Planning Committee

10.00am, Thursday, 5 December 2013

Edinburgh BioQuarter and South East Wedge Parkland: Supplementary Guidance and Masterplan

Item number	5.3
Report number	
Wards	Ward 16 – Liberton / Gilmerton Ward 17 – Portobello / Craigmillar

Links

Coalition pledges	P8, P15, P17, P18
Council outcomes	CO7, CO8, CO16, CO18, CO19, CO22, CO23
Single Outcome Agreement	SO1, SO2, SO3, SO4

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Executive summary

Edinburgh BioQuarter and South East Wedge Parkland: Supplementary Guidance and Masterplan

Summary

The purpose of this report is to seek the Committee's approval of the finalised statutory Supplementary Guidance (SG) for the Edinburgh BioQuarter and the South East Wedge (SEW) Parkland following consultation and to seek approval of the non-statutory Edinburgh BioQuarter Masterplan in draft for consultation.

The Proposed Local Development Plan identifies the Edinburgh BioQuarter as a 'Special Economic Area' as it offers a unique opportunity to establish a commercial life sciences centre in Edinburgh of a scale comparable with others globally. The Council has prepared the SG and the masterplan in consultation with the other BioQuarter partners.

Recommendations

It is recommended that the Committee:

1. Notes the responses received on the draft Supplementary Guidance for the Edinburgh BioQuarter and South East Wedge Parkland (Appendix 1);
2. Approves the finalised Supplementary Guidance (Appendix 2); and
3. Approves the non-statutory Edinburgh BioQuarter Masterplan in draft for consultation (Appendix 3).

Measures of success

The full life sciences potential of the Edinburgh BioQuarter is realised in a mixed use urban quarter, which protects and enhances the landscape setting of the city.

Financial impact

There are no direct financial impacts arising from this report. The costs of printing and publishing the finalised SG and draft non-statutory masterplan will be met from existing budgets.

Equalities impact

There are no negative impacts on equalities or rights resulting from this report. Further details on the assessment can be found in the Equalities and Rights Impact Assessment.

Sustainability impact

The finalised SG and masterplan will help achieve a sustainable Edinburgh. One of the stated aims of the Proposed LDP is to help create strong, sustainable communities, enabling all residents to enjoy a high quality of life. The principles set out within the SG and masterplan support this aim. In addition, the SG and masterplan specifically support the development of one of the LDP's identified 'Special Economic Areas'.

Consultation and engagement

Formal consultation on draft SG for the Edinburgh BioQuarter and SEW Parkland took place between 17 June and 9 August 2013. A summary of the responses to the consultation is provided in Appendix 1.
The draft masterplan will be published for a period in which interested parties can make comments. That period will run for eight weeks. The following groups will be consulted: the EBQ Partners and neighbouring developers, neighbouring authorities, the Key Agencies, universities, health care providers, city-wide amenity bodies, and local communities including Moredun and Craigmillar.

The draft masterplan will be the subject of a statutory Strategic Environmental Assessment process.

Background reading / external references

Supporting documents to be published with the Supplementary Guidance for the EBQ and SEW Parkland:

- Equalities and Rights Impact Assessment

Previous reports and other background reading:

- Report to Planning Committee, Edinburgh BioQuarter and SEW Parkland (May 2013
- Report to Planning Committee, Local Development Plan – Proposed Plan and Development Plan Scheme (19 March 2013)
- Report to Planning Committee, Annual Review of Guidance (28 February 2013)
- Edinburgh Local Development Plan Main Issues Report (October 2011)
- Summary of Responses to the Main Issues Report (April 2012)
- Proposed Strategic Development Plan for South East Scotland (November 2011)
- Planning Circular 1/20: Development Planning

Report

Edinburgh BioQuarter and South East Wedge Parkland: Supplementary Guidance and Masterplan

1. Background

1.1 The Proposed Local Development Plan (LDP) was approved on the 19 March 2013. It requires Supplementary Guidance to be prepared for the Edinburgh BioQuarter (EBQ).

1.2 The Edinburgh BioQuarter (EBQ) aims to become a top 10 global centre of excellence for life sciences offering opportunities for academic, commercial and clinical research and development with health care, teaching facilities and appropriate support services and facilities. The LDP identifies the EBQ as a 'Special Economic Area', LDP Policy Emp 2: Edinburgh BioQuarter, as it offers a unique opportunity to establish a commercial life science centre in Edinburgh of a scale comparable with others globally.

1.3 The SEW Parkland is to be developed as a significant new strategic park linking with parallel developments in Midlothian. There is an opportunity within the SEW Parkland to create a new landscape that provides a setting for the EBQ and local communities such as Moredun and Craigmillar. The SEW Parkland is identified as Green Space Proposal GS 4 in the LDP.

1.4 Draft Supplementary Guidance (SG) for the EBQ & South East Wedge Parkland was approved by Planning Committee on 16 May 2013 for consultation.

2. Main report

Consultation on draft Supplementary Guidance for the Edinburgh BioQuarter and South East Wedge Parkland

2.1 Consultation on the draft SG was carried out between 17 June and 9 August 2013. As part of the consultation over 500 letters and emails were sent to members of the public, community councils and stakeholders, including neighbour notification of surrounding properties. Two public drop-in events were

held to discuss the proposals with the communities in Craigmillar (Monday 24 June) and Moredun (Wednesday 26 June).

2.2 14 responses were received during the consultation period from: the Coal Authority, the EBQ Partners (ScottHobbs), Great Liberton Heritage Project, Historic Scotland, Liberton & District Community Council, Persimmon Homes, Scottish Water, Scotways, SEPA, Scottish Natural Heritage, Transport Scotland and a local resident. Two late responses were received from Springfield Properties and Sheraton Ltd.

2.3 A summary of all the responses received is at Appendix 1. The responses have been taken into account when finalising the SG. The main changes are set out below. The finalised version of the SG is at Appendix 2 with the changes highlighted in red.

Main changes

Flooding and Drainage

2.4 Comments on the draft SG in relation to flooding and drainage have been received from the EBQ partners, SEPA and SNH. To address these comments, additional principles have been included in the finalised SG. These principles (1-b to k) now set out the requirements that will need to be met by the non-statutory EBQ masterplan and forthcoming planning applications within the EBQ site in respect of flooding and drainage.

2.5 SEPA has also requested that the finalised SG should include an overview of flood risk and surface water management for the EBQ site, including the Edinburgh Royal Infirmary and Niddrie Burn. However, at this stage, much of the information to complete this assessment is not available or is part of works currently under construction or being agreed. This overview cannot be provided within the current timescale for finalising the SG although will be considered for a future revision of the guidance.

2.6 The draft non-statutory masterplan (Appendix 3) provides additional detail in relating to flooding and drainage at a level appropriate to a masterplan.

Supporting Uses

2.7 The EBQ partners have requested that Class 8 (residential institutions), Class 9 (dwelling houses), flatted residential development, student accommodation, Class 10 (non-residential institutions) and Class 11 (leisure) be included as part of the mix of supporting uses within the EBQ. Whilst some uses that fall within these use classes may be appropriate in terms of place making, it is considered that it is not appropriate to include the full range, in order to support the primary life sciences purpose of the EBQ allocation and to ensure compliance with other LDP policies.

2.8 Principle 2d has been amended to include some additional uses such as crèche/day nursery and gymnasium which fall within the requested use classes 10 and 11. With regards to leisure developments, an additional principle has been added in order to assess the appropriateness and scale of leisure developments proposed within the EBQ.

Parking

2.9 In order to achieve the overall density desired for the BioQuarter, a number of multi-storey car parking structures will form an integral part of the development. An amendment to the SG has been included to require an overall parking strategy for the EBQ. This should be provided as part of the non-statutory masterplan, and individual applications should contain full details of their proposals accord with this strategy. Further details on parking are set out within the draft masterplan.

Next Steps

2.10 Once finalised, the SG will become a material consideration in the determination of planning applications within the EBQ. Following the adoption of the LDP the SG will be sent to Scottish Ministers for approval with a statement setting out the publicity measures undertaken, the comments received, and an explanation of how these comments were taken into account. It is intended to review this guidance in step with reviews of the LDP (i.e. every five years).

Non-statutory Edinburgh BioQuarter Masterplan

2.11 A draft non-statutory masterplan has been prepared for the Edinburgh BioQuarter which should be read in conjunction with the SG. The masterplan has been prepared in consultation with the Edinburgh BioQuarter partners, which, as well as the Council, include Scottish Enterprise, NHS Lothian, University of Edinburgh and a development partner.

2.12 The aim of the masterplan is to build on the principles set out within the finalised SG, to create a cohesive whole, connecting the various parts of the EBQ together and integrate the EBQ into its surroundings.

2.13 The masterplan provides additional detail to the SG in the form of a key masterplan diagram which defines the location of development, points of access, principal movement routes, main areas of public realm, lines of principal façades and activation, and key areas of landscape retention. In addition, the masterplan sets out further detail in regards to place making, density, building heights, landscape impact, flexibility, transport and connectivity and flooding and drainage.

2.14 Appendix 1 to the draft masterplan contains technical environmental information and Appendix 2 to the draft masterplan provides a report of pre-draft consultation.

Publicity and Engagement

2.15 Pre-draft consultation on the masterplan has been carried out by the EBQ Partners in 2012. However, in order for the Council to adopt a masterplan as non-statutory guidance, it must first be subject to a formal consultation process by the Council.

2.16 The following groups and organisations will be consulted: the EBQ Partners and neighbouring developers, neighbouring authorities, the Key Agencies, universities, health care providers, city-wide amenity bodies, and local communities including Moredun and Craigmillar.

2.17 The masterplan will also be the subject of a statutory Strategic Environmental Assessment process.

3. Recommendations

It is recommended that the Committee:

1. notes the responses received on the draft Supplementary Guidance for the Edinburgh BioQuarter and South East Wedge Parkland (Appendix 1);
2. approves the finalised Supplementary Guidance (Appendix 2); and
3. approves the non-statutory Edinburgh BioQuarter Masterplan in draft for consultation (Appendix 3).

Mark Turley

Director of Services for Communities

Links

Coalition pledges	P8 Make sure the city's people are well-housed, including encouraging developers to built residential communities, starting with brownfield sites
	P15 Work with public organisations, the private sector and social enterprise to promote Edinburgh to investors
	P17 Continue efforts to develop the city's gap sites and encourage regeneration
	P18 Complete the tram project in accordance with current plans
Council outcomes	CO7 Edinburgh draws in new investment in development and regeneration

	CO8 Edinburgh's economy creates and sustains job opportunities
	CO16 Well-housed – People live in a good quality home that is affordable and meets their needs in a well-managed neighbourhood
	CO18 Green – We reduce the local environmental impact of our consumption and production
	CO19 Attractive Places and Well Maintained – Edinburgh remains an attractive city through the development of high quality buildings and places and the delivery of high standards and maintenance of infrastructure and public realm
	CO22 Moving efficiently – Edinburgh has transport system that improves connectivity and is green, healthy and accessible
	CO23 Well engaged and well informed – Communities and individuals are empowered and supported to improve local outcomes and foster a sense of community
Single Outcome Agreement	SO1 Edinburgh's economy delivers increased investment, jobs and opportunities for all
	SO2 Edinburgh's citizens experience improved health and wellbeing, with reduced inequalities in health
	SO3 Edinburgh's children and young people enjoy their childhood and fulfil their potential
	SO4 Edinburgh's communities are safer and have improved physical and social fabric
Appendices	Appendix 1: Summary of Consultation Responses
	Appendix 2: Supplementary Guidance: Edinburgh BioQuarter and South East Wedge Parkland Supplementary Guidance: finalised
	Appendix 3: Non-Statutory Masterplan: Draft for Consultation (Parts 1 & 2)

Respondent	Summary of response	CEC response
Coal Authority	Comments relate to the wider parkland area. • Noted that no built development will be proposed within these green areas, they are being promoted for encouraging greater public access, i.e. pedestrian/cycle access. • The eastern portion of the parkland falls within the Development High Risk Area. There are 5 recorded mine entries within the plan boundary. • It is recommended that the SG includes a requirement for intrusive site investigation works within the proposed line of the pedestrian/cycle access through the South East Parkland quarter. • This will therefore identify to developers that works should be undertaken to ensure that the route will not be adversely affected by past coal mining legacy and therefore create a public safety hazard. • Additional wording is suggested: *"The Parkland as a whole will:……* *g. protect the function of the public transport link, the safeguarded tram route and complete strategic footpath and cycleway networks. Undertake appropriate site investigations and remediation of recorded coal mining legacy feature to ensure public safety."* *"The Edmonstone Estate should:* *b. keep updated and implement an Estate Management Plan which should also ensure that a visual inspection of the coal mining features is regularly undertaken and any noticeable changes in the ground reported The Coal Authority"*	Noted. Ground conditions within the SEW Parkland is dealt with in the draft non-statutory masterplan on page 29
EBQ Partners (ScottHobbs)	**Introduction:** Amend second paragraph as follows: *"This Supplementary Guidance supports the development of the EBQ for life sciences research and ~~directly~~ related commercial developments."*	Not agreed. This statement relates to the main objective for the BioQuarter and hence the SG. Other commercial developments are allowed for within the 50,000 sqm gross of supporting uses,

		which are discussed in later sections.
	Background: Add the following as a last paragraph under this section: *"The SG has been directly informed by the EBQ Masterplan prepared by the EBQ Partners in consultation with CEC, in 2012. The Masterplan was the subject of widespread stakeholder and public consultation during the Summer of 2012. The Masterplan updates previous masterplans prepared for initial phases of development at EBQ and, for the first time, includes the whole of the EBQ. The Masterplan includes a number of illustrative options for the development of the EBQ, based on the Development Principles included in the SG".*	Agreed. The SG has been amended at Paragraph 2.4 to include: The SG has been informed by the preparation of a draft EBQ Masterplan by the EBQ Partners in consultation with CEC. Following formal consultation, the masterplan will comprise non-statutory guidance.
	Development Principle 1c: Amend as follows: *"SUDS should be provided using the existing ponds in the Parkland, **extended as necessary to accommodate the EBQ development,** up to their design capacity, in order to ensure delivery of useable green space within the Parkland. Beyond the capacity of the existing SUDS ponds, all other drainage and treatment should be provided within the EBQ site."*	Not agreed. Paragraph 4.1 has been amended to include additional principle (principle 1b-k) relating to drainage. This has been added to the SG in response to and in consultation with SEPA. Further information on drainage is provided within the draft non-statutory masterplan on page 13.
	Development Principle 2: Amend as follows: *"Ancillary uses are supported to promote place making and provide local services and evening and weekend activity. However the type, and quantity **and form** of ancillary uses must support, not jeopardise, the overall life science purpose of the EBQ".*	Not agreed. The text referred to here is set within the proposed LDP and will need to be considered here.
	Development Principle 2b: Amend as follows: *"A basic assessment of floorspace capacity of the EBQ site **south-east of Little France Drive** has been undertaken based on the more urban approach set out in Principle 1 above".*	Agreed and amended.
	Development Principle 2d: Amend as follows: *"Appropriate**ly integrated** ancillary uses are: retail (class 1), professional services (class 2) food and drink (class 3), business (class 4) hotel (class 7**), Class 8 (residential institutions), Class 9** and (residential), student accommodation (class 9**), Class 10 (non-residential**	Noted. Principle 2d amended: Appropriate integrated supporting uses are: retail (class 1), professional services (class 2) food and drink (class 3), general

	institutions) and Class 11 (leisure).”	business (class 4), hotel (class 7), housing and student accommodation. Additional acceptable uses which fall within a use class include: crèche / day nursery and gymnasium”. This allows for these uses which fall within the requested use classes 10 and 11. Principle 2g has been added which refers to appropriateness and scale of leisure developments.
	Development Principle 3d: Amend as follows: *“To **accommodate** plant for life science uses, building heights 5 metres above these levels will be supported provided they that they have regard to the positioning, scale, form, and detailing in respect of their impact on significant views and the sensitive Edmonstone ridge”.*	Agreed and amended.
	Development Principle 4b amend as follows: *“~~keep updated and implement~~ have an Estate Management Plan **that is updated as consistent with the SG, and implemented in accordance with it”.***	Not agreed. Wording proposed does not improve the current wording in the SG.
Great Liberton Heritage Project	• Concerned when we hear of any proposal to build on any green space or parklands, and of course the conservation of any buildings or remains and write to formally voice our concerns on this project. • On Page 4 item f, regarding “promote the interpretation and conserving of the area's historic sites", our Group would like to ask what these plans consist of and to drill into the details of this statement. For instance who is providing the historic research into the Edmonstone Estate, of which our Group have some knowledge?	Noted. The Historic Environment within the EBQ and SEW Parkland is dealt with in the draft non-statutory masterplan on page 30.
Historic Scotland	• Supports the SG’s emphasis on careful management of building heights and development of the Edmonstone ridge, and are broadly content with the principles set out in relation to heights and the Sensitive Area. • consider that management of heights in general, and development on the ridge in particular, will be central to minimising impacts on the setting of Craigmillar Castle, castle and gardens (Index No. 90129 and a Property in the Care of	Noted. The Historic Environment within the EBQ and SEW Parkland is further dealt with in the draft non-statutory masterplan on page 30. Not agreed. Section 3 specifically relates to the impact of development on Edmonstone Ridge

	Scottish Ministers), and associated Inventory GDL. • Section 3 should also refer to the setting of Craigmillar Castle as a key consideration. • SEW Parkland – welcome inclusion of historic environment asset considerations within this section, particularly in relation to Craigmillar Castle, castle and gardens (Index No. 90129 and a Property in the Care of Scottish Ministers), and associated Inventory GDL, and Home Farm, enclosure 300m ENE of (Index No. 6038). • Recommend that the SG should specify that development of the South Woods should be appropriate to the setting of the scheduled monument at Home Farm.	when viewed from the north. Noted. Principle 4(m) amended **"**recognise the setting of and highlight the Scheduled Ancient Monument (Prehistoric Domestic and Defensive NE of Home Farm) by use of careful interpretation and a maintenance regime"
Liberton & District Community Council	• No objection to the land identified for the BioQuarter in the Adopted Local Plan / Proposed Local Development being removed from the Green Belt to provide land for a global centre of excellence for life sciences. • Fully supports the area's status as an Enterprise Area which recognises its potential for national economic benefits • Supports the new North Meadows and the South Woods park land proposals. • Opposed to any changes to the development plan status of the BioQuarter area from that in the Adopted Local Plan. o no other employment land site enjoys the locational advantages of the BioQuarter site o Scope for extending the BioQuarter in the future is seriously compromised by the proposals contained in the SPG. o Questionable as to how the type of alternative development proposed in the Draft SPG will "protect(s) and enhance(s) the landscape setting of the city." o New development will effectively block and destroy any views which can be currently enjoyed from the edges and within the site and will do nothing to enhance the landscape (i.e. the natural undeveloped areas) of the city.	Noted. This is an LDP issue. Noted Noted Noted. The LDP and EBQ & SEW Parkland SG recognise the importance of the EBQ site for life sciences development in that it is recognised as a special economic area in the LDP. The SG proposes a target floorspace of 245,000 sqm gross for life sciences to support this aim. The SG also allows for supporting uses of 50,000sqm gross are acceptable to support place making within the BioQuarter development. The impact of development on identified views will be mitigated by principle 3b and the design code as set out within the draft masterplan on page 7. The draft

	o The Draft SPG does not indicate the areas to the south of the BioQuarter site which currently have planning permission for institutional purposes and planning permission for housing.	SG does not indicate development within the Edmonstone estate as these proposals have yet to be implemented and the estate remains in the greenbelt.
Ben Malcolm	Overall strongly supportive of these proposals and we will ask our local representatives on the Council to support them. f) Multi-storey carparks are usually eyesores. I hope they can be designed so they do not stick out like Nine does. j) So far, the landscaping of the Bioquarter has been poor, both in design and implementation. k) Retaining as much of the wall along Dalkeith Road helps to retain the existing character of the road. Removal of trees should be an absolute minimum. Public Open Space - It is important to provide space where scientific staff of the BioQuarter can meet informally 2. Floorspace - Specialist buildings can be over-specialised. Uses e. A hotel with reasonable charges is important to serve the needs of the ERI, the BioQuarter and visitors to them. Sensitive areas - The whole area should have a sense of cohesion with a careful choice of the surface treatment of the buildings and their architectural style. 4. SE Wedge Parkland. We strongly support these Proposals.	Noted
	• note there is a major conflict between these proposals and various proposals for a Private Hospital and building developments on the Edmonstone Estate.	Noted
	• maintain public access for walkers from the Gilmerton/Moredun area via the entrance at or near the traffic lights at the top of Dalkeith Road.	Noted. The SG includes a pedestrian/cycle link from Moredun to the SEW Parkland. This is illustrated on the key diagram within the draft NS Masterplan on page 6.
	• area is protected by a TPO and it is recognised as important for its biodiversity. Access here is only permissible now as a result of right of access law. The Drive	Noted. Biodiversity issues are dealt with in the draft NS Masterplan on page 27.

	from the lights has many fine trees. • The area towards The Wisp Is unstable because of mining but I do not think there is much risk to public safety. Any particular weak areas can be fenced off, infilled and trees grown over. • The very limited traffic capacity of The Wisp is a serious problem which the proposals do not appear to address. It is dangerous for pedestrians, cyclists and motorists.	Noted. Advice has been sought from the Coal Authority and ground conditions within the SEW Parkland is dealt with in the draft non-statutory masterplan on page 29. Noted. The SG and draft NS masterplan do not include any access to the Wisp. The proposals within Craigmillar at new Greendykes address pedestrian access at this point.
Persimmon Homes	• Supportive of the Council's ongoing efforts to deliver a global centre for excellence at the BioQuarter. • Promotion of the site for residential is inappropriate and is contrary to the intentions of the BioQuarter as identified within the LDP. • Clear the LDP sets out the aim of the BioQuarter as an economic development site for life sciences with directly related commercial developments. Housing is not a directly related commercial development. The LDP did not envisage that the BioQuarter would include residential development. Mixed use urban quarter is not identified in the LDP • Residential development will have a negative impact on the regeneration of Craigmillar and will dilute the market within this area. Council must take a more strategic view when considering sites for development – and how these will impact on the delivery of existing sites	The LDP (page 64) sets out principles for the development of the EBQ. The LDP states that *Ancillary uses are supported to promote place making and provide local services and evening and weekend activity. However the type and quantity of ancillary uses must support, not jeopardise, the overall life science purpose of the EBQ.* Not agreed. The inclusion of student accommodation and general residential development is seen as supporting the development of a place at the EBQ. The SG therefore allows housing to form part of the 50,000 sqm gross supporting uses floorspace. The SG requires housing development to contribute to the overall aims for density, mixed uses and urban form and should not take place on isolated sites.
Scottish Water	• Protection of the water environment is a vital consideration for any development. Scottish Water therefore welcomes the inclusion of statements highlighting the protection of the water environment, reduction of flooding, the protection of flood plains and the use of Sustainable Urban Drainage Systems	Noted

	(SUDs) within the guidance document	
Scotways	• Two rights of way (LC90 / LC91) • LC90 appears to require a diversion to accommodate the new housing in the Niddrie burn corridor. Procedure to be followed. Eastern exit to be established.	Noted. Location of footpaths is dealt within with the draft NS Masterplan on the key diagram.
SEPA	• Cannot support the SG in its current format as it does not provide this strategy and it may not meet the requirements of SPP or relevant PAN. • The Edinburgh BioQuarter "aims to become a top 10 global centre of excellence for life sciences" (SG, page 3) and this should include being an exemplar of sustainable water management. • The current draft of the SG does not provide a sufficient framework for a strategic approach to water management for individual applicants applying for planning permission in the BioQuarter. • The SG should provide this strategic approach to water management in this area and be integrated with a strategic approach to adjacent development sites. • Specific advice on flood risk, current issues provided.	The Council has worked with SEPA to develop a strategic approach within SG and to work with the BioQuarter Partnership to ensure its effective implementation via the non-statutory masterplan. New principles 1b – k have been added to the SG. However, SEPA has also requested that the finalised SG should include an overview of flood risk and surface water management for the whole EBQ and ERI sites. At this stage, much of the information to complete this assessment is not available or is part of works currently is under construction or currently being agreed.
Scottish Natural Heritage	Feel that important messages should be strengthened: • The careful design and development of the BioQuarter given the landscape sensitivities of the site; welcome clear guidance on building heights. • Potential to create a development that is well designed, walkable and has well integrated green infrastructure AIM - Strongly recommend that the dual aims of the Guidance are set out and that the aspirations for the South East Wedge Parkland are integrated into the overall aim.	Noted Not agreed. The key aim of the SG is to deliver the EBQ. Whilst the SG does include principles which relate to the SEW Parkland, however, these are to ensure that the opportunity to create a new landscape that provides a setting for the EBQ and local communities such as Moredun and Craigmillar is considered whilst the EBQ is developed.

	Principle 1 - Reference to "a compact urban approach" may not set enough of a steer on the urban character or urban design quality that is intended.	Noted. The draft masterplan deals with density on page 7.
	• Query whether 1a) could be construed as seeking buildings which are beyond carbon neutral.	Noted. Buildings will be required to comply with other policies on design with the LDP.
	• b) and c), which both refer to SUDS, could be merged	Noted. SUDs are dealt with under new principle 1h.
	• an additional bullet point could be added to emphasise that high quality landscape design will be an integral part of the place making approach	Noted. See above,
	• Unclear how provision of access will be co-ordinated and delivered throughout the site. e) could state that pedestrian and cycle linkages will be provided rather than should be provided, to clarify the requirement.	Noted. The draft NSG masterplan deals with transport and access on page 12.
	• clarify whether the multi storey car parks will also be bound by the building height principles, clarify form of car parks	All development within the EBQ is bound by the height parameters.
	• Welcome point j) to retain and strengthen the existing landscape along the Edmonstone Estate boundary.	Noted. The draft masterplan key diagram shows the extent of the removal of the wall and trees.
	• support point k) referring to retention of the existing woodland belt adjoining Old Dalkeith Road o Consider there would be strong merit in extending this further down Old Dalkeith Road and to the north west of access point 3 in order to retain a green approach to the city o the large scale loss of this long established woodland would be regrettable. o Important to clearly demarcate what woodland would remain and also to protect this woodland during construction and enhance it thereafter *"as retained, protected during construction and strengthened by appropriate management and further planting…."*	Agreed and Principle 1 (k) amended: The existing woodland belt adjoining Old Dalkeith Road is important in terms of the wider landscape setting of the city and the non-Inventory designed landscape of the Edmonstone estate and the majority should be retained as illustrated on Map 2. Beyond Access Point 3 buildings should address the street, with parts of the existing boundary removed or reconfigured to create more open views to facilitate this.

	• Suggest that the existing boundary wall is also of wider importance and this issue could be drawn out as a separate bullet point. Guidance should seek its repair and retention. Where access is required, the wall could be repositioned or reused to provide appropriate entrance design (and possible protection of woodland at the entrances) rather than just removed. • Public open space - welcome this requirement and suggest that a good urban design principle for this issue could emphasise that a *hierarchy of well connected* and publically accessible open spaces is provided.	Agreed and amended. Principle 1(l) now states: Whilst the SEW Parkland will provide a significant new park for the EBQ and surrounding area, a hierarchy of well connected publicly accessible open space should be provided throughout the EBQ site including pocket parks, gardens and public squares.
	Principle 2: Lack of clarity on possible quantities or locations of residential development and this could pose problems for achieving aims set out elsewhere in the guidance.	Not agreed. The SG allows for the quantity of residential development to be flexible based on a upper limit of 50,000sqm gross of all forms of supporting uses. Residential development is required to contribute to the overall aims for density, mixed uses and urban form and should not take place on isolated sites.
	<u>South East Wedge Parkland</u>	
	• Development Principle 4 - should focus on the delivery of the Parkland rather than the BioQuarter (which could be put forward as a sub-principle).	Noted. This is in relation to the principles set out within the LDP and will be dealt with at this level.
	• The principles in the draft SPP section on green infrastructure are highly relevant and could be used.	Noted. The draft SPP is out for consultation. The SG is designed to be reviewed on a regular cycle taking into account changes in national policy.
	• The wider context and wider importance of the proposed park should be clearly set out in the guidance to allow a more robust rationale for the guidance to be set out: o Strategic role of the park, as a green network development opportunity identified as a priority in the City's Open Space Strategy o highlighting the importance of connections to other green infrastructure assets and communities which bound the proposed park,	Noted. The Spatial Strategy is set out with the LDP. SEW Parkland is within the OSS.

	• Potentially a tension between a) low maintenance, and e) provision of areas for target species and habitats, as the latter could imply that more specialist areas could need greater management.	Agreed and amended.
Transport Scotland	• Wish to be involved in the area specific protocol to be taken forward • Position set out in response to LDP in respect of BioQuarter's impact on A702 Sherriffhall Junction. • Requirement for developers to contribute to upgrades at this location. • The supplementary guidance should include reference to the need to contribute towards these upgrades.	Noted. Sheriffhall upgrade is identified within SDP and relevant land in CEC area is safeguarded from development in LDP. Cross border mechanism to collect developer contributions is being progressed.

Late Representations

Springfield Properties	• Consultation on the SG is premature in light of the emerging revisions to the LDP a rising as a result of the SDP. The SG should not be finalised until a revised Proposed LDP is approved by committee. • The site at The Wisp can make a substantive contribution to the SDP requirements removed from the greenbelt and the SEW parkland proposal in the SG.	Not agreed. The SG is to be finalised at this stage and if changes are made to the spatial strategy in this location then the SG will be updated to reflect this. The SG is required to comply with the adopted LDP.
Sheraton Ltd	• Consultation on the SG is premature in light of the emerging revisions to the LDP a rising as a result of the SDP. The SG should not be finalised until a revised Proposed LDP is approved by committee. • The site at Edmonstone can make a substantive contribution to the SDP requirements removed from the greenbelt and the SEW parkland proposal in the SG. It is proposed that ground stability within the Edmonstone Estate can be addressed by the proposals.	Not agreed. The SG is to be finalised at this stage and if changes are made to the spatial strategy in this location then the SG will be updated to reflect this. The SG is required to comply with the adopted LDP.

December 2013

APPENDIX 2

Finalised Edinburgh BioQuarter and South East Wedge Parkland Supplementary Guidance

Changes from draft SG highlighted in red

Contents

Maps

Finalised Edinburgh BioQuarter and South East Wedge Parkland Supplementary Guidance

1.0 Introduction

1.1 This document comprises Supplementary Guidance under Section 22 of the Planning etc. (Scotland) Act 2006 and, once adopted will form part of the development plan. This Supplementary Guidance covers the Edinburgh BioQuarter (the EBQ) the South East Wedge Parkland (the Parkland), surrounding land and the Edmonstone Estate.

1.2 This Supplementary Guidance supports the development of the EBQ for life sciences research and directly related commercial developments. Proposals within the EBQ will be assessed against the BioQuarter Development Principles set out in Part 1, Section 5 of the LDP, Policy Emp 2 Edinburgh BioQuarter, this Supplementary Guidance and other relevant local plan policies. This SG also sets out principles to support the development of the South East Wedge Parkland (Proposal GS4) in the LDP.

1.3 The extent of the area covered by this Supplementary Guidance is illustrated in Map 1, with development principles illustrated on Maps 2 and 3. It is intended to review this guidance in step with reviews of the LDP (i.e. every 5 years).

2.0 Background

2.1 The Edinburgh BioQuarter (EBQ) aims to become a top 10 global centre of excellence for life sciences offering opportunities for academic, commercial and clinical research and development with health care, teaching facilities and appropriate support services and facilities. In January 2012, the Scottish Government designated the EBQ as an Enterprise Area due to its potential for national economic benefit, its ability to stimulate improved and sustained business and job creation and its deliverability.

2.2 The EBQ is identified as a Special Economic Area in the LDP. Special Economic Areas are areas of strategic economic importance, providing or with the potential to provide a significant number of jobs. The growth of these areas, through new businesses and the expansion of existing businesses will make a significant contribution towards meeting the plan's economic development objectives.

2.3 The context for the South East Wedge Parkland was first established with the approval of the Craigmillar Urban Design Framework (CUDF) in 2005. The CUDF set out that the area should be developed as a significant new strategic park linking with parallel developments in Midlothian. There is an opportunity within the Parkland to create a new landscape that provides a setting for the EBQ and local communities such as Moredun and Craigmillar.

2.4 This SG has been informed by the preparation of a Masterplan for the Edinburgh BioQuarter by the EBQ Partners in consultation with CEC. Following formal consultation, the Masterplan will comprise non-statutory guidance for the Edinburgh BioQuarter.

3.0 Aim

3.1 The aim of this Supplementary Guidance is to realise the full life sciences potential of the Edinburgh BioQuarter; in a mixed use, urban quarter, which protects and enhances the landscape setting of the city.

4.0 Edinburgh BioQuarter Development Principles

4.1 Proposals for development within the EBQ will be supported which adhere to the following principles:

1. **A higher density, more urban form of development than previously planned, with less land taken up by surface car parking is required to realise the EBQ's potential. A compact urban approach is also more likely to foster a sense of place, attractive to workers and visitors.**

Buildings and Layout

a. Buildings should achieve the highest level of sustainable design, reduce carbon and greenhouse gas emissions and make efficient use of energy, resources and land.

Flooding and Drainage

b. Development within the EBQ must not increase the risk of flooding elsewhere within the site, in particular with regard to the ERI. The EBQ masterplan and future planning applications should ensure coordination with flood defences within the ERI, the Niddrie Burn Restoration Project, and tramline 3.

c. Phasing of development within the EBQ must not introduce secondary pluvial (i.e. rain-related) flood risk through the introduction of low lying areas or by obstructing existing pluvial flow routes.

d. Any changes to landform (paths and soft landscaping) within the EBQ, the south East Wedge Parkland and as part of the Niddrie Burn Restoration Project should be designed to maintain existing surface water flow paths and avoiding low lying areas prone to pluvial flooding.

e. Any mitigation works or areas used for flood risk management should be maintained and protected in perpetuity against any future development.

f. The proposed foul and surface water drainage systems for the overall BioQuarter SG site should be designed in line with current guidance and best practice. This includes Sewers for Scotland 2nd Edition, relevant British Standards and CIRIA guidance and Designing Streets amongst others. Drainage systems are required to be designed to meet the requirements and stipulations of the approving bodies.

g. The surface water system will need to limit discharge into the receiving watercourse/sewer to the agreed flow and quality.

h. A 'treatment train' of SUDS measures should provide the required and agreed treatment and attenuation volumes and amenity and biodiversity enhancements. This 'treatment train' will include source control, site control and on-site regional control measures as appropriate.

i. Source control measures, within the individual development plots, will include green roofs, filter blankets/trenches, permeable paving and bio-retention features. Site control measures could include swales and other linear SUDS features, and regional control measures, which will be provided by on-site SUDS ponds, detention basins or below ground containment. Innovative and creative features

and landforms will be encouraged and quality hard landscape details appropriate to the location.

j. Planning applications should include a flood risk assessment and surface water management plan to show that development is not at risk of flooding in a 1:200 year (0.5% Annual Exceedence Probability (AEP)) flood from a watercourse and to ensure that flood risk elsewhere is not made worse by runoff from the development. An allowance should be made for climate change. An exception to this is for essential civil infrastructure, where 1:1000 year flood is required.

k. Full details of drainage measures will be expected to be submitted with individual planning applications. Each application will be required to demonstrate that it has made adequate provision for the treatment of surface water in line with the SG's preferred treatment train or hierarchy (source control first) and preferred treatment methods.

Vehicular, Pedestrian and Cycle Access

l. Vehicular access to the EBQ site is to be taken from Old Dalkeith Road and Little France Drive only. An additional access point from Old Dalkeith Road is supported and defined on Map 2 as Access Point 3. No vehicular access to the EBQ site should be taken from The Wisp due to the traffic impact and the visual impact on the greenbelt and the SEW Parkland.

m. Pedestrian and cycle linkages should be provided within the EBQ site and from the EBQ and Craigmillar to the SEW Parkland. Pedestrian and cycle routes should connect to long range strategic cycle paths as identified on Map 2.

Parking

n. In order to achieve the overall density of the new urban quarter, a number of multi-storey car parking structures will form an integral part of the development. An overall parking strategy for the EBQ should be provided as part of the non-statutory masterplan, and individual applications should contain full details of their proposals accord with this strategy.

Frontages

o. Buildings should have active ground floor frontages addressing key vehicular, pedestrian and cycle routes and spaces to allow visual contact and pedestrian movement between inside and out.

p. The building line along Little France Drive should be brought forward to allow building entrances to address the street. Sufficient space for pedestrian and cycle functions and the safeguarded off-road tram route should be retained.

q. Building frontages should address the SEW Parkland and be integrated into the landscape, taking advantage of the parkland setting.

r. The existing landscape along the Edmonstone Estate boundary should be retained and strengthened in accordance with the approved Estate Management Strategy and informed as necessary by the 2010 Survey of Gardens and Designed Landscapes in Edinburgh.

s. The existing woodland belt adjoining Old Dalkeith Road is important in terms of the wider landscape setting of the city and the non-Inventory designed landscape of

the Edmonstone Estate and the majority should be retained as illustrated on Map 2. Beyond Access Point 3 buildings should address the street, with parts of the existing boundary removed or reconfigured to create more open views.

Public Open Space

t. Whilst the SEW Parkland will provide a significant new park for the EBQ and surrounding area, a hierarchy of well connected, publicly accessible, open space should be provided throughout the EBQ site including pocket parks, gardens and public squares.

2. Ancillary uses are supported to promote place making and provide local services and evening and weekend activity. However the type and quantity of ancillary uses must support, not jeopardise, the overall life science purpose of the EBQ.

Floorspace

a. Floorspace within the EBQ should be predominantly specialist buildings for life sciences research and development, teaching, health care and clinical uses as well as directly related commercial life sciences developments.

b. A basic assessment of floorspace capacity across the EBQ site has been undertaken based on the more urban approach set out in Principle 1 above. The maximum floorspace capacity of the site south of Little France Drive has been calculated to be 295,000 sqm gross. The target for life sciences floorspace is 245,000 sqm gross.

c. Up to 50,000 sqm gross of ancillary uses will be supported in addition to the target level of life science use. These numbers are to be monitored at regular intervals by CEC and the EBQ partners, in line with the ongoing review of the SG, to demonstrate that the target life sciences capacity can still be achieved. There will only be spare land capacity for such uses if car parking is provided in multi-storey form.

Uses

d. Appropriate supporting uses are: retail (class 1), professional services (class 2) food and drink (class 3), general business (class 4), hotel (class 7), housing and student accommodation. Additional acceptable uses include: crèche / day nursery and gymnasium.

e. The scale of retail proposals will be assessed using LDP Policy Ret 5 (out of centre development). That policy recognises that there are benefits in providing small scale, convenience stores (up to 250 sqm gross floorspace) within the BioQuarter to provide local shopping facilities.

f. The scale of new general office development will be assessed using LDP Policy Emp 1 criterion c.

g. The appropriateness and scale of leisure proposals, including a gymnasium, will be assessed using LDP Policy RET 7 (entertainment and leisure developments – other locations).

h. Student accommodation will be supported within the EBQ due to its proximity to university teaching and research facilities and in terms of access to public transport.

i. Residential accommodation is seen as being appropriate to help to develop the "mixed use, urban quarter", an aim of the SG as articulated in Principle 1 above. Any residential development should contribute to the overall aims for density, mixed uses and urban form and should not take place on isolated sites.

3. Development at the BioQuarter must respect the site's sensitive location within the wider landscape setting of the city. The extent of development and building heights, particularly on the upper slopes, must be carefully managed.

Heights

a. To accommodate life sciences uses, maximum heights across the site are expected to be 20 metres (including plant). There may be scope for buildings taller than 20m and if these are proposed they will require to be assessed by a further landscape and visual impact assessment (LVIA).

Sensitive Area

b. The Edmonstone ridge is an important part of the landscape setting of the city. Development on the upper slopes of the EBQ site will have an adverse effect on this. In order to mitigate this impact, part of the site has been identified as sensitive. The Sensitive Area is illustrated on Plan 3.

c. Within the Sensitive Area, building heights up to the OSD heights shown on plan 3 will be supported.

d. To accommodate plant for life science uses, building heights 5 metres above these levels will be supported provided they that they have regard to the positioning, scale, form, and detailing in respect of their impact on recognised views and the sensitive Edmonstone ridge. Such proposals will be required to comply with a design code prepared for the site.

5.0 South East Wedge Parkland Development Principles

5.1 The following development principles apply to the South East Wedge Parkland.

4. The BioQuarter should front onto and connect with the adjacent South East Wedge Parkland (Proposal GS 4), a key element of the Plan's Spatial Strategy.

The Parkland as a whole will:

a. have a clearly defined landscape structure which is designed with future use and low maintenance in mind,

b. be a visually stimulating environment which provides clear transition between the urban area and Edinburgh's rural hinterland,

c. use a limited palette of parkland furniture including benches, signage and footpath surfacing – exceptions to this should be high quality public art,

d. through its design, walkways and planting, protect views to Craigmillar Castle, Arthur's Seat and Edinburgh Castle,

e. maximise biodiversity throughout the design,

f. promote the interpretation and conservation of the area's important archaeological and historic sites and monuments, including the remains of the Edmonstone Estate, Niddrie Marischal and the scheduled ancient monument located NE of Home Farm; and,

g. protect the function of the public transport link, the safeguarded tram route, and complete strategic footpath and cycleway networks (safeguards 37 and 9).

The North Meadows should:

h. create an attractive setting for the new adjacent buildings at the Edinburgh Royal Infirmary and housing at Greendykes South,

i. accommodate flood water storage, and,

j. enhance the setting of Craigmillar Castle and its Designed Landscape.

The South Woods should:

k. create a robust and defensible edge to the housing at New Greendykes, the EBQ and the edge of the built up area,

l. frame views of Craigmillar Castle, Edinburgh Castle and Arthur's Seat from Edmonstone ridge,

m. recognise the setting of and highlight the Scheduled Ancient Monument (Prehistoric Domestic and Defensive NE of Home Farm) by use of careful interpretation and a maintenance regime, and

n. recognise and protect the Edmonstone estate boundary and remains of Home Farm.

The Edmonstone Estate should:

o. conserve, enhance and maintain the surviving structure, and landscape elements of Edmonstone and Niddrie Marischal.

p. keep updated and implement an Estate Management Plan

The Niddrie Burn Corridor should:

q. provide space for the Niddrie Burn to flood safely,

r. create a safe and informal recreational space for the local community, allowing those on both sides of the river to interact,

s. create a highly valuable wildlife corridor with a variety of habitats, ensuring that the surveyed otter population and potential water vole population can move freely along the watercourse, and,

t. conserve, interpret and enhance historic elements of the burn.

6.0 Implementation and Delivery

6.1 This document sets out Supplementary Guidance in connection with Edinburgh Local Development Plan Policy Emp 2: Edinburgh BioQuarter and Proposal GS4: South East Wedge Parkland. In order to comply with the development plan, development proposals are required to adhere to the principles set out within this guidance.

6.2 In addition, other Local Development Plan policies and Action Programme requirements also apply, in particular those relating to developer contributions, urban design, landscape and open space in new development.

6.2 This Supplementary Guidance is accompanied by a non-statutory masterplan prepared by the EBQ Partners in conjunction with CEC. The masterplan includes a design code for the Sensitive Area.

6.3 The Supplementary Guidance is also supported by an area specific protocol agreement which sets out how the Council, Edinburgh BioQuarter Partnership (EBQP) and subsequent developers can work together to ensure a speedy, responsive and efficient planning delivery. The protocol agreement relates to the stages subsequent to the approval of the LDP, the supplementary guidance and the EBQ Masterplan, In particular it relates to the submission of planning applications within the overall EBQ site.

Edinburgh BioQuarter Non-Statutory Masterplan
Draft for Consultation, December 2013

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Contents

Introduction

This masterplan will form Non-Statutory Guidance for the Edinburgh BioQuarter (EBQ). It should be read in conjunction with the Supplementary Guidance (SG) for the Edinburgh BioQuarter and South East Wedge Parkland.

The Supplementary Guidance (SG) supports the development of the EBQ for life sciences development and directly related commercial developments. The SG sets out development principles for Edinburgh BioQuarter including the location of development, quantum of floorspace, acceptable uses, heights and massing of development, site access points, and areas of landscape sensitivity.

This consultation draft, non-statutory masterplan provides additional detail in the form of a key masterplan diagram which defines in more detail the location of development, points of access, principal movement routes, main areas of public realm, lines of principal façades and activation, and key areas of landscape retention. In addition the masterplan sets out further detail in regards to placemaking, density, building heights, landscape impact, flexibility, transport and connectivity and flooding & drainage.

Appendix 1 to this guidance contains technical information on:

- Air Quality
- Noise
- Ecology and Biodiversity
- Ground Conditions
- Water Resources
- Archaeology and Cultural Heritage
- Transport Appraisal

Appendix 2 to this guidance provides a report of pre-draft consultation.

This non-statutory masterplan, in parallel with the SG, will provide the basis from which subsequent detailed planning applications and design proposals will be assessed.

Aerial Photograph of the Edinburgh BioQuarter Site

Background

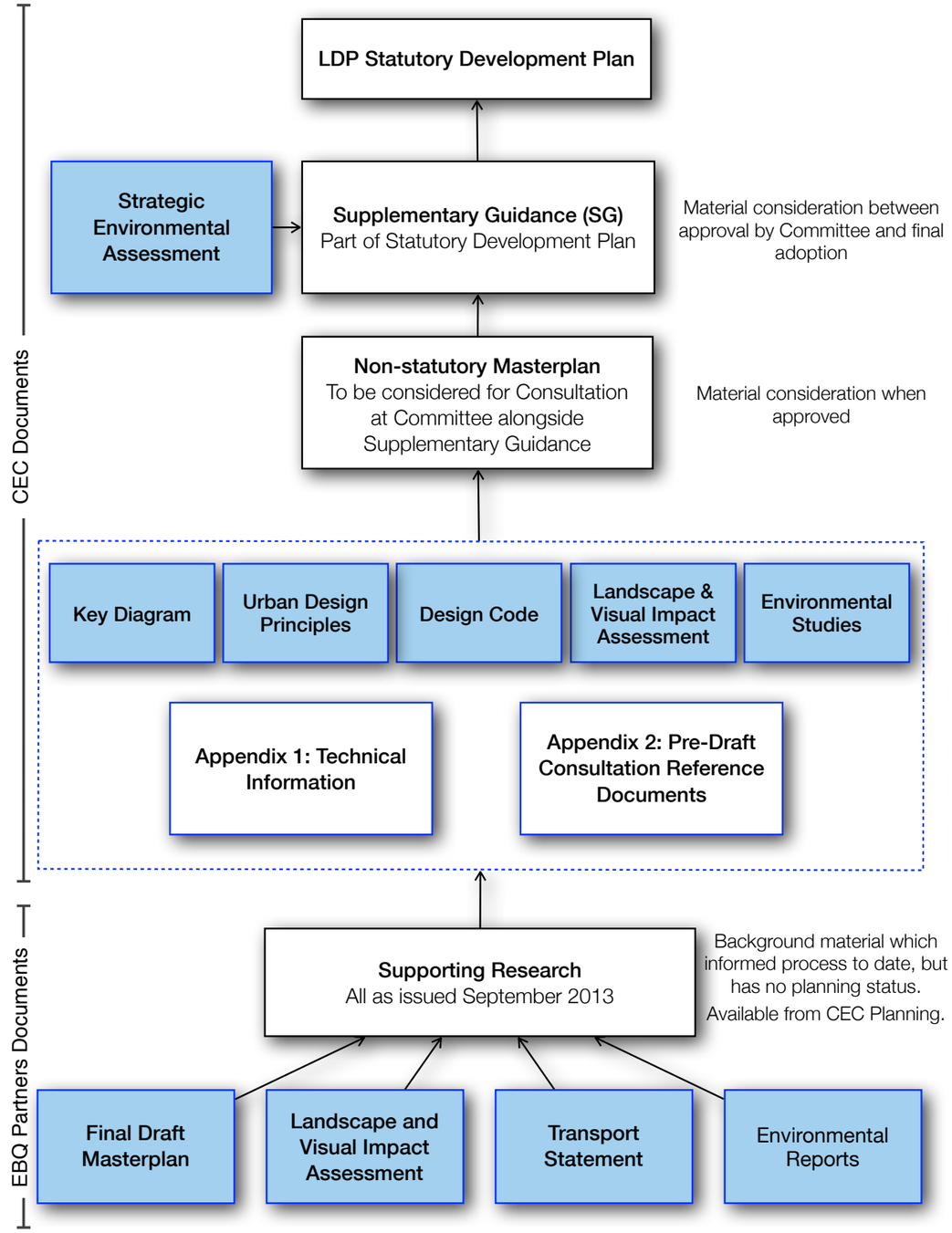
This Masterplan forms an important part of the Edinburgh BioQuarter Partner's (EBP) long term ambitions for the BioQuarter, a plan that will mature over the next 20-30 years as the requirements of Life Science buildings evolve.

The Royal Infirmary of Edinburgh has transformed the character of this 'edge of city' location into an area of significant built form. The hospital already attracts a large number of people and, coupled with the potential future developments on the BioQuarter, the character of the area will further transform from rural hinterland to a more urban character.

It is not only the BioQuarter site that is undergoing significant change. The 1998 South East Wedge Joint Development Study and the Craigmillar Urban Design Framework (approved in 2005 and updated in 2013) sets out the extent of new lands given over to housing, including the Greendykes edge to the north. These developments once completed will create a clear northern edge to the landscape strongly defining the open space as well as reinforcing the open space as amenity space for the BioQuarter and the wider community.

This draft Edinburgh BioQuarter (EBQ) Masterplan and supporting documents have been the subject of pre-draft consultation throughout its preparation in 2012. A report of this consultation is provided in Appendix 3. This pre-draft stage has informed the preparation of the EBQ SG, and this masterplan.

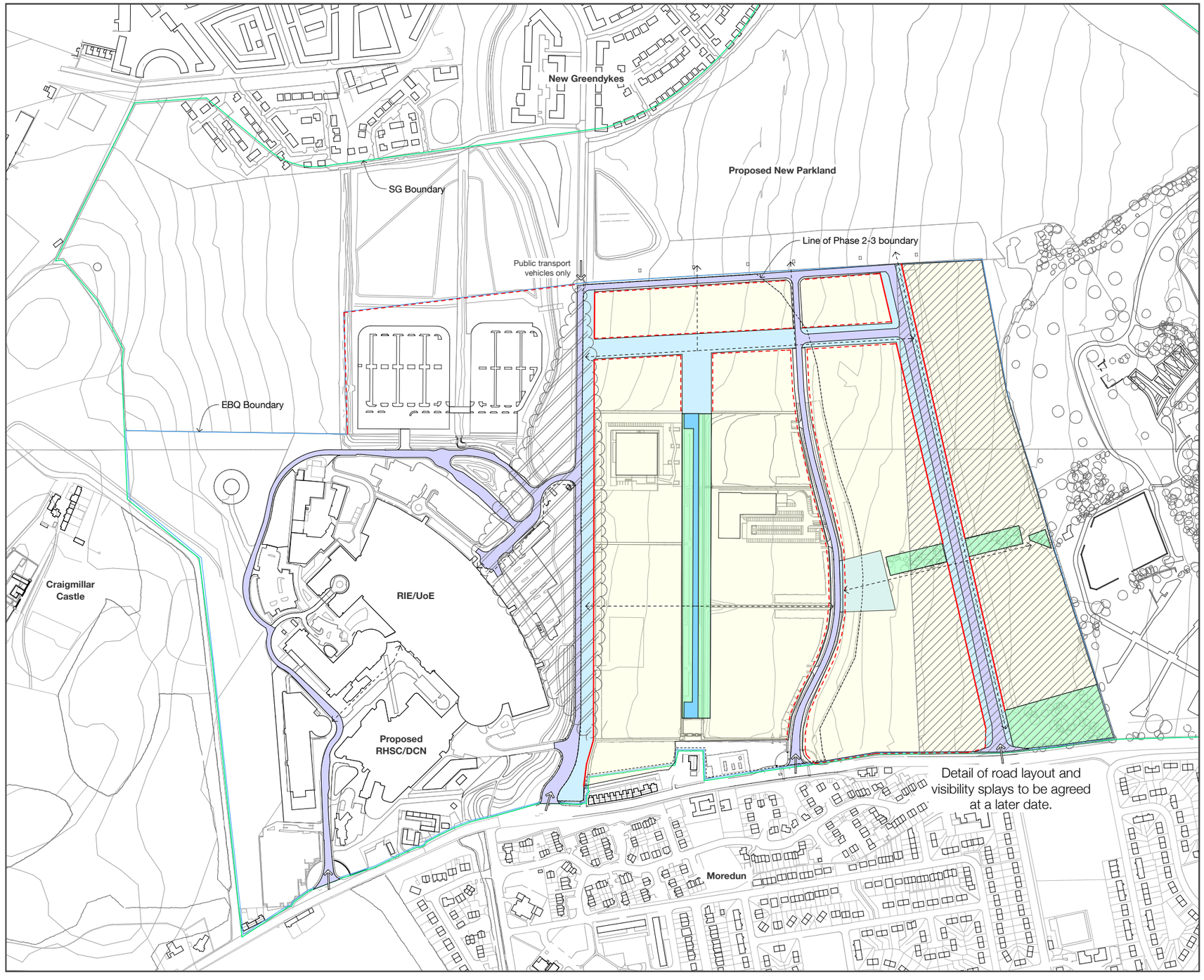
The consultation draft, non-statutory Masterplan has been informed by regular meetings with City of Edinburgh Council (CEC) key stakeholders and consultees and the surrounding communities to determine the best approach to the creation of a world class Life Sciences environment at the BioQuarter.



Organogram showing the relationship between the EBQ Partners' documents, the Supplementary Guidance & the Non-Statutory Masterplan

Masterplan and Urban Design Principles

Key Diagram



- Primary Access Road
- Enhanced Public Realm
- Retained Landscape
- Retained Water Feature
- Vehicular Access
- Indicative pedestrian/cycle routes
- Area of potential future works to public realm to enhance connectivity between Phase 1 & Phases 2-4
- Principal Frontages
- Frontage opportunity
- Development Area, described within Development Principle 2 of the SG — building height up to 20m, outwith the Sensitive Area
- Sensitive Area — Life Science buildings up to 20m high, other buildings 15m high
- Extent of Phase 2 & 3

N

0 50 100 150 200m

Placemaking

Like many of their competitors, the presence of a major hospital, together with University Medical School and clinical research organisations form the heart of the Edinburgh BioQuarter. However, successful examples of the Edinburgh BioQuarter's global competitors illustrate that it is also the external environment that is a significant factor in attracting global investment, global institutions and importantly, retaining a highly skilled workforce. Global competitors are increasingly locating in more dense, urban environments where there is greater co-location between functions and a high degree of connectivity between buildings.

There is also a strong trend toward a more diverse range of functions and uses to support the Life Sciences facilities. This includes services such as cafes and restaurants, but also offices supporting services such as IP and legal professionals, marketing and venture capital, as well as hotels, and student and residential accommodation. These uses are very important to create a sense of place and support a more sustainable BioQuarter community. The Supplementary Guidance outlines the quantum and types of uses that would be considered appropriate to include in the BioQuarter.

The masterplan's objective is to therefore create a physically integrated environment, with as a cohesive brand and identifiable sense of place that will be easy to use, easy to understand and that will promote a high level of interaction between users and co-location between BioQuarter businesses. The proximity of Life Science buildings, with a quality urban environment linking them together, enlivened by a balance of mixed supporting uses is therefore key to making the BioQuarter attractive to investors and the people who will work there.

Density

The masterplan seeks to create urban blocks that promote a number of buildings in proximity to each other. The overall strategy for the site recognises the need for integration of public transport and that in order to achieve the building development densities car parking will need to be in multi level structures.

Flexibility

Life Science buildings require very high levels of technology and servicing and the needs of the future buildings within a very dynamic and emerging research field are not fully known and therefore cannot be fully prescribed in terms of size, shape or form. A robust masterplan must be able to adapt and accommodate a very dynamic and changing business and therefore flexibility is fundamental to its usefulness and its ability to deliver buildings.

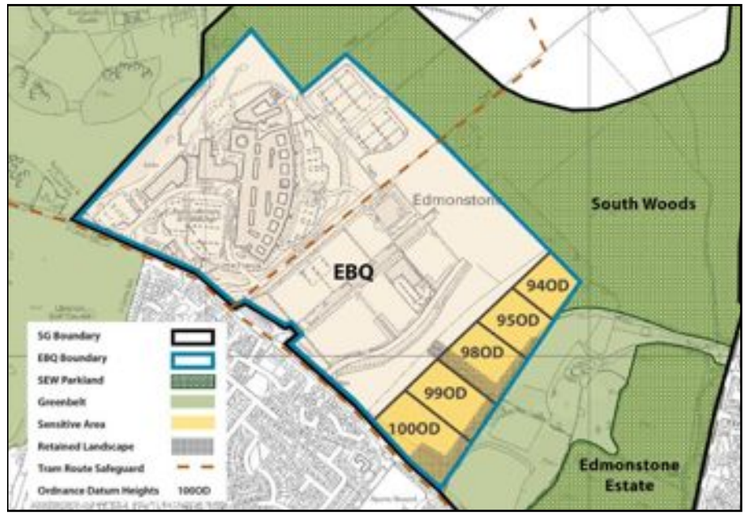
One of the most problematic issues with many masterplans which adopt the 'business park' approach is that they are overly prescriptive and plan for very similar models of built form. Therefore, this masterplan seeks to structure the main urban blocks only and not to subdivide these further into plots for development. In this manner the masterplan will be able to accommodate a number of future building sizes and forms.

Design Code

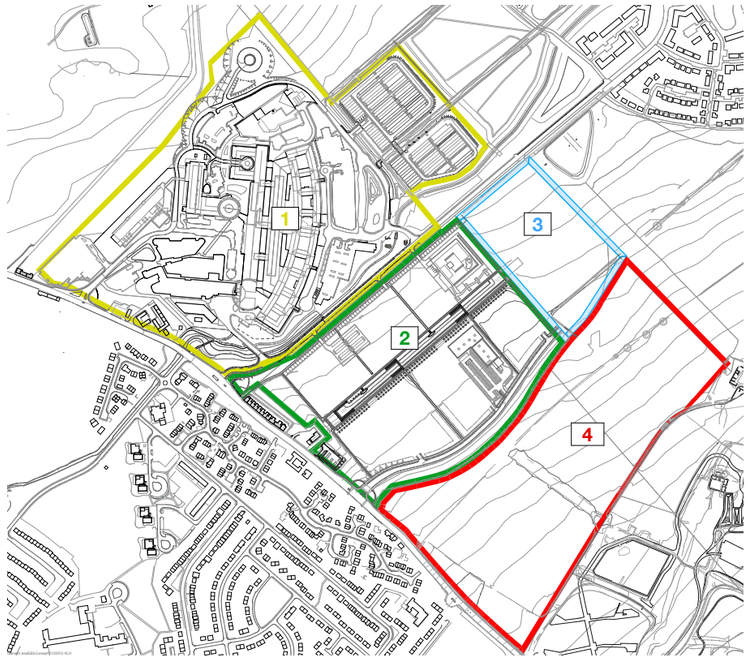
The SG identifies a Sensitive Area where building height is reduced to 15m with an additional 5m zone in which life sciences floorspace and plant will be allowed, subject to it complying with a design code for the area. The aim of the design code is to ensure that views to Edmonstone ridge are carefully considered in the design of the building form. Building form within the sensitive area should be designed to a high standard and avoid long visually unbroken horizontal lines with no single roof line element exceeding 20m in width viewed from Little France Drive or 40m in width when viewed from Old Dalkeith Road.

Building Heights and Landscape Impact

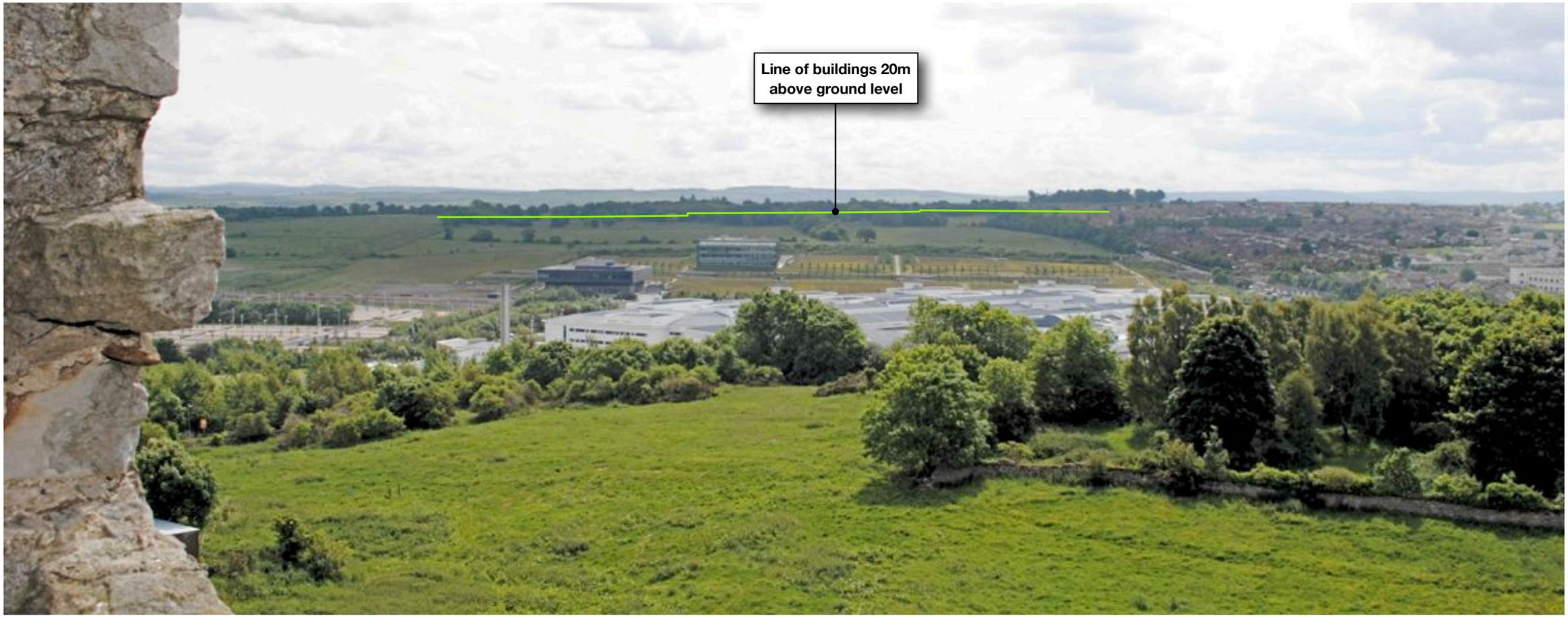
The SG sets maximum heights across the site. These are balanced between the functional requirements of the research buildings and the visual character of the site particularly the landscape ridge of Edmonstone estate to the south east. A visual assessment of the impact of the BioQuarter has been undertaken and key views from the massing model are included within the masterplan..



Extract from CEC Supplementary Guidance Map 3



Edinburgh BioQuarter Phasing Diagram



View from Craigmillar Castle

View from Old Dalkeith Road

View from Edge of Hawkhill Woods

View from near Meadowfield Drive

Transport and Connectivity

There are considerable physical barriers to greater integration of the site. The Niddrie Burn and flood prevention works, Little France Drive, reservation zone for the tram line, canals as water features and man-made bermed slopes all form physical barriers which make simple pedestrian connections across the site difficult, dislocating the buildings from one another.

The masterplan seeks to create network of roads, paths and pedestrian zones that will focus movement in a more coherent manner. A transport appraisal for the entire EBQ development site was been carried 2012 and is provided in Appendix 1.

Walking and Cycling

The transport appraisal identifies the walking and cycling provision at and around the existing site area. It also identifies where improvements are required. These include pedestrian / cycle routes:

- from the BioQuarter to Moredun and the A772.
- connecting the EBQ with the RIE, aligned along a vista of Craigmillar Castle, with a new bridge over the existing canal, to improve connectivity.
- to the northeast, aligned on a vista of Arthur's Seat.
- connecting Craigmillar Castle Road and Greendykes Road to the Wisp and beyond, potentially planted with trees to form a pleasant avenue which would be attractive to pedestrians and cyclists. The line of this route is set out within the SG.

Public Transport

The transport appraisal identifies that there is excellent bus provision to the area (up to 28 buses per hour in each direction), with high bus mode share for both the RIE and the University of Edinburgh (UoE). The transport appraisal predict that the EBQ development will result in an additional 900 public transport trips in both morning and evening peaks. The masterplan therefore proposes new bus hubs at the RIE and at the central part of the western site boundary of Phase 4 (on Little France Road). The masterplan also allows for a new tram stop to be incorporated near the RIE entrance should the proposed Tram Line 3 go ahead.

Vehicular Traffic

The transport appraisal also identifies the required mitigation to local roads and junctions, including minor mitigation to Little France Crescent and Little France Drive, as well as the design of the further two access points. The access to Phase 4 is proposed in the report as being at the southeast corner of the Phase 4 site, leading northeast onto the site from the A7. The location of this access is identified on the key diagram. The route options as presented in the masterplan concept are flexible, to allow optimisation of design as future development of the site and wider area progresses.

Mitigation of the transport impact of the EBQ will need to be considered strategically for the overall development, and cumulatively with other committed and proposed development in the wider area. Policies DTS1 and DTS2 of the Proposed LDP, as well as the Council's Action Programme and draft guidance on developer contributions set out the requirements for the Edinburgh BioQuarter.

Parking

Public transport provision and walking/cycling have been carefully considered in the evolution of the masterplan, with a view to minimising the need for car use to access the site. However, parking requirements have also been considered, for the site and with consideration of the wider area. In order to achieve the overall density of the EBQ and to deliver the quantum of floorspace required, a number of multi-storey car parks will form an integral part of the development over time.

Figure A.1 – Long term bus access strategy

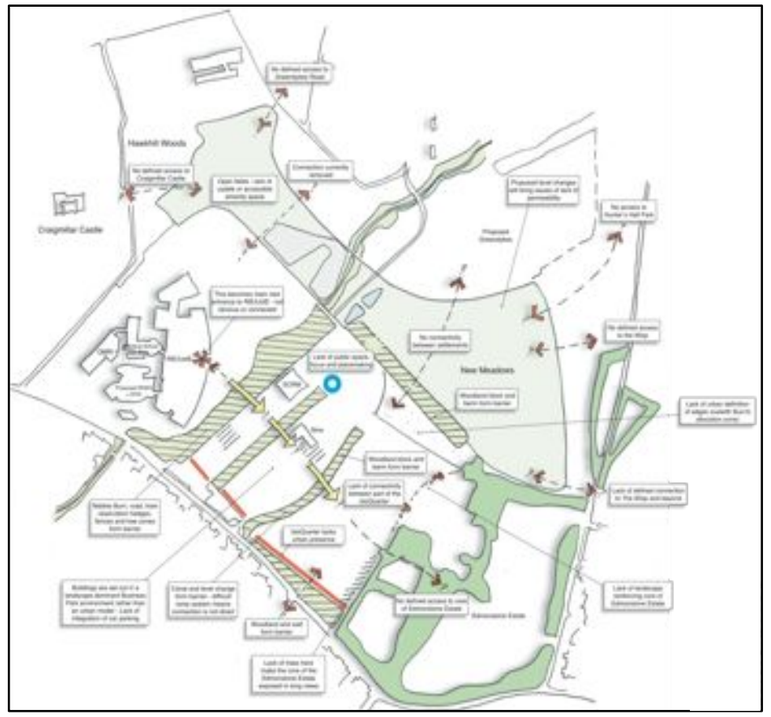


Figure – site constraints

Flooding and Drainage

Site Overview

The proposed site is approximately 39.4 hectares in area, generally rectangular in shape.

The northern part of the site is partially developed as BioQuarter Phase 2, with earthworks platforming in place, along with perimeter roads, plot drainage/utility infrastructure and network connections installed. Only two of the development plots are currently developed and occupied.

To the east (Phase 3) and south (Phase 4) the site is currently open fields.

The site is bounded:

- To the south east by the grounds of Edmonstone Estate;
- To the south by a tree belt and beyond by Old Dalkeith Road (A7);
- To the north west by Little France Drive, the Niddrie Burn and the roads, car parks and buildings of the Edinburgh's Royal Infirmary (ERI) site beyond; and
- To the north east by open fields
-

An as-built topographical survey of BioQuarter Phases 2 & 3 was carried out which indicates levels ranging from 53.96m Above Ordnance Datum (AOD) to 51.90m along the north west boundary with Little France Drive. The survey shows the levels ranging from 71.21m to 75.14m along the defined boundary between BioQuarter Phase 2 and 4.

Ordnance Survey mapping indicates contours between 75.0m – 85.0m, north to south, across the Phase 4 site.

Phases 2 to 4 - Stage 1 Flood Risk Assessment

A Stage 1 Flood Risk Assessment has been carried out to identify and quantify flooding issues associated with the BioQuarter, a life science and commercial development located in south east Edinburgh.

The assessment focuses on the Phases 2, 3 and 4 development areas, south of Little France Drive, and does not include assessment of developed areas, or sites earmarked for future development within Phase 1, i.e. Edinburgh Royal Infirmary, Royal Hospital for Sick Children or other adjacent NHS and UoE buildings.

The report takes into account the recommendations of the Scottish Planning Policy (SPP), issued by the Scottish Executive in February 2010, Planning Advice Note PAN 61 Planning and Sustainable Urban Drainage Systems, issued by the Scottish Executive in July 2001, and the Guidance Note for Sewers for Scotland 2nd Edition, issued by the Scottish Executive in November 2007.

SPP identifies flood risk as a specific consideration in the allocation and release of sites for new development. The Government's sustainable development strategy makes it a requirement to assess forms of development for areas at risk of flooding. This is to avoid an increase in the need for flood defences. A requirement of SPP is that developers who submit planning applications for sites potentially at risk from flooding, or whose proposals could materially increase the probability of flooding elsewhere, should consult with the local authority and, where appropriate, produce a Flood Risk Assessment for their proposals.

The flood risk assessment should show that the development is not at risk in a 1:200yr (0.5% AEP) flood from a watercourse, allowing for climate change, and assuming no land raising is introduced to protect the development within the functional flood plain.

Existing Watercourses—Niddrie Burn

The Niddrie Burn rises as the Lothian Burn in the Pentland Hills 7km south west of the proposed development site. From its origin the burn meanders in a generally easterly direction and is culverted beneath the A720 Edinburgh City Bypass.

The burn continues generally eastwards crossing beneath Burdiehouse Road, before turning to flow north between residential areas. Over this section, the burn is known as the Burdiehouse Burn.

The burn continues to flow northwards, turning to the north east, and is culverted beneath Gilmerton Road (A772). The burn thereafter routes through the Edinburgh Royal Infirmary (ERI) site at Little France. The burn is called the Niddrie Burn from this point.

As the burn routes north east from the ERI site the previous alignment of the burn, bifurcating into two separate channels, and routed to culverts laid under the Greendykes residential area, has been altered to realign the watercourse to its historical meandering routing across the flood plain. This is as part of a scheme known as the Niddrie Burn Restoration (NBR). The NBR has recently been completed by CEC and includes a 2km long, two-stage channel construction, flood management control/ storage elements and improvements to the existing ERI surface water outfalls.

The watercourse connects back to its previous alignment at a point adjacent to the Jack Kane Leisure Centre.

The burn then routes north eastwards, known as the Brunstane Burn, and reaches its outfall to the Firth of Forth at Joppa.

The section of burn immediately upstream of the NBR, within BioQuarter Phase 1, is known to have a flooding problem, and is currently being assessed for flood mitigation measures as part of Royal Hospital for Sick Children (RHSC) advanced works. A flood risk assessment and mitigation strategy is under development and it is understood the proposals require sections of the left bank to be raised in proximity to the ERI and the proposed RHSC buildings. The scheme, incorporating below-ground seepage piles, will defend the hospitals against a 1 in 1000 yr extreme flood event, appropriate for essential civil infrastructure.

No works are proposed on the right bank of the watercourse, the Little France Drive side of the burn corridor. It is however assumed that the RHSC advanced works land raising will have been designed / modelled to demonstrate no increase in flooding up/downstream, or in this case, on the opposite bank.

It is expected that the flood mitigation works to protect ERI/RHSC will be completed by Oct 2014, with further flood prevention measures completed upstream of the A7 at Nether Craigour, by April 2015

There is currently no relevant output from the RHSC flood model for review as part of this assessment. The available flood extent information is considered to be conservative due to an over estimation of the watercourse catchment during development of the flood model.

The plan provided shows the 1 in 200 yr plus climate change flooding extending to the CEC-owned verge (within the future tram corridor) on the south side of Little France Drive. The extent covers over half the length of BioQuarter Phase 2, the footprint suggest a minimal depth of flooding along the existing road and verge. There is also a channel of flood water spilling over the verge into Phase 2 land just downstream of the ERI footbridge over the Niddrie Burn. This flooding crosses the future tram corridor with ponding within the soft landscaped strip of Plot 4.

Our understanding is the future tram corridor is currently assumed to be aligned at-grade over the extent of its route through the BioQuarter. Levels may have to be reviewed at a future date if the assumed flood levels are confirmed as being accurate.

An area at the rear of the ERI, originally bounded by the bifurcation channels of the Niddrie Burn, and set within the function flood plain, has been developed by NHS Lothian as surface car parks to replace parking lost in developing the RHSC. As part of planning, flood risk assessment and mitigation options were agreed with SEPA which allowed the car parks to be raised 750mm above the flood plain subject to compensatory flood storage being provided within the adjacent flood management area of the NBR.

The NBR flood management proposals have subsequently re-worked to provide the additional storage required.

Existing Watercourses—Magdalene Burn

The Magdalene Burn is the only other named watercourse in proximity to the site. The burn has low flow and is sufficiently remote from the site not to cause flooding impact.

The burn is shown to originate to the north east of the BioQuarter at a location south of the Greendykes residential area. The burn flows along field boundaries, close to properties on The Wisp (A6106), and is routed to the north for a short distance before being culverted beneath this road.

During construction of NBR, an existing drain was re-connected to the Magdalene Burn by means of an overflow arrangement. This drain was believed to flow continuously and the assumption was that it was spring-fed.

Flows along the Magdalene Burn have reduced significantly in recent times, possibly as a result of development work. There may be scope to divert surface water flow to the burn from adjacent sites.

Further and detailed investigation may establish that there is an existing drainage system within, or immediately adjacent to, BioQuarter, which will allow conveyance of surface water to the burn. Without this opportunity, topography, land constraints and economic factors will dictate that a contributing flow from BioQuarter is unlikely as part of an emerging surface water management strategy.

From initial discussions, site walkovers and desktop studies, there is no evidence that natural catchment drainage patterns to the burn will be affected by the development of Phase 2, 3 and 4 of the BioQuarter.

Existing/Historical Flooding

There are no records of flooding within the proposed site.

Anticipated Fluvial Flooding

Pre- and post-development areas at risk from flooding have been considered and it can be confirmed that no flood mitigation will be required if external landscaped areas are maintained along the northern boundary of Phase 2.

An as-built topographical survey of BioQuarter Phases 2 & 3 was carried out by Balfour Beatty which indicates levels ranging from 53.96m Above Ordnance Datum (AOD) to 51.90m along the north west boundary with Little France Drive. The survey shows the levels ranging from 71.21m to 75.14m along the defined boundary between BioQuarter Phase 2 and 4.

Ordnance Survey mapping indicates contours between 75.0m – 85.0m, north to south, across the Phase 4 site.

Given the BioQuarter slopes up fairly steeply from the north, with a lowest boundary level of around 52m, it is anticipated that the finished floor level of many buildings within Phase 2 will be several metres higher. Phase 3 boundaries will be protected as the realigned Niddrie Burn remains in bank and Phase 4 buildings will be at least 25m above the flood zone.

The Magdalene Burn is situated at a similar level to the Niddrie Burn. It is a much more minor watercourse.

It is therefore considered that fluvial flooding of the BioQuarter Phases 2 to 4 from the Niddrie Burn and the Magdalene Burn is unlikely to occur and consequently is a low to medium risk.

Anticipated Pluvial Flooding

Pre- and post-development areas at risk from flooding have been considered and we can confirm that there is no flood mitigation required other than as noted below.

As the land slopes down to the northern boundary the site is likely to be served by a series of land drainage networks that will ultimately connect to either the Niddrie or Magdalene Burn. Careful consideration will be required to the phasing of such works to ensure the maintenance of existing surface water flow paths, including from areas outwith the site. Attenuation will be provided on site if run-off is likely to increase flooding risk elsewhere and development platforms will be designed to avoid low-lying areas prone to secondary flooding.

The current proposals for the Edmonstone Estate south of the development site show a residential development of 150 houses located in the NW sector of the development area.

A flood risk assessment (FRA) undertaken on behalf of Sheratan Limited concludes that the site has little or no risk of flooding.

The South East Wedge Parkland is a north-to-south landscaped corridor located east of BioQuarter Phases 3 and 4. Landforming works in this area, undertaken as part of the NBR, have introduced changes to the local topography, as the fairly evenly-graded slope has been contoured and mounded to accommodate future paths and soft landscape features.

In terms of pluvial flooding it is assumed that the landformings being implemented have been designed with careful consideration of their possible impact to future works, with adequate provisions made to ensure existing flow paths are maintained.

During intense or prolonged rainfall it is important that overland flow is not concentrated into new channels which will then cause localised flooding issues, ponding or impact to infrastructure construction to the North. Further, it is assumed that landforming has been designed in a manner that does not introduce low-lying areas prone to secondary flooding.

Sustainable Urban Drainage Systems (SUDS) for plots within the development site should be appropriately sized to deal with the catchment area. Proper maintenance of any features and their outfalls will be required to prevent blockages and consequent problems. This is particularly important in a sloping site where features may be located on the upper slopes.

Flood Routing and Risk

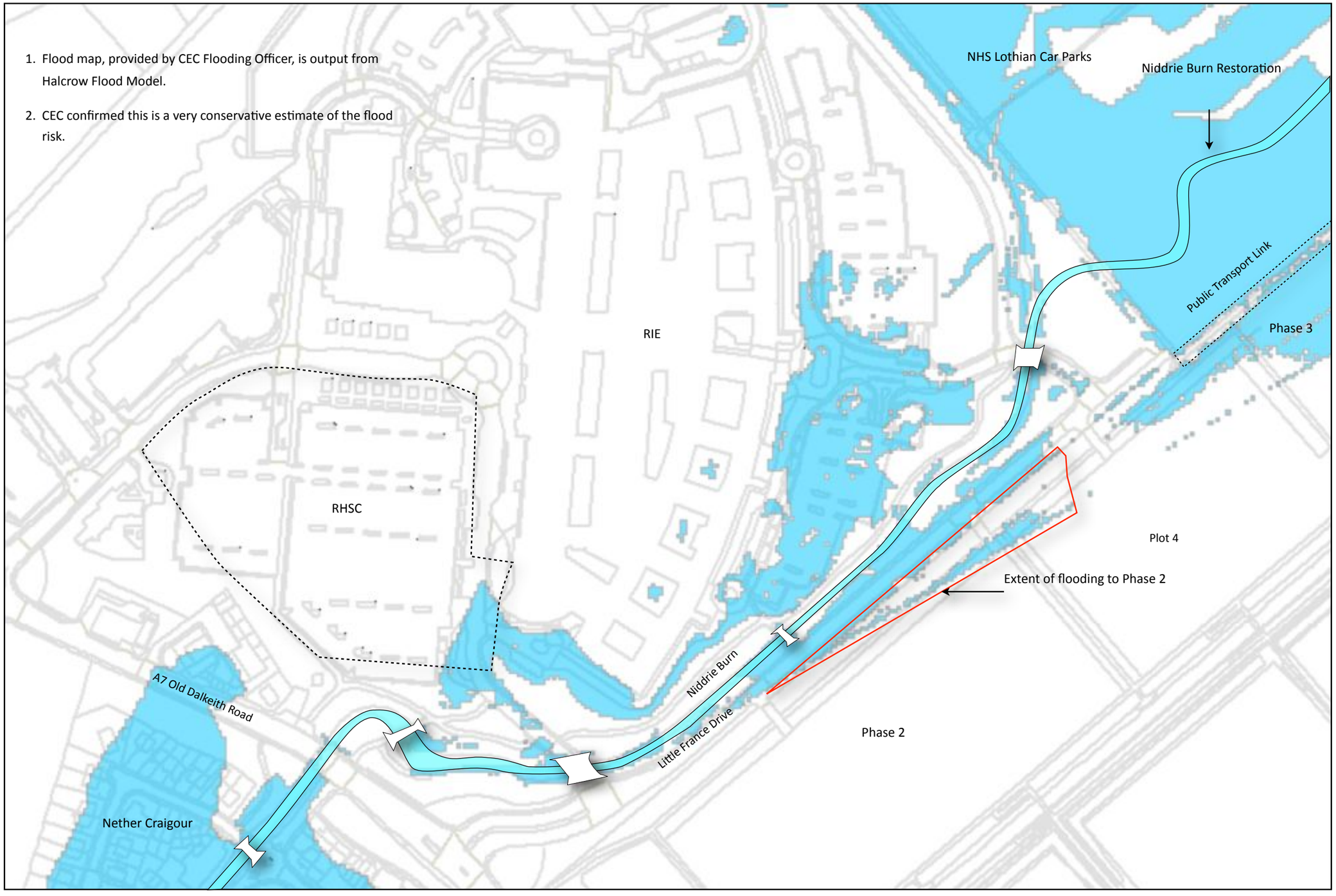
As noted previously, fluvial flooding from the Niddrie and Magdalene Burn is considered to be a low to medium risk. However, it is essential that appropriate protection to development buildings and overland sheet flow routes are adequately considered during planning and detailed design respectively.

Conclusions

In conclusion, fluvial flood risk from the Niddrie and Magdalene Burn is considered to be low to medium, given the difference in level between these watercourses and the lowest part of the site.

However, given the entire site generally slopes down to the north it is particularly important that the phasing of the development proposals do not introduce low-lying areas or obstruct existing pluvial flow routes, as this may cause a secondary pluvial flood risk.

1. Flood map, provided by CEC Flooding Officer, is output from Halcrow Flood Model.
2. CEC confirmed this is a very conservative estimate of the flood risk.



1:200 Year Flood Extents (NTS)

Phases 2 to 4 - Drainage & SUDS Strategy Report

WSP has completed an outline Drainage & SUDS Strategy for BioQuarter, located on the south eastern side of Edinburgh. The site is intended to incorporate life sciences and associated commercial development.

The strategy focuses on the Phases 2, 3 and 4 development areas, south of Little France Drive, and does not include assessment of developed areas, or sites earmarked for future development within Phase 1, i.e. Edinburgh Royal Infirmary, Royal Hospital for Sick Children or other adjacent NHS and UoE buildings.

The objective of this report is to inform the client of the key foul drainage, surface water drainage and Sustainable Urban Drainage Systems (SUDS) issues and constraints, which may influence the development / masterplanning process.

Existing Drainage/Sewerage Infrastructure

Scottish Water plans indicating location of existing sewerage in the vicinity of the proposed site were available for review. It should however be noted that sewerage systems in proximity to the proposed site have changed as part of the Niddrie Burn Restoration (NBR) scheme. WSP has had past involvement as designer of the scheme.

The Edinburgh Royal Infirmary (ERI), to the northwest of the BioQuarter Phase 2 site is served by three combined sewers that route generally north eastwards beyond its western boundary. These sewers are 375mm, 915mm and 840mm diameter as they leave the hospital curtilage.

The northern most combined sewer (375mm dia) routes directly north east into the Greendykes residential estate, running partially beneath Greendykes Drive, and collecting various branches connections on its route.

The two other combined sewers (915mm and 840mm diameter) are shown to route generally north east either side of the pre-existing line of the Niddrie Burn. The sewers skirt the southern side of the Greendykes / Niddrie residential area, progressively upsizing, and turning generally to the north to route adjacent to the Jack Kane Leisure Centre and beyond. This is what is shown on the Scottish Water plans we hold.

Impact of NBR has resulted in diversions to the existing sewerage. The 915mm diameter combined sewer, referred to previously, has been diverted to the south to run along the southern bank of the re-aligned Niddrie Burn.

As part of NBR, a new link road is being constructed connecting Little France Drive (on the southern side of the ERI site) to Greendykes Road.

On behalf of Scottish Enterprise, WSP designed a 375mm diameter foul drainage system that routes beneath the ERI Link Road and connects to the diverted 915mm diameter combined sewer adjacent to the Persimmon housing road bridge. The pipework is routed along the southern side of the ERI Link Road. This drain has been installed to service the BioQuarter Phase 4 development and Edmonstone Care Village.

In terms of surface water drainage features, the most prominent is the Niddrie Burn to the north of the site. This watercourse flows along the southern margins of the ERI site. Downstream of the ERI curtilage, the diverted burn, currently under construction, routes generally north eastwards skirting the Greendykes / Niddrie residential area. It thereafter turns to the north to tie-in to the pre-existing line of the burn, adjacent to the Jack Kane Leisure Centre.

Another watercourse, the Magdalene Burn is situated to the south of the re-aligned Niddrie Burn. This burn is located to the north east of the BioQuarter Phase 4 site and flows along field boundaries, in the form of a culvert or stone drain, to the north east. This drain connects to an open ditch on the southside of the tree belt bounding the Jack Kane Playing Fields. This burn diverts from this line, close to properties on The Wisp (A6106), routing to the north for a short distance and thereafter being culverted east beneath this road.

It is unclear whether the upper slopes of the hillside to the south of the existing BioQuarter site (proposed Phase 4 area) are currently served by land drainage systems or merely encourage overland flow northwards down the hill. A study of available Ordnance Survey mapping and aerial photography appears to indicate the presence of a drainage route that follows a wooded margin in the centre of the proposed site. This appears to route through the middle of the site north westwards towards the southern boundary of the existing BioQuarter site.

To the northern boundary of Phase 4, the as-built topographic survey shows filter drains at the toe and top of the cutting slope forming the earthworks interface with the southern access road of Phase 2. This survey appears to suggest these drains connect to the Magdalene Burn, although the NBR works included remedial drainage works to intercept flows which may have changed the previous arrangements. These systems will collect sheet runoff from the pre-existing BioQuarter Phase 4 site, and may also serve as an outfall for the drainage route referred to above.

The developed BioQuarter site, Phase 2 and 3, to the north is served by various SUDS water features. These include a linear water feature situated through the centre of the development area, which also manages the level difference, and is orientated south west to north east.

Surface water flows from the roofs and car park areas are generally shown to route north east from the site to outfall into two linked detention basins, located on the southern side of the new ERI Link Road. These basins are connected to the Niddrie Burn by piped outfall.

It is understood that foul discharge from Phase 2 (and Phase 3 when constructed) is routed generally to the north east, beneath the re-aligned Niddrie Burn, to the connect to one of the larger diameter combined sewers on the northern side of the burn, in the vicinity of the NHS Lothian car parks.

Site Drainage Strategy

Foul Drainage

The main infrastructure for Phase 2 and 3 of the BioQuarter site has been installed and routes flows to the sewer as noted in the previous section. This is as per separate agreement with Scottish Water.

It is anticipated that foul flows from Phase 4 of BioQuarter will be conveyed via a service corridor along the eastern boundary of phases 2 & 4 to connect into the new 375mm diameter foul drain laid to the south of the ERI Link Road.

Given a basic understanding of the topography of the proposed development site, it is considered possible to route a closed pipe system to fall by gravity to the north east and further to the proposed connection point.

If certain parts of the site prove difficult to drain by these means it may be possible to route drainage to connect through BioQuarter Phase 2. This is clearly dependent on capacity and condition and further discussion with Scottish Water.

During design of the 375mm diameter foul connection drain, assumptions were made on anticipated contributing flows. Assumptions were made in consideration of the future development of the BioQuarter Phase 4:

- 15 No. Lab/office units assumed;
- Developable Area = 12.5 ha;
- Domestic flows = 0.6 litres/second/ha (Sewers for Scotland 2nd edition); and
- Trade effluent for wet industry = 1.0 litres/second/ha (Sewers for Scotland 2nd Edition).

Using the above parameters, anticipated design foul flows from the BioQuarter Phase 4 site were calculated as 20 litres/second.

Development within an overall masterplan area (of which BioQuarter forms part) has been considered by Scottish Water through a Development Impact Assessment (DIA). The network modelling undertaken identified off-site network reinforcement works which have been implemented by Scottish Water. Provided the BioQuarter Phase 4 site foul flows remain within the above limit, no further external upgrading works will be required by Scottish Water.

Surface Water Drainage

It is generally anticipated that surface water flows from the proposed development would be routed to the north and discharge to the re-aligned Niddrie Burn. This is the current outfall for the drainage for Phase 2

In order to better understand the proposed site, surrounding environs, impact of adjacent potential developments and the surface water drainage design parameters required, a meeting was held with Alvin Barber, City of Edinburgh Council Flooding Officer, on 19 July 2012.

At this meeting it was confirmed that any proposed discharge into the Niddrie Burn would be limited to the lesser of the following:

- CEC's standard assumed 'greenfield' runoff rate of approximately 4.5 litres / second/ hectare; or
- An actual rural runoff calculation (Q2) for the site concerned.

A calculation has therefore been carried out, based on IH 124 Rural runoff method, for the proposed site using WinDes Micro-drainage. This calculation determined that the pre-existing 2 year discharge would be 4.2 litres / second/ hectare.

It should therefore be assumed, until further information is available on the site, that the discharge should be based on the lesser 4.2 litres / second/ hectare value. Considering an approximate development site area of 39.4 ha, a discharge limit of 165.5 litres/second is produced

Given a basic understanding of the existing topography of the proposed development site, it is considered possible to serve the site with closed pipe systems to fall by gravity to the existing detention basins.

Flows would be routed to proposed Sustainable Urban Drainage Systems (SUDS) providing attenuation and treatment within the site curtilage. Thereafter flows would pass through proposed SUDS features in public amenity areas prior to discharge either direct to the Niddrie Burn or via the existing basins serving BioQuarter Phase 2 and eventual discharge to the burn.

The existing BioQuarter basins are understood to be an unadopted private drainage system with maintenance remaining the responsibility of the developer (Scottish Enterprise). As a general rule, above ground SUDS features would be better vested with either the local authority or Scottish Water for maintenance purposes.

CEC have stated that they would consider the design criteria set out in 'Sewers for Scotland 2nd edition' (Scottish Water) as a starting point for any detailed discussions on adoption of SUDS measures. These criteria require any proposed basin to incorporate various requirements including a 3.5 m wide access track, etc.

SUDS Strategy

Surface Water Treatment

Treatment is a SEPA requirement in accordance with Regulatory Method (WAT-RM-08) for the regulation of urban drainage:

'In terms of SEPA's remit, however, the main regulatory SEPA driver for SUDS is clearly to protect water quality, and through construction of retrofit SUDS, to begin to achieve improved water quality, and reduce the length of polluted waters downgraded as a result of urban drainage impacts. For new developments, SUDS aim to protect water quality, and that includes groundwater. Where groundwater pollution is identified as a risk, then appropriate SUDS such as lined SUDS to prevent groundwater pollution should be used.'

'In addition, the requirement under the Water Framework Directive for SEPA to achieve good ecological status means that SEPA has a stronger role in preventing hydrological impacts from runoff to watercourses as well as protecting water quality.'

SUDS should be designed in accordance with CIRIA C697 The SUDS Manual, providing the appropriate levels of treatment; two for road runoff and one for roof runoff, and follow the SUDS principles of treatment train surface water management.

SUDS features can be in the form of source control. Features such as filter drain/beds, swales, bio-retention zones and permeable surfaces, which provide the first level of treatment, should be developed and implemented for the development.

Site control features, which could include swales and other linear SUDS features, will provide the required second level of treatment where this is not provided in source control.

As noted previously, it is possible that thereafter flows may either be conveyed to direct outfall into the Niddrie Burn or via the existing basins serving BioQuarter Phase 2 and eventual discharge to the burn. In the former scenario a third level of treatment, if required, would be provided by underground storage (filter blanket).

Surface Water Attenuation

In general terms, attenuation should be designed to ensure that flows arising from all rainfall events, essentially up to the 200-year event, are attenuated on site and then released at a rate no greater than the agreed discharge limit.

The architect (Allan Murray Architects Ltd) has provided assumed areas for BioQuarter Phases 2-4 as follows:

- Overall Site Area: 393,939m2;
- Buildings (roofs): 118,277m2;
- Green roofs (assumed): 11,828m2;
- Main access roads: 23,690m2;
- Access road area: 5,770m2;
- Car parks/paving/hardstandings: 92,101m2;
- Soft landscape: 154,101m2

The hardstanding area within the site therefore totals 239,838m2. The green roof figure has been discounted to allow robust attenuation calculations while the required volume may reduce as detail is confirmed.

An allowance of 10% has been assumed for the soft landscape contribution into the on-site drainage systems. The soft landscape area is 154,101m2 and therefore the contribution of this area will be based on an effective hard area of 15,410m2.

This produces an overall effective hard area of 255,248m2 which has been used as the contributing area in attenuation calculations.

Attenuation design modelling has been completed for the 30 year and 200 year return period storms, including a 10% allowance for climate change, using the potential discharge limit, i.e. 165.5 l/s. Maximum storage volumes for both scenarios are presented in the table below:

Return Period (years)	Climate Change Allowance (%)	Discharge Limit (l/s)	Storage volume required (m3)
30	10	165.5	7,981
200	10	165.5	13,356

Runoff from the upper slopes to the south is not quantifiable at this stage but will need to be taken account of in the final design. It may be possible to design a land drainage system that can tie-in to the existing BioQuarter land drainage system, assumed to outfall to either the Niddrie or Magdalene Burn. This will need to be checked and any issues addressed during the detailed design of a drainage scheme for the site.

Provision of this volume of attenuation by means of a series of SUDS and attenuation features, will ensure that the downstream flow is limited to the agreed rate of discharge. The concept of how this may be achieved is indicated on our sketch drawing number 1074-SK-002.

It is anticipated that permeable paving could be provided within surface car parks, paved areas and hardstandings. Swales, bio-retention zones and filter trenches could be located adjacent to roads, and integrated within the landscape strategy. These would constitute source control SUDS.

Site control measures will also be utilised, providing further attenuation volume, and could include swales, other linear SUDS features or underground storage.

Drainage and SUDS proposals for development of the Edmonstone Estate site to the south of the BioQuarter Phase 4 site have been reviewed as part of this study. The preliminary design carried out by Fairhurst, on behalf of Sheratan Limited, indicates a surface water network draining to a single detention basin. The flow is shown as being attenuated to the 1 in 2 year pre-development greenfield runoff rate. It will be for the developer of this site to ensure that they drain to the natural catchment. Consequently attenuation calculations for the BioQuarter Phase 4 site have not included flows from this development.

Conclusions

In conclusion, it is considered that an appropriate and adequate drainage system can be designed to serve the proposed development site and that there are suitable outfalls routes for both foul and surface water.

Formal connection applications to Scottish Water and further discussions with City of Edinburgh Council

1074-SK-002 – SUDS Strategy