East Lothian Council

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Document Title	Food and Drink Innovation Hub - Full Business Case

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East Lothian Council

REPORT TO: Members' Library Service

MEETING DATE:

BY: Head of Development

SUBJECT: Food and Drink Innovation Hub – Final Business Case

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1 PURPOSE

1.1 To provide a report on the final and approved Full Business Case for the Food and Drink Innovation Hub.

2 RECOMMENDATIONS

2.1 Members are advised to note the terms of the report.

3. BACKGROUND

East Lothian Council (ELC) and Queen Margaret University (QMU) are working in partnership to develop and deliver a Food and Drink Innovation Hub on land owned by ELC, adjacent to the University Campus, which will focus on food and drink related innovation. The Hub is located in East Lothian, adjacent to the QMU campus at Craighall on the boundaries of both Edinburgh and Midlothian.

3.2 The development of the Hub also unlocks a further significant opportunity for the partners to develop ELC's landholdings adjacent to the campus into the Edinburgh Innovation Park (EIP). The EIP would be a science and technology park, aligned with the activities of QMU and the Hub that will support the growth of high value added and innovative businesses including those in food & drink related sectors that would directly mature in and benefit from the activities of the Hub. The wider development also includes infrastructure improvements, being the delivery of a grade separated junction, 1500 new homes (including affordable homes) a new primary school and community centre. A Segregated Active Travel Corridor will also improve connectivity and accessibility throughout the development.

3.3 Funding of up to £30 million has been allocated from the Edinburgh & South East Scotland City Region Deal based on the outline business case submitted in June 2018. The project cost at Outline Business Case (OBC) stage was £45 million. This included land purchase (for the Hub and the EIP), off site utilities provision (which will support the wider EIP) and the construction and fit out of the Hub itself.

3.3 The Outline Business Case for the Hub provided for a £10M contribution from ELC comprising of (1) £4M for the acquisition of the land by ELC (now complete) and (2) £6M of capital contribution. QMU committed to a capital contribution of £5M and subject to the approval of the Full Business Case UKG and SG (as noted above) would provide funding of £30M

3.4 Since approval of the Outline Business Case for the Hub (approved by ELC on 12th June 2018), QMU have advised that the £5M capital contribution is no longer available and are seeking to finalise a value engineered solution to reduce the cost of the project proposed in the Outline Business Case from £45M to £40M

3.4 In accordance with the Edinburgh and South East Scotland City Deal, ELC and QMU presented the Full Business Case to the Edinburgh South East Region City Deal Committees being (1)The Directors Group (2) The Transport Appraisal Board (3) The Executive Board and (5) The Leaders Group

3.6 The approval of the Full Business Case (annexed as Appendix 1) by the Edinburgh and South East Scotland City Deal Joint Committee on 4th June 2021 unlocks ELC and QMU's ability to draw down the £30 million funding package from UK Government and Scottish Government.

4 INTEGRATED IMPACT ASSESSMENT

4.1 Inclusive growth is a shared policy objective of the Council and national governments and a key driver for the Deal is to promote equality through addressing inclusion across the city region.

4.2 An inclusive growth framework was developed to ensure that the city region deal projects can address these issues. Five thematic interventions to target these challenges will go some way towards ensuring that the benefits of the city region deal investment are shared as widely as possible.

4.3 All the ESESCR business cases for projects included in the programme have demonstrated, or will demonstrate, how they will reduce inequalities.

4.4 Each business case must also demonstrate the impact that it will have on inclusion. A Benefit Realisation Plan was approved by the ESESCR Joint Committee on 4 September 2020 which provides a series of pro-formas for all City partners which identify specific theme approaches to monitoring and evaluation in relation to identified outputs, potential impacts and positive equality actions; and a general approach to monitoring and evaluating Community Benefits and Social Innovation realisation given the cross

cutting nature of both objectives and extensive variation in the benefits that could emerge.

5 RESOURCE IMPLICATIONS

5.1 Financial - ELC's £10M contribution is reflected in the approved capital plan.

5.2 Personnel - None.

5.3 Other - None.

6 BACKGROUND PAPERS

6.1 Edinburgh and South East Scotland City Region Deal – Food and Drink Innovation Hub: Final Business Case – Report to East Lothian Council - 27 April 2021

6.2 Edinburgh and South East Scotland City Region Deal Annual report, Benefits Realisation Plan and Food and Drink Innovation Update - Report to East Lothian Council 27 October 2020

6.3 Edinburgh and East Scotland City Region Deal – Annual Conversation and Food and Drink Innovation Update - Report to East Lothian Council - 15 December 2020.

6.4 Edinburgh and South East Scotland City Region (ESESCR) Deal – Draft Outline Business Case – Food & Drink Innovation Hub Members Library Report (Private) 12th June 2018.

6.5 Edinburgh and South East Scotland City Region Deal – Deal Document Deal Implementation Plan, Financial Plan and Agreement Members Library Report (Private) 12th June 2018.

6.6 Edinburgh and South East Scotland City Region (ESESCR) Deal – Report to East Lothian Council 26th June 2018.

6.7 Edinburgh and South East Scotland City Region Deal – Report to East Lothian Council 11 August 2017

6.8 Heads of Terms Agreement signed by UK/Scottish Governments and Partner Authorities on 20 July 2017

6.9 East Lothian Council Summer Recess Arrangements – Standing Order 15.5 Members Library Report – Edinburgh and South East Scotland Region - City Deal Proposition 19th July 2017

6.10 Edinburgh and South East Scotland City Region Deal – Report to East Lothian Council 28 June 2016

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CONTACT INFO	
DATE	18th June 2021

Edinburgh South East Scotland City Region Deal

Full Business Case: Queen Margaret University Innovation hub for Food, Drink & Health Sciences

Contents

PART A

1 Project Description & Executive Summary

1.1 Strategic Intent & Vision

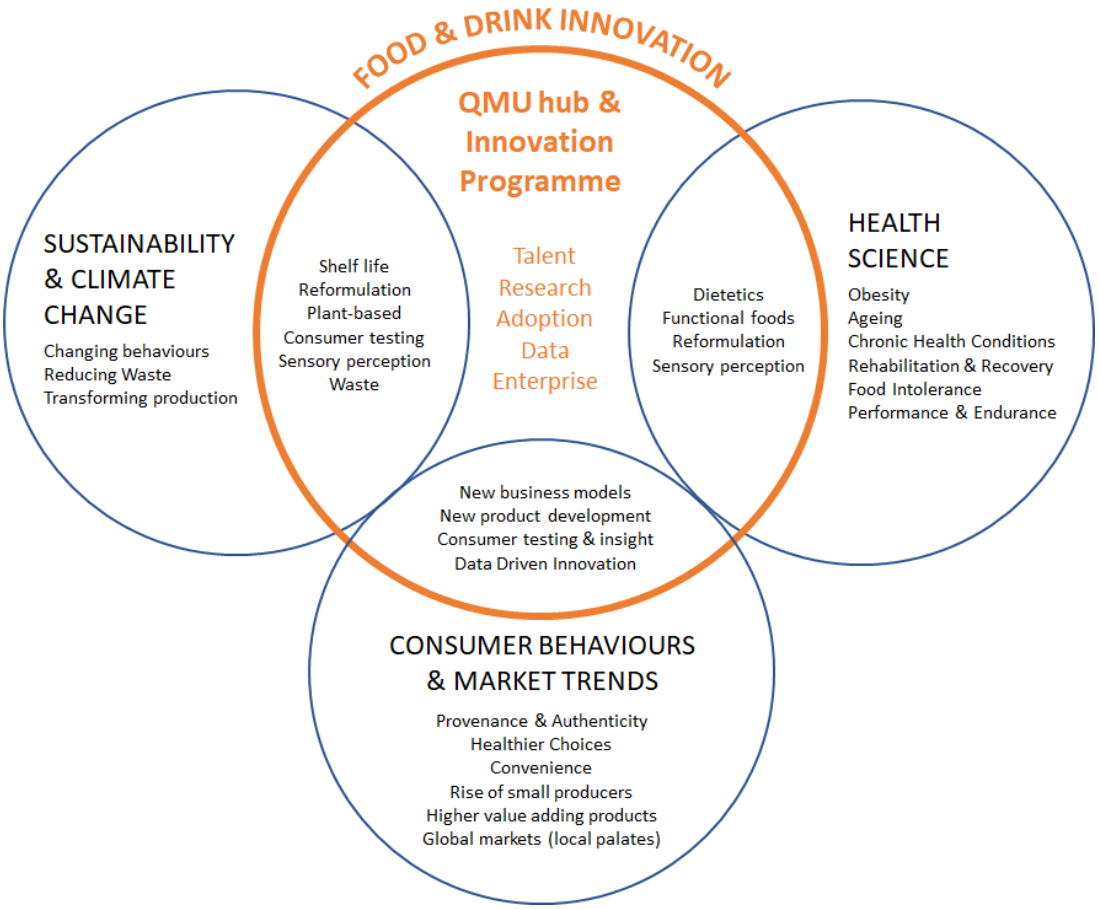
Queen Margaret University (QMU) and East Lothian Council (ELC) are collaborating to develop an Innovation hub on land owned by ELC, adjacent to the University Campus, which will focus on food and drink related innovation. The Hub is located in East Lothian, adjacent to the QMU campus at Craighall on the boundaries of both Edinburgh and Midlothian.

The development of the hub also unlocks a further significant opportunity for the partners to develop ELCs landholdings adjacent to the campus into the Edinburgh Innovation Park (EIP). The EIP would be a science and technology park, aligned with the university and the hub that will support the growth of high value added and innovative businesses including those in food & drink related sectors that would directly mature in and benefit from the activities of the hub.

In the last decade innovation has become a key tool of economic renewal and growth in developed economies causing small and medium sized enterprise (SMEs) to dominate not only the innovation space, but also the complexion of the economy. The economic importance of innovation as a tool to increase competitiveness and to gain market traction has created a new demographic whereby SMEs form the backbone of the global knowledge economy and company start-ups and spin-outs are creating economic renewal and regeneration. The need to support and promote innovation is embedded in all national and local government economic policy, including the city region deal, and is integral to Queen Margaret University's Strategy for 2020-2025.

QMU has a well established reputation in food and drink related innovation. The food and drink sector is growing significantly in importance and relevance, driven by major global trends such as climate change, health, ageing and the associated demands of consumers. As indicated in the diagram below, responding to these trends means food & drink related innovation is now a much broader field than might traditionally be considered the case and this has created opportunity for nimble SMEs to flourish.

The QMU innovation hub directly responds to this market opportunity and will offer an integrated home for, and holistic service offering tailored to, food and drink related innovation, building on QMUs strength in food and drink and related disciplines, including health science and business management, to support existing providers and foster new high growth SMEs.



The hub proposal and future EIP opportunity it unlocks, presents an exciting opportunity to develop a best in class offer to attract, establish, nurture and grow the City Region, and Scotland's, food and drink sector and the vibrant SME market in Edinburgh and the city region.

1.2 What will the City Deal Deliver?

The City Deal will enable the delivery of the following three Innovation projects, with further details of each set out in the sections below:

1. QMU Innovation hub ("hub")
2. Enable development of the Edinburgh Innovation Park (EIP)
3. Strategic Programme for Food & Drink related Innovation ("innovation programme")

1.2.1 QMU Innovation Hub

The £36m QMU Innovation hub will be the first plot to be developed at EIP and will open in 2025. It will be built through funding from the City Deal (£30m) and a capital contribution from ELC of (£6m).

The Innovation Hub will be bespoke and provide a highly targeted infrastructure and property offer, together with the specialist services required to capture, support and grow companies working in fast-moving innovation-led sectors. It will comprise a serviced multi-occupied laboratory and office building. The design concept for the Hub is for a facility that anticipates success and the need for subsequent 'grow-on' expansion. A number of 'innovation hub' facilities in the UK have not exploited their full potential because success and the concomitant need for contiguous expansion was not anticipated. To deliver an expansion capability, a two phase approach to the development of the QMU Innovation Hub building has been adopted with the first phase being the larger and funded by the City Deal grant. (**see Appendix G** – Financial Case**)** Further scope for growth is provided for by the EIP overcoming the issues that have constrained growth elsewhere.

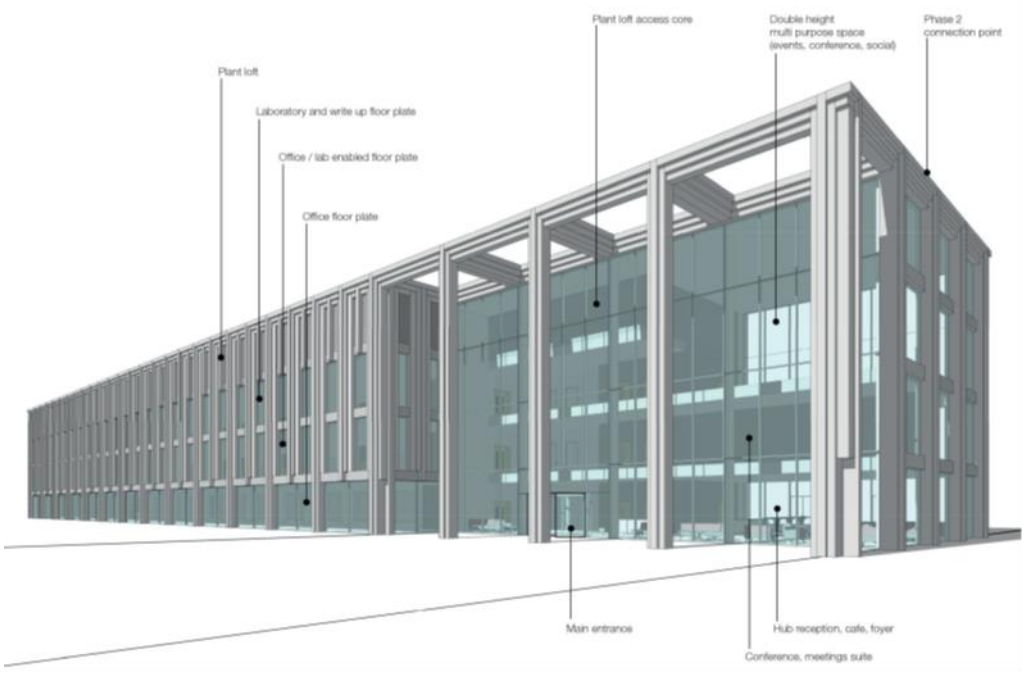
Companies operating in the Innovation Hub will not only benefit from bespoke facilities but will also have easy access to the University, its social capital and to new ideas. Co-location will encourage mentoring and peer support. Close access to business development staff and business support intermediaries will enhance the support on offer, facilitating connections with investors, enabling business collaboration and business growth. The close linkages and proximity to the University Departments, their students and expertise will be an important aspect of this initiative. The Innovation Hub will provide opportunities for students to embrace the innovation and enterprise culture as part of their educational experience, with a wider innovation programme encouraging them to create their own start-ups. The Innovation Hub will provide a home for enterprise initiatives, events and workshops and will display the inspirational, innovative students and staff from across the University.

The Hub will accommodate staff and facilities of QMU's Scottish Centre for Food Development and Innovation (SCFDI) a successful innovation, research and development (R&D) partner to the food and drink sector. SCFDI already addresses the need to reduce barriers to innovation in one of Scotland's key sectors and relocation to the Hub will allow it grow these activities significantly. It will address market identified needs by providing access to specialist industrial scale equipment, the knowledge and skills to undertake R&D projects and a client development kitchen to support product development and product launches. It will enable much closer collaboration between industry and the university offering vastly improved space for co-location and collaboration and will operate on an open basis with partners across the sector bringing much needed leadership and focus.

A more detailed description of the facilities that will be available and the history of SCFDI is set out at **Appendices A & B**;

The Hub is to be funded from public sources as a consequence of market failure (see further assessment in Economic Case) Speculative development to achieve supply led demand is the objective and has been the case in a number of successful 'innovation economy' developments nationally.

The vision of project partners is that the Innovation Hub will act as a national resource underpinned by the expertise found within the region's innovation network working in partnership to grow and support the innovation sector.



The above shows the concept design of the innovation hub

1.2.2 Edinburgh Innovation Park ("EIP")

The Edinburgh Innovation Park covers 52 acres adjacent to the Innovation Hub and provides an opportunity to transform a strategic economic development site, owned by ELC, into a thriving nationally significant cluster of knowledge exchange, innovation and high value business growth, the Edinburgh Innovation Park (EIP).

EIP will play an integrated role in delivering the ambition of the Edinburgh and South East Scotland City Region Deal (City Deal) to drive innovation and skills-led inclusive growth for all its citizens and to use its areas of knowledge and industrial based strength to help solve important societal challenges.

The strategy behind the EIP was presented by QMU in 2012 but can trace its roots back to 2005 and the relocation of the University to the Craighall site. Adjacency to economic development land and the potential the Craighall site presented for the University to work with industry and business was a paramount consideration in the University's decision to relocate to East Lothian. Since then the partnership with ELC has been formed and realising the potential of this site remains a joint commitment.

Innovation Parks have different development models. The most successful models involve creation of a range of innovation facilities that enable companies to graduate from 'hubs' to grow-on accommodation before taking larger facilities. By developing dynamic clusters of this nature, innovation parks are able to attract inward-investor development by larger enterprises seeking to co-locate with talent in a proven location for innovation and technology.

Demand for the wider Innovation Park will be stimulated by the wider Food and Drink innovation activity of the hub but it is not envisaged that tenants of EIP will be limited exclusively to this sector. The delivery of the hub as the first building at the EIP and the impact of the Innovation Programme (see below) is expected to drive demand for the wider long-term commercial development of the EIP itself over a 25 year period.

Edinburgh Innovation Park is a timely development that aligns closely with national and regional economic policy and the University's own future vision. University Science & technology park (STP) development has become a familiar part of the post-industrial economic landscape. Universities are increasingly recognising their key role in developing the specialist infrastructure and support ecosystem that the innovation sector requires to thrive and grow.

University (STP)'s are in a strong position to foster interactions with innovation-led companies based around tacit knowledge networking and enabling. Universities can be invaluable to SMEs on the forefront of emergent technologies and services, not only as (STP) hosts but increasingly as facilitators. By developing close relationships with (STP) companies, universities are able to facilitate access to expertise, funding, research, commercialisation, partnering and professional advice – all vital elements of innovation enterprise.

Within an (STP) setting, benefits of a co-located university to the regional innovation system are accrued over time and developed through networking, collaborations and partnerships. These interactions are vital contributions both to (STP) companies and the region's innovation networks and a provide a significant contribution to the region's economic growth and wellbeing. By embarking on this process through the development of EIP, QMU will become pivotal in promoting innovation both within the University and the City Region.

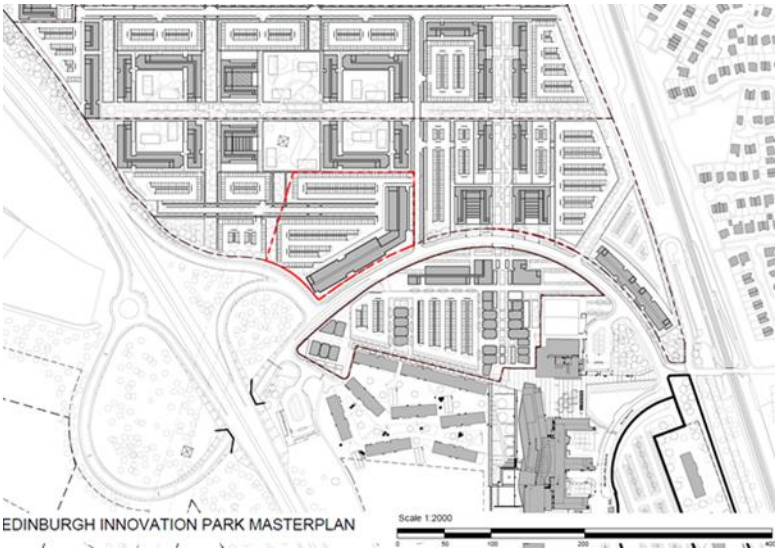
Additionally, EIP is a strong strategic fit with Scotland's Economic Strategy focused on 'fostering innovation within businesses, research & development, public services and workplace practices. EIP responds to the challenges and opportunities identified by Edinburgh's Economic Strategy to support and grow its innovation and tech sectors to secure the city region's future socioeconomic growth. EIP will play an integral part in delivering the vision for the City Deal[7] and the ambition for Edinburgh to become Europe's digital capital. EIP also delivers key elements of East Lothian's Council's economic strategy '*to enhance East Lothian's business infrastructure'* and to '*promote the proximity of East Lothian to Edinburgh, along with its lower costs and skilled workforce to attract new jobs and businesses to the area.*

EIP will also provide opportunities to strengthen the innovation and commercial activities already established within QMU and will assist in the delivery of the innovation strategy of the University.

EIP will follow the successful science and technology park model focussing on providing space dedicated to innovative high value companies (particularly high growth potential SMEs). Following successful models developed elsewhere in the UK, agreed "entry criteria" will be embedded in the commercial structure to restrict tenancy to innovative, high growth potential companies that contribute to developing an attractive cluster over the longer term.

Envisaged activities and outputs include:

- Approval by ELC of a development brief that will commit the site to development as a home for innovative businesses, giving companies confidence in the availability of space to grow;
- The establishment of a Joint Venture company (ELC and QMU) to progress the development of up to an additional 40,000 sqm of floor space on a commercial basis over a 25 year period. This commercial structure will offer a single point of interface for potential tenants while reflecting the underlying strength and commitment of the two parties to developing a flexible and ambitious offer to the market. When fully occupied this could support between 800 and 3,000 jobs (depending on the type of space developed and associated employment density) and net GVA in excess of £77m (NPV) over 15 years thereby improving job density in East Lothian, an inclusive growth objective of the City Deal;
- Entry criteria for tenancy of EIP will be essential in maintaining high quality focus on innovation on a key economic development site and are to be reflected in the development agreement.



The plan above shows the proposed development adjacent to the current QMU campus and location of the QMU Innovation hub (outlined in red) within the wider Innovation Park

Location of QMU to Edinburgh. Source: Google Maps

1.2.3 Strategic Innovation Programme ("Innovation Programme")

The partners recognise that realising the full potential of both the hub and the EIP will require the partners to deliver a range of complementary activities to secure the benefits identified. QMU has refreshed its Strategic Plan (2020-2025)[1] which includes a focus on seeking out partnership and collaboration; providing a market-responsive course portfolio; and delivering transformative research and innovation, with the overall aim of growing its commercial activities, building on its history as an externally focused institution.

To provide a holistic offer, the Joint Venture will work with partners to fund and deliver a programme of activities targeted at supporting food & drink related innovation and intended to maximise the economic and social impacts of the hub. Aligned with the wider City Deal proposals for innovation, activities and outputs will be delivered in 5 areas ("TRADE[2]"):

- **Talent** – QMU will refresh and expand its academic course offering to reflect strategic skills needs and skills gaps in food, drink related disciplines with courses of all types designed to meet sector needs and raise wages through increased productivity and skills. The innovation hub will align with the City Deal Integrated Regional Employability and Skills (IRES) programme and will support inclusive growth outcomes by building upon QMU's strong track record of engagement with women and encouraging people into higher education who may not otherwise have considered such a path.

  The courses offered will take advantage of the new facilities available in the hub to embed the skills needed for new product testing and development and will embrace an innovation driven and enterprising culture. In addition, the new commercial relationships formed through the hub represent a significant opportunity to promote employability and industry access to skills through industrial placement, part-time learning and apprenticeships. This

[1] QMU Strategic Plan 2020-2025 - https://www.qmu.ac.uk/about-the-university/our-strategic-plan/

[2] This is based upon the approach to benefit identification and measurement undertaken by the Data Driven Innovation Programme Hub Business Cases (2018-2020) for the City Region Deal. This approach has been adopted for the QMU Innovation Hub given the considerable alignment between these Programmes in terms of strategic focus and potential types of benefits.

growing supply of talent will be encouraged to develop student-led start-ups under the Entrepreneurships theme (below). Activities and outputs to be delivered over a 15-year programme include:

Talent Category	**Target Outputs**
Food & Drink Technology BSc (new students)	314
Food Science MSc (new students)	120
PhDs (new students)	50
CPD courses	165 (credit bearing) 1,878 (non credit bearing)

- **Research & Adoption -** QMU will work with partners across the sector including other FE and HE institutions and the private sector to leverage additional research and R&D spend into the sector and its translation into new and innovative product development. Target activities and outputs include:
    - Leverage £5.2m of Research Council funding over 15 years with a focus on alignment with the UK Industrial Strategy challenges relating to transforming food production and healthy ageing as well as wider consumer and public health priorities focussed on healthier and more sustainable foods and improved health outcomes; (see Appendix D – Case studies)
    - More than doubling the income leveraged from the private sector on R&D projects from current levels by the end of the first year of operations of the hub. This represents £9.0m of private sector research and development projects over 15 years including collaborative projects aligned across the food, drink and health science sector and led by the expansion and evolution of current SCFDI activities;
    - Promote and facilitate partnership working to combine individual capabilities and strengths into new integrated offers to market for multi-disciplinary research and testing services. Continue to liaise with partners with whom discussions have taken place including Scotland's Rural College (SRUC) and the James Hutton Institute, to ensure collaborative alignment of academic research. A partnership with Edinburgh Napier University on complex chemical analysis and data science is also being developed, taking advantage of City Region wide strengths.
- **Data** - Data Driven Innovation (DDI) is a key workstream for the City Deal with the ambition to make Edinburgh the Data Capital of Europe. QMU and ELC will work with other City Deal partners to identify ways to embed data science skills in the teaching and research offers and to grow the City Region's data assets. Target activities and outputs include:
    - Establish a research partnership with Edinburgh Napier University to combine data science and chemical analysis skills with SCFDI's existing offer (reflected in new PhD numbers captured under talent above);

- Explore opportunities to embed access to data driven skills and insights in teaching, research and entrepreneurship support in partnership with City Region DDI partners

- Work with DDI programme to create new City Region data assets for food & drink related innovation (these being large scale, accessible, suitably anonymised data sets available to be used to deliver new research insights and, ultimately, new products). Examples of opportunities for collaboration include overlaying nutritional insights with genomics research by University of Edinburgh at Easter Bush to develop genetically resilient crops for drought afflicted countries to prevent famine and childhood malnutrition

- **Entrepreneurship** – Providing flexible lease accommodation, access to the bespoke research services and facilities of SCFDI and supported by delivery of co-ordinated tailored and focused enterprise support services to encourage the creation of new businesses (including staff and student led start-ups from talent and research activities), scaling up existing small scale enterprises and promoting exports in the food and drink sector addressing a key policy objective at all levels of government and for the City Deal. Building on the existing integrated provision and particular success with female entrepreneurship, outputs and activities include:

  - c.100 new start-ups surviving to maturity over 15 years attracting £5m of seed investment on conservative assumptions;

  - Continue to simplify and co-ordinate the business support landscape for HEI start-ups and SMEs of all types through the continued growth of the successful on-campus Business Gateway service delivered by ELC (the only Business Gateway located on a university campus). Target outputs from the support offered include c.100 new start-ups over 15 years. Opportunities to relocate the service to the hub building will be explored to enhance the visibility of the service;

  - To promote inclusive growth outcomes discussions are underway with Scottish Government and others to deliver a Women's Business Centre at QMU, building on the university's high proportion of female students & staff and female founded start-ups. Target metrics include addressing gender inequality across the region with men earning 14% more than women[3] and making a contribution to addressing the UK's £250bn female entrepreneurship gap[4].

  - QMU and Business Gateway will work with City Region partners in the DDI Programme and sector partners including the Scottish Food and Drink Federation (SFDF) to explore the funding and creation of a cohort based accelerator programme for the most promising start-ups. More widely the target is to take advantage of Edinburgh's wider innovation ecosystem and the formal and informal networking opportunities and learning it offers to grow businesses.

[3] https://static1.squarespace.com/static/55c87967e4b05aa55020f656/t/5c263201898583ec74c01146/1546007049724/ESESCR+Deal+Document+6+August+2018+signed.pdf

[4] The Alison Rose Review of Female Entrepreneurship (2019) for HM Treasury - https://www.gov.uk/government/publications/the-alison-rose-review-of-female-entrepreneurship

- Promotion through the Joint Venture of the build out of the EIP on a commercial basis offering entrepreneurs that mature in the hub, and others attracted to the offer, a place to grow in a thriving innovation-led community.

1.3 Why is it needed?

Although innovation hubs are a familiar part of the innovation ecosystem in the UK and elsewhere, the speculative development of specialist innovation facilities is largely avoided by commercial property developers as a niche market sector that attracts a high degree of risk. The risks and challenges are reflected in a significant number of grant funded and privately developed innovation centres in the UK that have failed to achieve commercial viability and have therefore been unable to attract follow-on investment for further phased development. The combined proposals are intended to respond to requirements in two key areas:

- The strategic challenges facing the food, drink & health science sector and current barriers to R&D; and
- Local, regional and national policies to drive inclusive economic growth and globally competitive products and services through innovation and skills-led economic growth.

1.3.1 Food & Drink Related Innovation Needs

Challenges of food nutrition and sustainability exist at a global level. At a national level there are increasing challenges with obesity and an aging population. As of 2017 63% of UK adults were classed as being overweight, with 26% classed as obese[5]. This obesity epidemic is projected to cost the NHS £9.7 billion per year by 2050, with wider costs to society estimated to reach £49.9 billion per year[6]. This, combined with the recent discovery that obesity increases the risk of death by COVID-19, has prompted the UK government to spend increasing resources on efforts to change the dietary habits of the UK and the landscape of healthy offerings available to consumers. The food, drink and health science sector is also facing regulatory changes which necessitate the development of advanced reformulation strategies by companies operating in the sector.

At the same time, the sector is characterised by many small SMEs who often lack the in-house resources, facilities and expertise to carry out the required R&D activities to meet these challenges and the confidence to grow. This means that the UK and Scotland's highly regarded food and drink sector is failing to capitalise fully on the potential available and failure to adapt to these trends could see its offer undermined.

The innovation hub and innovation programme will provide focus and leadership in the sector in skills development, research activity and business support. It will seek to reduce the barriers to R&D through access to specialist equipment and bespoke food preparation standard floorspace

[5] Statistics on Obesity, Physical Activity and Diet, England, 2020 Official statistics

[6] Health matters: obesity and the food environment

on a flexible and cost effective basis, a staffed R&D service with the know-how to support joint projects and in-work skills development opportunities to embed knowledge across the sector.

1.3.2 Local, Regional & National Policy Objectives

The construction of the innovation hub is aligned to the UK Government's Industrial Strategy (2017), which stresses the need to proactively support innovation in order to enhance the UK's technological capabilities and contribute to the growth of the UK as a modern knowledge economy[7]. This priority is also reflected in Scotland's Economic Strategy (2015)[8] which focuses on fostering innovation through research and development and the Muscatelli report (2019)[9] highlighting the critical role of Scotland's world leading HEI sector to embedding a culture of innovation across the economy.

1.4 How does it fit in the wider Edinburgh and South East Scotland City Region Deal?

'Skills' and 'Research, development & Innovation' are two key priorities for the City Region Deal with which the proposals align closely. The City Deal features the following five overarching inclusive growth objectives to which all component projects are expected to contribute:

- **Accelerating inclusive growth** - to unlock new talent pools for business, promoting fair work, and equipping disadvantaged citizens with the skills they need to succeed;
- **Removing the barriers to growth** - through interventions to increase housing and enhance transport connectivity across the Region;
- **Delivering community benefits through procurement** - by integrating partner approaches to supplier engagement and procurement in order to increase the value achieved from Deal investments;
- **Targeting employability and skills interventions** - by widening access and addressing skills shortages to boost the flow of individuals from disadvantaged groups into good career opportunities; and,
- **Delivering social benefit through innovation** - through challenge-based social benefit projects and programmes across the City Region.

The hub and innovation programme will help to address the City Deal priorities noted above by removing barriers to growth and promoting more inclusive outcomes through:

- Addressing City Deal skills priorities through new full-time, part-time and in-work skills pathways with a particular focus on under-served groups;
- Promoting innovation-led growth in the local/national food & drink sector with a focus on developing new products to address the key social challenge of nutritional impacts on health which disproportionately affect deprived groups;

[7] Industrial Strategy Building a Britain fit for the future
[8] Scotland's Economic Strategy
[9] Driving Innovation In Scotland: A National Mission 2019

- Addressing shortages in strategic employment space and increasing job density in East Lothian to reduce the transport and housing pressures of current commuting patterns; and,
- Promoting Inclusive Growth outcomes for women through promoting female entrepreneurship.

1.5 How will it be funded and delivered?

The University relocation to Craighall in 2007 was significant, not just in terms of the educational provision, but also in relation to the interaction with the economic development land identified in the East Lothian Local Plan. Allocation of economic development land immediately adjacent to the University offered the potential for the University to create a future income stream and to work more closely and collaboratively with industry and business to create economic development.

Both the University and ELC promoted the shared objectives for the further land development. In 2012 the University produced a masterplan which detailed a vision for future physical growth on land around the University for uses that were synergistic with its strategic objectives. The masterplan was submitted in 2014 as part of the local development plan consultation process. It emphasised QMU's role in the wider land development and included proposals for the Edinburgh Innovation Park and a separate Commercial Hub to be located on land straddling Queen Margaret Drive.

In 2015 QMU appointed a specialist consultancy in science and technology park development to develop a vision and concept for the proposed EIP which became the basis of the current land development strategy. Phase 1 of the proposed EIP was identified as an Innovation Hub that would create a specialist facility for SMEs focussed on innovative activities and disruptive business models with a particular emphasis on the food and drink sector. This concept dovetailed with University commercial and research activity and national economic policy at that time.

In 2017, the same consultants supported the University's submission of a bid to the Edinburgh and South East Scotland City Regions Deal to fund the Phase 1 Innovation Hub. The bid was successful in attracting an award of £30m.

While certain activities will be delivered alongside business as usual, ELC and QMU are to form a joint venture company (JV) to develop and manage the Hub and the Park. The JV is to be created on an equal share basis. Shareholders will be QMU and ELC. The company will own the park and be responsible, in the first instance, for the launch of the Innovation Hub as a new business and will be responsible, subsequently, for operational and commercial matters. The management company will also be responsible for the wider EIP estate to ensure a coherent estate development and management strategy is adopted.

The JV structure is intended to act as a single point of interface (landlord) for tenants of the hub and future EIP, providing a more nimble day-to-day management and governance structure to respond to the rapidly evolving needs of the SME's and innovation businesses while retaining

appropriate control and influence for the partners. Over time, the JV vehicle may also provide a route to leverage in third party commercial investment to accelerate the growth of EIP and the economic benefits it can bring for the City Region.

The JV partners propose that design development is taken to RIBA Stage 4 by a design team with directly relevant experience of similar speculative, multi-occupied serviced laboratory and office buildings. The design and development of successful innovation hubs will be a key factor in appointing consultants. The very existence of an 'innovation hub' does not equate to a project that has been designed and operated in a way that results in success.

The recommended approach will enable the award of a fixed price contract (with bespoke amendments) with a key outcome being the transfer of all risk to the nominated contractor. Design certainty will enable contractors to bid for a defined specification and, consequently, they will have little requirement to include risk contingencies to cater for the unforeseen.
QMU will be responsible for development management and operational management of the Hub and for driving the Innovation Hub forwards as a new business on behalf of the JV partners.

The services of CAM-SCI, a specialist consultancy with experience of delivering similar innovation hubs and related innovation parks throughout the UK, has been retained to support the design and delivery phase. Opportunities to embed community benefit principles in the design and build contract, in line with the City Deal inclusive growth objectives, will be explored.

The total costs for delivering the innovation hub of £40m are intended to be met in full by the City Region Deal (£30m) and ELC (£10m). The funds from ELC comprise £4m already spent to acquire the land and a £6m capital contribution towards construction of the hub.

Detailed design will be progressed upon successful approval of the FBC but the costs of the scheme were prepared in November 2020 and are based upon an outline design concept for the Hub, which accords with the Royal Institution of British Architects plan of work Stage 0.

Cost Item	**Value**
City Deal Funding for Innovation Hub	£30m
ELC Capital Contribution to Innovation Hub	£6m
Total Innovation Hub Costs	**£36m**
ELC Site Acquisition Costs	£4m
Total Cost	**£40m**

The JV will be responsible for operating and managing the hub, and it is envisaged that QMU will deliver the required facilities management and maintenance services via existing arrangements under a Service Level Agreement (SLA) and will provide the management and marketing services to attract tenants, manage leases and deliver associated services. It is anticipated that a small number of staff, employed by QMU, will be allocated to the JV to carry out the day to day management and marketing activities of the hub. The JV will be responsible for overseeing the efficient running of the hub and ensuring that it develops in a manner which enables the objectives of the project to be achieved.

The wider package of proposed activities in relation to teaching and research activities will primarily be delivered by QMU through existing channels and through QMU's Strategic Plan objective to partner with other relevant institutions to enhance its offer. Comprehensive support for entrepreneurs will be delivered via the established partnership with ELC via the on-site Business Gateway and through collaboration at City Region Deal level with other Higher Education partners, particularly the Data Driven Innovation Programme, on cohort based approaches for supporting start-ups. Access to support in developing data skills and approaches will also be sought via collaboration with City Region Deal partners. A partnership with Edinburgh Napier University in relation to complex chemical data analysis for food and drink reformulation is under development allowing a comprehensive offer to commercial and research partners.

It is proposed that any operational loss that may arise during the early years of the hub while occupancy builds will be underwritten by QMU and ELC on a 50/50 basis through provision of a working capital fund. Subject to maintaining appropriate working capital in the JV, it is proposed that a first preferential share of any operational surplus from the hub (up to £1.4m indexed) will be returned to ELC as a partial return on its £6m capital contribution to the hub. Any remaining surplus will be retained within the JV as development capital to support the activities of the hub and Innovation Programme as well as advancement of the EIP. The amount of the surplus retained will be determined by the board of the JV.

The cash flow profile for the first 10 years of operations is summarised below indicating the hub is financially self-sustaining where the capital costs are largely met via the City Deal capital grant[10]. The 10 year net cash flow profile indicates a positive Net Present Value of c.£2.7m (at a 01 April 2020 base date and real discount rate of 3.5%) providing scope to provide a modest return to ELC on its capital contribution and investment to support the Innovation Programme in meeting its objectives:

[10] Further detail of the underlying cost and revenue assumptions is contained in the Financial Case.

10 year net operating cash flows for the Innovation Hub (see Financial Case)

£'000	TOTALS	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Operating income											
Occupancy (%)		50%	65%	80%	95%	100%	100%	100%	100%	100%	100%
Rental income at stated occupancy	**9,657**	543	705	868	1,031	1,085	1,085	1,085	1,085	1,085	1,085
Void and Bad Debt Allowance (5%)	**-483**	-27	-35	-43	-52	-54	-54	-54	-54	-54	-54
Meeting Room Charges	**98**	3	6	8	10	12	12	12	12	12	12
Total Income	**9,272**	**518**	**676**	**832**	**989**	**1,043**	**1,043**	**1,043**	**1,043**	**1,043**	**1,043**
Operating expenditure											
Operating costs	**4,946**	495	495	495	495	495	495	495	495	495	495
Working Capital Allowance (15%)	**742**	74	74	74	74	74	74	74	74	74	74
Total Expenditure	**5,688**	**569**	**569**	**569**	**569**	**569**	**569**	**569**	**569**	**569**	**569**
Net operating cash flow	**3,585**	**-50**	**107**	**264**	**420**	**474**	**474**	**474**	**474**	**474**	**474**
Distribution of Surplus											
Opening Balance ELC Prerential Surplus (£1.4m as at 2021, indexed linked at 2%)		1,508	1,538	1,459	1,219	815	348	-	-	-	-
Preferential distribution of surplus	**1,613**	-	107	264	420	474	348	-	-	-	-
Closing Balance		1,508	1,431	1,196	799	341	-	**-**	**-**	**-**	**-**
Residual Surplus Available	**2,022**	**-**	**-**	**-**	**-**	**-**	**126**	**474**	**474**	**474**	**474**

As noted above it is intended that the JV will act as a delivery vehicle for the wider EIP. This has the advantage of reinforcing the strategic intention for development of the site for high value employment and innovation-centric uses. It also offers a single point of interface for tenants but with the combined strength of ELC and QMU as partners behind it. It is proposed that ELC will retain title to the land and secure returns through the granting of ground leases to potential tenants, via the joint venture, on a plot by plot basis as opportunities arise.

1.6 Who will use it and why?

The target market for innovation hub is SMEs operating in the food and drink related sectors looking to benefit from the on-site facilities and services of the SCFDI and the University more generally. EIP will also cater to food and drink related enterprises (including those expanding out of the hub) and will also serve other innovative SMEs requiring access to flexible lease facilities not otherwise available in the market. This focus on science, technology and innovation minded SMEs will be reflected in the entry criteria that will govern who is able to become a tenant of the hub (and wider EIP) to maintain a high quality offer focussed on supporting high value-added activity over its life.

The nature of the SME sector and the target market for the hub is that many of the businesses that will become tenants do not yet exist and, even if they did, would not be in a position to enter into substantial pre-let agreements. In taking the risk on filling the building sufficiently to cover its operational overheads, a wide ranging review of the market and key demand drivers has been undertaken. Overall the JV partners are confident that the hub represents an attractive offer to the market that is likely to achieve high occupancy for the following key reasons:

- Market opportunity in the food, drink related sectors is significant[11] with a high preponderance of SMEs (in particular) seeking flexible access to the facilities and floorspace proposed that are not otherwise available in the market addressing a notable gap in supply;

- An operational business plan for the Hub that will focus upon business support and “grow on” with a number of existing structures used together with other initiatives drawing on relevant experience from other similar Hub developments

- The City Region has a growing reputation for innovation and this expanding with further investment through the City Deal. There is an overall shortage of supply of high quality floorspace of a specification suitable for SMEs and innovation-led companies on appropriate commercial terms. Excellent strategic transport connections means the hub and wider EIP is well placed to support this demand;

- A review of the growth of other innovation hubs and science and technology parks was commissioned from leading Science and Technology Park consultancy CAMSCI that provided strong case study evidence that other similar, university and council led, facilities elsewhere in the UK[12] have reached high occupancy and outgrown their initial buildings in a short timescale and catered to wide ranging demand that was not otherwise observed. CAMSCI specifically noted the strong fundamentals of the Edinburgh innovation cluster and excellent connectivity of the site as attractive drivers of demand.

[11] See Strategic Case

[12] Including similar recent projects in Liverpool, Newcastle and Leeds and longstanding case studies in Southampton and Keele.

The Hub will accommodate staff and facilities of the Scottish Centre for Food Development and Innovation (SCFDI) as a successful innovation, research and development (R&D) partner to the food and drink sector as well as enabling much closer collaboration between industry and the university. A summary of the SCFDI Facilities and Services we believe are in demand from industry are as follows:

- **Sensory Suite** (15 booth), accredited to ISO standard DIN EN ISO8589, with Compusense cloud based software. Onsite and offsite testing as appropriate. **Fully serviced suite with onsite expertise**. **Process Suite** Key client focused equipment in bakery, thermal process (UHT and pasteurization equipment which can be potentially be used for soft launches). Ability to site client test equipment in the process suite for assessment (e.g. equipment supplier wishing to test client project in a non-factory environment). This suite will be registered with the local Environmental Health Department as a small-scale manufacturing facility to enable sale of product made onsite. **Fully serviced suite with onsite expertise Development Kitchen** – for development of food and drink projects with or without client onsite. **Fully serviced suite with onsite expertise**. **Presentation Kitchen** – ability for clients to use facilities for presentation to their customers/clients (especially useful for location, and where our clients do not have appropriate facilities). This may also be used for client training. **Fully serviced suite with onsite expertise**. **Analytical Suite**. Analysis equipment suitable for the food industry, as basic as a pH meter or water activity (aW) meter to more complex analytical equipment such as texturometry, rheometry and HPLC. Many of these items are not available in food companies and the analytical suite provides an opportunity to use these on an *ad hoc* or contract basis. Additional equipment has been investigated as part of the analytical suite, although these will be confirmed closer to the time (but may include large items such as mass spectrometry). **Fully serviced suite with onsite expertise**
- **Services** - The SCFDI works with clients (small and large) to take their project from concept to launch. The Hub will enable an expansion of its capabilities and a true "one stop shop" offering. In particular, the expansion in facilities will allow more diverse projects examples being Ultra High Treatment (UHT) processing, bakery projects using commercial bakery ovens, and laminators and provers. The process suite will be accessible on a pay and play usage basis with SCFDI staff supporting the users. White space in the process room will allow clients/suppliers to test equipment in a neutral area. The Process Suite will increase activity by circa 30% and this area will support training in how to utilize new equipment and processes, a service, which is not routinely offered in other F & D facilities. The SCFDI is a market driven Hub with expertise provided by both academics and food industry professionals that will thus a unique blend of services that addresses the needs of clients and these include:

    - Application of a Client-led or Blue Sky Concept Service to create the brief;
    - Assessing the Feasibility of any project ;
    - Benchmarking; Category Insight and Brand Analysis;
    - New Product Development /Reformulation;
    - Nutritional calculation;
    - Profiling, expertise;

- Sourcing of ingredients relevant to client project (especially in relation to anticipated volumes);
- Sourcing of co-packers/co-manufacturers;
- Microbiological expertise;
- Pilot scale trials – in our new processing suite;
- Scale up assistance/factory trials if relevant;
- Food labelling assistance (nutritional, ingredient declaration);
- Packaging expertise (via subcontract);
- Ready-to-launch information packs (full formulation, product costing, supplier information including MOQs and lead time, methodology, technical information, labelling information, nutritional information, allergen information);
- Client training in a number of food industry related subjects through tailoring of CPD in areas of client need,;
- Access to collaborative research in the food sector with QMU academics in food science, nutrition, dietetics, gastronomy, business.

1.7 What Outcomes will it deliver?

As illustrated, in Table 1 below, the net present value (NPV) of the City Deal investment in the hub of £27.8m will, over the 15 year time period assessed and in net present value terms, generate a net additional £67.4m GVA (NPV) and 80 FTE jobs as a result of the direct and indirect impacts associated with the activities set out under the "TRADE" headings[13]. Including the wider potential impact on bringing forward development of EIP, net additional GVA rises to £144.4m (NPV) and 760 FTE jobs. The consequent cost benefit ratios are 1:2.4 based on direct and indirect benefits rising to 1:5.2 including the wider benefits of the Innovation Park.

	Including Innovation Park	**Excluding Innovation Park**
Total GVA (£'m, NPV at 01 Sep 2020)	144.4	67.4
Total cost (£'m, NPV at 01 Sept 2020)	27.8	27.8
Cost benefit ratio	**1:5.2**	**1:2.4**
Direct & Indirect Employment (FTE, gross[14])	880.7	80.7
Direct & Indirect Employment (FTE, net)	758.5	78.5

In addition, the proposals will generate a range of impacts for businesses and against the City Deal inclusive growth objectives that are not directly reflected in the above - e.g. in respect of

[13] We note that the economic impact assessment has been carried out using the same overall approach used for the City Deal Data Driven Innovation business cases including in respect of quantifying impacts and assessing net additionality.

[14] We note that job figures for EIP are based on a very prudent job density of 1 job for 50sqm for "R&D space" per HCA Employment Densities Guide (3rd Edition 2013). Assuming a higher density figure of 12sqm per employee for commercial office space would equate to c.3000 gross jobs.

promoting female entrepreneurship, widening skills participation to disadvantaged groups, contributing to the creation of data assets for the City Region aligned to the DDI programme, the specific alignment of these proposals to addressing key public health challenges, and strategic added value through leadership and coordination within the food and drink sector. Case study evidence from existing activities of SCFDI set out at Appendix D further illustrate the potential outcomes that are expected to be delivered.

In line with the outputs reported in the City Deal benefits realisation plan, the £36m investment is expected to support construction employment equivalent to 198 annual Full Time Equivalents (FTEs)[15] or c.20 FTEs when converted to new/maintained permanent jobs.

1.8 Conclusion

The proposals to develop the hub as the first building at EIP and delivery of the associated Innovation Programme represents a significant opportunity for QMU and ELC to deliver against the objectives of the City Deal and those more widely held by the UK and Scottish Governments.

The availability of funding from City Deal enables the project to progress in a way that would not otherwise be possible within the resources and financial risk bearing capacity of both sponsors and the residual financial and delivery risk is considered manageable. Overall the £30m investment to deliver the innovation hub will unlock wider potential for the EIP and in the 15 year appraisal period considered deliver :

- At least 758 net additional jobs (including EIP)
- £144m net additional GVA (in NPV terms)
- 314 additional undergraduates, 120 masters students and 50 PhDs equipped with the skills to lead innovation in food and drink related industries;
- Leverage £3.4m additional research council funding to the City Region and food and drink sector
- Attract £9m of commercial R&D investment
- Equip 2,043 learners with CPD led skills to promote in-work training and development
- 100 new start-ups to drive future growth with a key focus on driving up female entrepreneurship
- A meaningful contribution to the existing innovation ecosystem in the Edinburgh and South East Scotland City Region

Following approval of the FBC both parties commit to moving rapidly towards execution with £4m already invested by ELC in site acquisition. The principles of a JV delivery structure are established in Heads of Terms and the final detailed legal and commercial agreement will be progressed on approval of the FBC.

[15] In line with the commitment in the Benefits Realisation Plan, Construction employment estimates are provided on the basis of Scottish Enterprise Economic Impact Guidance that the ratio of total construction costs to labour content is £181,000 per annual FTE and then, in order to allow equivalency to new and maintained FTE jobs, total construction employment will be divided by 10 (years).

PART B

Five Case Model

1 Strategic Case

This section provides an overview of the key global, UK, Scottish, regional and local strategies and trends that have informed and shaped the proposals. The policy context for the proposed intervention was considered in detail at the Outline Business Case stage, however, key policies and themes are restated below and these have been refreshed to reflect changes in the policy landscape since they were last reviewed.

In general, each section first summarises the key themes from key relevant policies (chosen as being instructive of the overall policy context) and secondly considers how the proposal aligns with and contributes to the relevant policy and context. It is not intended to be an exhaustive review of the policy environment at all levels and it is expected that as specific activities are delivered these will do so in line with more detailed policies in specific areas.

1.1 Global Policy Context, Trends and Alignment

There are two key globally significant trends that set the context for the activities proposed in the hub and the market in which it will operate:

- **Health Impacts of Nutrition:** What people eat and drink is driving negative health outcomes around the world including chronic obesity, type-2 diabetes, heart disease and certain cancers[16]. Obesity alone constitutes an important threat to national and global public health in terms of prevalence, incidence and economic burden. In 2014, more than 2.1 billion people, nearly 30% of the global population, were overweight or obese and 5% of the deaths worldwide were attributable to obesity. If the incidence continues at this rate, almost half of the world's adult population will be overweight or obese by 2030. This comes at a significant economic cost with an estimated global obesity-related spend of US $2.0 trillion spent in 2014 alone[17].

  Set against this backdrop, regulators around the world are demanding that food and drink producers improve the nutritional performance of their product, from reducing sugar and fat content to increasing its nutritional value - e.g. vitamin and fatty acid content. Consumers are similarly demanding change with an increase in "free-from" diets to address increasing awareness of food allergies and intolerances and seeking to make healthier choices about what they choose to eat and drink. The market for healthy food and drink products is now estimated to be worth £300bn globally and poised to grow at

[16] Food Consumption and its impact on Cardiovascular Disease: Importance of Solutions focused on the globalized food system

[17] Economic Burden of Obesity: A Systematic Literature Review

6% p.a. during 2020-2024[18]. This will also need to be balanced with ongoing demands for convenient ways to prepare food aligned with modern “on the go” lifestyles.

- **Environmental sustainability of food production:** At the global level, the second key market trend relates to the change needed in the food and drink sector to respond to the carbon and land intensity of food production fuelled further by a growing global population and rising prosperity in the developing world driving an unsustainable growth in demand for “Western Style” diets including increased meat consumption.

- Meanwhile, there is increasing concern about degraded soils[19] and the long term consequences of fertilizer driven food production on the environment and the nutritional content of food and drink. Tackling food waste, packaging, growing techniques, water and land usage will require innovation in the way food and drink is produced and understood by consumers. Many consumers are already paying increased attention to the wider impact of their food choices, as demonstrated by the rising number of consumers trying plant-based alternatives to meat products.[20]

Alignment & Contribution of Proposals

The proposed innovation hub will provide food and drink businesses with access to the research and development facilities and associated expertise needed to reformulate and develop new products in response to these key global trends.

The hub will enable a significant scaling up of QMU’s already successful Scottish Centre for Food Development and Innovation (SCFDI), a research and development service which was established in 2014 and has been successful in attracting a range of businesses, from SMEs to supermarket retailers (see Appendices A&D). An expanded SCFDI will provide access to shared cost research and development infrastructure and skills to producers of all sizes, for many of whom the barriers to innovate, in terms of equipment, skills and knowledge are otherwise too high on an individual enterprise basis. In its refreshed February 2020 innovation strategy[21] SCFDI has proposed to focus on 4 areas for healthy, functional food development to address global market trends:

- **Product development and reformulation for health** - via creation of new wholesome food and drink products and by reductions in sugar, fat and salt in existing products on the market;
- **Product development and reformulation for lifestyle** – via creation of new food and drink products that are relevant to ever changing consumer lifestyles through the replacement of allergens, replacement/reduction of animal based ingredients in vegetarian, vegan and mainstream products and also the creation of clean label wholesome formulations;

[18] Technavio - "Global Health and Wellness Market 2019-2023" via Bloomberg

[19] DEFRA (2020) The Path to Sustainable Farming: An Agricultural Transition Plan 2021 to 2024

[20] “Record 500,000 people pledge to eat only vegan food in January”, The Guardian, 5 January 2021

[21] QMU Food and Drink Innovation Strategy Refresh; Feb 2020

- **Product development and reformulation for sustainability** – by sustainable blue sky development such as creation of palm fat alternatives, and product development such as optimisation of industry co-products and new viable sources of ingredients;
- **Product development and reformulation for new markets** - such as sport and exercise nutrition, healthy ageing and plant based nutrition.

Aside from these near market R&D activities, as part of its wider Strategic Plan, QMU also seeks to increase collaboration between its food and drink and health science disciplines, and with wider partners, to undertake more cross-disciplinary academic research in these areas leveraging a greater share of Research Council funding to tackle the challenges facing the sector and continue to grow the UK's, and Scotland's, reputation and standing for high quality products.

1.2 UK Policy Context, Trends and Alignment

There are a number of key UK Government policies that set the overall context for the activities proposed in the hub and upon which the devolved policy context builds in particular areas of devolved competency. Key policies and themes include:

- **UK Government Industrial Strategy** - The UKs flagship Industrial Strategy states that future socioeconomic success is largely dependent on developing the infrastructure and services to support the innovation economy[22] and emphasises the need for proactivity in supporting innovation and capturing emerging technology markets that are global in nature: *'We need to be acutely aware and take advantage of the world-changing trends which will shape Britain in the decades ahead. These are developments in technology that are set to transform industries and societies around the world.'*[23]

- The role of the UK's Higher Education Institutions (HEIs) is acknowledged as a competitive advantage that is not being fully exploited: *'We are not fulfilling Britain's potential if, despite having scientists and universities renowned the world over, we cannot turn their ideas into the products and services on which the industries of the future will be built'*.[24] In seeking to galvanise the national response to key global opportunities a number of challenges were specified of which two align closely to these proposals: Transforming Food Production and Healthy Ageing.

- **Obesity and Health Inequalities -** As of 2017, 26% of UK adults were classed as being overweight or obese[25]. UK-wide, NHS costs attributable to overweight and obesity are projected to reach £9.7 billion by 2050, with wider costs to society estimated to reach

[22] Industrial Strategy: Building a Britain fit for the future
[23] Industrial Strategy: Building a Britain fit for the future p25
[24] Industrial Strategy: Building a Britain fit for the future
[25] Statistics on Obesity, Physical Activity and Diet, England, 2020 Official statistics

£49.9 billion per year[26]. Most recently, studies have shown that the risk of COVID-19 death is heightened in obese individuals[27]. This has renewed UK government interest in promoting healthy eating at a national level. Policies to tackle obesity include; working with business and industry through the Government's reduction and reformulation programmes on sugar, calories and salt and encouraging shops to swap prominent areas displaying unhealthy food to healthier options.

- **DEFRA Food 2030 Strategy** - Building upon the above noted health trends, DEFRA states the following aim for the future of the UK food industry: "*Consumers to be informed, have the option to choose and afford healthy, sustainable food and this demand is met by profitable, competitive, highly skilled and resilient farming, fishing and food businesses, supported by first class research and development."* In its 6 policy priorities DEFRA includes the following to which this proposal is relevant; Enabling and encouraging people to eat a healthy, sustainable diet; and, Increasing the impact of skills, knowledge, research and technology.[28]

- **Role of UK SMEs** - Currently, SMEs comprise the majority of businesses in the UK accounting for: 99.9% of the business population (6.0 million businesses); around half of private sector turnover (£2.3 trillion); and 61% of total employment (16.8 million)[29]. Fostering innovation in the SME sector, where the barriers to participation in R&D can be high, is therefore key to economic success and SMEs are highly prevalent in the UK food and drink sector[30]. Key drivers for SMEs within the innovation sector are geared around the ability to respond to the rapid pace of change and to adapt to new market demands quickly. This requires SMEs to have a high degree of flexibility to respond to changing circumstances within short time-frames but, where they are successful, they can respond, disrupt markets and grow quickly.

- **UK Food and Drink Sector** - The food and drink industry is the UK's largest manufacturing sector, contributing £28.2bn to the economy annually and employing 400,000 people[31]. It is a key part of the nation's £110 billion 'farm to fork' food chain with a well-earned global reputation for provenance, quality and innovation.

- A 2020 survey for the UK Food and Drink federation highlighted a third of the workforce is due to retire by 2024, leaving the industry facing a shortage of about 140,000 recruits with this compounded by a reduction in access to imported labour as the UK leaves the European Union. Labour shortages, technology driven automation and demands for innovative new products are cited as requiring a major growth and upskilling of the

[26] Health matters: obesity and the food environment
[27] Public Health England press release, 25 July 2020
[28] DEFRA Food 2030 Strategy
[29] https://www.fsb.org.uk/uk-small-business-statistics.html
[30] https://www.fdf.org.uk/statsataglance.aspx
[31] https://www.fdf.org.uk/publicgeneral/FDF-Economic-contribution-Full-report.pdf

workforce[32]. New product launches and increased demand for healthy food products were identified as two of the top three opportunities that UK Food and Drink companies identified for 2018[33]. In the food and drink sector disruptive start-ups are becoming increasingly popular with venture capitalists as a result of consumers increasingly seeking out smaller, more trusted, challenger brands.

Alignment & Contribution of Proposals

The proposed hub and Innovation Programme aligns with and will respond to the above policy context by:

- **Sectoral Focus on Food, Drink and Health Sciences:** The hub and Innovation Programme focus on the food, drink & health science sectors building on QMU's existing strengths and established reputation as a partner for applied research in these complementary disciplines, enabling translational impacts of food and drink on health to be addressed. This aligns with the Transforming Food Production and Healthy Ageing pillars of the UK Industrial Strategy as well as DEFRA's food and drink strategy and the desire to improve the UK's health outcomes through diet and nutrition;

- **Talent & Skills:** A key component of the Innovation Programme is to address the skills needs of the sector and provide the next generation of talent equipped to improve productivity and drive innovation. A range of new skills pathways, including full and part time courses and in-work CPD training, is proposed to address the needs set out by the sector;

- **Research and Adoption:** The hub and Innovation Programme will make a wide range of facilities and accompanying know-how accessible to the food and drink sector to undertake R&D and in particular do so on a flexible and shared-cost basis suitable for the predominance of SMEs in the sector and their specific needs. The activities delivered from the hub will support QMU's aim to make an impact on societal concerns relating to diet and health by supporting industry-led reformulation projects and incorporating government led nutrition and health recommendations within projects. Partnership working is at the heart of QMU's Strategic Plan[34] for driving excellence in research and collaboration with partners such as Scotland's Rural College (SRUC) will enable activity covering the full supply chain

- **Enterprise:** SMEs are key to the UK economy and in particular the food and drink sector. A key component of the hub proposal is to make serviced floorspace of an appropriate specification available to SMEs on flexible lease terms alongside the leading work of SCFDI. This offer should support SMEs to respond quickly to global markets, building on the UK's trusted food and drink brand to create high value jobs and drive UK exports.

[32] Food & Drink Council: Preparing for a changing workforce: A food and drink supply chain approach to skills

[33] http://www.fdf.org.uk/business-confidence.aspx

[34] https://www.qmu.ac.uk/about-the-university/our-strategic-plan/

1.3 Scottish Policy Context, Trends and Alignment

There are a number of key Scottish policies and trends that set the context for the activities proposed in the hub. Key policies and themes include:

- **National Performance Framework & Government Economic Strategy** - Scotland's National Performance Framework sets out the overall national outcomes against which policy interventions should deliver and of most relevance to these proposals are: promoting education and skills; thriving and innovative businesses with fair jobs; globally competitive and entrepreneurial economy; and, healthy and active people. The Government Economic Strategy sets the tone for policy intervention to support economic growth in Scotland, supported by wider Scottish Government policies and agencies. It sets out 4 key actions: investment in people infrastructure and assets; fostering a culture of innovation; promoting inclusive growth; and taking advantage of international opportunities[35].

- **Scottish Government Economic Action Plan (2019/20) -** The Scottish Government's Economic Action Plan 2019-20 highlights the importance of 'industrial transformation' through innovation: *'Innovation is about ideas that create jobs and wealth for the people of Scotland. We want Scotland to be a leader in the technological and social innovations of the future'*[36]. It highlights the important role that a highly trained workforce plays in driving economic growth in modern "knowledge based" economies and in particular highlights the important role played by Scotland's higher education institutions and its world-leading research base in driving innovation across the economy.

- Streamlining business support and ensuring a competitive business environment was also cited as a key priority and the need for a "Future Skills Action Plan" (discussed below) was also identified, which has been taken forward by the Enterprise & Skills Strategic Board.

- **Higher Education and Innovation Policy (Muscatelli Report)** - Scotland has one of the highest ratios of cited research papers to GDP in the world and its higher education R&D as a percentage of GDP ranks top out of the twelve countries/regions in the UK, and ranks fifth in the OECD[37]. The importance of innovation and the role of Scotland's Higher Education sector in driving it is further underlined in the Muscatelli Report[38] in which innovation is identified as intrinsic to economic success for small global economies. The report highlights the need for innovation to be a national mission and sets out actions that include increasing leverage of R&D into Scotland from the UK and beyond, better coordination between HEIs, Scottish Funding Council (SFC) and enterprise agencies to improve the focus and impact of research ("clarity of purpose"), and enhanced knowledge exchange between HEIs and the private sector to address shortfalls in business R&D.

[35] https://www.gov.scot/publications/scotlands-economic-strategy/

[36] Scottish Government Economic Action Plan 2020 https://economicactionplan.mygov.scot/innovation/introduction/

[37] Higher Education Statistics Authority, 2018

[38] Driving Innovation In Scotland: A National Mission 2019

- The recently published Higgins report, detailing Scotland's required strategic response needed for successful economic recovery in the wake of COVID-19, also highlights the need for Scottish Enterprise to align resources more closely at a regional level[39].

- **Addressing skills needs: Enterprise and Skills Board Strategic Plan and Skills Investment Plan (SIP) for Food and Drink** - The Enterprise and Strategic Skills Board Strategic Plan[40] sets the strategic direction for Scotland's enterprise and skills agencies to drive productivity improvements through a focus on four missions: business creation and growth, tackling future skills needs, growing exports, and workplace innovation. In respect of skills, the emphasis is placed on developing an agile and responsive skills system for employers with an opportunity for high performance workplaces to achieve productivity gains of up to 30%[41].

- Skills Development Scotland (SDS) has set out a specific Skills Investment Plan for the food and drink sector[42], which reflects similar trends and skills needs in Scotland as set out above at the UK level. In particular, the plan notes that "the long-term shift towards occupations requiring higher-level skills and qualifications is set to continue" and "around 27,000 net job openings expected in the industry taking account of the changing occupational demand for skills and to replace those who retire, change occupations or move away". Recommended actions to which the hub and Innovation Programme proposals directly respond include:

    - Further develop entry routes into the sector for both young people and career changers;
    - Raise awareness of career opportunities and pathways within the sector;
    - Foster greater partnership working between industry and the public sector to promote opportunities within the sector;
    - Review the range of existing leadership and management training, support and advisory services available with a view to making it more flexible and accessible to companies in the sector;
    - Develop and promote opportunities for networking, mentoring and sharing of best practice within and between companies in the sector and in other sectors;
    - Support the development of skills for innovation in the food and drinks manufacturing sector;
    - Develop and promote a provision that is specifically targeted at meeting the skills needs of employers;
    - Facilitate access to information on the range of provisions available to companies to support growth.

[39] Towards a Robust, Resilient Wellbeing Economy for Scotland: Report of the Advisory Group on Economic Recovery
[40] Enterprise and Skills Board Strategic Plan: Working Collaboratively for a Better Scotland
[41] Enterprise and Skills Board Strategic Plan: Working Collaboratively for a Better Scotland - p5
[42] Skills Development Scotland: Skills Investment Plan for the Food & Drink Sector

- **Shaping Scotland's economy: inward investment plan** – The Shaping Scotland's Economy: Scotland's Inward Investment Plan sets out the ambition for Scotland as a leading destination for inward investment and the food & drink sector is identified as one of 9 opportunity areas. The opportunity areas reflect areas of comparative advantage, strong growth and investment potential and high potential economic impact. There is also explicit recognition of the important role which Scotland's academic institutions play when "working hand in hand with Scotland's businesses" to leverage Scotland's natural and human resources. *"The long term strength and sustainability of our economy will come through building on the talents of our people, the excellence and deep knowledge base of our academic institutions and the entrepreneurial spirit of our businesses to build world-leading capability".* Reflecting this, one of the actions set out in the strategy is to *"support stronger ties between academia and industry in Scotland".* The proposals for the hub to promote talent, research and collaboration with industry combined with the safeguarding of strategic economic development land at EIP are well placed to support delivery of the inward investment plan and its aims.

- **Scotland Food & Drink: Ambition 2030** - Scotland Food and Drink is a partnership between the public and private sectors focussed on driving success in the Scottish Food and Drink Sector. Ambition 2030 sets out its growth strategy for the sector and highlights the progress already made since the partnership's formation in 2007 with industry turnover up 44% to almost £15bn p.a. and exports now worth £5.6bn, up 56%, Scotland's best performing and fastest growing export sector with a global reputation for quality on which to build further.

- Ambition 2030's overarching goal is to double turnover in the sector to £30bn[43] by seizing and responding to key identified market trends including consumer convenience, healthier choices for better wellbeing, more ethically conscious consumption and the impact of technology. It considers sector growth projections to be high and the opportunities for employability unprecedented. Its identified pillars for seizing on this growth potential that exists include:

    - **People and Skills** - promoting positive career paths, being proactive in providing the skills for tomorrow and supporting in-work skills development;

    - **Supply Chain Connectivity** - working together from end-to-end to share knowledge, translate research into practical actions and drive value and productivity benefits across the supply chain;

    - **Embedding Innovation** - through investment in new products and processes, using data to improve supply chain and customer insight and collaboration with City Deals and the associated investment in innovation. Success will be measured by: new products and processes brought to market; business start-ups and survival rates; and the value of investment in R&D.

[43] Ambition 2030: Industry strategy for Growth

More generally, data indicate that expenditure on research and development in Scotland is generally below the broader UK level[44]. As reasons for this under investment, Scottish Enterprise has cited a lack of in-house expertise to undertake research and development, difficulties in accessing finance and a general lack of information about research and development[45]. Scottish Enterprise also identifies a lack of facilities and equipment as being a key constraint on the level of innovation taking place within the Food and Drink sector specifically, despite its potential for continued growth. The industry also reported technical support for new product development as one area which would benefit from investment[46].

- **Public Health & Good Food Nation** - Scotland faces the same challenges as the UK, with levels of obesity and poor health related to nutrition at the highest levels of any UK nation placing a significant burden on the NHS[47]. In October 2020 Food Standards Scotland issued a report which noted that two thirds of adults in Scotland are either overweight or obese.[48] The Good Food Nation Bill formed part of the programme for government in the previous parliamentary term and was developed to encourage citizens to take a keen interest in their food, know what constitutes good food, value it and seek it out whenever possible to combat dietary related disease and promoted by the appointment of a National Chef. It is not yet clear if the Bill will proceed in the new parliamentary session but we expect many of its intentions will remain a focus of government policy.

- "Health" is increasingly important in consumer choices being the main reason for particular food choice in one of four meal occasions, accounting for £11.4bn to the UK food industry[49]. Scottish Government has also made a major commitment to improving School Meals through the "Action plan to promote locally sourced and produced food and drink".[50] In addition to supporting local businesses, the promotion of locally sourced and produced food and drink helps to reduce carbon emissions associated with the transportation of food and drink and therefore contributes to the Scottish Government's ambitions to reduce greenhouse gas emissions.

Alignment & Contribution of Proposals

The proposed hub and Innovation Programme aligns with and will respond to the above policy context by:

[44] Skills Investment Plan: For Scotland's food and drink sector
[45] Business and R&D in Scotland: A Missing Link
[46] Skills Investment Plan: For Scotland's food and drink sector
[47] A Healthier Future – Scotland's Diet & Healthy Weight Delivery Plan
[48] The Scottish Diet: It needs to change, Food Standards Scotland, October 2020
[49] http://www.scotlandfoodanddrink.org/media/15356/health_paper.pdf
[50] Promoting local food and drink: action plan

- **Talent & Skills:** QMU is working with the SFC, SQA and Food and Drink Federation Scotland (FDFS) to support the delivery of the SIP by the provision of a new Food Science-related degree course to address skills shortage, particularly in areas of food innovation, new product development and nutrition for industry[51]. QMU is also actively involved in the Scottish Government consultations on the Good Food Nation Bill and will use this initiative to promote new product development and reformulation as a career opportunity within the sector, as well as supporting Scottish SMEs in responding to new public procurement and supply opportunities arising from the Good Food Nation Bill and Scottish Government plan to change school meal suppliers to healthier, local alternatives.

- **Innovation, Research & Adoption:** QMU recognises the key role of HEIs in driving a culture of innovation in the Scottish economy as set out in the Muscatelli Report. A key focus of the Innovation Hub proposal is to encourage, provide leadership and facilitate traction in the high growth F&D sector where SME R&D spend has historically been low but sector growth projections are high. In strategic alliance with the growth ambitions of 'Ambition 2030', and developing QMU's SCFDI further, QMU is working with the indigenous SME base in Scotland's food and drink industry to offer a uniquely responsive innovation and collaboration space to reduce barriers to R&D.

- Given the university's strong collaboration with industry and research players in this sector, the Innovation Hub will act as a focus for developing the Food and Drink sector nationally and internationally, alongside facilitating the alignment of regional resources in line with the Higgins report[52], representing targeted investment in a sector where Scotland has demonstrated a competitive advantage in export markets.

- **Enterprise:** Part of the mission of the hub and EIP is to make space available to others who wish to collaborate in an innovation focussed eco-system and to do so on flexible terms that meet their needs, a requirement which is likely to become ever more important as the sector recovers from the impacts of COVID-19. In doing so it aims to grow and create new enterprises to respond to the rapidly changing trends in the food and drink sector and Scotland's strong performance and reputation in export markets.

- **Public Health:** Building upon QMU's international research in Dietetics, Nutrition and Biological Sciences, SCFDI will be a key vehicle to support SMEs' access to opportunities arising from Scottish Government's review of school food regulations and will support industry to implement changes to reflect the revised scientific advice on nutrition. The proposed areas of research focus will contribute directly to the formulation of new products that better meet policy aspirations and will contribute to the body of

[51] QMU Food and Drink Innovation Strategy Refresh; Feb 2020

[52] Towards a Robust, Resilient Wellbeing Economy for Scotland: Report of the Advisory Group on Economic Recovery

evidence on this topic. QMU's chancellor, Prue Leith, is already an active campaigner to improve the eating habits of school children.

- **Public Health:** Through its research centres, QMU will seek to harness the potential of translational medicine in Scotland in supporting the diversification of the Food and Drink industry towards preventative, therapeutic and rehabilitative applications of Scotland's expertise in genomics of disease, biomarkers and bioinformatics. QMU will seek the additional integration of its research expertise in Rehabilitation Sciences to support the development, application and evaluation of functional food for gerontology and sport and exercise nutrition within target groups and associated markets.

1.4 City Region Policy, Trends and Alignment

There are a number of key local and regional policies that set the context for the activities proposed in the hub, in particular the strategic aims and objectives of the wider City Region Deal. Key policies and themes with which the proposal is seeking to align include:

- **Edinburgh and South East Scotland City Region Deal Key Priorities** - The Edinburgh and South East Scotland City Region Deal[53] is a £1.3 billion programme covering six local authorities, the City Region's universities and colleges and business and third sectors. On aggregate over fifteen years, the £1.3 billion funding will support a range of Deal activities across five Programme themes covering: Housing; Research, Development & Innovation; Skills; Culture; and Transport.

- **Edinburgh and South East Scotland City Region Deal (Skills)** - The City Region partners view skills development as being critical to embedding inclusive growth practices and outcomes in the regional labour market. The Integrated Regional Employability and Skills Programme (IRES) business case[54] has £25m allocated over 8 years to address its aims and will focus on improving skills through five key "improvement pillars": Active regional leadership and improvement capacity; Understanding need and opportunity; Building strong employer and citizen relationships; Targeted skills development; and Active opportunity matching. The aim is to create an integrated multi-agency regional employability and skills "escalator", with devolved funding arrangements, which helps people facing labour market exclusion into entry level employment, puts in place in work up-skilling incentives at scale, and supports a pipeline of indigenous and global talent, ensuring the industry can meet the growing demand for high level graduate skills.

[53] http://esescityregiondeal.org.uk/

[54] https://democracy.edinburgh.gov.uk/documents/s9930/V2_Full_Meeting_Papers___Edinburgh_and_South_East_of_Scotland_City_Region_Deal_Joint_Committee_____1.pdf

- **Edinburgh and South East Scotland City Region Deal (Inclusive Growth)** - As part of the agreed benefits realisation plan for the City Deal[55], five overarching inclusive growth objectives have been identified which City Deal projects have been collectively tasked to meet. They are:

    - **Accelerating inclusive growth** - to unlock new talent pools for business, promoting fair work, and equipping disadvantaged citizens with the skills they need to succeed;
    - **Removing the barriers to growth** - through interventions to increase housing and enhance transport connectivity across the Region;
    - **Delivering community benefits through procurement** - by integrating partner approaches to supplier engagement and procurement in order to increase the value achieved from Deal investments;
    - **Targeting employability and skills interventions** - by widening access and addressing skills shortages to boost the flow of individuals from disadvantaged groups into good career opportunities; and,
    - **Delivering social benefit through innovation** - through challenged-based social benefit projects and programmes across the City Region.

- **East Lothian Council** - One of ELC's Council Plan themes is 'Growing Our Economy'. This aims 'to increase sustainable and inclusive economic growth as the basis for a more prosperous East Lothian, and reduce inequalities within and across our communities'. The Plan recognises that the projected growth in population needs to be matched by corresponding growth in the local economy and local job opportunities, building on the region's key sectors of Food and Drink and tourism. The plan explicitly identifies the City Deal and the development of the EIP as a significant enabler of such growth.

- At the City Deal level, there is a recognition of uneven job density across the city region with East Lothian having the lowest job density of 0.55 and City of Edinburgh the highest at 1.02[56] which, as stated in the Deal Document, has led to: "strong cross-Region commuting patterns... contributing to areas of congestion and significant levels of pollution in some locations". Businesses in East Lothian, surveyed by ELC[57] identified a need for space to grow their business, citing their requirement for more modern facilities and better accessibility as reasons they are considering relocating their business in the next five years. Small office space, and a range of industrial space, have been identified as required facilities in the East Lothian area.

- **East Lothian Food & Drink Limited, Scotland's Food & Drink County** - Following years of successful collaboration between ELC and food and drink producers in East Lothian, the world's first Food and Drink Business Improvement District was established in 2016. A strong brand presence has been created under 'East Lothian, Scotland's Food and Drink

[55]https://democracy.edinburgh.gov.uk/documents/s25995/5.3%20Benefits%20Realisation%20Plan%20with%20appendices.pdf
[56] Edinburgh and South East Scotland City Deal benefits Realisation Plan
[57] 2017 Business Base Study, East Lothian Council

County', with a vision of being a leading regional producer of food and drink products in the UK, and for East Lothian produce to be perceived as having a premium offering, sought after by consumers.

- **City of Edinburgh Economic Strategy** - The City of Edinburgh is experiencing very strong demand for floorspace from emerging companies looking to grow but a historic city centre with few brownfield sites of scale, booming housing markets putting pressure on land prices in prime locations, regional transport pressures and the specific commercial issues of building for the SME market are meaning too few suitable sites are coming forward. *Edinburgh requires delivery of a supply of workspaces to meet the needs of business at every stage of development, from start up, to growth and expansion that does not currently exist. Without a ready supply of appropriate work spaces and facilities Edinburgh's economy will be unable to prosper and expand to support both the growing demand from tech companies and the growing population."*[58]

Alignment & Contribution of Proposals

The proposals for the innovation hub, innovation programme and wider EIP will respond to the local and regional priorities noted above by removing barriers to growth and promoting more inclusive outcomes through:

- **Addressing shortages in strategic employment space and increasing job density in East Lothian:** East Lothian Council has already invested £4m to acquire the site for EIP to support high value job creation in the area and address the issue of unequal job density across the City Region. The site is one of few in East Lothian to have excellent road and rail connections to the rest of the county and wider city region and this proposal will safeguard it for employment use. The 4,290 sqm of high quality floorspace for the SME market in the hub (and its impact on pump-priming the development of up to 30,000 sqm of lettable business space over the 20 to 25 year build out of the EIP) will play an important role in addressing the identified shortage of suitable business premises in East Lothian and address more widely the acute pressures facing the wider SME market in and around Edinburgh.
- **Promoting innovation-led growth in the local/national food & drink sector:** The focus on promoting innovation in food, drink and health sciences aligns strongly with the local focus on developing a high value-added food and drink sector and the wider City Deal priority for innovation-led growth that capitalises on the strength of local HEI partners. By providing a step change in accessibility to research skills and facilities, the proposals aim to increase business investment in formal innovation such as research and development and the benefits it brings (see Appendix D for previous case studies).

  The emerging relationship with local businesses is represented in East Lothian Food and Drink Ltd (representing 40 SMEs) recently taking a lease in QMU's Business Innovation Zone which is already promoting dialogue and engagement with employers,

[58] Edinburgh Economic Strategy 2019

SME networking, and student and graduate mentoring. The hub is expected to offer an excellent facility to support product launches and is a tangible statement to coordinate and bring leadership to the strength and growth prospects of the regional and Scotland-wide food and drink sector.

- **Addressing City Deal skills priorities through new full time, part time and in-work skills pathways:** The talent and skills aspects of the proposals align strongly with the 5 key pillars in the IRES Programme. In revisiting its skills pathways and re-aligning provision alongside a wider pivot towards engaging with industrial and commercial customers on product development activities, QMU's proposals will create a range of relevant and practical new skills pathways including full and part time options and employer sponsored CPD to improve in-work progression. In particular, the focus on CPD courses is seen as a route to formalise qualification in the food and drink sector where currently this is lacking, reducing mobility and professional growth within the sector as skills are not formally endorsed or recognised.

- **Promoting Inclusive Growth outcomes with a particular focus on skills development female entrepreneurship:** QMU traces its origins to the establishment of 'The Edinburgh School of Cookery and Domestic Economy' in 1875 with twin aims of improving women's access to higher education and improving the diets of working class families. While it has grown and evolved significantly as an institution in the intervening decades, it continues to have an inclusive and practical ethos at its heart.

  QMU's accessible reputation and range of practical oriented courses means it is well positioned to encourage people into Higher Education that may otherwise not consider it. The majority of its students come from a local or regional catchment (including several feeder FE colleges) and many live at home and commute-in to the campus. Additionally, over three quarters of QMU's students and staff are women.

  QMU's reach is complementary to delivery against the five City Deal inclusive growth objectives that include a focus on talent, employability and social benefit through innovation across all groups. The proposed skills pathways are already mentioned above and the focus on innovation related to diet related health issues, which disproportionately affect more deprived communities, should deliver social benefit. Discussions are also ongoing with multiple parties (including Scottish Government Women in Business policy team and Women's Enterprise Scotland) to build on QMU's successes in female higher education and entrepreneurship to establish a women's business centre[59]. This recognises the high degree of female enterprise in the food & drink sector on which the proposals centre and the requirement for bespoke support to help women grow small home businesses into larger enterprises. Finally, opportunities to embed community benefits in the procurement of the hub will be explored.

[59] Currently almost two thirds of the 40 start-ups in the QMU innovation zone have been created by females.

1.5 QMU Policy Context and Alignment

QMU's vision is to be "a university of ideas and influence". This is central to its strategy which sets the context for its enthusiasm to take the project forward:

- **About QMU[60] -** QMU traces its origins to the establishment of 'The Edinburgh School of Cookery and Domestic Economy' in 1875 with twin aims of improving women's access to higher education and improving the diets of working class families. It has since grown rapidly to offer a wide range of courses from its modern campus but has remained focused on making a real practical impact on everyday life and remains outward looking with a strong ethos of partnership and collaboration. QMU's purpose is to *"help to create a better society through education, research and innovation, and by providing a supportive and creative learning environment in which students and staff thrive"*. It is a university that is modern in outlook and facilities but with a maturity built on a long history of serving the community, both locally and globally, and enhancing its wellbeing. It strives to work in a transparent and inclusive manner and hold to its core values of: social justice, environmental sustainability, intellectual curiosity, valuing the individual, ambition and excellence.

- **QMU Strategic Plan 2020-25[61]** - Building on its inclusive and practical history and sustained growth, QMU's strategic goals for the future are:

    - **Seek out partnership and collaboration** - through taking a cross university approach to partnership working with government and industry to solve important societal challenges;

    - **Provide distinctive, accessible, high quality education** - through a reactive and market responsive course portfolio, promoting access to under-represented groups and focusing on staff and student well-being

    - **Deliver transformative research and innovation** - through building on strength in applied research to grow the proportion of internationally recognised research, grow research income and sustain a culture of innovation through development of the hub and EIP.

    - **Embed sustainability** - through continuing to incorporate sustainable practices in all its activities and in its teaching.

    - **Invest in the long term future of the university** - through maintaining financial stability and growing staffing and infrastructure.

- **Campus Masterplan** - A specific campus focused objective is that by 2025 QMU will have 'Synergistic development on the land surrounding the campus to include additional facilities for students and the local community (shops, cafes, etc) and an Innovation Park

[60] https://www.qmu.ac.uk/about-the-university/history/
[61] https://www.qmu.ac.uk/media/9275/strategic-plan-2020.pdf

focussing on start-up and early stage companies and SMEs in sectors related to the university's activities'.

Alignment & Contribution of Proposals

A significant element in QMU's decision to relocate to its current campus in 2007 was the future economic development opportunity that would *"establish QMU at the core of a new business and education-led mixed use hub serving the needs of students, staff, employers, employees, existing and future residents and visitors, focusing on research, learning, job creation and associated commercial uses, all contributing to the creation of a new place."*

The proposals for developing the hub and wider EIP are a direct response to QMU's long held strategic vision to be at the heart of a thriving R&D campus and current strategies contemplate this development as a key component of forward strategic planning.

The recent refresh of QMU's 5 year strategic plan has sought to embed and build upon the transformational impact that development of the hub and wider EIP is expected to have. The hub and EIP will be a key delivery mechanism for each of the strategic goals and the proposed innovation programme, while aiming to increase the benefits of the hub is also directly aligned with, and a response to, the Strategic Plan.

1.6 Collaborative and Competitive Landscape

Seeking out partnership and collaboration is a key goal in QMU's Strategic Plan, and the need for increased collaboration has been specifically highlighted by the Higgins report[62] which stated that collaborative working at a regional level is critical for Scotland's economic recovery in the wake of COVID-19. The hub will form a key part of an ecosystem of Innovation Hubs focused on Food and Drink that are being created along a corridor stretching up the east coast of Scotland.

QMU has been in contact with representatives of the Aberdeen, Inverness, Stirling, Ayshire and Tay Cities city region deals (the last of which incorporates the James Hutton institute). While all of these city region deals include Food and Drink elements, none of the other proposals in this sector are of the breadth and depth of health science expertise that the university is able to bring to food and drink innovation, and none are as well developed as those of the Edinburgh Innovation Hub. The Food and Drink proposals of the other city region deals are therefore not considered to be competitors and will instead be complementary to the innovation hub, with all of them serving their respective local SME catchment area and bringing different strengths to Scotland's offer.

QMU continues to work in collaboration with Scotland's Rural College (SRUC) and James Hutton to ensure collaborative alignment of academic research with the Food and Drink industry strategy.

[62] Towards a Robust, Resilient Wellbeing Economy for Scotland: Report of the Advisory Group on Economic Recovery

This will also support ongoing inter-institutional initiatives in support of graduate start up and employability in the Food and Drink sector.

QMU was also invited by Perth & Kinross Council to present at the East of Scotland Food and Drink Seminar to promote alignment with the Perth Food Park (part of the Tay Cities City Deal involving Abertay University). QMU is keen to develop links with Abertay University and UHI in the area of new product development and engineering capabilities around high pressure pasteurization (HPP).

A comparison of activity relative to the QMU innovation Hub and in particular the SCFDI is presented in the table below indicating an offer differentiated and complimentary via geography, access to academic, food technologist and research support, breadth of facilities and scale/type of businesses targeted: -

Center or Organisation	Comparison with QMU hub	Complementarity of service
Seed Pod	Based in Aberdeen, supported by Aberdeen City Deal funding and due to open in 2022. Discussion and research suggests a degree of overlap with SCFDI services but narrower in scope and focused on small-scale incubator type facilities without direct academic support. The QMU Innovation Hub, offering is much wider in scope and will provide a more integrated approach to product development through our laboratories, sensory suite and software, alongside the capability to produce pilot–scale trials of food consumption grade products. The accessibility to wider innovation support within the Hub and QMU itself is a clear differentiation. QMU will continue to support applications for Innovation and Research funding awards, which Seedpod does not have access to.	Degree of complementarity but serves a different geographic area with a lower scale of service etc.
Highlands and Islands Food and Drink Development Network (HIFDN)	Propose a central facility (hub) based in Inverness supported by Highland City Region Deal. Offering still being developed with the central facility to be available in 18 months albeit at a significantly reduced scale than that presented by QMU Hub. Regardless of Hub Service, emphasis will be on a virtual network of support, reflecting the geographic area. No Food Scientists or Food Technologists employed by them within their network and they intend to sub-contract work requiring New Product Development support and possibly other types of Food Science/Technology support (a potential opportunity QMU could offer).	Degree of complementarity but serves a different geographic area with a lower scale of service and on an emphasis on distributed /virtual support. Potential for SCFDI to complement and support the HIFDN in delivering Food Science support to the Highland Region is evident and recognized by both organizations and agreement that a memorandum of understanding will be developed.
University of Abertay	Based in Dundee -Has existing sensory, process and analytic capabilities, enabling it to run a variety of projects supported by academic staff. In contrast to SCFDI, Their Client work is focused on larger projects, in particular Knowledge Transfer Partnership (KTPs). SCFDI sensory and consumer insight work is much more client focused and our facilities are in daily use and of larger scale than Abertay with a consumer database (650+ people registered) with the ability to filter by age, sex, lifestyle, shopping habits according to the bespoke demands of clients. Abertay have no core staff or Full time Food Technologists to conduct projects.	We currently work with Abertay (and SRUC) through the Thrive project – Food and Drink Start-up generator Offering differs from SCFDI, which focuses on sensory and product development work in a highly integrated manner.

Nottingham Food Innovation Centre	Based in Nottingham and a major institution in the English Food Innovation landscape. It currently has significant large company financial support (Nestle, Unilever, Mars etc.) and operates with a very large team of academics and staff. The capacity and capability of Nottingham is significant but they do not support the Scottish F & D sector.	Any complementarity here will emerge from examples of good working practice. Our principal point of difference is our location. In addition the SCFDI is also characterized by its approachability, responsivity and proactivity to potential clients (oftentimes being much more flexible than larger institutions)
Alba Science Edinburgh https://www.albascience.com/services/consumer-sensory-evaluation	Located in Edinburgh - Alba specializes in health research and they have recently added food evaluation into their portfolio. Initial detail suggests food is not a core part of service offering.	May be a degree of complementarity but unlikely yet have range of services or academic support that QMU innovation will deliver.
South West Dairy https://www.thescottishfarmer.co.uk/news/18642322.working-make-south-west-scotland-uks-leading-dairy-region/	Collaboration between SRUC, with University of Strathclyde and University of West of Scotland alongside industry partners Dumfries Council, First Milk, Arla, Lactalis and a college in Cumbria (Newton Rigg). Targeted at the dairy industry to create a more traceable and sustainable dairy process. Facility not yet identified	Focused largely upon Agriculture and Dairy orientated (process equipment for milk production to enable full traceability). The main difference with SCFDI is that this center is purely focused on dairy whereas the SCFDI offering will be cross-sectoral**.** Potential opportunities to provide broader technical services of SCFDI to support the initiative (e.g. in respect of assessing and evidencing health & nutritional claims).
Ayrshire	Food & drink is identified as part of the Ayrshire Growth deal Land donated by Diageo (23-acre former Johnny Walker whisky bottling site) to assist development but no definition yet.	
Tayside City	The Tayside City Deal includes a food and agriculture component involving the James Hutton Institute. Commitments include £62m for Invergowrie farming research centre, the James Hutton Institute and also £26.5m for Fife's Eden Campus Largely an agriculturally driven and food production project and as such this “pre-farm gate” activity does not replicate what the SCFDI does.	SCFDI has worked with the James Hutton Institute for several years largely due to our near to market experience and approach. We currently provide consumer and sensory insight assessment support for their potato crop projects. Both organizations intend that this interface will continue

NMIS Renfrewshire	National Manufacturing Institute Scotland (https://www.nmis.scot/) is not food focused (although food firms will be involved). This manufacturing excellence centre will build on innovation in manufacturing in a number of sectors and amongst other tasks will be to include a collaborative member set of companies who work together to find solutions. Collaboration groups work well where non competing firms are involved (SCFDI proposes to facilitate assessment and evaluation of new F & D manufacturing equipment in our new process suite (white room).	Potential complementarity in the future through pilot testing of new F & D manufacturing equipment
Stirling Aquaculture Centre	A new Analytical Building and Innovation Hub. Funded by the Stirling & Clackmannanshire City Region Deal. Predominant area of interest will be Aquaculture, Facility will incorporate new Aquaculture Aquaria as well as a facility to support Entrepreneur-ship and Business Start-up. Propose to set-up an Intergenerational Living Hub that may have a "very slight" focus on F & D but the form of this remains unspecified.	No obvious overlap with EIP FBC for EIP F & D innovation Hub

2 Economic Case

The purpose of the economic case is to identify and appraise the options for the delivery of the programme and to recommend the option that is most likely to offer the best Value for Money (VfM). In order to identify the preferred option this section provides an overview of the:

- Case for change including market failures;
- Programme level impact pathway and associated benefits that have informed the development of this business case;
- Selection process involved in short-listing the QMU delivery options that are most likely to realise these Programme benefits;
- Assessment of the anticipated types and levels of economic costs and benefits that might be generated by each of these options;
- Consequent rationale for the selection of a preferred option; and,
- Resultant net economic benefits that will be generated.

In assessing the economic impacts of the proposed preferred option we note that the economic impact assessment has been carried out using the same overall approach used for the City Deal Data Driven Innovation business cases, including in respect of quantifying impacts and approach to assessing net additionality. This is intended to offer consistency within the City Deal and facilitate the review and approval process by following established methods.

Given the timing of the analysis being undertaken, the impact assessment follows the process set out in the 2018 Green Book and as such does not include detailed consideration of the new (and recently published) Green Book guidance (2020).

The rest of this economic case has been set out in three parts as follows:

- Part A - Case for Change
- Part B - Options Appraisal
- Part C - Preferred Option

2.1 Part A: The Case for Change

2.1.1 Current Situation, Symptoms & Needs

Based on the detailed policy and market assessment set out in the Strategic Case, the following provides a summary of the current situation, symptoms and needs that are required to be addressed through intervention to unlock the further economic and social opportunities identified:

- There is a global trend towards improving the health and nutrition of food and drink products and towards transforming the way food is produced to reduce its impact on the environment. This is leading to increasing regulatory and consumer pressure for the formulation of new products and the need for increasing collaboration between the food & drink and health science sectors;

- The food & drink sector in the UK and Scotland is dominated by SMEs and, in spite of significant opportunities for growth, investment in R&D to respond to emerging trends is insufficient. Specific barriers to SME participation in R&D and new company formations exist including access to relevant skills and facilities on a flexible basis and at a cost they can afford;

- There are forecast skills shortages and needs in the food & drink sector that are not currently being met and which require a range of new skills types and skills pathways that are not currently provided;

- The existing business support on offer to SMEs in the food and drink sector is often fragmented and there is a need for leadership and further coordination to raise the profile of careers and opportunities in the sector to build on current partnerships; and,

- Economic and social outcomes in the city region are unequal with pockets of low wage employment and inequalities amongst different social groups. Patterns of employment across the City Region are uneven with a need to increase job density in areas such as East Lothian (where it is low) to mitigate pressures on the transport network.

2.1.2 Market failure

The Green Book indicates that the rationale for government intervention: *"can be based on strategic objectives, improvements to existing policy, market failure or distributional objectives that the government wishes to make"*. The strategic and policy objectives for Government intervention in the QMU Innovation Hub have been presented in the preceding Strategic Case section. The consequent market failures and distributional benefits that will be addressed by this support have been provided below.

In light of the current constraints facing the food & drink and health sciences sector in East Lothian, and the City Region more widely, two areas of market failure have been identified:

- **Positive Externalities[63]:** in relation to the wider, spill-over benefits from QMU TRADE outcomes (and related food & drink and health sciences sector research and

[63] "Externalities arise when an economic activity results in costs and benefits for others which are not reflected in market prices……. Positive externalities are also possible, for example education provision can bring additional benefits to the wider economy and society, in addition to those gained by the direct beneficiaries and the provider"
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

infrastructure) resulting in uplifts in productivity for local businesses and the wider City Region (and Scottish and UK) economies which will not be captured in financial returns to the Universities. Additionally, the positive returns to the public exchequer from improved nutrition and health outcomes; and,

- **Imperfect Information[64]:** given the nascent nature of the demographic challenges facing the food and drink sector (particularly in relation to areas such as obesity, aging population and sustainability) market opportunities and related uncertainties, information deficiencies and related private sector investment (risk averse) inertia that could, however, be broken by the innovation at scale objectives of QMU TRADE activities. This includes a commercial risk aversion of traditional landlords to lease high quality space to start-ups/SMEs with high potential but lacking an established track-record.

The ultimate outputs and related impacts of Government intervention will be that the Innovation Hub provides students, academics, workers and existing and new businesses with better Food and Drink focused skills, facilities and infrastructure while also attracting new investors, students and academics to the City Region through enhanced food & drink and health sciences focused training, research and development, incubation and commercialisation support and data driven innovation provision.

Through the above activities there will be improved information flows and external positive benefits and consequent economic growth through three broad sources, namely:

- Business efficiency gains in terms of improved performance, reduced costs and expanded revenues;
- Consequent uplifts in R&D activity from reinvestment of profit uplifts; and
- New market entrants leading to efficiency gains and new products and services.

Consequently, as detailed in the Economic Case section of this case, the extent of the productivity gains that the QMU Innovation Hub will generate is estimated to exceed over £140 million GVA in net present value terms (including direct, indirect and wider impacts).

In light of the above, the opportunity presents itself for QMU to build upon existing expertise and develop the Edinburgh Innovation Hub as a renowned centre for research and development within the Scottish Food and Drink sector. Through supporting innovation, skills and start up opportunities at a single location, the Edinburgh Innovation Hub can increase the profile of food and drink research in Scotland and has the potential to stimulate increased investment in the sector as a whole.

[64] "Information deficiencies: where there is a lack of information of sufficient quality to enable informed decisions to be made"
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

2.1.3 Distributional Benefits

QMU Innovation Hub activities are aligned to the Scottish Government's Inclusive Growth Strategy of ensuring that Scotland will be: " more ambitious, with government, businesses and wider society working together to lead on the key technological and social changes of the future" and ensuring economic growth is "inclusive, so that everyone benefits and has a fair chance to contribute".[65]

In particular, all proposed QMU Innovation Hub activities will need to demonstrate how they will meet (at least one of) the identified overarching City Region Deal inclusive growth objectives. A summary of this alignment is set out in the Strategic Case *(see alignment with City Region, Policy and Trends)*.

2.1.4 Constraints & Dependencies

Space constraints

QMU has altered space within its existing academic campus facilities to accommodate the SCFDI and related SME activity. While this has enabled the SCFDI to operate, it has not been an optimal solution as the activities of SCFDI are constrained by being located within a campus that is primarily teaching focused. Furthermore, while the facilities currently offered to support innovation activity are modern, they are dispersed and not bespoke in the manner in which the facilities in the innovation hub will be tailored to the needs of the occupiers.

QMU does not have any additional capacity which could effectively be used by the SCFDI. The university estate is focussed on core learning, teaching and research activity. It operates one of the smallest higher education estates in the UK. It already makes very efficient use of its available space, as demonstrated by the fact that its allocation of space per full time equivalent student is the lowest in the UK.

The proposed new facility will be designed for easy external access to facilitate installation of temporary specialist equipment to support specific research activities, a level of flexibility which is considered to be very attractive to potential partners. This level of flexibility is something which is not readily possible at the current facility's location embedded within the main building.

The lack of appropriate facilities within the existing campus is now constraining QMU's ability to support businesses that wish to benefit from the services offered by SCFDI. It has become clear that the activities currently delivered through SCFDI could be scaled up substantially if appropriate space were available to support it. The proposed investment in Edinburgh Innovation Hub seeks to address the fact that existing demand for SCFDI is now exceeding supply and significant further opportunities and partnerships arising from greater alignment with health sciences could be missed if they cannot be accommodated.

Financial constraints

[65] First Minister, 31st August 2017.

As set out within the Financial Case, the £36m construction cost of the innovation hub will be funded by the City Deal (£30m) and a capital contribution (£6m) from ELC. Based on the assessment of the financial returns of the hub once completed (see Financial Case) QMU and ELC would not be in a position to fully fund the capital costs of a new building, bear the associated risks or prioritise it alongside other investment demands.

These constraints have been compounded by the Covid-19 pandemic which has created additional financial pressure for educational institutions and local authorities. Its longer term impacts have also introduced further economic uncertainty which further constrains the ability of the partners to bear the significant additional financial risk that investing in the full cost of the hub would otherwise entail.

A1 Junction Improvements & Wider Development

The operation of the hub will be further enhanced by completion of the A1 junction enhancements to provide direct access in both directions, further improving access to the site. In addition this will improve connectivity to the wider residential development of 1500 homes, a new primary school and community facilities and enhance the overall setting (place), attractiveness and competitiveness of the hub and EIP offer. Procurement of the enhancements by ELC is underway and progress is captured and monitored in the risk register (Appendix C).

Objectives

Taking into account the factors comprising the case for change, the following five objectives for guiding intervention have been identified:

- To deliver positive economic and social impact on the economy and lives of people in the city region and across Scotland;
- To facilitate the growth of start-up, early stage and larger companies in the food & drink sector; and to guide early stage businesses on the road to commercial success;
- To align QMU and ELC objectives (both strategic and academic) in order to meet the skills shortage in the sector;
- To support access to the global market for healthy and functional food and innovation in new product development; and
- To consolidate the reputation of QMU and the wider East Lothian region as a centre of excellence for food and drink innovation.

These objectives have been linked to the TRADE based outputs and outcomes identified as part of the options appraisal process in terms of timing and measurability of impacts during programme delivery and beyond.

2.2 Part B: Options Appraisal

2.2.1 OBC Options Appraisal

At the OBC stage the following options were considered and appraised against a range of identified, weighted objectives and criteria with the outcome as follows:

Option	OBC Appraisal Outcome
Do nothing/status quo - No new building, and the work of the SCFDI continues in its current scale and form.	**Discounted** - Ambitions of QMU and ELC to deliver transformative benefits for the region were inhibited and growth in activities severely constrained, significantly reducing potential for economic impacts.
Full build out - Full build out of the 10,000 sqm (GIA) facility, constructed as two buildings physically linked by a central operational core.	**Preferred Option** - New build facility would enable QMU and ELC to meet economic growth aspirations, meet rising demand for start-up space in the Food and Drink innovation sector and deliver transformative economic benefits.
Reduced build out - A reduced scale build out of the facilities. This could mean a smaller site, with functions based in one building.	**Discounted** - Enables a partial accommodation of demand and increase in innovation activity but cost benefit ratio felt likely to be constrained by the need to still justify fixed investment costs in terms of land acquisition, site preparatory works and core building facilities.
Innovation Network - A new "innovation network" model is adopted with existing facilities being maximised and funding directed more to equipment and staff / research costs through revenue funding, alongside network development across the region and further afield.	**Do Minimum** - Felt to deliver at least some economic and social impact beyond the do nothing option. However, failed to address the lack of facilities available to meet demand and considered unlikely to deliver transformation change for either ELC, QMU or the wider sector.

2.2.2 Revisit of Options Appraisal at FBC

At the FBC stage, the options for delivery have been revisited to confirm the scope of the preferred option in light of further developments since the OBC and that it remains the preferred solution in light of other options considered to be available. The following criteria were used to select a Preferred Option:

- Alignment with HMT Green Book Box 9 Critical Success Factors (CSFs)[66];
- Alignment with Case for Change objectives;
- Financially & Commercially Viable; and
- Impact on maximising the strategic potential of the wider EIP.

[66] HM Treasury Green Book, Box 9 Critical Success Factors, p32

Comments against each of the options assessed are set out below:

Options at OBC	Update to Option for FBC
Do minimum/nothing - Based upon the assumption that most of the potential opportunities and benefits identified from the "knowledge network" option at OBC stage could be embedded as the new "Do Nothing" in terms of maximising the impact and deployment of current facilities and resources in collaboration with wider partners. Some aspects of the Innovation Programme could be delivered but at much reduced scale due to lack of growth capacity in facilities and lower profile/organisational commitment compared to delivery of a dedicated innovation hub.	**Discounted** on the following basis: ● Performs well against some CSFs in terms of deliverability but very poorly against strategic and business needs; ● Fails to cater for market demands, needs and opportunities in addressing the Case for Change; ● Poor alignment with QMU and ELC strategic plans and desire to lead transformational change for the local economic and food & drink sector; ● Unlikely to have any impact on wider EIP development offer over the longer term.
Full build out - Following detailed design development, broadly the same option as considered at OBC but incorporating updated cost projection to bring the build cost to £36m. Additionally, incorporating the proposed wider Innovation Programme capitalising on the refreshed QMU Strategic Plan and opportunity represented by the hub to embark on ambitious change.	**Preferred Option** on the following basis: ● Performs well against all Green Book CSFs and considered deliverable and good fit with strategic objectives; ● Caters for market demand and identified needs and opportunities for the short and medium term and addresses the case for change; ● A significant investment to act as a wider catalyst for strategic change within QMU and the food and drink sector and in releasing ELC economic development ambitions on a key site; ● Expected to have a significant impact in attracting and developing tenants to establish the future of the EIP.
Reduced build out - A similar option to that considered at OBC where the building is reduced to a smaller size still considered to be economically justifiable from a construction perspective. Assumed reduced cost of £28m with impact on building specification and extent of "TRADE" activities delivered under the Innovation Programme. Further reducing the cost/scale of this option was not considered viable as the large components of "fixed" investment costs on and offsite (e.g. land acquisition, utilities, site	**Second Place Option** on the following basis: ● Similar outcomes to the above in respect of alignment with CSFs and overall strategic ambitions/needs; ● Concerns in respect of operational financial viability of a smaller building with lower floorspace reducing income disproportionate to any decrease in costs (reduced economies of scale); ● Expectation that the facility could be outgrown within 3-5 years based on current occupancy assumptions; ● Reduced TRADE outputs and impact

prep) would mean squeezing the residual costs associated with the building to the point that the size and specification of the building would not be commercially attractive or viable on an operational basis (either in terms of the necessary rents per sqm, quality of the offer to address the specific market needs identified and ability to efficiently accommodate further growth)	on EIP build out.

As a result of the above process, the full and partial build out were further considered on a cost benefit basis. This analysis was based on the results of a full appraisal of the full build out option and a sensitivity analysis of the proportion of benefits still considered deliverable under the reduced build out option. This confirmed the full build out option as the Preferred Option.

Option	**Estimated BCR (direct, indirect, wider)**	**Comment**
Full Build Out	1:5.2	Calculated per Part C below.
Reduced Build Out	1:2.4	Sensitivity on the above but reflecting: ● Reduced costs of £28m; ● TRADE benefits of between 60% and 75% of full build out option with most talent activities delivered but reduced commercial and entrepreneurial benefits due to reduced offer and more constrained floor space requirements which are more quickly outgrown; ● More limited and delayed impact on EIP as fewer surplus resources available to invest and expansion of initial facility requiring to be delivered prior to further plots being developed. Lower indigenous SME population in hub to drive expansion and demonstrate commercial viability. c.50% reduction in benefits.

2.3 Part C: Detailed Assessment of Preferred Option

This section sets out in more detail the key features of the Preferred option. Further technical detail is set out in Appendix E.

2.3.1 Impact Pathway

An impact pathway was developed for the Programme - as set out overleaf - to determine the range of potential impacts that might be realised and the consequent smart objectives and "success factors" (in terms of inputs, activities and market interactions with potential beneficiaries) required to deliver these impacts.

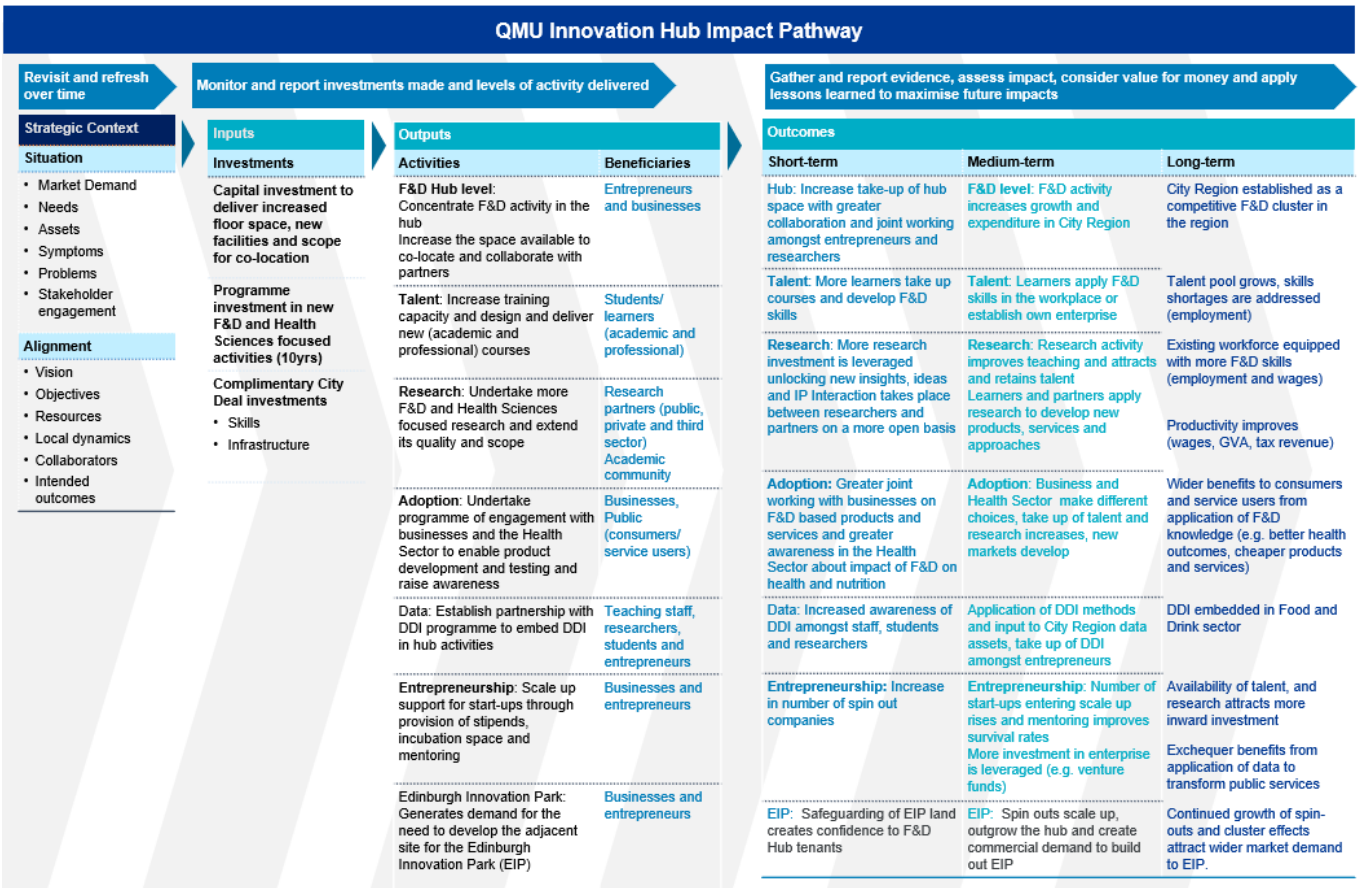
As illustrated, the objectives of the Innovation Hub will be met by the proposed QMU TRADE activities delivering a range of economic and social benefits, including:

- **Talent**: creating and retaining a sustainable pool of Food & Drink and health sciences related talent in the City Region, Scotland and the UK;
- **Research:** expanding and enhancing the Food & Drink and health sciences research activities;
- **Adoption:** increasing the use and adoption of Food & Drink and health sciences related activities and events by the public, private and third sectors in the City Region and beyond;
- **Data:** providing the analytical capacity and data accessibility to underpin Food & Drink and health sciences related activities; and,
- **Entrepreneurship:** enabling City Region based and other entrepreneurs to develop new Food & Drink and health sciences based businesses (through commercialising innovative research and accessing relevant talent and datasets).

QMU Innovation Hub Impact Pathway

2.3.2 Activities & Outputs

The following outputs were identified following discussion with QMU and these were measured as part of the economic impact assessment. These represent the uplift in outputs compared to the baseline (See Appendix E - Economic Impact Technical Appendix for details).



Benefit Category	Activities/Action(s) Taken	Gross Outputs (2020/21 to 2034/35)
Hub	Deliver new innovation hub incorporating bespoke food & drink grade facilities and flexible occupancy floorspace for collaborating companies and spin-outs.	• 5,040 sqm (net lettable internal area) delivered by 2024 to support research, adoption and enterprise activities. • Phased occupancy of 50% in

		2024 rising incrementally over 5 years to 100% by 2028.
Talent	Enhance and expand course provision for food and drink related technology & innovation to improve the quality and quantity of industry relevant skills	• 314 undergraduate BSc (over 15 years) • 120 Masters and 50 PhDs (over 15 years)
Research	Use the new hub facilities to scale up the quality and quantity of research activity undertaken in the City Region in collaboration with partners in the UK and abroad where relevant.	• £5.2m research council grant income over 15 years, representing an uplift of £3.4m from a baseline of £1.8m.
Adoption	Use the increased capacity and facilities provided by the hub to significantly increase direct development projects with commercial customers and create new CPD courses to create in-work skills development pathways for employers.	• Double annual commercial revenue from SCDFI activities to £500k by 2025/26 (representing c.35 projects based on current average value of a typical project) with a total commercial spend on R&D projects of £9m over 15 years • 2,043 CPD courses (accredited and non accredited) over 15 years.
Data	The Innovation Hub will seek to exploit the access to large datasets that the Data Driven Innovation Programme will unlock within the City Deal Region via the WCDI and related Hubs, particularly the Usher Institute and Easter Bush with their focus on health and food sciences respectively.	• Establish partnership with City Region Deal DDI Programme; • Establish joint commercial offer to industry with Edinburgh Napier University to combine their DDI expertise in complex chemical analysis with QMU food and drink product development expertise (reflected in PhD numbers).
Enterprise	The Innovation Hub will provide seed funding and incubation space and support to new start up food and health sciences businesses in the City Deal Region. Thereby providing a natural evolutionary corridor from R&D and Adoption to entrepreneurship.	• A prudent base assumption that half of the net lettable area (2,145 sqm) will be made available in the hub on a flexible lease basis to support **new** entrepreneurial start-ups (with use of the remaining space prudently assumed to support research and adoption activities by established businesses and measured under those headings). • 69 direct entrepreneurship jobs created p.a (once full occupancy has been achieved)

		• 98 new enterprises surviving to maturity over 15 years • £4.9m of total seed capital attracted
Edinburgh Innovation Park	Safeguard the development land at the Edinburgh Innovation park and actively seek commercial build out to support the onward growth of companies beginning in the hub and to accommodate inbound interest from those attracted to the emerging food & drink knowledge cluster.	• Drive forward the commercial development of 40,000 sqm of floor space for innovative scale-up and commercial customers attracted to the emerging food & drink related knowledge cluster over time.

2.3.3 Net Impacts

Appendix E - Economic Impact Technical Appendix, sets out the detailed measures and methodologies that have been used to quantify and value the net additional impacts of the uplift in activities and outputs set out above. The approach and measures used are consistent with those applied in the FBCs for the City Deal Data Driven Innovation Programme. The resulting employment and GVA impacts are summarised below:

GVA Impacts (Net Present Value Terms, 01 Sep 2020 base date)

GVA impact NPV (base date 1 Sep 2020)	Gross impact (£'m)	Net impact (£'m)
Student Spend	7.0	6.4
Graduate (City Deal Region)	46.7	10.7
Graduate (Scotland)	41.2	15.9
CPD	1.3	1.2
Research & Adoption	2.8	3.6
Entrepreneurship	39.0	20.1
Total	**149.7**	**67.4**
Innovation Park	228.3	77.0
Total	**378.0**	**144.4**

Employment Impacts

	Gross impact (FTE)	Net impact (FTE)
Direct Employment	11.7	9.5

Indirect Employment (Entrepreneurship)	69	69
Indirect Employment (EIP)	800	680
Total Direct & Indirect	**880.7**	**758.5**
Construction jobs (annual FTE)[67]	198	N/A
Construction jobs (FTE)	20	N/A

2.3.4 Cost Benefit Ratios

The cost benefit ratios for the project have been set out in the table below. The ratios are presented both including and excluding the GVA associated with the Innovation Park. The analysis undertaken has used the City Deal funding of £30.0m and discounted its drawdown profile at a rate of 3.5% to determine the net present cost of £27.8m.

	Including Innovation Park	**Excluding Innovation Park**
Total cost (£'m)	27.8	27.8
Total GVA (£'m)	144.4	67.4
Cost benefit ratio	**1:5.2**	**1:2.4**

These cost benefit ratios are considered to compare very favourably to threshold ratios observed on other projects.

2.3.5 Qualitative Evidence

In addition, and reflecting some of the findings of the Equalities Impact Assessment noted at 2.3.6 below, the proposals will generate a range of impacts for businesses and against the City Deal inclusive growth objectives that are not directly reflected in the above - e.g.:

- In respect of promoting female entrepreneurship through high levels of female participation throughout QMUs activities and specific initiative to establish a Women's Business Centre;

- Widening skills participation to disadvantaged groups through offering a wider range of courses (including in work CPD training) to broaden participation and QMUs existing inclusive reach into groups that may not otherwise access skills provision;

[67] In line with the commitment in the City Region Deal Benefits Realisation Plan, construction employment estimates are provided on the basis of Scottish Enterprise Economic Impact Guidance that the ratio of total construction costs to labour content is £181,000 per annual FTE and then, in order to allow equivalency to new and maintained FTE jobs, total construction employment will be divided by 10 (years).

- The specific alignment of these proposals to addressing key public health challenges through innovation in nutrition and health which disproportionately affect disadvantaged groups; and,

- Contributing to the creation of data assets for the City Region aligned to the DDI programme to build a resilient future employment base and innovation-led economy and skills base;

- Strategic added value to support innovative business growth through leadership and coordination of business support activities within the food and drink sector to increase the uptake of government support programmes in a sector that currently underperforms and has high representation in target groups.

Case study evidence from existing activities of SCFDI set out at Appendix D further illustrate the potential outcomes that are expected to be delivered to individual businesses and the markets they address.

In line with the outputs reported in the City Deal benefits realisation plan, the £36m investment is expected to support construction employment equivalent to 198 annual Full Time Equivalents (FTEs)[68] or c.20 FTEs when converted to new/maintained permanent jobs. Opportunities to deliver wider benefits through procurement of the hub and future phases of EIP will be explored (e.g. community benefits requirements).

2.3.6 Equalities Impact Assessment

An equalities impact assessment has been prepared and is set out at Appendix F - Equalities Impact Assessment. The assessment identifies no specific negative impacts of the policy and the potential for a number of positive impacts.

2.3.7 Overall Summary

The net impacts and resulting benefit-cost ratios (BCRs) attributable to the direct and indirect benefits of the activities proposed indicate a positive return on the public sector's investment with **net** BCRs believed to be equivalent to those for similar interventions assessed on a comparable basis. The inclusion of potential wider benefits from accelerated build out of the EIP and a range of qualitative benefits aligned to the City Deal inclusive growth objectives underline the positive case for public investment.

[68] In line with the commitment in the Benefits Realisation Plan, Construction employment estimates are provided on the basis of Scottish Enterprise Economic Impact Guidance that the ratio of total construction costs to labour content is £181,000 per annual FTE and then, in order to allow equivalency to new and maintained FTE jobs, total construction employment will be divided by 10 (years).

3 Commercial Case

3.1 Introduction

The Commercial Case seeks to test whether the Preferred Option is commercially viable and to set out the envisaged contracting arrangements to deliver it, and consideration of project risks.

3.2 Is it Commercially Viable? Establishing Demand

Innovation Parks have different development models. One of the most successful models is the creation of a range of innovation facilities that enable companies to graduate from 'hubs' to grow-on accommodation before taking larger facilities. By developing dynamic clusters of this nature, innovation parks are able to attract inward-investor development by larger enterprises seeking to co-locate with talent in a proven location for innovation and technology.

The target markets for the innovation hub on which the revenue in the Financial Case is predicated and delivery of proposed commercial activities in the Innovation Programme are underpinned are:

- Primarily, SMEs operating in the food, drink and health science sectors looking to benefit from the on-site facilities and services of the SCFDI; and
- Secondly, Innovative SMEs in other innovative and related sectors requiring access to flexible lease facilities not otherwise available in the local, regional or, in some cases, national market.

The nature of the SME sector and the target market for the hub is that many of the companies that will become tenants do not yet exist and, even if they did, would not be in a position to enter into substantial pre-let agreements. In taking the risk on filling the building sufficiently to cover its operational overheads, a wide ranging review of the market and key demand drivers has been undertaken. Overall the JV partners are confident that the hub represents an attractive offer to the market that is likely to achieve high occupancy for the following key reasons:

- Market opportunity in the food, drink and health science sectors is strong, and bespoke facilities for R&D are lacking regionally and nationally;
- There is a shortage of appropriately located and specified business space for SMEs in East Lothian and in Edinburgh generally;
- There is an established track record and case study evidence of other recent and very similar university and council-led innovation hubs throughout the UK achieving high levels of occupancy with a similar offer and in less buoyant and constrained markets; and,
- As set out in the financial case, the hub is financially viable at a rental assumption considered to be competitive in the local and regional market compared to benchmarks.

3.2.1 Market Opportunity and Needs in the Food, Drink & Health Science Sector

As set out in the Strategic Case, the strategy for Scotland's Food & Drinks sector: Ambition 2030, aims for Scotland's Food and Drink sector to be its most valuable sector by 2030, with a doubling in turnover of £30bn reflecting significant global growth potential for new products' strong health, well-being and provenance characteristics. However, there are still multiple barriers to achieving this goal, with Scottish Enterprise identifying a lack of facilities and equipment as a key constraint on the level of innovation taking place within the Food and Drink sector to address this potential for growth. Meanwhile, the sector is characterised by a high proportion of SMEs who struggle to find the space and facilities to support their growth on suitable terms in commercial markets.

3.2.2 Local and Regional Shortage of Business Space

City of Edinburgh Council and East Lothian Council have identified a significant shortage of appropriate infrastructure, facilities and services to support the growing innovation sector within the Edinburgh and East Lothian region. Businesses in East Lothian, surveyed by ELC[69] identified a need for space to grow their business, citing their requirement for more modern facilities and better accessibility as reasons they are considering relocating their business in the next five years. Small office space, and a range of industrial space, have been identified as required facilities in the East Lothian area.

Furthermore, the City of Edinburgh is experiencing very strong demand for floorspace from emerging companies looking to grow, but an historic city centre with few brownfield sites of scale, booming housing markets putting pressure on land prices in prime locations, regional transport pressures and the specific commercial issues of building for the SME market are meaning too few suitable sites are coming forward.

"Development of new, flexible workspace is a critical issue for Edinburgh. This is particularly the case for emerging growth companies in new sectors whose needs do not fit easily into traditional property models. Edinburgh requires delivery of a supply of workspaces to meet the needs of business at every stage of development, from start up, to growth and expansion that does not currently exist. Without a ready supply of appropriate work spaces and facilities Edinburgh's economy will be unable to prosper and expand to support both the growing demand from tech companies and the growing population."[70]

3.2.3 Case Study Evidence from other Innovation hubs and Science Parks

A review of the growth of other Innovation hubs and science and technology parks was commissioned from leading Science and Technology Park consultancy CAMSCI. This provided strong case study evidence that other similar, university and council led, facilities elsewhere in

[69] 2017 Business Base Study, East Lothian Council

[70] Edinburgh Economic Strategy 2019

the UK[71] have reached high occupancy and outgrown their initial buildings in a short timescale, catering to wide ranging demand that was not otherwise observed.

Cited examples include very recent projects in Liverpool, Newcastle, and Leeds that have been successful in achieving high occupancy and, in some cases, are already building additional buildings through commercial investment. More long-lived case studies include the build out of successful science and technology parks, from an initial innovation hub type building, aligned to universities in Southampton and Keele[72] over a similar 25 year timescale to that envisaged for EIP.

From its own involvement in the development and review of innovation hubs and science and technology parks, CAMSCI identified that innovation-led companies see access to appropriate facilities and services as a key factor in location choice, especially if these are scarce, as in the food and drink sector. Some companies were willing to move considerable distances in order to secure the specialist facilities and services they required for business operations. Where companies have a choice of available facilities, other key decision influencers include:

- Strength and composition of the existing cluster: companies gain credibility and a range of added value benefits from locating with like-minded market leaders, networks and ecosystems supporting their cluster, an ecosystem the Innovation Hub would be able to provide;
- Lease and rental structure, with flexibility in the cost and duration of leases being a key factor; and
- Ability for supported growth in situ or on site.

CAMSCI specifically noted the strong fundamentals of an onsite research university, gaps in food and drink sector provision, buoyant Edinburgh innovation activity and excellent connectivity of the site as attractive drivers of demand for the hub and EIP. It also recommended that, in order to develop a credible offer from the outset and in line with other successful projects, a series of "entry criteria" that restrict tenancy of the hub and wider EIP are agreed to establish a clear value proposition and maintain brand integrity over the long term. Occupying individuals or entities would need to comply with at least one of the criteria, with these being reinforced in any lease or sub leases granted. Subject to final agreement, the JV intends to follow this best practice to underpin its unique offer by adopting the following proposed entry criteria:

- Innovation-led companies and entities with R&D activity; prioritising Food & Drink;
- Science or innovative companies and entities requiring specialist facilities, services and infrastructure;

[71] Including similar recent projects in Liverpool, Newcastle and Leeds and longstanding case studies in Southampton and Keele.
[72] https://www.keele.ac.uk/business/scienceandinnovationpark/

- Company or entity benefitting from co-location with like-minded innovation led cohort;
- Company or entity requiring flexible operations strategy to enable growth at point of need;
- Company or entity requiring location within an innovation-focused business model with access to innovation ecosystem;
- Research Institute or Contract Research Organisation;
- University departments with an innovation focus; or
- Other activities that the JV partners consider appropriate to the delivery of the Vision.

The Entry Criteria have been drawn so as to maximise the commercial success of the hub and are not drawn so tightly that they restrict entry to an unreasonable level nor are they drawn so widely that they become inconsequential to presenting a unique offer and value proposition to the market. The entry criteria reflect the requirements of similar innovation, science and technology parks across the UK and internationally. Too tightly drawn criteria will restrict demand and too loosely drawn criteria will undermine the vision and concept for the Innovation Hub. Based on experience, the current criteria seek to achieve the optimal and mitigate risk to the project. While there is no strict exit strategy for companies, since this may be a disincentive to some occupiers who require a degree of certainty for their own business planning, especially if they are funding capital fitting out works, the leases that are to be granted will exclude security of tenure. The exclusion of security of tenure is common practice in the granting of leases in innovation hubs and it means that tenant companies will not be able to remain in occupation of premises any longer than their lease and the landlord permits; they will have no automatic right to renew their lease at the end of its contractual term. The requirement is to balance the operation of the Innovation Hub as a commercial facility with the need to enable young companies to grow.

3.3 Contracting Arrangements

3.3.1 Establishing a Joint Venture Company

Since approval of the OBC, ELC and QMU have continued to develop their long term partnership approach to the development of the hub in a manner that demonstrates the commitment of both parties and their respective investments, roles and responsibilities and creates a platform from which to take forward the development of EIP over the longer term.

Subject to final legal and tax due diligence, following successful approval of the FBC it is the intention of the parties to establish a formal joint venture company (working title “Edinburgh Innovation Park Limited”) to take forward the development, management and operation of the hub and any future EIP. The principal reasons for adopting this approach are:

- It offers a single point of interface (landlord) for tenants of the hub and future EIP while providing confidence that both QMU and ELC stand behind and are committed to the obligations and service being offered to tenants;

- An arms-length vehicle enables more nimble day-to-day management and governance structures to be put in place to respond to the rapidly evolving needs of the SME and innovation sector while retaining appropriate strategic control and influence for the partners;
- Over time, the JV vehicle may offer a desirable route to leverage in third party commercial investment on a structured basis;
- It provides appropriate financial and commercial incentives for both parties to invest in the success of the hub and EIP via their respective academic and land assets;
- It offers flexibility in recruitment of appropriate management and leadership resource to grow the offer and its standing in its key target markets over time; and
- A review of case study evidence suggests this is the most common formula for similar successful projects elsewhere in the UK and further afield with established advantages.

3.3.2 Overview of JV Roles and Responsibilities

The table below summarises the overall roles, rights and responsibilities of both parties in respect of the activities and requirements of the JV:

Party	**Roles, Rights & Responsibilities**
East Lothian Council	1. Grant receiving body for the City Deal and rights to sign off on specification and budget for the hub; 2. Investment of a £6m capital contribution to fully fund construction of the hub; 3. Owner in perpetuity of the land; 4. Grantor of a ground lease to the JV for construction of the innovation hub; 5. Grantor on a plot by plot basis of ground leases for the development of future plots at EIP as opportunities arise and primary recipient of any ground lease premium established over time; 6. Joint provider (with QMU) of working capital to the JV during the operational phase to establish a working capital fund;
Queen Margaret University	● Responsible for the detailed design and specification of the hub; ● Manage the procurement of the design and build contract for the hub and its supervision on behalf of the JV; ● Primary responsibility for the day-to-day management, marketing and operation of the hub/JV including: ○ Provision of facilities management services under Service Level Agreement; ○ Secondment of key operational staff to the JV; and, ○ Operator of the SCFDI facilities.

	● Joint provider (with ELC) of working capital to the JV during the operational phase to establish a working capital fund;

A heads of terms has been agreed between the parties reflecting the above principles and subject to approval of the FBC and final legal and tax due diligence, detailed legal agreements will be progressed.

3.3.3 Contracting for the Works

In line with the above noted roles and responsibilities, QMU will lead on taking the design and specification of the hub to a detailed level (RIBA Stage 4) to enable robust two stage procurement of a contractor to construct the scheme on a fixed price basis under a market standard design and build contract. This approach to establishing a detailed design specification and fixed price design and build procurement is intended to substantially mitigate the risk of any cost overruns arising. As set out in the financial case, benchmarking of the £36m budget for the hub has taken place against other similarly specified innovation hubs and the project is considered deliverable within this envelope.

The intention, subject to detailed assessment of the conditions of grant, would be for the Joint Venture to create a development company to which the construction of the innovation hub will be subcontracted to ring fence the associated construction period liabilities, again reflecting wider common practice.

To support the design, specification and procurement process, the services of CAM-SCI, a specialist consultancy with experience of delivering similar innovation hubs and related innovation parks throughout the UK, has been retained to support alongside QMU and ELC's internal estates teams. Opportunities to embed community benefit principles in the design and build contract, in line with the City Deal inclusive growth objectives, will also be explored.

3.3.4 Operational Arrangements

As noted above in the roles and responsibilities section, QMU will take the lead in the operations of the hub during the operational phase reflecting its key role in the operational attractiveness of the offer and its wider stake in its success aligned to its Strategic Plan. Operational resources and services will be delivered through the following routes:

- Service Level Agreements for provision of specific services to the JV (e.g. facilities management);
- Employment of staff for the JV to support its operations in respect of marketing, client management, tenant support etc; and
- Business as usual resources and structures in respect of many of the Innovation Programme activities.

ELC will continue to support the operations of the hub through its stake in the JV and its role as operator of the on-campus Business Gateway business support hub. While QMU is expected to

take the overall lead, ELC will look to support via staff secondments and shared services support where appropriate.

Over time the JV model offers the opportunity and flexibility to evolve to bring in third party development expertise/investment should this be required or desirable.

3.4 Risk analysis

An analysis of the main risks, and existing and proposed mitigating actions, is set out in the Risk Register at Appendix C. This Risk Register provides details of the project risks and the steps that have been or will be undertaken by the project owners. Overall, the partners are comfortable that the key risks are manageable and the overall risk and return profile is acceptable.

4 Financial Case

4.1 Introduction

The purpose of the Financial Case is to demonstrate the affordability of the project in terms of upfront capital expenditure and ongoing running costs and to show that an appropriate funding mechanism is in place to support successful delivery of the project.

4.2 Capital Costs

4.2.1 OBC

The figures included within the OBC cost plan were originally prepared in 2015, as part of an overall outline costing exercise of the University Development Strategy for all of its proposed on and off Campus developments. The Hub building presented within that development strategy was conceptual with no defined design content. The costs generated were based on all-encompassing construction rates for innovation type premises of a similar scale to that envisaged with allowances then made for main services infrastructure, design fees, client contingency and inflation. The latter reflective of the notional timescale of the Hub construction. The costs, whilst reviewed prior to submission of the OBC continued based on generic rates and allowances.

4.2.2 FBC

The cost plan figures included within the FBC were prepared in November 2020 and are based upon an outline design concept for the Hub, which accords with the Royal Institution of British Architects plan of work Stage 0. The briefing, specification and design work was led by CAMSCI who were appointed by the University to assist development of the vision, concept and business plan for EIP and the Innovation Hub. CAMSCI have been fundamental in informing the updated concept for the hub and supporting Currie & Brown, Cost Consultants on preparation of the cost plan.

The concept design brief, Images of the proposed Hub, its proposed extension and its location within the wider Innovation Park and MH1 land development are (appendix G)

4.2.3 Cost Comparison

Analysis of the FBC cost plan compared with the OBC cost plan is presented in table X below. As noted above the FBC Cost plan is based on a concept design and specification. The approach and build up to the costs of the FBC differs from the presentation within the OBC. E.g., allowances for fees, contingency, and construction preliminaries within the FBC are now separately identified and commensurate with e design stage and in terms of inflation, taking into account the projected construction date. The cost consultant's report (appendix G5) provides full detail of assumptions and exclusions.

The Cost plan identifies that the Hub building, while remaining at 7,200m2 in area will be delivered for circa £5m less than the costs projected within the OBC.

Capital Cost Comparison

Table

		OBC			**FBC**
		2015			**2020**
Costs					
Land acquisition		4,000,000			(see below)
Bus stop / turning point		448,000			450,000
Innovation hub and infrastructure (7,200 sqm GIA)		25,034,000			18,445,700
Construction preliminaries		(included)		16%	3,024,000
Specialist equipment		1,300,000			(see below)
Bus route		815,000			(n/a)
	Construction & Land	**31,597,000**	Construction		**21,919,700**
Inflation		4,582,000			(see below)
		36,179,000			**21,919,700**
Contingency - design + construction risk	20% of infrastructure *	1,025,000		13.50 %	2,960,000
		37,204,000			**24,879,700**
Inflation		(included)	to site start	5%	1,244,000
					26,123,700
Design and statutory fees	15% of infrastructure *	923,000		12%	3,135,000
		38,127,000			**29,258,700**
Client equipment					750,000
					30,008,700
VAT (20%)		6,826,000			6,001,740
Total Project Cost		**44,953,000**			**36,010,440**
Land acquisition		(included)			4,000,000
Overall Project cost		44,953,000			40,010,440

*** contingency and design fees already included in OBC buildings cost figures**

4.2.4 Funding Plan

The funding plan for the project is identified in the table below

Capital costs contributions from ELC comprise £6m for hub construction and £4m for Land purchase, the latter enabling construction of the Hub and the wider EIP.

QMU has insufficient reserves or borrowing capacity to contribute any capital to the development. However, QMU's involvement is fundamental to the success of the case and to reducing risk associated with Hub. The University is providing extensive asset value in terms of development management and operation.

The Commercial aspects of the JV agreement between the parties is reflective of ELC Capital contributions with ELC receiving a contribution to its investment from net returns. Both QMU and ELC are contributing working capital to the operation of the Hub and have committed to return net surpluses to further development of the hub and the park.

Funding Plan for the Edinburgh Innovation hub

Funding source	**Funding amount (£'m)**	**Comments**
Edinburgh Innovation Hub		
East Lothian Council	6.00	ELC will make a £6m capital contribution towards delivery of the hub and has sufficient reserves to make such a contribution.
City Deal	30.00	City Deal grant funding.
Total	**36.00**	
Associated Costs (Land)		
East Lothian Council	4.00	The land has already been acquired by ELC.

4.2.5 Capital Expenditure Profile

The forecast capital expenditure and funding profile in respect of the Edinburgh Innovation Hub is set out in the table below. The funding profile assumes that ELC and City Deal funding is drawn down on a proportionate basis but this is subject to final discussion with the City Deal PMO and government.

Profile of capex and funding

£m	2021/22	2022/23	2023/24	2024/25	Total
Capex	3001	11644	11644	9711	36.00
Funding					
ELC	501	1934	1934	1631	6.00
City Deal	2500	9710	9710	8080	30.00
Total	**3001**	**11644**	**11644**	**9711**	**36.00**

4.3 Operational income and expenditure

4.3.1 Operational Model

The first phase of development at Edinburgh Innovation Park, called the Innovation Hub is to be a serviced multi-occupied laboratory and office building that operates as a commercial facility. The scale of the development has been established at 7,200 sq. m (Gross Internal Area) with a target of 5,040 sq. m (Net Lettable Area) over which income can be generated. This comprises an efficiency ratio of 70%, which is appropriate for a building intended to provide for the needs of SMEs in a range of innovative sectors.

It is of fundamental importance that the Innovation Hub operates as a new commercially driven business and to achieve a goal it is necessary to ensure, when in operation, the Innovation Hub is managed and operated in a manner that maximizes all revenue generating opportunities and minimizes operating costs without compromising the totality of the Value Proposition.

CAM-SCI a leading consultancy in specialist development and service delivery for the commercial innovation sector. They have provided support and guidance on the optimum size of the facility, its operating model and applicable rental and service charges, as well as occupancy uptake from comparable developments. **See Appendix G**

Key Assumptions within the operating model

- The Hub will have an operational business plan that will propose how business support is to be facilitated. A number of existing structures will be used together with other initiatives drawing on relevant experience from other similar Hub developments
- All lettable space is leased by all occupying entities at market rent (including any space to SCFDI)
- The Innovation Hub will operate a RICS Compliant Service Charge
- Occupiers will pay a service charge
- Occupiers will pay for power consumed within their demise, power, heating and cooling
- Occupiers will organise, and pay for the cleaning of their demise
- Occupiers will have access to meeting rooms for a fee
- The Innovation Hub will be open permanently for use by occupiers. Use will not be restricted to business hours
- The Innovation Hub will procure services in the most cost effective way possible, most likely through the University's existing systems
- The Innovation Hub will have a managed ICT system for use by occupiers as part of the service charge
- The Innovation Hub will be insured, including insurance for three years loss of rent, with the insurance premium being chargeable to tenant companies pro rata
- All VAT is recoverable (subject to confirmation from tax advisors)
- Rental growth by at least the CPI is factored in in due course from the beginning of year 6; meaning an effective rent review from the end of year 5
- Expenditure has been analysed based on the Gross Internal Area of the Hub (7,200 sq m)
- Income has been analysed based on the Net Lettable Floor Area of the Hub (5,040 sq m)
- Staffing to support users comprises: -
    - Innovation Hub Manager – Commercial Operations and Business Development
    - Operations Manager – Property management and oversight of outsourced FM services
    - Reception and Administration

4.3.2 Operational Expenditure

Benchmarking analysis on operational expenditure at comparable buildings has been undertaken by QMU with support from CAM-SCI in order to derive appropriate operational expenditure assumptions.

Innovation hub Core Operational Expenditure

Cost type	**Cost per sqm (£)**
Energy	4.36
Cleaning	3.13
Security	10.33

Site management	5.06
Mechanical & Electrical services	13.56
Fabric repairs and maintenance	4.70
ICT	5.75
Buildings and loss of rent insurance	2.69
Management costs	19.61
Total (pre financing)	**68.69**

Based on a cost of £68.69 per sqm (in current 2020 prices), total core operational expenditure is anticipated to be £544,043k per annum for the 7,200 sqm facility.

In addition to the above, a 15% 'working capital contingency' has been applied at this stage to reflect the agreement between the JV partners to provide a working capital buffer within the JV to be used to support the wider marketing and innovation activities of the hub in delivering against the City Deal and FBC objectives and to manage operational cashflow requirements. This also reflects a notional value attributable to staff time seconded or otherwise allocated to the operation of the JV. A total base case operational budget for the hub of **£625k p.a.** has therefore been assumed in the base case financial assessment.

The Innovation Hub will be a key support for and driver of the wider Innovation Activity within the University predominantly around increase in research and teaching. It is envisaged that any costs associated with supporting the growth of these developments will be met from the associated revenue streams including course fees, research grant and commercial income. The University will apply its standard full economic costing model to ensure this is the case.

The enterprise activities will continue to be managed and funded via the on campus Business Gateway service and this will continue to leverage the wider funding streams already available to support business start-ups.

4.3.3 Operational Income

The principal element of revenue for the innovation hub is the rental value of the commercial space. CAM-SCI have a large amount of specialist sector knowledge and they have undertaken a comprehensive analysis, of the sector and comparable developments which have informed rental income assumptions applied in respect of the cash flow forecast for the innovation hub.

Key assumptions

Occupancy assumptions

Gross area	7,200 sqm	
Non-lettable space	30%	Reception, corridors and other common areas.
Lettable space	5,040 sqm	
Less allocation of space for university use	750 sqm	Assumed 100% occupancy from year 1
SME commercial space available for rent	4,290 sqm	Year 1 - 50% occupancy Year 2 - 65% occupancy Year 3 - 80% occupancy Year 4 onwards - 100% occupancy
Rental assumptions		
Rental value	£215/sqm	Combined Rental & service Charge. Based on rental income for comparable developments across the UK
Estimated Maximum Rental Income (gross, p.a.)		
Estimated max rental income (p.a.)	£1,040k	Total value of available lettable area at assumed rental value and assuming full occupation
Operational voids and bad debts		
Allowance for voids and bad debts	5%	Allowance for vacant space awaiting re-let or refit and irrecoverable bad debts.

4.3.4 Net operating cash flows

Based upon the above cost and revenue assumptions, the table below summarises the overall net cashflow build up over the first 10 years with a steady state position reached after 5 years in 2028. As the occupancy levels of the commercial space increases, income rises and this results in improving net operating cash flows with underlying costs remaining fixed. In the first year the hub is expected to make a modest loss with scope for modest returns to the JV thereafter.

10 year net operating cash flows for the Innovation Hub

£'000	TOTALS	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033

Operating income											
Occupancy (%)		50%	65%	80%	95%	100%	100%	100%	100%	100%	100%
Rental income at stated occupancy	**9,657**	543	705	868	1,031	1,085	1,085	1,085	1,085	1,085	1,085
Void and Bad Debt Allowance (5%)	**-483**	-27	-35	-43	-52	-54	-54	-54	-54	-54	-54
Meeting Room Charges	**98**	3	6	8	10	12	12	12	12	12	12
Total Income	**9,272**	**518**	**676**	**832**	**989**	**1,043**	**1,043**	**1,043**	**1,043**	**1,043**	**1,043**
Operating expenditure											
Operating costs	**4,946**	495	495	495	495	495	495	495	495	495	495
Working Capital Allowance (15%)	**742**	74	74	74	74	74	74	74	74	74	74
Total Expenditure	**5,688**	**569**	**569**	**569**	**569**	**569**	**569**	**569**	**569**	**569**	**569**
Net operating cash flow	**3,585**	**-50**	**107**	**264**	**420**	**474**	**474**	**474**	**474**	**474**	**474**
Distribution of Surplus											
Opening Balance ELC Prerential Surplus (£1.4m as at 2021, indexed linked at 2%)		1,508	1,538	1,459	1,219	815	348	-	-	-	-
Preferential distribution of surplus	**1,613**	-	107	264	420	474	348	-	-	-	-
Closing Balance		1,508	1,431	1,196	799	341	-	**-**	**-**	**-**	**-**
Residual Surplus Available	**2,022**	**-**	**-**	**-**	**-**	**-**	**126**	**474**	**474**	**474**	**474**

At a real terms discount rate of 3.5% (in line with Green Book guidance) and a base date of 1 April 2020, the Net Present Value (NPV) of the net operating cashflow set out in the table above is approximately £2.7m. While positive, it is very modest and would not see full recovery by ELC of its £6m capital contribution. Given the extent of financial return estimated and the associated risks, the financial assessment underlines the need for the substantial contribution to the hub's capital costs via the City Deal, and the hub would not be considered viable without this.

4.3.5 Financial sensitivities

It was deemed appropriate to undertake a number of sensitivities in respect of several income and cost assumptions of the Financial Case. The table below provides a summary of the sensitivities that have been undertaken. The table illustrates in particular that a rent of £116/sqm (compared to a base case rent of £215/sqm) would be required to achieve a breakeven steady state annual operating cashflow, albeit with £1.8m of the ELC preferential surplus unpaid at the end of year 10. A higher rent of £162/sqm would be required to achieve a repayment of the ELC preferential surplus by the end of year 10.

	Rent (£ sqm)	*O&M Cost (£ sqm)*	*Steady State Annual Net Operating Cashflow (yr 5 onwards, £'000)*	*ELC Surplus Repaid within 10 years?*	*Residual Surplus Available for Reinvestment (£'000 over 10 years)*
Base case	215	69	474	YES	**2,022**
Rent +20%	**258**	69	680	YES	**3,722**
Rent -20%	**172**	69	268	YES	**254**
O&M costs +20%	215	**82**	360	YES	**971**
Rent -20%, Cost +20%	**172**	**82**	154	**NO (£700k unpaid)**	**0**
Rent Breakeven: Steady State Annual Operating Cashflow Zero	**116**	69	**0**	**NO (£1.8m unpaid)**	**0**
Rent Breakeven: 10yr Net Operating Cashflow of Zero	**131**	69	71	**NO (£1.26m unpaid)**	**0**
Rent Breakeven: ELC Preferential surplus repaid by end of year 10 (i.e. no residual surplus)	**162**	69	220	**YES**	**0**

4.4 Summary

The Financial Case has demonstrated that the upfront capital cost of the Innovation Hub will be met by the City Deal funding and the upfront capital contribution from ELC, both of which can be considered to be viable funding mechanisms which can provide funding at the required timescales while the innovation hub is under construction. The partners are open to discussing the profiling of the City Deal contribution with the City Deal PMO and respective governments.

This Financial Case also shows that the Innovation Hub will be financially sustainable over the longer term and could return a modest financial surplus to the JV partners to reflect ELC's capital contribution in the hub, to provide working capital to advance the wider EIP proposals and Innovation Programme and offer a financial return to QMU for its stake in the operation of the hub and delivery of the wider Innovation Programme.

The JV intends that net surplus, following the agreed base return on investment to ELC (or £1.4m indexed) and subject to a business plan between the parties, be available for reinvestment in the JV Innovation programme in the form of further investment in the Hub facility, extension of the

Hub facility (which is part of the design concept) or development on the wider Edinburgh Innovation Park.

Overall, the JV partners are confident in the financial risk profile of the project and that the hub and innovation programme activities proposed can be delivered.

5 Management Case

5.1 Introduction

The Management Case demonstrates that the project owners have put in place appropriate management and governance structures which will oversee the successful delivery of the project. The Management Case also shows that the project's benefits will be monitored in order to ensure the realisation of these benefits.

5.2 Key Principles Adopted

In considering the appropriate management and governance arrangements to be put in place, the approach followed has to be proportionate and draw upon existing arrangements where these are considered to be fit for purpose in order to avoid unnecessary cost. The governance structure and accompanying processes put in place have therefore been developed to provide for:

- Being accountable to government(s) for the value for money of their investment made (and being able to evidence this to them);
- The right type, level and robustness of reporting information making its way to the higher level governance to enable appropriate decision taking;
- The ability for wider partners to hold the programme to account for the spectrum of benefits it promised to deliver (innovation, skills, enterprise etc.) and to influence delivery where objectives are not being met;
- The university and the local authority being able to exercise an appropriate level of control over investment of their own (substantial) resources in the programme;
- Keeping the programme aligned with the requirements of the private sector to maximise economic impacts;
- Accountability for day-to-day delivery but with reasonable levels of flexibility to react to opportunities;
- The sharing of best practice to avoid silo mentalities and maximise clustering benefits; and,
- Access to resources capable of taking/affecting action on the recommendations of the governance groups to prevent "talking shops" with no resource/ability to act or influence in practice.

5.3 Scope of Development

- The Costs of the development proposed at OBC were £45m with sources of funding identified as :-

    - UKG and SG - £30m Subject to the approval of the Full Business Case)
    - QMU/ELC Joint Venture - £11m
    - ELC Funding for land purchase - £4m

- The Costs of the development now proposed are £40m. Section 4.1 provides a detailed explanation behind the changes in cost and confirms that that the Hub building, remains at 7,200m^2 in area, but will be delivered for £5m less than the costs projected within the OBC.

- QMU has insufficient reserves or borrowing capacity to contribute any capital to the development, a position which has been exacerbated by the impact of the Covid-19 pandemic. Therefore, the Capital contributions now proposed from the JV for the construction of the Hub have been reduced to £6m and are being provided solely by ELC.

- Despite the inability to provide a capital contribution, ELC and QMU, recognise that QMU's involvement in the project is fundamental to the success of the project, in terms of provision of development management and operational management thereby reducing risk associated with the Innovation Hub,

- QMU/ELC will progress the EIP as a Joint Venture Development. The JV addresses all necessary governance, development, financing and operational aspects of the EIP (Hub and Park).

- The Commercial aspects of the JV agreement reflect ELC capital funding of the hub, with ELC receiving a contribution reimbursement to recognise its investment from the hub net surpluses. QMU and ELC are contributing working capital to the operation of the Hub and have committed to return net surpluses, beyond ELC reimbursement, to further developing the agreed JV business plan.

5.4 Joint Venture Arrangement

The Joint Venture arrangement for the EIP (Hub and Park) reflects the above. Advice on the appropriate JV structure has been was sought from CAMSCI specialist practitioner consultants in the development and operation of innovation, science and technology parks for the public and private sectors. Reference was made to relevant case studies of previous UK Science and Innovation parks directly comparable to the EIP Hub and Park -) See annex X

ELC and QMU agreed eight key high-level principles to direct the JV agreement, as follows: -

1. The cost of the innovation hub development will be £36 million, excluding the cost of the land;

2. The funding of the construction of the Hub facility to be provided from £30M from Government(s) and £6 million from ELC;
3. QMU will manage the design and build of the innovation hub;
4. Construction risk will be shared between the parties;
5. QMU will operate the innovation hub once complete, will take occupancy risk and will determine use and occupation based on the Entry Criteria;
6. When the innovation hub starts to return a surplus, ELC will receive a return to reflect its capital investment in the facility;
7. Similar principles will be applied to the future development of the wider innovation park, recognising that a third party developer may be involved;
8. All of the above will be incorporated into a legal agreement.

5.4.1 Joint Venture Management Company

- ELC and QMU propose that a Joint Venture (JV) management company limited by shares be created on an equal share basis. The shareholders will be QMU and ELC.
- The JV Company will be the owner of the Innovation Hub.
- The land on which Innovation Hub is to be erected will be provided by ELC at a peppercorn rent.
- ELC's risk exposure in the Innovation Hub will be formalised by way of a grant of a standard security on the Hub until such time that any City Deal related obligations have been discharged.
- QMU will be responsible for the development management, management and operation of the Hub and for driving the Innovation Hub forward as a new business on behalf of the JV partners.
- The JV partners will agree the procedures and requirements for operational management including but not limited to the operational business plan and budget.

A diagram showing the structure of the JV is at **Appendix x**

5.4.2 Joint Venture Company Governance

A JV governance structure will comprise:

- A chair provided by each of the JV partners on a rotating basis
- Each partner to provide two company directors
- Board meetings to take place quarterly
- Key decision making points to be agreed by both individual parties.
- One of the parties will need to take responsibility for the preparation of annual accounts and other Companies House obligations. Because of QMU's operational management of the Innovation Hub, QMU will fulfil this function.
- The accounting of all financial matters will be on an 'open book' basis.

- There will be a need to complete a Joint Venture Shareholders Agreement between ELC and QMU. This will provide the necessary detail concerning the functioning of the Joint Venture. The detail will include a range of matters including a schedule listing the matters reserved for shareholder approval.

5.4.3 Leasing Strategy

The following leasing strategy will be adopted:

- ELC owns the EIP land in perpetuity.
- In any leasing structure ELC is designated as the Head - Landlord.
- ELC will obtain a valuation of each tranche of land prior to disposal of the land by way of a ground lease to the JV Company. The valuation will inform the baseline rental payable by the JV company to ELC

Within this Leasing Strategy the JV company will either:

- Develop sites directly, or
- Grant a ground lease to a third party for either:
    - Development and occupation by 'owner occupiers' This could be achieved by either an inward investor or a company growing out of the Innovation Hub wishing to self-fund the development of a facility at their own cost
    - Development by a third-party investor/developer and subsequent occupation by compliant entities e.g. Prudential Portfolio Managers, Legal & General, Aviva etc.

In addition,

- Leases at the Hub will be granted by the JV company
- EIP Sub leases will be granted by the JV company to third parties
- All development and occupation must comply with Entry Criteria for the EIP

The Leasing Strategy will ensure that, with a single JV mid - landlord, it will be possible for the entire EIP lease portfolio to be managed proactively and to ensure maximum control over the estate, including the establishment and provision of estate wide services; recovered through an Estate Service Charge.

5.4.4 Entry Criteria

The requirement for the Entry Criteria is a critical component of successful commercial innovation park development and operations. Some innovation parks have not enforced their Entry Criteria in pursuit of short-term revenue gains. In these circumstances the Value Proposition and brand integrity of the park has been damaged with long term negative consequences.

In defining the Entry Criteria, it is important these are not drawn so tightly that they restrict entry to an unreasonable level nor are they drawn so widely that they become inconsequential.

The proposed entry criteria for EIP are:

- Innovation-led companies and entities with R&D activity; including Food & Drink
- Science or innovative companies and entities requiring specialist facilities, services and infrastructure
- Companies or entities benefitting from co-location with like-minded innovation led cohort
- Companies or entities requiring flexible operations strategy to enable growth at point of need
- Companies or entities requiring location within an innovation-focused business model with access to innovation ecosystem
- Research Institutes or Contract Research Organisations
- University departments with an innovation focus
- Other activities that the JV partners consider appropriate to the delivery of the Vision

Occupying entities would need to comply with at least one of the criteria.

The Entry Criteria would only apply to any compliant entities or individuals intending to occupy premises at the EIP. The Entry Criteria will not apply to third party investors/developers, but their occupational tenants would need to comply e.g. Legal and General would not comply with the Entry Criteria but any company or other entity to which they granted an occupational lease would have to adhere to the Entry Criteria.

5.4.5 Innovation hub design, development and operations

- QMU will be responsible for the development management, management and operation of the Hub and for driving the Innovation Hub forward as a new business on behalf of the JV partners.

5.4.6 Innovation hub – operating surplus

- When the Innovation Hub generates a net operating surplus, there will be a need to distribute the surplus between the JV partners. This distribution will be asymmetrical to reflect ELC's contribution of up to £6 million to the capital costs of the Innovation Hub.
- The following is proposed, based on a presumption that if ELC does not contribute £6 million the calculations below will be adjusted pro rata.

- Based on a contribution of [£200,000] by both ELC and QMU, to establish working capital for the Hub, it was provisionally agreed[73] that after the payment of £1.4 million [index linked] to ELC then all subsequent surpluses would be shared equally by the partners. The principle has also been proposed that during the operation of the Hub some surplus funds would be retained within the JV Company, to maintain working capital, with the amount to be decided by the Board of the JV.
- All QMU resources allocated to the operation of the Innovation Hub are to be charged at cost.

5.4.7 Innovation park – ground lease premium

- The JV will dispose of Sub Leases for a rental premium.
- ELC will require a valuation of each tranche of land to establish each ground lease as they come forward. This would inform the ground lease premium between ELC and the JV Company.

5.4.8 Follow on development

To create a vibrant Innovation Park capable of delivering the vision for ELC and QMU, follow on development will be necessary and will generally take the form where:

- ELC grant ground leases to the JV Company as demand arises. The JV Company grants a sub-lease to the third party investors/developers for those sites as they come forward.

Other development scenarios may arise and the JV partners with the condition being that the Entry Criteria for EIP would not be compromised would consider these.

5.5 Hub Development & Construction Management

5.5.1 Joint Venture Development Company

ELC and QMU have agreed that all the development activity at the EIP (other than third party development) will be undertaken by a separate development company, Edinburgh Innovation Park Development [Ltd][74], to mitigate commercial risk to the JV Partners in Edinburgh Innovation Park Ltd. It is proposed that the equal joint shareholders would be ELC and QMU and that the development company would delegate responsibility to QMU to deliver the Hub in terms design and construction.

[73] Working Capital aspect discussed on 6 Nov during a Teams meeting attended by ELC, QMU and CAM-SCI

[74] The company has not yet been incorporated

5.5.2 Project execution plan

The development company will ensure appropriate Project Governance and Project management arrangements are in place to successfully deliver design and construction of the Hub. This will be achieved through creation of a project execution plan (PEP). This will describe the procedures and systems, which will be used to manage and control the delivery of the project activities for the innovation Hub. The PEP will provide an easily understood project management organisation framework that recognises the project requirements, the project and organisational constraints and further supports the delivery of a successful programme of works

The PEP will include definition of roles and responsibilities, with the JV development company acting as the Governing Board for the Hub development.

Specialist external advisers including those from Food & Drink, Healthcare and other relevant sectors will be seconded to support the work of the Governing Board.

5.5.3 Procurement strategy

A procurement strategy will be developed which mitigates risk to the JV partners. At this stage it is proposed that design development of the hub is taken to RIBA Stage 4 by a design team with directly relevant experience of similar multi-occupied serviced laboratory and office buildings. Experience in the design and development of successful innovation hubs will be a key factor in appointing consultants.

The recommended approach will enable the award of a fixed price Design & Build contract) with a key outcome being the transfer of all construction cost risk to the nominated contractor. Design certainty will enable contractors to bid for a defined specification and, consequently, they will have little requirement to include risk contingencies to cater for the unforeseen.

5.6 City Deal Governance Arrangements

The governance arrangements set out in the Deal Document[75] empower local authorities to:

- Operate strategically with their partners to fully realise the economic potential of the city region;

[75] Edinburgh and South East Scotland City Region 'Deal Document' Accelerating Growth

- Respond to issues critical to the economic health and wellbeing of the city region;
- Unlock economic assets; and
- Decide on the alignment of resources in projects and programmes with the greatest economic potential for the city region.

The City Deal Joint Committee has overall responsibility for the allocation of the City Deal resources and the FBC will be provided for their approval in order to approve the funding allocation sought to deliver the hub. As Sponsoring Authority for this project, ELC will act as the grant receiving body, accountable to the City Deal Joint Committee for the approved expenditure.

To maintain the focus and alignment of the City Deal on its agreed priorities and to promote opportunities for cross sector collaboration, the Joint Committee is advised by the City Deal Executive Board which is supported by a number of thematic boards and advisory groups that include the IRES board (skills), Innovation Advisory Group and HE/FE Group. The Project will both report to, and seek guidance from, these respective groups over the life of the city deal in order to maintain delivery focus on the overall objectives to which the proposals are expected to contribute and to take advantage of emerging opportunities through more closely aligned collaborative and partnership working. This is also reflected in direct membership and participation in each of these groups by both ELC and QMU.

Opportunities to supplement the public, private, third sector and sectoral governance already provided at City Deal level with specific sectoral leadership and representation from the food & drink sector and other City Deals (building upon current representation in the Steering Group) will be explored further following successful approval of the FBC.

5.7 Monitoring and Evaluation Framework

The City Deal Joint Committee has recently (September 2020) approved an overall Benefits Realisation Plan against which all partners and projects in the city deal are expected to align their reporting[76]. The Benefits Realisation Plan sets out the overarching approach to reviewing and evaluating benefits by addressing two central issues to allow the Deal to demonstrate that benefits are being realised:

- How the City Region Deal is performing against delivery plans as set out in approved programme and project business cases and the overall Deal Document objectives; and,
- What economic, social and other impacts may be generated as a result within the Region, Scotland and elsewhere in the UK?

The proposals in this document will primarily report under the ‘Research, Development and Innovation’ theme of the City Deal although the proposals will also contribute towards progress under the skills theme. The preparation of this FBC has already been prepared in recognition of the future reporting requirements of the Benefits Realisation Plan by:

[76] Edinburgh and South East Scotland City Deal: Benefits Realisation Plan

- Giving consideration to how the proposals align to the 5 inclusive growth objectives set out in Benefits Realisation Plan as part of the Strategic Case (see City Deal Policy Alignment section);

- Developing a Theory of Change/Logic Model as part of the economic case; and

- Aligning the outputs proposed (and assessed as part of the Economic Case) under the same “TRADE” headings already established as a precedent for reporting purposes by the DDI Programme.

Accordingly, while the FBC was not complete nor outputs confirmed at the time of the Benefits Realisation Plan being finalised, ELC and QMU were able to commit to reporting in line with the Innovation Programme Proforma of the approved Benefits Realisation Plan[77] which includes:

- Smart output one: Construction period Employment;
- Smart output two: Programme expenditure;
- Smart output three: Outcomes under the TRADE headings; and
- Smart output four: Direct jobs created at EIP.

The partners will engage further with the City Deal PMO to confirm alignment of reporting and appropriate metrics and approaches to measurement as delivery plans are finalised.

[77] See page 36 of the Benefits Realisation Plan

PART C

Supporting Appendices

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Appendix A - Scottish Centre for Food Development and Innovation

The Scottish Centre for Food Development and Innovation (SCFDI) was set up in 2014 following an investment in facility upgrades of £500k by QMU. SCFDI is an academic research and knowledge exchange hub based at QMU, staffed by research academics with expertise in food science and technology and a technical and commercial support team. The centre focuses on collaborating with private enterprises to deliver highly commercial research and knowledge exchange in areas including new product development (NPD), the reformulation of companies' existing food recipes, and sensory and consumer insight testing, and training as well as the shelf life extension of their food and drink products. The centre is equipped with a specific SCFDI laboratory, development kitchen, white room and sensory suite. The centre also has access to the university's general teaching facilities.

The QMU approach to SME engagement is valued by companies for being both commercially focused and partnership orientated. Companies appreciate the SCFDI's flexibility of space and availability of equipment. They also value the opportunity to work alongside and utilise the expertise of the academic and technical staff at QMU. QMU continues to use part of its Innovation Fund to invest in equipment that enhances its innovation and new product offer to companies.

QMU has engaged with over 250 companies across Scotland over the last four years, assisting with new product development, reformulation of existing products, nutritional analysis, and sensory analysis/taste panel work. These companies are mostly SMEs referred to QMU from a range of sources including: Business Gateway; Scottish Enterprise; Scotland Food and Drink; Edinburgh and other Chambers of Commerce; and Interface. Other sources include QMU's own marketing and networking activities, and companies referring other companies.

Case studies which demonstrate the value of the work of the Centre to SMEs which are active in the food & drink industry are attached. A case study which highlights the synergistic influence of the SCFDI and the QMU campus-based Business gateway in supporting a new "health-focused" start-up company in the Food and Drink Sector is (Fodilicious).

Appendix B - Facilities and equipment of Queen Margaret Innovation Hub

The innovation hub will comprise a brand new, purpose built building which will help to ensure the realisation of the project's objectives. The facilities in the building will be bespoke and have been determined following wide consultation, in particular with businesses operating in the food, drink and health science sector. The proposed facilities are described below in more detail.

Specialist equipment

- Specialist food and drink equipment will be available to the hub's occupiers in both the development kitchens and the Food Processing suite. This equipment will include a deck oven, a drinks fllller, and UHT kit. There will also be access to labelling and packaging services, and commercial food analysis services.
- In order to allow occupiers to undertake on site research, the hub will feature a large sensory facility with specialised aroma booths and acoustic testing facilities. This will be particularly attractive to SMEs which do not have capabilities to test products.

Showcase facilities

- Showcase facilities will provide a setting for new product launches. They will also facilitate the demonstration of new technologies to food companies and academics.

ICT

- The innovation hub will be built with high performance ICT infrastructure. ICT is critical to innovative companies of all sectors and in order to attract companies to the hub it will be essential to provide access to high performing ICT and any associated support.

Flexible unit sizes

- The hub will allow companies to rent units of a range of sizes in order to best suit their needs.

Serviced facilities

- Units will be rented on a 'turn-key' basis and will be serviced. QMU will be responsible for overseeing the servicing arrangements which will enable the hub's occupiers to focus on their innovative activities.

Common space

1. Meeting rooms and break-out areas will be available for use by occupiers. These will assist with collaboration and provide space for meeting potential investors or customers.

Accessible facilities

- The accessibility of the hub will assist with distribution and receipt of supplies required for product development. Individual units will feature roller doors to allow for simple ingress and egress. A shared forklift will assist with the movement of heavy goods.

Appendix C - Risk Register

See end of document.

Appendix D - SCFDI Case Studies

Black and Gold Rapeseed Oil

Black & Gold produces a cold-pressed rapeseed oil at Stevenson Mains Farm, East Lothian. Black & Gold wanted to be clear about the properties of their product so that they could be accurate in any nutritional claims made on the labelling and in their marketing material. The company wanted to establish the brand at the forefront of nutritional, premium, artisan foods while expanding beyond farm shops, delis and butchers, to the web, clinical practitioners, health stores and health centres. With this end in mind researchers at Queen Margaret University were asked to establish the facts about the omega-3 nutritional content of the oil.

Rapeseed oil is renowned for its healthy fatty acid composition, as it has a very low omega-6 to omega-3 ratio, which helps to maintain cardiovascular health. Black & Gold rapeseed oil is cold-pressed and doesn't undergo significant processing. This is not only believed to optimise the flavour of the oil but may also preserve a range of antioxidant compounds that would otherwise be lost in processing. The research assessed the antioxidant profile and fatty acid content of the Black & Gold rapeseed oil and compared it with an equivalent grade olive oil on the market. In addition, the effect of domestic cooking on these nutrient profiles was investigated.

The research confirmed that the overall balance between omega-6 and omega-3 fatty acids conforms to the World Health Organisation international guidelines for heart health. Furthermore, analysis of the product showed that Black & Gold rapeseed oil does contain naturally occurring antioxidants in the form of polyphenols which remained active after domestic cooking such as shallow frying. Our research has established that Black & Gold may be considered superior to oils such as sunflower and extra virgin olive oil commonly used for cooking. This superiority can be attributed to this oil's favourable omega-6 to omega-3 ratio, antioxidant content and retention of nutritional benefits throughout normal cooking and heating processes.

Louise Elder, Director of Black & Gold, commented that: "Meeting with the specialists at Queen Margaret University gave immediate access to invaluable experience and research in the food industry not only in Scotland but the rest of the world. Engaging with academics who could increase the product potential is extremely rewarding for very small, inexperienced and young businesses. Black & Gold have found the collaboration with Queen Margaret University to be highly profitable in terms of understanding the efficacy of our product and we now feel we can communicate its benefits accurately to our customers." The company now supplies to over 30 outlets including: Harvey Nichols; Napier the Herbalists; Coulstoun Cookery School; and a range of top class restaurants and fine food suppliers.

The university is now working with The Scottish Rapeseed Oil Group (SRO), set up by Interface Food & Drink in partnership with Scotland Food & Drink and SAOS. The group, which includes seven rapeseed growers and producers, is working together to promote Scottish cold-pressed rapeseed oil to consumers and buyers. Commenting on behalf of SRO, Amanda Brown, Industry Development Director for Scotland Food & Drink, said: "QMU's research suggests that Scottish cold-pressed rapeseed oil has a distinctive fatty acid profile in comparison to cold-pressed rapeseed oils from elsewhere in the UK and Europe, which may in turn allow for targeted marketing to differentiate it."

Gusto

Established in 2011, Gusto is a small artisan company based in Leith who produce a range of dressings, marinades, infused oils, balsamics and vinegars. Using Scottish rapeseed oil, the company has achieved a notable level of success with their existing products which are marketed at high profile events and distributed via high end delicatessens, food markets and retail outlets.

The company wanted to diversify their current product line to introduce a new range with a strong unique selling point which would enable them to stand out from their competitors. The aim of this project was to develop a new dressing/oil/condiment product incorporating marine algae oil to complement the existing range of oils and vinegars. Such a product would offer consumers a vegetarian alternative to oily fish with increased versatility in the diet. It is anticipated that this novel product could improve intakes of long chain omega-3 fatty acids (DHA and EPA) in those who are not consuming adequate fish and help to achieve dietary requirements.

The research involved the development of nutritional profiles for new Gusto products incorporating marine algae oil (DHASCO™) as a source of DHA by varying the amount of the oil in relation to cost impact on the final product and possible label claims. Thereafter, sample batches of selected recipes were developed to assess shelf life and fatty acid profiles. Finally, a consumer focus group assessed the acceptance of the products, the perception of adding marine algae oil, and the understanding of the health benefits.

The project has clearly shown it is possible to produce oils and dressings enriched with marine algae which are acceptable to consumers. Ultimately this novel concept has the potential to offer consumers an alternative source of DHA in their diet which responds to the increasing need to reduce cardiovascular disease in the population. It is anticipated that this exploratory work will offer the company the opportunity to develop an entirely new range of products enhanced by the use of functional ingredients thus providing them with a strong unique selling point. The project has paved the way for the application of marine algae into other foods providing a valuable alternative to oily fish in supplying DHA in the diet.

Rachel Cousins, Gusto Artisan Foods, commented that: “This project gives a very strong USP therefore enabling market differentiation. Our collaboration with Queen Margaret University was focused on the task in hand and delivered the desired results which will aid our company in moving forward”

The Chocolate Tree

The company is an organic certified, “bean-to-bar” chocolatier specialising in artisan chocolate, organic chocolate bars, hand-crafted chocolates, continental baking and Italian style ice cream. This family-run business started in 2005 with a mobile shop supplying festivals, farmers markets and delicatessens. Since then they have expanded and now operate from a factory in Haddington, East Lothian and have an upmarket retail/café in Bruntsfield, Edinburgh. The company only uses the finest natural ingredients and they enjoy experimenting with new ideas. They are proud to be one of the first UK chocolatiers to make chocolate from beans supplied directly from the producer. The company is the winner of the 2013 East Lothian Food & Drink Award for the most innovative product.

The Chocolate Tree has developed new “bean-to-bar” chocolate products made from cacao beans sourced directly from cacao growers in Madagascar, Peru and Ecuador. The aim of the project was to provide the company with accurate antioxidant and mineral information to enable them to gain a fuller understanding of these nutritional characteristics in order to promote the health and nutritional aspects of their “bean-to-bar” chocolate.

Chocolate is frequently seen as an unhealthy indulgence. However, good quality chocolate with a high cacao percentage, when enjoyed in moderation as part of a balanced diet, has been shown to have a number of physical and mental health benefits. This project investigated the health properties of chocolate produced directly from roasted and unroasted beans from Madagascar, roasted beans from Ecuador, and unroasted beans from Peru. In particular the polyphenol content and the antioxidant capacity in these different products were investigated. This allowed the company to gain insight into the effects of the country of origin and roasting process on these properties. In addition the presence of a number of healthy minerals was also determined.

Queen Margaret University was able to provide scientific evaluation of the antioxidant profile and mineral content of The Chocolate Tree organic certified “bean-to-bar” range and provided professional guidance regarding the health and nutritional aspects of their products. This will assist the company in developing accurate information for labelling purposes and advertising material via their website, social media and leaflets. In the long term it will facilitate a large marketing campaign through which the company aim to: bring transparency to the chocolate industry; showcase how companies can work on an ethical basis supporting organic farmers in

Peru, Madagascar and Ecuador by sourcing cacao directly from the growers for the manufacture of “bean-to-bar” chocolate.

The client commented that: “This was a fantastic project which provided us with information which helped us better understand the health benefits of chocolate and go on to promote our products into new markets.” Alastair Gower, Owner and Partner.

Fodilicious (www.fodilicious.com)

Lauren Leisk graduated from Queen Margaret University (QMU) in 2016 with a BA Hons (1st Class) Business Management. At the age of 20, Lauren discovered that she had irritable bowel syndrome (IBS). She struggled to find readily available food products that were suitable for her diet, and discovered a gap in the market to fill.

In September 2017, Lauren set up Fodilicious, an innovative and UK exclusive food manufacturing business providing convenient, healthy meal options following the low FODMAP diet, (IBS-friendly) helping IBS sufferers to live a better quality lifestyle. Their products are also gluten-free and dairy-free too, effectively positioning Fodilicious in the fast growing ‘free from’ food market. The company has grown very quickly and is now selling through their website directly to consumers and to several food service and hospitality clients who are keen to take their products.

Support from Queen Margaret University

- **Scottish Centre for Food Development and Innovation -** Lauren is currently engaged with the team from QMU’s Scottish Centre for Food Development and Innovation (SCFDI) who are working with her on a project to develop a new range low FODMAP snacks. The project, which is currently ongoing, is funded through the Scottish Funding Council Innovation grant scheme.
- **Business Innovation Zone -** Lauren joined QMU’s Business Innovation Zone in 2017 where she has access to desk space and business support from the on campus Business Gateway service. In addition, she has received support with funding opportunities workshops and entrepreneurial competitions. Supported by the University she has entered:
    - Scottish Institute for Enterprise – Fresh Ideas competition 2018 – winner
    - Santander Universities Entrepreneurship Competition 2018 – through to Semi finals
- Scot Edge Competition – winner of Young Edge 2018
- Royal Society of Edinburgh, Unlocking Ambition competition – Finalist
- Merchant Company of Edinburgh – supported with a grant and mentor.

- Scotland Food and Drink Awards – finalist in Young Talent Category
- Sir Tom Hunter – winner of 100 Disrupters competition

“The team at QMU are absolutely fantastic, highly experienced and a pleasure to work with.” Lauren Leisk

https://www.qmu.ac.uk/services-for-business-and-industry/biz-fodilicious/

https://www.qmu.ac.uk/study-here/student-stories/lauren-leisk/

Queen Margaret University
SCOTTISH CENTRE FOR FOOD DEVELOPMENT AND INNOVATION

Cobbs

Case Study : Cobbs Bakery Reformulation

Summary Of Project

Cobbs Bakery, based in Drumnachrochit in the Scottish Highlands, are a traditional style bakery and hotel group, sought to create a more healthful range of their successful bakery range. Cobbs service the foodservice and retail sectors, and were challenged by their retail clients to reduce sugar content. Cobbs were also keen to expand into markets which may have been excluded for nutritional reasons.

Sugar performs a number of different functions in baked products, not just sweetness, and providing a "one size fits all" approach is not appropriate.

Cobbs sought to create a range of six products which mimicked their top selling products, each of different styles :

- Victoria sponge cake with vanilla butter icing
- Chocolate sponge cake with chocolate butter icing
- Iced Carrot Cake
- Flapjack
- Gluten Free Brownie
- Millionaires Shortbread Tray Bake

Cobbs were keen not to lose their "home made" reputation, so any ingredient used to replace sugar should be clean label, legal and available for delivery in the desired quantiities in the Scottish Highlands.

The project was part funded by a Scottish Funding Council Innovation Voucher, with cash and in kind contribution from Cobbs.

Challenges

- Retail clients sought a reduction of minimum 20% reduction in sugar in their product range.
- In order to make claims on pack of reduced sugar, a minimum of 30% reduction in sugar was required (this challenge became the benchmark reduction required)
- Sugar reduction was required in the many parts of the finished product (ie not just the cake batter, but also the additional icing and fillings in the cake examples, but also for example the chocolate topping of the millionaire shortbread)
- Sugar's many functions in the finished product (shelf life, texture, bulk, moistness, cake integrity and icing format) had to be considered.

- Media campaigns looking at "sugar free" cakes sought to promote the use of other ingredients such as agave, honey, etc – these options were not appropriate as they did not reduce the actual sugar content of the product (and were deemed as misleading in the term "sugar free" given their high sugar contents). In addition, intense sweeteners commonly opted for in home baked sugar reduced items (such as Canderel and Stevia) were not permitted in use in the EU for manufactured products of this type and hence were excluded from the project

Scottish Centre for Food Development & Innovation Solution

The SCFDI took a strategic approach to this project, outlining what was possible not only in the six project products, but how solutions could be extended into other products within the wider Cobbs range.

Nutritional Calculation : Creating a nutritional information file for each of the products highlighting the impact of sugar in the formulation, and providing a base from which to look at sugar reduction. This file, based on MS Excel, was provided as part of the project and enabled Cobbs to extrapolate this to all products in their range.

Ingredient Search : A search for ingredients which would be functional yet meet the legal and clean label criteria was undertaken and samples sourced for use in product development. In addition, supplier information on specifications, nutritional profile, costing, minimum order quantities and lead time was incorporated.

Test Baking : Test baking of all products was undertaken onsite at QMU to assess optimal recipes, with regular reviews with Cobbs to ensure client approval. Trials based on kitchen batch recipes from the SCFDI were carried out at Cobbs site (to assess scale up, especially oven, challenges from kitchen batch to manufacturing bakery)

Consumer Insight : Two sets of consumer taste panelling were carried out as part of this project to assess consumer acceptance of the revised recipes against the standard full sugar products.

Final Report : A detailed final report outlining all methodologies and rationale for ingredients was created by the SCFDI, together with the results of all consumer insight testing.

Results

- A minimum of 30% sugar reduction was achieved in all six products, with successful consumer acceptance (or client approval) in each case.
- A labelling claim of "reduced sugar" was therefore permitted should this be required.
- An additional consumer taste test of these products was featured in the BBC Radio Scotland Kitchen Café programme where the panel was asked to discriminate between a standard carrot cake and one developed with 35% reduced sugar (where no difference in flavour and texture was reported)
- The products were launched via Cobbs distributor, Fife Creamery.
- Further adjustments are being investigated by Cobbs for their standard range based on the learnings from this project, in particular to investigate NHS and education markets which have stricter nutritional requirements.

About The SCFDI

The SCFDI is a wholly integrated centre within Queen Margaret University Edinburgh. The team incorporates expertise from both industry and academia and has four full time industry focused food scientists/product developers, plus additional input from the wider academic team. Services offered include new product development, reformulation, scale up advice, consumer insight using purpose built sensory suite and a consumer panel in excess of 650 members mostly from the local community. Projects are considered both from a consultancy and publicly funded basis.

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SCOTTISH CENTRE FOR FOOD DEVELOPMENT AND INNOVATION

Case Study : Tongue In Peat

New Product Development

Summary Of Project

Tongue In Peat was a concept created by Hannah Fisher, cofounder of the Start Up Drinks Lab in Inverclyde whereby peat smoked Scottish tomatoes could be incorporated to create a truly unique new style tomato juice for sale in on-trade premises.

Whilst some initial work had been carried out some years ago on a blue sky concept by a third party consultancy, a revised approach was required to create a suitable manufacturable product.

The project offered by the SCFDI was a one day "NPD day", based at QMU, to create the optimal product together with Hannah, bringing together the technical expertise of the SCFDI and the brand decision maker to expedite the whole process.

The project was provided on a consultancy basis .

Challenges

- A concept product had been created initially but unfortunately this was unfeasible for scale manufacture, and much too expensive.
- Process – the product would have to be manufactured at Start Up Drinks Lab, with existing equipment and process restrictions, and hence any formulation and process should comply.
- Cost was a major consideration as the product needed to be accessible to the on-trade as a premium but affordable mixer.
- Taste – the smokiness of the smoked tomatoes was being lost in the heat process and this was the USP of the product so needed to be boosted.

Scottish Centre for Food Development & Innovation Solution

The team at SCFDI were able to provide a one day NPD day which covered every aspect of the drinks development process.

In advance of the NPD day, all ingredients, pricing, specifications and trial packaging were sourced from appropriate suppliers. All the equipment required for kitchen batch preparation and analysis was available at the SCFDI for this project.

Two members of the team structured the day to ensure that the maximum impact was provided in the allocated time.

- Review of all Ingredients Proposed : The SCFDI brought in a number of ingredients for assessment and trial during the development time, and the rationale for each (including any benefits and disadvantages were discussed).
- Product Development : Kitchen batch preparation, with the client, until a desired formulation was achieved. This included full heat treatment (pasteurisation) of all relevant samples.
- Assessment : Specialist equipment such as refractometer, pH testing and equipment to assess specific gravity of all ingredients were incorporated into the assessment process.
- Preparation of Launch Information File : A one stop excel file was created following the NPD day which included all essential information for launch manufacture, including:-
    - Full formulation details (both in weight and mass options to allow for specific gravity and conversions from kg to litres). A conversion tab was created to make adjustments to batch sizes simple in manufacture.
    - Full costing of ingredients based on volumes required, including yield loss calculator
    - Supplier information, including contact info and pricing, leadtimes, specification
    - Technical analysis results
    - Manufacturing methodology and process (including critical points)
    - Nutritional calculation for labelling purposes (Group 2 nutritionals per 100g (calories, kjoules, total fat, saturated fat, carbohydrates, sugars, protein, fibre and sodium as salt.
    - Labelling ingredients declaration (including any allergens)

.

Results

- The project was successful and led to the launch of the Tongue in Peat brand in 2019 into ontrade outlets.
- The information file produced is used as a benchmark for all projects carried out by Start Up Drinks Lab.

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Queen Margaret University
SCOTTISH CENTRE FOR FOOD DEVELOPMENT AND INNOVATION

Case Study : Scottish Salmon

Training Workshop on Sensory Techniques and Consumer Testing in Smoked Salmon

Summary Of Project

The Scottish Salmon Company are headquartered in Edinburgh with fisheries across Scotland. They supply fresh and smoked salmon to the foodservice and retail sectors.

As part of a review of procedures, they wished to ensure that the team based in Edinburgh and each of the fisheries were able to assess and review the products they farm and manufacture in a harmonized way. In order for this to be achieved, a bespoke training workshop specifically targetted at smoked salmon was created by the SCFDI for delivery in the sensory suite.

The project was funded via consultancy. .

Challenges

- The twelve participants came from across the business, senior and junior, and with differing knowledge levels. A tone and pace suitable for the group as a whole was required.
- Removing pre-conceived ideas regarding both Smoked Salmon Company and its competitor products was essential.
- Current assessment procedures were subjective and very much open to interpretation, hence the need for a confirmed process across the business.
- Adding objective methodologies to the assessment process, without the need for specialist equipment was required.
- The workshop would involve a large amount of tasting highly flavoured foods, and palate fatigue would need to be avoided.

Scottish Centre for Food Development & Innovation Solution

The SCFDI created a training workshop over two consecutive days which met the needs of the business.

Day one was a general introduction and concentrated on understanding the senses and their impact on how this affects our perception of taste, and covered the following topics:

- Introduction to the senses, including the benefits of taste testing, factors affecting the palate and protocols to consider
- Practical session one – identifying the 7 basic tastes of salt, sour, bitter, sweet, acid, metallic and astringent.
- Practical session two – the impact of salt on the palate and its function in finished products
- Practical session three – the impact of sweet on the palate, and why not all sweetening agents are equal
- Session on understanding the differences between consumer testing and sensory testing and reasons, with the benefits and disadvantages of each
- Organoleptics and how to taste
- Matching your data needs to the test type required.

Day two concentrated on understanding the basics of sensory testing with particular reference to smoked salmon and incorporated :

- Practical sessions where competitor and own samples were tasted in a controlled setting, blind coded and using sensory analysis techniques.
- A session on how to create more detailed descriptions on the products highlighted differences in flavour, texture, aroma, mouthfeel, using quantitative descriptive analysis techniques.
- A session on their current assessment template, including a review of format at the end of the two day workshop to incorporate learnings from the sessions.

Results

- Feedback from all twelve participants was positive. They found the sessions useful, from a personal and professional viewpoint.
- Protocols were put in place to replace current procedures to ensure more meaningful assessments.
- A more calibrated ability to review products on the different sites was achieved, resulting in more meaningful assessment and audible process.
- The participants were able to assess both their own products and competitor products in a more objective way, better understand the differences and how to describe those differences.
- Participants wiere able to disseminate the training information to the remaining staff at the sites who were unable to attend the workshop.

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The Scottish Centre For Food Development & Innovation, Queen Margaret University, Edinburgh

Queen Margaret University
SCOTTISH CENTRE FOR FOOD DEVELOPMENT AND INNOVATION

Malcolm Allan
SCOTLAND'S FAMILY BUTCHER
Over 60 years of Quality...

Case Study : Malcolm Allan

Consumer Testing In The Quest To Find The Ultimate Haggis

Summary Of Project

Malcolm Allan are a Scottish based butchery business, with a well known and establish brand in Scottish retail outlets

As part of their product development process, a benchmarking review of competitor and products in development was undertaken by the SCFDI.

The SCFDI were able to design the research, and carry out testing using participants from the Centre's own 650 strong consumer panel which is mainly populated from consumers from the local community. The wide range of consumers, from all walks of life and ages, are able to provide useful consumer insight when considering product launches or redevelopments.

The sensory suite enables the products to be assessed in a controlled environment, using established consumer testing techniques, and utilising 60 participants sourced from the consumer panel.

A final detailed report on the results of the research was provided to Malcolm Allan. The Ultimate Haggis was launched in Asda for Burns Night 2020.

The project was funded via consultancy. .

Challenges

- Achieving the ideal balance of optimum number of participant numbers versus project cost was essential. The choice of 60 participants and a very detailed questionnaire was approved.
- Using a controlled environment it was possible to achieve impartial and unbiased results – this can be challenging to achieve in client in-house panels where own product can be identified easily.
- The assessment of haggis, being a highly flavoured product, can be troublesome as palate fatigue can occur. Palate cleansing techniques and protocols were in place to ensure that this did not occur.

Scottish Centre for Food Development & Innovation Solution

The SCFDI created a bespoke assessment on a new recipe haggis from Malcolm Allan and its three main competitors.

Competitor products were purchased by the SCFDI, and Malcolm Allan products provided by the client. All samples were prepared in the Centre's sensory preparation kitchen for the assessment.

A detailed bespoke questionnaire was created in two sections, and incorporated:-

- Organoleptic questions covering perceptions of the products tasted
- Lifestyle questions covering store choice, important factors when considering haggis purchase, likelihood to purchase, regularity of purchase and pack size preference.

The purpose built sensory suite within the SCFDI was able to host the sessions and results from the 60 participants reported anonymously using Compusense™ sensory software in place at the Centre.

The sessions were carried out in controlled conditions.

Results

- The results from the study were useful to Malcolm Allan during their product development process and enabled the client to complete their product development process in a focussed way.
- The product launched in 2020, ready for the busy Burns Night celebrations.

About The SCFDI

The SCFDI is a wholly integrated centre within Queen Margaret University Edinburgh. The team incorporates expertise from both industry and academia and has four full time industry focused food scientists/product developers, plus additional input from the wider academic team. Services offered include new product development, reformulation, scale up advice, consumer insight using purpose built sensory suite and a consumer panel in excess of 650 members mostly from the local community. Projects are considered both from a consultancy and publicly funded basis.

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Appendix E - Economic Impact Technical Appendix

Appendix F - Equalities Impact Assessment

Appendix G – Financial Case

G1 EIP Hub - Masterplan

G2 EIP Park – Masterplan

G3 EIP Hub – 3d

G4 EIP Hub – Development Programme

G5 EIP Hub – Cost Plan

G6 EIP Hub Concept Design Brief

G7 Case Study (5 nr)

G8 Hub rentals

G9 Hub uptake

G10 Hub Size

Appendix H Management case

H1 Leasing Structure

Appendix I - Commercial Case

I1 CASE STUDIES OF COUNCIL/ UNIVERSITY JV COMPANIES IN THE INNOVATION ECONOMY

EIp/Innovation Hub – Project Risk

Risk ID	Risk Description (Threat/Opportunity to achievement of business objective)	Risk Control Measures (currently in place)	Assessment of Current Risk			Planned Risk Control Measures	Assessment of Residual Risk [With proposed control measures]			Risk Owner
			Likelihood	Impact	Risk Rating		Likelihood	Impact	Residual Risk Rating	
			L	I	L x I		L	I	L x I	
IH 1	Innovation Hub/EIP Lack of market demand for innovation space/EIP commercial units resulting in the innovation space being underused, particularly as a result of Covid-19. Financial impact by loss of potential revenue stream for JV by the short term and long term by unoccupied units. Reputational damage to ELC/QMU if completed project has no uptake/cannot deliver on the terms of the full business case.	The JV partners will provide a working capital contribution of £200,000. Early engagement and instruction of the relevant retail/market studies will be needed to identify the market demand, particularly around impact of COVID19. Continued engagement with relevant bodies to promote innovation space and continued reliance on national and local market intelligence particularly around impact of COVID19. Already existing business start-up and business growth arrangements already in place between QMU and ELC.				Continue to review national and local market intelligence on the impact of COVID19. Review short, medium and long term impact of COVID19 on existing business start-ups both nationally and locally and business growth both nationally and locally.				Project Manager
IH 2	Innovation Hub/EIP – Business Case Inability to draw down some or all of the £30 million targeted in the City Deal to bring forward the Innovation Hub and therefore unable to fund the construction of the Innovation Hub which is the catalyst for the development of the 52 acre wider EIP. Delay to the timetable for submission/approval of FBC. Financial impact is a revenue stream identified for ELC by the construction / completion and occupation of the Innovation Hub and commercial units at the EIP. Reputational damage by not bringing forward a crucial element of a strategic site that has been allocated City Deal money from UKG.	Draft Full Business case submitted to SG/UKG on 4th December 2020 and iterative feedback currently ongoing with a target date of June 2021 for approval. PWC continue their appointment as the appointed consultant to advise on the business case and there is continued and ongoing feedback sessions on the Full Business Case with UKG/Scottish Government, City Deal PMO office and QMU. Regular reporting to ELC and Members. University FEC and Court briefings undertaken to ensure the proper interface with ELC/QMU governance. Current timetable for approval of FBC deferred to June 21. Direct impact of delay to the submission and approval of FBC is the date for completion and operation of Innovation Hub to Sept 22 and Feb 25 respectively SG/UKG advised of this and approved same.				SG/UKG continue to feedback on resources of FBC review personnel in context of Brexit to meet the target date for approval of the FBC in June 2021				Project Manager
IH 3	Innovation Hub/EIP – Construction Costs Increase in cost of project at (1) design stage, (2) contractor tendering stage, (3) during building process. Financial impact on ELC if unforeseen increased project costs require to be met. It will require a revisiting of funding arrangements with ELC/QMU and to report accordingly to the City Deal to assess that funding streams are adequate to enable completion of the project. Potential	QMU will lead on the procurement of the design, specification and construction of the Hub in order to achieve the maximum synergy with the vision and operations of QMU. The intention is to engage a design team with directly relevant experience of similar projects and award a fixed price JCT Design & Build contract. A key outcome of the above appointment is to transfer all of the risk to the nominated contractor. Design certainty will enable contractors to bid for a defined specification				Ongoing close financial monitoring of construction costs including monthly financial reporting/discussions with ELC finance officers and the PMO finance officers. Proposed governance structures will demand ongoing financial scrutiny.				Project Manager

Risk ID	Risk Description (Threat/Opportunity to achievement of business objective)	Risk Control Measures (currently in place)	Assessment of Current Risk			Planned Risk Control Measures	Assessment of Residual Risk [With proposed control measures]			Risk Owner
			Likelihood	Impact	Risk Rating		Likelihood	Impact	Residual Risk Rating	
			L	I	L x I		L	I	L x I	
	reputational damage by disruption to attaining key project milestones.	and, consequently, they will have little requirement to include risk contingencies to cater for the unforeseen. Currie & Brown appointed as cost consultants to ensure a rigorous assessment There is a refresh of the cost plan associated with the project being undertaken to assess the current costings in line with the budget albeit the cost implications of COVID19 have been identified as a cost risk and as such remain to be fully assessed. Regular oversight meetings between Persimmon Homes, QMU and ELC officers to ensure that all financial monitoring, strategic matters and costs are discussed including any short, medium and long term impact of COVID19. Regular reporting to ELC and Members. QMU FEC and Court to ensure the proper interface with ELC/QMU governance.								
IH 4	Innovation Hub/EIP - Infrastructure Costs Cost for building and infrastructure is higher than forecast at planning stage. Financial impact to ELC/QMU if unforeseen increased project costs require to be met. It will require a revisiting of funding arrangements with ELC/QMU and to report accordingly to the City Deal to assess that funding streams are adequate to enable completion of the project. Potential reputational damage by disruption to attaining key project milestones.	There is a refresh of the cost plan associated with the project being undertaken to assess the current costings in line with the budget albeit the cost implications of COVID19 have been identified as a cost risk and as such remain to be fully assessed Regular oversight meetings between Persimmon Homes, QMU and ELC officers to ensure that all strategic matters and ongoing development of the housing element of MH1 are discussed including any short, medium and long term impact of Covid-19. Partial utilities review carried out to identify any future utility issues. Operating costs will become more definitive as the FBC progresses. Early and continued benchmarking against similar developments UK/locally. Regular reporting to ELC and Members/QMU FEC and Court to ensure the proper interface with ELC/QMU governance.				Ongoing close financial monitoring of infrastructure costs including monthly financial reporting/discussions with ELC finance officers and the PMO finance officers. Proposed governance structures will demand ongoing financial scrutiny.				Project Manager
IH 5	Innovation Hub/EIP - Operating Costs Operating costs of the Innovation Hub/EIP are higher than forecast resulting in financial loss. Financial impact to ELC/QMU by impacting on revenue streams if operational costs cannot be met	Operating costs will become more definitive as the FBC progresses. The current proposal is for QMU to be responsible for the, management and operation and occupancy risks associated with the Hub and for driving the Hub forward as a new business on behalf of the JV partners.								Project Manager

Risk ID	Risk Description (Threat/Opportunity to achievement of business objective)	Risk Control Measures (currently in place)	Assessment of Current Risk			Planned Risk Control Measures	Assessment of Residual Risk [With proposed control measures]			Risk Owner
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			L	I	L x I		L	I	L x I	
	Reputational damage if rents require to be increased and/or unoccupied units. Reputational damage of the Council/East Lothian as a business location and impact on jobs in the area and the income of the Council.	Early and continued benchmarking against similar developments UK/locally. Ongoing close financial monitoring of operating costs by JV partners.								
IH 6	Innovation Hub/EIP – Business Plan/Occupancy Levels Failure to deliver the operational business plan resulting in unoccupied business space Financial impact to ELC/QMU by impacting on revenue streams if operational costs cannot be met Reputational damage if rents require to be increased and/or unoccupied units. Reputational damage of the Council/East Lothian/QMU as a business location and impact on jobs in the area and the income of the Council.	The current proposal is for QMU to be responsible for the, management and operation and occupancy risks associated with the Hub and for driving the Hub forward as a new business on behalf of the JV partners. subject to a working capital contribution of £200,000 from ELC/QMU The JV will have to ensure that there is the appointment of a strong management team and a robust review of any operational business plan once final design is established. Proposed governance structure will ensure that the JV company can be responsible for checking and balancing the operations of the Innovation Hub/ EIP. Ongoing monitoring with JV partners. Regular reporting to ELC and Members/QMU FEC and Court to ensure the proper interface with ELC/QMU governance. Early promotion of the business plan and effective marketing strategy to identify potential tenants.				There is a relatively advanced leasing strategy that has been agreed that ensures that entry criteria is applied to all lease documentation to enable the ongoing commercial success of the Hub and the EIP.				Project Manager
IH 7	Innovation Hub/EIP –planning matters Onerous planning conditions imposed. Delay to delivery of the project if planning conditions cannot be met. Reputational damage of project delayed as a result and this needs to be reported both internally and externally.	Early consultation by design team with ELC planning department and neighbouring developers. Strategic site oversight group, incorporating ELC planning, co-ordinating planning matters.								Project Manager
IH 8	Innovation Hub/EIP - Governance Inadequate Governance results in failure to deliver. Reputational damage if governance inadequate and insufficient monitoring and reporting both internally and externally results in failure to deliver. This could also damage the reputation of the Council/East Lothian/QMU as a business location and impact on jobs in the area and the income of the Council.	Outcomes paper (approved by ELC (Dec 2020)/QMU) has set out a framework for the governance to deliver and operate the Innovation Hub/EIP. The outcomes paper will form the basis of detailed Heads of Terms. ELC Elected Members briefed on the above on 8th December 20202 and Council approval of outline governance structure on 15th December 2020. Draft Full Business Case sets out proposed governance structure so SG/UKG are alert to same.				As the project evolves the governance structures will be developed alongside within the context of the approved outcomes paper and the Heads of Terms (to be agreed).				Project Manager

Risk ID	Risk Description (Threat/Opportunity to achievement of business objective)	Risk Control Measures (currently in place)	Assessment of Current Risk			Planned Risk Control Measures	Assessment of Residual Risk [With proposed control measures]			Risk Owner
			Likelihood	Impact	Risk Rating		Likelihood	Impact	Residual Risk Rating	
			L	I	L x I		L	I	L x I	
	Impact financially if steps to rectify governance to allow deliverability of project require to be taken. Potential inability to recover costs on project.	Ensure that existing and future legal arrangements support governance structure and enable the delivery partners in the respective obligations. Regular reporting to ELC and Members /QMU FEC and Court to ensure the proper interface with ELC/QMU governance.								
IH 9	Innovation Hub/EIP – Ongoing engagement with stakeholders Lack of appropriate engagement, management, solutions or outcomes could reflect badly on the Council. Reputational damage to Council/QMU , key stakeholders, delivery partners, City Deal if failure to engage properly and appropriately brings undesired outcomes. Could impact financially if reputational damage is sufficient that the project cannot be delivered/no uptake.	Monthly and ongoing reporting to PMO submitting financial reports, progress reports and regular meetings to ensure risks are avoided or minimised to the highest degree. When appropriate reporting directly to contacts at SG/UKG on the programme. Where relevant, by engaging with the relevant Communications team at the appropriate milestone. Regular oversight meetings between Persimmon Homes, QMU and ELC officers to raise any strategic issues affecting all 3 stakeholders. Regular reporting to ELC and Members/QMU FEC and C0urt to ensure the proper interface with ELC/QMU governance. Continue with regular briefings and reports to all stakeholders. ELC represents project at monitoring and evaluation committee to devise and promote a monitoring and evaluation framework for SG/UKG.								Project Manager

Appendix E

Technical Appendix for Economic Impact Assessment of the Preferred Option

1 Introduction

This section sets out in more detail the economic impact assessment undertaken in line with guidance set out in the HM Treasury Green Book to assess the potential gross and net impacts in respect of the preferred option to develop the QMU Innovation Hub. This annex covers the following key steps:

- **Preparation of an Impact Pathway** - mapping out an impact pathway (or logic model) that gives consideration to the potential beneficiaries of the activities delivered and the associated short, medium long term outcomes that are anticipated to arise;
- **Defining Measurable Impacts** - giving consideration to the types of direct and indirect benefits arising and how they can be measured;
- **Identifying Activities/Outputs** - Identification of the activities that will be delivered and associated beneficiaries for the preferred option on a bottom-up basis;
- **Estimating Net Impacts** - giving consideration to how much of the estimated gross benefit arising can be attributed to the intervention proposed taking into account what may happen anyway (counterfactual) and displacement, leakage and multiplier effects; and,
- **Assessment of Value for Money** - in terms of the ratio of net present costs to the public sector to the net present value of estimated net impacts.

2 Impact Pathway (Establishing types of impact)

2.1 Impact Pathway

An impact pathway was developed - as set out in Figure 1 below - to assess the range of potential impacts that would need to be realised to address the needs and opportunities set out in the Strategic Case and the consequent inputs, activities and market interactions with potential beneficiaries required to deliver these impacts.

The impact pathway built upon the detailed work carried out by City Region Deal partners in developing the business cases for the Data Driven Innovation (DDI) Programme. Building on their findings, the impact pathway for the innovation hub considers how the objective of the Innovation hub to deliver positive impacts in food & drink related sectors could be met through holistic intervention via delivering the proposed “TRADE” activities from the innovation hub:

- **T**alent: creating and retaining a sustainable pool of food & drink technology talent in the City Region, Scotland and the UK to address the changing needs of industry, drive up value-added by the sector and promote fulfilling long-term career opportunities;

- **R**esearch: expanding and enhancing the UK’s food and drink related research assets, insights and knowledge base and its global reputation as an innovation led economy;

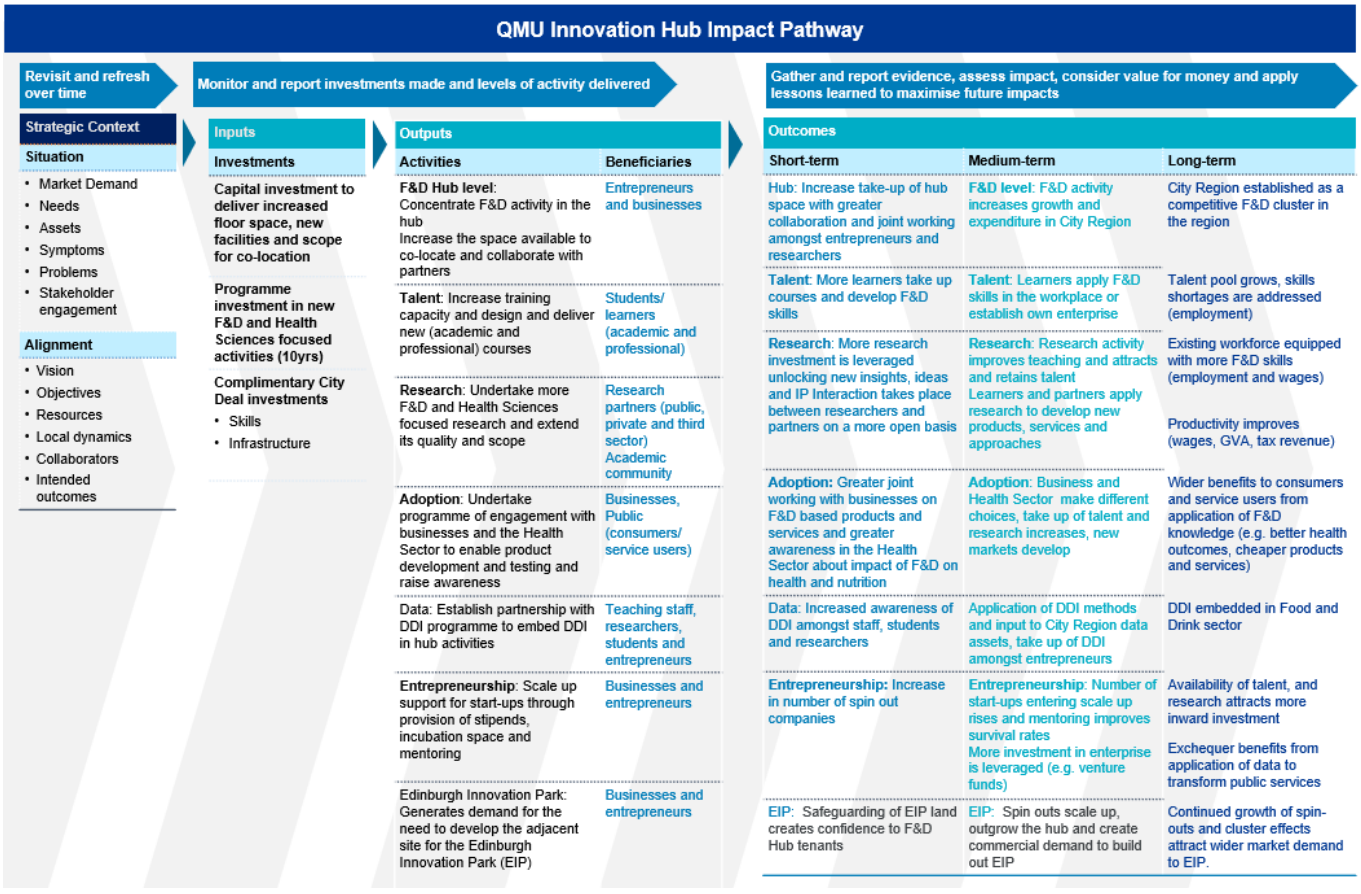
- **A**doption: increasing the uptake/use of food and drink related research and development and product innovation activities by businesses, entrepreneurs and the public to realise benefits for the City Region and beyond;

- **D**ata: providing the analytical skills, capacity and data accessibility to underpin food and drink related innovation activity that is richer, quicker and more responsive to market needs; and,

- **E**ntrepreneurship: enabling and attracting City Region based and other entrepreneurs to develop and grow new food and drink related businesses that benefit from the commercialisation of innovative research and access to talent, data, enterprise support and suitably flexible premises in which to grow.

Additionally it is anticipated that the City Deal Funding will help unlock the potential to develop the adjacent site to host the Edinburgh Innovation Park. For completeness, the impact of this indirect output and subsequent outcomes have also been included in the impact pathway below and subsequent analysis.

Figure 1: QMU Innovation Hub Impact Pathway



2.2 Direct & Indirect Impacts

Building upon the logic model set out in the impact pathway, the table below summarises the measures that have been identified - across each talent, research, adoption, enterprise and Edinburgh Innovation Park (EIP) theme[1] – to quantify the anticipated impacts of the QMU Innovation Hub. In summary, it is anticipated that the Innovation Hub will generate a range of direct and indirect economic impacts as a result of delivering the TRADE+EIP activities, as follows:

Table 1: Direct and indirect impacts

Theme	Direct Impacts	Indirect Impacts
Talent	GVA generated from: ● employment of additional academic & administrative staff to deliver the new food & drink related teaching courses proposed; and, ● student spending impacts on the City region while undertaking courses.	GVA generated as a result of: ● the provision of food and drink related undergraduate and postgraduate degrees and pathway courses resulting in long term productivity improvements once these students enter the UK workforce.
Research	GVA generated as a result of: ● the creation of additional Food and Drink and health sciences related research staff posts.	GVA generated by: ● the return on investment from successful awards of public and private research & development funding.
Adoption	GVA from: ● academics working on commercial projects and associated support staff posts.	GVA from: ● returns on investment from spend attracted to commercial development projects including scaling up existing SCFDI activities, and, ● productivity impacts from return on investment on employees undertaking Food and Drink related CPD training.
Entrepreneurship	Through the creation of GVA from: ● entrepreneurship support staff posts.	GVA from: ● the successful creation of new Food and Drink related spin out and start-up

[1] No direct impacts are attributed to the Data theme given the enabling role that this tool plays in supporting the Innovation Hub to deliver activities and the consequent benefits that are derived across the other four TRAE themes.

		businesses and employment that attract private investment funds.
EIP	N/A - development of the F&D Hub helps unlock the need for the EIP site to be brought forward for development.	GVA from: ● 40,000 sqm of employment space on build out of EIP over 25 years

3 Approach to Establishing Net Impacts

HMT Treasury Green book requires that in undertaking an Economic Impact Assessment consideration is given to estimating and attributing **net** impacts. This requires undertaking additionality analysis that takes into account the key steps set out in Fig. 2 below including consideration of: deadweight (what would happen anyway in the counterfactual scenario); displacement, substitution and leakage effects (to what extent does the intervention proposed replace existing economic activity or deliver benefits outside the area of appraisal); and, multiplier effects.

Figure 2: Key Stages in undertaking Gross to Net Analysis

Accordingly, the economic impact analysis has followed a three stage process:

- **Identification of outputs and outcomes** – workshops were held with QMU sector leads to discuss and capture the range of "TRADE" activities and expected outputs envisaged under a "do nothing" (counterfactual) and "reference case" (with intervention) scenario;
- **Measurement and quantification of gross outputs and outcomes** – a detailed breakdown of anticipated outputs, costs and income over the appraisal period was

developed to estimate the overall uplift in jobs created, GVA, and wider benefits (where possible) as a result of City Deal Innovation Hub funding; and,

- **Analysis of net impacts** – comprising additionality analysis (as per the steps outlined at Figure 2 above) of the gross Innovation Hub outputs and outcomes to identify levels of net impact based primarily on estimates of the levels of leakage, displacement and multiplier impacts from current and historic data.

In scoping the economic impact assessment, the following key assumptions have been made in measuring the economic impact of the Innovation Hub across all TRADE+EIP elements:

1. **Timescale:** the analysis is based on the economic impact that is likely to be generated over the 15 year City Deal Funding period; and,

2. **Geographic area:** the analysis has been split by City Deal Region and Scotland levels for Talent impacts. However the other areas of impact (i.e. for Research, Adoption and Entrepreneurship etc) have not been split by geographic area at this time. This reflects constraints in relation to identifying appropriate and robust GVA per head levels at different geographic levels and sectors that could be applied to the benefits profile identified. However given the relatively low levels of leakage (per the Net Impacts section below) associated with the benefits identified it is estimated that the majority of impacts will occur at (and therefore remain within) the City Deal Region and Scotland levels.

4 Identifying Activities & Outputs

It is best practice to give detailed consideration to the specific type and number of activities that will be delivered as a result of taking forward the preferred option such that the impact of these can be measured on a “bottom-up” basis following the logic chain in the impact pathway.

Accordingly, workshops were held with QMU and ELC to identify the type and quantum of activities to be undertaken over an initial period of 15 years if the £40m investment to deliver the QMU Innovation Hub were taken forward.

As part of this exercise consideration was given to capturing:

- **Do Nothing (Counterfactual)** - the levels of activity expected to occur anyway, without the intervention proposed to deliver the hub, in order to establish a baseline;
- **Reference Case (with Intervention)** - the levels of activity expected to occur if the intervention to deliver the innovation hub were taken forward; and
- **Uplift** - isolating the overall uplift in activity through comparison of the reference case to the counterfactual.

The resulting actions and **uplift** in activities and outputs as a result of the innovation hub investment were derived based on the activities and outputs presented in the Table below.

Table 2: Innovation Hub key activities and outputs

Topic	Action(s) Taken	Measured Target Outputs (Uplift)
Hub	Deliver new innovation hub incorporating bespoke food & drink grade facilities and flexible occupancy floorspace for collaborating companies and spin-outs.	● 5,040 sqm (net lettable internal area) delivered by 2024 to support research, adoption and enterprise activities. ● Phased occupancy of 50% in 2024 rising incrementally over 5 years to 100% by 2028.
Talent	Enhance and expand course provision for food and drink related technology & innovation to improve the quality and quantity of industry relevant skills	● 314 undergraduate BSc (over 15 years) ● 120 Masters and 50 PhDs (over 15 years)
Research	Use the new hub facilities to scale up the quality and quantity of research activity undertaken in the City Region in collaboration with partners in the UK and abroad where relevant.	● £5.2m research council grant income over 15 years, representing an uplift of £3.4m from a baseline of £1.8m.
Adoption	Use the increased capacity and facilities provided by the hub to significantly increase direct development projects with commercial customers and create new CPD courses to create in-work skills development pathways for employers.	● Double annual commercial revenue from SCDFI activities to £500k by 2025/26 (representing c.35 projects based on current average value of a typical project) with a total commercial spend on R&D projects of £9m over 15 years ● 2,043 CPD courses (accredited and non accredited) over 15 years.
Data	Establish partnership with City Deal DDI Programme to embed DDI awareness in talent, research, adoption and enterprise activities delivered from the hub.	● Establish partnership with City Region Deal DDI Programme; ● Establish joint commercial offer to industry with Edinburgh Napier University to combine their DDI expertise in complex chemical analysis with QMU food and drink product development expertise (reflected in PhD numbers).
Entrepreneurship	Actively support the creation of	● A prudent base assumption

	spin-out companies from student, academic and commercially-led research activities and the scaling up of existing enterprises. Work with public and private partners to enhance and simplify access to the entrepreneurial support ecosystem.	that half of the net lettable area (2,145 sqm) will be made available in the hub on a flexible lease basis to support **new** entrepreneurial start-ups (with use of the remaining space prudently assumed to support research and adoption activities by established businesses and measured under those headings). ● 69 direct entrepreneurship jobs created p.a (once full occupancy has been achieved) ● 98 new enterprises surviving to maturity over 15 years ● £4.9m of total seed capital attracted
Edinburgh Innovation Park	Safeguard the development land at the Edinburgh Innovation park and actively seek commercial build out to support the onward growth of companies beginning in the hub and to accommodate inbound interest from those attracted to the emerging food & drink knowledge cluster.	● Drive forward the commercial development of 40,000 sqm of floor space for innovative scale-up and commercial customers attracted to the emerging food & drink related and innovation-led knowledge cluster over time

Table 3 below summarises the total outputs over the 15 year appraisal period for the "do nothing" (Counterfactual) and "reference case" (with intervention) scenarios. These were used to isolate the consequent Innovation Hub **uplift** in employment and TRADE+EIP outputs that has been taken forward into the impact assessment for the Innovation Hub Programme (i.e. the profile of outputs net of the counterfactual scenario). The profile of gross outputs for the uplift scenario over the 15 year period is set out at Appendix 1.

Table 3: Innovation Hub Gross Employment and TRADE+EIP Outputs

Category	**Do Nothing (Counterfactual)**	**Reference Case (Intervention)**	**Innovation Hub Uplift**
Direct Employment (FTEs)			
Talent	5	11	6

Research and Adoption	0	5	5
Entrepreneurship	0	7	7
Total	**5**	**23**	**18**
Talent			
No. of UG students	1,128	1,442	314
No. of PG students	543	663	120
No. of PhDs	25	75	50
Research and Adoption			
Public Sector Research Funding	£1.80m	£5.22m	£3.42m
Funding from Industry & Commerce (incl. SCFDI)	£4.53m	£8.97m	£4.44m
Total Research Funding	£6.33m	£14.19m	£7.86m
No. of credit bearing CPDs	0	165	165
No. of non-credit bearing CPDs	2,100	3,978	1,878
Entrepreneurship			
No. of businesses entering Innovation Hub	0	98	98
Sq m of lettable space created	0	5,040	5,040
Sq m of SME space available for rent for Entrepreneurship	0	2,145	2,145

No. of jobs created	0	69	69
EIP			
Sq m of space created	0	40,000	40,000
No. of jobs created	0	680	680

5 Impact Assessment Assumptions & Calculations

This section sets out the key economic metrics and additionality assumptions that have been applied to measure the net impacts of the profile of outputs identified for the uplift scenario summarised at Table 2 above. It considers each category of impact (direct, indirect and wider) in turn.

5.1 Direct Impacts

5.1.1 Employment Outcome Analysis

This section outlines the steps taken in quantifying the GVA generated from the estimated additional employment that will be generated as a result of the Innovation Hub Uplift scenario. The key assumptions drawn in relation to measuring employment impact are:

Table 4: Direct employment outcome analysis: key assumptions

Assumption	Description and Sources
GVA Metrics	● **Academic staff** - the economic impact for academic staff has been calculated for a 15 year period based on the average GVA per job for the Education and ICT sectors in the CDR (£47,880) and Scotland (£55,233) (i.e. to represent the average GVA per job from academic staff posts); The profile of GVA has been discounted to net present value terms at 3.5% to a base date of 1 Sep 2020. ● **Research, Adoption and Entrepreneurship Staff** - the economic impact for implied research, adoption and entrepreneurship employment has been calculated for a 15 year period based on the average GVA per job/per head of the ICT and Professional and Technical sectors in CDR

	(£74,091) and Scotland (£67,636). The profile of GVA has been discounted to net present value terms at 3.5% to a base date of 1 Sep 2020.
Additionality Factors	● **Counterfactual –** A nil counterfactual scenario is assumed (at all geographic levels) as without the Innovation Hub Programme investment these additional academic, research, entrepreneurship and adoption staff posts would not be created; ● **Leakage –** Leakage values have been assumed to be low as, based on current staff composition as advised by QMU, the majority of the QMU faculty are assumed to reside locally at 90% at the CDR level, falling to 10% at the rest of Scotland level; ● **Displacement –** Displacement levels for academic staff are based on the HCA Additionality Guide (2014) and vary by geographic level from between 10% (for the City Deal Region reflecting the likelihood of fewer competing academic and research institutions) to up to 25% (for the Rest of Scotland based on the greater likelihood of competing institutions whose activities might be displaced); and, ● **Multiplier –** Type I GVA multipliers have been applied for SIC code 72 (R&D) 2017 of 1.4 for employment benefits for the City Deal and Scotland levels based on the latest Scottish Government data for the Scottish `economy.

Application of the above assumptions to the gross outputs identified results in the following estimated net employment impacts for the Programme.

Table 5: Innovation Hub Net Direct Employment Impacts, Discounted (2021/22 to 2034/35)

Benefit Category	Net Employment Uplift	Assumed GVA per Head p.a.	Gross GVA over 15 years (£'m, net present value terms at 01 Sep 2020)	Net GVA (£'m, net present value terms at 01 Sep 2020)
Talent	6	£47,880 (CDR) £55,233 (Scotland)	4.6	3.7

Research & Adoption	5	£74,091 (CDR) £67,636 (Scotland)	4.1	3.3
Enterprise	7		3.0	2.5
Total	**18**		**11.7**	**9.5**

5.1.2 Student Spend Outcome Analysis

The indirect impacts from the Innovation Hub talent theme includes student spending impacts generated from on campus undergraduates and postgraduates based upon the following assumptions:

Table 6: Student spend outcome analysis: key assumptions

Assumption	Description and Sources
GVA metrics	● Average student spend is assumed at £6,990 per annum. In the absence of specific data for QMU, this figure is a proxy for the purposes of this appraisal derived from the economic impact of student spend during their time at University from data presented in Biggar Economics: "Economic Impact of the University of Edinburgh (2013-14)". ● The economic impact of student spending for campus based graduates and post graduates has been calculated for a 15 year period and discounted at 3.5% to a base date of 1 September 2020.
Additionality factors	● **Counterfactual** – A nil counterfactual scenario is assumed (at all geographic levels) as without the Innovation Hub investment these additional graduate and post graduates would not be in receipt of teaching at the University; ● **Leakage** – Leakage levels are assumed to be in line with the student spend profile provided within the: "Biggar Economics- Economic Impact of the University of Edinburgh (2013-14)" report which indicates the majority of the University's graduate spend takes place within the City Region at 93%, falling to 7% and 0% for the rest of Scotland and UK levels respectively; ● **Displacement** – based on the HCA Additionality Guide – with an assumption of low levels of displacement of between 10% (for the City Deal Region) to up to 25% (for the Rest of Scotland) with 0% assumed for Rest of UK based on the local nature of on campus undergraduate students location and therefore spend profiles. Similar levels have been applied for

	postgraduate students reflecting the location of the QMU campus and Innovation Hub in East Lothian; and, ● **Multiplier** – The GVA Type I multiplier has been applied for SIC code 85 (Education) of 1.1 for GVA benefits generated from student spending effects for the City Deal and Scotland levels, based on the latest available Scottish Government data for the Scottish economy (2017).

Based on the above approach and additionality ratios it is estimated that an additional net GVA of **£6.4m** will be generated over 15 years as a result of the student spending impacts associated with the provision of additional teaching activities at QMU.

Table 7: Innovation Hub Net Direct Student Spend Impacts, Discounted (2021/22 to 2034/35)

Benefit Category	Total number of students	Assumed GVA per student p.a.	Gross GVA over 15 years (£'m, net present value terms at 01 Sep 2020)	Net GVA (£'m, net present value terms at 01 Sep 2020)
Student Spend	1,353	£6,990	7.0	6.4

5.2 Indirect Impacts

5.2.1 Talent Outcome Analysis

This section presents the approach that has been undertaken to quantify the **indirect** Innovation Hub based teaching impacts based on the net additional earnings GVA impact from the training of Food and Drink and health sciences undergraduates and postgraduates at QMU. It is important to note that this analysis does not include the impact of CPDs which have been captured under Adoption given CPD courses are predominantly undertaken by individuals in employment.

Table 8: Talent outcome analysis: key assumptions

Assumption	Description and Sources

GVA metrics

- In regard to talent outcomes consideration has been given – in line with BEIS Guidance regarding "wage uplifts"[2] – to the likely increases in the net present value of the lifetime income and GVA of those students securing Innovation Hub related employment in the City Region and Scotland.
- **Counterfactual GVA:** the "benchmark" or baseline comparator comprises the average GVA per employee across all SIC codes for each area (City Region and Scotland) to represent the GVA that could be generated by graduates not in receipt of Innovation Hub related teaching. This has been calculated on a lifetime basis during the City Deal Programme (i.e.15 year employment profile) and discounted at 3.5%. Table 5 below sets out the outcomes of these counterfactual GVA assumptions.

Area	Average GVA (2020)	Discounted lifetime average GVA (2020)
City Region	£45,338	£522,752
Scotland	£53,186	£612,565

From: Annual Business Survey (ABS) data by Local Authority (1): 2008-2017 (uplifted to 2020 prices) and PwC analysis of ABS GVA data discounted by 3.5% over 15 years.

- **Reference Case GVA:** it is assumed that on graduation each QMU graduate will secure a new FTE position in the Food and Drink sector which is a higher value added sector of the economy and reflecting their specific area of study. The table below presents a breakdown of the expected GVA per graduate for the Food and Drink sector and shows the overall discounted net uplift upon deduction of the counterfactual lifetime earnings set out above.

Area	GVA for the Food and Drink sector	Discounted lifetime average GVA (2020)	"Premium" of discounted lifetime average Food & Drink GVA above counterfactual (2020)
City Region	£76,048	£875,876	£353,124

[2] BIS (2013) The Impact of University Degrees on Lifecycle of Earnings: Some Further Analysis and BIS (2011) The Returns to Higher Education Qualifications.

	Scotland	£88,201	£1,015,847	£403,282

From: ABS data by Local Authority 2008-2017 (uplifted to 2020 prices).

Additionality factors

- **Counterfactual** – A nil counterfactual scenario is assumed (at all geographic levels) as without the Innovation Hub investment these additional graduate and post graduates would not be in receipt of teaching at the University;
- **Leakage** – this has been based on data from QMU student destination figures for 2018/19, indicating that approximately 25% of their undergraduate student body stays in the City Deal Region post-graduation rising to 50% at the Scotland level;
- **Displacement** – is assumed to be around 50% for undergraduates reflecting the funded status of Scottish students at the City Deal and Scotland levels. However given the unique and innovative nature of the proposed postgraduate QMU training courses, displacement is assumed to be low, (at 10%) at the City Deal Region level rising to 25% at the Scotland level given the prospect of greater number of competing courses; and,
- **Multiplier** – Type I multipliers have been applied for the SIC code 72 (R&D) of 1.4 for GVA and Employment impacts for the City Deal and Scotland levels based on latest Scottish Government data for the Scottish economy (2017).

As a result of the above GVA metrics and additionality factors, and as demonstrated in Table 9 below, net uplifts in GVA (over the lifetime of the Programme) from QMU trained undergraduate and postgraduate talent at the Innovation Hub is estimated to be **£10.7m** at the City Region level and £15.9m for Scotland.

Table 9: QMU Talent related Net Indirect GVA, Discounted (2020/21-2034/35)

Category	City Region GVA (£'m)	Scotland GVA (£'m)	Total GVA (£'m)
Talent Graduates	10.7	15.9	26.6

5.2.2 Research and Adoption Outcome Analysis

This section presents the approach that has been undertaken to quantify Innovation Hub based research and adoption impacts. For the purposes of the economic case the Innovation Hub Research and Adoption outcomes have been based upon all direct public, private and third sector research funding attracted to QMU as a result of the Innovation Hub activities.

Table 10 below presents the split of research funding by source e.g. public and private funds and adoption funding. This data has also been used to calculate the potential return on investment that could be generated in GVA terms over the Programme period from the Innovation Hub anticipated research and adoption funding profile.

Table 10: Innovation Hub Research and Adoption Funding Uplift Split by Funder (2020/21 - 2034/35)

Research and Adoption	
Public Sector Research Funding	**Funding from Industry & Commerce**
£3.42m	**£4.44m**

In regard to **research and adoption outcomes** analysis has been based on existing evidence in relation to the likely GVA uplifts resulting from this research and related adoption levels supported. The key assumptions drawn from this evidence are:

Table 11: Research and adoption outcome analysis: key assumptions

Assumption	Description and Sources
GVA	• **Rates of return:** research from the University of Edinburgh[3], Russell Group Universities[4] and wider sources[5] have indicated the average rate of return from R&D investment to be between 20% to 30%. In order to be prudent a 20% rate of return p.a. until the end of the public funding process for the Innovation Hub Programme for public and private research funding (including adoption funding) has been assumed; and, • **Time lags:** this research also indicated the need to take time lags into consideration when measuring the impact of R&D funding indicating a 4 year time lag for public and private sector R&D i.e. funding in year 1 will start generating impact in Year 5 for the remaining 10 years of the

[3] From: A Science and Innovation Audit Report for University of Edinburgh, 2016.

[4] From: London Economics – The Economic Impact of Russell Group Universities, 2017

[5] Including (amongst other reports): Frontier Economics – Rates of Return to investment in Science and innovation, 2014 and Haskel et al - The Economic significance of the UK Science Base 2014.

	Programme. However given the near to market nature of Food and Drink related R&D carried out at QMU, a more realistic time lag of 2 years has been applied to the analysis for the Innovation Hub.
Additionality	• **Leakage:** a low level of leakage (of 10%) has been assumed on the basis the majority of the research funding will be retained within the University and hence City Deal Region boundary; • **Displacement:** an assumption of no displacement for public and private funds at the City Deal Region level has been applied, given the innovative nature of R&D the funding will be seeking to unlock and the lack of alternative Higher Education Institutions/competitor bodies likely to undertake similar activity within the City Region; and, • **Multipliers:** Type I multipliers have been applied for the SIC code 72 (R&D) 2017 of 1.4 for GVA and Employment impacts for the City Deal and Scotland levels based on latest Scottish Government data for the Scottish economy.

As a result of the above additionality adjustments, and as demonstrated in the table below, net uplifts in GVA (over the lifetime of the Programme) from research and adoption are estimated to be **£3.5m**.

In quantifying the type and level of impacts that might be created from Research and Adoption activities consideration has also been given to the uptake of CPD modules. The projected levels of CPD uptake have been estimated over the next 15 years with and without the Innovation Hub Programme to isolate the **net CPD outputs** attributable to the Programme of **£1.2m**[6]. This has been based on Return on investment on CPD courses by sponsoring employers using data from Biggar Economics analysis of return on continued professional development – "Economic Impact of the University of Edinburgh 2013-14" which indicates GVA from CPDs are on average 3.6 times the fees paid for the course undertaken[7].

[6] Additionality ratios for CPDs have been applied as follows: 10% leakage outside the City Region this is based on the assumption that the majority of impact will remain in the local area given the specialist and localised nature of the courses on offer. Displacement is also assumed to be low at 10% on this basis with Type I multiplier of 1.2.

[7] CPD fees for credit bearing courses are projected to be £750 per student. Non-credit bearing: £140 in year 1 increasing to £239 by year 15.

Table 12: Innovation Hub: Net GVA Impact for Research and Adoption, Discounted (2020/21-2034/35)

Net Additional Research and Adoption GVA (£'m)	Net Additional CPD GVA (£'m)	Total Net Additional GVA (£'m)
3.5	1.2	4.7

5.2.3 Entrepreneurship Outcome Analysis

The creation of the Innovation Hub will establish an additional 2,145 sq m of commercial and R&D space for use by the start-ups likely to be generated by Hub activities in relation to teaching and research support. It is projected that approximately 98 new start-ups will be created as a result of the Innovation Hub over 15 years. In regard to the GVA outcomes associated with this level of start-ups, analysis has been based on the Employment Density Guidance from the HCA[8] and set out in the table below.

Table 13: Innovation Hub Entrepreneurship outcome analysis: key assumptions

GVA	• Direct employment from occupiers of the Innovation Hub estimated by applying the HCA employment density ratio of 1 employee per 31 sq m[9] • GVA per head for the Professional and Technical sector of £74,091 for the CDR[10]
Additionality	• **Deadweight:** a medium level of deadweight at 30% has been assumed given the likelihood that in the absence of the Innovation Hub start-ups and other commercial users would require commercial space in the City Deal Region and that potential occupiers may find alternative (if sub-optimal) accommodation in the City Deal Region. • **Leakage:** medium level of leakage has been assumed at 25% based on the HCA Additionality Guide (2014) for the City Deal Region reflecting the likelihood that the Innovation Hub will attract researchers and businesses from outside the City Deal Region. • **Displacement:** low level of displacement at 10% has been assumed based on the bespoke nature of the space provided by the Innovation Hub including specialist staff and equipment.

[8] Employment Densities Guide 3rd Edition, 2015. Based on R&D Space employment density ratio of between 40 to 60 per sq m of space developed applied to Net Internal Area (NIA) in sq m in order to generate gross FTE jobs.

[9] This is based on the average employment density ratios for commercial space of 12 employees per sq m and R&D space of 50 employees per sq m.

[10] Based on average GVA for the Professional and Technical sector across the six Local Authority areas within the CDR from the Annual Business Survey by Local Authority, 2017 inflated to 2020 prices.

	● **Multipliers:** Type I multipliers have been applied for the SIC code 72 (R&D) of 1.4 for GVA and Employment impacts for the City Deal and Scotland levels based on latest Scottish Government data for the Scottish economy.

Based on the above analysis it is estimated that the Innovation Hub will generate an additional **£20.1m** of net GVA (in net present value terms) over the Programme period.

Table 15: Innovation Hub Entrepreneurship Net Employment and GVA Impacts, Discounted (2021/22 to 2034/35)

Benefit Category	Total number of Jobs[11]	Assumed GVA per job p.a.	Gross GVA over 15 years (£'m, net present value terms at 01 Sep 2020)	Net GVA (£'m, net present value terms at 01 April 2020)
Edinburgh Innovation Hub	69	£74,091	39.1	20.1

5.3 Edinburgh Innovation Park Impacts

The Innovation Programme will also help facilitate the creation of a new 40,000 sq m Edinburgh Innovation Park. The additional employment and GVA impact of this employment space has also been considered for the purposes of the business case. In order to capture the impact of this development the following assumptions have been applied:

Table 14: Edinburgh Innovation Park outcome analysis: key assumptions

GVA	● Direct employment from occupiers of the EIP estimated by applying the HCA employment density ratio of 1 employee per 50 sq m ● GVA per head for the Professional and Technical sector of £74,091 for the CDR[12]
Additionality	● **Deadweight:** a relatively high level of deadweight at 50% has been assumed given the likelihood that the EIP would eventually be developed for commercial use and that potential occupiers may find alternative (if sub-optimal) accommodation in the City Deal Region.

[11] Steady state jobs p.a. assuming 100% occupancy of the Innovation Hub from year 8 onwards.

[12] Based on average GVA for the Professional and Technical sector across the six Local Authority areas within the CDR from the Annual Business Survey by Local Authority, 2017 inflated to 2020 prices.

	• **Leakage:** medium level of leakage has been assumed at 25% based on the HCA Additionality Guide (2014) for the City Deal Region reflecting the likelihood that the EIP will attract businesses from outside the City Deal Region. • **Displacement:** low level of displacement at 10% has been assumed based on the bespoke nature of the space provided by the EIP including specialist staff and equipment. • **Multipliers:** Type I multipliers have been applied for the SIC code 72 (R&D) of 1.4 for GVA and Employment impacts for the City Deal and Scotland levels based on latest Scottish Government data for the Scottish economy.

Based on the above analysis it is estimated that the EIP will generate an additional **£77m** of GVA in net terms over the Programme period.

Table 15: Edinburgh Innovation Park Net Employment and GVA Impacts, Discounted (2021/22 to 2034/35)

Benefit Category	Total number of Jobs	Assumed GVA per job p.a.	Gross GVA over 15 years (£'m, net present value terms at 01 Sep 2020)	Net GVA (£'m, net present value terms at 01 April 2020)
Edinburgh Innovation Park	680	£74,091	228.3	77.0

5.4 Summary Net Impacts

The table below summarises the net outputs and GVA that is estimated to be generated over a 15 year period associated with the gross outputs provided in Table 3 above and indicates that a total net GVA of **£144m** will be generated as a result of the Innovation Hub and EIP.

Table 16: Innovation Hub Net Employment, TRADE & EIP GVA (discounted)

GVA impact - NPV (base date 1 Sep 2020)	Gross impact (£'m)	Net impact (£'m)
Direct Employment	11.7	9.5
Student Spend	7.0	6.4
Graduate (City Deal Region)	46.7	10.7

Graduate (Scotland)	41.2	15.9
CPD	1.3	1.2
Research & Adoption	2.8	3.6
Entrepreneurship	39.0	20.1
Total	**149.7**	**67.4**
Innovation Park	228.3	77.0
Total	**378.0**	**144.4**

6 Value for Money

The cost benefit ratios for the project have been set out in the table below. The ratios are presented both including and excluding the discounted net GVA associated with the Innovation Park. The analysis undertaken has used the City Deal funding of £30.0m and discounted its drawdown profile at a rate of 3.5% (in line with HMT Green Book guidance) to determine the cost of **£27.8m**.

Table 17: Total Innovation Hub (discounted) GVA and CBR (**2021/22 to 2034/35)**

	Excluding Innovation Park	**Including Innovation Park**
Total cost (£'m)	£27.8m	£27.8m
Total net GVA (£'m)	£67.4m	£144.4m
Cost benefit ratio	**1:2.4**	**1:5.2**

Appendix 1

A detailed breakdown of the profile of gross annual outputs is provided below.

Profile of gross outputs over 15 year appraisal period.

Year		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Academic Year		20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35
Hub Operational Flag	**Total**	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1
Talent																
Graduates																
New undergraduate students	314	0	0	20	22	22	23	23	24	24	25	25	26	26	27	27
New Masters Students	120	0	0	0	0	0	0	10	11	12	13	14	15	15	15	15
New PhD Students	50	0	4	2	2	3	3	4	4	4	4	4	4	4	4	4
CPD																
Professional courses (credit bearing) - uplift	165	-	-	-	-	10	11	12	13	14	15	16	17	18	19	20
Professional courses (non credit bearing) - uplift	1,878	77	77	77	77	85	93	102	113	124	136	150	165	182	200	220
Direct employment																
SCFDI - Research (FTE)	5	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Hub - Admin (FTE)	6	0	0	0	3	1	1	1	0	0	0	0	0	0	0	0
Entrepreneurship - Enterprise Officers (FTE)	4	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0
Entrepreneurship - Innovation Managers (FTE)	3	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Total staff uplift	18	3	0	0	3	5	1	2	0	2	0	0	2	0	0	0
Student spend																
Total undergraduate students	1095	0	0	20	42	64	87	90	92	94	96	98	100	102	104	106
Total Masters Students	120	0	0	0	0	0	0	10	11	12	13	14	15	15	15	15
Total PhD Students	138	0	4	6	8	7	8	10	11	12	12	12	12	12	12	12
Research & Adoption																
UK Innovate Funding																
Baseline (£'000)	1,800	40	40	40	80	80	80	120	120	120	160	160	160	200	200	200
Revised (£'000)	5,220	80	120	120	200	200	250	300	350	400	400	500	500	600	600	600
Uplift (£'000)	3,420	40	80	80	120	120	170	180	230	280	240	340	340	400	400	400
Industry Consulting																
Baseline (£'000)	4,531	210	221	232	243	255	268	281	295	310	326	342	359	377	396	416
Revised (£'000)	8,972	220	242	266	293	322	500	545	595	649	708	772	843	919	1003	1094
Uplift (£'000)	4,441	10	22	35	50	67	232	264	300	339	382	430	484	542	607	678
Entrepreneurship																
Entrepreneurship																
No of student/graduate start ups	537	0	5	7	10	15	20	25	35	40	50	55	60	65	70	80
No of student/graduate start ups founded/co founded by women	437	0	3	5	7	10	15	18	28	32	42	46	51	55	60	65
No of QMU student/graduate businesses securing scale up funding	188	0	0	2	4	5	7	12	15	16	17	18	20	23	24	25
No of start ups	633	0	5	8	10	17	23	29	41	47	58	66	72	78	84	95
No of start ups securing scale up funding	233	0	0	3	4	6	8	14	17	19	21	23	26	29	31	32
No of start ups surviving	98	0	0	1	2	3	3	6	7	8	9	10	11	12	13	13
Scale up investment raised (£'000)	4893	0	0	63	84	126	168	294	357	399	441	483	546	609	651	672
Entrepreneurship employment																
Gross Internal Area (sq m (thousands))		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Letable space (sq m (thousands))		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
SCFDI (sq m (thousands))		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Remaining lettable space (sq m (thousands))		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Occupancy level		0%	0%	0%	0%	50%	65%	80%	100%	100%	100%	100%	100%	100%	100%	100%
Space occupied (gross sq m (thousands))		0	0	0	0	2	3	3	4	4	4	4	4	4	4	4
Entrepreneurship space occupied (net sq m (thousands))		0	0	0	0	1	1	2	2	2	2	2	2	2	2	2
Entrepreneurship direct employment		0	0	0	0	35	45	55	69	69	69	69	69	69	69	69

Edinburgh Innovation Park

Entrepreneurship																
Gross Internal Area (sq m (thousands))		40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Occupancy level		0%	0%	0%	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	100%
Space occupied (gross sq m (thousands))		-	-	-	-	4	8	12	16	20	24	28	32	36	40	40
Conversion to net area (100%-15%)		85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Space occupied (net sq m (thousands))		-	-	-	-	3	7	10	14	17	20	24	27	31	34	34
Employment		-	-	-	-	68	136	204	272	340	408	476	544	612	680	680

Equalities Impact Assessment - Edinburgh Innovation Hub

Introduction

In a partnership, public bodies covered by the Public Sector or Fairer Scotland equalities duties carry their duties into that partnership. Where a decision is taken in that partnership, authorities must be able to demonstrate that they have met the duties in relation to their own contributions to the partnership. In meeting this obligation, the purpose of this equalities impact assessment is to consider if the policy intervention being proposed:

- Helps to remove or minimise disadvantage;
- Meets the needs of different groups;
- Encourages increased participation of particular groups; and
- Takes account of disabled people's requirements.

Policy Context

The Public Sector Equality Duty, also known as the general equality duty, came into force on 5 April 2011.
It covers the following protected characteristics:

- age
- disability
- gender reassignment
- pregnancy and maternity
- race, religion or belief
- sex
- sexual orientation.

As bodies subject to the general duty, QMU and ELC are required to give due regard to the need to:

- Eliminate unlawful discrimination, harassment and victimisation and any other conduct prohibited under the Act
- Advance equality of opportunity
- Foster good relations

Due to limitations in the available data, as part of the agreed benefits realisation plan for the Edinburgh and South East Scotland City Region Deal[1], it has initially been agreed to monitor and report on four of the protected characteristics:

- Age
- Disability
- Race and minority and ethnic communities
- Sex.

The socio economic duty (Part 1 of the Equality Act 2010), also known as the Fairer Scotland Duty [FSD], came into force in April 2018. The duty places a legal responsibility on public bodies in Scotland to

[1] https://democracy.edinburgh.gov.uk/documents/s25995/5.3%20Benefits%20Realisation%20Plan%20with%20appendices.pdf

actively consider using their functions to reduce inequalities of outcome caused by socio-economic disadvantage when making strategic decisions.

QMU currently reflects these requirements in its biennial Mainstreaming Report[2] and Outcome Agreement[3]. With respect to the protected characteristics and providing equality of opportunity for all, QMU's Mainstreaming Report outlines seven Equality Outcomes it is striving for with which the hub proposals will align:

1. The University workforce represents the community it serves.
2. Pay Gaps are eliminated where the pay gap is significant in statistical terms.
3. Recruitment, progression, retention and attainment of students drawn from a wide range of backgrounds is maximised.
4. Our people policies promote inclusive employment and career advancement prospects.
5. The particular needs of disabled staff and students are fully accommodated.
6. Equality and diversity is embedded fully in the curriculum and in research.
7. Women's careers in research and in STEM subjects are advanced through Athena SWAN and other sector initiatives.

Approach to Assessment

In carrying out the assessment the following steps have been taken:

- Confirm the scope of the proposal being assessed;
- Review the evidence base, relevant to the subject matter of the proposal, to identify potential equalities issues. This included desktop review of existing evidence and specific discussion with relevant staff members with visibility and awareness of current known issues;
- Analyse the potential positive and negative impacts of the proposals;
- Identify any actions required;
- Confirm ongoing monitoring and reporting.

Equality Impact Assessment

Scope of Proposal Assessed

Public sector investment of up to £40m to construct the Edinburgh Innovation hub at Queen Margaret University focused on innovation in the food & drink sector. The hub will enable delivery of a programme of activities focussed on realising benefits to the city region covering the following areas:

- ***Talent** - address skills needs and shortages in the food and drink sector including in-work skills development;*
- ***Research & Adoption** - develop the knowledge needed to tackle market trends and challenges in the food and drink sector and work with commercial partners to embed this knowledge to add value, realise productivity gains, grow wages and employment and drive economic growth;*
- ***Data** - harness the expertise of the City Region in data driven innovation in teaching, research and entrepreneurship activities to support target sectors;*
- ***Entrepreneurship** - actively support the formation and growth of companies to address the*

[2] https://www.qmu.ac.uk/media/6803/mainstreaming-report-and-equality-outcomes-review.pdf

[3] http://www.sfc.ac.uk/funding/outcome-agreements/outcome-agreements-2018-19/queen-margaret-oa2018-19.aspx

opportunities present in the market providing well paid employment opportunities for the region.

Review & Analysis of Evidence Base

Assessed Characteristic	**Gathering relevant evidence of issues/barriers**	**Assessment of potential positive and negative impacts of the proposals**	**Actions/ Recommendations**
Age	The south of Scotland has an ageing population, with a lower proportion of young and working-age people relative to the Scottish average[4]. 17% of the population in Edinburgh[5] and 14% of the population in the Scottish Borders are aged 20-34, compared to 20% of the Scottish population overall[6] As people live longer, there is a need for ongoing skills development to enable people to respond to a changing workplace with relevant skills.	*Positive impacts of the proposals* QMU has a positive track-record in educating young people and hopes that the Hub and innovative new course pathways will attract young people to the local area and equip them with up to date skills with long term relevance to the evolving workplace. Meanwhile the proposed CPD course offering gives people greater opportunity for in work development including formal accreditation of skills to facilitate labour mobility in the food and drink sector. Additionally, current research activities focus on the role of diet in supporting "healthy aging" in line with the government's Industrial Strategy. *Negative impacts of the proposals* None identified.	Maintain an open and inclusive application process for courses and entrepreneurial activities Offer a range of course pathways to reflect people at different stages of their career Support research activity that has age positive impacts (both in early and later years)
Disability	Review of relevant evidence indicates that people with disabilities are: ● Significantly less likely to be in employment and less likely to have educational qualifications, than those without disabilities[7].	*Positive impacts of the proposals* QMU's goal of equality of opportunities for the disabled community is stated in its fifth equality outcome statement and currently 20.6% of QMU's student population has declared a	Through careful scrutiny of the building designs, ensure that all of the Innovation Hub's facilities are accessible. Closely monitor the extent to

[4] Demographic Change in Scotland

[5] https://www.edinburgh.gov.uk/downloads/file/24261/population-age-structure-and-household-overview

[6] Enterprise and Skills Review report on Phase 2: South of Scotland Enterprise Agency

[7] Disability and education, UK: 2019

Assessed Characteristic	Gathering relevant evidence of issues/barriers	Assessment of potential positive and negative impacts of the proposals	Actions/ Recommendations
	• More likely to live in poverty, experience higher household costs and face challenges to being economically active[89]. • Underrepresented in the UK entrepreneur community[10], struggle to gain access to start-up capital, often lack the skills and confidence necessary to start their own business and struggle to access appropriate business advice and support materials in a suitable format (e.g. braille, audible). • Face physical barriers to services.	disability. As such, ensuring no opportunities are lost due to disabilities is at the core of QMU's ethos. The university encourages early disclosure of any disabilities by staff and students to allow for the provisions of any necessary adjustments. QMU will continue this commitment to equality of opportunity for the disabled community in both the design and running of the Innovation Hub with disabled access to all areas of its site and ensuring materials and resources are in appropriate formats. This commitment will offer disabled people access to the support and resources this minority often struggles to gain, providing them with the skills and confidence necessary to start their own businesses. *Negative impacts of the proposals* None identified.	which the Innovation Hub's tenants include people with disabilities. QMU should work with local authorities to ensure that the Innovation Hub is well served by accessible public transport.
Race, religion or belief	Research indicates that ethinic minorities in Scotland are: • Twice as likely to live in poverty and experience unemployment[11]; • Unusual compared to other minorities being more likely to start their own businesses than their white counterparts, with the self-	*Positive impacts of the proposals* The Innovation Hub will have much of the resources and support required for promoting successful, long term entrepreneurship in one place, which should combat the difficulties in identifying appropriate resources SMEs are currently facing. With the building of the Hub,	Consideration should be given to making appropriate facilities available and accessible on campus for users of the hub (e.g. multi faith prayer room). QMU should work closely with any charitable organisations

[8] POVERTY AND DISABLED PEOPLE IN DEVELOPMENT CONTEXT

[9] The Employment of Disabled People

[10] Under-represented entrepreneurs: A literature review

[11] https://www.equalityhumanrights.com/en/our-work/news/scotland%E2%80%99s-ethnic-minorities-face-overcrowding-poverty-and-unemployment-says-equality

Assessed Characteristic	Gathering relevant evidence of issues/barriers	Assessment of potential positive and negative impacts of the proposals	Actions/ Recommendations
	employment rate for ethnic minorities in Scotland in 2016 being 16% compared to 13% for those of white ethnic origin[12]; ● More likely to experience greater barriers to entry in starting a business and face lower turnover and survival rates than their white counterparts[13]; ● More likely to establish businesses in low value-added sectors and sub-sectors; ● Less aware of available enterprise support and less likely to trust that they can have fruitful engagements with support institutions, finding the support system complex, overwhelming and difficult to navigate.	QMU will be in a unique position to offer its 5.9% ethnic minority student base (vs 3.7% Scottish average) the opportunities they need to thrive in the F&D sector including the opportunity to create their own businesses that target high value added markets. *Negative impacts of the proposals* None identified.	or government bodies which specifically support businesses started by individuals from minority groups to make sure they are aware of and encouraged to access the support available. QMU should continue to promote a culture of inclusion and diversity within its student body and workforce. To support this it could run training and provide guidance on areas such as unconscious bias and open-mindedness.

[12] Taking steps to combat barriers to ethnic minority enterprise in Scotland

[13] Under-represented entrepreneurs: A literature review

Gender/Sex	The 2019 Alison Rose review of Female Entrepreneurship, stated that up to £250bn of new value could be added to the UK economy if women started and scaled new businesses at the same rate as men[14]. In February 2019 the British Business Bank issued a report (commissioned by the UK Government) which reported that for every £1 of venture capital investment in the UK, all-female founder teams get less than 1p. This report helped to demonstrate the challenges that female entrepreneurs can face when seeking funding.	*Positive impacts of the proposals* A large proportion (75%) of QMU's student body is female and QMU already has a large focus on promoting female equality and entrepreneurship and has a continued programme of the EntreprenHER events with their Chancellor Prue Leith and East Lothian Business Gateway. These can be further developed with the Innovation Hub. Furthermore, QMU actively promotes sector wide accelerator programmes specifically catered towards female entrepreneurs and will work with external organisations such as Women's Enterprise Scotland (WES) and the Royal Bank of Scotland, both of whom are championing female entrepreneurship in an effort to create an environment where more women can start up in business and enable businesses to thrive and grow. In addition to the Innovation Hub QMU are working with the Scottish Government and WES to explore options of developing a hub at QMU to support female entrepreneurs/businesses across the region. The building of the Innovation Hub could act as a stimulus to provide specific, targeted support in this area. *Negative impacts of the proposals* None identified.	QMU should take advantage of the fact that a significant proportion of its student base is female and should continue to proactively promote entrepreneurship opportunities for females. QMU should seek to ensure that female entrepreneurs are well represented amongst the tenants of the Innovation Hub and seek to offer tailored support.. QMU should support women who are seeking to return to work or education following maternity leave. It should allow flexible working to provide for those who wish to work or study while also managing childcare responsibilities.

Assessed Characteristic	Gathering relevant evidence of issues/barriers	Assessment of potential positive and negative impacts of the proposals	Actions/ Recommendations
Sexuality	A 2017 report by the Scottish Government highlighted some of the inequalities in respect of the LGBTQ community in Scotland. The report noted that a higher proportion of this community lives in the most deprived areas of Scotland (27% compared with 19% of heterosexual adults). Furthermore LGBTQ adults were over three times more likely to be unemployed than hetrosexual adults.[15] In 2018 Stonewall issued a report on the discrimation and barriers that members of the LGBTQ community face in the workplace. The report noted that in the past year over a third of LGBTQ staff had hidden or disguised the fact that they are from the LGBTQ community out of fear of discrimination.[16]	*Positive impacts of the proposals* QMU has achieved good representation of the LGBTQ community amongst its student body, with 6.6% of students identifying themselves as being from the LGBTQ community (compared to an estimated average of 2.9% across the Scottish population as a whole[17]). QMU prides itself on its inclusive campus and this reputation should help to attract a wide range of entrepreneurs to the Innovation Hub, regardless of their sexual orientation. *Negative impacts of the proposals* None identified.	Monitor continued enrollment in activities by this protected group. Target marketing materials at this group in the event of the LGBTQ community being underrepresented among tenants of the Innovation Hub. QMU should continue to promote a culture of inclusion and diversity within its student body and workforce. To support this it could run training and provide guidance on areas such as unconscious bias and open-mindedness.
Other Protected Characteristics	Due to the lack of data on the relative economic activity rates for certain protected groups in the south of Scotland (pregnancy and maternity, marriage and civil partnership, religion and belief and gender reassignment). It is currently difficult to identify specific issues and areas for intervention.	N/A	N/A

[14] The Alison Rose review of female entrepreneurship

[15] https://www.gov.scot/publications/sexual-orientation-scotland-2017-summary-evidence-base/pages/6/

[16] https://www.stonewall.org.uk/system/files/lgbt_in_britain_work_report.pdf

[17] Lesbian, gay, bisexual and transgender (LGBT) people: number in Scotland

Assessed Characteristic	Gathering relevant evidence of issues/barriers	Assessment of potential positive and negative impacts of the proposals	Actions/ Recommendations
Socio Economic Disadvantage	People in protected characteristics groups are more likely to suffer from poverty than others, specifically ethnic minorities, women, the LGBTQ population and those with disabilities. Socio economic disadvantage can act as a barrier to entrepreneurship. In the 10% most deprived areas of the UK, people are almost 50% less likely to be self-employed[18]. A briefing paper issued by Public Health Scotland highlighted that income and wealth inequalities are key causes of health inequalities. It noted that for men in the most deprived areas of Scotland nearly 25 fewer years are spent in 'good health' than men in the least deprived areas.[19] Poor diet is often a contributory factor to health inequalities.	QMU has a commitment to equality, with their mission being that all students, regardless of their background, will have equal opportunities to succeed and become graduates with a strong sense of ethical and social responsibility who will have the skills to contribute to and influence their wider community. Their Widening Participation and Retention Strategy seeks to increase student numbers from non-traditional groups, including those that are: first generation to go to Higher Education; from low progression schools and/or reside in communities in the lowest 20% and 40% of the Scottish Index of Multiple Deprivation, with bursaries provided to support these students[20]. This ethos will continue in the building and running of the Innovation Hub, giving those from low income backgrounds previously difficult to access support and pathways to entrepreneurship. Furthermore, the overarching aim of the Innovation Hub is to promote innovation-led growth in the local/national Food & Drink sector and focus on developing new products to address the key social challenge of nutritional impacts on	Monitor continued enrollment in activities by this group. Target marketing materials at this group in the event of evidence of under-representation among tenants of the Innovation Hub. Engage with City Deal Skills team to support positive and inclusive skills pathways across the city region. Continue to invest in areas of research that have a positive impact on disadvantaged group (e.g. in respect of affordable nutrition)

[18] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/511533/boosting-enterprise-in-more-deprived-communities.odt

[19] http://www.healthscotland.scot/media/1365/inequalities-briefing-8_income-wealth-and-poverty_apr17_english.pdf

[20] https://www.qmu.ac.uk/media/6803/mainstreaming-report-and-equality-outcomes-review.pdf

Assessed Characteristic	Gathering relevant evidence of issues/barriers	Assessment of potential positive and negative impacts of the proposals	Actions/ Recommendations
		health which currently disproportionately affects these deprived groups.	

Conclusions

The equality impact assessment process has helped to consider the potential positive and negative impacts of the creation of the Innovation Hub on those with protected equality characteristics. Overall, QMU and ELC consider the assessment to show that the innovation hub:

- Will be neither directly nor indirectly discriminatory on the basis of any of the protected characteristics and that the partners have established policies in place to enforce this; and
- Will enable delivery of a range of activities capable of making a significant contribution to addressing inclusive growth and equalities challenges including education, training, research and entrepreneurship support activities in the food and drink sector; and
- opportunities for groups currently less likely to be economically active or self employed.

Summary of effects on Protected Characteristics

QMU's has a positive reach to groups with protected characteristics. It is anticipated that all protected characteristics will experience a positive impact from the project through improved access to training and enterprise support via the hub. No negative impacts are anticipated with established policies to promote equality already in place within QMU as the key delivery partner.

Summary of Socio Economic Impacts

The broad range of activities proposed and QMU's established reach within groups of varied social economic backgrounds creates a positive platform for the hub to deliver further change. In particular the following areas of activity proposed in the hub are expected to have a positive impact: ● QMU's established culture of inclusion and support for all groups; ● Proposed research activities that include a focus on developing healthier foods, addressing challenges of poor nutrition for low income groups; ● Offering a wide range of skills development pathways including to support in work progression ● An accessible campus by public transport and road serving diverse communities; ● Aim to support the creation of higher value adding careers in the food and drink sector

Reporting and Monitoring Progress

Under the requirements of the Public Sector Equality Duty (PSED) introduced in the Equality Act 2010 (Specific Duties) (Scotland) Regulations 2012, QMU and ELC are already required to report on how they are mainstreaming equality and have established reporting frameworks for this into which the innovation hub activities will be integrated including:

- QMU biennial Mainstreaming Report[21] and Outcome Agreement[22];
- ELC Annual Equalities Monitoring Report; and
- Commitment to monitor and report project outcomes via the Edinburgh and South East Scotland City Region Deal Benefits Realisation Plan [23]. This will specifically monitor and evaluate four of the protected characteristics: disability, minority and ethnic communities, age and sex.

The partners are committed to using the findings of ongoing reporting and monitoring activities to improve delivery in support of equality and positive socio economic outcomes.

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[21] https://www.qmu.ac.uk/media/6803/mainstreaming-report-and-equality-outcomes-review.pdf

[22] http://www.sfc.ac.uk/funding/outcome-agreements/outcome-agreements-2018-19/queen-margaret-oa2018-19.aspx

[23] https://democracy.edinburgh.gov.uk/documents/s25995/5.3%20Benefits%20Realisation%20Plan%20with%20appendices.pdf

EDINBURGH INNOVATION PARK PHASE 1

Scale 1:2000

0 50 100 200 400

EDINBURGH INNOVATION PARK MASTERPLAN

Scale 1:2000

0 50 100 200 400

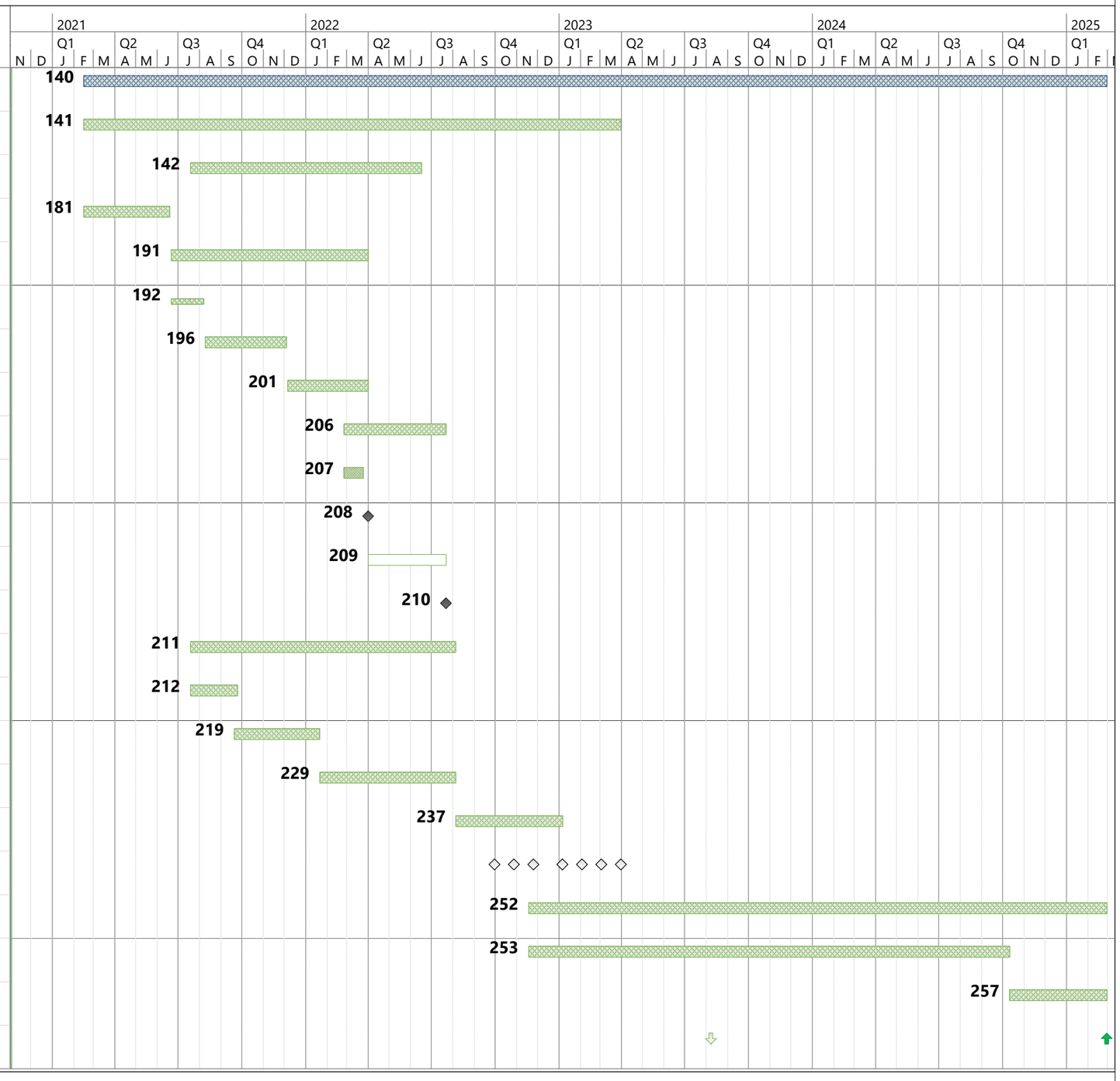
Queen Margaret University & East Lothian Council
Craighall Land Development

Phase 1 Programme
2 November 2020

Currie & Brown

DRAFT **INFORMATION ONLY**

ID	Task Name	Duration	Start
140	**PHASE 1: INNOVATION HUB**	**1025 days?**	**15 Feb '21**
141	**Preconstruction**	**535 days?**	**15 Feb '21**
142	**Surveys & Investigations**	**230 days**	**19 Jul '21**
181	**Design Team Procurement**	**90 days**	**15 Feb '21**
191	**Design Development**	**195 days**	**21 Jun '21**
192	**RIBA Stage 0/1: Preparation & Brief**	**35 days**	**21 Jun '21**
196	**RIBA Stage 2: Concept Design**	**85 days**	**09 Aug '21**
201	**RIBA Stage 3: Developed Design**	**75 days**	**06 Dec '21**
206	**Consents**	**105 days?**	**25 Feb '22**
207	Prepare MSIC Submission	4 wks	25 Feb '22
208	Submit MSIC	0 days?	31 Mar '22
209	Planning Determination Period	16 wks	01 Apr '22
210	Planning Consent granted	0 days	21 Jul '22
211	**Contractor Procurement: 2-Stage D&B**	**265 days**	**19 Jul '21**
212	**ESPD**	**50 days**	**19 Jul '21**
219	**First Stage Tender**	**80 days**	**20 Sep '21**
229	**Contractor ECI: PCSA Appointment**	**140 days**	**21 Jan '22**
237	**RIBA Stage 4: Technical Design (Contractor)**	**100 days**	**05 Aug '22**
241	**Building Warrant (Staged)**	**120 days**	**29 Sep '22**
252	**Construction**	**575 days**	**18 Nov '22**
253	**RIBA Stage 5: Construction**	**475 days**	**18 Nov '22**
257	**RIBA Stage 6/7: Handover & Occupation**	**100 days**	**11 Oct '24**
260	**Innovation Hub Operational**	0 days	27 Feb '25





Queen Margaret University

Innovation Hub - Phase 1

Indicative Cost

Job No: 4101725

27 November 2020

Currie & Brown

Ref.	Description	Qty	Rate	Total

Queen Margaret University

Innovation Hub - Phase 1
Newcraighall, Edinburgh

GiFA 7,200 **m2**

INDICATIVE COST **27 November 2020**

			Qty	Rate £	Amount £	Cost /m2 £
1	**Building shell and core**	m2	7,200	1,475	10,620,000	
2	**Fit Out**					
2.1	Balance space	m2	2,160	250	540,000	
2.2	Cat A+ Office incl floor distribution and carpets	m2	1,714	200	342,800	
2.3	Cat 1 Laboratories	m2	1,663	1,050	1,746,150	
2.4	Cat 2 Laboratories	m2	1,663	1,650	2,743,950	
2.5	IT	m2	5,040	70	352,800	
2.6	External Works	Item	1	2,100,000	2,100,000	291.67
3	**Bus Turning Circle**	Item	1	450,000	450,000	
	Prime Cost		**Say**	**£**	**18,895,700**	2,624.40
4	**Main Contractor's Prelims**	16%		£	3,024,000	
				£	**21,919,700**	
5	**Contingencies and Design Development**	13.5%		£	2,960,000	
				£	**24,879,700**	
6	**Inflation to Main Works Site Start**	5%		£	1,244,000	
INDICATIVE CONSTRUCTION COST TOTAL				**£**	**26,123,700**	**3,628.29**
7	**Professional Fees**	12%		£	3,135,000	
8	**Client Equipment**	Item	1	750,000	750,000	
				£	30,008,700	
9	**VAT**	20%		£	6,001,740	
				£	36,010,440	
TOTAL PROJECT COST			**SAY**	**£**	**36,000,000**	

COMMENTARY

1 This Indicative Cost has been prepared using the following design information:

10 Design
Masterplan site layout Options 2A and 2B

WSP
EIP-WSP-01-ZZ-DR-C-0501 Indicative SW layout
EIP-WSP-01-ZZ-DR-C-0502 Indicative FW layout

2 The following assumptions have been made in preparing this Indicative Cost:

a Start date on site: 3Q 2023
b Overall duration on site is 80 weeks
c Public Utility costs are provisional and will be subject to receiving quotations from statutory providers.
d It is assumed that the site has no adverse ground conditions and no allowance has been included for any remediation works or abnormal foundation solutions.
e The building design and elevational treatments will be to an out of town science, technology and innovation park level and will be consistent with the other Queen Margaret University buildings.
f Loose FF&E is excluded, with the exception of soft furniture in the atrium area.
g The project site is outwith any HV cable exclusion zones.
h We have assumed a Grade A+ office, which includes in addition to BCO Grade A office, floor outlet boxes, power distribution and carpets to tenanted areas.
i Cat 1 Laboratory areas - Usage will be for a broad range of SMEs principally in food and drink related technologies - to include vinyl floor, benching, lab drainage and associated M&E.
j Cat 2 Laboratory areas - Usage will be for a broad range of SMEs in the life and physical sciences and convergent technologies - to include vinyl floor, benching, lab drainage and one fume cupboard or microbiological safety cabinet per lab.
k An allowance for Client fit out has been included (£750K).
l An allowance for professional fees has been included (12%).

3 The Indicative Cost is exclusive of the following:

a Section 75 costs associated with planning consent
b Site purchase/acquisition costs
c Capital allowances, grants and contributions
d No allowance has been made for currency fluctuations
e Decant costs and transfer of existing Furniture and Equipment
f Illuminated signage/artwork
g Off site Signage
h Implications resulting from Brexit
i Implications resulting from Covid19 or any other pandemic virus

4 The construction cost has been prepared on the basis of current rates and prices ie 4th Quarter 2020 with an allowance for any inflation to the start on site of 3Q2023.

5 It is assumed all services and drainage are located nearby and they have sufficient capacity to serve the project without reinforcement or diversion.

6 The costs are based on a competitively tendered Single Stage Design and Build procurement route.

7 The works are completed in one Phase during normal working hours and that there is no linkage or conditions precedent between construction and lettings.

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Appendix Concept Design Brief

QMU innovation Hub

Context

Phase One of the Edinburgh Innovation Park (EIP) is the development and operation of an Innovation Hub that is to be designed to provide fit for purpose facilities and services to capture, support and grow companies working in the fast-changing innovation sector.

The development of the Innovation Hub will provide a dedicated home to small and medium sized enterprises (SMEs) working across a range of innovation sectors with a particular focus on food and drink and those areas where the University network and the region has existing expertise and excellence. The vision of QMU is that the Innovation Hub at EIP will act as a regional and national resource underpinned by the expertise found within the wider University innovation network working in partnership to grow the nation's innovation sector.

The Innovation Hub is not an incubator although business incubation will be one of the many functions the facility will fulfil.

The high-level concept for the Innovation Hub is not a design brief, which cannot be drafted until the operating model for the facility has been fully defined. At this early stage, the high-level concept has been drafted with the limited objective of informing the next iteration of the cost plan.

Design Concept

The Innovation Hub is to be a speculative, serviced multi-occupied laboratory and office building. All of the Innovation Hub is to be fitted to Cat B (less office furniture) or laboratory equivalent; because the target market for the facility will not have the resource to fit out units should they be provided by the landlord to a shell specification.

The design concept for the Innovation Hub is for a facility that anticipates success and the need for subsequent 'grow-on' expansion. A number of 'innovation hub' facilities in the UK have not exploited their full potential because success and the concomitant need for contiguous expansion was not anticipated. To deliver an expansion capability it is recommended that a two phase approach to the development of the Innovation Hub is adopted with the first phase being the larger and funded by the City Deal grant.

- Phase One – 7,200 sq m (GIA) excluding plant loft

- Phase Two – 4,650 sq m (GIA) excluding plant loft

To retain the opportunity for the development of a second phase there is a requirement for the core of the first phase of the Innovation Hub to be located and designed in such a way that it could serve the second phase wing. This means that Phase Two would use the core developed in Phase One. The core for Phase One would not need to be enlarged in anticipation of a second phase being developed.

Companies locating to the Innovation Hub will benefit from first class facilities – both specialist laboratory facilities and generic facilities designed for target markets – together with easy access to the University, its social capital and to new ideas. Co-location will encourage mentoring and peer support. Close access to business development staff and business support intermediaries will enhance

the support on offer, facilitating connections with investors and enabling business collaboration. The close linkages and proximity to the University Departments, their students and expertise will be an important aspect of this initiative. The Innovation Hub will provide opportunities for students to embrace the innovation and enterprise culture as part of their educational experience. The Innovation Hub will provide a home for enterprise initiatives, events and workshops and will showcase the inspirational, innovative students and staff from across the University.

Design, Specification and Services

Based upon a speculative supply-led demand model, the first phase of EIP is the development of an Innovation Hub for SMEs that qualify with the entry criteria for the park. Drawing on best practice from the newest approaches to service delivery within the innovation sector, the Innovation Hub will deliver both specialist and generic research and business support services together with specialist and generic facilities for target SMEs.

The concept for the Innovation Hub is for a facility that will be constructed as two phased buildings physically linked by a central operational core. The proposed approach has been adopted successfully at Liverpool Science Park and Thames Valley Science Park. The Innovation Hub will offer a range of common services including front of house, amenities and networking space. The target Nia is 70%. Each 'wing' of the Innovation Hub will target high growth SMEs working in the innovation space that have been identified as key economic growth sectors for Scotland. For Phase 1 the table above provides indicative uses and proportions to inform the next high-level iteration of the cost plan. A number of operational issues will need to be incorporated in the design of the Innovation Hub as the project moves towards. These issues will be addressed in the design brief, which will reflect the operating model for the Hub.

Function	**Specification**	**Proportion of lettable**
Offices – for office based R&D	Cat B Unfurnished Power and data included Raised floor	33%
Offices / Lab enabled for Food and Drink	Cat 1 Lab Power and data included Solid floor	33%
Labs and write up – for SMEs	Cat 2 Lab Power and data included Positive pressure regime at no less than 5 Pascal's Solid floor	33%
Shared Provision	Cat B furnished: • Meeting rooms • Café? • Team points • Lab wash up • Reception • Management office	0%

CAM-SCI
Developing the Knowledge Economy

Cyber Park, Cheltenham

Government Communications Headquarters (GCHQ) Cheltenham, UK

GCHQ is a UK government intelligence and security organisation. A sub department of GCHQ is the National Cyber Security Centre.

With an existing cyber cluster of over 200 organisations, Cheltenham is a national centre of expertise in cyber security and a key potential growth asset for the region's economy. The project is to develop a Cyber Park co-located with GCHQ as an important strategic step in creating specialist infrastructure that will provide a focus and resource to support the UK's cyber security capability.

Set on 20.81 ha of land, the Vision for the Cyber Park is to create a vibrant ecosystem fostering the support of digital innovation entities and cyber security companies; facilitating innovation, start-up activity and inward investment by larger companies to develop a cyber-secure nation and to help grown the regional and national economy.

A new garden village providing 3,000 new homes is to be developed contiguously with the Cyber Park.

We have provided strategic, commercial, development, funding and operational advice for the new Cyber Park.

Client: Public and private sector Joint Venture

Role: Principal strategy, development and operations advisor

Project complexities

- Alignment of divergent partner aims and objectives
- Creating a market-focused Value Proposition (hard and soft infrastructure)
- Speculative development to establish supply led demand
- Launch of a new business exploiting proximity to an established government cyber facility

Benefits to be delivered

- Only purpose built innovation campus in the UK focusing only on cyber security
- Development on a previously green-field site
- SME cluster creation and facilitated growth
- Direct and indirect employment creation
- Delivery of the Cheltenham Borough Council Economic Strategy

CAM-SCI
Developing the Knowledge Economy

Gold Coast Health and Knowledge Precinct

City of Gold Coast, Queensland, Australia

Development and operation of the Gold Coast Health and Knowledge Precinct to create an integrated research, education and related commercial precinct that drives a diversified health and knowledge based economy through a cooperative partnership between all tiers of government, the education sector, health services and the private sector.

Following a period of extensive marketing which had not resulted in commercial development, CAM-SCI was appointed to provide advice to deliver value proposition development and a market approach for new life science and physical science sectors.

Our role was to propose a revised and market appropriate approach to the development of this 200 ha site to support the establishment and growth of commercial knowledge enterprise.

Client: Queensland Government, Australia

Role: Strategic and Development Advisor

Project Complexities

- Dormant project requiring re-launch and re-positioning
- Absence of a defined value proposition
- Undefined development strategy
- Small scale of existing commercial knowledge enterprise
- Multi-partner stakeholder group
- Requirement for speculative development to pump prime the wider development scheme

Benefits Delivered

- Defined Value Proposition
- Adoption of a development strategy optimised to the SME market
- Concept definition for initial phase of development
- Client group agreement to initial phase of speculative development
- Multi-partner stakeholder engagement and agreement
- Optimised market creation strategy
- Stakeholder group endorsement to revised approach

CAM-SCI
Developing the Knowledge Economy

Liverpool Science Park

Liverpool, UK

Creation of a new science park for a special purpose vehicle client comprising University of Liverpool, Liverpool John Moores University and Liverpool City Council.

The purpose of the new science park is to facilitate the establishment and growth of commercial knowledge enterprise in a city where this sector is under-developed. In addition, there is an economic regeneration agenda in this post-industrial city. So far three phases of speculative development have been completed providing 12,000 sq m of serviced multi-occupied office and laboratories with high occupancy.

Our role has been to undertake the full range of services from initial concept definition and business planning to the design, development, commercial operation and leasing of new build office and laboratory facilities

Client:

- University of Liverpool
- Liverpool John Moores University
- Liverpool City Council

Role: Founder Chief Executive, Chief Operating Officer and Development Director

Project Complexities

- History of previous science park project failure in Liverpool
- Multi partner ownership structure
- Alignment of divergent partner aims and objectives
- Creating the Value Proposition (hard and soft infrastructure)
- Acquisition of capital to fund construction
- Speculative development to establish supply led demand
- Transition from initial public funding to a sustainable commercial business model

Benefits Delivered

- Successful development in a post-industrial city
- Regeneration of a previously brown field site
- SME creation and facilitated growth
- Leasing to ‘blue chip’ tenants
- Direct and indirect employment creation
- Positive cash flow for a previously grant aided project
- Reputational benefits to the City and its Universities
- Increased business rates income to Liverpool City Council

CAM-SCI
Developing the Knowledge Economy

Thames Valley Science Park

Thames Valley, University of Reading, UK

Creation of a new science park serving London and Thames Valley focusing on a range of science and digital markets.

TVSP is located 30 miles west of London in easy reach of London's Heathrow Airport. The purpose of TVSP is to create a commercial knowledge cluster that enhances the reputation of the University and provides an income stream for the University. Outline planning consent for an initial 80,000 sq m of knowledge-based development has been granted.

TVSP opened its first facility in March 2018 - a 7,500 sq m speculative multi-occupied office and laboratory building.

Our role has been to undertake all advisory work from initial concept and vision definition and business planning to design oversight, development, commercial operation and leasing.

Client: University of Reading

Role: Strategy advisor, Development Director and agency

Project Complexities

- A new major commercial venture for the University
- Requirement to justify TVSP over other University investment opportunities
- Alignment with University aims and objectives
- Creating the Value Proposition (hard and soft infrastructure)
- Major off site highway construction to enable site access
- Speculative development to establish supply led demand
- Changed university capital funding priorities mid programme

Benefits Delivered

- Speculative development of a multi-occupied laboratory and office building on a green field site
- Zero demand at commencement of the build programme with 95% pre-let at completion of construction
- Verified success of the design concept
- SME creation and facilitated growth
- Direct and indirect employment creation
- Earlier than predicted income generation
- Positive reputational benefits to the University

NEWCASTLE HELIX: A SPECULATIVE INNOVATION PARK DEVELOPMENT

INTRODUCTION

As part of its economic regeneration strategy, in 2005 Newcastle City Council acquired the 24-acre site (previously occupied by the Scottish and Newcastle brewery) in partnership with Newcastle University. Legal and General joined the partnership in 2017.

The site, branded Newcastle Helix, is now a commercial Innovation Park incorporating commercial and university facilities. The site currently has four commercial facilities, each developed on a speculative basis with no known occupiers previous to design or construction.

Like other successful developments in the UK targeting the innovation sector, Newcastle Helix has adopted a supply-led model in order to stimulate market demand and to attract follow-on investment.

THE BIOSPHERE

The Biosphere is the Park's flagship development. The Biosphere is a 75,000 sq ft (gross internal area) speculative facility targeting SMEs in digital, life sciences, engineering and other related innovative sectors.

The Biosphere's rate of occupation was projected to be circa five companies per annum reaching capacity by 2025. However, due to its highly functional design and operations model, the facility reached capacity within two years of launch and three years ahead of target.

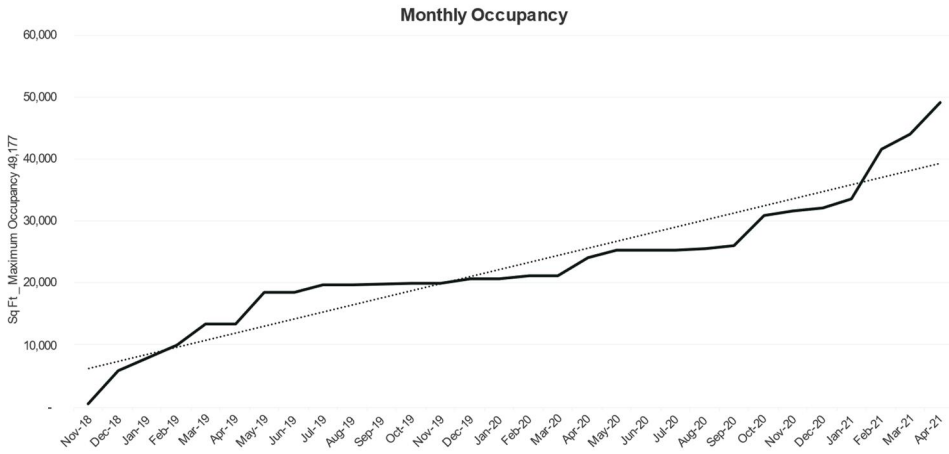
November 2017

July 2018

March 2019

Biosphere Occupancy Graph

CAM-SCI
Developing the Knowledge Economy



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FUNDING AND OPERATIONS MODEL

The Biosphere was developed at a cost of £25m with funding provided through a public sector body. However, the development and operations model for the Biosphere is fully commercial so that the facility generates commercial revenue that can be invested in further development.

OTHER DEVELOPMENT AT NEWCASTLE HELIX

The Core: The Core has had high levels of occupancy since launch in 2014 and is currently full. The Core was developed as a speculative serviced multi-occupied office building providing 24,812 sq ft (net internal area) of offices for an SME market. The Core is operated as a commercial facility.

Newcastle University: Newcastle University has developed a number of academic and research facilities at the Helix site:

- National Innovation Centre for Data
- National Innovation Centre for Ageing
- Newcastle University Urban Sciences Building

Legal and General: Legal and General joined the Newcastle Helix partnership in 2017 and has since developed the following:

- **The Lumen:** The Lumen is a speculative building providing 100,000 sq ft of office space. This £32m development, funded by Legal and General, has been brought forward in partnership with Newcastle University and Newcastle City Council. Completed in May 2020 the Lumen is operated as a commercial facility.
- **The Spark:** The Spark is a speculative £32m replica of The Lumen, adjacent to it, and it is currently under construction. The Spark will be operated as a commercial facility.

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QUEEN MARGARET UNIVERSITY, EDINBURGH

UK Science Park Rent and Service Charge Benchmarking Summary for Queen Margaret University - Edinburgh Innovation Park

APRIL 2020

	Project	Location	Rent (per sq ft)		Service Charge	Rates Payable	Utilities	Total (per sq ft)	
			Laboratory	Office				Laboratory	Office
1	Alderley Park BioHub (Ex AZ)	Cheshire	£35.00	£35.00	Included	Included	Included	**£35.00**	**£35.00**
2	Babraham Institute, Bioincubator (BBSRC)	Cambridge	£50.00	£50.00	Included	Included	Included	**£50.00**	**£50.00**
3	BioCity Scotland (Newhouse, Motherwell) (Ex MSD)	Lanarkshire	£28.00	£28.00	Included	£4.00	Included	**£32.00**	**£32.00**
4	Cambridge Science Park Innovation Centre (Closed down)	Cambridge		£39.00	£5.00	£12.00	Excluded		**£56.00**
5	Charnwood Biomedical Campus (Ex AZ)	Loughborough	£25.00	£15.00	£1.00	Excluded	Excluded	**£26.00**	**£16.00**
6	Edinburgh BioQuarter (Scottish Enterprise)	Edinburgh	£20.00-£22.00	£20.00-£22.00	£8.45	Included	Excluded	**£28.45 - £30.45**	**£28.45-£30.45**
7	Enterprise Centre (University of Reading)	Reading		£50.00	Included	£9.29	Included		**£59.29**
8	Innovation Building BioCity Nottingham (Ex BASF)	Nottingham	£33.00	£30.00	Included	£1.80	Included	**£34.80**	**£31.80**
9	Keele Science Park Innovation Centres (Keele University)	Keele	£35.00	£15.00	£9.50	Included	Excluded	**£44.50**	**£24.50**
10	Laurus BioCity (Ex BASF)	Nottingham	£24.00	£24.00	£6.20	£2.30	£2.00	**£34.50**	**£34.50**
11	Liverpool Science Park (University of Liverpool, Liverpool John Moores University and Liverpool City Council)	Liverpool	£20.00	£18.00-£24.00	£8.49	£6.00	Excluded	**£34.49**	**£32.49 - £38.49**
12	London BioScience Innovation Centre (Royal Veterinary College)	London	£49.00		£14.00	£9.00	Excluded	**£72.00**	
				£38.00	£9.00	£9.00	Excluded		**£56.00**
13	MediCity Nottingham (Ex Boots)	Nottingham	£33.00	£30.00	Included	Included	Included	**£33.00**	**£30.00**
14	Mersey Bio (Closed down) (University of Liverpool)	Liverpool	£18.00		Included	Included	Included	**£18.00**	
15	Northampton Innovation Centre (University of Northampton)	Northampton		£27.00	Included	Included	Included		**£27.00**
16	Newcastle Science Central Innovation Centre (The Core) (Newcastle City Council)	Newcastle		£24.00	Included	£8.59	Included		**£32.59**
17	Newcastle Science Central BioInnovation Centre (The Biosphere) (Newcastle City Council)	Newcastle	£24.00	£24.00	£10	£8.59	Excluded	**£42.59**	**£42.59**
18	Science and Technology Centre (University of Reading)	Reading	£55.00		Included	£8.00	Included	**£63.00**	
19	Science Village, Chesterford Research Park	Cambridge	£35.00		£2.70	£11.15	Excluded	**£48.85**	
20	Sheffield BioIncubator (University of Sheffield)	Sheffield	£35.00		Included	Included	Included	**£35.00**	
21	Stevenage Bioscience Catalyst	Stevenage	£18.75		£8.50	£13.50	Excluded	**£40.75**	
22	Thames Valley Science Park (University of Reading)	Reading	£35.00	£32.50	£9.00	£18.00	Excluded	**£62.00**	**£59.50**
23	University of Manchester Incubator	Manchester	£38.50		Included	Included	Excluded	**£38.50**	
24	Warwick Science Park Innovation Centre	Coventry		£16.50	£6.10	£5.00	Excluded		**£27.60**
25	York Science Park BioCentre (University of York)	York	£46.00		Included	Included	Included	**£46.00**	

KEY

Some facilities are laboratory only, others are office only; some facilities are a mixture of laboratory and offices.

Included — Included in rent.

Excluded — Excluded from rent and charged separately. For utilities this will be metered separately or apportioned. For business rates depending on operating model these charges are made by the Valuations Office directly to the tenant.

SCIENCE AND TECHNOLOGY PARK	SPECULATIVE INNOVATION HUB DEVELOPMENT	0% PRE-LET
Newcastle Helix The Core	5,310 sq m multi-occupied office facility	**Fully occupied within 12 months**
Newcastle Helix The Biosphere	6,967 sq m multi-occupied office and lab facility	**Original target occupancy of 33% in year one with full occupancy to be achieved by the end of year three. The Biosphere achieved full occupancy before the end of year two in 2020**
Nottingham BioScience and Office Innovation Facility	6,967 sq m multi-occupied office and lab facility	**85% pre-let at completion**
Liverpool Science Park – Innovation Centre One	3,900 sq m multi-occupied office facility	**Fully occupied within 18 months**
Liverpool Science Park Innovation Centre Two	3,900 sq m multi-occupied office facility	**Fully occupied within 15 months**
Liverpool Science Park Innovation Centre Three	3,900 sq m multi-occupied office and lab facility	**70% occupied within 6 months of completion**
Thames Valley Science Park Innovation Gateway Building	6,897 sq m office and lab facility	**95% pre-let at completion**

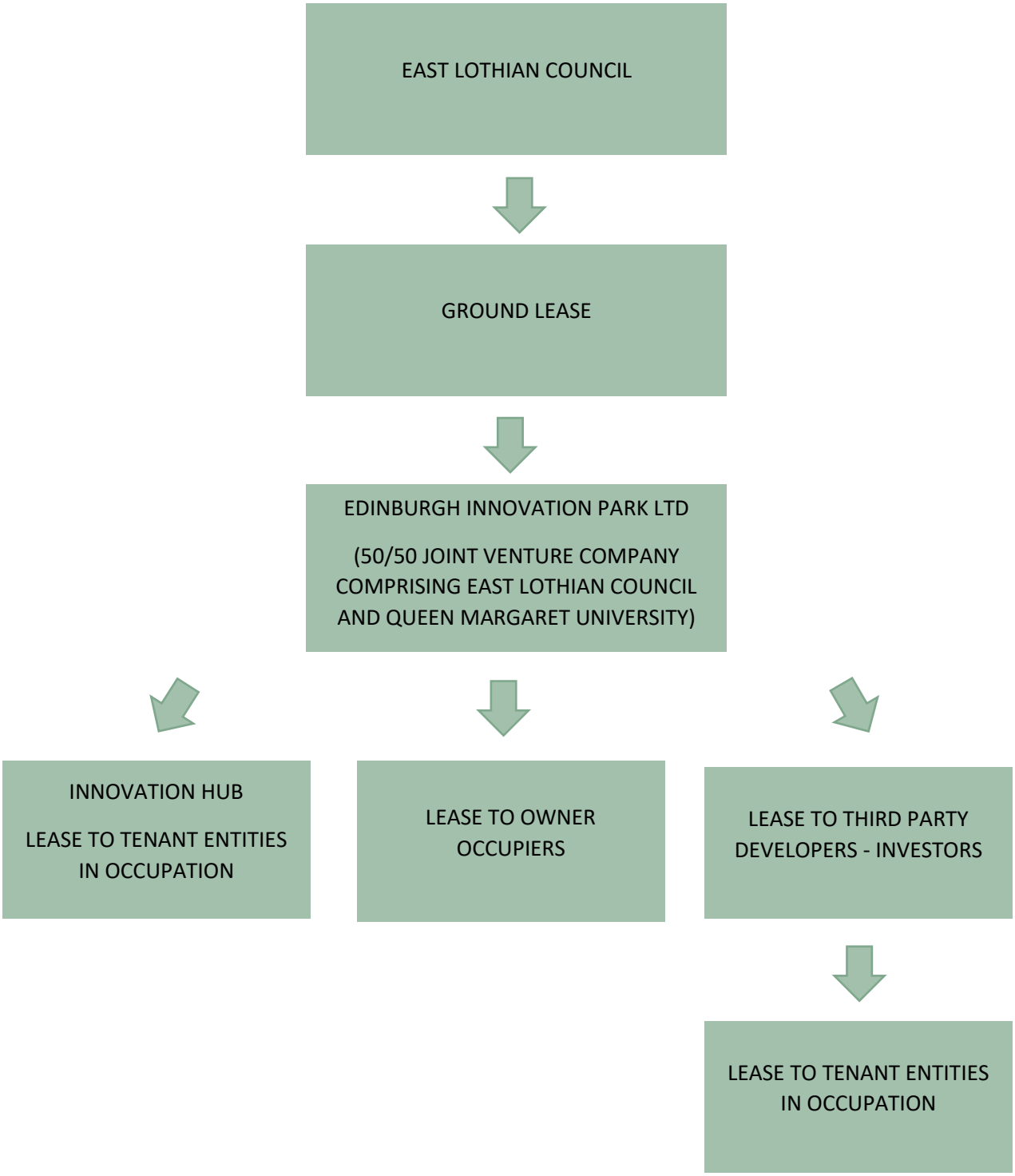
INNOVATION HUBS IN THE UK BY SIZE

LOCATION	**FACILITY**	**SQ M (Gross Internal Area)**
Edinburgh Innovation Park	QMU Innovation Hub	7,200
Central Park Manchester	Innovation Centre	11,148
Oxford Science Park	Innovation Centre	9,290
Edinburgh BioQuarter	BioInnovation Centre	8,825
Citi Labs Manchester	Innovation Centre	8,297
Liverpool Science Park	BioInnovation Centre	7,800
Newcastle Helix	BioInnovation Centre	6,988
Thames Valley Science Park	Gateway Building 1	6,897
Nottingham	BioInnovation Centre	6,705
Liverpool Health Campus	BioInnovation Centre	6,500

Average 8,050 sq m across existing facilities

APPENDIX B

Edinburgh Innovation Park-Leasing Strategy



EDINBURGH INNOVATION PARK

CASE STUDIES OF COUNCIL AND UNIVERSITY JOINT VENTURE COMPANIES IN THE INNOVATION ECONOMY

The table below summaries how most innovation and science parks that are delivered jointly by Councils and Universities have structured themselves.

The projects cited have been funded through a combination of public grant aid sources (ERDF, Regional Development Agencies, Regional Growth Funds, Local Enterprise Partnership etc) in order to establish innovation and science parks with the aim of delivering new economically driven commercial ventures following initial speculative development 'pump priming'. The public funding sources used have an equivalence with City Deal funding.

The development of innovation and science parks provides Councils with the opportunity to deliver their respective socio-economic and commercial strategies while simultaneously enabling universities to exploit intellectual property and create commercial benefit.

Working through a Joint Venture limited company, Councils and Universities have a shared beneficial interest in developing new innovation and science parks. Both the risks and the rewards are shared in the adoption of an equitable approach founded on cooperation and mutuality of interests.

Where Councils or Universities seek additional security, it is common practice for them to register a charge on property at the park in which they are co-owners.

The well-established practice should inform the Joint Venture structure that is proposed to deliver Edinburgh Innovation Park, including the Innovation Hub, by East Lothian Council and Queen Margaret University.

	LOCATION	**JOINT VENTURE PARTNERS**	**JOINT VENTURE COMPANY**	**DEVELOPER**	**DEVELOPMENT**	**RISK**	**CHARGES**	**DEVELOPMENT CAPITAL FUNDING BY UNIVERSITY JV PARTNER(S)**
1	Liverpool Science Park	• University of Liverpool • Liverpool John Moores University	Liverpool Science Park Ltd	Liverpool Science Park Development Ltd	Three Innovation Hubs comprising 120,000 sq ft of labs and offices	Shared equally through the JV company	Liverpool John Moores University has a charge on the first	No

		• Liverpool City Council					building. The university was the Accountable Body and was responsible for the discharge of obligations to the public bodies that funded the first development	
2	Exeter Science Park	• University of Exeter • Devon County Council • Exeter City Council • East Devon District Council	Exeter Science Park Ltd	Exeter Science Park Ltd	Six buildings since opening in 2015 providing 135,000 sq ft of offices and labs	Shared equally through the JV company	East Devon District Council has a charge on a 'grow-on' building at Exeter Science Park having loaned money to Exeter Science Park Ltd	No
3	Plymouth Science Park	• University of Plymouth • Plymouth City Council	Plymouth Science Park Ltd	Plymouth Science Park Ltd	Fourteen buildings on a 35 acre site with more than 100	Shared equally through the JV company	Since incorporation in 1996, Plymouth Science Park	No

					business in occupation		has had numerous charges against its properties. Charges have variously been in favour of the University and the City Council	
4	University of Warwick Science Park	• University of Warwick • Coventry City Council • Warwickshire County Council	University of Warwick Science Park Ltd	University of Warwick Science Park Ltd	Provides over 500,000 sq ft of development on a 42 acre site accommodating 140 companies employing circa 2,100 staff	Shared equally through the JV company until the university acquired all interests in 2012	Since incorporation in 1982, charges have been registered in favour of the University, Warwickshire County Council and Coventry City Council.	No
5	Bristol and Bath Science Park	• University of Bath • South Gloucestershire Council	Bristol and Bath Science Park Estate Management Company Ltd	Bristol and Bath Science Park Estate Management Company Ltd	59 acre site launched in 2011 Development costs so far are £300 million and it is	Shared equally through the JV company	No charges	Not at establishment stage but seven years after launch when the University purchased the

					expected to employ 6,000 staff when fully developed In 2018 the University and the Council purchased the park from the Department for Business, Energy and Industrial Strategy			park with the Council from the Department for Business, Energy and Industrial Strategy
6	Wolverhampton Science Park	• University of Wolverhampton • Wolverhampton City Council	University of Wolverhampton Science Park Ltd	University of Wolverhampton Science Park Ltd	Incorporated in 1993 the park now comprises 129,000 sq ft of office and labs	Shared equally through the JV company	Three charges have been registered	No
7	University of Stirling Innovation Park	• University of Stirling • Stirling Council	University of Stirling Innovation Park Ltd	University of Stirling Innovation Park Ltd	Incorporated in 1985 the park houses 70 companies and comprises 110,000 sq ft of development	Shared equally through the JV since March 2005	One charge registered	Not known
8	Manchester Science Park	• University of Manchester	Manchester Science Park Ltd	Manchester Science Park Ltd to 2012	Incorporated in 1983, Manchester Science Park	Shared equally through JV	There have been 21 charges registered	No

		• Manchester Metropolitan University • Manchester City Council • Salford City Council			had developed 8 buildings funded from public sources until 2012 In 2012 a third party investor developer acquired a controlling interest			