

## GENERAL INFORMATION

### SECTION UIP 35

### PERCENTAGE BREAKDOWN OF BASE COST

The following general information should be considered for rough budgeting guides and checks only. The percentage breakdowns in some cases are based only on a few construction projects. They are presented here in conformity with our policy of furnishing all possible information to the users of the *Michigan Assessor's Manual*, with the knowledge that they will use the data with consideration for its probable degree of accuracy.

#### AVERAGE-QUALITY FAST-FOOD RESTAURANT

The following percentages indicate the approximate portions of the total cost attributable to each component in a typical fast food restaurant of average size and quality.

Plans, engineering and supervision .....	3.5%
Permits .....	.7%
Survey .....	.9%
Clearing, excavation and fill .....	.8%
Concrete .....	1.8%
Footings .....	.4%
Foundations .....	.9%
Slab on grade .....	.6%
Masonry .....	6.2%
Wall insulation .....	.3%
Steel frame and decking .....	7.4%
Doors, frames and hardware .....	1.6%
Carpentry .....	7.8%
Roofing and roof insulation .....	5.5%
H.V.A.C. ....	13.1%
Electrical, including fixtures .....	11.6%
Plumbing .....	9.4%
Toilet partitions and equipment .....	.9%
Glass storefront .....	5.3%
Exterior ornamentation .....	2.0%
Drywall and partitions .....	1.9%
Tile .....	3.8%
Acoustic ceilings .....	1.6%
Painting .....	1.3%
Cleanup and miscellaneous .....	.3%
Tax and freight .....	1.3%
Contractor's overhead and profit .....	<u>9.1%</u>
<b>TOTAL .....</b>	<b>100.0%</b>

The 9.1% listed for the general contractor's overhead and profit is the percentage of total cost. This is the equivalent of 10.6% of labor, material and subcontracts, excluding plans, engineering, permits and survey.

#### AVERAGE-QUALITY NEIGHBORHOOD SHOPPING CENTER

The percentages listed below indicate typical costs attributable to various components in an average quality and size neighborhood shopping center.

Plans, engineering and supervision .....	6.5%
Clearing and excavation .....	3.3%
Foundations .....	5.5%
Steel frame and decking .....	13.5%
Carpentry .....	3.4%
Insulation and waterproofing .....	1.2%
Masonry .....	12.6%
Aluminum storefronts .....	3.0%
Roofing .....	5.9%
Doors and frames .....	1.2%
Interior finish: gypsum board .....	6.4%
Floor cover .....	3.0%
Painting .....	.5%
Acoustic ceilings .....	1.4%
Plumbing .....	5.1%
Toilet accessories and partitions .....	.3%
Heating and air conditioning .....	9.1%
Electrical, including fixtures .....	10.3%
Contractors' overhead and profit .....	<u>7.8%</u>
<b>TOTAL .....</b>	<b>100.0%</b>

The 7.8% listed for the general contractor's overhead and profit is the percentage of total cost. This is the equivalent of 9.1% of labor, material and subcontracts, excluding plans, engineering and supervision.

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#### AVERAGE-QUALITY MULTIPLE

The following percentages indicate approximate portions of the total cost of average-quality multiple residences attributable to each component listed, as derived from an analysis of several 10 to 40 unit, 1- to 3-story, wood-frame buildings. Cost of plans is normally on a flat fee basis and includes simple details with no supervision by architect.

Plans and engineering .....	2.0%
Plan check and permit .....	1.1%
Survey .....	.4%
Water meter and temporary facilities .....	.4%
Excavations, forms, concrete and backfill .....	4.3%
Lightweight concrete .....	.9%
Rough carpentry (material) .....	8.6%
Rough carpentry (labor) .....	8.4%
Roofing .....	1.4%
Insulation and weatherstripping .....	1.9%
Siding, stucco and masonry veneer .....	5.9%
Plaster and drywall .....	5.6%
Sash and doors .....	3.2%
Finish carpentry (material) .....	1.3%
Finish carpentry (labor) .....	2.0%
Hardware, rough .....	.4%
Hardware, finish .....	.9%
Cabinets .....	4.4%
Countertops/tile .....	1.8%
Floor covering: carpeting .....	2.5%
resilient .....	.9%
Plumbing and sewer connections .....	10.1%
Tub enclosures and toilet accessories .....	.4%
Electrical .....	8.2%
Light fixtures .....	.7%
Built-in appliances .....	2.8%
Heating .....	3.5%
Sheet metal .....	.8%
Ornamental iron .....	.7%
Painting .....	2.1%
Miscellaneous (TV antenna, etc.) .....	.5%
Cleanup .....	.4%
General contractor's overhead and profit .....	<u>11.5%</u>
<b>TOTAL</b> .....	<b>100%</b>

The 11.5% listed for the general contractors' overhead and profit is the percentage of the total cost. This is the equivalent of 13.5% of the labor, material and subcontract costs, excluding costs of plans,

survey, plan check and permit, and engineering, with a range from 8.6% to 18.5%.

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### HOTEL DESIGN AND CONSTRUCTION DEVELOPMENT

PLANNING DESIGN ANALYSIS	GROSS AREA	PROJECT COST ANALYSIS	AMOUNT	COST/ROOM
<b>SITE AREA</b> (1 acre/50 rooms)	10 acres	<b>LAND</b> , \$750,000/Acre .....	\$ 7,500,000	\$ 15,000
<b>HOTEL</b>				
	Net Area	<b>BASE BUILDING COSTS</b>		
	(sq. ft.)	Sitework		
500 Room facility	69,130	Clearing, grubbing, fill, drainage ..	\$ 550,000	\$ 1,100
223 Doubles @ 310 .....	60,000	Site amenities		
160 Kings @ 375 .....	18,720	Pools and decks, gazebos .....	762,500	1,525
32 Suites @ 585 .....	<u>47,150</u>	Tennis courts .....	175,000	350
85 Various @ 555 .....	195,000	Parking and paving .....	550,000	1,100
Circulation (net to gross) 1.4 x .....	273,000	Landscape and waterscape .....	900,000	1,800
		Exterior signs and lighting .....	100,000	200
		<b>HOTEL HARD CONSTRUCTION COSTS</b> (Percent of base costs)		
Public facilities		Clearing and excavation .... ( .8)	\$ 280,750	
Lobby, 18 sq. ft./room .....	9,000	Structural steel .....	( 12.0) 4,300,000	
Function, ballroom,		Miscellaneous metals .....	( 2.9) 1,027,000	
meeting, conference		Reinforcing steel .....	( 2.3) 821,500	
space, 1,200 seats @ 15 sq. ft. .	18,000	Exterior walls .....	( 9.7) 3,465,500	
prefunction and support		Carpentry .....	( .8) 282,750	
(net to gross) .....	x 2 36,000	Millwork .....	( 4.0) 1,428,000	
Food and beverage,		Concrete .....	( 8.8) 3,151,250	
dining, lounge and		Roofing and sheetmetal .... ( 1.3)	464,250	
bar space,		Metal decking .....	( .5) 178,500	
600 seats @ 25 sq. ft. ....	15,000	Windows, doors and hardware ( 1.0)	355,500	
preparation and support		Plaster and drywall .....	( 10.2) 3,631,250	
(net to gross) .....	x 1.4 21,000	Painting .....	( 1.3) 456,500	
Retail, 500 sq. ft. (net to gross) . . .	x 1.35 675	Elevators .....	( 3.9) 1,395,250	
Recreational,		Marble and tile .....	( 2.7) 964,750	
2,000 sq. ft. (net to gross) .....	x 1.4 2,800	Plumbing .....	( 10.9) 3,896,750	
Circulation .....	11,525	Heating and air conditioning . ( 7.8)	2,800,750	
Staff support facilities		Electrical .....	( 7.8) 2,791,500	
Housekeeping @ 25 sq. ft./room . .	12,500	Miscellaneous and cleanup . ( .6)	210,750	
Misc. support and storage		General contractors'		
@ 20 sq. ft./ room .....	10,000	overhead and profit .....	( 10.7) 3,822,250	
Administration @ 15 sq. ft./room . .	<u>7,500</u>	<b>TOTAL</b> .....	(100%) \$35,724,750	\$ 71,450
Circulation (net to gross) 1.4 x .....	30,000	<b>SOFT CONSTRUCTION COSTS</b>		
Mechanical facilities		Architectural, engineering and design fees,		
H.V.A.C., electrical, maintenance		project management, surveys,		
areas @ 30 sq. ft./room .....	15,000	inspections .....	\$ 2,475,000	\$ 4,950
Circulation .....	<u>16,500</u>	Contingency .....	1,225,000	2,450
<b>TOTAL SQUARE FEET</b> .....	412,500	<b>INDIRECT COSTS</b>		
Gross area per room (square feet) . . . .	825	Construction interest and fees .....	\$ 4,087,500	\$ 8,175
<b>SITE AMENITIES</b>		Utility connection, impact fees .....	250,000	500
Swimming pools, 15 sq. ft./room, 7,500 sq. ft.		Real estate taxes .....	187,500	375
Tennis courts, 4		Special consultants/feasibility .....	300,000	600
Gazebo, whirlpool spa		Legal, title, insurance .....	125,000	250
Surface parking, 1.4 spaces/room, 700 spaces		Developers' overhead, venture accounting		
Landscaped and waterscaped		misc. reimbursables, etc. ....	437,500	875
<b>CONSTRUCTION PERIOD</b> , approximately 24 months		<b>CAPITAL COSTS</b>		
		Furniture, fixtures and equipment . . .	\$11,687,500	\$ 23,375
		Operating equipment .....	625,000	1,250
		Pre-opening expenses .....	2,175,000	4,350
		Working capital .....	<u>1,425,000</u>	<u>2,850</u>
		<b>TOTAL PROJECT COST</b> .....	\$71,262,250	\$142,525

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### OFFICE DESIGN AND CONSTRUCTION DEVELOPMENT

PLANNING DESIGN ANALYSIS	GROSS AREA	PROJECT COST ANALYSIS (CONTINUED)	AMOUNT	COST/SQ. FT.
<b>SITE AREA</b>	5 acres	Building shell (continued) (Percent of base costs)		
		Toilet accessories & partitions ( .6)	\$ 81,750	\$ .45
<b>SUBURBAN OFFICE BUILDING</b> (Gross sq. ft.)	180,000	Elevators, conveying systems ( 4.1)	566,750	3.15
Net to gross @ 80%		Plumbing . . . . . ( 4.5)	612,500	3.40
10 stories, atrium entry		Heating and air conditioning . ( 7.3)	1,003,500	5.58
Floor system, underfloor duct with cells		Electrical . . . . . ( 5.3)	728,000	4.04
Floor loading, 80 and 100 lbs/sq. ft.		Miscellaneous and cleanup . ( 1.4)	189,000	1.05
H.V.A.C., central VAV and perimeter system		General contractors' overhead and profit . . . . . ( 8.5)	<u>1,166,250</u>	<u>6.48</u>
Four elevators		Subtotal . . . . . ( 71.0)	\$ 9,764,750	\$ 54.25
<b>SITE AMENITIES</b>		Tenant improvements, work letter		
Parking, surface and 3-level structure		Acoustical ceilings, suspended . . . . . ( 1.7)	\$ 231,250	\$ 1.28
3 spaces/1,000 sq. ft.		Resilient floor coverings . . . . ( .6)	82,250	.46
Landscaped and waterscaped		Carpeting . . . . . ( 1.7)	234,250	1.30
		Frame and drywall partitions ( 3.8)	521,000	2.89
		Carpentry . . . . . ( .6)	82,250	.46
		Doors, frames and hardware ( .9)	123,250	.68
		Paint and wall covering . . . . ( .8)	107,000	.59
		Sprinklers and life safety . . . ( 1.7)	229,000	1.27
		Heating and air conditioning . ( 4.0)	556,000	3.09
		Electrical . . . . . ( 4.2)	575,750	3.20
		Tenant upgrades		
		Interior finishes . . . . . ( 2.7)	\$ 369,500	\$ 2.05
		Partitions and cabinetry . . . . ( 3.2)	436,000	2.42
		Electrical and mechanical . . . ( 2.0)	273,500	1.52
		Security and life safety . . . . ( 1.1)	<u>147,250</u>	<u>.82</u>
		<b>TOTAL</b> . . . . . (100.0)	<u>\$13,733,000</u>	<u>\$ 76.29</u>
<b>CONSTRUCTION PERIOD</b>		<b>SOFT CONSTRUCTION COSTS</b>		
Approximately 18 months		Architectural, engineering and design fees, project management, surveys, inspections . . . . .	\$ 948,000	\$ 5.27
		Contingency . . . . .	381,500	2.12
<b>PROJECT COST ANALYSIS</b>	<b>AMOUNT</b>	<b>COST/SQ. FT.</b>		
<b>LAND</b> , 800,000/acre . . . . .	\$4,000,000	\$22.22		
<b>BASE BUILDING COSTS</b>				
Sitework				
Clearing, grubbing, fill, drainage . . .	\$ 708,500	\$ 3.94		
Site amenities				
Parking and paving . . . . .	3,433,500	19.08		
Landscape and waterscape . . . . .	599,500	3.33		
Exterior signs and lighting . . . . .	70,750	.39		
<b>OFFICE HARD CONSTRUCTION COSTS</b>				
Building shell (Percent of base costs)				
Clearing, excavation and foundation . . . . . ( 2.4)	\$ 333,500	\$ 1.85		
Steel frame and decking . . . (14.0)	1,929,250	10.72		
Miscellaneous steel and iron ( 1.4)	190,750	1.06		
Concrete, floors and roof . . . ( 6.5)	890,500	4.95		
Masonry backup and partitions ( .7)	98,000	.54		
Roofing and roof insulation . ( .9)	122,000	.68		
Building wall panels . . . . . ( 4.1)	566,750	3.15		
Sash and glazing . . . . . ( 8.6)	1,187,000	6.59		
Marble, tile and terrazzo . . . ( .7)	99,250	.55		
			<b>INDIRECT COSTS</b>	
			Construction interest and fees . . . . .	\$ 1,226,500
			Utility connection, impact fees . . . . .	180,000
			Real estate taxes . . . . .	60,000
			Special consultants, feasibility, space planning . . . . .	147,000
			Legal, title, insurance . . . . .	87,000
			Advertising, leasing commissions . . .	616,000
			Developers' overhead, venture accounting, etc. . . . .	354,500
			<b>CAPITAL COSTS</b>	
			Furniture, fixtures and equipment . . .	\$ 2,698,500
			Operating expenses . . . . .	<u>1,787,500</u>
			<b>TOTAL PROJECT COSTS</b>	<u>\$31,031,750</u>
				<u>\$172.40</u>

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### FLOOR LOADS

The following are typical live floor loads of some of the buildings used in determining cost averages. A majority of the buildings will have more than one design floor load to accommodate various uses. Thus, a hotel will be designed for heavy floor loads in halls and public areas and lighter floor loads in room areas; banks will need heavier floors in computer and equipment rooms than in office areas.

The listed loads are typical of design specifications of a number of buildings built or under construction during recent years.

OCCUPANCY	POUNDS PER SQUARE FOOT
Apartments and dormitories . . . . .	40
Attics (no storage) . . . . .	10 (20 lbs. for limited storage)
Auditoriums and churches . . . . .	100 (50 lbs. for fixed seating)
Balconies (exterior), stairs and fire escapes . . . . .	40
Banks . . . . .	100
Computer floors . . . . .	150
Corridors and stairways . . . . .	100
Dwellings . . . . .	40 (30 lbs. for sleeping rooms)
Equipment rooms . . . . .	125
Garage repair . . . . .	100
Garages and automobile parking . . . . .	50
Governmental buildings . . . . .	80
Gymnasiums . . . . .	100 (150 lbs. for drill floors)
Hospitals . . . . .	50 (40 lbs. for patient rooms)
Hotels and clubs . . . . .	40 (100 lbs. in public areas)
Industrials, light . . . . .	100
medium . . . . .	150 (200 – 350 lbs. for cleanrooms)
heavy . . . . .	200
Libraries . . . . .	60 (150 lbs. in stacked areas)
Lofts . . . . .	100
Meeting rooms . . . . .	100
Offices, low cost . . . . .	50 (plus 20 lbs. for partitions)
average . . . . .	50 (plus 20 lbs. for partitions)
good . . . . .	60 (plus 20 lbs. for partitions)
excellent . . . . .	80 (plus 20 lbs. for partitions)
Restaurants . . . . .	100
Roofs, unoccupied . . . . .	20 (plus snow and drift)
School, classrooms . . . . .	50
Stores, retail . . . . .	75 (125 lbs. in appliance floors)
wholesale . . . . .	125
Theaters . . . . .	100 (150 lbs. for stage floors)
Warehouses, light . . . . .	125
medium . . . . .	175
heavy . . . . .	250 (and up)

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### CONSTRUCTION TIME

The following table of average periods of construction lists points on smoothed empirical curves, which have been developed from figures for actual construction jobs. The data was adjusted for time lost due to labor shutdowns with extreme and/or staged construction cases being discarded. No adjustments were made for holidays, inspection delays, weather or other minor shutdowns. Figures are the number of contract (calendar) days from ground breaking to completion of project.

DESIGNED OCCUPANCY	TOTAL COST OF PROJECT (in thousands of dollars)												
	100	200	500	1,000	2,000	3,000	5,000	10,000	20,000	30,000	50,000	75,000	100,000
Apartments and retirement homes, low rise	100	145	200	240	285	310	340	385	----	----	----	----	----
Apartments and retirement homes, high rise	----	----	----	250	325	370	425	500	575	620	675	----	----
Auditoriums and clubhouses	105	135	185	235	300	345	410	520	665	765	910	1050	----
Banks	95	120	165	210	270	310	375	475	----	----	----	----	----
Department stores and shopping malls	----	----	----	280	330	365	415	490	575	635	720	----	----
Dormitories	120	150	205	260	330	375	445	565	710	----	----	----	----
Garages and parking structures	105	135	195	250	325	380	460	600	----	----	----	----	----
Hotels and motels	115	145	195	245	305	350	415	520	655	750	885	1010	1110
Hospitals	----	----	270	325	395	445	510	620	755	845	975	1090	1180
Industrial buildings	100	125	165	205	250	285	335	410	510	575	675	----	----
Medical office buildings	120	180	260	320	375	410	455	515	575	----	----	----	----
Nursing homes	160	195	250	305	370	415	480	585	710	795	----	----	----
Office buildings	110	135	185	225	280	315	370	460	570	645	760	860	940
Town houses	95	125	180	240	315	----	----	----	----	----	----	----	----
Restaurants	120	155	220	285	365	425	515	----	----	----	----	----	----
Retail stores, markets and discount stores	105	160	235	290	340	375	415	470	----	----	----	----	----
Veterinary hospitals	130	175	255	340	455	535	665	----	----	----	----	----	----
Warehouses	90	110	150	185	235	265	315	390	----	----	----	----	----