

STANDARD COST ELEMENTS

Ref.B/3

Unless otherwise agreed with a Director or Deputy/Assistant Director all cost appraisals, cost plans and cost analyses should be based on the standard list of cost elements contained in this guideline.

Modifications to elements will only be permitted where the modification gives a more precise meaning to the specific element in relation to the project, e.g. "Lifts and escalators" in lieu of "Transport".

List of Standard Cost Elements

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| 1.6 | Topographical survey | 6.6 | MVAC/HVAC |
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Davis Langdon & Seah

Definitions of Standard Cost Elements**1. Site Preparation****1.1 Demolition**

This includes demolition of existing buildings or structures on site.

For renovation or refurbishment works, this includes cutting down a portion of the building structure, breaking down of partitions, stripping off of finishings and taking down all works not suitable for the new design.

It includes all temporary protection works such as hoarding, covered walkway, catch fans, scaffolding, propping and shoring.

Element quantity : None

1.2 Site formation

This includes general site clearance, cutting and filling site to required levels, retaining walls, slope protection works, site drainage, formation of roads and pavements and road decks.

When the above works are of very minor nature and are included in the main building contract, such general site clearance and levelling of site shall be included in the "Substructure" element.

Element quantity : Total volume of excavation and imported filling

1.3 Service diversion

This includes all works necessary for the diversion of existing services.

Diversion of nullahs and stream courses shall be included in the "Site Formation" element.

Element quantity : None

1.4 Site investigation

This includes all site investigation works.

Element quantity : Total number of bored holes

1.5 Tree felling and transplanting

This includes cutting down, treatment, protection and transportation of the existing trees and subsequent establishment works.

Element quantity : No. of trees

1.6 Topographical survey

This includes the survey and production of topographical information.

Element quantity : None

1.7 Asbestos survey and removal

This includes the fee for asbestos survey and the removal of asbestos.

Element quantity : None

2. Foundation and Substructure

2.1 Foundation

This includes all pilings, raft foundation and footings which forms the foundation system for the proposed building.

This excludes all piling works for retaining wall construction and for upholding of excavations. These should be included under "Site formation" or "Basement enclosure", as appropriate.

Element quantity : Total volume of bore, tonnage or shaft length of piles as appropriate

2.2 Substructure

This includes pile caps, columns and structural walls below the lowest floor level, the lowest floor slabs and beams, lift pits and underground water tanks, including all requisite earthworks.

Lowest floor slabs and beams integral to raft foundation, like base slab of basement, shall be included in the "Foundation" element.

Basement construction shall be included in the "Basement enclosure" element.

Element quantity : Total volume of concrete

2.3 Basement enclosure

This includes all works required for the construction of the "shell" structure of a basement, comprising of the basement earthworks, temporary works for upholding of excavations, dewatering, tanking and basement walls.

All works below the basement slab shall be included in the "Foundation" element or the "Substructure" element as appropriate.

All structural members within the basement shell shall be included in the "Frame and slabs" element.

Element quantity : Basement perimeter wall area above lowest slab

3. Carcase**3.1 Frame and slabs**

This includes all columns, walls, beams, slabs, trusses, girders, space frames, deckings, staircase structures and transfer structures, which are integral parts of the loadbearing structure of a building and above the top of its lowest slabs. Materials for the works can be timber, brick, stone, reinforced concrete or steel.

This also includes fire protection works to steel structures, expansion joints, curbs and cills.

This element would also include the water-tanks.

Non-structural walls shall be included in the "External walls" or the "Internal walls" elements as appropriate.

Space frames and fabricated structures for skylights shall be included in the "Skylights" element.

Element quantity : Total Construction Floor Areas

3.2 External walls

This includes all non-structural walls, parapets, pre-cast wall panels, bay window surrounds, planter boxes, architectural features and projections to the external facade of a building. Materials for the works can be timber, brick, stone, reinforced concrete, metal or glass.

This should include glass railing and balustrade to balconies and staircases.

Curtain walls shall be included in the "Curtain walls and glazed screens" element.

Metal railings shall be included in the "Metal works and sundries" element.

Element quantity : Total area of external walls (after deducting window areas) measured on the outside face

3.3 Internal walls

This includes all non-structural internal partitions, screens and parapets whether constructed in timber, brick, stone, reinforced concrete, metal, glass, dry wall construction or proprietary supplied systems.

This should include glass railing and balustrade to atriums and staircases.

For proprietary systems, this also includes all finishings and attached doors.

Metal railings shall be included in the "Metal works and sundries" element.

Element quantity : Total area of internal walls and partitions

3.4 Doors and shutters

This includes all sliding or folding timber, metal or glass doors, collapsible gates, security roller shutters, roller grilles and fire-rated shutters. The works shall include the doors and the shutters, frames, linings, trimmings, glazing, hardware, ironmongery, gears, motor sets, finishings and painting.

Doors forming part of proprietary supplied internal wall system shall be included in the "Internal walls" element.

Doors forming part of curtain wall system shall be included in the "Curtain walls and glazed screens" element.

Element quantity : Total number of door leaves irrespective of size (double doors are therefore counted as two leaves)

3.5 Windows

This includes all louvres and windows to the external facade of a building. The works shall include the louvres and the windows, frames, linings, trimmings, glazing, hardware, ironmongery, gears, waterproof grouting and painting.

Windows forming part of internal partitions shall be included in the "Internal walls" element.

Windows forming part of curtain walls shall be included in the "Curtain walls and glazed screens" element.

Element quantity : Total area of windows

3.6 Curtain walls and glazed screens

This includes the whole of the curtain wall system or glazed screens to the external face of a building. The works shall include the framing, glazing, cladding, hardware, fire stop packings between floors, waterproof grouting and painting. This shall also include all doors and windows forming part of the curtain walls.

Glazed partition inside a building shall be included in the "Internal walls" element.

Element quantity : Total area of curtain walls and glazed screens

3.7 Shop fronts

This includes the whole of the framings and glazing for shop fronts. This shall also include all doors forming part of the shop fronts.

Element quantity : Total area of shop fronts inclusive of door openings

3.8 Skylights

This includes roof lights, north lights and skylights. The works shall include all fabricated supporting structure, (except concrete structure composed of isolated beams only), space frames, glazing, glazing domes, framing, hardware, waterproof grouting and painting.

Element quantity : Total plan area of skylights

3.9 Canopies

This includes the whole of the framing, glazing and cladding for canopies.

Element quantity : Total area of canopies

3.10 Roof features

This includes the whole of the structure and cladding for roof features.

Element quantity : None

4. Finishings**4.1 Roof finishes**

This includes all insulation, backing screeds, light weight concrete backings, waterproofing, flashings, and rendering or tile finishings to roofs, podiums and terraces. This shall also include all work to curbs and skirtings.

Fair facing of concrete surfaces shall be included in this element.

Final finishings other than the waterproofing and the related backings to roofs, podiums and terraces which have extensive landscaping works shall be included in the "External works and landscaping" element.

Element quantity : Total area of roof

4.2 Floor finishes

This includes all backing screeds, in-situ finishings, tiling, timber parquet, carpet and sheet finishings, and proprietary floor systems to floors, stairs, open strings, curbs and skirtings. This shall also include all necessary dividing strips, non-slip strips, waxing, painting, applying floor sealer, hardening and waterproofing additives, and labour smoothing, roughing, forming dishes and channels, etc.

Fair facing of concrete surfaces shall be included in this element.

Floor finishes to external pavings shall be included in the "External works and landscaping" element.

Element quantity : Total area of internal floor finishes

4.3 Internal wall finishes

This includes all spatterdash, backing screeds, in-situ finishings, tiling, coverings and linings, natural and artificial slabs, waxing, painting and sprayed coating to internal wall surfaces.

Fair facing of concrete surfaces shall be included in this element.

Finishings to proprietary wall systems which form part of the products shall be included in the "Internal walls" element.

Element quantity : Total area of internal walls finishes

4.4 Ceiling finishes

This includes all spatterdash, backing screeds, in-situ finishings, tiling, coverings and linings, suspended ceiling systems, cornices, coves, waxing, painting and sprayed coatings to soffits of slabs and sides and soffits of beams.

Fair facing or off-form finish of concrete surfaces and exterior ceiling finishes shall be included in this element.

Element quantity : Total area of finished ceilings

4.5 External wall finishes

This includes all spatterdash, backing screeds, in-situ finishings, tiling, natural or artificial slabs, painting and sprayed coatings to the external faces of a building.

Fair facing or off-form finish of concrete surfaces and cladding systems shall be included in this element.

Element quantity : Total area of external wall finishes

4.6 Graphics and signage

This include logos, signage, directories, name tags and numbering to rooms, road signs, carpark markings, exit signs and other indicative and warning signs.

Element quantity : None

5. Furniture, Fittings and Equipment5.1 Metal works and sundries

This includes all miscellaneous and sundry metal works not belonging to any other elements. Examples are metal railing and balustrade, cat ladders, water tank covers, hose reel cabinets, etc.

Element quantity : None

5.2 Built-in furniture

This includes all furniture which form an integral part of a building, such as, caretakers' counters, reception counters, wardrobes, kitchen cabinets, mirror boxes, letter boxes, clothes drying racks, storage racks and cabinets, laboratory benches and worktops, bookshelves, blackboards and pin boards, desks and chairs, hall seating, etc.

Element quantity : None

5.3 Equipment

This includes kitchen appliances (fridges, washing machines, microwaves, exhaust hoods and stove, etc.), indoor playground equipment, stage equipment, audio and video equipment (televisions, display systems, video walls, etc.), teaching equipment, laboratory equipment, gymnasium equipment, bar equipment, health club equipment (sauna, steam bath, Jacuzzi, SPA, etc.), office equipment, medical equipment, etc.

Kitchen equipment for non-domestic use shall be included in the "Kitchen Equipment" element.

Element quantity : None

5.4 Loose furniture and fittings

This includes loose furniture and fittings, such as chairs, tables, system furniture and other movable items.

Element quantity : Total fitting out area

5.5 Special light fittings

This includes all architectural and decorative light fittings, such as downlights, tubular lighting, wall lamps, pendant lights and loose light fittings (table lamps, reading lights, bed side lights, etc.).

Element quantity : No. of light fittings

5.6 Curtain and draperies

This includes curtain, blackouts, sheer draperies, blinds, tracks and accessories.

Element quantity : Total areas of curtain and blinds

5.7 Fitting out works to particular areas

This includes the fitting out works to particular areas, such as a clubhouse in an office building, staff club in a university, estate management office, show flats and sales offices. Club facilities in residential developments can be separately identified as a stand alone building types if they are extensive or included in this element if they are small.

Works include partitions, doors, interior finishes, furniture, fittings, equipment and E/M works.

Element quantity : Total fitting out area

6. Services6.1 Sanitary fittings

This includes bidets, water closets, slop sinks, urinals, flushing cisterns, basins, bath tubs, shower trays, shower fittings, hand dryers, soap dispensers, soap holders, toilet roll holders, paper trays, curtain rails, towel bars, grab bars, etc., including all necessary hardware and accessories.

Element quantity : Total number of sanitary appliances with a plumbing point

6.2 Plumbing and disposal

This includes the whole of the installations for fresh water supply, hot water supply, flush water supply, aboveground rainwater disposal, soil and waste disposal for a building. The works shall include all necessary pumps, valves, pipe work and accessories and painting.

Water heaters for domestic use shall be included in "Electrical" or "Gas" element as appropriate.

For non-domestic use, water heaters, or boilers, for space heating purpose only shall be included in "MVAC/HVAC" element, whilst those serve both for space heating and hot water supply shall be grouped under this element.

Supply mains from the city network to the boundary of the building footprint shall be included in the "Utilities connections" element.

All disposal systems normally below lowest floor level of the building shall be included in the "Drainage" element.

Element quantity : None

6.3 Electrical

This includes the whole of the electrical installations comprising all necessary conduit, trunking, fuse boards, switchgear, supply mains, sub-circuits, fittings, etc., for power supply and lighting installations.

This also includes all fixed light fittings to statutory requirements, electrical water heaters, control console in hotel guest rooms, lightning protection system and conduits for telephone installation.

Element quantity : None

6.4 Fire services

This includes the whole of the installations for smoke and heat detection systems, hose reels and risers, sprinklers, drenchers, gas and fume flooding fire fighting systems. The works shall include all necessary conduit, trunking, pumps, valves, pipework, accessories, special equipment and fittings, and painting.

This also includes all portable equipment.

Fire shutters shall be included in the "Doors and shutters" element.

Element quantity : None

6.5 Transport

This includes the installation of aerial platforms, wheel chair platforms, dumbwaiters, lifts, escalators, vehicles turn tables, dock levellers, etc.

The cladding and balustrades to escalators and interior finishes to lifts shall be included in this element.

Element quantity : No. of lifts and escalators

6.6 MVAC/HVAC

This includes the whole of the installations for heating, ventilation and air conditioning systems. This shall include electric heaters, centralized heating systems, exhaust fans and duct work if required, electric fans, window type air conditioning, air conditioning package units, centralized air conditioning systems, etc.

Element quantity : None

6.7 Security

This includes door lock systems, pedestrian entrance and exit control systems, burglar alarm systems, closed circuit TV systems, etc.

This also includes simple door phone systems which are normally an integral part of the door lock systems.

Element quantity : None

6.8 Gas

This includes the whole of the installations for town gas and LP gas supply systems, as well as gas water heaters.

Gas cooking ranges and stoves shall be included in the "Kitchen equipment" for non-domestic use or in "Equipment" for domestic use.

Element quantity : None

6.9 Communication

This includes telephone and PABX systems, public address systems, door phone systems, paging systems, structural cabling, CABD systems, dish antenna, etc.

Simple door phone systems which are an integral part of door lock systems shall be included in the "Security" element.

Element quantity : None

6.10 Gondola

This includes all devices for cleaning and maintaining external wall faces or curtain walls.

Element quantity : No. of gondolas

6.11 Building management system

This includes major building management installations for centralized control of other electrical and mechanical installations. Normally, smaller scale controlling devices would have been included in sub-contracts for electrical installation, fire services installation, heating, ventilation and air conditioning installations, etc. In such circumstances, it is not necessary to separate the costs of such installations from the respective sub-contracts. It is only when separate contracts or sub-contracts are prepared for the building management system installation that such sums shall be kept under this item.

Element quantity : None

6.12 Kitchen equipment

This includes the whole of the kitchen equipment installation for non-domestic use.

Kitchen equipment for domestic use shall be included in the "Equipment" element.

Element quantity : Total kitchen area

6.13 Swimming pool filtration plant

This includes the whole of the swimming pool filtration plant installation for indoor pools.

Those for outdoor pools shall be included in the "External Works" element.

Element quantity : None

6.14 Sewage treatment

This includes all mechanical, chemical or biological sewage treatment installations inside a building; including all associated sump tanks and pools, controlling devices, accessories, etc.

This also includes septic tanks and cesspools if applicable.

Those installed outside buildings shall be included in the "External Works" element.

Element quantity : None

6.15 Refuse and linen disposal equipment

This includes refuse chutes, linen chutes, refuse compactors, refuse trolleys, incinerators, etc.

Element quantity : None

6.16 Carpark control equipment

This includes the cashier computer, ticket readers, automatic barrier and tickets for carpark control system.

Element quantity : None

6.17 Laundry equipment

This includes the whole system of laundry equipment.

Element quantity : None

6.18 Solar (photovoltaic) panel

This includes the whole of the installation for solar (photovoltaic) panels of all types and the associated equipment, control and operation gear, wiring, conduits, water tank, pipe work, valves and etc.

Element quantity : None

6.19 Facade lighting

This includes the whole of the installation for façade lighting and the associated equipment, control and operation gear, wiring and conduits.

Video wall and similar display equipment shall be included in the "Equipment" element.

Element quantity : None

6.20 Other E/M specialist works

This includes the services works done by specialist contractors such as clean rooms, cold rooms, data centres and floodlighting.

6.21 Builder's works, profit & attendance

This includes all amounts for the profit and attendance for sub-contractors, specialist contracts, etc., and all builder's works in relation to services installations, or specialist works including cable trenches, cable ducts, cable pits, steel hanger joists for lift installations, steel joist supports for air conditioning equipment, concrete plinths and pedestals for supporting equipment, etc.

Element quantity : None : For the purpose of cost calculation and cost analysis, it's value is expressed as a percentage of the service installation

7. Miscellaneous Works**7.1 External works and landscaping**

This includes all surfacing work to roads and pavements outside the building, fencing, railings, planters, hard and soft landscaping works, outdoor playground equipment, sports grounds, outdoor pools and water features, covered walkways, trellises and pergolas, street furniture, external signage, external lighting, road drainage and minor buildings, etc.

This also includes final finishings to landscaped roofs, podiums and terraces; water filtration systems to outdoor pools and water features.

Element quantity : None

7.2 Drainage

This includes all underground drainage works.

Temporary or permanent drainage works to site formation works shall be included in the "site formation" element.

Septic tanks and cesspools, if applicable, and all mechanical, chemical and biological sewage treatment installations shall be included in the "Sewage treatment" element.

Element quantity : None

7.3 Utilities connections

This includes the provisional sum for utilities connections which shall be carried out by government and utility companies, and all service supply mains leading from the street connection to the boundary of the building footprint.

Element quantity : None

7.4 Others

This includes all other items which are of significant financial effect but do not fall into any of the aforementioned elements.

Element quantity : None

8. Preliminaries

This includes all site overheads, Contractor's management, insurances, plant, equipment, etc. In some cases, some of these preliminary items may appear in the Prime Cost and Provisional Sums Bill.

For cost analysis, the costs for preliminaries items from all separate contracts shall be grouped under this element. Costs for preliminaries items in nominated sub-contracts shall be spread into the costs for the respective sub-contract works.

Element quantity : None : For cost analysis, its value is expressed as a percentage of the total cost excluding preliminaries and contingencies

9. Contingencies

This includes the provisional sums specified for the purpose included in all separate contracts and nominated sub-contracts.

This also includes the provisional sums for the dayworks.

Element quantity : None : For cost analysis, its value is expressed as a percentage of the total cost excluding contingencies

10. Fluctuations

This includes the provisional sums specified for the purpose included in all separate contracts and nominated sub-contracts.

Element quantity : None