

The New Zealand Post Management Excellence Awards 2005

Project Title: Tablets Relieve Building Inspection Headaches

Award Category: Technology Application

Project Overview

The New Plymouth District Council (NPDC) is using technology to dramatically simplify and improve the quality of its building inspection process.

The buoyant construction sector in the New Plymouth area ensures the district council's six building inspectors are extremely busy. Meanwhile, the new Building Act 2004 requires territorial authorities to become accredited and registered as Building Consent Authorities (BCAs).

Compliance with the new legislation requires inspectors to capture additional site information, adding to their workload.

To ensure the Council can efficiently, accurately and expediently process the numerous building inspection requests, as well as provide the required site information under the new Act, it sought a technology solution.

It found the answer in mobile Tablet PCs, to allow its building inspectors to complete comprehensive building inspection reports in real time, on-site.

Demonstrate the need for and expected benefits of the project and how it furthers the Council's vision and strategic direction

The Need and Expected Benefit

Undertaking a building project is incredibly complex and demanding for all involved.

One of the key elements to any building project is the council's inspections. The purpose of building inspections is to ensure that the work being carried out on-site is in accordance with the approved plans, and that building regulations are being met.

The New Plymouth District Council (NPDC) building inspectors carry out inspections throughout the district, either signing off the work, or requiring some items of work to be completed or rectified in order to comply with the New Zealand Building Code (NZBC) and/or approved plans.

Like all NPDC's service arms, the building inspection team aims to deliver a high standard of customer service and has a goal of carrying out site inspections and delivering reports to its customers within two days of receiving the request from the builder.

High regional building activity sees NPDC's six building inspectors visit about eight building sites a day. The new Building Act, which came into force on 31 March 2005, resulted in additional information having to be captured at each building site which further increased the workload.

With customer service and the pending accreditation requirements in clear focus, NPDC identified the need to re-look at its processes closely and come up with a new solution.

Three key goals were identified at the start of the project:

Improved risk management – Often, site information would be captured inconsistently, depending on the style of the inspector – some would write copious notes, others very few. Inspection documents would not be placed in council’s archive until the building work was completed. An inspector assigned to check an existing building site would not have a clear indication of what was previously inspected. The administration staff also had difficulty reading some inspectors’ hand writing, making it difficult to key accurate information into the central system.

Increased efficiency – Administration staff printed inspection assignments on blank carbonised inspection sheets. Inspectors would handwrite their inspection notes, provide a copy to the customer if they were on the site, and then take the carbon copy back to the Council office for an administration staff member to type up – double-handling the information.

Improved customer service – Back-to-back site visits would mean inspectors returned to the office only at the end of the day, so the inspection details could not be logged until then. This meant site visits were not logged centrally during the day, so if a customer had not been on-site during the inspection, they might not know if the inspector had even visited. In addition, as the council does not sign off an inspection request until the paperwork is completed, customers often had an unnecessary wait for the inspection report.

The issues relating to information consistency, the inefficiency and potential inaccuracy of re-keying information, the desire to deliver high quality customer service and the requirement to be ISO compliant, led NPDC to pre-emptively start work on a cost effective technology solution.

NPDC wanted inspectors to be able to log all the necessary inspection information and sign off a request, while out in the field, without having to write down each item that they checked and with the flexibility to add project specific site instructions.

The solution developed provided them with a detailed, and yet simple, electronic form listing the site information needed. Arming inspectors with a templated form ensured all of them logged the same information, to greatly improve the consistency of service delivered to customers, reduce the council’s risk exposure and greatly improve the completeness of the Council’s records.

So that the new electronic form could hit the road with the inspectors, NPDC looked at mobile devices and settled on the Tablet PC with handwriting recognition technology. The inspectors’ notes are turned into perfect text, which saves administration staff from having to re-key the notes later. Once back in the office, the inspectors upload the inspection report straight to the system, so it is automatically filed and accessible by other authorised staff. The inspectors also have Bluetooth printers so they can print the reports out in front of the customer, rather than giving them a messy handwritten copy.

Furthering the Council’s Vision and Strategic Direction

In 2002 NPDC adopted a customer service strategy called “Customer First”. NPDC created a customer charter, set in place a number of customer service standards and began undertaking a

number of process improvements. This project was implemented as part of the Customer First strategy.

The vision and goals for the Customer First Strategy:

Customer First “delivering sensational service”

- Customers: “We will deliver quality services to meet our customers’ needs and in a sensitive, efficient and timely manner.”
- Processes: “We will focus our processes on producing the best possible outcomes for our customers.”
- Organisation and Staff: “We will think, learn, communicate and work as one organisation.”

In turn, the Customer First strategy aligns with Councils “Looking Ahead – the Long Term Strategic Plan 2002-2012”. Supporting the district vision “New Plymouth District will be a caring, dynamic, diverse and safe place to be” are five strategic issues. These are outlined below with additional comment on the role of the project in furthering this vision and strategic direction.

Quality of life

- Improving service to customers.
- Providing accurate, up-to-date information.
- Regulating the district’s living environment in a cost effective and timely manner.

District growth

- Providing a robust, efficient service to the district’s builders in order to support the Taranaki building boom.

Iwi relationships

- Building a more professional relationship with Iwi – and all NPDC customers.

Environment

- Ensuring that the district environment is a safe and enjoyable place in which to live.

Youth – Rangatahi

- Making it easier for the council to train new inspectors.

Demonstrate effective project management techniques to achieve results

From the outset, communication was identified as key to the success of the project. The steps along the project path were as follows:

- Research and develop a project scope – this document identified the project’s aims in broad terms and the stakeholders to be consulted. It also identified assumptions made, the risks faced and the management structure for the project. This scoping document was distributed widely among stakeholders to obtain feedback.
- Identification of project tasks – once the scope of the project had been agreed, the individual tasks and resource requirements were identified.
- A small project team consulting with internal and external stakeholders.

- Staff and external building practitioners' inputs were combined to come up with a practical inspection checklist package for NPDC.
- Project planning and budgeting – a project budget was maintained and monitored using Microsoft Excel. Microsoft Project was an essential tool for task and resource monitoring. Reports were created in Word and PowerPoint.
- Reporting – project status reports were prepared and circulated on a regular basis. A weekly report was circulated to the Executive Management Team. A fortnightly meeting was held with a steering group committee. Minutes of all meetings were posted on the intranet. A series of internal and external presentations were given to various stakeholder groups before and during the implementation.
- No major issues arose during the life of the project.
- The project was delivered on time, within budget and achieved results of a quality that surpassed expectations.

Demonstrate a participatory approach to communicating with and 'buy-in' from stakeholders associated with the project

To ensure the project met the requirements of the various stakeholders, a series of consultation sessions were organised and presentations were made to:

- Building practitioners (builders, draughtsmen, architects, plumbers, etc.)
- Building inspectors
- Customer and Regulatory Services Staff
- Managers of Community Assets Group and Support Services Group
- The Executive Management Team

This extensive consultation process achieved a significant level of stakeholder buy-in.

Demonstrate innovation and originality in technology application

- The use of tablets by building inspectors in the field is first of its kind to be developed and implemented by a local authority in New Zealand.
- The use of standard off-the-shelf hardware (HP Tablet PCs) and software (MS Word template forms) demonstrates that a simple, relatively inexpensive, solution can solve a complex problem.
- The template forms are ease of use as they utilise a familiar tools (MS Word).
- The solution is professional and provides a quick response.
- The system ties together and integrates various technologies, systems and data.
- Service levels are significantly improved and life-cycle costs are significantly reduced, thereby creating significant added value.

Demonstrate successful results in both financial and non-financial terms

Improved Risk Management

- The decision making process in the field is now documented. A transparent and thorough record of what was checked on site and the items that the building work passed and failed.

- A signed electronic copy of a completed inspection checklist is saved in council's document management system at the latest one working day after the inspection is completed, (compared to waiting for the building to be issued with code compliance certificates) which ensures that council records are intact, if something happens to the paper copy of the building consent records, a reliable copy of the document is available).
- There is no second guessing on what the other inspectors have inspected. The tablet/checklist package gives as an improved audit trail of inspections.
- The tablet/checklist package forms part of the council's preparation for IANZ accreditation under ISO 17020.
- The tablets allow the immediate look up of appropriate parts of the building act, product specifications etc so user education is immediate and exact.

Increased efficiency

- Reports are generated faster and more accurately
- The need to print, photocopy and post carbonised copies is eliminated.
- Re-keying of inspection results is no longer required as electronic copies are saved in document management)

Improved customer service

- Reduced the instances when customers need to talk to an inspector to query the result of inspection.
- Developers may have several concurrent projects and are not able to be on site when the inspector visits. Checklists can now be emailed to clients to keep them fully informed.
- Immediate notification of the fixes that are required or that all is well.
- Transparency – NPDC has now given a commitment that when a customer calls for an inspection, there are set items that it will check to ensure that their building work complies with the building code.
- Image – more professional look, no more handwritten notes, it is inline with the council's standard look and feel initiative

Financial

- Eliminated inventory cost related to carbonised copies.
- The project allowed NPDC to implement a project-specific base fee for inspections. The preparation work needed for the implementation of the project helped NPDC determine a benchmark on how long an inspection can take and coming up with average number of inspections required for each project.

Represent to the Judging Panel a 'good, sensible and right thing to do'

- The cost-effective use and application of technology has been utilised to enable a shift toward effective, timely and efficient business management that enhances customer service.
- It enables NPDC to feedback to customers on the work being carried out in a timely, professional manner.
- The project was inexpensive to set up and maintain, using off the shelf hardware and software to tie together different technologies.
- There is great potential for future development of this groundbreaking system as well as its introduction to further NPDC departments and other local authorities.