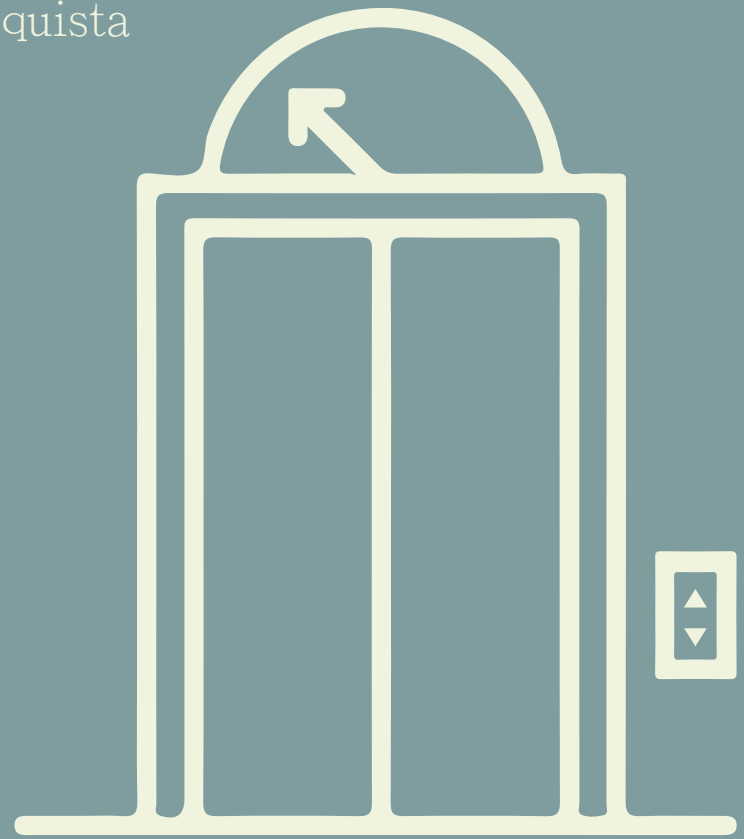
Designing An Elevator

Gabrielle Acquista



WARNING: I do not claim to know Braille. For the purposes of the midterm I will use dots.

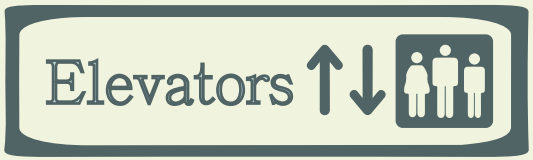
Part One:
The Elevator Experience

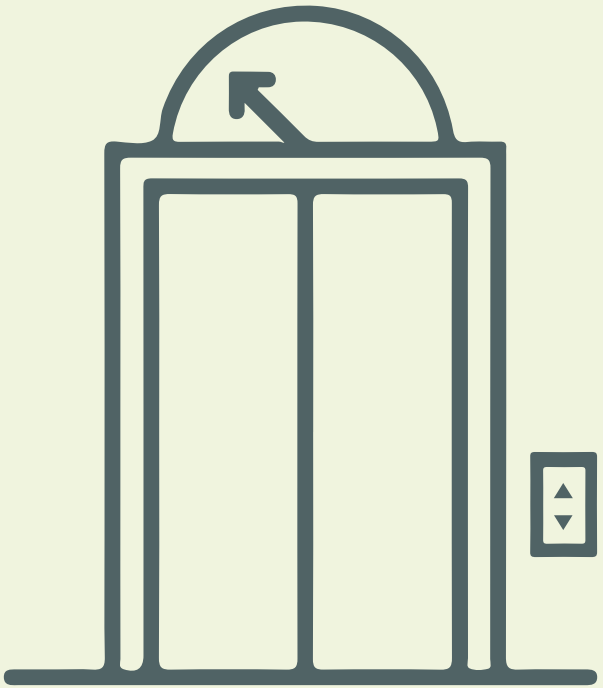
I. How to Ride an Elevator

II. Interfaces

III. The Good Stuff

IV. Areas of Improvement





I.

Find the elevator.

↓

Call the elevator, press button for up or down.

↓

Wait for the doors to open.

↓

The doors open!

If people are getting off, wait for them to step out.

↓

Get on the elevator.

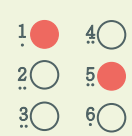
↓

Press the button for desired floor.

↓

Elevator doors close.

Elevator stops at each floor where the button is pressed.



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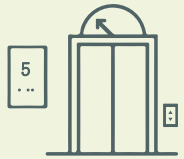
Elevator stops at your desired floor.



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Doors open.

↓

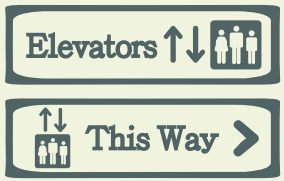
Step out of the elevator!

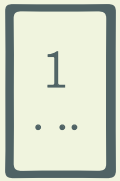
II.

Interfaces Outside

Elevator Signs

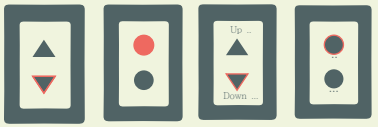
Directional and informational (i.e floor#)





Up-Down Button

Position and words (braille too) indicate direction, glow means the button has been pressed.



Display of Elevator's Floor

Interfaces Inside

Display of Current Floor

Sometimes the inner display does not have an arrow, some only have arrows.

Floor Buttons

Proximity isn't always clear as to which label goes with which button!! We don't want to end up on the wrong floor....

III.

Pros

1. Most times, buttons will have braille for accessability. And, the buttons are intuitive; the one on top is going up, the one on the button is going down, the button number goes to that floor.

2. If an elevator has a display on each floor for where it currently is, it's typically easy to understand.

3. Typically there's a *ding* to indicate when the doors are opening. Elevator music is a plus.

4. Buttons light up to indicate they've been pressed.

5. It does what it needs to do.

IV.

Cons

1. Elevator experiences lack consistency, some are more accessible than others.

2. What if the user doesn't actually know which floor they need to get to? There's no way to just "call the elevator here" and most elevator lobbies don't have a directory unless it's the main floor.

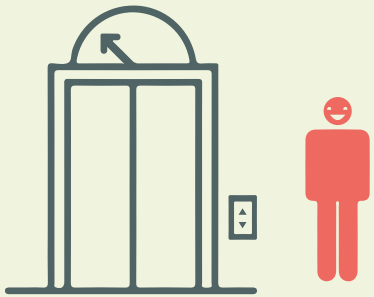
3. The whole experience is typically awkward. I dread waiting for the first elevator to open - especially if it doesn't have a display of its current floor - and sometimes a full elevators open and nobody is geting off, so I have to press the button all over again.

Summary:

Riding an elevator is an experience. We don't want people to have to take the stairs.

Keys to a good experience:

* easy to find
* being accessible (sound, braille, voice activation?)
* intuitive
* avoids awkward interactions
* display is accurate for all scenarios
* able to move smoothly, and get to the right place

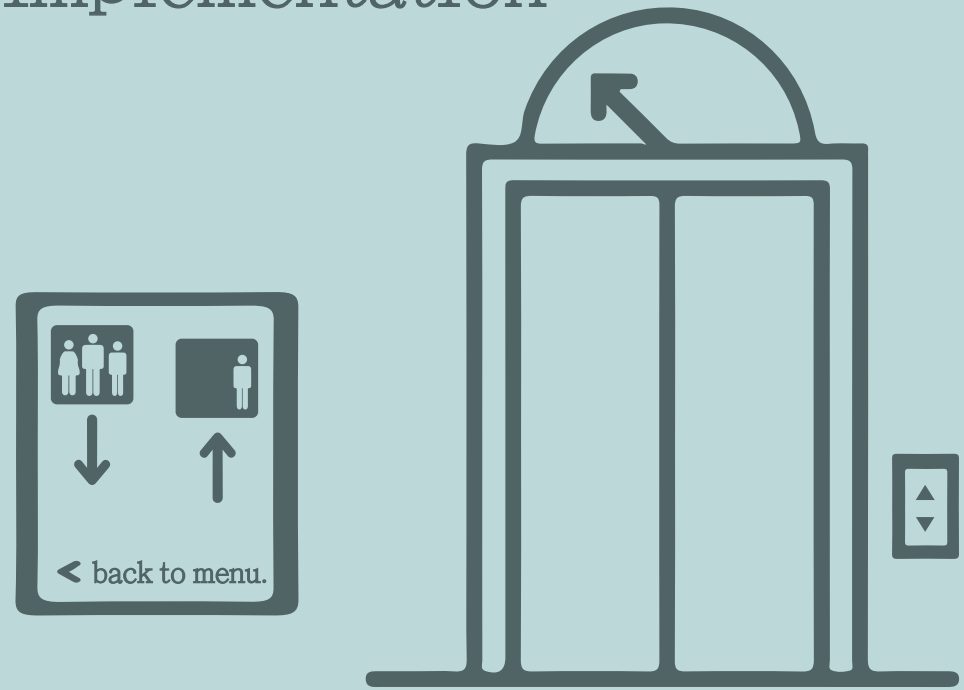


Part Two:
The Evolved Elevator

I. Enhanced Designs

II. Drawbacks

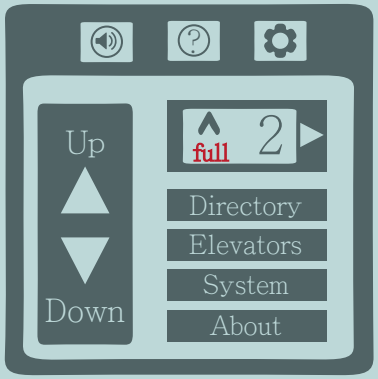
III. Discuss Universal Implementation



I.

Option 1: The Eleva-TABLET

There are two interfaces: one outside the elevator/s, and one inside (does not include signage to get to the correct location).



1. Typical UP/DOWN button draws the majority of the attention.

2. Everything is in one place.

3. Settings, voice activation, speaker, info, directory, elevator "watching" .

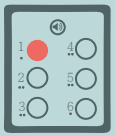
1. Buttons are clearly labeled, ordered left to right and up to down.

2. Arrow to scroll to more floors if necessary.

3. More panel leads to directory, similar to outside interface. Maybe it can incorporate a "juke-box" feature.

Option 2: Update the Current System

1. Buttons have clear proximity, braille under the number, voice activation connected to button system for further accessibility with different languages.



2. Digital display of current floor is clear- shows the current floor, and only that. Having more there could look cluttered and is especially unreasonable for larger buildings. Outside/Inside.

3. Detection on the floor of the elevator prevents it from being called to a floor *UNTIL* the load has decreased (by weight AND/OR by person capacity). Status is displayed on digital display. System uses an elevator queue.

4. Signs on every floor so you know to go up or down.

Circle shows your current location,
* represents main floor.

II.

Option 1 Oh-No's

1. Technology tends to fail - we would have to keep the up/down buttons for that case.

2. It's complicated! Older people tend to use elevators more frequently than young adults, they could see this as too "advanced" and be put off.

3. It seems like an expensive solution to something that already works perfectly decent as is.

4. No braille on a tablet!

Option 2 Oh-No's

1. Directory on every floor could be redundant. Perhaps this is something that should be inside the elevator itself?

2. Directory might not be helpful for those who can't read or speak a different language.

III.

Technically, this elevator tablet can be applied for universal use. Since it's a software, the UI can be customized for any building. It will be the same system with optimized elevator movement and is easily accessible - although you cannot read braille off of a tablet, voice activation and audio will be used in its place. The financial aspect, unfortunately, would likely be unreasonable for many places. Developing a high-tech software is expensive, and same for implementing it! There's a lot of room for error, but this is not an impossible solution and could be created in the near future. It is efficient and accessible.

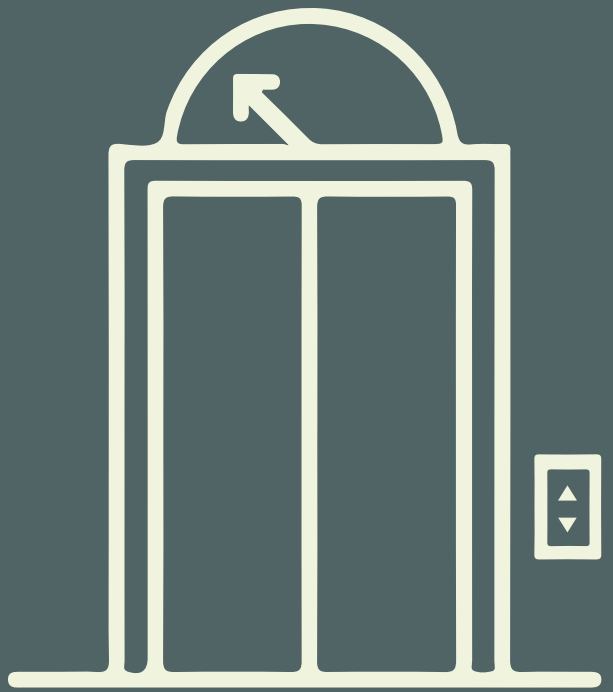
As for option 2 - updating the system - there are only a few design aspects that can be implemented to create an entirely more efficient and less awkward experience.

Part Three:
The Building With 10,000 Floors

I. How It’ll Work

II. Potential Modifications

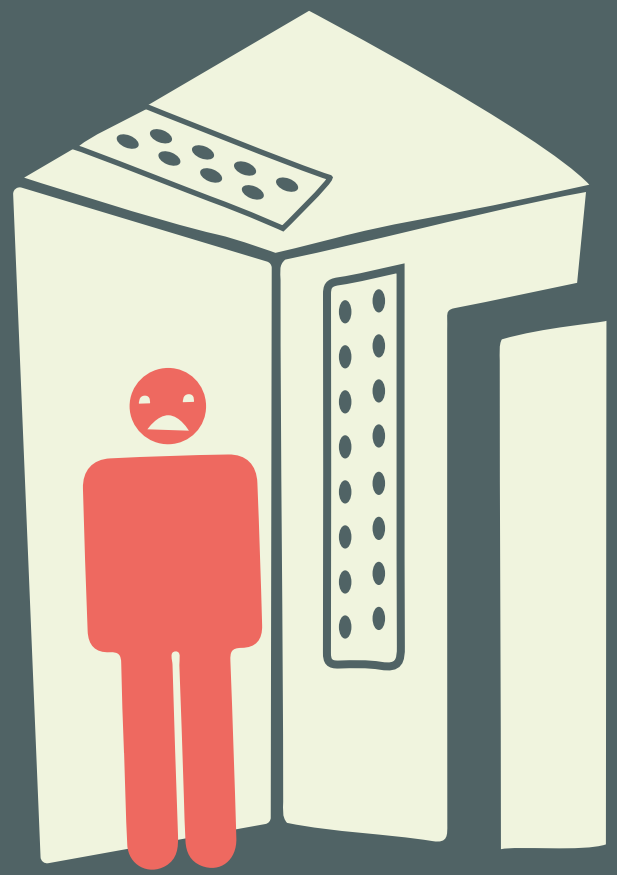
III. Managerial Perspective



I.

Not to flex, but the eleva-tablet would be the perfect solution for a 10,000 floor building. Software can literally do anything. The interface will "compartmentalize" and make the buttons easily accessable. You'd have to scroll A LOT, but it's better than the other options.

Updating the system probably wouldn't be so great for the inside buttons on a 10,000 floor building. They might be easy to read with clear proximity, but would cover the walls making it so much harder. In this case, the voice activation would have to be flawless and be a replacement to the buttons. The digital display and up/down buttons would be fine (although watching that elevator come from floor 9,992 down to floor 2 would really stink), but the directory signs are going to be huge - FILLED with 10,000 floors of information... on every floor? If you're in a building that big I hope you already know where you're going.



II.

Tablet Modifications:

1. Search feature for floor buttons to prevent excessive scrolling.

2. "Wait time" for closest elevator on the outside tablet. If I'm only going 4 floors up I don't want to wait 7 minutes for the elevator.

Other Modifications:

1. Dial or input keypad instead of buttons.

2. The signs are short but descriptive. Maybe they categorize floors, i.e "Floors 60-200 are the hotel rooms".

III.

Managing the Tablet:

1. Frequent software updates that don't interfere with elevator use.

2. Help/Info button doubles as a call button for a nearby building staff.

Managing Current System Updates:

I truly just think people need to make sure they know where they're going. I also think that having a building this big is a horrifying idea. But that is besides the point ... :(