

## **CHAPTER NINE - PREFERRED OPTION**

### **9.1 Proposed Scope**

- 9.1.1 The Preferred Option, Option 1, is to demolish the existing Barry and Cancer centres on the Royal Sussex Hospital campus and build new facilities to accommodate neurosciences, trauma on the Latilla campus, and a new cancer centre, teaching BSMS and non clinical offices on the Barry campus. A car park and future expansion site will also be provided. This would take place over three stages estimated to take approx nine years to deliver main buildings with a further period for Stage 3 and associated remedial works.
- 9.1.2 The cost of the Preferred Option is currently estimated at £420.1 million.
- 9.1.3 The Preferred Option has many benefits including the replacement of all outdated buildings on the south of the campus, and providing oncology with its own identity whilst being integrated with the 'Main Hospital'.
- 9.1.4 As part of their commission with the Trust, the Laing O Rourke Design Team has developed the design of the preferred option in some detail. Volume 1-Preferred Option Report of the Laing O Rourke OBC Deliverables, appended to this OBC separately, sets out a series of report and investigations which have informed the site analysis and preferred option development. 1:500 drawings showing the inter-relationships between the clinical and non-clinical departments in the development, plus 1:200 drawings of each department are provided. Standard rooms are shown at 1:50 scale.
- 9.1.5 The 1:500 layout drawings are also attached as **Appendix 9A**.
- 9.1.6 The capital costs for the preferred option, including the elemental cost plan, decanting and enabling programmes and the main construction programmes are set out in Volume 3 - Costings, Risks and Programmes of the Laing O'Rourke OBC Deliverables.

### **9.2 Reconciliation with Strategic Outline Case**

- 9.2.1 The key issues are:
- The land sales related to two potential disposals:
    - the current Outpatients building on the southern side of the Eastern Road opposite the Barry Building on the Royal Sussex County Hospital campus. The intention in the Strategic Outline Case was, potentially, to reuse the Barry Building for Outpatients and non –clinical support accommodation once new build accommodation had been provided for the ward accommodation currently in the Barry and Jubilee Buildings. This was valued at £4m in early 2008;
    - a piece of land on the Princess Royal Hospital campus which was adjacent to the area which will be vacated by the Hurstwood Park Neurosciences Centre. This was valued at circa £2m in July 2007;

9.2.2 The Trust has therefore decided not to include any potential land sales in the Outline Business Case as it cannot guarantee that the optimal value for money would be delivered for the public purse.

9.2.3 There have been two main developments in local and national policy since the approval of the SOC:

- The increased drive towards greater privacy and dignity in inpatient accommodation. From 2009/10, NHS Trusts which are not able to offer single sex inpatient accommodation may be fined for each breach of this duty. This will have the effect of increasing the number of single rooms, or ensuring that multi-bedded areas are designated as single sex only. The key principle is that patients who wish to use toilet or shower facilities should not have to cross an area occupied by someone of another gender. The SOC assumed that an average of 50% single rooms would be provided. The OBC assumes that an average of 63% will be provided in the new build;
- The review of the Fit for the Future service configuration proposals across West and Mid Sussex. The proposals contained in this originally envisaged that consultant-led maternity services at BSUH would be centralised at the RSCH campus. This particular proposal is no longer being pursued and consultant-led obstetric services will continue to be offered by the Trust from both its major campuses.

9.2.4 On a like for like comparison of costs and comparing the scope of the scheme once Trust-generated inclusions and exclusions have been calculated as shown in the table above, **the relevant cost increase from SOC to OBC is 6% in real terms**. This lies within the 10% allowed by the Capital Investment Manual and Department of Health guidelines

### 9.3 Capital Costs and Cash Flow

9.3.1 The build element of the 3Ts programme has a capital cost, at OBC, of £420.1m.

**Figure 9.1 The capital cash flow of the preferred option**

Year	Cost (£)
2010/11	11,695,100
2011/12	17,056,000
2012/13	46,537,800
2013/14	28,248,200
2014/15	37,038,500
2015/16	95,210,300
2016/17	59,848,000
2017/18	27,111,700
2018/19	17,555,400
2019/20	60,415,500
2020/21	18,436,100
2021/22	961,100
<b>Total</b>	<b>420,113,700</b>

Note: all costs include optimism bias, equipment, contingencies, inflation to out-turn and VAT. This excludes the cost of the Brighton & Sussex Medical School facility and any private patient development.

9.3.2 Figure 9.2 demonstrates the break down between stages as follows:

**Figure 9.2 Capital cost break down between Stages**

Stage	Cost (£)
Stage 1 Decants	33,721,984
Stage 1 Demolitions & Enabling	49,732,365
Stage 1 Build	233,445,316
Stage 2 Demolitions & Enabling	13,481,343
Stage 2 Build	85,880,349
Stage 3 Demolitions & Enabling	2,532,789
Stage 3 Build	1,319,555
<b>Total</b>	<b>420,113,700</b>

Note: all costs include optimism bias, equipment, contingencies, inflation to out-turn and VAT. This excludes the cost of the Brighton & Sussex Medical School facility and any private patient development.

9.3.3 Computer generated images of the new development are below in Figure 9.3.

**Figure 9.3 New Development**







## 9.4 Service Model

9.4.1 The 3Ts new build is planned to have an average of 65% single rooms overall, with 70% single rooms on the medical and elderly care wards. 3Ts Programme Board has discussed the proportion of single rooms on a regular basis during the planning phase to ensure that it meets the needs and preferences of the current and future generations of patients.

9.4.2 Planning has included national guidance; a review of the available research evidence, including from the National Patient Safety Agency<sup>1</sup>; advice from the Trust's Infection Management & Control service; site visits to other Trusts (e.g. the Hillingdon Hospital single room ward pilot, the Maidstone & Tunbridge Wells Trust's Pembury Hospital<sup>2</sup> development) and advice from NHS South East Coast. The ward designs and proportion of single rooms have been discussed in detail with and agreed by each specialty/clinical team to ensure that they meet the particular needs of each patient group, with internal challenge provided by the Trust's Chief Nurse. A review of the design according to productive ward principles is attached in **Appendix 9B**.

**Figure 9.4 Single Room Accommodation**

Ward	Total Beds	No. of Single Rooms	No. of Multiple Bays (4 Bed Bay)	Comments	Single room accommodation
Neurology Ward	30	14	4	Includes 2 telemetry	47%
Neurosurgery 1	21	9	3		43%
Neurosurgery 2	21	9	3		43%
Medical Ward 1	79	55	6		70%
Medical Ward 2 – Stroke	30	14	4		47%
Medical Ward 3	28	20	2		71%
CIS Ward	24	24	0	Includes 8 negative pressure rooms	100%
Cancer Inpatient	45	37	2	Includes 4 positive pressure rooms + 2 lead lined rooms	82%
<b>TOTAL</b>	<b>278</b>	<b>182</b>	<b>24</b>		<b>65%</b>

Note: excludes critical care beds (ITU, HDU and neurosurgery ITU) and acute assessment beds as these are usually excluded from the single room percentage calculation.

<sup>1</sup> *Single Bed versus Multi-Bed Hospital Rooms: The Case for Patient Safety – a Review of the Evidence*, National Patient Safety Agency (2009)

<sup>2</sup> *Pembury Hospital Design for Patient Safety*, National Patient Safety Agency (2008)

## Clinical Infection Service

9.4.3 The development will improve patient care directly, through enhanced research and teaching and in the event of a major outbreak or pandemic:-

- Patients with HIV are currently cared for in accommodation (Jubilee building) that is over 120 years old. The 3Ts development will provide modern, appropriate, purpose-built patient facilities in 100% single rooms, all with en suite toilet and bathroom facilities;
- The Clinical Infection Service will centralise clinical expertise in the management of patients with clinical infection. This will create an environment in which medically highly complex patients with HIV and other clinical infections, e.g. patients with HIV and TB co-infection, can be managed by different specialties in a single unit under common clinical protocols;
- The development will further strengthen the partnership between Brighton & Sussex Medical School and the NHS service and its reputation as a centre for academic and clinical research, multi-professional teaching and training. This will enhance patient care locally and, through research publications and collaborations, nationally and internationally;
- The facility will allow the service to respond more efficiently and flexibly to the changing epidemiology of hospital- and community-acquired infectious disease, in particular through the negatively pressured inpatient and treatment rooms. It will also provide an expanded isolation facility that has been designed to be able to be 'locked down' in the event of major outbreak.
- Patients in the CIS unit will be under one or more of the following teams: HIV Medicine, Infectious Diseases, Respiratory Medicine or General Medicine. These Consultants have different junior medical teams (training doctors). It is anticipated that there will be more shared care however it is planned to designate a team with overall responsibility (so that the junior medics are aware of their responsibilities).
- Consultant on-call provision for the unit is unlikely to change: there will always be an HIV Consultant, Respiratory Consultant and ID/Microbiology Consultant on call. The team has had initial discussions about cross-cover for the ID/Microbiology and HIV Specialist Registrars (SpR) on-call, so instead of two small rotas there would be one larger rota. (This would mean that the SpRs would do less on-call). This will be discussed in more detail at FBC stage and the implications for training will be considered (this would probably be positive since SpRs would gain broader experience). The concept of the CIS unit has been clinically-led and one of its aims is to promote joint working with the potential for cross-cover where clinically appropriate.
- Capacity modelling has been undertaken to size the Clinical Infection Service overall, which includes patients cared for by the HIV, Infectious Diseases and, as appropriate, General Medical Consultants. The design of the unit will allow some beds to be used as an isolation facility. The Trust has, therefore, not separately modelled the requirements for an isolation facility.



## Acute Brain Injury Centre

- 9.4.4 The new Acute Brain Injury Centre (ABIC) brings together into a single location the expertise of four key services in the management of patients with stroke: the existing Stroke Unit and acute rehabilitation service at the Royal Sussex County Hospital and the neurology and acute neuro-rehabilitation services from the Regional Centre for Neurosciences (currently on the Princess Royal Hospital campus). It will serve the population of Brighton & Hove in-hours and a wider catchment out-of-hours.
- 9.4.5 The ABIC will also draw on the wider tertiary care expertise of the Regional Centre for Neurosciences. Strengthening this relationship is particularly important in the optimal treatment of young patients with atypical strokes and some patients with intracerebral haemorrhage or subarachnoid haemorrhage. Although there are relatively few indications for neurosurgery in patients with stroke, appropriate intervention in specific cases (e.g. cerebellar haematoma, hydrocephalus, massive peri-infarct oedema) may be life-saving. There may also be a role for interventional neuroradiology in the management of patients with basilar thrombosis.
- 9.4.6 Work is currently underway and will be completed for the FBC to quantify the number of beds within Neurosciences currently used for post-acute rehabilitation, i.e. that could potentially be provided in a dedicated rehabilitation setting in line with the PCTs' 'Strategic Framework for Adult Neuro-Rehabilitation in Sussex'. The results of this audit, the impact of additional Neurosciences activity on existing rehabilitation services and identified rehabilitation service gaps (e.g. for chronic conditions such as MS) will then be discussed with PCT commissioners and other service-providers. The outcome will be factored in the bed model for Neurosciences within 3Ts.
- 9.4.7 The detailed clinical and operational model is under development and will be finalised at Full Business Case stage, in partnership with the Sussex Stroke Network. Key features will include the following:-
- Development of the ABIC and refinement of the stroke pathway will allow patients with stroke to be seen rapidly by a senior/experienced member of the stroke team. This will enhance early intervention and ensure standardisation to best clinical practice;
  - The TIA service currently offers rapid weekday access, aiming to see the majority of patients with high-risk TIA within 24 hours of referral. Future developments include a six day service that aims to see all patients with high-risk TIA within 24 hours of referral. This is expected to reduce the 8% two day stroke risk for patients with high-risk TIA through early intervention, including provision of carotid endarterectomy;
  - In the 3Ts plans, the ABIC is vertically co-located with specialised neuro-imaging facilities (CT, MR) to ensure ease and speed of access;

- The ABIC's ambition is to develop pathways within the Sussex Stroke Network for the small number of young patients who would benefit clinically from acute intervention beyond the scope of a local acute hospital, for example
- intra-arterial clot removal, intrarterial thrombolysis, development of carotid stenting. The co-location of neuroradiology will support this development;
- Bringing together clinical expertise in the management of patients with acute brain injury will provide opportunities for joint teaching and training of staff and will strengthen academic links with Brighton & Sussex Medical School.

### **Imaging and Nuclear Medicine**

- 9.4.8 The 3Ts development will create an integrated Imaging, Neuro-Imaging, Nuclear Medicine and Interventional Radiology service. Patients will benefit from the purpose-built environment that is being designed to ensure their privacy, dignity and safety.
- 9.4.10 The Regional Centre for Neurosciences currently (2008/9) uses 0.67 MRI at the Lister (based on the current productivity of the MRIs at RSCH, in scanning minutes). Capacity planning for neuro-imaging in 3Ts has assumed that Mid Sussex neuro-outpatients will continue to use this facility (0.21 MRI). This would reduce the Trust's overall use of this facility. However the impact on MRI utilisation of other service moves to PRH is still to be fully assessed; this is outside the 3Ts project. It should also be noted that the Trust has a block contract with the Lister for provision of MRIs.
- 9.4.11 Patients will also benefit from improved access. The planned increase in capacity comprises three elements:
- Additional capacity commensurate with the planned expansion of the Regional Centre for Neurosciences and Sussex Cancer Centre and the establishment of the Royal Sussex County Hospital as a Major Trauma Centre;
  - Additional capacity to ensure that the Imaging & Nuclear Medicine service is able to achieve a maximum two week wait for investigations. This allows two diagnostic cycles to be incorporated within the six week diagnostic phase of the 18 week pathway. Although the current MR scanners operate over extended hours seven days a week and additional capacity is purchased from the Independent Sector, meeting the access targets presents a considerable daily challenge; and
  - Some additional flexibility in recognition of the gradual increase in the rates of clinically-indicated CT and MR, as highlighted through the Department of Health's National Diagnostics Capacity Planning Programme (NDCPP)<sup>3</sup>.
- 9.4.12 The new Regional Centre for Neurosciences on the Royal Sussex County Hospital campus will be a modern, purpose-built development. It will offer significantly higher standards of patient privacy and dignity, with 47% single rooms on

<sup>3</sup> 'Evidence for a probable and growing diagnostic deficit in MRI and CT access in the NHS in England', Rafferty, White & Marchand (2006) for *The National Diagnostics Capacity Planning Programme*



the neurology wards and 43% on the neurosurgery wards to reflect the need to close observation and monitoring. All single rooms and all multi-bed bays will have en suite toilets and bathrooms

- 9.4.13 The expansion of the Centre will also significantly improve patient access. The additional inpatient neurosurgical beds and the increase from two to three neurosurgical theatres will allow Sussex patients who have to travel to London currently to be treated locally, as set out in the Sussex Tertiary Services Commissioning Strategy.
- 9.4.14 GP practices immediately to the north of the Sussex county boundary (i.e. in SE Surrey and SW Kent) already refer a proportion of their patients to the Regional Centre; the remainder are referred to London. The Centre would wish to attract a greater proportion of these patients. Modelling for the 3Ts development has assumed that the proportion of referrals from these GP practices rises to 70%. The number of patients is relatively small, however; equivalent to 2-3 beds. This change in referral pattern is included in the Outline Business Case on a tentative basis. Discussions with the respective Kent and Surrey PCTs and GP practices will be undertaken during the Full Business Case stage.
- 9.4.15 In addition to the standard growth assumptions agreed with the Sussex PCTs, the modelling includes four additional neurology inpatient beds. This provision is for patients who are currently managed by the Regional Centre's neurologists in local acute hospitals but who would benefit from being transferred to the Regional Centre. The Sussex Neurology Network has confirmed that it 'absolutely supports the proposal that appropriate patients with acute neurological conditions should be managed in the Neuroscience Centre rather than in a general hospital [and that in doing so] there are clear benefits both for patient outcome and for length of stay'.

### **Severe Head Injury**

- 9.4.16 Guidance from the National Institute for Health & Clinical Excellence states that clinical outcomes for patients with a major head injury (i.e. GCS  $\leq$  8) are improved if the patient is managed within a Neurosciences Centre 'irrespective of the need for neurosurgery'<sup>4</sup>. Initial modelling of the Trauma Audit & Research Network (TARN) data for Brighton & Sussex University and East Sussex Hospitals Trusts, extrapolated for the Neurosciences catchment, indicate that this will require no more than four additional beds. This has been included in the modelling and will be validated at Full Business Case stage.

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<sup>4</sup> *Head Injury: Triage, Assessment, Investigation and Early Management, Ibid*

- 9.4.17 The development of an Acute Brain Injury Centre, which will co-locate and bring together the clinical expertise of the neurology, stroke and acute rehabilitation services is discussed in detail above. The transfer will also significantly enhance the out-of-hours neurology cover provided for patients on the Royal Sussex County Hospital campus.

### **Regional Spinal Surgery Unit**

- 9.4.18 Complex spinal surgery is currently undertaken by neurosurgeons within the Regional Centre and by orthopaedic surgeons at the main Princess Royal Hospital. The expanded Regional Centre for Neurosciences will cohort these patients and the associated clinical expertise within a Regional Spinal Surgery Unit. Initial discussions have been held with East Sussex Hospitals Trust about centralising its complex spinal surgery within the Regional Unit. The associated patient activity is equivalent to 2-3 beds. Again, this is expected to be finalised at Full Business Case stage.
- 9.4.19 This bed modelling assumes that relatively straightforward spinal surgery will continue to be referred to the independent sector Sussex Orthopaedic Treatment Centre, which is also located on the Princess Royal Hospital campus.

### **Post-Acute Rehabilitation**

- 9.4.20 The Regional Centre's Allied Health Professions currently provide neuro-rehabilitation during the patient's acute post-surgical phase and for a period thereafter while the patient is awaiting transfer to the Sussex Rehabilitation Centre, to another facility or into the community. In line with the Strategic Framework for Adult Neuro-Rehabilitation Services adopted by the Sussex PCTs in 2009, the Regional Centre is reviewing its rehabilitation service to quantify the patients who could transfer to the Sussex Rehabilitation Centre (SRC) earlier and any changes that this would require in the SRC admission criteria. The aim is to ensure that the Regional Centre's resources can be concentrated on patients who are not yet medically fit to transfer to another facility. This is expected to be resolved during the Full Business Case stage.

### **Radiology**

- 9.4.21 Planning for the re-provision of the Sussex Cancer Centre in the 3Ts development has responded to these analyses and commissioning intentions and assumes the following provision:-

#### **Sussex Cancer Centre**

- six Linacs (an increase of two from current) plus one decanting bunker. The plans assume three high-energy bunkers and four medium-energy bunkers; which of these will be the decanting bunker will be determined at Full Business Case stage.

#### **East Sussex**

Version 17	Chapter 9	Page 10 of 64	Date: January 2012
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- a linked unit of three Linacs at East Sussex Hospitals Trust. This is subject to a separate business case outside the 3Ts development.

#### West Sussex

- a linked unit of two Linacs 'from a West Sussex coastal location, probably Worthing [Hospital]', in line with West Sussex PCT's commissioning plans for radiotherapy<sup>5</sup>. Again, this would be subject to a separate business case outside the 3Ts development.

#### Haematology-Oncology

9.4.22 Planning for the 3Ts development has addressed these issues. The Stage 2 development includes a modern, purpose-built, integrated haemato-oncology inpatient ward that has been sized, as set out in the activity planning assumptions, to provide more integrated, local care for patients with cancer. Specifically, the expansion will allow the service to:-

- Repatriate patients who are diagnosed at the Sussex Cancer Centre with acute leukaemia and require intensive inpatient chemotherapy, but who are currently treated in other hospitals across the Sussex Cancer Network and in London because of insufficient capacity at the Royal Sussex County Hospital. This development is therefore in line with the IOG for Haematological Cancers<sup>6</sup> and with the Sussex Cancer Network's strategic intention<sup>7</sup> that 'by December 2012, Worthing Hospital Level 2 patients are required to be treated at the Royal Sussex County Hospital';
- Repatriate earlier than currently, patients who have received a bone marrow transplant and transfusion at the Royal Marsden Hospital (i.e. Level 3 patients), which will allow them to have a greater part of their post-transplant inpatient stay locally;
- Accommodate the haemato-oncology inpatient beds from the Renal Unit (Millennium Building) and beds currently used on the general medical wards to provide a single, integrated facility that brings together clinical expertise that is currently disparate; and
- Treat the small number of patients (mostly with cord compression) who require inpatient radiotherapy at the Sussex Cancer Centre but who are currently in beds at East Sussex Hospitals or Worthing Hospital and travel to the Centre on a daily basis for treatment. These patients will in future be inpatients at the Royal Sussex County Hospital during their treatment (usually 7 days) and then transferred back to their local acute hospital once the course of treatment is complete.

<sup>5</sup> West Sussex PCT's high-level analysis suggests that 1.8 Linacs will be required by 2021 to meet the needs of the former PCT area of Adur, Arun and Worthing, although not all of this caseload could be provided safely from the linked unit.

<sup>6</sup> *Guidance on Cancer Services : Improving Outcomes in Haematological Cancers – The Manual*, National Institute for Clinical Excellence (2003)

<sup>7</sup> *Service Delivery Plan 2009/10 – 2011/12*, Ibid

## Chemotherapy

9.4.23 Planning for the 3Ts development aims to address this issue. The Stage 2 development includes a modern, purpose-built haemato-oncology Day Unit that has been sized to accommodate expected growth in demand, as set out in the activity planning assumptions. This will integrate the Day Units currently provided in the Sussex Cancer Centre and haematology unit.

## Trauma

9.4.24 The development includes the following:

- A dedicated polytrauma theatre with full interventional capability, plus an additional interventional theatre for elective interventional radiology and to provide a back-up for the polytrauma theatre;
- A polytrauma ward; and
- A helipad, in line with NCEPOD and Royal College of Surgeons/British Orthopaedic Society recommendation that 'a helicopter pad close to the A&E department is mandatory [for Major Trauma Centres and that] there should be **no additional secondary journey** by road.'

## 9.5 Clinical Planning Considerations

9.5.1 Since 2004, work has been undertaken with clinical staff across the Trust to develop the overall model of care across the Trust (as a Trust working on two campuses as one hospital). The first key development was the development of PRH into a hospital which would accommodate the majority of the planned patient care across the Trust, whilst maintaining an Emergency Department and Maternity service to treat the people of Mid-Sussex and RSCH as the main site which would deal with very specialist care as well as the emergency care for the people of Brighton & Hove.

9.5.2 In 2008, the Trust began work on the preparation of a new major stage of development which has since become known as the 3Ts development. Work began in earnest at this point to identify what would need to be in such a development and the optimum way in which clinical services should be planned within any new development.

9.5.3 The following were taken as fixed points in these discussions:

- The services currently accommodated in the Emergency Department, Pathology extension, Sussex Cardiac Centre, Sussex Kidney Unit and the RACH would be excluded from the proposed redevelopment as most of these were accommodated in developments which had opened after 1995;
- The services in the Thomas Kemp Tower would not be relocated as many of these functions (for example surgical beds and ITU) relate to admission through the Emergency Department;



- The remaining hospital overall needed to remain fully operational throughout the development.
- 9.5.4 The following key principles were discussed as part of the process of identifying how the development could be phased:
- Services could be relocated off-site permanently if this was clinically appropriate and sustainable;
  - Services could be relocated off-site temporarily if this was clinically appropriate and sustainable;
  - Priority had to be given to maintaining clinical services on-site wherever possible and therefore support and administrative functions should be prioritised for moving off-campus (either permanently or temporarily) during the development.
- 9.5.5 It was apparent that in order to implement a large scale development on the site, some services and functions would need to be relocated either permanently or temporarily whilst building work was being undertaken. This is known as “decanting” and is a typical term used in NHS major developments to describe this process.
- 9.5.6 In 2008, the Trust prepared a “Strategic Outline Case” for the 3Ts development and this was approved by South East Coast Strategic Health Authority (the regional headquarters of the NHS - now known as NHS South East Coast) in July 2008. The Strategic Outline Case sets out the overall need for a major capital investment rather than the detail of how it will be undertaken (this is the role of later stages in the NHS Capital Approval procedures).
- 9.5.7 The Strategic Outline Case examined a wide variety of service configurations across 14 different options, concluding that a mainly new-build option which provided facilities for a Major Trauma Centre should be provided. The Case contained only a very cursory examination of how these options could be accommodated on the site based on a high level appraisal of the space required, in line with the purpose of such a document.
- 9.5.8 The next phase of the approval process is known as “Outline Business Case” and describes the best value for money way to implement the overall strategy approved in the Strategic Outline Case. This stage selects a preferred way forward in building and phasing terms and sets out the optimal way in which it will be funded. The final stage of the NHS capital investment process is known as the “Full Business Case” which identifies proposals for the detailed implementation of the scheme selected in the Outline Business Case. The Trust will undertake this final stage of the process once a Full Planning Consent has been secured which will unlock the approval of the Outline Business Case.
- 9.5.9 The Trust embarked on the Outline Business Case stage of the process in October 2008. In doing so, it selected Laing O’Rourke as a Principal Supply Chain Partner (under the Department of Health’s ProCure 21 procurement framework) with BDP as architects and lead designers. BDP has also been

the lead designer for the new RACH and had been working intermittently with the Trust on site development studies since 2004.

- 9.5.10 During this time, the Trust, in developing its requirements for the development, undertook another series of internal meetings with clinical teams to give further thought to the “on-site/off-site” debate for the period of construction and what would be permanently housed in the new development.
- 9.5.11 The major constraint to what could be achieved during the construction phase clearly lay with the Barry and Jubilee buildings given that these contain almost 200 inpatient beds and the RSCH site main imaging department. Of these, the inpatient beds were the most significant challenge.
- 9.5.12 The Trust examined the potential to decant, temporarily, the entire inpatient bed complement (or the maximum number possible) to other locations. The two locations which were examined were:
- Brighton General Hospital, and;
  - Southlands Hospital.
- 9.5.13 In theory, Brighton General Hospital was the best location of the two given that it was within Brighton (just over 1 mile from the RSCH site) and had a number of areas which could, potentially, be refurbished for inpatient accommodation. Southlands Hospital had the potential to accommodate around 40 beds, but not the entire complement. Also, Southlands Hospital was of a lower clinical intensity, mainly being concerned with rehabilitation rather than acute services.
- 9.5.14 In discussion with clinicians and paying regard to guidance on the provision of services from the Royal Colleges, both options were discarded in October 2008 because:
- As well as general inpatient beds, some intensive care facilities and support would be required at either site given the level of illness of some of the patients who would be transferred;
  - The majority of patients admitted into the 200 beds in the Barry Building were admitted through the Emergency Department (“ED”). They would therefore need to be stabilised and have initial treatment before transfer to an inpatient bed elsewhere. Patients may also have to be transferred back to the RSCH for other investigations or treatment as both BGH and Southlands lacked the general infrastructure to undertake this. This would require a significant number of transfers between sites on a daily basis which would compromise patient safety and overall continuity of care – this is entirely contrary to Royal College guidance;
  - If either of these obstacles could be overcome in support facility terms (and Royal College guidance), it would place a significant workforce burden on the Trust requiring additional staff to be recruited for the period of decanting, to double up certain functions so that they could operate at the remote location and on the RSCH site.

- 9.5.15 There was considerable clinical (medical and nursing) opposition to either of these sites being used as temporary (and in this context at least five years) locations for inpatient beds. It was also noted that acute inpatient beds had been closed at BGH and moved to RSCH in the late 1990s/early 2000s for precisely these reasons.
- 9.5.16 The Trust team therefore concluded that there was little or no prospect of relocating the entire bed complement to another site and that the absolute maximum which might be capable of relocation would be up to 50 beds (the complement of Jubilee Wing) if a suitable group of patients could be identified and this was agreed as clinically appropriate. The only place felt to offer some potential was for these beds to be relocated to a temporary facility at PRH.
- 9.5.17 It was therefore clear in late 2008 that the Barry Building would have to stay in place during the period of construction.
- 9.5.18 This meant that the only suitable area on the site which could be developed as a first main stage was from the western edge of the cancer centre to the eastern edge of the Barry Building (if Jubilee wing beds could be located elsewhere on site or within the Trust).
- 9.5.19 This had a number of clear advantages:
- Apart mainly from Jubilee Wing and the Nuclear Medicine department, the functions on this part of the site were mainly administrative and support functions and the buildings in which they were contained were generally of low density – meaning that it was potentially possible to find a decant solution which was achievable without disrupting patient care;
  - This area was directly to the south of the main Emergency Department and the base of the Thomas Kemp Tower, which meant that there was good potential to join up the Emergency Department and the TKT theatre complex into a new development;
  - The Barry Building wards and main Imaging department could remain operational.

## **9.6 Bed Requirement in 3Ts-review of original scoping exercise**

- 9.6.1 The Trust undertook a detailed planning exercise to examine the current and future bed needs of the Trust based on agreed growth projections for local District General Hospital services, the quantum of activity in neurosciences, trauma and cancer services associated with treating patients in Sussex and the likely growth in these services.
- 9.6.2 This exercise, which is fully supported by the Trust's clinical teams and NHS Sussex (as the commissioners of hospital services) showed that an additional 100 beds would be required on the RSCH site following the relocation of neurosurgery and relocation of services from elsewhere.
- 9.6.3 These are composed of:

- 45 current neurosurgical intensive care, general neurosurgical and neurology beds which transfer from Hurtswood Park;
- 42 additional neurosurgical intensive care, general neurosurgical and neurology beds;
- 26 additional cancer beds;
- 9 additional HIV and clinical infection service beds;
- 16 additional intensive care and high dependency beds;
- additional major trauma beds.

9.6.4 With a reduction in beds of 48 across the rest of the RSCH site through increased efficiency and performance in line with other Teaching Hospitals, this yields the requirement for an additional 100 beds.

9.6.5 The 3Ts development contains 361 beds in total, made up of the 100 additional beds above plus 261 other beds – from the demolished Barry Building and internal reorganisations of beds from the existing bed complement (mainly ITU and HDU).

## 9.7 **Overall Model of Care**

9.7.1 The Trust had also identified a preferred overall model of care which, where possible, would separate “hot” and “colder” clinical activities on the site based on their proximity to the Emergency Department.

9.7.2 “Hot” activities can be defined as those which have a close relationship with the Emergency Department – so those patients who are mainly admitted for diagnosis, treatment or inpatient care through the ED. These can be defined as:

- General medicine – 80% of patients are admitted through the ED;
- Care of the elderly – 90% of patients are admitted through the ED;
- Stroke - Well over 90% of patients are admitted through ED;
- Clinical Infection – Almost 30% of patients are admitted through the ED;
- Major Trauma – by the nature of patient care group, all are admitted through the ED apart from the relatively small percentage (circa 12%) who could potentially be admitted via Air Ambulance.

9.7.3 Neurosurgery and trauma would also need their own dedicated operating theatres close to ED (to facilitate quick assessment of patients and to get them to treatment facilities as quickly as possible and with the minimum of travel distances) and to the operating theatres in the Thomas Kemp Tower (to ensure efficient management of all the main theatres on the site).

9.7.4 In order to function effectively, all of these clinical functions would also need other functions such as imaging (MRI, CT and normal x-ray) to be located



alongside them to assist in the rapid diagnosis of patients and then to ensure that the treatment recommended can take place as quickly as possible – which is key to ensuring the best outcome for these groups of patients.

- 9.7.5 “Colder” activities can be defined as those which are mainly elective or planned in nature and which do not require such a close relationship with the Emergency Department. These can be defined mainly as radiotherapy and chemotherapy patients and the inpatients beds which are associated with the cancer centre. There are a small number of patients who are admitted through the ED for cancer treatment, but the majority (90+%) are planned treatments.
- 9.7.6 There are also patients in neurosurgery, neurology and HIV who are seen on a booked, planned basis who would not necessarily need such a close relationship to the ED.
- 9.7.7 These activities also have diagnostic facilities which need to be in close proximity to afford efficient diagnosis and treatment (again, such as imaging).
- 9.7.8 The other consideration was whether there could be a complete separation of “hot” and “colder” facilities on the site. This would mean that, if this principle was applied rigorously across all departments and specialties, there could be effectively two neurosurgical departments (one elective and one emergency) – perhaps in different and separate buildings. From discussion with the clinical teams, it was quickly concluded that a total separation in this way would be inefficient in staffing terms.
- 9.7.9 Hence, where a department of function was overwhelmingly “hot”, all of its functions would be located in one geographical location with the support functions required to ensure that diagnosis and treatment could be undertaken efficiently. Also, where there were identified clinical benefits in locating a “colder” function alongside a “hot” function, such as locating the stroke ward (hot) with neurology (“colder”) and having neurology and stroke close to neurosurgery these were also adopted.

## 9.8 Calculation of NHS Space Requirements

- 9.8.1 The calculation of space in NHS developments is guided by the Health Building Note (HBN) series, volumes of which are published from time to time by the Department of Health for the NHS in England. The devolved administrations also publish similar documents – in many cases they are the same.
- 9.8.2 Each HBN is produced by a panel of NHS clinicians, managers and private sector advisers and is a statement of guidance to the NHS based on good practice in how clinical and support departments within healthcare facilities can operate and the levels of accommodation which are required. These schedules of accommodation contain the types of rooms which should be provided and the recommended sizes for each one, based upon custom and practice and in some cases on ergonomic research.
- 9.8.3 As noted above, the HBN series are guidance for the NHS and are not mandatory. However, NHS organisations are expected to take cognisance of this guidance when planning new developments or refurbishments and to tailor the guidance to local circumstances and operational practice.

- 9.8.4 It should also be noted that HBNs are not always available for all departments in a hospital development. In those cases, NHS bodies may develop their own operational policies and schedules of accommodation and can interpolate other HBNs to achieve this.
- 9.8.5 In some cases, older HBNs provide schedules of accommodation based on a series of particular scenarios: for example, HBN 12 which deals with Outpatient Facilities in acute hospitals, identifies Outpatient Department which may have 6 or 12 consulting/examination rooms and builds up the schedule of accommodation around this figure. However, if as a result of local calculations a particular outpatient functions requires 5 or 8 consulting/examination rooms, then an interpolation of the guidance for 6 or 12 is required to arrive at a suitably endowed outpatient suite for 5 or 8 rooms.
- 9.8.6 The HBN provides a “Departmental” space – which is essentially the space identified from the available guidance and good practice – for that particular departmental space or function. The departmental space also provides an allowance for the circulation space *within* a particular department.
- 9.8.7 This allowance for departmental space excludes circulation (corridors) *between* departments, main hospital streets, space for lifts and stairs (vertical circulation) and the space required for engineering plant for a building as a whole. These latter areas are driven by the final design solution (both architectural and engineering) and are only finalised once the departmental adjacencies are fixed and an assessment has been made of the requirements for lifts (for patients, staff, visitors and supplies) and the technical engineering requirements of the building or buildings.
- 9.8.8 There are, therefore, two measures of space within an NHS facility: the departmental space and the gross internal floor area (or GIFA). The GIFA includes all the main circulation, lift areas and engineering plant requirements.
- 9.8.9 It should also be noted that the original proposals for a separate multi-storey car park as part of the proposed development fell outside the GIFA for the development (as it was a separate building which is only semi-enclosed and therefore is counted in a different way). Once the car parking provision was brought underneath the building, it technically counted as part of the GIFA of the proposed development.
- 9.8.10 In essence, the overall total in each schedule of accommodation (as compared with the HBN or the interpolation of that guidance – the departmental space described above) was then used as a target figure for that particular clinical or support department.
- 9.8.11 The schedules were reviewed by the Trust team to ensure that the overall totals lay within the Trust’s ability to afford the development. Once the overall total for each department was agreed within the project team, the Trust team and Cyril Sweett discussed and agreed the detail with wider user groups for each of these departments.

- 9.8.12 These user groups were composed on clinicians (in the widest sense), managers and facilities management staff. The expectation was that each user group would tailor the draft schedules to local practice whilst remaining within the target total provided. Any variance from this is required to be agreed by the Trust Programme Director and 3Ts Clinical Director as part of a carefully managed change management process.
- 9.8.13 When the schedules were agreed with each clinical and support service user group, these were then provided to the Design Team to commence drawing up:
- 1:500 scale plans which showed the inter-relationship between different departments both within the two stages of 3Ts, but also to ensure that there was coherence across the site when linked to the existing estate which lay outwith the planned development;
  - 1:200 scale plans of how rooms would be arranged within each of the departments, and;
  - 1:50 scale plans of the furniture and equipment within each room.
- 9.8.14 The overall content of the scheme, the resulting departmental areas and the resultant overall scope and size of the proposed development were reviewed at key points in the development process between October 2008 and December 2010 and amended as necessary as long as these changes could be afforded in capital and revenue terms.
- 9.8.15 The planning for which functions needed to be close to each other is summarised below:

<b>“Hot” Functions</b>	<b>“Colder” Functions</b>
Medical wards	Cancer wards
Care of the Elderly wards	Radiotherapy
Stroke ward	Cancer Day Care
Clinical Infection (including HIV) ward	Palliative Care
Neurosurgery wards	
Neurosurgery Theatres	
Trauma theatre	
Imaging associated with “hot” functions	
Nuclear medicine	
<b>Place alongside “hot” functions</b>	
Neurology ward	
Imaging associated with “colder” functions	
Clinical infection and HIV Outpatients	
Fracture clinic (for relationship with trauma and imaging)	

9.8.16 There were also a number of outpatient functions on the development site which would be displaced by the proposed development and which would need de-canting space, either permanently or temporarily. These are:

- Rheumatology;
- ENT and Audiology.

9.8.17 In order to reduce the amount of time these functions were displaced, it was decided that they should be accommodated in whichever stage was completed first.

9.8.18 It was also decided that other administrative functions displaced could be accommodated in whichever stage of development was most appropriate depending upon the ultimate clinical configuration which would be agreed.

## 9.9 Capacity

9.9.1 The capacity of the solution reflects an assessment of demand, as outlined in the service model above. Calculation of capacity based upon current activity and predicted demand results in a requirement of 100 new beds (see relevant table overleaf).



**Table 9.7 Change in Bed Numbers from Current Baseline to 2017 Model Change**

Specialty Group	Current beds	Beds Re-quired at 2020/21	Change in Demand	3T Beds
General, Respiratory and Elderly Medicine	214	251	37	177
Critical Care	17	22	5	28
Clinical Infection Service	13	16	3	24
Haematology/Oncology	17	39	22	45
Major Trauma	0	21	21	
Trauma & Orthopaedics *	61	77	16	
Renal	25	30	5	
Cardiac Services	55	75	20	
Surgery	125	139	14	
<b>Royal Sussex County Hospital (Excl Obs/Paeds/A&amp;E)</b>	<b>527</b>	<b>671</b>	<b>144</b>	<b>274</b>
Neurology	10	24	14	30
Neurosurgery	28	41	13	42
Neuro ITU	6	12	6	15
<b>Hurstwood Park Neurosciences Centre</b>	<b>44</b>	<b>77</b>	<b>33</b>	<b>87</b>
General, Respiratory and Elderly Medicine	116	130	14	
Surgery	29	32	3	
Trauma & Orthopaedics	37	38	1	
<b>Haywards Heath - Princess Royal Hospital (Excl Obs/Paeds/A&amp;E)</b>	<b>182</b>	<b>200</b>	<b>18</b>	<b>0</b>
<b>Total BSUH (Excl Obs/Paeds/A&amp;E)</b>	<b>753</b>	<b>948</b>	<b>195</b>	<b>361</b>
Replacing	261			
Additional Beds	100			
Theoretical excess in bed demand - likely to be addressed through demand management & new bed capacity at PRH	95			

## 9.10 The Preferred Option- Design Development since 2009

9.10.1 During 2009 and 2010, design was progressed on Option 1 and discussions continued between the Trust, the Design Team, Brighton & Hove City Council and English Heritage with regard to the design of the proposed development – and in particular the scale and mass of the main first stage of development. Parallel discussions and studies were undertaken with regard to the Stage 2 site and the use of the Barry Building, which are discussed in a subsequent section.

9.10.2 Work also continued on the development of the Trust's detailed clinical brief which produced room by room schedules for each department in the proposed development. In January 2010, following a series of discussions, the Trust and the Design Team decided that the Stage 1 building would need redesign to meet the concerns of Brighton & Hove City Council and English Heritage which were primarily:

- The bulk, mass and height of the octagonal Stage 1 tower;
- The appearance of the helipad on the Stage 1 tower;
- The visual intrusion of the Stage 1 tower and the helipad, particularly when seen from Lewes Crescent, one of the key heritage assets in the City.

9.10.3 Two main options were examined:

- A refinement of the octagonal tower building form (this was known as “Option A”), and;
- A more radical redesign which reorganised the clinical accommodation – particularly the wards at upper levels – into three “fingers” to reduce the bulk and massing of the building as it is seen from Eastern Road and the surrounding streets and also to reduce the height of the building (this was known as “Option B”).

9.10.4 It became apparent that the more radical redesign had the potential to meet the concerns raised by the City Council and English Heritage and this (Option B), and its variants were pursued as the preferred development option and the original octagonal form was discarded.

9.10.5 The transition to the “three finger” form required significant replanning of the clinical areas and the circulation routes. However, a particular advantage was that the new building form allowed the accommodation to be provided in a building which would be around three storeys lower than the solution presented in the July 2009 OBC.

9.10.6 During 2010, the Trust team worked with clinical user groups, the Design Team, the City Council and English Heritage to produce a solution which would be viable clinically and in city planning and heritage terms.

9.10.7 The final solution, which forms part of this Planning Application, has maintained and met the clinical planning considerations set out in an earlier section of this Trust Statement:

Version 17	Chapter 9	Page 22 of 64	Date: January 2012
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- The wards and the departments currently housed in the Barry Building are contained in the first stage of development (to allow for the development of the Barry site – either as new-build or refurbishment). This also allows these wards to be closer to the Emergency Department, which is where the majority of patients are admitted and a key requirement;
- Level 5 of the Stage 1 building provides a link across directly to the ED. Level 5 of Stage 1 contains the Major Trauma Theatre, the Neurosurgery Theatres and the associated imaging facilities which are needed to treat patients who are admitted as a result of accident or emergency. This arrangement allows patients to be admitted through the ED and then either treated in the existing theatres in the Thomas Kemp Tower, the new theatres in Stage 1 of the proposed development, or can be taken to the “hot” imaging facilities in Stage 1 quickly and efficiently. Once diagnosed and treated, it is a relatively simple matter to transfer patients vertically within the building to the wards on the upper floors of the Stage 1 building. This compares with the four lift journeys and the transfer of patients in the open air which currently characterises the journey between the ED and the wards in the Barry Building – a journey which typically takes 20 minutes;
- Level 7 of the Stage 1 building provides Intensive Care facilities for general patients and for neurosurgery and neurology and are therefore a short lift journey vertically for patients who are admitted through the ED or who have been treated in the theatres on Level 5;
- Level 6 of the Stage 1 building also provides a public access link through the Thomas Kemp Tower to the Sussex Kidney Unit and the Sussex Cardiac Centre on the North side of the site;
- The design still maintains the clinical link between neurology wards and the stroke wards;
- The lower floors of the buildings (Levels 1-4) are mainly for outpatient functions (associated primarily with the functions of the rest of the Stage 1 building) and are “colder” clinical areas – mainly for patients who are undergoing elective or booked investigations and which are also the highest volume of patients who will pass through the building. There is logic in having the highest footfall lower down the building;
- There is also a good link at Level 4 to the Sussex Cancer Centre in the proposed Stage 2 development which will allow patients with suspected cancers to have their diagnostic scans in the Stage 1 building and then move quickly and efficiently back to the Cancer Centre for further diagnosis, investigation and treatment;
- The final proposed form of the Stage 1 building does allow for a higher proportion of patient bed rooms to have external views when compared with the original octagonal form. In the latter option, almost half of the beds faced into the internal atrium of the building. In the current option over 90% have external views.

## 9.11 Final Size of the Proposed Facilities

9.11.1 It is the process of identifying and agreeing the 1:200 scale process which is key to driving the scale of the building when compared to the schedules of accommodation which have been drawn up in advance of that process. The schedules of accommodation include the circulation (corridors etc) within departments but exclude the circulation between departments themselves and the hospital streets – the primary circulation routes around the facility for patients and visitors. It is also possible that this process will drive increases or decreases in space required as the operational requirements of particular departments are fleshed out and explored in greater detail through the process of generating the 1:200 drawings and staff can visualise more easily how a department will work rather than the more theoretical exercise of generating the schedules of accommodation.

9.11.2 The final shape of the building will be determined by:

- how the departments within the building fit together to meet the clinical adjacencies determined by the patient care pathways, and;
- external factors (discussions with statutory bodies etc);
- the overall context of the site (adjacency of other buildings etc).

9.11.3 It is the interplay between these two factors (the building being designed inside out and outside in) which yields the final shape and form of the building. In many cases, the final building will end up being marginally larger or marginally smaller than the sum of the original schedules.

9.11.4 The Trust team also critically reviewed all the functions in the proposed development and across the site throughout this process to ensure that all the Trust's planning assumptions still held true and that all critical clinical adjacencies could be provided.

9.11.5 Naturally, changes were made between the process of selecting the preferred option in 2009 and the detailed design development and extensive redesign of the preferred option which has taken place as a result of the consultation the Trust has undertaken since that point.

9.11.6 There has been an overall *net* increase in the departmental areas of just under 7,000 m<sup>2</sup> since early 2009.

9.11.7 The main key changes have been:

- the inclusion of general critical care facilities (Intensive Care Unit and the High Dependency Unit) and the acute medical admissions unit (AMU) in Stage 1 to allow additional space to be freed up in the ED to ensure that there is efficient and effective patient flows for trauma and for routine emergencies and walk-in patients;
- the inclusion of additional Facilities Management facilities to allow all site logistics to be focused on the eastern side of the site in a single area rather than diffused around the site and close to residential areas;

- the relocation of the helipad onto the Thomas Kemp Tower and the requirement to provide a trauma lift from that to the ED down the side of the tower;
- The inclusion of additional facilities for staff – mainly staff changing, WCs and showers;
- The inclusion of a 380m<sup>2</sup> clinical staff training facility (simulation centre) in line with the nature of the facilities being provided in other University teaching hospitals;
- The inclusion of a dedicated hotdesk room (with 3-5 workstations/PCs) on every ward for medical and other peripatetic staff and the inclusion of workstations/PCs in the Doctors' Mess (Level 11, adjacent to the Education & Meeting Suite).
- The exclusion of office accommodation (the majority Trust HQ and office accommodation for divisional management) which will now remain in the decant location at St Mary's Hall.

9.11.8 The building is now fully designed and therefore the actual amount of inter-departmental and main hospital circulation, plus lifts and stairs and the final assessed requirement for engineering plant rooms has also been finalised.

9.11.9 The car parking facility has been increased to an additional 312 spaces from the original assumption of 200 additional spaces and has now been located underground. This has also increased the overall gross internal floor area of the development up to just over 93,000m<sup>2</sup>. Excluding the car park, the gross internal floor area of the proposed development will be just over 80,000 m<sup>2</sup>.

## 9.12 Major Trauma and Helipad Provision

### Current Position

9.12.1 At the moment, around 100 major trauma patients are treated at the RSCH or at the Regional Neurosciences Centre at Haywards Heath each year. The limitation here is that if patients suffer serious head and chest injuries it is not possible to treat them at either of the Trust's sites as all clinical specialist services are not available at both.

9.12.2 These patients are usually taken by air ambulance or road ambulance to the other nearest Major Trauma Centres which are St. George's Hospital, King's College Hospital, the Royal London Hospital (all in London) or to Southampton General Hospital.

9.12.3 This means that the patient is not treated as close to home as could be the case and necessitates longer travelling times for family and visitors. Since major trauma patients often require extensive in-hospital stays, social isolation can be a risk.

9.12.4 Sussex and its coastline are served by three air services with medical capability: the Kent, Surrey and Sussex Air Ambulance, the Sussex Police



Helicopter (Hotel 900) and the HM Coastguard Search and Rescue. The KSS Air Ambulance Service operates, as do all other Air Ambulance services, during day light hours only (usually 7am-7pm) and this is not expected to change. Outside of these hours, road ambulance is usually as rapid.

- 9.12.5 The decision where to take a seriously injured patient is taken by South East Coast Ambulance NHS Foundation Trust as its personnel will be first on the scene and able to assess the patient.
- 9.12.6 On the rare occasions that the air ambulance needs to transport a patient to the RSCH, it lands in East Brighton Park and the patient is then transferred the remaining 1.1 miles by road ambulance. Secondary transfers of this nature are not seen as ideal. This is especially the case in Brighton and Sussex as this additionally requires the use of a South East Coast Ambulance crew. It delays the patient's arrival in hospital and involves the inconvenience and discomfort of further transfers into and out of the ambulance. It also takes the air ambulance out of service for up to an hour while its medical crew accompany the patient to hospital for handover to the staff at the RSCH Emergency Department.

### 9.13 Clinical Need for helipad

- 9.13.1 As set out earlier, the clear direction of travel for the NHS across England is the development of Major Trauma Centres for patients who suffer the most serious and most life-threatening injuries. All regions in the NHS are required to move to the development of major trauma networks with Major Trauma Centres at the heart of that provision by April 2012. The Trust is putting arrangements in place to ensure that it meets the absolute minimum standards for this, but will not be able to accommodate these requirements to their fullest extent until the Stage 1 building is complete.
- 9.13.2 The most critical factor influencing survival following major trauma is the time to definitive surgery (i.e treatment) rather than the time to the nearest hospital as that hospital may not have the required range of specialist services available on a 24 hours a day, 7 days a week basis. For major trauma cases, a range of specialised skills may be required depending on the nature of the serious injury. These include:
- Neurosurgery – currently at Haywards Heath;
  - Cardiothoracic surgery – currently at the RSCH site;
  - Trauma & Orthopaedics – currently at the RSCH site (PRH mainly undertakes non-urgent orthopaedic surgery);
  - Vascular surgery – currently at the RSCH site;
  - Interventional radiology – image guided surgery to help stop internal bleeding – currently at the RSCH site.
- 9.13.3 Given the specialist nature of these services, it is most likely that a Major Trauma Centre will already have these very specialist services in place. The only hospital across Kent, Surrey and Sussex which has access to all of these ser-

vices is the RSCH but neurosurgery needs to be on site to achieve full access to the range of services required.

- 9.13.4 Various reports – the first of which was published in 1961 by the British Medical Association – have called for the introduction of Major Trauma Centres as available evidence suggest that patients had a much better chance of survival if they were treated in such a Centre and that these patients also stood a much better chance of significant recovery than if they were treated in a District General Hospital.
- 9.13.5 The national recommendation is that patients within 45 minutes of a Major Trauma Centre should be taken there directly, bypassing closer hospitals. For the many patients in England, this can be achieved by road ambulance. However in regions which include extensive rural areas (such as Sussex) or dense urban areas (such as London) or a mixture of both, air ambulance is often the most effective way of reaching and extracting the patient.
- 9.13.6 The Trust, working with the Sussex Trauma Network, has reviewed patient data from a number of different sources and concluded that around 400 additional trauma cases from the Kent, Surrey and Sussex catchment area could be treated at a Major Trauma Centre serving the Sussex Trauma Network catchment.
- 9.13.7 A recent report (Trauma: Who Cares? by the National Confidential Enquiry into Peri-Operative Death) identified that fewer than 12% of trauma patients are transferred by air ambulance. For the projected trauma workload of Sussex, this would equate to around 50 air ambulance transfers per year – or around one per week. This analysis does not take account of the potential for very serious major incidents (such a plane crashes or terrorist outrages) in and around Sussex which might require a different response in such extreme circumstances.
- 9.13.8 It is proposed that, in common with other hospital helipads such as the Royal London Hospital, that the hours of operation are 7am-7pm or for daylight hours, whichever is the shortest period. However, it is possible that there may be a requirement for night-time use in the event of a major incident on land or at sea (when the Coastguard may require access to the helipad).

## **9.14 Helipad Solution**

- 9.14.1 As noted above, it is not considered clinically appropriate for patients to be transferred by air ambulance and then undergo a secondary transfer to the Major Trauma Centre.
- 9.14.2 Given that RSCH is the only hospital in Kent, Surrey and Sussex with the capability and specialist services to become a Major Trauma Centre, consideration was given to how a helipad could be provided on or around the site. Consideration was also given to the size of the particular pad which would be required.
- 9.14.3 Given that there may be a requirement for a larger HM Coastguard Search and Rescue helicopter to retrieve off-shore emergencies, it was concluded that a Type 5 helipad would be required (the largest being a Type 6 for the larger military helicopters). This requirement has been confirmed by a recent letter from the NHS National Clinical Director of Trauma that all Major Trauma Centres

planning a helipad should ensure that they are able to accommodate the Coast-guard helicopters if required. It is envisaged that these will need to utilise the pad in only very rare occasions.

- 9.14.4 During 2008 and 2009, the original concept for the Stage 1 development was for a building which was just slightly taller than the existing Thomas Kemp Tower. Given that a helipad needs to be on the tallest part of the site for operational reasons, it was logical to locate the helipad on the Stage 1 building.
- 9.14.5 As set out above, the design development process undertaken during late 2009 and into 2010 reduced the proposed height of the Stage 1 building but left the helipad on that building.
- 9.14.6 The Trust had undertaken studies to identify the potential of the Thomas Kemp Tower to accommodate the helipad (alongside a number of other options) as, for operational reasons relating to the Air Ambulance and for patient safety, the only realistic locations for the helipad were Thomas Kemp Tower or the Stage 1 building.
- 9.14.7 As the design for the Stage 1 building evolved and developed, it became increasingly apparent that the design of the helipad structure on that building was becoming problematic. Although operational solutions were found, a satisfactory solution could not be agreed with the City Council or English Heritage: the original, higher octagonal Stage 1 structure had hidden the helipad. The lower Stage 1 solution accentuated its presence on the skyline and it was starkly visible above Lewes Crescent.
- 9.14.8 Previous studies on the structure of the Thomas Kemp Tower had not been promising in relation to locating the pad on the tower itself. Given the nature and vintage of the construction (concrete frame constructed in the 1960s), there were real concerns that the structure would not be able to take the additional load and the build solution would be too intrusive for the clinical functions in the building.
- 9.14.9 During the latter part of 2010, the Design Team and the Trust identified two potential solutions:
- The construction of a steel frame around the Thomas Kemp Tower on which the pad would be placed (known as the “exoskeleton”);
  - A lightweight construction tied into the structure of the tower (known as the “endoskeleton”).
- 9.14.10 The former would be relatively simple to construct. The latter was more problematic given the concerns about the structure of the tower and any potential disruption – especially if intrusive surveys needed to be undertaken and if those surveys found that the structure needed reinforcement to take the helipad. In that case, the Trust would need to decant large portions of the tower – adding to the already difficult problem of decanting on the site and to keeping the existing hospital operational.
- 9.14.11 The Trust’s Structural Engineers were able to secure some construction

drawings from the archive of the original engineers involved in the construction of the tower and devise surveys in non-patient areas to be able to construct a picture of the structural capacity of the tower.

9.14.12 It was concluded that the tower could take the structure, but that this would curtail any future major structural additions to it. The Trust therefore agreed to take forward the “endoskeleton design” and for which an acceptable design was agreed with the City Council and English Heritage.

9.14.13 The advantage of this approach is that the helipad can be constructed in advance of the Stage 1 building being completed, which will mean that more trauma patients can be treated locally, earlier.

9.14.14 The need for a helipad is therefore derived from the strong clinical case that such a facility will benefit patients by ensuring that they can access appropriate care quickly. This is proven to save lives and to improve the quality of a patient’s life after their recovery.

9.14.15 The Trust believes that the solution reached of placing the helipad on the Thomas Kemp Tower achieves the clinical objective and is the least visually intrusive of the solutions analysed and considered.

### **9.15 Workforce Planning in 3Ts**

9.15.1 In the period April to September 2009 initial projections of the staffing requirements for each stage of the 3Ts Programme were made; these projections were very outline and focused primarily on the nursing requirements for the new wards to be provided in the 3Ts build. Subsequently the staffing requirements for the Neuro Theatres, the Polytrauma Theatre and the Interventional Radiology Suite were considered and also the additional Therapeutic Radiotherapy and Medical Physics staff required in support of the new radiotherapy equipment profile to be established in Stage 2 of the Programme.

9.15.2 At this stage of the workforce planning work programme, a bench marking exercise was undertaken to compare the 3Ts outline staffing projections with four major acute hospital Trusts that had previously undergone similar redevelopment programmes. The staffing establishments for University Hospital Birmingham NHS Foundation Trust, North Bristol NHS Trust, Barts and The London NHS Trust and the Sandwell and West Birmingham Hospitals NHS Trust as set out in the Full Business Cases for their respective redevelopment programmes were related to their bed complements and an overall comparison was made. Barts and The London NHS Trust had the highest overall staff to bed ratio, followed by BSUH.

9.15.3 A summary table showing the last version of these staffing projections is set out overleaf:

**Table 9.8 Staffing Establishment (Budgeted Contracted WTES including vacancies)**

Staff Group	Aug-09	Mar-14	Mar-17	Overall Change
Medical Staff	876.30	876.30	876.30	
Nursing & Midwifery (registered)	2,076.60	2,251.03	2,274.14	197.54
Scientific, Therapeutic & Technical	713.70	744.05	778.13	64.43
Managers	182.00	182.00	182.00	
Administration and Estates	1,061.60	1,071.27	1,071.27	9.67
HCA's & Other Support Staff	948.30	1,007.99	1,007.99	59.69
Nurse Learners & Others	57.10	57.10	57.10	
Totals:	5,915.60	6,189.74	6,246.93	331.33

9.15.4 In the *3Ts Workforce Briefing* in October 2009 it was explained that the projections were based on a simple scaling-up methodology which extrapolated up existing clinical and non-clinical establishments on a "more of the same basis". In the case of the nursing establishment for the new 3Ts wards, the projections were based on applying the existing staff to bed ratio of comparable ward areas to the new bed complements to be provided within the new 3Ts build.

9.15.5 It was recognised that the nursing workforce accounted for a significant proportion of the additional workforce requirements and there had been significant omissions, including the medical workforce and many clinical support functions such as pathology staff and pharmacy staff; the workforce demand for the 3Ts Programme was therefore acknowledged to be significantly understated. Furthermore, the workforce model did not take into account new models of care, new roles and ways of working or consider, for example, the impact of moving to larger wards with a high proportion of single rooms. Moreover the financials for the 3Ts Outline Business Case (OBC) had to be developed using marginal rates; a marginal rate of 64% was decided on.

9.15.6 In 2009 the indicative overall increase in staffing establishments required on completion of both stages of the 3Ts Programme was now set at 450.33 WTES, as shown in the following tables overleaf:



**Table 9.9 Staffing Establishment (Budgeted Contracted WTES including vacancies) & Projected Increase**

Area	Current WTE 2009	3Ts Stage One 2014	3Ts Stage Two 2017	Increase
Medical Wards	218.31	285.52	285.52	67.21
Neurosciences	125.69	241.12	241.12	115.43
Imaging	135.52	199.25	199.25	63.73
Nuclear Medicine	17.69	24.08	24.08	6.39
Cancer- Wards	30.81	72.16	96.97	66.16
Cancer- OPD & Day Case	18.61	38.72	50.79	32.18
Radiotherapy	29.43	63.56	84.03	54.6
Medical Physics	36.4	64.29	81.03	44.63
<b>Total</b>	<b>612.46</b>	<b>988.7</b>	<b>1062.79</b>	<b>450.33</b>

Staff Group	Current WTE 2009	3Ts Stage One 2014	3Ts Stage Two 2017	Increase
Nursing (qualified)	285.33	463.61	491.78	206.45
Nursing (unqualified)	129.31	200.07	207.84	78.53
S,T&T Staff-Qualified	146.44	256.56	291	144.56
S,T&T Staff-Unqualified	14.65	20.15	21.65	7
Admin & Clerical	36.73	48.31	50.52	13.79
<b>Total</b>	<b>612.46</b>	<b>988.7</b>	<b>1062.79</b>	<b>450.33</b>

9.15.7 Of the 145 additional qualified Scientific, Therapeutic and Technical staff required, 46 are Diagnostic Radiographers, 50 Therapeutic Radiographers, 25 Medical Physics Clinical Scientists, and 22 Medical Physics or Nuclear Medicine Clinical Technologists.

9.15.8 Initial workforce modelling explored the initial implications of the additional capacity planned as part of the 3Ts Programme on workforce requirements and investigated hard to recruit staff groups and current recruitment initiatives, along with the career pathway for the service with associated education commissioning.

9.15.9 This modelling comprised a series of 'fact sheets', intended to give an overview of the key points for consideration as part of any workforce planning for 3Ts. They were populated through interviews with service leads and snapshot ESR (electronic staff record) data. The fact sheets included each of the areas within the Sussex Cancer Centre, including the services supporting the Centre (Radiotherapy and Medical Physics); the areas within the Hurstwood Park Neurosciences and the medical wards and services within the Barry/Latilla Building including Imaging, Neuro Imaging and Nuclear Medicine.

## 9.16 The 3Ts Workforce Planning Work-stream

9.16.1 In August 2009 the 3Ts Workforce Planning work-stream was formalised. Professional heads of service and clinicians from each of the affected services were to undertake a detailed workforce planning exercise as part of the OBC/FBC process with the intention of ensuring that the workforce plans for each stage of

the 3Ts Programme were based on clinical input and built around patient and care pathways.

9.16.2 The following specific outputs were to be produced from the workforce planning work-stream:

- Costed staffing establishments (by staff group and pay band) for the 3T decant and main development, showing phasing by year to 2017/18 (the 3T planning horizon);
- Costed options for 'grow your own' staffing, i.e. employing staff at more junior grades and supporting their education, training and development into more senior roles required for the 3T development;
- Identification of the implications of the proposed workforce changes for the Trust's pre- and post-registration education commissioning; and
- A personnel plan to address the contractual and other personnel issues associated with the 3T decant and main development, e.g. consultation on changes to staff's work base.

9.16.3 The work-stream also included the establishment of a 3T Workforce Planning Project Team and a 3T Workforce Planning Operational Group.

## **9.17 The Indicative Work Programme**

9.17.1 The Work Programme included a seminar for 3T workforce leads entitled 'Demystifying Workforce Planning', followed by a number of key activities summarised as follows:

- Review of recruitment issues and analysis of 'career trajectories' for hard-to-recruit staff within 3T services;
- Identification of personnel and other contractual issues associated with the 3T decant and main development and develop an associated action plan;
- Agreed work programme and Terms of Reference of the Workforce Planning Project Team, identification of key policy issues and an agreed process for determining staffing establishments;
- Planning tools for translating staffing shift numbers into costed establishments and agreed establishment uplifts; i.e. predictable absence allowances for annual leave, sickness absence and statutory/mandatory training;
- Reviews of planned 3Ts establishments including the development of an evidence base using patient dependency tool(s), benchmarking, best practice and professional judgement;
- Identification of pre- and post-registration education commissioning issues and develop and cost proposals for 'grow your own' schemes; and,
- Review of emerging Trust HR/OD Strategy and FT IBP thus ensuring they addressed the requirements of the 3T FBC, including the associated action plan.

9.17.2 At the workforce planning Seminar held in September 2009 it was recognised that the assessment of the non-medical workforce requirements of the 3Ts Pro-

gramme to date had been extrapolated on a “more of the same” basis. The projected workforce requirements had taken no account of affordability or financial plans, commissioning intentions/planned activity, new ward layouts; single rooms and bays, changes in skill mix and new job roles such as Assistant Practitioner roles.

9.17.3 Therefore it was realised that an in-depth assessment of the workforce was required for each stage of the 3Ts Programme was needed; which would meet either of the following definitions of workforce planning:

*“Getting the right people with the right skills and competencies in the right place at the right time”.* (National Workforce Projects)

*“Getting service quality right - sufficient workers with the right skills in the right place at the right time at the right price”.* (Keith Hurst)

9.17.4 A brief summary was provided of The National Workforce Project’s Six Steps Guide to Workforce Planning:<sup>8</sup> and of the various methods for determining nursing workload assessment as described by Keith Hurst in his paper on Workforce Planning Method Classification.

## **9.18 The 3Ts Workforce Planning Tool**

9.18.1 Comprehensive workforce planning for the 3Ts Programme with engagement from all of the services affected by 3Ts Programme subsequently got underway with the formation of the Workforce Planning Project Team and the Workforce Planning Operational Group in September 2009.

9.18.2 In order to provide the workforce planning leads with a planning tool to help them set out future staffing requirements for each of the wards, theatres and support functions within the services affected by the 3Ts Hospital Redevelopment Programme, a series of workforce planning templates were designed. Individual heads of services were tasked with completing these templates to project the numbers of staff required on completion of the 3Ts Programme for each ward/theatre/department. Planned staffing requirements were shown by staff numbers (headcount) being entering by position and shift for each day of the week on each of the Ward/Theatre/Department sheets; the requirements for all areas not covered by the ward/theatre and other department worksheets were set out on an “Other Areas” worksheet.

9.18.3 Each worksheet contained a text box within which a supporting narrative was to be provided according to the following guidance:

- Describe the impact of new models of care and/or technological advances that may impact on the workforce plan.
- Describe briefly any new roles/new ways of working that you may have developed or intend to develop e.g. multi-disciplinary team working, assistant practitioner roles, ward administrators, discharge planners - outline briefly any professional training and development needs and/or implications on education and training commissions that need to be considered.

<sup>8</sup> Hurst K (1993) Nursing Workforce Planning

- Identify whether the workforce plan has an appropriate balance of trained and support staff.
- Outline any recruitment and retention issues that need to be considered.

9.18.4 The structure of each Workbook is shown in the following table overleaf:

**Table 9.10 Workbook Structure**

<b>Workbook</b>	<b>Division</b>	<b>Workbook</b>	<b>Division</b>
<b><u>Cancer</u></b>		<b><u>Medical Physics</u></b>	
Oncology Ward 1	Specialist	Radiological Science	Specialist
Oncology Ward 2	Specialist	Radiotherapy	Specialist
Oncology Outpatients	Specialist	Nuclear Medicine	Specialist
Chemotherapy/ Day Case	Specialist	ICT	Specialist
<b><u>Medicine</u></b>		<b><u>Imaging</u></b>	
Medical Ward 1	Medicine	CT	Specialist
Medical Ward 2	Medicine	MRI	Specialist
Medical Ward 3	Medicine	X-ray	Specialist
Medical Ward 4	Medicine	Flouroscopy	Specialist
Medical Ward 5	Medicine	Interventional Radiology	Specialist
Medical Day Unit	Medicine	Nuclear Medicine	Specialist
Clinical Infection Service: Ward	Medicine	Ultrasound	Specialist
Clinical Infection Service: Outpatients	Medicine	PET CT & SPET CT	Specialist
Discharge Lounge	Medicine	Mobile Image Intensification	Specialist
Site Management Team	Medicine	Dexa (bone scanning)	Specialist
Central Treatment Area	Medicine	Nuclear Medicine	Specialist
<b><u>Neurosciences</u></b>		<b><u>Speech &amp; Language Therapy</u></b>	
Neurology Ward	Specialist	Acute Stroke	Medicine
Neurosurgery Ward 1	Specialist	Critical Care	Medicine
Neurosurgery Ward 2	Specialist	ENT	Medicine
Operating Theatre 1	Specialist	General Inpatients - COTE	Medicine
Operating Theatre 2	Specialist	Medical & Surgical Wards	Medicine
Operating Theatre 3	Specialist	Neurosciences (inc. Critical Care)	Medicine
Recovery	Specialist	Oncology	Medicine
Outpatients (incl. specialist nurses)	Specialist	Out Patients	Medicine
Intensive Treatment Unit (ITU)	Specialist	<b><u>Dietetics</u></b>	
Planned Investigations Unit	Specialist	<b><u>Critical Care</u></b>	Medicine
Neuropsychology	Specialist	ITU 1/ ITU 2	Medicine
Neurophysiology	Specialist	HDU	Medicine
<b><u>Surgery</u></b>		<b><u>Pathology</u></b>	
Fracture Clinic	Surgery	Pathology Central Services	Specialist
Flexible IR Theatre (non-Imaging staff)	Surgery	Biochemistry	Specialist
Polytrauma Theatre	Surgery	Haematology	Specialist
Polytrauma Ward	Surgery	Microbiology	Specialist
<b><u>Occupational Therapy</u></b>		Mortuary and Histology	Specialist
Medical/Surgical	Medicine	Cytopathology	Specialist
Neurology	Medicine	General Pathology	Specialist
Orthopaedics	Medicine	Compliance & Regulatory Affairs	Specialist
Specialist	Medicine	Biochemistry Training	Specialist
<b><u>Physiotherapy</u></b>		Biomedical Scientist Training	Specialist
Cardiac	Surgery	Microbiology Registrars	Specialist
Medical/Elderly Wards	Surgery	<b><u>Pharmacy</u></b>	
Neurosciences	Surgery	Cancer	Medicine
Orthopaedics	Surgery	HIV	Medicine

Stroke Unit	Surgery	Neurosciences	Medicine
Surgery/ITU	Surgery	General Medical Wards	Medicine
<b>Radiotherapy</b>		Other Areas	Medicine
Sussex Cancer Centre	Specialist	<b>Estates and Support</b>	
Eastbourne District General Hospital	Specialist	Sterile Services	Facilities
Worthing Hospital	Specialist	Estates (soft FM: cleaning/catering)	Facilities

## 9.19 Aggregation of the 3Ts Workforce Plans

9.19.1 Formulae within the completed worksheets automatically created a planned establishment for each ward, theatre and department. The data from each completed workbook was extracted and held in a central data table. In the case of ward and theatre establishments, a 24% predictable absence allowance was built in for all nursing positions of Band 2 to Band 6. Each position was assigned a cost value based on the banding of the position according to the average cost by pay band and staff group of the existing workforce. On cost amounts for Pension and National Insurance contributions were also included. Fully costed summaries of the planned 3Ts establishments were then produced by both 3Ts service and staff group.

9.19.2 Two staffing scenarios have been developed:-

- A “24/7 workforce model” predicated on extended hours working, including weekend working in some instances, and reflecting best practice and professional guidance where available (e.g. National Radiotherapy Advisory Group) to determine the workforce numbers. The workforce increases in this model represent the optimum staffing solution.
- A “standard workforce model” predicated on clinical services being provided on broadly the existing number of hours (but with some extended operating hours in some services) to allow for best and safest care; workforce numbers are based on best professional judgement with objective workload information and reflect a more realistic scenario in terms of recruitment and retention and overall affordability.

9.19.3 Later versions of the 3Ts plans have excluded the staffing requirements for trauma as it is now being planned separately. The latest version of the plans is shown in summary form below by service and staff group overleaf

**Table 9.10 Change in Staffing Establishment (Budgeted Contracted WTES including vacancies)**

Including PAA Uplift % Staff Group	Establishment Change	
	WTES	Cost
Cancer	146.93	£3,970,654
Clinical Infection Service	23.63	£591,701
Critical Care	161.99	£6,268,022
Dietetics	9.00	£346,330
Imaging & Nuclear Medicine	117.47	£4,442,370
Medical Physics	36.84	£1,786,745
Medicine	53.49	£1,607,451
Neurosciences	134.66	£4,716,305
Occupational Therapy	10.64	£304,597



Pathology	34.51	£1,366,888
Pharmacy	46.71	£1,690,380
Physiotherapy	31.45	£926,330
Speech & Language Therapy	7.95	£264,442
Therapeutic Radiography	34.44	£1,167,007

<b>849.70</b>	<b>£29,449,223</b>
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Including PAA Uplift %	Establishment Change	
Staff Group	WTES	Cost

M&D – Consultant	40.53	£4,388,593.54
M&D - Middle Career Grade	0.68	£31,918.39
M&D - Training Grade	26.17	£1,111,340.38
Registered Nurse	258.80	£9,255,264.21
Non-registered Nursing & Midwifery	199.97	£4,000,249.83
Registered Allied Health Professional	108.21	£4,170,915.97
Registered/Qualified Other ST&T Staff	42.05	£1,896,058.79
Registered/Qual Healthcare Scientist	53.58	£2,121,118.90
Non-reg/qual Allied Health Professional	34.33	£709,557.89
Non-reg/qualified Other ST&T Staff	1.61	£34,356.89
Non-reg/qualified Healthcare Scientist	12.60	£222,331.89
Senior Manager	-0.60	-£54,592.06
Manager	3.00	£76,444.78
Clerical & Administrative Staff	58.47	£1,294,296.01
Support Worker	10.30	£191,367.77

<b>Totals:</b>	<b>849.70</b>	<b>29,449,223.17</b>
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Medical & Dental	67.38	£5,531,852
Nursing & Midwifery	458.77	£13,255,514
Scientific, Therapeutic & Technical	252.39	£9,154,340
A&C and Estates	60.87	£1,316,149
Support Staff & Others	10.30	£191,368

<b>Totals:</b>	<b>849.70</b>	<b>£29,449,223</b>
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9.19.4 The 3Ts workforce plans were accordingly developed as part of a “bottom up” process and in the case of many of the services the methodology used in developing the plans was essentially “professional judgement”. The resulting workforce numbers were reviewed internally against a number of criteria and were challenged by professional clinical leads within the organisation. Where possible the planned 3Ts establishments were benchmarked against workforce establishments from comparator organisations. In the case of the planned establishments for each of the 3Ts wards, staff to bed ratios were benchmarked using data taken from the “Nurses per occupied bed” database in the Keith Hurst “Nursing Workforce Planning Tool”.

9.19.5 The 3Ts establishments for Medical Physics and Therapeutic Radiography reflects a staffing strategy that is based on guidelines and recommendations issued by the Institute of Physics and Engineering in Medicine (IPEM), the Na-

tional Radiotherapy Advisory Group (NRAG), the Society of Radiographers, and the Royal College of Radiologists.

- 9.19.6 Using NRAG ratios the number of radiography staff required to operate the new linear accelerators and deliver the required radiotherapy fractions per million population have been calculated. Society and College of Radiographers guidance for determining an appropriate skill of radiography staffing has also been considered, including assistant practitioners and expert practitioners and new expanded roles for advanced practitioner radiographers and consultant radiographers. IPEM guidance has been used in determining the Physics staffing required to support the new equipment profile to be provided as part of the 3Ts Redevelopment Programme.

## **9.20 Education Commissioning**

- 9.20.1 The education commissioning submissions for the 2012/2013 plan have taken account of the establishment projections derived from the latest iteration of the Long Term Financial Plan. Data provided by the SHA on student attrition rates for commissioned courses is used to determine the number of commissions required to meet the assessed demand for newly qualified staff in each profession.

- 9.20.2 In developing the 3Ts workforce plans heads of service were asked to consider new roles and ways of working, as well as the implications of building design and new models of care. The nursing workforce plans have included new Band 4 Assistant Practitioner roles and to support the development of these roles, places on the Foundation Degree in Health and Social Care at the University of Brighton have been commissioned for 2010, 2011 and 2012.

## **9.21 Modernising Scientific Careers**

- 9.21.1 Modernising Scientific Careers is a UK-wide education and training strategy for the NHS healthcare science; it introduces a clear and coherent career pathway and structure for the healthcare science workforce with aspects of the programme covering education, training and workforce planning. Modernising Scientific Careers affects several of the 3Ts services; especially Medical Physics, Nuclear Medicine, Neurophysiology and Pathology.

- 9.21.2 The Trust has established a Modernising Scientific Careers (MSC) Project Group. The Group is chaired by the Director of Health Professions and the membership includes representation from each of the Trust's Healthcare Science professions, the Head of Workforce Planning and the People and Change Manager. The existing Healthcare Science workforce has been mapped to the MSC career roles and the implications of the profiles produced for each healthcare science profession are being assessed.

- 9.21.3 The MSC Project Group is assessing the implications of Modernising Scientific Careers, especially in terms of education requirements and the impact on staff recruitment. The Group is using the NHS Employers "Modernising Scientific Careers Checklist" to inform the Group's work plan.

- 9.21.4 The Trust's submission for the 2012/2013 education commissioning plan has included the requirement for commissions for the Scientist Training Pro-

gramme for the following pathways: Blood Sciences: Infection Sciences: Cellular Sciences: Clinical Physics and Neurosensory Sciences. Six commissions were also included in the submission for the Biological Sciences FdSc at City College, Brighton and Hove; these are new commissions which are intended to support the implementation of Modernising Scientific Careers. However, the City College Foundation Degree has yet to be rewritten and accredited as an FdSc in Healthcare Science. The proposed foundation degree requirements for Modernising Scientific Careers are not yet known and the STP and Foundation Degree commissions requested for Pathology have yet to be linked to the PTP programme.

- 9.21.5 The Pathology Department Training staff have also started to look at the Open University health science foundation degree provision as there are currently no other integrated degree options available for Trust staff. At the present time it is unclear whether FdSc students would be on work placements at the Trust as external students or would be seconded by the Trust as employed staff.

## **9.22 Education and Training Strategy**

- 9.22.1 The 3Ts workforce plans will be underpinned by the development of an overarching education and training strategy with linkages to the annual education commissioning process.
- 9.22.2 Education commissioning plans for each profession will be aligned to the aggregated workforce plans developed at specialty and service level; using the previously described “stocks and flows” methodology to predict the demand for both experienced and newly qualified staff. In addition to the staffing establishments projected over the next 5-years, the modelling process includes forecasts of staff turnover and the percentage of total recruits that will be newly qualified, for each year of the planning cycle. The planning process also takes into account course attrition and appointment rates, placement capacity and infrastructure, in order to ensure that contract commissions are both based on service demand and can be supported by placement capacity plans.
- 9.22.3 The implementation of a comprehensive programme of work planning and modernisation at BSUH will be undertaken within the new national and local framework for developing the healthcare workforce as set out in the Government’s consultation paper Liberating the NHS: developing the healthcare workforce (January 2011). Under the new framework, BSUH and other healthcare providers will have local accountability for planning and developing the workforce and will lead the commissioning of education and training through local skills networks. One of the recommendations of the NHS Future Forum Report published in June 2011 is for the skills networks to be known as Local NHS Education and Training Boards (LETB). The LETBs will become responsible for the planning, education and training of the health and social care workforce following the dissolution of Strategic Health Authorities in 2103.

## **9.23 Recruitment and Retention Strategy**

- 9.23.1 Recruitment strategies will identify initiatives and solutions for recruiting the larger proportion of staff that are not to be sourced via either direct entry or seconded education commissions. Retention strategies will need to reflect the varying age profiles and predicted retirement rates of the Trust’s workforce as

differentiated by staff group and site location, plus respond to staff feedback from the annual staff survey, exit questionnaires and other information sources. In short the supply side part of the workforce plans developed at specialty and service level will need to be addressed, both through the planned recruitment of new staff and the retention of existing staff through succession planning, development and talent management.

- 9.23.2 The Trust's Recruitment and Retention Strategy outlines the ways in which the Trust will work towards recruiting and retaining a skilled and dedicated workforce, promoting an environment which supports personal and professional development to make the Trust an employer of choice and to enable its staff to provide excellent patient care.
- 9.23.3 The Strategy is a 'live' document that will grow as new strategies are developed and work for the 3T's Programme is incorporated. Central to the Trust's ambition, is its role as a developing academic centre, a provider of high quality teaching and a host hospital for cutting edge research and innovation, working alongside its partners, Brighton and Sussex Medical School (BSMS) and the Kent, Surrey and Sussex Postgraduate Deanery, and local universities.
- 9.23.4 As the Trust expands, taking into consideration the 3Ts build and the associated decant of services into other buildings, the Trust will explore a number of flexible working options such as home-working and mobile working (hot-desking) in addition to some of the existing practices such as job share, annualised contracts and term time contracts.

## **9.24 Next Steps in 3Ts Workforce Planning**

- 9.24.1 The "3Ts Workforce Planning Tool" workbooks enabled staff numbers (head-count) required by specific job role and shift pattern for each day of the week to be entered on separate worksheets for designated wards, theatres and other departments, with requirements for other areas being entered on an "other areas" sheet. From the data entered onto the worksheets, total staffing establishments were calculated for each 3Ts service. The overall change in staffing numbers required for 3Ts was presented as the difference between the opening baseline establishment and the planned 3Ts establishment for each service. This information was shown on the summary sheet of each workbook.
- 9.24.2 The primary aim now is to enable the workforce requirements for 3Ts to be translated into establishment changes at a departmental and position level with a projected time frame for when these changes are to occur. The phasing of the additional staffing required supporting the 3Ts Programme needs to be linked to the planned changes in both capacity and activity of each of the affected services.
- 9.24.3 To assist the workforce planning leads in this task, a new series of workforce planning workbooks has been developed and issued to the workforce planning leads. The workbooks include the following worksheets:
- **Baseline Establishments:** this sheet sets out the baseline (Month 6 2009/2010) establishments that were used for calculating the establishment change required to implement the planned post 3Ts establishments.

- Post 3Ts Establishments: this sheet sets out the latest version of the planned post 3Ts establishments.
  - Consolidation: this sheet brings together the baseline (Month 6 2009/2010) establishments and the latest version of the planned post 3Ts establishments.
- 9.24.4 On the return of the completed 3Ts Workforce Position Management Workbook for each 3Ts service, a new data table will be established, with the planned change in establishment being held at an individual position level. For FBC detailed analysis of the 3Ts workforce plans will be undertaken as the plans can be predicated against either the current or any future baseline establishment.
- 9.24.5 Planning leads for 3Ts will be tasked to work with their Divisional Management Teams to ensure that the workforce plans for the 3Ts Programme are affordable and matched to the planned change in activity and service provision for each specialty. This is likely to entail changes in workforce configuration and design, incorporating new ways of working and new job roles.
- 9.24.6 Further work will be undertaken to ensure that planned activity is appropriately translated into capacity – e.g. the number of beds being staffed, theatres being utilised etc. given the effects of growth, case mix, length of stay and so on.
- 9.24.7 The resulting 3Ts workforce plans will be subject to both internal and external scrutiny, including assessment against productivity measures and benchmarking against comparable services and organisations. This will be complete in time for the FBC.
- 9.24.8 Significant work has been accomplished over the past two years in assessing the staffing requirements of the 3Ts Programme. The work now being undertaken to describe the 3Ts workforce plans in terms of the Trust's current workforce structure and to show the predicted phasing of these establishment changes will lead to the further development of the plans with the objective of ensuring that the changes in workforce are linked not only to physical capacity but to the predicted changes in activity and in service delivery for each 3Ts specialty. Ensuring that the 3Ts workforce plans form an integral part of the Trust's long term business and financial plans, including the Trust's efficiency plans, is crucial to the success of the 3Ts Programme as is the requirement to develop, maintain and implement an education and training strategy and a recruitment and retention strategy that secures the future workforce required by the Programme. Further detail about this workforce information can be found at **Appendix 9C**.

## 9.25 **Public Consultation**

- 9.25.1 All formal consultation on service changes has been completed. The expansion of the trauma service to a Major Trauma Centre was part of the consultation carried out as part of 'Healthy People, Excellent Care'. The move of neurosciences to the RSCH campus was consulted on as part of the 'Best Care, Best Place' consultation in 2004. Relevant OSC minutes confirm that "*The Joint Committee accepts the proposal to keep neurosciences in Sussex and the Joint Committee also accepts that there are sound clinical reasons (includ-*



ing the treatment of children) for the new department to be based at the RSCH site<sup>9</sup>”.

9.25.2 The Trust has also considered the four tests of reconfiguration which were set out by the Secretary of State for Health in 2010 almost immediately following the General Election in May 2010. More detailed guidance was issued by the Chief Executive of the NHS in July 2010 which looked to ensure that any proposals were gauged against these four key areas:

- Support from GP Commissioners;
- Strengthened patient and public engagement;
- Clarity on the clinical evidence base;
- Consistency with current and prospective patient choice.

9.25.3 There is only one element of the 3Ts proposals which could possibly be characterised as reconfiguration and that relates to the relocation of neurosciences from Hurstwood Park to the RSCH campus.

9.25.4 The rationale for this can be directly linked to the five investment objectives for the scheme:

- Investment Objective 1: Replace the Barry Building wards and departments with modern, fit for purpose clinical accommodation. This is essentially a provider choice to replace outdated accommodation and does not drive any relocation, change or cessation in the services involved. Hence, it does not relate to any form of reconfiguration of services. Hence, this element of the 3Ts proposals does not require any further assessment against the four tests. However, the GP commissioning consortium in Brighton & Hove and in West Sussex have issued letters of support for the 3Ts scheme;
- Investment Objective 2: to relocate neurosciences from Hurstwood Park to the RSCH campus. This has previously been consulted upon and the need for this discussed, consulted and confirmed over a series of years. The Trust also sought to consolidate the clinical evidence base by requesting a review of the Neurosciences service by the SBNS. This is summarised in Section 3 of this OBC and is the fourth such review of the service undertaken over the last 10 years. The report, undertaken as a peer review by four prominent neuroscientists concluded that the transfer of services to the RSCH site is a “golden opportunity to expand and secure the neurosciences in modern facilities alongside other specialist services and the Major Trauma Centre”. Patient and public consultation was undertaken in 2004 as noted above;
- Investment Objective 3: to establish the RSCH as a Major Trauma Centre. This was consulted upon by NHS South East Coast and is a service development in line with national policy rather than a reconfiguration;

<sup>9</sup><http://www.eastsussex.gov.uk/yourcouncil/agendasreportsminutes/scrutinycommittees/healthoverview/reports/HOSC18Mar2005item8BestCareBestPlace.pdf>

- Investment Objective 4: to expand and rebuild the Sussex Cancer Centre. This is a service development in response to commissioner requirements as set out in the Sussex Tertiary Commissioning Strategy and not a reconfiguration;
- Investment Objective 5: to develop facilities for teaching, training and research. This is an essential part of the Trust's development as the Teaching Hospital for the South East Coast region and is not a reconfiguration.

9.25.5 The 3Ts proposals have been driven by, and endorsed by commissioners. The Sussex PCT cluster has reconfirmed its support for the Trust's proposals and the local GP consortia have confirmed their support for those elements of the scheme which they have responsibility for.

9.25.6 No other formal consultation is required as part of the 3Ts programme, however there has been a high level of public engagement as detailed in section 12 of this OBC.

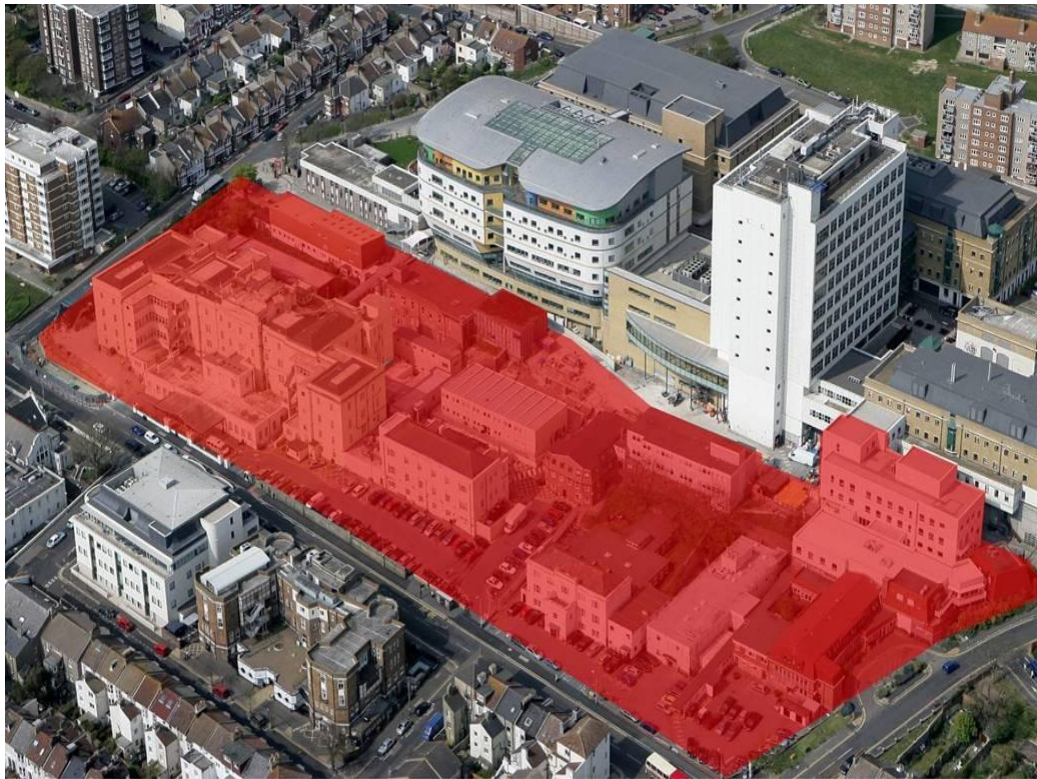
## 9.26 **Site**

9.26.1 The Royal Sussex County Hospital (RSCH) campus lies within the Kemp Town conservation area of Brighton. Kemp Town contains a significant number of Grade I and Grade II listed buildings and the RSCH itself has a small Grade II listed chapel at the rear of the Barry building which needs to be demolished to enable Stage 2 of the preferred option build to proceed.

9.26.2 The RSCH campus is wholly owned by BSUH. No land transactions are required to facilitate the scheme, but the re-location of the Neurosciences Centre from Hurstwood Park at PRH to RSCH presents the Trust with the option to either dispose of or re-develop the Hurstwood Park campus on completion of Stage 1 of the build.

9.26.3 The proposed 3Ts redevelopment area on the RSCH is shown in picture 9.5, shaded in red.

***Figure 9.5 Area for Redevelopment on RSCH Campus***



## 9.27 Planning Issues

9.27.1 The Trust has established and maintained a regular dialogue with the planning officers of Brighton and Hove City Council throughout the OBC phase. Formal discussions about the project were initiated in August 2008 and continued throughout the development of the OBC in 2009 and this refreshed OBC.

9.27.2 The Council has appointed an experienced major projects planning officer to act as Case Officer for the 3Ts programme. The Council's senior planning officer is also a member of the 3Ts Programme Board.

9.27.3 Key statutory planning issues that have been identified are:

- Massing, height and external appearance;
- Sustainability, including transport and parking;
- Delisting and demolition of the Grade II listed chapel at the rear of the Barry building;
- Helipad impact.

9.27.4 To inform the statutory planning process, the following studies and surveys have been carried out:

- Massing and height configuration study;

- Traffic Impact Assessment (TIA) and Travel Plan;
- Environmental Impact Assessment (EIA);
- Habitat Survey.

9.27.5 The key findings are detailed below.

- Massing and height configuration study:
  - stage 1 tower should not be higher than the existing Thomas Kemp tower.
  - building to be set back sufficiently from Eastern Road to avoid appearing overbearing at ground level.
  - external façade treatment to be in keeping with the Kemp Town conservation area and the coastal setting.
  - intermediate and distant perspective views should be in keeping with the existing cityscape skyline.
  - additional 'green space' should be included via terraces and living roofs and walls.
- Traffic Impact Assessment (TIA) and Travel Plan:
  - Bristol Gate road junction to be widened to accommodate an additional lane for vehicles turning right into Eastern Road (see site plan in Estates Annex);
  - some re-phasing of traffic lights on Eastern Road to accommodate peak traffic flows;
  - additional parking of 312 spaces on the RSCH campus is acceptable. This is substantially below the maximum number of 2300 spaces theoretically allowed by current planning guidance;
  - the revised BSUH travel plan is acceptable.
- Environmental Impact Assessment (EIA):
  - the EIA scope has been agreed with Brighton and Hove City Council and will be carried out during the FBC stage.
- Habitat Survey:
  - a pair of peregrine falcons normally nests on the existing Thomas Kemp tower each Spring. Peregrine falcons are a protected species and nests must not to be disturbed during the nesting season. Otherwise no particular issues.

- 9.27.6 The planning officers at Brighton and Hove City Council are satisfied that the 3Ts preferred option complies with the national and local planning policies and site specific constraints. The scheme remains subject to formal planning approval as part of the FBC stage of the project.
- 9.27.7 It should be noted that given that the site is adjacent to five conservation areas and within one-quarter of a mile of the only Grade 1 Listed crescent with sea views in England, plus the Grade 2 listed chapel, there has been considerable interest from a town planning, conservation and heritage viewpoint. The Local Planning Authority has confirmed that the level of assurance required to inform a positive recommendation to the local Planning Committee can only take the form of a Full Planning Consent. This is currently being prepared.



## 9.28 Decanting

Linen Service	Linen store	Relocated to RSCH north service road
Jubilee Block	Howard 1 Ward Howard 2 Ward Grant Ward	Barry Building Sussex Kidney Unit Sussex Kidney Unit
MRI	MRI	Front Car Park. Modular building to be located in front of the Barry Building.
Sussex Cancer Centre Annex	Impression Service Medical Physics offices Oncology OPD Radiation safety team	Sussex Cancer Centre Front car park Sussex Cancer Centre St Mary's Hall School
Major Incident Equipment	MIE store	North Service Road. New build enclosure
Trust Headquarters building	Trust Executive offices	St Mary's Hall School

*Figure 9.6 Decant area*



9.28.1 As demonstrated by the site photograph above providing a sufficient area of the RSCH campus on which to develop the preferred option, as well as to continue to deliver high quality patient services, is a major challenge.



- 9.28.2 The Trust, with Laing O'Rourke, has developed outline decanting strategies for all the shortlisted options and has developed a detailed decanting plan for the preferred option.
- 9.28.3 The buildings which need to be demolished at each stage, with an identification of the departments which require temporary or permanent relocation, are identified in Table 9.12 below. As a set of key principles, the number of relocations for individual departments – particularly clinical ones – must be kept to the absolute minimum.
- 9.28.4 The table overleaf identifies the proposed location of the decanted service under the decant plan. The full decanting plan for the preferred option is contained in the Estates Annex.

**Table 9.12 Decanting Plan**

<b>Building</b>	<b>Function/Department</b>	<b>Decant Location</b>
Nuclear Medi- cine	Nuclear Medicine	Front Car Park Modular building to be located in front of the Barry Building.
	Anaesthetics Offices	Courtyard Modular building in Brighton Pathology courtyard
	Medical Physics Offices	Front Car Park Modular building to be located in front of the Barry Building.
ENT building	ENT OPD	Courtyard
	Audiology	Modular building in Brighton Pathology courtyard
	Speech and Language Therapy	
Latilla Building and Annex	Physiotherapy OPD	Brighton General Hospital Block C.
	Rheumatology OPD	
	Clinical Directorate Offices	St Mary's
	Management support of-fices	
	Cardiac Gym	Building 545
	Physio Inpatient Support	Building 545
Stephen Railli building	Clinical coding	St Mary's
	Medical secretaries	
	Management support of-fices	
	Site Management	Building 545
Estates building	Estates Workshops and offices	Oil Tank store
	EMBE workshops	Modular building in Thomas Kemp tower courtyard
	Security Office	Building 545
	Occupational health	St Mary's
Linen store	Linen store	Existing storage containers relocated to RSCH service road
Jubilee Block	Howard 1 Ward	Barry Building
	Howard 2 Ward	Renal Unit and Barry Building
	Grant Ward	Renal Unit and Barry Building
MRI	MRI	Front Car Park. Modular building to be located in front of the Barry Building.
	PACS Office	Building 545
Sussex Cancer Centre Annex	Mould Service	Sussex Cancer Centre
	Medical Physics office	Front car park
	Oncology OPD	Sussex Cancer Centre
CRBN	CBRN store	North Service Road. New build enclosure
Trust HQ build- ing	Trust HQ	St Mary's
	Post room	Building 545
	Junior Doctors Mess	Building 545
Waste com- pound	External waste storage compound	Building 545

- 9.28.5 These decanting arrangements relate to the first major stage of development on the campus which re-provides the Barry Building wards and relocates the remainder of neurosciences to the RSCH campus. Emergency neurosciences external space will be provided at BSUH once the Level 1 Trauma Centre is established in 2012.
- 9.28.6 Once the Stage 1 building is complete ENT, Audiology and Oral and Maxillofacial Outpatients, plus Nuclear Medicine (including Radiopharmacy suite), Facilities offices and stores, Junior Doctor's Mess and Rheumatology Outpatients will all relocate into the new build. They will be joined by Cardiac Investigation, the wards in the Barry Building and the main Imaging department.
- 9.28.7 Once these moves are complete, the Barry Building will then be vacated and can be demolished with no further temporary decanting undertaken.
- 9.28.8 Upon completion of Stage 2 all of the existing cancer centre functions, plus accommodation displaced by Stage 1 will relocate into the new Stage 2 building. The existing Cancer Centre can then be demolished to make way for the new service yard and future expansion space.

## **9.29 Design Quality and Philosophy**

- 9.29.1 A design brief has been developed in conjunction with a clinical and non clinical brief to facilitate the design process. The design philosophy is built around the interplay of space, form, environment and place – all of which are described below. The design has taken into account the Productive Ward Programme and the Trust's previous lead for this Programme is working as a change consultant on the 3Ts project with responsibility for ward design.

### **Space**

- Legibility – clarity of layout and flow of spaces that makes the building easy to navigate, even for first-time visitors, for staff and for patients who may be tired, unwell and stressed;
- Openness – that almost indefinable quality of a place that says 'welcome' as soon as you arrive;
- Interaction between people including staff-to-staff and staff-to-patient, breaking down the sense of a 'formal institution';
- An appropriate gradation from public to private, recognising that within the overall public identity of the hospital, there is a need for spaces of very different character and with different levels of access;
- Privacy versus staff observation – reconciling the patients' desire for privacy with the need for effective staff observation, particularly in wards accommodation which may have a preponderance of single rooms;
- In-between' spaces – as important in the overall feel of the hospital as individual departments and rooms. Corridors often feel institutional, cutting off people from the outside. They will always be necessary, but should be de-

signed to minimise the ‘tunnel’ effect and exploit opportunities to open them up as informal spaces, possibly with views to the outside and into other neighbouring shared spaces. Observations at the workshop included that waiting areas could be “entertaining”.

### **Form**

- Civic presence – the hospital is an important destination in Brighton. Its architecture needs to reflect this, giving it an attractive presence on the Brighton skyline and improving the quality of the streetscape along its frontage to Eastern Road;
- Image – the new architecture should express a welcoming and re-assuring image that draws both on its activities and its location to give it a re-invigorated sense of place;
- Scale – this must be deftly handled to ‘humanise’ the experience of such a potentially large building on an even larger campus, breaking down the sense of scale so that it feels ‘approachable’ and in tune with its context;
- Health promoting – not a ‘healing machine’ but a place more akin to a health spa: where light, air, water and nature are intrinsic to its character and instil a ‘healthier frame of mind’.

### **Environment:**

‘Sustainability is about creating successful places’.

- Light – and above all, good daylight can aid a ‘healthier frame of mind’. Daylight and sunlight connect us with the outside and with our own natural rhythms, potentially contributing to the quality of the healing environment;
- Temperature – whilst getting this right in relation to specific areas is important, we must not forget the psychological component: the ability to open a window for fresh air to stop a space feeling stuffy and claustrophobic to someone;
- Ventilation – in hospitals this is usually unseen: an engineer’s world of ducts and air-conditioning. In Brighton we can try to re-connect with the sea and the idea of ‘taking the air’;
- Orientation and micro-climate should be carefully considered so that the buildings’ internal and external spaces look at using light and views whilst minimising the unwanted effects of the local climate – high volumes of sunlight and wind;
- Health should be encouraged by providing attractive and easily accessible environments to walk around;
- Sustainability – a very broad theme which is as much about longevity and flexibility as it is about reducing energy consumption

## Place

- A sense of Brighton – its colours, forms, scale of spaces, steep hills and relationship to the sea contribute to its special atmosphere;
- Sussex landscape – the ‘green top/white front’ is characteristic of the chalk cliffs where the ‘pillowy’ Sussex landscape meets the sea. It has topography of gentle curves, subtly replayed in the bow fronts of Victorian houses and the rise and fall of the City’s skyline;
- Views – the panoramic sweep of city and sea is potentially the site’s greatest asset. The new buildings can look to embrace these views without compromising the existing hospital buildings’ views, particularly from patients’ bedrooms;
- Campus – the Royal Sussex County Hospital is a campus in name but not in feel. Introducing gardens and a pattern of attractive external spaces and routes can bind different buildings together within a more coherent ‘urban quarter’;
- Inside/outside - drawing the outside in and allowing a sense of the inside to express itself outside could help embed the new buildings in context and making them feel open and welcoming, not an ‘institutional box’;
- Art – potentially a very positive way of engaging public interest and participation both during design development and throughout the lifetime of the building. It should be a seamless part of the character of the architecture and the interior and exterior spaces, planned from the beginning of the design process;
- Front door – is an opportunity to give the new hospital a ‘public face’; a clear point of arrival that will be critical in forming first impressions. It must be highly visible along Eastern Road and provide re-assuring glimpses of the inside: cafes, lounges and reception points where the emphasis should be on putting ‘hospitality’ back into hospital.

## AEDET Evolution

9.29.3 The 3Ts programme was subjected to an ‘Achieving Excellence in Design Evaluation Toolkit’ (AEDET) Evolution review, which was carried out on 8<sup>th</sup> May 2009 led by BDP and refreshed in late 2010. AEDET Evolution is part of a benchmarking tool to assist trusts in measuring and managing the design quality of their healthcare facilities.

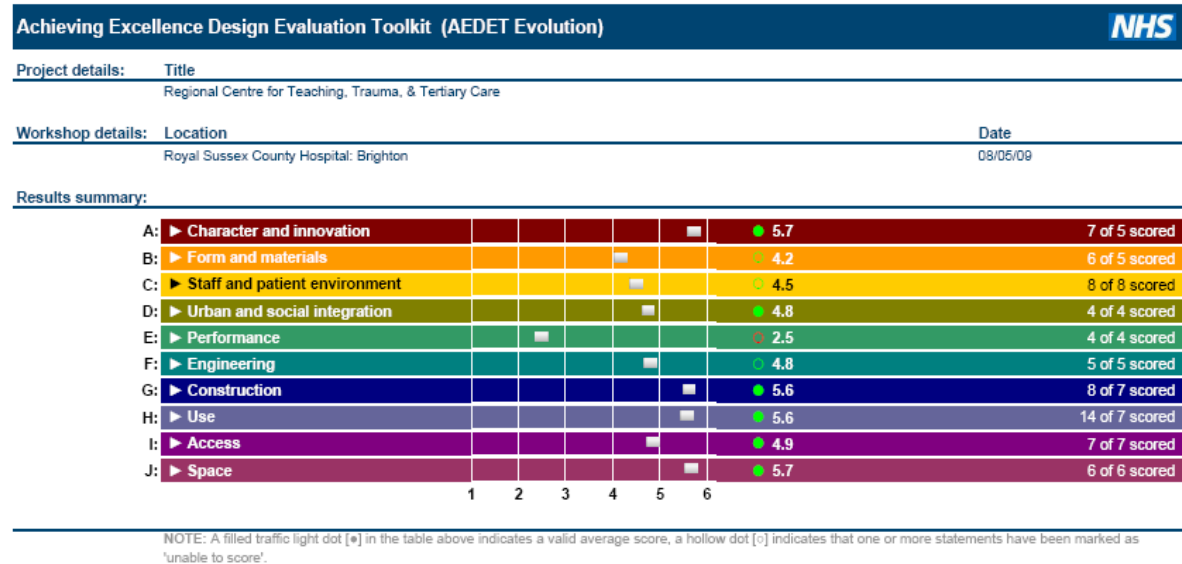
9.29.4 A six point scoring scale was used to express a level of agreement with each statement in the toolkit. Scoring were allocated as follows

- 6 = Virtually complete agreement
- 5 = Strong agreement
- 4 = Fair agreement
- 3 = Little agreement
- 2 = Hardly any agreement
- 1 = Virtually no agreement

9.29.5 The AEDET Evolution guidance states that Trusts should seek to achieve as high a score as possible, but at least a score of three, for each of the ten main criteria.

9.29.6 The AEDET Evolution results for the 3Ts Programme are detailed below. Further details are provided at **Appendix 9D**.

**Figure 9.7– AEDET Evolution results**



### Art Strategy

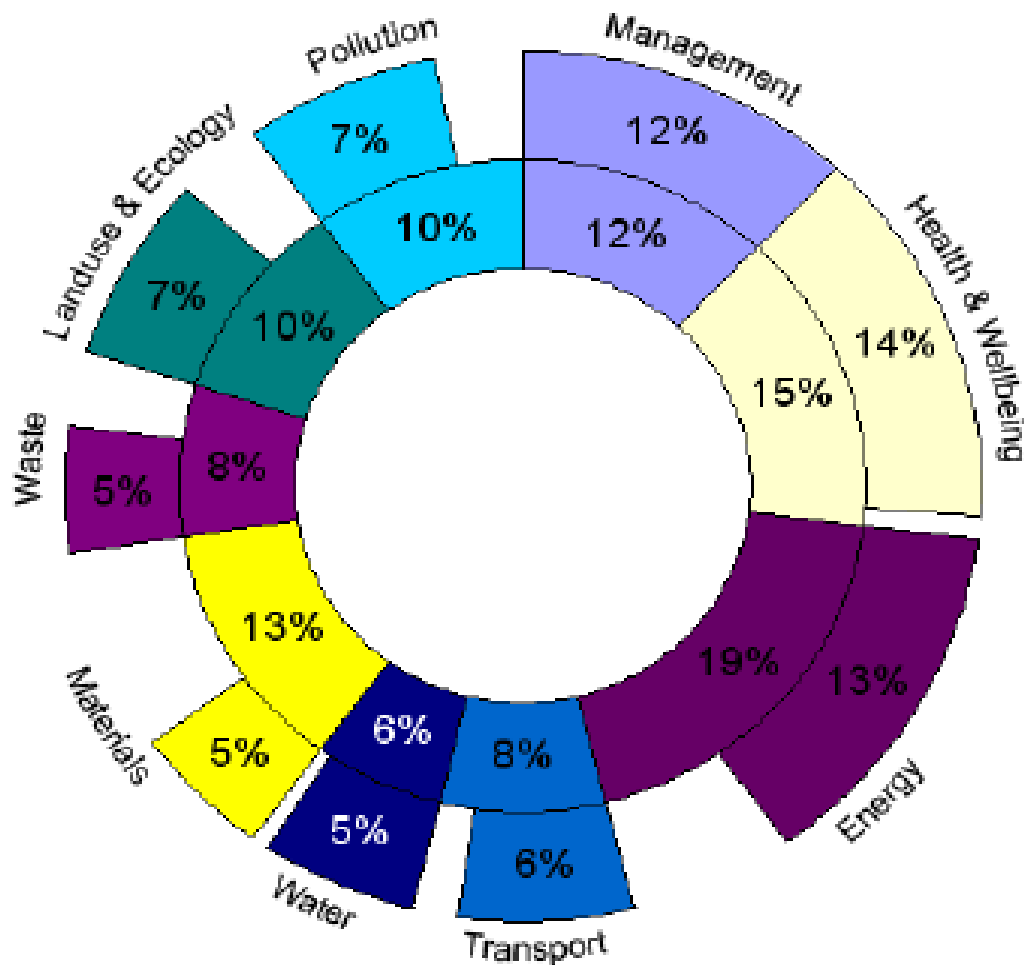
9.29.7 The Trust has commissioned Willis Newson to ensure that the art in the new hospital compliments the design and enhances the environment for patients, visitors and staff. The Public Arts Strategy is attached at **appendix 9E**.

### 9.30 Sustainability

9.30.1 A detailed BREEAM assessment has been carried out for the preferred option, 'Do Minimum A' and 'Do Minimum B'. The results for the preferred option are summarised in figure 9.8 overleaf



Figure 9.8– BREEAM results



Inside ring = available credits

Outside ring = predicted route to 'Excellent'

+ 2% for innovation credits

9.30.2 The preferred option scores 73%, achieving a BREEAM Excellent rating.

9.30.3 BREEAM is embedded in the project design process from the outset. For example, achievement of a CO2 index of between 38-40 ('B' rated EPC) is a minimum requirement and energy efficient design has implications on orientation, building form, ventilation potential, building fabric design and material selection.

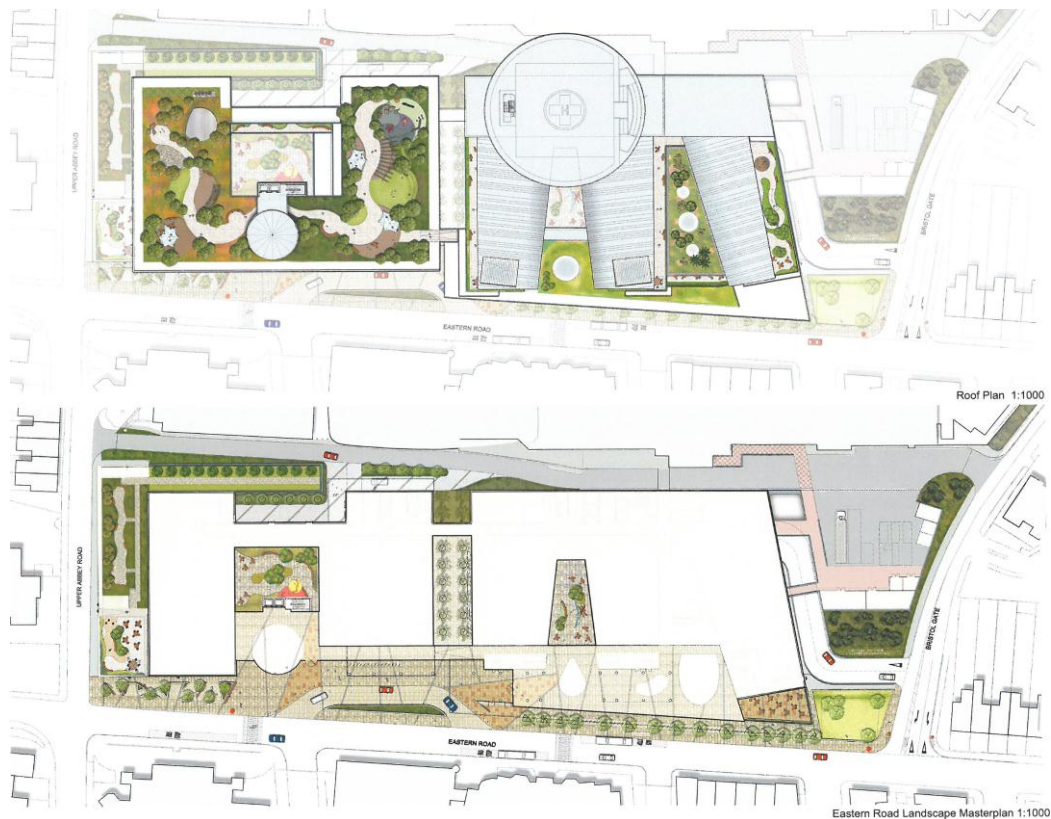
9.30.4 Regular consultation with appropriate stakeholders has and will continue in the design, and investigations into potential use of Combined Heat and Power (CHP), harvesting rainwater, grey water systems will inform design.

9.30.5 The design incorporates appropriate cyclist facilities (including showers and storage) and meets all BREEAM cyclist requirements. It also incorporates an

element of renewable energy and will contribute to the attenuation of urban heat island effect.

9.30.6 The project will create links with the community and take into account local initiatives to produce a holistic design which encourages healthy travel, provides green space, accommodates local food and promotes education. Several green roof terrace areas are shown in figure 9.9 below.

**Figure 9.9 Proposal for Landscaping on Redeveloped RSCH Campus**



9.30.7 The Trust's advisors have considered the implications of achieving a BREEAM Outstanding rating ( $\geq 85\%$ ). In order to achieve 85 – 90%, the uplift from the current position will require general credit improvement; selective exemplar performance credits and all mandatory credits. It was noted that the 'Energy' category is very tough to achieve for a hospital and materials would be very difficult and costly to improve. These aspects in particular were considered in more detail – in particular bio-fuelled energy sources, building integrated solutions and off-site solutions. The practicality, feasibility, capital cost and operating cost of these were reviewed. It was deemed not feasible to deliver a value for money solution that was BREEAM Outstanding.

9.30.8 The Preferred Option fully complies with relevant CDM regulations (full approval contained at **appendix 9F**).

9.30.9 The Trust is keeping abreast of large scale renewable technology in the locality so that in the future there may be potential to link into larger scale developments and achieve 'Outstanding'.

### **9.31 Infection Control**

9.31.1 The Infection Control Team at BSUH has been engaged in the design process to date and have provided recommendations, in liaison with the Consultant in Communicable Diseases at the Health Protection Units for the detailed design phase of the project. BSUH has also reviewed the design from an infection control perspective (attached in **appendix 9G**)

9.31.2 The control of infection checklist provided by NHS South East Coast has been completed and is attached at **Appendix 9H**.

### **9.32 Information Management and Technology**

9.32.1 Working on behalf of the Trust, Sussex Health Informatics Service has developed a plan that details the Trust's proposals for IM&T and telephony services in the new hospital buildings, the transition from old to new and how services will be maintained for the parts of the hospital not being redeveloped.

9.32.2 The new buildings will provide the necessary Cat 5e cabling up to the socket that will support the BSUH IM&T strategy to develop and modernise the IM&T infrastructure to ensure that services are secure, resilient, cost effective and sufficiently accessible to the public. The Trust recognises that its vision and ambitions for the future will depend, in large part, on the nature and capability of telecommunications systems and services. It is also acknowledged that, in their present form, the existing systems and services are unlikely to facilitate the Trust's real aims and objectives.

- 9.32.3 The Trust's intends to provide one hot desk room with up to 6 workspaces each with a computer terminal in every ward/ department. Consideration will be given to the location of screens for viewing images such as x-rays during the design phase leading up to the FBC.
- 9.32.4 In addition, careful consideration will be given to the location/placement of VDUs (eg. for Imaging) throughout the development as part of the 1:50 plans at FBC stage.
- 9.32.5 The existing Data Centre building will move to accommodate the new 3Ts buildings. The data centre migration strategy is outside the scope of the 3Ts programme and this OBC, and is being addressed via a separate business case led by the Sussex HIS. It is recognised as a critical success factor for 3Ts, as the current data centre lies within the stage 2 (Cancer Centre) build area, so has to move prior to stage 2 start on site (est. late 2014).
- 9.32.6 The Trust has engaged a specialist IT consultancy (PTS consulting) working in conjunction with the Sussex Health Informatics Service (HIS) to develop the IM&T brief for the scheme and to provide expert advice on technical issues to inform the design process in respect of the IT, Telecoms and AV aspects of 3Ts.
- 9.32.7 The 3Ts IM&T plan, together with the following strategies are attached at appendices 9H-M.
- Decant Strategy;
  - IT workstream Output;
  - Data Centre Migration Strategy;
  - Telecommunications Strategy;
  - AV Strategy

### **9.33 Equipment**

- 9.33.1 The Trust has engaged a specialist hospital equipment planning consultancy (MTS Consulting), via the Laing O'Rourke ProCure 21 supply chain to scope the equipment requirements for the scheme.
- 9.33.2 Equipment costs are based on the following assumptions at OBC stage:
- All Group 1 equipment will be supplied and fitted as part of the construction contract and has been allowed for in the works cost estimate;
  - Group 2, 3 and 4 equipment in the 3Ts build which replaces existing equipment on the Trust's asset register will be funded from the Trust's operational capital programme;
  - Group 2, 3 and 4 equipment which is additional to the Trust's asset register will be funded from the 3Ts programme;

- All Group 2 medical equipment (e.g. Imaging and theatre equipment) will be new, to avoid temporarily reducing operational capacity if existing equipment is decommissioned, moved and re-commissioned in the new 3Ts facilities;
- 70% of existing Group 3 and 4 medical equipment (e.g. Beds and portable medical equipment) will be transferred from existing locations to 3Ts;
- 30% of existing Group 3 and 4 non medical equipment (e.g. office furniture and equipment) will transfer, subject to survey and compatibility with the new location.;
- All 'front of house' Group 3 and 4 equipment in public areas (e.g. patient's waiting rooms, reception points and the main entrance concourse) - will be new.

9.33.3 A detailed Bill of Quantities for 3Ts equipment has been generated and costed in total as new. The 'all new' cost has then been abated, based on the assumptions above, which indicates that an allowance of £29m + VAT should be made within the 3Ts capital budget at OBC stage for Groups 2, 3 and 4 equipment. Group 1 equipment has been accounted for in the construction works element of the capital costs. On approval of the OBC, detailed work will commence to establish each individual room requirement for equipment and whether it will be transferred or replaced. This will confirm the equipment costs required within the 3Ts budget for the FBC, along with an equipment procurement strategy for the Trust.

9.33.4 At FBC stage, the equipment requirement will be identified in groups via the room data sheets and 1:50 scale room loadings design process. This process will identify which items will be:

- Supplied through the construction programme;
- Items to be purchased outside the construction programme but free issue to the contractor, by the Trust, to be fitted within the construction programme;
- Items to be purchased by the Trust to be delivered and placed/installed after the construction programme has been completed.

- 9.33.5 All items within the construction programme will be subject to the protocols of the Tender process.
- 9.33.6 All Trust bought items will be purchased through the Trust's Purchasing Department, augmented by an equipment procurement consultancy team due to the large scale of the project, and will be subject to the competitive tender process.
- 9.33.7 All items will be monitored against a given equipment budget both by the Programme Director and the Project Manager and will be subject to at least two authorising signatures, one being from the Trust's Finance Department to comply with the Trust's Standing Financial Instructions.
- 9.33.8 All contractor supplied items, supplied through the contract, will be monitored against the contractors programme and will be his responsibility for both delivery and quality against a given contract specification issued at the Tender stage.
- 9.33.9 Items purchased by the Trust to be placed / installed at contract end will be delivered and placed after hand over / completion of the construction programme. All items will be unpacked and checked by the Trust or its agents.
- 9.33.10 By allocating responsibility for equipment purchase to the party who best understands their requirements, the Trust will be able to purchase at competitive rates equipment that it knows is suitable for this client group, the contractor will be able to ensure equipment is co-ordinated with its design and procurement delays will be minimised thus maximising value for money.

### **9.34 Facilities Management**

- 9.34.1 The Trust currently provides most of its hard FM services for estates maintenance and repair in house, except for some specialist maintenance contracts such as medical gases, lifts and fire alarms. One major exception is the Royal Alexander Children's Hospital which is a PFI facility on the Royal Sussex County Hospital campus where hard FM services are outsourced and provided by Kajima.
- 9.34.2 Catering, cleaning and portering services are outsourced to ISS.
- 9.34.3 For the 3Ts programme, FM services have been planned on the basis that existing provision arrangements and contracts will be maintained and extended as appropriate to cover the new buildings. No TUPE issues are anticipated.

### **9.35 Consumerism**

- 9.35.1 Consumerism is the overarching concept of looking after the needs and desires of patients and visitors in NHS hospitals and clinics. It is about providing a service that recognises and meets the expectations of an individual rather than a generic group. Consumerism is about anticipating needs, and delivering consistently high levels of service that satisfy those needs.
- 9.35.2 The design addresses the relevant consumerism criteria as detailed overleaf:



**Figure 9.10: How the Design Addresses Consumerism**

	<b>Consumerism Criteria (those applicable to this project)</b>	<b>Design Response</b>
<b>A. Privacy &amp; Dignity</b>		
A1	Greater assurance of privacy and dignity	The design of the hospital has ensured privacy and dignity of all patients wherever they are within the new hospital .This includes: 75% single rooms on most wards excluding stroke and neurosciences where the acuity of the patients has led to a higher proportion of 4 bed bays within the operational policy.
A2	Women only Day Rooms	Day rooms have been provided on all wards in addition to a high proportion of single rooms. The expectation is that patients will spend more time in their rooms and the increased acuity of in patients will reduce the demand for day space.
<b>B. Quality of Environment</b>		
B3	Higher specification of fabric, finishes and service instillations to reduce the risk of maintenance thereby encouraging perception of quality facilities and care in ownership	This is agreed in principle and will be developed in greater detail as part of the FBC .
B4	Natural light as agents of wellbeing and recovery	All clinical areas have direct access to natural light .
B5	Natural ventilation as agents of wellbeing and recovery	Wind factors in the tower mean that it will be a sealed building. Ventilation of other areas of the development at lower levels will be developed in detail at FBC. Natural ventilation will be provided where possible taking into account clinical constraints.
B7	Clean Wards/Recovery Bays	All wards and clinical areas have been provided with levels of storage designed to ensure that corridors are clear. Every ward has a separate commode cleaning room so that high levels of cleanliness are maintained and cross infection risks minimised. In addition the scheme includes a central bed and equipment was facility that twill be available to the whole hospital. All areas have local cleaner's cupboards and the Clinical Infection ward has separate support facilities for each bed zone. The detailed design will ensure that all areas can be easily cleaned and

	<b>Consumerism Criteria (those applicable to this project)</b>	<b>Design Response</b>
		avoid build up of dust etc.
B8	All medical equipment, consumables and linen discreetly stored	Storage has been provided throughout to ensure goods are not stored on circulation routes.
B9	All clinical waste safely and discreetly stored	Disposal areas for waste awaiting collection have been provided in all departments and where possible have been located close to the FM lifts to avoid public routes.
B10	Interiors that instil a sense of quality, care, restfulness and cheerfulness and that work to create a healing environment	The development benefits from the availability of peerless views of the sea or the surrounding countryside. The detailed interior treatment will be developed at FBC.
B11	Artwork installed as an essential characteristic of the healing environment	The development has included an art project from its inception. The design incorporates designated locations for large pieces of art as well as less formal locations for other pieces. This will be developed further at FBC.
<b>C. Patient Accommodation</b>		
C12	Rationalisation of bed space configuration to a ratio of 50% or greater of single beds to multi-bed bay ward accommodation	The configuration of the wards varies according to clinical requirements with all wards having at least 50% single rooms, most wards having 75% single rooms and the cancer and clinical infection wards having 100% single rooms.
C13	Single sex washing and toilet facilities	Single sex washing and toilet facilities are available throughout.
C14	Adequate shower / bathing facilities In-Patients Departments where full en suite facilities is not a design objective	En suite facilities have been provided to all single rooms and 4 bed bays; the latter have 2 WC's available for patients plus a shower. Separate public toilets are available on wards.
C15	Improved Relatives / Patients Overnight stay facilities and increased supply to meet demand	It is anticipated that many relatives will choose to stay at the bedside particularly in the single rooms where sufficient space will be available and the rooms will be furnished accordingly. Separate relatives' overnight stay is provided for the neurosciences ITU and the cancer wards.
C16	Increased relatives/patients	The spacious critical care accommodation

	<b>Consumerism Criteria (those applicable to this project)</b>	<b>Design Response</b>
	overnight stay facilities adjacent to critical care wards	for patients will allow relatives to spend time alongside the patient where this is clinically feasible; the unit will be for neurosciences patients and relatives' bedrooms are to be provided nearby so that the relatives can be close but also have some respite.
C17	More Space around beds to accommodate visitors in comfort without instilling sense of crowding and to engender the patients sense of spatial volume / airiness	Space allowances comply with HBN guidance and the layout of all accommodation will be designed to maximise the sense of space.
<b>D. Entrances, Reception &amp; Waiting</b>		
D18	Improved waiting areas	Careful consideration has been given to all waiting areas to ensure they relate logically to all destinations and offer a comfortable well lit environment – for example with an outlook into the atrium or with outside views.
D19	Ward foyers and focal point for arrival of visitors	Ward entrances have been designed so that visitors immediately meet someone who can help and guide them. Visitor waiting areas have been provided shared between two wards.
D20	Improved main entrances, dept entrances and reception points	All wards and departments have been designed to include easy access to a receptionist and information. The Main Entrance will be light, spacious and give immediate visibility to public lifts and stairs as well as support facilities including WC's and public telephones. There will be full visibility to the drop off point for people waiting to be collected by vehicle.
<b>E. Security &amp; Safety</b>		
E21	Safe and accessible storage of belongings and cash	It is proposed that all in patients will be provided with a personal hotel style safe.
E22	Immediate access by patients and staff to call points for summoning assistance	These will be provided in all clinical areas.
E23	Secure facilities that instil a sense of safety and security of possessions	Access to each phase the new development will be via one public entrance; the access from the car park to Phase 1 will be controlled and overseen from the reception desk. Detailed security arrangements will be

	<b>Consumerism Criteria (those applicable to this project)</b>	<b>Design Response</b>
		developed at FBC.
<b>F. Barrier Free Access</b>		
F24	No physical or operational barriers to the disabled	There will be no physical or operational barriers impeding the disabled.
F25	Clear multi-functional signage / way-finding that is non-institutional in character	Way-finding and signage will be developed as part of the FBC; however the layout of the building with an atrium and central lifts and stairs will make much way-finding intuitive.
<b>G. Patient Control of Environment</b>		
G26	Patient control of personal ambient environmental temperature.	This will be provided.
G27	Task lighting at the bedhead / bedside conducive to reading and close work.	This will be provided.
G28	Controllable lighting levels delivered from high quality non-institutional style luminaires.	This will be provided.
<b>H. Catering</b>		
H29	Easy access to vending machines	The vending locations will be decided at FBC stage.
H30	Better food, prepared and served in adherence to a clear hospital food, nutrition and health policy	This development forms only part of the Royal Sussex County Hospital and the hospital's overall catering policies will pertain. The development includes ward kitchens but not the central catering facility.
<b>I. Patient Advocacy</b>		
I31	Inclusion of Patient Advocate's Room	This has been included in a highly accessible location.
<b>J. Information and Communication</b>		
J32	Meeting the requirements of "Patient Power" by accommodating integrated bedside communication and entertainment systems.	This will be included at FBC stage.
J33	Easy access to (public) telephones	These will be included throughout the development as required at FBC stage. There are banks of public phones in the Main entrance.
J34	Fully informed patients, relatives	There are interview rooms throughout the

	<b>Consumerism Criteria (those applicable to this project)</b>	<b>Design Response</b>
	and visitors	building including all clinical areas where clinical staff can speak privately to relatives, patients and others away from a clinical atmosphere.
J35	Access to multi-lingual reading material for relaxation, including special needs material in large print or Braille.	This will be developed at FBC stage.
J36	Access to personal health records	N/A

### 9.36 Constraints and Dependencies

9.36.1 The project is subject to following constraints and dependencies that will be carefully monitored and managed throughout the lifespan of the scheme:

Constraints:

existing clinical capacity must be maintained throughout the 3Ts build programme;

continuity to meet commissioning intentions;

decant programme and sequence of the build;

remains within budget.

Dependencies:

achieve funding;

planning approval;

recruitment of workforce;

implementation of Data Migration Strategy.

## Preferred Option – Conclusions

- This design solution is the product of over three years work by the Trust and the Design Team, working with clinical teams, patients and staff and in consultation with the City Council, English Heritage, local residents and other local interested parties.
- 70% of the space replaces existing clinical facilities on a like for like basis when considering the clinical function to be reprovided: over 50,000 m<sup>2</sup>. This compares with the 7,700 m<sup>2</sup> of the Barry Building and Jubilee Wing, the circa 3,000 m<sup>2</sup> of Hurstwood Park and the 2,900 m<sup>2</sup> of the existing Cancer Centre – a total of just over 13,000m<sup>2</sup>. In order to just replace the current accommodation in line with modern space standards, the replacement facility needs to be over four times that of the current accommodation. This illustrates clearly the discrepancy between the in the current accommodation provided at the RSCH and at Hurstwood Park and current NHS space standards.
- 20% of this space is required for the expansion of imaging, neurosurgery, cancer and the appropriate support facilities for trauma, plus the new facilities for teaching and research;
- 10% of this space is allocated to new and enhanced support functions such as staff changing and shower/WC facilities, the new café on Level 6 of the Stage 1 building and the retail facilities in the main entrances of Stage 1 and Stage 2.
- The preferred solution meets the Trust's clinical requirements in full.
- The Preferred Option meets the Trust's requirements;
- The Preferred Option will enhance the patients' experience;
- The design takes full account of sustainability considerations and meets the required BREEAM standards;
- The Trust has developed and will continue to develop strategies to support the project in relation to IT, HR/Workforce, Equipment, Art and Decanting