

**Marshall Valuation Service Analysis
A.L.S. HEALTHCARE CONSULTANT
SERVICES**

**Suburban Hospital
Basement**

I. The Marshall and Swift Guideline

Type	Hospital Basement
Construction Quality/Class	Good/A
Stories	1
Perimeter	-
Average Floor to Floor Height	19.0
Square Feet	64,432
f.1 Average floor Area	64,432

A. Base Costs

Basic Structure	\$180.52
Elimination of HVAC cost for adjustment	0
HVAC Add-on for Mild Climate	0
HVAC Add-on for Extreme Climate	0

Total Base Cost \$180.52

**Adjustment for
Departmental
Differential Cost
Factors**

0.86

Adjusted Total Base Cost \$155.85

B. Additions

Elevator (If not in base)	\$9.37
Other	\$0.00

Subtotal \$9.37

Total \$165.22

C. Multipliers

Perimeter Multiplier	0.890706328
Product	\$147.16

Height Multiplier		1.16
Product		\$170.86

Multi-story Multiplier		1.000
Product		\$170.86

D. Sprinklers

Sprinkler Amount		\$3.07
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Subtotal		\$173.93
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E. Update/Location Multipliers

Update Multiplier		1.05	3/1
Product		\$182.62	5

Location Multiplier		1.07	1/1
Product		\$195.41	5

Calculated Square Foot Cost Benchmark		\$195.41
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MVS Method for Interpolating Area and Perimeter Factor

Basement

		Perimeter					
		1,000	1,101	1,200	1000	1101	1200
Area	50,000	0.897		0.908	0.897		0.908
	64,432				0.88660896	0.890706328	0.89472256
	75,000	0.879		0.885	0.879		0.885

Area Interpolation

1	0.897	-	0.879	=	0.018
2	64432	-	50000	=	14432
3	75000	-	50000	=	25000
4	14432	/	25000	=	0.57728
5	0.018	*	8	=	0.010391
6	0.897	-	91	=	0.886609
7	0.908	-	0.885	=	0.023
8	0.023	*	8	=	0.013277
9	0.908	-	0.0132	=	0.894723

Sprinkler Interpolation

50,000	3.19
64,432	3.0687712
75,000	2.98
0	0

Perimeter Interpolation

10	1200	-	1000	=	200	1	3.19	-	2.98	=	0.21
11	1101	-	1000	=	101	2	64,432	-	50000	=	14432
12	101	/	200	=	0.505	3	75000	-	50000	=	25000
13	0.8947226	-	0.886609	=	0.008114	4	14432	/	25000	=	0.57728
14	0.0081136	*	0.505	=	0.004097	5	0.21	*	8	=	0.121229
15	0.886609	+	0.0040	=	0.890706	6	3.19	-	0.121229	=	3.068771

		New	128864	257728	515456	1030912
			0	0	0	0
Total Square Footage	64,432					
C Level	64,432					
1st Floor						
2nd Floor						

Wall Height Interpolation

18	1.138
19.00	1.161
20	1.184
0	0

Average	64,432
Perimeter	
C Level	1,101
1st Floor	
2nd Floor	
Average	1,101
Wall Height (floor to eaves)	
C Level	19
1st Floor	
2nd Floor	
Average	19.0

					-
1	1.138	-	1.184	=	0.046
2	19	-	18	=	1
3	20	-	18	=	2
4	1	/	2	=	0.5
					-
5	-0.046	*	0.5	=	0.023
6	1.138	-	-0.023	=	1.161

Elevator Add On	\$9,800	MVS Good Cost/Stop, p. 15-36
	64,432	SF
	\$9.37	Cost/sf

**Marshall Valuation Service Analysis
A.L.S. HEALTHCARE CONSULTANT
SERVICES**

**Suburban Hospital
Hospital**

I. The Marshall and Swift Guideline

Type	Hospital
Construction Quality/Class	Good/A
Stories	4
Perimeter	1,376
Average Floor to Floor Height	15.0
Square Feet	235,597
f.1 Average floor Area	58,899

A. Base Costs

Basic Structure	\$354.99
Elimination of HVAC cost for adjustment	0
HVAC Add-on for Mild Climate	0
HVAC Add-on for Extreme Climate	0

Total Base Cost \$354.99

**Adjustment for
Departmental
Differential Cost
Factors**

0.93

Adjusted Total Base Cost \$330.14

B. Additions

Elevator (If not in base)	\$0.00
Other	\$0.00

Subtotal \$0.00

Total \$330.14

C. Multipliers

Perimeter Multiplier	0.907650599
Product	\$299.65

Height Multiplier		1.07
	Product	\$320.32

Multi-story Multiplier		1.005
	Product	\$321.92

D. Sprinklers

	Sprinkler Amount	\$2.46
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Subtotal		\$324.38
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E. Update/Location Multipliers

Update Multiplier		1.05	3/1
	Product	\$340.60	5

Location Multiplier		1.07	1/1
	Product	\$364.44	5

Calculated Square Foot Cost Benchmark		\$364.44
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MVS Method for Interpolating Area and Perimeter
Factor

Tower - New Construction

		Perimeter					
		1,200	1,376	1,400	1200	1375.5	1400
Area	50,000	0.908		0.918	0.908		0.918
	58,899				0.89981269	0.9076506	0.90874478
	75,000	0.885		0.892	0.885		0.892

Area
Interpolation

1	0.908	-	0.885	=	0.023
2	58899.25	-	50000	=	8899.25
3	75000	-	50000	=	25000
4	8899.25	/	25000	=	0.35597
5	0.023	*	0.35597	=	0.00818731
6	0.908	-	0.0081873	=	0.89981269
7	0.918	-	0.892	=	0.026
8	0.026	*	0.35597	=	0.00925522
9	0.918	-	0.0092552	=	0.90874478

Perimeter
Interpolation

10	1400	-	1200	=	200
11	1375.5	-	1200	=	175.5
12	175.5	/	200	=	0.8775
13	0.9087448	-	0.8998127	=	0.00893209
14	0.0089321	*	0.8775	=	0.007837909
15	0.8998127	+	0.0078379	=	0.907650599

New

Total Square Footage	235,597
1st Floor	65,605
2nd Floor	69,224
3rd Floor	51,716
4th Floor	49,052
5th Floor	
6th Floor	
7th Floor	
8th Floor	

Capitalized Construction Interest and Financing Fee Allocation

Hospital	New	Renovation	Total		
Building Cost	\$83,831,747	\$2,375,878			
Subtotal Cost (w/o Cap Interest)	\$118,029,569	\$4,792,938	\$122,822,507		
Subtotal/Total	96.1%	3.9%		Net Interest	Financing
Total Project Cap Interest & Financing [(Subtotal Cost/Total Cost) X Total Cap Interest]	\$10,729,494	\$435,703	\$11,165,197	\$10,467,372	\$697,825

9th Floor	
Penthouse	
Average	58,899
Perimeter	
1st Floor	1,292
2nd Floor	1,344
3rd Floor	1,616
4th Floor	1,250
5th Floor	
6th Floor	
7th Floor	
8th Floor	
9th Floor	
Penthouse	
Average	1,376
Wall Height (floor to eaves)	
1st Floor	15.00
2nd Floor	15.00
3rd Floor	15.00
4th Floor	15.00
5th Floor	
6th Floor	
7th Floor	
8th Floor	
9th Floor	
Penthouse	
Average	15.00

Height
X sf

984,075

1,038,360

775,740

735,780

3,533,955

15 Height

Building/Subtotal

Building Cap Interest&Financing

71.0%

\$7,620,737

49.6%

\$ 215,980

Wall
Height
Interpolation

16 1.092

15.00

18 1.138

1 1.092 - 1.138 = -0.046

2 15 - 16 = -1

3 18 - 16 = 2

4 -1 / 2 = -0.5

5 -0.046 * -0.5 = 0.023

6 1.092 - 0.023 = **1.069**

Sprinkler
Interpolation

200,000 2.53

235,597 2.458806

250,000 2.43

1 2.53 - 2.43 = 0.1

2 235,597 - 200000 = 35597

3 250000 - 200000 = 50000

4 35597 / 50000 = 0.71194

5	0.1	*	$\frac{0.7119}{4}$	=	$\frac{0.071}{194}$
6	2.53	-	$\frac{0.0711}{94}$	=	$\frac{2.458}{806}$

**Suburban Hospital
Departmental Cost Differential Analysis - New
Construction**

Department/Function	BGSF	MVS Department Name	MVS Differen tial Cost Factor	Cost Factor X SF
First Floor				
SURGERY DEPARTMENT	56,276	Operating Suite, Total	1.59	89,478.8
LOBBY AND PUBLIC	2,408	Public Space	0.8	1,926.4
CIRCULATION/SPACES	2,433	Internal Circulation, Corridors	0.6	1,459.8
VERTICAL CIRCULATION (STAIRS/ELEVATORS/SHAFTS)	2,750	Shafts and Exterior wall	0.6	1,650.0
MECHANICAL ROOMS	148	Mechanical Equipment and Shops	0.7	103.6
EXTERIOR WALL THICKNESS	1,590	Shafts and Exterior wall	0.6	954.0
Second Floor				
PHYSICIAN OFFICES (SHELL SPACES)	35,212	Unassigned Areas	0.5	17,606.0
CONFERENCE CENTER	5,478	Public Space	0.8	4,382.4
OUTPATIENT PHARMACY	3,062	Pharmacy	1.33	4,072.5
GIFT SHOP	944	Public Space	0.8	755.2
REGISTRATION FINANCIAL COUNSELING	3,511	Offices	0.96	3,370.6
VOLUNTEERS	572	Volunteer Areas	0.8	457.6
CONFERENCE STORAGE	422	Offices	0.96	405.1
CLINICAL SUPPORT	323	Offices	0.96	310.1
PATIENT TRANSPORTERS	323	Public Space	0.8	258.4
CHAPLAIN OFFICE	88	Offices	0.96	84.5
MECHANICAL ROOMS	800	Offices	0.96	768.0
SECURITY	385	Offices	0.96	369.6
CIRCULATION (include MAIN LOBBY)	12,950	Public Space	0.8	10,360.0
MAIN ENTRANCE/PUBLIC SPACES	1,182	Public Space	0.8	945.6
VERTICAL CIRCULATION (STAIRS/ELEVATORS)	2,765	Shafts and Exterior wall	0.6	1,659.0
EXTERIOR WALL THICKNESS	1,206	Shafts and Exterior wall	0.6	723.6
Third Floor				
SHELL SPACE	35,184	Unassigned Areas	0.5	17,592.0
CONSULT ROOMS		Offices	0.96	

	230			220.8
MECHANICAL ROOMS	320	Mechanical Equipment and Shops	0.7	224.0
STORAGE	545	Housekeeping	1.31	714.0
ELECTRICAL/TRASH/ IT /JC	717	Mechanical Equipment and Shops	0.7	501.9
CIRCULATION/PUBLIC SPACES	7,467	Public Space	0.8	5,973.6
VERTICAL CIRCULATION (STAIRS/ELEVATORS)	2,423	Shafts and Exterior wall	0.6	1,453.8
EXTERIOR WALL THICKNESS	4,829	Shafts and Exterior wall	0.6	2,897.4
Fourth Floor				
PATIENT CARE UNIT - 24 Beds (3/500)	17,244	Inpatient Units	1.06	18,278.6
PATIENT CARE UNIT - 30 Beds (3/600)	19,605	Inpatient Units	1.06	20,781.3
PT/REHAB	427	Physical Medicine	1.09	465.4
SHARED CLINICAL SUPPORT	1,019	Offices	0.96	978.2
MECHANICAL ROOMS	331	Mechanical Equipment and Shops	0.7	231.7
TRASH/IT/ELE/JC ROOMS	847	Mechanical Equipment and Shops	0.7	592.9
PUBLIC SPACES	1,728	Public Space	0.8	1,382.4
CIRCULATION	878	Internal Circulation, Corridors	0.6	526.8
VERTICAL CIRCULATION (STAIRS/ELEVATORS)	2,480	Shafts and Exterior wall	0.6	1,488.0
EXTERIOR WALL THICKNESS FOURTH FLOOR	4,492	Shafts and Exterior wall	0.6	2,695.2
Total	235,594		0.93	219,099

Department/Function	BGSF	MVS Department Name	MVS Differen tial Cost Factor	Cost Factor X SF
Celler				
CENTRAL STERILE PROCESSING 12,057 12,057	12,057	Central Sterile Supply	1.54	18,567.8
MECHANICAL ROOMS 29,549 29,549	29,549	Mechanical Equipment and Shops	0.7	20,684.3
ELECTRICAL ROOMS 8,336 8,336	8,336	Mechanical Equipment and Shops	0.7	5,835.2
COMPOUNDING PHARMACY 1,659 1,659	1,659	Pharmacy	1.33	2,206.5
MAINTENANCE 3,351 3,351	3,351	Mechanical Equipment and Shops	0.7	2,345.7

CRAWL/PIPE CHASE/ELEVATORS PIT 2,534 2,534	2,534	Mechanical Equipment and Shops	0.7	1,773.8
PUBLIC CIRCULATION/SPACES 3,981 3,981	3,981	Internal Circulation, Corridors	0.6	2,388.6
VERTICAL CIRCULATION (STAIRS/ELEVATORS) 1,089 1,089	1,089	Shafts and Exterior wall	0.6	653.4
ELEVATOR MACHINE ROOM 471 471	471	Mechanical Equipment and Shops	0.7	329.7
EXTERIOR WALL THICKNESS 1,406 1,406	1,406	Shafts and Exterior wall	0.6	843.6
Total	64,433		0.86	55,628.6

**Marshall Valuation Service Analysis
A.L.S. HEALTHCARE CONSULTANT
SERVICES**

**Suburban Hospital
Penthouse**

I. The Marshall and Swift Guideline

Type	Mechanical Penthouse	
Construction Quality/Class		ExcellentA
Stories		7
Perimeter		178
Average Floor to Floor Height		15.00
Square Feet		1,046
Average floor Area		1,046

A. Base Costs

Basic Structure	\$78.55
Elimination of HVAC cost for adjustment	0
HVAC Add-on for Mild Climate	0
HVAC Add-on for Extreme Climate	0

Total Base Cost \$78.55

B. Additions

Elevator (If not in base)	\$9.37
Other	\$0.00

Subtotal \$9.37

Total \$87.92

C. Multipliers

Perimeter Multiplier 1.2925032
Product \$113.64

Height Multiplier 1.413
Product \$160.57

Multi-story Multiplier 1.035
Product \$166.19

D. Sprinklers		
	Sprinkler Amount	\$5.82
	Subtotal	\$172.01

E. Update/Location Multipliers			
	Update Multiplier	1.05	3/1 5
	Product	\$180.61	
	Location Multiplier	1.07	1/1 5
	Product	\$193.25	
Calculated Square Foot Cost Benchmark		\$193.25	

MVS Method for Interpolating Area and Perimeter Factor

Penthouse

		Perimeter					
		175	178	200	175	178	200
Area	1,000	1.299		1.364	1.299		1.364
	1,046				1.284924	1.2925032	1.348084
	1,500	1.146		1.191	1.146		1.191

Area Interpolation

1	1.299	-	1.146	=	0.153
2	1046	-	1000	=	46
3	1500	-	1000	=	500
4	46	/	500	=	0.092
5	0.153	*	0.092	=	0.014076
6	1.299	-	0.014076	=	1.284924
7	1.364	-	1.191	=	0.173
8	0.173	*	0.092	=	0.015916
9	1.364	-	0.015916	=	1.348084

Perimeter Interpolation

10	200	-	175	=	25
11	178	-	175	=	3
12	3	/	25	=	0.12
13	1.348084	-	1.284924	=	0.06316
14	0.06316	*	0.12	=	0.007579
15	1.284924	+	0.007579	=	1.292503

New	2092	4184	8368	16736
	356	712	1424	2848

Total Square Footage	1,046
Penthouse	1,046
Average	1046
Perimeter	
Penthouse	178.0
Average	178.0
Wall Height (floor to eaves)	

Wall Height Interpolation

28	1.367
30.00	1.413
32	1.459
44.5	1980.25

Wall Height Interpolation	1	1.367	-	1.459	=	-0.092
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Penthouse	15.00
Average	15.00

15690
15690

15

2	30	-	28	=	2
3	32	-	28	=	4
4	2	/	4	=	0.5
5	-0.092	*	0.5	=	-0.046
6	1.367	-	-0.046	=	1.413

Sprinkler
Interpolation

n/a	5.15
1,046	5.82
1500	5.82

1	5.15	-	5.82	=	-0.67
2	1,046	-	n/a	=	#VALUE!
3	1500	-	n/a	=	#VALUE!
4	#VALUE!	/	#VALUE!	=	#VALUE!
5	-0.67	*	#VALUE!	=	#VALUE!
6	5.15	-	#VALUE!	=	#VALUE!

Marshall Valuation Service Analysis
A.L.S. HEALTHCARE CONSULTANT SERVICES

Suburban Hospital
Consolidated Benchmark

	MVS			Total Cost
	Benchmark	Sq. Ft.		Based on
Standard				MVS
<u>"Tower" Component</u>	\$364.44	235,597	\$	85,862,129.23
<u>Basement</u>	\$195.41	64,432	\$	12,590,416.39
<u>Mechanical Penthouse</u>	\$193.25	1,046	\$	202,139.34
<u>Consolidated</u>	\$ 327.67	301,075	\$	98,654,684.95

**Marshall Valuation Service Analysis
A.L.S. HEALTHCARE CONSULTANT
SERVICES**

Suburban Hospital

New Construction

II. The Project

A. Base Calculations	Actual	Per Sq. Foot
Building	\$89,816,065	\$298.32
Fixed Equipment	\$8,253,670	\$0.00
Site Preparation	\$13,372,894	\$44.42
Architectural Fees	\$5,537,540	\$18.39
Permits	\$1,049,400	\$3.49
Capitalized Construction Interest	Calculated Below	Calculated Below
Subtotal	\$118,029,569	\$392.03

B. Extraordinary Cost Adjustments

Project Costs

Site Demolition Costs	\$566,484	Site
Storm Drains	\$40,030	Site
Rough Grading	\$50,133	Site
Hillside Foundation	\$0	Site
Paving	\$1,075,149	Site
Exterior Signs	\$6,250	Site
Landscaping	\$168,072	Site
Walls	\$29,546	Site
Yard Lighting	\$17,156	Site
Site Furnishings	\$114,372	Site
Sheet and Shore Basement Excavation	\$2,845,215	Site
Fire Pump Water Storage Tank (20,000 gal)	\$285,863	Site
Security Devices	\$50,000	Site
Utilities	\$5,000,000	Site
Jurisdictional Hook-up Fees	\$500,000	Site
Restricted Site	\$3,248,000	Building
Backfill Premium	\$721,520	Building
Select building demolition	\$281,880	Building
Provisions for vertical addition	\$2,900,000	Building

Pneumatic tube system	\$440,800	Building
Permanent dewatering system	\$174,000	Building
LEED Silver Premium	\$3,922,789	Building+Fixed
Canopy Premium for Concrete Frame Construction	\$489,520	Building
	\$730,351	Building
Overhead Bridge	\$1,329,128	Building
Total Cost Adjustments	\$24,986,258	24.0%

C. Adjusted Project Cost

Per Square Foot

Building	\$75,578,077	\$251.03
Fixed Equipment	\$8,253,670	\$27.41
Site Preparation	\$2,624,624	\$8.72
Architectural Fees (adjusted for Extraordinary Cost allocation)	\$4,210,174	\$13.98
Permits	\$1,049,400	\$3.49
Subtotal	\$91,715,945	\$304.63
Capitalized Construction Interest	\$7,620,737	\$25.31
Total	\$99,336,682	\$329.94

MVS Benchmark	\$327.67
The Project	\$329.94
Difference	\$2.27
	0.69%

**Marshall Valuation Service Analysis
A.L.S. HEALTHCARE CONSULTANT
SERVICES**

**Suburban Hospital
Renovation**

I. The Marshall and Swift Guideline

Type	Hospital
Construction Quality/Class	Good/A
Stories	3
Perimeter	475
Average Floor to Floor Height	11.3
Square Feet	17,587
f.1 Average floor Area	5,862

A. Base Costs

Basic Structure	\$354.99
Elimination of HVAC cost for adjustment	0
HVAC Add-on for Mild Climate	0
HVAC Add-on for Extreme Climate	0
Total Base Cost	\$354.99

**B.
Additions**

Elevator (If not in base)	\$0.00
Other	\$0.00
Subtotal	\$0.00

Total	\$354.99
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C. Multipliers

Perimeter Multiplier	0.876764891
Product	\$311.24
Height Multiplier	0.98
Product	\$306.47
Multi-story Multiplier	1.000

Product	\$306.47
D. Sprinklers	
Sprinkler Amount	\$0.00
Subtotal	\$306.47
E. Update/Location Multipliers	
Update Multiplier	1.05 3/15
Product	\$321.79
Location Multiplier	1.07 1/15
Product	\$344.32
Calculated Square Foot Cost Benchmark	\$344.32

II. The Project

A. Base Calculations	Actual	Per Sq. Foot
Building	\$2,375,878	\$135.09
Fixed Equipment	\$2,254,000	\$128.16
Site Preparation	\$0	\$0.00
Architectural Fees	\$127,460	\$7.25
Permits	\$35,600	\$2.02
Capitalized Construction Interest	\$215,980	\$12.28
Subtotal	\$5,008,918	\$284.81
MVS Benchmark		\$344.32
The Project		\$284.81
Difference		-\$59.51
		-17.28%

Renovation

Area Interpolation

Sprinkler Interpolation

Perimeter Interpolation

New	35174	70348	140696	281392
	0	0	0	0

Wall Height Interpolation

	11	0.977			
	11.33	0.98466667			
	12	1		0	0
1	0.977	-	1	=	-0.023
2	11	-	11	=	0.333333
3	12	-	11	=	1

Average	475
Wall Height (floor to eaves)	
1st Floor	12
2nd Floor	11
3rd Floor	11
Average	11.3

4

0.33333333

/

1

=

0.333333

5

-0.023

*

0.33333333

=

-0.00767

6

0.977

-

-0.00766667

=

0.984667