

Student Engineering Advocacy: Transportation Section

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Groups of People Using Elevators

- Students and Faculty, including those with physical disabilities and injuries.
- Maintenance Workers
- Construction Workers
- Cleaning Crew

The Problem with NAC Elevators and Student Transportation

- Two sets of elevators in the NAC
- Huge demand for it produces overcrowding on both the elevator and escalators

People with disabilities and injuries

- People with physical disabilities have difficulties
- 7th floor can only be reached by the elevators or stairs



Effect on Tardiness

Students are expected to attend every class session of each course in which they are enrolled and to be on time. They should note that an instructor may treat lateness as equivalent to absence. No distinction is made between excused and unexcused absences.



Busy elevators make students late

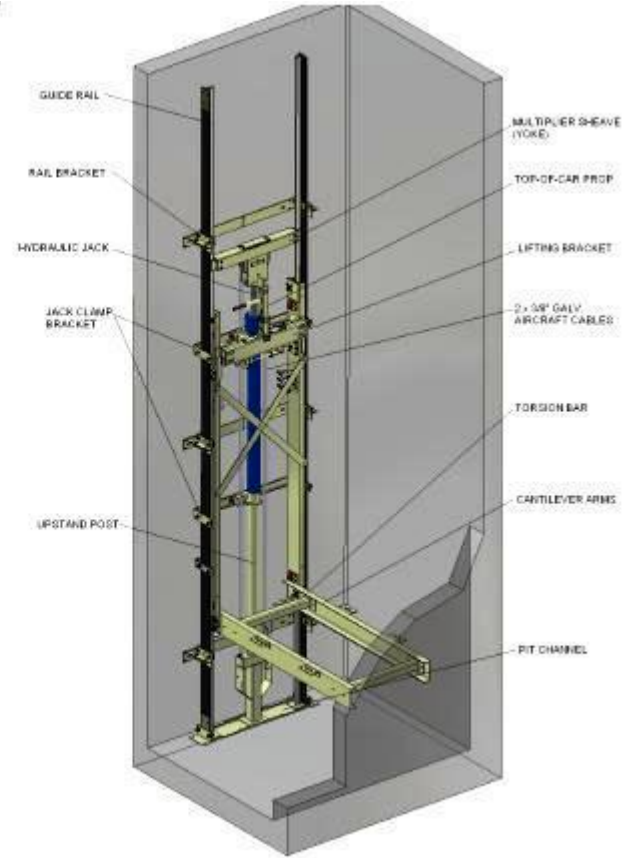
Possible Risks in Current System

- 20 people injured in the Rome Metro after a crowded football match ended
- Possible lawsuits
- Increased probability of injuries
- Repair and labor expense



Proposal

- Low-cost maintenance and space was a priority
- Limited Use Limited Accessibility Elevators is the best result



Location

Four new elevators
installed in each of the
staircases in the NAC



Budget

This table shows the total cost of installing four new elevator shaft, material expenses, and labor costs. The second table shows the lowered maintenance costs and how much money will be saved in relation with the current set up.

Net operating cost	\$5,000
Elevator cost	\$200,000
Labor cost	\$25,000
Total cost	\$230,000

Budget (continued)

With one more elevator shaft in place, the original elevator and escalator will require less maintenance, due to decreased amount of use. As seen in Table 2, after four years of operation, money that will be saved from a more spread out use will cover the cost of installing new elevators.

Set up	Maintenance	Operation	In 4 years
Current set up	\$250,000	\$25,000	\$1,100,000
After change	\$175,000	\$30,000	\$820,000
Savings	\$75,000	\$-5,000	\$280,000

Schedule

This schedule shows proposed dates. These dates have been selected due to what we believe are the best dates to begin construction. The presence of students and faculty are minimal during these times on campus.

Activity	Start Date	End Date
Task 1: Research the most appropriate elevators	Nov 11	Nov 18
Task 2: Present our proposal to the VP of Facilities, gain feedback, budget, and organize staff to install elevators	Nov 18	Feb 1
Task 3: Observe quality and cost-effectiveness	Feb 2	Mar 28
Task 4: Make a report	Mar 29	Apr 15

2019 - 2020 Calendar

November							December						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2	1	2	3	4	5	6	7
3	4	5	6	7	8	9	8	9	10	11	12	13	14
10	11	12	13	14	15	16	15	16	17	18	19	20	21
17	18	19	20	21	22	23	22	23	24	25	26	27	28
24	25	26	27	28	29	30	29	30	31				
4:●	12:○	19:●	26:●				4:●	12:○	18:●	26:●			

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January						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	
2:●	10:○	17:●	24:●			

February						
Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
1:○	9:○	15:○	23:●			

March						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				
2:○	9:○	16:○	24:●			

April						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
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12	13	14	15	16	17	18
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1:○	7:○	14:○	22:●	30:○		

May						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
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17	18	19	20	21	22	23
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31						
7:○	14:○	22:●	29:○			

June						
Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				
5:○	13:○	21:●	28:○			

Conclusion

- Crowded elevators costs money, time, and quality of life
- Installing Limited Access Limited Use Elevators in the staircase of the NAC is the solution
- Saves maintenance costs and adds extra capacity

References

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