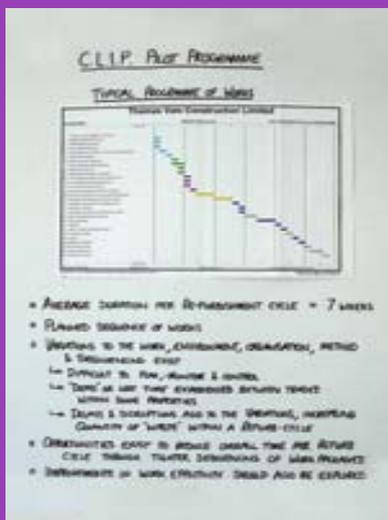# CLIP

A general contractor used CLIP to reduce property refurbishment times and improve their partnering relationships

The foremen working together as a team, developed an improved programme that resulted in a revised target time of 24 days (originally 30 days

A programme of works for the CLIP project was displayed

THE PROJECT

Modernisation of community housing, The Wyre Forest District

CLIENT:
Wyre Forest Community Housing

CONTRACTOR:
Thomas Vale Construction plc

Bill Munn of Thomas Vale tells how CLIP helped the whole project team to increase client satisfaction, by reducing property refurbishment times and the number of defects.

BACKGROUND TO THE PROJECT

Thomas Vale is a general contractor operating in the Midlands. We provide a comprehensive construction service, and use a number of modern construction techniques, such as design and build and partnering arrangements.

We are a forward-looking company, with a strong commitment to best practice, lean construction and continuous improvement.

What attracted us to CLIP

Our Managing Director Tony Hyde is very active in the industry and is always looking for new ideas. He heard about CLIP and got into discussions with CBP about being involved with the pilot scheme. He heard how other industries had benefited from using lean working methods, so the company decided to give it a go.

At the time Thomas Vale Construction was partnering with Wyre Forest Community Housing, to modernise a significant number of social housing units. We invited Wyre Forest's Chief Executive, Ray Brookes, to the CLIP pilot launch presentation. He could also see the potential benefits of applying CLIP to the programme, and agreed to take part.

What our aims and expectations were

As we were partnering closely with Wyre Forest on a community housing project, we decided to use CLIP as a way of improving the refurbishment programme. Assuming that good results were achieved, there would be an opportunity for transferring the lessons we learned from this project to similar ones in the future.

At the time of the CLIP pilot, the modernisation programme had already been running for one and half years. The five year programme will involve the modernisation of over 3,000 occupied properties, involving flats and houses. The renovation activities included new kitchens and bathrooms, central heating and decoration.

We wanted to become more efficient as we went through the project by building on existing ideas.

7Ws the seven wastes: motion • waiting • defects • transport • overproduction • unnecessary inventory • inappropriate work or processing

The before situation of the stores layout

The team carried out a 5C activity, completing the first 3 Cs (clear out, configure and clean & check) to create an improved stores layout

By using CLIP the company expected to:

- Identify and reduce wasteful activities
- Learn more about lean production
- Create ownership of improvement among the project team
- Improve client and tenant satisfaction.

The project team also set themselves a number of goals to reach, by the end of the project. Our main one was to ensure the 'involvement of all'. This way, any improvements could be maximised and 'owned' by the team. This would provide a good basis for continuous process improvement.

How the CLIP process worked for us

We followed the CLIP 'standard structured approach', which is made up of four main stages; pre-diagnostic, diagnostic, improvement activity and follow up. Then we selected the CLIP team, which was made up of representatives from all the partnering organisations.

At the pre-diagnostic meeting, we agreed the aims and time scale of the project. We decided how to organise ourselves, plan the activities, and what information we needed to collect to fulfil our aims. There was an initial resistance to change. Some of the workforce were suspicious of this type of initiative. They

felt it would not bring any benefits to the project, because they were already doing a good job. It took a bit of time to talk them round, a key part of which is showing people that you are there to help them be more effective.

During the diagnostic stage, a CLIP engineer trained the team to do work observation exercises, such as activity sampling. By observing the different trades carry out their work tasks, the team captured data on work methods, times, effectiveness and waste. When we analysed the data, it showed the team that people approached the jobs in different ways, and some were more effective than others. Areas of waste were also identified.

Additionally, the team analysed the data recorded for us by the site personnel on 'delays & disruptions' and 'defects & snags'. The two areas experiencing the most delays and disruptions were carpentry and plastering. The carpenters were often standing idle because kitchen units were either not delivered or some were damaged.

Through looking at our process we identified a significant number of opportunities for improvement. We used a 'Priority Matrix' to help define which ones would yield the greatest benefits, when looking back at the aims of the project. The CLIP engineer helped us to look at specific improvement areas. Then they had to produce an action plan as part of our Plan-Do-Check-Act (PDCA) process.

Our main focus for improvement was to reduce the amount of time it took to refurbish a property. The CLIP team worked with the site foremen to eliminate waste and transfer the value adding work, both within and between properties. We found ways to improve how trades people worked and interacted on site, and this significantly reduced the time it took to refurbish a property.

Part of the drive to eliminate process waste was discovering the 'root cause' of the key delay and disruption issues.

This took us back to the main central site stores. We decided that the layout, configuration and operation of the stores needed to be improved. Lean tools such as 5Cs, 7Ws and visual management were applied. We established an improved system for inventory control and distribution.

To support the CLIP process we looked at the flow of management information. This was important as it was affecting the planning, operation and control of the work. This led to delays that left the tenants feeling dissatisfied. We talked to the site foremen about any changes they would like, and quickly altered the project drawings to accommodate them.

The team introduced visual charts to improve the way we managed the refurbishment process. The charts allowed us to plan, manage and control the refurbishment programme. The charts also linked the flow of informa-

5Cs for continuous improvement: clear out • configure • clean & check • conformity • custom & practice

tion between the site and the central stores, improving our inventory and stock systems.

We used a number of company and project Key Performance Indicators, and displayed them on our central visual planning board, where we could all see them. We reviewed the results regularly, prompting the team to focus on making improvements.

How we benefited from this initiative

We found that before the CLIP project, the actual time taken to refurbish a house was between 35 – 45 days. The original target set in the partnership was 30 days. Now we have completed the CLIP project, we can do the same refurbishment in 20 – 23 days. This improved output is being achieved whilst working on twice the number of properties at any one time, with the same level of resource.

Tenant satisfaction is now 93%, having risen from 87% last year. 66% of tenants said they are very pleased with the project.

76% of properties now have less than five snags, compared to 61% in the previous year, and this has produced a big benefit in terms of cost and time savings.

Overall, we have reduced the refurbishment cycle time by 33% for houses, and by 50% for flats. We have also

> ' *CLIP unifies all of the project team, and is a great benefit to both the project overall and the client. I honestly believe CLIP to be the way forward for all construction project.* '
>
> *Bill Munn of Thomas Vale Construction plc*

identified reductions in work package time of between one to eight hours, and once the improvements are implemented, refurbishment times will be reduced further.

Using CLIP has helped us to improve the way we manage our tools, so we lose less time on-site. We now manage and measure the flow of materials, which has improved inventory and stock turnover. We measure KPIs and this is critical for driving improvements in the future.

How we plan to use the skills and lessons learned

CLIP is a journey, starting with looking at your internal processes, and developing a company culture for continuous improvement. As part of this, we have just started to establish a process to 'grow' a framework of internal 'agents for change'.

We want to develop a team-based 'common approach' to making improvements. Lean and continuous process improvement is about getting people to challenge their own processes. It's a way of life.

By driving this change, we can create processes that will enable us to partner more effectively with the rest of the supply chain. We can use CLIP methods to see how well our suppliers are performing on projects, and how together we can reduce waste. We have made big improvements, but there is so much more to go at. This culture of continuous improvement will help us to grow a lean supply chain, achieving 'best value using best practice'.

The project was very successful and has certainly drawn the CLIP team and the partnership closer together. The CLIP project team has now formed their own 'innovation group' to improve other aspects of the modernisation programme and also their own business.

> ' *Lean and continuous process improvement is about getting people to challenge their own processes. It's a way of life.* '
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LEARNING POINTS

- CLIP is a journey, starting with looking at your internal processes, and developing a company culture for continuous improvement. As part of this, we have just started to establish a process to 'grow' a framework of internal 'agents for change'.

- The CLIP project team has now formed its own 'innovation group' to improve other aspects of the modernisation programme and also their own business.

- We can use CLIP methods to see how well our suppliers are performing on projects, and how together we can reduce waste.

- The team introduced visual charts to improve the way we managed the refurbishment process. The charts allowed us to plan, manage and control the refurbishment programme.

- Some of the workforce were suspicious of this type of initiative. They felt it would not bring any benefits to the project, because they were already doing a good job. You have to show people that you are there to help them be more effective.

- At the start up meeting, we agreed the aims and time scale of the project. We decided how to organise ourselves, plan the activities, and what information we needed to collect to fulfil our aims.

- We want to develop a team-based 'common approach' to making improvements.

7Ws the seven wastes: motion • waiting • defects • transport • overproduction • unnecessary inventory • inappropriate work or processing

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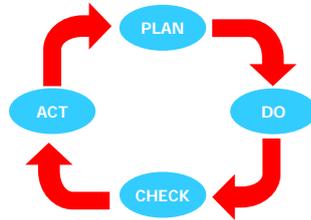
THE CLIP – 'standard structured approach' – which is made up of four main stages:

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