



Health Campus Programme  
**Emergency Care Centre Project**

Outline Business Case

Addendum

31 March 2009

**DRAFT**

*Implementing healthfit* 

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**Emergency Care Centre Project**

Outline Business Case Addendum

**Key points:**

1. The original OBC was approved by the Scottish Government in July 2008 and detailed planning is underway. This addendum to the Emergency Care Centre (ECC) outline business case (OBC) proposes the replacement of further inpatient capacity at Aberdeen Royal Infirmary (ARI) as part of the ECC development.
2. There are two options i.e. to add one floor for cancer inpatient services or to add two floors which would include a further floor for other inpatient services. The additional capacity would provide modern facilities within a clearly agreed timescale i.e. the timescale for the Emergency Care Centre completion of mid 2012 as set out in the original OBC.
3. This proposal would replace existing capacity at Aberdeen Royal Infirmary in advance of the current plans. The addendum does not propose any additional capital or revenue expenditure beyond that which is currently planned.
4. The planning of the ECC development is progressing well and a principal supply chain partner (PSCP) has been appointed using the Frameworks Scotland process. The aim is for the enabling works to commence in June 2009, main construction in December 2009 with full completion in mid 2012 i.e. as indicated in the OBC. A decision on any additional capacity is necessary in early April 2009 to ensure that the ECC programme is maintained.
5. The capital cost of each additional floor is approximately £10m. The Health Directorate has agreed in principle to advance part the cancer centre funding from the capital plan in 2013/14 to 2012/13 as a means of funding the cancer inpatient floor. The second additional floor will be funded from within the NHS Grampian capital plan by adjusting the funding provision for the stage 1 Ambulatory Care project.
6. The addition of a floor for cancer inpatients to provide an early improvement of facilities has been recommended by the Health Campus Programme Board. The case for two additional floors was considered by the NHS Grampian Asset Investment Group (AIG) on 30 March. The AIG agreed to recommend the proposals for two additional floors to the Grampian NHS Board.

## Emergency Care Centre Project

### OBC Addendum

#### Introduction

1. The purpose of this document is to submit an addendum to the outline business case (OBC) for the Emergency Care Centre (ECC). The ECC project is part of the NHS Grampian Health Campus Programme and the OBC was approved by the Scottish Government Health Directorate in July 2008. The Executive Summary of the original OBC is included in appendix 1.
2. The addendum to the OBC proposes an increase in the inpatient capacity through the construction of two additional floors. This additional capacity would replace existing capacity at Aberdeen Royal Infirmary in advance of the current plans. The addition of this amount of capacity in planning terms is consistent with the Foresterhill Development Framework but would require formal approval by Aberdeen City Council Planning Department.
3. The proposals are stimulated by the need to improve facilities for cancer service inpatients at an early date, the difficulties in providing modern healthcare from outdated facilities and the opportunity to radically change the organisation of Aberdeen Royal Infirmary to support the redesign of services.
4. There are two options i.e. add one floor for cancer inpatient services, and a further floor for other inpatient services – the service proposals for a second additional floor as a replacement for cardiology/renal inpatients located in the east end of ARI, and a further contribution to the facilities required for the medicine for the elderly service. All of the new facilities will be provided to a high standard to ensure flexibility therefore the final decision on the allocation of facilities to specialties will be made closer to the opening date. This will ensure that the configuration of services reflects best clinical practice and efficiency.
5. The additional capacity would provide modern facilities within a clearly agreed timescale i.e. the timescale for the Emergency Care Centre completion of mid 2012 as set out in the original OBC.
6. The addition of two further floors can be achieved without increasing the total capital spend as set out in the NHS Grampian capital programme. The proposals represent a re-organised spending pattern to deal with agreed high priority pressures associated with the condition of existing facilities and service redesign.
7. The proposals in this addendum remain consistent with the aims of the project as set out in the original OBC i.e. to:
  - improve the experience of patients in need of emergency and unscheduled care
  - take a major step forward in the modernisation of services and facilities at Foresterhill consistent with NHS Grampian's vision for the site
  - integrate unscheduled care services for Aberdeen and the surrounding area in a single facility on the Foresterhill site
  - re-organise inpatient services and facilities at Aberdeen Royal Infirmary as the first stage in the modernisation of the Foresterhill site consistent with the long term vision for Foresterhill
  - be the focus for the re-organisation of unscheduled care services as part of the implementation of the NHS Grampian Health Plan
8. The addendum relates only to the provision of replacement inpatient capacity in two floors. This document will, however, provide an update on the project and identify the detailed development of the brief and service configurations which have been agreed as part of the formulation of the Full Business Case (FBC)

#### Project Status

9. Detailed planning approval was sought from Aberdeen City Council in November 2008. Planning approval was given by the Council in March 2009 with no substantial conditions. If additional floors were approved this would be regarded as a material change and an amendment to the planning approval would be necessary. The City Council Planning Department have already indicated informally that a further two

floors would be within the scope of the approved Foresterhill Development Framework which is accepted by the Council as supplementary planning guidance.

10. NHS Grampian approved the application of Frameworks Scotland for projects in Grampian at its Board meeting in December 2008. A Principal Supply Chain Partner (PSCP) was appointed in December – the PSCP is RD Health which is now fully engaged in the development of the detailed design, preparation of the FBC and the formulation of the target cost.
11. The programme for the project remains as set out in the OBC i.e. commence on site in 2009 with partial completion in December 2011 and full completion and occupation in mid 2012. Within that overall timescale it is the aim for the enabling site works to start on site in June 2009 with the main construction works starting in December 2009.
12. The enabling works package will be approved separately to permit an early start on site – this will cost less than £5m and will be approved by NHS Grampian within its delegated authority limit. The FBC and target cost for the main construction works will be submitted for NHS Grampian Board and Scottish Government approval in November 2009. Indications from the PSCP and the independent cost adviser for the project indicate that the costs for the project as currently configured will be maintained within the OBC approval target.
13. A number of adjustments to the service configuration included in the OBC are currently being considered by the project board and project team to maximise the service benefit to be gained by the project. These include:
  - Relocation of the Hyperbaric Unit from a location within the building on level 3 to a small separate building between the ECC and the Phase 2 ARI building. This proposal is being reviewed with the National Services Division.
  - Increasing the size of the High Dependency Unit (HDU) to permit full centralisation of medical HDU services i.e. respiratory, cardiology coronary care unit (CCU), gastro-intestinal (GI) bleeding unit together with patients from other specialties as appropriate. The centralisation of medical HDU will eliminate an existing significant clinical governance issue. This can be achieved by using the space vacated on level 3 by the Hyperbaric Unit without any increase in the overall space in the main ECC building.
  - The potential relocation of GI inpatients from Block 2 ARI to the ECC to be close to the GI bleeding unit in the centralised HDU and to contribute to the efficient flow of patients in the ECC. This change would require the inclusion of one endoscopy room for emergency cases.
14. The proposed revised configuration within the currently agreed facility i.e. as per the OBC, is shown in appendix 2. As indicated above the final agreement of the service configuration will be made at a later date and a major influence will be the outcome of a review of general medicine and medicine for the elderly services at Foresterhill.
15. Other key issues which will be addressed during the preparation of the FBC include the potential requirement for a sprinkler system as part of the fire strategy for the ECC, and the review of the lift capacity in relation to patient, public and staff movements.

### **The Case for Additional Capacity**

16. The currently configured ECC project will replace approximately 25% of inpatient capacity at Aberdeen Royal Infirmary (ARI). The overall plan for inpatient facilities as set out in the Health Campus Initial Agreement (IA) Document (approved by the NHS Grampian Board in February 2008) is to remove all inpatients from the east end blocks of ARI which are nightingale design wards on the basis that they can never be made fit for modern healthcare delivery regardless of the level of investment. It is further agreed that the balance of inpatient capacity will be replaced/modernised by either:
  - upgrading the Phase 2 ARI building and provide the balance of beds required in a) the Cancer Centre (for cancer inpatient services) and b) a new inpatient block (for all other specialties) adjacent to the ECC building on a site identified in the Foresterhill Development Framework, or

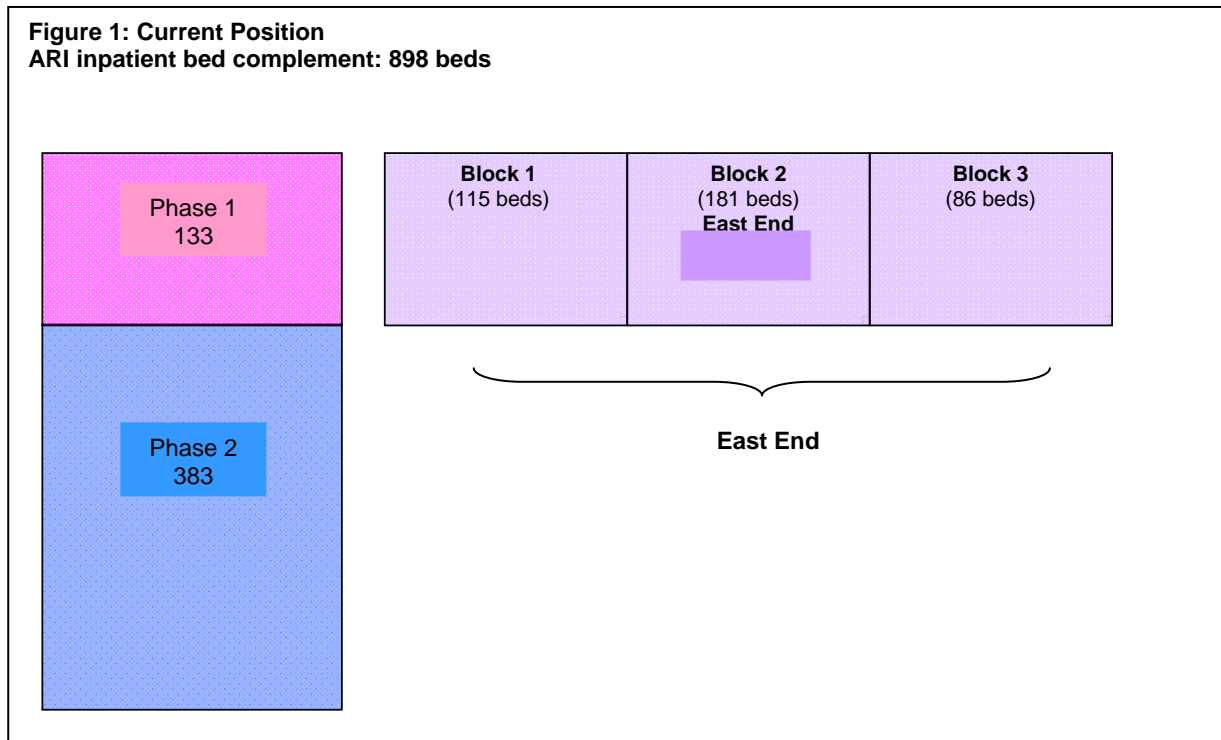
- removing all inpatients from the Phase 2 ARI building and providing the balance of beds required in a) the Cancer Centre (for cancer inpatient services) and b) a new inpatient block (for all other specialties) adjacent to the ECC building on a site identified in the Foresterhill Development Framework
17. The decision on the above options will be taken forward as part of an option appraisal to be undertaken as part of the staged planning of the Foresterhill site in due course.
18. The proposals contained within this OBC addendum do not materially change the approach set out above but would reduce the scope and cost of the options by advancing the replacement of the cancer and some other specialty inpatient facilities that are currently located in the east end ARI blocks. The main reasons for submitting the proposals are summarised below:
- Service Configuration – it is the view of the Health Campus Programme Board and clinical management that the cancer inpatient beds currently located in Block 2 of the east end of ARI should be provided in modern accommodation as soon as is practical i.e. in the ECC building. This is consistent with external advice that has been commissioned by the Scottish Government
  - ARI Blueprint – the further removal of inpatients from the east end blocks at ARI provides the opportunity to demolish a block or use the vacated accommodation to deal with a non inpatient capital plan priority in an efficient way
  - Facilities Risks – there is continuing concern regarding the ability of the wards in the east end of ARI to deliver modern healthcare and minimise the risks of health acquired infection (HAI)
  - Cost Efficiency – there is an opportunity to maximise the value of the ECC development by adding two floors of inpatient accommodation at marginal cost thereby minimising capital cost.
19. The following paragraphs will expand on the issues identified above.

### **Service Configuration – Cancer Inpatient Services**

20. The broad assumption regarding the development of a Cancer Centre at Foresterhill was that it would include inpatient facilities for cancer patients. The Cancer Centre project is currently being configured with a view to developing the facilities required on a staged basis consistent with NHS Grampian's priorities and the programming of the capital funding for the Cancer Centre within the NHS Grampian capital plan. The aim is therefore to complete a first phase of the Cancer Centre by 2012 – this would facilitate the replacement of the radiotherapy equipment in line with the Scottish Government's National equipment replacement programme. Subject to business case approval, the second stage will be developed from 2013/14 to provide the other cancer facilities including outpatients, day treatment, pharmacy and, potentially, inpatient facilities on a long term basis.
21. An urgent review of the facilities available for cancer services was prompted by the concern expressed by the Scottish Cancer Group and the Chief Medical Officer during 2008. As a result of this concern Professor Alan Rodger, formerly Clinical Director of the Beeton Cancer Centre in Glasgow, was commissioned to support NHS Grampian in the review of its service and facilities. A range of short term changes are currently being implemented to improve the facilities available for day treatment and outpatients.
22. The Health Campus Programme Board has reviewed the requirements for cancer inpatient services and has agreed that the inpatient facilities need to be provided at the earliest possible date. The provision of an additional floor on the ECC building is the best way to achieve this with the new facilities being available in mid 2012.
23. The Health Campus Programme Board at its meeting in March 2009 further agreed that the final location of inpatient beds should be determined by an option appraisal to be carried out as part of the Cancer Centre planning process with the support of a Principal Supply Chain Partner to be appointed in April 2009. The outcome of the option appraisal will determine whether the cancer service inpatient beds will remain in the ECC building in close proximity to other inpatient facilities including high dependency care, or co-located with other cancer facilities including day treatment and radiotherapy. If the Cancer Centre is include inpatient beds in the future then the additional floor provided initially for cancer inpatients will be used by other specialties occupying accommodation in the remaining east end block or phase 2 of ARI thereby contributing to the replacement of outdated facilities generally.

ARI Blueprint

24. The diagram below identifies the broad configuration of beds at ARI.



25. The projected requirements for inpatient beds at ARI have been calculated as part of the ARI Blueprint planning process. These projections were included in the ECC OBC (appendix 3) as the strategic context for the replacement of inpatient beds within the project. The projections confirmed the difficulty in estimating bed requirements in the long term and therefore set out a range i.e. a minimum requirement of 694 and a maximum of 892 with a working assumption at this stage of 776 beds being required over the next 10 – 15 years.
26. The addition of two floors on the ECC development would provide a total of approximately 380 beds at modern standards with a further 314 being necessary to meet the minimum projected level of 694, and 512 to reach the maximum projection of 905. The provision of additional capacity in the ECC is therefore well within the minimum projected requirements (appendix 4).
27. The currently approved ECC OBC indicated that Phase 1 and the East End block 3 would be vacated as far as inpatients was concerned i.e. services will transfer into the ECC facilities and other areas at ARI that will be vacated as a result of the ECC development.
28. The addition of a further floor (i.e. in addition to the cancer inpatient floor) would create replacement capacity of approximately 120 beds creating the opportunity to vacate a further east end block – block 1 – as far as inpatients is concerned.
29. The second additional floor would permit the co-location of other acute medical specialties in close proximity to the core ECC and centralised medical HDU facility. Cardiology and renal medicine (currently in east end block 1) are likely to work more efficiently in this location as both services will have a number of patients in HDU care and both have a significant impact on emergency medical care. Similarly, medicine for the elderly services would be appropriate given their key role in supporting the ECC as a whole. Appendix 5 identifies a potential configuration of services in the ECC with two additional floors.
30. Two additional floors on the ECC provides the opportunity to explore two broad options for a “step” change in the way that Aberdeen Royal Infirmary is organised:
  - a. Advance the implementation of the ARI blueprint which seeks to co-locate core inpatient beds for cases requiring complex care, and separate less complex short and day case treatment to assist in the application of standardised processes to minimise length of stay and reduce waiting times. This would include the transfer all day and short stay activity from Phase 2 ARI to east end block 2 where

the existing day/short stay unit is located. Phase 2 could subsequently be dedicated to the provision of core specialty beds. This option would a) use east end block 2 facilities for short stay/day activity – given the available estate this is the most appropriate use for the older and less flexible facilities as the patient group is less dependent and shorter stay, and b) use the Phase 2 building which, whilst dating from the 1970's, is more flexible and adaptable for more complex care and comparatively longer stay acute patient care

- b. Alternatively use east end block 2 to co-locate all medicine services for the elderly which cannot be accommodated in the ECC.

31. As indicated above these are broad options which would be explored in detail subject to the approval of the OBC addendum.

### Facilities Issues

32. The east end blocks of inpatient accommodation are not capable of providing a high standard of accommodation to deliver modern healthcare and minimise infection risks. The wards are converted nightingale wards with only minimal single room accommodation.

33. NHS Grampian has already agreed that the east end blocks will not be used as inpatient accommodation in the future as they cannot be converted to provide the minimum requirements in terms of single rooms in a clinically and financially efficient way.

34. The report of the Vale of Leven Hospital published in December 2008 related to inpatient facilities, and the Audit Scotland report on backlog maintenance published in January 2009 has stimulated NHS Grampian to review the programme for the replacement of outdated inpatient accommodation. The only opportunity to do this within a predictable timescale is to maximise the potential of the ECC development (the other main inpatient development on the Foresterhill site is included in the NHS Grampian capital plan provisionally for completion in 2019/2020 subject to option appraisal and Scottish Government approval).

35. In addition to the lack of single room accommodation, east end blocks 1 and 2 have significant backlog maintenance, with an estimated value of £35m. £14m of this would be eliminated with the addition of two further floors on the ECC development.

### Cost Efficiency

36. The main cost efficiency in capital terms relates to the maximisation of the benefit of the strategic site on which the ECC building will be built. The ECC has a floor area of 22,864m<sup>2</sup> and has an efficient design with inpatient facilities standardised at a design guide levels throughout the building on an efficient footprint. This standardisation would continue with the potential two additional floors. The all inclusive cost of the development in its current configuration is £4,029 per m<sup>2</sup>.

37. The cost per square metre includes all on-costs related to site clearance, preparation and foundations. The cost of each additional floor of approximately 60 beds per floor would therefore be provided at marginal cost i.e. £3,054 per m<sup>2</sup> or a total current estimated cost of £9.2m (see appendix 6 – Independent Cost Adviser's report on the cost of additional floors and cost comparisons).

38. The cost of an additional floor for cancer services would be marginally more expensive at a total current estimated cost of £9.5m due to the additional engineering services required.

39. The cost of the second additional floor of inpatient capacity is likely to be similar to providing the accommodation as part of the future stages of redevelopment of ARI, however construction industry cost projections for the next 3 years indicate that there is unlikely to be any inflation.

40. As indicated above, the backlog maintenance and functional suitability costs of east end blocks 1 and 2 is valued at £35m, of which £14m would be eliminated by the provision of two additional floors. Whilst there are no plans to invest in these areas to deal with the backlog and functional suitability issues, the cost represents a risk that may require unplanned investment to deal with infection or breakdowns in the coming years.

**Cost and Funding Assumptions**

41. In strategic terms additional floors on the ECC will reduce cost in the future i.e. one floor will potentially reduce the cost of the Cancer Centre (£50m provision identified from 2013/14), the second additional floor will reduce the cost of future stages of the redevelopment of ARI (£218m provision from 2013/14)
42. Given the timescale for the ECC completion the proposals for capital funding are:
  - Cancer floor – bring forward £9.5m of Cancer Centre funding from 2013/14 to 2012/13 (formal SGHD approval required)
  - Second floor – review the stage 1 Ambulatory Care project currently costed at £42m in the capital plan
43. The review of the Ambulatory Care Centre cost will include the conversion of ARI Phase 1 and a part of east end Block 1 to meet the Ambulatory Care brief. It should be noted that by using Phase 1 and east end Block 1 instead of a new build option, there are reduced property revenue of approximately £267,000. This will be included in the business case for Ambulatory Care.
44. Some compromises would be necessary given the need to fit an existing footprint, and some of the vacated accommodation in East End block 1 would have to be used to complete meet all of the briefed requirements e.g. office and support accommodation. It should be noted that estimated costs for Ambulatory Care in the Phase 1 building at this stage are pre-design estimates only. It is the view of the Health Campus Programme Board that this proposed approach is acceptable but further detailed work will be undertaken to ensure that the aims of the project can be achieved.
45. All revenue costs included in this OBC addendum for the inpatient accommodation relate to the facilities i.e. heat, light, power, cleaning, maintenance and capital charges. The assumption regarding service revenue costs consistent with the ECC OBC i.e. no new services or service developments are planned or approved – the purpose of the developments is to support the more efficient organisation of existing services and to eliminate facilities risks including backlog maintenance and functional suitability (e.g. availability of single rooms, inflexibility).
46. The property related costs are summarised below.

	<b>Capital Cost £000</b>	<b>Net Revenue Cost £000</b>	<b>Capital Charges £000</b>
<b>Cancer Inpatient Floor</b>	9,500	165	446
<b>General Acute Floor</b>	9,200	161	431
<b>General Acute (shell)</b>	3,500	16	151

Notes:

Net revenue costs – in all the above options, the net revenue costs represent additional revenue expenditure for NHS Grampian and while these are not beyond what is currently planned, they are real costs that will require a funding source to be identified. It is however recognised that it is not possible to provide modern, fit for purpose in-patient accommodation without incurring these additional property costs.

Capital charges – although the current capital plan includes the Cancer Centre at a cost of £50m, the capital funding has not been secured at this time and therefore the associated revenue cost is in addition to NHS Grampian's current revenue plans.

The capital charges for an additional floor, funded by the change to the Ambulatory Care plan, are currently accounted for as part of the Ambulatory Care Centre capital allocation and is therefore not in addition to the current plan.

The inclusion of a floor as a shell only is not currently in NHS Grampian capital plans and therefore the capital charges would be in addition to current revenue plans.

47. It should be noted, however, that the net additional costs above assume that NHS Grampian will approve the ambulatory care centre project which will include the funding of the revenue costs in addition to the capital costs. A funding source for these revenue costs will need to be identified in due course.
48. The development of Ambulatory Care in Phase 1 of ARI and the provision of a second additional floor on the ECC for general acute use would have no greater capital or revenue costs than the current proposal in

the capital plan for ambulatory care i.e. £42m capital provision new build proposal in the capital plan (note – it is likely that revenue costs will be less due to the potentially higher level of impairment which will apply to an existing building – this will have the effect of reducing capital charges. The actual level of impairment will not be known until the completed building is valued by the District Valuer).

49. The second additional inpatient floor will have no greater revenue costs than the longer term solution as part of a future stage of ARI inpatient redevelopment. This cost will, however be incurred earlier i.e. from 2012. The revenue costs associated with the future stage of ARI inpatient redevelopment have not yet been quantified.
50. The addition of two floors for the ECC would eliminate backlog maintenance in the East End blocks valued at £14m.
51. The additional floors would create sufficient capacity to remove inpatient beds from a further East End block (Phase 1 and East End Block 3 inpatients will be relocated as part of the agreement reached through the original OBC – the two additional floors would allow all inpatients to be relocated from East End block 1 leaving East End block 2 as the only part of the original ARI buildings to be in use for inpatients).
52. The vacated East End accommodation will either be re-used to support a further stage of the redevelopment of ARI in the future, or will be closed contributing to the full closure of the building and subsequent demolition. Any decision to re-use vacated accommodation will require to be the subject of business case approval – the accommodation will remain vacant until any such approval is given.

### Risks

53. The main risks associated with the proposals contained within this paper are summarised below:
  - Planning approval - there is a need to ensure that the ECC programme is maintained. The addition of any floors to the ECC will require planning approval. The addition of floors has been discussed with the planners and the proposals remain consistent with the Foresterhill Development Framework which has been accepted as supplementary planning guidance.
  - SGHD approval – there will be a need to obtain formal approval from the Scottish Government
  - ECC programme – in order to maintain the ECC programme it will be necessary to instruct the PSCP to develop proposals for additional floors as part of the target cost process.
  - The costs included in the paper are as provided by external professional advisers and the PSCP. There is scope for costs to vary as the target cost for the ECC is developed but there is no reason to believe that any costs variances will be substantial and not capable of being managed within the budgets provided. Final approval of the proposals will be achieved through the submission of the Full Business Case to the Grampian NHS Board in November 2009 – this will include the target cost agreed by the PSCP and NHS Grampian

### Recommendations

54. The Grampian NHS Board is asked to approve the recommendations made by the Asset Investment Group:
  - The provision of an additional floor on the ECC development for cancer service inpatient beds either on an interim basis or a permanent basis (subject to the completion of an option appraisal on the matter)
  - The provision of a second additional floor for other inpatient specialties funded from a review of the capital provision for the stage 1 Ambulatory Care project
55. Subject to the approval the OBC addendum will be submitted to the Scottish Government for approval.



Health Campus Programme

Emergency Care Centre

Outline Business Case Addendum

Appendices



Health Campus Programme  
**Emergency Care Centre Project**

Outline Business Case  
Executive Summary

April 2008

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*Implementing healthfit* 



## **Executive Summary**

- 1.0 The title of the Project as it appears in the Board's Capital Plan and as it will appear in the capital reporting system is **The Emergency Care Centre, Foresterhill**.
- 2.0 This draft Outline Business Case sets out the proposal to develop the Emergency Care Centre (ECC) at Foresterhill in Aberdeen. The project is being taken forward within NHS Grampian's Health Campus Programme and the Initial Agreement for the Programme was approved by the Scottish Government Health Directorate in March 2008.
- 3.0 The Outline Business Case (OBC) document confirms the need for change and sets out the preferred option, anticipated level of investment and procurement strategy in a way that allows NHS Grampian and the Scottish Government to ensure that the scheme is affordable and meets the objectives set out in the Local Delivery Plan and NHS Grampian's Health Plan.

## **Background**

- 4.0 In 2005 NHS Grampian took a major step forward in the development of its Change and Innovation Programme. A decision was made by the Asset Investment Group (AIG) that the replacement of the Acute Medical Assessment Unit (AMAU) should include integration with the Accident and Emergency (A&E) Department at Aberdeen Royal Infirmary (ARI) and the primary care out of hours service, G-MED, to provide a comprehensive "one stop" Emergency Care Centre for the people of Aberdeen and the surrounding area.
- 5.0 It was further agreed during the development of the project that a number of complementary services should be included with the aim of improving clinical adjacency and service efficiency i.e. the Hyperbaric Unit relocated from the National Hyperbaric Centre and NHS24.
- 6.0 During 2007 the Blueprint for Aberdeen Royal Infirmary and the Development Framework for the Foresterhill site were prepared. The Blueprint process highlighted the need to co-locate and integrate a broader range of acute unscheduled care services within the Emergency Care Centre. The Development Framework process confirmed the need to avoid incremental development and maximise the potential of the site selected for the Emergency Care Centre in the context of a strategic approach to Foresterhill.
- 7.0 In addition, facilities risks and backlog maintenance at Foresterhill have been re-assessed by the Asset Investment Group. It became clear that specific plans needed to be put in place for the replacement or upgrading of all clinical facilities at Aberdeen Royal Infirmary to have a positive and strategic approach to maintenance in place. This, combined with the factors identified above, resulted in an agreement to undertake the first stage in the replacement of inpatient beds within an expanded Emergency Care Centre project.

## **The Case for Change**

- 8.0 **Healthfit Vision:** The agenda for redesign and service change in Grampian was set in 2002 when the "Healthfit" planning and redesign process was conceived. The result of the Healthfit agreements is a set of actions taken forward through the Health Plan process to:
  - provide services closer to people's homes
  - "shift" appropriate activity from an acute setting to a community setting
  - dedicate specialist and acute services/facilities for specialist care
  - improve the flow of patients by ensuring that each patient is seen by the right clinician at the right time in the right place

Unscheduled care services are currently fragmented and the Emergency Care Centre will be a major step towards implementing the Healthfit agreements.

- 9.0 **Integration:** The services providing unscheduled care in Aberdeen are carried out in a range of locations i.e. primary care out of hours service (G-MED) in the David Anderson Building at Foresterhill;

medical emergency admissions in the AMAU; surgical emergency admissions in the surgical wards; and minor and major injuries in the A&E Department – all at Aberdeen Royal Infirmary. NHS24 is located at Riverside House in Aberdeen and hyperbaric services are provided from the National Hyperbaric Centre on the Foresterhill site. Individually the services operate efficiently but the opportunities for integration and streamlining the patient experience cannot be maximised without co-location.

10.0 **Clinical Strategy:** Aberdeen Royal Infirmary (ARI) will be modernised in response to the facilities/functional suitability risks that have been identified, in a way which meets the needs of patients and service efficiency, and on a staged basis consistent with the Foresterhill Development Framework. The modernisation will take account of the transfer of intermediate care to other settings (i.e. 25% of existing inpatient activity and up to 40% of outpatient activity), and flexibility will be built in to support the management of uncertainty in the future.

11.0 The Emergency Care Centre will organise services to be consistent with the ARI Blueprint against a background of inpatient bed projections that are consistent with the Health Plan and National policy.

12.0 In summary the key elements of the case for the Emergency Care Centre are to:

- improve the experience of patients in need of emergency and unscheduled care
- integrate unscheduled care services for Aberdeen and the surrounding area in a single facility on the Foresterhill site as part of the implementation of the NHS Grampian Health Plan
- apply the investment that will have to be made over the next 10 years to deal with backlog maintenance and functional suitability risks in a pro-active and strategic way
- take a major step forward in the modernisation of services and facilities at Foresterhill consistent with NHS Grampian's vision for the Foresterhill campus
- replace and re-organise inpatient facilities at Aberdeen Royal Infirmary as the first stage in the modernisation of the Foresterhill site consistent with the long term vision for Foresterhill

13.0 **Foresterhill Site Development Framework:** The Foresterhill site is acknowledged to be a major strength for service provision and education by both NHS Grampian and the University of Aberdeen. Being a joint University/NHS owned site it is important that it is organised to meet the strategic needs of both organisations over the next 20 years and beyond.

The process to develop a joint NHS/University of Aberdeen Development Framework for the Foresterhill site was taken forward during 2007 with wide staff and public involvement. The Framework provides strategic design guidance for the redevelopment of the Foresterhill campus over the next 20-30 years and will be a major influence on how projects focused on the site are shaped. As well as providing a "template" for change the Development Framework process has resulted in the agreement of a realistic approach to the redevelopment and modernisation of facilities.

14.0 The Development Framework issues relevant to the Emergency Care Centre project are summarised below:

- The Development Framework agreements include the redevelopment of the Foresterhill site on a staged basis over the next 10-20 years. The ECC project has been configured to be part of the first stage of this redevelopment
- The agreements also include the identification of "zones" of development for specific groups of services – the Emergency Care Centre project will maximise the potential of the part of Foresterhill identified for emergency care

15.0 **Facilities Risk Management:** The Asset Investment Group of NHS Grampian has reviewed the condition of the estate at Foresterhill and in the Grampian area as a whole. Significant facilities risks and poor standards of accommodation exist at Foresterhill that require to be dealt with in a strategic way, in support of the Foresterhill Development Framework and ARI Blueprint. The facilities maintenance/functional suitability issues at Foresterhill are summarised in the table 1 below:

Table 1: Facilities Costs 2008 - 2018	
Current and projected maintenance <sup>1</sup>	£126,787,400
Functional Suitability & Space Utilisation <sup>2</sup>	£ 248,703,668
<b>Total</b>	£375,491,068

<sup>1</sup> Based on technical surveys of NHS Grampian essential properties

<sup>2</sup> Estimated costs based on Building Cost Information Service (BCIS) indices (4<sup>th</sup> Quarter 2007)  
All costs are at 2007 4<sup>th</sup> quarter baseline

The table sets out the financial value of the maintenance issues associated with the current buildings and installations together with an estimate of the cost of bringing facilities up to modern standards. In addition to integrating emergency care services the Emergency Care Centre project will replace inpatient facilities in Phase 1 and the East End of ARI considered to be the highest priority risk areas as far as facilities are concerned. The capital cost of the project, estimated at £83m is broadly equivalent to the investment required to deal with facilities and functional suitability risks in these areas over the next 10-15 years.

### Benefits for Patients

16.0 The achievement of benefits for patients is central to this business case. The anticipated benefits are summarised below:

- **Access:** The creation of a single focus for the delivery of emergency care will provide a clear access point for the services
- **Streamlined care:** A more efficient experience resulting from the co-location of services i.e. primary care, acute care, diagnostics – radiology and laboratories – and integration with community services
- **Better treatment outcomes:** the focus of the Centre with the inclusion of radiology and laboratory services will be on early diagnosis resulting in earlier and more appropriate treatment
- **Less waiting:** the new facilities will allow the services to operate in a more co-ordinated way thereby reducing the time that patients will have to wait for treatment
- **Reduced admissions:** the improved co-ordination and integration with community services will mean that patients are more likely to be treated without having to be admitted to hospital
- **Shorter stay in hospital:** if patients do have to be admitted to hospital the re-organisation of inpatient facilities means that patients can return home with appropriate aftercare more quickly
- **Reduced infection:** the Emergency Care Centre facilities will be new and designed to the most modern standards. This eliminates or minimises the likelihood of any hospital acquired infection due to the increased number of single rooms, high level of isolation facilities and surfaces that can be cleaned and maintained effectively
- **Privacy and dignity:** the construction of modern facilities will include many more single rooms for patients who need privacy during their treatment
- **Motivated staff:** the implementation of an innovative and creative approach to emergency care will help to attract and retain the best clinical staff to the services

### Public and Staff Involvement

17.0 There has been considerable public involvement and consultation in the development of the proposals for the Emergency Care Centre. This has taken the form of direct involvement in the project structure

and participation in the option appraisal process. Consultation has been undertaken through the project specific Emergency Care Centre Communication and Involvement Advisory Group, and as part of the consultation on the Health Campus programme as a whole with 22 community associations and the NHS Grampian Community Forum between September 2007 and February 2008.

- 18.0 Staff involvement has been through regular consultation with the Clinical Advisory Committee Structure and the Grampian Area Partnership Forum. In addition, advisory structure and the Partnership Forum representatives are represented on the project structure. This level of participation and involvement will continue throughout the detailed planning stages to completion and bring into service.

**Short-listed Options**

- 19.0 Options were identified as part of the business case process to address the service, accommodation and strategic issues (see table 2).

<b>Table 2: Short-listed Options</b>		
<b>No.</b>	<b>Short-list Option Description</b>	<b>Reason for inclusion in Appraisal</b>
2	Clinical functions remain within existing accommodation. Facilities risks and functional suitability issues addressed. Application of modern standards would displace significant amount of inpatient accommodation requiring it to be replaced in new build on the Foresterhill site. Significant decanting facility would be required to achieve this	<b>Included</b> as benchmark option to demonstrate constraints/opportunities provided by existing accommodation and impact of new accommodation standards
3a	Refurbish existing A&E and adjacent Phase 2 ARI together with extension to provide core ECC with replacement inpatient capacity	<b>Included</b> as consistent with Foresterhill Development Framework, Blueprint and staged approach to redevelopment
4a	All core ECC functions accommodated in new build linked to Children’s Hospital on the site identified on the Foresterhill Development Framework for the development of emergency care with replacement inpatient capacity	<b>Included</b> as consistent with Foresterhill Development Framework, Blueprint and staged approach to redevelopment
5a	All core ECC functions accommodated in new build to the west of and linked to Phase 2 ARI with replacement inpatient capacity	<b>Included</b> to permit assessment of alternative new build linked to ARI

**Financial and Economic Appraisal**

- 20.0 The total estimated capital costs of the short-listed options (including optimum bias) is summarised in the table below:

<b>Table 3: Option Appraisal Capital Costs</b>	
<b>Option</b>	<b>Capital Cost (£,000)</b>
2. Do Minimum	136,071
3a. Partial Refurbishment & New ECC Build	89,279
4a. New ECC Build Linked to ARI & RACH	95,075
5a. New ECC Build not Linked to RACH	94,426

- 21.0 The forecast revenue impact of each of the short-listed options is summarised in table 4:

Table 4: Option Appraisal Revenue Impact					
Option	Additional Capital Charges	Additional Property Costs	Changes in Staff Costs	Offsets/ External Contributions	Net Revenue Impact
2. Do Minimum	4,744	372	(172)	(85)	4,859
3a. Partial Refurbishment & New ECC Build	3,882	1,350	(172)	(569)	4,491
4a. New ECC Build Linked to ARI & RACH	3,885	1,758	(172)	(612)	4,859
5a. New ECC Build Not Linked to RACH	4,003	1,758	(172)	(611)	4,978

22.0 Value for money is defined as the optimum solution in terms of the comparison of qualitative benefits to costs. This analysis has been performed on an annual cost basis in line with Treasury guidance and the results are shown in the table 5 below:

Table 5: Value for Money Ranking				
Option	Qualitative Benefits Score	Net Present Cost (£000)	Cost Per Benefit Point (£000)	VfM Economic Ranking
2. Do Minimum	300	122,907	409.7	4
3a. Partial Refurbishment and New ECC Build	755	110,597	146.5	2
4a. New ECC Build Linked to ARI & RACH	937	120,463	128.6	1
5a. New ECC Build Not Linked to RACH	667	119,958	179.8	3

23.0 The non-financial benefits appraisal together with the financial and economic analysis resulted in option 4a being identified by the Project Board as the preferred option. This was recommended to the NHS Grampian Asset Investment Group in January 2008 and approved for development as the preferred option in the Outline Business Case.

### The Preferred Option

24.0 The key features of the preferred option are summarised below:

- The new facilities will replace the most outdated accommodation at Foresterhill and reduce facilities risks – there will also be a significant contribution to the rationalisation of other accommodation in Aberdeen
- All services will be delivered from new, purpose built accommodation – the core Emergency Care Centre will be purpose designed to meet the needs of the operational policy. The inpatient accommodation will be provided to the high quality standard set out in current design guides to provide flexibility of use in the future
- The core Emergency Care Centre will be designed to maximise workforce flexibility and integration between acute hospital and Community Health Partnership (CHP) services – the assessment area will accommodate the functions of a clinical decision unit, observation and medical/surgical assessment, and will have a peak capacity for 40+ patients
- The development will facilitate the creation of a dedicated Medical High Dependency Unit at Aberdeen Royal infirmary through the re-organisation of services
- The 15 bed medical high dependency unit will be co-located with the Hyperbaric Unit. The HDU represents the start of a significant modernisation of critical care facilities at ARI and will provide the opportunity to create a single level 2 critical care area for all medical specialties

## DRAFT 31 March 2009

- In addition to the 40 beds/places in the core Emergency Care Centre a minimum of a further 179 inpatient beds will be provided (subject to detailed briefing and design) as part of the staged modernisation of Aberdeen Royal Infirmary. This, together with the assessment area, will provide a minimum of 219 replacement inpatient beds which will permit Phase 1 and the far east end block of ARI to be vacated as far as inpatients are concerned. These areas will be considered for re-use in the future stages of the hospital in due course
- During the detailed development of the preferred option further opportunities will be taken to maximise the level of replacement inpatient facilities that can be included in the building with the aims of providing turning space to support future stages and the re-organisation of inpatient facilities on the opening of the new Centre, and to further reduce the risk of remaining in outdated facilities in the rest of ARI
- As well as replacing outdated facilities, the new accommodation will be organised to provide a focus for integrated unscheduled care and an improved educational experience for all staff
- The new inpatient accommodation will be occupied by medical and surgical short stay units, respiratory medicine and acute geriatric/general medicine – the facilities will meet current design guide standards, 75% of beds will be in single rooms, and high standards of infection control will be built in. The final decision on the detailed configuration and content of the replacement inpatient facilities will be made closer to the bring into service date consistent with the more detailed ARI Blueprint agreements at that time
- There will be maximum energy efficiency contributing to NHS Grampian's carbon reduction targets
- The new facilities will cost £83m. A contingency of 14.2% (optimism bias) is added to this sum to give an outline business case stage budget of £95m. The project will be completed in December 2011 (subject to FBC approval by December 2008)
- The total additional revenue cost of the development will be £4.8m net of revenue savings offsets. The additional revenue costs are solely related to capital and property costs – the overall assumption regarding staffing is revenue neutral i.e. there may be changes in staffing/supplies revenue requirement during the course of development but this will not be as a direct consequence of the capital investment

25.0 The impact of implementation on other facilities is summarised below:

- Phase 1 and Block 3 of the east end of ARI will be vacated as in terms of inpatient activity – these areas will be included in the option appraisals that need to be undertaken to shape the subsequent stages of the redevelopment of Aberdeen Royal Infirmary i.e. inpatients, Cancer Centre, Ambulatory Care
- 40 beds in phase 2 will be vacated on the transfer of the AMAU functions to the ECC. This vacated ward accommodation will be used to support the relocation of inpatient services from the east end Block 3 and Phase 1
- The relocation of G-MED from the David Anderson Building will support the closure of Woolmanhill – the Diabetes service in Woolmanhill will move to the David Anderson Building to create a Diabetes and Endocrinology Centre
- The new inpatient facilities will assist in the relocation of acute geriatric assessment from the South Block at Woodend and contribute to the subsequent closure of the South Block

26.0 The configuration of the services in the preferred option is summarised diagrammatically in figure 1 and figure 2 below:

Figure 1: Emergency Care Centre – Preferred Option Side View

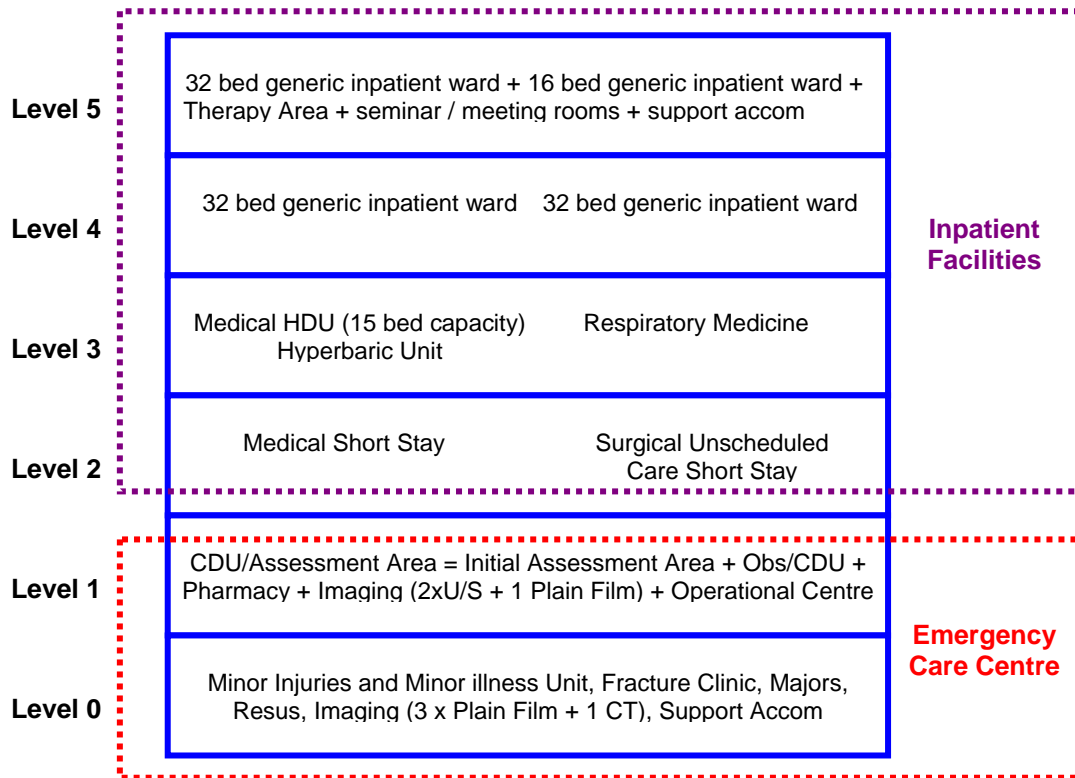
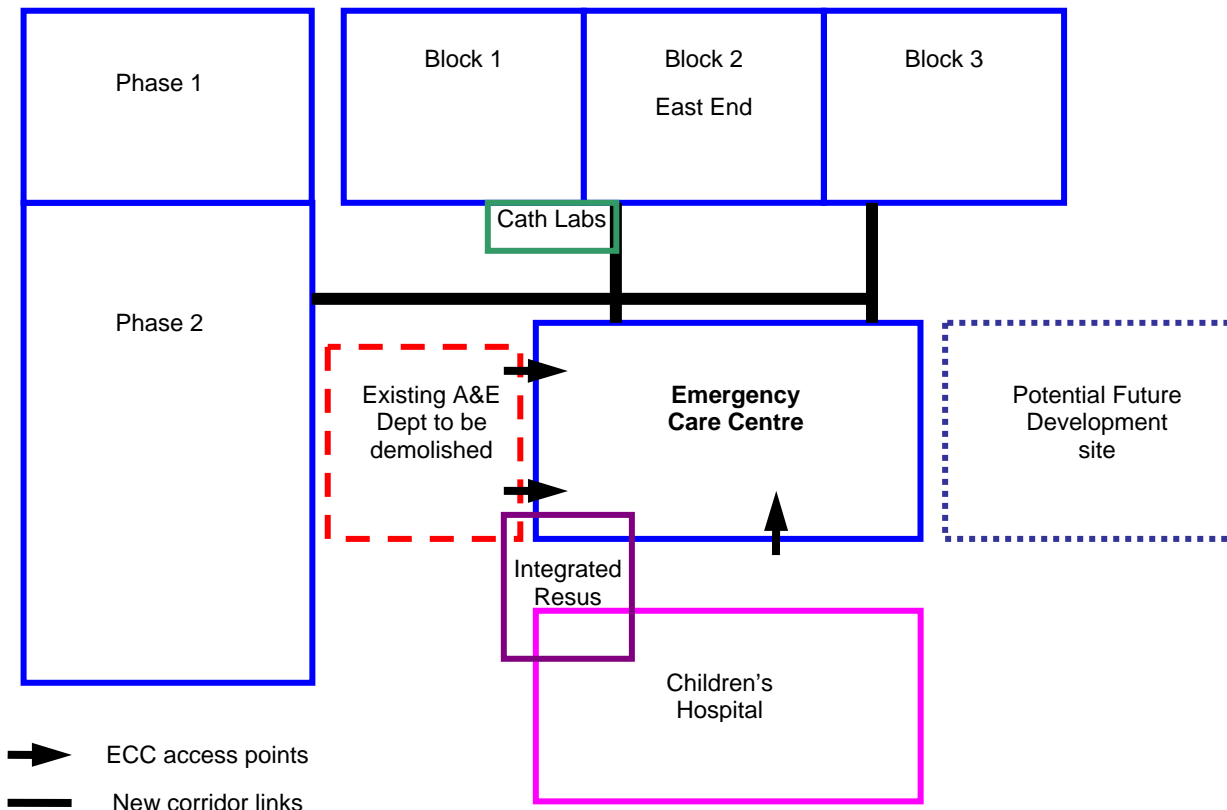


Figure 2: Emergency Care Centre – Option 4a  
Links with Aberdeen Royal Infirmary – Plan View



Support from NHS Grampian Board

27.0 NHS Grampian confirms that:

- the development fits with the Local Delivery Plan and the objectives of the Board as set out in the NHS Grampian Health Plan
- an appraisal of a full range of options has been considered and evaluated following the guidance in the Scottish Capital Investment Manual (SCIM) considering costs, benefits and risks
- the OBC has been approved by NHS Grampian Board and that the revenue consequences have been agreed
- procurement options have been adequately explored
- a plan for governance and implementation has been agreed
- the delivery of the project aims will maximise the use of the Board's estate and are consistent with the Foresterhill development framework

28.0 The Outline Business Case is signed off by NHS Grampian Chair and Chief Executive, for submission to the Scottish Government and approval is sought to develop the Full Business Case.

David Cameron  
Chairman  
NHS Grampian

Richard Carey  
Chief Executive  
NHS Grampian

## Appendix 2

Current preferred service configuration – no additional floors

Floor	Emergency Care Centre			
5			Infection Unit	26
			Gen Med	32
4			HDU	24
			Respiratory	32
3	Hyperbaric relocated		GI	26
			Gen Med	32
2			Med and Surg short stay	59
1			Pharmacy	
	CDU	Radiology	Operational Centre	40
0				
	Majors	Minors	Radiology	
	<b>Total ECC beds</b>			<b>271</b>

**Appendix 3**

**Extract from ECC OBC April 2008, section 4:**

The proposal to undertake the first stage of the replacement of inpatient beds as part of the Emergency Care Centre project first requires an assurance on the range of acute bed requirements over the next 10-15 years. The current bed complement at Aberdeen Royal Infirmary is 898. This, together with the agreement to relocate 90 geriatric Assessment beds from Woodend to Aberdeen Royal Infirmary gives a total requirement at current activity levels/practice of 988 beds. From this baseline the table 4.4 sets out the summary of inpatient requirements over the next 10 – 15 years:

	<b>Scenario 1 (5% + 0%)</b>	<b>Scenario 2 (5% + 15%)</b>	<b>Scenario 3 (10%+ 25%)</b>	<b>"Best Fit" Scenario</b>	<b>Demo-graphic change (5%)</b>	<b>Demo-graphic change (10%)</b>	<b>Demo-graphic change (15%)</b>
<b>Medical specialities</b>	443	389	336	352	369	389	404
<b>ITU</b>	19	19	19	19	20	21	22
<b>Surgical specialities</b>	305	257	219	244	258	268	281
<b>North of Scotland Tertiary</b>	132	102	78	119	125	131	137
<b>Women's Services</b>	40	30	22	22	23	24	25
<b>Infection Unit</b>	20	20	20	20	21	22	23
<b>Total</b>	<b>959</b>	<b>817</b>	<b>694</b>	<b>776</b>	<b>816</b>	<b>855</b>	<b>892</b>

**NOTES:**

For Scenarios 1, 2 & 3: First percentage figure in brackets reflects efficiency improvement. the second figure reflects outward shift in activity from ARI

Best Fit Scenario is the likely planning assumption based on discussions with clinicians and managers.

The table summarises the impact of a range of assumptions regarding activity shifts, efficiency and demographic change across broad specialty groups at Aberdeen Royal Infirmary. The detailed information is contained in the Clinical Strategy/Aberdeen Royal Infirmary Blueprint.

## Appendix 4

**Discussion paper submitted to the Asset Investment Group meeting on 26 January 2009:**  
(amended to include the potential for two additional floors)

### Introduction

1. The Emergency Care Centre (ECC) project outline business case (OBC) was approved by the Scottish Government in July 2008. Since then the detailed planning has been progressed with a view to starting on site with enabling works in April 2009 and the main contract in the autumn of 2009.
2. The ECC occupies a strategic part of Foresterhill and is the first stage in the redevelopment of the campus. In addition to integrating unscheduled care services it will replace approximately 250 beds at Aberdeen Royal Infirmary. The main aim in terms of inpatient beds is to replace the Phase 1 and Block 3 east end ARI inpatient facilities which are regarded as having the highest risk in terms of maintenance and environment.
3. A number of pressures have emerged that has prompted a review of the ECC in relation to the number of beds it should replace. These pressures include the increasing risk related to HAI highlighted by infection incidents in Grampian and across Scotland, the need to provide replacement cancer beds as part of a co-ordinated approach to the development of the new Cancer Centre, and the opportunity to maximise the benefit to be gained from the ECC site.

### ECC Project – Current Position

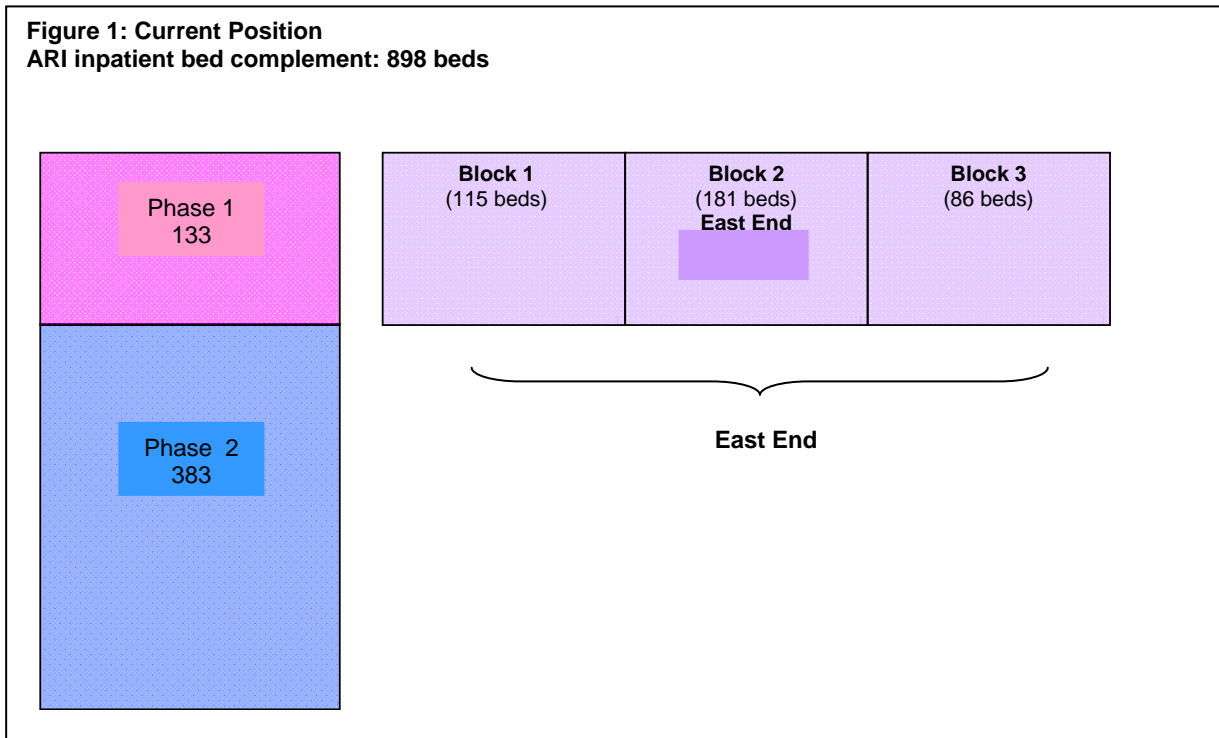
4. The ECC project programme aims to ensure a completion and bring into service between December 2011 and June 2012. A Frameworks Scotland contractor – RD Health – was appointed to the project in December 2008 and it is the aim to complete and submit the FBC in May 2009 (note: the approval of the enabling works will be done separately to permit an earlier start).
5. Two changes to the brief are currently under consideration i.e.
  - Substitution of general acute beds for HDU beds to create a centralised HDU for all medical specialties (currently under consideration by the project team and project board)
  - Addition of a floor of general acute beds for cancer services or other acute specialties – a floor can accommodate approximately 60 beds - this may vary depending on configuration
6. These changes need to be agreed by April 2009 to ensure that the detailed planning can be completed in preparation for the agreement of the target price with the Framework contractor.

### Projected Requirement for Inpatient Facilities at Aberdeen Royal Infirmary

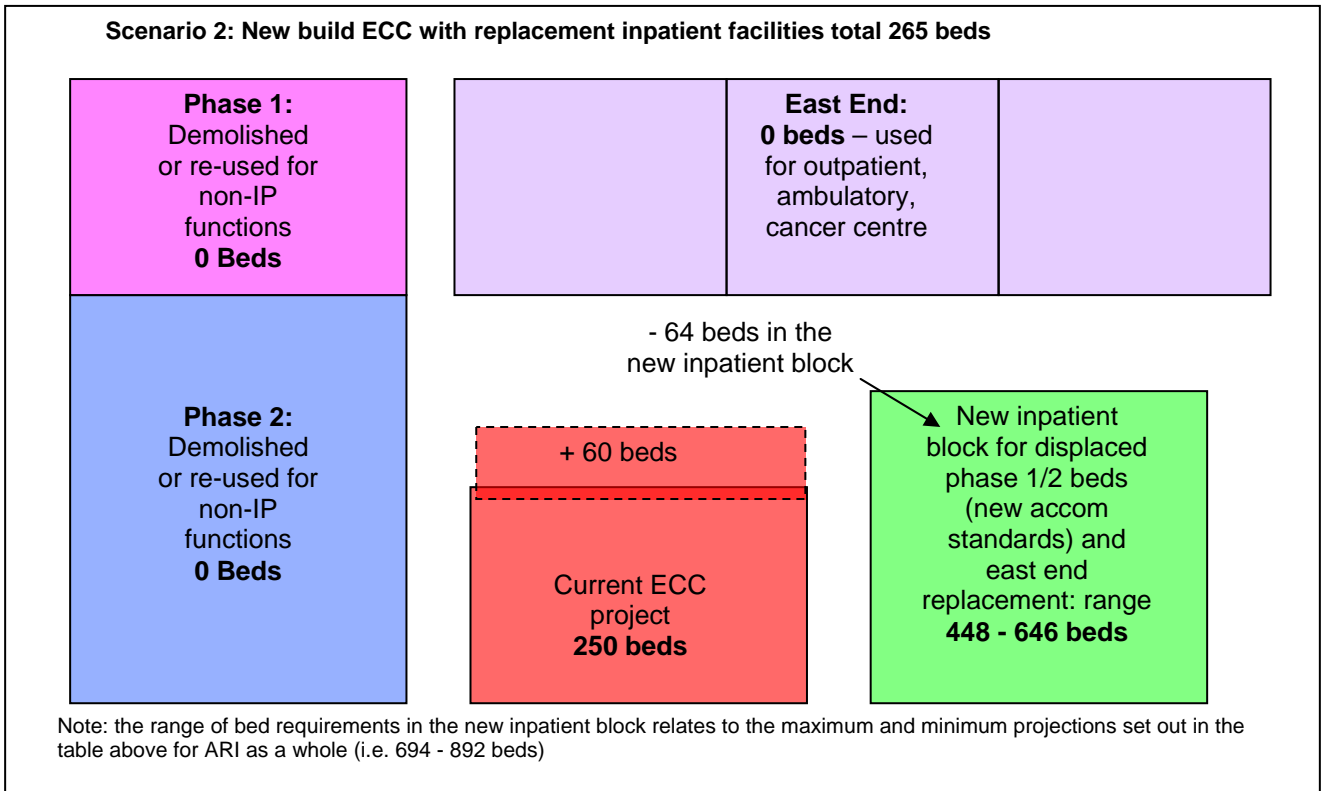
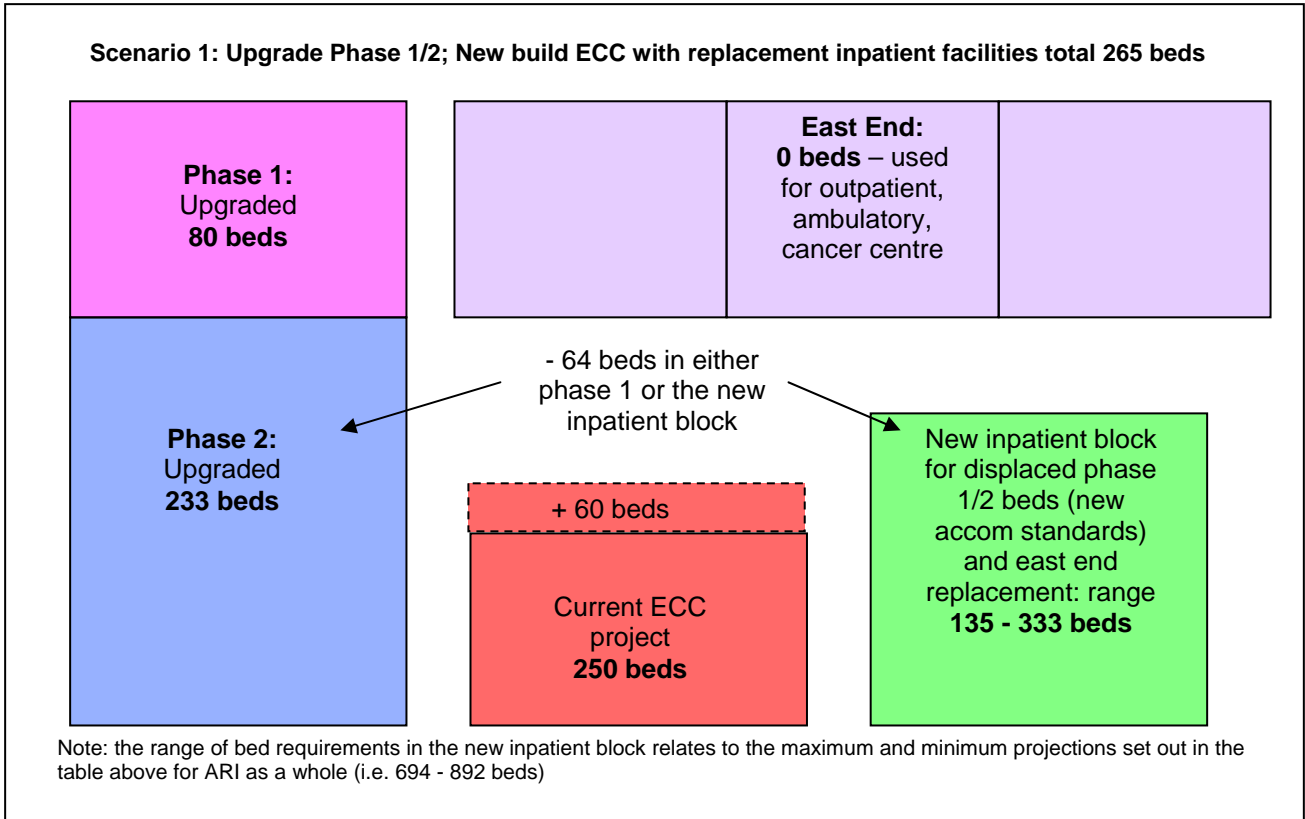
7. The planning of the ECC has been undertaken as part of the staged redevelopment of the Foresterhill site and within the context of the clinical strategy for ARI and the ARI Blueprint. It is important that the number of replacement beds provided by the ECC project does not exceed the minimum number of beds projected for ARI. At this stage the lower end of the projection is 694 beds and the upper end is 895 beds. The addition of a floor on the ECC will therefore contribute to future requirements and the project will remain well within the minimum projected need. The activity modelling is summarised in annex 1.

### Scenarios for the Configuration of Inpatient Facilities at ARI

8. Work has been done to determine if the proposed Emergency Care Centre is consistent with a range of possible futures for the configuration of inpatient facilities at Aberdeen Royal Infirmary and Foresterhill. The strategy for each part of ARI is also an influence and the current distribution of beds is outlined below:



9. There are two broad scenarios for the provision of modern inpatient facilities at Aberdeen Royal Infirmary to meet the space requirements for the services identified in the specification i.e.:
  - **Scenario 1:** Upgrade phase 1/2 to modern standards and replace the east end and displaced phase 1/2 capacity in new build (bed capacity will be displaced in phases 1 and 2 due to the need to apply modern accommodation standards of a minimum of 50% single rooms)
  - **Scenario 2:** Re-provision of inpatient facilities in new build consistent with the Foresterhill Development Framework with phases 1 and 2 being demolished or re-used for other non inpatient purposes
10. Each of the scenarios has a permutation i.e. with or without replacement an additional floor – the effect of an additional floor would be to reduce the size of a future stage. The scenarios are shown in the diagrams below (note: the figures below will increase by a further 60 if a further additional floor is added) :



11. The conclusions from the scenarios are that:

- Maximising the opportunity of the ECC project by adding a floor will reduce the size of future stages of bed provision
- The addition of a floor is consistent with the broad scenarios for bed configuration at Foresterhill

## Potential Service Use

12. There are broadly two potential uses for an additional floor:

### Cancer Service Inpatient Beds

- This has been discussed at the Cancer Centre Project Board and with the staff concerned. The preference of the cancer service clinicians is for the beds to be included in a comprehensive cancer centre. There are, however, broader issues that need to be taken into account including closer proximity to high dependency care within a larger inpatient facility and the sustainability of medical staffing.
- Advice has also been provided by Professor Alan Rodger, Clinical Director of the Beeton and adviser appointed by the Health Directorate. Professor Rodger will be submitting a formal report on Grampian cancer issues to the Scottish Government within the next month.

### Other Specialties

- There are many other specialties which currently occupy below standard accommodation that would benefit from co-location in the ECC facility e.g. renal, GI, cardiology, acute medicine for the elderly. As with cancer inpatient beds relocation to the ECC would provide modern standards of accommodation and eliminate the infection and backlog maintenance risks associated with the existing accommodation.
13. If a decision was made to add two further floors to the ECC the potential configuration would be as follows:
- Cancer inpatient services to occupy one floor, and
  - Renal and cardiology services to occupy a further floor

14. This configuration would result in all services with a major non surgical inpatient bed requirement being accommodated in the Emergency Care Centre.

## Re-use of Vacated Accommodation

15. Further replacement bed capacity in the ECC will provide considerable turning space within the east end of ARI. This space could be used to deal with a range of other issues e.g. the improvement of facilities for non inpatient cancer services, clinical support accommodation, day surgery, laboratories etc. Detailed planning will be undertaken to maximise the use of this turning space subject to a decision on an additional floor.

## Technical Feasibility

16. The project design team and the newly appointed Principal Supply Chain Partner (PSCP), RD Health, have confirmed that the addition of a floor is technically feasible and can be provided at marginal cost i.e. with only minimal increase in on-costs for extending lifts, stairs etc.

## Programme

17. RD Health have confirmed that the programme for the ECC can be maintained i.e. partial opening by the end of 2011 with full occupation during the early part of 2012. This is subject to receiving an instruction to including an additional floor in the project brief in early February.

## Costs

18. The final cost for the ECC project will be formulated by RD Health in the form of a target cost within Frameworks Scotland process by October 2009. Whilst this is a new process the outcome will be a price with the same level of certainty as a traditional tender price.

19. The budget for the project is £95m. This includes a core OBC cost is £84m plus optimism bias of 14%. A recent cost check indicated a cost of approximately £87m – the increase is due mainly to additional circulation space required by the detailed configuration of the services, and the need to increase fire protection. This sum also includes a project contingency of £4.6m which has not yet been allocated.

20. The cost of an additional floor containing up to 64 beds, with an area of 3,000m<sup>2</sup>, has been calculated by the design team at approximately £10m including VAT, fees, on-costs, equipment etc.

### **Health Directorate View**

21. The potential for adding a floor to the ECC in the context of improving cancer services was discussed with the Health Directorate in November 2008 and again in March 2009. SGHD advised that they would view such a proposal positively and would consider an addendum to the ECC OBC at an early date. It is likely that the funding would be organised by re-allocating the cancer centre funding included in the capital plan in 2012/13 if the total cost is beyond the maximum ECC budget i.e. £95m.

### **Conclusion**

22. The planning done for the Emergency Care Centre and the Blueprint for ARI demonstrates that there will be a requirement for replacement beds to modern standards beyond the level provided by the existing ECC project. A wide range of services occupy inpatient accommodation which is below currently agreed standards, and there is a need to provide a predictable programme for the replacement of cancer inpatient beds.

**Annex 1**

The activity modelling has taken account of the main targets included in the NHS Grampian Health Plan as follows:

- Transfer of up to 25% of inpatient activity from Aberdeen Royal Infirmary to Community Health Partnerships
- Relocation of specialist services to Aberdeen Royal Infirmary – specifically Geriatric Assessment from Woodend Hospital
- Achievement of best practice in terms of efficiency in the operation of inpatient services

The proposal to undertake the first stage of the replacement of inpatient beds as part of the Emergency Care Centre project first requires an assurance on the range of acute bed requirements over the next 10-15 years. The current bed complement at Aberdeen Royal Infirmary is 898. This, together with the agreement to relocate 90 geriatric Assessment beds from Woodend to Aberdeen Royal Infirmary gives a total requirement at current activity levels/practice of 988 beds. From this baseline the table 1 sets out the summary of inpatient requirements over the next 10 – 15 years:

<b>Table 1</b>							
	<b>Scenario 1</b> <b>(5% + 0%)</b>	<b>Scenario 2</b> <b>(5% + 15%)</b>	<b>Scenario 3</b> <b>(10%+ 25%)</b>	<b>"Best Fit" Scenario</b>	<b>Demo-graphic change (5%)</b>	<b>Demo-graphic change (10%)</b>	<b>Demo-graphic change (15%)</b>
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**NOTES:**

For Scenarios 1, 2 & 3: First percentage figure in brackets reflects efficiency improvement. The second figure reflects outward shift in activity from ARI

Best Fit Scenario is the likely planning assumption based on discussions with clinicians and managers.

Table 1 summarises the impact of a range of assumptions regarding activity shifts, efficiency and demographic change across broad specialty groups at Aberdeen Royal Infirmary. The detailed information is contained in the ARI Blueprint.

A “best fit” scenario has been identified following discussion with clinical services. This has been achieved by applying the appropriate scenario to each specialty based on progress in reaching the targets to date, and the potential for greater efficiency and intermediate care activity transfers. The “best fit” scenario is based on the assumption that the impact of demographic change/epidemiology/medical technology on inpatient bed requirements will be neutral. The three columns at the right of table 4.4 indicate the potential impact of a 5%, 10% and 15% growth due to demographic change. The staged approach to the redevelopment of Foresterhill means that assumptions can be adjusted stage by stage giving the ability to “future proof” the proposals.

Based on the assumptions set out in the Health Plan and the ARI Blueprint the inpatient bed modelling indicates that there is a minimum requirement for inpatient beds at ARI in the long term of 694 compared with the current 898; the maximum requirement is 892 beds based on the 15% growth scenario. The “best fit” scenario developed through the modelling process of 776 is the current working assumption for planning purposes. This will be adjusted in the light of actual performance and demographic change in the planning of future stages of the modernisation of inpatient services.

The resources released from this change will be used to support the transfer of activity to Community Health Partnership responsibility and to invest in more efficient ways of working, cost pressures and quality improvements as determined by NHS Grampian. There is a need to be cautious in assessing the level of

resource release that will be available due to the uncertain impact of changing demography, the need to meet increasingly challenging access targets, and the need to provide revenue funding to support NHS Grampian's capital investment programme.

The key issue in planning the capacity of the Emergency Care Centre is that the number of inpatient beds should not exceed the minimum projected requirement of 694. Investing in capacity within this level is low risk given the need to apply significant investment to deal with identified facilities risks.

Activity modelling has been undertaken to determine the range of inpatient bed requirements over the next 10 – 15 years. Given that the inpatient capacity included in the Emergency Care Centre will only be a contribution to the final total there is no requirement to agree with certainty what the final bed requirement will be.

Appendix 5

Example ECC configuration with two additional floors:

Floor	Emergency Care Centre
7	Add floor 2 Cancer
6	Add floor 1 Infection Unit Medicine for Elderly
5	Cardiology Renal + seminar
4	HDU Respiratory
3	Hyperbaric relocated GI Medicine for Elderly
2	Med and Surg short stay
1	Operational Centre CDU      Radiology
	Majors Minors      Radiology

**Appendix 6 – Independent Cost Adviser report on additional floor costs:**

Element	OBC Scheme	Cost/m <sup>2</sup> GIFA	OBC Scheme + Cancer Care Floor	Cost/m <sup>2</sup> GIFA	OBC Scheme + Cancer Care Floor + Generic Floor	Cost/m <sup>2</sup> GIFA	OBC Scheme + Cancer Care Floor + Shell & Core Floor	Cost/m <sup>2</sup> GIFA
<b>ESTIMATED RD HEALTH TARGET COST</b>	22,864 sq.m		25,875 sq.m		28,888 sq.m		28,888 sq.m	
<b>1 Construction Costs</b>								
Construction Elements	£61,142,163	£2,674	£67,597,040	£2,612	£73,839,542	£2,556	£69,849,020	£2,418
Ancillary Construction Costs	£12,090,771	£529	£13,256,294	£512	£14,421,817	£499	£14,018,694	£485
Element Total	£73,232,934	£3,203	£80,853,334	£3,125	£88,261,359	£3,055	£83,867,714	£2,903
<b>2 Fees &amp; Charges</b>								
Statutory Fees & Charges (Incl. PSCP OH&P)	£0	£0	£53,171	£2	£90,713	£3	£90,713	£3
Design Fees (Incl. PSCP OH&P)	£2,775,276	£121	£3,125,589	£121	£3,475,902	£120	£3,324,998	£115
Element Total	£2,775,276	£121	£3,178,760	£123	£3,566,615	£123	£3,415,711	£118
<b>3 PSCP Contingency / Optimism Bias</b>								
PSCP Element of Risk Register (2%)	£1,545,812	£68	£1,710,312	£66	£1,869,565	£65	£1,869,565	£65
Element Total	£1,545,812	£68	£1,710,312	£66	£1,869,565	£65	£1,869,565	£65
<b>TOTAL ESTIMATED TARGET COST</b>	<b>£77,554,022</b>	<b>£3,392</b>	<b>£85,742,406</b>	<b>£3,314</b>	<b>£93,697,539</b>	<b>£3,243</b>	<b>£89,152,990</b>	<b>£3,086</b>
<b>NHS GRAMPIAN DIRECT COSTS</b>								
<b>4 Fees</b>								
Design Team Fees for works prior to 19/1/2009; as agreed with NHS Grampian	£863,321	£38	£863,321	£33	£863,321	£30	£863,321	£30
Allowance for Statutory Fees & Charges - paid direct by NHS Grampian	£278,885	£12	£278,885	£11	£278,885	£10	£278,885	£10
Allowance for Supervisor Fees	£200,000	£9	£200,000	£8	£200,000	£7	£200,000	£7
Allowance for Cost Advisor Fees	£300,000	£13	£300,000	£12	£300,000	£10	£300,000	£10
Allowance for CDM Co-ordinator Fees	£100,000	£4	£100,000	£4	£100,000	£3	£100,000	£3
NHS Direct Costs (eg. Project Manager, Admin etc.); taken as 12% of Construction Costs less fees contained in sections 3 & 5; note: no additional fees have been included for the Cancer Care floor or the Shell & Core floor as instructed by NHSG	£3,042,991	£133	£3,042,991	£118	£3,042,991	£105	£3,042,991	£105
Element Total	£4,785,197	£209	£4,785,197	£185	£4,785,197	£166	£4,785,197	£166
<b>5 Equipment</b>								
Equipment Costs (as advised by NHS - see notes)	£6,961,875	£304	£6,961,875	£269	£6,961,875	£241	£6,961,875	£241
Contingency on Equipment Costs @ 7.5%	£525,622	£23	£525,622	£20	£525,622	£18	£525,622	£18
Inflation on Equipment Costs (see notes)	£755,657	£33	£755,657	£29	£755,657	£26	£755,657	£26
Allowance for equipment costs for Generic Floor	excl.	-	excl.	-	£1,085,902	£38	excl.	-
Allowance for equipment costs for Cancer Care Floor	excl.	-	£1,145,625	£44	£1,145,625	£40	£1,145,625	£40
Element Total	£8,243,154	£361	£8,388,779	£363	£10,474,681	£363	£8,388,779	£325
<b>6 NHS Contingency / Optimism Bias</b>								
Allowance for NHS Element of Risk Register (2%)	£1,545,812	£68	£1,710,312	£66	£1,869,565	£65	£1,869,565	£65
Element Total	£1,545,812	£68	£1,710,312	£66	£1,869,565	£65	£1,869,565	£65
<b>TOTAL NHS GRAMPIAN COSTS</b>	<b>£14,574,163</b>	<b>£637</b>	<b>£15,884,288</b>	<b>£614</b>	<b>£17,129,443</b>	<b>£593</b>	<b>£16,043,541</b>	<b>£555</b>
<b>ESTIMATED TOTAL PROJECT COST</b>	<b>£92,128,185</b>	<b>£4,029</b>	<b>£101,626,694</b>	<b>£3,928</b>	<b>£110,826,982</b>	<b>£3,836</b>	<b>£105,196,531</b>	<b>£3,642</b>

