



Clearbox

BIM Project of the Year Winner 2015

Mayfield School



The Mayfield project's use of BIM shows that Level 2 intentions are achievable and can solve the very real problem faced by Local Authorities to deliver new school places to meet urgent demand in London and the South East.

The brief was to increase the school from 8 to 12 form entry, providing teaching spaces for 800 students and 80 staff, plus new sports and dance facilities for shared community use. The 17-month programme, demanded quality design within a tight budget.

Mayfield became an opportunity for the design team, led by Bouygues, to draw on experience gained from previous informal BIM collaborations, to roll out a formal contractual BIM deliverable to achieve critical success factors for Redbridge Council and the school.

BIM objectives were defined as: full coordination and clash detection, quantity take-off, method and sequencing, design development, visualisations and communications. The development of the model was co-ordinated and managed from David Miller Architects 'mission room' where all team meetings were held. They used pre-approved components from their BIM Library (refined over five school projects with Bouygues UK) to ensure quality and rapid assembly of the design model.

Using the model to communicate proposals allowed stakeholders to make timely decisions and to understand the phasing. This improved site planning and safety – a critical consideration on a live school site. BIM also brought together multiple strands of best practice from the supply chain using the model as a method of collaboration.

The collaborative model-based approach allowed the team to collapse the usually linear project programme. With two teams working in parallel, one developed the full planning application within a 7-week period, whilst the other developed early construction information. This enabled procurement of major sub-contractors at financial close and the quality of the co-ordinated information facilitated detailed pricing and cost certainty. The construction period was shortened by 6 months through a combination of build methodology and a faster procurement process using scheduling and coordination.

By using scan data of existing assets, the interface design between old and new buildings was not only quicker, but also more accurate. The Cross Laminated Timber (CLT) superstructure was completed in just 12 weeks. Off-site manufacturing allowed the frame to be taken off the critical path, reducing time on site, while the lightweight timber frame eliminated the need for time-consuming piled foundations. Integration of the CLT and MEP suppliers ensured structural and services co-ordination and the frame was manufactured in the Austrian production plant directly from the federated model.

Environmental performance was developed within the BIM model ensuring the design progressed to achieve its BREAM 'Excellent' target and although COBie for Asset Management was not a contractual requirement, provision has been made to add FM data to demonstrate operational benefits to the Local Authority.

Judges comments

Embracing BIM resulted in a project that delighted the end users and allowed the buildings to be constructed on a tight site with significant time and cost savings as well as enabling structural innovation.

The use of all the elements of BIM and the integration between the client and other team members early led to a truly effective project. BIM allowed the accurate off-site machining directly from the BIM model which not only eliminated drawing transcription errors but also reduced installation problems on-site.

Project Contract Value:	£18.2 million
Type of work:	New Build
Approx M²:	8,500

Finalists

- A5 – M1 Link Road (AECOM & Costain Carillion JV)
- C435 Farringdon Main Station Works (BamFerroviaKier JV)
- E P Collier Primary School (Hampshire County Council Property Services)
- Imtech Paperless Site – 70 Mark Lane, London (Imtech)
- Maiden Lane, Kings Cross, London (PRP Architects)
- Mayfield School (David Miller Architects)

davidmillerarchitects



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Redbridge



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