

CLIP

to improve the productivity of their bricklaying team

A regional contractor used CLIP



PROJECT

St Duke's Terrace – Liverpool

CLIENT:

Maritime Housing Association – Liverpool

CONTRACTOR:

Cruden Construction Ltd

Stephen Morris of Cruden Construction tells how the company used CLIP to improve the management and productivity of their bricklaying team.

BACKGROUND TO THE PROJECT

Cruden Construction is a regional contractor specialising in new social housing and refurbishment. We also work in the private sector building industrial, retail and commercial facilities for clients in the Northwest.

We have a strong focus on best practice and are following many of the recommendations from the Egan Report 'Rethinking Construction'.

What attracted us to CLIP

We heard about CLIP at one of our local National Federation of Builders (NFB) meetings. We were putting an improvement programme together at Cruden, and it sounded as though CLIP could help us to achieve this.

We approached the NFB for more details, and he put us in contact with CBP. After some initial discussions, we launched the first CLIP pilot project in the UK.

What our aims and expectations were

We wanted to use CLIP on a project where it could help improve our own partnering arrangements. The £3.8m project at St Duke's Terrace, central Liverpool was the second of a strategic partnership programme taking place on a major construction site. It seemed ideal.

This project involved the demolition of the existing structures, followed by the

construction of four new buildings. The site is located in a conservation area. We decided to start using CLIP to improve the productivity of our brick laying processes, by harnessing the best ideas from the team.

We wanted to:

- Identify key issues and inefficiencies relating to the brickwork activity and the associated site services
- Improve the management of brickwork and the workforce
- Improve methods, practices and cost predictability
- Improve the management of our own bricklaying force
- Maximise the benefits across the entire construction project. We wanted to use any improvements made throughout all our projects, to optimise the productivity of our own precious bricklaying resources.

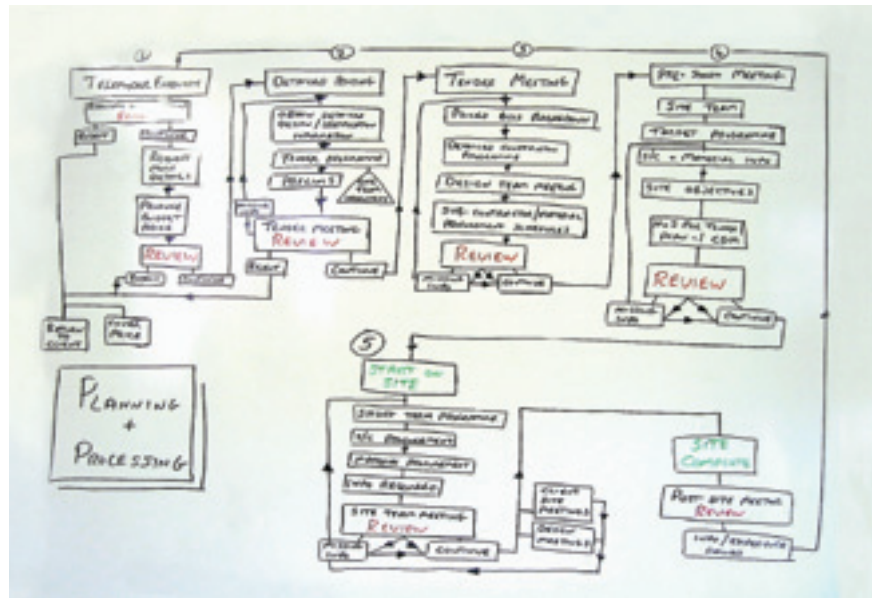
We also tasked the team to learn from the CLIP project, and to develop a team-based 'common approach' to process improvement. This could then be used throughout Cruden Construction.

How the CLIP process worked for us

We already had a good relationship with the client as we had worked together before. Their Chief Executive was also keen to improve the building process, and she was happy to be involved in the process.

I felt that the whole company needed to be involved with the project for it to be a success. I set up the first meeting with our contracts manager, senior buyer, site brickwork supervisor, estimator, project manager, contract surveyor and chief bonus surveyor. Our CLIP engineer then briefed the team.

The CLIP engineer introduced Key Performance Indicator analysis and the



By challenging the Current State the team created and mapped out an improved Future State

need to measure change. We then discussed and agreed the areas to be measured. We put them on a board so that everyone had access to them.

Everyone decided to review the performance of the project on a regular basis, as a way of prompting improvements. At this point, we agreed that we should just let the team get on with it.

They analysed the way our work force laid brickwork, and in particular the re-laying of reclaimed facing bricks. They also looked at issues such as access, tools, work patterns and the movement of materials around the site.

The brickwork foreman used a log sheet to collect data on work activities, which were affecting the effectiveness of the bricklaying process. It revealed that 45% of the bricklayers' working time was being wasted. We identified two main areas that were impacting heavily on the productivity of our bricklayers.

Even a small problem or delay to the scaffolding and excavation works was causing us problems. The team mapped out each stage of the bricklaying process, and looked at how the rest of the site activities affected it. We then looked at each stage of the works and asked ourselves, why are we doing

this? We wanted to see what was going wrong, and if there was a better way of doing things.

We looked at different ways of maximising the productivity of the bricklayers. The team brainstormed the issues most likely to impact on the effective construction of brickwork, from the ground works to wall plates. They started by improving the interaction between the different trades on site. For instance, you can't lay bricks when there is scaffolding in the way because you are running a service pipe through to another part of the building. We defined pro-active countermeasures based on how important they were, and wrote down the crucial action points on improvement activity sheets.

“This has created a loop for knowledge transfer across the company, turning us into a learning organisation.”
 Stephen Morris of Cruden Construction

Visual planning was used to show the order and timing of the work, and the interaction of the trades. We found that, in certain situations, the skill and competence of the material handler affected the speed and success of the work.

We have now defined the 'best' method for the set-up, operation and control of the brickwork. By challenging how we do things, the team has created improvements that have reduced waste

How we benefited from this initiative

CLIP has made us analyse what we do, before we do it. This means we will think ahead about using construction methods that will remove the maximum amount of waste from the project. It has also made our internal departments work closer together during a project. This has created a loop for knowledge transfer across the company, turning us into a learning organisation.

We also benefited by getting the whole team together to discuss any key issues, allowing us to develop a common understanding. Now we can create a company wide framework that will improve our operations and project management.

‘By challenging how we do things, the team has created improvements that have reduced waste.’

Stephen Morris of Cruden Construction

We are currently implementing an on-site process for recording and analysing why delays and disruptions are occurring. We can then get to the root of any problems, and identify the best way to solve them. By using a 'plan-to-protect' methodology we can prioritise ideas, based on how much they impact on the successful delivery of the project. This should improve the productivity of the work.

We have developed a 'best set-up' method for our brick and block work, and identified the best way of getting the best mortar supply possible. We now need to implement this, but it should help us to reduce site lead times. Overall, we have improved the productivity of the brick laying process by 7%.

How we plan to use the skills and lessons learned

The CLIP project made us review our tendering and estimating processes. We can now predict the cost of a project more quickly and accurately, which means we can manage our resources more easily. By setting up a system for transferring information around the company, we can ensure that all departments receive timely, value-adding information.

We are also going to change the way we manage and plan our labour resources. We will analyse how productive they are each week, and what encourages the best people to stay on with us. 83% of the workforce said that knowing they could go straight onto the next job was most important to them.

We are still monitoring the feedback from this project. We are going to transfer the processes where we have made the biggest improvements into future contracts. I have asked the team to create a 'Roll-Out Plan' and to start a review and management process for future CLIP projects.

Starting again, I would have spent less time analysing the problems we had on site, and more time coming up with practical solutions on how to solve them. My advice is not to use CLIP as a way of solving all your problems at once. It is at its most powerful when you focus on one element of the construction process.

LEARNING POINTS

- The main aim was to improve the productivity of our brick laying processes, by harnessing the best ideas from the team.
- We also benefited by getting the whole team together to discuss any key issues, allowing us to develop a common understanding. Now we can create a company wide framework that will improve our operations and project management.
- We are still monitoring the feedback from this project. We are going to transfer the processes where we have made the biggest improvements into future contracts.
- My advice is not to use CLIP as a way of solving all your problems at once. It is at its most powerful when you focus on one element of the construction process.
- We have now defined the 'best' method for the set-up, operation and control of the brickwork. By challenging how we do things, the team has created improvements that have reduced waste.

JARGON BUSTING BOX

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

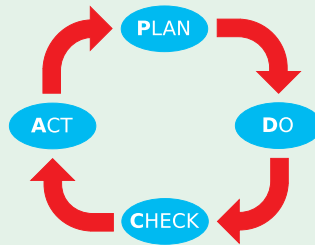
- Motion
- Transport
- Waiting
- Overproduction
- Defects
- Unnecessary inventory
- Inappropriate work or processing.

■ **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

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PUBLISHED: APRIL 2005

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