

# Redesign of Eye Services in NHS Lothian including Re Provision of the Princess Alexandra Eye Pavilion

Initial Agreement - Version 11.5 – Redacted for Publication



Source: Oberlanders Architects initial first draft exemplar design – October 2016

## Document Control

Title:	Initial Agreement: Redesign of Eye Services in NHS Lothian including re-provision of Princess Alexandra Eye Pavilion, Edinburgh
Owner:	Jacquie Campbell, Chief Officer – Acute Services, NHS Lothian

### Version History

Version	Date	Author(s)	Comments
1, 3	10/07/2016	KI,CK	Updated SCIM guidance reviewed & IA template structure created. Supporting info gathered from 10 Questions Document.
4	30/9/2016	KI, NMcL	Further development of the above. Inclusion of some contributions as per Action Sheet issued 15/9/16
5	10/10/2016	KI, NMcL	Comments received at review session 5/10/16 – up to start of section 4.2 Further requests for info/feedback issued as discussed
6	14/10/2016	KI, NMcL,	Finance section developing separately to be incorporated in due course. Sent out as an attachment
7	25/10/2016	KI, NMcL, CG	Comments from NMcL and CG incorporated. Finance section developing separately to be incorporated in due course. Sent out as an attachment
8	27/10/2016	KI, NMcL, CG, GW, NB	Note updated guidance on DTC elective centres (Borders & Fife) in covering e-mail. Clarity on Collaboration element required for costings. Capital Finance and Capital Project Teams to do final review of capital costs to ensure consistent presentation through document and reference to Thomson Gray report– rounding etc. Review of outpatient demand forecasts underway.
9	31/10/2016	KI, NMcL, CG, GW, NB, IFG	Capital Finance & Capital Projects to ensure alignment of costs across sections reflecting Thomson Gray revised cost option report – Nov 16.
10	2/11/2016	KI, NMcL, CG, GW, NB, IFG	Submitted to be reviewed by LCIG – 8/11/16. Sent to Partnership Team for comment prior to LCIG. Final copy issued to local CMT.
10.1	4/11/2016	KI, NMcL, CG, GW, NB, IFG	Row definitions in Table 7 copied to Table 13 so consistent.. 3.1.4.1.` 3500 m2` of clinical only space replaced with `6000 m2` to reflect building wide + LOTT. Appendix 3 – Thomson Gray's Appendix 1 Programme included. 3.1.5.2 – old assumption re paediatric services removed in line with rest of doc. Final copy issued to Corporate Management Group
10.2	16/11/2016	KI, NMcL, CG, GW, NB, IFG	Updated for approval from LCIG, Corporate Mgmt Committee, Clinical Management Team, Partnership Director. Ref to 15/11/16 correspondence from SG re Ophthalmology National Programme – section 3.1.7.5
10.3	21/11/2016	KI, NMcL, CG, GW, NB, IFG	Revenue costs updated by N Bradbury/O Notman to reflect future predicted inpatient costs. Tables:24,28,29.
10.4	1/12/2016	KI, NMcL, CG, GW, NB, IFG	F&R Committee support 30/11/16 noted. Section 4.5.5 updated re progress on NDAP. Section 1.3 updated re recent SG directive of management of return outpatient capacity – 15/11/16. Section 2.4.1 update from recent Scottish Fire Service inspection – 29/11/16. Submitted

			to Scottish Government Capital Investment Committee in December 2016. Advised to re-submit when outcome of regional ophthalmology plans are clarified.
11.2			Executive Summary, Strategic Case – updated to reflect capital and revenue cost changes and outcome of Regional discussions. Appendix 2 – Risk & Management. Updated Appendix 3 – Updated – Cost Report from Thomson Gray – November 2017 Appendix 3a – Programme. Incorporated into Appendix 3. Gray Appendix 5 – Updated Appendix 6 – Schedule of Accommodation – incorporated into Appendix 3 Appendix 8 – Exemplar Design added
11.3			Approval of above by Chief Officer, NHSL and submitted to CIG – 14/11/2017
11.4			Post approval process changes  <ol style="list-style-type: none"> <li>1. Executive summary updated to confirm approval of IA and permission to develop the OBC</li> <li>2. Replacement Appendix 3 – Cost Option Report by Thomson Gray.</li> <li>3. Updates to all `Do minimum` capital cost options to reflect the replacement Appendix 3. Also, any reference to the Do minimum cost updated accordingly.</li> <li>4. A fully costed Appendix 2 is added in support of the existing Appendix 2</li> </ol>
11.5			Public version – as above but with any commercially sensitive information redacted

## Contents

		<b>Page</b>
<b>1.</b>	Executive Summary	6
<b>Strategic Case</b>		
<b>2.</b>	<b>The strategic background to the proposal</b>	10
	2.1 Stakeholders affected by this proposal	10
	2.2 NHS Scotland's strategic context	15
	2.3 The strategies that this proposal directly responds to	16
	2.4 External factors that influence this proposal	19
<b>3. The case for change</b>		
	3.1 Current arrangements	24
	3.1.1 Services affected by this proposal	24
	3.1.2 Location of current services and activity	24
	3.1.3 Location of service users and associated catchment areas	25
	3.1.4 Functional size and description of existing facility	25
	3.1.5 Care Pathways and patterns of working	32
	3.1.6 Service Performance Data	35
	3.1.7 Existing Service Capacity	36
	3.1.8 Service Demand	38
	3.1.9 Service providers affected by this proposal	40
	3.1.10 Condition and performance of the existing asset affected by this proposal	40
	3.1.11 Public and service user feedback on existing service	43
	3.1.12 The need for these services to continue	44
	3.2 The current situation	45
	3.3 Investment objectives	51
	3.3.1 Investment objectives – high level	51
	3.3.2 How has NHS Lothian challenged itself about the proposed design of future services within this proposal?	51
	3.4 Measurable benefits to be gained from addressing these needs	57
	3.5 Risks, Constraints and Dependencies	57
<b>Economic Case</b>		
<b>4.</b>	<b>The preferred strategic/service solution</b>	58
	4.1 The `Do nothing` and `Do minimum` options	58
	4.2 Service Change Proposals	58
	4.3 Indicative costs for the shortlisted options	65
	4.4 The Preferred Solution	66
	4.5 Design Quality Objectives	67
<b>Commercial, Financial and Management Cases</b>		
<b>5.</b>	<b>Readiness to proceed</b>	69
	5.1 The Commercial Case	69
	5.1.1 Procurement route	69

	5.1.2	Edinburgh BioQuarter Infrastructure	69
	5.1.3	Land acquisition	70
	5.1.4	Timetable	70
	5.2	The Financial Case	71
	5.2.1	Introduction	71
	5.2.2	Capital Costs	72
	5.2.3	Revenue Costs	73
	5.2.4	Service Model Costs	74
	5.2.5	Property Costs	75
	5.2.6	Non Recurring Costs	75
	5.2.7	Accounting Treatment	76
	5.2.8	Statement of Affordability	76
	5.3	The Management Case	77
	5.3.1	Introduction	77
	5.3.2	Project management arrangements	77
	5.3.3	Project reporting structure	78
	5.3.4	Capabilities of those taking forward the project	79
	5.3.5	External specialist advisors	79
	5.3.6	Project plan	79
	5.3.7	Strategic Assessment Update	80
<b>Appendices</b>			
	1	Benefits Register	81
	2	Risk Register & Management Plan	87
	3	Capital Costs – Report by Thomson Gray	Attached
	4	Strategic Assessment Template	92
	5	Collaboration and Clinical Research space	93
	6	AEDET – Achieving Excellence Design Evaluation Toolkit	Attached
	7	NHS Scotland Design Assessment Process – Supported (verified) Report – Design Statement (V.3)– Health Facilities Scotland/Architecture & Design Scotland	Attached
	7a	Design Statement V4 - updated	Attached
	8	Exemplar Design Report	Attached

## 1. Executive Summary

- 1.1 The purpose of this Initial Agreement (IA) was to seek approval from the Scottish Government Capital Investment Group (CIG) to develop an Outline Business Case to re-provide the Princess Alexandra Eye Pavilion, Edinburgh in a purpose designed and built Eye Hospital on the Royal Infirmary of Edinburgh/ Edinburgh bioQuarter site at a total capital cost of £68.5M. The IA was submitted to CIG in November 2017 and approval to proceed to Outline Business Cases was received on 8<sup>th</sup> February 2018.
- 1.2 An earlier version of this IA was submitted to CIG in December 2016 prior to the establishment of the East Region Acute Workstream. This subsequent version was submitted with agreement of the region and outlines outputs of the East Region Ophthalmology Group and the regional position thus far.
- 1.3 The vision for ophthalmology services in NHS Lothian is to provide a safe, effective, high quality service for patients delivered in the right place at the right time. Where services can be provided within a community setting, closer to where service users live, they should be. Services within an adult eye hospital should be those that can only be effectively and efficiently be delivered there. An efficient ophthalmology model will be delivered by trained and skilled staff using appropriate equipment and information technology for effective diagnosis and treatment. This care should be provided in an environment that supports staff to provide an excellent experience and has modern facilities that meet the needs and expectations of service users, carers and staff well into the mid to late 21<sup>st</sup> century.
- 1.4 A key element of the vision is that services should be designed and maintained in a way that meets the needs of both new and existing chronic disease patients. There is a very significant number of existing and newly diagnosed patients with chronic eye disease and they have potentially blinding conditions. They may need urgent access to the service for treatment at any time and require regular review at pre-defined intervals. Also new patients, such as those requiring surgical treatment for non-blinding reversible conditions e.g. cataract, require access to services. Cataract surgery provides excellent outcomes in >95% of patients and has huge benefit for quality of life. Therefore the service must meet the needs of both, as is clinically appropriate, so as not to result in avoidable irreversible loss of vision. At a national level, it was announced in November 2016 that establishing effective management information for return ophthalmology patients was required of all NHS Boards to support access at clinically required intervals for return patients who have confirmed pathology.

### Scope of proposal

- 1.5 This proposal covers:
  - The redesign of adult ophthalmology services and paediatric outpatient ophthalmology services in NHS Lothian to meet user needs and expectation and to respond to the predicted increase in demand particularly those with chronic potentially blinding eye conditions. The redesign optimises the use of staff skills at all grades to ensure that patients are treated by the right person at the right time and releases valuable senior clinician time to manage the most complex aspects of care and decision making;

- The continuation of provision of specialist services to the South East Region of Scotland, such as surgical retinal services, paediatric surgery and neuro-ophthalmology.
  - The provision of sufficient cataract assessment and surgical services to meet the needs of the local population up to and beyond 2030 in response to projected increases in demand due to demographic growth and patient expectation.
  - The proposal has the support of the East Region Health and Social Care Acute Services Group and is included in the Regional Plan. This includes providing capacity for NHS Lothian residents who currently are reviewed and treated for cataract at the NHS Golden Jubilee Hospital in Clydebank.
  - Output from the East Region Ophthalmology Group regarding regional requirements to accommodate growth across the region. NHS Borders and NHS Fife have indicated adequate infrastructure capacity for expected future growth with the limiting factor being future workforce, as this could potentially affect their ability to support growth. NHS Lothian cannot meet current or future demand without redesign of the current service, maximising use of community services and access to functionally suitable estate for specialist services.
  - The support of the East Region Health and Social Care Acute Services Co-ordinating Group and inclusion in the East Regional Health & Social Care Delivery Plan.
  - The re provision of the Princess Alexandra Eye Pavilion (PAEP), Chalmers Street, Edinburgh to address the issue of its poor condition, suitability for future clinical use, mounting backlog maintenance costs and that there would be a requirement to decant all services to address significant issues affecting the roof;
  - A proposal to reap the opportunity benefits of collaboration with academic, research and development and industry sectors on the Edinburgh BioQuarter site. The capital cost of this is £3.5M.
- 1.6 Stakeholders including service users, carers and staff have been involved in developing the proposal which responds to and supports national and local general healthcare strategy and that which meets the needs of people with sensory impairment in Scotland. The Scottish Health Council was aware of and involved in the process in July 2016.
- 1.7 External factors relating to the building itself and the need to plan responsibly for future demand and harness the benefits of technology support the proposal.
- 1.8 Development and improvement of the existing service is held back by the poor functionality and design of the existing facility. Professional advice over the last decade has been that a plan should be drawn up to replace the building which is viewed to have come to the end of its useful life. The estimated cost to refurbish the existing building to extend its life and allow clearance of backlog maintenance is £13.7M. Full decant of the building would be required and temporary accommodation would require to be found for all services provided at the site. There is no easy solution for decant and this too would incur significant costs in addition to service disruption and the potential to compromise quality of care.

- 1.9 Growing demand and the pace of technological advancement also drive the need for change.
- 1.10 The objectives of investment are to provide sustainable, flexible and future proofed facilities that meet the needs of 21<sup>st</sup> century eye care using valuable resources as efficiently as possible. Service users and staff have fully informed the design quality objectives, with key focus on access to the service and site, improved layout and adjacency of facilities and improved general facilities. Each investment benefit has been quantified and a measure proposed to enable the realisation of the vision and plan to be a key focus. Risks, associated with the project and build and delivery of benefits are identified and mitigation plans in place.
- 1.11 A `do nothing` or `do minimum` option was set aside at an early stage of option appraisal as neither would meet the needs of the service moving forward. The main service change proposals will be to meet increased demand for outpatients, injection treatment and surgery and to use the opportunity to design and build efficient facilities to deliver that in the most cost effective way. The shortlist of options includes a new build facility on each of the main acute sites in Lothian (Royal Infirmary of Edinburgh/Edinburgh BioQuarter, Western General Hospital and St John's Hospital, Howden, Livingston) and a new Edinburgh city centre site.
- 1.12 In order to optimise the use of existing estate across the region and develop a regional approach for development of new estate the East Region Health & Social Care Delivery Plan Programme Board agreed to extend the PAEP Option Appraisal to include options identified by NHS Borders and NHS Fife. The option appraisal took place on the 8 September 2017 and representatives from NHS Borders, NHS Fife and NHS Lothian were in attendance. The outcome was support for the initial proposed solution i.e. re-provision on the Edinburgh Royal Infirmary/Edinburgh BioQuarter campus. This was adopted into the Regional Plan at the East Region Acute Workstream meeting on 2<sup>nd</sup> November 2017.
- 1.13 The indicative costs, for the shortlisted options are:

**Table 1 – Indicative costs for the shortlisted options**

Costs in £ millions	Do minimum	New Build			
		RIE/BioQuarter	Western General Hospital	St John's Hospital	City Centre
Re provision of PAEP	£13.7M	£68.5M	£73.4M	£64.1M	£77.0M
Collaboration/Clinical Research Space		£3.5M	£3.7M	£3.2M	£3.9M
OVERALL	£13.7M	£72.0M	£77.1M	£67.3M	£80.9M
Whole of life capital costs	£16.6M	£77.6M	£84.3M	£73.1M	£86.1M
Whole of life operating costs	£451.9M	£704.8M	£669.7M	£704.8M	£703.1M
Estimated Net Present Value of Costs	£312.7M	£511.3M	£483.0M	£507.3M	£515.9M
Non-financial benefit score	370	930	675	705	690
Net present cost per benefit point	£845,234	£549,760	£715,588	£719,623	£747,646
<b>Ranking</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>



- 1.14 The preferred strategic and service solution would be to re provide the hospital on the Royal Infirmary of Edinburgh/Edinburgh bioQuarter site, approximately 3.5 miles from the existing site and giving the benefits of being closer to emergency services and the infrastructure associated with a major teaching hospital, the University of Edinburgh Medical School and the opportunities for research and collaboration that would come as part of being on the bioQuarter site.
- 1.15 Furthermore, re-provision on the Edinburgh bioQuarter site will support the development of this Science Park and attract investment, research, entrepreneurial enterprise and health innovation which will benefit the campus and wider finance and health economy.
- 1.16 In order to deliver the project in accordance with current NHS Scotland construction procurement policy, it is anticipated that Frameworks Scotland 2 will be the best option via traditional Capital Funding. This procurement route appoints a single contractor to act as sole point of responsibility for the management and delivery of an integrated design and construction project on time, within budget and fit for purpose.
- 1.17 As agreed in advance of re-submission of the IA, NHS Lothian will work closely with the Scottish Government Health and Social Care Directorate, and external partners, to identify funding sources for the capital outlay during the development of the OBC.
- 1.18 A detailed Project Plan will be produced for the Outline Business Case (OBC). At this stage, the Board is aiming to achieve the milestones shown below:

<b>Key Milestones</b>	<b>Date</b>
Initial Agreement approval	January 2018
Site Acquisition	February 2018
Appointment of PSCP	April 2018
Appointment of CDM Advisor	June 2018
Outline Business Case approval	March 2019
Obtain outline planning consent	March 2019
Full Business Case approval	March 2020
Construction Commences	March 2020
Construction completion	February 2022
Commence service	mid 2022

- 1.19 Governance and project management arrangements are proposed and reflect the structures that have served NHS Lothian well as part of the new Child and Young Persons Hospital and the Department of Clinical Neurosciences. Learning from this and other NHS Lothian projects will be applied as part of NHS Lothian's continuous improvement.

## 2. The strategic background to the proposal?

### 2.1 Stakeholders affected by this proposal

2.1.1 This proposal has impacts on adults, children and young people and their carers who live in Lothian who require ophthalmology services and to adults, children and young people and carers who live in Fife, Borders, and Forth Valley for certain tertiary services.

2.1.2 The proposal impacts upon clinical and support staff currently working at the Princess Alexandra Eye Pavilion, Chalmers Street, Edinburgh.

**Table 2**

<b>Stakeholder Group:</b>	<b>Engagement that has taken place</b>	<b>Confirmed support for the proposal</b>
NHS Lothian	NHS Lothian is fully supportive of this proposal, with Jacquie Campbell, Chief Officer, Acute and Jim Crombie, Deputy Chief Executive , taking the lead role in its development. This proposal is also incorporated into the NHS Lothian Strategic Plan ` Our Health, Our Care, Our Future (2014 – 2024)	Previously submitted IA (Version 10.1) - approved by the Finance and Resources Committee – NHS Lothian on 30th November 2016.  The re-presented IA will be put forward for approval to F&R Committee on 15 <sup>th</sup> November 2017
Service or Department	The Clinical Management Team have collective responsibility for the delivery of Ophthalmology services in Lothian and has been actively involved in the process of developing options and plans for the proposal:  A Tyrothoulakis, Site Director - St. John's Hospital & Princess Alexandra Eye Pavilion  Dr J. Singh, Consultant Ophthalmologist & Clinical Director for Ophthalmology,  K McCabe, Clinical Service Manager, Ophthalmology  L Struthers, Clinical Nurse Manager, Ophthalmology	Approved by the Ophthalmology Clinical Management Team – November 16 <sup>th</sup> 2016.
Staff / Resource	Staff affected by this proposal include: Medical; Nursing; Theatre; Optometry; Orthoptic, Medical Photography & Imaging;	

	<p>Pharmacists, Ocular Prosthetic Technician; Reception; Records, Waiting List Office; Secretarial staff; Clinical Service Management Team and Facilities staff, Vision Support Team (provided by the RNIB).</p> <p>Staff representatives and Staff Partnership participated in an Integrated Impact Assessment (IIA) on February 25<sup>th</sup> 2016 which reviewed the long list of potential options for the service including `do nothing`, and presented a review of the options against 6 benefits criteria. At this the preferred option was proposed and supported.</p> <p>Staff highlighted the importance of good public transport services to the new site. Staff parking provision, especially for those working across sites, was important. There was a need for staff rest and catering facilities which are limited on the existing site. These were all noted in the resulting action plan which is being taken forward in tandem with the project.</p>	<p>There was support for the proposed solution</p> <p>The feedback from the Options Appraisal and IIA session was captured in the IIA report and actions to be taken forward summarised in the IIA Action Plan.</p> <p>This was sent out to all participants for comments/approval before being placed on NHSL's public web site.</p>
<p>NHS Borders, NHS Fife, NHS Forth Valley – current level of service</p> <p>South East Regional Delivery Plan Programme – Acute Workstream</p> <p>East Region Boards –</p>	<p>Elements of service, in particular Retinal Surgery, are provided on a regional basis to neighbouring Health Boards. NHS Fife, Borders and Forth Valley advised of the planned relocation of PAEP at the Directors of Planning meeting in November 2016.</p> <p>The Regional Ophthalmology Group conducted an extended options appraisal to include the Queen Margaret Hospital site in Fife in a part new build/part refurbishment proposed option. Comparison of this option and the original proposed option was undertaken using the criteria applied in the original option appraisal</p> <p>Regional Ophthalmology Group has undertaken work towards agreeing</p>	<p>Confirmed support for this proposal has been gained through the Diagnostic and Treatment Centre (DTC) Programme Board on 28<sup>th</sup> September 2016.</p> <p>The preferred option, as described in the original IA and in this re-presented IA, remains the preferred solution for the region. The East Region Health &amp; Social Care Delivery Plan Acute Services Workstream Co-ordinating Group approved the proposal-2 Nov 2017</p> <p>NHS Borders and NHS Fife have</p>

<p>future plans to respond to predicted increases in elective surgical demand and any planned increase in activity that the new facility would be required to provide for.</p>	<p>and defining future regional demand for ophthalmology services and corresponding delivery options.</p>	<p>indicated that they have adequate infrastructure capacity for expected future growth; however, the limiting factor would be future workforce, as this could potentially affect their ability to support any growth.</p> <p>NHS Lothian cannot meet current or future demand without redesign of the current service, maximising use of community services and access to functionally suitable estate for specialist services.</p>
<p>Scottish Health Council</p>	<p>A Major Change Template was sent to the Scottish Health Council on 7<sup>th</sup> July 2016 so that they could make an assessment. Also sent was:</p> <ul style="list-style-type: none"> <li>• The introductory presentation used at the Integrated Impact Assessment on Equality session held with service user and staff representatives in February 2016</li> <li>• The session report and resulting action plan</li> <li>• Options Appraisal summary report</li> <li>• Proposed Communications and Engagement Plan</li> <li>• A summary of `What is wrong with the existing PAEP building in relation to the delivery of patient services now and in the future` - for general information.</li> </ul> <p>NHSL's recommendation was that this was not a major service change.</p>	<p>The Scottish Health Council confirmed via letter dated 20<sup>th</sup> July 2016 that they agreed that the proposal did not meet the threshold for major change. They recognised the engagement activities to date (service user survey, options appraisal and integrated impact assessment) and noted the support from service users and staff at the IIA for the preferred option. They were aware of and involved in the process in July 2016. This included review of the proposed future engagement plans to which they made some recommendations.</p> <p>They noted that they</p>

		<p>were aware that patients view the service in Lothian positively and that there was recognition of the need for change. They also noted concerns regarding public transport and accessibility at the proposed site and NHS Lothian's commitment to work with partners to address this.</p>
Staff Partnership	<p>Staff partnership representatives participated in the options review, the Integrated Impact Assessment, the AEDET review and the planned NDAP review. The Staff Partnership Director and local Staff Representative will be consulted on the final document in November 16 in tandem with the organisations internal governance route.</p>	<p>Partnership Director confirmed support on 7<sup>th</sup> November 2016.</p>
Patients / service users	<p>Service user and carer representatives participated in an Integrated Impact Assessment on February 25<sup>th</sup> 2016 which reviewed the long list of potential options for the service including `do nothing`, and presented a review of the options against 6 benefits criteria. At this the preferred option was proposed and supported. The service users and carers expressed concerns about public transport and the accessibility of the new site. A requirement for drop off facilities, some parking, and catering facilities was flagged. These were all noted in the resulting action plan which is being taken forward in tandem with the project.</p>	<p>The feedback from the Options Appraisal and IIA session was captured in the IIA report and actions to be taken forward summarised in the IIA Action Plan. This was sent out to all participants for comments/approval before being placed on NHSL's public web site. There was support for the proposed solution</p>
General public	<p>The general public will be affected by this proposal as potential service users or carers or by being neighbours of the existing or proposed future facility.</p>	<p>NHS Lothian keep the Lothian Hospitals Plan under constant review and engage on particular concrete proposals</p>

	<p>The Scottish Health Council having reviewed the extent of change being proposed has advised that it is not major so no formal consultation exercise has been undertaken.</p> <p>However, Integrated Joint Boards have been advised of the plans through discussion around the emerging NHS Lothian Hospitals Plan.</p> <p>A Communication and Engagement Plan has been developed to ensure good Stakeholder communication.</p>	<p>emanating from the Plan as they are brought forward. This includes close working with NHSL's Integrated Joint Board partners where appropriate</p> <p>The Scottish Health Council have been consulted on the proposed Communication and Engagement Plan and made additional recommendations.</p>
Other key stakeholders	<p><u>Community Optometry</u></p> <p>The nominated NHS Lothian lead for Community Optometry was on the original group that looked at the options and prepared the original IA.</p> <p><u>University of Edinburgh and NES.</u></p> <p>Support sought for students, University staff working in the PAEP and current research activities plus future research/collaborative plans</p>	<p>NHS Lothian's Community Optometry representative approved the proposal in 2015</p> <p>Dr C Elliott, College Registrar, College of Medicine, UoE confirmed strong support for both – October 2016</p>

**2.2 NHS Scotland's strategic context**  
**Table 3**

NHS SCOTLAND Strategic Investment Priority:	How the proposal responds to this priority	As measured by:
Person Centred	Ensure that people who use health and social care services have positive experiences and their dignity respected ( <i>Quality Outcome Indicator</i> )	Percentage of service users rating the care and support they get as excellent or good
	Improves the physical condition of the healthcare estate (SAFR KPI)	Proportion of estate categorised as either A or B for the Physical Condition appraisal facet
	Improves the quality of the healthcare estate (SAFR).	Proportion of estate categorised as either A or B for the Quality appraisal facet
	Improves people's opinions of the hospital environment (SAFR KPI)	Proportion of positive responses to the In-Patient Questionnaire
	Reduces the age of the healthcare estate (SAFR KPI).	Percentage of estate less than 50 years old
Safe	Improves statutory compliance (SAFR KPI)	Overall percentage compliance score from SCART
	Reduces backlog maintenance	Reduction in backlog maintenance costs
	Reduces significant and high risk backlog maintenance (SAFR KPI)	Significant & high risk backlog as a percentage of total backlog
Effective Quality of Care	Ensures the functional suitability of the healthcare estate (SAFR KPI)	Proportion of estate categorised either A or B for the Functional Suitability appraisal facet.
	Maintains clinically appropriate access for chronic disease patients requiring review/ treatment e.g. AntiVeg F drugs	Time between assessment and commencement of treatment. Number of patients reviewed within the clinically stipulated timescale.
	Maintains service access guarantees for elective patients	Percentage of patients seen within 12 weeks and treated within 12 weeks Percentage of patients seen and treated within 18 weeks.
Value & Sustainability	Increases level of staff engagement ( <i>Quality Outcome Indicator</i> )	Percentage of staff who would recommend their workplace as a good place to work
	Optimises resource usage (SAFR)	Cost of Emergency admissions
	Improves accommodation space utilisation (SAFR)	Proportion of estate categorised as 'Fully Used' for the Space

		Utilisation appraisal facet.
	Optimises overall running of buildings (SAFR KPI)	Total occupancy cost of building
	Optimises property maintenance costs (SAFR)	Property maintenance cost £ per sq. M
	Optimises property management costs (SAFR)	Facilities management costs £ per sq. M
	Optimises energy usage costs (SAFR KPI)	Energy costs £ per sq. M
	Reduces financial burden of backlog maintenance (SAFR)	Reduces backlog maintenance costs. Facilities Condition Index
	Improves design quality in support of increased quality of care and value for money (SAFR KPI)	AEDET score improved/targets met
	Reduces carbon emissions and or energy consumption (HEAT /LDP)	% in CO2 and energy consumption

## 2.3 The strategies that this proposal directly responds to

2.3.1 The Scottish Government's vision for healthcare by 2020 (2011), the recently published National Clinical Strategy (2016) and NHS Lothian's Strategic Plan – 'Our Health, Our Care, Our Future (2014 – 2024') refers to the following which have a specific bearing on eye services:

- Predicted increase in population, particularly those aged 75 and over. Currently 33% of all eye outpatient attendances and 51% of all surgical treatments are for service users in this age group. In Lothian, it is predicted that there will be a 22.2% increase in the over 75 age group by 2020. Almost all 70 year olds and over will have a cataract which may or may not be causing them a vision issue but may do as it develops
- An increase in the prevalence of long term conditions such as diabetes and the associated increase in demand for eye services (both screening and treatment). Ophthalmology has a very significant number of chronic disease patients on regular and often life-long follow-up.
- That people should live longer, healthier lives at home and be supported in doing so. Maintaining good vision is a key factor in allowing people to continue living independently.
- Prevention, anticipation and preventative self management of conditions could avoid unplanned admission to hospital. Issues with vision frequently contribute to falls.
- Continued investment in public, not private healthcare is a core value. In recent years, NHS Lothian has required to use the private sector to ensure it could provide sufficient ophthalmology outpatient and surgical capacity to meet the 12 week access and maximum treatment guarantee introduced through the Patient's Rights (Scotland) Act 2011. NHS Lothian ceased the use of the private sector in April 2016, and remains committed to this ethos. The predicted rise in demand will require further redesign and investment within ophthalmology to retain this position.



- 2.3.2 The 'See Hear', Strategic Framework for meeting the needs of people with sensory impairment in Scotland (2014) reflects that:
- Significant sight loss affects over 180,000 people in Scotland, one in 30 of the population. That is predicted to double by 2031. The majority are older people with more than one in two people aged over 90 having a significant sight loss. Evidence suggests that over 50% of sight loss is due to preventable and treatable causes.
  - As people are living longer and the incidence of illness and disability increases with age, early detection, prevention or stabilisation of sight loss is a key factor. The impact on an older person who may already be finding it less easy to continue with their previous lifestyle can be very significant affecting their ability to continue an independent life.
  - Sight impairment is a major contributory factor in falls and subsequent admissions to hospital, which in turn is a major contributory factor to admission to a care home facility. Reducing unplanned admissions to hospitals in NHS Lothian is a key strategic aim.
- 2.3.3 The proposal supports the Scottish Government led National Ophthalmology Work stream the key aims of which are: to extend ophthalmology staff competencies and capacity; to further develop shared care between community optometrists and secondary care; to use our data more effectively to plan services at sub-specialty level and to ensure the timing of access to services, where they are crucial, is appropriate for a patient's specific eye condition.
- 2.3.4 The proposal supports the work of the Scottish Government Elective Collaborative and the National Elective Centres Programme Board, to ensure future service provision meets anticipated demand across key elective care specialties and to progress the Elective Centres Programme in each of the four regions.
- 2.3.5 Following a ministerial announcement committing £200m capital for Elective Centres nationally (2015), initially focussing on hips, knees and cataracts, the East Regional Diagnostic and Treatment Centre Programme Board was established in September 2016. This has since evolved to become a project group of the Acute Workstream following establishment of the East Region Health and Social Care Delivery Plan Programme Board and associated workstreams (launched March 2017).
- 2.3.6 The proposal responds to agreement reached in the East Region to;
- Develop plans for 2 Elective centres in Lothian :-
    - (1) Short stay / day case Elective Centre, SJH (5 key specialties: - Gynaecology, General Surgery, Colorectal, Urology, Orthopaedics)
    - (2) Orthopaedic Elective Centre, Edinburgh bioQuarter Campus
  - Support redesign and re-provision of PAEP to deliver capacity for NHS Lothian's current and projected demand profile.
- 2.3.7 NHS Lothian has an extant clinical strategy, *Our Health, Our Care, Our Future (OHOCOF)*. This strategy was agreed by the NHS Lothian Board in 2014 and

covered all aspects of NHSL’s activities, including the key proposition that NHSL would move to centralise all of its acute activities onto its 4 acute sites. Significant change has occurred since the publication of *OHOCOF*, and so the Lothian Hospital’s Plan (LHP) should be seen as a strategic plan to move forward the work identified at a strategic level in *OHOCOF*, while identifying how NHSL will work in this new environment.

- 2.3.8 The need to re-provide the accommodation for eye services due to the condition of the PAEP building forms a key part of the LHP Elective Strategy and supports the direction of travel for the 4 main hospital campuses.
- 2.3.9 In tandem with this proposal steps have been taken to increase the level of ophthalmology service available in West Lothian. Through the development of Ward 20, St John’s Hospital, Livingston there has been an expansion of cataract services (outpatient, diagnostic and surgical treatment) and surgical treatment for glaucoma patients. This supports the regions direction around development of a short stay elective centre at St Johns Hospital whilst also supporting the direction of the LHP. Recently additional services have been developed in St John’s for patients diagnosed with acute macular degeneration requiring regular anti veg F injections to the eye.
- 2.3.10 As the preferred site, Edinburgh bioQuarter is a joint venture between Scottish Enterprise, the University of Edinburgh, City of Edinburgh Council and NHS Lothian. Once fully developed, the bioQuarter will offer up to 1.4m sq ft of specialist accommodation for academic, commercial and healthcare activity. The campus wishes to attract rapidly growing companies in the Health and Life Sciences sector and inward investors wishing to engage with the expertise on site. This proposal supports this venture by contributing to the development of this Science Park and helping to attract local and international investment, health innovation, entrepreneurialism and research benefiting Scotland’s financial and wider health economy.

## 2.4 External factors that influence this proposal

### 2.4.1 Building related – Table 4

	External factor	Aspect	Evidence
1	Legislative	Fire	Issued with an Improvement

			Notice in November 2014 and have actioned improvements. From a service and safety perspective this is not a sustainable Health and Safety position for NHSL Board. Follow-up visit from Scottish Fire Service – 29/11/16 – further future actions required.
2	Legislative	Disability Discrimination Act 2010	A general DDA assessment indicates poor access, layout and infrastructure which lead to problems for the service client group in particular. This is not a sustainable position for NHSL Board.
3	Legislative	Co2 emissions	Building produces 62% more CO2 emissions than a comparable modern building
4	Legislative	HEI and Building standards for provision of toilet facilities	Inpatient ward has shared toilet facilities
5	Locality change	The use of the local area around the existing facility for `health` has decreased. Residential and economic use has increased.	In planning terms - this has constrained planning and parking developments

#### 2.4.2 Service Related Table 5

	<b>External factor</b>	<b>Aspect</b>	<b>Evidence</b>
1	Demographics	Growth in demand, especially for chronic eye disease services (assessment and treatment) and removal of cataracts	Local and national predictions of growth. Scottish Govt predictions on growth in cataract demand supported by South East Regional projections ( 2017)
2	Legislative & Economic	Patient Bill of Rights (Scotland) Act 2011 – Treatment Time Guarantee	Use of locum medical staff to provide required level of capacity. Demand growth due to demographics – see above
3	Technology	Digital imaging has become the accepted diagnostic tool and this is set to increase with developments in technology.	Considerable rise in demand No more expansion space so patients undergo tests in same room at same time.
	<b>External factor</b>	<b>Aspect</b>	<b>Evidence</b>
4	Commercial factors	Research, Development, Clinical Trials and commercialisation	Limited potential to engage with University, Research and potential commercial partners to trial/improve treatment for service users. Evidence from Scottish Enterprise and

			industry (26 <sup>th</sup> April 2016 – see Appendix 5) of the benefits of collaborative working and facilities within a bespoke new facility.
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### **Building Related**

- 2.4.3 The existing PAEP building has reached the end of its economic life as a clinical facility. The service developments in ophthalmology and demand for services have exacerbated the issues of an inefficient layout, limitations with lifts and external envelope deterioration. Major improvements to address backlog maintenance and meet statutory standards will require service decant. Such works will not facilitate significant improvements in space utilisation and service provision due to structural and layout constraints.

### **Service Related**

#### **Demographics**

- 2.4.4 The demographic profile of ophthalmology patients using NHS Lothian services in 2016/17 is below. This is particularly relevant to service planning in light of predicted increased life expectancy and the proportion of our patients in their elder years.

**Table 6 – Activity April 2016 to March 2017**

Age range	Outpatients	Day Cases	Inpatients
0 – 19 years	8344	270	38
20 – 39 years	10846	173	87
40 – 59 years	20460	723	255
60 - 79 years	39385	3700	479
80 years +	22847	2424	164
<b>Total</b>	<b>101,882</b>	<b>7290</b>	<b>1023</b>

Source: TRAK Oracle analysis. Tableau Dashboard + Golden Jubilee invoiced activity 16/17. Age profile of Golden Jubilee cases not available i.e. applied proportionally to OP and DC based on TRAK profile for patients aged greater than 40 yrs.

#### **Future Demand Forecasts**

- 2.4.5 NHS Lothian has undertaken projections for future demand in ophthalmology. The table below shows predicted demand for inpatients and day case surgery across Lothian and outpatient services planned to be delivered from PAEP and so directly affected by this proposal.

**Table 7 – Estimates of future demand for Ophthalmology relevant to this proposal**

	2013	2020	2025	2030
Inpatient demand – Lothian-wide	964	1054	1143	1240
Day Surgery demand – Lothian wide	7312	8244	9303	10352
Combined Inpatient and day case demand – Lothian wide	8276	9298	10446	11592

New outpatients – PAEP only	22798	24,744	26,617	28,524
Review outpatients – PAEP only	44636	48,446	52,114	55,847
Total outpatients – PAEP only	67,434	73,189	78,731	84,371

Source: NHS Lothian Analytical Services. Please see notes in section 3.1.8

- 2.4.6 This represents a projected 25% increase in demand for new and for review outpatients between the baseline year of 2013 and 2030, and a corresponding 41.6% rise in demand for inpatient and surgical day case services, of which approximately 80% is estimated to be for cataract surgery.
- 2.4.7 Since 2013, there has been a significant increase in the number of IVT injections delivered to service users in Lothian in line with agreed developments in infrastructure and workforce. In 2013, capacity was 3780. At November 2017, this is 11,900. This additional 8000 patients was therefore not taken account of in the above figures but will be for the Outline Business Case.
- 2.4.8 The original demand calculations for the future inpatient, daycase and outpatient volumes were calculated from SMR-equivalent data held on NHS Lothian's Patient Management System, Trak. The figures, from 2013 were projected forward to 2020, 2025 and 2030, adjusting for demographic change. They remain within this document at tables 7 and 13 and these figures have been the basis of the majority of the planning for the Redesign of Eye Services in Lothian.
- 2.4.9 Earlier this summer however, alternative figures became available through the Regional Delivery Plan process. Within these forecasts projections were made on a procedural level basis for residents of east regional boards using a variety of assumptions which considered both the impact of demographic change and changing intervention rates.
- 2.4.10 Although future work on these procedural level projections is anticipated, the procedural breakdown available was felt to provide a better bias upon which to anticipate theatre requirements and, accordingly, has been chosen in lieu of activity figures for that purpose. As such this regional data was used in Table 18.
- 2.4.11 It is expected that as the regional planning work progresses and the forecasts available through this route become more refined, future iterations of these regional figures will be used to inform all aspects of re-provision planning.

#### Patient Bill of Rights (Scotland) Act 2011

- 2.4.12 Under the Patient Rights (Scotland) Act 2011 all patients have a legal right and guarantee that their treatment will commence within 12 weeks of agreeing to that treatment with their clinician. In recent years very significant numbers of Lothian residents have received treatment in the local private sector to ensure this obligation was met due to there being insufficient capacity to achieve this within existing services. This is not a sustainable solution due to the cost. Several plans have been put in place to increase NHS capacity and at time of writing NHS Lothian is no longer using the local private sector for ophthalmology surgical treatments such as cataracts. It does continue to send approximately 220 patients per month to receive their assessment and surgical treatment at the NHS Golden Jubilee Hospital, Clydebank. To ensure that NHS Lothian is capable of meeting current and future demand it needs to improve the efficiency and throughput of ophthalmology theatres which is not feasible in the current facilities at PAEP and ensure that there are sufficient staffed theatre sessions available to deliver the required service.

#### Technology

- 2.4.13 When the PAEP was originally designed and built it included a number of dark rooms which were used to develop photographs taken of the eye in clinic. Ophthalmic imaging has been revolutionised within the last decade with the development of digital imaging equipment capable of giving much improved information for clinicians on the anatomy and function of the eye and presence of disease and its progression.
- 2.4.14 Within PAEP there are now 4 Optical Coherence Tomography (OCT) machines recently networked to workstations throughout the building but located in available space that may not support patient flow. The demand for images (particularly OCT) has grown extremely quickly from 13,000 in 2013 to 21,000 for the 12 months ending March 2016. Ophthalmic Technicians have been recruited to operate these machines on a full time basis. Demand is expected to continue to rise in line with the increased use of AntiVeg F drugs which require very regular imaging follow-up.
- 2.4.15 Each OCT machine requires sufficient space for a patient, carer and member of staff to use it plus good quality ventilation is required. PAEP has very limited space for Digital Imaging and currently there is one imaging room with 3 separate pieces of diagnostic equipment which frequently has 3 patients, their carer and a member of staff at each (see image below). This delivers a poor quality of service in terms of dignity and confidentiality. The future of ophthalmic imaging will rely on ever improving and evolving diagnostic imaging equipment. There is no expansion space at PAEP to accommodate that.

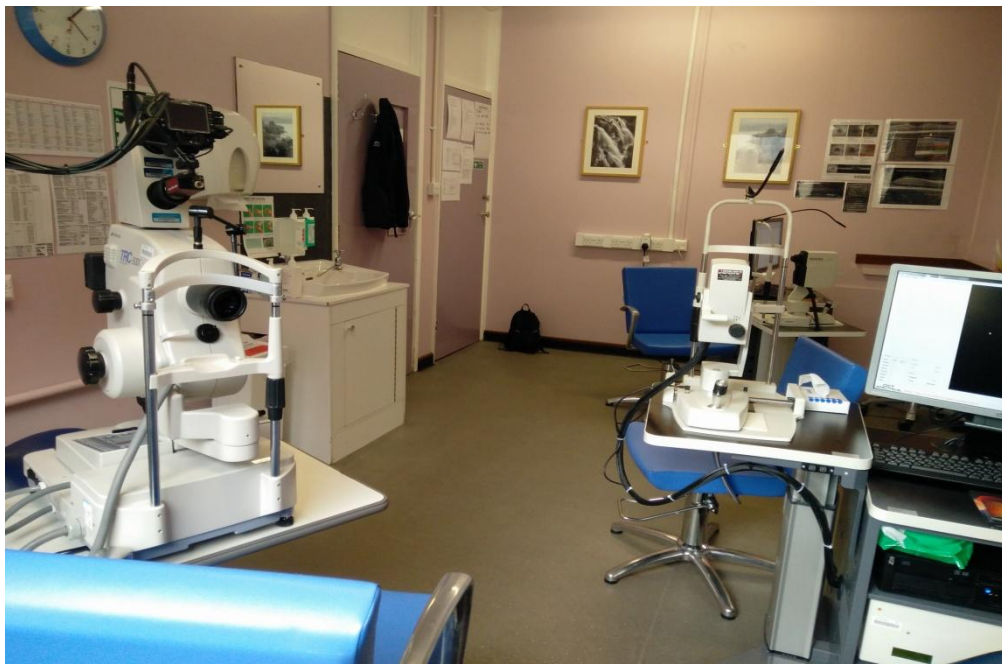


Figure 1 - Main Medical Photography and Diagnostic area, Eye Outpatients

### Commercial factors

#### Existing site

- 2.4.16 The existing building sits within a campus of three healthcare buildings divided by a public highway (but linked by a tunnel). The Lauriston Building is focussed on Outpatients and includes a Blood Donor Centre. The Chalmers Centre is a recently refurbished and extended listed building again for outpatients. The surrounding area has been developed in recent years and sits at the western edge of the Quartermile development – an economic development masterplan for housing, commerce and

academia. High value commercial interest in the existing site for alternative uses will be mitigated by planning constraints and the linked health facilities.

- 2.4.17 The limitations of the existing building, lead to poor appraisal for redevelopment for the existing services, but suggest alternative uses will be viable. This could include provision of support accommodation to the existing health and social care requirements in the central area.

Suggested option

- 2.4.18 The potential development of the Edinburgh BioQuarter, adjacent to the Royal Infirmary of Edinburgh, has been identified within the campus masterplan, jointly commissioned by Scottish Enterprise, University of Edinburgh, City of Edinburgh Council and NHS Lothian. The site offers a new build opportunity unencumbered by existing facilities, but within the parameters of a leading science park focused on leveraging commercial, research and healthcare opportunities. The development will require investment in public realm and infrastructure commensurate with such a campus, but with the added advantage of shared buildings such as multi storey car parking.
- 2.4.19 The key enabler is the innovative opportunity to develop “collaboration space” within the new facility to bring industry, research and healthcare professionals into appropriate space. Whilst including a “traditional” Clinical Research Facility, for which the University of Edinburgh have indicated funding, the concept will be designed to meet the requirements of industry and translational medicine as well as for research. The University of Edinburgh are developing a capital and ongoing revenue funding business plan for this proposal. Part of the Edinburgh BioQuarter partners’ vision is to include collaboration space across all their buildings.

### **3. The case for change**

#### **3.1 Current arrangements**

##### **3.1.1 Services affected by this proposal**

- 3.1.1.1 The services and activities affected by this proposal are ophthalmology services to adults, children and young people who are existing or future patients in Lothian and who are or will be treated at the PAEP. These services are summarised below:

Emergency eye care and injury care and treatment in response to referrals from Community Optometrists, General Practitioners or Emergency Departments
Emergency surgery and treatment for Vitreo-retinal disease including retinal detachment and eye trauma
Diagnosis, treatment and review for patients with chronic diseases such as age related macular degeneration, diabetes, diabetic macular oedema and glaucoma.
Assessment and surgical treatment for the removal of cataracts
Diagnosis and treatment of corneal eye disease including corneal graft
Treatment and surgery for adult or child squints
Specialist neuro-ophthalmology care for visual disorders such as optic neuropathy as a result of brain tumours or stroke
Specialist surgery around eyelid/tear ducts for cysts, tumours and abnormalities
Treatment for general eye conditions
Children's services – other than those planned to go to the new Edinburgh Children's Hospital in 2018 (inpatient beds, theatres)

3.1.1.2 PAEP is the principal ophthalmology site in Lothian. In addition, currently 220 cataract patients per month are seen and 70% (154) treated at the NHS Golden Jubilee Hospital.. It is now assumed they would be fully accommodated in future in the new Edinburgh eye hospital.

3.1.1.3 Additional outpatient and theatre capacity has recently been put in place for West Lothian through the redevelopment of Ward 20.

3.1.1.4 The Diabetic Retinopathy Screening service to the local area and the Lothian-wide screening booking service will relocate to the Lauriston Building, Lauriston Place, Edinburgh using the vacated Lothian Optometry and Treatment accommodation.

### 3.1.2 Location of services and activity

3.1.2.1 A full analysis of the 2014/15 service was undertaken to respond to the data need for the Equality Integrated Impact Assessment undertaken with service users and staff representatives in February 2016. That data has now been updated for the year ending 16/17 and is shown below:

**Table 8**

2016/17	Outpatients	Day cases	Inpatients
Princess Alexandra Eye Pavilion	79181	4379	965
St Johns Hospital, Livingston	17712	720	28
Royal Hospital for Sick Children	470	236	30
Western General + Roodlands Hospital	2184	4	0
NHS Golden Jubilee Hospital – source NHSL TRAK	249	0	0
NHS Golden Jubilee Hospital – source invoiced OP attendances with above	2073	1854	0



deducted			
External provider - Edinburgh	14	97	0
	<b>101,882</b>	<b>7290</b>	<b>1023</b>

Source: TRAK Oracle. Tableau Dashboard + actual activity at Golden Jubilee as per invoiced

### 3.1.3 Location of Service Users and associated catchment areas

3.1.3.1 The location of service users and their catchment areas for the full year 2014/15 is below:

**Table 9**

Locality of residence based on postcode	Outpatient	Day Case	Inpatients
Edinburgh	55.5%	53%	49.7%
West Lothian	14.1%	9.9%	23%
East- Lothian	11.8%	13.2%	9.8%
Mid Lothian	10%	10.4%	9.8%
Non-Lothian Health Boards	7.7%	7.1%	7.1%
Golden Jubilee (post codes not available for analysis)	0.8%	6%	0

Source: TRAK Oracle analysis undertaken by NHSL Analytical Services on 1/10/2015. IRS732

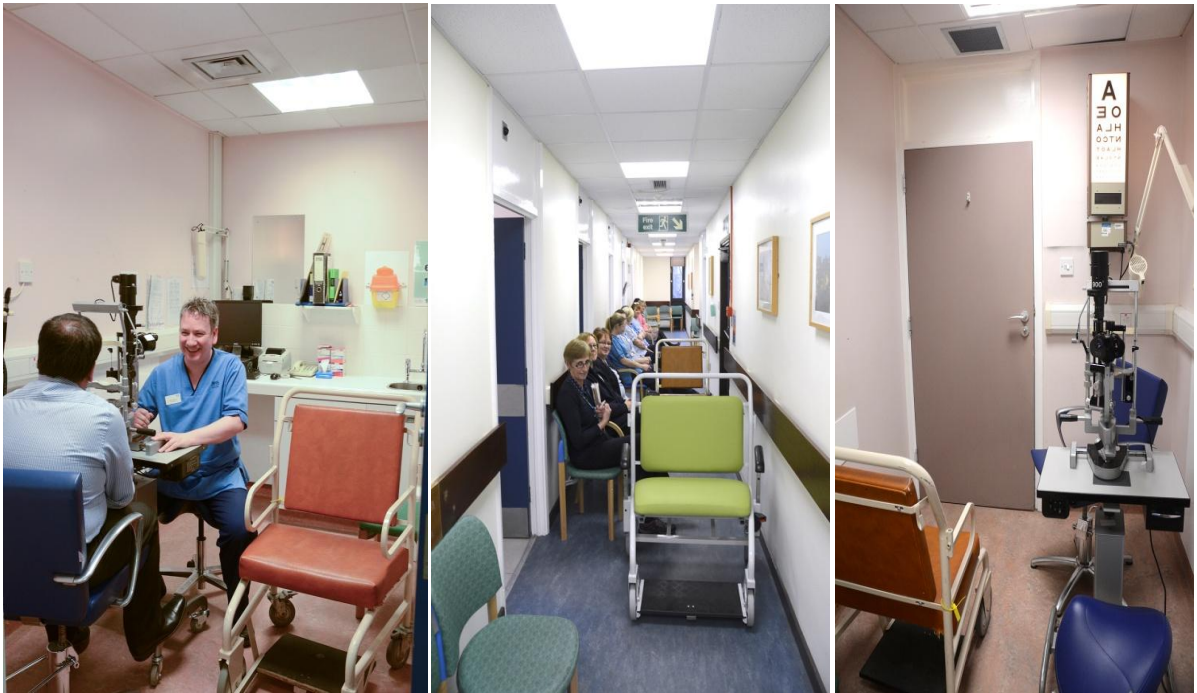
### 3.1.4 Functional size and description of existing facility

3.1.4.1 The Princess Alexandra Eye Pavilion (PAEP), Chalmers Street, Edinburgh opened in 1969. It is a tower block design consisting of seven floors of clinical and supporting facilities and office accommodation (5697m<sup>2</sup>). It was originally designed to provide 72 inpatient beds, 1 operating theatre and one outpatient department supported by medical photography with dark rooms for film processing and development. Now there are 20 Day Case Surgery chairs, 12 inpatients beds plus 2 post day case recovery bays and 3 operating theatres. There are 5 individual outpatient areas supported by Ophthalmic Imaging and photographic services using largely digital imaging technology. The table below summarises the current accommodation use.

Figure 2 – The hospital entrance



A key issue for service users and carers is the restricted access the current site gives to the hospital entrance.



Figures 3, 4 and 5 above: Outpatient Consultation rooms and waiting areas in the main Eye Outpatient Department

Figure 6 below: The main stairwell linking the 3 main outpatient floors, the ward, day bed suite, theatres and support accommodation. The alternative to the 2 lifts and the main evacuation route for patients and staff.



**Below** – the patient journey to theatre and back.

Patients travel in groups of 5 to 6, gowned and marked for surgery. They leave from the Day Surgery Ward, Level 2 (entrance on left of image), and travel using one of the 2 lifts in the building to Level 5 Theatres. They share the lifts with all outpatients, staff, supplies, waste, and movement of surgical instruments, facilities and workmen.

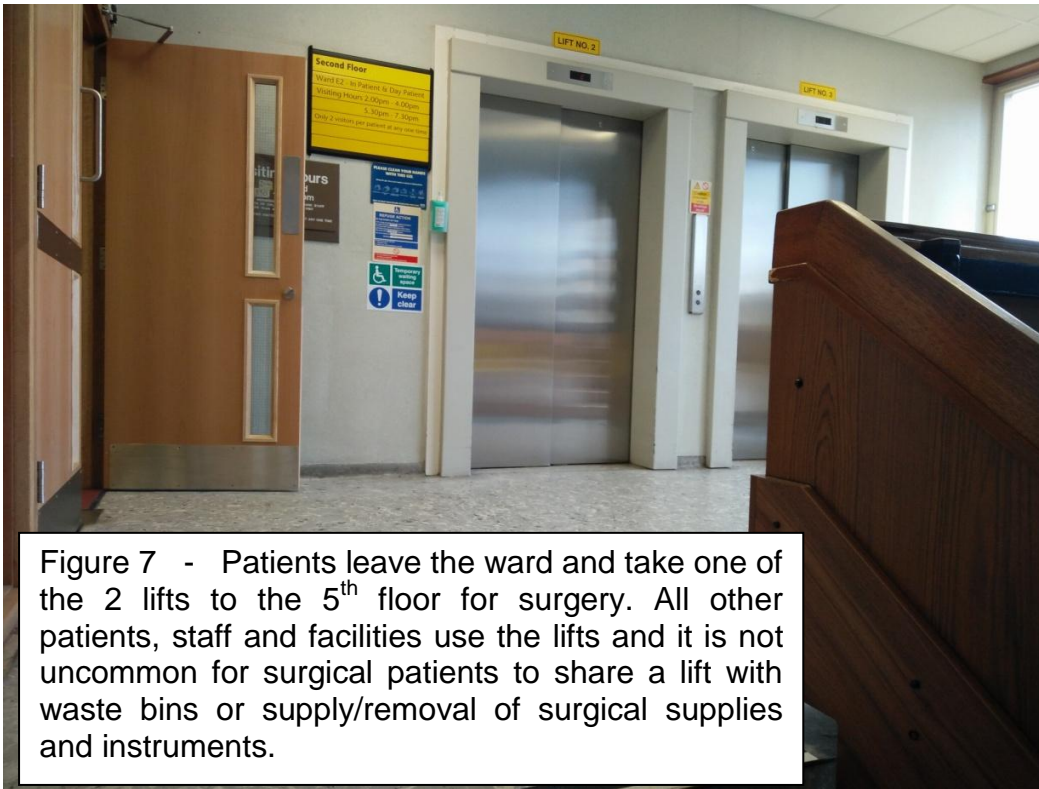


Figure 7 - Patients leave the ward and take one of the 2 lifts to the 5<sup>th</sup> floor for surgery. All other patients, staff and facilities use the lifts and it is not uncommon for surgical patients to share a lift with waste bins or supply/removal of surgical supplies and instruments.



Figure 8 - The pre-operative wait area. Note the unavoidable overflow of theatre storage into the main theatre corridor. Patients walk past the storage and supplies on their way to the operating theatre for their procedure.



Figure 9/9a – Surgical Operating Theatre 3, PAEP. Theatre teams working in restricted space. Not suitable for patients who are undergoing a general anaesthetic. Temporary theatre closures due to ingress of water from roof.



Figure 10 - Leaving theatre and the post operative area moving past equipment and supplies



Figure 11 - Along the narrow theatre corridor, passing the main electrical switch cupboard, back to the lift on the stairwell

Accommodation provided currently

Lower Ground	Health Records library and staff. Secretarial Team. Staff changing rooms, staff room, University Lecture Theatre, Linen, gases and general facilities storage and team. Plant Rooms
Ground	Acute Referral Centre ( 6 rooms) and reception Main Outpatient Department (19 rooms)and reception Fields Department (5 rooms) Orthoptic Department ( 4 rooms) and reception Medical Photography and Imaging (2 rooms) Pharmacy, Cashier, Play Room + Management Offices Ocular Prosthetist – consultation and workshop
First Floor	Medical staff offices (21 consultants, 5 associate specialists, 13 medical trainees Waiting List Office Research Room Medical Photography store and office, University Library and Wet Lab teaching and education facility
Second Floor	Ward reception 12 inpatient beds plus 2 beds of day patients requiring recovery. 20 day surgery chairs (pre and post surgery) Day room, treatment room
Third Floor	Acute Macular Degeneration Outpatient Department (6 rooms), reception, waiting area AMD OCT Imaging room Pre injection room and Clean Room for IVT injections Records Store/Office. Low Visual Aids store Electro-diagnostics testing and reporting room Vision Support Service (RNIB) Diabetic Retinopathy Screening – Photographs and Fields (2 rooms) + OCT Room and wait area. NHS Lothian Diabetic Screening Appointments Hub and management
Fourth Floor	Cataract and Corneal Clinic + other clinics (8 rooms) and reception 4 Cataract and Corneal biometry and vision test bays (space for 4) Lasers ( 3 rooms) Waiting area Minor Surgical room
Fifth Floor	1 immediate pre-op waiting area (8 chairs) 3 operating theatres (2 suitable for general anaesthetic patients) 1 staff room, Store, Theatre office
Annexe - Lower Gnd , Lauriston Building	Lothian Optometry Teach and Treat Centre (NES funded) Waiting area 6 consulting/diagnostic rooms

### 3.1.5 Care pathways and patterns of working

#### Patients requiring rapid or emergency treatment

- 3.1.5.1 Acute presentations include retinal detachment, acute glaucoma, corneal infection, injuries or the sudden loss of vision. These are all potentially blinding conditions.
- 3.1.5.2 Patients are referred to the service by their Community Optometrist, GP, through a visit to the Emergency Department or from other hospitals across the South East of Scotland. PAEP is a tertiary referral centre for certain sub-specialties receiving urgent cases from Lothian, the Borders, Fife, Stirling and Falkirk. The sub specialties include Vitreo-retinal Surgery (VR), Corneal Surgery, Glaucoma, Macular retinopathy, Diabetes, Neuro-ophthalmology and Paediatric Ophthalmology.
- 3.1.5.3 Urgent cases are reviewed at the Acute Referral Centre (ARC) at PAEP and within urgent appointment slots in clinics at St Johns Hospital. ARC is a mainly consultant led service supported by Associate Specialist Doctors and Nurse Specialists. ARC sees and treats 13,000 patients per year. It is open 5 days per week.
- 3.1.5.4 50% of VR cases present as an emergency or are urgent such as retinal detachment. Advanced micro-surgical techniques are used for this surgery which is normally required within 48 hours of on-set of symptoms. Dedicated theatre sessions are available for VR surgery and additional operating sessions are opened up, as required, including at the weekend to manage patients within a clinically appropriate timescale.

#### **Referrals and Diagnosis**

- 3.1.5.5 The majority of referrals are made electronically and are triaged by consultants to the most appropriate sub-specialty team. The patient is then sent an appointment for an outpatient consultation.
- 3.1.5.6 As well as giving a detailed history, most patients undergo a wide range of diagnostic tests as part of their initial visit to allow the clinician to make a diagnosis.
- 3.1.5.7 Photography and imaging play a very significant role in the diagnosis and review of ophthalmology patients. Increasingly digital imaging of the eye is undertaken which gives a more accurate diagnosis and baseline image of the eye to assess the impact of treatment more effectively. The use of an Ocular Coherence Tomography test (OCT) has increased very considerably over recent years. This service is delivered mainly out of a single Medical Photography Room due to shortage of space in the main Outpatient Department.

#### **Treatment**

- 3.1.5.8 Treatment can be in the form of prescribed medicines, laser treatment, intra-vitreous injection of drugs into the eye or surgery.
- 3.1.5.9 Over 30,000 pharmacy items were dispensed from the PAEP Pharmacy during 2014/15.
- 3.1.5.10 Laser treatment is used to reduce eye pressure in glaucoma patients and prevent small blood vessels in the eye leaking or blocking leading to sight loss in diabetic patients with more advanced retinopathy or maculopathy. It is also used to carry out capsulotomy if, after cataract surgery, the remaining membrane at the back of the eye thickens or clouds over and needs to be reduced. This can be quite common. Approximately 2000 laser treatments are carried out per year at PAEP including emergencies or laser undertaken as part of an outpatient consultation where the urgent need was identified.



- 3.1.5.11 Following the licensing of AntiVeg F drugs for a range of chronic eye conditions, demand for intra vitreal injections (into the eye) has risen dramatically. It has been necessary to increase the capacity for these from 80 per week in 2013 to up to 240 per week (11,872) per year) in November 2017. In 2013, this service was delivered exclusively by medical staff. Trained Nurse Specialists now deliver 87% of the weekly injections. A second clean room is due to be introduced to PAEP in early 2018. Patients have courses of monthly injections with essential regular review of the amount of fluid in the eye. The need for injections may run for several years. Conditions can often be stabilised for some time before then worsening, leading in many cases to sight loss. The growth in the use of these drugs looks set to continue and already there are suggestions that the range of conditions for which they will be licensed is due to increase following successful trials e.g. dry macular degeneration. Of those patients with macular disease approximately 10% have the wet form; 90% dry. The cost of these drugs currently can be up to £127,000 per week which means any extension in the range of conditions treated in this way is a significant service development for NHS Scotland requiring drug funding, sufficient clean room facilities and suitably trained staff to support delivery.
- 3.1.5.12 8300 day case patients and inpatients received treatment in 2016/17 either in NHS Lothian or through the Service Level Agreement that NHS Lothian has with Golden Jubilee NHS Hospital for cataracts. Approximately 86.7% of surgical treatments undertaken were cataract procedures and approximately 98% of those were undertaken as a day case. Approximately 50% of patients who have a cataract procedure undertaken in one eye return to have the procedure carried out on their second eye. Non-cataract surgical activity includes: trabulectomy, vitreo-retinal, corneal, strabismus and ocular surgery.
- 3.1.5.13 Day Chair spaces at PAEP were increased from 12 to 20 in June 2015 to accommodate extra day patients treated when the length of both morning and afternoon theatre sessions was extended. The percentage of all surgical cases carried out as a day case over the past few years is detailed below. In 2016/17, 87.7%% of all surgical cases in or on behalf of NHS Lothian by other providers were undertaken as a day case.

**Table 10**

	All Lothian		
	2014/15	2015/16	2016/17
Day Cases activity NHSL sites (TRAK)	4962	5177	5339
Day Cases activity NHS Golden Jubilee – (Invoiced)	472	834	1854
Day Case activity – External Provider (TRAK)	2117	2295	97
Total Day Cases	7551	8306	7290
Inpatients - TRAK	981	1064	1023
Day Cases all + Inpatients	8532	9370	8313
% Day Case	88.5%	88.6%	87.7%

Source: NHSL Tableau Dashboard + Golden Jubilee invoiced activity from Outpatient Services

NB. Above includes Day Cases undertaken at RHSC circa 200 day cases per year.

- 3.1.5.14 When the PAEP was built in 1969 there were 72 inpatients beds which, with advances in methods of surgical treatment, are now reduced to 12. The mean length of stay for an inpatient was recorded as 1.9 days in 2016/17

3.1.5.15 The main reasons for patients having an overnight stay are a mixture of pre and post ophthalmic surgical requirements, medical ophthalmology reasons or unavoidable social reasons such as distance travelled.

**Follow-up of chronic disease patients**

3.1.5.16 Patients are followed up according to their condition and treatment course and discharged where possible. There are a very significant number of chronic condition patients whose follow-up will be life-long and whose treatment aim will be to maintain or stabilise their sight for as long as is possible. Regular access to review and testing is essential for the majority of these patients so that deterioration can be identified and treatment provided in a timely way to prevent sight deterioration or loss. The provision of these services has a significant impact on quality of life and maintaining independence for a large number of service users.

### 3.1.6 Service Performance Data

3.1.6.1 The key performance indicators are listed in **Table 11** below

	Key Performance Indicator	Relevance of KPI	Target	Current	Improvement Required
New Outpatient	Maximum wait from referral to appointment	How quickly patients are seen	84 days	Up to 140 days (specific sub specialities)	100% within 84 days
	Did not attend rate	Wasted capacity	10%	10.9	0.9%
	New to Return ratio	In some circumstances a high ratio can indicate that patients are being asked to attend more often than their condition requires.	N/A	1:1.79	N/A
	Wait from diagnosis of macular degeneration to assessment for treatment	Adherence to protocol	14 days max	14 – 21 days	100% within 14 days
	Wait between assessment for AntiVeg F treatment and commencement	Adherence to protocol	14 days max	7 – 21 days	100% within 14 days
Return Outpatient	Under development by SG Access Support Team	Ensure clinically important review periods are not affected	TBC	Target to be agreed	Yes
Surgical Treatment	Maximum wait from agreement to surgery	How long patients wait to be treated	84 days	84 days	
	Theatre cancellations	How efficiently theatre capacity is used	9.2%	11.2%	2%
	Utilisation of funded theatres	As above	95%	87%	8%
	Percentage of all cases performed as a day case	Patients not admitted to a bed unnecessarily. An indication of efficiency	98%	92%	6%
	Average number of surgical cases per session (all)	Efficient use of surgical time	TBC	4.11	TBC
	Average number of cataract surgical cases per session	Efficient use of surgical time	7 - 8	5 - 6	Yes
	Infection rate per X surgical procedures	Governance and safety			
Bed occupancy		TBA	72%	Yes	

### 3.1.7 Existing Service Capacity

3.1.7.1 For some years, NHS Lothian has used the services of Medinet and the local private healthcare sector in Edinburgh to maintain patient treatment time guarantees.

3.1.7.2 In response to this NHS Lothian has provided additional resource to increase surgical capacity within PAEP. All morning and afternoon theatre sessions were extended by 30 minutes operating time in July 2015 to allow for an additional 1 cataract in all cataract lists and an additional 1 cataract in 50% of specialist surgical lists. In summer 2015 a minor operations theatre was upgraded to make it suitable for ocular plastic and cyst removal lists. The sessions freed in main theatre from December 2015 were converted into a weekly cataract and a corneal list. Together these provided capacity for 1323 procedures and assisted in the withdrawal from the local private sector. In 2016/17 a 3 year service level agreement was put in place to allow Lothian cataract patients to be seen and treated at the NHS Golden Jubilee Hospital (GNJH) in Clydebank. This replaced previous arrangements with private healthcare providers and reduced cost.

**Core `job planned` service capacity as at November 2017 – All Lothian plus Golden Jubilee NHS Hospital. Table 12**

	New Outpatient	Return OP	Day Case or Inpatient	IVT
Cyst	1408	0		
Electro Diagnostics (EDV)	220	44		
Uveitis/Immuno-suppression	0	1158		
Botox	82	252		
Strabismus	676	676	126	
Corneal	861	3666	294	
Laser	231	588		
Thyroid	126	294		
DMO IVT injection				800
Optometry teach & treat	1032	176		
Glaucoma	1236	6338	294	
Oculoplastic	508	1142	378	
Medical Retinal	168	1280		
Cataract – NHSL	3444	273	5250	
Cataract – GJH	2640	0	1848	
Surgical Retinal	428	2090	816	
IVT injection				11,072
Diabetic	692	3494		
Paediatric	2142	2973		
Macular Assessment	604	3037		
Neuro -ophthalmology	1266	1612		
General	2075	7923		
Acute Referrals Centre (ARC)	6684	3742		
WIDE clinic – Nurse Led	416	0		
	<b>26939</b>	<b>40758</b>	<b>9006</b>	<b>11,872</b>

Source: Capacity was taken directly from electronic job planning software (Zircadian) 2017/18 and the Patient Administration System (TRAK) with nurse,AHP capacity added and updated for in year staff changes. This excludes paediatric surgery as that is carried out a RHSC/Childrens & Young Persons

Hospital which is not included in this IA. This is calculated over 42 weeks to take account of annual leave, study leave and public holidays but not special leave such as parental, carers or paternal leave etc.

- 3.1.7.3 A range of efficiency measures have been identified across the organisation to maximise the use of this available job planned capacity such as reducing did not attend rates for outpatients and improving utilisation of theatre time and use of theatre lists during leave periods where prospective cover is feasible within job plans.

#### Additional capacity introduced at St John's Hospital, Livingston – 2017

- 3.1.7.4 The redevelopment of Ward 20, St John's Hospital has provided a dedicated location for cataract assessment clinics at St John's Hospital and has increased theatre capacity from 5 to 8 sessions per week making it possible to undertake an additional 619 eye surgical treatments per year.

#### The National Ophthalmology Workstream and action to deliver sustainable Ophthalmology Services

- 3.1.7.5 NHS Lothian ophthalmology services are full contributors to the National Ophthalmology Workstream which is led by the Scottish Government Access Support Team. The aim is to share and harness best practice to enable services to utilise available capacity optimally on a sustainable basis. This is being taken forward through a series of peer review visits, sharing of innovative good practice and benchmarking data. A benchmarking dashboard is being developed which will be used to capture and report upon the Benefits Realisation Register (Appendix 1).
- 3.1.7.6 The Scottish Government wrote to NHS Boards in November 2016 emphasising the need for this work to be prioritised and the structure within which this would be managed and reported going forward. An important, and welcome focus will be given to establish effective information to allow return outpatients to be more rigorously managed to ensure adequate and timely follow-up. Boards will be required to put in place systems that give focus to follow up timescales in a similar way to that in place for the management of new patient access to the service.
- 3.1.7.7 A key recommendation from the June 2016 peer review is that the service should aspire to deliver 'a minimum of one cataract surgery every 30 minutes, including turn-around time, and a minimum of eight in a four hour theatre session'. The current actual number is an average of 5-6 due to: the number of training lists; distance between the day ward and the theatre floor; because there is no scope to make the theatre process more efficient (double scrubbing) due to the constraints of the accommodation and safe pace of surgery for some clinicians. However it should be noted that there are a small number of clinicians who routinely schedule 7 cases per list. This proposal is to provide all theatres with the facility to have a routine high volume throughput of up to 8 cases per session to maximise existing theatre sessions. Future demand and capacity modelling (table 18) proposes 7 cases per session initially. It is recognised however that the actual number may be clinician dependent and expected cases will be reduced for training lists.

### 3.1.8 Service Demand

- 3.1.8.1 The summary of projected demand for the service can be seen below. **Table 13**

<b>Demand</b>	<b>2013</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
Inpatient demand – Lothian-wide	964	1054	1143	1240
Day Surgery demand – Lothian wide	7312	8244	9303	10352
Combined Inpatient and day case demand – Lothian wide	<b>8276</b>	<b>9298</b>	<b>10446</b>	<b>11592</b>
New outpatients – PAEP only	22798	24,744	26,617	28,524
Review outpatients – PAEP only	44636	48,446	52,114	55,847
Total outpatients – PAEP only	<b>67,434</b>	<b>73,189</b>	<b>78,731</b>	<b>84,371</b>

Source: NHS Lothian Analytical Services.

#### Method used to calculate future demand

- 3.1.8.2 Services bed model. This takes 2013 inpatient and day case activity from the TRAK Patient Administration System as a baseline and adjusts it for waiting list imbalances, independent sector use for elective activity and demographic change. Outpatient activity used outpatient activity held in TRAK that was flagged to be returned nationally on the SMR00 scheme for both attendances and those that did not attend. New outpatient was also adjusted for demographic change although not for waiting list changes. The resulting new outpatient forecast is used to calculate the anticipated return demand by applying the 2013 new to return ratio.
- 3.1.8.3 It should be noted the activity sourced through SMR00 data as a baseline for projections understates actual outpatient activity for 2013 when compared with Tableau. A further analysis is underway to understand the difference. As SMR00 is currently used for costing purposes it is thought that the proportional difference in demand forecasts should be still relevant.
- 3.1.8.4 The original demand calculations for the future inpatient, daycase and outpatient volumes were calculated from SMR-equivalent data held on NHS Lothian's Patient Management System, Trak. The figures, from 2013 were projected forward to 2020, 2025 and 2030, adjusting for demographic change. They remain within this document at tables 7 and 13 and these figures have been the basis of the majority of the planning for the Redesign of Eye Services in Lothian.
- 3.1.8.5 Earlier this summer however, alternative figures became available through the Regional Delivery Plan process. Within these forecasts projections were made on a procedural level basis for residents of east regional boards using a variety of assumptions which considered both the impact of demographic change and changing intervention rates.
- 3.1.8.6 Although future work on these procedural level projections is anticipated, the procedural breakdown available was felt to provide a better bias upon which to anticipate theatre requirements and, accordingly, has been chosen in lieu of activity figures for that purpose. As such this regional data was used in Table 18.
- 3.1.8.7 It is expected that as the regional planning work progresses and the forecasts available through this route become more refined, future iterations of these regional figures will be used to inform all aspects of reprovion planning.
- 3.1.8.8 Demand for return outpatient services is not subject to an access target and data on this demand is limited at this point though the Scottish Government Access Team are proposing future focus on this. Extensive overbooking of clinics is the way in which the service manages the new outpatient and return outpatient demand though this is not sustainable and relies on staff good will.

3.1.8.9 In response to predictions of future demand for elective services a ministerial commitment announcing £200m investment in Elective Centres across Scotland initially focussed on hips, knees and cataracts. The initial announcement proposed two of these centres for the East Region to be sited in NHS Lothian (St Johns and the Royal Infirmary of Edinburgh BioQuarter site).

3.1.8.10 As part of the work undertaken by the East Region Ophthalmology Group to inform configuration of elective centres for the region DCAQ analysis by the region to date supports the following outputs;

- I. NHS Fife and NHS Borders have sufficient capacity to manage the projected demand profile within their own Board areas with no requirement to access additional capacity in a regional centre.
- II. NHS Borders has the physical infrastructure to manage current and future demand as per the projected demand profile but their ability to deliver a service to their population is dependent on the ability to recruit and retain staff.
- III. NHS Borders will continue to work with NHS Lothian and NHS Fife to identify solutions to workforce challenges and identify potential for a regional workforce model.
- IV. 1 additional cataract theatre in the Queen Margaret Hospital (QMH), expected completion July 2018, will enable NHS Fife to provide adequate infrastructure to deliver the board's current and projected demand profile including repatriation of activity currently delivered at Golden Jubilee National Hospital (GJNH)
- V. Once in operation NHS Fife have identified approximately 4 theatre sessions a week from this additional capacity, reducing by 1 session a year, which might provide short term capacity for other boards. Utilisation of these theatre sessions would rely on a boards ability to staff identified sessions.
- VI. NHS Lothian cannot meet current demand and an existing agreement with GJNH equates to 2640 new cataract assessments per year with a conversion rate of 70% for cataract treatments (1848).
- VII. The current Princess Alexandria Eye Pavilion (PAEP) facility is not functionally suitable and will prevent the Board from delivering a sustainable ophthalmology service.
- VIII. NHS Lothian has concluded that redesign of the current service, maximising use of community services and delivering specialist activity in functionally suitable estate will provide capacity to meet current and projected demand and this was reflected in submission of an Initial Agreement (IA) for Redesign and Reprovision of Eye Services in Lothian to Scottish Government (SG) Capital Investment Group (CIG) January 2017

### 3.1.9 **Service Providers affected by this proposal**

3.1.9.1 The NHS employs all clinical, non clinical and facilities staff who provide the service.

- 3.1.9.2 Services provided at the New Royal Hospital for Children and Young People and the Department of Clinical Neurosciences that rely on ophthalmological support from the clinical team based at PAEP.
- 3.1.9.3 The National Scottish Diabetic Screening Service supports 35,000 service users in Lothian. The Lothian wide booking hub for the service and the local city centre screening site (one of 19 sites across Lothian) is based at PAEP and will move to the Lauriston Building.
- 3.1.9.4 The Scottish Ambulance Service transfer urgent patients from other hospital emergency departments and provide a patient transport service for outpatients to and from the site.
- 3.1.9.5 Community Optometrists and General Practitioners refer patients to the hospital. A small number of Community Optometrist have sessional commitments supporting outpatient clinics for which they hold an NHS contract.
- 3.1.9.6 The Royal National Institute for the Blind operates a Vision Support Centre within the building.
- 3.1.9.7 The University of Edinburgh employs medical trainees based in or on rotation to PAEP.
- 3.1.9.8 National Education Scotland (NES) fund the Lothian Optometry Teach and Treat Centre which would relocate with the service.
- 3.1.9.9 The NHS Golden Jubilee Hospital, Clydebank.

### 3.1.10 **Condition and performance of the existing asset affected by this proposal**

- 3.1.10.1 In October 2016 EAMS identified £2.7M of high priority backlog maintenance (£3.3m overall BLM metric). There is frequent disruption to services from failing lifts, roof and other key elements of the infrastructure. This leads to a poor performing asset overall. NHS Lothian commissioned a further condition survey in 2017 which will be followed up with a more intrusive survey when clinical capacity allows. The current revised estimate for “refurbishment” of the existing building including BLM, cost to extend the existing building infrastructure lifespan but excluding decant cost, is £13.7M. Such a cost will not, however, provide any improvement to functional suitability or address future capacity requirements.

To improve the existing asset state, some upgrading work has been necessary over the past couple of years and this has included the following:

- The ward was decorated and upgraded for new fire requirements in summer 2013
- A programme of redecoration (painting and flooring, installation of sinks and some replacement cabinetry) has been undertaken in some areas and in particular in the Eye Outpatient Department which was particularly in need of upgrade because it did not meet current standards.
- The Minor Surgical Theatre has been upgraded to extend its potential
- Replacement of fire doors in main stairwell is now complete
- Basic improvements to sanitary ware in changing areas.
- New OCT room for Diabetic Screening plus wait area.



- Data cabling has been upgraded to support a server and imaging equipment to work over a network to workstations in clinic rooms.

3.1.10.2 There are limitations to the extent of upgrade beyond cosmetic that we can carry out due to the shape, design and condition of the building. Already recently upgraded rooms have been damaged by water ingress through the south west wall (the same aspect that results in the theatre roof problem).

3.1.10.3 Although all possible reasonable changes have been made to the building to fulfil the requirement PAEP still falls short of the standards in some areas. There is only one short-term disabled care space at the front of the building and no provision to park for the duration of an appointment. Internal access throughout the building is affected by the need to place chairs for waiting in corridors. Some consulting and testing rooms are very small and present problems to patients using a wheelchair and staff providing the service. There is no disabled toilet provision on one of the administrative floors despite it accommodating up to 50 staff.

#### IM&T Infrastructure

3.1.10.4 Until recently, NHS Lothian was the only ophthalmology service in Scotland not to operate a digital imaging service by which clinicians could view images remotely from the equipment they were captured on or via print out. The data cabling throughout the building was upgraded from Category 3 to Category 6 in 2014/15 as an essential requirement to support digital networking. Associated with this work, a new switch room and remote server was installed.

3.1.10.5 Key medical equipment within the PAEP building

**Table 14**

Item	Number of machines	Replacement value each
Optical Coherence Tomography (OCT)	4	£80 - £120k
Colour Fundus Camera	1	£49k
Fields Analyser	4	£47k
Pentacam	1	£86k
Phaco –emulsification machines for cataract removal	3	On contract
Optimap	1	£100k
Glaucoma Camera	1	£60k
Microscope for detailed Vitreous Retinal surgery	1	£102k

Considerable investment in digital imaging equipment will be required to achieve the level of efficiency required to support future service demand. In particular OCT and Optimap equipment will be required.

#### Fleet and Transport

3.1.10.6 Consultants with cross-site responsibility and other staff with a disability or carer/ dependant responsibilities may be allocated a parking pass for the site which is shared with Chalmers Hospital and the Lauriston Building.

- 3.1.10.7 The Scottish Ambulance Transport service supports patients attending outpatient clinics and who require rapid access to service.
- 3.1.10.8 The standard delivery and uplift of laundry, sterile instruments, medical gases, supplies, drugs, stationery, general and clinical waste applies.

### 3.1.11 **Public and Service user feedback/views of the service**

3.1.11.1 An analysis of all complaints and feedback for the 17 months between September 2013 and May 2015 was undertaken. The full analysis was shared with the service users and staff who attended the Integrated Impact Assessment and was sent to the Scottish Health Council. The main themes are summarised below:

- Communication issues.
- Specific issues relating to a patient's clinical experience or outcome.
- Delays within clinics, particularly where multiple tests were required sometimes on different floors of the building.
- Staff attitude and language skills.
- Delays in agreeing replacement appointments for chronic disease patients whose appointment was rescheduled either at theirs or the services request.
- Poor quality of the environment and facilities.

Other aspects are observed to frustrate service users, carers and staff though they are not registered in formal feedback. This was supported through discussion at the Integrated Impact Assessment and AEDET review (See Appendix 6). These included:

- No available car parking for relatives taking service users to the service.
- Only one, short term drop off parking bay at front of the building.
- Patients gowned and marked for surgery sharing one of only 2 lifts with other patients, staff, support services. Lack of dignity.
- Lifts being out of action – patients having to use stairs.
- A lack of appointment capacity to see return patients.
- Appointments letters issued with the wrong clinic description on them.
- Limited and unreliable access to refreshments/beverages.
- Cramped waiting areas in corridors.
- Queuing out onto the stairwell for reception due to design of building.
- Poor general condition of the building fabric.
- Poor signage/misleading signage.
- Not being informed about delays in clinic and the reason for them.
- Not being informed in advance that appointments may involve waits between tests and their consultation.

3.1.11.2 The service has recently introduced a survey for all day surgery and inpatients to complete called `Tell Us Ten Things`. Ward E2 & Day Surgery Unit in PAEP has been participating in this for 3 months. Below is a summary of the return for July. There were 378 discharges from Ward E2 & Day Surgery Unit of which 205 service users completed the survey. Patients have options to rate each question e.g: Yes completely, Yes to some extent, No etc. Score are then collated into an overall response which gives staff feedback to focus upon. A high score reflects good feedback and a low one poor. The questions focus on the care given and not the building/facility but do give an indication of how service users rate the inpatient and day surgery service in general.

**Table 15**

	<b>Question</b>	<b>Score out of a maximum of 10.0</b>
1	Do you feel that the staff took account of the things that matter to you?	9.98
2	If you started any new medicines or tablets on this ward, were you given enough explanation about what these were for?	9.83
3	How much information about your care & treatment was given to you	9.56
4	Were you involved, as much as you wanted to be, in decision about your care & treatment?	9.68
5	Were you treated with kindness and compassion?	10:00
6	In your opinion, how clean was the hospital room or ward you were in?	9.73
7	I was bothered by noise at night from hospital staff:	8.72
8	Do you think the staff did everything they could to help control your pain?	9.92
9	I was happy with the food/meals I received:	6.93
10	Overall: I had a very poor/very good experience	9.48

3.1.11.3 The Scottish Council response in July 2016 to the proposed re-provision noted that they were aware that patients view the service positively and that there was recognition of the need for change. They also noted the concerns that service users and carers have regarding public transport and accessibility at the new site and NHS Lothian's commitment to address this.

3.1.11.4 In conclusion, with regard to building and designing a new facility this gives clarity on what expectations the public, service users and carers have of a new facility. Key areas would be:

- Good public transport facilities
- improved access for patients to the building itself and for there to be somewhere that relatives could park, even for a short period, whilst they settle the service user safely within the building. Also, some provision for local longer term parking should the appointment be a long one.
- Dignified and appropriate reception and waiting experience where there is room to sit and wait without being in the corridor.
- Access to available refreshment in the form of a hot beverage or light snack that maintains them whilst they wait.
- Departments and test facilities co-located and not on separate floors.
- A separate wait area and route for those awaiting surgery where they are not mixing, whilst gowned and marked for surgery, in one of only 2 lifts with other patients, staff moving through the building.

### 3.1.12 **The need for the service to continue**

3.1.12.1 NHS Lothian provides ophthalmology services to a population of more than 800,000. In 2016/17 it provided 102,000 outpatient appointments, 7300 day surgery treatments and treated 1000 patients as inpatients. The principal site for service delivery is the PAEP which is the subject of this proposal.

### 3.2 Issues with the current situation - Table 16

The following is a full list of the main issues causing the need for change, the effect that these issues are having and an assessment of why, through this proposal, it is believed action is required now.

	<b>Cause of the need for change:</b>	<b>Effect of the cause on the organisation:</b>	<b>Why action now:</b>
1	Future service Demand	<p>The inpatient ward, day bed area and theatre were all deemed to be over-utilised as part of the space utilisation assessment. The toilet facilities are shared. Day Surgery has recently increased from 12 chairs to 20. We predict in future we may need to accommodate up to 32 patients AM or PM (potentially 4 lists of 8 cataracts max). No further expansion is feasible due to restrictions in space.</p> <p>NHS Lothian must provide treatment to all Lothian residents within the Treatment Time Guarantee.</p> <p>Because people are living longer, demand for eye services will increase. The service not only needs staff with the right skills and training to meet this increase but it will need sufficient accommodation to cope. Pressure on existing accommodation and services will inevitably increase. The Scottish Government are predicting significant demand for cataract surgery and NHS Lothian's own modelling suggests a 25% increase in demand for outpatient services and a 41% increase in demand for inpatient/day surgery treatment between 2013 and 2030 . Regional projections undertaken by ISD predict consistent levels of increase across Scotland.</p>	<p>The need to plan for a sustainable service in the future. Time from Initial Agreement to occupation of a new facility will take circa 4 years.</p> <p>NHS Lothian will fail to provide treatment for all patients in the future unless this is planned for. Timescale from Initial Agreement to occupation will be circa 4 years.</p> <p>There is a need to plan to provide a sustainable service for the future.</p>
	<b>Cause of the need</b>	<b>Effect of the cause on the organisation:</b>	<b>Why action now:</b>

for change:			
2	Ineffective service arrangements	<p>The small size of Theatre 3 means that only cases requiring local anaesthetic can be scheduled there. It is not suitable for patients with mobility issues. There is no scope for any development of the Theatre floor as all available space is being utilised.</p>	<p>Current/ future demand makes it not sustainable to have to select specific cases for this smaller, less supported theatre.</p>
		<p>PAEP theatres complete 5 to 6 cataracts per cataract operating list due to the distance between the ward on the second floor and the 5<sup>th</sup> floor, the capacity of the pre-surgical holding area and the theatres on the 5<sup>th</sup> floor and the layout and size of the 3 operating theatres. Other Units can average 7 cataracts per list because they have facilities that support the flow of patients through the Unit and can do `double scrubbing`. This is where a second team of scrub nurses has access to a `preparation room` to prepare for the next case and will immediately begin set up for the next case once the surgeon has completed surgery. The surgeon de-scrubs, completes the post-operation paperwork and re-scrubs and is straight away ready to continue operating. The layout of the theatres in PAEP means that there is not sufficient space to do this and retain 3 operating theatres. The clinical team are of the view that, if this facility was in place, each cataract surgical list could treat as many as 8 patients and in time possible more if:</p> <ul style="list-style-type: none"> <li>• cases were specifically selected for these lists</li> <li>• surgeons with the skill for high volume throughput were appointed</li> <li>• theatre staff were trained to support surgeons so that they only performed the procedure itself.</li> </ul> <p>Running below potential efficiency.</p>	<p>National guidance is that throughput should be 1 routine cataract per 30 minutes including turnaround. This is cannot be achieved in PAEP due to the layout/space restrictions on the theatre level..</p> <p>Need to maximise use of existing resource to achieve Treatment Time Guarantees.</p> <p>Demand is forecast to increase.</p>
		<p>Ideally, the service would wish to be closer to a main Emergency Department to limit the distance that patients need to travel when emergency treatment or surgery is required. Should emergency help be required for inpatients, 999 is called to request and ambulance to take patients to the Edinburgh Royal Infirmary Emergency Department.</p>	<p>Access to service could be improved for a proportion of patients if the service is located closer to an emergency department.</p>
<b>Cause of the need</b>		<b>Effect of the cause on the organisation:</b>	<b>Why action now:</b>

for change:			
3	Service arrangements are not person centred .	In the ward that was converted into the Cataract Assessment Unit, 3 or 4 patients can be undergoing testing in one open area (previously an open ward) Patient histories are taken and there is little scope for maintaining privacy.	Poor patient experience
		The Day Surgery Unit admitting area and inpatient ward are on the 2 <sup>nd</sup> floor. The operating theatres are on the 5 <sup>th</sup> floor. Patients travel to theatre via the main stairwell landing, in groups of 4 or 5 and take one of the 2 lifts that service the building. They are gowned with eyes marked for surgery and are understandably a little anxious. On their journey they are mixing with the transfer of supplies, domestic and clinical waste, food staff, patients, relatives and workmen. Frequently patients need to wait for the lift to return because the lift is full and on its way to the service basement.	Poor patient experience
		The minor surgery theatre is on the 4 <sup>th</sup> floor and has no dedicated waiting area. Patients sit, gowned and ready, alongside outpatients, their relatives or carers.	Poor patient experience
		The main Ophthalmic Imaging service is delivered in one 19.4 sq metre room. There are 3 large pieces of imaging equipment, tables and computer terminals in the room. With 3 patients, 3 carers and a member of staff – there can be 9 (sometimes 10) people in this area at the same time. This is a poor experience for patients affecting privacy and dignity. Patient confidentiality can be compromised by relatives and carers overhearing conversations between staff and patients and having visible access to their images. Flow of patients has to be interrupted where an individual patients undergoing a test has a special need. To expand laterally within the building would reduce the number of outpatient rooms or the Acute Referral Unit which would limit the numbers of patients that could be seen.	Poor patient experience
		<b>Effect of the cause on the organisation:</b>	<b>Why action now:</b>
	Patient and carer amenities are limited and do not meet 21 <sup>st</sup> century expectations There is one `no waiting - disabled access	There is a need to plan to provide suitable facilities for	

		<p>bay` at the front of the building and no other car or vehicle access other than for 2 ambulances. This needs to be strictly policed due to the need to maintain access for emergency vehicles. There are no parking spaces available to patients or relatives outside the PAEP other than short term city centre metered parking.</p> <p>Throughout the building heating and ventilation is poor, resulting in poor comfort for patients and staff. The ceiling heating system operates poorly and is difficult to control resulting in extremes of cold or heat.</p> <p>There is limited opportunity to ensure equality of service for disabled patients due to the building layout and the room sizes. There is no refreshment and appropriate seating area despite the fact that patients can be in the building for a number of hours undergoing the necessary tests. One `hole in the wall` style kiosk outlet serves the entire building.</p>	<p>the future.</p> <p>Future facilities must meet current and future DDA requirements.</p>
4	Accommodation has high levels of backlog maintenance	<p>In 2016 £2.7M of high priority backlog maintenance was identified as being required for the building. It would be necessary to decant services to have the roof repaired and it is not clear how sufficient decant space could be made available to re-provide the whole hospital. A condition survey has been undertaken in 2017 which has identified a revised estimate cost of £13.7M to refurbish the existing building to extend its life and allow clearance of backlog maintenance.</p>	<p>There is a need to improve the quality of the estate.</p>
5	Accommodation has poor functionality	<p>The original wards have been minimally adapted to form outpatient areas on floors 3 and 4. As demand for outpatient services has increased the service has had to adapt to use all consulting rooms on all floors as flexibly as possible. This means that patients can need to visit several floors as part of their visit to get their necessary tests and their consultation. For many of the elderly or disabled patients and their carers this is a frustrating situation.</p> <p><b>Effect of the cause on the organisation:</b></p> <p>Over the past decade, opportunities to convert smaller rooms and store cupboards into useable consulting or diagnostic space have been taken This now means that some of the consulting rooms are</p>	<p>No scope exists to re-organise parts of the service to improve the experience.</p> <p>Demand is increasing.</p> <p><b>Why action now:</b></p> <p>Poor patient and staff experience. Do not meet current</p>



	very small. They don't meet current standards and, given that ophthalmology uses a lot of equipment, they can be very restrictive for patients and staff.	recommended standards. Not DDA compliant
	As patient numbers have expanded the need for waiting space has too. Five of the waiting areas are in corridors outside the consulting rooms. This prevents wheelchair access, gives a poor experience to the patients and their carers, it is a difficult environment for staff to work in and, poses a fire evacuation risk. .	Poor patient experience.  Exhausted options to improve within current layout. Not DDA compliant and would not aid evacuation in a fire situation
	The 2 lifts are aged and subject to frequent breakdown. As the majority of patients and all support services rely on these 2 lifts, this can cause considerable operational and service continuity issues.	Risk to continuity of service Poor patient experience
	15 flights of stairs link the patient service areas of the building and, even for a relatively fit patient, stairs are not an ideal option. Staff use the stairs continually to leave the lifts free for patients, ambulance personnel and the movement of supplies and services. The stairs are steep and the banister to the open stairwell is low. The stairs are steep and there have been falls. A kickboard has recently been fitted to the gap between the steps and the lower banister to improve safety for young children. Gripper strips have now been added to all steps.	Risk of falls.
	The poor condition of the flat roof, prevailing wind and rain has resulted in water entering the theatres. They then need to close for repair. Elective surgery has been cancelled on 4 occasions in the past 18 months. Repairs, cleaning and subsequent `sign off` by the infection control team can take a theatre out of action for 4 days. Temporary repairs give a temporary solution but are not addressing the source of the problem.	Disruption for patients.  Decant would be necessary to repair the roof robustly. Not a sustainable situation given the pressures on the service
	<b>Effect of the cause on the organisation:</b>	<b>Why action now:</b>
	Fire Evacuation routes are limited and the secondary stair is very steep	Future fire safety regulations must be met
	The building is not fully DDA compliant. Discriminating between the experience of service users	DDA requirements should be met

		The building is inefficient to run. The building emits 62% more CO2 than a comparable modern building would.	Targets for CO2 emissions should be met
		There is no expansion space to accommodate increased use of digital imaging ophthalmic equipment. The drive to use this technology and the need to accommodate it is a current pressure	Need to plan to accommodate these inevitable developments in the future
6	Service arrangements do not support the workforce	Staff frequently work in areas where the temperature is circa 28 to 30°C with all available windows open. The job descriptions of posts advertised to work in the building state that staff must be able to cope with extremes of temperature due to their being little means to regulate it. The ward and theatres can often be cold. There is one small staff room with basic kitchen facilities in basement and one in theatres serving the whole hospital. Changing areas are now too small for numbers and we are allowing staff to change elsewhere to manage this.	There is a need to plan to provide suitable facilities for the future, especially as staff numbers will continue to increase.
7	Research and Development	There is no opportunity within the existing building to develop space to enhance relationships and services with research and commercial interests in Ophthalmology.	Identified demand for collaboration space can be incorporated in a new build

### 3.3 Investment Objectives

#### 3.3.1 Investment Objectives - high level. Table 17

Effect of the cause on the organisation:	What needs to be achieved to overcome this need? (Investment Objectives)
Existing capacity is unable to cope with future projections on demand	<p>Improve service capacity to achieve national standards for quality and access</p> <p>Develop a shared care model between hospital and community optometry to appropriately support chronic disease patients</p>
Inefficient service performance due to the design/ layout and functionality of the existing space	<p>Improve and modernise facilities to improve the patient experience, maximise efficiency and optimise resource usage</p>
Service is not meeting current or future user requirements	<p>Meet user requirements as clinically appropriate</p> <p>Ensure that people who use service have positive experiences</p>
High level of backlog maintenance associated with PAEP building and some non-compliance with DDA 2010 and future fire regulations	<p>Re-provide facility in a suitable modern building. A reduction in backlog maintenance costs</p> <p>Improve the estates condition, quality, and age.</p> <p>Improve the functional suitability of the Healthcare Estate</p>

#### 3.3.2 How has NHS Lothian challenged itself about the proposed design of future services to meet the investment objectives?

3.3.2.1 From the beginning of discussions on re-provision of the PAEP it has been agreed by all that this would not be a `lift and lay` proposal but that there was a real opportunity not only to provide modern facilities that meet current required and acceptable standards but to focus on re-design of workforce and facilities and consider future benefits that developments in digital technology will bring. Where feasible many of those developments are being tested or introduced currently.

3.3.2.2 For aspects of service where, other than growth in demand, no significant change is foreseen in the method of delivery, accommodation requirements have not routinely been lifted for that growth in terms of number of rooms. It is anticipated that efficiencies will result from better co-location of services and by having rooms of the appropriate size so their use can be flexible. Currently there are 12 inpatient beds plus 2 trolley beds used to recover day patients who have required a general anaesthetic. Despite increase in demand and the direct correlation between a rise in cataract surgery and the number of retinal detachments

which will require a bed prior to and after surgery, the proposal is not to increase that number. We believe this is achievable because bed occupancy is not optimum currently, there will be a further move to increase the proportion of surgery carried out as a day case and improvement in admission and discharge arrangements.

- 3.3.2.3 A small amount of additional education and teaching space is proposed. This is to take account of changes required of Teaching Centres that now require us to use surgical simulation equipment (EyeSi Surgical Simulators) to provide adequate training and practice for doctors in training. Currently we are planning to have space available to increase to 3 simulators which would be housed in the unit collocated with the Wet Laboratory training facility.

There are 3 key areas where re-design of services specifically has impact upon the accommodation requirement, capital cost and revenue costs of this proposal. These are:

- Chronic eye disease such as glaucoma, patients with acute macular degeneration and those receiving regular injections of drugs (antiveg F) to maintain vision
- cataract assessment and removal
- advances in digital imaging as a key tool for diagnosis and ongoing condition monitoring of patients and the opportunity this provides to introduce `virtual clinics`.

### **Chronic eye disease**

- 3.3.2.4 By far the largest group of patients who receive services at PAEP are within this category. As stated in the strategic section of this document, a key element of the vision for this service is that it should meet the needs of both new and existing chronic disease patients. This very significant number of existing and newly diagnosed patients with chronic eye disease have potentially blinding conditions and the key objective is to provide services that don't result in irreversible loss of vision where that is potentially avoidable. Long term and regular review at pre-determined intervals is often required to ensure that appropriate treatment is given when needed. This regular review is routinely provided in a traditional consultation with a doctor in the hospital and much of the services resource is utilised this way. However, with increasing demand, alternative ways of delivering this service are being explored.

### **Glaucoma – patients requiring regular review but regarded as `stable`**

- 3.3.2.5 The Scottish Government, through the National Ophthalmology Workstream, has funded an audit of glaucoma patients in Lothian to review options to redesign how services are used to support stable glaucoma patients. The audit itself has completed and now requires analysis and reporting and it is hoped that this will demonstrate that a cohort of stable chronic disease patients could be supported in the community if rapid re-entry to the service could be achieved.
- 3.3.2.6 A real pressure in the delivery of service to Glaucoma patients is the availability of fields testing and frustration about delays within clinics is a significant source of frustration and feedback from patients. Two additional fields rooms have been incorporated into the schedule of accommodation in anticipation that demand will grow and these regular delays require to be addressed.

## Acute Macular degeneration and patients receiving regular injections of drugs (antiveg F) to maintain vision

### Macular Assessment reviews

- 3.3.2.7 Until recently, all return patients were seen by a consultant who personally performed the OCT test and discussed the results with the patient. The recent investment in ophthalmic imaging staff, modern data cabling, switch and server facilities, ophthalmic imaging equipment, monitors and software has allowed for the introduction of `virtual clinics`. In these clinics the patient attends as before and is reviewed by a nurse and has their OCT undertaken by a technician. The consultant reviews their digital image in a dedicated `virtual clinic` and then confirms the next steps. This development is already allowing us to redesign how the macular clinical team work to free up medical resource for pressure areas such as meeting the protocol for assessment of new patients. Sufficient outpatient rooms to see the patients have been included in the accommodation schedule to meet the growth, plus a Virtual Clinic Hub area is planned to support the review of scans. From a revenue cost perspective, it is assumed that no additional medical resource will be required to cope with the rise in future patient demand but additional nursing costs and imaging technician costs will be incurred.

### Treatment for Macular Disease and support for patients on AntiVeg F treatment

- 3.3.2.8 Patients with macular degeneration and increasingly patients with other conditions such as diabetes are being treated with AntiVeg F drugs which are injected into the eye (IVT) in a clean room environment. It is crucially important that these patients have regular review as described above. Historically, in most centres including Lothian, injections were delivered by the medical team. Across the UK and in Scotland increasingly trained advanced nurse practitioners are delivering this service releasing the medical sessions back to other service pressures. Trained nurse specialists now provide 87% of the IVT service to Lothian patients and provide cover during leave for the medical team. There has been a 200% increase in the number of IVT injections per year between 2013 and 2017. The licensing of these drugs for diabetic macular oedema and the estimated growth in demand plus the likely licensing of the treatment for new conditions (such as dry macular degeneration) have led us to ensure we have sufficient clean room facilities to future proof this area. A second clean room will be opened at PAEP in 2018. An additional clinic room, capable of future use as a third clean room, is planned for the new facility. The current high costs of drugs used in this service make it an area of service that requires robust planning. The service is looking to invest in software which will allow improved forecasting of future demand to facilitate this (e.g. Medisoft)

## Assessment and surgical treatment to remove cataracts

- 3.3.2.9 Patients, such as those requiring surgical treatment for non-blinding reversible conditions e.g. cataract, require access to services. Cataract surgery provides excellent outcomes in >95% of patients and has huge benefit for quality of life.
- 3.3.2.10 In reviewing current and future demand for cataract services it is clear that a significant increase in the number of available assessment appointments is and will be required to ensure appropriate and timely flow to surgical treatment and to make maximum use of theatre capacity. Redesign of cataract assessment clinics is being considered to improve

throughput per clinic from approximately 12 to 20. Current thinking is that this should involve provision of improved digital diagnostic information directly to the clinician (OCT and Optimap) along with biometry testing so that there will rarely be the need for the doctor to examine the anatomy of the macula unless results indicate the need. Clinicians will work between 2 rooms with an adjoining door for efficiency. Testing of this model is in the planning. Even with improved throughput a considerable increase in the number of cataract assessment clinics will be required to accommodate the demand currently catered for at the Golden Jubilee NHS hospital plus growing demand.

- 3.3.2.11 Cataract surgery makes up approximately 87% percent of the current surgical treatment provided in Lothian and it is in cataract services that future demand particularly requires us to provide as efficient services as possible. It should be noted that whilst many cataract operations could be regarded as routine (Category 1 and 2) they can also be complex e.g. Category 3.
- 3.3.2.12 With regard to future potential throughput per theatre session, much is to be learned from throughput in the private sector and areas where lower category cases are streamed deliberately to achieve a higher throughput e.g. Elective Centres. At the NHS Golden Jubilee Hospital we understand that one surgeon is achieving 10 – 12 cases in a single session whilst working between two operating theatres. In terms of surgeon's time this is efficient but would require a doubling of operating theatres per clinician which in terms of capital costs would increase expense. Further afield, the service provided by the Aravind Centre in India serves as an important reminder of just what throughput can be achieved – circa 20 cataract procedures per session. They operate an open area where patients are laid out next to each other in an open theatre and with a large team of nurses carrying out every activity other than the surgery itself. The surgeon moves from patient to patient without scrubbing or a safety `surgical pause` and does not physically touch the eye. In terms of throughput this is undoubtedly impressive. Recent discussion with the Ophthalmology National Redesign team though suggests that it may be some time before such a service would be considered culturally acceptable in this country and the advice is that we should aspire to best in class in the UK.
- 3.3.2.13 Operating time per PAEP theatre session was extended by 30 minutes in July 2016 to allow one additional routine cataract operation to be scheduled. This capacity is now built into job plans and each cataract operating list is estimated to support 6 cataracts within the planning baseline. Although there are a small number of surgeons who are able to complete 7 cases, it is not yet possible to increase the numbers routinely, mainly due to the distance and travel between the admitting day ward and the theatres and the layout of theatres themselves i.e. not able to support `double scrubbing`.
- 3.3.2.14 Full prospective cover of job planned operating sessions is assumed in the redesign plan to ensure that theatre facilities are used efficiently during periods of leave. It is estimated that, if the necessary workforce can be recruited, it will deliver capacity for circa 1600 additional cataract procedures per year.
- 3.3.2.15 The Scottish Government National Ophthalmology Work stream has undertaken a series of peer reviews across Scottish NHS Boards. The recommendation resulting from Lothian's review in June 2016 is that it should, in the future, be looking to provide a throughput of 8 cataracts in a four hour non-training cataract theatre session. This cannot be supported in

theatres in PAEP but it is a key assumption that this will be regarded as the norm, in due course, in the new facility providing surgeons with the appropriate skills can be recruited. In November 2017, a national focus on `Target Operating Models` commenced and optimum pathways for cataracts is one of the areas under discussion. NHS Lothian will fully engage with this workstream and, where feasible, incorporate future agreed performance standards into the Outline Business Case for the re-provision of PAEP.

3.3.2.16 In the meantime, the current favoured model in Lothian is to provide a purpose designed flow, with a preparation and scrub room attached to each theatre to allow `double scrubbing` to ensure that the changeover time between cases is minimised. It is believed that this could, in due course, increase throughput by appropriately trained and skilled surgeons to 8 per service list and 7 per training list. This proposal includes operating theatres which would be specifically designed and supported to maximise throughput of more routine cataracts (Classified CC1 and CC2). It is theoretical that, should the flow be honed appropriately in this environment that some lists could contain 9 cataracts but this is yet to be proven. The high volume theatre/s will require sufficient CC1 and CC2 cases to maximise potential and this is another reason why repatriation of the cases currently streamed to Golden Jubilee will be beneficial in improving throughput per surgical session. Discussion continues on how to modernise and improve throughput and a local group has now been formed to look at what workforce changes would be required to establish a High Volume Cataract service in one of the new operating theatres. A proposal is to be finalised at the end of March 2018.

3.3.2.17 The IA schedule of accommodation includes an increase in the number of operating theatres from the existing 3 to 4 and an increase in Day Surgery Unit chairs from 20 to 32 to support a high volume cataract flow environment in response to increased demand and repatriation of capacity currently provided at the Golden Jubilee NHS Hospital.

Linking future demand for eye surgery in Lothian, including re-partition of 1850 procedures per year at the Golden Jubilee, with plans to improve utilisation of the existing 3 operating theatres

3.3.2.18 The following table shows the impact of future plans to introduce full prospective cover of existing job planned surgical sessions and, through the provision of purpose designed facilities, increase the average cataract surgical list size from the current target of 6 to 7. This is then compared to the regional forecast procedural projections referred to in sections 2.4.10 and 3.1.8.6 which so far cover the period up to 2025/26.

3.3.2.19 As previously stated, future work on the procedural projections is planned and it is anticipated that there will be further refinement on the split of cataract and non-cataract demand and any remaining procedures which are now carried out in an outpatient setting not an operating theatre environment. However, at this point it is concluded that the difference between the total service capacity and regional projections on the estimated total future procedural demand suggests that, even with planned re-design and improvement in the utilisation of the 3 existing theatres, the need for an additional theatre exists. The service envisages this being a dedicated high volume throughput cataract theatre.

**Table 18**

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26
Total Cataract Capacity - NHS Lothian	5160	5160	5160	5160	5160	7498	7498	7498	7498
Total Cataract Capacity - Golden Jubilee SLA	1778	1848	1848	1848	1848	0	0	0	0
Total Sub Specialty Capacity (non cataract)	1878	1878	1878	1878	1878	1902	1902	1902	1902
<b>Total Capacity</b>	<b>8816</b>	<b>8886</b>	<b>8886</b>	<b>8886</b>	<b>8886</b>	<b>9400</b>	<b>9400</b>	<b>9400</b>	<b>9400</b>
Total Cataract Demand	6236	6373	6511	6662	6826	6988	7165	7340	7506
Total Non-cataract procedure demand	2946	2990	3038	3089	3135	3197	3250	3306	3366
<b>Total Demand</b>	<b>9182</b>	<b>9363</b>	<b>9549</b>	<b>9751</b>	<b>9961</b>	<b>10185</b>	<b>10415</b>	<b>10646</b>	<b>10872</b>
Difference between Total Capacity & Total Demand	-366	-477	-663	-865	-1075	-785	-1015	-1246	-1472

Sources:

Capacity

NHS Lothian consultant job plans 2017/18 with nominal procedure numbers allocated per list type

Estimated impact of introduction of full prospective cover and + 1 cataract per cataract list from relocation/workforce in place assuming a relocation date of mid 2022.

Golden Jubilee – Service Level Agreement numbers – projected forward to point of relocation. Assumption to be tested.

Demand

Regional analysis on Forecast Demand issued 7<sup>th</sup> September 2018 to the East Region, Regional Ophthalmology Group – upon which South East Boards have confirmed future plans. Adjusted within NHSL to take account of any obvious procedures not undertaken in a theatre environment.



### 3.3.2.18 **Developments in Digital imaging**

The proposal includes a deliberate expansion of the accommodation providing support to the diagnosis and onward monitoring of patients with eye disease. This is seen as necessary to provide a suitable environment of `one patient per room per test`, to allow improved throughput of patients and accommodate additional imaging staff necessary to cope with demand. The range of digital equipment available in diagnosis will inevitably expand and it will be important that the proposed facility is capable of accommodating that.

## 3.4 **Measurable benefits to be gained from addressing these needs**

3.4.1 The above investment objectives and the Strategic Assessment (Appendix 4) have informed the development of a Benefits Register (Appendix 1). As per the draft Scottish Capital Investment Manual guidance on `Benefits Realisation`, this initial register is intended to record all the main benefits of the proposal. As required, this includes the resulting reduction in backlog maintenance and, as the cost of the proposal is above the £4m investment threshold, it includes anticipated benefits to the Community. A proposed assessment method has been assigned to each proposed benefit as required.

3.4.2 Each identified benefit has been prioritised using the following categories:

Scale / RAG	Relative Importance
1	Fairly insignificant
2	↕
3	Moderately important
4	↕
5	Vital

## 3.5 **Risks, Constraints and Dependencies**

3.5.1 An assessment of the risks associated with the project was undertaken in July 2016 and updated in Autumn 2017. Identified risks, ranking and actions for mitigation can be seen in Appendix 2 – Risk Register.

## 4. The preferred strategic/service solution

### 4.1 The do nothing and do minimum options

Table 19

Strategic Scope of Option:	Do Nothing and Do Minimum
Service provision:	Insufficient capacity to meet future demand for outpatients or treatment.
Service arrangements:	An increased reliance on either Golden Jubilee or a return to the use of the private sector
Service provider and workforce arrangements:	Without investment in staff to deliver services, predicted increases in demand will not be met.
Supporting assets:	The condition of the building will deteriorate further. In particular the condition of the roof means a full repair, with associate decant of services will become unavoidable.
Public & service user expectations:	Perpetuate a poor environment with limited facilities.

A do nothing or do minimum option was set aside at an early stage of option appraisal as neither would meet the needs of the service moving forward.

### 4.2 Service Change Proposals

4.2.1 NHS Lothian is of the view that there has been a sufficient level of engagement to gain support for an identified proposed solution i.e. a new build with preference that it be located at the Royal Infirmary of Edinburgh/Edinburgh bioQuarter site. The following summarises the decision making process followed.

4.2.2 A long list of options was generated in May 2015 and subject to an internal review against 6 benefits criteria by a small group of representatives from staff, staff partnership, estates, service management, capital and finance and community optometry. A weighting of 35% was attributed to the potential for `improved quality of patient care and clinical effectiveness`. Before embarking on the scoring the service reflected on what their definition of `improvement` would be. See below.

- **Facilities fit for the future.** Purpose designed and sized to cope with increasing demand. Based on methodical redesign of each key service pathway informed by service user and clinical guidance. Modern infrastructure to support developments in diagnostic imaging and treatment
- **Space** to design smoother patient journeys, efficiency and effectiveness and to expand digital eye imaging
- Improved proximity to **emergency services** desirable
- **Research space** so that we can recruit more patients into clinical trials, leading to better treatments and, ultimately greater clinical effectiveness
- **Co-location with good research and teaching facilities** makes us more attractive. Need to attract and retain **the best clinical staff**
- **Reduced travel** between sites increases available clinical time.

4.2.3 Initially 9 potential options were considered as part of a long list. These were:

1. Do nothing
2. Do minimum to existing building
3. Major refurbishment of existing building
4. Relocation to the Lauriston Building, Lauriston Place
5. New build and relocation to Royal Infirmary of Edinburgh/Edinburgh bioQuarter Campus
6. New build and relocation to Western General Hospital Campus, Crewe Road
7. New build and relocation to St Johns Hospital at Howden, Livingston
8. New build at the New Royal Edinburgh Campus, Morningside Edinburgh
9. New build, City Centre site – unspecified.

4.2.4 The results of the initial review can be seen in the following table and from this the highest scoring option was a new build on the RIE/Edinburgh bioQuarter site.

**Table 20a - Initial Options appraisal outcome – up to presentation of IA version 10.4 to CIG Dec 2016**

	1	2	3	4	5	6		
	Improved Quality of Care or Clinical Effectiveness	Accessibility	Quality of Physical Environment	Sustainability	Deliverability	Least disruption	Weighted score	Rank
Weighting	35	15	20	10	10	10		
Do nothing	0	7	3	0	0	1	175	9
Do minimum	3	7	4	2	4	2	370	8
Major refurbish	5	7	5	4	4	0	460	7
Lauriston	5	7	7	7	5	6	600	5
New build – RIE/bioQuarter	10	8	10	9	8	9	930	1
New build – WGH Campus	6	5	9	8	4	9	675	4
New build – St Johns Campus	7	6	9	8	3	8	705	2
New build – Royal Edinburgh	5	4	8	8	2	9	585	6
New build – City Centre	5	7	10	9	3	9	690	3

4.2.5 A further ranking was carried out in December 2015 to test and record the rationale for the ranking allocated.

4.2.6 The proposed solution identified is to relocate to a purpose designed new build on the Royal Infirmary of Edinburgh/ Edinburgh bioQuarter site. The rationale for this is:

- The weighted score ranked first in the options exercise
- There is sufficient land available and a potential site identified.
- There would be improved proximity to an Emergency Department, the Children and Young people's Hospital and the Department of Clinical Neurosciences –
- The site has an established public transport infrastructure and is approximately 3 miles from the existing site
- Appropriate drop off/service user and relative access to a new build should be feasible
- Co-location with the research activities on the campus would enable Ophthalmology in Lothian to retain and attract the best calibre of medical staff for patient care
- Closer proximity to the University of Edinburgh Medical School will support the training and development of ophthalmology trainee medical staff.
- Scottish Enterprise and the University of Edinburgh are very supportive.

Wider sharing of this process and the recommendations was required to ensure there was appropriate support. The appraisal process and results were later presented to a wider group including service users and staff in February 2016. At the same time an Integrated Impact Equality Assessment was undertaken on the preferred option. At that session, the 9 options were discussed along with the benefit criteria and the options presented in the following 3 categories

#### 4.2.7 Do nothing, do minimum, major refurbishment of existing Princess Alexandra Eye Pavilion

- Issues with the building are major in particular the roof fabric and services
- Site restrictions re layout and tower arrangement
- The estimated cost to refurbish the existing building to extend its life and allow clearance of backlog maintenance is £13.7M.
- Decant. No obvious place for this. Costs of establishing temporary facilities would be significant
- Does not address any of the clinical improvements/advantages
- No scope to improve service user, relative or carer access e.g. drop off facility
- All options scored low when weighted benefits criteria were applied.

#### 4.2.8 Relocation to the Lauriston Building

- Blood Transfusion Service due to vacate basement sections of building in 2017
- Architects were commissioned to look at feasibility of service move
- Cannot fit even 3 operating theatres and wards on one floor – loss of efficiency
- Cannot fit outpatients and associated diagnostics on same floor – loss of efficiency
- Parts of the service would need to be spread across floors
- No scope to improve drop off facility for relatives and patients
- Lifts – will not currently accommodate beds
- A service would require to move out to release sufficient space
- Existing backlog maintenance on building is high
- Does not address any of the clinical improvements/advantages

#### 4.2.9 New build options

- Environment should theoretically be comparable
- Need sufficient space to plan an efficient service layout
- Closer proximity to an Emergency Department – preferable
- Accessibility – need a good public transport infrastructure. Ideally limit additional travel to the majority of NHSL patients
- Sustainability – closer links with research and university would be advantageous for collaboration on new treatments, general service development, training and recruitment
- Disruption – services can be maintained at the existing site throughout construction and commissioning
- A new city centre site would likely have a considerable cost element for land purchase.

4.2.10 The four main NHS Lothian campuses were considered. Already Site Master Plans for these sites are in development for consultation with Integrated Joint Boards and Public. These contain options for other service developments and it is unlikely that there would be sufficient space to accommodate a new Eye Hospital. A common theme is the lack of available space on these sites.

4.2.11 The Royal Infirmary of Edinburgh/Edinburgh bio Quarter site is a collaboration between Scottish Enterprise, University of Edinburgh, City of Edinburgh Council and NHS Lothian as part of a £600m joint venture to offer specialist accommodation for academic, commercial and healthcare activity. It consists of 100 acres of land at Little France, Edinburgh and is already an established healthcare and academic campus. Already on site are: Royal Infirmary of Edinburgh a 900 bed acute healthcare facility, University of Edinburgh Medical School, Anne Rowling Regenerative Neurology Clinic, Queens Medical Research Institute, Scottish Centre for Regenerative Medicine, Building Nine (incubator facilities for 15 life sciences start up companies. Research facilities existing and planned include the Centre for Clinical Brain Sciences, Scottish Centre for Regenerative Medicine, Clinical Research Imaging Centre, The Farr Institute and the Edinburgh Wellcome Clinical Research Facility. The new Royal Hospital for Sick Children and the new Department of Clinical Neurosciences is under construction with occupation scheduled for 2018.

4.2.12 There was support at the Integrated Impact Assessment for the preferred option and this was captured in the write up and action plan from the session held with patient representatives and staff.

4.2.13 A Major Change template was then prepared and submitted to the Scottish Health Council in July 2016 and they responded to acknowledge awareness of the proposal and confirm that based upon our description of the change, they did not view it as `major` which would have required a period of consultation.

#### **Regional Option Appraisal – South East Regional perspective**

4.2.14 As part of the Acute Work stream of the East Region Health & Social Care Delivery Plan Programme a Regional Ophthalmology Group was established in May 2017, chaired by the Director of Nursing, Midwifery & Acute Services in NHS Borders. This has clinical and managerial representation from the three South East NHS Boards. The aim of this work is to identify productive opportunities within acute services in the region that improve both service sustainability and access for patients and identify and where possible quantify

workforce challenges and financial pressures. A key aspect of the group's remit was to look at future demand for ophthalmology services across the region and reach a view on how, using regional resources to best effect, that demand can be met and sustained. Whilst there is still more detailed work to understand the demand profile fully, based upon the model issued by the Director of Analytical Services, NHS Lothian on 7<sup>th</sup> September 2017, the conclusion of the Regional Boards has been summarised as follows:

- NHS Fife and NHS Borders have sufficient capacity to manage the projected demand profile within their own Board areas with no requirement to access additional capacity in a regional centre.
- NHS Lothian cannot meet current or future demand without maximising use of community services and having access to functionally suitable estate from which to provide specialist services. This is not feasible on the current PAEP site.
- The ability of all three NHS Boards to deliver sustained services in the future is dependent upon the ability to recruit and retain staff.
- NHS Borders, who are currently experiencing recruitment difficulties, will continue to work with NHS Lothian and NHS Fife to identify solutions to workforce challenges and identify potential for a regional workforce model.
- NHS Fife and NHS Lothian plans include repatriation of activity currently delivered at the NHS Golden Jubilee Hospital.

4.2.15 In order to optimise the use of existing estate across the region and develop a regional approach for development of new estate the East Region Health & Social Care Delivery Plan Programme Board agreed to extend the PAEP re-provision Option Appraisal to include any viable options identified by NHS Borders and NHS Fife. In order to establish whether any alternative options had merit and warranted further development an initial desk top appraisal was planned with focus on clinical adjacencies and impacts on service users and staff.

4.2.16 NHS Borders indicated that they had no plans available to re-provide PAEP on NHS Borders estate. NHS Fife advised that they would wish to have the option of relocating all or part of the PAEP service to the Queen Margaret Hospital to be considered. There was sufficient land on that NHS site to accommodate the estimated area required, with a part-refurbishment/part new build option on an existing car park. The Director of Capital Planning & Projects for NHS Lothian visited Queen Margaret Hospital, Dunfermline to view and discuss the proposal with the Fife Estates Team. It was concluded that it was theoretically feasible to accommodate the proposed size of site there.

4.2.17 The appraisal took place on the 8th September 2017 and representatives from NHS Borders, NHS Fife and NHS Lothian were in attendance. The option to re-provide Lothian Eye Services at the Queen Margaret Hospital Fife was appraised alongside the original preferred option of the Royal Infirmary of Edinburgh/Edinburgh bioQuarter (EBQ). Of particular note during the scoring exercise was the numbers of patients that would be travelling in each scenario and the impact that the changes would have on existing workforce across the region. The outcome can be seen in tables 20b and 20c below.

4.2.18 The appraisal supported the direction of travel outlined in the original IA. The Deputy Chief Executive, NHS Lothian submitted a paper to the East Region Health and Social Care, Acute Services Workstream Co-ordinating Group for discussion at their meeting on 2<sup>nd</sup> November 2017. It was confirmed that the Royal Infirmary of Edinburgh/Edinburgh BioQuarter option was the preferred option for the Region.

**Table 20b** – the original options outcome plus the 6 additional options including QMH

		Improved Quality of Care or Clinical Effectiveness	Accessibility	Quality of Physical Environment	Sustainability	Deliverability	(Least) Disruption to Services	Weighted Score
	<i>Weighting</i>	35	15	20	10	10	10	
1	DO NOTHING	0	7	3	0	0	1	175
2	DO MINIMUM	3	7	4	2	4	2	370
3	REFURB MAJOR	5	7	5	4	4	0	460
4	LAURISTON	5	7	7	7	5	6	600
5	RIE/EBQ new build	10	8	10	9	8	9	930
6	WGH new build	6	5	9	8	4	9	675
7	SJH - new build	7	6	9	8	3	8	705
8	REH - new build	5	4	8	8	2	9	585
9	NEW SITE	5	7	10	9	3	9	690
10	NPAEP to EBQ. All Boards plan to meet own future demand	10	8	10	8	8	10	930
11	NPAEP to EBQ. NPAEP to provide for all excess future elective demand	8	6	10	8	10	10	850
12	NPAEP to EBQ. QMH to provide for all excess future elective demand	8	5	9	5	5	8	715
13	Part NPAEP to EBQ. Part NPAE to QMH. Excess regional demand shared	8	3	9	6	2	8	665
14	NPAEP to QMH. All excess regional demand to QMH. QMH = S.E Regional Centre	2	1	8	4	1	5	345
15	NPAEP to EBQ. All excess regional demand to EBQ. All/some services across region centralised at EBQ. NPAEP = S.E. Regional Centre	2	1	10	4	1	10	435

. NB. Options 5 and 10 are the same re site but 10 reflects a regional demand assumption.

**Table 20c** – All options ranked in order of their weighted score

		Improved Quality of Care or Clinical Effectiveness	Accessibility	Quality of Physical Environment	Sustainability	Deliverability	(Least) Disruption to Services	Weighted Score
	<i>Weighting</i>	<i>35</i>	<i>15</i>	<i>20</i>	<i>10</i>	<i>10</i>	<i>10</i>	
1	NPAEP to EBQ. All Boards plan to meet own future demand	10	8	10	8	8	10	<b>930</b>
1	RIE/EBQ new build	10	8	10	9	8	9	<b>930</b>
2	NPAEP to EBQ. NPAEP to provide for all excess future elective demand	8	6	10	8	10	10	<b>850</b>
3	NPAEP to EBQ. QMH to provide for all excess future elective demand	8	5	9	5	5	8	<b>715</b>
4	SJH - new build	7	6	9	8	3	8	<b>705</b>
5	NEW SITE	5	7	10	9	3	9	<b>690</b>
6	WGH new build	6	5	9	8	4	9	<b>675</b>
7	Part NPAEP to EBQ. Part NPAE to QMH. Excess regional demand shared	8	3	9	6	2	8	<b>665</b>
8	LAURISTON	5	7	7	7	5	6	<b>600</b>
9	REH - new build	5	4	8	8	2	9	<b>585</b>
10	REFURB MAJOR	5	7	5	4	4	0	<b>460</b>
11	NPAEP to EBQ. All excess regional demand to EBQ. All/some services across region centralised at EBQ. NPAEP = S.E. Regional Centre	2	1	10	4	1	10	<b>435</b>
12	DO MINIMUM	3	7	4	2	4	2	<b>370</b>
13	NPAEP to QMH. All excess regional demand to QMH. QMH = S.E Regional Centre	2	1	8	4	1	5	<b>345</b>
14	DO NOTHING	0	7	3	0	0	1	<b>175</b>



**Table 21**

<b>Strategic Scope of Option:</b>	<b>Do Nothing/ Do minimum</b>	<b>Proposed solution</b>
Service provision:	Insufficient capacity to meet future demand for outpatients or treatment.	Sufficient capacity available to meet future demand
Service arrangements:	An increased reliance on either Golden Jubilee or a return to the use of the private sector	Avoidance of an increase in patients travelling for treatment or premium rates for treatment in the private sector
Service provider and workforce arrangements:	Without investment in staff to deliver services, predicted increases in demand will not be met.	Predicted increases in demand can be met
Supporting assets:	The condition of the building will deteriorate further. In particular the condition of the roof means a full repair, with associate decant of services will become unavoidable.	A new a modern building is provided with a corresponding decrease in backlog maintenance
Public & service user expectations:	Perpetuate a poor environment with limited facilities.	Purpose designed facility with modern facilities.

### 4.3 Indicative Costs for the shortlisted options

The indicative capital costs for each of the short-listed options are shown below. A more detailed breakdown of costs is given in Appendix 3

**Table 22 – Indicative costs for each of the shortlisted options**

<b>Costs in £ millions</b>	<b>Do minimum</b>	<b>New Build</b>			
		<b>RIE/BioQuarter</b>	<b>Western General Hospital</b>	<b>St John's Hospital</b>	<b>City Centre</b>
Re provision of PAEP	£13.7M	£68.5M	£73.4M	£64.1M	£77.0M
Collaboration/Clinical Research Space		£3.5M	£3.7M	£3.2M	£3.9M
<b>OVERALL</b>	£13.7M	£72.0M	£77.1M	£67.3M	£80.9M
Whole of life capital costs	£16.6M	£77.6M	£84.3M	£73.1M	£86.1M
Whole of life operating costs	£451.9M	£708.4M	£670.9M	£708.4M	£706.7M
Estimated Net Present Value of Costs	£312.7M	£514.0M	£483.9M	£510.1M	£518.6M
Non-financial benefit score	370	930	675	705	690
Net present cost per benefit point	£845,234	£552,698	£716,929	£723,498	£751,605
<b>Ranking</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

Source: Thomson Gray, Cost Option Appraisal – November 2017. NHS Capital Finance Team.

4.3.1 Do minimum option incorporates refurbishment within the existing building to allow for the clearance of current backlog maintenance items. Also included are costs to extend the life of the existing facility through undertaking work identified as being necessary within the next 5 years. However with a Gross Internal Floor Area of 5,697m<sup>2</sup> the existing building provides significantly less area than that identified in the Schedule of Accommodation. It should also be noted decant requirements are excluded from this cost.

#### **4.4 The Preferred Solution**

4.4.1 The preferred solution is to relocate service from PAEP to a new building on the Royal Infirmary of Edinburgh/Edinburgh BioQuarter site. A summary of the rationale for that proposal is below:

- The proposal has the support of representative service users, carers, staff, all other key stakeholders and is acknowledged by the Scottish Health Council.
- The proposal has the support of the East Regional Ophthalmology Group, the East Region Health and Social Care Workstream Co-ordinating Group and the East Region Chief Executive Lead.
- There is sufficient land available and a potential site has been identified.
- It would give Improved proximity to an emergency department, the Children's Hospital and Neurosciences.
- There is an established public transport infrastructure and the move is approximately 3.5 miles from the current site.
- Relocation to the site would strengthen access to clinical studies and research.
- It would enable improved access to clinical studies and research which will be good for patient services and will attract and retain the best calibre of medical staff for patient care.
- The proximity to University of Edinburgh Medical School and its resources will support the training and development of ophthalmology trainees.
- Scottish Enterprise and The University of Edinburgh are very supportive and the University of Edinburgh are currently working on a business plan to establish clinical research and collaboration space as part of the proposed development.
- Relocation to the bioQuarter will contribute to development of a Science Park and help attract investment, research and health innovation.

## 4.5 Design Quality Objectives

4.5.1 The project will use the Achieving Excellent Design Evaluation Toolkit (AEDET) to assess design quality throughout the procurement and design process and as part of the Post Project Evaluation. An initial AEDET workshop was held on 26<sup>th</sup> August 2016 facilitated by Health Facilities Scotland and involving service users and NHS clinical & non clinical service users. The objectives of the workshop were to:

- Review the existing building and set a benchmark score under 3 main areas – Impact, Build Quality & Functionality split into 10 sections with a number of statements in each section.
- For each of the 10 sections to identify priority statements which need to be addressed as a priority as the design develops.
- Generate target scores for each section.

4.5.2 A summary of the benchmark and target scores for each of the 10 sections is shown below:

Category	Benchmark	Target
Use	1.2	4.5
Access	1.7	4.4
Space	1.3	4.4
Performance	1.2	4.5
Engineering	1.8	3.3
Construction	0.0	4.2
Character & Innovation	1.6	4.4
Form and Materials	1.8	4.6
Staff and Patient Environment	1.7	4.5
Urban and Social Integration	2.0	4.5

4.5.3 The Construction section was not scored as a benchmark because it is not relevant for the existing building. For all of the other sections the existing building scored very poorly with a range of 1.2 to 2.0.

4.5.4 The priority statements agreed at the workshop were:

Section	Priority Statements
Use	<p>The design facilitates the care model</p> <p>The design is sufficiently flexible to respond to clinical/service change and to enable expansion.</p>
Access	<p>There is adequate parking for visitors/ staff cars/ disabled people.</p> <p>Pedestrian access is obvious, pleasant and suitable for wheelchair/ disabled/ impaired sight patients.</p>
Space	<p>The circulation distances travelled by staff, patients and visitors is minimised by the layout.</p> <p>Any necessary isolation and segregation of spaces is achieved.</p>
Performance	<p>The building and grounds are easy to clean.</p> <p>Access to daylight, views of nature and outdoor space are robustly detailed.</p>
Engineering	None identified.
Construction	Not scored at workshop.
Character and Innovation	The design provides a clear strategy for future adaptation and expansion.
Form and Materials	<p>The design has a human scale and feels welcoming.</p> <p>The external materials and detailing appear to be of highest quality and are maintainable.</p>
Staff and Patient Environment	The design reflects the dignity of patients and allows for appropriate levels of privacy.
	There are good facilities for staff with convenient spaces to work and relax without being on demand.
Urban and Social Integration	There is a clear vision behind the design, its setting and outdoor spaces.

4.5.5 As part of the NHS Scotland Design Assessment Process (NDAP), two workshop sessions were held with representative service users and staff to develop the Design Statement for the project. The sessions were facilitated by Architecture Scotland in November 2016 and January 2017. A Self Assessment was also undertaken. Health Facilities Scotland and

Architecture Scotland submitted a `supported and verified` NDAP report at IA stage to the Scottish Capital Investment Group on 30<sup>th</sup> March 2017. It included a letter from NHS Lothian confirming intent to include early engagement with NDAP on early design proposals as part of the Outline Business Case.

## **5.0 Readiness to Proceed**

### **5.1 The Commercial Case**

#### **5.1.1 Procurement Route**

5.1.1.1 In order to deliver the project in accordance with current NHS Scotland construction procurement policy, it is anticipated that Frameworks Scotland 2 will be the best option via traditional Capital Funding. This procurement route appoints a single contractor to act as sole point of responsibility for the management and delivery of an integrated design and construction project on time, within budget and fit for purpose.

5.1.1.2 Frameworks Scotland has been used successfully by NHS Lothian for a number of years and there is a clear organisational understanding of the process for appointment of the Principal Supply Chain Partner (PSCP).

5.1.1.3 With regard to Consultant appointments Thomson Gray has already been appointed as the lead advisor for the project and will therefore undertake the Consultant duties of Project Manager, Cost Advisor & Supervisor. The only required Consultant appointment will be the CDM Advisor.

5.1.1.4 A High Level Information Pack (HLIP) will be issued by NHS Lothian to the PSCP's on the Framework. NHS Lothian commissioned Oberlanders Architects in 2016 to produce an exemplar design for the re-provided building. The exemplar design report will be part of the pack of information issued to PSCPs. The indicative floor plans resulting from that exercise are shown in Appendix 8.

5.1.1.5 Expressions of interest will be invited from the PSCPs and there will then be an evaluation followed by interviews and presentations by the PSCP's. Appointment will be made on the basis of the highest scoring PSCP on a Quality / Cost evaluation.

5.1.1.6 It is anticipated that this process will commence in early 2018, with the appointed PSCP inputting from the OBC Stage through to completion in order to optimise programming and achieve best value from the process.

#### **5.1.2 Edinburgh BioQuarter Infrastructure**

5.1.2.1 In order to facilitate the development of the NHS Lothian development site that will include provision for the relocated Eye Pavilion, there are a series of infrastructure upgrades required.

5.1.2.2 Transport – The existing junction at Little France Drive/Dalkeith Road will require an upgrade to the junction layout and traffic signals as outlined in detail in the Transport Statement prepared by Sweco. This junction amendment will include the construction of a new access to the Bioquarter development via a service road.

- 5.1.2.3 The new service road will be required to provide vehicle and servicing access to the NHS site away from Little France Drive. The service road is to pass around the western boundary of the NHS site and then run parallel with the existing canal, eventually meeting with the proposed development at MOB2 and the Strategic Pedestrian Link through the Bioquarter.
- 5.1.2.4 A temporary location for bus halts on both sides of Little France Drive is likely to be required close to the NHS Lothian development site.
- 5.1.2.5 Utilities – The existing utilities located parallel with Little France Drive are to be relocated to allow the building line facing Little France Drive to be set at a dimension from the existing kerbline that will allow the future tram route to be constructed as advised in the Transport Statement prepared by Sweco. All existing utilities including foul and surface water sewers are to be relocated northwards.
- 5.1.2.6 Building service connections will be taken from the relocated utilities on the northern boundary and new utility connections will be taken along the service road route.
- 5.1.2.7 Surface water drainage will discharge towards Little France Drive with a restricted discharge equivalent to 4 l/s/Ha. The surface water then discharges to the water environment via a surface water basin constructed to the east of the Bioquarter development site. This will provide sufficient levels of treatment for roofs and minor hardstanding, but service yard areas are likely to require an additional level of source treatment to comply with General Binding Rules 10 and 11 (SEPA Controlled Activity Regulations).
- 5.1.2.8 Foul water will discharge to the relocated foul sewer running parallel with Little France Drive. Applications should be made via a licensed provider for consent to discharge to both foul and surface water sewers for the specific proposed buildings and associated hardstanding areas.
- 5.1.2.9 There is a flood study being developed currently by Arup to define the extent of flooding and associated mitigation in relation to the Bioquarter development. Early information indicates that there is no flood risk associated with the area of site being considered by NHS Lothian, but the findings of this report are being concluded and will be issued to confirm or otherwise the requirement for compensatory storage.

### **5.1.3 Land Acquisition**

- 5.1.3.1 The Edinburgh BioQuarter partners, including the existing land owners, University of Edinburgh and Scottish Enterprise, have agreed a set of “Land Principles” for the sale and purchase of land to enable the delivery of the campus masterplan. There are willing parties, an aligned planning position, and an opportunity to conclude transfers efficiently upon approval of the initial agreement or such other milestone as required.
- 5.1.3.2 Values and development costs are reflective of the location and aspirations of a public realm and infrastructure to support the vision of the Edinburgh BioQuarter. This includes the opportunity to benefit of shared buildings and services; for example, car parking and combined heat and power plant.

### **5.1.4 Timetable**

- 5.1.4.1 A high level project plan is detailed in 5.3.6.

## 5.2 The Financial Case

### 5.2.1 Introduction

5.2.1.1 The Financial Case considers the affordability of the scheme. This section sets out all associated capital and revenue costs, assesses the affordability of the preferred option and considers the impact on NHS Lothian's finances. In order to make this assessment an overall affordability model has been developed covering all aspects of projected costs including estimates for:

- Capital costs for options considered (including construction and equipment);
- Non-recurring revenue costs associated with the project;
- Recurring revenue costs (pay and non-pay) associated with existing services i.e. baseline costs;
- Changes to revenue costs associated with service redesign as a direct result of the development.

5.2.1.2 Taking all the above into account the summary position is shown below:

**Table 23: Summary of Capital Costs**

	<b>Do minimum £m</b>	<b>Proposed Option £m</b>
Total Capital Costs	13.7	68.50
Project Team costs		1.20
<b>Sub total</b>	<b>13.7</b>	<b>69.70</b>
<b>Expansion Option</b>		
Collaboration/Clinical Research Facility Space		3.47
<b>Total including expansion option</b>	<b>13.7</b>	<b>73.17</b>

**Table 24: Summary of Recurring Revenue Costs**

	<b>Baseline £m</b>	<b>Do Minimum £m</b>	<b>Proposed Option</b>	
			<b>2020 £m</b>	<b>2030 £m</b>
<i>Clinical Costs</i>				
Pay	7.05	7.82	8.60	9.41
Drugs (not IVT)	1.57	1.73	1.91	2.09
IVT Clinics incl Nursing	4.33	4.33	10.56	12.67
Theatres	1.97	1.97	3.26	3.26
Other Services	1.07	1.12	1.17	1.21
<b>Clinical Costs Sub-Total</b>	<b>15.99</b>	<b>16.97</b>	<b>25.50</b>	<b>28.63</b>
Property Costs	0.96	1.21	2.52	2.52
<b>Total Revenue Costs</b>	<b>16.95</b>	<b>18.17</b>	<b>28.02</b>	<b>31.16</b>

Non recurring revenue costs of £0.2m, comprising double running, decant and small equipment are anticipated for the preferred option.

The clinical research facility is assumed to be self-funding. The revenue costs for the collaboration space will be clarified at OBC stage.

## 5.2.2 Capital Costs

### 5.2.2.1 Capital Cost Components

The total capital cost comprises the construction costs provided by quantity surveyors (or estimates of backlog maintenance for `do minimum`) plus all other costs directly related to the development (mainly relating to equipment and fees).

### 5.2.2.2 Assumptions

A number of assumptions have been made in relation to the capital costs. These are set out below:

**Table 25**

Cost	Assumption
Funding	Funding assumed to be traditional capital funding, through the Capital Resource Limit, therefore no borrowing costs included. However, alternative and innovative funding solutions are being sought to support the development in whole or part in line with Scottish Government requests.
VAT	VAT on construction costs is assumed to be irrecoverable, with the exception of professional fees and PSCP mark up. Estimates of VAT recoverability on other costs will be reviewed by VAT advisors during the OBC
Equipment	Equipment costs are based on 15% of construction cost.
Risk Register	Risk Register has been costed by the Quantity Surveyor
Building Regulations	Construction costs are based on 2016 Building Regulations

### 5.2.2.3 Total Capital Costs

The overall capital cost for the preferred option amounts to £69.70m before expansion options. The proposal to include a Clinical Research and collaboration space, would increase the total capital costs to £73.17m. These costs are detailed below:



**Table 26: Total Capital Costs**

	<b>Do Minimum £m</b>	<b>Proposed Option £m</b>
Backlog Maintenance	6.38	
Construction		28.40
Site Acquisition		
Professional Fees	0.97	4.33
Other Costs	1.29	0.75
Equipment	0.17	5.76
Costed Risk Register		
Inflation	1.31	9.04
VAT	1.80	11.03
<b>Sub Total (inc Collaboration/Clinical Research</b>		
Edinburgh BioQuarter Enabling		4.93
Project Team Costs		1.20
<b>Total</b>		
Less Collaboration/Clinical Research Facility Space		3.47
<b>Total excluding Expansion Option</b>		

Source: 1. Thomson Gray Cost Option Appraisal – November 2017. 2. NHSL Capital Finance Team.

NB. At this stage no assumption is made in the above regarding financial contribution from Partners towards the Collaboration/Clinical Research Facility. This will be explored as part of the OBC.

#### 5.2.2.4 Capital Receipts

In the event of the current PAEP site being declared surplus, the future of the site will be considered through the NHS Lothian Property Rationalisation Strategy. In line with Scottish Government directions, where the Net Book Value of capital receipts are returned to the Scottish Government to support the health capital investment programme, no proceeds for the sale have been included as a source of funding.

#### 5.2.3 Revenue Costs

5.2.3.1 In order to confirm the revenue implications of the project, it is necessary to establish the baseline costs of the current service, particularly workforce, for the existing service model. The baseline costs are then compared to the estimated costs of the new models of care to assess the financial implications.

5.2.3.2 To support this process, a number of assumptions have been agreed in relation to the different cost categories. These will be revised and clarified throughout the Outline Business Case (OBC) and Full Business Case (FBC) process.

**Table 27**

<b>Cost</b>	<b>Assumption</b>
Workforce	Calculated based on agreed NHS Lothian methodology including allowances for on-costs, enhancements, sick leave, public holidays and annual leave. Workforce increased are based on forecast demand growth.
Non-Pay	Variable non-pay costs assumed to increase in line with demand forecasts
Facilities	Changes in staffing reflect the overall increase in the size of the building
Independent Sector	Assumed no independent sector use as part of the do minimum/ re-provision scenarios
Depreciation	Building – 60 years. Equipment 10 years, IT – 5 years

## 5.2.4 Service Model Costs

5.2.4.1 The clinical and support costs for the overall Ophthalmology service have been estimated based on current costs, and amended for known changes as part of the `do minimum` and re-provision scenarios. The table below summarises the increase in costs arising from these estimates.

5.2.4.2 Do minimum costs take into account increases in demand that can be met by the current model up to 2020. Estimates for the proposed option reflect forecast demand at 2020 and 2030, to show the potential full cost of the facility.

**Table 28 – Service Model Costs**

	Baseline £m	Do Minimum £m	Proposed Option	
			2020 £m	2030 £m
Nursing	2.30	2.55	2.81	3.07
Medical and Admin	4.75	5.27	5.79	6.34
Drugs	1.57	1.73	1.91	2.09
Medical Photography	0.70	0.74	0.79	0.84
IVT Clinics incl Nursing	4.33	4.33	10.56	12.67
Other	0.38	0.38	0.38	0.38
<b>Sub-Total</b>	<b>14.01</b>	<b>15.00</b>	<b>22.24</b>	<b>25.37</b>
Theatres	1.97	1.97	3.26	3.26
<b>Total</b>	<b>15.99</b>	<b>16.97</b>	<b>25.50</b>	<b>28.63</b>

For the proposed option 2020 service model costs are based on the activity data projections for 2020. While the actual construction is anticipated to be completed not before 2022, effect of the date change on revenue estimates is considered to be not significant.

5.2.4.3 The estimated costs above assume no immediate increase from the Do Minimum to day one in a re- provided facility, based on demand forecasts. The exception is IVT treatments,

where two additional rooms in a re-provided facility will immediately enable a significant increase in activity. The `do minimum` option currently excludes any additional IVT costs which may arise from the opening of the second clean room at the existing PAEP in 2018. These costs will be clarified at the OBC development stage.

5.2.4.4 Forecasts indicate that an additional high volume cataract theatre will be required in 2022/23, and the costs for this have been reflected above.

5.2.4.5 Estimated costs reflect known changes in demand and service models, however are necessarily undertaken at a high level at Initial Agreement stage and are indicative only. Detailed costings of proposed service models will be undertaken at OBC stage.

## 5.2.5 Property Costs

5.2.5.1 An outline of the changes in both running costs and depreciation is summarised below:

**Table 29 – Property Costs**

Service	Baseline Budget £m	Do Minimum £m	Proposed Option £m
Portering	0.02	0.02	0.02
Domestics	0.16	0.16	0.28
Maintenance	0.08	0.24	0.08
Catering	0.02	0.02	0.03
Utilities	0.13	0.13	0.13
Laundry	0.02	0.02	0.03
Rates	0.09	0.18	0.42
<b>Sub-Total</b>	<b>0.52</b>	<b>0.77</b>	<b>0.99</b>
Depreciation	0.44	0.44	1.54
<b>Total Property Costs</b>	<b>0.96</b>	<b>1.21</b>	<b>2.52</b>

5.2.5.2 The major increases in property costs relate to rates and depreciation. Rates have been estimated on similar properties, and the Do Minimum option includes a prudent assessment of an increase in rates due to the up and coming rates review.

5.2.5.3 Facilities management review will be undertaken on a campus wide basis to maximise the efficiencies.

## 5.2.6 Non- recurring Costs

Decant and `Double Running Costs`

5.2.6.1 Costs will be incurred in order to complete the move from the current building to the preferred solution, while double running costs are also anticipated during this period. These costs have been estimated at £0.2m based on similar schemes.

### **5.2.7 Accounting Treatment**

5.2.7.1 The appropriate accounting treatment will be determined through the development of the OBC and will depend on the nature of the funding sources for the capital requirements.

### **5.2.8 Statement of Affordability**

5.2.8.1 As agreed in advance of submission, NHS Lothian will work closely with the Scottish Government Health and Social Care Directorate, and external partners, to identify funding sources for the capital outlay during the development of the OBC.

5.2.8.2 Revenue cost forecasts are currently estimates and will require detailed costing through the OBC/FBC process. This will inform the requirement for efficiencies and other funding sources.

## 5.3 Management Case

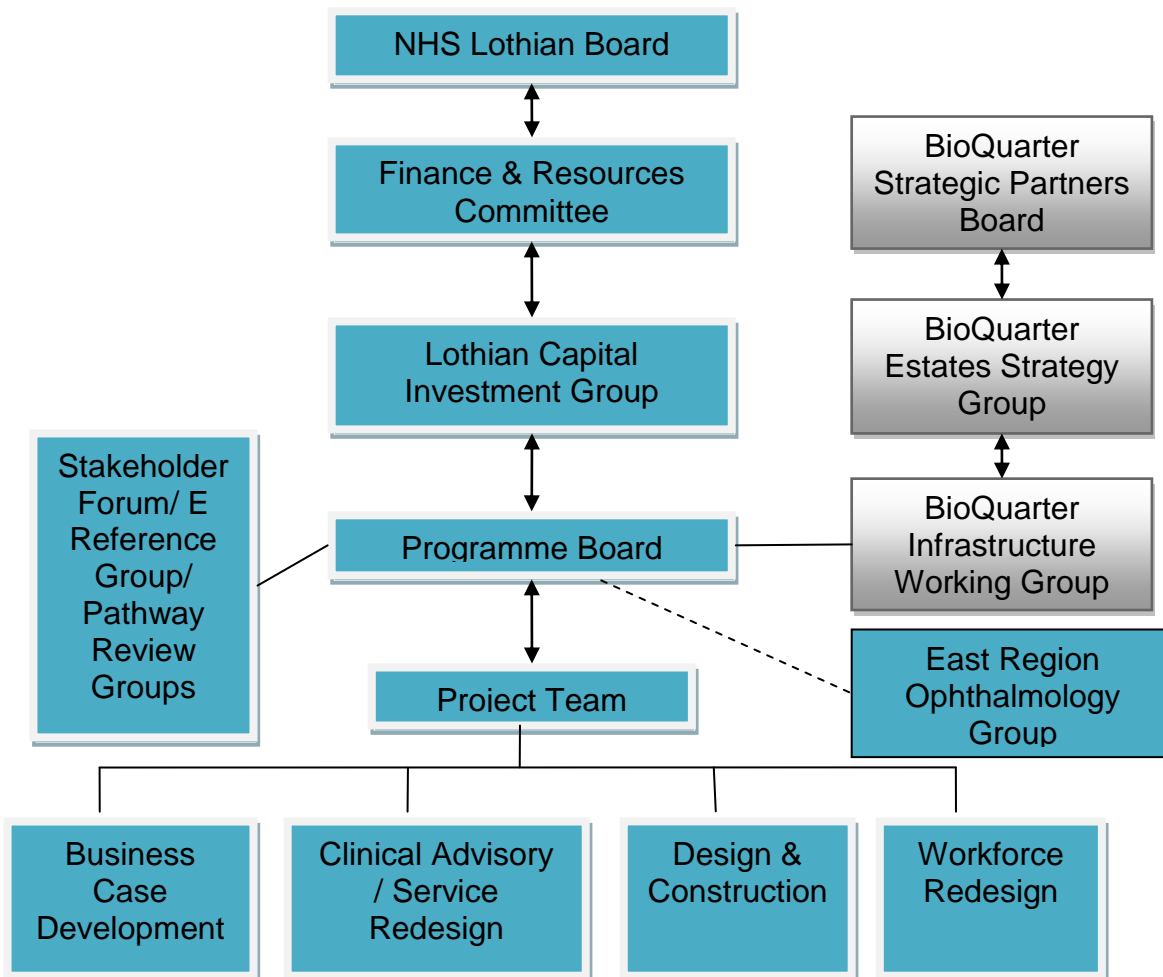
### 5.3.1 Introduction

5.3.1.1 This section of the case addresses:

- The governance arrangements for the project,
- The capabilities of those taking forward the project,
- Use of external advisors
- A high level project plan.

### 5.3.2 Project Management Arrangements

5.3.2.1 The organisation and reporting structure for the project are shown below:



### **5.3.3 Project Reporting Structure**

5.3.3.1 The organisational structure shown above will be used for the duration of the project. The roles & responsibilities of the bodies integral to the project are:

#### **Programme Board**

5.3.3.2 The remit of the Programme Board is:

- To assist the Project Owner with the decision-making process and ongoing implementation of the project.
- To assist the Project Owner with preparing to meet the assurance needs of the Finance & Resources Committee, as well as any further enquiries from Lothian NHS Board with regard to the project.

5.3.3.3 The Programme Board came into existence in June 2017. Terms of Reference have been agreed and the Board will meet every two months. The membership includes the Chief Officer, Acute Services, NHS Lothian as Project Sponsor and chair, in addition to representation from Capital Planning, Finance, Partnership and Senior Management from the service.

#### **Stakeholder Forum**

5.3.3.4 The principal remit of the Stakeholder Forum is:

- To inform PAEP stakeholder groups and organisations of progress of the redesign & re-provision project and related developments in PAEP services.
- To provide PAEP stakeholders with a forum to discuss service issues pertinent to the delivery of the project.

#### **Project Team**

5.3.3.5 The remit of the Project Team is to co-ordinate the delivery of the project from the design stage through to construction. At this stage the team meets on a monthly basis together with external advisors. The principal task of the team to this point has been to co-ordinate the composition of the Initial Agreement including the Exemplar Design.

#### **Task Groups**

5.3.3.6 A number of Task Groups will be formed to undertake the detailed pieces of work required to take the project forward. The groups shown in the structure give an indication of how this will be structured.

#### **BioQuarter Infrastructure**

5.3.3.7 NHS Lothian is working with Scottish Enterprise, University of Edinburgh and City of Edinburgh Council to deliver the infrastructure on the preferred site. The project structure for this element of the project is as follows:

### 5.3.4 Capabilities of those taking forward the Project

#### Project Director

5.3.4.1 Brian Currie is an experienced construction professional, project manager and chartered architect with over 35 years experience in the property and construction sectors in Scotland.

#### Senior Capital Planning Project Manager

5.3.4.2 Neil McLennan is an experienced health service manager with 19 years experience in the NHS. He has worked as a Senior Capital Projects Manager in NHS Lothian on the RHSC/DCN Project for 9 years and prior to that in NHS Highland for 7 years on a number of projects at Raigmore Hospital in Inverness.

#### Programme Manager

5.3.4.3 Kathleen Imrie is an experienced health service manager with 30 years experience in the NHS including senior roles in operational management, planning, contracting, commissioning and service modernisation. This includes 5 years as Head of Commissioning for the Royal Infirmary of Edinburgh Little France project. She is a certified Lean Practitioner and has led a number of healthcare modernisation/redesign projects as part of the Lean in Lothian Programme.

### 5.3.5 External Specialist Advisors

5.3.5.1 Thomson Gray have been employed as lead advisor for the project and Oberlanders Architects have been employed to produce an Exemplar Design.

5.3.5.2 As detailed in the Commercial Case it is anticipated at this stage that the new building will be procured using Frameworks Scotland 2 and that the Principal Supply Chain Partner and CDM Advisor will be appointed using this process. Thomson Gray will carry out the other Consultant roles specified under Frameworks Scotland 2.

5.3.5.3 Legal advice for the Project will be obtained from the Central Legal Office.

### 5.3.6 Project Plan

5.3.6.1 A detailed Project Plan will be produced for the OBC. At this stage, the Board is aiming to achieve the milestones shown below:

Key Milestones	Date
Initial Agreement approval	January 2018
Site Acquisition	February 2018
Appointment of PSCP	April 2018
Appointment of CDM Advisor	June 2018
Outline Business Case approval	March 2019
Obtain outline planning consent	March 2019
Full Business Case approval	March 2020
Construction Commences	March 2020
Construction completion	February 2022
Commence service	mid 2022

### **5.3.7 Strategic Assessment Template**

- 5.3.7.1 The strategic assessment scored this proposal 23 out of a possible maximum score of 25. This highlights the need for change.
- 5.3.7.2 The Strategic Assessment carried out for this proposal can be seen in Appendix 4



Benefits Register						
1. Identification						2. Prioritisation (RAG)
Ref No.	Benefit	Assessment	As measured by:	Baseline Value	Target Value	Relative Importance
1	The ability to reduce transfer time to the Ophthalmology service for a large number of patients presenting as an `emergency` at the RIE Emergency Department.	Quantitative	Improved patient experience. Reduction in time taken.	3.5 miles	Proximal site	3
2	Provide adequate drop off/disabled parking adjacent to the facility plus available parking for patients/relatives nearby.	Qualitative	Survey of users Complaints received	No drop off facility available	6 spaces available	4
3	Clear separation of the patient experience from the movement of goods and services.	Qualitative	Improved experience for patients, relatives and staff.	No separation	Separation	3
4	Sufficient number of appropriately sized/ designed/staffed consultation and examination facilities to support 25% increase in demand for outpatient services	Quantitative	No. of outpatients seen.			5
			Access performance against 12 wk outpatient target and 18wk RTT	Up to 104 weeks for sub specialties	100% within 84 days	5

Benefits Register						
1. Identification						2. Prioritisation (RAG)
Ref No.	Benefit	Assessment	As measured by:	Baseline Value	Target Value	Relative Importance
5	Bringing 5 outpatient areas together, co-located with the Ophthalmic Imaging Suite to provide a smoother flow and experience for patients through the stages of diagnosis and consultation.	Qualitative & Quantitative	Distance travelled by patients/staff. Overall appointment time. Survey of service users to gauge satisfaction	5 separate outpatient departments	2 outpatient departments	4
6	All facilities designed to accommodate service users with a disability. Reduced number of reception areas, introduction of a Help Desk, Purpose designed waiting areas with a refreshment/catering facility	Qualitative	Adherence with DDA Patient satisfaction	Not fully DDA compliant	Full DDA compliance	5
7	Creation of an Ophthalmic Imaging Suite incorporating all imaging and photography, provided in an appropriate environment enabling confidentiality and dignity for patients	Qualitative	Patient satisfaction	3 patients undergoing diagnostic tests simultaneously in one room.	1 patient per test per room	4

Benefits Register						
1. Identification						2. Prioritisation (RAG)
Ref No.	Benefit	Assessment	As measured by:	Baseline Value	Target Value	Relative Importance
8	Sufficient pre injection and IVT clean rooms, assessment and imaging facilities to regularly review patients on AntiVeg F treatment.	Quantitative	No. of sessions/IVT slots available per week.	10 sessions /160 slots	20 sessions/ 320 slots	5
			Length of wait between new patient diagnosis and first injection of treatment course	14 – 21 days	14 days maximum	5
			Wait between request for repeat injection and injection date	7 – 21 days	14 days maximum	5
9	Sufficient capacity to deal with future estimated growth in existing patient cohort	Quantitative	No. of sessions/IVT slots available per week.	10 sessions /160 slots	Potential for up to 30 sessions/ 480 slots if convert clinic room to clean room	5
10	<u>Community Optometrists</u> a future `shared care` model capable of supporting chronic disease patients who require regular review	Quantitative	Percentage of stable chronic disease patients supported in a shared care model	0%	% estimated from audit to be added	3

Benefits Register

1. Identification						2. Prioritisation (RAG)
Ref No.	Benefit	Assessment	As measured by:	Baseline Value	Target Value	Relative Importance
11	Sufficient Day Surgery spaces to cope with increased demand and to further increase the percentage of surgery performed as day case	Quantitative	No. of available day surgery chairs	20 chairs	32 Chairs	5
			% of all surgery performed as a day case	92%	98%	4
	Sufficient theatre capacity designed to support `double scrubbing` to maximise efficiency and throughput	Quantitative	No. of routine cataract cases performed per list	4 – 6 per list	7 – 8 per list	4
	Placement of Day Surgery Unit and Theatres on same floor adjacent to each other to improve flow and turnaround	Quantitative	Time from leaving day surgery area to arriving in theatre suite	10 – 15 mins	1 – 2 mins	3
	Co-locating the Day Surgery Unit and Theatres on the same level	Qualitative & Quantitative	Distance between admission point and surgery	X metres	X metres	3
12	Modern inpatient ward beds with single rooms and en-suite facilities	Qualitative	Improved patient experience. Standards met re single sex accomm.	Shared toilet facilities	En-suite toilet facilities	4
13	Provide an effective and efficient workforce to support services for decades to come and able to meet the predicted demand.	Quantitative	Sustainable services	Current level of service sustainability	2020 then future level of service sustainability	5
<b>Benefits Register</b>						
1. Identification						2. Prioritisation

						(RAG)
Ref No.	Benefit	Assessment	As measured by:	Baseline Value	Target Value	Relative Importance
14	Appropriate change, catering, rest, education and training facilities commensurate with a modern healthcare facility	Qualitative	Staff Survey	High level of dissatisfaction	Improved satisfaction	4
15	Digital infrastructure and Wireless network supported by appropriate storage, front end technology and modern equipment.  Sustainable and appropriate systems are in place to support all key functions and facilitate developments in communication	Quantitative	Increased potential for e-communication with Community Optometry and, for the future, with patients. Education and advice only feedback to the Community. Safe and secure image sharing between Community and hospital Adult Eye Services. Palm held/trolley pc access to TRAK Patient Administration system (Computers on Wheels )	Low level of digital infrastructure  Efficiency benefits	Improved level of digital infrastructure.  Efficiency benefits	5
16	A new modern Adult Eye Hospital for Lothian will contribute to improving the functional suitability of the wider NHS Lothian estate and will reduce backlog maintenance	Quantitative	Level of backlog maintenance. Rate of C02 emissions	£2.7M backlog maintenance C02 emission at + 62% in current building in comparison to a modern building	£0.0 backlog maintenance and point of occupation  An estimated 62% reduction in C02 emission	4
<b>Benefits Register</b>						
1. Identification						2. Prioritisation (RAG)
Ref	Benefit	Assessment	As measured by:	Baseline Value	Target Value	Relative

No.						Importance
17	Co-location with established, excellent research and teaching facilities to become a centre for clinical excellence in Ophthalmology supported by first class modern teaching and research facilities	Qualitative & Quantitative	Survey of student satisfaction.  Recruitment and retention success	Survey results  Low number of applicants responding to advertised vacancies	Improved levels of student satisfaction and trainees wishing to work in Lothian High number of applicants responding to advertised vacancies	4
18	Relocation to the BioQuarter site will provide greater opportunity for patients to be attracted to take part in clinical trials, leading to better treatments	Quantitative	No of trials No of patients recruited into trials Level of research funding attracted	No of trials No of patients recruited into trials Level of research funding attracted	No of trials No of patients recruited into trials Level of research funding attracted	4
19	Community benefits There will be a link between opportunities presented by the New Eye Hospital project and the local community in a similar way to that seen with the new RHSC and DCN	Quantitative	No of new entrant jobs No of training opportunities/ graduates and apprenticeships Support to local business – SME and 3 <sup>rd</sup> sector. Community engagement activities	TBC	TBC	4

Risk Analysis and Management Plan - **Appendix 2**

RISK REGISTER						
Ref No:	Risk Description	Prior to Mitigation			Mitigation	
		Probability (1-5)	Impact (1-5)	Risk Rating (1-25)		

1	<b>Stakeholder Identification/Change</b> May fail to identify appropriate Stakeholders or stakeholders change.	3	3	9 MEDIUM	Stakeholder Forum to be established when IA approved. Running audit trail of decisions.
2	<b>Inadequate Stakeholder Engagement</b> May fail to engage with Stakeholders or stakeholders are unable to dedicate adequate time.	2	3	6 MEDIUM	Identify key stakeholders and negotiate appropriate time.
3	<b>Conflicting Aspirations</b> Stakeholders may have contradictory aspirations.	1	3	3 LOW	Programme Board established to manage/make decisions.
4	<b>Professional Advisers</b> May not involve appropriate professional expertise, (Design, Construction, Commercial, Clinical, Expert Advisers such as Infection Control).	3	3	9 MEDIUM	Managed in line with SCIM and relevant capital management guidelines.
5	<b>Programme</b> May fail to adequately determine the overall programme. Issue of effect of how funding will be sourced for the building currently unclear	4	4	16 HIGH	Clarity on SG plans for Elective Centre and `Collaboration Space` needed. NHSL has facilitated regional optional appraisal re Elective Centre etc. Re Collaboration space paper proposing size & use of space submitted to Crombie Group & agreed. Main uncertainty re timing of approval of IA.
6	<b>Capital/Revenue Costs</b> May fail to establish Financial Parameters, (Capital, Revenue) accurately.	2	4	8 MEDIUM	Clear financial accountability through Programme Board.
7	<b>Scope</b> May fail to define appropriately the Clinical Need. Issue of effect of how funding will be sourced for the building currently unclear	2	4	8 MEDIUM	Work directly with users on output specifications. ensuring sign off where required. NHSL Information Team to advise on future demand forecasts.
8	<b>Availability of Operational Revenue Funding</b> There may be insufficient revenue funds to deliver the full Clinical Requirement.	3	5	15 HIGH	Requirements to be established through robust business case development.
9	<b>Delays</b> Approval process - ensuring prompt approval to maintain programme.	3	3	9 MEDIUM	Once IA approved will be managed via Programme Board.
<b>Ref No:</b>	<b>Risk Description</b>	<b>Prior to Mitigation</b>			<b>Mitigation</b>
		<b>Probability (1-5)</b>	<b>Impact (1-5)</b>	<b>Risk (1-25)</b>	<b>Rating</b>
10	<b>Management of Expectations</b> Planned facilities do not meet expectations of public, staff, clinicians, NHS and Council strategies, etc. Reputation & Service Delivery Impact.	3	3	9 MEDIUM	Stakeholder engagement and participation in decision making.

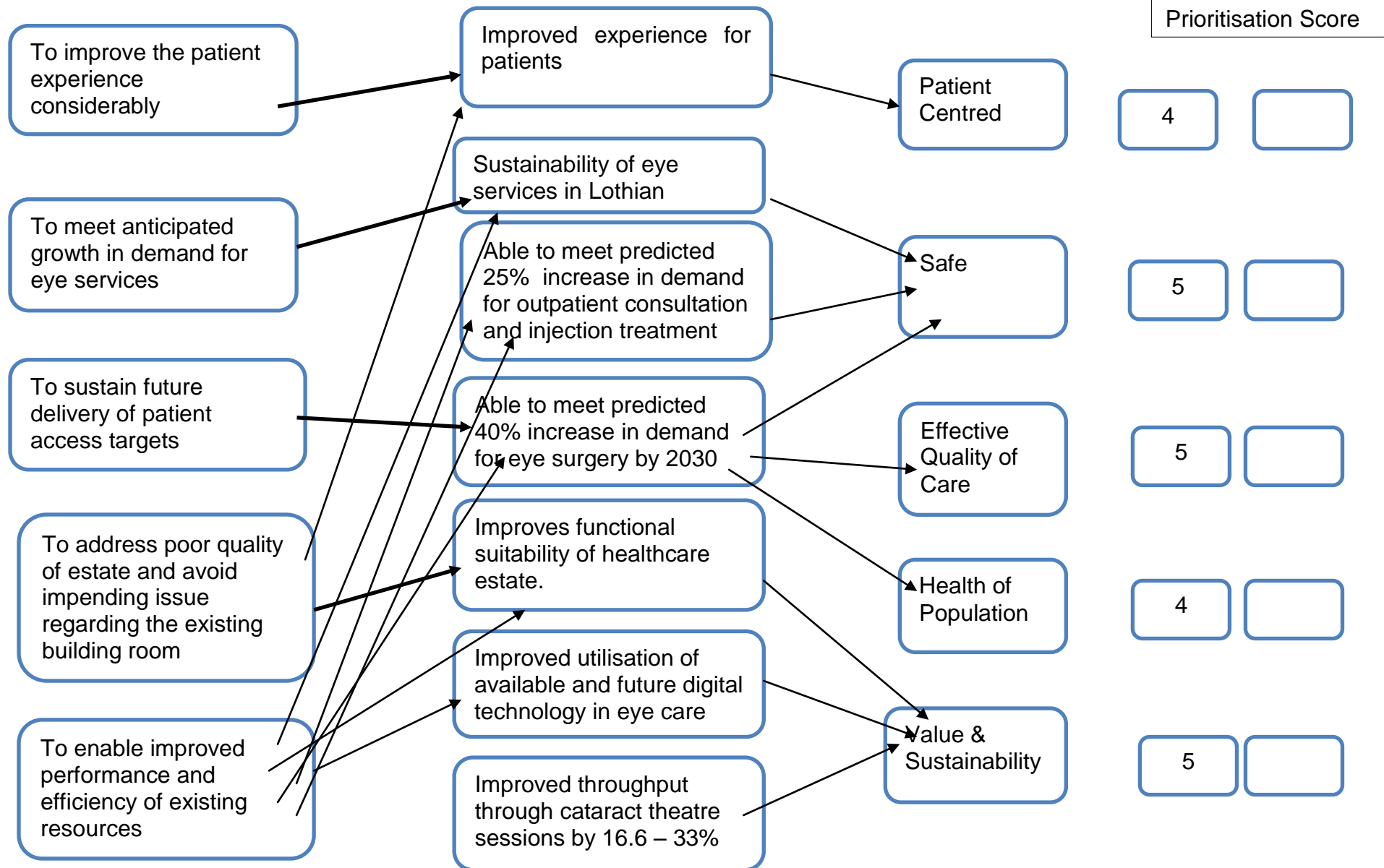
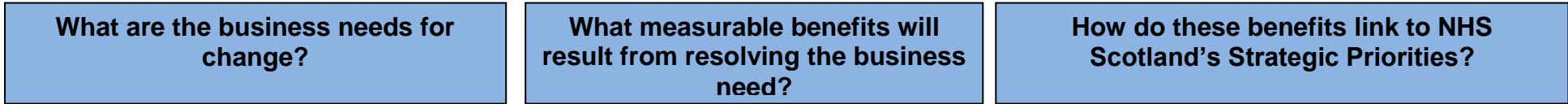
11	<b>Records Storage</b> Digitising images - too much/little storage space provided.	3	3	9 MEDIUM	E-Health Business Case to be established to support move to paperless or paperlite & expansion of digital networking.
12	<b>Unclear Roles &amp; Responsibilities</b> Unclear definition of roles, responsibilities and communication routes/paths.	3	3	9 MEDIUM	Project structure and resources to be proposed/ agreed following approval of IA.
14	<b>Planning Permission</b> May fail to acquire detailed Planning Permission.	2	4	8 MEDIUM	Discussion ongoing via BioQuarter partners.
15	<b>Future Change</b> The Requirement Statement may fail to keep abreast with future Clinical Practice.	3	3	9 MEDIUM	Requirements to be kept under regular review.
16	<b>Change of Scope</b> The Requirement Statement may be subject to uncontrolled Scope Creep.	3	3	9 MEDIUM	Programme Board to agree any change if required.
17	<b>Design Changes</b> There may be changes to Clinical regulations or other related legislation.	2	3	6 MEDIUM	Closely monitored throughout project lifetime.
18	<b>Budget Costs (Site Conditions)</b> The Options may fail to identify and address Site constraints, (environmental concerns, ground conditions, public access, car parking, transport).	2	3	6 MEDIUM	Programme Board to review.
19	<b>Construction Costs</b> Construction market changes significantly and costs increase.	4	4	16 HIGH	Programme Board to review.
20	<b>Workforce Planning</b> NHS Lothian may fail to effectively plan future staff requirements.	2	3	6 MEDIUM	Programme Board to review.
21	<b>Recruitment &amp; Retention</b> NHS Lothian may fail to attract sufficient appropriately skilled staff to meet the anticipated increase in demand.	3	4	12 HIGH	Recruitment and Retention plan including succession planning.
22	<b>Business Case Completion</b> Lack of clarity / lack of resource (Funds, time or people) to complete the Business Case Documents effectively / timeously.	2	4	8 MEDIUM	Once IA approved necessary resources to be identified.
<b>Ref No:</b>	<b>Risk Description</b>	<b>Prior to Mitigation</b>			<b>Mitigation</b>
		<b>Probability (1-5)</b>	<b>Impact (1-5)</b>	<b>Risk Rating (1-25)</b>	
23	<b>Costs</b> Costs of discharging conditions of Planning Consent may be greater than allowance provided for.	2	3	6 MEDIUM	Programme Board to review.



24	<b>Statutory Approvals</b> Failure or delay in obtaining planning approval/building warrant/SEPA/Environmental or any other required approvals. Delay to start on site. Time and Cost Impact.	3	3	9 MEDIUM	Programme Board to review.
25	<b>Project Management</b> NHSL may not have the experience or availability to manage the Project.	2	4	8 MEDIUM	Expertise exists within NHSL.
26	<b>Costs</b> NHSL approach to Cost Planning may not be effective.	1	3	3 LOW	Programme Board to review.
27	<b>Equipment</b> May not conduct Equipment Planning effectively.	3	3	9 MEDIUM	Programme Board to review.
28	<b>Design Inadequacy (Clinical Brief)</b> The Design may fail to support the Brief.	2	2	4 MEDIUM	Detailed plans developed through Clinical Output Briefs. Appoint experienced, competent design team via appointment of PSCP. Sign off as appropriate. throughout the project.
29	<b>Design Inadequacy (Guidance/ Standards)</b> May fail to maintain a consistent interpretation of guidance/standards.	3	3	9 MEDIUM	Programme Board to review.
30	<b>Project Plan</b> The Project Plan does not adequately reflect required tasks & timescales & does not align with associated projects - Elective Centre etc.	4	4	16 HIGH	Following approval of IA a full programme to be developed. Project Board to monitor impact of any changes e.g. Elective Centre.
31	<b>Planning Permission</b> Local objection may influence Planning Permissions (increased number of visitors/pressure on car parking).	3	3	9 MEDIUM	Programme Board to review.
32	<b>Regulatory Compliance</b> The Design may not comply with local Planning Regulations (Unlikely due to design guide document/early consultation).	1	1	1 LOW	Programme Board to review.
33	<b>Regulatory Compliance</b> May fail to comply with Environmental Regulations.	2	2	4 MEDIUM	Programme Board to review.
<b>Ref No:</b>	<b>Risk Description</b>	<b>Prior to Mitigation</b>			<b>Mitigation</b>
		<b>Probability (1-5)</b>	<b>Impact (1-5)</b>	<b>Risk Rating (1-25)</b>	
34	<b>Regulatory Compliance</b> May fail to comply with Traffic Planning Regulations.	2	2	4 MEDIUM	Programme Board to review.

35	<b>Regulatory Compliance</b> May fail to comply with Section 106 Approval.	2	2	4 MEDIUM	Programme Board to review.
36	<b>Regulatory Compliance</b> May fail to comply with Utilities Regulations.	2	2	4 MEDIUM	Programme Board to review.
37	<b>Scope (Regional Elective Cataract Planning)</b> Risk of failing to define whether the new build will be a eye unit with additional electives at the appropriate time.	3	5	15 HIGH	Discussion began with SG in August 2016. Any need to include additional demand from SE Scotland will require to be scoped in addition. NHSL has participated in regional planning, facilitated a regional option appraisal and sought clarity re the other affected Boards' future plans.
38	<b>Scope (Collaboration Space)</b> Risk of failing to agree appropriate Ophthalmology Collaboration space at the appropriate time.	3	3	9 MEDIUM	Definition of proposed requirement and how and by whom it will be used to be incorporated into IA.
39	<b>Existing Facility</b> Problems with existing facility (roof leaks etc) severely impact on required completion date of new build.	3	5	15 HIGH	Maintain existing roof condition and repair as required. Monitor any increased level of deterioration. Condition survey to be carried out & contingency plan being drawn up.
40	<b>Scope (Location of Ward/Theatre)</b> Risk of failing to agree location of inpatient beds & associated theatre at the appropriate time.	3	5	15 HIGH	Options appraisal carried out in August 2016. Outcome – inpatient beds remain in IA.
41	<b>Building Size / Configuration (Clinical Pathways)</b> New clinical pathways still not tested which may impact on schedule of accommodation.	2	3	6 MEDIUM	Conduct small tests of change where possible to test theories. Look to other services for experience.
42	<b>Building Size / Configuration (Outpatient Utilisation)</b> Lack of data on outpatient utilisation which has potential impact on required space. (Particularly with regard to macular services). Proposed shift of service to community does not materialise	3	4	12 HIGH	Conduct clinic space utilisation exercise and build in forecasts for key services.
43	<b>Building Size / Configuration (Visits to Other Sites)</b> Visits to other sites not carried out to give perspective on planning.	2	3	6 MEDIUM	Develop an appropriate programme of focussed visits to review specific designs. Full report back to Project Board.
<b>Ref No:</b>	<b>Risk Description</b>	<b>Prior to Mitigation</b>			<b>Mitigation</b>
		<b>Probability (1-5)</b>	<b>Impact (1-5)</b>	<b>Risk Rating (1-25)</b>	

44	<b>Scope (Link to RIE)</b> Risk that scope is increased to include physical link between new build and RIE.	2	3	6 MEDIUM	Due to physical constraints this would be unaffordable as advised by Director of Capital Planning & Projects.
45	<b>Political Environment</b> The impact of the UK's decision to withdraw from the EU and the related possibility of a further referendum on Scottish independence may adversely impact on the delivery of the project.	3	3	9 MEDIUM	Under review.
46	<b>Capital Resource</b> There may be insufficient capital resource available to NHS Lothian to deliver the project timeously.	4	4	16 HIGH	Secure appropriate resource through robust business case.
47	<b>Car Parking (Patients &amp; Carers)</b> Plan is for commercial multi storey car park on site. Risk that this is not delivered on time. Clarity also required that solution is acceptable vis a vis Integrated Impact Assessment.	4	4	16 HIGH	Review through Bioquarter Strategic Partners Board & liaison with Scottish Health Council. Management of expectations.
48	<b>Car Parking (Staff)</b> Potential impact of not having dedicated parking for staff working between different sites on recruitment & retention.	4	4	16 HIGH	Number of essential users will be assessed. Plan to be developed.



### Ophthalmology Service Reprovision (Princess Alexandria Eye Pavilion)

#### Scope of “collaboration space” as part of the Edinburgh BioQuarter (EBQ)

##### A. Context

The development of a business case for the reprovision of ophthalmology services to EBQ coincides with a revision of the EBQ masterplan which facilitates a much greater degree of collocation and adjacencies between NHS, University and commercial interests at the campus adjoining the Royal Infirmary of Edinburgh.

In order to capitalise on such proximities the partners have proposed a concept to encourage collaboration within the buildings themselves, and a reprovided Eye Pavilion may be an early enabler to prove this approach.

The EBQ masterplan for the area is being developed but includes an assumption of public / retail space within buildings and readily accessible public realm linking the buildings on the site. The synergy or incorporation of these concepts and collaboration space can be explored to offer greater cost efficiency in the build costs.

This paper sets out the draft methodology and a draft specification being considered within the operational service briefing which in turn will be developed into a design brief.

##### B. Objective

Collaboration space in this context is the provision of an appropriately sized and located area within the design for the new Eye Pavilion which will facilitate a cooperative arrangement between EBQ partners and potential industry parties active in the area of ophthalmology; working towards a common goal through the transfer of knowledge and experiences.

For the EBQ partners, this collaboration space must support the EBQ vision<sup>1</sup> and demonstrate real advantages of locating at EBQ.

##### C. Proposed Developments

Initial interaction with the University of Edinburgh and Scottish Enterprise around the potential development of a new Eye Pavilion at Edinburgh BioQuarter suggested benefits of fit for purpose and appropriately located Clinical Research Facilities and a broader Collaboration Space within the new development. Leveraging clinical research from “bedside through bench to manufacture” is a key economic driver for the City of Edinburgh and Scotland.

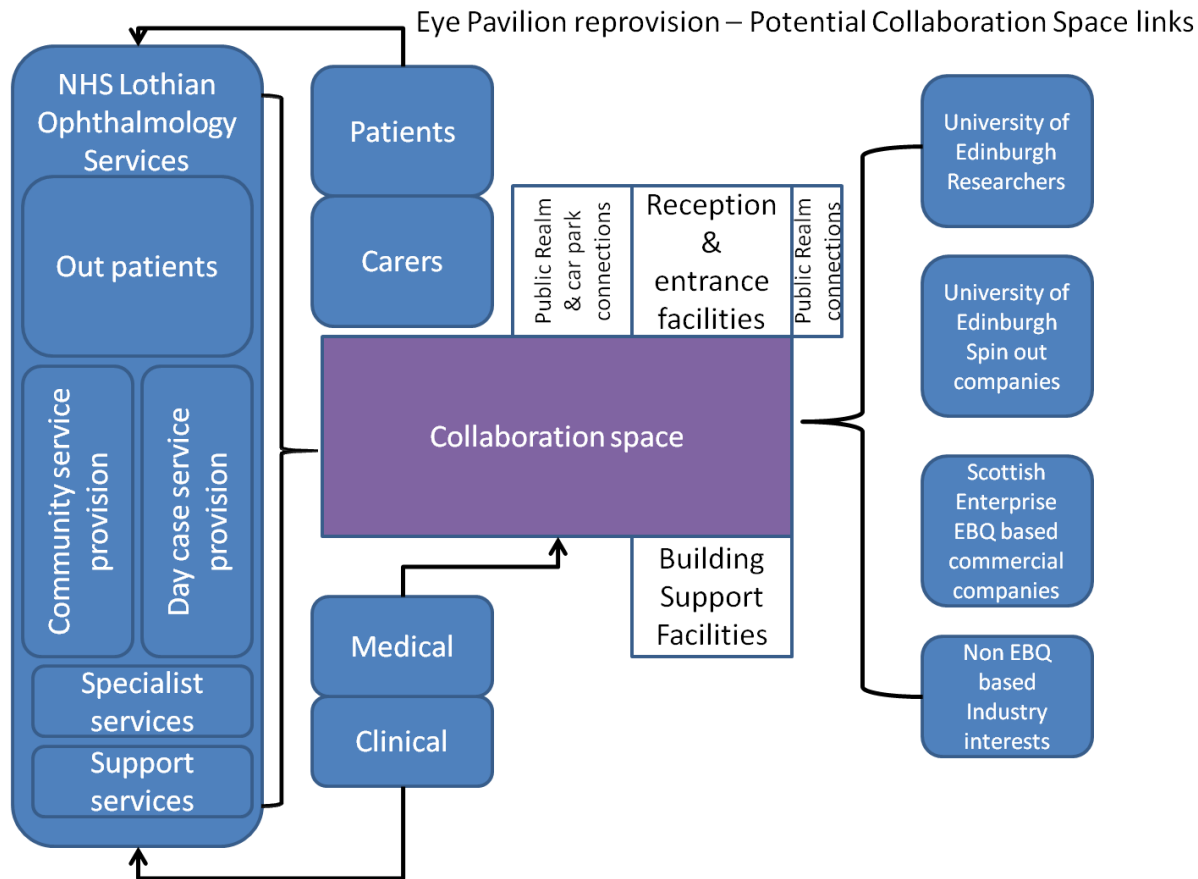
A schedule of accommodation for the Clinical Research Facility (CRF) and Collaboration space has been drawn up in partnership with the University of Edinburgh and has been agreed as a reasonable provision by the University. The University is now exploring sources of funding such as Wellcome Trust, philanthropic sources, Scottish Enterprise etc. A Joint funding approach seems likely at this stage

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<sup>1</sup> Vision prepared for EBQ masterplan

Scottish Enterprise facilitated engagement with key industry players in April 2016 – see end note below<sup>1</sup>.

The space will work to the following relationships but also forms “soft expansion” for clinical services should the need arise.



The flexibility this approach offers allows for re allocation of uses across the EBQ campus to reflect needs amongst the partners and industry. Initial benefits to be realised of this space include:

Community Benefits – the accessibility of the EBQ / collaboration space(s) could derive economic and local benefits to support the shift of care and improve (local) health outcomes.

Scientific and commercialisation opportunities for NHS Lothian / NHS Scotland could include, for example, data research. Links with other developments to be investigated.

Industry interests - Scottish Enterprise<sup>2</sup> have a consultancy procurement pending which can support identifying market interests which may influence the collaboration space.

EBQ developments in research – University of Edinburgh interests in related fields complementary to Ophthalmology. Specification or brief for other collaborative opportunities on EBQ to be shared and / or provided in other EBQ (UoE) buildings.

Scottish Government (H&SCD) - identified the principle of investigating the added benefit of local, regional and national Ophthalmology service demands as part of the business case.

<sup>2</sup> Provisional schedule of work / interests prepared by SE.

It is planned to continuously refine the footprint and operating model for collaboration space and clinical research as the design is developed and concepts refined to minimise the capital and revenue costs and maximise the value for money. This will be undertaken in conjunction with our EBQ partners and industry.

Iain F Graham MSc FRICS

Director of Capital Planning and Projects, NHS Lothian

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## Princess Alexandra Eye Pavilion Dinner Summary, April 26<sup>th</sup> 2016

### **Guests**

Douglas Anderson, Founder and VP of Global Advocacy, Optos

Dr. Alec McLean, CEO, Lamellar Biomedical

Ken Sutherland, President, Toshiba Medical Visualization Systems Europe

Andrew Fowlie, Innovation Team and Health Innovation Partnership, Scottish Government Health and Social Care Directorates

### *Princess Alexandra Eye Pavilion Clinicians:*

Dr. Jas Singh, Clinical Director Ophthalmology, PAEP

Prof. Baljean Dhillon, Hon. Consultant Ophthalmic Surgeon, PAEP, NES Professor of Clinical Ophthalmology, University of Edinburgh

Dr. Andrew Tatham, Consultant Ophthalmic Surgeon, PAEP, Edinburgh NHS Scotland Research Fellow  
University of Edinburgh

### *NHS Lothian:*

Jim Crombie, Chief Officer: NHS Lothian University Hospitals & Support Services

Iain Graham, Director of Capital Planning and Projects

### *Scottish Enterprise:*

Julia Brown, Director, Life and Chemical Sciences team

Andrew Henderson, Senior Manager, Life and Chemical Sciences team

Jane Pritchard, Life and Chemical Sciences team

Andrew Staines, Sector Innovation team

### **Discussion Summary**

The evening began with brief talks to set the scene around plans for the Princess Alexandra Eye Pavilion. Beginning with Jim Crombie and Iain Graham from NHS Lothian, who described the journey of the last 2.5 years this resulted in the decision to re-provision the PAEP at the Edinburgh BioQuarter (EBQ), in order to fulfil the aspirations of the new facility.

Prof. Baljean Dhillon then described the goal of collaborating with Industry and the facility's future three strategic R&D themes of:

- i) Multimodal diagnostics in retina/neurodegeneration
- ii) Novel therapies for inherited retinal disease
- iii) Mining big data: retinal predictors of systemic disease

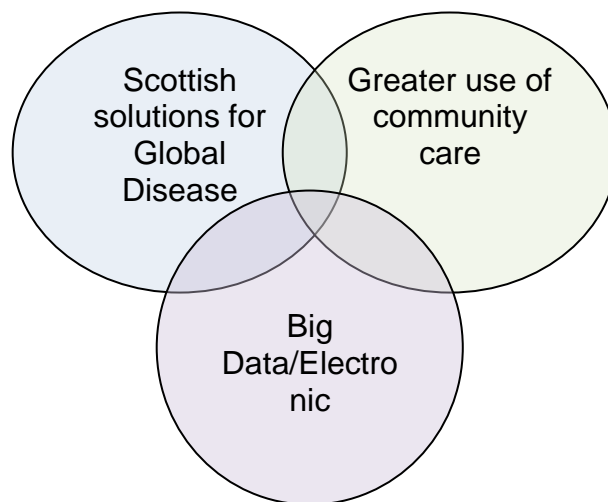
Finally Andrew Henderson (SE) opened a round-table discussion on the opportunities that the new facility might represent, how companies might be involved and what the critical elements might be. The results of this discussion are summarized below:

### Aspirations:

At the beginning, the need for aspiration and trying out new and innovative ideas was described. With a focus on the patient at the centre of the new initiative; its aspirations would be:

- 1) The highest clinical service delivered to patients efficiently.
- 2) A world leading centre of applied research.
- 3) A hub for innovation beneficial to the Scottish economy.

### Opportunities:



- **Ophthalmic disorders are a global issue:** Scotland is a small market/country with an increasing incidence of eye disease but this is only a reflection of the greater increase in eye pathology on a global scale.
  - Test Bed Scotland/Sandpitting<sup>3</sup>
    - The potential of a Scottish lead centre for Ophthalmic Clinical trials in the UK and beyond.
  - Innovation in the developing world
    - Reverse engineering-making technology simpler e.g. Malawi remote eye exams
    - Optos in Sierra Leone-Ebola uveitis.
- **Extension of service delivery into primary care and at-home care:** 'Use of the whole care pyramid'.

<sup>3</sup> <https://www.epsrc.ac.uk/funding/howtoapply/routes/network/ideas/whatisasandpit/>



- Whilst delivery globally is similar funding models vary according to the country, though the trend to unify the health and social care is driven by the global funding crisis.
- In the US the linkage between primary and tertiary healthcare is broken. Preventative care is not insurance funded but paid for by the patient themselves. However, Scottish links to primary care are good, and better than those found elsewhere in Europe.
- In Scotland there is a clear eye health care pathway. Scottish primary care is largely conducted by the Optometry business community where CPD uptake is high (currently use space in the PAEP to train).
- This primary healthcare service is under-utilised and there is an opportunity to make greater use of this sector for service delivery. This model could also be exported for example to emerging markets (see opportunity 1).
- A small decrease in primary healthcare over-referral would have significant effects on the tertiary care service. Shifting a balance of 95% to 96% of healthcare delivered by primary healthcare would create a drop of 20% in tertiary care demand (5% to 4%).
- For the big three diseases: Glaucoma, AMD, Diabetic retinopathy a robust dataset is needed for analysis but this could be done in the community.
- This process innovation could represent a real opportunity.
- Could solve the problem of a 'hidden' patient population, particularly the elderly.
- **Big Data/Electronic Records**
  - Big data is a real resource used by the US eye institutes: for example, Shiley Eye Institute, UCSD. There are electronic record systems for eye data in the US and the trend for greater use is being driven by US legislation. However any electronic system would have cost implications.
  - Benefits include:
    - Patient selection for clinical trials; greater ability to stratify patient populations (Precision medicine).
    - Longitudinal analysis possible; this is good for patient management and clinical trial analysis. Additionally, software is available with algorithms for risk analysis enabling clinician decisions and patient understanding.
    - Facilitates 'virtual clinics' whereby clinician sees fewer patients and relies on data collected by other staff e.g. imaging. Some virtual clinics of this kind already exist at the PAEP. This frees up clinician time and reduces costs. This is also critical for any shift in service delivery to the community since as mentioned previously a robust data set is required.
    - The waste in resources whereby patients are referred to specialist clinics without the required imaging data could be avoided (the example of a specialist clinic in Liverpool was quoted).
    - Analysis of eye data can be used as an indicator of wider health issues, for example, neurological or cardiovascular, so there is an opportunity to increase cross medical disciplinary collaborations.
    - This could potentially be an asset; the 'Edinburgh Screening Technology'

## Critical Requirements

- Need to define a **vision**-‘What is world class?’ There is a need to understand the features and benefits of existing ‘world-class’ centres and successful local initiatives.
- **Leadership**- need an identifiable, key individual leading the facility and actively promoting it and themselves on a global scale. Companies will go to see KOLs. Examples of this include Bascom Palmer Institute, and Chris Mason, face of UCL Regenerative Medicine
- **Capacity**: Space and clinical resource. The space might be significant e.g. the Optos trial in Iceland allowed 10 machines and thus a throughput of 600 patients in 1 week. See also the example of the Shiley Eye Institute.
- **Data Linkage**: It would appear that, currently, ophthalmic data systems are isolated from other record- or imaging systems; more integrated systems might better support cross-disciplinary collaboration for example in diabetes care or neurology.
- **Access**: The example given by Lamellar Biomedical illustrated how important access to NHS staff and facilities was to SMEs and could be an attractive feature of a new facility.
- **Cultural change** needed. Incentives can drive this. Example of behaviours at EBQ given where a cultural change on Industry engagement has led to an exponential increase in Industry collaboration and repeat business.
- **Differential interactions** between SMEs vs. large companies. Not all companies are the same:
  - SMEs seek expertise and specialist equipment not research conducted by PhD students. Large companies appreciate PhD training with students embedded in their companies, this generates clearer IP ownership e.g. EngD trainees in Toshiba.
  - Protracted IP negotiations can affect SMEs disproportionately. This can make/break a start up. Large companies are less intimidated by legal negotiations and less financially affected by a delay in IP acquisition: they may prefer to have greater certainty around a robust IP position.
  - Large companies are seeking long term relationships with institutions; it is not about the money (and they really do not appreciate being seen as ‘meal tickets’). SMEs were proposed to be *perhaps* more innovative.
- **Proximity issues**: There is a need to understand in greater detail the differing degrees of proximity needed. For example, the high incidence of elderly people in the patient cohort makes proximity a greater issue due to access/mobility. Recent experience at the CRIC and the PAEP of using equipment sited elsewhere has shown patient recruitment problems, suggesting that where companies need direct access to patients (eg for trialling new devices), they might prefer to be part of the PAEP. However, for other activities, eg R&D programmes, accommodation at other location on BioQuarter may be preferred.
- **Logistics**: there are opportunities for innovative solutions for transport for patients afforded by the new site.
- **Funding**
  - The budget for NHS future proofing is insufficient. The amount of NHS funds available for supporting investment in future care models would be a challenge, as the service is coping with the ‘everyday tsunami’ of service demands

- In addition, the actions behind the focus of serving the local patient population of NHS Lothian and the goal of global innovation do not entirely overlap. There is an element of economic development in the additional activities.
- This facility would need to go beyond the NHS for further funding. There could be potential for EU/multi-partner funding, similar to SCRM. Phil Luthert, Director of Moorfields, has indicated the need for more than one funding stream.
- No similar EU facility was identified with the same service plan ambitions so this could be 'stealing a trick'.
- EU 2020 funding available for developing exports for the developing world.
- **Training :**
  - Previous experience for Optos demonstrated a substantial reduction in over referral through training.
  - In addition, the future is in cross-sectorial opportunities and thus a cross-sector education would be beneficial.
  - Skills and a pipeline of talent are a significant anchoring factor for larger companies in Scotland.
- **Promotion:** attraction of an Ophthalmology conference would promote the new facility (perhaps something similar to the Aspen symposia). Not only is Edinburgh a major tourist/conference venue but hotel and conference development is planned for the EBQ site so there is a need to ensure the ophthalmic centre is part of the programme.

## Barriers to Innovation

- **Need for a streamlined process;** particularly for access to IP, "standard" contracting (often less of an issue for larger companies), access to clinicians (who often do not have time/capacity to engage)
- **Exchanging data between public/private entities** may have issues that will affect access to big data by companies and the transfer between primary to tertiary healthcare in Scotland. Using data across clinical specialities would need infrastructure.
- **Data isolation from medical other disciplines;** to date Ophthalmic teams work independently from other specialists.
- **IP;** difficulties in IP release from certain research institutions. In addition, for larger companies placing staff and equipment in institutions alongside competitors the issue of protecting Intellectual assets can be an issue, though this has obviously been overcome for other institutes e.g. Iceland.
- Need to generate **KOLs;** often no Scottish KOLs on stage.
- **Access:** The lack of an Interface equivalent was noted for NHS Access.
- **Demonstrating the benefit:** Adoption across Health and social care; difficult for a company to get data. Currently no social care impact included as part of the assessment.

## **Best Practice**

Examples of best practice mentioned at the dinner include:

### **Shiley Eye Institute:**

**Trialling New Equipment:** Companies donate free equipment into the institute for clinicians to trial. This enables clinicians to have access to cutting edge equipment and companies to have clinicians using their prototypes. This has implications for staff morale but also attracts the best clinical staff to work there. This requires both time and clinical resource.

**Clinical Trials:** Patients attending clinics at the Institute are given a 'passport' to ongoing clinical trials. Once they have seen their physician they are taken to a mirror suite with dedicated staff where the additional clinical testing takes place. Generic ethical approvals cover the additional tests.

**Anne Rowling Centre at Edinburgh:** combines clinics with academic research on MS, in addition to interacting with Industry, for example, Optos. Significant funding has enabled more flexibility in the use of clinician resource.

**Edinburgh Complex Fluid Partnership:** This group providing expertise (at the postdoctoral level upwards) holds Industry days to advertise their capabilities complete with speed dating sessions to build collaborations.

**Access to NHS for SMEs:** Lamellar Biomedical presented a Scottish example of how access to clinicians and facilities can enable SMEs to progress product development:

Lamellar approached the Beatson with solution to Xerostomia (dry mouth) associated with radiology treatment of cancer patients; a significant unmet need with poor health outcomes. Input from Beatson clinicians shaped and altered the therapy strategy to the unmet clinical need. The Beatson co-sponsored the study which was significant as this opened up access to clinicians and the CRUK clinical trials unit. NHS GGC facilitated access and contracting. The result is that they are now in Phase I trials.

**Note** Lamellar also found working with the HIP and SLA useful for NHS access; they also have trials in cystic fibrosis and are working on Ophthalmologic treatments with the Department of Vision Science at Glasgow Caledonian University.

### ***Next Steps***

A short paper presenting the outline business case is to be presented this summer. The new facility is proposed to be running 2020/21.

1. Establishment of a cross-domain advisory panel. This could then support the team at NHS Lothian in drafting of the outline business case.
2. Support for evidence generation to engage a broader Scottish Government audience including the case for economic development. This would help demonstrate why the NHS needs to create more than just a provision of essential patient services.
  - a. Calculation of the current cost of care as a baseline for comparison with proposed improvements

- b. In cases where there is adoption across Health and Social care services, it is difficult for a company to get effective data for this. Currently there is no social care impact in assessments but for this project it could be done perhaps through SHTG engagement. This would attract SMEs, and an economic impact assessment would be good for this project.
  3. Creation of a 'marketing brochure' led by the NHS Lothian team; a pitch of the aspirations of the new PAEP to broaden buy in and gain traction. 'Other relevant companies would be interested in being involved'.
-

## Appendix 2 – Risk Register – Fully costed version

Costed Risk Register provided to CIG on request between submission and approval

Redacted from the public version of the IA document on basis that it contains commercially sensitive data

## Appendix 3 – Cost Option Report

1. Updated post approval to reflect required change to `do minimum` option – figures updated in document as required.
2. Redacted from the public version of the IA document on basis that it contains commercially sensitive data

**Functionality**

**Use**

Weight	Score	Notes
1	1	YES
2	1	YES
1	1	YES
1	1	NO
2	1	YES
1	1	NO
1	1	YES
1	3	YES
1	1	YES
0		

**Access**

Weight	Score	Notes
1	4	YES
2	1	YES
1	2	YES
1	2	YES
2	2	YES
1	1	YES
1	3	YES
1	3	YES
0		

**Space**

Weight	Score	Notes
1	1	YES
1	3	YES
2	1	YES
2	1	YES
1	1	YES
1	1	YES
1	1	YES
1	2	YES
0		

**Build Quality**

**Performance**

Weight	Score	Notes
1	1	YES
2	1	YES
1	1	YES
1	1	NO
2	2	YES
1	1	YES
1	1	YES
0		

**Engineering**

Weight	Score	Notes
1	1	NO
1	1	NO
1	1	NO
1	4	NO
0		
1	3	YES
1	1	YES

**Construction**

Weight	Score	Notes
0		
0		
0		
0		
0		
0		
0		
0		
0		
0		
0		

**Impact**

**Character and Innovation**

Weight	Score	Notes
1	3	YES
1	3	YES
1	1	NO
1	2	YES
1	1	NO
2	1	NO
1	1	NO
0		

**Form and Materials**

Weight	Score	Notes
2	1	YES
1	1	NO
1	5	NO
2	1	NO
1	2	NO
1	2	NO
0		

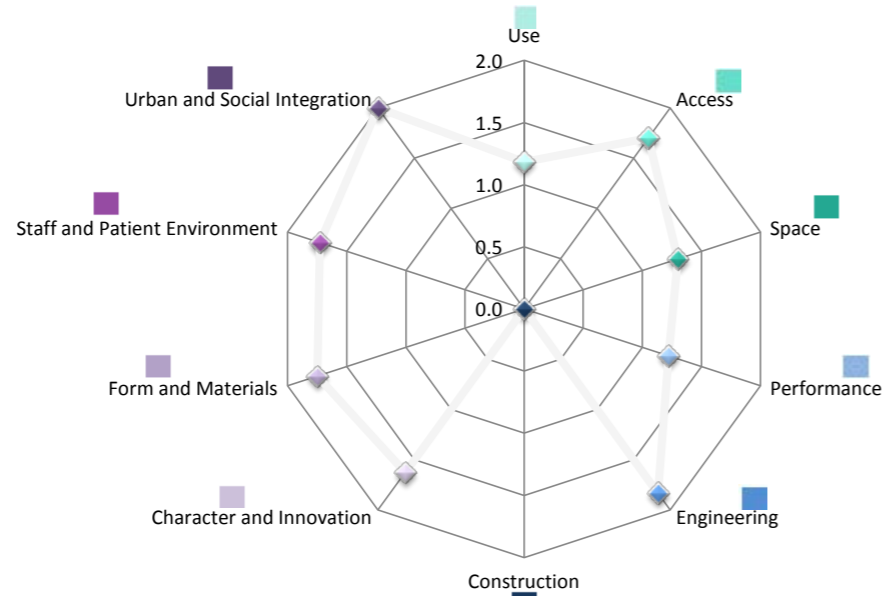
**Staff and Patient Environment**

Weight	Score	Notes
2	1	YES
1	2	NO
1	2	YES
1	1	NO
1	2	YES
1	2	YES
2	2	YES
1	2	NO
0		

**Urban and Social Integration**

Weight	Score	Notes
1	3	NO
1	2	NO
1	1	NO
1	2	NO
2	2	NO
0		

AEDET Refresh Benchmark Summary



Category	Benchmark
Use	1.2
Access	1.7
Space	1.3
Performance	1.2
Engineering	1.8
Construction	0.0
Character and Innovation	1.6
Form and Materials	1.8
Staff and Patient Environment	1.7
Urban and Social Integration	2.0

Weighting	=	Target
2	=>	5 - 6
1	>	3 - 4
0	<	3





**Functionality**

**Build Quality**

**Impact**

**Use**

Weight	Score	Notes
1	4	
2	5	
1	4	
1	4	
2	5	
1	4	
1	4	
1	4	
1	4	
1	4	
2	5	

**Performance**

Weight	Score	Notes
1	4	
2	5	
1	4	
1	4	
2	5	
1	4	
1	4	
2	5	

**Character and Innovation**

Weight	Score	Notes
1	4	
1	4	
1	4	
1	4	
1	4	
2	5	
1	4	
2	5	

**Access**

Weight	Score	Notes
1	4	
2	5	
1	4	
1	4	
2	5	
1	4	
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1	4	
2	5	

**Engineering**

Weight	Score	Notes
1	4	
1	4	
1	4	
1	4	
0	4	
1	4	
1	4	

**Form and Materials**

Weight	Score	Notes
2	5	
1	4	
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1	4	
2	5	

**Space**

Weight	Score	Notes
1	4	
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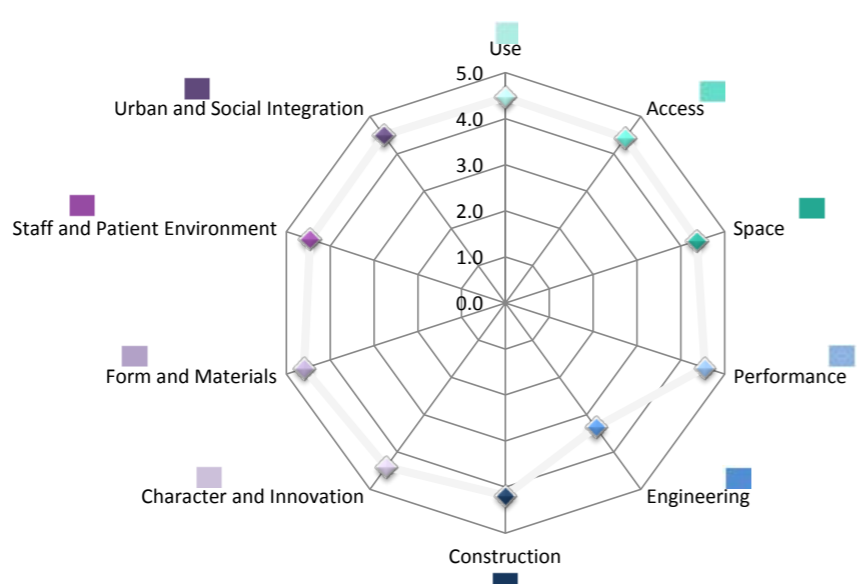
**Construction**

Weight	Score	Notes
1	4	
1	4	
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2	5	
1	4	
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1	4	

**Staff and Patient Environment**

Weight	Score	Notes
2	5	
1	4	
1	4	
1	4	
1	4	
1	4	
1	4	
2	5	
1	4	
2	5	

**AEDET Refresh Target Summary**



Category	Weight	Score	Notes
Use	1	4	
Access	1	4	
Space	1	4	
Performance	1	4	
Engineering	1	4	
Construction	2	5	
Character and Innovation	1	4	
Form and Materials	1	4	
Staff and Patient Environment	2	5	
Urban and Social Integration	2	5	

Weighting	=	Target
2	= >	5 - 6
1	>	3 - 4
0	<	3

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## NHSScotland Design Assessment Process

Project No/Name: LT09 Princess Alexandra Eye Hospital Re-provision

Business Case Stage: IA

Assessment Type: Desktop

Assessment Date: March 2017

Response Issued: 30 Mar 2017

### Introductory Notes

The report below is based on the Design Statement (V.3) received on 9 March 2017.

### Joint Statement of Support

Having considered the information provided, Health Facilities Scotland and Architecture & Design Scotland have assessed the project and consider that it is of a suitable standard to be

### SUPPORTED (verified)

#### With the following recommendations:

#### Essential Recommendations

- A. That the following benchmarks in sections 1-3 be revisited **prior to publishing with the IA** to improve clarity and standards for the user environment.
  - Objective 1.1, clarify if the distances noted are to the site entrance or the building entrance (considering also distances noted within benchmarks to 1.2).
  - 1.2, first benchmark, clarify gradient and extend accessibility from wheelchairs only to other needs, including RNIB standards.
  - 1.5, reduce necessary length of waiting before a view and daylight is needed from 1hr to something more reasonable (e.g. 15 mins).
  
- B. That the benchmarks in section 4 be substantially revised **prior to publishing with the IA** to improve clarity of standards, see attached examples, plus specifically:
  - Objective 4.1 the Objective is about wider public and community access to landscape for health promotion, but the benchmarks are all around selection of materials and suitability for patient groups, not how the landscape can invite and aid use for health promotion and wider community engagement,
  - Objective 4.2 to provide clearer benchmarks e.g  
*"Sustainability, Equality and reduction of the Board's Carbon and Energy Footprint is a requirement of all NHS Lothian infrastructure projects.  
Improvements in Energy Performance and Carbon Reduction The Design shall*

*support meeting national targets (e.g. NZEB) and NHS Lothian's Carbon Management Plan and Equality Policy. Collaborative workshops using current BREEAM, BRUKL, BIM and DSM (dynamic simulation model) are required at key stages, evidencing a holistic approach to delivering safe, sustainable long term investment. For example, new build target: BREEAM 2014 NC 'Excellent'. Options pre-assessments and early NDAP reviews will allow HFS to set a bespoke/ pragmatic % target BREEAM score. Minimum criteria will include: Man03: Considerate construction; Man04: Building user guide; Man05: 2yrs seasonal commissioning; Ene01: 5credits; Ene02: sub-meter; Wat01: 1credit; Wat02 + Mat03: Criteria1 only; HEA04: 3credits. Total operational energy consumption target: ≤300kWhr/m2; plus thermal safety & comfort (TM52: ALL 3 criteria); evidenced by realistic DSM using future local weather data. Continuous improvement, i.e. annual operational energy report (DEC or equivalent) min. 3yrs /FM contract period. Collaborative workshops for Equality Impact Assessment (EIA) at key stages, to set and evidence positive steps to reduce local health inequality; e.g. public WiFi, Changing Places toilet, electric scooter bay, bariatric access, community space, gardens, gym, benches along walking routes, green transport improvements, shared car parks, site art & wayfinding."*

- Objective 4.3, to set aims for how the development will contribute to the wider development of the area, not simply provide a note of local developments. This could be through images good campus design principles integrating movement, landscape and buildings into one place. Supplemented by text such describing how you will achieve this such as "*Good regeneration development practices provide a healthy, self-perpetuating cycle, these will include: early, wide and continuous Community Engagement; incorporation of Health Promoting Health Service (HPHS) principles, enabling healthy decisions, e.g. stair visibility, food outlet standards or usable gardens/ courtyards, non-car dependant transport network. Build on wider Green Infrastructure locally, to encourage physical activity and biodiversity, e.g. cycle/ walking travel routes; plus links to existing amenities; wildflower meadows, green roofs, positive tree and seating use to aid well being, equality and shelter; plus enable continuous environmental and community benefits by early engagement e.g. growing spaces, walking groups"*
- Objective 4.4 set some standards that consider future adaptability beyond flexibility in use described in section 2. Although specifics currently unknown, future change is inevitable and good design could include items like soft space that can be expanded into, modular grids and rooms for adaptability, or design for re-use elsewhere or multiple purposes.

- C. That in Section 5, the design/delivery team selection and processes be amended **prior to publishing with the IA** to show how the client team will look to attract and value the skills needed to deliver an environment with the qualities benchmarked within the chosen procurement and appointment process.

## Advisory Recommendations

- none

## Notes of Potential to Deliver Good Practice

If the enhanced (see essential recommendations above) quality objectives outlined within the SCIM Design Statement are met in full then the facility has the potential to be a model of good practice.

## Next Stage Processes

### Next Actions at Current Business Case Stage

The Board are invited to provide the evidence described below to allow the NDAP to verify the **SUPPORTED** status to the CIG.

- Letter committing to making the above improvements and timescale within which we can expect an updated design statement for agreement and publication on Pulse.

**VERIFICATION CIG** (to be completed once above has been received and considered):

The above evidence was received and conditions discharged on ...28 Mar 2017.....

A Copy of NHS Lothian's letter/evidence in this regard is attached. The above **SUPPORTED** status is therefore **VERIFIED**.

Signed .....*Susan Grant*..... Dated .....30 Mar 2017.....

### Process at Next Business Case Stage

- Submission of revised Design statement for agreement and publication for agreement and publication.
- Consultations with NDAP as set out in board's self assessment process. Given the nature of the sight and building it may be necessary to draw a panel together for early stage responses (concept design and pre-planning) and therefore early notification of these points would be appreciated.

## Notes on Use And Limitations To Above Assessment

The above assessment may be used in correspondence with the Local Authority Planning Department as evidence of consultation with A&DS **provided the report is forwarded in its entirety**. A&DS request that they be notified if this is being done to allow preparation for any queries from the local authority; please e-mail [health@ads.org.uk](mailto:health@ads.org.uk) . If extracts of the report are used in publicity, or in other manners, A&DS reserve the right to publish or otherwise circulate the whole report.

Any Design Assessment carried out by Health Facilities Scotland and/or Architecture & Design Scotland shall not in any way diminish the responsibility of the designer to comply with all relevant Statutory Regulations or guidance that has been made mandatory by the Scottish Government.

Lothian NHS Board

Finance Director's Office  
Waverley Gate  
2-4 Waterloo Place  
Edinburgh  
EH1 3EG  
Telephone 0131 536 9000  
Fax 0131 536 9088



[www.nhsllothian.scot.nhs.uk](http://www.nhsllothian.scot.nhs.uk)

Susan Grant  
Principal Architect  
Health Facilities Scotland  
Procurement Commissioning & Facilities  
NHS National Services Scotland  
Meridian Court, 3<sup>rd</sup> Floor, 5 Cadogan Street  
Glasgow  
G2 6QE

Date: 29/3/2017  
Enquiries to: Kathleen Imrie  
Extension: 61974  
Direct Line: 0131 536 1974  
Email: [Kathleen.imrie@nhsllothian.scot.nhs.uk](mailto:Kathleen.imrie@nhsllothian.scot.nhs.uk)

Dear Susan

### **The Re-provision of the Princess Alexandra Eye Pavilion Project – NDAP Report LT09**

Thank you for your e-mail of 22<sup>nd</sup> March 2017 enclosing the NDAP Report on behalf of Health Facilities Scotland and Architecture and Design Scotland.

NHS Lothian is pleased to work with you to successfully complete the Design Assessment Process for the new eye hospital. Please accept this letter as confirmation of our commitment to incorporate the recommendations and to the process outlined in the report.

There will be a need to consult with the RNIB and the Edinburgh BioQuarter partners over sections 1.2 and 4 and so, given that the Easter period is looming, we aim to have the updated Design Statement with you by the first week in May 2017 latest, but ideally earlier if feasible. Kathleen Imrie will then be in touch to organize a date to go through the early design proposals etc.

In the meantime, we would be grateful if, as per your suggestion, the NDAP Report could be updated to status 'Supported and Verified' before being sent on to the Capital Investment Group for consideration at their April 2017 meeting.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Iain F. Graham', with a long horizontal flourish extending to the right.

**Iain F Graham**  
**Director of Capital Planning and Projects, NHS Lothian**



Headquarters  
Waverley Gate, 2-4 Waterloo Place, Edinburgh EH1 3EG

Chair Mr Brian Houston  
Chief Executive Mr Tim Davison

*Lothian NHS Board is the common name of Lothian Health Board*

## Princess Alexandra Eye Pavilion: SCOTTISH CAPITAL INVESTMENT MANUAL - DESIGN STATEMENT D4

The Business Objectives for the project are: –

- To meet service user requirements as clinically appropriate.
- Improve service capacity to achieve national standards for quality and access and cope with future demand
- Develop a shared care model between hospital and community optometry to appropriately support chronic disease patients.
- Improve the patient experience; ensure that people who use service, and their carers, have positive experiences.
- To maximise efficiency and optimise resource usage.
- To support staff to deliver the best possible care and ensure that the service remains an attractive place to work
- Improve the functional suitability, including condition and quality, of the Healthcare Estate and tackle backlog maintenance.

Therefore, in order to achieve these objectives, the completed development must have the attributes described below.

### 1.0 Agreed non-negotiables for Service Users

<b>Non-Negotiable Performance objectives</b> <i>What the design of the facility must enable (what it needs to do)</i>	<b>Benchmarks</b> <i>The physical characteristics expected and/or some views of what success might look like for each (what you expect there to be)</i>
1.1 The facility must be located where it is easy to access by the community it serves, considering the options for transport available to patients and their family.	<ul style="list-style-type: none"> <li>• Site entrance within circa 40 minutes travel by bus of a major train &amp; bus hub serving Fife and the Lothians (e.g. Waverley Station/St Andrew Bus Station).</li> <li>• Site entrance served by a range of direct buses from the city centre at regular frequency with route from bus stop to meet walking standards noted below. Talking Buses (announcing next stop and final destination) should serve the route.</li> <li>• Building entrance within approximately 75 metres of multiple bus routes serving local populations, 15 – 20 minutes minimum frequency during operating hours, with route from bus stop to meet walking standards noted below.</li> <li>• Building entrance within 400 metres of an A-class road, accessible within a 10 minute drive.</li> </ul>



<p>1.2 The experience of arriving must be safe, calming and obvious; providing a welcoming, professional and reassuring first impression.</p>	<ul style="list-style-type: none"> <li>• Arrival routes and spaces, including routes in parking areas, to be level or low gradient (max 1 inch suggested) with good lighting and visibility across areas to allow observation. All routes should be accessible to registered blind, partially sighted and wheelchair using service users and carers and assistance dogs. RNIB standards will apply.</li> <li>• Bus stop/s within a maximum of 75 metres of the public entrance, ideally visible from an internal space to allow people to wait in the warm with reliable information on bus arrival times and taxi pick-ups.</li> <li>• Where there is a need to cross a public road, support for crossing should be available i.e. visual and audible signals that traffic should have stopped.</li> <li>• The experience of arriving by foot public transport should be at least as nice as for those walking from their parked car, i.e. parking and roads should not dominate the experience of arrival by other means, and walking routes from parking should not be generally shorter than routes from public transport or pedestrian arrival, and in any case not more than approximately 200 metres.</li> <li>• Drop off area – located adjacent to facility to aid access by wheelchair and frail service users whose relatives/carers accompany them or they are dropped off/picked up by taxi.</li> <li>• Reliable parking, organised so that it's easy to find your way around (no doubling back), with priority spaces for those in greatest need.</li> <li>• The public entrance must be clearly visible from all arrival routes, and obviously an entrance.</li> <li>• The building and landscape must shelter walking routes and external spaces (particularly the drop-off area where people may take longer to transfer to/from the vehicle) from the wind, like welcoming arms.</li> <li>• Separation of delivery/pick up of goods and services from service user and carer access.</li> </ul>
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- Landscaping to make the facility more attractive/welcoming/asset to the community.





1.3 The initial entrance space must be a normalising, multi-generational space, with immediate and obvious access to assistance in the form you need and space to occupy yourself before, after and between appointments.

- There should be a clear/obvious view from the entrance to: check-in facilities, toilets, food/refreshments, vertical circulation, wheelchair availability and person who can help you with onward routes and way finding.
- Internal respite seating should be available for those `dropped off` and whose relative/carer has gone to park their vehicle. Warm and draft free if possible. In line of sight of staff, in case of a need to seek assistance – see below.
- The entrance space should provide places with different scales and opportunities - socialising, quiet escape etc. There should be accessible wifi and information on services and support available to patients and their family/carers, with opportunities for some 3<sup>rd</sup> sector support being central to the space and experience.
- Consistent levels of lighting and bulbs which diffuse light evenly across space. Toilets with sensor lights are a hazard, as they go off when someone has not moved. This is a particular issue for service users with poor sight (initial RNIB advice)
- Contrast colour of flooring, walls, doors, handrails, furniture. Antiglare or matt finish surface materials and paint (initial RNIB advice).
- Differentiation of departments can aid navigation. A different colour wall for each floor could help indicate where people are when they exit the lift or a large number. Appropriate contrast is signage – essential (initial RNIB advice).
- Audio directions available and facility for smart phone users to tap into `beacons` to self navigate around the building (initial RNIB advice)
- Good natural daylight (without glare), colour, texture, art and direct access to useable landscape area for a breath of fresh air and multi-sensory experiences (smells, sounds) should all combine to provide an environment where any extended waiting, or time needed to think after an appointment, is a relaxing experience (not one you feel like you're `in a goldfish bowl`).
- The spaces must be observable from staff stations so help is available when needed and to aid a feeling of security.

- The impression to be - spacious, uncluttered, light, airy, clean - not overly clinical
- A differentiation between the Adult and Child service entrance or flow through building is desirable to allow for the needs of both to be achieved e.g. colour, play area etc.
- Catering outlet to purchase hot and cold food/refreshment with a seating area (shared with staff). Minimum opening hours 09:00am to 16:30pm with access to vending hot drinks and snacks out with these periods (including ward visiting time). Payment possible by debit card essential.
- Provision of a Cash Dispenser (e.g. Cashline) or clear signposting to the nearest available on BioQ site so that service users, relatives and carers and staff can access cash to purchase food or beverages or to pay for parking etc. associated with their visit.





1.4 Reception facilities must allow for personal preferences and accommodate multiple patient needs with ease. The privacy of sensitive conversations must be maintained.

- Check-in systems organised (where IT systems can support), to maximise opportunities for `check-in only once`.
- Options for electronic and face to face check-in, with feedback on likely wait till first appointment so you can decide what to do next and where to go to wait and obtain help you need for the onward journey.
- Reception desks not immediately adjacent to waiting areas so that conversations are not readily overheard.



1.5 Booking and patient planning systems should reduce waiting times, but where patients will wait (such as appointments involving multiple tests, pre and post surgery), waiting areas must be comfortable, pleasant and positive distractions (views/IT). Patients must feel not forgotten and be able to deal with their human needs (toilet, refreshments etc).

- Waiting areas within sight of staff based for sense of security and access to information and assistance as needed.
- Systems to allow an update on timing of appointment, either delays or if it can be brought forward.
- Catering facilities offering hot and cold food and beverages are required to support what can be long waits to complete all tests/investigations required for diagnosis or review.
- Toilets within approximately 35 metres, and location visible from waiting area.
- Good controlled natural light (not glare) and views in all spaces where people may wait. Window glare is specifically an issue for partially sighted service users.

Waiting while in a vulnerable condition (during and just post treatment) must be discretely located to maintain people's privacy and dignity.

- Seats grouped to allow personal choice in environment and some feel of a defensible space.
- Waiting, including temporary sub-waits within departments, must not feel like a seat in a corridor with people pushing past you.
- Flow of patients to and from theatres must be separated from the flow of goods and services, facilities etc.



*Adult wait area – clean, modern, welcoming, with daylight and external views*



*Children's wait area*



1.6 Routes around the building – both to, from and between appointments/ testing/therapy - must be easy and pleasant to use, reducing stress and likelihood of people becoming lost, supporting patients to retain their independence and control.

Using these routes must not compromise the privacy and dignity of the patient or others.

- Patient routes must minimise walking distance by ideally not requiring patients to double back through the sequence of progressing through the building. Shared services such as diagnostic etc should be central to the plan to be convenient to all patients and promote good patient flow.
- Routes where the destination is not visible at the start of the journey (which are preferable) should have areas of character en route so that people can be directed by 'landmarks' as well as by signage (supported as appropriate by another).
- Good clear inclusive signage to support intuitive way finding strategy and meet the needs of those with relatively poor vision (RNIB will advise/assist)
- Routes to and between departments must not go through the service areas, or discrete sub-waits where people may be in a more vulnerable condition.



1.7 Consulting, diagnostic and treatment spaces must feel clean, professional, private, and calming. They must not be too clinical looking, but aid stress reduction, particularly for those with anxieties, learning difficulties, and children who may have difficulties understanding the situation.

- Soft controllable lighting to provide appropriate visual environment for the person and process.
- Daylight and views from each space (positive distraction and calming) without the need to shut windows and window blinds for audio/visual privacy from adjacent external areas.
- Good use of colour, art and furnishings to provide softer appearance, with storage for props etc to aid particular groups.
- Good sound attenuation (47dB) internally between individual consulting and treatment rooms and between them and waiting/ areas.
- Ability for staff to summon support or back up should help be required.
- Consulting rooms in which Snellen's Chart examinations are performed will require to be a minimum of 6 metres in length.



An Ophthalmology consulting room will house much more equipment than this but the look and feel of this image is supported

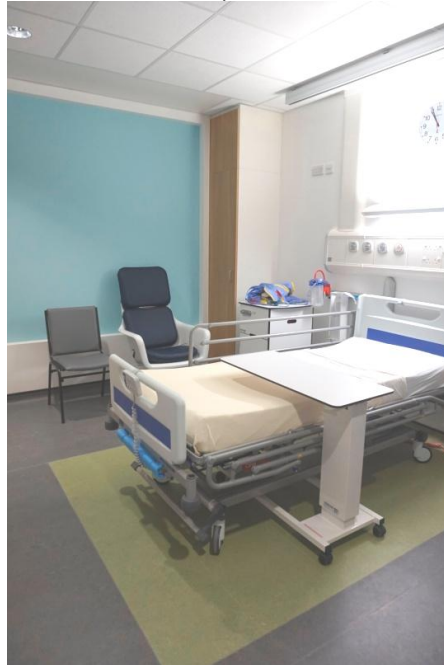


Ophthalmology Digital Imaging and Photography `hub` - centralised and service all areas. Images are of the Retina Hospital and Eye Clinic, Warsaw and are owned by them. They provide an example of the look and feel desired for the diagnostic rooms.

1.8 Inpatient areas must help patients feel secure, connected and able to make personal choices for privacy, social interaction and own environment, and normalise the day as much as possible to aid recovery.

- Staff areas visible from the bed, and a view outside to an interesting view (without glare).
- The ability to control environment in room/light levels, heating etc.
- En-suite toilet/shower facilities. No sensor lights.
- Availability of distractions/IT/TV
- Space within the ward to come together with other patients and a choice of environment.
- Good use of colour, art and furnishings to provide softer appearance.

External space to allow a breath of fresh air without the need for staff to accompany (as risk assessed)





Patient day/sitting area (separate to admission waiting bay)



Patient access to fresh air (providing safe/risk assessed)

## 2. Agreed non-negotiables for Staff

The majority of working areas are patient areas above, this section below list the additional aspect of this environment, and staff only environments, that are needed to support staff.

<b>Non-Negotiable Performance objectives</b> <i>What the design of the facility must enable</i>	<b>Benchmarks</b> <i>The physical characteristics expected and/or some views of what success might look like for each</i>
<p>2.1 Staff's wellbeing must be supported. They must be able to</p> <ul style="list-style-type: none"> <li>• Know their belongings are secure, but accessible in breaks.</li> <li>• have a break, some food and a mental rest – feeling 'off duty' in their breaks – with the opportunity for a breath of fresh air or some exercise.</li> <li>• Have access to toilets without going off duty</li> <li>• Come together socially, and increase familiarity with colleagues</li> <li>• Obtain formal and informal emotional support when needed</li> </ul>	<ul style="list-style-type: none"> <li>• Lockers to securely store outside clothing and valuables including cycling gear. Good shower facilities and changing areas that allow for privacy.</li> <li>• Handbag/purse/wallet lockers not more than 5 minutes off route from working areas so can be accessed during lunch breaks (usual = 30 mins).</li> <li>• Staff toilet facilities within/immediately adjacent to departments</li> <li>• Catering outlet to purchase hot and cold food/refreshment with a seating area (shared with public). Minimum opening hours 09:00am to 16:30pm with access to vending hot drinks and snacks out with these periods (including ward visiting time). Payment possible by debit card essential.</li> <li>• Staff rooms (with storage for packed lunches and area for self prep food) within reasonable distance to enable use within break, with seating etc organised to allow you to group with colleagues to be sociable, or sit more quietly. It must be possible to sit and rest or socialise away from public areas to allow staff to relax, release any steam, or discuss any emotional impacts of the day. This space must be attractive enough to encourage staff away from their immediate work environment to meet.</li> <li>• External area accessed from staff rest/eating spaces to allow use of both in one visit, and make possible a walk from lunch area to wider walking routes.</li> <li>• Space for quiet contemplation, or religious observance.</li> <li>• Spaces within departments/on a floor for 1 to 1 support of staff following difficult situations</li> <li>• Provision for secure storage of bicycles – sheltered from rain.</li> <li>• Access to IT facilities that enable staff of all disciplines to complete mandatory 'on line' training updates outwith their departments.</li> </ul>



- Staff eating, food preparation areas with access to external space during breaks



Consideration to be given to designing shared/communal spaces so that can be used for patient support groups, staff training, larger social activities (e.g. Christmas Buffet, Staff retreats), or group exercise sessions



2.2 The layout of the facility must enable staff to maintain, or improve, current connectivity between departments during the working day.

- Staff routes around the facility to bring people together (not separated by department) as part of their normal use.
- Space for impromptu discussions at node points such as the printer, water cooler etc.
- IT systems and spaces to allow staff to do administrative and learning work in a range of



locations (not just consulting rooms) to encourage people out. Staff only areas (such as offices and any rest areas) designed to allow a range of spaces so you can meet, chat, or sit/work quietly without one disturbing the other.

- Non- clinical work areas should be a balance of open plan work stations to facilitate good communication and interaction and the need for access to quiet space to concentrate on specific clinical and non-clinical tasks at a desk area e.g. Virtual Clinics, dictation undertaken by clinicians as part of their job plan (currently in an office). The clinical management team must have the facility to support a) confidential discussions in a pre-planned way where a generally available room can be booked (e.g. Appraisals, 1:1's, return to work interviews following sickness) and b) a room where the need to pre-book could not have been foreseen (e.g. immediate response to staff situation/complainant wishing to discuss their issue). The latter space should allow for conversations not to be heard or observed by others working in the area or passing by.



2.3 The facility must have the flexibility to manage different service patterns, changes in throughput of services and to develop better services.

- Layout to allow services operating longer hours to do so without requiring patients, visitors or staff to use large areas of vacant, unsupervised building.
- Meeting and other flexible rooms located so that they can be used (in combination with the entrance space) for third sector/training/group support including out of hours.
- Departments arranged so that the number of rooms in each 'department' can flex and change in time without structural alterations.
- Rooms designed to common specification to allow multiple uses, and sized to allow kit to be used in a number of configurations to suit patient needs and treatment protocols.

2.4 The facility must be located so that functional and learning links with allied services are enhanced, aiding both service provision and the attractiveness of the working environment to staff.

- Storage areas located and sized so that kit can be shared between a number of rooms, with routes to rooms wide enough to allow manoeuvre
- Proximity to a major hospital and or medical college to enable joint use of meeting/learning resources (others and the ones within the facility) to share learning and keep services at the cutting edge of thinking and research, and demonstrate pride in the service.



Surgical Simulation area – Medical Trainees



University Lecture Theatre/Meeting area

### 3. Agreed non-negotiables for Visitors (Family/Friends/Carers)

<b>Non-Negotiable Performance objectives</b> <i>What the design of the facility must enable</i>	<b>Benchmarks</b> <i>The physical characteristics expected and/or some views of what success might look like for each</i>
3.1, People visiting inpatients during times when most of the facility is closed, must be able to do so safely and without increasing their stress.	<ul style="list-style-type: none"> <li>• External arrival routes to standards in 1.2 above.</li> <li>• Internal layout of the plan to enable visitors to reach wards without venturing through large areas of vacant, unheated, unsupervised building.</li> </ul>
3.2 The facility must enable access to information and support for relatives/carers to promote their health and wellbeing	<ul style="list-style-type: none"> <li>• Printed information and IT in waiting areas. The full range of services on offer should be clear in a manner that is attractive and engaging (not visual clutter), and in a range of formats to suit differing needs.</li> <li>• Space for third sector groups to communicate what they can offer and meeting or other flexible rooms (also needed for other uses) situated so they can be used by third sector for support groups etc when available</li> </ul> <div data-bbox="779 837 1205 1412" data-label="Image"> </div>

3.3 There must be easy access to pleasant places to wander, sit, eat, and occupy yourself, and any accompanying children, while waiting for day surgery patients and others on extended visits.

- Where possible, systems to be in place to allow carers to be called when they are needed, so they can leave to deal with their own needs in confidence.
- Wander routes and external rest/play areas to be visible from routes into the facility (or main foyer) so carers are aware they've available before they need them.



- Catering and main waiting/social area to have comfy seats for long waits and access to IT and other amusements. Good daylight and views for distractions.



#### 4. Alignment of investment with policy

*This section is about the additional benefits (not directly related to the service to be provided) that can be delivered, so things like contributing to regeneration, health promotion, good corporate citizenship etc*

<b>Non-Negotiable Performance objectives</b> <i>What the design of the facility must enable</i>	<b>Benchmarks</b> <i>The physical characteristics expected and/or some views of what success might look like for each</i>
4.1 Contribution to health promotion through landscape availability to community.	<p>The overall site context is that it should be accessible to the community and service users.</p> <p>Service users with varying levels of sight and some who are registered blind will need to be able to access the facility safely and confidently. Our intention would be to seek wider context for that group e.g. crossing facilities designed for the sight impaired which would be a useful asset for the wider site and community.</p> <p>On the current preferred site (the Edinburgh BioQuarter) all parties (Scottish Enterprise, University of Edinburgh, City of Edinburgh Council, NHS Lothian) are interested in Public Realm and we will invest in that wider strategy. A `Place Making Strategy` for the Edinburgh BioQuarter site is in final draft form.</p> <p>We seek a site with ready access to wider parkland and wish to ensure that there is local and transparent engagement on aspects such as parkland and meadow.</p>

4.2 Sustainability	Sustainability and reduction of the Board's Carbon Footprint is a requirement of all NHS Lothian infrastructure projects. Re improvements in Energy Performance and Carbon Reduction the Design shall support meeting national targets (e.g. NZEB) and contribute to NHS Lothian's energy reduction targets over the period 2015 to 2020 of 10.5% basic and 17.6% stretch and also NHS Lothian's Equality Policy.
4.3 Contribution to wider regeneration around chosen site in terms of townscape, links etc.	The Edinburgh BioQuarter site is the preferred option for the new hospital. The development of the campus is a joint venture between Scottish Enterprise, University of Edinburgh, The Edinburgh City Council and NHS Lothian. Design guidelines have been drawn up for the campus. Also, a Place Making Strategy has been developed which sits within the context of an approved Masterplan. Endorsed by all project partners, it aims to ensure that the Landscape and Public Realm meets and exceeds national design standards for Place Making Green Infrastructure and the creation of a lively and sustainable place.

## 5.0 The Vision



The `Place Making strategy` includes:

- Place making lessons learned from the existing buildings and a review of case studies of best practice in several European projects.
- Appraisal of location and setting and existing landscape and the impact that the Masterplan would have on site character.
- Design objectives covering sociability, accessibility, activity, image and appeal
- The Design Concept `The Connected Cord` and how it would relate to the site
- A series of Action Plan Projects covering: canal intervention; structured planning removal; public arts opportunities; draining, utilities and lighting and softworks.
- A Design Code Tool kit with associated design briefs
- Design guidance on Hardworks (including surfacing, kerbing, steps, walls, boundaries and and Softwork (landscaping) and furniture.





	<p>Early, wide and continuous Community Engagement on the wider development proposals will be achieved through – <b>Iain/Brian to advise</b></p> <p>The campus will have a role in supporting Health Promoting Health Service principles by enabling healthy decisions to be made by campus users and to encourage healthy lifestyles and support work/life balance. Key to this will be to encourage use of the surrounding outdoors for amenity and outdoor recreation and to adopt cycle, walking travel routes supported by a good public transport network. This will include</p> <ul style="list-style-type: none"> <li>• A series of `nuclei` pedestrian seated courtyard areas – all unique with featured trees and seasonal interest. Bespoke seating, public art and feature lighting.</li> <li>• Places and external furniture to encourage external dining and `time out`</li> <li>• Access to public parkland, meadow space and good views (Arthur’s Seat, Craigmillar Castle) plus enhancement to existing water features (tranquil public space)</li> <li>• Paths that connect to nearby communities and across the site</li> <li>• Provision of a green infrastructure system</li> <li>• A clear pedestrian prioritised layout and a non-car dependent transport network</li> <li>• Cycle, walking and travel routes into and around the buildings on the campus to allow full use of the facilities e.g. retail, gym, collaboration meeting space.</li> </ul> <p>The food outlet within the Eye Hospital would support healthy choices by meeting the criteria for the Healthcare Retail Standard.</p>
4.4 Future alterations or expansion	<p>The design shall consider the means for departments to be used flexibly, adapted or expanded. National policy, clinical advancements and technological changes will impact on the way services are provided in the future, and the Facilities need to be sufficiently flexible to handle these advances. The design shall demonstrate that potential change or expansion has been considered by the provision of adequate space either at the external perimeter and / or between functions and departments.</p> <p>The structural grid, construction technique, structure, service penetrations and engineering services strategy shall demonstrate that the design proposals for expansion, adaptation and flexibility are co-ordinated.</p>

This statement was developed through the engagement of the following stakeholders:

Daniel Meikle	Service, User and employee of RNIB
Christine Farquhar	Carer of service user and Patient and Public Representative member of the Edinburgh Integrated Joint Board
Paula Collings	Service User, Chair of the Lothian Diabetes Representation Group
Marilyn Jackson	Service User, Member of the Edinburgh branch of the International Glaucoma Association – Patient Support Group
Dr Jas Singh	Consultant Ophthalmologist and Clinical Director – Ophthalmology, NHS Lothian
Lynn Struthers	Clinical Nurse Manager – Ophthalmology, NHS Lothian
Marion McClure	Senior Clinical Photographer, Ophthalmic Photography and Imaging
Vicky Laidlaw	Lead Orthoptist – Ophthalmology and Community Screening
Cathy Swan	Optometrist, Princess Alexandra Eye Pavilion
Monica Barrington	Senior Theatre Nurse – Ophthalmology
Caroline MacAskill	Clinical Lead, Ophthalmology Theatres – Princess Alexandra Eye Pavilion
Ina Paterson	Assistant Facilities Manager – Princess Alexandra Eye Pavilion
Daniella Knox	Outpatient Services Supervisor – Princess Alexandra Eye Pavilion
Jamie Ramsay	Sector Manager – Estates Team
Karen McCabe	Clinical Services Manager – Ophthalmology NHS Lothian
Kathleen Imrie	Programme Manager, Redesign and Re-provision - Ophthalmology
Neil McLennan	Senior Capital Projects Manager – NHS Lothian
Iain Graham	Director of Capital and Projects – NHS Lothian

## 5. Self Assessment Process

<b>Design Milestone</b>	<b>Authority of Decision</b>	<b>Additional Skills</b>	<b>How the Criteria will be evaluated and valued</b>	<b>Information needed to allow evaluation</b>
Site Selection	Decision by NHSL.	Architect		Design feasibility study.
Approval of Exemplar Design	Decision by Project Team / CMT	Project lead advisor  NDAP	Assessment of the Exemplar Design using AEDET to evaluate how well the design delivers the objectives set out in the Design Statement.	
Completion of High Level Information Pack	Drafted by Capital Projects Manager. Decision by LCIG	HFS Project lead advisor	Design statement will be embedded in the HLIP.	Information from Initial Agreement.
Selection of PSCP	Recommendation by interview panel. Decision by Programme Board.	HFS Project lead advisor	Highest scoring PSCP on a Quality / Cost evaluation.	Dialogue with PSCP's will affirm Design Statement as a key document in the development of the project.  Submissions by PSCP's on framework & performance at interview.
Approval of Concept Design	Decision by Programme Board with advice from Project Team.	Project lead advisor  NDAP	Assessment using AEDET to evaluate how well design meets targets set in Design Statement.	Design proposals developed to RIBA Stage 2 with enough detail to distinguish between main uses of the building.
Approval of design to submit to Planning	Appointed PSCP to submit to planning following agreement by Project Board	Project lead advisor  HFS	Assessment using AEDET to evaluate how well design delivers the objectives set out in the Design Statement.	Review against design statement and approved service model.
Approval of detailed design proposals to allow construction	Appointed PSCP to agree with Project Team. Approval by Programme Board	Project lead advisor HFS	Assessment using AEDET to evaluate how well design delivers the objectives set out in the Design Statement.	Review against design statement and approved service model.
Post Project and Post Occupancy	Project Team to draw up for consideration by	Project lead advisor	Assessment of completed project against objectives set	Review against design statement and approved

Evaluations	Programme Board. Results to SGHSCD		out in the Design Statement with final AEDET review.	service model. Conduct satisfaction survey with patients, relatives, visitors & staff within 2 years of start of occupancy.
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PAEP Design Statement D4 (KI and NM)

## **APPENDIX 8**

