

Choosing by Advantages Study: George Washington University Hospital Helipad Elevator Analysis

	Alternative 1 D1 Adj. to Existing Elevators	Alternative 2 D2 Elevator located west of Stair #3	Alternative 3 D4 Elevator located west of stair #3 closer to screen wl	Alternative 4 D3-A Modernize Elev. Equip Above Elev Raise the Roof	Alternative 5 D3-B Modernize Elev. Equip Relocated West	Alternative 6 D3-C Modernize Elev. Equip relocated to exterior	Alternate 7 D5 Replace Existing Elevator	Value	Alternate 8 D6 Add New Elevator on Side Of Hospital	Value
Factor: Amount of Structural Modifications Required	Hole in Roof, New Shear Wall, New Beams to the Floor into new shear wall	Cut Roof create sump pit	Cut roof- cuts column strips	Extend penthouse roof Remove portion of Existing penthouse roof	Construct area for equipment, Remove portion of roof, raise roof	Construct area for equipment.	New sump pit,			70
Criteria: Amount of Days Elevators will be down	1 elev KONE-12-14 weeks Total 14 weeks 22 weeks less	0	0	1 elev KONE-12-14 weeks HITT 4 weeks Total 18 weeks 18weeks less	1 elev KONE-12-14 weeks HITT 4 weeks Total 18 weeks 18 weeks less	1 elev KONE-12-14 weeks HITT 4 weeks Total 18 weeks 18 weeks less	1 elev KONE-18 weeks HITT 18 weeks Total 36 weeks		0	100
Factor: Length of access path required to elevator	190' of Path to Elevator 20' Less	190' of Path to Elevator 20' Less	165' of Path to Elevator 45' Less	210' of Path to Elevator	210' of Path to Elevator	210' of Path to Elevator	210' of Path to Elevator			30
Criteria: Length of travel from Helipad Stop to Elev.	15	15	30	0	0	0	0		0	
Factor: Amount of spaces affected on 5th floor	Depending on elevator chosen and detail, may fit above ceiling	Depending on elevator chosen and detail, may fit above ceiling	Depending on elevator chosen and detail, may fit above ceiling	0	0	0	0		0	90
Criteria: Square footage of space altered	60	60	60	No space affected	No space affected	No space affected	No space affected		No space affected	
Factor: Amount of Space affected on the 6th floor	100 sf for elevator 80sf for lobby 80sf for machine room Total= 360sf	100 sf for elevator 80sf for lobby 80sf for machine room Total= 360sf	100 sf for elevator 80sf for lobby 80sf for machine room Total= 360sf	0	0	0	0		0	80
Criteria:	80	80	80	No space affected	No space affected	No space affected	No space affected		No space affected	
Factor: Amount of Revisions to existing roof	Relocate elevator exhaust	Relocate MAU-1 and Kitchen exhaust fans and ductwork	Relocate some mechanical equip and fans	Relocate elevator exhaust Relocate elev equip	Relocate elevator exhaust Relocate elev equip	Relocate elevator exhaust Relocate elev equip	Relocate elevator exhaust		2	20
Criteria: Amount of MEP revisions Scale:1-10(most)	1	3	5	3	3	3	2		17	
Factor: Meets Zoning Criteria	Does not require variance	Does not require variance	Does not require variance	Requires Variance	Requires Variance	Does not require variance	Does not require variance			50
Criteria: Cannot be over 18'-6" above roof	Variance Not Req.	Variance Not Req.	Variance Not Req.	Variance Not Req.	Variance Not Req.	Variance Not Req.	Variance Not Req.		Variance Not Req.	
Factor: Amount of Space in Leased Space affected	0	2 exam rooms in classroom area 170 sf	Conference room in Classroom area 300 sf	0	0	0	0		0	80
Criteria:	80	40	60	80	80	80	80		80	
Factor: Requires Life Safety Modifications to Level 6	Yes, blocks exit corridor Will have to reassess exiting from Psych Difficulty 5	Minor Life Safety Modifications if careful with placement Difficulty 3 Minor required	Minor Life Safety Modifications if careful with placement Difficulty 3	0	0	0	0		0	70
Criteria: Degree of difficulty of modifications required- Scale 1-10(most)	30	60	60	70	70	70	70		70	
Factor: Structural Analysis Required	40 hours	40 hours	40 hours	40 hours	40 hours	40 hours	80 hours			10
Criteria: Estimated amount of hours	10	10	10	10	10	10	0		0	
Factor: Maintain 8'-0" Path to Elevators	40' of Path at 6'-6" wide	Can maintain 8'-0" for length of Entire Path	Can maintain 8'-0" for length of Entire Path	40' of Path at 6'-6" wide	40' of Path at 6'-6" wide	40' of Path at 6'-6" wide	40' of Path at 6'-6" wide			40
Criteria: Length of Path at 8'-0"	25	40	40	25	25	25	25		25	
Factor: Amount of Above Ceiling Modifications on Level 5/6	Large amount of piping Fuel lines, and conduit above ceiling	Small amount of HVAC above ceiling to serve adjacent rooms	Small amount of HVAC above ceiling to serve adjacent rooms	None required	None required	None required.	None required.		None required.	60
Criteria: Amount of modifications- Scale 1-10 (most)	8	4	4	60	60	60	60		60	
Advantage:	10	25	25	None	None	None	None		None	
COST RANKING	370	403	385	478	408	528	472			
	7	5	6	2	4	1	3		3	
Factor: Amount of Exterior Wall required	Approx 700sf of ext 220 sf of roof	Approx 1120sf of ext. 220sf roof	Approx 400 sf of exterior 220sf of roof	Approx 400 sf of exterior 220sf of roof	Approx 400 sf of exterior 100sf of roof	Approx 700sf of ext. 220sf roof	0			0
Criteria:										
Advantage:	400sf less ext	720sf less ext	720sf less ext	720sf less ext	720sf less ext/ 120sf less roof	400sf less ext	None			

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Factor: Amount of Structural Modifications Required								
Criteria: Hole in Roof, New Shear Wall, New Beams to tie Floor into new shear wall		Cut Roof create sump pit	Cut roof- cuts column strips	Extend penthouse roof Remove portion of Existing penthouse roof	Construct area for equipment, Remove portion of roof, raise roof	Construct area for equipment.	New sump pit,	New structure required to support elevator
Attribute: Advantage:								
Factor: Amount of Days Elevators will be down								
Criteria: Days for prepping/ days for elevator Installation	1 elev KONE-12-14 weeks			1 elev KONE-12-14 weeks HITT 4 weeks Total 18 weeks	1 elev KONE-12-14 weeks HITT 4 weeks Total 18 weeks	1 elev KONE-12-14 weeks HITT 4 weeks Total 18 weeks	1 elev KONE-18weeks HITT 18 weeks Total 36 weeks	
Attribute: Advantage:	Total 14 weeks 22 weeks less	36 weeks less	36 week less	18weeks less	18 weeks less	18 weeks less	36 weeks less	36 weeks less
Factor: Length of access path required to elevator								
Criteria: Length of travel from Helipad Stop to Elev.	190' of Path to Elevator	190' of Path to Elevator	165' of Path to Elevator	210' of Path to Elevator	210' of Path to Elevator	210' of Path to Elevator	210' of Path to Elevator	25' of Path to Elevator
Attribute: Advantage:	20' Less	20' Less	45' Less					185' less
Factor: Amount of spaces affected on 5th floor								
Criteria: Square footage of space altered	Depending on elevator chosen and detail, may fit above ceiling	Depending on elevator chosen and detail, may fit above ceiling	Depending on elevator chosen and detail, may fit above ceiling					Delete 1 Semi-Private Room, lose 2 licensed beds
Attribute: Advantage:	Some above ceiling	Some above ceiling	Some above ceiling	No space affected	No space affected	No space affected	No space affected	
Factor: Amount of Space affected on the 6th floor								
Criteria: Square footage	100 sf for elevator 80sf for lobby 80sf for machine room Total= 360sf	100 sf for elevator 80sf for lobby 80sf for machine room Total= 360sf	100 sf for elevator 80sf for lobby 80sf for machine room Total= 360sf					
Attribute: Advantage:				No space affected	No space affected	No space affected	No space affected	No space affected
Factor: Amount of Revisions to existing roof								
Criteria: Amount of MEP revisions Scale:1-10(most)	Relocate elevator exhaust	Relocate MAU-1 and Kitchen exhaust fans and ductwork	Relocate some mechanical equip and fans	Relocate elevator exhaust Relocate elev equip	Relocate elevator exhaust Relocate elev equip	Relocate elevator exhaust Relocate elev equip	Relocate elevator exhaust	No MEP revisions required to roof
Attribute: Advantage:	1	7	3	5	3	3	2	No rev. required
Factor: Meets Zoning Criteria								
Criteria: Cannot be over 18'-6" above roof	Does not require variance	Does not require variance	Does not require variance	Requires Variance	Requires Variance	Does not require variance	Does not require variance	Does not require a variance
Attribute: Advantage:	Variance Not Req.	Variance Not Req.	Variance Not Req.			Variance Not Req.	Variance Not Req.	Variance not required
Factor: Amount of Space in Leased Space affected								
Criteria:	0	2 exam rooms in classroom area 170 sf	Conference room in Classroom area 300 sf					
Attribute: Advantage:	None required	130sf less		None required	None required	None required	None required	None required
Factor: Requires Life Safety Modifications to Level 6								
Criteria: Degree of difficulty of modifications required and affect on operations- Scale 1-10(most)	Yes, blocks exit corridor Will have to reassess exiting from Psych Difficulty 5	Minor Life Safety Modifications if careful with placement Difficulty 3 Minor required	Minor Life Safety Modifications if careful with placement Difficulty 3 Minor required					
Attribute: Advantage:		30	60	None required	None required	None required	None required	None required
Factor: Structural Analysis Required								
Criteria: Estimated amount of hours	40 hours	40 hours	40 hours	40 hours	40 hours	40 hours	80 hours	40 hours
Attribute: Advantage:	40 hours less	40 hours less	40 hours less	40 hours less	40 hours less	40 hours less		40 hours less
Factor: Maintain 8'-0" Path to Elevators								
Criteria: Length of Path at 8'-0"	40' of Path at 6'-6" wide	Can maintain 8'-0" for length of Path	Can maintain 8'-0" for length of Path	40' of Path at 6'-6" wide	40' of Path at 6'-6" wide	40' of Path at 6'-6" wide	40' of Path at 6'-6" wide	Can maintain 8'-0" for length of Path
Attribute: Advantage:		Entire Path	Entire Path					Entire Path
Factor: Amount of Above Ceiling Modifications on Level 5/6								
Criteria: Amount of modifications/ affect on operations affect on operations - Scale 1-10 (most)	Large amount of piping Fuel lines, and conduit above ceiling	Small amount of HVAC above ceiling to serve adjacent rooms	Small amount of HVAC above ceiling to serve adjacent rooms	None required	None required	None required.	None required.	Outside air intake at end of patient room will need to be modified.
Attribute: Advantage:	8	4	4	None	None	None	None	3
COST RANKING	3,167,701.00	2,675,389.00	2,680,592.00	2,359,853.00	2,360,335.00	2,374,787.00	2,374,787.00	2,374,787.00
	8	6	7	3	5	1	4	2

THE OAKS - CBA

	Alternative 1 M & OP bld 100 % new	Alternative 2 M w/ Reno in 2 bldgs	Alternative 5 enlarge M	Alternative 6 Orig. M + 4 Reno	Alternative 7 1story and split foors	Alternative 8 stepped slab M	Alternative 14 100% new Her. Tree Free	
Factor:	Building Pad							
Criteria:	less tons is better							
Attribute:	40,771	35,545	43,645	33,963	30,499	33,967	16,302	95
Advantage:	(2,874)	(8,100)	0	(9,682)	(15,148)	(9,678)	0	
Factor:	Cuts & Fills							
Criteria:	less cost is better							
Attribute:	628,731	536,737	663,224	517,758	505,468	547,084	429,930	70
Advantage:	-34,493	-126,487	0	-145,466	-157,756	-116,140	-215,954	
Factor:	Regular Caliper Trees							
Criteria:	less caliper inches is better							
Attribute:	1,497	1,275	1,354	1,189	1,497	1,497	707	35
Advantage:	0	-222	-143	-308	0	0	0	
Factor:	Exterior Walls							
Criteria:	less lf of perimeter is better							
Attribute:	2,503	2,023	2,322	1,961	2,503	2,718	2,219	20
Advantage:	-215	-695	20	0	-215	0	-499	
Factor:	Parking Relationship							
Criteria:	less distance in lf is better							
Attribute:	570	570	600	755	570	570	380	50
Advantage:	-185	-185	-155	0	-185	-185	0	
Factor:	Additional Abatement Requirement							
Criteria:	less cost is better							
Attribute:	71,136	156,939	71,136	177,840	71,136	71,136	71,136	20
Advantage:	0	-20,901	0	0	0	0	0	
Factor:	Wet Site Utilities							
Criteria:	less lineal ft is better							
Attribute:	2,970	2,930	2,590	2,930	2,970	2,970	2,540	5
Advantage:	0	-40	-380	-40	0	0	0	
Factor:	Structural Concrete							
Criteria:	min/mod/max - min is best							
Attribute:	max	max	max	max	mod	mod	min	95
Advantage:	0	0	0	0	0	0	0	
Factor:	Site Concrete							
Criteria:	min/mod/max - min is best							
Attribute:	max	max	max	max	mod	mod	min	70
Advantage:	0	0	0	0	0	0	0	
Factor:	Paving							
Criteria:	less sf is better							
Attribute:	19,500	19,500	19,500	19,500	19,500	19,500	14,000	10
Advantage:	0	0	0	0	0	0	0	
Factor:	Speed of Const.							
Criteria:	faster is better							
Attribute:	14	14	14	14	13	14	12	30
Advantage:	0	0	0	0	-1	0	0	
Factor:	MEP Systems							
Criteria:	no renovation is better							
Attribute:	none	28,601	none	35,568	none	none	none	60
Advantage:	none	-6,967	0	0	0	0	0	
Factor:	Exterior Material Options							
Criteria:	no restriction of material selection is better							
Attribute:	no	yes	no	yes	no	no	no	40
Advantage:	0	0	0	0	0	0	0	
Factor:	Kitchen Distance From Fullding Entrance							
Criteria:	less footage distance and inside is better							
Attribute:	0	0	0	300	0	0	0	50
Advantage:	0	0	0	0	0	0	0	
Factor:	Ferticite Transport							
Criteria:	no elevator is best							
Attribute:	no	no	no	no	yes	no	no	100
Advantage:	0	0	0	0	0	0	0	
Factor:	Construction Type							
Criteria:	2B (less than 55000 sf) is better							
Attribute:	IIB	IIB	IIA	IIB	IIB	IIB	IIB	50
Advantage:	0	0	0	0	0	0	0	
SCORE		375	346	304	271	440	490	800
RANKING						3	2	1