

**COMPANY OVERVIEW**



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Some of the most recognisable properties in the country are held by the Office of Public Works (OPW). OPW has one of the largest and most diverse property portfolios, ranging from landmark buildings such as Dublin Castle to Garda stations and Government offices. A focus of OPW is to get value for money while providing accommodation that meets the operational needs of Government.

OPW manage more than 2,000 buildings spread across 1,700 properties throughout the country.

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**OVERVIEW OF THE LEAN INITIATIVE**

This case study looks at the *Office of Public Works Lift Replacement Programme* which involved the installation of 26 passenger lifts per year

across the Republic of Ireland, with a budget for the works of €1.85M per annum.

**BACKGROUND TO THE LEAN INITIATIVE**

The OPW has 650 passenger lifts across 10.7 million sq.ft. of its property portfolio. The average working life of each lift is 25 years when maintained correctly. OPW must replace a minimum of 26 lifts per annum to maintain its portfolio; however, the current system of lift replacement only delivered 3-4 lift replacements each year. Previously each lift was tendered separately using consultants or in-house engineers. A lift replacement required a tendering system for the consultant engineer followed by a separate competition to appoint a contractor for the construction works. Each project received an individual project manager, engineering and procurement team.

Each project was managed from head office on an individual basis using the traditional critical path method (CPM) of scheduling. A new system of lift replacement was

needed based on Lean thinking and practice.



Figure 1. OPW Lift.

**LEAN INITIATIVE UNDERTAKEN – LEAN THINKING, TOOLS, TECHNIQUES**

OPW introduced a streamlined procurement system to improve delivery called a “Dynamic Purchasing System (DPS)” which is like a framework agreement except that during its life other economic operators (suppliers) may, if they meet the published criteria, join the system. Using a DPS provides a simple and straightforward form of access to contracts for suppliers. When applied appropriately, it is a cost effective method that can limit the need for complex tender processes and benefit both supplier and tendering organisation. The DPS is a two-stage process. First, in the initial set-up stage, all suppliers who meet the selection criteria, and who are not excluded under the grounds for exclusion, are admitted to the DPS. There can be no limit on the number of suppliers that may join a DPS. Unlike framework agreements used previously by OPW, suppliers can also apply to join the DPS at any point during its lifetime. Individual contracts are awarded during the second stage. The second stage is streamlined and all of the paperwork has been previously approved. The approach lends itself well to self-limiting marketplaces where new activity is to be encouraged. This procurement system follows the Lean methodology of eliminating wastes and repetition from the processes.

OPW also introduced Integrated Project Delivery (IPD) which is a project delivery method that is distinguished by early collaboration between cross-functional teams, including design, engineering, and construction. This system of project delivery encourages a culture of collaboration among the owners, designers, and construction delivery teams. The owners and designers are encouraged to listen to the construction delivery experts and decisions are arrived at by consensus rather than the traditional top-down method. Responsibilities can be shared between the entire team which means that risk and rewards are also shared. By putting together shared goals and working as a team, schedule durations can be reduced by removing handovers from one part of a team to the next. IPD aims to have a transparent process of project delivery with as many barriers and wastes removed. It is important that every member of the project construction team speaks up and has the opportunity to contribute to the shared objective.

*Design Stage*

Instead of appointing individual project managers and design teams to individual projects, OPW appointed a team to complete a programme of works over 3 years. This enabled

the integrated team to have a strategic view over the medium-term and avoid looking at the work on an individual basis. The same team are focussed on the entire programme and quickly find efficiencies. Tender specifications, pricing documents, and drawings, all complying with strict and onerous public procurement guidelines, are prepared quickly. Our specialist contractors are contacted and consulted on the correct solutions. Specialist practical advice is listened to and the traditional silos between design and construction teams are removed and instead are connected at key stages throughout the project delivery.



Figure 2. OPW Lift.

#### Procurement

OPW advertised for inclusion to the DPS on e-tenders as required under public procurement rules. OPW provided guidance notes to the contractors to assist with completing the paperwork as this system and process was completely new to the lift industry in Ireland. In fact, it was the first time any construction or maintenance project used a DPS delivery in OPW. Contact details of the project managers were provided to the industry to provide any assistance required. The DPS went live in August 2016 with three successful lift companies

joining the system.

#### Construction

The construction teams are appointed via a streamlined appointment process. This allows orders for materials and plant to get issued as quickly as possible. The specialist contractors are encouraged to take the lead on the construction programme for each project. The previous practice of imposing a construction programme is eliminated. By allowing the specialist contractor to propose their own programme, they immediately have a greater incentive to meet their own dates. Meetings are only held when necessary. The previous arrangements included fortnightly meetings on site regardless of site activities. This allows people to get on with useful work rather than attending meetings. All contractors are encouraged to participate in directing the meeting. The entire team are encouraged to ask questions electronically in advance of meetings instead of holding questions back for the next meeting. Approval of plant and materials is quickened up as all plant and materials are approved for the programme of works rather than for individual projects.

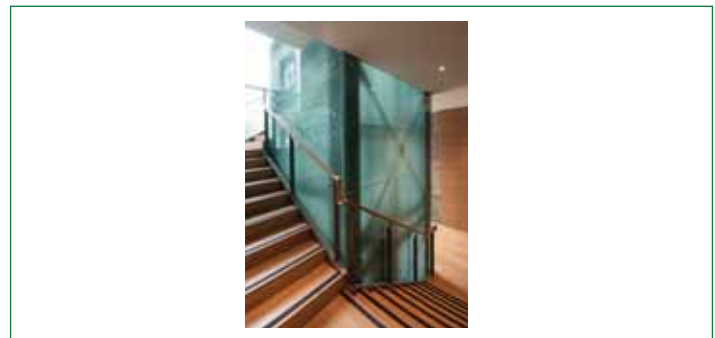


Figure 3. OPW Lift.

## LEAN INITIATIVE IMPROVEMENTS & IMPACT

This programme of works has proved to be hugely successful. The model will be rolled-out to future work in the OPW. A critical change is that we now view our portfolio of property as programmes of work rather than individual construction projects.

Key outcomes include:

- The programme delivered 18 new lifts in 2017 compared to 4 lifts in 2016. As efficiencies grow we are on target to complete 25 new lifts in 2018.

- Snag lists are still required, but have reduced in size.
- Plant and equipment delivery times have improved.
- Costs are in line with construction industry inflation; however, supervision and management costs have decreased as less supervision is required.
- Contractors and engineers have reported that the new system of project delivery is better than the previous system. All parties are relieved to have less paper to produce and less time spent at meetings.