

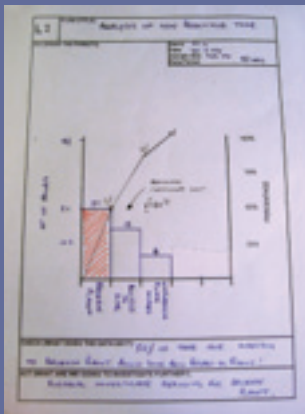
## A main contractor used CLIP to improve their efficiency & working methods on two projects



Works progressing on the Bentley Hotel



above: visual management boards on the Carholme Road project showing pictures of progress on site, below: Pareto chart used to analyse the amount of non-productive time spent on the Bentley Hotel project



By using CLIP...

“On the Carholme Road project we reduced the amount of non-productive time from 19.5% at the start of the project, to 2.5% by the end”

### THE PROJECTS

Carholme Road, Lincoln –  
New build block of 22 student flats  
and Bentley Hotel, Lincoln –  
30-room extension

#### CLIENTS:

Sunny Properties (Lincoln) Ltd &  
Bentley Hotel

#### CONTRACTOR:

Lindum Construction

Warren Glover of Lindum Construction tells how CLIP helped them to improve their site management methods and efficiency on two projects at the same time, in Lincoln.

### VIEW FROM THE CONTRACTOR

#### Background to the project

Lindum is a national contractor, although the majority of our work is carried out in the East Midlands and East Anglia. The company specialises in challenging, ‘one-stop-shop’ construction, be it a ‘traditional’, or ‘design & build’ contract.

We have a strong focus on delivering real value to our clients, and 70% of our work is repeat business.

#### What attracted us to the CLIP programme

The CLIP team got in touch with us, and asked if they could meet our management team. As we are familiar with the concept of ‘lean working’ and the major efficiency improvements it has produced in the manufacturing industry, we readily agreed.

Lindum has already introduced some of the principles championed by both the ‘Egan’ and ‘Latham’ reports. But, we felt that CLIP would be a good vehicle for initiating further improvements in the way we do things.

#### What our aims & expectations were

We chose to use CLIP on two different projects that had similar construction techniques and construction periods. By being able to compare and contrast the results, we could better evaluate their effectiveness, and their potential for incorporation on other projects.

Both projects are ‘design & build’ contracts with a value of between £1m – £2m. The buildings are both steel framed, with a Metztec external walling system.

Our main aim was to make the sites more efficient and effective. We wanted to improve our margins, without increasing our turnover.

#### We also expected the CLIP project to help us:

- Improve quality, and reduce the number of defects
- Provide a method for collecting project data, so that we can monitor, record, improve and maintain our performance on site.

#### How the CLIP process worked for us

Initially, we focused on improving quality and reducing defects. Each site manager, with the aid of a CLIP engineer, collected and recorded data on site activities, such as how long it took the different trades to complete their work. We soon discovered that team members were not communicating effectively, and the quality of the sub-contractors’ work was not always being properly managed. This was amounting to a considerable loss of time, money and productivity.

We set up visual management boards on both sites, to help improve communication. These included site maps, photos, planned sequences of work,

*‘Our vision is to have all our sites deliver these improvements by introducing these new systems, measures and reporting structures on all our projects’*

*Warren Glover of Lindum Construction*

and safety reports. This also allowed the clients to see easily how far the work had progressed. Pareto and pie charts were displayed to quantify and highlight to the teams, the areas that were causing delays and disruptions.

Once they were introduced to the scheme’s aims and objectives, everyone soon became committed to the changes. This commitment was reinforced by displaying the actual improvements we were making on the visual boards. To maintain what were both tight build programmes, we had to make sure that everyone involved knew what was happening on their site. The foremen used the information on the visual boards at the weekly site meetings with all the sub-contractors, to review the next two weeks programme.

We held regular half day workshops involving the CLIP engineer on both sites, to teach the teams about ‘lean tools and techniques’ and how to put them into practice.

One problem we identified on both sites was the lack of space for storing materials. The CLIP engineer helped resolve this by introducing the teams to the ‘5Cs’ tool, to develop a plan to manage the sites. For example, on the Bentley Hotel project we started co-ordinating our deliveries with the hotel, so that they never clashed. Greater care was also taken to order materials in manageable quantities to arrive just as we needed them, saving valuable space.

The CLIP programme builds the discipline needed to collect and review data regularly, which means you can get to the route of a problem quickly.

### **How we benefited from this initiative**

Both projects finished on budget, and on time. On the Carholme Road project the amount of non-productive time was reduced from 19.5% at the start of the project, to 2.5% by the end.

The construction periods could have been shortened further if we had used all the lessons learned on the CLIP programme from the start. The advantage of having clearer site management roles and the benefits this brings, in terms of making our sites more productive, is also understood better now.

Bringing sub-contractors in early during the planning stage of our projects enables us to use their expertise and experience to programme their on-site activities better. A contractors’ league table has been established and maintained to continuously monitor our suppliers’ performance, particularly in the key areas of quality and reliability.

### **How we plan to use the skills & lessons learned**

We are in the process of putting together a ‘site best practice guide’ to spread the lessons and ideas captured from the CLIP project. Our vision is to have all our sites deliver these improvements by introducing these new systems, measures and reporting structures on all our projects.

On-site build time is the end of the process and the wrong time to be looking for major improvements. The best time to look for efficiencies is at the design and planning phase, when you can make the biggest savings. Involving sub-contractors early is a vital part of this.

*‘The advantage of having clearer site management roles and the benefits this brings, in terms of making our sites more productive, is also understood better now’*

*Chris Conroy of Lindum Construction*

The construction industry has to recognise that it needs to become more efficient, not just on site, but throughout the process. CLIP helps to initiate this change by focusing you on what is really critical to a project’s success.

### **LEARNING POINTS**

- Collate, record and analyse data on all your site activities to discover where you can make improvements.
- Involve the CLIP engineer through regular workshops so that the key team members can learn about ‘lean tools and techniques’, and how to put them into practice on site.
- Set up a visual management board on-site to improve communication and efficiency. This will help the whole team, especially the client, to see exactly how the project is progressing and what interactions are to take place.
- Bring your sub-contractors in early, during the planning stage if possible, so that they can understand exactly what work needs to be done, and provide their advice on the best way to carry out the work.
- Put together a ‘site best practice guide’ to spread the lessons and ideas captured from your CLIP projects.

## JARGON BUSTING BOX

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

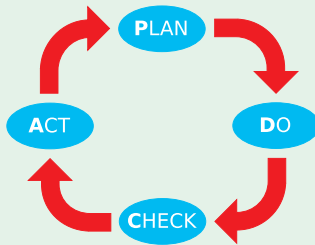
- Motion    ■ Transport
- Waiting    ■ Overproduction
- Defects    ■ Unnecessary inventory
- Inappropriate work or processing.

### ■ **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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