

SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST

**FULL BUSINESS CASE – CHANGES TO CATERING SERVICE AND DELIVERY
METHODS/INFRASTRUCTURE ON A PHASED PROGRAMME**

EXECUTIVE SUMMARY

Board of Directors - 15th June 2011

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KOR/JT/3.06.2011

1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

Sheffield Teaching Hospitals NHS Foundation Trust is one of the largest Trusts nationally and has five main healthcare components spread across the city. The current catering strategy serving the Trust's healthcare facilities has developed over time on an ad hoc basis within each individual centre and is now in need of critical upgrading / investment and unification. A need for change has been identified to develop a clear and consolidated catering strategy across the Trust which makes the best use of the existing facilities, resource and systems.

1.2 LONG LIST OF OPTIONS

The following long-list of options was developed in the SOC and explored in the Outline Business Case (OBC):

- Option 1 Do Nothing (subsequently changed to Do Minimum)
- Option 2 Refurbish existing facilities and replace equipment on a like for like basis
- Option 3 Introduce cold line at all sites
- Option 4 Introduce hot bulk delivery at RHH and retain cold line delivery from NGH Central Production Unit (CPU) maintaining existing bulk service at WPH
- Option 5 Introduction of ward level regeneration of bulk food across all Trust sites Utilizing the CPU on the NGH site
- Option 5a Introduction of ward level regeneration of bulk food across all Trust sites Utilizing the CPU on the NGH site
- Option 6A Direct delivery to all wards from one location on a bulk basis (off site)
- Option 6B Direct delivery to all wards from one location on a bulk basis (on site)
- Option 7 Introduce "Steamplicity" or equivalent system (external provider)

After consideration and evaluation the long list was reduced to a short list of options with a thorough evaluation of the short listed options being undertaken as part of the OBC development process.

1.3 DETAILED SHORT LISTED OPTIONS CONSIDERED

The following shortlisted options have been evaluated using a detailed option appraisal in the OBC; the options have been further reviewed for the purposes of this FBC, Appendix B

- Option 1 Do Minimum
- Option 2 Refurbish existing facilities and replace equipment on a like for like basis

- Option 4 Conventional cooking system and bulk service at RHH and cook chill with ward and zone regeneration at NGH, maintaining existing bulk service at WPH

- Option 5 Introduction of ward level regeneration of bulk food across all Trust sites.
- Option 5a Introduction of ward level regeneration of bulk food across all Trust sites.
- Option 6A Introduction of ward level regeneration of bulk food across all Trust sites (distribution of food produced off site by others).

1.4 OBC Approval April 2010

The OBC was approved to proceed to FBC by Trust Board 15th May 2010 with the preferred option 5A at a projected value of £10.5M Inc.

Since approval, significant change has occurred across the NHS due in part to a change in government but also due to the global financial downturn that has brought about the need for the NHS to reduce its budget by £20 Billion. This reduced budget has brought about the need for all Trust's to be highly critical of capital spend and mindful of the revenue consequences that arise from that spend.

To assist with affordability issues the project team were tasked by CIT with reducing the value of the preferred option 5A whilst retaining the core benefits; this re-engineered option would become option 5B. Although the changes explored by the design team were significant resulting in increased fees compared with those declared at OBC, these increased costs have been managed within the allocated budget by the project team.

This FBC will demonstrate that a substantial reduction in project value (option 5A) has been achieved and it will also demonstrate how that reduction has been achieved (option 5B) and what assumptions have been made.

It has to be clearly understood, this is not option 5A for less; 5B is a re-engineered option that will have consequences in the future. Whereas option 5A prepared the Trust catering infrastructure for the next 15 – 20 years the revised option 5B will

mean that further future funding will be required for plant and equipment on an on-going basis, after replacement as detailed below:

1. The NGH CPU will require planned maintenance and replacement of existing production equipment over the next 7 years as equipment not included in option 5B reaches the end of its working life.
2. Operational savings from redesign will not be delivered to the same extent and it may require an afternoon production shift to produce the increased number of meals required within the existing production facilities.
3. Only 590m² of space on D Floor will be made available to the Trust for use by others as opposed to the 1500m² made available by option 5A.

The re-engineering of the preferred option 5A (OBC Trust Board Approval 15th May 2010) to 5B has reduced the capital requirement from £10.5m to £7.1M inclusive of previously approved £200k fees, whilst still delivering the quality benefits to patients, but there will be an increased requirement for maintenance, planned equipment and plant replacement in comparison with option 5A at OBC approval. Also the level of operational cost savings that were projected in Option 5A cannot be delivered to the same extent.

1.4a Changes that have occurred to Option 5A to create Option 5B

Work Content – Option 5A	Work Content Option 5B
<p><u>NGH CPU Option 5A</u></p> <p>The costs associated with option 5A allowed for major alteration of approximately 50% of the existing CPU together with new finishes and fittings to the office, staff change/rest area.</p> <p>In order to accommodate the increased production of meals for the Royal Hallamshire Hospital and the move from cold line plated meals to bulk meals at ward level for the NGH, significant and substantial changes needed to be made to the CPU regarding its ability to efficiently deliver a consistent quality driven service.</p> <p>The existing plating area and central dish washing area was to be removed, and the space utilised in both production and post production activities.</p> <p>The production area needed to be extended to provide better processing and increased capacity. The portioning and packing area needed to be extended to cope with the increased volume of meals, and all blast chillers needed to be replaced as they are at the end of their useful life.</p> <p><u>Post chilling</u>, the remainder of the released space would be temperature controlled, and used for chilled meal holding, picking and packing for direct delivery to wards at both the Northern General and Royal Hallamshire.</p>	<p><u>NGH CPU Option 5B</u></p> <p>The costs associated with Option 5B allow for the refurbishment of approximately 37% of the CPU, an area that is 25% less than was included for in Option 5A.</p> <p>The existing goods inwards, storage and production areas have been retained, with no changes to flows or equipment.</p> <p>The plating area and plate wash will be converted into chilled holding, to be able to accommodate the production requirement for the Royal Hallamshire Hospital, as well as the Northern General Hospital.</p> <p>Blast chillers are replaced and capacity increased to accommodate the volume of food to be produced.</p> <p>The CPU production schedules will be revised, to be able to work within the existing flows and cooking equipment.</p>

<p><u>RHH Production Kitchen</u></p> <p>The project costs allowed for a major reconfiguration and refurbishment of the existing kitchen area to create a new kitchen utilizing only 50% of the existing kitchen area. The full extent of the works was required to release the space currently occupied by the dining/lounge and plating/pot wash areas.</p> <p>All of D level would have been affected up to half of the area 1500M² would have been released for other/clinical use by the Trust and the remainder was to be refurbished to provide for patient and staff catering.</p> <p>Patient catering was to include receipt and holding areas for food from the NGH-CPU, ward issues, bread and milk and supplies for the staff catering facility.</p> <p>The staff restaurant was to be replaced with a food hall and coffee shop with all counters/offers in one area better utilizing available space.</p> <p>The staffing dining room and coffee lounge was to be moved in to what is now the kitchen areas, allowing for the release of the most useful and accessible space for Trust use.</p> <p>A staff restaurant kitchen was also be created for special call orders and for items that are not produced in the CPU.</p> <p>The doctors' mess was to be relocated to an existing dining room to facilitate some natural light and a better environment for the proposed staff restaurant.</p>	<p><u>RHH Production Kitchen</u></p> <p>The catering space on D floor has been further reduced, to diminish the area that requires work.</p> <p>The proposed access corridor to the lifts on the west side of the hospital has been omitted, and all food for patients will be delivered via the existing east corridor, this enables the existing dishwashing area (140 sq m) to be retained and the existing machine to be used.</p> <p>There will be no new staff dining room (280 sq m), with continued use of the existing space. The grill bar in the dining room will be decommissioned (boarded up) and obsolete equipment in the salad/coffee area will be replaced.</p> <p>The servery will be relocated to improve flows in respect of food safety and customer service.</p>
<p><u>RHH Staff Restaurant</u></p> <p>The project costs allowed for a major alteration and refurbishment of part of the existing kitchen area to provide a new staff restaurant. The alterations were required to release the space currently occupied by the dining/lounge and plating/pot wash areas.</p>	<p><u>RHH Staff Restaurant</u></p> <p>There will be a minor investment in the kitchen (staff feeding) and staff servery in order to relocate the facility away from the lift hall.</p>
<p><u>Jessop Wing Coffee Bar</u></p> <p><u>Wall Finishes</u> – Making good surfaces to provide compliant environmental conditions, Also, an allowance for additional or replacement protection.</p> <p><u>Floor Finishes</u> – An allowance for replacing the floor finishes.</p> <p><u>Ceiling finishes</u> – Making good surfaces to provide compliant environmental conditions. Replacing 20% of ceilings where damaged or to allow for services installations e.g. ventilation.</p> <p><u>Fittings</u> – Allowance for replacing fittings.</p> <p><u>Sanitary Appliances</u> – Allowance for replacing fittings.</p> <p><u>Disposal</u> – A small allowance has been included to make minor adjustments to final connections to suit</p>	<p><u>Jessop Wing Coffee Bar</u></p> <p>Only surfaces and wall protection in need of maintenance will be included in order to achieve environmental compliance. Wholesale maintenance will not be included</p> <p>Space has not been found to regenerate patient food, and therefore a regeneration room has been incorporated into the D floor kitchen area for this purpose.</p>

<p><u>Mechanical</u> new/replaced equipment. - A small allowance has been included to make minor adjustments to final connections to suit new/replaced equipment.</p> <p><u>Electrical</u> - An allowance has been included to replace lighting where non-compliant or backlog maintenance not carried out and for sundry works to suit new/replaced equipment.</p> <p><u>Builders Work</u> - General builders work (holes etc) in connection with the required mechanical and electrical works.</p>	
<p><u>Weston Park Hospital</u></p> <p><u>Wall Finishes</u> – Making good surfaces to provide compliant environmental conditions (EHO reports state that work to renew surfaces with peeling/damaged surfaces has almost always been a requirement), also an allowance for additional or replacement protection.</p> <p><u>Floor Finishes</u> – An allowance for replacing 20% of the floor finishes due to being in a poor condition/unfit for purpose/required as a result of work to other elements (this has been assessed over all of the departments, some areas will need more replacement and others less).</p> <p><u>Ceiling finishes</u> – Making good surfaces to provide compliant environmental conditions. Replacing 5% of ceilings where damaged or to allow for services installations e.g. ventilation. There is also a leak which has been an issue since 2004 and should have been resolved as part of on-going maintenance.</p> <p><u>Fittings</u> – Allowance for replacing 30% of fittings that are in poor condition (this has been assessed over all of the departments; some areas will need more replacement and others less).</p> <p><u>Disposal</u> – A small allowance has been included to make minor adjustments to final connections to suit new/replaced equipment.</p> <p><u>Mechanical</u> - An allowance has been included to provide additional ventilation as the ventilation system and the main ventilation canopy to the kitchen has not been compliant for a</p>	<p><u>Weston Park Hospital</u></p> <p>Work will be restricted to repairs to disturbed surfaces for environmental compliance purposes only including the works required to enable the regeneration of patient meals in the Weston Park kitchen or Weston Park wards</p>

<p>number of years and this is a legal requirement which must be made legally compliant as a priority. It has been noted that this may warrant more formal action from the enforcement authority. Also, a nominal allowance for works to rebalance plant to ensure compliance with the regulations, but not to provide additional plant.</p> <p><u>Electrical</u> - An allowance has been included to replace lighting where non-compliant or backlog maintenance not carried out and for sundry works to suit new/replaced equipment together with a nominal allowance for switchgear works.</p> <p><u>Builders Work</u> - General builders work (holes etc) in connection with the required mechanical and electrical works.</p>	
<p><u>RHH Ward Kitchens</u></p> <p>An allowance of approximately £30k per kitchen to cover new finishes, fittings, equipment and works to services including upgraded electricity supplies had been allowed.</p>	<p><u>RHH Ward Kitchens</u></p> <p>Work has been restricted to that which will enable bulk regeneration of patient meals, inclusive of the provision of a three-phase power supply for bulk regeneration, also ward dishwashing and associated catering activities. Ward kitchens used for beverages have been excluded.</p>
<p><u>NGH Ward Kitchens</u></p> <p>An allowance of approximately £10k per kitchen to cover new finishes fittings and equipment had been allowed.</p>	<p><u>NGH Ward Kitchens</u></p> <p>Works have been limited to replacement of the plated regeneration trolleys with bulk, and at the Royal Hallamshire Hospital, , Industrial fridges have been omitted and small domestic fridges provided. Operational changes will be initiated by the catering department to accommodate this.</p>

1.4b Option 5A Benefits Comparison with Option 5B

It is important to show that although the value of the project has been reduced the patient centred core benefits of the project are still being achieved, the following comparison illustrates:

Benefit	Description	Achieved	Not Achieved
1	Meet the special needs of dietary need of patients	√	
2	More personal patient food service at ward level	√	
3	Improved space utilization of catering facilities across the Trust		√
4	Opportunities to deliver performance and efficiency savings	Reduced √	
5	Reduced backlog maintenance liabilities	Reduced √	
6	Provision a modern catering environment for the next 15-20 years making the best use of the CPU asset		√
7	Improve the condition of the existing plant and equipment	√	
8	Ensure compliance with current legislative standards	√	
9	Establishment of a Trust wide catering delivery strategy	√	

10	Ensure positive contributions to the sustainability agenda	√	
11	Greatly enhanced catering service and patient experience driven by a fully coordinated and cost effective catering infrastructure	Reduced √	
12	Increased efficiency and consistency arising from a standardised catering service, including economies of scale in supplies, resources etc.	√	
13	Improved accessibility and service logistics for catering provision, taking cognisance of current market and technological advancements	√	
14	Underpinning of Trust core values and expectations to deliver an excellent catering service/patient experience	√	
15	Added potential to improve clinical service provision and development through the release of “non-clinical” space within the RHH	Reduced √	
16	Upgrade to staff catering facilities		√

It is clear that all the patient centred benefits are still being delivered and that a consistent catering strategy is being applied across the Trust however, some of the long term benefits not patient related has diminished as a result of the reduced project value.

1.5 SUSTAINABILITY ISSUES OPTION 5B

Implications of Reducing Operational Area

The project team recognises and embraces its responsibility to consider the use of energy and CO₂ emissions and as a result of this responsibility space has been released by the catering department as part of a rationalization for use by others, whilst also the most cost effective and energy efficient equipment that can be afforded within the project budget has been procured.

a. Carbon Emissions

One of the environmental and sustainable advantages of Option 5B is that it delivers back to the Trust 590m² of space. Using the current Trust average energy/volume consumption across the estate of (83GJ/100m³) the implication of the CO₂ emissions saving associated with such a reduction in catering operational area can be calculated.

NHS Carbon Emissions data for every 1 GJ/100m³ = .076 Tonnes of CO₂

1. STH NHS Trust average consumption = 83GJ/100m³.
2. Energy Consumption is 70% Gas & 30% Electrical
3. Carbon emissions per kWh (gas) = 0.194kgCO₂.
4. Carbon emissions per kWh (Electricity) = 0.422kgCO₂.
5. 150,093,144kWh of Thermal Energy Consumed
6. 64,580,972kWh Electrical Energy Consumed

The space released back to the Trust of 590m² x 3.5m in height from floor to soffit equates to 2065m³ volume.

2065m³ /100m³ x 83GJ's x 0.076 tonnes = a reduction of **130 tonnes of CO²**
/Annum

b. Energy Savings through Catering Equipment Exchange

Option 5B includes significant change to the existing catering equipment across the affected areas. Substantial amounts of equipment that has reached the end of its useful life whilst also having inefficient energy consumption characteristics will be replaced with new equipment proven to be 30% more energy efficient includes the removal of the steam supplies which supports the Trust initiative to remove steam from across the Trust saving energy and reducing carbon emissions. Appendices H & I indicates the equipment to be installed and the projected effect that the equipment will have on the current use of electricity, when approximation of use is applied.

1.5a RHH AVAILABLE ELECTRICAL CAPACITY

The project team is aware that for some years the electrical infrastructure at the RHH has been under extreme pressure as technical and clinical innovation has substantially increased the energy footprint of each patient episode. A member of the project team has liaised with the estates operations department so as to gain a clear understanding of the issues that could affect the success of the project. Currently there is insufficient electrical power available at ward level to support the installation of the catering equipment necessary to bring the project to fruition. A study has been undertaken and the projected electrical needs of the equipment have been determined. Based on this information an outline specification has been produced in order to increase electrical capacity to the ward kitchens

1. New rising busbar, with individual tap-offs on each level serving new 4w TPN
2. DB's, 2 x per floor, 4 x per floor on levels P&Q. Bus bar feeder on level S is to
3. be fed via a new 800A switch which will involve a modification to panel board
4. TB7 consisting of a new cubicle, connect into existing bars and a new 800A
5. ACB with multi-meter interfaced to BMS. Bus bar feeder on level A is to be fed
6. From existing switch on TC3. Bus bar is to be split on level I with a bus coupler
7. arrangement to allow the entire riser to be fed from either level A or level S via
8. castle lock arrangement to prevent inadvertent paralleling of supplies

The cost associated with these alteration has been factored into the overall project costs and amount to an estimated £330K Inc. which is included within appropriate capital options.

1.6 Standards of Service – Patients Perceptions

During the period 01/04/2010 – 21/03/2011 there were 11 complaints received, this information was obtained via the Trust Datix system which has 2 issue categories for food: Quality of food and Availability of food. These complaints normally form part of a wider complaint regarding the care received by the individual concerned. It is felt that the quality of the food and service delivery is reflected in this very low

percentage of dissatisfaction. It is also felt that the manner in which the food has been prepared and delivered to site has had little or no influence on the patient's perception of the quality and tastiness of the meals.

1.7 CAPITAL & REVENUE COSTS

The cost of each of the shortlisted the options is -

	CAPITAL £	ANNUAL REVENUE EXTRA / SAVING - exclusive of capital charges
Option 1	2,472,482	Neutral
Option 2	7,476,229	Minor Saving
Option 4	9,048,568	Minor Extra
Option 5	15,234,035	Minor Saving
Option 5A	10,202,221	Minor Saving
Option 5B	£7.,099,390	Minor Saving
Option 6A	13,097,902	Major Extra

Note: - the capital costs associated with options 5A and 5B are inclusive of informed VAT recovery which has been assumed at 30% of the current 20% VAT rate i.e. 14% VAT payable in total.

1.7a ASSESSMENT SUMMARY

The financial implications detailed in 1.7 above represent part of the overall assessment process, which is more fully detailed in Sections 5, 6 and 7, including the benefit scoring matrix in Appendix E. The order of preference of each option from the overall assessment can be summarised as follows:

	CAPITAL	REVENUE	COST/BENEFIT POINT SCORE
Option 1: Do Minimum	1 st	1 st	2 nd
Option 2: Refurbish existing	3 rd	4 th	4 th
Option 4: Hot bulk RHH / cold line NGH	4 th	5 th	6 th
Option 5: Ward level bulk regeneration	6 th	6 th	5 th
Option 5A: Ward level bulk regeneration with direct delivery	5 th	3 rd	3 rd
Option 5B: Ward level bulk regeneration with direct delivery, reduced work content	2 nd	2 nd	1 st
Option 6A: Direct delivery (off site)	7 th	7 th	7 th

1.7b CHOICE OF PREFERRED OPTION

On the basis of the cost and benefits assessment summarised in 1.7 above, together with the potential to be affordable whilst still releasing space of 590m² - RHH D Floor (see Section 7), it is recommended that Option 5B be approved to proceed.

1.7c COSTS OF PREFERRED OPTION

The projected cost at FBC for the preferred Option 5B is £7,100,000 inclusive of VAT and the enabling works and fees previously funded (£400K + £200k fees)

1.8 PROJECT PROGRAMME – APPENDIX L

It is suggested that the project delivery programme span 3 financial years made up of 3 phases, the proposed timetable for progressing Option 5B is shown below.

FBC Submitted / Approved	April 2011
Commence Ward Kitchens – Phase1	August 2011/2012
Commence works on CPU – NGH – Phase 2	May 2012/2013
Commence RHH kitchen - Phase 3	April 2013/2014

1.9 CONCLUSION AND RECOMMENDATION

For clarification, as option 5A was the Trust Board approved preferred option at OBC, only options 5, 5A and 5B have been re-evaluated regarding costs inclusive of projected VAT recovery.

Approval is sought from C.I.T., T.E.G. and Trust Board to proceed with Option 5B, to be delivered over a phased 3 year period and that a capital allocation of £7.1 million is made available inclusive of fees.