

The Characteristics of Public Real Estate Asset Management and Maintenance Practice in New Zealand Council Community Buildings

Zulkfli Sapeciay¹, Suzanne Wilkinson², Seosamh Costello³

Abstract

Asset Management is an important element of the Council's policies and assists delivery of its service objectives. Asset management is a vital role to facilitate organizational performance, both in the public and private sector. Most of the asset management literature suggests that there is a relationship between asset management practice and organizational performance. New Zealand, Australia and the UK are perceived to have the most advanced asset management processes, driven by strong government direction. The New Zealand Government, via its 72 local councils, have used Asset Management Plans (AMP) as a tool for managing, operating and maintaining its property.

This research studies AMPs for community centres in New Zealand local councils, and shows that there is no standard approach in asset management practice. Non-standard approaches are likely to result in poorer asset management and limited improvement in public asset management practice, due to differences in management systems, quality, levels of service and KPIs. Furthermore, the mechanism of how maintenance management adds value and enhances council property performance via AMPs, and the link between maintenance practice for community centres and organizational performance as an outcome, is unclear. Thus, there is a need to understand how asset management, in general, and maintenance performance measurement, in particular, for community centres, can be successfully applied to improve the performance of council community assets. This paper presents an overview of the current characteristics of the property asset maintenance practice that is being implemented by New Zealand local councils related to community buildings in New Zealand.

Keywords: Property asset management, Maintenance management, Local government, Community buildings.

¹ Doctoral Student; Department of Civil and Environmental Engineering, The University of Auckland, New Zealand, email: zsap711@aucklanduni.ac.nz.

² Assoc. Professor; Department of Civil and Environmental Engineering, The University of Auckland, New Zealand, email: s.wilkinson@auckland.ac.nz.

³ Senior Lecturer; Department of Civil and Environmental Engineering, The University of Auckland, New Zealand, email: s.costello@auckland.ac.nz.

1. Introduction

Property asset management has emerged as a distinct discipline as part of a broader worldwide trend, especially in the private sector. The public sector has mirrored the reforms through adoption of private sector practices. These practices have not developed uniformly across the world, but Australia, New Zealand and the UK are perceived to be the most advanced, driven by strong government direction (Phelps, 2011). The government owns or uses a substantial amount of property and provides real estate for public amenities, for example public halls, libraries, administration buildings and community housing. Governments emphasize the importance of considering real estate as a strategic portfolio whose composition, extension and employment plays a key role for local government performance (Vermiglio, 2011).

In the international literature, the New Zealand public sector is often considered a world leader in central government driven public asset management reform (Kaganova and Nayyar-Stone, 2000). In the context of any organization or business unit, the focus of asset management is to reconcile the demand for, and the supply of, a physical asset base and associated support services essential for the delivery of its core products or services. In this case, the principle role of asset management is to support the core business of the local councils, that is community services. Shardy *et al.* (2011) identified that the main characteristic of asset management practice is the focus on maintenance management. This study investigates the maintenance management of public assets, identifies problems associated with current practices, and focusses on identifying how the local council and management committee understand and maintain these assets. The findings will help local authorities to determine the advantages and disadvantages of its current practice, and could be used to evaluate the capabilities of asset and maintenance management processes.

2. Asset management in the government sector

McDonagh and Hayward (2000) defined real estate asset management as the management (planning, organizing, leading and controlling) of real estate assets and related personnel of those organizations whose primary area of business is other than real estate. Kaganova *et al.* (2006) added that real estate management should be referred to as the process of decision making and implementation related to the acquisition, use of and disposal of real estate. RICS (2012), in their public sector property asset management guideline refer to the definition given by The Institute of Asset Management UK as 'the management of physical assets, their selection, maintenance, inspection and renewal which play a key role in determining the operational performance and profitability of industries that operate assets as part of their core business'.

The principle of asset management has developed over the last decade, and a number of approaches, standards and models are used. Asset management improvements have been driven by influences including maintenance legacies, rising services standards, socio-economic changes and scarce public funds (Kaganova *et al.*, 2006). Good asset management involves optimising within any absolute constraints, including the mix of cost, risk and performance over the whole asset life (IAM New Zealand, 2012). IAM further

explained that the lessons learnt over the last 20 years from different sectors, for example; electrical, water utilities, transport systems, mining and manufacturing industries is realizing great opportunities in asset management. In local government, good asset management makes an essential contribution to the governance and management of a public entity's business and is an integral part of an organisations wider service and financial planning process (Audit New Zealand, 2010). The main purpose of asset management for public entities is to provide a desired level of service through the management of assets in the most cost-effective manner.

In New Zealand, councils are required to produce an Asset Management Plan (AMP) as a tool for managing public assets for short, medium or long term periods. The benefit and need of asset management planning continues to be promoted by central government, and its profile has been raised in local authorities. This has been reinforced through the guidelines and standards produced by central government and local government. Through the AMPs, the central government are looking for more local authorities to improve the quality of their asset management planning (Audit New Zealand, 2012).

In the asset management literature, it is assumed that there is a relationship between asset management, facilities management, maintenance practices and performance. Amaratunga and Baldry (2000) stressed there is a causal link between facilities management practices and performance. Vermiglio (2011) in discussing the definition of corporate real estate management by Krumm *et al.* (2000) stated that the management of an organization's real estate portfolio is achieved through aligning the portfolio and its related real estate services (facility management, property management and maintenance management) to the needs of the core business (processes), in order to obtain maximum added value for business (processes) and to contribute optimally to the overall performance of the organization. Vermiglio (2011) added that one important factor in performance measurement in order to enhance the planning and managerial control system of real estate property portfolio is maintenance activities.

Most services are provided through facilities (Brackertz and Kenley, 2002), including in the public sector. IAM New Zealand (2012) explained the backbone to a good management system for assets is the clear connectivity between the organisation's strategic plan and the on-the-ground daily activities of individual departments in planning, engineering, procurement, operations (facilities), maintenance and performance management. Shardy *et al.* (2011) in discussing their research findings stated the main characteristics found in the current practice of government real asset management needed more focus on maintenance management.

White (2011) in discussing the link between asset management and performance measurement in UK public sector estate asset management, cited the report outline prepared by Howarth (2006):

"Measuring the efficiency and effectiveness of property and facilities management is a critical component of better real estate asset management and provide the opportunity for increased productivity and delivery of saving".

Based on the above review of the international literature, it is clear there are vital links between property asset management, facilities management, maintenance practice and performance measurement both in building and engineering maintenance.

3. Local Councils and Community Facilities

Local councils play an important role by providing physical spaces for activities that help to build strong communities. They provide resources and community facilities as a way of meeting their organizational outcomes to the community. Community facilities are a good example of the way in which councils and communities work together to provide for the needs of the local citizen. These facilities need to be managed to ensure most of the services provided are available and achieving organizational goals. Poor maintenance and ineffective maintenance programming of community buildings will lead to loss of building performance, organisational performance and reputation, decrease of level of services, increasing operational cost and maintenance. Therefore, maintenance management in local government is an important factor to maximise the performance of physical and community infrastructure.

4. Methodology, Data Collection and Case Studies

A constantly changing society has meant changing need for some district facilities. Greater mobility, changes in population and changing leisure need has had a significant impact on some communities (Whangarei District Council, 2007). These changes need to be identified, measured and translated into an asset management plan. Audit New Zealand (2010) has been successful in identifying a number of asset management problems which may be caused by poor maintenance approaches. The current practice of local authorities typically addresses only some specific aspects of asset management and maintenance strategies due to different asset requirements, complexity of the asset and the absence of a standardized whole life asset maintenance management process. In this study, AMPs from four diverse local councils in New Zealand were reviewed to define the characteristics of public real estate asset management and maintenance practice, particularly for community buildings. Through the literature review undertaken, there are five main characteristics that were found to show the differences in the practice of public asset maintenance management implemented by local councils for community buildings namely, asset management plan documentation and policy, maintenance organization, maintenance approach, procurement arrangements, and continuous improvement. This paper will focus only on two of these characteristics; maintenance organization and maintenance approaches. Their operation and maintenance (O&M) issues will be discussed to show significant differences in their asset maintenance management practice.

4.1 Local Authority A

In this case study, a '*Community Hall Strategy Plan*' sets out the planning, operation and maintenance plan for 36 community halls under the jurisdiction of Local Authority A. The strategy of this management plan is to provide clear information of facilities provided, clarify council roles and responsibilities, explain the funding framework and develop a

comprehensive database. Local volunteers largely drive the planning and construction of community halls with assistance from district fundraising and donations. These volunteers are a vital part of the district's social fabric, and management and maintenance of the community halls still relies heavily on volunteers. In New Zealand, the national trend within local authorities is towards community halls both owned and managed by local communities, with the councils primary contributions being to the maintenance of the facilities. It means all community facilities are supported by Councils, with no distinction based on ownership, but the maintenance approach is different among local councils. In this case study, all community halls are managed by the volunteer hall committees, generally legally constituted as Incorporated Societies or Trusts. The council contribution to maintenance is limited to external maintenance, ground maintenance, landscaping, external works and maintenance and operating costs, for only a few Council-owned buildings or Council-owned land. Council also assists the committees in terms of maintenance costs by making a provision for a Community Hall Maintenance Fund and Community Grants Fund, to which the hall management committee can apply for financial assistance.

In asset maintenance, the council assists the hall committee by providing advice, expertise and resources to assist community halls with their property maintenance requirements. A comprehensive periodical facility inspection is carried out on all community buildings by the Council, together with hall committee representatives, and this establishes an agreed baseline of information on maintenance needs and determines the maintenance requirements. A medium to long term maintenance work plan complete with a budget of maintenance works is then developed based on the inspection report. Consequently, a Building Assessment Record is prepared and used in order to develop a prioritization framework which will help the technical team assess requests for community hall maintenance in terms of support for usage, on-going viability and maintenance needs for safety and health requirements. At this time, the hall committees are able to apply for extra funding for any other specific projects or one-off renovation works. Normally, council's annual budget will be processed after a schedule of community hall maintenance projects have been submitted to them. The council continues to assist the committee in insurance matters, auditing of community hall committee accounts, fire safety provision and requirements, developing Community Response Plans and giving advice on administration especially on legal requirements. Some issues have been identified in this case study which result in difficulties in decision making in operation and maintenance due to confusion between the committee and council interest, usage, roles, responsibilities and authorities. The main issue is the difficulty attracting and retaining volunteers as the management committee members.

4.2 Local Authority B

Local Authority B has developed a *Community and Recreation Facilities Asset Management Plan (2009-2019)* as a guideline for managing their community assets on a long term basis. It includes 11 community halls, 2 public pools, 3 libraries, 57 public conveniences, 57 pensioner houses and 1 museum which total \$45 million. The council uses asset management software, providing an integrated database system which helps the councils in financial and specialist local government application system solutions. The asset

management database is the asset register for all of the council's assets and stores information on the assets. It includes the value, condition, life and renewal date of an asset complete with details of the asset recorded such as its materials, construction and typical life determined from previous knowledge. An effective asset management tool is essential for effective decision making in asset and maintenance management. This case study shows the District Council has used an information asset management system since 2002, and it provides a greater understanding of the asset network and its conditions, which help the council in setting out asset policy and decision making processes.

The council is responsible for maintaining all community facilities under The Community and Recreation Division. The main policy and management of the asset are set-out by the council and used by policy and asset managers in strategic planning, asset management, policy planning, operation and maintenance. The Council has developed a Lifecycle Management Plan which includes a 10 years financial forecast, to illustrate a comprehensive framework consistent with asset management practices and analyses the construction, operation, maintenance and renewal of facilities. The purpose of this management plan is to help the property manager in planning, managing and operating the assets at the agreed level of service, and optimising lifecycle costs.

Asset maintenance management practice in this case study focusses on routine planned maintenance. Periodical asset inspection and condition assessment is carried out as part of a 3 year cycle building maintenance program to identify the structural condition and any defects to building components. Through these inspections, all components are ensured to meet safety standards and specification, and these data are recorded for information gathering which will aid in planning facility maintenance, upgrades, replacement and renewals. Data produced from these inspections are using in lifecycle based expenditure analysis, and are compared to the long term strategic plan where work plans are identified and produced. All operation and maintenance works are planned and conducted in accordance with industry best practice and maintenance contractors are appointed based on their experience with council procedures. Maintenance of community facilities are generally determined by public safety, national or local significance, location, specialist use and level of usage. The decisions in regards of maintenance works are made based on knowledge, experience and public input, such as public complaints and requests, and available funds.

The Council categorised maintenance management into 3 types; scheduled inspections, scheduled maintenance and unscheduled maintenance. Scheduled inspections are the routine inspections to monitor asset condition and identify the physical and structural soundness of an asset. Any identified maintenance needs are recorded and reported either under urgent or routine status. This type of inspection is conducted by visual and hands on approach, but all data is recorded in a computerised information database using asset management system software. Scheduled maintenance is the periodical or cyclic maintenance to ensure the assets continue functioning at the standard and level of service identified. This allows the assets to reach their maximum life expectancy. Under scheduled maintenance, routine maintenance is conducted by the community team which consists of the day to day operation and maintenance. Unscheduled maintenance, therefore is undertaken to repair an asset, to correct faults identified by routine inspections and

notification from the users. This is generally reactionary works that has not been foreseen such as repairing vandalised assets.

4.3 Local Authority C

Local Authority C has produced a comprehensive *Building and Property Asset Management Plan (BAMP)* to provide an overview of what the property team will be doing to contribute to the community outcomes and priorities identified in the 10-year Long Term Council Community Plan (LTCCP). As a major feeder plan for LTCCP, this document helps the council in improving their business and service processes and practices to become more efficient and effective. It contains information regarding changes and achievements in the asset portfolio, current and future demand as key drivers of growth and usage trends, level of services, risk management, lifecycle of the assets, financial forecast and their assets improvement plan. An interesting part of this plan is on the value management framework whereby strategic and operational asset management is being measured, monitored and reported, as part of performance management in assessing the effectiveness and efficiency in achieving the outcomes. Thus, effective asset management will reduce the long-term cost of ownership and servicing to the council.

Operation and maintenance (O&M) of community buildings has been managed by the council under a property asset team which is divided into two main departments; Property Management and Maintenance Management. The maintenance management department is responsible in all operation and maintenance of public real estate assets in line with statutory compliance, capital and contract management while the property team manages a diverse range of leases, licences and tenancies. This case study uses a lifecycle management approach to operation and maintenance management. It contains four lifecycle activities necessary in managing the facilities: 1) Operations; day-to-day work to keep assets operating, 2) Disposal; sale, demolition or relocation of assets, 3) Augmentation; creating a new asset or upgrade beyond asset capacity, and 4) Renewals; does not increase but restores original capacity.

Asset maintenance management covers planned maintenance and unplanned maintenance, and operation of the maintenance works are undertaken on the Council's behalf by approved contractors. Routine maintenance or day-to-day work is carried out to keep all community buildings and facilities operating, running smoothly and complying with statutory requirements and agreed levels of service. The property team responsible for managing the community buildings categorized maintenance into planned or proactive operation and maintenance and unplanned or reactive maintenance. Planned operation and maintenance is pre-arranged inspection and maintenance works undertaken to maintain the assets and prevent asset failure. This includes inspection works, monitoring and follow up maintenance and certificates for building mechanical and electrical components. Maintenance contractors are appointed to carry out a series of regular maintenance activities. In some instances, follow-up action and maintenance will also be undertaken to keep the current level of service and keep up statutory compliance. The council uses single supplier contracts for all operation and maintenance in order to ensure the effectiveness and performance of the assets.

Unplanned maintenance is an action to correct faults and failure as required, for example in repairing storm damage, leaking roof and windows, and rectifying vandalism damage. Incoming work requests are recorded in the team's Task Manager System, prior to the work being assessed, and then assigned to a pre-approved maintenance contractor. In terms of its service level agreements, the team is responsible for responding and resolving the problem to the customer's satisfaction within an agreed time period. Similar to planned maintenance, the council has plans to create single supplier contracts for such tasks as afterhours call outs and responsive maintenance.

4.4 Local Authority D

In this case study, the council has provided the most comprehensive asset management plan in managing public real estate property, from those assessed, especially for community buildings. The council has developed a *Community Facilities Asset Management Plan* for yearly usage in managing their 48 community facilities, which is in line with a 10-year Long-term Council Community Plan, previously established for the management needs and work programmes for community facilities owned by the council.

This plan explains the service provided by the council, how they manage growth, demand and asset lifecycle, sustainability approach, financial report and risk in asset management practices. Rapid population growth is the major factor causing increasing demand for community facilities. In order to ensure all community assets are in good condition, asset condition information is used to prepare work programmes to replace existing assets. Most assets are replaced before they reach failure to ensure they continue to provide a cost effective service. Different to other case studies, the council has used building condition survey assessments in order to analyse failure and determine which community building are in most need of renewal. The council also adopted a sustainable management approach to asset management practice and asset performance measures are utilised to determine the levels of service. Levels of service focus on what customers' value about community facilities and the service provided. Performance measures are linked to the council vision through identification of the management strategy and policy. Monitoring the performance of community centres is a council responsibility with key performance measures outlined in the management agreement.

Most community centre buildings have been managed by the council, with others managed by a management committee under a partnership agreement. This case study shows planned and unplanned maintenance is undertaken based on data collection from building condition surveys. Maintenance needs are identified through condition surveys using the National Asset Management Steering (NAMS) group property approach, undertaken on a 3-year cycle by contracted building surveyors. Such needs can also be identified by the contract cleaners which are required to notify the council of any maintenance issues they find. Monthly inspections are also carried out by council staff. Responsive maintenance is for urgent repairs that are required to keep an asset functioning. The facility maintenance contract is outsourced and deals with response maintenance and smaller maintenance repairs that are carried out for health and safety reasons, or to protect the asset. Technical contracts include items such as building warrants of fitness, lift maintenance, heating

ventilation and air conditioning maintenance. They are typically routine service contracts that include small value responsive maintenance repairs.

5. Discussion

In the field of maintenance management, the term maintenance approach refers to the maintenance techniques and strategies such as preventive maintenance (PM), condition-based maintenance, total productive maintenance (TPM), computerized maintenance management system (CMMS), reliability centred maintenance (RBM), predictive maintenance (PdM), maintenance outsourcing, effective centred maintenance, strategic maintenance management, and risk-based maintenance (Garg and Deshmukh, 2006). Through this study, it is found that all case studies are practicing a general approach to maintenance management, with their own strengths and weaknesses. The discussion of the practices and a comparison based on the characteristics mentioned in section 4.1 to 4.4 is presented in Table 1. The asset maintenance practice of each case study varies according to the management policy and organisation, and building management strategy the council adopts. The study shows there is no standardisation in asset maintenance management, in term of asset management plan documentation, maintenance organisation and maintenance approaches.

- The case studies show that each council uses different structures and forms of asset management plans in managing their community assets. For example, the AMP for Local Authority A explains the role of local authorities and community facilities, addresses the current conditions and issues of community assets, and their recommendations for managing community halls. Local Authority D used a more comprehensive AMP which clearly explains their community services, shows how they manage the community's growth and demand, describes their asset management risks, policy and asset lifecycle in asset management practices, includes a financial summary of community assets and proposes their plan for improvement, monitoring and review procedures in public asset management. This shows there is no standardization in the documentation of AMP by Local Authorities in New Zealand.
- Community buildings under Local Authority A are managed by volunteers (hall committee) and assistance from the council seems limited, but the case of Local Authority B, C & D, community buildings are managed by the councils. This situation affects the organization structure and level of services in asset and maintenance management. The discussion on operation and maintenance issues shows that asset management carried out by local authorities is more efficient and practical compared to community assets managed by volunteers.
- Local Authority A, B and C used periodic asset and facilities inspection for a justification of the need of maintenance management, but Local Authority D used standard building prioritisation methods from building condition survey data for decision making processes related to assets and maintenance management.

All local authorities used asset condition prioritisation methods in decision making processes, but the techniques are different and there is no standard approach. Local Authority A used a committee prioritisation method, Local Authority B used an integrated database system, knowledge tools, experience, public input and available funds, and Local Authority C & D based prioritisation on asset condition and condition survey analysis.

Table 1: Case studies summary

Characteristics	Local Authority A	Local Authority B	Local Authority C	Local Authority D
1. Maintenance Organisations	Volunteers: Hall Committee	The Council: The Community & Recreation Division	The Council: Property Management and Maintenance Management	The Council
2. Maintenance approach:				
a) Condition audit	Periodical facilities inspection	Periodical asset inspection	Monitoring	Condition survey & inspection
b) Maintenance technique	Routine & planned maintenance	Routine & planned maintenance (Scheduled inspection, scheduled & unscheduled maintenance)	Planned & unplanned maintenance	Long-term maintenance, routine maintenance & response maintenance
c) Data collection method	Inspection & building assessment	Condition assessment	Remote sensing, physical inspections assessment model & rating systems	Building condition survey & monthly inspection
d) Decision making	Committee based prioritising method	Based on integrated database system, knowledge tools, experience, public input & available fund	Based on asset condition	Based on condition survey analysis

6. Conclusion

This paper presented the result of a study on asset management plans (AMPs) of four local councils in New Zealand. The main objective of this study was to identify the characteristics of public real estate maintenance management practice on community centre buildings implemented by these government agencies. The findings of this study show that in relation to published literature, there is no standard approach in asset management and maintenance practice for community buildings. New Zealand Audit emphasizes in their report in 2010 that, there has been no improvement in public asset management practice by most of the councils for the period 2007 to 2009, and that the current practice of deferred maintenance will store up problems for the future. The AMPs show there is no standard

approach to measuring performance of their assets due to maintenance activities, within the management of their public real estate portfolio.

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