

CLIP

A building contractor used CLIP to help improve their framework for partnering and reduce their pre-construction lead times



“We quickly recognised the possible advantages of looking at a project, pulling it apart and then reassembling it. We wanted to produce a clear vision of our future partnering strategy.”

Neil Quaife of Denne Construction

THE PROJECT

Unicorn Primary School – Bromley

CLIENT:

London Borough of Bromley

CONTRACTOR:

Denne Construction

Neil Quaife of Denne Construction tells how CLIP helped the company to reduce waste and improve their framework for partnering with the supply chain.

BACKGROUND TO THE PROJECT

Denne Construction is the construction division of Denne Group Ltd. We undertake general contracting covering residential, care and commercial works in both the public and private sectors. Denne is a regional contractor operating in London and the South East.

The company has a strong emphasis on partnering with 80% of our work being repeat business.

What attracted us to CLIP

We heard about CLIP through one of our managers. We knew that other contractors were using it successfully. We also noticed someone with process management experience from outside the industry was involved. We asked Martin Watson of Construction Best Practice to come and meet our Managing Director Graham Brown.

They discussed the process, and looked at the areas where it could bring the greatest improvements. We quickly recognised the possible advantages of looking at a project, pulling it apart and then reassembling it.

What our aims and expectations were

We do a lot of work for local authorities, and we thought this would be a good opportunity to use CLIP in a partnering context. The Unicorn Primary School at Langley Court in Bromley, is a traditional low-rise construction. It is a brick and block structure with a trussed roof and block work finish. The project cost is £2.5 million.

We decided to focus on the pre-construction phase and look at the areas where we had the best chance of making improvements. We wanted to compare our current practices against new possibilities.

Our main objective in joining the CLIP project was to improve on the relationships with the client, suppliers and subcontractors. We wanted to understand what 'partnering really meant' and to identify issues that could be barriers to making it work. We wanted to produce a clear vision of our future partnering strategy.

From partnering using CLIP, we expected to be able to:

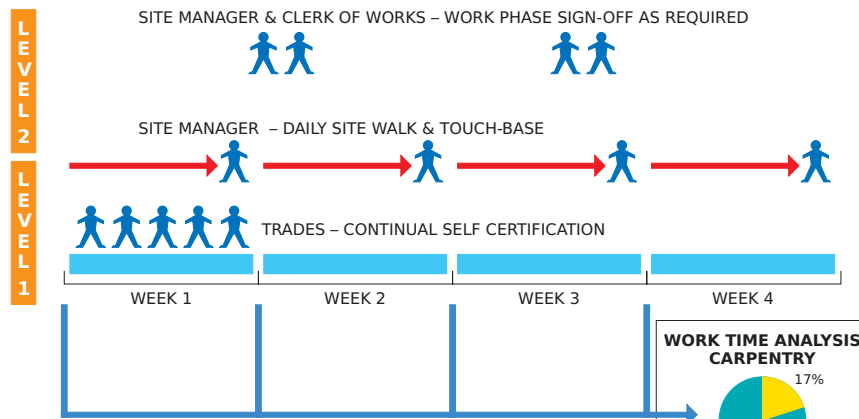
- Increase profits
- Reduce build times
- Reduce waste and defects
- Partner more effectively
- Meet our clients' needs better.

How the CLIP process worked for us

Once we had chosen Langley Court as the pilot project, we informed the project team. We invited the client and their representatives to a meeting, where a CLIP engineer gave us a taster of the process. Everyone turned up not knowing what to expect. But things got more exciting as we looked at how we could analyse our processes.

We looked at the tools available for breaking down activities and looking for waste. Then we applied these tools to each process to see what was necessary to reduce the amount of waste. We discussed various ways of improving them, and the team agreed three areas to focus on:

- Improving relationships and collaboration by focusing on pre-construction activities
- Handover and maintenance
- Improving materials planning, procurement and control.



The Progressive Quality Assurance process. Weekly data was captured allowing a monthly analysis of problem areas

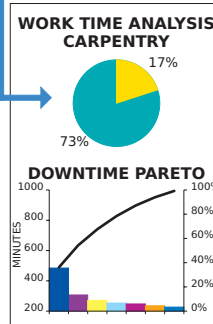
The team created a 'current state' process map of all key project phases, from tender through to handover and maintenance. We plotted the key phases of actual times and planned times to give the total project lead time. The team chose to focus future improvements on the pre-construction phase.

CLIP put us into a new arena of looking for new ways of doing things. We identified changes we could make from our current practices, by applying the principles of lean construction and partnership collaboration. Looking at the changes led the team to a new 'blueprint' for pre-construction activities.

We produced visual charts to plan future activities, to help the partnering process. We set targets, and identified the critical areas to focus on by breaking down the project into manageable phases. The visual charts allowed free thought and brainstorming.

This process turned up many improvement opportunities from the tendering and selection process, to the final handover and payment phase. We decided to focus improvement on the handover and maintenance phase of construction. We then used 'future state' mapping to define the improved processes for handover & maintenance.

The site foreman logged information on delays and disruptions to the work. We



found that 31% of the time lost was caused by the late supply of door thresholds.

The client identified snags as the reason why many of their previous projects had been delayed at handover. Client satisfaction on the project was poor, and there was additional time and cost in rectifying the snags.

We made two improvements to help eliminate snags at handover. We set up a site-based quality control scheme. So, when a subcontractor has completed a section of work, we check it carefully looking for unnecessary waste. We can then discuss this with them and look for ways to improve.

We want to get all our subcontractors to self-certify their work on site. The quality system meant we could measure the number of times defects occurred, and then diagnose the problem. We looked at how we could change the way we worked to remove the fault.

Secondly, we analysed the snag data from site. We found problems with the current set-up and operation of procurement. We identified the reasons for the snags, and put in place effective measures to eliminate them.

Be prepared for the CLIP process to get in the way of your normal day job. It takes time out of your day to work with the CLIP engineer to develop your own skills set, so you will need to put in the extra time and effort. Go into the process with an open mind, the guys on site certainly did.

How we benefited from this initiative

The main benefit is that the team now fully understands our process improvement systems, and this has helped transfer vital knowledge between projects. We used CLIP to create a mindset of looking at every process for unwanted waste. The results are startling.

By taking the learning points from the process and putting them into our Business Management System, the whole company can benefit from the developments. We now have what we call our 'blue-print' for pre-construction activities.

We also have improved our framework for collaboration between client, main contractor, subcontractors and suppliers. The visual framework for the project has improved team and partnership relationships.

The whole team is delighted with the initiative and the amount of waste we have removed through our newly developed processes. We now run a workshop to ensure the actions from the pilot project are accessible to everyone. We are also using CLIP thinking on repetitive house building projects and in our joinery division.

CLIP has helped us to produce an action plan that will develop our processes further, and the changes have reduced the amount of waste in our processes. The next step is to apply and trial the 'blue-print' to new construction projects.

How we plan to use the skills and lessons learned

You will get the most out of CLIP if it fits with your company's long-term strategy, and if you prepare the team properly at the start of the process. My advice would be to run a session that clearly explains the principals of lean construction and process management. It has been hard work and the process does require top management support to succeed.

The great thing about the process is that it got the whole project team in a room thinking strategically. Suddenly, everyone was discussing how to work more effectively in a pre-construction environment.

I would say that it is vital to develop trust and to understand each other's business processes. We went through the tendering process with the client, and they were amazed by the amount of duplication and wasted effort involved. We also reviewed the actual lead-time from feasibility to start on site, and came up with a proposal that could reduce it by 48%. The client is now considering using different procurement routes, and is talking to other local authorities about using CLIP.



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LEARNING POINTS

- It has been hard work and the process does require top management support to succeed.
- We used CLIP to create a mindset of looking at every process for unwanted waste.
- We have taken the learning points from the CLIP process and put them into our Business Management System. The whole company can now benefit from the developments. The result is a 'Blue-Print' for pre-construction activities.
- I would say that it is vital to develop trust and understand each other's business processes.
- People turned up not knowing what to expect from the idea. However, the whole thing got more exciting as we looked at how we could analyse processes.
- We quickly recognised the possible advantages of looking at a project, pulling it apart and then reassembling it. We wanted to produce a clear vision of our future partnering strategy.
- You will get the most out of CLIP if it fits with your company's long-term strategy, and if you prepare the team properly at the start of the process.
- We produced visual charts to plan future activities, to help the partnering process. We set targets, and identified the critical areas to focus on by breaking down the project into manageable phases. The visual charts allowed free thought and brainstorming.

JARGON BUSTING BOX

■ **7Ws – look for seven wastes that can never be added value:**

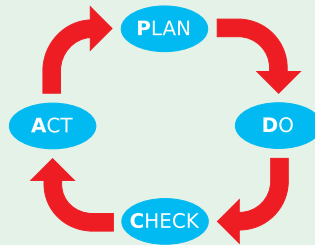
- Motion
- Transport
- Waiting
- Overproduction
- Defects
- Unnecessary inventory
- Inappropriate work or processing.

■ **5Cs – check these to lay the foundations for continuous improvement:**

- **Clear out** – separate the essential from the non-essential
- **Configure** – a place for everything, and everything in its place
- **Clean & check** – assess the current condition of the environment
- **Conformity** – ensure standard easily maintained
- **Custom & Practice** – ensure everyone follows the rules.

■ **THE PLAN-DO-CHECK-ACT (PDCA) CYCLE –**

a way of thinking which encourages continuous improvement



■ **THE CLIP – ‘standard structured approach’ – which is made up of four main stages:**

- **Pre-diagnostic** – setting the aims and training the team in lean tools and techniques
- **Diagnostic** – practically applying the tools to analyse the situation
- **Improvement activity** – looking at the data for opportunities to improve processes
- **Follow up** – identify barriers to success and set improvement actions in place.

■ **VISUAL CONTROL –**

a major part of the CLIP process is to use visual tools to display data, highlight improvements and record ideas. These include:

- **Key Performance Indicators** – are the measure of performance of activities that are critical to the success of an organisation
- **Pareto Chart** – a comparative bar chart that shows the number of defects for each chosen area of work, and the cumulative total of defects over the whole project
- **Fishbone Diagrams** – are used to identify the possible causes of problems. Start by defining the problem to be investigated and write it down. Then draw lines (bones) to represent each cause that runs into it. Finally you can brainstorm what is actually the cause of the problem
- **Priority Matrix** – a quadrant chart used to prioritise which improvement areas to focus on first. For example, you can place activities that will have a high impact at a low cost in one quadrant and focus on these first.

GETTING HELP

CONTACT DETAILS

Martin Watson
CLIP Director
BRE
Garston
Watford WD25 9XX
01923 664638
email clip@bre.co.uk
www.bre.co.uk

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