



New South Wales Government Procurement System for Construction

Procurement Practice Guide

Building project elements

July 2008

Important notices

Current version

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Building project elements

Guidance notes

- This guide is provided to assist with the preparation of GC21 tender schedules titled 'schedule of information for "Schedule 3 – Progress Claims Worksheet"'
- This guide is based on the National Public Works Conference Cost Control Manual and the Australian Standard Method of Measurement of Building Works.(Fifth Edition) published by the Australian Institute of Quantity Surveyors and the Master Builders'-Construction and Housing Association Australia

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Building project elements

1 List of Elements

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2 List of Elements and Definitions

Preliminaries

See Item 3.1

Site Preparation

See Item 3.9

All basic work necessary prior to proceeding with buildings and external works.

Substructure

See Item 3.2

Structurally sound and watertight base upon which to build. Includes lower floor slab but does not include basement walls or plumbing beneath walls.

Superstructure

See Item 3.3

Columns, Upper Floors, Staircases, Roof. Includes portal frames, External Walls, Windows, External Doors, Internal Walls, Internal Screens and Borrowed Lights, Internal Doors.

Finishes

See Item 3.4

Wall Finishes, Floor Finishes, Ceiling Finishes

Fittings

See Item 3.5

Fitments. (benches, cupboards, counters, daises, stages), Special Equipment.

Services (inside external walls)

See Item 3.6

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See Item 3.7

Steam heating, hot water, Site generated electricity.

Alterations

See Item 3.8

Alterations and Renovations.

Site Works

See Item 3.9

Roads, Footpaths and Paved Areas, Boundary Walls, Fencing and Gates, Outbuildings and Covered Ways, Landscaping and Improvements.

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See Item 3.10

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Special Provisions

See Item 3.12

Items not included in the Net Project Cost but which may be included in the building contract

3 Definitions Of Elements

3.1 Preliminaries

00 PR Preliminaries

It **INCLUDES** preliminary items as defined in Section 2 of the Australian Standard Method of Measurement of Building Works, where ascertainable.

3.2 Substructure

01 SB Substructure

The structurally sound and watertight base upon which to build.

It **INCLUDES** basement and foundation excavations; piers, piles, pedestals, beams and strip footings; foundation walls; drop aprons; hardcore filling; work slabs and damp-proofing or other membranes; floor structures; subsoil drainage; ducts, pits, bases and service tunnels; entrance steps, ramps and their finishes; steps and ramps in the one floor level; structural screeds and toppings; covered swimming pools; all other work up to but excluding the lowest floor finish.

It **EXCLUDES** 'Site Preparation' (32 XP); basement walls (06 EW); columns above tops of bases (02 CL, 06 EW, 09 NW); 'Floor Finishes' (13 FF); all non-structural work associated with the internal services.

3.3 Superstructure

02 CL Columns (Framed Buildings)

The upright supports to upper floors and roof forming part of a framed structure.

It **INCLUDES** internal and external columns from tops of columns to bases; column casings; all protective non-decorative coatings.

It **EXCLUDES** portal frames (05 RF); columns to non-framed (load bearing) structures (06 EW, 09 NW); columns supporting awnings and attached covered ways (05 RF); columns supporting exposed attached external stairs (04 SC); all finishes (06 EW, 12 WF).

Note:

Columns below lowest floor finish (e.g. in filled areas) are included in this element because of the impracticability of splitting a column into two elements.

03 UF Upper Floors

Floor structures above that at the lowest level.

It **INCLUDES** all beams; concrete, precast and in-situ floors; waffle slab and filler block floors; metal floors; computer floors; timber framed floors; structural screeds and toppings; concealed insulation; balconies; overhangs and sunhoods integral with floors; steps and ramps in the one floor level; all protective non-decorative coatings.

It **EXCLUDES** landings and ramps between floor levels (04 SC); balcony balustrades (06 EW); internal and external finishes (04 SC, 06 EW, 13 FF, 14 CF).

04 SC Staircases

The structural connections between two or more nominal floor levels or to roof, plant rooms and motor rooms together with associated finishes.

It **INCLUDES** landings; ramps between floor levels; fire escapes; supporting framework; access ladders; spiral staircases; tread, riser, string and soffit finishes; balustrades and handrails.

It **EXCLUDES** steps and ramps at changes in the one floor level (01 SB, 03 UF); ground level entrance steps (01 SB); lifts and escalators (28 TS).

05 RF Roof

To provide a structurally sound and watertight covering over the building.

It **INCLUDES** portal frames; roof construction; gable and other walls in roof spaces; parapet walls and roof balustrades; thermal insulation; rooflights and dormers with their

sunscreens; eaves, verges and fascias; rainwater goods; internal stormwater drainage runs; awnings and open lean-to roofs; all protective non-decorative coatings.

It **EXCLUDES** rainwater goods to balconies and other unenclosed floor areas (03 UF); all non-structural work associated with the internal services; independent roofs to exposed attached external stairs (04 SC).

06 EW External Walls

The vertical enclosure around the building other than 'Windows' and 'External Doors' from 'Substructure' to 'Roof'.

It **INCLUDES** structural walls; basement walls and tanking above lowest floor finish; spandrel, curtain and window walls; external shop fronts; glazed screen walls; columns and isolated piers to non-framed (load bearing) structures; gallery and balcony walls and balustrades; solar screen walls; plant room air flow screens; all insulation to external walls; all external finishes to all columns, slab edges, beams, projecting overhangs and walls; lintels and flashings at openings; ring beams and stiffening beams not integral with floor, ceiling or floor slabs.

It **EXCLUDES** all internal finishes to external walls (except screens and the like) and columns (12 WF); sills, thresholds and linings (07 WW, 08 ED); walls in 'Roof' (05 RF) and 'Substructure' (01 SB) and all doors (08 ED); sun protection to windows (07 WW) and sunhoods integral with floors (03 UF); fire places, hearths, flues and stacks (21 SH, 29 SS); beams integral with slabs (03 UF, 05 RF).

07 WW Windows

Openings in 'External Walls' to provide light and ventilation.

It **INCLUDES** flyscreens; louvres; guard grilles; remote control gear; sun protection to windows; curtains, blinds, track and pelmets; window sills and linings; hardware; decoration.

It **EXCLUDES** lintels and flashings (06 EW); special blackout facilities (16 SE); rooflights and dormers (05 RF); window walls and glazed screens (06 EW); sunhoods integral with floors (03 UF); solar screen walls (06 EW); window cleaning equipment (16 SE).

Note:

Includes hardware and decorations, glazing and infill panels within window frames.

Clerestory windows occurring in external walls to clerestories are included in this element.

08 ED External Doors

The access ways into the building both for pedestrians and vehicles.

It **INCLUDES** frames; linings; glazing; architraves; hardware; panels and highlights over; flydoors; roller shutters; garage doors; fire doors; grille and chain wire doors; gates; service cupboard doors and thresholds; decoration.

It **EXCLUDES** frames forming an integral part of wire mesh or glazed screen walls (06 EW); lintels and flashings (06 EW); under floor access doors (01 SB); framing and glazing to sidelights to doors with or without highlights (06 EW).

09 NW Internal Walls

Permanent division of internal spaces into separate rooms or to enclose duct and other non-useable areas.

It **INCLUDES** walls; internal columns and isolated piers to non-framed (load bearing) structures; lintels, damp courses and bearing strips; stiffening beams not integral with floor, ceiling or roof slabs; part height solid walls glazed over to ceiling; unducted air flow grilles; fire walls and smoke screens.

It **EXCLUDES** 'Internal Screens and Borrowed Light' (10 NS); wall finishes (12 WF); works in 'Roof' (05 RF) and 'Substructure' (01 SB); part height solid walls (10 NS); fireplaces, hearths, flues and stacks (21 SH, 29 SS); beams integral with slabs (03 UF, 05 RF).

Note: Part height solid walls are screens (by definition) and included in element 10 NS.

10 NS Internal Screens and Borrowed Lights

To screen off or temporarily divide internal spaces into separate compartments and to allow the transfer of light through 'Internal Walls'.

It **INCLUDES** proprietary type office partitioning; glazed screens; internal shop fronts; fold away and operable walls; overhead frameworks and supporting beams; chain wire and grille screens; toilet partitions and screen walls; borrowed lights; balustrades and rails not associated with stair cases; all finishes and decorations.

It **EXCLUDES** all doors (11 ND); counters and wall hatches (15 FT).

11 ND Internal Doors

Passage ways through 'Internal Walls', internal screens and partitions and to provide access to service cupboards and ducts.

It **INCLUDES** frames; linings; glazing; architraves; pelmets; hardware and door grilles; chain wire and grille doors; toilet doors; cell and strong room doors; fire doors; roller shutters; service cupboard doors; duct access panels; fanlights and panels over and linings to blank openings; decoration.

It **EXCLUDES** frames forming integral parts of demountable, wire mesh or glazed screens, etc. (10 NS); lintels (09 NW); framing and glazing to sidelights to doors (10 NS).

3.4 Finishes

Note: Re - Finishes Generally:

Where a finish incorporates a special type of formwork, only that cost which is extra over the cost of rough formwork is to be included in the finish. The rough formwork cost is part of the structure.

12 WF Wall Finishes

To finish and decorate all interior faces of 'Columns', 'External Walls' and 'Internal Walls'.

It **INCLUDES** finishes to internal faces of external walls and columns; acoustic wall linings; extra costs involved for face bricks, face and coloured blocks and off form concrete; splashbacks, dados and regulation wall vents.

It **EXCLUDES** finishes to 'Internal Screens and Borrowed Lights' (10 NS); skirtings (13 FF) and cornices (14 CF); all external finishes to external walls and columns (06 EW); finishes to both sides of external screens (06 EW); all protective non-decorative coatings.

Note:

Finishes to 'Internal Screens and Borrowed Lights' (10.NS) are included in that element.

Finishes to internal faces of external screens, etc. are included with the relevant sub-elements in 'External Walls' (06 EW).

13 FF Floor Finishes

To provide a satisfactory finish to 'Upper Floors' and 'Substructure' for walking on.

It **INCLUDES** all preparatory work and finishing; balcony floor finishes; skirtings; screeds; timber floor finishes; dividing strips; mats and matwells; duct and pit covers; carpeting used as a permanent floor finish; timber and other finishes to concrete floors; finishes to steps in the one floor level.

It **EXCLUDES** structural screeds and toppings (01 SB, 03 UF); landing and stair finishes (04 SC); trafficable roof covering (05 RF); timber framed floors (03 UF, 01 SB); finishes to external thresholds (08 ED); door sills (08 ED, 11 ND).

Note:

Element includes all floor finishes to areas measures in the 'Building Area' (B.A.).

14 CF Ceiling Finishes

To finish and decorate all internal soffits of 'Upper Floors' and 'Roof' over rooms and external soffits over unenclosed covered areas.

It **INCLUDES** preparatory work; suspended false ceilings; proprietary suspended ceiling systems; acoustic ceiling linings; extra costs involved for off form concrete; linings to roof lights; ceiling manholes; framing to bulkheads and cornices.

It **EXCLUDES** eaves soffits (05 RF); stair and landing soffits (04 SC); ceiling joists where not suspended (03 UF, 05 RF); soffits of projecting overhangs (06 EW); all protective non-decorative coatings (03 UF, 04 SC, 05 RF); air conditioning grilles (24 AC).

3.5 Fittings

15 FT Fitments

To fit out the building with built-up fitments and fixed items included in the main contract.

It **INCLUDES** benches; cupboards; shelving; racks; seats; counters; chalkboards; notice boards, signs and name plates; coat rails and hooks; mirrors; wall hatches; daises and stages.

It **EXCLUDES** loose furniture and furnishings (46 YY); curtains and blinds (07 WW); 'Special Equipment' (16 SE) ; 'Internal Screens and 'Borrowed Lights' (10 NS).

16 SE Special Equipment

To provide items of equipment of unitary, commercially available type and/or of a type not covered by other elements.

It **INCLUDES** window cleaning, gymnasium, mortuary and photographic equipment; audio-visual aids; laboratory, laundry, kitchen and central sterile services department (C.S.S.D.) type equipment; dental and workshop equipment; boiling water units; sink heaters; laboratory stills; special blackout facilities; bed pan washers; linen and refuse disposal equipment; refrigerators and refrigerated drinking water coolers; incinerators; sanitary macerators; circulating fans; all cold, hot, gas and other valves and cocks, controls, electric wiring and piping integral with this equipment; specified Builders work in connection with this equipment.

It **EXCLUDES** cool rooms and process cooling, incineration plant of custom design of built-up type, and other 'Special Services' (29 SS) or 'External Special Services' (44 XS); loose equipment not covered in the main contract (46 YY); fire fighting equipment (25 FP); 'Sanitary Fixtures' (17 SF); refrigeration plant associated with air conditioning (24 AC).

3.6 Services

17 SF Sanitary Fixtures

To fit out the building with normal fixtures connected to the soil and waste plumbing systems and all associated ancillaries.

It **INCLUDES** W.C. suites; urinals; basins; sinks and tubs; troughs and runnels; drinking fountains; slop hoppers; showers; hobs; shower curtains and trays; terminal outlets integral with fixtures; flusherette valves; soap and toilet paper holders; towel rails and hand driers.

It **EXCLUDES** sanitary macerators, bed pan washers, kitchen, laundry and sterilising equipment and refrigerated drinking water coolers (16 SE); sanitary incinerators (29 SS); floor wastes and all loose traps (18 PD); terminal outlets not integral with fixtures (19 WS).

18 PD Sanitary Plumbing

The disposal of all waste and soiled water from fixtures and equipment out to the external face of external walls.

It **INCLUDES** stacks and vents; all loose traps; floor wastes; internal sewer drainage runs, pumps and ejectors; acid resisting pipes and drains; box ducting and paintwork.

It **EXCLUDES** rainwater disposal systems (05 RF); incinerator flues (16 SE, 29 SS, 44 XS); duct access panels (11 ND).

19 WS Water Supply

Systems to supply water from point of building entry to the points of consumption. The water may be at ambient temperature, heated or cooled and may be treated by clarification, filtration, softening, de-mineralisation, distillation, desalination or other means. The water may be supplied from town mains, bores, rivers, lakes, rainwater tanks, centralised energy systems or other sources.

It **INCLUDES** storage tanks; pumps; water treatment plants; water heaters and coolers; reticulation pipework including pipeline components; terminal outlets not integral with fixtures and/or equipment; controls other than those associated with water consuming items of equipment; box ducting; insulation; sheathing; painting and identification; building and electrical work forming part of the Contract for water supply.

It **EXCLUDES** meters, extensions and connections to town mains or other sources (39 XW); self-contained unitary equipment such as boiling water units, sink heaters and laboratory stills (16 SE).

20 GS Gas Services

To supply town, natural, simulated natural and liquefied petroleum gas from point of building entry to points of consumption. The gas may be supplied from town mains, storage cylinders, bulk storage tanks or other sources.

It **INCLUDES** portable gas cylinders; booster compressors; manifolds and regulators; box ducting, painting and identification; building and electrical work forming part of the gas services element; reticulation pipework and pipeline components; terminal outlets not integral with fixtures and/or equipment; gas detection systems.

It **EXCLUDES** outlet cocks integral with appliances (16 SE); hot water heaters (16 SE, 19 WS); space heaters (21 SH) and other like equipment; meters and extensions and connections to town mains or other sources (40 XG).

Note:

Gas appliances forming part of an air conditioning, space heating water supply system or other system should be included under the appropriate element.

Gas controls, valves regulators and other pipeline components directly associated with gas fired equipment should be included under the element appropriate to the gas fired equipment.

21 SH Space Heating

To heat the interior of buildings by means of convection, radiation or any other form of heating.

It **INCLUDES** unitary heaters; reticulated steam, hot water or hot oil systems; warm air systems; electric floor or ceiling heating systems; fireplaces, hearths and associated work in chimney stacks; boiler plant installed within the heated building and servicing only element (21 SH) in that building; insulation and painting; controls and associated electrical work.

It **EXCLUDES** any system which also provides air cooling ['Air Conditioning' (24 AC) or 'Evaporative Cooling' (23 EC)].

Note:

Boiler plant and pipe reticulation located outside the building served and serving multiple buildings, or serving other elements such as AC or WS to be included under 'Centralised Energy Systems' (30 CE).

Gas storage and reticulation systems to be included under 'External Gas' (40 XG) if located outside the building served or if serving other elements, or 'Gas Service' (20 GS) if located within the building served, otherwise to be included in 21 SH.

Electric cabling terminates at junction with 'Electric Light and Power' (26 LP).

Controls and electric wiring integral with equipment items to be included with those items.

22 VE Ventilation

To ventilate buildings by means of supply and/or exhaust systems.

It **INCLUDES** mechanical ventilators; non-mechanical roof ventilators; supply and/or exhaust fans; ducted systems; exhaust hoods; ducting, plant, controls and associated electrical work.

It **EXCLUDES** any system which also involves heating (21 SH) ; 'Air Conditioning' (24 AC); 'Evaporative Cooling' (23 EC); circulating fans (16 SE); regulation wall vents (12 WF); door grilles (11 ND); plant room air flow screens (06 EW); louvred windows (07 WW).

Note:

Dust extraction to be included under 'Special Services' (29 SS).

Electric cabling terminates at junction with 'Electric Light and Power' (26 LP).

23 EC Evaporative Cooling

To cool air within a building by evaporative processes; the system can include ancillary heating.

It **INCLUDES** evaporative coolers, rock bed regenerative systems and ancillary heating devices; ducting, insulation, painting and associated electrical work.

It **EXCLUDES** door grilles (11 ND); 'Air Conditioning' (24 AC) ; systems which heat (21 SH) and/or ventilate (22 VE) only.

Note:

Air relief grilles in doors and walls to be included under respective building element

Electric cabling terminates at junction with 'Electric Light and Power' (26 LP).

24 AC Air Conditioning

To maintain and control temperature, humidity and quality of air within predetermined limits within buildings.

It **INCLUDES** package air conditioners; systems for cooling only; ductwork, plant, controls and associated electrical work; air conditioning grilles.

It **EXCLUDES** door grilles (11 ND) and systems which heat (21 SH) and/or ventilate (22 VE) only; special cool rooms (29 SS); special hot rooms (29 SS); 'Evaporative Cooling' (23 EC).

25 FP Fire Protection

To detect and/or extinguish fires.

It **INCLUDES** sprinklers and other automatic extinguishing systems; fire indicator board; manual and automatic fire alarm installations; fire fighting equipment; hydrant installations and hose reels and cupboards; hand appliances.

It **EXCLUDES** fire doors (08 ED, 11 ND); fire proofing (02 CL, 03 UF, 05 RF, 12 WF, 14 CF, etc.)

26 LP Electric Light and Power

To provide all light and power and emergency light and power from and including main distribution board to and including power outlets and light fittings.

It **INCLUDES** main distribution board*; sub-mains and distribution boards; emergency lighting systems; power sub-mains to mechanical equipment and sub-mains and/or sub-circuits to other equipment and/or final sub-circuits.

It **EXCLUDES** other electrical installations listed under other elements such as 'Special Services' (29 SS); 'Communications' (27 CM) and 'Centralised Energy Systems' (30 CE).

** Where the main switchboard supplies only one building, it shall be considered as a main distribution board.*

27 CM Communications

To provide audio and video communication within a building.

It **INCLUDES** the following systems - Telstra telephone, internal telephone, public address, call, emergency warning and intercommunication, personal paging, clock and/or bell, TV antenna and closed circuit TV.

It **EXCLUDES** document hoists and conveyer systems (28 TS); cables between buildings (43 XC).

Note:

Document hoists and conveyer system to be included in 28 TS. Cables between buildings to be included in 43 XC.

28 TS Transportation Systems

To transport personnel and/or goods from floor to floor or area to area.

It **INCLUDES** all lifts, hoists and conveyer systems; escalators; all associated equipment and work other than structural building work.

It **EXCLUDES** such items as walls to shafts and lift wells and machine rooms (06 EW , 09 WW).

29 SS Special Services

To provide services or installations not covered by other elements.

It **INCLUDES** monitoring systems; cool rooms and process cooling; special conditioned rooms; staircase pressurisation systems; compressed air; medical and industrial gas systems; dust extraction systems; security systems; lightning protection; stage lighting and theatre equipment; reticulated soap dispenser systems; laundry, heat and water reclaim systems and the like.

It **EXCLUDES** equipment items (16 SE); communication services (27 CM).

3.7 Centralised Energy Systems

30 CE Centralised Energy Systems

To produce and supply steam, heating, hot water, chilled water and/or other cooling or heating media and/or site generated electrical energy to a number of buildings and/or to multiple energy consuming elements.

It **INCLUDES** the piping reticulation within central plant room or plant house and up to branch off-takes to energy consuming functional elements; sections of the main piping reticulation running to, within or through buildings served; cabling within the central plant room or house and all work which forms part of the energy system element; buildings to house such plant, service tunnels, ducts and/or conduits.

It **EXCLUDES** emergency generating plant and cabling from central switchboard to other buildings (42 XE).

Note:

Interfaces between element 30 CE and other elements are those points where branches serve single elemental systems or where branches leave common mains within buildings to serve single elemental systems.

Centralised Energy Systems may range from very large boiler and/or chiller and/or electrical generating plants serving large and complex sites such as airports, major hospitals, universities or colleges to small boiler installations supplying energy to say space heating and domestic hot water systems in relatively small single buildings such as school classroom blocks, pavilion type hospital wards and so on.

Where energy generators supply the whole of their production to one functional system only and are contained within the alignment of the building served they are to be considered as part of that functional system.

Engineering systems serving the central plant room or plant house are to be included under appropriate elements for the building housing the centralised energy plant.

3.8 Alterations

31 AR Alterations and Renovations

To alter or renovate any existing building including works to the substructure, finishes, fittings and internal services.

It **INCLUDES** work in connecting a new building to an existing; redecorations; refitting out and all mechanical and electrical services in connection therewith; underpinning to existing buildings for alteration works.

It **EXCLUDES** complete demolitions of existing buildings, site clearance and removal of any paving, fences and outbuildings (32 XP); alterations and renovations to external services and site works (45 XX); any work involved in connecting new services to old in existing buildings (39 XW 40 XG, 42 XE, etc.)

3.9 Site Works

32 XP Site Preparation

All basic work necessary prior to proceeding with buildings and external works.

It **INCLUDES** demolitions; site clearance; general levelling and filling; hoardings; retaining walls; removal of any paving, fences, trees and services; temporary diversions of services; underpinning to adjacent buildings.

It **EXCLUDES** alterations and permanent diversion of services (45 XX); alterations to buildings (31 AR) and existing site works (45 XX); any work involved in permanent connections of new services to existing (39 XW, 40 XG, 42 XE, etc.)

33 XR Roads Footpaths and Paved Areas

Trafficable areas between and around buildings (outside 'Fully Enclosed Covered Areas' and 'Unenclosed Covered Areas' as defined, outbuildings, etc.) for vehicles and pedestrians.

It **INCLUDES** car parks; playgrounds; kerbs; crossovers; bollards; steps and associated balustrades; weed poisoning.

It **EXCLUDES** uncovered bridge links (35 XB); sports pitches, lawns, site landscaping and improvements (36 XL); cut and fill (32 XP).

34 XN Boundary Walls, Fencing and Gates

To enclose or define the extent of the site.

It **INCLUDES** all walls, fences and gates at the site boundary.

It **EXCLUDES** all walls, fences and gates that subdivide the site (36 XL); all retaining walls (32 XP).

35 XB Outbuildings and Covered Ways

To provide small buildings supplementary to the main building(s) and covered areas or bridge links for pedestrian or vehicular site circulation.

It **INCLUDES** detached covered ways not alongside buildings; garages; bicycle sheds; incinerator buildings; residential and gatekeepers cottages; garbage shelters; workshops; chapels; stores; sheds; stair blocks; all electrical, mechanical and other services in connection therewith.

It **EXCLUDES** attached covered ways alongside buildings; boiler and plant houses (30 CE); water towers (39 XW); gas meter (40 XG) and water meter (39 XW) shelters; pump houses (39 XW), substations (42 XE) and similar engineering services buildings.

36 XL Landscaping and Improvements

To improve the appearance of the site and provide incidental site facilities for the use of the occupants.

It **INCLUDES** grassing and turfing; garden plots and planting; trees, screen, dwarf, play and entrance walls; seats; fountains; petrol bowsers (pumps) and tanks; sculptures;

flagpoles; signs and notices; cricket nets and basketball posts; sports pitches and goal posts; open air swimming pools.

It **EXCLUDES** paving (33 XR); site clearance (32 XP); 'Boundary Walls, Fencing and Gates' (34 XN); walls required to retain the site (32 XP).

3.10 External Services

37 XK External Stormwater Drainage

To dispose of rain and surface water from the site.

It **INCLUDES** pipe runs from the external face of buildings; inspection pits; sumps; road gullies; culverts; box drains; grated trenches; runs from pools and fountains; outfalls and head walls; agricultural and sub-soil drains; connections to existing runs and pits.

It **EXCLUDES** pipe runs, pits, etc. under buildings from internal downpipes (O5 RF); road gutters (33 XR); temporary drainage as site preparation (32 XP) : diversions to existing runs (45 XX).

38 XD External Sewer Drainage

To dispose of soil and waste water from the site.

It **INCLUDES** pipe runs from the external face of buildings; grease gullies; inspection pits and manholes; acid resisting and special drains; dilution pits; petrol and plaster arrestors; septic tanks; collection and holding wells; absorption trenches; transpiration areas; pumps and ejectors; connections to existing runs, pits and mains.

It **EXCLUDES** pipe runs, pits, etc. beneath buildings (18 PD); diversions to existing runs (45 XX).

39 XW External Water Supply

Systems to supply water up to the external faces of new buildings and up to other major consuming points such as swimming pools, fountains, artificial ponds, irrigation and ground watering outlets. The water may be at ambient temperature, heated or cooled and may be treated by clarification, filtration, softening, demineralisation, distillation, desalination or other means. The water may be supplied from town mains, bores, rivers, lakes, rainwater tanks, centralised energy systems or other sources.

It **INCLUDES** storage tanks; water towers; pumps; water treatment plants; water heaters and coolers; reticulation pipework including pipeline components; terminal outlets not integral with fixtures and/or equipment; insulation; sheathing; painting and identification; meters and meter enclosures included under the Contract; water bores; irrigation and ground watering systems; building and electrical work forming part of this element.

It **EXCLUDES** diversion to existing runs (45 XX).

40 XG External Gas

To supply town, natural, simulated natural and liquefied petroleum gas up the external faces of new buildings and other consuming points. The gas may be supplied from town mains, storage cylinders, bulk storage tanks or other sources.

It **INCLUDES** storage cylinders and tanks, meters and regulators forming part of the Contract; meter enclosures; reticulation pipework and pipe-line components; building and electrical work forming part of the external gas supply Contract.

It **EXCLUDES** diversions to existing runs (45 XX).

41 XF External Fire Protection

To supply fire hydrant and gas or vaporising agent runs up to external faces of new buildings, external sprinkler systems, and for site connections and connection of fire detection systems between buildings. Also to detect and/or extinguish fires in fixed plant or equipment located in the open air.

It **INCLUDES** standby and booster pumps; pipe runs; storage and reticulation of gas and vaporising agents; hydrant points; overhead and underground cables for fire detection systems.

It **EXCLUDES** trenches for cabling (42 XE).

42 XE External Electric Light and Power

To supply electric power to main distribution boards of buildings and to provide lighting and power to external site areas.

It **INCLUDES** connections to source of power supply; consumers mains; sub-station equipment; emergency generating plant; main switchboard*, underground and overhead cables; pylons and all trenches for cabling; street and area lighting; illuminated signs and building flood lighting.

It **EXCLUDES** communications cables (43 XC); work to existing electrical work (45 XX).

** Where the main switchboard supplies only one building, it shall be considered as a main distribution board and included in 26 LP.*

Note:

Communications cables to be included in 43 XC.

Fire Alarm cables to be included in 41 XF.

43 XC External Communications

To provide external communication cables to terminating frames of buildings and to provide communication systems between buildings and to external site areas.

It **INCLUDES** Telstra work; underground and overhead cables; pylons; connections to existing cables; external speakers; hooters; clocks; bells; closed circuit TV; community antenna systems.

It **EXCLUDES** trenches for cabling (42 XE).

44 XS External Special Services

To provide external service or installations not included in other elements.

It **INCLUDES** external connections to items included in 'Special Services' (29 SS); service tunnels, ducts and conduits in connection with external reticulation of Services elements; dust extraction plant; incineration plant; bulk storage for medical and industrial gases.

3.11 External Alterations

45 XX External Alterations and Renovations

To alter or renovate any existing site works and external services.

It **INCLUDES** resurfacing paved and grassed areas; renovating outbuildings; renewing fencing and gates; permanent diversion of drainage, cold water and other external service runs.

It **EXCLUDES** renovating existing buildings (31 AR).

3.12 Special Provisions

46 YY Special Provisions

Items not included in the Net Project Cost but which may be included in the building contract or to make up the Gross Project Cost.

Such items may include:

- Loose Furniture and Loose Equipment