High Level Requirements

Custodian   Resident

HVAC   Storage   Lighting

Electric Power   Emergency Warning

Residence Hall Room for 1 Student
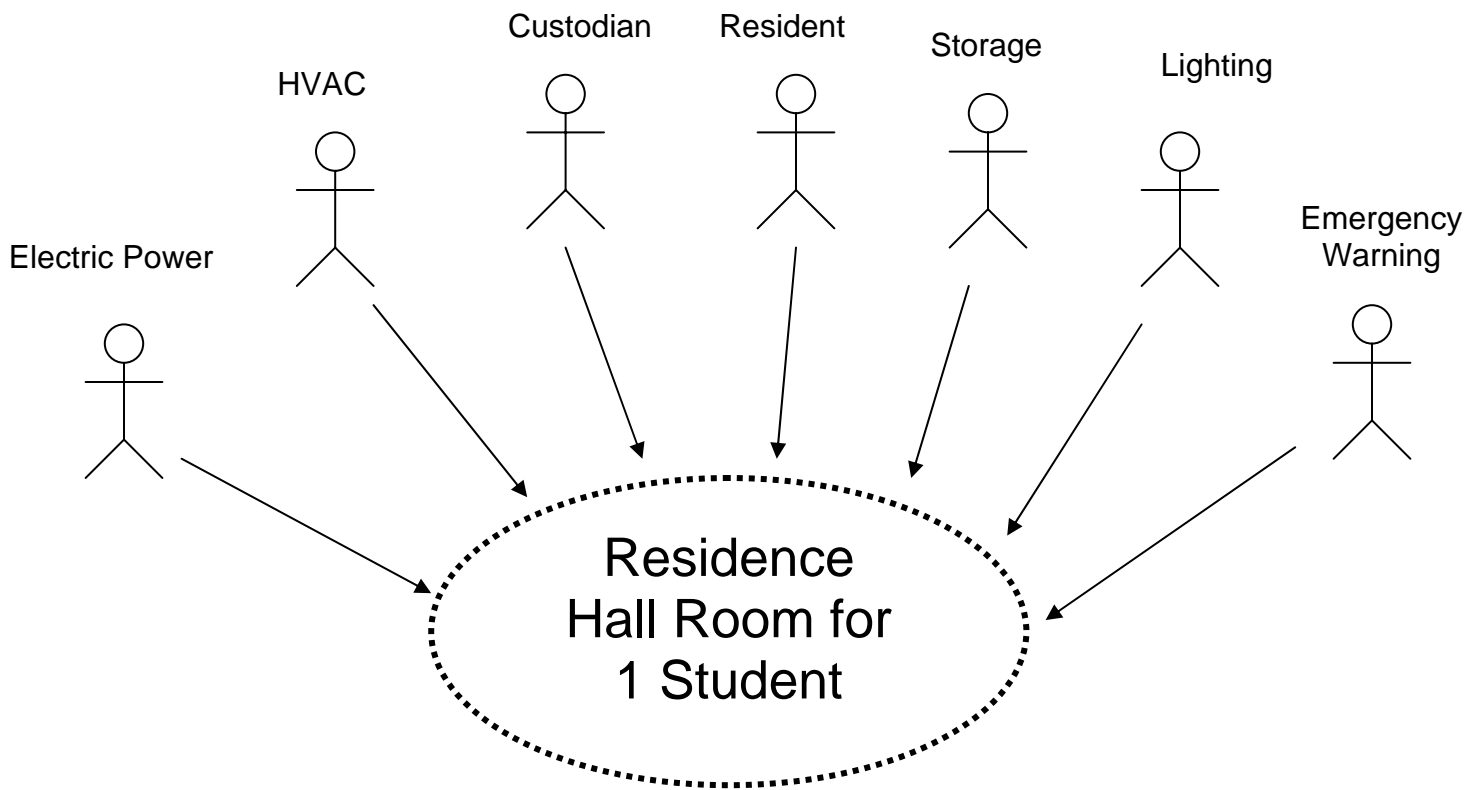
FUNCTIONS

Electric Power – 110 VAC, GFI protection
HVAC – Adjustable temperature, thermostatic controlled, fresh air
Custodian – Access for cleaning equipment
Resident – Study, sleep, TV viewing, music listening, visitors
Storage – Clothes, books, stuff
Lighting – Study, ambience, natural
Emergency warning – Smoke and CO detectors, audible & visual alarm,

STATES

Study – Temperature 70 F, no TV, focused study lighting, computer network.
Sleep – Temperature 60 F, no light, phone (ringer off/voicemail on)
Visitors – Temperature 70 F, TV, music, lights, refreshments
Cleaning – Temperature 65 F, lights, electric power for machines
Annual maintenance – Removable furniture, washable floor, walls, removable
    windows
Disaster alarm – High level audio alarm, flashing lights, emergency lighting

PDS

Electric Power
- 110 VAC, 40 A
- GFI protection,
- Number and location of outlets will satisfy all applicable local and national electric codes

HVAC
- Temperature range 50 – 80 F
- Temperature accuracy $\pm$ 2 F
- User adjusted, thermostatic controlled
- Air exchange (>2/hour) or to meet all applicable and local HVAC codes
- Filter of 100 micron particles

Custodian
- Access for cleaning equipment (30" door width)
- Power outlet for cleaning equipment (10 A)

Resident
- Study – Desk, computer carrel, & ergonomic adjustable chair
- Sleep – Standard, twin-sized bed
- Music listening – Shelves/rack (>6 ft^3) for electronics & speakers
- Visitors – Space (3 ft^2) for each guests (up to 6)

Storage
- Clothes (10 ft^3)
- Books (6 ft^3)
- Miscellaneous stuff (20 ft^3)

Lighting
- Study lighting (localized 40 lumens/ft^2 over 8 ft^2 desktop)
- Ambient (15 lumens/ft^2) throughout room
- Natural – Window area >5 ft^2
- Shall conform to all applicable local and national standards.

Emergency warning
- Smoke and CO detectors
- Audible (>90 dB) alarm
- Visual (50 lumens/ft^2, flashing) alarm
- Shall conform to all applicable local and national codes