



Independent CAM Reviews

Our Feedback & Observations

Our Perspective

- SPM Assets completed 16 of 29 (55%) independent CAM reviews in 2014/15
- Common threads in terms of both good practice and recommended improvements
- Risk Management was the best area overall
- Information Systems was the poorest area overall
- Significant opportunity for sectorwide collaboration – sharing ideas, solutions, resources

Assessment Framework

2011 International Infrastructure Management Manual

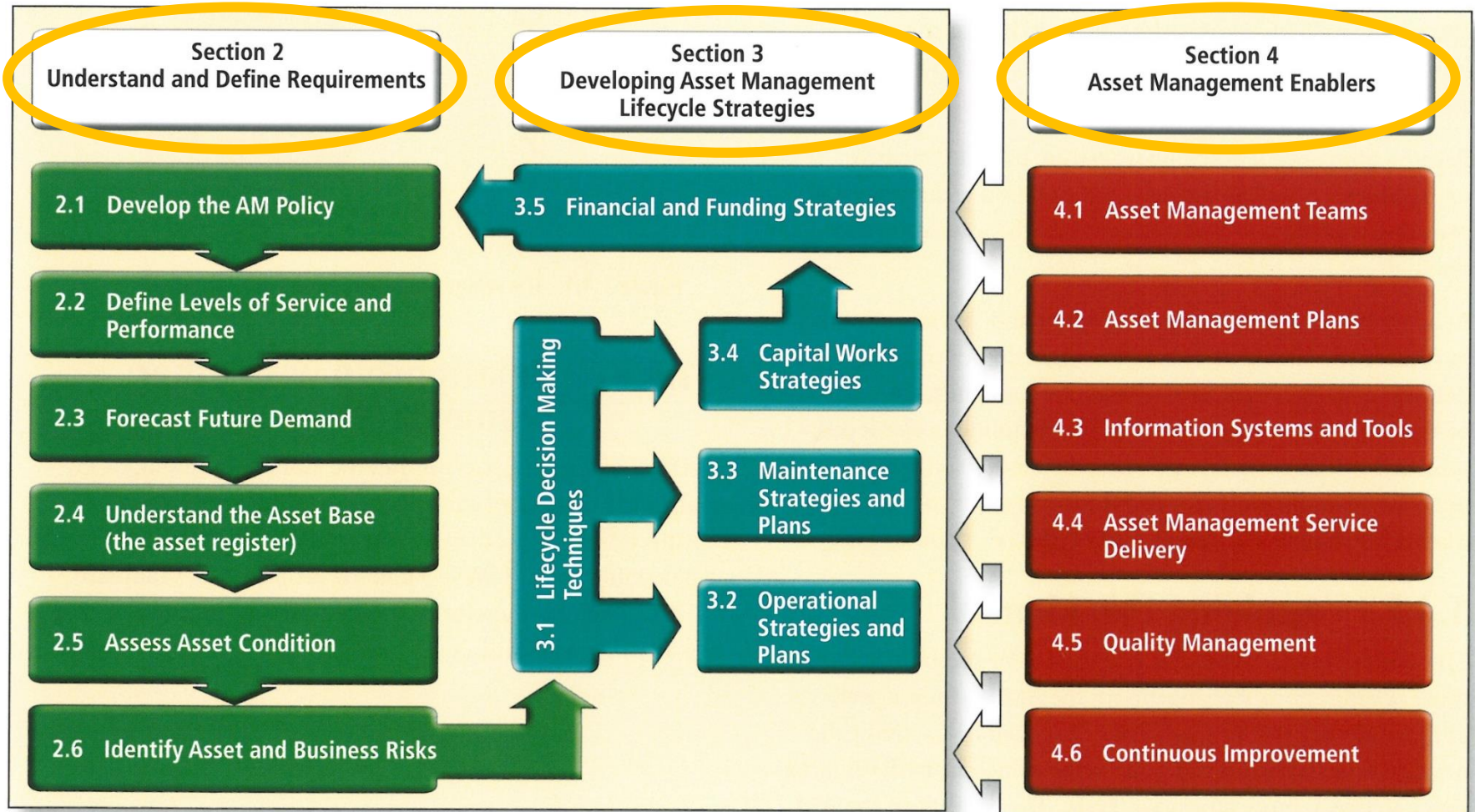


Figure 1.3.1: The Asset Management Process

Capability by Area

AM Policy and Strategy	Understand and Define Requirements
LoS and Performance Management	
Demand Forecasting	
Asset Register Data	
Asset Condition Assessment	
Risk Management	
Decision Making	
Operational Planning and Reporting	Developing AM Lifecycle Strategies
Maintenance Planning	
Capital Investment Strategies	
Financial and Funding Strategies	
Asset Management Teams	Asset Management Enablers
AM Plans	
Information Systems	
Service Delivery Models	
Quality Management	
Improvement Planning	

Capability by Area – The Good and Bad

Risk Management

Decision Making

Demand Forecasting

Service Delivery Models

Capital Investment Strategies

Asset Management Teams

AM Policy and Strategy

Operational Planning and Reporting

Financial and Funding Strategies

Asset Register Data

LoS and Performance Management

Asset Condition Assessment

Quality Management

Maintenance Planning

Improvement Planning

AM Plans

Information Systems

LoS and Performance Management

- Basic levels of service have been **defined** and **agreed**. (Minimum)
- **Customer** groups have been defined and **requirements understood**. There is annual reporting. (Core)
- **Customer** needs have been **analysed** and costs of delivering **alternate** levels of service have been assessed. (Intermediate)
- **Customer** levels of service and **technical** levels of service are an **integral** part of to **decision making** and business **planning**. (Advanced)



Levels of service are the outputs a customer receives from the organisation, and are supported by performance measures. One of the first steps is to find out what levels of service customers are prepared to pay for, then understand asset performance and capability to deliver those requirements.

Levels of Service

LoS and Performance Management

- Common area of uncertainty across the sector
- Often questions about the value of developing LoS and performance measures
- Where they exist they are not always measured and monitored
- Not always possible to see the link with planned projects to see evidence of LoS tradesoff

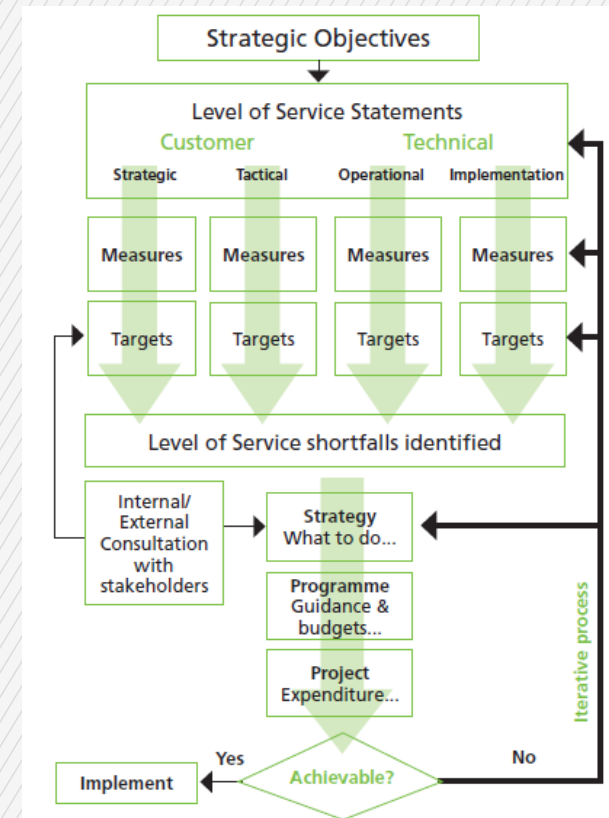


Figure 4.8 Levels of Service Process

LoS and Performance Management

Service Level Statements	Current Service Level	Strategic Objectives
4.1 Asset management planning systems are well understood and embedded within the organisation	<p>This document is the third formal asset management plan prepared by TWoA. The first AMP was developed and adopted in 2010, and significantly updated in 2013.</p> <p>The 2013 AMP was refined in accordance with the TEC CAM standard and is a reflection of TWoA's commitment to continuous improvement in asset management practice.</p> <p>TWoA have established that the appropriate asset management maturity level for the organisation is intermediate. Note there are a few exception areas in which a core level of maturity is deemed more appropriate.</p>	Asset Management is at the heart of the strategic objectives Educational Excellence; Effective Leadership; Communication; Innovation; Brand Strength

	Service Level Measure	Corresponding Service Level (cross reference chapter 3)	Type (SPM / TPM)	Target	Result 2010	Result 2012	Result 2014
Q1	Stakeholder Experience Performance						
B	Facilities comply with the Guidelines for amenities at Hub, Permanent, and non-permanent Locations as detailed in Table 2	4.1 Provide education facilities which are functional, accessible, well maintained, cost effective, and provide for the safety and comfort of all taura and kaimahi	TPM	80%	-	82%	88% ¹¹
C	All facilities are adequately funded for renewals and maintenance. Deferred or backlog maintenance is managed to acceptable limits.	4.1 Provide education facilities which are functional, accessible, well maintained, cost effective, and provide for the safety and comfort of all taura and kaimahi	TPM & SPM	90%	-	63%	73%

LoS and Performance Management

Strategic Objective	Contribution to Goals and Pillars				Level of Service	Student /Learner Success Performance Measures	Technical Performance Targets
	Destination Programmes	Open Learning Programmes and Services	Knowledge Transfer Services	Local Programmes			
Achieve Educational Excellence							
Further development of the physical and virtual learning environments to support our strategy:	H	H	M	H	Students have access to contemporary and relevant facilities	90% of students are satisfied with the quality of the student spaces and commons areas they can access (SOS)	100% of Student commons areas are at C1. (SPM AM data base). 100% of all other students spaces are at C3 or higher.
o More contemporary learning spaces which meet learner ne	H	H	M	M	Students have access to high quality physical, technological and virtual learning resources	Students can access online resources from their learning (lecture, workshop, labs etc.) and common spaces	100% of learning/lecture spaces, workspaces and open learning spaces will have wireless for accessing on-line services between 0800 and 1750 Mon - Fri. Wirelss minimum speed will be ?
o Reliable and leading edge technology	H	H	H	H		Students can electronically access services, communicate readily, and meet in a digital manner as well as order food or other purchases from services or facilities.	Student wireless access portals available in all learning/lecture, study, studios, workshops etc., and common spaces between 0800 and 1750 Mon-Fri.
	H	H	H	H		90% of students are satisfied with the computing/IT resources they can access.(SOS)	Student access to physical computer access
	H	M	M	H		90% of students are satisfied that the labs, workshop, studios spaces etc., meet their programme needs.(SOS)	Lecture/learning spaces (labs, workshops, studios etc.) are relevant to programme delivery - technical measure ?
	H	M	M	M		IT services to lecture/learning spaces offer minimum standard of visual and audio visual aids.	100% of lecture/learning spaces will have wireless, plug-in-go audio and visual capability TV screen facilities; and amplifier and speakers with aux input.
	H	H	H	M		ISS customer feedback (students and staff) support that the technology works and is to their satisfaction 95% of the time.	Access to facility technology (Computers, Projectors, Audio, etc.), BYOD devices interfacing with the environment is xxxx?

LoS and Performance Management

Courtesy: Otago Polytechnic

Strategic Objective

Collaborate with our communities to make a difference, prioritising Kai Tahu.

Contribution to Goals and Pillars

- Destination Programmes: Medium
- Open Learning Programmes and Services: Medium
- Knowledge Transfer Services: Low
- Local Programmes: High

Level of Service

All physical facilities are safe and ensure visitor secure

Student Success Performance Measure

95% of visitors feel safe and secure while on the site.

Technical Performance Measure

Fewer than 2 security events per year.

LoS and Performance Management

- Keep it simple and refine progressively
- Consider current and future performance requirements
- Engage with stakeholders and understand their needs
- Understand the cost – performance links
- Explore performance and cost tradeoffs with stakeholders
- Identify and scope projects to address identified shortfalls
- Remember reducing level of service is a viable option

Asset Register

- **Basic** physical information recorded in a **spread sheet** or similar, e.g. location, size, type. (Minimum)
- Sufficient information to complete asset valuation, e.g. replacement **cost and life**. Asset **hierarchy**, identification, and attribute systems. (Core)
- Register of physical and financial attributes recorded in an **information system** with data **analysis and reporting** functionality. (Intermediate)
- Information on work **history, condition, performance**, etc. recorded at asset **component** level. (Advanced)



Asset data is the foundation for enabling most AM functions. Planning for asset renewal and maintenance activities cannot proceed until organisations know exactly what assets they own or operate and where they are located.

Asset Register

Asset Register

- Often held within the financial asset register
- Use of spreadsheets is still common
- Limited alignment between FAR and AM register
- Wide variation in data quality and consistency
- Limited processes to maintain asset data
- Limited documented data collection processes
- Limited drill down and roll-up analysis and/or reporting

Asset Register

- Understand business needs and level of component detail
- Recognise the link with the AM information system
- TEFMA and NAMS both offer approaches
- NAMS Property Manual is a widely recognised reference
- Establish and maintain data dictionaries for all asset types
- Establish business processes for acquisition and disposal
- Establish business processes for data collection and update
- Establish interfaces – manual and automated with other systems

Asset Register

COMPONENTS: KELB-LB-1-LT118: LECTURE THEATRE (BLOCK/ZONE=D)

comp. group	comp. type	component	location	base life	C1	C2	C3	C4	C5	qty	unit	repl. cost	cond. conf	qty conf	rate conf	sel.
Interior Finishes	Ceiling Finishes	Gib-board Lining	Global	50	100	-	-	-	-	112.00	m2	\$5,376	E	E	E	<input type="checkbox"/>
Interior Finishes	Ceiling Finishes	Gib-board Lining	Global	50	100	-	-	-	-	112.00	m2	\$5,376	E	E	E	<input type="checkbox"/>
Interior Finishes	Ceiling Finishes	Paint Finish	Global	10	100	-	-	-	-	112.00	m2	\$2,800	E	E	E	<input type="checkbox"/>
Interior Finishes	Ceiling Finishes	Paint Finish	Global	10	100	-	-	-	-	112.00	m2	\$2,800	E	E	E	<input type="checkbox"/>
Interior Finishes	Ceiling Finishes	Timber Lining	Global	75	100	-	-	-	-	60.00	m2	\$10,500	E	E	E	<input type="checkbox"/>
Interior Finishes	Ceiling Finishes	Timber Lining	Global	75	100	-	-	-	-	1.00	m2	\$175	E	E	E	<input type="checkbox"/>
Interior Finishes	Fixtures & Fittings	Fixed Seating	Global	20	-	100	-	-	-	76.00	no	\$12,540	E	E	E	<input type="checkbox"/>
Interior Finishes	Fixtures & Fittings	Fixed Seating	Global	20	-	100	-	-	-	76.00	no	\$12,540	E	E	E	<input type="checkbox"/>
Interior Finishes	Fixtures & Fittings	Grabrail Stainless	Global	25	-	100	-	-	-	2.00	no	\$600	E	E	E	<input type="checkbox"/>
Interior Finishes	Fixtures & Fittings	Grabrail Stainless	Global	25	-	100	-	-	-	2.00	no	\$600	E	E	E	<input type="checkbox"/>

total number of components: 42 grand total: \$303,049

delete add new edit

COMPONENT: INTERIOR FINISHES * CEILING FINISHES * GIB-BOARD LINING # 202327 (C)

comp. group: * Interior Finishes comp. type: * Ceiling Finishes component: * Gib-board Lining description: Gib-board Lining location: Global	base life: * 50 base life upper: * 60 base life lower: * 40 confidence: not assign	criticality: * appearance: * medium to high consequence: * medium safety: * low
quantity: 112.00 unit m2 rate \$ 48 replacement cost: \$ 5376	condition: * C1 100 C2 C3 C4 C5 remaining life: R-C1 R-C2 R-C3 R-C4 R-C5 minimum cond. grade 5.0	confidence: not assign construction year survey year 2014 (2014) created: 29/09/2015 15:55: last modified:
comment: data source: - please select -	<input checked="" type="checkbox"/> archive component move copy delete add new save	

[component](#) [details](#) [maintenance](#) [info](#) [history](#) [projects](#) [docs\(0\)](#)

Asset Register

<p>Archived/Disposed Assets</p> <ul style="list-style-type: none"> Hamilton City Campus Hamilton Gardens Otorohanga Rotokauri Te Kuiti Thames Tokanui Waihi 	<p>HCC-Buildings and Land</p> <ul style="list-style-type: none"> HCC-Infrastructure HCC-Office Equipment and Furniture HCC-Plant and Equipment HCC-Specialist Teaching Equipment 	<ul style="list-style-type: none"> A Block B Block C Block D Block E Block F Block - WINTEC House G Block - Gallagher Hub J Block - M.S. Carpark Building N Block P Block Q Block - Kidz @ WINTEC R Block R22 Block S Block Whare Admin - Marae Wharekai - Marae Wharenui - Marae X Block Z Block
<p>cat-1: campus</p>	<p>cat-2: asset type</p>	<p>cat-3: asset location</p>

- Block: HCC-F: City F Block (WINTEC House) - Externals
 - Floor: HCC-F-Equip: City F Block Equipment
 - Floor: HCC-F-Plant: City F Block HVAC Plant
 - Floor: HCC-F1: F Block Level 1
 - Floor: HCC-F2: F Block Level 2
 - Floor: HCC-FG: F Block Ground Floor
 - Unit: HCC-FG.01-04: Foyer
 - Unit: HCC-FG.02: Cafe
 - Unit: HCC-FG.03: Storage INCLUDED IN .02
 - Unit: HCC-FG.04: Accessible Access
 - Unit: HCC-FG.06: Storage
 - Unit: HCC-FG.07: Storage

COMPONENT: SERVICES * MECHANICAL * SPLIT AIR CONDITIONING UNITS # 43655 (C)

<p>comp. group: * Services</p> <p>comp. type: * Mechanical</p> <p>component: * Split Air Conditioning Units</p> <p>description: Multi cassette system</p> <p>location: HCC-F1.03</p>	<p>base life: * 12</p> <p>base life upper: * 16</p> <p>base life lower: * 10</p> <p>confidence: highly reliable</p>	<p>criticality: *</p> <p>appearance: * medium</p> <p>consequence: * medium to high</p> <p>safety: * medium to high</p>
<p>quantity: 2.00 unit no rate \$ 6000</p> <p>replacement cost: \$ 12000</p> <p>confidence: qty: highly reliable cost: highly reliable</p> <p>comment: Mitsubishi ceiling cassette/OU on Roof</p> <p>data source: - please select -</p>	<p>condition: * C1 <input type="checkbox"/> C2 <input type="checkbox"/> C3 <input checked="" type="checkbox"/> C4 <input type="checkbox"/> C5 <input type="checkbox"/></p> <p>remaining life: R-C1 <input type="checkbox"/> R-C2 <input type="checkbox"/> R-C3 <input type="checkbox"/> R-C4 <input type="checkbox"/> R-C5 <input type="checkbox"/></p> <p>minimum cond. grade: 4.0</p> <p>confidence: highly reliable</p>	<p>construction year: 2010 survey year: (2013)</p> <p>created: 30/04/2013 11:19: last modified: 21/10/2015 09:51:</p>

archive component

Information Systems

- Asset register records core asset attributes - **size, location, age**, etc. Asset information reports can be manually generated for AMP input. **(Minimum)**
- Asset register enables **hierarchal reporting** - component to portfolio. There are systems for tracking customer **service requests** and for **planning maintenance**. **(Core)**
- Key **operations, unplanned maintenance** and **condition** information held. **(Intermediate)**
- Financial, asset and customer service systems are **integrated** and enable advanced AM functions. **(Advanced)**



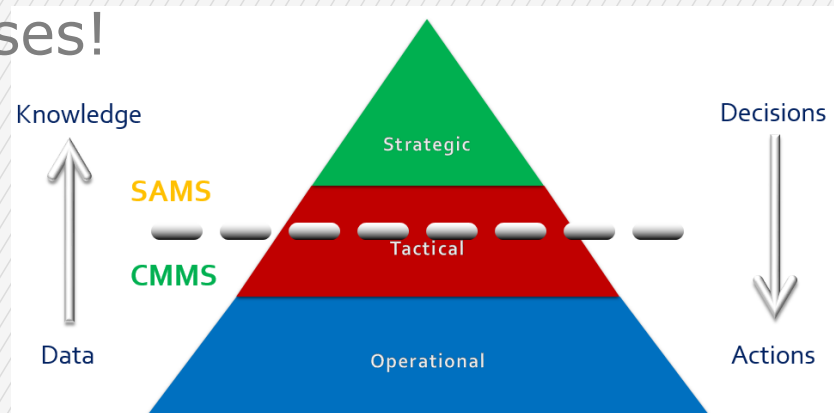
AM systems have become an essential tool for the management of assets in order to effectively deal with the extent of analysis required.

Information Systems

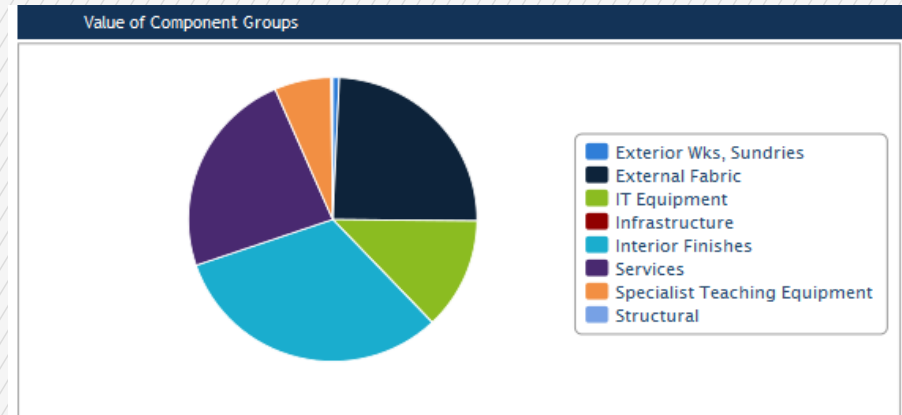
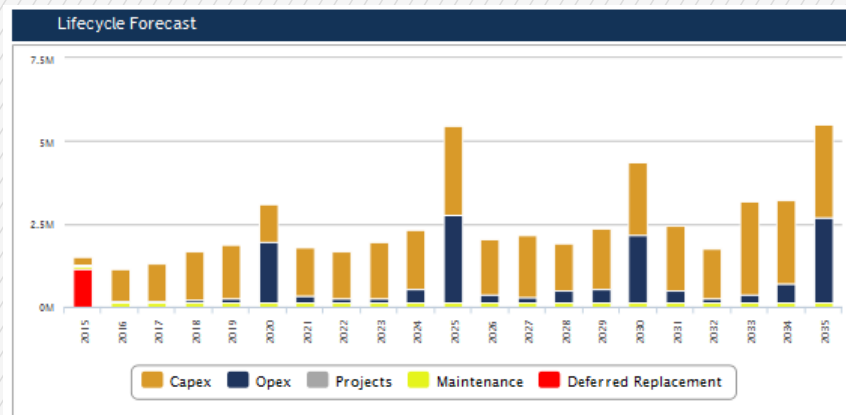
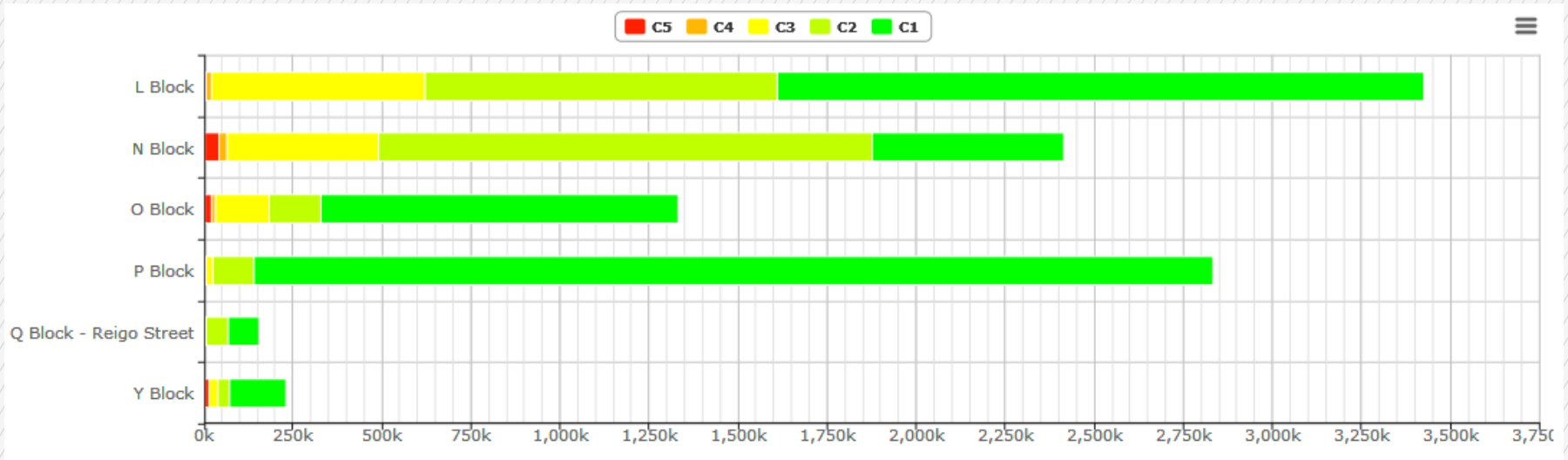
- Reliance on spreadsheets and local databases
- Reliance on key people and external suppliers
- Reliance on financial information systems for AM
- Inconsistency across asset types and portfolios
- Limited integration between finance, AM, and maintenance
- Limited ad hoc reporting
- Limited asset intelligence

Information Systems

- There are a wide range of solutions available
- Consider business needs carefully
- Understand the links with the asset register
- Be pragmatic and develop systems iteratively
- Look to TEFMA and others in the sector
- Remember business processes!



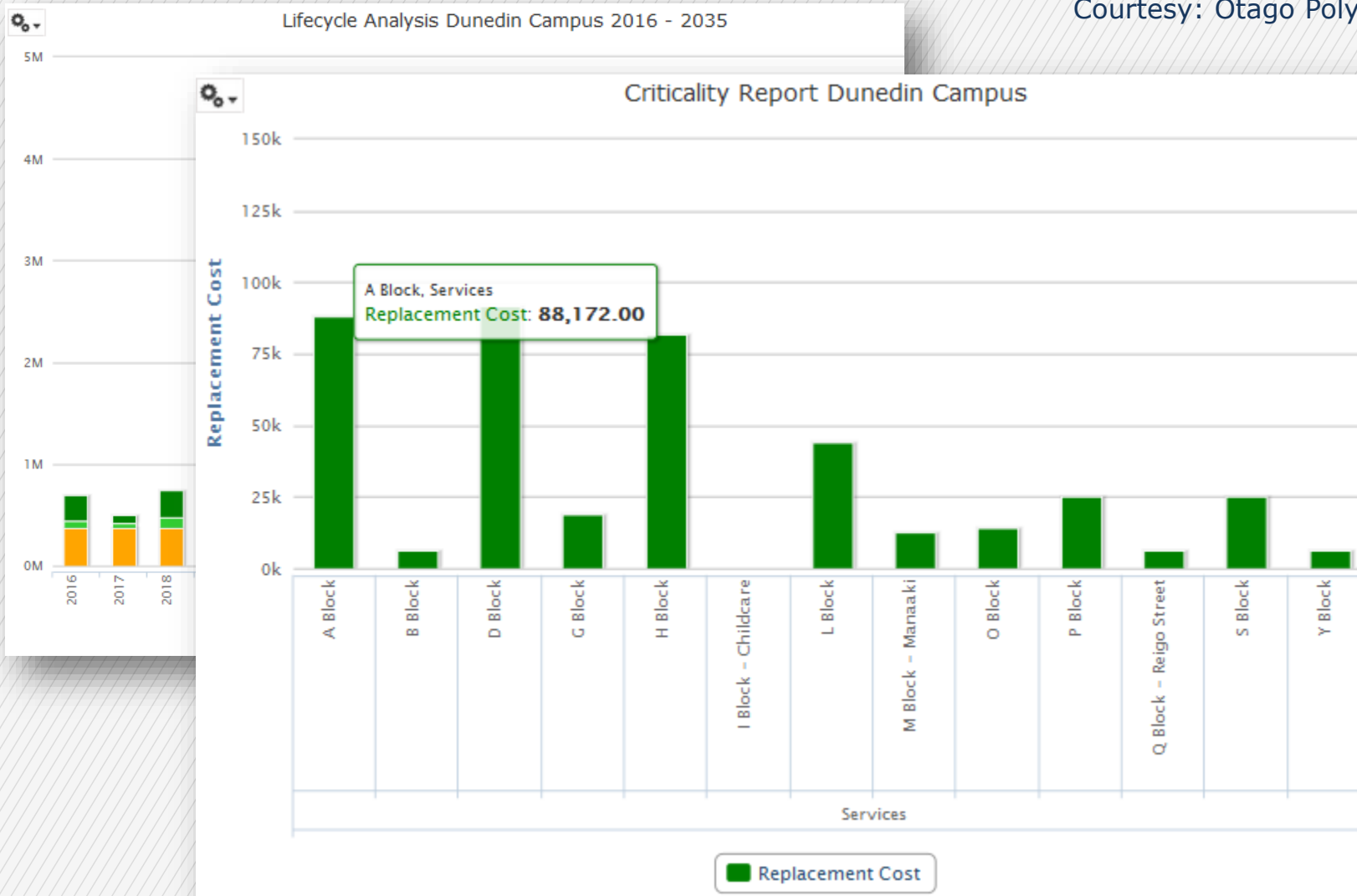
Asset Register



Courtesy: WINTEC

Information Systems

Courtesy: Otago Polytechnic



Asset Management Plans

- **Basic** information and forecasts to **5 years**. (Minimum)
- More detailed information and forecasts to **10 years**. (Core)
- **Analysis** of asset quality, customer engagement, risk and ODM. (Intermediate)
- Programmes **driven** by ODM, RM, LoS **tradeoffs**. (Advanced)



An asset management plan is a written representation of intended capital and operational programmes for its new and existing infrastructure, based on the organisation's understanding of demand, customer requirements and its own network of assets.

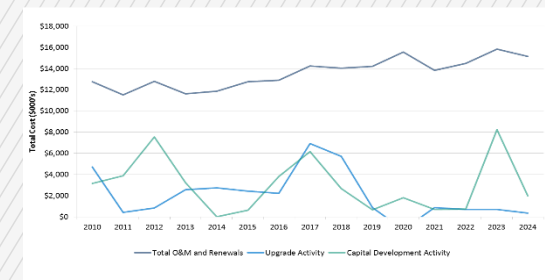
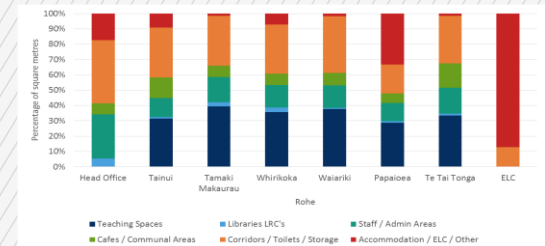
AM Plan

Asset Management Plans

- Number of TEIs have developed AM Plan(s)
- Number also question the value of the investment
- Often produced by one person in isolation
- Often have limited readership and distribution

Asset Management Plans

- Use data and information from other AM sources
- Develop iteratively and linked to prioritised improvement activities
- Use existing templates and resources
- Involve the entire organisation
- Keep it simple, graphical, and interesting



Improvement Planning

- Improvement actions have been **identified and allocated** to appropriate staff. (Minimum)
- Improvement plans identify **objectives, timeframes, deliverables, resources and responsibilities**. (Core)
- Formal **monitoring and reporting**. Resources have been allocated to the improvement (Intermediate)
- Evidence that agreed improvement plans have delivered the expected **business benefits**. (Advanced)



Well performing institutions give careful consideration of the value that can be obtained from improving AM information, processes, systems and capability. The focus is on ensuring AM practices are "appropriate" to the business objectives and government requirements.

Improvement Planning

- Most TEIs have an 'improvement plan'
- Number of plans result from the CAM reviews
- Some have allocated responsibility and milestones
- Some have established monitoring and reporting into leadership teams and Council
- Some improvement plans are linked into BAU processes, including quality and risk

Improvement Planning

- Establish and agree the list of improvements
- Allocate resources, milestones, and budgets
- Link to individual and department business plans
- Establish routine monitoring and reporting
- Celebrate success and record in the AMP

IMM Section	IMM Reference #	CAM Matrix Question #	Section	Improvement Reference #	Improvement Action(s)	Comments for Actioning	Status	Year that action was identified	Target start date	Forecast completion date	Person responsible	Cost estimate	Budget
Asset Management Enablers	IMM 4.2	13	Asset Management Plans	4.2.2	Update SAM Plan to incorporate new content identified in other improvement actions: AM policy and strategies Asset based levels of service statements Asset demand forecast assumptions Critical assets Maintenance plan Improvement plan	RH	Partially complete	2014	31-03-14	31-07-15	PC	Nil	Nil
Asset Management Enablers	IMM 4.3	14	Information Systems	4.3.1	Gather requirements (wide stakeholder group) for a centralised asset management system (AMS) (including maintenance) that will integrate with OP Enterprise Management Systems.	RH/with working group	Complete	2013	1-11-13	31-04-15	PC	\$ 15,000	\$ 15,000
Asset Management Enablers	IMM 4.3	14	Information Systems	4.3.2	Prepare a RFP (budget for RFP preparation is in this year's 2013 plan) for an AMS that will integrate with OP Enterprise Management Systems.	RH/THMC	Complete	2013	1-02-14	31-08-14	PC/MC	\$ 74,000	\$ 80,000
Asset Management Enablers	IMM 4.4	15	Service Delivery Models	4.4.1	Measure the current audit of procurements (supply chain management) against the IMM list of potential service delivery mechanisms.	GS/STTW,THR	Not started	2013	1-02-14	31-12-15	PC/MC	Nil	Nil
Asset Management Enablers	IMM 4.4	15	Service Delivery Models	4.4.2	Complete audit of procurements (supply chain management) and implement recommendations.	GS/STRH	Started	2013	30-12-15	MC	Nil	Nil	
Asset Management Enablers	IMM 4.4	15	Service Delivery Models	4.4.3	Develop and implement asset related internal service level agreements (SLAs) for service areas and academic departments.	RH/MC	Not started	2013	1-04-14	30-12-15	MC/PC	Nil	Nil
Asset Management Enablers	IMM 4.5	16	Quality Management	4.5.1	Document the existing and target asset management processes to an appropriate level of detail (will feed into the requirements for an AMS).	RH/LH	Partially complete	2013	31-07-14	1-10-15	RH/LH	Nil	Nil
Asset Management Enablers	IMM 4.5	16	Quality Management	4.5.2	Develop a centralised repository system for recording the asset management related quality management systems that are in place.	RH/TWIS	Partially complete	2013	1-02-14	31-12-15	RH/PC	Nil	Nil
Asset Management Enablers	IMM 4.6	17	Improvement Planning	4.6.1	Educate staff on the available processes for developing good ideas related to assets, i.e. to get ideas endorsed by the leadership team.	RH- capture in ideas forums with HODs/HOSA students & staff	Started	2013	1-06-14	31-12-15	RH/PC/MC	Nil	Nil
Asset Management Enablers	IMM 4.6	17	Improvement Planning	4.6.2	Update SAM Plan to include the improvement plan from this external review.	RH	Partially complete	2013	31-03-14	31-07-15	RH/PC	Nil	Nil

Improvement Action	Chapter	Item	Improvement Number	Description	By	Timing
G.	6	How Do We Deliver Our Services? (Managing the Asset Lifecycle)	H1	Create asset lifecycle management plans via implementation of the Opus Asset Management Database Tool (Decision Support Tool). Use this tool to develop project options for renewal and maintenance activity. Correlate these works with upgrade programmes to ensure effective use of financial resources and publish a detailed five year forward work plan, and indicative work plan for a further 5 years.	Bruce Nunns	Dec 2015
		Asset Maintenance (Maintenance Planning)		TEC CAM Standard: <ul style="list-style-type: none"> • Decision Making • Maintenance Planning • Capital Investment Strategies 		
			H2	Link maintenance activities to how these activities will bring about cost or performance improvements in maintenance activities.	Rangatahua	Dec 2015
			H3	Improve linkages between understanding of capital upgrades and maintenance activities budget requirements.	Rangatahua	Dec 2015
			H4	Document methodology.	Rangatahua	Dec 2015

**Measure what is
measurable, and make
measurable what is not
so**

Galileo Galilei

What is Asset Management?

Assets exist
to provide value to the organisation
and its stakeholders

Asset management translates the organisational objectives into technical and financial decisions, plans and activities

Asset management gives assurance that assets will fulfil their required purpose

Asset management translates the organisational objectives into technical and financial decisions, plans and activities

Organisational objectives
= Strategic Objectives

Expressed as levels of service,

Measured as metrics

Asset management translates the organisational objectives into technical and financial decisions, plans and activities

Improve learning outcomes

Facilities support learning

- 100% of student feel safe on campus
- M2/EFTs

Case Study - Te Wananga o Raukawa Asset Management and a Maori world view



Whakapapa Genealogical descent and History

Rangatiratanga Integrity, honesty, obligation and responsibility

Whanaungatanga Relationships

Manaakitanga Hospitality, generosity, humility and reciprocity

Wairuatanga Spirituality, beliefs and practices

Ūkaipōtanga The source of their nourishment and sense of purpose

Te Reo Language and communication

Kaitiakitanga guardianship

Kotahitanga unity, solidarity

Pūkengatanga skill development, expertise, achieving ones potential

TWoa Example

Chapter 3 | What Services Do We Provide?

Service Level Statements	Current Service Level	Strategic Objectives
2.1 Ensure legislative and administrative compliance of all properties, accommodation, and campus sites	<p>All permanent sites as defined by NZQA have education as their intended use and comply with the Resource Management Act.</p> <p>Active management and support is provided to Rohe to achieve compliance regarding:</p> <ul style="list-style-type: none"> • Tenure documentation • Health and safety checks; and • Building warrant of fitness <p>Financial and insurance valuations are undertaken three yearly, with the last valuations undertaken in</p>	Mandatory requirement for responsible organisations and Supportive of the strategic objectives Educational Excellence; Brand Strength

Chapter 4 | How Do We Measure Our Services?

	Service Level Measure	Corresponding Service Level (cross reference chapter 3)	Type (SPM / TPM)	Target	Result 2010	Result 2012	Result 2013
Q2	Mandatory Requirements Performance						
E	All sites to be fully compliant, including BWOFF, evidence of tenure, a current Health & Safety check, and for permanent sites a use permit for education	<p>1.3 Ensure legislative and administrative compliance of all properties, accommodation, and campus sites</p> <p>4.1 Provide education facilities which are functional, accessible, well maintained, cost effective, and provide for the safety and comfort of all taura and kaimahi</p>	SPM	90%	78%	82%	83% ¹⁴

The Take-away

- AM processes do not have to be driven by AM compliance, they are better driven by better outcomes – only then do they have a chance to be permanent

Comment and Discussion?

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