

THE IPD JOURNEY

OPTIMIZING THE TEAM FOR PROJECT SUCCESS

MULVEY & BANANI
Consulting Engineers

THE ELECTRICAL ENGINEER'S PERSPECTIVE

PROJECT SUMMARY

Project, Location

TD LEGO
77 Bloor Street West, Toronto

Target Price

Confidential

Delivery

September 2013 to May 2016

Project Team Execution Rating

90%

Project Model

Integrated Process Delivery (IPD)

Final Price

13% Below Target Price

Client Satisfaction Rating

96%

Project Team Trust Rating

94%

PROJECT TEAM



Brookfield
Global Integrated Solutions

HHAngus



MULVEY & BANANI
Consulting Engineers

EllisDon



SYMTECH

teknion

IPD ELEMENTS

- Extensive pre-planning with all levels of leadership
- An agreement between the partners not to litigate
- Transparency in scheduling, delivery and billing
- A shared pool of risk/reward to stimulate innovation
- 11 Floors of renovation
- Completed over 6 phases

MULVEY & BANANI BIOGRAPHIES

Rob Marcuzzi

P. Eng., LEED® AP, Vice President

With MBII since 1987, Rob joined the firm after graduating from the University of Toronto with a degree in Electrical Engineering. In 2003 he was promoted to Vice President.

Nick Bonadie

P. Eng., RCDD, Vice President IT/ Communications

Nick has designed IT/Comms systems for dedicated data centres and trading floors for many of Canada's big banks, as well as for Ontario's largest casinos. Nick joined MBII in 1989 after earning a Bachelor of Applied Science Degree (B.A.Sc.) in Electrical Engineering at the University of Toronto.

Moe Pourgholam

P. Eng., Associate

Moe's practice area focus is Tenant Fit-up. Moe graduated from the University of Western Ontario with a Bachelor of Engineering Science Degree (Electrical). Beginning his career as a service technician, Moe joined MBII in 1999 and has worked in Texas and Dubai.

MBII Vice President Rob Marcuzzi had doubts about the potential of the IPD delivery model when his firm began working on TD LEGO. Rob had feedback from others: IPD was unproven on smaller scale projects. It involved a radical culture change on the job sites.

“I had a biased opinion coming into the project,” Rob said. “We had never done a project like this in the past and while I had heard of the advantages with larger scale projects, I was hesitant about taking this approach for a small project. Everyone on the team felt the same,” Rob reported. “However, we all decided to keep an open mind and see what we could learn from one another and how this process actually works.”

Nick Bonadie, also an MBII VP, had long become inured to the cat-and-mouse game of change orders within a stipulated sum project. “Many times contractors know certain things but they do not share with you up front because they want to keep it in their back pocket for later,” he said. “They get awarded the job and then they surprise you with a request for change once construction is in motion.”

“The last few floors were the most efficient from a design and construction standpoint. Efficiency increased steadily on a linear scale from the first tranche to the final tranche”

Rob Marcuzzi

In an IPD project, the participants return is included in the tendering process. Innovation and co-operation are prioritized because cost savings are split among the participants. “On a standard hourly project, there is no real incentive to work as productively as possible” Rob said. “Here the incentive is to spend the time required efficiently” says Rob, “then everyone wins in the end.”

Team members share a common room and a white board that allow them to co-ordinate their jobs. Every partner’s billing is open for all participants to inspect. A comprehensive planning and visioning session early in the process unearths potential errors before they became problems. Likewise, an accelerated approval process fuels the process as it moves along.

“The engineers and contractors sat around the table to review drawings and came up with items that were either missed or incorrectly documented” says project engineer Moe Pourgholam. “For me that was novel, something I had not done before.”



IPD collaboration was occasionally tested in meetings. “It wasn’t a difficult adjustment but there was a pretty sharp learning curve,” Rob says. The biggest leap of faith in an IPD project comes at the beginning: because of the lengthy planning and consultation process, billable hours piled up before a screw was turned at Lego. “Early on in the process I wondered how we were going to remain profitable, based on the amount of time and effort that was being spent so early in the project,” Rob continued. “Within a few months we were hundreds of hours in the red, however each month, we started recovering, catching up.”

“I was our company’s representative on both the Senior Management Team (SMT) and the Project Management Team (PMT)” says Rob. “Over the history of the project, my time dropped from forty hours a month early on, to about two hours a month for the final tranche. It’s unbelievable how it turned out.”

A key aspect of the project was the work on Lego’s 21st floor. “There were some unique conditions, such as ceiling plenum space constraints. We really had to work together with the contractors, other engineers and the furniture supplier with regards to the connection points,” Nick said.

“In some areas we only had four to six inches within the ceiling plenum space to work with. If the design wasn’t properly co-ordinated that would have exposed us to extras at a later date.” This never happened.

“The one aspect of the IPD process that I feel benefited us most was that it was a phased job,” Rob says. “We took our lumps in phases one and two but by phase three, four and five, we had the process down to a science.”

The team kept generating new economies even in Lego’s later stages. “The last few floors were the most efficient from a design and construction standpoint. Efficiency increased steadily on a linear scale from the first tranche to the final tranche” Rob says.

By then the mutual benefits of co-operation, openness and job satisfaction had taken hold, team-wide. “If someone became a little defensive at a meeting, the conversation was always ‘hold on, hold on. Let’s not take that tone. Let’s figure this out together.’” Rob says. “It wasn’t long before everybody on the team knew what the final goal was and worked cooperatively to get it done.”

“Conflict is one thing you always dread on a project” Moe says. “If you miss something and that incurs a large cost or scheduling impact, you need to justify that to the client. Because you were taking those elements out of this process we had a much easier time focussing on the design and delivering the end product.”

Rob is now absolutely convinced of the value of IPD delivery model. “At the end of the day, nobody is going to retire after an individual project. If everyone goes in with that fact in mind and with the knowledge that everyone can make a reasonable profit, I can’t see why something like this couldn’t work on a smaller-scale project as well.”

The issue, Nick says, isn’t whether IPD works but rather can the industry adapt to something so drastically different from the stipulated sum model. “I want to say yes but I find the industry always finds it difficult to accept and embrace change,” he reflects. “My hope is that it can gain some traction. It all depends on having leaders like TD and other larger organizations adopting and promoting the benefits.”

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