KIER SOUTHERN

PROJECT EXECUTION PLAN
REV A

18th April 2011

WORTHING HOSPITAL

LAMINAR FLOW

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1.0 Introduction

1.2 Aim of the Project Execution Plan

The Project Execution Plan is intended, both in written and diagrammatic form, to describe the strategy of the project team in taking the existing site through to handover. Please read this document in conjunction with site layout plans appended.

1.3 Overview of Project

The project consists of the construction of two laminar flow theatres at Worthing Hospital, within the east wing of the hospital on the second floor, adjacent to existing theatres.

The project will provide additional theatres and associated accommodation to provide a compliant design. The theatres will provide laminar flow capacity to the hospital for the first time, in order to deliver an ultra clean environment for trauma and orthopaedics surgery as well as provide capacity for future elective orthopaedic provision.

We have taken account and comment within this document on a number of specific site issues which include but are not limited to:

Access & Egress to site
Sensitive site location
Noise
Security
Construction Sequence
Control of mud and dust.

Project Methodology & Strategy

2.1 Site Establishment.

At the commencement of works the site will be secured by the use of heras panelling to the external elements of the site and air sealed hygienic hoardfast panels internally to areas adjacent to the theatres. All work whether internal or external will be fully segregated from member of the public, hospital staff and patients.

Fully segregated pedestrian access will also be formed for site staff and visitors accessing site from the site boundary to the site accommodation. See Site Layout Plan WB-01-Site Logistics Plan

The main entrance will be restricted to Kier staff and operatives only with all personnel signing in at the site offices before entering site. Kier will manage all access to and from site by pedestrians and vehicles in addition

to assisting centre hospital users vehicles which may need access in adjacent locations to the site.

During mobilisation the Main Kier set up will be utilised for site welfare. However a welfare provision will be install directly on the site location from day 1 of works proceeding. Site parking will be also be located at the Main Kier compound on Park Road.

All site establishment items, i.e. hoardings and accommodation are constantly reviewed to ensure they remain in excellent condition and are in line with the minimum requirements set by Kier.

2.2 Access to Site

Access to the works for all vehicles and personnel will be achieved via the North hospital access road. The entry and exit of vehicles to and from the site shall be controlled by the use of adequate direction signs. All traffic is restricted to a 10 mph speed limit.

Pedestrians will be required to report and "sign in" at the main Kier compound with designated pedestrian routes defined and clearly signed to marshal visitors to and from the site offices.

Careful planning and scheduling of the deliveries will ensure that delivery vehicles arrive on site in a co-ordinated fashion "just-in-time" for the required work element. These delivery schedules will be co-ordinated with the main gate and will ensure delivery drivers are directed to points for material unloading and distribution.

External access to the the building area on the second floor and roof will generally be from external staircases and loading bays via the pedestrian access routes.

2.3 Material Handling & Storage

For all elements of the project mobile cranes are critical for horizontal and vertical movement of materials. Subcontractors requiring mobile craneage will include this within their packages. These operations will be managed in strict accordance with the Kier Procedures.

In addition, and on areas that are not covered by mobile cranes, telehandlers and hiab offloading will be used for material movement.

The storage for materials on this project is limited and will be achieved in predetermined areas. Existing hard standings for material storage will be used as well as a crane mat for lifting operations. A site plan will be used to allocate storage areas to each subcontractor taking account of available access routes and unloading areas.

Materials required from the storage area for use within the building will be transported by hoist onto the floors and by hoist onto the external loading bay.

As work proceeds and internal contractors commence storage within the building will be required due to the size of the building this will be kept to a minimum. The principle of scheduling and calling off deliveries on a "just-in-time" basis will be paramount.

2.4 Noise & Nuisance Control

The site is located within a hospital adjacent to a residential area. We will inform our neighbours of any potential nuisance to discuss ways and means to mitigate any disturbance.

As a matter of policy we will ensure that any major plant used in the construction of the project, such as compressors, percussion tools, drill etc will be fitted with silencers as recommended by respective manufacturers. In addition tools will be fitted with dust removal or suppression equipment. No mud is envisaged due to lack of excavation type works. If excessive dust is created from site activities further measures such as damping down will be utilised. The site will be equipped wit a jet wash to immediate deal with road cleaning and dust suppression issues. The site team also have access to road sweeping companies if the required.

Where plant required for the construction of the project is located adjacent to a neighbouring property consideration will be given to acoustic measures to suppress noise levels.

All reasonable measures will be taken to ensure these nuisances are kept to a minimum without disrupting the progress of the works.

Noise levels and assessments on site and particularly at the site boundary will be carried out regularly and recorded.

2.5 Emergency Procedures and Security

The construction phase Health & Safety plan should be referred to with regard to fire and emergency procedures.

With regard to security/ access during working hours Kie rwill be responsible for :-

- Provide, monitor and control vehicle access to the car park.
- Provide, monitor and control pedestrian access to the site, compounds and car parks by using a sign-in book procedure.
- Provide, monitor and control delivery vehicle access to the site area by liaising with site staff radio.

  In order to assist in maintaining security the following items will also be maintained:-

- Security floodlighting to main access routes and compound.
- Lockable temporary gates and doors to the main access points to the site and building itself as and when necessary.

- Ladder to external scaffolds will be removed and made secure at the end of each shift.
- Windows or doors apertures that are easily accessible will be locked prior to the end of shift.

2.6 Health & Safety Plan

The Health & Safety Plan together with the Kier Group management procedures provides details of specific project procedures and policies respectively. The Health & Safety Plan is a "live" document distributed to all subcontractors and continually reviewed and updated.

2.7 Fire and Emergencies

Whilst the health and safety plan contains details of fire and emergency procedures, it is worth noting that consideration has been given to the following:-

Construction Stage

- Staircases will be constructed as structure proceeds and where necessary partitions will be installed to provide fire compartmentation to the staircase as required by fire regulation.
- Temporary fire doors will be required to the staircase to ensure its integrity during fire conditions. This will be dependant upon the fire strategy.
- Temporary fire points will be incorporated into the building and into any temporary accommodation. These are linked to ensure the whole site is aware of activation.
- Hot works permit system will operate.
- A secondary exit point will be created from the first an d second floors via a Haki stair case to the ground.

Full Occupation/ Completion Stage

- The full fire fighting/ prevention facilities will be operational in accordance with the agreed fire strategy for the building
- Designated fire brigade control panel and access routes will have been completed.

2.8 Working Hours

Due to the proximity to the neighbours working hours as previously described will be restricted to the following:-

Site Opens from 7.30am

Plant Starts
Monday to Friday 8:00am – 6:00pm
Saturday 8:00am – 1:00pm

2.9 Temporary Services

Temporary Electrics

Scheme/ requirements as follows:-

1. An plant room is available for the site supply.
2. Supply for site accommodation.
3. Supplies taken to 10kva transformers to each floor.
4. Floodlighting to the compound area.
5. Internal safety lighting including emergency backup fluorescents to be provided to all corridors and staircases.
6. Temporary interconnected howler fire points included in the entrance on every floor and office accommodation.
7. Temporary supplies for commissioning.

2.10 Considerate Contractors

Kier are Associate Members of Considerate Constructors Scheme and all our sites are registered accordingly. We are committed to achieving the highest possible standards on our site sand proactively seek measures that can improve our performance.

As noted in the methodology section of this document the control of noise, dust, dirt and rubbish will be strictly enforced, ensuring tidy and safe environments are maintained for our neighbours and our workforce.

Noise, dust and dirt will be monitored daily and controlled through the use of modern silenced equipment, road sweepers when required and wheel. Existing hard standing areas will be used and no mud and dust is envisaged. If required damping down will be used where required to prevent airborne dust externally. The control of dust internally in sensitive will be carried out using a dust extraction system.

We have signed up and are fully committed to the Governments Half Waste to Landfill initiative, reducing the amount of construction waste to landfill by 50% by 2012. We also fully support and promote the requirement for accurate monitoring and recording of waste by the Site Waste Management Plan. We operate our SWMP using the BRE SmartWaste format, which has been developed to provide a bespoke plan for Kier.

We require all of our specialist sub contractors to participate fully in all waste minimisation and waste management initiatives including waste segregation and recycling activities. Our allowance for waste removal in our preliminaries reflects this.

Kier Southern operate an Environmental Management system certified to ISO 14001. Our procedures provide a robust audit and compliance mechanism to ensure that as a minimum we meet the criteria necessary by BSI to maintain accreditation.

2.11 Site Rules & Restrictions

1. Always wear safety helmets, safety boots and other safety equipment as required.
2. Do not operate any plant or equipment unless authorised to do so. This means the provision of a specific training card e.g. CPCS and the issue of a blue sticker for your hard hat.
3. A Permit to Dig must be issued before any excavation is carried out.
4. Do not enter any excavation unless authorised to do so.
5. Only competent persons who are authorised to do so may erect, alter or dismantle scaffolding, mobile aluminium towers, falsework or excavation support.
6. Keep your working area clear, tidy and free from tripping hazards at all times.
7. Do not work at any edge from which you could fall and be injured, unless edge protection or fall arrest equipment is in place.
8. Make sure you have sight of the COSHH Assessment for any hazardous substances you may come into contact with, comply with the requirements of the assessment.
9. Report any defect or unsafe practice to your Supervisor.
10. Report any accidents to your Supervisor.
11. Cooperate with your employer and the safety requirements of the Principal Contractor.
12. Request to see the safe system of work for any hazardous activity you are required to undertake.
13. Leave the welfare facilities in a clean condition.
14. Understand the Fire and Emergency procedures.
15. Clear up or report all spillages of fuel, oil and hazardous substances.
16. Do not tamper with, alter or remove any plant or equipment unless you are authorised to do so.
17. Weil's Disease is a serious and sometimes fatal infection which is transmitted to humans by contact with urine from infected rats. Refer to Kier and HSE information cards for advice.
18. If in doubt, speak to your Safety Supervisor.
19. Cooperate with Kier’s Drug and Alcohol Poilcy
20. Stay within the designated compound areas and don’t wander around the hospital.
21. Be considerate to patients, staff and visitors.
22. Ensure works areas and compounds are secure, especially as some patients may be under the influence of drugs, be stressed or have disabilities.
23. Use of mobile phones is only in the designated areas.

24. Comply with Hospital Site rules

- Worthing Hospital is a busy facility which will remain in operation throughout the construction period. We must minimise disruption and nuisance to patients, staff and visitors.
- Ensure that you comply with all the protocols of being in a hospital e.g. use the hand sanitisers.
- Do not stray away from your work area.
- Parking is not permitted on site.
- No radios on site.
- No smoking anywhere on hospital grounds.
- Keep dust and noise to a minimum – agree noisy operations locally.
- Don't obstruct fire escapes and emergency access routes without prior consultation and consent.
- All service shut downs to be pre-agreed.
- Do not obstruct the passage of ambulances or other vehicles dropping off emergency patients.
- Comply with the hospital traffic marshal's instructions.
- All deliveries to go to our site offices off Park road so they can be scheduled to drive straight into the Laminar Flow site compound area.
- Should the hospital receive notification of a major emergency e.g. train crash for example we may have to quickly make what you are carrying out safe and vacate the site, in which case you are to report to the assembly point in our site compound for instructions.

2.12 Procurement of Package Contractors

Based upon start on site dates shown on the construction programmes, the procurement of subcontractors has been developed to suit these dates.

The scope of works has been broken down into suitable subcontract packages, which are detailed, together with the tender and procurement durations on the procurement programmes attached to this section.

The critical and major packages are summarised as follows:-

1. Laminar Flow Equipment
2. Demolition/Strip Out
3. Steel Frame.
4. Scaffold.
5. Brick/ Blockwork.
6. Roofing
7. Drylining, Plastering and Screed.
8. Mechanical and Electrical.

9. Carpentry 1st and 2nd Floors.
10. Internal Metalwork.
11. Decorations.
12. Floor Finishes.

3.0 Construction Sequence

3.1 General/ Overall

The construction sequencing and programme has been upon the following key elements:-

1. Site logistics, including available access, location and nature of boundaries etc.
2. Construction method and materials.
3. Quickest sequence to achieve a watertight date in areas of the building.
4. Sequence of working to allow early access for testing and commissioning.

3.2 Site Establishment

Following the site set up as described in section 2.1 the erection of the scaffold will commence to the north elevation of the existing building. This will provide:

- the loading bay at second floor to assist the structural alterations to the roof and the installation of the new plant.
- The hoist tower to provide material access to the upper floors.
- The star tower to provide personnel access to the upper floors.

During this phase of work it is intended to carry out all service disconnection/asbestos surveys and removal to the intended work areas.

3.3 Demolition /Strip Out

On completion of the scaffold the north elevation will be opened up via the loading bay to create access to the second floor internal space.
This opening will be formed by removing the existing cladding and brickwork at that level.

Strip out works commence with the unwanted internal partitions ceilings and floor finishes moving onto the removal of the ceiling joist to allow access to the roof void to enable the structural alterations to take place. Any making god to the existing floor and wall structures will be carried out at this point to allow adequate drying times.

3.4 Structural Alterations / Roof Plant Location

The structural alterations are required to the existing steel roof framework to create space for the new Laminar Flow plant in the roof space. The new steel section will be raised from the ground level via mobile crane onto the loading bay. The steel sections will then be located into the roof space via trolleys and Genie Lifts.

As part of the structural alterations the gable housing the extract louvers needs to be increased in size. This will necessitate the stripping back of the existing roof around the gable to carry alteration to the steel and timber structure. Once complete the roof can be re finished and the new louver installed.

On completion of the structural alteration the ceiling joists will be replaced incorporating the drip tray recess under the plant area together with re-insulating the roof void. Ply will be re-laid on top of the ceiling joist to give access around the theatre hood plant.

A hatch through the roof carcusing and the steelwork will be incorporated in the design to lift the plant through into its final position.

On completion of the structural elements the roof plant can be lifted into place via the loading bay much the same as the structural frame. The roof plant once on the second floor can be lifted via an electric winch connected to a lifting beam designed into the new roof structure through the hatch previously described.

Plant such as IPS/UPS being house in the old plant room will be installed via the existing goods hoist to this area.

On completion of the plant location to the roof space the opening in the north elevation can be leaving access via the goods hoist / stair tower.

3.5 External Envelope

No work is required to the external envelope other than that previously mentioned to the gable of the roof. Window positions are remaining in place with secondary glazing being fitted to areas where necessary.

3.6 Internal Finishes

It is the intention to complete the internal finishes working initially in the theatres working towards the hoist location.

Work to the internal finishes will commence with the first fix mechanical and electrical installation closely followed by the first fix partitioning. With this completed the closing up of the walls and ceilings will commence to allow the further finishes to progress.

3.7 External Works

No external works required other than reinstatement related to site set up.

4.0 SITE PHASING DIAGRAMS

4.1 Site Layout WB/01/Logistics Plan Rev B

