

Asta Powerproject Case Study: Robertson Construction Group

ROBERTSON EMPLOYED ASTA POWERPROJECT'S ACCURATE SCHEDULING FOR SUCCESSFUL DELIVERY OF AWARD-WINNING ABERDEEN EMERGENCY CARE CENTRE



Mark Alberts was Planning Manager on this large-scale, world-class project. It was administered by use of the NEC3 form of contract, which has the programme at the hub. Mark's wealth of experience has taught him that the key factors of every successful project must be identification of workable solutions, and teamwork, which needs to be backed up with consistent use of a well-resourced and dynamic programme model. Mark developed the entire programme using Asta Powerproject, and continued to project manage all progress in the software. Being one of the largest facilities of its kind in Europe, the project's sheer size and complexity meant the programme would be equally large and complex. It required a robust, yet flexible tool that could handle the significant numbers of activities, logic links, material quantities and production data.

Robertson has evolved over the past 50 years into one of the largest privately owned infrastructure, support services and construction groups in the country. It is proud of the quality of its work and dedication to clients, the entrepreneurial culture it has created across all of its companies and of the rewards they are able to achieve from this. It was recently

made even more proud when that dedication was rewarded at this year's CIOB prestigious Construction Manager of the Year Awards. Robertson Construction Group scooped the gold award in the £40m to £100m new build and refurbishment sector for the successful delivery of its state-of-the-art Aberdeen Emergency Care Centre for NHS Grampian, in Aberdeen.

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Said Mark: “I developed the programme in Asta Powerproject because it was an NEC3 contract, and programme control is at its heart. In this case, I believed Asta Powerproject to be more user-friendly than other major software packages and able to cope with the detail required. The programme scope contained all design, procurement and off-site manufacture activities, together with the on-site

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construction works. I used it to project manage all progress through the project's entire lifecycle, with progress added to the programme and re-scheduled on a weekly basis."

"The programme was reasonably substantial, containing approximately 10,000 activities and 40,000 logic links. These are relatively high quantities for some software systems to manage, but Asta Powerproject coped easily, allowing me to monitor every movement, analyse "what-if" scenarios, forward forecast, and successfully accommodate every change, thanks to its flexibility and functionality. The traditional culture of paper programmes was generally out of the question, and the outcome of client changes, progress and planning meetings was available to see "live" on the IT system via a shared web-based information management system. Using Asta Powerproject's coding system, individual managers, client users and subcontractors could easily access their own programme requirements using filters and coding from the main programme data base. This applied to both on-site and off-site users via use of the web."

► LOGISTICAL CHALLENGES ARE NO MATCH FOR EXCELLENT PLANNING

The new Emergency Care Centre was designed to improve workforce flexibility and promote better integration between acute hospital and community health services on the site of Aberdeen Royal Infirmary's existing A&E department. Construction work on one of the largest emergency care centres in Europe would therefore be carried out in the middle of a



**Mark Alberts, Planning Manager,
Robertson Construction**

live, large-scale operating healthcare development. The project posed significant logistical and construction challenges due to the proximity of neighbouring active medical facilities, some as little as a metre away. The challenge was to carry out all work sensitively and without disruption to patient care in the surrounding buildings.

Mark explained "On Healthcare projects, planners face their biggest challenges when they are operating within the confines of a busy, live campus, especially one located in a city centre. That is the way it is, and is usually the same on any live Healthcare project. The need for maintaining public and workforce safety, together with uninterrupted client healthcare provision, are the number one considerations. Assessment of programme impact via running problem solving variables through Asta Powerproject ensured we were able to do just that. We were able to use Asta Powerproject's resource histograms to smooth out the distribution of labour, materials and equipment; see both the planned and forecasted numbers, and manage the whole resourcing process more effectively."

The quantities and time constraints involved were very challenging. The building houses 10 floors each the size of a football pitch. The basement excavation volume alone amounted to 30,000m³ – relating to the capacity of 8 Olympic-size swimming pools -- and all had to be

excavated in 7 weeks. This equated to 10 truck movements per hour on a live campus. The concrete frame amounted to approximately 13,500 m³ for the structure, with 2330 concrete truck deliveries in 10 months, an average of 1.5 truck deliveries every working hour. There was enough plasterboard to completely clad the full façade of the Empire State Building. The logistical challenges of vehicular movement were huge, and all to be done in a cul-de-sac, within a few metres of live hospital buildings surrounding the site. Add to this the quantities of other materials ranging from the roof cladding down to the floor coverings, and the amount of resource and materials to manage really starts to stack up. Mark cannot stress enough the importance of identification of robust working methods, and communicating the plan and results of the programme re-scheduling on a project of this scale.

"On such a large build, vast quantities of materials are involved – and with that comes the logistical options in moving them at the right times and to the right places. It's an intensely involved task and one needs to be able to rely on the planning software to help you make the right decisions. Asta Powerproject helped us to schedule deliveries accurately to multiple workfaces at the required rate; predict appropriate plant and numbers required to serve production requirements; identify working methods which recognise the environment within which the project will be built; and even identify the size of a dedicated labour force car park required to avoid choking the campus and the surrounding roads."

► PREDICTABILITY AND COLLABORATION ARE ESSENTIAL SUCCESS FACTORS

The NEC3 suite of contracts have long recognised the importance of the programme and integrated it within the contractual requirements of all parties. This project was administered using this form of contract with the programme at the centre. The management of the two key processes of planning and collaboration, or the mutual understanding between parties, was

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fundamental to the success of the project. Asta Powerproject is very helpful with working to NEC3 requirements because NEC3 demands that users adopt a robust project management approach. Mark believes: “If you have a Project Management team who don't know where they are on the progress status of a project, then you don't have a Project Management team!” Asta Powerproject solved that with the required input of the team's “Progress Holders.”

At the outset, labour hours (effort) were loaded into the software and modelled to show numbers of each trade or subcontractor required to deliver the project. Methodology, logistical decisions and their development were identified by Mark in close collaboration with the construction and client teams using Asta Powerproject's “what-if” scenario function. This identified various outcomes, and the logistical solutions were fed directly back into the programme along with time parameters.

Mark believes that in this way, the project's success can partly be attributed to the predictability this afforded him. He was able to bring every party into collaboration and identify conflicts of time, resource and material in advance of it becoming a risk. “We progress monitored the programme on a weekly basis with a full team of managers identifying their progress parameters. These meetings were chaired by myself, with data entered into the software live on a Smartboard for all to see. On completion of

the weekly progress data entry, the programme was rescheduled live to identify critical path movement, mitigation measures, viewing new labour demand and identification of opportunities. The software was invaluable in promoting this collaborative approach to work and gave us the ability to demonstrate a clear strategy of how the works would be executed.”

Construction began in early 2010 and the finished project was handed over in Autumn 2012, on time and under budget. Two to three years of superior project management and a strong collaborative approach led to

an award Robertson can be truly proud of, as Mark points out:

“The project has been an all-round winner, and from every angle: from safety, client satisfaction, quality, budget, programme, planning and performance. One of our greatest complements came from the Chief Executive of NHS Grampian who said ‘for the duration of the contract, we didn't know you were there’. I am proud to have been part of a successful project team on such a landmark building, and to have been part of a project that adds so much value to the community.”

▶ ABOUT ROBERTSON

Since 1966 Robertson has been building quality and creating value throughout Scotland and the North East of England. It has evolved into one of the largest privately owned infrastructure, support services and construction groups in the country and now operates six business units throughout the UK.

Its aim is to deliver environmental and sustainable solutions for its clients and continues to work in partnership with its clients to achieve these goals.

Robertson has long-standing experience



in the healthcare sector. It has the experience to work via a private or a public procurement route and as one of the early pioneers of PFI/PPP it can work with local authorities and health trusts to deliver a cost-effective value for money solution. Through experience it has the knowledge to work sensitively in live healthcare environments, working as a good partner and a good neighbour.

▶ ABOUT ASTA DEVELOPMENT

Asta Development is a leading international developer of project, portfolio and resource management software which provides solutions for managing any size and any type of project.

Since its launch in 1988, the company's core solution suite, Asta Powerproject, has evolved and improved driven by regular feedback from users and using the latest technologies available. It has proved its capabilities over the years on high profile projects throughout the world and is now used by thousands of planners in a wide variety of industry sectors in the UK, Europe, Asia Pacific and the USA. Asta Development supports customers directly from its offices in Oxfordshire and

Shropshire. Outside of the UK, Asta Development has a network of distributors who supply, train and support customers, with the software available in up to seven different languages. Asta Development is a part of Eleco plc, a holding company focusing on software and advanced off-site building systems for the construction industry. The company is listed on the London Stock Exchange's Alternative Investment Market (AIM).

More information about Asta Development and its products can be found at www.astadev.com and information about Eleco plc can be found at www.eleco.com.