Professional Education Workbased, Part-time, Full-time, Graduate Apprenticeships, Foundation Degrees, Undergrad & Postgrad Degrees</td><td>Short Courses & CPD Sector and profession specific</td></tr></table><p>Economy: Target Sectors</p><p>Life Sciences Engineering, Advanced Manufacturing, Environmental Technologies and Energy Healthcare Information & Communication Technology (ICT)</p></div>	Growth Oriented Services & Partnerships	Innovation Idea -> prototype -> deployment -> commercialisation	Research 'Pure' and applied: undergrad, postgrad, PhDs, commercial	Technical & Professional Education Workbased, Part-time, Full-time, Graduate Apprenticeships, Foundation Degrees, Undergrad & Postgrad Degrees	Short Courses & CPD Sector and profession specific
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<p>LGF investment will take the University’s existing plans to expand science at the former Canterbury Prison site to the next level by:</p> <ul style="list-style-type: none">Significantly broadening CCCU’s Higher Education offer, in line with its strategic aims, by adding a whole new suite of Technical and Professional Education opportunities (Higher and Degree Apprenticeships, Foundation Degrees, Undergraduate Degrees, Masters and Doctoral programmes) in Engineering, Product Design and Technology, with 1250 additional learners by 2024.						

	<ul style="list-style-type: none"> • Creating a new Engineering and Technology Innovation Service that will work with small businesses, larger companies, inventors and entrepreneurs to take innovations from prototype to commercialisation. • Supporting companies with business-focused PhD, Masters, Undergraduate and commercial research projects using state-of-the-art facilities. • Offering new business-focused short courses and CPD opportunities, meeting the needs of small and larger companies. <p>In addition to working with a range of industry partners, such as Discovery Park, the Hub will act as a catalyst for developing an enhanced local and regional strategic approach to inspiring and enabling an expansive sustainable education pipeline, supporting new learning and career pathways in Engineering and Technology. It will build on and interface with other regional STEM educational ambitions which have the potential to engage young people in employer-led scientific research embedded in their learning experiences.</p> <p>This is essential in Kent and Medway, where progression by young people into higher level engineering and technology courses is below the national average, with those that do progress tending to leave the area. Being based in a more vocationally oriented institution like CCCU, which has always recruited large numbers of local and regional students and those from under-represented groups, Kent and Medway EDGE Hub will build a passion for Engineering and Technology among young people. It will address identified recruitment challenges that are holding back economic growth and investment.</p> <p>Kent and Medway EDGE Hub is a new, partnership-based, industry-led initiative to drive economic growth in national, SELEP and KMEP priority sectors. A Strategic Industry Advisory Board, led by a leading industrialist, and involving other company members of KMEP's Advanced Manufacturing, Life Sciences and Healthcare Guilds, will advise on the Hub's strategy.</p>
1.6. Lead applicant	Canterbury Christ Church University
1.7. Total project value	£20.502m
1.8. SELEP funding request, including type (e.g. LGF, GPF etc.)	£6.12m LGF
1.9. Rationale for SELEP request	<p>CCCU is already planning to grow organically its existing science offer with new, related subject offerings and increased student numbers, with departments co-located in a new signature facility at and adjacent to the old Canterbury Prison site.</p> <p>LGF will enable this development to be taken to another level, bringing significant additionality in terms of speed, scale and quality. LGF funding will allow CCCU to invest quickly in completely new subject teaching capabilities (Chemical, Mechanical and General Engineering, Product Design and Technology); develop new services in innovation, research partnerships with local companies and a new short course / CPD offer to business; and establish satellite teaching and research facilities distributed around Kent and Medway, supported by the main Canterbury hub.</p>

	<p>This will be a highly significant development in terms of growth and investment for Kent and Medway engineering and technology companies, especially those in East Kent, which are being held back by skills shortages and a lack of infrastructure to support innovation and research. Kent and Medway EDGE Hub will raise the profile of engineering and technology in Kent and Medway, establishing it as a good place to invest and where engineering and technology companies can grow and flourish. Without a decisive and visible intervention of this type it is possible that future growth and investment in key national, SELEP and KMEP sectors could be lost.</p> <p>SELEP funding will address these issues by:</p> <ul style="list-style-type: none"> Reducing the University's risk in developing the additional new services quickly, when it is already committed to major investment in science and other subjects; Helping to unlock other funding from business (in kind) and the Higher Education Funding Council for England (HEFCE) alongside the University's own resources and borrowing; Overcoming the co-ordination challenge of meeting the needs of a predominantly SME engineering and technology business base which is characterised by relatively isolated companies geographically spread over a large area, without any beneficial clustering or agglomeration effects. 						
1.10. Other funding sources	<p><i>Please consider any constraints, dependencies or risks on the other funding sources.</i></p> <p>The University has secured £6.5m of capital funding from the HEFCE Catalyst fund and the remaining £7.2m of the £20.5m total requirement will come from the University's own funds, commercial borrowing against the projected additional income from students on the new Engineering and Technology courses (including CPD), research activities and employer contributions of equipment in kind.</p> <p>The feasibility of this approach is underpinned by the university's 50-year track record of delivering high quality HE courses. In that time it has developed new areas of teaching and research from scratch including significant activity in Health and Social and Applied Sciences, and transitioned from a teacher training college into an established university.</p> <p>CCCU can confirm its ability to borrow and self-fund the matched funding that is required alongside LGF monies. At present the other funding source for the projects will be from the University Capital budget supported from reserves and loans, with the source of loan funding currently under review.</p>						
1.11. Delivery partners	<p>Letters of Support are appended in Annex 1.</p> <table border="1"> <thead> <tr> <th>Partner</th><th>Nature and/or value of involvement (financial, operational etc)</th></tr> </thead> <tbody> <tr> <td>Kent and Medway Economic Partnership Guild for Engineering and Advanced Manufacturing, Environmental Technologies and Energy</td><td rowspan="3">These employer-owned bodies which promote the development of workforce skills required in these priority sectors are wholehearted supporters of the project, given that the project addresses skills shortages and skills gaps, and the problem of attracting young people into the sector, as identified in KMEP's Workforce Skills Evidence Base, as well providing innovation and research support services, which will enable growth and investment.</td></tr> <tr> <td>Kent and Medway Economic Partnership Life Sciences Guild</td></tr> <tr> <td>Kent and Medway Economic Partnership Healthcare Guild</td></tr> </tbody> </table>	Partner	Nature and/or value of involvement (financial, operational etc)	Kent and Medway Economic Partnership Guild for Engineering and Advanced Manufacturing, Environmental Technologies and Energy	These employer-owned bodies which promote the development of workforce skills required in these priority sectors are wholehearted supporters of the project, given that the project addresses skills shortages and skills gaps, and the problem of attracting young people into the sector, as identified in KMEP's Workforce Skills Evidence Base, as well providing innovation and research support services, which will enable growth and investment.	Kent and Medway Economic Partnership Life Sciences Guild	Kent and Medway Economic Partnership Healthcare Guild
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	Major local employers	The project responds to needs identified through research with major local employers and subsequent consultation with them, including: Pfizer Ltd (Dover) Port of Dover Ltd (Dover) Cummins Ltd (Thanet) Wire Belt Co Ltd (Swale) MJ Allen Group (Ashford) Fujifilm Sericol (Thanet) Delphi Diesel Systems Ltd (Medway) Sunray Engineering Ltd (Ashford) HV Wooding Ltd (Shepway) Megger (Dover) Emco Wheaton (Thanet) Minnitron Ltd (Thanet) Cammegh Ltd (Ashford) Levicept (Dover) Quivium (Dover) Crofton Design (Tonbridge and Malling) Peter Brett Associates LLP (Ashford)
	Industry and Professional Bodies	Engineering Employers Federation Royal Society of Chemistry Institution of Mechanical Engineers
	Discovery Park	The management of this major Life Sciences hub wholeheartedly supports the initiative given its ability to support the attraction and growth of science, engineering and technology based businesses.
	Canterbury City Council	Strategic supporter of the project from a local economy perspective (and the priority to develop the knowledge economy, technology and science). Operational partner in terms of planning.
	Kent County Council	Strategic supporter and proposed Accountable Body. The Council supports the project on the basis of its economic and social impact in priority sectors in Kent as a whole, and especially in East Kent.
	Schools	CCCU is working closely with Simon Langton Grammar School, the Canterbury Academy, and schools across Kent and Medway to develop a Science, Technology, Engineering and Maths 'pipeline' of more young people progressing into engineering and technology learning and careers. Kent and Medway EDGE Hub is a key element of this wider vision.
	The FE Sector	CCCU has strategic partnerships with East Kent/Canterbury College, the Hadlow Group, Mid-Kent College and London South East Colleges (LSEC) which includes a shared commitment to creating progression pathways to higher level learning and career opportunities in engineering and technology.

		Other individual FE colleges have welcomed the opportunity to work with the new EDGE Hub, including Medway UTC. CCCU is in discussion with Kent Further Education (KFE) about the project.	
	Locate in Kent	The inward investment agency supports the bid on the basis that it addresses longstanding issues of concern to prospective inward investors to do with access to Engineering and Technology skills (recruitment and workforce development), links to research and innovation and appropriate CPD opportunities.	
	Post-92 University Engineering and Technology Network	Involving partner universities such as Chichester and Lincoln, who are sharing good practice in the development of effective employer-led, work-focused engineering and technology teaching, research, innovation and CPD services.	
	European Engineering and Technology partner universities	CCCU is working with the Universite Libre de Bruxelles, Universite Catholique de Lille and will expand on our existing relationship with Fontys University of Applied Science, Netherlands to collaborate on Engineering and Technology through Kent and Medway EDGE Hub.	
1.12. Key risks and mitigations	<i>Summary form only</i> See section 7 (below) of this Business Case.		
1.13. Start date	1 July 2017		
1.14. Practical completion date	1 August 2020 (building completion)		
1.15. Project development stage	<i>Inception, option selection, feasibility, detailed design, implementation</i> Implementation (detailed design when the LGF Business Case was originally submitted in June 2016).		
1.16. Proposed completion of outputs	1 August 2024		
1.17. Links to other SELEP projects, if applicable	The project is one of a suite of projects from across Kent and Medway Districts and Boroughs agreed by KMEP as part of its strategic approach to enabling economic growth in the sub-region. Like the NIAB-EMR (formerly East Malling Research) proposal ¹ , Kent and Medway EDGE Hub develops services that support the growth of priority local sectors of the economy.		

¹ CCCU is liaising with NIAB-EMR to ensure that there is synergy between these two key sector focused initiatives.

2. STRATEGIC CASE

The strategic case determines whether the scheme presents a robust case for change, and how it contributes to delivery of the SEP and SELEP's wider policy and strategic objectives.

2.1. Challenge or opportunity to be addressed

Describe the key characteristics of the challenge to be addressed and the opportunity presented. Provide an overview of the evidence supporting this and the impact of not progressing the scheme.

What is the need?

Why now?

"If high-skill sectors in the UK are to take advantage of growth opportunities, it's clear they must be confident about the future supply of people with the right skills, experience and competencies founded on strong links between businesses, educational institutions and students themselves".

Tomorrow's Growth – New Routes to Higher Skills - CBI (2013)

Kent and Medway EDGE Hub creates the **opportunity** of unlocking economic growth and employment in engineering and technology through an expansion of specialist education, research and innovation support services. Kent and Medway EDGE Hub will unlock growth of existing businesses and make the area more attractive to inward investors by addressing the **challenge** of engineering and technology skills shortages, which local companies have identified as a key barrier to future success.

National Perspective

The EDGE Hub specifically addresses a number of the challenges the UK faces that were identified in the ten 'pillars' of the recent Industrial Strategy Green Paper², including:

- **Investing in science, research & innovation:** the Hub will increase the scale and scope of science, research and innovation activity, focused on the real needs of businesses.
- **Developing skills:** the project will improve the supply of skills in the local economy, especially in terms of technical education, STEM and addressing skills shortages.
- **Encouraging trade and inward investment:** Kent and Medway's inward investment agency Locate in Kent is an active supporter of the project on the basis that it can address skills shortages which are deterring investment and serve as a visible 'asset' that will help them promote the area to companies.
- **Delivering affordable energy and green growth:** part of the Hub's engineering and technology offer will relate to the technologies that underpin this.
- **Cultivating world-leading sectors:** the Hub will be a valuable tool in delivering the kind of outcomes envisaged under the proposed 'sector deals' (such as improved productivity, accelerating growth across the value chain, developing the strengths of clusters, commercialising research and boosting skills).
- **Delivering growth across the whole country:** addressing identified skills and talent shortages that have been identified as constraints to growth in Kent and Medway.

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/611705/building-our-industrial-strategy-green-paper.pdf

- **Creating the right institutions to bring together sectors and places:** the Hub will provide a focus and resource that will assist the development of a relatively dispersed population of companies with significant growth potential.

The initiative delivers on four of the main strands of the Government's productivity strategy, *Fixing the Foundations* (HM Treasury and Department for Business Innovation and Skills, 2015):

A highly skilled workforce, with employers in the driving seat: in line with the recent *Wakeham Review of STEM Degree Provision and Graduate Employability*³, Kent and Medway EDGE Hub courses will be developed in partnership with employers. The new centre's strategy and offer will be overseen by an industry led Strategic Advisory Board, linked to KMEP Guilds. Detailed discussions with employers has defined the priority sector skills, courses, and research services required to support growth and investment. A key focus will be to respond to additional demand for Higher and Degree Apprenticeships that the Government's new levy scheme will create.

World-leading universities, open to all who can participate: Kent and Medway EDGE Hub will be innovative and expand the offer of Engineering and Technology related courses and research opportunities, increasing the choice open to students, in particular those from under-represented groups.

High-quality science and innovation, spreading fast: Kent and Medway EDGE Hub will contribute to an improved research infrastructure, include a focus on high-potential science (as are being explored by the Nurse Review), and increase the amount of collaboration with industry and the commercialisation of research (as specified in the Dowling and Wakeham Reviews).

A trading nation, open to international investment: the project will create a 'brain gain' in Kent and Medway in higher level Engineering and Technology skills, acting as a magnet for inward investment. It will attract more local people and others from outside the county into the area to engage in study and research, who will then be available to progress into local Engineering and Technology careers.

Kent and Medway EDGE Hub specifically addresses many of the policy recommendations set out in the Government's recent *Wakeham Review of STEM Degree Provision and Graduate Employability*, including:

- Work to improve graduate employment outcomes in biological sciences, biomedical engineering and engineering design (the project will involve the teaching of these subjects in new industry-focused Degrees and Degree Apprenticeships which are co-designed with employers).
- Increased engagement between industry and HE providers (the Hub is based on active engagement of business and greater work focus in teaching through projects, placements and employer input to curriculum design).

The project also contributes to business growth based on many of the 'eight great technologies' where the national Government has the capability to become a world

³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/518582/ind-16-6-wakeham-review-stem-graduate-employability.pdf

leader, as well as the key Enabling and Industrial Technologies identified in the Horizon 2020 Programme for Research and Innovation.

Kent and Medway EDGE Hub supports growth and employment in key sectors identified by Innovate UK, including Emerging and Enabling Technologies, Health and Life Sciences, Infrastructure Systems, Manufacturing and Materials.

The Hub will become a valued part of the new provision required to meet the ambitious goals set out by national Government for Apprenticeships in *English Apprenticeships: Our 2020 Vision*, (BIS & DES, 2016), which sees Apprenticeships as a driver of productivity growth and as a solution to identified skills shortages in the STEM and digital sectors. In particular, it will contribute to the delivery of the national strategy by:

- Making Higher and Degree Apprenticeships accessible to people from all backgrounds (CCCU has an excellent track record in engaging under-represented groups).
- Addressing the need to develop robust, employer-led approaches to Higher and Degree Apprenticeships, where employer demand is likely to be high, but provision is still currently relatively limited. Government aims to deliver 3,000,000 new apprenticeship starts by 2020, many of which will need to be Higher and Degree level. However, there were only 30,000 Higher Apprenticeship starts between August 2015 and January 2016⁴ and there are currently around 1,000 people on Degree Apprenticeship programmes⁵. Canterbury Christ Church University has an excellent reputation as one of the largest providers of workbased and workplace provision in education and health.

A Thriving Economy in a Post-Brexit World

Since the referendum decision that the UK would leave the European Union in June 2017, numerous reports⁶ have indicated that already-high levels of skills shortages appear to be worsening in anticipation of Brexit. If freedom of movement of labour is curtailed as part of the final Brexit settlement, then greater emphasis and resource will be required for the UK to 'grow its own' technically skilled and educated workforce. The EDGE Hub meets this need by specifically engaging and developing people who would otherwise be lost to the engineering and technology sectors.

Engaging Young People in Engineering and Technology

Finally, through outreach work and exciting, experiential events for children, young people, teachers and parents at the new state-of-the-art facility, the Hub will make a significant contribution to engaging more young people in Engineering and Technology related learning and careers. This will help to address specific challenges that have been identified in terms of the participation of under-represented groups:

- Research⁷ in 2014 by WISE (the campaign for women in science, technology and engineering) into under-represented groups in science, technology and engineering found that pupils from age 10 start to self-identify as 'not STEM', and science, technology and engineering careers from STEM are not popular aspirations for students age 10-14.

⁴ <https://www.gov.uk/government/news/dramatic-increase-in-the-number-of-higher-apprenticeships-new-figures-released-today>

⁵ <http://www.hefce.ac.uk/kess/apprentice/>

⁶ See for example <https://www.theguardian.com/money/2017/may/09/uk-firms-struggle-to-find-employees-even-before-brexit-bites> or <https://www.theguardian.com/politics/2017/feb/13/uk-labour-shortages-brexit-as-eu-worker-numbers-fall>

⁷ https://www.wisecampaign.org.uk/uploads/wise/files/not_for_people_like_me.pdf

- OFSTED in 2011 identified⁸ that from Year 3 (age 7–8) onwards girls’ views regarding future careers tend to conform to traditional notions of ‘girls’ jobs’ and ‘boys’ jobs’.
- The Perkins Review of Engineering Skills⁹ for BIS (2013) noted the importance of parents’ views in reinforcing attitudes which militate against participation in engineering learning and careers. Polling evidence¹⁰ also suggests that parents are more likely to see science as an activity for boys rather than girls. Research for the 2013 ASPIRE project¹¹ found that some BAME parents recognised that they personally lacked knowledge and awareness of where science can lead, and felt that this might be a disadvantage for themselves and their children.
- The Institution of Mechanical Engineers’ *Five Tribes* research (2014)¹² explored how different groups of young people can best be engaged in STEM, suggesting that a broad range of modern technologies and contexts should be used to engage different groups and illustrate the diverse nature of engineering.

Addressing these challenges opens opportunity for young people, but also brings benefits in terms of the growth of Engineering and Technology related sectors of the economy by improving the supply of talent.

CCCU is especially well placed to work with schools and Further Education to address these challenges, given its role as the provider of Eastern and South East England STEM Advisory Network and STEM Ambassadors programme (STEM Learning). This major capability in engaging young people in STEM involves nearly 900 STEM Ambassadors from industry and academia, and is supported by 109 major Kent and Medway employers.

SELEP Perspective

Kent and Medway EDGE Hub addresses the education, research and innovation needs of **key SELEP growth sectors**, including:

- **Life Sciences and Medical Technology**, with new offers at Canterbury and enhanced services at the University’s Industry Liaison Lab at Discovery Park and the Institute of Medical Sciences at Medway Campus, and the potential for a new facility at Ashford.
- **Advanced Manufacturing**, increasing the support available to major companies across Kent and Medway and enabling growth potential to be unlocked in under-performing areas like East Kent. The new Hub’s role in supporting innovation will assist with the growth of existing Advanced manufacturing companies and the creation of new ones.
- **The Low-carbon Economy**, with a focus on the engineering needs of energy and utility-related companies.

More generally, SELEP have identified that an opportunity exists to increase productivity and rebalance employment to higher value activities, in a number of sectors, including Manufacturing and Digital Economy, and to have a stronger knowledge economy.

⁸ <http://www.raeng.org.uk/publications/other/girls-career-aspirations>

⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/254885/bis-13-1269-professor-john-perkins-review-of-engineering-skills.pdf

¹⁰ <https://www.ipsos-mori.com/Assets/Docs/Polls/sri-pas-2011-main-report.pdf>

¹¹ <https://www.kcl.ac.uk/sspp/departments/education/research/aspires/ASPIRES-final-report-December-2013.pdf>

¹² <https://www.imeche.org/policy-and-press/reports/detail/five-tribes-personalising-engineering-education>

“A principal priority of the LEP must be to support growth in higher value sectors.”

SELEP European Structural and Investment Fund Strategy (2016)

In addressing these strategic needs, the new Hub will ensure that small businesses are able to benefit from the services on offer.

The development of this Business Case is taking place with the involvement of SELEP’s Skills Lead, Louise Aitken, who is in the process of consulting on and updating the LEP’s Skills Strategy. The EDGE Hub is a direct response to many of the strategic skills and growths sector issues that the LEP and partners have identified.

Kent and Medway Perspective

Kent and Medway EDGE Hub addresses two key challenges in Kent and Medway:

1. The need to improve and increase the supply of skilled labour in order to unlock business growth in Engineering and Technology related sectors, and improve employment prospects and earnings for residents in the process.
2. The difficulties faced in attracting new engineering and technology investment into Kent and Medway. The Hub will be a highly visible and tangible tool in unlocking such investment, making the area more attractive by improving workforce skills and labour supply, creating new research partnership opportunities and offering new innovation support services.

KMEP’s recent *Workforce Skills Evidence Base (2015)*, commissioned to inform the work of KMEP’s Skills Commission and Guilds) identified that a recurring challenge was to attract more young people into Engineering and Technology related career opportunities, and equip them with the right education and skills, both before employment and when employed. In addition, the *Kent and Medway Economic Review (2013)* described the East Kent economy as being characterised in part by low productivity, social and economic deprivation, high levels of young people not in education, employment or training (NEET) and below-average (although improving) achievement in schools.

Additional sector employer research commissioned by CCCU and KCC in late 2015 found that recruiting staff with the right skills was a major issue for employers and that they would welcome a new facility which helps to address the wider challenge of attracting people into Engineering and Technology learning and careers. They wanted it to work closely with 14-19 provision to raise the profile of Engineering and Technology jobs, and help to create learning pathways from entry level roles to high level ones.

CCCU’s *University Centre for Engineering and Technology Feasibility Study (2015)* found that progression by local young people into higher level engineering and technology courses is below the national average, and those that do progress tend to leave the county. CCCU’s traditional student is more local and less mobile and, as a post-92 university, its teaching is very professionally and technically focused, suggesting that its Engineering and Technology offer would bring new local people into good careers and support the local economy in the process.

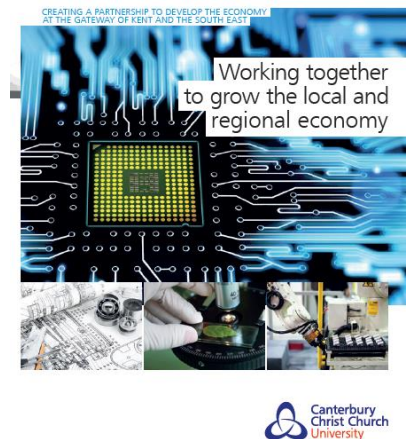
The feasibility study assessed student demand and gaps within the existing local and national offer, and concluded that the most significant gaps in the market in

Engineering and Technology-related subjects were for Higher and Degree Apprenticeships, Foundation Degree, Degree, Masters and PhD programmes in

- Chemical, General and Mechanical Engineering
- Product Design
- Technology (Electronics, Games and Computer Science)

Subsequent internal planning by the University has concluded that total student numbers in these additional subjects could reach as much as 1250 per year. While not all of these graduates and post-graduates would stay in the area, many would, and significantly improve the labour supply for Engineering and Technology companies in the process. These students would also provide the essential baseline revenue needed for Kent and Medway EDGE Hub to be sustainable in terms of its operation, allowing new activities in innovation, research and short courses / CPD to be developed at the same time, forming a rich and varied support offer for the businesses in key growth sectors of the economy, including a focus on small businesses.

The approach to developing the Kent and Medway EDGE Hub was presented and debated at a special Employer Breakfast events held in Canterbury on 6 June 2016 and 7th November 2016, and Chatham on 20th March 2017. The events (report attached) demonstrated widespread business support from key employers and organisations like the Engineering Employers' Federation for the project, and also provided valuable feedback on how the model can be refined to have the maximum impact for the local economy, local businesses and Kent and Medway residents. Details of the consultation event can be found in Annex 5 of this document.



Not progressing Kent and Medway EDGE Hub would mean that these challenges would remain unmet and opportunities missed. Kent and Medway EDGE Hub is the right practical response in terms of the detail of what it does and how, but also signals KMEP and SELEP's intent to really get to grips with these issues. Delaying or postponing action runs the risk of confidence in engineering and technology being undermined and growth and investment opportunities being missed.

A Response to Local Needs

The KM EDGE Hub aims to be a response to these specific local issues identified through research and consultation by building an expanded talent pool for industry at the same time as it opens up high-quality engineering and design career opportunities to people who would otherwise be under-represented. In addition, the local economy will be boosted by the additional capacity for supporting innovation, research and knowledge exchange in locally based companies, enabling them to grow and adapt to change. The EDGE Hub will create new university capability which will boost skills, expand the local (and more easily retained) talent pool and increase the cope for knowledge exchange with industry.

	<p>Innovative Curriculum</p> <p>The EDGE Hub's highly innovative approach to teaching and learning will both directly address the needs of industry and draw new groups into engineering, design and technology-related higher-level learning who would otherwise be lost to local companies and miss out on high value-added work and careers. Interesting aspects of this approach include:</p> <ul style="list-style-type: none"> • Offering engineering and technology-related Foundation years, which will open up the opportunity to people without the A'Level Physics or Maths that tends to be required in many other universities. • Adopting industry-engaged, team-based, project-focused teaching and learning strategies, which more closely reflect the world of work and value softer, interpersonal and creative skills alongside the 'hard science' which can dominate in other provision. • Being based on 'real world' engineering, design and technology requirements, whether commercially or socially oriented, through the EDGE Hub's satellite centres in industry locations and its extensive links to public service organisations, such as the health and social care sector, and the third sector. <p>The aim is to engender a genuine passion for engineering and design among a section of the learner population who would otherwise be lost, missing out on excellent work and career prospects in the process.</p> <p>Why Now?</p> <p>The enthusiastic endorsement that the project has achieved among businesses and the key local economy stakeholders is due in part to the pressing nature of the issues the project seeks to address. Skills shortages are a major challenge and appear to be worsening, especially in the higher level technical and professional skills which the EDGE Hub will provide. Feedback from business support organisations like Locate in Kent is that skills shortages are now a significant inhibitor of business growth. Concerns around talent acquisition are further being aggravated by uncertainty created by the eventual Brexit settlement.</p> <p>The timing of the initiative also reflects the opportunity presented by CCCU's new Masterplan and redevelopment of the former prison site at Canterbury. Now is the ideal time, given the development that is now starting, to add significant new HE capacity at marginal cost, given that it can dovetail with the larger scale plans for STEM and the new Arts building. The timing also aligns with the strategic purpose of the University, as it seeks to make its offer more relevant to the local economy and the employability needs of its students.</p>
<p>2.2. Description of project aims and SMART objectives</p>	<p><i>Please outline primary aims and objectives</i></p> <p><i>Please present the SMART (specific, measurable, achievable, realistic and time-bound) benefits and outcomes on the local economy that will arise following delivery of the scheme in terms of numbers of jobs, new homes, GVA).</i></p> <p>The aim of the project is to support the growth of key Engineering and Technology related sectors in Kent and Medway, by creating a step change in workforce education and skills through a new Kent and Medway EDGE Hub at CCCU.</p>

The project's objectives are:

1. To open a new state-of-the-art, 3588m² Kent and Medway EDGE Hub in Canterbury for learners and businesses by August 2020 (making use also of the University's Industry Liaison Lab at Discovery Park, the Institute of Medical Science at the Medway campus and other satellite facilities).
2. To create 56 direct new jobs by 2024 (67 by 2029). Given the nature of the project, these jobs will predominantly be highly skilled, highly productive and well paid, making a significant contribution to the growth of the economy.
3. Broaden CCCU's STEM offer by using the facility to establish new Higher and Degree Apprenticeships, Foundation, Undergraduate and Postgraduate Degrees in Engineering (Chemical, Mechanical, General and Medical), Product Design and Technology (Electronics, Games and Computer Science), with 1250 additional student enrolments by July 2024. 275 of these will be Degree Apprenticeships.
4. Establish an expanded PhD, Masters, Undergraduate research project programme that responds to local employer and business needs in the new subject areas, with 420 company projects completed by 2024.
5. Develop a new Engineering and Technology Innovation Service, that works with external partners to take new ideas to market, generating £45,000 in income related to Intellectual property by 2024 (a modest, but realistic target, taking into account the lead in time required and newness of the service).
6. Deliver new Engineering and Technology related research and consultancy worth £1.8m from industry and £825K in grants.
7. Develop an employer-responsive short course Continuing Professional Development (CPD) offer in the specialist areas which engages 375 learners by July 2024.
8. Deliver an extra 12,900 school student visits to experiential and innovative Engineering and Technology-themed careers and learning events at the new facilities by July 2024, raising awareness of local careers opportunities and building a passion for science in the region. This will build on and extend significantly the University's existing work with schools through STEM Learning, as well as good practice identified in research to scope the Kent and Medway EDGE Hub concept, such as Techniquist Glyndwr¹³.

CCCU believes these objectives are based on a realistic assessment of what it is actually feasible to deliver, and risks to the achievement of targets have been considered in some detail (see section 7). In particular, development of the EDGE Hub will start before the main Canterbury 'hub' facility is in place. The first staff appointments are being made now (August 2017) and existing engineering and chemical engineering expertise already available in the Faculty of Social and Applied Science will be used to develop the early offer (BSc Computer Science and BEng Chemical Engineering), building practice and reputation with industry in the process. This will include foundation courses that start building the 'pipeline' for degree courses by engaging non-traditional science learners, building on CCCU's excellent track record in widening participation.

¹³ <http://www.ttg.org.uk/>

2.3. Strategic fit

Please detail the SELEP and local objectives/strategies/work programmes/ services which the investment will support

A Strategic Intervention

Kent and Medway EDGE Hub is a strategic intervention to enable the local economy to grow in response to identified opportunities. The education opportunity is matched by the economic opportunity associated with the North Kent and Discovery Park Enterprise Zones, and the involvement of key local employers like Pfizer, Cummins, Wire Belt Co Ltd and Port of Dover, as well as a focus on the needs of small businesses.

The initiative also makes a strategic contribution to Kent and Medway's ongoing work to secure new inward investment. Locate in Kent have recently analysed inward investment performance and the prospects for future Foreign Direct Investment success (looking at their investment pipeline and UKTI forecasts). Their analysis identifies four key sectors that should be targeted for inward investment, three of which will be directly supported by Kent and Medway EDGE Hub, namely:

- Life Sciences, where the success to date of Discovery Park has been significant in recent years.
- Advanced Manufacturing
- Information and Communication Technology (ICT)

Kent and Medway EDGE Hub is precisely the kind of initiative that is required to support this work, given that Locate in Kent has identified that access to higher level skills are seen as a challenge by potential inward investors.

SELEP Perspective

Kent and Medway EDGE Hub addresses the education, research and innovation needs of key SELEP growth sectors, including:

- Life Sciences and Medical Technology
- Advanced Manufacturing
- The Low-carbon Economy

SELEP's *European Structural and Investment Fund Strategy (2016)* sets out the aim to increase productivity and rebalance employment to higher value activities, in a number of sectors, including Manufacturing and ICT, and to have a stronger knowledge economy.

Local Perspective

The project supports two of the three key objectives in KMEP's Kent and Medway Local Growth Deal¹⁴, namely:

- **Private sector employment:** the project is part of the labour market solution that will help to create sector growth.
- **Increased economic value:** the project directly supports the Plan's objective to increase Kent and Medway's levels of productivity and innovation, leading to an additional 11,000 knowledge economy jobs over six years. Kent and

¹⁴ <http://kmep.org.uk/growth-deal>

Medway EDGE Hub is a strategic initiative which will boost knowledge economy employment through direct and indirect jobs.

Investment in the region's skills infrastructure linked with the needs of key economic sectors is one of four key actions to deliver the Plan's objectives.

The project will help to address the combined challenges identified in the *Kent and Medway Economic Review (2013)* of the East Kent economy suffering in part from a combination of low productivity, social and economic deprivation, high levels of young people not in education, employment or training (NEET) and below-average (although improving) achievement in schools.

The more recent *KMEP Workforce Skills Evidence Base (2015)*, commissioned to inform the work of KMEP's Skills Commission and Guilds) found that attracting more young people into Engineering and Technology related career opportunities and the right kind of learning opportunities was a major challenge.

Kent and Medway EDGE Hub is fully supported by Canterbury District Council, as well as neighbouring local authorities. The project is part of the wider redevelopment of the former Canterbury Prison site, which is a key development in the District Local Plan (2014).

CCCU Perspective

Within CCCU, the KM EDGE Hub is seen as key element of the University's strategic intent to align its offer more with the needs of the local economy and improving the employability and career prospects of its learners, while also fulfilling its mission as an institution with a strong focus on widening participation. The new main campus Masterplan, of which the EDGE Hub and Building 2 which houses the Canterbury presence are key developments, reflects this strategic commitment. The University is also furthering this strategic aim by developing its presence and practice in industry locations, such as the Industry Liaison Lab at Discovery Park, Sandwich, the Institute of Medical Science in Medway, and other places being explored in locations such as north Kent. This represents the early development or prototyping of the approach to industry-based 'satellites' that are part of the EDGE Hub vision.

The strategic commitment to the EDGE Hub has been brought to the fore with an improved web presence on the CCCU 'landing page', with interviews with key senior staff and detail of the University's strategic commitment and vision to engineering and design: <https://www.canterbury.ac.uk/business-and-community/engineering-and-technology/engineering-and-technology.aspx> The first roles (Director of Engineering Curriculum and Engineering Outreach and Engagement Lead) have now been advertised through this page and a number of relevant channels. Interest so far has been very positive.

2.4. Summary outputs (3.2 will contain more detail)	Note: 1 FTE job = 30 hours per week or more; Permanent job = 12 months or more								
		17/18	18/19	19/20	20/21	21/22	22/23	23/24	Totals
	Jobs*	4.25	9.75	13	7.5	11.5	6	4	56
	M2 floorspace			3588					
	Additional Student Enrolments**		46	122	212	252	290	328	1250
	Additional Degree Apprentices***		20	40	45	50	60	60	275
	Employer Student Research Projects		5	15	40	90	135	135	420
	Innovation Service IP-related Income				£5,000	£10,000	£15,000	£15,000	£45,000
	Income from employer research & consultancy		£50K	£200K	£350K	£400K	£400K	£400K	£1.8m
	Short course and CPD Learners		20	30	50	75	100	100	375
Additional school student visits	300	600	1000	2000	3000	3000	3000	12,900	
* Total jobs reaches 67 in 2028/29. ** Includes Foundation Year, Degree Apprenticeship, BSc and MSc *** Also included in Additional Student Enrolments (above). 275 by 23/24									
2.5. Planning policy context, consents and permissions	Please include timeline where appropriate								
	<p>The former HM Prison Canterbury site upon which the development is sited has been designated for Class D1 Educational use in the draft Canterbury District Local Plan 2014 currently going through review.</p> <p>The University’s Estate Master Plan is for the site to include Building 2, which will house Kent and Medway EDGE Hub on the land behind the former prison, together with other science and health specialist laboratories, simulation suites, general purpose teaching and staff accommodation. Through the appointed architects and town planners BDP the University has now secured planning permission for the development to take place.</p> <p>The Environmental Impact Assessment has now been completed (Ref CA//16/00781).</p>								
2.6. Delivery constraints	<p>High level constraints or other factored which may present a material risk to delivery</p> <p>Project risks (and appropriate mitigation) are assessed in section 7 of this Outline Business Case. These include the risk of not securing sufficient political support and possible delays due to technical constraints or planning issues. We also consider the challenges of developing the EDGE Hub as capacity is being developed, but have adopted this approach (as opposed to ‘build first’) because it is important to begin to develop a track record with industry and students, especially in locations close to industry, which will become EDGE Hub ‘satellites’ over time. Also considered, is the risk of it not being possible to recruit the staff required, given the current lack of reputation in EDGE Hub subjects.</p>								

<p>2.7. Scheme dependencies</p>	<p><i>Please provide details of any related or dependent activities that if not resolved to a satisfactory conclusion would mean that the full economic benefits of the scheme would not be realised.</i></p> <p>Planning permission for the development has now been secured, and the project has the full support of Canterbury District Council. CCCU has now confirmed in writing to KCC that it is able to meet its commitment to fund the project, using its own resources, borrowing and capital funding from HEFCE.</p> <p>This Business Case sets out CCCU's commitment to developing the EDGE Hub's physical infrastructure at the same time as staff resources, curriculum and other services are put in place. In one sense, this increases the risk of the project (which is explored in section 7 of this document), given that it is more complex to achieve such a range of tasks at once, because, for example, teething problems might be more likely to affect quality from the learner or employer perspective. However, consultation has identified a strong appetite for the project among local business and stakeholders, while economic and business needs, such as skills shortages are known to be acute and worsening. More importantly, the eventual success of the project will depend on its ability to build a positive track record with industry and the right services, operating practices and culture that underpin this.</p> <p>It is therefore considered essential that work starts immediately before all the building work is completed. This will enable the operating practice and curriculum to develop and case studies of good practice to be built up, most importantly in an industry context through pilot 'satellite' centres, such as the Industry Liaison Lab. This will also start to engage existing STEM-related departments in the organisational change project that the EDGE Hub represents, as initial curriculum offers in, for example, chemical engineering and design are developed using the skills and knowledge of engineers and chemists already in teams like Computing and Chemistry.</p>
<p>2.8. Scope of scheme and scalability</p>	<p><i>Please summarise what the scope of the scheme is. Provide details of whether there is the potential to reduce the projects costs but still achieve the desired outcomes – or increase projects costs for much improved outcomes.</i></p> <p>The scope of the scheme is as specified elsewhere in this document. A reduction in project costs would result in a more phased development of Building 2 at the former prison site, which would increase costs overall and impact on the University's ability to secure loan finance and develop synergies with planned developments for Life Sciences. This, in turn, would reduce the overall economic impact and reduce the effectiveness of the Hub in engaging employers and young people.</p> <p>So the project could proceed with less LGF funding than is requested, albeit with longer time scales, reduced outputs and outcomes, and opportunities for synergy with the expansion and re-location of other relevant Schools (such as Life Sciences) diminished.</p>
<p>2.9. Options if funding is not secured</p>	<p><i>Please summarise what would happen if the funding for the scheme was not secured - would an alternative solution be implemented and if so please identify how it differs from the proposed scheme and how it would be funded.</i></p> <p><i>Is doing nothing an option?</i></p> <p>If LGF funding is not secured, the University will endeavour to identify and secure other sources of grant funding to meet the gap between what is required and what the University itself can fund. This is likely to be challenging in the current funding</p>

	<p>climate and may take significant time to achieve, missing the opportunity to build on the active support of business which has now been secured, the University's own commitment to part-fund the project. It would also place at risk the funds secured from HEFCE who requested confirmation of SELEP support for the project. A smaller scale project could be considered using the approach detailed above in 2.8, but would deliver less strategic impact and would be unable to fully develop the innovative CDIO based curriculum being proposed.</p>
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3. ECONOMIC CASE

The economic case determines whether the scheme demonstrates value for money. It presents evidence on the impact of the scheme on the economy as well as its environmental, social and spatial impacts.

For projects requesting over £5m of SELEP directed funding, a separate economic appraisal should be undertaken and supplied alongside this application form. This should provide:

- *A calculation of Benefit Cost Ratio according to Government guidelines*
- *Proper inclusion of optimism bias and contingency linked to a quantified risk assessment*
- *Inclusion of deadweight, leakages, displacement and multipliers*
- *An appraisal spreadsheet with clearly identified, justified and sensitivity-tested assumptions and costs (note: alignment with ITE expectation down the line?)*

3.1. Impact Assessment

Please provide a description of the impact assessment of the scheme with some narrative as to why other options have been discounted. This should include a list of significant positive and negative impacts and a short description of the modelling approach used to forecast the impact of the scheme and the checks that have been undertaken to ensure that the approach taken is fit for purpose.

Impact Assessment Description

This impact assessment is based on:

- An extensive programme of research and consultation that sets out the anticipated demand for Kent and Medway EDGE Hub services, based on the baseline conditions in relation to the local economy and local and regional skills provision.
- A quantitative assessment of the direct capital costs of the scheme, undertaken internally by CCCU in conjunction with the architects Sweett.
- A quantitative assessment of the direct revenue costs based on market analysis by Cushman and Wakefield and Emergent Research, which was conducted as part of the project's feasibility stage.
- An assessment of the Present Value Costs of the project, based on the period 2017/18 to 2035/36, applying a 3.5% discount rate, in line with HM Treasury Green Book Guidance.
- The incorporation of a 28% optimism bias applied to the Present Value of the Capital component of the scheme, including 4% for works duration and 24% for Capital Expenditure, in accordance with Green Book Supplementary Guidance on the upper limits for optimism bias for standard buildings.
- A quantitative assessment of the direct benefits based on forecast student numbers and other income based on market analysis by Cushman and Wakefield and Emergent Research, which was conducted as part of the project's feasibility stage.
- An assessment of the Present Value benefits, based on a 3.5% annual discount rate for the period 2017/18 to 2035/36.
- An assessment of an Initial Cost-Benefit Ratio, based on the Present Value Costs and Present Value Benefits.
- An assessment of other quantified benefits, including:
 - The indirect and induced impacts of the EDGE Hub on the Kent & Medway economy, taking into account leakage, displacement and local multipliers, drawing on the Economic Impact of Canterbury Christchurch University, undertaken by Viewforth Consulting Ltd in August 2015.
 - The estimated economic and employment spending in Kent & Medway generated by additional student spending, taking into account leakage, displacement and local multipliers, drawing on the Economic Impact of Canterbury Christchurch University, undertaken by Viewforth Consulting Ltd in August 2015.

- The estimated additional spending by EDGE Hub graduates in the Kent & Medway economy, based on an estimate of earnings uplift of graduates, drawing on evidence in “The Impact of University Degrees on the Lifecycle of Earnings, BIS Research Paper No 112; August 2013”
- An assessment of the Net Present Public Value of the project, incorporating the ‘other quantified benefits’ to the estimates.
- An assessment of the Adjusted Benefit Cost-Ratio, incorporating the ‘other quantified benefits’ to the estimates.
- A sensitivity analysis, based on high, medium and low scenarios, that considers amendments to the preferred option based on lower levels of staff recruitment and higher levels of student attrition.
- A consideration of non-quantifiable impacts of the project.
- A consideration of an alternative option to the proposed development the Benefit-Cost ratio and Present Value associated with this.

Options that Have Been Discounted

(i) Do Nothing

This option would mean that the former Canterbury Prison site on North Holmes Road would remain undeveloped and an opportunity to develop the site for education uses would be lost. The Do Nothing option would stall Canterbury City Council’s ambitions for Canterbury to become a leading ‘knowledge city’. Although the wider strategy of developing the university’s curriculum offer through organic growth would continue, the Do Nothing option would undermine the City Council’s stated strategic aim of supporting the development of the area’s universities and colleges to diversify the local economy and to support the development of knowledge-based businesses. Kent & Medway would continue to lose many of its STEM undergraduates to other areas of the country, undermining attempts to improve the supply of skilled, technical labour to local science and engineering businesses.

The ‘Do Nothing’ option is considered to be the reference case. It assumes that there will be no costs and no benefits and that the Present Public Value of this option would be £0 over the period 2017/18 to 2035/36.

(ii) Alternative Option (‘Do Minimum’) - Concentrate Kent and Medway EDGE Hub Solely in Canterbury

The Canterbury Hub is the main focus of the development because there is an opportunity to construct bespoke facilities in CCCU’s core campus. Canterbury is a central ‘hub’ location in the sub-region and, hence, it is likely to attract the most students from across the sub-region (combined with students from further afield through its superior student experience). It is therefore, likely to have the greatest economic impact on East Kent. However, only having activity on this site would mean missing out on opportunities to develop more responsive employer focused services at Hub satellites, such as at Discovery Park (Dover) and at the Institute of Medical Sciences (Medway) in other parts of the sub-region.

This option is assessed as the Alternative Option to the preferred option. The capital costs have been estimated at 66% of the costs of the preferred option; the Present Value revenue costs are estimated to be 66% of the Present Value revenue costs of the Preferred Option, based on reduced staff costs. The Present Value benefits are estimated to be 50% of the Present Value benefits of the Preferred Option Present Value Benefits, based on reduced student enrolments. The other quantifiable benefits are estimated to be 50% of the other quantifiable benefits of the preferred option. The Net Present Public Value of the Alternative (Do Minimum) Option (based on the medium level scenario) is £51.5m, the

initial benefit-cost ratio is assessed at 0.87 and the adjusted benefit-cost ratio is assessed at 1.72. A summary of the impacts of the Alternative option and how they compare with the Preferred option is shown in the Appraisal Summary Table (AST) at the end of the Economic Case section of this business case.

Other Options

Three further options have been considered and dismissed. However, quantitative impact assessment has not been undertaken for any of these, as they were not considered to be strategically or operationally viable.

Develop the Broadstairs Campus

An alternative option would be to develop Kent and Medway EDGE Hub at the University's Broadstairs campus, but location is key to the success of the project. A background feasibility study undertaken on behalf of CCCU by Cushman and Wakefield¹⁵ considered this option. The report concluded that "the Broadstairs buildings are unsuitable to any significant alteration should heavy equipment or specialised facilities be required (this is especially the case with engineering and laboratories)". Furthermore, the report's authors concluded that the peripheral location and restricted access from across the sub-region mean that locating Kent and Medway EDGE Hub at Broadstairs would limit its appeal to business. Given that business responsiveness is key, the Broadstairs option has been discounted.

Develop a Partnership STEM Learning Programme with the University of Kent

CCCU explored the option of developing a joint STEM related learning programme with the University of Kent, making use of existing resources and expertise. However, these discussions concluded that this was not a viable option, mainly because the University of Kent and CCCU are very different institutions, serving different needs. The University of Kent is a well-established university with an international reputation and a strong existing research base (albeit not in the areas that this project is seeking to address) which tends to recruit students from across the UK and EU with high entry qualifications. By contrast, CCCU is, historically, a locally embedded university that has very strong links with its local business community, and has traditionally had a strong focus on widening participation in HE.

'Build First'

This Business Case focuses on the preferred option of developing the EDGE Hub's physical infrastructure at the same time as staff resources, curriculum and other services are put in place. In one sense, this increases the risk of the project (which is explored in section 7 of this document), given that it is more complex to achieve such a range of tasks at once, because, for example, teething problems might be more likely to affect quality from the learner or employer perspective. However, consultation has identified a strong appetite for the project among local business and stakeholders, while economic and business needs, such as skills shortages are known to be acute and worsening. More importantly, the eventual success of the project will depend on its ability to build a positive track record with industry and the right services, operating practices and culture that underpin this.

It is therefore considered essential that work starts immediately before all the building work is completed. This will enable the operating practice and curriculum to develop and case studies of good practice to be built up, most importantly in an industry context through pilot 'satellite' centres, such as the Industry Liaison Lab. This will also start to engage existing STEM-related departments in the organisational change project that the EDGE Hub represents, as initial curriculum offers in, for example, chemical engineering and design are developed using the skills and knowledge of engineers and chemists already in

teams like Computing and Chemistry. For these reasons 'Build First' has not been subjected to a detailed analysis as an option.

Significant Positive Impacts of the Project

Skills

By 2025/26 Kent and Medway EDGE Hub will support over 1,000 full-time undergraduates and graduates each year in STEM related learning programmes, such as Product Design, Mechanical Engineering, Chemical Engineering, Games, Computer Science and Medical Technologies.

In addition to this, Kent and Medway EDGE Hub will pursue an active programme of Continuing Professional Development activity with local STEM businesses and it will work closely with schools and colleges in East Kent to promote STEM related learning and to develop clear learning pathways from Primary school to postgraduate study.

Employment

The direct employment impacts are likely to be moderate. Kent and Medway EDGE Hub will employ 67 gross full-time jobs by 2028/29. Most of these jobs will be high skilled, including Professors, Principal and Senior Lecturers and Technical Managers.

There is much greater scope for improving the quality of employment in the wider economy for a number of reasons, including:

1: This project has been designed specifically in response to the skills deficits that have been identified by Kent & Medway businesses. This means that Kent & Medway's engineering and life sciences businesses should, over the longer term, be better able to recruit locally trained people, rather than having to rely on labour supply from outside Kent & Medway. By 2028/29 over a thousand new graduates with STEM related skills will be entering the labour market. Whilst not all of these will remain in Kent & Medway, the strong local employer focus of the EDGE Hub means that there are expected to be significant higher skilled employment impacts over the long term.

2: CCCU activity already has a significant impact on the local economy, The Economic Impact of CCCU undertaken in 2015 by Viewforth Consulting Ltd found that every 1.0 FTE direct jobs created at the university led to a further 0.78 jobs in the wider economy. On this basis, the EDGE Hub could be expected to create a further 52 jobs in the wider economy by 2028/29.

3: Local student spending will also create additional jobs in the wider economy. The Economic Impact of CCCU undertaken by Viewforth Consulting in 2015 found that £213m of student spending created 1,652 jobs in Thanet, Medway and Canterbury in 2012/13, with £128,892 of student spending resulting in one additional FTE job in the local economy. On this basis, additional student spending could be expected to create a further 20 jobs in the wider economy by 2028/29.

4: It is difficult to estimate the catalytic employment effects of initiatives like the Kent & Medway EDGE Hub. However, in combination with effective place promotion with partners, the facility should become a key component of Kent & Medway's inward investment strategy, delivering greater potential to attract national and international business relocations, and therefore jobs, to the county. The Strategic Case details how the EDGE Hub aligns closely with the focus of Locate in Kent, the agency which supports inward investment and business growth.

Economy and Business

The involvement of local industry in the design and development of this project suggests that it is likely to deliver direct benefits to local businesses over the longer term by providing a better supply of skilled labour and more responsive learning provision. Our quantitative economic impact assessment suggests that Kent and Medway EDGE Hub has a net present public value of £137.5m over the period 2017/18-2035/36, direct benefits and other quantified benefits including:

- Indirect and induced impacts on the Kent & Medway economy
- Impacts of additional student spending in the Kent & Medway economy
- Additional spending associated with the earnings premium of EDGE Hub graduates.

Other beneficial impacts of Kent and Medway EDGE Hub include providing CPD on behalf of local STEM businesses, providing research and consultancy to support business growth, attracting research grants and IP income as a result of Kent and Medway EDGE Hub activity and ensuring that 3,588 m2 of floorspace is developed for community and commercial purposes.

It is difficult to quantify the extent to which the Hub will help safeguard local jobs, but it not unreasonable to suggest that increasing the supply of higher level technical skills will make a significant contribution to the competitiveness of local STEM businesses by improving productivity and fostering a culture of innovation.

As has already been stated, there are also potential catalytic effects associated with the Kent & Medway Hub's contribution to the attractiveness of Kent & Medway as a location of choice for inward investors. Discussions with Locate in Kent have confirmed that the supply of skills is a key determinant of inward investment decisions. We would expect the Hub to become a key feature of the Kent & Medway investment prospectus, helping to attract new businesses and employment to the local economy, and support the growth of existing businesses.

Significant Negative Impacts of the Project

All projects have the potential to have short-term adverse impacts on local businesses during the construction and operational phase. Given this, CCCU and its partners will develop a Statement of Community Involvement to inform its planning application, which will ensure that any adverse risks associated with the development are mitigated by actions agreed with the local business community.

Transport

The development of the city centre site and its potential to provide learning for over 1,000 students each year by 2025/26 may have some impacts on the local transport infrastructure. These will be addressed as part of the response to the Environmental Impact Assessment and measures to minimise and adverse transport impacts will be taken, based on the recommendations in the assessment.

Housing

The addition of over 1,000 new students in Canterbury City Centre has the potential to have adverse impacts on housing provision within Canterbury. According the Canterbury Local Plan "concentrations of students affect communities and affect the housing market as there is only enough purpose built student accommodation for 21% of the student population". This results in many family-sized homes being converted into shared student houses. This means that there is a local priority to increase the amount of purpose-built student accommodation to release family-sized homes for occupation by families.

CCCU is in on-going dialogue with Canterbury City Council to ensure that any projected growth in student numbers is supported by an active approach to providing purpose-built student accommodation, in line with Planning Policy HD7.

Summary of Significant Impacts

Positive impacts	Negative impacts
67 Direct FTE Jobs by 2028/29	Higher volume of traffic given higher student numbers.
52 Indirect and Induced Jobs by 2028/29	Further pressure on local housing stock due increased student numbers.
20 new local jobs associated with additional student spending	Displacement of students from other CCCU courses and those of other local universities.
£137,526,000 Net Present Public Value over the period 2017/18-2035/36	Extra pressure on local health services due to increased student numbers.
1106 students* enrolled on courses each year by 2027/28	
Significantly enhanced university research and teaching capacity in commercially relevant academic disciplines	
Enhanced local graduate skills base, including over 1,000 STEM students graduating by 2028/29	
Strengthened university-school partnerships, providing high quality STEM related learning activities.	

(* This refers the number of students on programme in the given year. This Business Case also refers to the headline output target for learners for LGF purposes, which is 1250 enrolled learners by the end of 2023/24, representing the total accumulated over the period 2018/19 to 2023/24.)

Modelling the Impact of the Scheme

The assessment of the impacts of the scheme is based on the following estimates over the period 2017/18 to 2035/36:

- Direct Benefits
- Direct Costs
- Other Quantifiable Benefits.

The impacts of the Preferred Option have been assessed in relation to three scenarios:

- High, where staff and student numbers are 1.4 times the medium scenario
- Medium, which has been used as the base scenario; and
- Low, where student numbers are 0.7 times and staff numbers are 0.8 times the medium scenario numbers.

Direct Benefits

Student Fee Income

The Direct Benefits are based on the expected number of students enrolled at the EDGE Hub and anticipated income from research activities. Student income is based on the following annual fee income at 2017/18:

- Undergraduate Foundation and Degree Apprenticeship Programmes £5,733
- Undergraduate Programmes £8,603
- Postgraduate Taught Programmes £4,697

- PhD Programmes

£3,901

In addition, £1,000 per student has been added for undergraduates, to account for the HEFCE High Cost allowance that is paid to universities for undergraduates. A 2.5% annual inflation assumption has been applied for 2017/18 and 2018/19, thereafter a 2.0% annual inflation allowance has been applied.

Estimates of attrition in student numbers are based on historical trends and they assume 10% attrition in year 1, 8% attrition in year 2 and 7% attrition annually, thereafter.

Research Income and CPD Income

Research income and CPD income are based on conservative estimates derived from in other, related subject areas, such as Life Sciences.

Total Direct Benefits

Total Direct Benefits have been estimated by adding the estimated income from student fees, income from HEFCE, research and CPD income.

Direct Costs

Capital Costs

In each of the scenarios of the preferred option, the capital costs remain the same and are spread over the period 2017/18 to 2021/22. The costs include the following components:

- Repayments to KCC / Project Management £120,000
- Construction Costs £9,906,000
- Professional Fees £1,486,000
- Construction Equipment Costs £991,000
- Planning and Related Fees £310,000
- Engineering and Technology Equipment £1,829,000
- VAT £3,480,000
- Contingency and Inflation Adjustment £2,380,000.

The contingency/inflation adjustment represents 11.6% of the total project costs (including VAT).

An Optimism bias estimate of 28% (including 4% for works duration and 24% for capital expenditure has been applied to the Present Value capital cost estimates (see below).

Revenue Costs

Revenue costs include staff costs, school consumables, bursaries, equipment costs and research costs. Academic staff numbers are based on historical CCCU staff:student ratios. Staff costs for different levels of staff are as follows:

- Head of School £102,900
- Professor £87,591
- Principal Lecturers £67,000
- Senior Lecturers £57,000
- Lecturers £46,143
- University Instructors £34,320
- Technical Managers £46,500
- Senior Technicians £34,400
- Technicians £24,000
- School Admin Manager £38,800
- Senior Administrators £27,000

- Administrators £24,000

A 3.5% annual allowance for wage inflation has been included in the staff costs for the period to 2035/36.

Other Quantified Benefits

The other quantified benefits have been identified as:

- Indirect and induced economic and employment impacts as a result of EDGE Hub activity
- Additional economic and employment impacts, as a result of student spending by new students in Kent & Medway
- Additional economic impacts, as a result of increases in earnings of graduates from EDGE Hub learning programmes.

Indirect and Induced Economic and Employment Impacts

The indirect and induced impacts have been based on applying a 'mid range multiplier' of (1.63) to the CCCU outputs. The Economic Impact of Canterbury Christchurch University, undertaken by Viewforth Consulting Ltd in 2015, found that £121.9m of output from the university produced an additional £111.8m to the Canterbury, Thanet and Medway economies. This means that for every £1 of output, the university generated a further £0.92 in the Kent & Medway economy. However, a study into the impacts of the University of Gloucestershire by Biggar Economics in 2015 used a 1.33 economic multiplier at county level. A 1.63 multiplier has been used as this is a midway point between the high and low-level multipliers. We reviewed a number of options in choosing an appropriate economic multiplier, and feel that this figure is conservative and most closely reflects local circumstances.

The Economic Impact of CCCU also found that every direct FTE job at the university resulted in a further 0.78 jobs in Canterbury, Thanet and Medway. This has, therefore been used to estimate the indirect and induced employment impacts of the EDGE Hub on the local economy.

Additional Student Spending Economic and Employment Impacts

The Economic Impact of CCCU report found that annual spending per student in 2012/13 was £11,803. A 2% annual inflation allowance has been applied to this to the period 2035/36. Gross student spending has been estimated by multiplying the annual student spending figure by the number of students enrolled at CCCU in each year. The CCCU economic impact report found that of the £562.7m direct, indirect, induced and student spending impacts of the university, £433.9m (77%) of accrued to Canterbury, Thanet and Medway. On this basis, 23% of student spending is assumed to leak out of the Kent & Medway area.

There are no clear local estimates about the level of displacement, but these are assumed to be high. The EDGE Hub is expected to have 1,106 students on roll by 2026/27. These are likely to include the following:

- a) Students who would have studied in Kent & Medway anyway on different, non-STEM, programmes
- b) Students who would have studied on a STEM programme outside Kent & Medway
- c) Students who would have studied on a non-STEM programme outside Kent & Medway

- d) Students who would have studied on an alternative STEM programme in another part of Kent & Medway
- e) Students who would not have studied a higher education programme either inside or outside Kent & Medway in the absence of the EDGE Hub.

The additionality, in terms of student spending is, therefore, most likely to come from b) and c). It has been assumed that students who would not have studied on a higher education programme would have been working and, therefore, contributing to the Kent & Medway economy in some other way. Given that the EDGE Hub is primarily aimed at addressing local skills needs, it seems reasonable to assume that for the purposes of additional student spending, displacement levels are likely to be high. We have, therefore, estimated them at 75%.

There are likely to be additional employment impacts associated with local student spending. The Economic Impact of CCCU study found that total spending by CCCU students in 2012/13 was £213m and that this contributed to 1,653 jobs in Medway, Thanet and Canterbury. This works out at £128,892 of student spending to support one additional Kent & Medway job. A 2% inflation allowance has been applied to this figure each year for the period until 2035/36 and the number of jobs has been estimated by dividing the total additional student spending by that figure for each year. For example, in 2018/19, Net Student Spending was estimated at £106,045, so this would have generated one additional job.

Additional Graduate Spending Impacts

The additional skills that graduates from the EDGE Hub will bring to the local economy could also reasonably be expected to have a beneficial impact on the local economy. New graduates can be expected to start to enter the economy three years after they enrol on an EDGE Hub learning programme. This means that the first newly qualified graduates will enter the labour market in 2021/22. According to a study undertaken on behalf of the Department for Business, Innovation and Skills (BIS) in 2013¹⁶, male graduates can expect to earn 22% more per hour than non-graduates with 2 'A' levels. We have assumed the latter to be earning mean annual earnings for Kent & Medway (£31,340), which would make a 22% premium +£6,895 gross and net £4,688. This 'premium' has been increased at a rate of 3% each year until 2035/36. We have assumed a three-year attributable persistence of benefits, so the premium for students starting in work in 2021/22 only counted until 2023/24.

Much of the additional income will not be retained in Kent & Medway. Firstly, it is reasonable to expect that some graduates will find employment outside Kent & Medway, secondly some of the graduates from the EDGE Hub would have graduated from another learning programme anyway and thirdly only a proportion of the additional income is likely to be spent within Kent & Medway itself. We have, therefore, assumed leakage to be 75% and displacement to be 50%, although it is acknowledged that these are broad estimates that lack a specific local evidence base.

We feel that these are conservative assumptions, given that CCCU serves a predominantly local population. The vast majority of students come from London and the Southeast. Just over half come from Kent and Medway and nearly a third from East Kent. Similarly, a significant proportion of CCCU graduates find work locally, over a quarter find work within East Kent and 44% across Kent & Medway as a whole, as shown in the table below.

¹⁶ The Impact of University Degrees on the Lifecycle of Earnings, BIS Research Paper No 112; August 2013

Geographical Origins and Destinations of CCCU Students

	Origins (% all students)	Destinations (% those in employment)
East Kent	31	28
Kent & Medway	51	44
SELEP area	61	50
South East region	63	53
Greater London	17	23

Source: CCCU from DLHE 14/15. UK Domiciled First Degree students

Assessing Net Present Public Value and Benefit Cost Ratios

Net Present Public Value has been estimated by applying an annual 3.5% discount rate, starting in 2017/18 and concluding in 2035/36 to the following estimates:

- Direct Benefits
- Direct Revenue Costs
- Direct Capital Costs
- Other Quantifiable Benefits.

An Optimism Bias allowance of 28% has been applied to the Present Value Direct Capital Costs.

The Net Present Value has been estimated by subtracting the Present Value Costs from the Present Value Benefits; an initial Benefit Cost Ratio has been produced by dividing the Present Value Benefits by the Present Value Costs and an Adjusted Benefit Cost Ratio has been produced by adding the Other Quantified Benefits to the Present Value Benefits and dividing these by the Present Value Costs.

Sensitivity Analysis

A sensitivity analysis has been undertaken by assessing the direct costs and benefits and other quantified benefits in relation to a lower impact scenario. In this scenario, there is a lower level of staff recruitment (reaching 52 directly employed staff, instead of 67 staff by 2028/29 (medium scenario) and student numbers reach 761 students instead of 1,106 by 2026/27 in the medium scenario).

The Medium Scenario is the basis of the assessment. However, a High-Level scenario has also been produced, which assesses the impacts, based on a higher than expected number of students enrolling on the course. Under the higher-level scenario, student recruitment reaches 1,582 by 26/27 and the number of staff employed at the EDGE Hub reaches 91 in the same year.

3.2. Outputs

Identify jobs, floor space and housing starts connected to the intervention, quantify the outputs in tabular format and provide a short narrative for each theme (i.e. jobs/homes/floorspace) explaining how the project will support the number identified. Please describe the methodology used for calculating jobs and homes numbers.

Unit	Metric	Narrative
Floorspace	3,588 sq.m	The floorspace has been calculated by CCCU's architects and building surveyors, based on detailed designs of laboratory, teaching and office space at the site.
Direct Jobs	67 by 2028/29	<p>The number of direct jobs has been calculated by CCCU's strategic planning department, based on the estimated number of students and the range of activity that is proposed. In 2017/18 there will be 4.25 staff, including 3.25 academic staff. By 2023/24 there is expected to be 56 staff, including 40 academic staff; and by 2028/29 there is expected to be 67 staff, including:</p> <ul style="list-style-type: none"> • 1 x Head of School • 2 x Professor • 6 x Principal Lecturers • 17 x Senior Lecturers • 13 x Lecturers • 12 x University Instructors • 1 x Technical Manager • 4 x Senior Technicians • 4 x Technicians • 1 x School Administration Manager • 2 x Senior Administrators • 4 x Administrators
Indirect and Induced Jobs	52 by 2028/29	Every 1.0 FTE direct job at CCCU results in a further 0.78 FTE jobs in the Kent & Medway economy, as a result of indirect and induced effects, according to The Economic Impact of CCCU produced by Viewforth Consulting in 2015. On this, basis the 67 direct jobs at the EDGE Hub, should result in a further 52 jobs in the wider Kent & Medway economy.
Jobs Associated with Student Spending	20 by 2028/29	According to the Economic Impact of CCCU, it took £128,892 of student spending to support one FTE job in Kent & Medway. The additional net spending of students in the local economy is estimated at £2.6m in 2029/30. On this basis, and applying a 2% annual inflation increase, 20 additional local jobs would be supported by EDGE Hub students by 2028/29
Learners	1,106 per year by 2028/29	<p>There are expected to be 1,106 students enrolled on EDGE Hub learning programmes by 2027/28. The pattern of enrolments is shown below:</p> <ul style="list-style-type: none"> • 2018/19: 46 • 2019/20: 169 • 2020/21: 350 • 2021/22: 601 • 2022/23: 738 • 2023/24: 882 • 2025/26: 950 • 2026/27: 1060 • 2027/28: 1101 • 2028/29: 1106
Young People Engaged in STEM Activities	12,900 by 2023/24	<ul style="list-style-type: none"> • 2018/19: 600 • 2019/20: 1000 • 2020/21: 2000 • 2021/22: 3000 • 2022/23: 3000 • 2023/24: 3000

Graduate Work placements	420 by 2023/24	This assumes that half of all final year students at the Kent and Medway EDGE Hub will undertake a work placement: <ul style="list-style-type: none"> • 2017/18: 0 • 2018/19: 5 • 2019/20: 15 • 2020/21: 40 • 2021/22: 90 • 2022/23: 135 • 2023/24: 135
CPD Course Completions	375 by 2023/24	<ul style="list-style-type: none"> • 2018/19: 20 • 2019/20: 30 • 2020/21: 50 • 2021/22: 75 • 2022/23: 100 • 2023/24: 100

Summary of Economic Impacts

The table below provides a summary of the economic impacts of the preferred option over the period 2017/18 to 2035/36, based on the High, Medium and Low scenarios.

		High	Medium	Low
A	Present Value Benefits	£176,973,893	£123,007,340	£93,496,124
<i>B</i>	<i>Present Value Revenue Costs</i>	<i>£111,085,301</i>	<i>£82,708,838</i>	<i>£69,203,522</i>
<i>C</i>	<i>Present Value Capital Costs</i>	<i>£19,482,561</i>	<i>£19,482,561</i>	<i>£19,482,561</i>
<i>D</i>	<i>Optimism Bias – Capital Costs (+28%)</i>	<i>£5,455,117</i>	<i>£5,455,117</i>	<i>£5,455,117</i>
E	Present Value Costs – Total - (B+C+D)	£136,022,979	£107,646,516	£94,141,200
F	Present Value of Other Quantified Benefits	£178,499,945	£122,165,141	£91,519,369
G	Net Present Public Value - (A+B)-E	£219,450,859	£137,525,965	£90,874,294
H	Initial Benefit Cost Ratio - A/E	1.30	1.14	0.99
I	Adjusted Benefit Cost Ratio - (A+F)/E	2.61	2.28	1.97
J	Direct Jobs	91 (by 2024/25)	67 (by 2028/29)	52 (by 2028/29)
K	Indirect, Induced and Student Spend Jobs	99 (by 2024/25)	72 (by 2028/29)	54 by (2028/29)
L	Total Jobs - J+K	190 (by 2024/25)	139 (by 2028/29)	106 (by 2028/29)

The assessment of the impacts of the Preferred Option are based on the Medium Scenario. The Low Level impacts represent the sensitivity analysis, where there are only 52 FTE staff

	<p>instead of 67 and where the number of enrolled students peaks at 761 instead of 1106. In this instance, the Initial and the Adjusted Cost Benefit ratios are below the Medium scenario, but, once the Present Value of Other Quantified benefits is included, the Value for Money category would still be at the high end of Acceptable. With the additional non-monetised benefits, the VfM category could be switched to 'high.</p>
<p>3.3. Wider benefits</p>	<p><i>Please describe below any wider economic benefits that the scheme will achieved that will help to contribute to the overall value for money of the scheme.</i></p> <p>The wider benefits of the scheme are set out in the strategic objectives in this application. The aim is to provide a catalyst to help transform Kent and Medway into a knowledge intensive economy that is attractive to high value added investors and, which has a strong supply of higher-level technical skills in established and emerging industrial sectors. Wider benefits, therefore, include:</p> <ul style="list-style-type: none"> • Increasing and broadening the capacity of the Higher Education sector in Kent and Medway and of CCCU, in particular. • Making East Kent a more attractive location for inward investors, by having a stronger STEM skills base; • Strengthening the competitiveness of Kent's STEM related businesses, thereby safeguarding existing jobs; • Improving education-business dialogue, higher education responsiveness, and positioning the Higher Education sector as a key driver of local economic growth, in line with recommendations in the Witty Review (2013)¹⁷; • Developing a greater diversity of vocational learning pathways to higher level, in line with recommendations in The Wolf Report;¹⁸ • Building on Canterbury's excellent reputation as a centre of learning, identified in the Canterbury City (Draft) Local Plan; • Supporting the City Council's aims to diversify the economy, so that it has a more robust knowledge intensive profile, set out in Canterbury City Council's Draft Local Plan; and • Building on the activities of STEMNET to promote STEM related learning and career opportunities to young people in Kent's primary and secondary schools, supporting the Government's aim to promote the public's understanding of science and engineering, originally set out in the HM Treasury/BIS publication, <i>Our Plan for Growth – Science & Innovation</i> (2014); and • Promoting equality and social mobility by providing local people with the skills to improve their longer-term career prospects. <p>Benefits to the Exchequer</p> <p>This is primarily a project that is intended to have distributional impacts, focusing on strengthening the skills base within Kent & Medway, so that it can develop and diversify its economic base in line with objectives in the Industrial Strategy Green Paper.</p> <p>The monetised benefits that are set out in this assessment have, therefore, focused primarily on those that accrue to Kent & Medway. There is likely to be only minimal monetised benefits to the Exchequer in terms of additional student spending, as this is likely to be mainly displaced from other parts of the UK. Whilst EDGE Hub activity is also likely to displace some</p>

¹⁷ Encouraging a British Invention Revolution: Sir Andrew Whitty's Review of Universities and Growth (2013)

¹⁸ The Wolf Report: Review of Vocational Education (2011)

existing activity nationally, the strong focus of the Hub on local business needs suggests that it is responding to identified need that is not currently being served.

The main benefits to the Exchequer are likely to be delivered over the long term in terms of the contribution that the EDGE Hub makes towards improving the productivity and value added of Kent & Medway's technology businesses. No attempt has been made to quantify this, but it is reasonable to expect that the increase in the supply of skills will lead to better earnings and more profitable businesses, which will increase Corporation Tax, Income Tax and VAT contributions to the Treasury.

GVA per worker in STEM intensive sectors of the economy tends to much greater than in non-STEM related sectors, as illustrated in the table below:

Sector	GVA per Worker	Sector	GVA per Worker
Mining & Quarrying	£649,934	Transport, Storage & Distribution	£46,993
Pharmaceuticals	£263,763	Construction	£45,030
Real Estate	£235,230	Business Services	£43,637
Chemicals	£142,235	Public Admin & Defence	£41,061
Utilities	£115,480	Shipbuilding	£38,938
Financial Services	£115,439	Other Manufacturing	£37,184
Communications	£101,436	Research and Development	£34,320
Food, Beverages & Tobacco	£69,602	Education	£32,945
ICT & Precision Instruments	£60,819	Administrative & Support Services	£26,936
Machinery, Electrical & Transport Equipment	£55,214	Community, Social and Personal services	£26,910
Digital, Creative & Information Services	£52,658	Health & Social Care	£26,175
Automotive	£52,293	Retail	£23,132
Aerospace	£50,089	Agriculture, Forestry & Fishing	£22,303
Metal, plastic and non-metal mineral products	£47,954	Hotels & Restaurants	£19,900
Whole Economy	£43,769		

Given this, it would seem reasonable to suggest that investment in skills that support businesses in high-value added sectors to grow should deliver long-term economic benefits, not just to East Kent and Kent & Medway, but to the United Kingdom, as a whole. In addition, the EDGE Hub has an active widening participation outreach programme that aims to engage young people, in particular, in STEM related learning. This is also likely to reduce risks of future benefit dependency and its associated costs to the Treasury.

3.4. Standards

Provide details of anticipated standards (such as BREEAM) that the project will achieve.

The University has set a target of BREEAM Outstanding and a DEC A rating for its new developments under the Master Plan and the Building 2 is being designed to meet this standard.

3.5. Value for money assessment

Please consider value for money in broad terms, e.g.:

- Cost per job
- Cost per housing unit
- Leverage ratio against SELEP investment and as a percentage of total scheme cost

The table below shows the value for money assessment based on both apportioned and non-apportioned LGF contributions of £6.12m. The outputs are shown until the year 2023/24.

	Unapportioned		Apportioned	
By 2023/24	Number of Units	Cost Per Unit	Share	Cost Per Unit
Total Direct and Indirect Jobs	115	£53,217	15	£7,983
Commercial floorspace (Sq.m)	3588	£1,706	15	£256
Learning Years	2826	£2,166	55	£1191
Young People Engaged in STEM Events	12900	£474	5	£24
Graduate Work Placements	420	£14,571	5	£729
CPD Courses	375	£16,320	5	£816

Note: The total number of direct, indirect, induced and student spending jobs is expected to rise to 139 by 2028/29 under the Medium scenario of the preferred option

The multiple outputs mean that a value for money assessment that attributes the whole LGF contribution to each variable risks exaggerating costs per unit. Each output has, therefore, been attributed a share of the LGF contribution. Given that Higher Education learning is the main focus of the project, it seems reasonable to attribute just over half (55%) of this LGF funding to this output. Employment outputs (both direct and indirect) and developed commercial floorspace have been allocated 15%, and the remaining outputs (young people engaged in STEM events, graduate work placements and CPD courses) have been allocated 15% of the LGF contribution. Whilst the unapportioned costs range from between £474 per unit (Young People Engaged in STEM events) to £53,217 (Direct and Indirect jobs), the apportioned costs range from £24 per unit (Young People Engaged in STEM events) to £7,983 (Jobs).

The project is worth £20.502m and the LGF contribution being sought is £6.12m. This means that for every £1 of LGF funding, there will be £2.35 of levered funding.

3.6. Options assessed

Please provide a description of at least 4 options (or choices) for investment, together with their relative advantages and disadvantages (a SWOT analysis):

- Do nothing
- Do minimum
- Do something
- Do optimum

Please bear in mind that:

- these options may differ in potential business scope, service solution, service delivery, implementation and funding, depending on the nature of the investment

Recommended option. How do its impacts compare with the other options considered?

The options that have been assessed have already been set out in Section 3.1 of this application:

1. Do Nothing

Advantages	Disadvantages
<ul style="list-style-type: none">• No investment requirement• No additional housing pressures relating to increased student numbers	<ul style="list-style-type: none">• Site allocated for educational uses not developed• Opportunity to strengthen educational provision in East Kent lost• Opportunities to help diversify the East Kent economy lost• Opportunities to provide a focal point for STEM activity lost• Opportunities to develop curricula that respond directly to local business needs lost.

2. Do Minimum

This would involve developing Kent and Medway EDGE Hub only at the Canterbury site and to have a single, rather than a multidisciplinary focus. It would mean focusing only on the traditional learning programmes and not extending the scope of the project to school and college outreach activities and CPD and innovation support activities for local businesses.

Advantages	Disadvantages
<ul style="list-style-type: none">• Lower investment costs• Fewer co-ordination requirements• Lower risk and easier to manage	<ul style="list-style-type: none">• Would not develop an integrated approach to higher level STEM provision• Would fail to provide a curriculum that responds fully to identified higher level skills needs• Would fail to provide a curriculum of sufficient breadth to attract and retain the required volume of students• Would mean that activity is over-concentrated in Canterbury, restricting the potential spatial impact of Kent and Medway EDGE Hub• Would not be based on a strong partnership with local schools, college and businesses.• Would not include a component to promote STEM to young people, develop new learning pathways and inspire new learners.

3. Do Something

This would involve developing the main Kent and Medway EDGE Hub in Broadstairs, rather than Canterbury.

Advantages	Disadvantages
<ul style="list-style-type: none">• Lower investment and cheaper building costs• Potential to have greater regeneration impacts in an area of higher deprivation.	<ul style="list-style-type: none">• Would lose out on synergies created by locating the main Kent and Medway EDGE Hub adjacent to the main campus• Broadstairs is a less attractive location for students• The more remote location would make a Broadstairs Hub more difficult to serve the wider sub-region• There is evidence that businesses would be less attracted by a Hub based in Broadstairs.

4. Do Optimum – Recommended Option

This is the preferred option. It involves adding a new suite of Technical and Professional Education opportunities (Higher and Degree Apprenticeships, Foundation Degrees, Undergraduate Degrees and Masters programmes) in Engineering, Product Design and Technology, with 1,106 additional learners per year by 2026/27; creating a new Engineering and Technology Innovation Service that will work with inventors and entrepreneurs to take innovations from prototype to commercialisation; supporting companies with business-focused PhD, Masters, Undergraduate and commercial research projects using the Hub's

state-of-the-art facilities; and offering new business-focused short courses and CPD opportunities.

It will involve working with partners, including the Discovery Park and delivery partners in FE, schools and careers to create new learning and careers pathways in Engineering and Technology, focusing on priority sectors of Engineering, Advanced Manufacturing, Environmental Technologies and Energy; Life Sciences; Healthcare; and InfoTech.

Advantages	Disadvantages
<ul style="list-style-type: none">• Has the potential to deliver a step change in the focus of learning in East Kent• Responds specifically to business demands to improve the supply of higher technical skilled people• Ensures that there is an on-going dialogue between learning providers at all levels and local businesses• Provides a breadth of curriculum that is likely to be attractive to both businesses and students• Ensures that there is sub-regional coverage by working in partnership with other agencies through a Hub and spoke model• Places the university at the vanguard of local economic development, in line with Whitty recommendations• Provides the opportunity to promote innovation and develop innovative local products and services• Will deliver a comprehensive programme of engagement with young people to inspire them to take up STEM learning opportunities	<ul style="list-style-type: none">• Higher investment costs• More challenging coordination• Higher delivery risks

It should be noted that the approach embodied in the preferred options is based on:

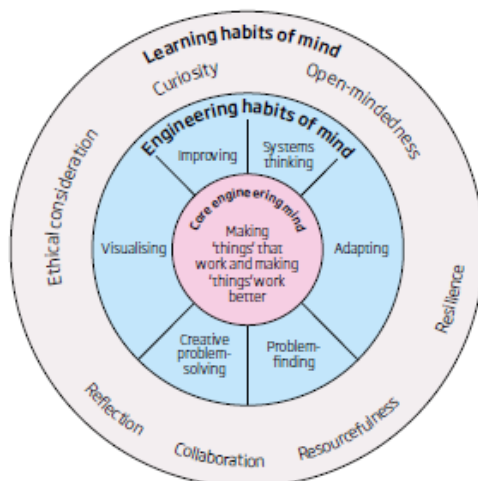
- a) A detailed and research-based analysis of the challenges that the Hub aims to address: essentially providing strategic support to the growth of key, high value-added sectors by helping to address well documented skills shortages among a highly geographically distributed and predominantly SME business base.
- b) A commitment to making engineering and technology-related Higher-Level learning available to groups who tend to be excluded, including women and white working class men, an issue made all the more challenging in Kent and Medway, given its selective education system (and the fact that non-grammar schools are much less likely to offer subjects like physics and maths at Level 3).
- c) Building on and learning from nationally and internationally 'best in class' approaches to teaching and learning for engineering and technology-related subjects, focused in particular on the needs of a more diverse and 'non-traditional' (for engineering) student target audience and harder-to-reach employer base.

The approach is based on a detailed review of relevant practice and involvement in key Higher Education and professional networks, including the following:

- The 'hub and spoke' model, with a main centre in Canterbury and 'satellites' in industrial locations, is based on practice developed by CCCU's School of Life Sciences at Discovery Park, Kent, but also on practice in delivering professional

pathways developed and evaluated elsewhere, such as NHS Scotland and the Engineering and Physical Sciences Research Council.

- Adopting the 'Conceive-Design-Implement-Operate (CDIO)¹⁹ educational approach, developed by academics and industry professionals led by the Massachusetts Institute of Technology (MIT) to close the gap between scientific and practical engineering demands, and recognise the creative nature of professional engineering. CCCU has reviewed emerging practice in the 6 research-led UK universities that have adopted the model and is working with the Institution of Engineering and Technology (IET)²⁰ CDIO initiative and its forthcoming New Approaches to Engineering in Higher Education event, which will be led by experts from the USA and Canada.
- Informing CCCU's practice with the Engineering Habits of Mind (EHoM, see diagram below) model, which has been developed by the Royal Academy of Engineering for



use in primary and secondary schools, and also stresses the more creative (as opposed to purely theoretical) aspects of engineering.

- Working with UCL, the University of Manchester and the IET to develop new approaches to student recruitment to engage a more diverse group of people, through new practices relating to course content, pedagogies, student and staff characteristics, and removing the need for A'Level Physics for new entrants through access-level Foundation Years. CCCU's Pro Vice Chancellor Helen James sits on the IMechE's national Academic Panel, which is identifying innovative ways that universities can remove the requirement for Physics while maintaining professional accreditation of courses. Good practice reviewed in this area for the development of the EDGE Hub model includes that of universities, such as Uppsala Sweden, Aston, Lincoln and Royal Holloway which have a high proportion of women students

CCCU is a founding member of network of new Higher Education engineering providers, working with Lincoln, Royal Holloway, Chichester and Hereford to evaluate and enhance innovative curriculum developments in Engineering and Technology.

3.7. Scheme assessment

Provide a brief description of a modelling and appraisal methodology – including details of data source.

Show sufficient information to demonstrate the analysis supporting the economic case fitness for purpose.

For transport projects, note that the level of detail in the appraisal summary table should be proportionate to the scale of expected impact with particular emphasis placed on the assessment of carbon, air quality, bus usage, sustainability modes, accessibility and road safety.

¹⁹ <http://www.cdio.org/>

²⁰ <http://www.theiet.org/>

The modelling approach and sources are set out in detail in Sections 3.1 and 3.2 of this application. The table below summarises the main impacts and benefits of the preferred option and the do minimum option, both of which are based on the Medium scenarios.

DCLG Appraisal Section		Preferred Option	Alternative Option / 'Do Minimum'
A	Present Value Benefits (£m)	£123,007,340	£61,643,044
B	Present Value Costs (£m)	£107,646,516	£71,255,904
C	Present Value of other quantified impacts (£m)	£122,165,141	£61,166,745
D	Net Present Public Value (£m) [A-B] or [A-B+C]	£137,525,965	£51,553,885
E	'Initial' Benefit-Cost Ratio [A/B]	1.14	0.87
F	'Adjusted' Benefit Cost Ratio [(A+C)/B]	2.28	1.72
G	Significant non-monetised Impacts	<p>Delivers 139 net new jobs in Kent & Medway, including 67 direct jobs, 52 indirect and induced jobs and 20 jobs as a result of additional student spending.</p> <p>Provides higher level STEM learning programmes for over 1,000 students each year from 2025/26</p> <p>Delivers 3,588 sq.m of new commercial floorspace</p> <p>Increases and broadens the capacity of the Higher Education sector in Kent and Medway and of CCCU, in particular</p> <p>Contributes to East Kent's attractiveness as an inward investment location.</p> <p>Strengthens the competitiveness of Kent's STEM related businesses.</p> <p>Improves education-business dialogue, higher education responsiveness,</p> <p>Promotes STEM related learning and career opportunities to young people in Kent's primary and secondary schools</p> <p>Promoting equality and social mobility by providing local people with the skills to improve their longer term career prospects.</p>	<p>Delivers 89 jobs in Kent & Medway, including 44 Direct jobs, 35 indirect and induced jobs and 10 jobs as a result of additional student spending.</p> <p>Provides higher level STEM learning programmes for over 500 students each year from 2025/26.</p> <p>Delivers 3,588 sq.m of new commercial floorspace.</p> <p>Makes a limited contribution to East Kent's attractiveness as a n inward investment location.</p> <p>Makes a more modest contribution to Kent's businesses and local community than the Preferred Option, because of its more limited scale.</p>
H	Value for Money Category	The Value for Money category is assessed as 'high'. This is because the external quantified benefits, in terms of additional indirect, induced and student spending impacts are significant. In addition, the non-quantified impacts also strengthen the	The Value for Money category is assessed as 'acceptable', because of the other quantified benefits associated with induced, indirect and student spend economic impacts on the wider Kent & Medway economy. The initial BCR,

		VfM, in terms of the project clearly supporting Government education, training and economic development priorities and delivering significant benefits to local businesses. If the volume of students was lower than expected the benefit cost ratio would be 1.97, which is at the high end of the acceptable VfM category. However, even if this was the case, the non-monetised impacts set out above, mean that it would still be appropriate to assess the VfM category as high.	without the other quantified impacts would represent poor value for money. This is largely because the present value costs (including the capital costs) are disproportionately higher than the benefits, when compared with the preferred option.
I	Switching Values and Rationale for VfM Category	Although non-monetised impacts are significant, the monetised benefits (including direct benefits and wider economic benefits are such that the VfM category is high anyway.	The non-monetised impacts are less substantial than in the Preferred Option, due to scale issues. The VfM category, therefore, remains Acceptable.
J	DCLG Financial Cost	£6.12m including £1.12m in 2017/18, £2.5m in 2018/19 and £2.5m in 2019/20.	£3.06m, including £0.56m in 2017/18, £1.25m in 2018/19 and £1.25m in 2019/20.
K	Risks	All 9 risks identified in section 7 apply, but the risks of non-delivery of outcomes, securing business support, securing revenue, staff recruitment and developing capacity as the Canterbury site is developed are all lower than in the 'Alternative Option.	All 9 risks identified in section 7 apply, but the risks of non-delivery of outcomes, securing business support, securing revenue, staff recruitment and developing capacity as the Canterbury site is developed are all greater than in the preferred option. Only the risk of delays due to technical constraints appears lower because the overall project is less complex.
L	Other Issues	This option has strong support from the Kent & Medway business community and has already received planning consent from Canterbury City Council Planning Authority.	This option was considered as part of an independent feasibility study, which concluded that focusing on a single site would mean that EDGE hub activity was over-concentrated in Canterbury and its limited scale would not deliver the breadth of learning programmes that is required by Kent & Medway businesses.

Economy, Efficiency and Effectiveness

The preferred option involves a £20.502m capital build project that will support the delivery of thousands of new learners in higher level STEM related learning programmes that reflect the stated needs of Kent & Medway businesses over the long term. The EDGE Hub will also provide a focus for a co-ordinated approach to education-business knowledge exchange activity and will provide a physical presence to inspire new learners into STEM related learning programmes.

The Applicant is requesting £6.12m (30%) to spread the risk of the capital development, without which a more modest development could proceed, which would not have the same scale of impact over the longer term.

The approach to assessing the quantitative outputs and monetised impacts is conservative, acknowledging risks associated with lower than expected student numbers and potential difficulties in attracting suitably qualified staff.

Nevertheless, once indirect, induced and other wider economic impacts have been considered, the Preferred Option represents good value for money (VfM: 2.28) and with

strong stakeholder support, it is reasonable to expect that the proposed outputs from the Medium scenario will be delivered.

The alternative options were considered as part of the Feasibility Study that was undertaken on behalf of CCCU by Cushman and Wakefield²¹. This was based on a detailed assessment of existing STEM provision and likely learner demand on a subject by subject basis, drawing extensively on HESA data.

In addition, the Feasibility Study drew on examples of similar initiatives being pursued elsewhere, including at the University of Chichester, the University of Lincoln and NMiTE in Hereford. The Feasibility Study was also informed by a programme of business and community consultation, which helped to define a delivery model and estates approach that would align with local, regional and national priorities, and which would gain the full support of business community partners. This approach enabled the feasibility study to consider, but then subsequently discount single subject development options.

4. COMMERCIAL CASE

The commercial case determines whether the scheme is commercially viable. It presents evidence on risk allocation and transfer, contract timescales, implementation timescales and details of the capability and skills of the team delivering the project.

4.1. Procurement

Please provide details of the procurement route and strategy that will be used for the project. This should include details of the procurement mechanism to be used, details of whether it is an existing framework and contract, the timescales associated with the procurements and details of other routes that were considered for delivery and reasons why these were rejected.

CCCU is a large and complex organisation that applies robust and rigorous standards throughout its operation. This is reflected in its approach to procurement in general and specifically in terms of the EDGE Hub. Procurement related to the EDGE Hub is part of a more complex and highly controlled process of implementing the University's new Masterplan for the former Prison site, and Building 2 developments benefit from following on from earlier stages of the project, with design and build contracts already let for Building 1, for example.

The University has a Procurement Strategy and is a member of the Southern Universities' Purchasing Consortium. The consortium negotiates framework agreements on behalf of the higher education sector which the University can and does utilise, where appropriate.

The University employs two qualified procurement professionals and each year spends several million pounds in goods and services. This includes procurement through tendering, OJEU (where required) and more recently competitive dialogue. The University has recently introduced measured term contracts for its estates minor works maintenance spend. Working with professionally qualified and experienced estates colleagues and professional advisers, the procurement team has supported significant estates and buildings development of tens of millions of pounds over the last ten years.

The procurement required for the development of the EDGE Hub is part of a larger exercise to redevelop the former Canterbury Prison site, where two major new buildings will be established. 'Building 1' will re-locate Arts and Humanities to a single location, and 'Building 2' will be the new location for science, technology and engineering. The EDGE Hub will represent a significant enhancement of the University's STEM offer, and be part of Building 2, linked to satellite centres in industry locations.

The approach taken to the whole exercise was to first procure a contractor for the Estate Master Plan, and then procure design and build services for Buildings 1 and 2.

Estate Master Plan

Following the acquisition of the Former HM Prison Canterbury in April 2014 the University sought a Master Planning architectural team to develop an Estate Master Plan by running a tender following the placement of an advertisement in the Architects Journal. From 30 applicants 10 were shortlisted and an invited to tender through a process run for the University by local firm Betteridge and Milsom. From the resulting tender evaluation, interviews and quality and cost scoring the Building Design Partnership (BDP) were selected for the Estate Master Planning exercise, which went through a wide consultation with internal and external Stakeholders from July 2014 to the Governor approval of the plan in June 2015.

Building 2 including Engineering School Consultants

In August 2015, the University tendered through the NHS London Procurement Partnership framework for a multi-disciplinary practice to develop a detail design and planning submission for the Historic Listed Prison and incorporate a development brief built upon the Master Plan proposals. From four bidders against this Framework (AECOM,

AHR, BDP and Mott McDonald) BDP were chosen as the successful bidder. **BDP** submitted a comprehensive proposal which provided a very high level of confidence to the evaluation panel. They also scored well in the conformance to the specification and price highlighting previous experience in the Higher Education Sector with a great deal of heritage experience.

As Design work commenced discussions with Canterbury City Council planning department developed such that rather than submitting a Development brief for the North Holmes Campus with detail design for the Historic Prison it was agreed to submit two detailed applications one for the Prison Quarter (Building 2, 3 and listed Prison conversion) and one for the Arts Building (Building 1).

Under a clause in the NHS LPP tender contract CCCU reserved the right to utilise the successful supplier for any other related services within a 12-month period from the award of the contract. Work commenced with BDP to develop the Building 2 design to RIBA Stage 2 and the Listed Building and Building 3 to RIBA Stage 2+, sufficient to submit for Listed Building consent.

As a multi-disciplinary consultant BDP provided Architectural and Engineering services and under their NHS LPP agreement used Sweetts (now **Currie and Brown**) as Quantity Surveyor and CDM Principal Designer.

The planning proposal for the Prison Quarter was of a scale to require an Environmental Impact Assessment resulting in a series of direct appointments for these studies with a number of practices:

Heritage Consultant	Montagu Evans
Archaeology	Canterbury Archaeological Trust
Travel Plan and Transport assessment	Urban Flow
Environmental Impact Assessment development	BDP
Arboricultural survey	Arcadis
Noise & Vibration	BDP
Ecology	BDP
Construction Environmental Management Plan	WSP
Construction Waste Management Plan	WSP

The Planning approval for the Prison Quarter was granted in December 2016.

Building 1 Arts Building

Following approval of a feasibility study and business case in January 2016 the University tendered for Architect and Project Manager using the Kent County Council (KCC) SS1201 Property Services Consultancy Framework.

From this exercise **Nicholas Hare Architects** were selected as Architect and Lead Designer from a field of 12 bidders, providing a comprehensive proposal which demonstrated a high level of confidence in their ability to the evaluation panel and good experience in education and music performance buildings. They scored the highest in the conformance to the specification and also scored well in relation to price. In the tender bidders had been asked to demonstrate the capability of their nominated sub-consultants for Acoustics, Landscaping, BREEAM assessment and Fire Engineering.

Pellings LLP were selected as Project Manager also providing the evaluation panel with a very high level of confidence with their ability. They also scored well in the conformance to the specification and particularly well in relation to price.

Nicholas Hare Architects and Pellings then joined the University in proposing nominations for the disciplines of Quantity Surveyor (QS), Mechanical, Electrical and Public Health (MEP) Engineers and Civil and Structural (C&S) Engineers, with these then being shortlisted to five bidders in each discipline.

Tenders for a direct appointment were conducted, with fees anticipated as below the OJEU limit. As a result of the tender submissions, scoring and interviews **Currie and Brown** (formerly Sweets) were chosen as QS, **Max Fordham LLP** as MEP Engineers and **Integral Engineering Design** as C&S Engineers.

In support of the planning application separate appointments for the specialist consultants used in the Prisons Quarter EIA for the relevant support and sections of the application, realising economies in scale in surveys and background information. Building 1 sits within the Scheduled Monument of St Augustine's Abbey and in a preliminary archaeological investigation in June 2016 the footings of the Abbey precinct wall were rediscovered. Adaptations to the design philosophy took some time to agree with Canterbury City Council and Historic England, with the planning approval gained at the end of April. The University continued design at risk during the planning period through RIBA Stage 3 into Stage 4.

Procurement of Construction Team

The University conducted an initial procurement workshop to establish the preferred method of procurement of the construction team for Building 1 the arts building.

The outcome was as follows:

- Design and Build was ruled out largely because of the difficulty in maintaining a high level of design integrity when this is delegated to the contractor.
- Construction Management was deemed too vulnerable to contract value uncertainty
- Traditional single stage selection was preferred by the design teams generally, but this was unlikely to generate a high enough level of interest with the local contractor market to obtain the level of competition and quality that is required.
- Traditional two stage selection retained a high level of design integrity and also a high level of cost certainty, prior to final appointment.

The recommendation was to proceed with the two-stage selection process which provides the optimum level of design integrity and cost certainty, and ensuring a high level of competition from the market.

The University decided to use the Southern Construction Framework to select a contractor for a traditional contract through a 2-stage open book tender as recommended.

At the Mini Competition 1 stage four framework bidders were selected for Mini Competition 2 including detailed interviews (Galliford Try, Kier, Morgan Sindall and Wilmott Dixon). Based on preliminaries costs, pre-construction support and delivery capability determined at interview, **Kier** were chosen to act as the preferred bidder for the Second Stage tender, due for completion on the RIBA Stage 4 designs on 21st August 2016. (Annex 6 of this Business Case is the Contract and documentation for this work, provided as an example of the appropriateness of the procurement process.)

An early works Letter of Intent covering archaeological support, drainage and preparation for piling has been entered into to ensure the early start of work in June 2017 and opening in September 2018.

Building 2 (including Engineering School)

Procurement of Design Team

The University is currently in the process of an OJEU tender for the appointment of a multi-disciplinary design team or consortia, using the restricted procedure. The PQQ stage will be based on the experience, capacity and technical qualities of the team, and will result in a ranking order with no more than 8 invited to tender, ie, the second phase of the process.

The ITT will require the tendering design teams to indicate how they will deal with some of the most complex challenges associated with this particular project, including Historic Monument status, Phasing of wings, occupied sites, underground car park and the University Calendar year etc. These issues will be identified in the tender documents as critical to the appointment and will also be tested at interview which will also be audiorecorded.

A project manager will be appointed separately to ensure governance and accountability with the remainder of the design team. This will be made by selection from interested providers off a local framework, with interviews focussing on the qualities of the individuals coming forward. The project manager will be in place and available to assist with the ITT process for the remainder of the design team.

Procurement of Main Construction Team

It is the intention to evaluate the procurement process adopted for building 1, ie the two-stage open book tendering process and apply the same process to the construction procurement for building 2 including the Engineering school, incorporating any learning opportunities from the application of the same process in Building 1.

Management of risk in the procurement and construction process

The first and principal risk to a successful outcome for this project is the planning approval itself. This has successfully been achieved in Dec 2016, after only 13 weeks, and without a single objection.

There remains significant risks in undertaking the following works as part of a main contract due to unforeseen issues, interruptions etc:

1. Diversion of underground engineering services
2. Demolition of buildings
3. Archaeological investigations

The university has therefore sought to mitigate such risks by bringing forward select packages of work to which are as follows:

Diversion of existing utilities services etc for Building 1	Underway
Diversion of existing utilities services etc for Building 2	Underway
Demolition of redundant buildings in prison backlands	August/September 2017

By having these packages brought forward, the University is ensuring such critical works are undertaken at a time of year, when disruption is minimised and any consequent delays occur during a minor works programme, and do not occur on the critical path for the main construction programme.

Procurement Experience

The University's track record over recent years demonstrates that it possesses the necessary knowledge, skills and experience to deliver complex capital projects to timescale. Such experience includes the establishment of new campuses at Broadstairs and Medway between 2000 and 2004 and also the construction of the iconic and award-winning Augustine House building on the Canterbury city ring road in 2009. This building houses the open learning resource centre, library and academic support facilities.

Recognising the significant £150m investment that the University is forecasting for its Estate Master Plan over the next ten years, a new appointment was made to the institution in 2016 for a Director of Estates and Facilities as a member of the Senior Management Team. A qualified Chartered Building Surveyor, the post holder comes with extensive experience of delivering major capital works schemes which includes a new critical care centre at the Royal Group of Hospitals in Belfast in 2015, totalling £150m. Within the last twelve months, the University has established a new centre in Meadow Road, Tunbridge Wells which had to be completed by August 2017 in readiness for the new academic year commencing in September.

Works are also in hand for the construction of a new building on the Canterbury campus which will open in September 2018 for Media, Music and Art programmes.

The institution is accustomed to delivering programmes to a fixed timescale as the revenue payback on capital schemes needs to be realised from the commencement of each academic year since the majority of the institution's funding is received in tuition fees for programmes that run annually over the academic year. Any delay in timescale therefore would have a massive impact on the University's income.

Maximising Social Value

The University by undertaking the current high-quality design that has been achieved, is seeking to not just preserve the archaeological and heritage capital of Canterbury and the local community, but also to actually enhance it, by providing visual and direct linkages between two of the most important parts of the World Heritage Site which is located in Canterbury around our campus and the prison site.

This has been achieved with enthusiastic support from the guardians of the local and national heritage and resulted in Planning Approval being processed under delegated authority with the local council in record time.

This is also a reflection of the detailed engagement between the University and the local communities and the careful consideration of feedback into the design process. Consultants and contractors who are appointed to the project are all required to maximise opportunities for apprenticeships and training opportunities for young people and long-term unemployed.

The building when complete will incorporate the very latest in engineering design, technology and installation. It is a stated intent of the project that such engineering can form part of the curriculum for the engineering school, and in effect become a living laboratory. The University expects students to be able to use the building as part of the learning programme.

CCCU is strongly committed to maximising social value in its projects, a commitment which work to date has demonstrated. However, the University is always keen to identify new ways of improving its performance in this area, and especially welcomes the opportunity to explore this with KCC through the contract management process. KCC has already provided useful case study evidence on the approach taken for the Rathmore

	Road development in North Kent, for example, and this is being reviewed by the CCCU procurement team.												
4.2. Commercial dependencies	<p>The main commercial dependencies for the project relate to the Hub's ability to secure ongoing revenues to maintain the operation, once the new facility has been established. They are set out in the table below, along with our assessment of risk. Project level risks are described in section 7 of this Outline Business Case.</p> <p>Main Commercial Dependencies</p> <table> <tr> <th>Dependency</th><th>Assessment of Risk</th></tr> <tr> <td>1. Student numbers must be achieved to secure the bulk of revenue funding.</td><td>Forecast volumes are based on the University's tried and tested budgeting methodology, and backed up by market research and Senior Management team scrutiny. Experience shows that CCCU is successful at expanding provision into new areas.</td></tr> <tr> <td>2. Business engagement needs to secure enough businesses as customers for learning and research.</td><td>In the early days, relatively modest amounts of employer revenue are budgeted for, recognising the need to build a reputation and establish the business benefits of the services on offer. These revenues are forecast to grow after the start-up phase, once the centre is more embedded and has clear strengths. At a more fundamental level the Hub project is a key project in making the university more responsive to the needs of the economy and local businesses. The University is committed at the highest level to engaging successfully with business.</td></tr> <tr> <td>3. Success of the Innovation Service</td><td>A small amount of revenue from innovation activities is forecast from 2020. This cautious approach reflects the need to build capabilities and processes in this area from a low base, and failure to achieve income targets in this area would have a medium impact. Again the University's SMT are committed to being more responsive to the needs of the economy and business, and are fully committed to success of this aspect of the project.</td></tr> <tr> <td>4. Bank loan finance needs to be secured as expected.</td><td>The University is an asset rich institution with an excellent financial standing, and so can expect to access the necessary finance, and on reasonable terms.</td></tr> <tr> <td>5. Modest levels of grant funding for research are forecast.</td><td>The amount of grant funding is modest relative to the overall budget, and the University has a good track record in securing external research grants from companies, Europe and charities.</td></tr> </table> <p>Detailed alternative scenarios for costs and revenues have been developed and can be found in the accompanying Commercial Case spreadsheet. Three alternatives are presented in which the level of cost is set according to the student numbers on taught programmes.</p> <ul style="list-style-type: none"> • 'Low': maximum 761 FTE students and 52 staff • 'Medium': maximum 1016 FTE students and 67 staff 	Dependency	Assessment of Risk	1. Student numbers must be achieved to secure the bulk of revenue funding.	Forecast volumes are based on the University's tried and tested budgeting methodology, and backed up by market research and Senior Management team scrutiny. Experience shows that CCCU is successful at expanding provision into new areas.	2. Business engagement needs to secure enough businesses as customers for learning and research.	In the early days, relatively modest amounts of employer revenue are budgeted for, recognising the need to build a reputation and establish the business benefits of the services on offer. These revenues are forecast to grow after the start-up phase, once the centre is more embedded and has clear strengths. At a more fundamental level the Hub project is a key project in making the university more responsive to the needs of the economy and local businesses. The University is committed at the highest level to engaging successfully with business.	3. Success of the Innovation Service	A small amount of revenue from innovation activities is forecast from 2020. This cautious approach reflects the need to build capabilities and processes in this area from a low base, and failure to achieve income targets in this area would have a medium impact. Again the University's SMT are committed to being more responsive to the needs of the economy and business, and are fully committed to success of this aspect of the project.	4. Bank loan finance needs to be secured as expected.	The University is an asset rich institution with an excellent financial standing, and so can expect to access the necessary finance, and on reasonable terms.	5. Modest levels of grant funding for research are forecast.	The amount of grant funding is modest relative to the overall budget, and the University has a good track record in securing external research grants from companies, Europe and charities.
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	<ul style="list-style-type: none"> • ‘High’: 1582 FTE students and 91 staff <p>The analysis is done on a discounted cashflow basis (with and without optimism bias) and shows that in all three cases the project breaks even within a reasonable time period for a project of this scale, as follows:</p> <ul style="list-style-type: none"> • Low: 2028/29 (2034/35 with optimism bias) • Medium: 2026/27 (2028/29 with optimism bias) • High: 2023/24 (2025/26 with optimism bias)
4.3. Commercial sustainability	<p><i>Please can you identify how the project will be commercially sustainable? Will the project require on going revenue support? If so how will this be funded?</i></p> <p><i>Please verify the project’s sustainability by including cash flow projections post-completion.</i></p> <p>The allocation of a £6.12m LGF allocation is essential to share the project risks and to make the project commercially viable over a reasonable time scale. The capital costs of the project are estimated to be £20.502m by 21/22, of which CCCU will contribute £7.2m and HEFCE £6.5m (conditional upon LGF funding being secured). However, in addition to this, revenue and other costs associated with the project amount to a further £12.5m by 2024/25, making the total project costs closer to £33m by then.</p> <p>The Kent & Medway EDGE Hub is a long-term project that involves significant investment over and above the capital build component. Indeed, our estimates suggest that by 2037/38, total project investment will approach £90m and will deliver a revenue of over £160m, primarily from new undergraduate tuition fees, but also from commercial revenue streams.</p> <p>LGF funding is crucial to bring forward this project on a scale that will make the real difference to the Kent & Medway economy. Our estimates show that the Kent & Medway EDGE Hub (on the medium case scenario) with LGF funding should deliver a small surplus by 2026/27.</p> <p>However, in the absence of the LGF grant the HEFCE funds would be put at risk and CCCU would need try to secure £12.5m in borrowed income, in addition to the capital of £7.2m that is committed as part of the project plan. These borrowing costs would add an estimated further £0.5m costs by annum from 2018/19 which totals £7.5m by 2032/33, assuming an interest rate of 4% per year is secured over a twenty-year period with no capital payback. Over the long term, we would still expect to see the project delivering a sustainable surplus, but without LGF grant and HEFCE funding it would not reach a breakeven point until 2031/32.</p> <p>Whilst there is every prospect of the project being commercially viable and sustainable over the longer term, the time it would take to secure a surplus without the level of LGF grant requested, makes the venture a risky one to pursue without other support, despite the fact that the Kent & Medway EDGE Hub strongly aligns with local, regional and national strategic priorities.</p> <p>A detailed spreadsheet of the costs and revenue with and without LGF grant is appended to this application in the Commercial Case spreadsheet and is summarised below for the ‘medium scenario’.</p>

Financial Forecasts without LGF and HEFCE Funding



Business Case Financial Projection - Engineering Development - Medium Estimates

Student FTE (if applicable)		0.0	46.0	169.0	390.0	601.0	1,106.0		
Income	Year 0	2017/18	2018/19	2019/20	2020/21	2021/22	Years 6-20	Total	Average
Tuition Fees - Full-time (Home & EU)		0	290,188	1,234,355	3,080,854	4,915,552	157,544,556	167,065,506	8,353,275
HEFCE		0	10,000	73,000	211,000	348,000	10,407,000	11,049,000	552,450
Research Income		0	73,981	306,283	609,622	757,150	15,121,066	16,868,102	843,405
Other Income		0	4,203	6,430	10,931	16,724	393,332	431,619	21,581
Bursaries		0	(31,519)	(126,185)	(304,147)	(479,142)	(14,845,952)	(15,786,944)	(789,347)
QRA		0	(28,431)	(122,723)	(308,156)	(492,483)	(15,773,175)	(16,724,967)	(836,248)
Net Income	0	0	318,423	1,371,160	3,300,104	5,065,801	152,846,827	162,902,315	8,145,116
Expenditure									
Staff Costs									
Academic Staff		182,141	609,601	1,026,139	1,329,098	1,958,394	60,480,546	65,585,913	3,279,296
Research Staff		0	35,511	147,016	292,618	363,432	7,258,111	8,096,689	404,834
Professional Services Staff		27,945	91,488	339,656	471,058	556,906	11,121,988	12,609,036	630,452
Overheads - Facilities Staff Costs		0	0	0	157,500	163,013	3,255,527	3,576,040	178,802
	0	210,086	736,595	1,512,811	2,250,269	3,041,744	82,116,173	89,867,678	4,493,384
Staff FTE		4.3	14.0	27.0	34.5	46.0	67.0		
Non-Staff Costs									
Office & Communication Costs		30,000	23,000	84,500	195,000	300,500	7,895,500	8,528,500	426,425
Departmental Equipment		0	0	0	100,000	102,287	1,804,275	2,006,562	100,328
Central Services - Library & IT		41,000	157,594	192,895	196,753	200,688	3,539,988	4,328,916	216,446
Research Costs		0	23,674	98,011	195,079	242,288	4,838,741	5,397,793	269,890
Rent & Rates		40,000	42,601	43,964	45,371	46,823	912,014	1,130,773	56,539
Overheads - Estates Costs (inc uplifts)		0	0	0	367,500	379,260	7,387,203	8,133,963	406,698
	0	111,000	246,889	419,370	1,099,703	1,271,846	26,377,721	29,526,508	1,476,325
Contribution	0	(321,086)	(665,040)	(561,021)	(49,868)	752,211	44,352,933	43,508,129	2,175,406
Cumulative Contribution	0	(321,086)	(986,126)	(1,547,148)	(1,597,016)	(844,804)	44,352,933		
Contribution %	0%	0%	-209%	-41%	-2%	15%	29%	27%	27%
Capital Items									
Local Growth Fund								0	0
HEFCE Catalyst Fund								0	0
KCC / Project Management		(17,143)	(17,143)	(17,143)	(17,143)	(17,143)	(34,286)	(120,000)	(6,000)
Building Works		(806,000)	(5,400,000)	(2,700,000)	(1,000,000)	0	0	(9,906,000)	(495,300)
Professional Fees		(421,000)	(420,000)	(405,000)	(240,000)	0	0	(1,486,000)	(74,300)
Construction Equipment		(411,000)	(200,000)	(190,000)	(190,000)	0	0	(991,000)	(49,550)
Planning & Related Fees		(100,000)	(100,000)	(110,000)	0	0	0	(310,000)	(15,500)
Contingency & Inflation Adjustments		(480,000)	(750,000)	(750,000)	(400,000)	0	0	(2,380,000)	(119,000)
Engineering and Technology Equipment		(57,000)	(200,000)	(700,000)	(660,000)	(212,000)	0	(1,829,000)	(91,450)
VAT on Building Costs		(455,000)	(1,427,600)	(993,000)	(528,000)	(76,400)	0	(3,480,000)	(174,000)
	0	(2,747,148)	(8,514,743)	(5,865,143)	(3,035,143)	(305,543)	(34,286)	(20,502,000)	(1,025,100)
Total Cash Flows	0	(3,068,229)	(9,179,783)	(6,426,164)	(3,085,011)	446,668	34,269,876		
Discount Factor	3.5%	1.00	0.97	0.93	0.90	0.87	0.84	0.68	
Discounted Cash Flow	0	(2,964,472)	(8,569,426)	(5,796,032)	(2,688,409)	376,083	23,473,005	9,182,076	459,104
Break-even period	2031/32						Total Capital Expenditure	20,502,000	
Optimism Bias Adjustment		(764,400)	(2,379,328)	(1,637,440)	(845,040)	(80,752)	0	(5,706,960)	(285,348)
Adjusted DCF	0	(3,703,023)	(10,790,554)	(7,272,909)	(3,424,812)	308,092	23,473,005	3,941,125	197,056
Break-even period	2034/35								
Sources of funding									
SE LEP		0	0	0	0	0	0	0	0
HEFCE Catalyst Fund		0	0	0	0	0	0	0	0
Equipment in kind from businesses		0	100,000	200,000	200,000	200,000	0	700,000	35,000
Applicant contribution		2,747,143	8,414,743	5,665,143	2,835,143	105,543	34,286	19,802,000	990,100
	0	2,747,143	8,514,743	5,865,143	3,035,143	305,543	34,286	20,502,000	1,025,100
Total Sources of Funding								20,502,000	

Financial Forecast with LGF and HEFCE



Business Case Financial Projection - Engineering Development - Medium Estimates

Student FTE (if applicable)		0.0	46.0	169.0	390.0	601.0	1,106.0		
Income	Year 0	2017/18	2018/19	2019/20	2020/21	2021/22	Years 6-20	Total	Average
Tuition Fees - Full-time (Home & EU)		0	290,188	1,234,355	3,080,854	4,915,552	157,544,556	167,065,506	8,353,275
HEFCE		0	10,000	73,000	211,000	348,000	10,407,000	11,049,000	552,450
Research Income		0	73,981	306,283	609,622	757,150	15,121,066	16,868,102	843,405
Other Income		0	4,203	6,430	10,931	16,724	393,332	431,619	21,581
Bursaries		0	(31,519)	(126,185)	(304,147)	(479,142)	(14,845,952)	(15,786,944)	(789,347)
QRA		0	(28,431)	(122,723)	(308,156)	(492,483)	(15,773,175)	(16,724,967)	(836,248)
Net Income	0	0	318,423	1,371,160	3,300,104	5,065,801	152,846,827	162,902,315	8,145,116
Expenditure									
Staff Costs									
Academic Staff		182,141	609,601	1,026,139	1,329,093	1,958,394	60,480,546	65,585,913	3,279,296
Research Staff		0	35,511	147,016	292,618	363,432	7,258,111	8,096,689	404,834
Professional Services Staff		27,945	91,483	339,656	471,058	556,906	11,121,988	12,609,036	630,452
Overheads - Facilities Staff Costs		0	0	0	157,500	163,013	3,255,527	3,576,040	178,802
	0	210,086	736,595	1,512,811	2,250,269	3,041,744	82,116,173	89,867,678	4,493,384
Staff FTE	4.3	14.0	27.0	34.5	46.0	67.0			
Non-Staff Costs									
Office & Communication Costs		30,000	23,000	84,500	195,000	300,500	7,895,500	8,528,500	426,425
Departmental Equipment					100,000	102,287	1,804,275	2,006,562	100,328
Central Services - Library & IT		41,000	157,594	192,895	196,753	200,688	3,539,988	4,328,916	216,446
Research Costs		0	23,674	98,011	195,079	242,288	4,838,741	5,397,793	269,890
Rent & Rates		40,000	42,601	43,964	45,371	46,823	912,014	1,130,773	56,539
Overheads - Estates Costs (incuplifts)		0	0	0	367,500	379,260	7,387,203	8,133,963	406,698
	0	111,000	246,869	419,370	1,099,703	1,271,846	26,377,721	29,526,508	1,476,325
Contribution	0	(321,086)	(665,040)	(561,021)	(49,868)	752,211	44,352,983	43,508,129	2,175,406
Cumulative Contribution	0	(321,086)	(986,126)	(1,547,148)	(1,597,016)	(844,804)	44,352,983		
Contribution %	0%	0%	-209%	-41%	-2%	15%	29%	27%	27%
Capital Items									
Local Growth Fund		1,120,000	2,500,000	2,500,000	0	0	0	6,120,000	306,000
HEFCE Catalyst Fund		0	3,000,000	2,500,000	1,000,000	0	0	6,500,000	325,000
KCC / Project Management		(17,143)	(17,143)	(17,143)	(17,143)	(17,143)	(34,286)	(120,000)	(6,000)
Building Works		(806,000)	(5,400,000)	(2,700,000)	(1,000,000)	0	0	(9,906,000)	(495,300)
Professional Fees		(421,000)	(420,000)	(405,000)	(240,000)	0	0	(1,486,000)	(74,300)
Construction Equipment		(411,000)	(200,000)	(190,000)	(190,000)	0	0	(991,000)	(49,500)
Planning & Related Fees		(100,000)	(100,000)	(110,000)	0	0	0	(310,000)	(15,500)
Contingency & Inflation Adjustments		(480,000)	(750,000)	(750,000)	(400,000)	0	0	(2,380,000)	(119,000)
Engineering and Technology Equipment		(57,000)	(200,000)	(700,000)	(660,000)	(212,000)	0	(1,829,000)	(91,450)
VAT on Building Costs		(455,000)	(1,427,600)	(993,000)	(528,000)	(76,400)	0	(3,480,000)	(174,000)
	0	(1,627,143)	(3,014,743)	(865,143)	(2,035,143)	(305,543)	(34,286)	(7,882,000)	(394,100)
Total Cash Flows	0	(1,948,229)	(3,679,783)	(1,426,164)	(2,085,011)	446,668	34,269,876		
Discount Factor	3.5%	1.00	0.97	0.93	0.90	0.87	0.84	0.68	
Discounted Cash Flow	0	(1,882,347)	(3,435,117)	(1,286,318)	(1,816,966)	376,083	23,473,005	20,779,666	1,038,983
Break-even period	2026/27						Total Capital Expenditure	20,502,000	
Optimism Bias Adjustment		(764,400)	(2,379,328)	(1,637,440)	(845,040)	(80,752)	0	(5,706,960)	(285,348)
Adjusted DCF	0	(2,620,897)	(5,656,245)	(2,763,195)	(2,553,370)	308,092	23,473,005	15,538,716	776,936
Break-even period	2028/29								
Sources of funding									
SE LEP		1,120,000	2,500,000	2,500,000	0	0	0	6,120,000	306,000
HEFCE Catalyst Fund		0	3,000,000	2,500,000	1,000,000	0	0	6,500,000	325,000
Equipment in kind from businesses		0	100,000	200,000	200,000	200,000	0	700,000	35,000
Applicant contribution		1,627,143	2,914,743	665,143	1,835,143	105,543	34,286	7,182,000	359,100
	0	2,747,143	8,514,743	5,865,143	3,035,143	305,543	34,286	20,502,000	1,025,100
							Total Sources of Funding	20,502,000	

The assumptions that underline these calculations are detailed in the Commercial case spreadsheet.

4.4. Compatibility with State Aid rules

Does funding this scheme constitute state aid?

If so, what regulations are being applied and what advice has been received to demonstrate compatibility? Are you eligible to receive grant aid at the level requested within the State Aid Regulations?

Having consulted guidance on State Aid from the Department of Business, Innovation and Skills, funding this scheme would be seen as necessary and justified as it is addressing 'a genuine market failure' as demonstrated earlier in section 2.1 of the Strategic Case.

Further, State Aid rules only apply to the funding of 'economic activity'. Support to an organisation engaged in a non-economic activity is not State Aid. Funding a university's core activities - teaching and non-commercial research - is not State Aid. This is confirmed by *Section 2.5 of the draft Commission Notice on the Notion of State Aid pursuant to Article 107 of the Treaty on the Functioning of the European Union* which states that: 'According to the case-law, public education organised within the national educational system funded and supervised by the State may be considered as a non-economic activity'.

The Commission normally regards the funding of the following to be non-economic, and therefore not State Aid:

- A university's primary activities, such as:
 - Education for better and more skilled human resources
 - Independent R&D (including collaborative R&D) for more knowledge and better understanding where the university engages in effective collaboration
 - Wide dissemination of results of research on a non-exclusive and non-discriminatory basis, e.g. teaching, publications, open databases.
- Knowledge exchange, knowledge transfer and technology transfer activities where all profits from those activities are reinvested in the primary activities of the research organisation.

The scheme to which this application relates is based on funding a facility to be used predominately by the University in furtherance of its educational functions, which it considers are non-economic and therefore outside of the application of State Aid rules.

It is also understood that should there be an element of economic activity within the facility, this will in all cases only ever be purely ancillary to the core educational uses. Commission regulations regard such ancillary economic usages of infrastructure as still falling outside of State Aid rules provided that the capacity allocated each year to the economic activities is not more than 20% of the 'relevant entity's' overall annual capacity. For practical purposes a conservative approach would be to treat this 'entity' as the part of the university (laboratory, school, centre) carrying out the economic activity, rather than the university as a whole. If there is any such use it will always be below this 20% threshold.

It should be noted that in order to comply with State Aid rules, charges for services to businesses are required to be transacted at normal market rates. This is usual practice at the University. In addition, the University closely monitors any economic activity to ensure continued compliance with State Aid rules and will continue to do so.

CCCU revisited the position on State Aid in August 2017 in order to verify that there had been no material change in the position since this Business Case was first submitted in

	<p>June 2016. In particular, the following provisions from the State Aid Manual July 2015 issued by the Department for Business Innovation and Skills were considered:</p> <p><i>Public funding of university and other non-profit research organisations' core teaching, research, and result dissemination activities, including provision of infrastructure for core activities, is not State aid. This still applies where organisations also provide economic services such as commercial research and consultancy, as long as the economic services are: necessary to or intrinsically linked to main non-economic activities; use the same inputs (material, equipment, labour & fixed capital) and do not exceed 20% of the annual capacity.</i></p> <p>It was verified that CCCU does not approach the limit of 20% as its income from consultancy and commercial research represented 6% of its income for the year ended 2016 and is not set to increase. The consultancy contracts and commercial research income was reported as £8.199m in year ended 2016 and the University's total income was £134.833m. The commercial income included in this calculation incorporates Teach First, which may or may not be deemed to be commercial, but is included for the purposes of the analysis. On the same basis, the percentage for 2015 was 5.92%.</p>
<p>4.5. Commercial viability</p>	<p><i>Please provide:</i></p> <ol style="list-style-type: none"> <i>Evidence to show the risk allocation and transfer between the promoter and contractor and timescales identified in procurement and/or contract management strategy</i> <i>Definition of approach taken to assess commercial viability</i> <i>Arrangements for cost overrun</i> <i>Letter from local authority S151 officer.</i> <ol style="list-style-type: none"> Within the preliminary cost plans an allowance has been made for a Price and Design Reserve (5%) and Construction Contingency (5%) within the overall construction cost and there is a further client risk of 5%. The management mechanisms for the control of the contractor side risk will be built into the form of the building contract. This is detailed in 4.3. The analysis is based on future estimates of income and expenditure into future years with and without LGF. The project will be run with the University's PRINCE 2 based project control system with the Project Manager producing monthly reports based on the Quantity Surveyor's input. A change control mechanism will be used to manage the risk/contingency elements within the contract and the client side risk will be allocated in agreement with the Project Board. The relevant s151 Officer for this project is the Director of Finance, Kent County Council (the Accountable Body), who will issue the letter and liaise with CCCU's Director of Finance to ensure that adequate financial assurance systems are in place. The letter is provided in Annex 4 of this Business Case.

5. FINANCIAL CASE

*To be completed in conjunction with the spreadsheet in **Part B***

5.1. Total project cost and basis for estimates	£20.502m, based on CCCU standard workload planning procedures, architect costings of works and initial search on equipment costs.
5.2. Total SELEP funding request	<i>Revenue or capital?</i> <i>Grant or loan?</i> <i>Repayment schedule</i> Capital grant funding of £6.12m is requested from SELEP.
5.3. Other sources of funding	CCCU will borrow, self-fund and use employer contributions to fund the additional £7.88m that is required in addition to the £6.5m capital grant secured from HEFCE and the LGF investment.

5.4. Summary financial profile – expand as appropriate

(£m)		17/18	18/19	19/20	20/21	21/22	Total
<i>Source of Funding – list here the amount of funding sought.</i>							
SELEP request		1.12	2.5	2.5			6.12
HEFCE Funds			3	2.5	1		6.5
Applicant contribution		1.61	0.97	0.2	0.2	0.3	3.28
Equipment in kind from businesses			0.1	0.2	0.2	0.2	0.7
Borrowing			1.652	0.75	1	0.5	3.902
Total		2.73	8.222	6.15	2.4	1	20.502
<i>Costs – list here the elements of gross costs, excluding optimism bias.</i>							
Construction Cost		0.806	5.4	2.7	1		9.906
Professional Fees		0.421	0.42	0.405	0.24		1.486
Construction Equipment Costs		0.411	0.2	0.19	0.19		0.991
Planning and Related Fees		0.1	0.1	0.11			0.31
Contingency & inflation adjustments		0.48	0.75	0.75	0.4		2.38
KCC / Project Management		0.017	0.017	0.017	0.017	0.052	0.12
Engineering and Technology Equipment		0.057	0.2	0.7	0.66	0.212	1.829
Pre-VAT Total		2.292	7.087	4.872	2.507	0.264	17.022
VAT		0.455	1.428	0.993	0.528	0.076	3.48
Total		2.747	8.515	5.865	3.035	0.34	20.502

5.5. Viability: How secure are the external sources of funding?	Please provide evidence of the security of the specified third party contributions			
	Type	Source	How secure?	When will the money be available?
	Public	HEFCE (documentary evidence provided in Annex 6 of this Business Case)	Allocated in principal on expectation that SELEP funds will be secured	2018/19
	Private	Loan capital	Very, given the university's credit worthiness	2017/18
		CCCU contribution	Already secured	2017/18
	Employer in kind	Very, given track record of equipment contributions in STEM and Medical Sciences subjects		
5.6. Cost overruns	<p>Please describe how cost overruns will be met by other funding sources given that SELEP contributions will be capped at the offer awarded</p> <p>Appropriate contingencies have been included in the project budget, with clear assignment of risk to the University and the contractor (see 7. Risk Analysis below). Costings include significant and highly conservative allowances for unexpected cost increases, as well as optimism bias, while the University's highly robust procurement processes have proven to be highly effective in mitigating the risk of cost overruns. In the unlikely event of overruns occurring which are not addressed by the risk management approach described, the University will cover any shortfall from its general funds</p>			
5.7. Delivery timescales	<p>What are the main risks associated with the delivery timescales of the project? Please identify how this will impact on the cost of the project</p> <p>Project risks are discussed in section 7 (below). The most likely risks which might affect delivery timescales relate to technical issues with the site or design arising or planning issues not being resolved in time. Both of these risks are considered to be under control at this stage, given the advanced stage of the design of the new facility and that planning permission has been secured.</p> <p>Delays are likely to increase the overall cost of the project, given inflation, and the University understands that it would need to secure additional funds from other sources to make good any shortfall.</p>			
5.8. Financial risk management	<p>Identify key risks to the scheme funding and any mitigations</p> <p>The key financial risks are:</p> <p>1. The University cannot secure the required loan capital. This is highly unlikely, given the financial strength of the institution and the fact that borrowing can be funded through revenues generated by increased student numbers. LGF funding itself reduces the risk of loan funding not being forthcoming by</p>			

	<p>reducing the risk of the loan, given that a smaller proportion of the total required for Kent and Medway EDGE Hub will need to be borrowed.</p> <ol style="list-style-type: none"> 2. HEFCE withdraws its funding if the SELEP funds are not secured. HEFCE have allocated the funds in principal but will review the commitment once the final decision of the SELEP has been made. Support from the SELEP was a key criterion in the decision making process. 3. The University cannot secure funding in kind from industry in the formation of donations of specialist equipment. This again is unlikely, given that the institution already has a good track record in this area. An example of this is the wide range of high-end medical equipment already donated to the University's Institute of Medical Science. <p>As detailed in 4.2 (above) financial projections have been sensitivity tested using three alternative revenue and cost scenarios. This analysis shows that the project is viable for different levels of activity, albeit with differing break even periods.</p> <p>In addition, though the options appraisal detailed in the Economic Case (section 3), we have examined the risk associated with developing the EDGE Hub in advance of the main 'hub' building being available for us. A 'develop and build' approach is judged to reduce the financial risk compared with a 'build first' approach, because it allows student pipeline, employer reputation and good practice in core operations (such as learning and teaching) to be prototyped. All of these developments reduce the longer term financial risk by helping to ensure healthy revenues as the sale of activity ramps up and the new Building comes on line.</p>
5.9. Alternative funding mechanisms	<p><i>If loan funding is requested how will it be repaid?</i></p> <p><i>Do you anticipate that the total value of the investment will be repaid? If not, how much will be repaid?</i></p> <p>Loan funding is not requested from LGF.</p>

6. DELIVERY/MANAGEMENT CASE

The management case determines whether the scheme is achievable. It provides evidence of project planning, governance structure, risk management, communications and stakeholder management, benefits realisation and assurance.

6.1. Project management	<p><i>Please provide details of who will be Senior Responsible Officer for delivering the scheme and the different roles and responsibilities they will play. Please also detail the governance structure for the project identifying how key decisions have or will be made, how the scheme will be monitored and details of the contract management arrangements. Please provide an organogram if available.</i></p> <p>The Project Sponsor is Canterbury Christ Church University (CCCU). The Senior Responsible Officer for the EDGE Hub project overall is Professor Helen James, pro Vice Chancellor for Education and Student Experience.</p> <p>Construction Phase</p> <p>The University has set up a Building 2 Project Board chaired by the Dean of Social & Applied Sciences (a member of the University Senior Management Team) to oversee the final design and construction works. This board will include representatives from estates, finance, academic departments and key professional services (e.g. IT). It has also appointed a Project Director to manage and control the projects within the Estate Master Plan. The appointed Project Manager will report to the Project Director.</p>
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The Project Director reports to the Director of Estates & Facilities who as a member of the Senior Management Team (SMT) has overall responsibility for the management and reporting for the Estate Master Plan projects.

A project team has been formed and meets fortnightly comprising BDP (appointed as a multi-disciplinary practice), the Project Director, Director of Estates & Facilities and Dean of Social & Applied Sciences. Specific User group consultations are underway, the Project Board will meet monthly/bi-monthly as the project progresses.

Regular update reports are given to the SMT and to the Governing Body via the Finance & General Purposes Committee (Business case / Planning progress) , Audit Committee (Project Risk) and Chairs' Group (Overall Project Progress)

The University has engaged with 32 key local and regional stakeholders and run briefings for Council members and staff & students as well as publishing update newsletters on progress. As the project develops the stakeholder group will increase to include employers, particularly those related to Science and Engineering partnership opportunities.

Overall Kent and Medway EDGE Hub Project

A Project Steering Group, chaired by the Pro Vice Chancellor (Education and Student Experience) has been established to oversee successful delivery of the overall project, as set out in this Outline Business case. This will bring together all the relevant parts of the University that are required to ensure successful delivery of the project, including Estates, Finance and Resources, the Deans and Heads of School involved in Kent and Medway EDGE Hub and REDC (Enterprise Unit), along a representative from KCC Economic Development team and East Kent College to represent Further Education.

This group meets quarterly to review progress against key outputs and milestones and agree actions to ensure that Kent and Medway EDGE Hub is delivered as specified. The group will receive a quarterly progress report from the Dean of Social and Applied Sciences, who will also be the operational lead for the project.

Appropriate accountability and governance of the project will be ensured by the University's Senior Management Team (SMT) and ultimately the Vice Chancellor (VC). The Chair of the Project Steering Group and the Dean of Social and Applied Sciences will make regular reports to the SMT, which will scrutinise and approve major decisions.

Given that delivery of many of the Hub's services will be interdisciplinary in nature, appropriate shared plans and ways of working will be agreed through the University's Academic Strategy Committee, which is also chaired by the Pro Vice Chancellor (Education and Student Experience) and also involves the Deans of the University's four faculties.

Regular reports will be provided to SELEP on project process through the KCC representative on the project group, who will also sign off the payment of grant capital monies at appropriate stages of the project.

The detail reporting and monitoring and audit requirements for the LGF funding are currently (August 2017) being agreed with KCC, which will administer the funds on SELEP's behalf. The precise approach will be set out in the funding agreement which is expected for consultation later in August 2017, but is expected to include:

- Monthly progress and exceptions reporting using a standard report spreadsheet. This is currently being used informally so as to ensure that CCCU systems can provide the information required in a timely manner.
- Quarterly progress meetings with the KCC contract manager. The meetings will include review of progress against targets, expenditure for the previous quarter, assessment of spend forecast for the quarter ahead, and consideration of key operational and strategic issues and follow the following agreed agenda:
 - Scheme Progress
 - Delivery Risks and Issues
 - Procurement
 - Finance
 - Comms
 - Future Meetings
 - AOB

A note of each quarterly meeting will be drafted and signed off by both parties, and be reviewed for accuracy and actions at the following meeting.

- Invoicing agreed with KCC upon achievement of agreed outputs and upon provision of auditable evidence of delivery and spend.
- During the lifetime of the project at appropriate points (eg mid-point formative and end-point summative) discussion of project evaluation findings (see 6.9 below)

Initial discussions with KCC have concluded that this approach will work well and dovetail with CCCU internal systems. CCCU is happy to include a Benefits Realisation Plan within its internal project management arrangements, and review this as part of the contract management process with KCC. The purpose of benefits realisation is to plan for and track the benefits that are expected to be accrued over the lifetime of the scheme. The plan will detail the activities required to track the progress of the scheme including project milestones and responsibilities.

6.2. Outputs

Please identify how the outputs for the scheme will be achieved within the programme timescales and details of how the project will be monitored and evaluated. Please also complete the outputs delivery table. Please complete with any baseline information.

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	Totals
Jobs	4.25	9.75	13	7.5	11.5	6	4	56
M2 floorspace			3588					
Additional Student Enrolments**		46	122	212	252	290	328	1250
Additional Degree Apprentices***		20	40	45	50	60	60	275
Employer Student Research Projects		5	15	40	90	135	135	420
Innovation Service IP-related Income				£5,000	£10,000	£15,000	£15,000	£45,000
Income from employer research & consultancy		£50K	£200K	£350K	£400K	£400K	£400K	£1.8m
Short course and CPD Learners		20	30	50	75	100	100	375

	<table><tr><td>Additional school student visits</td><td>300</td><td>600</td><td>1000</td><td>2000</td><td>3000</td><td>3000</td><td>3000</td><td>12,900</td></tr></table> <p>* Total jobs reaches 67 in 2028/29.</p> <p>** Includes Foundation Year, Degree Apprenticeship, BSc and MSc</p> <p>*** Also included in Additional Student Enrolments (above). 275 by 23/24</p>	Additional school student visits	300	600	1000	2000	3000	3000	3000	12,900																														
Additional school student visits	300	600	1000	2000	3000	3000	3000	12,900																																
6.3. How will outputs be monitored?	Outputs will be monitored through the project management mechanism described in 6.1 above, with progress reported back to SELEP via KCC.																																							
6.4. Milestones	<p>Please identify the key milestones and projects stages relating to the delivery of this project in the table below. Please ensure a Gantt chart has been attached to this application form, clearly identifying the milestones for the project, the key construction stages, the critical path and all interdependencies.</p> <table><tr><th>Project milestone</th><th>Description</th><th>Indicative date</th></tr><tr><td>LGF funding approval</td><td>Formal confirmation of funding</td><td>September 2017</td></tr><tr><td>CCCU internal project steering group and delivery team established</td><td>Chaired by the Pro Vice Chancellor (Education and Student Experience) and comprising key internal staff and external partners, including FE and KCC.</td><td>August 2017</td></tr><tr><td>Strategic Industry Advisory Group established.</td><td>Drawn from a range of relevant companies and employers, chaired by a leading industrialist.</td><td>October 2017</td></tr><tr><td>Planning permission for new building received</td><td>Approval of redevelopment of former prison site and adjacent land.</td><td>December 2016 (now secured)</td></tr><tr><td>Site preparation commences</td><td>Contractors on site, clearance of site starts</td><td>July 2017 (now in progress)</td></tr><tr><td>First Engineering and Technology students begin</td><td>Chemical Engineering Foundation Year, based at Discovery Park</td><td>October 2018</td></tr><tr><td>Build Commences</td><td>Construction works starts</td><td>May/June 2018</td></tr><tr><td>Second wave of Engineering and Technology students begin their programmes</td><td>Foundation Year in product design, general engineering and mechanical engineering, plus 1st year undergrad chemical engineering, based at Discovery Park and North Holmes Rd campus.</td><td>October 2019</td></tr><tr><td>Launch of undergraduate and graduate research in industry projects initiative</td><td>Presentation of the research collaboration initiative to industry, and announcement of the first 10 projects.</td><td>December 2019</td></tr><tr><td>Handover of new building at former prison site</td><td>Building work completed, specialist equipment installed, snagging.</td><td>June 2020</td></tr><tr><td>Formal opening of Kent and Medway EDGE Hub</td><td>Major event, with business breakfast, taster courses, hands-on workshops for schools and students.</td><td>September 2020</td></tr><tr><td>Launch of Kent and Medway EDGE Hub Innovation Service</td><td>At the Hub opening event. With processes to take ideas through to commercialisation. First projects announced.</td><td>September 2020</td></tr></table>	Project milestone	Description	Indicative date	LGF funding approval	Formal confirmation of funding	September 2017	CCCU internal project steering group and delivery team established	Chaired by the Pro Vice Chancellor (Education and Student Experience) and comprising key internal staff and external partners, including FE and KCC.	August 2017	Strategic Industry Advisory Group established.	Drawn from a range of relevant companies and employers, chaired by a leading industrialist.	October 2017	Planning permission for new building received	Approval of redevelopment of former prison site and adjacent land.	December 2016 (now secured)	Site preparation commences	Contractors on site, clearance of site starts	July 2017 (now in progress)	First Engineering and Technology students begin	Chemical Engineering Foundation Year, based at Discovery Park	October 2018	Build Commences	Construction works starts	May/June 2018	Second wave of Engineering and Technology students begin their programmes	Foundation Year in product design, general engineering and mechanical engineering, plus 1 st year undergrad chemical engineering, based at Discovery Park and North Holmes Rd campus.	October 2019	Launch of undergraduate and graduate research in industry projects initiative	Presentation of the research collaboration initiative to industry, and announcement of the first 10 projects.	December 2019	Handover of new building at former prison site	Building work completed, specialist equipment installed, snagging.	June 2020	Formal opening of Kent and Medway EDGE Hub	Major event, with business breakfast, taster courses, hands-on workshops for schools and students.	September 2020	Launch of Kent and Medway EDGE Hub Innovation Service	At the Hub opening event. With processes to take ideas through to commercialisation. First projects announced.	September 2020
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	Launch of inaugural short course and CPD portfolio	Delivered at the new Hub and at industry-based satellite centres.	September 2019								
	Launch of Kent and Medway EDGE Hub Schools Outreach and Public Engagement programme.	Additional events to engage people in engineering and technology at the new Hub and industry-based satellite centres.	January 2018								
	Full suite of Engineering and Technology HE programmes and Degree Apprenticeships available.	Across curriculum areas of chemical engineering, general engineering, mechanical engineering, product design, electronics, games, energy and utilities.	October 2020								
6.5. Stakeholder management & governance	<p><i>Please provide a summary of the stakeholder management plan for the scheme. Include any governance arrangements which will materially impact on the delivery of the scheme.</i></p> <p><i>Provide brief description of how key statutory stakeholders will be managed and engaged, in line with Communication and Stakeholder Management Strategy.</i></p> <p><i>In broad terms consider: supplier, owner, customer, competitor, employee, regulator, partner and management. Specifically consider: local authorities, the Highways Agency, statutory consultees, landowners, transport operators, local residents, utility companies, train operating companies, external campaigns, etc.</i></p> <p><i>Identify champion, supporter, neutral, critic, opponent and potential objections</i></p> <p><i>Define stakeholder's involvement (response, accountable, consulted, support, informed)</i></p> <p>Governance From an operational perspective, delivery of the project will be overseen by a steering group of key university staff and external delivery partners (Further Education and KCC), chaired by the Pro Vice Chancellor (Education and Student Experience). The strategy for Kent and Medway EDGE Hub will be guided by a Strategic Industry Advisory Board, chaired by a leading industrialist. This group will draw its membership from local engineering and technology-focused companies and employers from across Kent and Medway, and also include members from the three relevant Guilds (Manufacturing, Life Sciences and health) of KMEP's Skills Commission.</p> <p>Stakeholder Management The table below summarises our planned approach to stakeholder management. All named organisations have been consulted and involved in the development of this Outline Business Case.</p> <p>As the project is part of the redevelopment of the former prison site, the Statement of Community Involvement will apply and there will be full consultation with a wide range of community, commercial and public interest groups in line with Environmental Impact Assessment requirements.</p> <table border="1"> <thead> <tr> <th>Category</th><th>Organisation</th><th>Role</th><th>Involvement</th></tr> </thead> <tbody> <tr> <td>Supplier</td><td>Building contractor (neutral)</td><td>Build & equip the Hub</td><td>Contractual relationship, accountable for building delivery.</td></tr> </tbody> </table>			Category	Organisation	Role	Involvement	Supplier	Building contractor (neutral)	Build & equip the Hub	Contractual relationship, accountable for building delivery.
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	Owner	CCCU (champion)	Commission and operate the Hub	Lead partner & long-term owner of the investment.
	Customer	Engineering and Technology companies (various – see 1.11 above) (supporter)	User of the Hub's services	Consulted by research, events and feedback on services used.
	Customer	Students: CCCU Student Union (user)	Participation in HE programmes	Involved as learners and beneficiaries of the development.
	Employee	CCCU (champion)	67 staff will be appointed to work at the Hub	Fully engaged in delivering the project through internal management processes.
	Regulator	HEFCE and new Apprenticeships funding & oversight body (neutral)	Regulator and funder.	Involved through curriculum planning and as development funder (eg: Degree Apprenticeships)
	Partner	Engineering and Technology companies (various – see 1.11 above) (supporter)	Set the strategy	Engaged through the Strategic Industry Advisory Board and consultation / research / feedback processes
	Partner	KCC (champion)	Accountable Body for the funding. Economic development perspective. Links to Council Leader.	Part of Project Group that have submitted this bid. Ongoing involvement through delivery steering group. Council Leader chairs current project stakeholder group.
	Partner	Canterbury District Council (champion)	Planning Authority, strategic stakeholder.	Top-level bilateral discussions. Formal involvement through Canterbury Local Plan and planning processes.
	Partner	Other District / Borough Councils (supporter)	Briefed and consulted during bid development and subsequently.	Through officer planning meetings and KMEP.
	Partner	Further Education Colleges (supporter)	Consulted with during bid development	East Kent College strategic partner of CCCU.

			process, and subsequently.	Other Colleges also actively supporting.
	Partner	Local universities (neutral)	Briefed and consulted during bid development process, and subsequently.	Top-level bilateral discussions
	Partner	Schools (supporter)	Briefed and consulted during bid development process, and subsequently. Engaged through discussions to expand STEM offer in East Kent.	Ongoing relationships with Faculty of Education, and inclement in project stakeholder group.
	Partner	Locate in Kent (champion)	Briefed and consulted during bid development process, and subsequently.	Top-level bi-lateral discussions
	Management	CCCU (champion)	Leading delivery of the project.	Fully engaged in delivering the project through internal management processes.
6.6. Organisation track record	<p>The University has a solid track record of successful delivery of projects of a similar nature including in recent years Augustine House (£30m) and Christ Church Sports Centre opened in 2009 and the St Gregory's Centre for Music and Maxwell Davies teaching facilities in 2011. Since then the University has worked with development partners to deliver Petros Court and St Georges student accommodation and in partnership with Polo Farm a major sports facility. In 2013 the University completed a 2-year major infrastructure replacement at its North Holmes campus.</p> <p>CCCU can also demonstrate success in investigating and developing new subject streams exemplified by the growth in its Health and Wellbeing offer from a start in Allied Health provision in 1989 to becoming the major provider for health training locally with dedicated facilities in Medway and Canterbury.</p>			
6.7. Assurance	<p><i>Please provide s151 Officer confirmation that adequate assurance systems are in place. Please also provide evidence of financial performance over 3 years.</i></p> <p>The relevant s151 Officer for this project is the Director of Finance, Kent County Council (the Accountable Body), who will liaise with CCCU's Pro Vice Chancellor (Resources) to ensure that adequate financial assurance systems are in place.</p> <p>Details of CCCU's financial performance over the last three years can be accessed at: http://www.canterbury.ac.uk/about-us/docs/annual-report/annual-report-2014-15.pdf</p>			

6.8. Equalities Impact Assessment	<p>Please provide evidence of your Equalities Impact Assessment here.</p> <p>CCCU operates an Equalities Impact Assessment process for all new initiatives and activities, with the activity led by the University’s Equality and Diversity Manager. The document used is appended to this Business Case in Annex 2.</p>																												
6.9. Monitoring and evaluation	<p>Please explain how you will monitor and evaluate the project, referring to the use of key performance indicators as appropriate.</p> <p>Will an Evaluation Plan be put in place? Will it be standalone; how will it be disseminated; how will lessons learned be incorporated into future projects?</p> <p>The University will use its existing monthly and quarterly project reporting mechanisms covering:</p> <ul style="list-style-type: none">• Quality – meeting user expectations, post occupancy evaluation• Cost – reporting on commitment and anticipated /unapproved changes• Timing – progress against programme stages and milestones• Risk – Top five risks reported on Red/Amber /Green basis with mitigation plans presented for any red risks• Sustainability – projected BREEAM score and energy performance predictions <p>At project end a post occupancy evaluation and lessons learned exercise will be conducted.</p> <p>In addition to its existing monthly and quarterly reporting processes, the University will conduct and disseminate an evaluation of the EDGE Hub. The detail of the approach to be taken will be discussed internally and agreed with key stakeholders, but is likely to be based on an agreed Theory of Change / Project Logic Model, an initial draft of which is provided below:</p> <div><table><tr><th>Activities</th><th>Outputs</th><th>Outcomes</th><th>Impact</th></tr><tr><td>Development of innovative industry-focused technical & professional education for students and companies</td><td>1250 learners by 2024 (inc 275 degree apprentices)</td><td>Employer report their skills shortages and skills gaps being met through the EDGE Hub</td><td>Economic growth as a result of EDGE Hub employment and induced effects</td></tr><tr><td>Engineering and Design-focused research partnerships with industry</td><td>420 student research projects by 2024</td><td>Under-represented learners engaged in engineering & design learning</td><td>Economic growth in sectors supported by EDGE Hub</td></tr><tr><td>Development of innovation services</td><td>Innovation service income £45K by 2024</td><td>Under-represented learners progressing in engineering & design careers</td><td>Improved graduate employment levels in high-quality engineering & design-related careers</td></tr><tr><td>Engagement of under-represented learners and curriculum tailored accordingly</td><td>Employer research & consultancy income £1.8m by 2024</td><td></td><td></td></tr><tr><td>Engagement of children & young people</td><td>375 short course & CPD learners by 2024</td><td>Companies attribute business growth & innovation to the EDGE Hub</td><td></td></tr><tr><td></td><td>12,900 school student visits by 2024</td><td></td><td></td></tr></table><p>Subject to assumptions and operating environment</p></div> <p>Once this is agreed, appropriate data collection methods will be specified and implemented or commissioned, as appropriate. It is likely, for example, that student destination tracking surveys will provide information needed to assess the EDGE Hub’s added value in terms of student employability. Similarly, surveys or qualitative research with participating employers could be used to assess the extent to which the Hub really adds value in addressing skills shortages, for example, or by</p>	Activities	Outputs	Outcomes	Impact	Development of innovative industry-focused technical & professional education for students and companies	1250 learners by 2024 (inc 275 degree apprentices)	Employer report their skills shortages and skills gaps being met through the EDGE Hub	Economic growth as a result of EDGE Hub employment and induced effects	Engineering and Design-focused research partnerships with industry	420 student research projects by 2024	Under-represented learners engaged in engineering & design learning	Economic growth in sectors supported by EDGE Hub	Development of innovation services	Innovation service income £45K by 2024	Under-represented learners progressing in engineering & design careers	Improved graduate employment levels in high-quality engineering & design-related careers	Engagement of under-represented learners and curriculum tailored accordingly	Employer research & consultancy income £1.8m by 2024			Engagement of children & young people	375 short course & CPD learners by 2024	Companies attribute business growth & innovation to the EDGE Hub			12,900 school student visits by 2024		
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	driving productivity improvements through innovation, research and knowledge exchange.
6.10. Post completion	<p><i>What are the plans for the project on completion? Will there be a change of ownership, will the project be refinanced? How will this be managed?</i></p> <p>Once the project is completed, its management and operation will be through CCCU's Faculty of Social and Applied Sciences, with cross-faculty aspects of the Hub's work managed through the University's Academic Strategy Committee, which brings together the Deans of the four Faculties with the Pro Vice Chancellor (Education and Student Experience), who is also the lead staff member for this bid and will chair the project implementation steering group.</p> <p>There will be no change of ownership.</p>

7. RISK ANALYSIS


Likelihood and impact scores:

5: Very high; 4: High; 3: Medium; 2: Low; 1: Very low

Risk	Likelihood*	Impact*	Mitigation
1. Project cannot be delivered within the proposed budget	3	3	<ol style="list-style-type: none"> Extensive feasibility and technical studies already completed, with project at an advanced and detailed stage of planning. Most match funding commitments already secured in principle. Budget overrun will be CCCU risk, not LGF risk. Project budgets include an appropriate level of contingency to allow for adjustments to build plans and unexpected cost overruns. An allowance has been made for a Price and Design Reserve (5%) and Construction Contingency (5%) within the overall construction cost and there is a further client risk of 5%. The management mechanisms for the control of the contractor side risk will be built into the form of the building contract. Cost consultant will be appointed by CCCU prior to project start.
2. Project does not deliver outcomes required by SELEP or LGF	1	4	Outcomes specified are estimated conservatively and / or are based on specific, realistic implementation plans. The project delivers clearly defined and quantified employment space, high quality employment and education and skills benefits.
3. Project does not meet State Aid requirements	1	5	External legal advice has been sought as part of the development of this Outline Business case. This is detailed in section 4.4 (above) and indicates that the project does not breach State Aid requirements.
4. Project does not secure the requisite business support	2	4	The project as specified draws on extensive market research (into the needs of Engineering Technology companies in 2015) and into Chemical Engineering and Medical Technologies companies (2016). These processes have engaged businesses as supporters of the projects and there are ongoing contacts with key employers (such as Pfizer at Discovery Park). Employers have shown themselves to be highly supportive of the project concept, based, as it is, on research conducted with their input. They are also shaping the detail of the offer of the centre through ongoing bilateral contacts and an employer consultation event in Canterbury in June 2016. Strategy for the new facility will be set by

			a Strategic Advisory Board chaired by a leading industrialist. The University has demonstrated its ability to engage with business through its highly successful delivery of STEM Learning in Kent and Medway, which has engaged 800 business ambassadors to promote STEM in schools
5. Project does not secure political or public support.	1	4	Canterbury District Council have already indicated their strong support for the proposed new facility as part of the wider redevelopment of the site. The new facility is embedded in a new building development at the former Canterbury Prison site. As a result, the project is part of a development which has been designated for Class D1 Educational use in the draft Canterbury District Local Plan 2014 currently going through review. The Environmental Impact Assessment that was required for the planning application (Ref CA//16/00781) included extensive community and stakeholder consultation. The planning application itself was approved in December 2016.
6. The project does not secure the required revenue to be viable in the medium and long term	2	5	The bulk of the identified revenue streams that will make the project viable arise from fees and government additional payments for taught courses in Engineering, Product Design and Technology. These market opportunities have been shown by detailed feasibility work by Cushman and Wakefield in 2015 to be areas of likely strong student demand where there are gaps in provision. Student numbers and associated fees are based on this detailed market intelligence and use the University's standard business planning methodology, which allows for some 'wastage' (such as student drop out) and 'starts small', with realistic initial volumes before increasing once the provision is established. In the event of these numbers coming into question (in, for example, changed market or policy conditions) alternative provision will be developed that makes relevant use of the facilities in terms of their original intended purpose.
7. Project delayed due to technical constraints or planning issues	2	4	The project is embedded in a larger education development which already forms part of the Canterbury Local Plan 2014. Site surveying and preparation work is already underway and no unexpected technical obstacles are expected. In the event of the archaeological investigation identifying issues that may delay the development, there is still time to do this and keep to the timescales indicated in this Outline Business case, given that the investigation will commence in late 2017.
8. The project fails to recruit the staff it requires	3	5	A lot of attention has been given to the challenge of securing the right talent to lead and deliver the EDGE Hub. While it may be considered challenging to recruit the right team to an institution without a recognised track record in engineering and technology, the 'blank canvas' nature of the opportunity also means that it will act as a magnet for ambitious forward-thinking people who are committed to being industry focused, innovative and creative in terms of teaching and learning, and passionate about widening participation in engineering and technology. This risk is being managed in the following ways: a) The strategic commitment to the EDGE Hub has been brought to the fore with an improved web presence on the CCCU 'landing page', with interviews with key senior staff and detail

			<p>of the University's strategic commitment and vision to engineering and design: https://www.canterbury.ac.uk/business-and-community/engineering-and-technology/engineering-and-technology.aspx</p> <p>The first roles (Director of Engineering Curriculum and Engineering Outreach and Engagement Lead) have now been advertised through this page and a number of relevant channels. Interest so far has been very positive.</p> <ul style="list-style-type: none"> b) Staff resources have been identified within existing STEM-related departments to contribute to the first new teaching offers (engineers in the computing department and chemists with experience of chemical engineering in Life Sciences). In this way, part of the EDGE Hub offer will be built in part upon existing staff. c) Partnerships are being developed with other post-92 universities who are also developing engineering and design capabilities with a similar ethos in terms of approaches like CDIO and a commitment to widening participation. This could open possibilities of staff exchanges and cross-institutional approaches to teaching and learning. d) Key posts will have a research student linked to the appointment to attract research active staff e) University instructor posts will be offered so that the KMEDGE Hub can train a proportion of its expanding staff base f) Links with industry will provide access to specialist expertise
9. Delivery is compromised by the need to develop the EDGE Hub as new capability is being built up	3	4	<p>The EDGE Hub will be developed incrementally, starting in temporary facilities and in industry-based centres like the Discovery Park Industry Liaison Lab, as the new Building 2 is being built. An alternative approach would be to build the main new centre in Building 2, recruit staff and then start delivery of services to learners. However, this would run the risk of companies engaged losing interest and slow the development of industry-based practice in locations that will become 'satellites' of the central Hub in Canterbury. While this in one sense increases risk (with service development happening alongside the main building project), it also enables industry links to be maintained and developed and the practice of teaching, learning, research, knowledge exchange and innovation to be developed, and a track record built up. Industry consultation has shown that companies want tangible evidence of how well the Hub works with business, and a body of practice needs to be built up. This essentially has already started with the Industry Liaison Lab at Discovery Park acting as a prototype 'EDGE Hub satellite centre. The greater risk, therefore, is to wait for Building 2 to be completed and lose industry interest in the project, while also failing to start developing the kind of practice that will make the project a success. In a more practical sense, the Build of the central facility is being handled by the University's procurement team (which is expert in the building delivery aspects), while a cross-university, multidisciplinary team is supporting the Dean of Social and Applied Science to develop and implement the EDGE Hub vision and operating ethos.</p>

8. DECLARATIONS	
8.1. Has any director/partner ever been disqualified from being a company director under the Company Directors Disqualification Act (1986) or ever been the proprietor, partner or director of a business that has been subject to an investigation (completed, current or pending) undertaken under the Companies, Financial Services or Banking Acts?	No
8.2. Has any director/partner ever been bankrupt or subject to an arrangement with creditors or ever been the proprietor, partner or director of a business subject to any formal insolvency procedure such as receivership, liquidation, or administration, or subject to an arrangement with its creditors	No
8.3. Has any director/partner ever been the proprietor, partner or director of a business that has been requested to repay a grant under any government scheme?	No
<p>If the answer is “yes” to any of these questions please give details on a separate sheet of paper of the person(s) and business(es) and details of the circumstances. This does not necessarily affect your chances of being awarded SELEP funding.</p>	
<p>I am content for information supplied here to be stored electronically and shared in confidence with other public sector bodies, who may be involved in considering the business case.</p> <p>I understand that if I give information that is incorrect or incomplete, funding may be withheld or reclaimed and action taken against me. I declare that the information I have given on this form is correct and complete. I also declare that, except as otherwise stated on this form, I have not started the project which forms the basis of this application and no expenditure has been committed or defrayed on it. I understand that any offer may be publicised by means of a press release giving brief details of the project and the grant amount.</p>	
8.4. Signature of Applicant	
8.5. Print Full Name	Professor Rama Thirunamachandran
8.6. Designation	Vice Chancellor Chief Executive)
8.7. Date	4 August 2017