AUS-SPEC
The Local Government Specification

CASE STUDIES and
TECHNICAL RESOURCES

IPWEA
INSTITUTE OF PUBLIC WORKS
ENGINEERING AUSTRALASIA

NATSPEC// Construction Information

AUS SPEC

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NATSPEC

NATSPEC is a national not-for-profit organisation whose objective is to improve the construction quality and productivity of the built environment through leadership of information. It is responsible for the development and maintenance of NATSPEC, the National Building Specification system; AUS-SPEC, the Australian Local Government Specification; and the National BIM guide and associated documents, for Building Information Modelling. It is impartial and is not involved in advocacy or policy development, and is owned and endorsed by Government and industry organisations.

NATSPEC is the only comprehensive Australian national specification system that is regularly updated to reflect the latest changes in regulations and standards. It provides specification templates for architects, interior designers, landscape architects, structural engineers and service engineers. For more information visit www.natspec.com.au.

IPWEA

The Institute of Public Works Engineering Australasia (IPWEA) is a professional organisation providing member services and advocacy for those involved in and delivering public works and engineering services to the community both in Australia and New Zealand. The organisation is expanding its traditional local government engineering focus to the broader public works, thereby covering all tiers of government, as well as the private sector, where IPWEA has over 30% of its membership.

The evolvement of IPWEA maintains the traditional expertise of local government engineering, but by broadening the base of expertise and experience, adds a new dimension to public works professionalism in Australia and New Zealand. For more information visit www.ipwea.org.

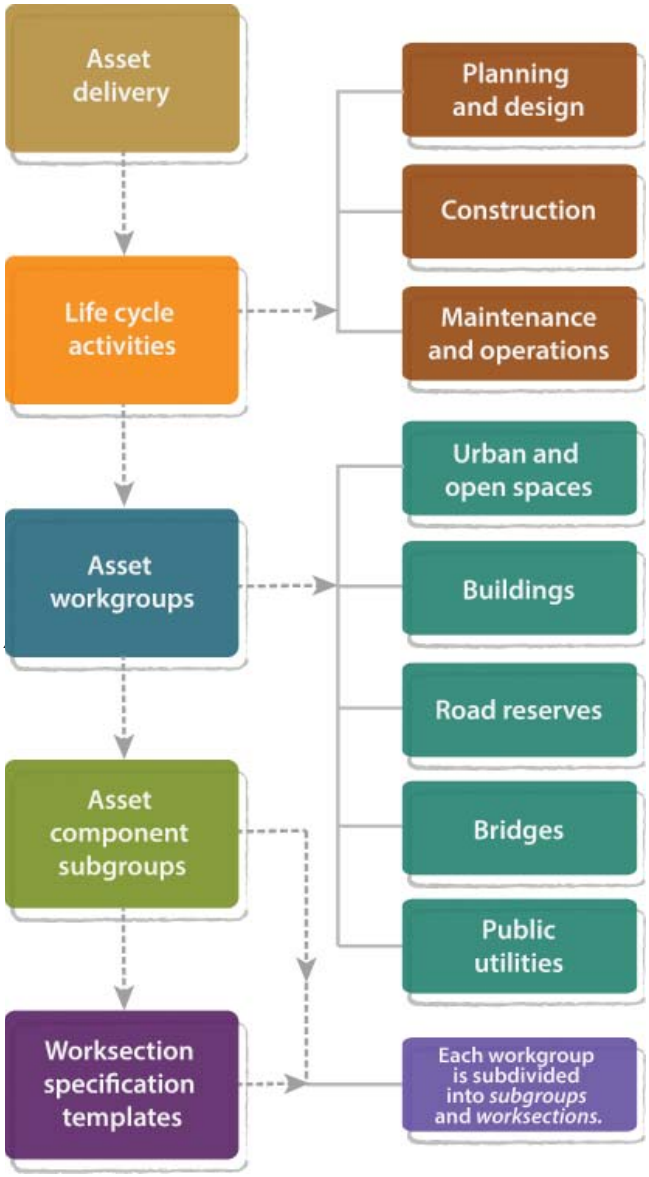
Front cover image courtesy of Tweed Shire Council

AUS-SPEC Local Government Specification

AUS-SPEC is the national local government specification system for the life cycle management of assets. It is a joint venture between IPWEA and NATSPEC, responsible for delivering the national construction specification system endorsed by government and professional bodies.

The AUS-SPEC documentation series was originally developed in 1997, to assist Councils in providing quality infrastructure assets to their communities, using either internal business units or outsourced contracts.

AUS-SPEC is aligned to the NATSPEC National Classification System, which has been widely adopted by the construction industry. The AUS-SPEC system provides tools, technical specifications templates, and a framework and processes to document requirements for asset life cycle activities. AUS-SPEC provides a range of specifications for buildings, roadworks, urban and open spaces and public utilities. The system supports technical and contractual consistency between Councils, yet allows flexibility to edit and add project specific requirements where necessary.



THE MID NORTH COAST REGIONAL ORGANISATION OF COUNCILS: MASTER SPECIFICATION

The Mid North Coast Regional Organisation of Councils (MIDROC) is the peak organisation representing six local government areas: Bellingen Shire, Coffs Harbour City, Kempsey Shire, MidCoast, Nambucca Shire, and Port Macquarie-Hastings Councils. These Councils identified common issues with the design, construction, and maintenance of road and bridge networks, and other assets.

The member Councils developed a uniform approach to development and construction works, including subdivision works, like roads and stormwater, which includes a specification based on the AUS-SPEC local government specification system for the life cycle management of assets. This provides economies of scale and efficiency for the Councils, as well as contractors within this region.

The Councils joined together to increase their effectiveness and efficiency through sharing ideas and resources. MIDROC intends to improve the lifestyle of the local communities, protect the local environment, improve the Councils' capacity and productivity, and enable the communities to be strong and sustainable for the long term. Using AUS-SPEC, the MIDROC Councils were able to develop a uniform set of specifications for construction and development to a high and accepted standard.

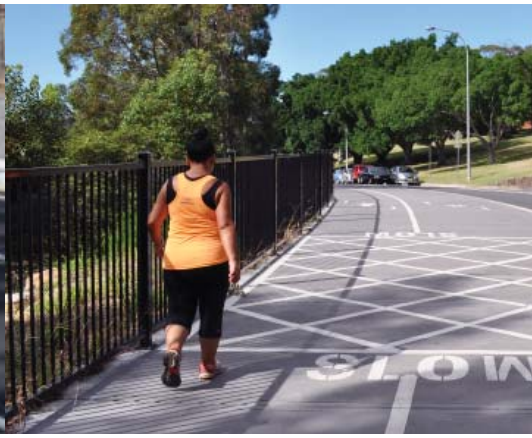
THE PROCESS

Construction and development Engineers from each of the constituent Councils formed a committee to jointly develop a uniform specification for the various types of construction in their region.

A review of existing Council specifications found that the majority were based on AUS-SPEC. Some Councils were using older versions of AUS-SPEC and cited out-of-date Australian standards, materials, and methods. A small number of Councils had no single set of specifications and used a range of documentation – some were good, and others were not. A comparison of the previous specifications revealed a disparity in the standard and applicability of Council documents within the MIDROC region.

Specialists were called from each Council to contribute and agree on how the AUS-SPEC master specifications would be customised for the joint MIDROC document set.

Many Councils have customised the AUS-SPEC master templates for completion of works, including Fairwater Drive East (bottom left) in Horsley, NSW, by Wollongong Council, and The Bay Run (bottom middle, bottom right), in the City of Canada Bay, NSW, which offers a 7km trail around Iron Cove.



USING AUS-SPEC DOCUMENTATION

It was paramount that the standard specification requirements for development by external developers be consistent with specification used for construction of the Councils' own contract works.

There was also recognition that each Council and region would have some minor varying requirements depending on topography, style, and culture. However, it was understood that major aspects should remain standard to maximise the benefits from a master specification. While the local and cultural requirements of each Council area prevented total uniformity, the criteria of individual Councils was identified and documented; appropriate adjustments to suit local requirements can be easily made.

The customised specification is known as the *MIDROC Specification Documentation for Development and Construction Works*, and has been adopted by the MIDROC Councils.

In the future, the currency of the MIDROC specification series will be maintained using the AUS-SPEC master specification as a reference. Individual Councils subscribe to AUS-SPEC which provides up-to-date information on Australian standards and legislation.

In developing a single system based around AUS-SPEC, MIDROC now benefits from regional and uniform development on construction specifications. This includes citation of current Australian standards and other reference documents.

Faster and more efficient production of specifications for tendering is enabled, and the competitiveness of tendering increases as contractor's familiarity with regional requirements increases.

"The AUS-SPEC documents help the Council achieve consistency in documentation, and with our levels of service."

- Mathew Naylor, Section Leader, Asset Project Delivery, Coffs Harbour City Council

Information and images courtesy of Complete Urban, and the MIDROC Councils

KESWICK RESIDENTIAL SUBDIVISION

Dubbo Regional Council has over a number of years subdivided existing Council land, formerly open paddock, to expand the urban residential districts of the city. As part of the Keswick Urban Release Area, development and construction of the Keswick Stage 4, Release 3 Subdivision provides a whole host of new housing options available for the community.

The Council emphasised both strategic planning and structure planning to ensure the neighbourhoods that are created provide comfortable living environments, with a high level of amenity, identity, and sense of community today and for generations to come. Endeavouring to provide the best and most accessible housing for the community, the Council has embarked on this project to develop the capacity to support future growth.

The subdivision consists of standard residential housing blocks, and with the completed Stage 4 Release 3, will provide 62 fully serviced lots of 600-800m^2. Utilities provided include electricity, water, stormwater, natural gas, NBN, and sewer services. Gutter, road, pavement, and street lighting services are integrated into the complex, and the entire area has an approximate value of $8.5 million. The $130,000 lots on offer have a minimum building size of 150m^2, and less restrictive covenants to meet market demand for smaller and more affordable homes.

DUBBO REGIONAL COUNCIL

ENVIRONMENTAL CONSIDERATIONS

Prior to development, areas of the Keswick Residential lands had been found to contain a remnant area of Fuzzy Box Woodland, an endangered ecological community. Fuzzy Box Woodland is a plant community recognisable by tall woodland dominated by Fuzzy Box (Eucalyptus conia). After further attention and management of this land to consider the legislative responsibilities associated with Endangered Ecological Communities, the affected areas were protected from development.

USING AUS-SPEC DOCUMENTATION

Dubbo Regional Council has used the AUS-SPEC 'Design and Construction' suite of documentation to cover all general civil infrastructure works since 1999. The Council uses AUS-SPEC for both its own subdivision works, and in works undertaken by private companies.

The benefits that the Council has seen using the mechanisms and controls that these documents provide have been a consistent approach between the Council's constructed activities, and private developers/contractors (with these private works eventually being handed over to the Council's asset registers). This minimises confusion and miscommunication, saving time and undue cost to the community.

"As AUS-SPEC is known internally within the Council, externally among private contractors, and throughout the industry, using the specifications has assisted the flow of the project and encouraged the consistently high standard we expect across the board. Some work is being done using our own staff, and some using local contractors. At all stages we have reliable and uniform work being performed," said Ian Bailey, Director of Technical Services at Dubbo Regional Council.

Stormwater, earthworks, and pavement, were some of the specifications selected from the AUS-SPEC asset components for the Keswick Residential Subdivision. With the Council having the same standards as developers and external contractors, the Council has not needed to develop its own set of construction standards. The documentation is easily customised to suit local requirements, with the cover page recording amendments made to the standard document, e.g. Benkelman Beam Test for flexible pavements required on both the subgrade and base materials, as well as compaction tests.

"...using the specifications has assisted the flow of the project and encouraged the consistently high standard we expect across the board."

- Ian Bailey, Director Technical Services, Dubbo Regional Council

Images courtesy of Dubbo Regional Council

TUNCURRY WASTE MANAGEMENT STATION

Stuart Small, Senior Project Manager at MidCoast Council, has been using the AUS-SPEC specification system for the design and construction of local government assets since 2002. In late November 2015, a new challenge presented itself and Small provided engineering and project support to the increasingly nervous Waste Team at Great Lakes Council.

Peter Brabant, Project Manager for Great Lakes Waste Division, explained the situation: “The Council’s landfill at Tuncurry was filling up quickly, following an unforeseen environmental delay. We needed to transition the Waste Transfer Station Project from the design to procurement phase, and have a contract out for tender prior to the Christmas holiday period. The time-frame in which Small was able to interact with consultants, prepare and compile the project contract documents, and have a local government tender issued was impressive. It was an important turning point for the project.”

The project involved converting the Council’s existing Tuncurry Waste Facility from a landfill to a modern Community Recycling Centre and Waste Transfer Station with dual weighbridge capabilities. Costing $4 million to complete, the project is part of NSW Government’s ‘Waste Less, Recycle More’ initiative, and is the final project in the former Great Lakes Council’s Waste Management Strategy.

THE PROCESS

The site geology was predominantly sand, and as a result, significant earthworks and subbase preparation for pavements was required to handle the regular heavy truck movements that would occur on the site. The waste facility also needed to continue to operate 7 days a week during the conversion process. This was a significant project for the regional council, which was also in the midst of a tri-merger with the Gloucester Shire and Greater Taree Councils, subsequently being amalgamated with the MidCoast Council.

For this project, the AUS-SPEC Complete package was utilised, providing an excellent framework for both the civil and building works for the project. Minor customisation of the civil specifications was required, limited to situations where the Council’s experience had identified adjustments to achieve a positive outcome for local situations. More extensive customisation/selections were required for the steel and concrete structures to reflect the local geography, as well as the aesthetic requirements of the Council.

The building and construction company ATB Morton, which is headquartered in Newcastle, was awarded the contract and partnered with local civil sub-contractor Ditchfield Contracting to complete the civil works.

USING AUS-SPEC DOCUMENTATION

With AUS-SPEC templates, specifications like upgrading and expanding the water, sewerage, and electrical services on-site, could be clearly and concisely documented. The quality across the site was consistent, and requirements for the civil work that involved clearing and grubbing the site included:

- Bulk earthworks.
- Flexible pavement construction (base and subbase).
- Installation of stormwater systems.
- Installation of environmental controls.
- Construction of two steel buildings and associated concrete structures.

Benkelman beam testing during the excavation process identified results that didn't conform to the specifications, exposing a major issue. Further testing discovered that some old tarpaulins wrapped around organic material were decomposing in the subgrade. The Council directed the contractors to remove the foreign material and rebuild the pavement. The Benkelman beam testing saved valuable time and resources; if the problem hadn't been identified, the asphalt pavement would have failed within a few years, making it difficult to identify the cause.

Using AUS-SPEC assisted with the clear communication to subcontractors of what was expected by the Council during the tender and execution phases. This provided clarity and eliminated redundancy, which minimised the risk of costly mistakes while meeting the Council's high expectations. An efficient and effective means of specifying and executing projects was enabled, from both a contractual and practical perspective.

"We set a high benchmark for the civil works, and the AUS-SPEC documents provided very clear details to the civil sub-contractor so there was no ambiguity and they knew exactly what was expected from them since they regularly undertake works where AUS-SPEC has been utilised," said Small.

The AUS-SPEC templates provided significant support in detailing the requirements of the Council; this was an important risk control for the Council, especially for the building works where the Council's in-house project delivery team lacks experience, for which the templates compensate.

"...there was no ambiguity and they knew exactly what was expected from them..."

- Stuart Small, Senior Project Manager, Midcoast Council

ENVIRONMENTAL CONSIDERATIONS

Adjoining the site is a setoff area where the Tuncurry Midge Orchid is distributed. It is critically endangered and only found in this small area north of Tuncurry. The facility was originally to be constructed through this location, but was redesigned after the Council received a referral decision under sections 75 and 77A of the Environmental Protection and Biodiversity Conservation Act 1999.

Images courtesy of Great Lakes and MidCoast Councils

USING AUS-SPEC FOR:

ASSET MANAGEMENT

Life cycle management encompasses all asset strategies and practices associated with an asset or a group of assets in an ongoing planned maintenance program, resulting in reduced life cycle costs and increased asset life. A series of nationally consistent frameworks were developed by the Local Government Planning Ministers' Council (LGPMC) to provide minimum requirements for asset and financial management and planning by local government across Australia. This development supports improved management of assets such as roads, water and sewerage, drains, footpaths, public buildings and the like, which Local Government provides to the community.

The AUS-SPEC specification system is a major information source for asset management which complements the International Infrastructure Management Manual (IIMM). AUS-SPEC provides tools, templates, the framework and processes to assist at various asset life cycle activities. The AUS-SPEC maintenance system assists Local Government to achieve an optimal balance between the costs of planned and unplanned maintenance. AUS-SPEC encourages a proactive approach to asset maintenance rather than a reactive approach.

ASSET MANAGEMENT FRAMEWORK

An asset management (AM) framework drives the implementation of asset management and aligns with the Council's strategic objectives. It consists of:

- **AM policy**: Outlines principles, requirements and responsibilities for AM and is linked to the Council's strategic objectives.

- **AM strategy**: Outlines AM objectives, practices, action plans, audit and review processes.
- **AM plan**: Outlines asset description, levels of service, demand forecast and life cycle activities.

LIFE CYCLE ACTIVITIES

The life cycle activity of an asset is defined as the activity commencing with the identification of the need and terminating with the decommissioning of the asset. AUS-SPEC's specification system for the life cycle management of assets is aligned to the NATSPEC National Classification System, which has been widely adopted by the construction industry. AUS-SPEC can be used for the following life cycle activities, as defined in IIMM:

- **Asset Planning**: Defines the most effective solution to meet the services required by the community. Use Workgroup *00 PLANNING AND DESIGN* which covers development and subdivision of land, design of waterfront development, bushfire protection, design of roadways, and design of public utilities.

Gold Coast City Council (left) and Adelaide City Council (right) utilise the AUS-SPEC system for their asset management plan

- **Asset Creation/Acquisition**: Includes works that create a new asset, or works that upgrade or improve an existing asset beyond its existing capacity using capital expenditure. This may result from growth, social or environmental needs. Assets may also be acquired at no direct cost to the Council e.g. donated assets. AUS-SPEC focuses on the technical aspects and processes of how to plan, design, and construct new assets using the following:
    - » **Design worksection templates**: Provide guidance and procedures for those involved in the design of civil infrastructure for Local Government, both internally (Council staff) and externally (Consultants and Developers). The worksections support uniform design practices for civil infrastructure works. For Design, use Workgroup *00 PLANNING AND DESIGN*.
    - » **Construction worksection templates**: Suitable for both quality control and integrated management contracts associated with most Councils' engineering activities. These worksections have been developed to assist Local Government control the quality of works performed by contractors and developers. For Construction, use Workgroups 01, 02, 03, 11, and 13.

- **Maintenance and Operations**: Operations are active processes of utilising an asset which will consume resources such as manpower, energy, chemicals, and/or materials (e.g. cleaning, mowing etc.). Maintenance is the actions necessary for retaining an asset as near as practicable to its original condition, excluding rehabilitation or renewal. Over time, the AUS-SPEC asset maintenance system provides Councils with records of asset inspections, defects, programmed and prioritised works, and monthly work completed reports, which improve a Council's maintenance history and asset inventory. AUS-SPEC maintenance activity specifications cover both unplanned and planned maintenance. For Maintenance and Operations, use Workgroups 14-18.
- **Asset Monitoring/Condition/Performance**: AUS-SPEC provides a framework for performance requirements of the Council assets, defines the technical level of service, response times, and compulsory intervention levels to systematically program asset maintenance. AUS-SPEC covers most of the maintenance activities of local government assets. Management plans for planned and unplanned maintenance of various assets provide a proactive approach to maintenance. For asset monitoring/performance, use Workgroups 14-18.
- **Renewal/Rehabilitation/Replacement**: Renewal is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces, or renews an existing asset to its original condition. For asset renewal and rehabilitation, a combination of AUS-SPEC construction and maintenance worksections may be required. Use Workgroups 01, 02, 03, 11 and 13 to 18.

RELATIONSHIP BETWEEN AUS-SPEC AND IPWEA (IIMM AND AIFMM)

To assist the Council's implementation of the nationally consistent frameworks, the AUS-SPEC maintenance management system should be integrated with the Council's asset management plans and long term financial plans. IPWEA's National Asset Management Strategy Committee (NAMS.AU) provides guidelines (IIMM and AIFMM), tools, and templates to assist Local Government in developing asset management systems and integrate asset management with their corporate and financial planning.

According to the Australian Infrastructure Finance Management Manual (AIFMM), classification of an asset is "one of the most important steps in financial reporting, asset accounting, and asset management." The NATSPEC National Classification System, in alignment with the AIFMM asset hierarchy, can link with GIS (Geographic Information System) and can assist in providing relevant information to the asset managers, finance managers, and service managers. AUS-SPEC maintenance management plans can be linked to the asset management plans and financial management plans through the NATSPEC National Classification System or the Activity codes of Maintenance specifications.

USING AUS-SPEC FOR:

ASSET DESIGN AND DELIVERY

Local government plays an important role in land use planning, development, approval, and construction of infrastructure in all Australian states. AUS-SPEC assists Councils in this role by providing documentation templates and guidance material for a systematic approach to the planning, design, and construction of new infrastructure assets. AUS-SPEC also provides documentation related to the maintenance of existing assets.

BENEFITS OF USING AUS-SPEC FOR ASSET DELIVERY

AUS-SPEC provides a documentation system for the delivery of assets, to meet the essential services required by the community. The system provides the following benefits:

- **Local government focused:**
  - » Planning, design, construction, and maintenance contract documentation requirements for local government assets.
  - » Simple and easy to use.
- **For minor civil works:**
  - » Specification requirements are limited to the standard of minor civil works.
  - » Addresses minimum best practice requirements.
- **A national document:**
  - » Applicable across all Australian jurisdictions.
  - » Accommodates variations for metro/regional locations, climate zones, or locally available materials.
- **A reference type specification:**
  - » Minimal customisation required.
  - » Addresses the shortage of in-house technical expertise and reduces need for outsourcing.
  - » Consistency for contractors specialising in local government work.
  - » Performance and technical requirements separated from contract management requirements.
- **An industry standard:**
  - » Improved productivity and quality.
  - » High quality outcomes at project level.

USING AUS-SPEC FOR PLANNING

AUS-SPEC TECHguide TG 201 *Process and procedures for the development and subdivision of land* is applicable to the planning and approval processes, and design requirements, for the development and subdivision of land within a Council area. It provides guidance on the infrastructure requirements for subdivision and development in urban residential, rural residential, rural, and industrial commercial areas. This includes development applications, assessment and determination criteria, the appeal process, developer contributions and fees, certificates, bonds, and environmental considerations.

This is a reference document for the development or updating of documents and forms which set out Council requirements for development and subdivision of land. The guidelines are intended to assist Councils to achieve the following objectives:

- Provide a functional, attractive, and safe environment for residents that is consistent with community standards and needs.
- Minimise adverse effects on the natural environment.
- Provide for the needs of future users of the land with respect to building requirements, vehicular and pedestrian access, provision of services, and an amenity appropriate to the zoning of the land.
- Economically utilise the land resource of the area.
- Achieve a balance between the development/subdivision of residential, commercial, and industrial land and the amenity of existing occupants/residents.
- Provide for an equitable and efficient distribution of public amenities and services.
- Minimise Council's future maintenance costs for roads, services, and open spaces.

USING AUS-SPEC FOR DESIGN

The AUS-SPEC Design worksection templates provide guidance, design criteria, and documentation requirements for the execution and recording of the design process for local government infrastructure including open space, road reserves, bridges and public utilities. They complement the AUS-SPEC Construction worksection templates.

The templates should be customised to reflect the Council's particular requirements. The customised templates can then be used to document Council subdivisional guidelines for internal use (Council design staff) or as a design reference document/Design Manual for developers and external consultants. This uniform approach provides the following benefits:

- Infrastructure associated with any Council works is designed to be fit for purpose and of a standard maintainable by the Council.
- Clear records of key design processes are documented.
- Data relevant to the asset maintenance is available for future use by the Council.
- Specification requirements for development by external developers are the same as the specifications used for construction of the Council's own contract works.

Quality requirements at the design stage are covered in *0010 Quality requirements for design*. The checklists included in this worksection provide a valuable tool to achieve the following objectives:

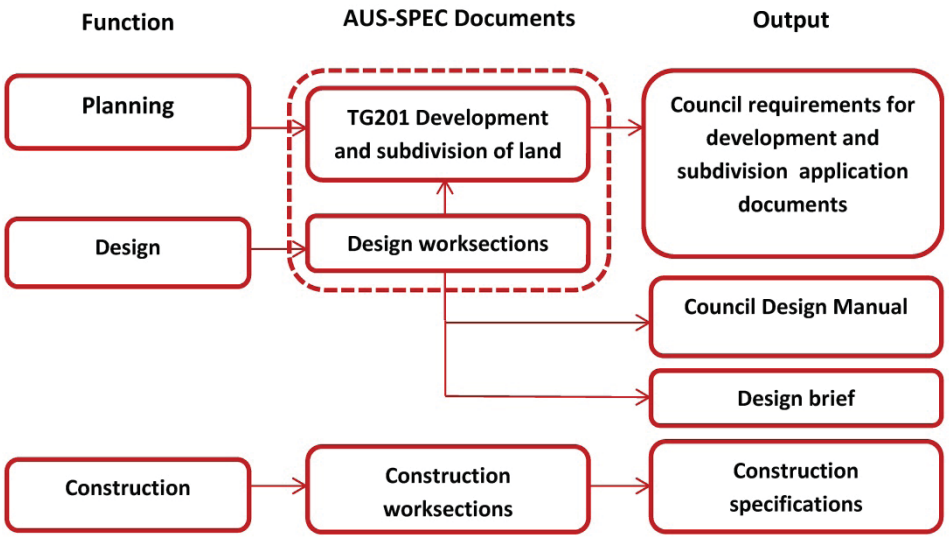
- Remind designers of design criteria.
- Provide a quality record of the design process.
- Allow additional criteria to be integrated into the Council's design process.

USING AUS-SPEC FOR CONSTRUCTION

The AUS-SPEC specification system includes specification templates for the construction of local government roads, public utilities, buildings and landscape works.

For construction of minor civil works use selected worksections from Workgroups 01, 02, 03, 11, and 13.
For construction of building works use Workgroups 01, 02, 03, 04, 05, 06, 07, 08, and 09.

TECHguides TG101, 102 and 103 provide guidance on the compilation of tender and contract documentation for either quality control or integrated management contracts.



Infrastructure asset delivery using AUS-SPEC

USING AUS-SPEC FOR:

CONTRACT DOCUMENTATION

"The Australian economy spends approximately $7 billion per annum to resolve disputes in the construction industry. Concerns exist regarding the cost of tendering, lack of clarity of documentation, and unequal allocation of risk."

- CRC Construction Innovation, Guide to leading practice for dispute avoidance and resolution: An overview

The AUS-SPEC specification system can be used for standard and period supply and service contract documentation for the life cycle management of assets. The AUS-SPEC system assists users to manage each stage of the contract cycle: project initiation; project delivery; compilation of contract documents; contract management and administration; operation; maintenance; and asset management.

PROJECT DELIVERY AND PROCUREMENT

Local government typically procures the following:

- **Building and construction services** involving major works (e.g. construction of an aquatic centre or construction of a road) or minor works (e.g. repairs to a footpath or resurfacing a car park).
- **Supply of services** including supply of equipment or material.
- **Period supply and services** including construction or non-construction services over a fixed period of time (e.g. linemarking of roads, security surveillance, bituminous surfacing, or weed treatment).
- **Consultancy services** including design and documentation.

The Local Government Acts of the various states underpin the detailed tendering process and procurement procedures used by Councils. AUS-SPEC provides for the incorporation of state-based requirements into contract documentation and also references AS 4120 Code of Tendering which sets out the ethics and obligations of the principal and Tenderers in the tendering process in the construction industry.

THE IMPORTANCE OF SPECIFICATIONS

Preparing the specification is a core process in tendering and contracting. It is an essential contract management document which sets out the Council's requirements to prospective suppliers and/or contractors. A clear, concise, and unambiguous specification results in more accurate tender bids and fewer variation claims.

The AUS-SPEC specification templates and associated guidance documents provide a framework for developing quality documentation for different procurement methods and types of contracts. They can be used to define:

- Outputs.
- Quality standards and standards of compliance.
- Method of payment.
- Risk identification and management.
- Procedures, roles, and responsibilities.
- Dispute resolution processes.
- Requirements for the Council's economic, social, and environmental objectives.

COMPILATION OF CONTRACT DOCUMENTS

The AUS-SPEC contract document system is suitable for all Council services related to asset management including design, construction, maintenance, and operations of urban and open spaces, buildings and facilities, road reserves, and public utilities.

Reference Documents

Before compiling the documentation, refer to the following AUS-SPEC TECHguides for detailed guidance on contracts, technical specifications, tender submission requirements and sample documents.

- TG102 *Guidelines for Principals – standard contracts.*
- TG103 *Guidelines for Principals – period supply and service contracts.*
- TG104 *Guidelines for Principals – sample documents.*

Standard Contracts

Identify the following contract requirements for the project:

- Conditions of tendering: Required for tender documentation only.
- Conditions of Contract: General conditions, Annexures and Special conditions of contract. SAI Global licence is required to use the Annexures of AS 2124 and AS 4000.
- Quality management system: Quality assurance or Integrated management.
- Method of payment: Schedule of rates or Lump Sum or a combination of both.

Period Supply and Service Contracts

In addition, for period supply and service contracts, define the following contract requirements:

- Extent of service: Supply only, supply and deliver or supply, deliver and install/lay/place.
- Type of quality control: Quality control or Quality management system.
- Period of contract: e.g. 12 months with optional extension for 3 to 5 years or a longer term.
- Method of payment: Monthly payment, proportional payment, payment upon delivery.

SPECbuilder Live

Using SPECbuilder Live, the online specification compilation software, select the appropriate AUS-SPEC worksections and NATSPEC worksections to create a project specification. Edit standard clauses where necessary and customise the worksections to include project specific information. Complete any checklists and annexures to suit the needs of a particular project.

Project Documentation

Assemble the project specific documentation in two sections:

- Section A – Tender documents. Assemble separately. For electronic tendering, a PDF file with all the information can be issued to the Tenderers.
- Section B – Contract documents: Assemble contract documentation in four volumes; conditions of contract, technical specifications, drawings and schedules (not covered by AUS-SPEC), and tender submission documents and additional information.

Contract documentation is essential for the effective life cycle management of local Council assets, such as River Torrens footbridge in Adelaide (left) and Upper Coomera Community Centre on the Gold Coast (right)

USING AUS-SPEC FOR:

ASSET MAINTENANCE

The AUS-SPEC system supports a proactive approach to maintenance based on programmed maintenance, quality management, and competitive principles.

The specification system can be adapted for documenting routine, periodic, and urgent maintenance, using in-house service agreements or external contracts, or a combination of both. Local Government asset maintenance services include traffic control, routine park maintenance, and maintenance of Council buildings.

ROLES AND RESPONSIBILITIES

Under the AUS-SPEC maintenance system, the roles and responsibilities are allocated as follows:

- The principal (Council) specifies the maintenance requirements and assesses the quality capability of the Contractor/Service provider.
- The Contractor/Service provider controls the processes and methods, verifies conformance and provides the products and services. Quality inspection is a separate activity to verify the performance of the completed maintenance work.
- The principal's Superintendent audits the maintenance system, methods and end product, during the course of the Contract.

AUS-SPEC MAINTENANCE SYSTEM

The AUS-SPEC maintenance system includes reference documents and a series of templates, known as worksections, classified according to the NATSPEC National Classification System. The templates can be edited to suit a particular project reflecting the asset maintenance management policy of the Council. They include:

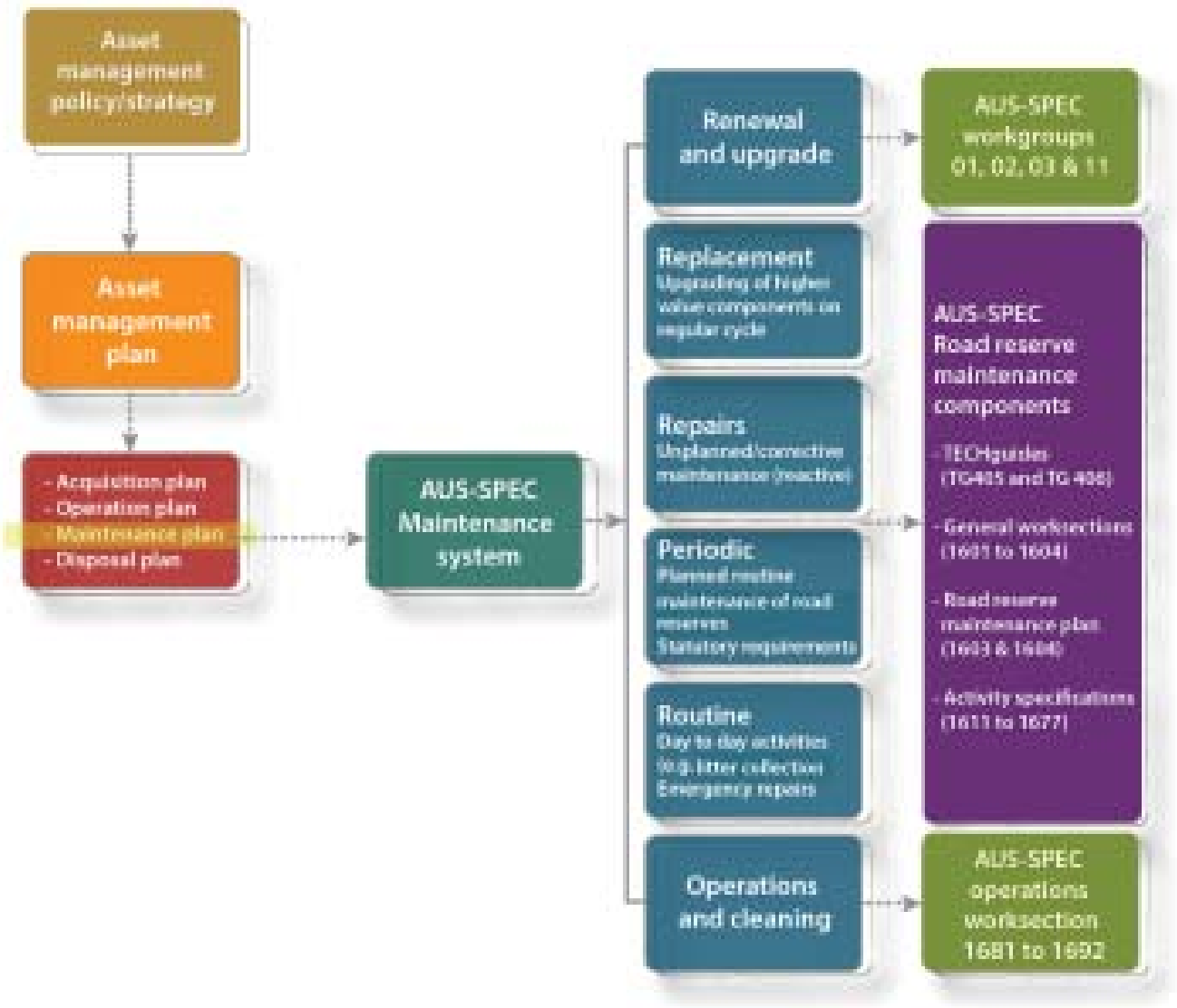
- **Reference Documents**: Including **TECHguides**, which assist in the preparation of maintenance contract documentation.
- **General Requirements (Maintenance)**: Outlines the work and defines the measurement and payment.
- **Contract Schedules**: Includes schedule of asset network, facility data sheets, maintenance frequency, schedule of rates and dayworks rates, lump sum components, etc.
- **Maintenance Plan**: Nominates anticipated activities and confirms agreement with the principal's requirements and the method of operation by the contractor. The plan is prepared by the principal and completed with input from the contractor/service provider. It consists of two parts:
  - » **Part 1**: Outlines the maintenance performance policy, maintenance organisation and activity specifications. Part 1 is to be included with the Tender documentation and is to be read in conjunction with the General requirements included in the Tender documentation.
  - » **Part 2**: Includes management procedures and maintenance planning. This part of the plan is based on the structure of a Quality manual and Quality plan; however the simplified format does not require third party verification or extensive documentation by the contractor/service provider.
- **Proformas**:
  - » Non-conformance management forms, Maintenance Defect Register, Work Order form, Hold Point release form, Damage report and repair form, etc.
- **Maintenance Worksections**:
  - » **Activity specification**: Sets out the requirements for a particular activity including scope, work method, inspection requirements, special requirements, hold points and checklists.
  - » **Activity contract requirements**: Sets out the performance/service level requirements (recording level, response time, intervention levels, MMS reporting units and method of payment for a particular activity (Lump Sum/Schedule of rates/Day Works). The AUS-SPEC defaults should be revised by Council, in line with the Council Asset Management policy.

BENEFITS OF AUS-SPEC MAINTENANCE SYSTEM

The AUS-SPEC maintenance system is a professional, best practice approach to maintenance which allows Councils to:

- Calibrate service levels with their maintenance and operations budgets.
- Prepare documentation for in-house and/or private maintenance contracts.
- Collect records of asset inspections, defects, programmed and prioritised works and monthly works completed reports.
- Progressively improve management of asset maintenance, with control and historical data.
- Benchmark with other organisations using AUS-SPEC as work processes and outcome are essentially the same.
- Manage risk through a systematic approach to maintenance of Council assets.

Appropriate AUS-SPEC worksections can be selected using SPECbuilder, the online NATSPEC specification compilation software, and customised for specific projects. The full list can be found at www.natspec.com.au.



USING AUS-SPEC TO:

SPECIFY BUILDING AND FACILITY MAINTENANCE

Good maintenance, like good design, can be difficult to define. Part of the uncertainty is that maintenance may refer to the whole system, as well as its components. For example, maintaining an air conditioning system may involve inspections (e.g. to AS 1851 Routine service of fire protection systems and equipment) without having to change anything, whilst maintaining a building may involve replacing parts, such as defective windows, or repairing partitions. Building and facility maintenance using the AUS-SPEC system is defined as follows:

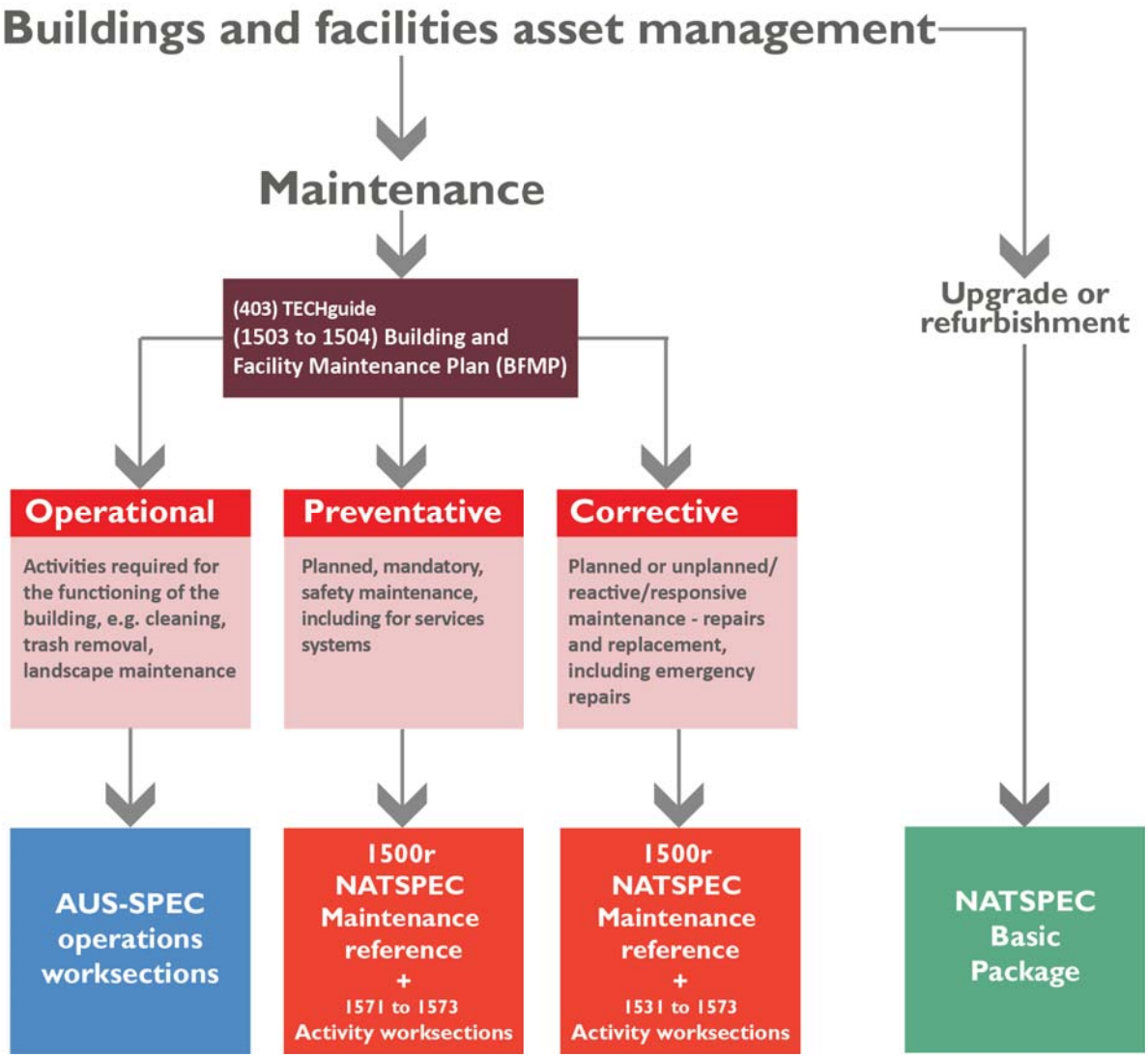
> *All actions necessary for retaining an asset as near as practicable to its original condition, but excluding rehabilitation or renewal.* (Source: International Infrastructure Management Manual)

This includes actions such as regular inspections, repairs, and minor replacement of components to eliminate the cause of defects and to avoid excessive repetition of maintenance effort, but does not include upgrading the asset.

AUS-SPEC MAINTENANCE SYSTEM

Effective maintenance of buildings and facilities involves maintenance strategies and maintenance management systems, captured in the maintenance plan. The AUS-SPEC Maintenance System can be used to compile documentation for a maintenance contract as shown in the figure below and includes the following:

- TECHguide TG403 *Guide to building and facility maintenance management system and documentation*.
- *NATSPEC Maintenance Reference* covers corrective maintenance works and preventive maintenance works for services systems.
- AUS-SPEC building and facilities maintenance includes *General requirements*, *Contract schedules*, and *Building and facility maintenance plan* templates which can be used to define the scope of work and project specific requirements.
- AUS-SPEC Activity specifications defining, performance criteria and repair and replacement criteria.



"IPWEA is renowned for its best practice – industry leading publications and training. It's our solutions management that is valued so highly by Councils, Government and the private sector.

AUS-SPEC provides a library of civil design, construction and maintenance templates, and allows the flexibility to edit and add Council specific and project specific information. It means that everyone involved in design, construction and maintenance of Council assets are using the same language."

Robert Fuller, CEO, IPWEA Australasia

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AUS-SPEC

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