FAD SYSTEM DEFINITIONS

NMPSFA

Contents

Intro	4
Determination of FAD Systems	4
System Costs & Lifecycles	4
Property Type Determines Systems	4
System Listings	5
Permanent Systems	6
A – Foundation / Slab	6
B2010 – Exterior Walls	6
B2020 – Exterior Windows	7
B2030 – Exterior Doors	7
B30 – Roof	7
C10 – Interior Doors, Partitions, Stairs, Elevator	8
C1010 – Interior Walls	8
C3010 – Wall Finishes	9
C3020 – Floor Finishes	9
C3030 – Ceiling Finishes	10
D2010 – Plumbing Fixtures	10
D2020 – Water Distribution	10
D2030 – Drain, Waste, Ventilation	11
D3020 – Heat Generating Systems	11
D3030 – Cool Generating Systems	12
D3041 – Air Distribution	12
D3042 – Exhaust Ventilation Equipment	13
D3050 - Terminal and Package Units	13
D3060 – HVAC Controls	13
D4010 – Sprinklers	14

D5010 – Main Power / Emergency	14
D5020 – Lighting / Branch Circuits	15
D5037 – Fire Detection / Alarm	15
D5038 – Communication / Security	15
D5039 – Technology	16
D5090 – Other Electrical Systems	16
D5092 – Emergency Lightning	16
E1020 – Institutional Equipment	17
E1090 – Other Equipment	17
Portable Systems	17
F1012 – Pre Engineered Structure	17
Site Systems	18
G2020 – Parking Lots	18
G2030 – Pedestrian Paving	18
G2041 – Fencing / Gates	18
G2047 – Play Fields	19
G2050 – Landscaping	19
G2052 – Basketball Courts	19
G2053 – Running Track	20
G2054 – Tennis Courts	20
G2055 – Playground Equipment	20
G3010 – Water Supply	20
G3020 – Sanitary Sewer	21
G3030 – Storm Sewer	21
G3052 – Wells Heating / Cooling	22
G3060 – Fuel Distribution	22
G4010 – Electrical Distribution	22
G4020 – Site Lighting	22

G4090 – Other Site Electrical Utilities	23
G90 – Site Specialties	23

Intro

The Facilities Assessment Database (FAD) is a tool that is used to standardize the priortization of school funding through the Public School Capital Outlay Council (PSCOC). The FAD combines building repair cost & system life cycle analysis with New Mexico Educational Adequacy Standards to evaluate a facility's brick & mortar condition with its educational usefulness. The current FAD dataset is then evaluated against the PSCOC/PSFA defined standards and a report from the FAD is then published yearly.

Determination of FAD Systems

The classification of building elements is an integral and key component of the FAD.

Using ASTM UNIFORMAT II Standard E1557 provides a common point of agreement on design elements for all project stakeholders.

The framework for the UNIFORMAT II classification, and the decisions in which parts of the classification to include the items are based on the following criteria:

- framework accommodates unlisted items based on the judgment of building professionals
- selected items have a significant influence on project cost
- selected items have high frequency of occurrence
- selected items are distinctive

System Costs & Lifecycles

Costs per square foot and expected lifecycles for all systems are derived from RS Means.

Property Type Determines Systems

There are 3 unique property types that can be present at any given campus.

- 1. Permanent
- 2. Portables
- 3. Site

Based on the property type system lists change. Refer to system listings below;

System Listings

Property Type			
Permanent	Site	Portable	
A- Found. Slab	G2020- Parking Lots	F1012-Pre Engineered Structure	
B2010 - Exterior Walls	G2030 - Pedestrian Paving		
B2020 - Exterior Windows	G2041 - Fencing/Gates		
B2030 - Exterior Doors	D2047-Play Fields		
B30- Roof	G2052- Basketball Courts		
C10 - Int Door, Part, Stair Elevator	G2053-Running Track		
C1030 - Interior Walls	G2054-Tennis Courts		
C3010 - Wall Finishes	G2050 - Landscaping		
C3020 - Floor Finishes	G2055-Playground Equip		
C3030 - Ceiling Finishes	G3010 - Water Supply		
D2010 - Plumbing Fixtures	G3020-Sanitary Sewer		
D2020 - Water Distribution	G3030 - Storm Sewer		
D2030 - Drain, Waste, Vent	G3052 - Wells Heating / Cooling		
D3020 - Heat Generating Systems	G3060-Fuel Distribution		
D3030 - Cool Generating Systems	G4010 Electrical Distribution		
D3041 - Air Distribution	G4020-Site Lighting		
D3042 - Exhaust Ventilation Equipment	G4090- Other Site Electrical Utilities		
D3050- Rooftop Unitary A/C	G90-Site Specialties		
D3060 - HVAC Controls			
D4010 - Fire Sprinklers			
D5010 - Main Power /Emergency			
D5020 - Lighting/Branch Circuits			
D5037 - Fire Detection/Alarm			
D5038 - Communication / Security			
D5039 – Technology			
D5090 - Other Electrical Systems			
D5092 - Emergency Lighting			
E1020 - Institutional Equipment			
E1090 - Other Equipment			

Permanent Systems

A – Foundation / Slab

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes

- o wall & column foundations
- o foundation walls up to level of top of slab on grade
- o footings & bases
- o perimeter insulation
- o perimeter drainage
- o slab on grade

Excludes

 under-slab drainage and insulation (see section A 1030, Slab on Grade)

EXPECTED LIFECYCLE – 100 YEARS

COST PER SQUARE FOOT - \$25.91

B2010 – Exterior Walls

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes

- exterior wall construction with facing materials, exterior applied finishes,
- back-up construction, framing, wallboard, parapets, insulation & vapor retarders, sheathing, wallboard
- o exterior load-bearing wall construction
- o exterior louvers & screens
- exterior sun control devices
- balcony walls & railings
- exterior soffits

Excludes

- o applied finishes to interior faces of exterior walls (see section C 3010, Wall Finishes)
- o columns and beams in exterior walls (see section B 10, Superstructure)
- o venetian blinds (see section E 20, Furnishings)
- o other interior sun control devices (see section E 20, Furnishings)
- roof eaves and eaves soffits (see section B 3010, Roof Coverings)
- o glazed curtain walls

EXPECTED LIFECYCLE – 100 YEARS

COST PER SQUARE FOOT - \$14.50

B2020 – Exterior Windows

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o windows
- o storefronts
- o curtain walls
- o exterior painting of windows
- wall opening elements such as lintels, sills, flashings, etc.
- o window treatments (see section E 20, Furnishings)

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$3.29

B2030 – Exterior Doors

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- personnel doors
- o revolving doors
- o overhead doors
- o other doors (e.g., hanger doors, blast resistant doors, etc.)

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$3.29

B30 - Roof

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o roofing membranes
- o traffic coatings
- o waterproof membranes below paving
- o expansion joints
- o vapor retarder
- o roof & deck insulation
- o roof fill

o parapets (see section B 2010, Exterior Walls)

- o flashings & trim
- o gutters & downspouts
- o eaves & eaves soffits
- o roof openings
- o Roof drains
- o skylights
- o roof hatches
- o roof penetrations

EXPECTED LIFECYCLE - 20 YEARS

COST PER SQUARE FOOT - \$11.75

C10 – Interior Doors, Partitions, Stairs, Elevator

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes

- o standard swinging doors
- o glazed doors
- o sliding & folding doors
- o fire doors
- o other doors
- o door frames
- o door hardware
- o fixed partitions
- o demountable partitions
- o retractable & movable partitions
- o operable partitions
- o interior balustrades & screens
- interior window & storefronts
- Though not in standard, C1010 includes field constructed toilet partitions
- o door opening elements
- o door painting & staining
- o hatches & access doors

Excludes

- o vault doors (see section E 10, Equipment)
- o operable partitions (see section C 1010 Partitions)
- o stair balustrades (see section C 2010, Stair Construction)
- interior load bearing & shear walls (see section B 10, Superstructure)
- o applied wall finishes (see section C 3010, Wall Finishes)

EXPECTED LIFECYCLE - 50 YEARS

COST PER SQUARE FOOT - \$11.48

C1010 - Interior Walls

Includes Excludes

- o interior wall construction
- o interior load-bearing wall construction
- o back-up construction, framing, insulation

o interior wall applied finishes

EXPECTED LIFECYCLE - 60 YEARS

COST PER SQUARE FOOT - \$8.38

C3010 – Wall Finishes

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o concrete wall finishes
- o wall plastering
- o wallboard
- o tile & terrazzo
- o painting
- o wall coverings
- o acoustic wall treatment
- o other coatings & finishies

 wallboard integral to interior walls & partitions (see section C 1010, Partitions, B2010, Exterior walls)

EXPECTED LIFECYCLE - 12 YEARS

COST PER SQUARE FOOT - \$3.84

C3020 – Floor Finishes

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o floor toppings and traffic membranes
- o hardeners & sealers
- o tile, terrazzo, wood & resilient flooring
- o carpeting
- o masonry & stone flooring
- o other flooring (e.g., conductive, armored)
- o painting & staining
- o access pedestal flooring

o stair finishes (see section C 2020, Stair Finishes)

EXPECTED LIFECYCLE - 12 YEARS

COST PER SQUARE FOOT - \$6.20

C3030 – Ceiling Finishes

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes	Excludes
 exposed concrete finishes plaster ceiling finishes wallboard ceiling finishes acoustic ceiling tiles & panels painting & staining metal strip ceilings other ceilings all suspended systems 	 finishes to stair soffits (see section C 2020, Stair Finishes) finishes to exterior soffits (see section B 2010, Exterior Walls)
EXPECTED LIFECYCLE – 30 YEARS	COST PER SQUARE FOOT - \$6.37

D2010 – Plumbing Fixtures

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes	Excludes
 water closets urinals lavatories sinks showers bathtubs drinking fountains bidets 	 domestic hot water heaters (see section D 2020, Domestic Water) hose bibbs (see section D 2020, Domestic Water) other equipment (see section D 2090, Other Plumbing Systems)
EXPECTED LIFECYCLE – 30 YEARS	COST PER SQUARE FOOT - \$5.69

D2020 - Water Distribution

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- pipes & fittings
- o valves, hydrants & hose bibbs
- o water heaters
- o domestic water supply equipment
- o *insulation*

 plumbing fixtures (see section D 2010, Plumbing Fixtures)

EXPECTED LIFECYCLE - 30 YEARS

COST PER SQUARE FOOT - \$5.69

D2030 - Drain, Waste, Ventilation

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- waste pipe & fittings
- o vent pipe & fittings
- o floor drains
- o sanitary waste equipment
- o insulation

EXPECTED LIFECYCLE - 30 YEARS

COST PER SQUARE FOOT - \$5.69

D3020 - Heat Generating Systems

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o boilers, including electric
- o piping and fittings adjacent to boilers
- o primary pumps
- o auxiliary equipment
- o equipment & piping insulation
- o electric baseboard
- electric or fossil fuel fired unit heaters, unit ventilators, & radiant heaters
- electric or fossil fuel fired air-handling units or furnaces
- o wall sleeves where required

 electric space unit heaters & baseboard, fuel fired unit heaters, furnaces (see section D 3050, Terminal & Package Units) controls & instrumentation (see section D3060, Controls & Instrumentation)

EXPECTED LIFECYCLE - 30 YEARS

COST PER SQUARE FOOT - \$16.50

D3030 – Cool Generating Systems

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o chillers
- o cooling towers & evaporative coolers
- o condensing units
- piping & fittings
- o primary pumps
- o direct expansion systems
- o equipment & piping insulation
- window or through-the-wall air conditioners,
 with or without heating of any type
- reverse-cycle, water- or air-cooled, terminal heat pumps
- o wall sleeves where required

- secondary chilled water pumps (see section D 3040, Distribution Systems)
- o distribution piping (see section D 3040, Distribution Systems)
- o controls & instrumentation (see section D3060, Controls & Instrumentation)

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$16.50

D3041 – Air Distribution

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes

- supply & return air systems, including air handling units with coils (electric included), filters, ductwork, & associated devices such as VAV boxes, duct heaters, induction units & grilles
- auxiliary equipment such as secondary pumps, heat exchangers, sound attenuation, & vibration isolation

Excludes o

- o electric, gas, or oil fired unit heaters (see section D 3050, Terminal & PackageUnits)
- o furnaces (gas or oil) (see section D 3050, Terminal & Package Units)
- o floor, ceiling, & rooftop package units (see section D 3050, Terminal & Package Units)
- o controls & instrumentation (see section D 3060, Controls & Instrumentation)

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$16.50

D3042 - Exhaust Ventilation Equipment

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

o ventilation & exhaust systems

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$3.27

D3050 - Terminal and Package Units

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes	Excludes
 self-contained, air- or water-cooled, floor, ceiling, & rooftop air conditioners, & heat pumps ductwork and accessories, including flue stacks 	 piping & accessories (see section D 3040, Distribution Systems) hydronic or steam convectors, fan-coil units (see section D 3040, Distribution Systems) cooling towers, remote air-cooled condensers, evaporative coolers (see section D 3030, Cooling Generation Systems) air-handling units with only hydronic heating or steam coils (see section D 3040, Distribution Systems) air-handling units with chilled water or direct expansion cooling coils (see section D 3040, Distribution Systems)
EXPECTED LIFECYCLE – 25 YEARS	COST PER SQUARE FOOT - \$25.73

D3060 - HVAC Controls

Includes	Excludes
 heating generating systems cooling generating systems heating/cooling air handling units exhaust & ventilating systems 	 factory-installed controls, when an integral part of terminal & package units(see section D 3050, Terminal & Package Units)

- o terminal devices
- o energy monitoring & control
- o building automation systems

EXPECTED LIFECYCLE - 20 YEARS

COST PER SQUARE FOOT - \$3.27

D4010 - Sprinklers

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o water supply equipment
- o piping valves & fittings
- o sprinkler heads & release devices

EXPECTED LIFECYCLE – 50 YEARS

COST PER SQUARE FOOT - \$4.12

D5010 – Main Power / Emergency

Includes	Excludes
 primary transformers secondary transformers main switchboard interior distribution transformers branch circuit panels enclosed circuit breakers motor control centers conduit and wiring to circuit panels 	 outdoor transformers (see section G 4010, Electrical Distribution) emergency power (see section D 5090, Other Electrical Systems) branch wiring (see section D 5020, Lighting & Branch Wiring)
EXPECTED LIFECYCLE – 30 YEARS	COST PER SQUARE FOOT - \$1.51

D5020 - Lighting / Branch Circuits

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes	Excludes
 branch wiring & devices for lighting fixtures lighting fixtures branch wiring for devices & equipment connections 	 underfloor raceways (see section D 5090,
o <i>devices</i>	
 exterior building lighting 	

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$12.58

D5037 - Fire Detection / Alarm

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes	Excludes
o fire alarm systems	 o other electrical systems (see section D 5090, Other Electrical Systems)
EXPECTED LIFECYCLE – 15 YEARS	COST PER SQUARE FOOT - \$2.26

D5038 – Communication / Security

33	ı	9	
Include	es .	Excludes	
0 0 0 0 0 0	call systems telephone systems public address & music systems intercommunication systems & paging clock & program systems television systems security systems	 o other electrical systems (see section D 50 Other Electrical Systems) 	190,
ı	EXPECTED LIFECYCLE – 15 YEARS	COST PER SOUARE FOOT - \$2.26	

D5039 – Technology

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes	Excludes
o local area networks	 o other electrical systems (see section D 5090, Other Electrical Systems)
EXPECTED LIFECYCLE – 10 YEARS	COST PER SQUARE FOOT - \$0.33

D5090 – Other Electrical Systems

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

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Includes	Excludes
 UPS power factor correction lightning & grounding protection systems raceway systems power generation systems 	 electric baseboard (see section D 3050, Terminal & Package Units) electric coils & duct heaters (see section D 3040, Distribution Systems) building automation & energy monitoring systems (see section D 3060, Controls & Instrumentation) communications & security systems (see section D 5030, Communications & Security)
EXPECTED LIFECYCLE – 30 YEARS	COST PER SQUARE FOOT - \$0.50

D5092 – Emergency Lightning

Includes	Excludes
emergency generatorsemergency lighting systems	 building automation & energy monitoring systems (see section D 3060, Controls & Instrumentation) communications & security systems (see section D 5030, Communications & Security)

E1020 - Institutional Equipment

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o bleachers
- casework

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$3.90

E1090 – Other Equipment

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

o food service equipment

EXPECTED LIFECYCLE – 60 YEARS

COST PER SQUARE FOOT - \$10.45

Portable Systems

F1012 – Pre Engineered Structure

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

o Pre-engineered structures

o Pre-engineered structures that sit on a poured foundation with no intention of moving

EXPECTED LIFECYCLE - 15 YEARS

COST PER SQUARE FOOT - \$52.44

Site Systems

G2020 - Parking Lots

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o parking lot paving & surfacing
- o curbs, rails & barriers
- o parking booths & equipment
- o markings & signage

EXPECTED LIFECYCLE – 20 YEARS

COST PER SQUARE FOOT - \$5.26

G2030 - Pedestrian Paving

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o paving & surfacing
- exterior steps

 waterproof membranes under terrace & plaza paving (see section G 3010, Roof Coverings)

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$2.71

G2041 - Fencing / Gates

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

o fences & gates

o signs (see section G 2010, Roadways & section G 2020, Parking Lots)

EXPECTED LIFECYCLE - 100 YEARS

COST PER SQUARE FOOT - \$0.62

G2047 – Play Fields

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

o playing fields

competitive sports fields

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$0.72

G2050 - Landscaping

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o seeding & sodding
- o planting
- o irrigation systems

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$2.21

G2052 - Basketball Courts

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

basketball courts

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$1.42

G2053 - Running Track

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

o running track

EXPECTED LIFECYCLE – 20 YEARS

COST PER SQUARE FOOT - \$1.90

G2054 – Tennis Courts

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

o tennis courts

EXPECTED LIFECYCLE – 20 YEARS

COST PER SQUARE FOOT - \$1.42

G2055 - Playground Equipment

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

o playground equipment

EXPECTED LIFECYCLE – 20 YEARS

COST PER SQUARE FOOT - \$1.42

G3010 - Water Supply

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o potable water distribution and storage
- o non potable water distribution. and storage
- o well systems

- o fire protection distribution and storage
- o pumping stations
- o package water treatment plants

EXPECTED LIFECYCLE – 50 YEARS

COST PER SQUARE FOOT - \$2.25

G3020 - Sanitary Sewer

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o piping
- o manholes & cleanouts
- o septic disposal systems
- o *lift stations*
- o packaged water waste treatment Plants
- o septic tanks
- o drain fields

EXPECTED LIFECYCLE – 50 YEARS

COST PER SQUARE FOOT - \$2.83

G3030 – Storm Sewer

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o piping
- o *manholes*
- o headwalls & catch basins
- o lift stations
- o retention ponds
- o ditches & culverts

EXPECTED LIFECYCLE - 40 YEARS

COST PER SQUARE FOOT - \$2.13

G3052 – Wells Heating / Cooling

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

 wells for cooling/heating within a geothermal system

EXPECTED LIFECYCLE – 50 YEARS

COST PER SQUARE FOOT - \$3.09

G3060 – Fuel Distribution

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o fuel piping
- o fuel equipment
- o fuel storage tanks

EXPECTED LIFECYCLE – 50 YEARS

COST PER SQUARE FOOT - \$0.54

G4010 - Electrical Distribution

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- substations
- o overhead power distribution
- underground power distribution

EXPECTED LIFECYCLE – 50 YEARS

COST PER SQUARE FOOT - \$0.54

G4020 - Site Lighting

Includes Excludes

- o fixtures & transformers
- o poles
- o wiring conduits & duct banks
- o site lighting controls

EXPECTED LIFECYCLE – 40 YEARS

COST PER SQUARE FOOT - \$2.87

G4090 – Other Site Electrical Utilities

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o cathodic protection
- o site emergency power generation

EXPECTED LIFECYCLE – 30 YEARS

COST PER SQUARE FOOT - \$1.06

G90 – Site Specialties

Suggested Elements per Chart 5.1 Uniformat II Classification of Building

Includes Excludes

- o solar energy supply
- wind energy supply
- o oil gas and coal supply

 electrical energy supply systems (see section D5090,Other Electrical Systems and section D5010, Service and Distribution)

EXPECTED LIFECYCLE – 40 YEARS

COST PER SQUARE FOOT - \$0.24