

C A S E S T U D Y

LONG BEACH COURTHOUSE: MOCK-UPS FOR FIT-OUT DESIGN



■ **PROJECT MANAGEMENT:** SECURE COSTS, SCHEDULE AND QUALITY THROUGH MOCK-UPS

3 SUCCESSIVE MOCK-UPS: OVERALL CONFIGURATION, FINISHES, CONSTRUCTABILITY

APPLIED TO: COURTROOMS, HOLDING CELLS

PRACTISE MAKES PERFECT

The Governor George Deukmejian Courthouse in Long Beach, California, stands out as an exemplary development for a number of reasons: a major State building in an urban area in downtown Long Beach developed through a public private partnership, the courthouse was finished ahead of schedule and within budget – and has performed well to exacting requirements ever since. Credit goes, at least in part, to the project team’s attention to practising the finer details of the final design.

Fit-out processes are arguably the most important stages of building construction. They are certainly critical for ensuring the end product works well for the end user. Particularly so in the case of a courtroom, fixtures and fittings have to be designed and arranged just right for their specific use.

This was the challenge facing Long Beach Judicial Partners (LBJP), the organisation that delivered the Governor George Deukmejian Courthouse in California. The new building would become **one of the most impressive developments in Long Beach for a generation** – a model in good design and the winner of numerous awards after its opening in 2013.

But the construction team couldn’t be sure of this as the design of the courthouse was taking shape. Modern architecture and sound engineering would deliver a first rate structure and a gleaming exterior to the building, but what about the interior layout? How would the judges, sheriff and court administration take to it? Would it work?

With such uncertainty, the answer was practise. A process of mocking-up courtroom interiors was enacted for the fit-out stages.

One mock-up was required under the terms of the project agreement drawn up with the State of California. But LBJP took the principles a few stages further – ending up with **three phases of mocking-up** courtroom

interiors, for testing the final stages of construction and equipment installation, as well as for ensuring the design was right.

As the first plywood mock-up was being built, the judges, judiciary officials and other users of the building were invited along to try out the new arrangements for themselves, before they were built for real.

“Courtrooms are highly specialised places. The layout and interior designs are very specific to their use. Privacy where it’s needed, certain interactions, lines of sight and the finishes, fixtures and electronic equipment – it’s all really important for the performance of a courthouse,” says LBJP Chief Executive, Freddy Rayes.

The George Deukmejian Courthouse also stands out from others as a courthouse developed through a public private partnership (P3) contract. The project company LBJP is a special purpose vehicle set up by Meridiam. In December 2010, financial close was reached on a P3 contract agreement between LBJP and the Judicial Council of California.





A type of P3 deal known in the US as 'Performance-Based Infrastructure' was used in this case. The resulting asset would remain in public ownership, but the private sector partner would take responsibility for the financing and design and construction of the new courthouse, as well as its maintenance and operation for 35 years. Importantly, the contract terms were conditional on **performance criteria** being met.

Financing was injected through equity investment from Meridiam and loans from senior lenders. LBJP would construct the new courthouse and operate and maintain it for the benefit of the State of California and the County of Los Angeles. In return, LBJP would receive rental payments from the County and service fees from the Judicial Council of California.

But this revenue could be reduced if the building failed to meet the performance requirements. The interior of the building had to be designed and built correctly to suit its users' particular needs.

"We started with **a plywood mock-up fabricated in a warehouse building** nearby, which took about **three months** to put together, before we gathered

everyone for the mock trial," says Freddy.

The courthouse has four main stakeholders that would occupy the building: the State Judicial Council, Judges, court administration and the Sheriff. Plus others use the building including the County of L.A. "These end users were invited and we had many willing volunteers that came along to help," Freddy says.

All of the main interior courtroom fittings were installed for the mock trial, with heights and dimensions of platforms, benches and furniture made adjustable with styrofoam panels. "Necessary changes were marked up. The whole process of practising and refining the layout was stickered on, which proved very beneficial. We had **31 courtrooms to build**. Mistakes would have been very expensive and time consuming to correct later on," Freddy says.

From there, design of the building's interior developed with the help of 3D software now typical of all construction projects - and with **a further full-scale mock-up built over a seven-month period, including all finishes** to allow LBJP to obtain feedback from the stakeholders on everything of the interior - carpets, wood finish and electronic equipment. "This gave the users

opportunity to see what they were getting and to comment if there was any problem," Freddy says.

"During the latter stages of construction of the courthouse we built **an additional courtroom mock-up to ensure we were ahead of the learning curve on constructability**. Practise with putting the interior of a room together meant we anticipated any difficulty and fully understood the fit-out schedule needed. Based on that one dry-run, which also included all mechanical and electrical connections, **we learnt the exact construction procedure** for all 31 courtrooms."

Mocking up the courthouse's steel holding cells was another vital element in the overall design process. Freddy adds: "This was very important. Sheriff's Office requirements for prisoner in-custody conditions are exacting and have to be correct, for good reasons, from a legal and a safety standpoint.

"To ensure delivery of the courthouse on time and to budget, the design had to meet our Client's needs without a long interaction process. We had to be flexible for anticipating other needs that may not have been part of the original agreement,





CONSTRUCTION DETAILS

The Governor George Deukmejian Courthouse is a five-storey building of 530,000 square feet (nearly 50,000 square metres) of floor space – a development with room to house 31 courtrooms, as well as administration offices, space leased to the County of Los Angeles and areas leasable for retail use. The building accommodates a workforce of 800 and receives approximately 5,000 daily court users.

The building also contains detention facilities at basement level and separate secure parking for judges, a five-level, full-height open atrium and a secure exterior courtyard.

The consortium that developed the courthouse included the project company Long Beach Judicial Partners – and its investors and senior lenders – which contracted the design and build contractor Clark Construction. Johnson Controls is performing facilities management for LBJP and the architect of record was AECOM.

Built at a cost of around \$347m, the building received **many prestigious awards** most notably the Urban Land Institute Global Excellence Award (2014) and the Engineering News Record (ENR) Best Global Project Award (Government building, 2014). Moreover it was designed and built to very high environmental standards: the Client set a target of achieving a Silver LEED (Leadership in Energy and Environmental Design) rating, but the final outstripped this, claiming the **Gold LEED standard**. ■

as requirements do change. This was the beauty of the mock-up process. **It was good for the contractor too**, because it got to test the logistics of the interior construction process. When walking the completed building for sign-off, we already had a lot of the interior design details well documented and agreed upon. **There were no surprises for anyone.** Freddy says.

Multiple other Meridiam projects could benefit from the same approach and one or two have done. “For the Felix Bulnes project in Chile, a 525-bed hospital in western Santiago, we’ve used mock-ups in the design and construction of interior layouts for the nursing stations and patient rooms,” Freddy says.

The Governor George Deukmejian Courthouse was completed ahead

of schedule. It has also achieved a high level of satisfaction recorded through customer surveys carried out on a frequent basis since it entered service.

“After more than four years in operation, we’ve had a good amount of time to look back on the project’s performance,” says Meridiam Senior Investment Director, Scott Derby.

“Construction was completed ahead of schedule, within budget and with no disputes or claims, which is rare for projects of this complexity; and as a P3 development, it’s rated against a performance regime, with monthly gradings and financial incentives. The Judicial Council has dubbed our courthouse as a model for best in class.” ■

