

Case study: Bouygues UK

Bouygues UK reaches new heights of planning excellence in City build

Construction contractors often face issues of proximity to buildings and infrastructure – but the £31m redevelopment of 71 Queen Victoria Street, London, presented them in abundance.

The eight-storey office building sits in the heart of the busy City of London, almost directly above both an electricity sub-station and Mansion House tube station – and therefore with sections of the District and Circle lines running beneath. It was to require demolition of the building cores, new foundations and a new steel frame, as well as a complete internal refit. Any contractor bidding for the demolition, building and fit-out contract would have realised that this wouldn't be simple, with both access challenges and proximity to existing infrastructure.

Bouygues UK won the contract in part because it had conceived a bold approach which would allow it to shave three months off the timeline, by installing temporary bracing to stabilise the structure, then running demolition and construction programmes simultaneously. Delivering on this promise took extremely careful planning, but the resulting successful programme won Project Director Ben Tominey a gong in the New Build and Refurbishment £30-60m category at the Construction Manager of the Year Awards.

Planning away risk

The foundations for success were laid long before the team ever reached the site, said Ben: “Before you even start to create a programme, I always feel you need a mental picture of the build. Then you can turn it into a physical picture by visualising it, which helps you to understand how you need to build



before you create the actual programme. It can all take several months. For this project we were fortunate to have some time up front, to work on it at head office. We visualised the site and all our intentions, taking into account constraints such as its neighbours and City location. We had to consider the physicality of how to get around the site, and deliver vast amounts of materials. From this we could create a series of drawings and plans, and lastly use Powerproject to turn it all into a physical plan of works.” The team was therefore able to think ahead about some obvious challenges it was likely

to face. He continued: “We took the time to appreciate the difficulties first – then spent time planning around those

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difficulties, and taking the risks away.”

Towering challenges

The team realised instantly that the City location presented one glaring challenge: to erect the new steel frame would require a tower crane to hoist and position its sections, as well as to lift other materials around the site. Unfortunately the site was so confined that this would be a huge headache. This large project would require significant deliveries – but the obvious delivery point on the road outside would mean closing the whole thoroughfare, with significant time and cost implications. The City of London authorities would certainly not be happy.

Ben conceived a neat solution which wiped away many of these issues at a stroke – although it took some convincing of both the client and his own management: “I recalled a recent visit to a steelworks which used an overhead gantry crane to move large steels around and thought: why can’t we have one here? Deliveries could then be driven directly off the road and into the building, through the main entrance. We could take the materials straight from the back of a lorry and hoist them to where they were needed. And, because it was inside the building, we could

install roofing and prevent rain coming into the building – which would have been inevitable with a tower crane.”

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Bracing for changes

Planning the sequence of works to install the temporary bracing, Ben used Powerproject to capture his thinking and turn it into practical reality: “We had in mind how we would do this, planned it in drawing form and consulted with our structural professionals. Then we could develop a sequence for installation of temporary braces in Powerproject and link it all up. This told the guys on the site exactly what to do, and when – not just for installation but through to when to remove things again to facilitate the rest of the build. Software-based planning is critical, because it creates the exact parameters of what to do and when.”

The initial plans for construction projects are all very well, Ben observed somewhat wryly: “Of course, theoretically if everyone sticks to the plan, nothing goes wrong. In reality, you

always have to re-plan at some point, to compensate for something. You can rely on the fact that someone will let you down, daily, or a van will break down, or something won’t turn up on time. You need not only to have Plan A but Plans B, C and even D.”

Powerproject helped Ben to keep a very tight rein on work on site. “I physically manage works on site – and I expect my team to spend the first part of the day doing the same. You can’t run a site from a desk. You need to see and understand what is going wrong in order to be in a position to do something about it, and manage the change, or you lose the day, which is why I keep Powerproject constantly open on my laptop. I was the sole owner – because one of the problems with any programme management software is that, when lots of people use it, they tend to break project links.”

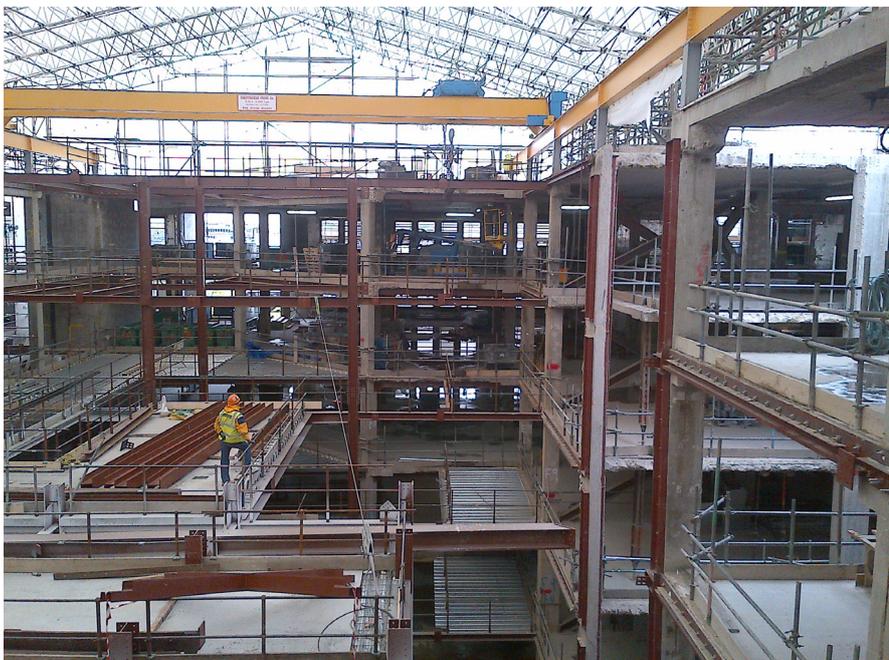
Meeting deadlines

With a large team of managers, each responsible for certain floors, Ben ran a strict schedule of daily, weekly and monthly meetings and briefings, using Powerproject as a communications aid: “We would have the programme up on screen as well as in printout, so that everyone could see it, and could easily mark it up. We could then make careful changes using the baseline to work out where any activities needed to fit. It ran to 1200 individual items, each broken down into sub-sections. To simplify that for sub-contractors we also exported data from Powerproject to our in-house Last Planner spreadsheet to show a simplified version of the plan that everyone could understand.”

He went on: “You can’t ever cascade a programme to people and just say ‘do this’. Everyone must buy in and believe that achieving goals is possible. At our workshops and briefings each person brought their practical experience of what could be achieved in what timeframe. I pulled it all together in Powerproject.”

Sub-contractor collapse

As so often happens, the project faced one critical unforeseen problem when, just six months from completion, the



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MEP contractor went into administration. Having been responsible for the largest sub-contractor package of all, activities suddenly ceased, leaving Bouygues UK with a major problem on its hands. Ben told us: "We had to do some very fast work – including re-engaging 35 of their own sub-contractors and 45 individual suppliers. We had to find alternatives in a few cases, as some smaller firms unfortunately went down too, and we directly employed some of the company's management to keep as much continuity as we could. We effectively created our own M&E department."

“ The software lets me go in and change a task to see the effect of allocating more resources, or having all the material arrive earlier. ”

Re-planning the remainder of the programme was unavoidable, as he recounted: "We had to completely and utterly reschedule all the programme for the remainder of the build – but that wasn't the biggest issue. We needed to take everything to pieces and compare it to the plan. We ran three major auditing activities, as we had to find out exactly where every single item was, what had been installed and what was in transit or still in the warehouse – right down to the single light-bulb and fuse– just to re-plan and re-commission the work." With Herculean effort, Ben then input all the new activity details into Powerproject, to bring it back to plan – it took three weeks, but Bouygues UK didn't lose a single day on the overall programme.

Critical planning

On any complex build, all eyes are on the critical path – which means that you need to be able to see it very clearly. Ben told us: "Having programme management software is critical. It gives you the logic to create a critical path, which no spreadsheet can do. On a complex job you must know exactly what the drop-dead critical items are and be able to monitor them, in order to

prepare for actions."

He continued: "One of the great things about Powerproject is the baseline function. You can have two programmes visible side by side, so on each line you can compare what has actually happened with the original plan. It lets you see exactly how each task has an effect on another task. You can also simply hit the reschedule button, to see the effect on the end date – then figure out what you need to do and change to get back to the original date. The software lets me go in and change a task to see the effect of allocating more resources, or having all the material arrive earlier."

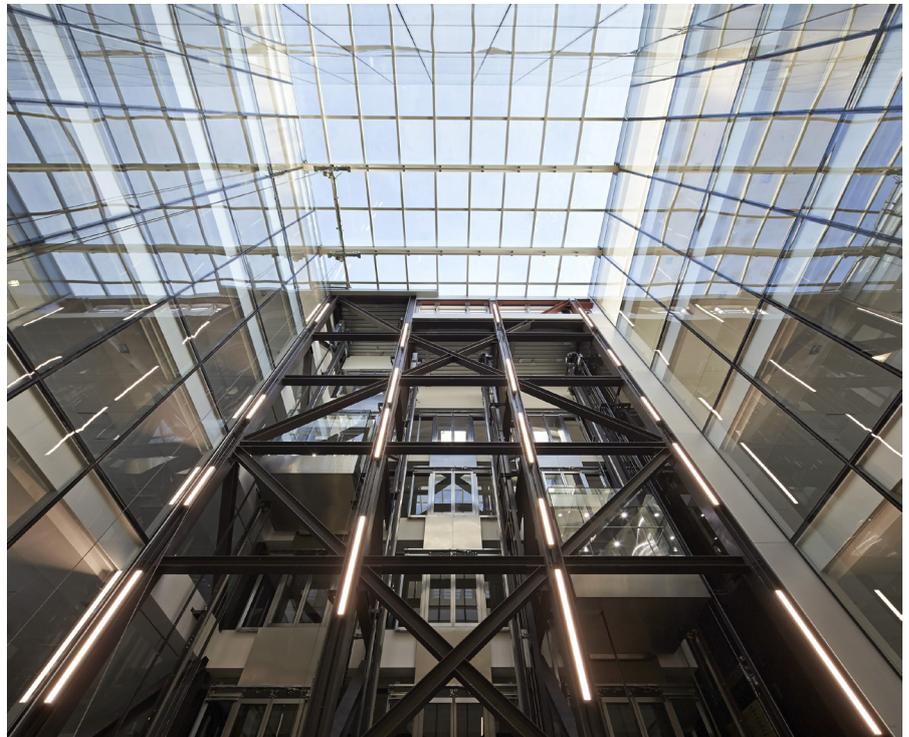
Of course, sometimes clients create changes which can't be resolved simply by moving resources around. Ben explained how he used the software to aid communication and negotiation with the client: "I can use Powerproject to sit down and show the client what I can and cannot do to mitigate problems. It is vitally important, in this instance, that I can prove the cause of any resulting delays that changes may cause to the programme, and claim back any money I am due. It enables me to show things clearly and take a fair and

reasonable approach to explain delays."

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Floor-by-floor flexibility

In such a complex build the planning software's flexibility was really put to the test. Ben told us how this benefited him in directing work: "I particularly like that you can allocate resources and owners to each task. When I wanted to assign someone to the third floor of the building, I could do that, then give them a breakout programme just for their floor, often just a single page with just their own items showing. I could break it down as I wanted – by contractor, by floor level, or by discipline. Because it had all been properly allocated at the start, I could do a whole lot of different things quickly. I could click one button and generate a programme for the window installation – then just hand it to the window provider and ask them to work to it. To me, that's one of Powerproject's best features."



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Reflecting more generally on the value Powerproject delivers, Ben told us: “Powerproject may just be a tool, but it happens to be a particularly good one. I like its simplicity – it’s not overly complex to use. I often mentor juniors and one task I set them is to go away and write me a programme for an imaginary build. If I give them Powerproject then 99% of the time they come back with a good result.

“ Powerproject is one of the most flexible programme management solutions. ”

Although training has its place, using and spending time with software is how you really get to understand how it works. When you spend a day with Powerproject, build a little programme, link it up, get the resources part working – then you understand it.”

“Different businesses and project managers make their own choice of programme management software. I prefer Powerproject, and have been using it for 15 years. I know its functions and how to use it – so I don’t have to figure out how to get things done. Other products are also used in our company, but all the systems we buy have to be adaptable because the main thing is that you can share information between them. Powerproject is one of the most flexible programme management solutions – it has the longest list of files you can pick from to import.”

This project was certainly complex, but innovative thinking, value engineering, clear leadership and a tight focus on

managing change and challenges led it to a highly successful conclusion, in which Powerproject played a supporting role.

About Elecosoft UK Ltd

Elecosoft UK Ltd is a leading international developer of project, portfolio and resource management software. Its core product, Powerproject, provides solutions for managing any size and any type of project and is widely recognised as one of the world’s leading project management software solutions for construction.

Elecosoft UK Ltd is a part of Elecosoft plc, a holding company focused on software development and services for architectural, engineering and construction industries. The company is listed on the London Stock Exchange’s Alternative Investment Market (AIM).

More information about Elecosoft UK Ltd and its products can be found at astapowerproject.com and information about Elecosoft plc can be found at elecosoft.com.

About Bouygues UK

Bouygues UK has been operating in the UK since 1997, during which time it has developed and grown its business organically. This, along with the company’s acquisitions of Denne Construction, Leadbitter, Thomas Vale and Warings – and the creation of its specialist business, Bouygues Development – has helped it to become one of the biggest players in the UK construction industry.

Operating on around 110 sites at any one given time, from Birmingham to Brighton and Southampton to Swansea, Bouygues UK’s annual turnover is in excess of £860m. The company has a workforce of around 1800 people to help deliver its projects, providing vital homes, infrastructure and regeneration for people living in communities across the UK.



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