Statement of Tom Costello, Chair, National Paediatric Hospital Development Board on concluding the process on the cost of constructing the new children’s hospital –

Joint Oireachtas Committee on Health, 16 January 2019

Introduction

Thank you Chair and members of the Committee for inviting us here this morning.

I am joined by Mr. John Pollock, Project Director of the NPHDB, Dr. Emma Curtis, Clinical Director, the NPHDB and Eilish Hardiman, CEO of Children’s Health Ireland. Children’s Health Ireland, formerly the Children’s Hospital Group is the client to the NPHDB with regards to the construction of the new children’s hospital.

Background

In August 2013 I was truly honoured when asked by Minister for Health James Reilly to chair the NPHDB – the Development Board with a remit to design, build and equip the New Childrens Hospital for the island of Ireland. The proposed new children’s hospital development is the most significant capital investment project ever undertaken in healthcare in Ireland, bringing together three children’s hospitals in a modern custom-designed building to deliver the best care and treatments for Ireland’s sickest children.

I was joined on the Board by 11 other dedicated women and men with the collective skills and experience to deliver on the responsibility with which we were entrusted...

To build a world class children’s hospital on the site of St. James’s Campus

The urgent need for a new children’s hospital for the country has been recognised for decades. Acknowledging the importance of the challenge ahead of us and the realisation that we were building a hospital that will care for sick children and their families for many generations to come we set out a bold vision for the project:

To deliver one of the finest children’s hospital in the world and specifically:

- a hospital that provides a truly supportive and therapeutic environment for children and their families,
- a safe and stimulating environment for staff recognising the importance of WELLNESS,
- is sensitive to and positively enhances its urban setting and the quality of life of the local population. A Local Community Benefits programme is in place. Dublin 8 Health and Innovation Hub established with IDA and DCC to ensure there is a legacy for this area of Dublin.
- with a layout, detailed design and construction quality that will facilitate the optimum delivery of all aspects of leading current and developing clinical practice – a leading edge fully digital hospital.
- is cost effective in terms of capital costs and whole-life costs, with lifecycle costings included in the selection of building systems and materials, with all works competitively bid in line with EU procurement rules.
- Sustainable solutions are integrated into all stages of project life cycle, designed to BREEAM Excellent and BER A3 standards and including the installation of the most efficient energy systems delivering 60-70% reduction in energy running costs when compared to the existing children’s hospitals, and well in excess of the Government commitment to improve energy efficiency by 33% by 2020.
Design Team Selection/Planning Permission

With a clear vision for the project and an experienced Executive Team in place the board then put in place a structure and process for design team procurement, securing planning permission, and thereafter procurement of contractors to ensure a timely delivery of the New Hospital, while at the same time working closely with St. James Hospital in decanting the buildings from the 12 acre site identified for new children’s hospital.

Rather than proceeding with the Design/Build approach preferred, at the time, for public sector projects the Board opted for employer led design with the same design team retained from project inception to completion. In due course, apart from assuring the high quality design demanded by the Board, this decision was very influential in attracting a high quality list of tenderers to bid for construction works. Following a comprehensive procurement process we hit our first major milestone with the appointment of the design team in August 2014: Architect: BDP/OCMA, Civil/Structural: O’Connor Sutton Cronin, Mechanical/Electrical: ARUP, Quantity Surveyors: Linesight. The design for planning was produced in a most expeditious manner (for a project of this scale and complexity). Planning application was lodged in August 2015 and An Bord Pleanala granted planning permission in April 2016 for the children’s hospital, The Paediatric Outpatients and Urgent Care Centres at Connolly and Tallaght hospitals and for related developments including the Children’s Research and Innovation Centre and a Family Accommodation Unit adjacent to the new Childrens Hospital – a huge milestone for the project.

Decanting of buildings from the 12 acre site identified for the Childrens Hospital commenced immediately concluding in late 2017 – another huge milestone. An enabling works contract focused mainly on demolition commenced in July 2016.

Procurement model for Contractors

Shortly after receipt of planning permission the procurement process for contractors began in June 2016. A procurement sub-group was established to define the most appropriate approach to contractor procurement. The group included NPHDB, HSE Estates and members of Government Construction Contracts Committee (GCCC). Given the history of cost overruns and adversarial behaviour on public sector projects it was decided to consider alternatives to the traditional form of tendering which involved contractors bidding on the basis of a completed design including bill of quantities.

Reference was made to lessons learned and evolving best practice in UK as articulated in Cabinet Office ‘Government Construction Strategy’ published in May 2011. One of the stated intentions of the strategy was ‘It will replace adversarial cultures with collaborative ones’.

Quoting from the Executive Summary: ‘The right model for public sector construction procurement is one which:

- Clients issue a brief that concentrates on required performance and outcome; designers and constructors work together to develop an integrated solution that best meets the required outcome
• Contractors engage key members of their supply chain in the design process where their contribution creates value.

The construction of terminal 5 at Heathrow airport is held up as a prime example of collaborative working. Prior to construction BAA conducted a two-year study in which every major UK construction project of over €1bn completed over the previous 10 years was investigated. The two main areas identified by BAA which contributed to the general poor performance across all projects were ‘a lack of collaboration among project partners and the clients reluctance to assume responsibility for project risk’ (Brady and Davies 2009)

The procurement model for NCH had to align with EU procurement and work closely with established Government Construction Contract forms.

Following deliberations over several months including presentation of proposed option to the Government Construction Contracts Committee, the strategy group recommended a 2-stage tender process for procurement of Contractors. This process was then and remains the accepted best practice internationally for procurement of largescale complex projects such as NCH. Among the clear and defined benefits of the 2-stage approach are:

- It attracted the desired calibre and number of local and international contractors to bid competitively for the project
- It enabled tendering to happen prior to the completion of full detailed drawings for Phase B meaning that Phase A construction could start two years earlier than if a traditional procurement strategy was deployed, and allowing the bulk of costs to be secured at 2016 levels. Work commenced on Phase A (Below ground works - Basement excavation and construction) on 3rd Oct 2017.
- As well as getting physical work commenced on site it also facilitated Early Contractor involvement by contractors in the design development process with critical input on buildability, contractor and supply chain integration, risk management and innovation resulting in the completion of a fully integrated design.
- Prior to commitment of expenditure on the main Building works (Phase B, above ground works) there is now certainty on cost and programme with Client/Contractor risks reduced or eliminated. The programme includes delivery of a fully commissioned and quality assured building.
- It fosters a collaborative culture - eliminating the traditional adversarial and opportunistic behaviour. The contractors will work with NPHDB team and Design Team to ensure that the determined cost is not exceeded. On traditionally procured public sector contracts it is not unusual for costs to escalate substantially during the course of the contract.

Tenderers were issued in 4 lots: Main Contractor, Mechanical Contractor, Electrical Contractor, Lifts Contractor. Stage 1 of the 2-stage tender involved the works being bid on the basis of a preliminary Stage 1 drawings for the Phase B works and an approximate itemised bill of quantities. The contractors provided rates for all elements of the works. Stage 2 included the designers and contractors working together to develop the design to completion. The tendered rates were then applied to the final Bill of Quantities produced by Linesight QS. In cases where there is disagreement between NPHDB QS – Linesight and the Contractors this is resolved by the Independent Expert whose decision is binding on both parties.
First stage tenders were returned on 21st October 2016. The lowest bid of €637m received from BAM was very competitive, €131m lower than the second placed bid.

Following a detailed tender assessment whereby the quality assessment was completed before financial tenders were opened, the following preferred bidders were identified in Feb 2017.

Main Contract: BAM Building Ltd.
Mechanical Installation: H A O’Neill
Electrical Installation: Mercury Engineering
Lifts: Schindler.

The final Project Brief and Definitive Business Case including tender results were approved by Government in April 2017 enabling the Board to commence Phase A of the build, namely below ground works, while the adjusted contract sum (incl. Phase B, above ground works), provided for in the two-stage procurement process was being determined.

The total capital cost identified in the Project Brief was €983m. As the tenders returned were substantially above the Quantity Surveyors pre-tender estimate on which funding envelope was based there was pressure for cost reductions notwithstanding the extremely keen tenders which were received. The capital cost of €983m included an aspirational amount of €66m for cost reductions/value engineering.

An additional cost of €61m was reported mainly relating to Fire Officer requirements including Sprinklers and costs associated with programme alignment between Main Contractor and Specialists.

Contract was signed with BAM on 3rd Aug 2017 and work commenced on site on Phase A works on 3rd Oct 2017. A major procurement exercise completed and a hugely significant milestone for the project.

**Second Stage**

At the same time works commenced on site the contractors began the engagement on design development of Phase B with the design team. In line with what is set out in the contract and with the support of the Independent Expert, the final cost was determined, based on rates tendered in 2016 and adjusted quantities based on completed design.

The two-stage procurement process transfers the risk to contractors in relation to cost, quantities, co-ordination issues, any project delays unless caused by client changes or lack of design information.

As the design development progressed from October 2017 the design of earlier packages such as concrete frame, steel frame, stone cladding, internal walls were completed and costed and were trending within expected costs. This trend changed by mid 2018 as the design for mechanical and electrical systems were completed and it became clear that there was a very significant gap developing between the estimated quantities at tender stage and the quantities that were now required to deliver the completed design. With this very significant increase in project scope came the requirement for extended programme and associated costs.

Working closely with the project team we scrutinised all costs as they became clear and we endeavoured first to deal with increase in construction cost of €320m. The process of determining the costs of the various packages was fully interrogated, independent reviews were commissioned.
While acknowledging significant increase in cost we explored the alternative options for project delivery however it became clear that the option to award Phase B to BAM would result in the lowest cost and fastest completion.

On completion of the various exercises the Board were satisfied that, despite the huge disappointment with the outcome, proper procedures were followed throughout the Stage 2 process in determining the final contract sum.

Following the Board meeting in November 2018 the Board made recommendation to HSE and Department of Health that the works should proceed as set out in agreed tender process - to instruct BAM to proceed with Phase B – the Main Building Works.

**Cost Escalation**

As well as the increase in construction cost of €320m, there are additional costs of €130m relating to VAT (€50m), additional costs on OPD/UCC at Tallaght and Connolly, staff, site supervision, design team, medical equipment, risk/contingency. The final project cost is now €1.433bn, €450m higher than the figure of €983m approved by Government in 2017. This is set out in detail in slide 16 of PowerPoint presentation.

**Construction cost drivers**

Allow me to explain some of the key construction cost drivers in more details that have contributed to the increase of €320m in construction costs.

<table>
<thead>
<tr>
<th>Description</th>
<th>Increase in Cost</th>
<th>Cumulative Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017 Definitive Business Case Construction Cost</td>
<td>€570m (lowest tender was €637m)</td>
<td></td>
</tr>
<tr>
<td>1) A reduction in the delivery of the €66m targeted savings/value engineering set out the 2017 Business Case</td>
<td>€46m</td>
<td>€616m</td>
</tr>
<tr>
<td>2) Statutory issues – specifically changes in fire regulations following the Grenfell fire and the need to add additional sprinklers following a decision by An Bord Pleanála</td>
<td>€27m</td>
<td>€643m</td>
</tr>
<tr>
<td>3) Engagement with clinicians on final design was completed and any omissions in the original design were identified and costed</td>
<td>€21m</td>
<td>€664m – prior to design development/design omissions, programme extension costs and claims.</td>
</tr>
<tr>
<td>4) Finalisation of the detail e.g. detailing and itemising quantities of all materials and fixtures required in each of the 6,000 rooms</td>
<td>€94m 14% increase on €664m</td>
<td>€758m</td>
</tr>
<tr>
<td>5) Omissions in design</td>
<td>€20m 3% increase on €664m</td>
<td>€778m</td>
</tr>
<tr>
<td>6) The impact of the additional 9 months on the construction programme to 2022, incl costs for preliminaries</td>
<td>€90m</td>
<td>€868m</td>
</tr>
<tr>
<td>7) Additional claims from the contractors to reflect changes in scope</td>
<td>€22m</td>
<td>€890m</td>
</tr>
</tbody>
</table>

Following the Government approvals to the investment decision the Phase B (above ground works) have now been instructed to BAM (Total Construction Cost of €890m) with construction works of the main hospital on the St James’s campus to be completed in mid-2022 followed by a period of commissioning and staff familiarisation before services transfer.
Benchmarking

The 2014 NPHDB Budget of c €800m, referenced earlier, was based on advice from AECOM (Quantity Surveyors for Mater children’s hospital proposal). The estimate included construction cost per sq.m. of €2500. The inflation allowance of 3% p.a. up to 2019 compounded to 15% giving an overall cost per sq. m. of €2875. An international benchmarking report recently completed by AECOM in October 2018 concludes that the average construction cost per sq. m. for an international hospital projects similar to NCH, based on a completion date in 2022, is now €5951/sq.m, with a recorded high for one project of €8,000/sq.m. It is worth noting that the average of €5,951 is more than twice the estimated cost of construction in 2013.

In the recent project cost report prepared by LINESIGHT (Quantity Surveyors for NCH at St James’s campus) the estimated compounded tender price inflation over 10 years from 2013 to project completion in 2022 is 95% based on actual inflation from 2013 to 2018 and predicted inflation up to 2022.

Based on the award of the Phase B works the construction cost of delivering ‘one of the finest Childrens Hospitals in the world’ at NCH is €890m equating to a cost of €6,500/ sqm for the main hospital. The equivalent figure for the two Outpatient and urgent Care Centres at Connolly and Tallaght is c. €5,200/sqm.

Conclusion

The timeline to deliver the New Childrens Hospital from the appointment of the NPHDB in August 2013 to project completion in mid 2022 is a total of 9 years. I am satisfied that the Board and Executive Team have set about the task in a competent and professional manner, putting in place the most appropriate structures and processes based on best international practice. If we were to start again on a project of this scale and complexity we would adopt the same procurement approach. Notwithstanding this we are deeply disappointed and acknowledge the very significant cost increases and the challenges these pose. There are lessons to be learned in relation to the wisdom of pursuing cost reductions on competitive tenders and ensuring the sufficiency of tender information, in particular, mechanical and electrical services at tender stage.

With cost and programme certainty our focus now is on ensuring that all parties work safely and collaboratively and deliver a hospital of outstanding quality, a project we will all be proud of ...one of the finest children’s hospitals in the world .. providing unsurpassed care for the nation’s sick children for generations to come.

At the same time, we are very mindful of the Governments’ concerns to ensure that the project is indeed delivered within the agreed time and within the revised budget. We welcome the planned independent review of Board’s processes and procedures. Any issues identified will be dealt with speedily and comprehensively in the interests of successful completion of the project and the effective management of public funds.

Thank you for your attention. My colleagues and I will be pleased now to deal with your questions.