

Children's Hospital Satellite Centre at Connolly Hospital

Planning Application

Outline Construction Management Plan



August 2015

1.0 OVERVIEW AND OBJECTIVES

The purpose of this Outline Construction Management Plan as part of the proposed documentation for the proposed new children's hospital satellite centre located at Connolly Hospital campus is set out below. As the proposed development at the Connolly Hospital site is of a much smaller scale than the St. James's Hospital Campus the Outline Construction Management Plan relates to site specific issues. The overall principles are consistent however, and the objectives of the Outline Construction Management Plan for the children's hospital satellite centre are as follows:

- To highlight key site information in relation to the proposed construction of a major new build project on the grounds of the existing hospital facility;
- Identify information required from the contractor in developing their construction management planning and requirements leading to the issue of the Contractors Construction Management Plan;
- Highlight key health & safety issues associated with over site set up, site access and traffic management considerations;
- Identify design assumptions with regard to overall constructability existing services, facilities, proposed site compound area, craneage etc.
- To identify key environmental mitigation measures that are required to be employed by the contractor.

For the avoidance of doubt, any construction on the Connolly Campus must have regard to the mitigation measures set out in the individual sections of this EIS.

Children's Hospital Satellite Centre - Connolly Hospital

The gross floor area of the proposed satellite centre at Connolly Hospital is 5,093sq.m. and includes the construction of an extension of 4,990m² and refurbishment works of 103m² to the existing hospital on a 1.25ha site. The building will be three storeys in height (66.425m above Ordnance Datum) or approximately 12.123m at its highest point above the street level at the new entrance (the Ordnance Datum at the adjacent existing pavement is 54.3m). The finished floor levels of each floor area as follows:

- FFL Level 0 - 54.450m
- FFL Level 1 - 58.350m
- FFL Level 2 - 62.250m
- FFL Roof Deck - 66.000m
- Parapet Level - 66.425m
- Flue Level - 67.725m

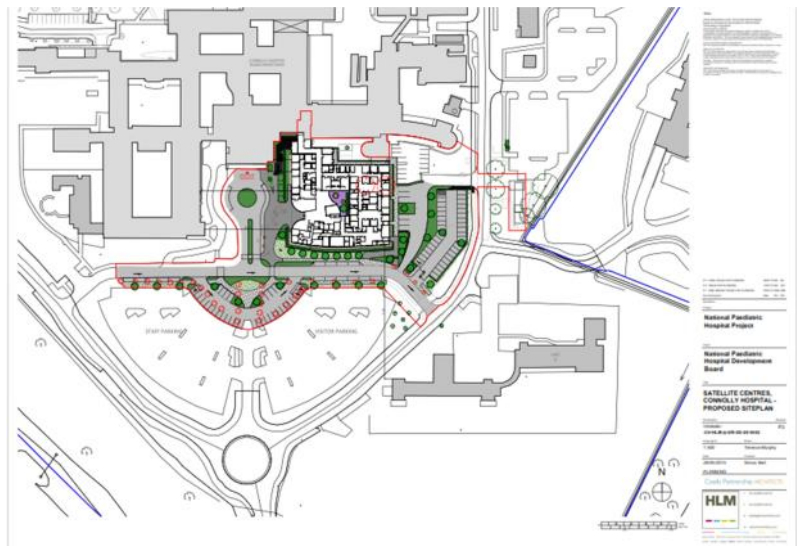
The development will be located to the east of the existing main entrance on an area of open grass and will connect back into the existing adult hospital via a new link corridor. The new link corridor, primarily sited to provide a connection to Radiology, can also facilitate the provision of any shared services with its direct connection to the existing hospital street network. The majority of the elevation of the building will be finished self-coloured render with perforated metal cladding panels to rooftop plant areas. Coloured panels will be introduced on the ground floor elevation as this is both in-keeping with the treatment for the 'overall family of buildings proposed under National Paediatric Hospital Project, and will also to provide a sense of identity for the children's hospital satellite centre within the Connolly Hospital campus.

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A small area of the existing hospital is being re-configured to allow for a link from the new building to the existing hospital street (103 sq.m.).

The garden in the northern part of the site will be integrated with the new development. The entrance on the western side of the new building will be accessed from the existing main hospital set down and pick up area. A new entrance space will be created here with informal seating, enhanced paving and planting. The levels have been designed to provide level access between the set down/pick up bays and the new entrance. The Urgent Care Department entrance is located on the east elevation of the building adjacent to the ambulance parking area. A direct pedestrian route will be provided between the set down/pick up bays to the south of the building and this entrance. In addition to the gently sloping path a set of steps will also be provided including necessary handrails and pavement identification.

Parking will be reconfigured whilst retaining clarity of way finding for patients and visitors from the main entrance. The proposed development will provide 34 no. visitor car parking bays and 46 no. staff parking bays (including 1 no. disabled parking bay), 3 no. ambulance parking bays and 3 no. delivery parking bays to the East of the proposed development. The development will provide 7 no. new cycle hoops located to the north of the main entrance, adjacent to the existing retained cycle parking.



A new pedestrian access will be provided from the existing footpath along the hospital road to the west. The existing turning circle drop off to the main acute hospital entrance will be reconfigured to provide more accessible drop off bays (currently provided on the radius). This will allow safer drop off for the existing entrance and children's hospital satellite centre. A totem sign will be located adjacent to the new building main entrance, opposite the two new pedestrian crossings by the South-West corner of the proposal. The significant majority of visitors to this building will move towards the building from the existing crescent car parking area from where the new building will be visible. Signage to the children's hospital satellite centre will be integrated into the existing site signage system and will assist in directing patients and visitors towards the correct entrance - the use of colours to the ground floor of the building will act as a signal as to the child orientated function of the building in addition to any signage.

The existing transformer room and generator compound has sufficient space for the upgrade of equipment required, negating the need for any new buildings outside the new facility. Attenuation tanks will be provided below newly formed parking areas with minimal service diversions, restricted to those located below the new footprint. The children's hospital satellite centre and its construction compound will utilise the grass area to the fore of the existing hospital and will also utilise parts of surrounding roads and the northern end of the existing main car park.

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The development will necessitate the removal of c.41 trees, including the two mature beech trees. All but the 2 beech trees are young early mature specimens - mainly lime, holm oak and cherry. Once construction is complete an area of new lawn will be reinstated with new tree planting (c. 29no.) around the proposed children hospital satellite centre and within the re-aligned car park. The existing school project tree planting area shall be re-located elsewhere within the campus.

2.0 STATUTORY REQUIREMENTS - HEALTH & SAFETY

The contractor will be appointed as main contractor and Project Supervisor (Construction Stage) in line with the provisions of the Safety Health & Welfare at Work (Construction) Regulations 2013. As such, they will maintain responsibility for the management of health & safety for all aspects of the construction works including site access requirements. The Health Service Executive and hospital maintain their own statutory obligations under safety legislation and will discharge these in line with requirements and best practice procedures.

This document should be reviewed in conjunction with the statutory requirements of the following safety legislation:

- Safety Health & Welfare at Work Act 2005 (Section 20);
- Safety Health & Welfare at Work (Construction) Regulations 2013 (Section 16);
- Safety Health & Welfare at Work (General Application) Regulations 2007;
- Supporting safety standards and codes of practice including but not limited to works to underground services, overhead power lines, crange, confined spaces etc.

3.0 PROJECT SAFETY GOALS AND OBJECTIVES

The contractor will be expected to set out in detail site specific leading and lagging indicators to track positive elements such as training, safety consultation, feedback, safety inspections and auditing, compliance and conformance criteria -

- Health & safety objectives for the project e.g. formalised safety observations; safety behaviour code; safety inspection monitoring and assessment;
- Maintenance of infection control and aspergillus prevention measures and compliance;
- Defined communications and consultation arrangements;
- Recording of all accidents and incidents including near misses;
- Compliance with environmental management objectives including waste recycling, volume of water used, percentage of sustainable timber;
- Monitoring of noise, dust, vibration;
- Traffic Management on the site during construction detailing access/egress
- Method statements for service and utility diversions
- Method statement for striping of existing fabric within the existing Admin building being refurbished.

5.0 SITE ACCESS AND TRAFFIC MANAGEMENT

Access to the defined construction site and site compound will be achieved by the existing entrance and access routes within hospital grounds. The site compound area is located adjacent to the North East to the existing site area as indicated on design layout drawings.

Access will also be required outside defined works areas including excavation works and connections to existing services etc. There are also pedestrian access routes along these roads. A dedicated traffic management plan must be prepared by the appointed contractor, the objective of which is as follows:

- Ensure the safety of members of the public visitors construction operatives, staff and patients - there will also regular presence of young children in access areas;
- Maintain safe access and egress to/from all works areas;
- Ensure that traffic calming measures are implemented;
- Maintain and ensure adequate vision and sightlines;
- Ensure adherence to the Environmental Impact Statement submitted with the Strategic Infrastructure Development Planning Application;

Key inputs and requirements for the traffic management plan will include:

- Advance communications to all contractors accessing the site during construction;
- Erect traffic management signage in accordance with Chapter 8 of the traffic Signs manual to alert users of construction traffic;
- Maintain pedestrian crossing points; provide segregated access between vehicle and pedestrian & cyclists;
- Speed limit signage (15 kph) to be erected at entry and on approach to the site and site working areas;
- Provide a wheel wash facility immediately inside the site entry point;
- Ensure that the roads and others areas are maintained and cleaned to a very high standard and that any spillages of an material are promptly cleaned;
- Provide adequate temporary lighting when and where required;
- A nominated temporary traffic operations supervisor will be appointed by the contractor.

With reference to the Traffic and Transportation chapter of the EIS:

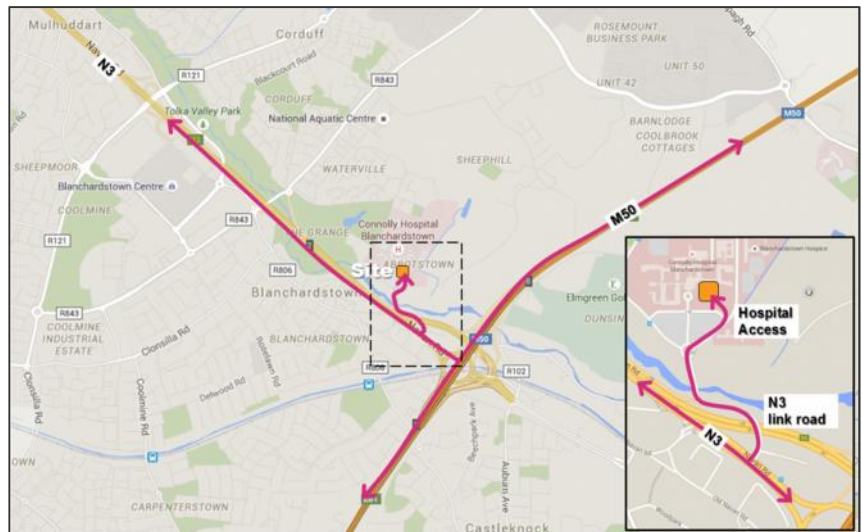
Construction Access Routes

The site for the proposed satellite centre at Connolly Hospital is located in close proximity of a number of high-capacity roads, which are considered appropriate for and capable of accommodating all of the construction traffic, without any impact on residential streets.

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Construction Traffic Routes

All routes are accessed via the main Hospital access gate off the N3. This junction provides a direct connection to junction 6 of the M50, which in turn provides access to a wide range of locations within the greater Dublin area and nationally. To the northwest, the N3 also provides access to counties Meath and Cavan. It is not possible at this stage to determine where construction traffic will originate from, as this is dependent on the particular strategy adopted by the appointed contractor.



It is envisaged that the peak construction activity will be associated with the excavation stage which is envisaged to last for a maximum of three weeks.

During the peak construction period, it is estimated that a maximum 64 vehicular trips (32 trucks in and 32 out) per day will be generated by the construction activities. This is based upon a truck removing spoil every 15 minutes over a period of eight hours, corresponding to an average of 8 in and out trips per hour.

The estimated impact on the local junctions is outlined in the table below.

Peak Construction traffic Impact on Local Road Network

Junction Name	AM peak			PM peak		
	Existing volumes	Additional trips	% increase	Existing volumes	Additional trips	% increase
Hospital Main Access/ N3 link road	756	16	2.12%	628	16	2.55%
N3 link road/ N3	2,639	16	0.61%	2,897	16	0.55%

The junctions of N3 with the M50 to the southeast and with the R843 Snugborough Road have higher capacity than the above-mentioned junctions and it is considered that the impact of construction traffic on these will be marginal, even on a worst case scenario whereby all trips would be directed to one of these junctions only.

On the basis of the traffic assessment presented in this report, it is envisaged that the traffic impact associated with the proposed satellite centre on the surrounding road network will be insignificant. As such no physical mitigation measures are proposed.

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Phased external works will be required to the new entrance plaza and perimeter of the building affecting the existing pedestrian flows to the Main Hospital Entrance. Flows to the east of the Lollipop will need to be temporarily diverted whilst these works progress, using the west side only.

A site attendance of approximately 100 operatives is anticipated although this is expected to vary during the course of the works.

It is anticipated that the total number of operatives on site will be approximately 100.

- Site set up include erection of secure and robust hoarding around the defined site area;
- Co-ordination and management of site access and traffic management to the site along existing hospital roads and access routes; co-ordination and scheduling of site related traffic with other users bearing in mind that existing routes are busy;
- Formation of site entrance;
- Formation of crane base; verification of existing ground conditions to support loadings;
- Bulk excavation; construction of retaining walls;
- Verification of existing services and maintaining protection of these services;
- Construction of the main building structure and plant areas;
- Installation of heavy plant and components;
- Alteration works to existing hospital buildings and structures.

7.0 IMPACT OF WORKS ON THIRD PARTIES

The chosen contractor must show competent ability and understanding of working within a live hospital campus. Immediately adjacent are the Elderly Care Ward, and the Main Hospital Entrance that all have to remain operational throughout the construction of the new facility. In particular the Contractor will minimise the associated risk of aspergillus through designated procedures, controls and preventive measures with active monitoring in associated with hospital infection control; incorporating infection control protocols including aspergillus protection measures and protocols, assessment air sampling monitoring to specified limits during the works, liaison with existing hospital infection control department, implementing safety control and management requirements arising from excavation works, break out of existing structures, noise and vibration, dust levels together with ongoing liaison with hospital authorities.

Staff and deliveries will still access the Hospital via the Main Campus entrance off the N3 roundabout, to the south of the site and need to access the service perimeter road, as well as the Mill Road Entrance to the North West.

Traffic flows, should be affected a little as possible with operational agreements on acceptable delivery times. Alternative access for construction traffic should be considered from the Mill Road Entrance to the north west of the campus with vehicles leaving via the same way to reduce impact on existing hospital traffic.

Pedestrian access will remain as the Main Campus Entrance and from the Main staff and visitor car parks immediately to the south of the construction site with a steady flow along the footpaths

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either side of the 'Lollypop' including potential drop off provision from cars etc. A temporary new crossing point should be considered at the boundary of the construction area (see Contractor's Setup Plan) to provide safe access to the other footpath when adjacent to the site works.

Builder's dust and noise should be carefully considered with works progressing immediately adjacent to openable windows of existing departments

8.0 KEY SITE INTERFACES

The following site interfaces i.e. overlap and proximity between construction works and the existing hospital and public access and occupied areas have been identified:

- Site access and traffic management;
- Maintaining pedestrian access and crossing points including temporary measures as required;
- Ongoing measures (throughout construction) to prevent risk of aspergillus and air monitoring by infection control department within the hospital to ensure compliance with stated requirements;
- Operation of crange; lifting of large heavy prefabricated components in proximity to occupied areas;
- Securement around works areas through the design, construction and maintenance of robust and secure hoarding;
- Deep excavation works along existing access route;
- Adjacency of site working areas to the existing day room facility;
- Site security and protection;
- Diversions and connections to existing services including water main, surface water and foul drainage, existing manholes;
- Maintenance;
- Site compound.

9.0 ORGANISATION AND ARRANGEMENTS

Set out site safety organisation and responsibility to achieve stated objectives including but not limited to the following as noted below - this to be developed further by the appointed contractor:

- Traffic management and logistics co-ordinator;
- Crange co-ordinator;
- Infection control co-ordinator;
- MEP manager;
- Temporary works co-ordinator;
- Fire safety and emergency co-ordinator.
- Project Liaison with key stakeholders such as Connolly Hospital

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10.0 CONTRACTOR PREQUALIFICATION

The contractor must set out the procedures by which contractors are assessed, selected and appointed from the bid and pre-construction phase of the project works. The procedures should also set out how contractors will be pre-conditioned in regard to the management of health and safety when on site.

The following requirements will be noted and included:

- Supervisor competence;
- Training and experience;
- Logistics and planning;
- Lifting procedures and equipment;
- Safety induction procedures;
- RAMs;
- Safety system of works;
- Control of respective works areas.

11.0 HAZARDOUS MATERIALS

Potentially hazardous materials and substances for use on site should be identified with supporting materials safety data sheets (MSDS) information should be detailed in line with the provisions of the Chemical Agents Regulations, control of substances hazardous to health and codes of practice:

- Identification of health hazards (including operatives but also any others which might be affected including patients staff and members of the public) through their storage, use and / or application;
- State the measures used to prevent harm;
- Making sure that these measures are implemented;
- Providing information instruction and training;
- Providing health surveillance in appropriate cases;
- Planning for emergencies;
- Waste management considerations.

12.0 MAIN HEALTH & SAFETY ISSUES

- Proximity of construction works to an existing and live hospital including link construction
- Site access and related traffic movement within the grounds of Connolly Hospital;
- Maintaining existing ambulance and services, pedestrian and vehicle access, services deliveries within the hospital
- Co-ordination of construction e.g. different levels between the construction of the new hospital and the existing structure, to be outlined on structural drawings
- The immediate adjacency of the existing occupied hospital and maintaining access; maintaining critical services ; tie ins to the existing building structure and services;

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- works at height both internally and externally;
- Co-ordination and management of existing fire safety procedures including co-ordination of emergency access and evacuation arrangements;
- Works to existing services including medical gases, water, power, and electricity; anticipated diversions works for services; minimising risk of disruption;
- Maintaining access by staff, public to existing hospital ; separation of pedestrian and site related access and movement through the hospital campus;
- Deep excavation and ground works for new foundations, services diversions, trenches for services;
- Identifying and incorporating into the design and supporting communications, infection control protocols, incorporating infection control protocols including Aspergillus protection measures and protocols, patient assessment air sampling etc. during the works, safety control and management requirements arising from excavation works, break out of existing structures, noise and vibration, dust levels together with ongoing liaison with hospital authorities;
- Maintenance of day to day hospital services access to existing plant equipment and services;
- Heavy lifting or large prefabricated components close to public access and occupied hospital;
- Development of phasing and sequencing of works planning;
- Location and confirmation of existing external services.

13.0 EMERGENCY RESPONSE PLAN

The project works involves a major construction project immediately adjacent to an existing and live public hospital facility. A dedicated site emergency plan should be prepared and reviewed in detail with existing hospital authorities in order to ensure effective implementation of procedures - by all parties - in the event of an emergency during construction.

This should address the following criteria:

- Identify potential health & safety emergency situations;
- Potential environmental emergency;
- Outline of necessary resources;
- Emergency plan outlining actions and contact details;
- Emergency evacuation to assembly point;
- Missing person;
- Emergency scene;
- Emergency contact numbers including site staff, contractors e.g. crane hire companies, pollution clean up, local authority, hospital and utility companies.

14.0 HEALTH & SAFETY MANAGEMENT

Provide a detailed safety management plan for the project to address:

- Site access and set up including pedestrian access and movement, segregation from vehicle access;

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- Development of site logistics plan to address: access control; security; traffic management; deliveries; storage; housekeeping; waste management etc.
- Hazard Identification, risk assessment and Control measures;
- Infection control procedures and management requirements;
- Change management affecting safety, health and environmental impact;
- Reporting of accidents and incidents;
- Occupational first aid and case management;
- Adjacent hospital access and requirements.

15.0 ENVIRONMENTAL MANAGEMENT PLAN

Provide a detailed environmental management plan for the project to address:

- Ecology control plan;
- Noise control plan including anticipated noise levels, duration, works scheduling, restrictions, positioning of equipment; use of noise screens;
- Dust controls (air, emissions and dirt); impact of site related vehicle movement, wheel wash facility - selection, location and management; maintenance inspection and regimes for site operation; covers to site vehicles; cleaning and maintenance of existing roads;
- Discharge Effluent Plan; control of discharges, location of welfare facilities, impact on existing drainage; water treatment;
- Prevention of discharge of any site materials e.g. waste materials, oils, paints, other contaminants or wash out of any materials in to any drain, sewer or water;
- Ground control measures - review and incorporation in to site planning site investigation reports and surveys procured for the project works; identification of any contamination during excavation; preventing any cross contamination during the works;
- Vibration control plan to reduce the impact of vibration e.g. heavy works, demolition, plant use to be restricted; preference to electrically powered equipment and plant;
- Spill incident prevention and control plan including drips, stains, spillage or release of any liquid; maintenance of plant and equipment, selection and maintenance protection of storage plant; designated local up facilities; certified self bunded metal units for fuel storage;
- Emergency response plan;
- The requirements of the Construction & Demolition Waste Management Plan (included in Appendix 10.3 of this application).

16.0 TIMESCALE AND PROGRAMME

It is envisaged that construction of the Satellite hospital will commence in the Spring of 2016 and be completed in approximately 18 months. The construction works will be phased as follows:

- Site set up, construction of site compound and services;
- Implementation of aspergillus prevention measures;
- Site clearance and excavation works;
- Commencement of hospital construction;

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- Commissioning of plant, equipment and services;
- Handover of completed building.

The design team review of the construction programme will take account of all identified health & safety issues, highlighting potential areas of mitigation and safer construction methods for consideration by the full team.

17.0 ENVIRONMENTAL IMPACT STATEMENT

Reference should be made to the attached EIS report and relevant chapters in regard to the following:

- Noise control (Chapter 11)
- Dust minimisation (Chapter 12)
- Discharge of effluent (Chapter 8 & 17)
- Groundwater control measures (Chapter 8)
- Vibration control (Chapter 11)
- Spill incident control (Chapter 8)
- Waste management (Chapter 10)
- Waste reduction and construction demolition management plan (Chapter 10)

18.0 WORKING HOURS

The hours of work proposed for the project are as follows, unless otherwise advised:

Monday to Friday	7.00am to 7.00pm
Saturday	8.00am to 2.00pm
Sundays and Bank holidays	Any construction activity, with the exception of emergency, works will be limited to 8.00am to 2.00pm and will require the explicit permission of the local authority.

19.0 REFERENCES

This document should be read in conjunction with:

HLM document 13130.06 / CH-HLM-A-DR-XX-Z2-2010 Contractor's Setup Plan.

Roughan & O'Donovan Designer's Assessment of Safety and Health Hazards/Risks. (doc. ref: 14.232.101 DAR Stage 2(a)) and all other consultants construction managements plans.