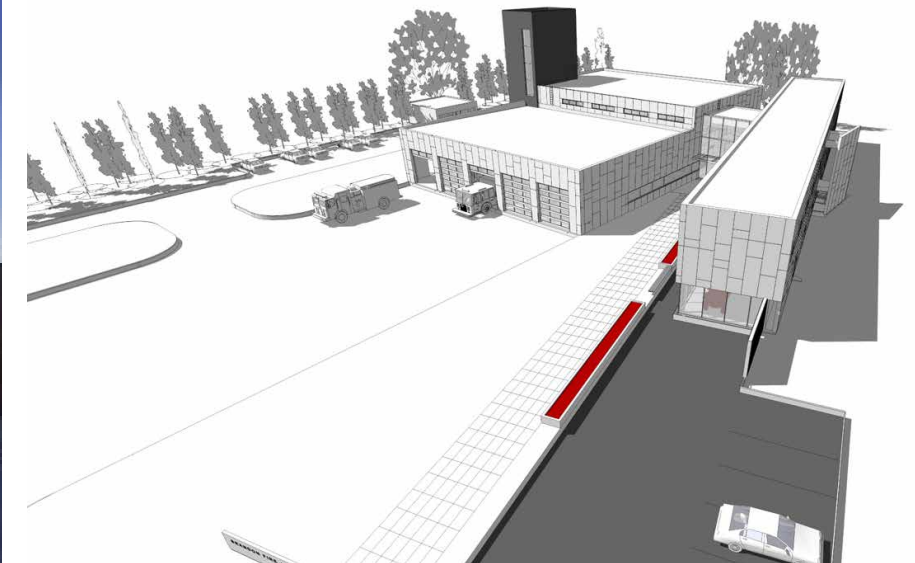


Precedent #1

Brandon Firehall No. 1

By: Cibinel Architects

This project is a 30,000 square feet Fire & Emergency services building that includes a 911 center, classrooms and Museum area. It was completed in 2010 and won the 2014 F.I.E.R.O Fire Station Design Award of Honor. The project is two stories, and beckons a separation from the public area and firehall wing through its formal gesture of a pivot, that is caused by aligning one hall to a creek next to the site and one hall to the street next to it.

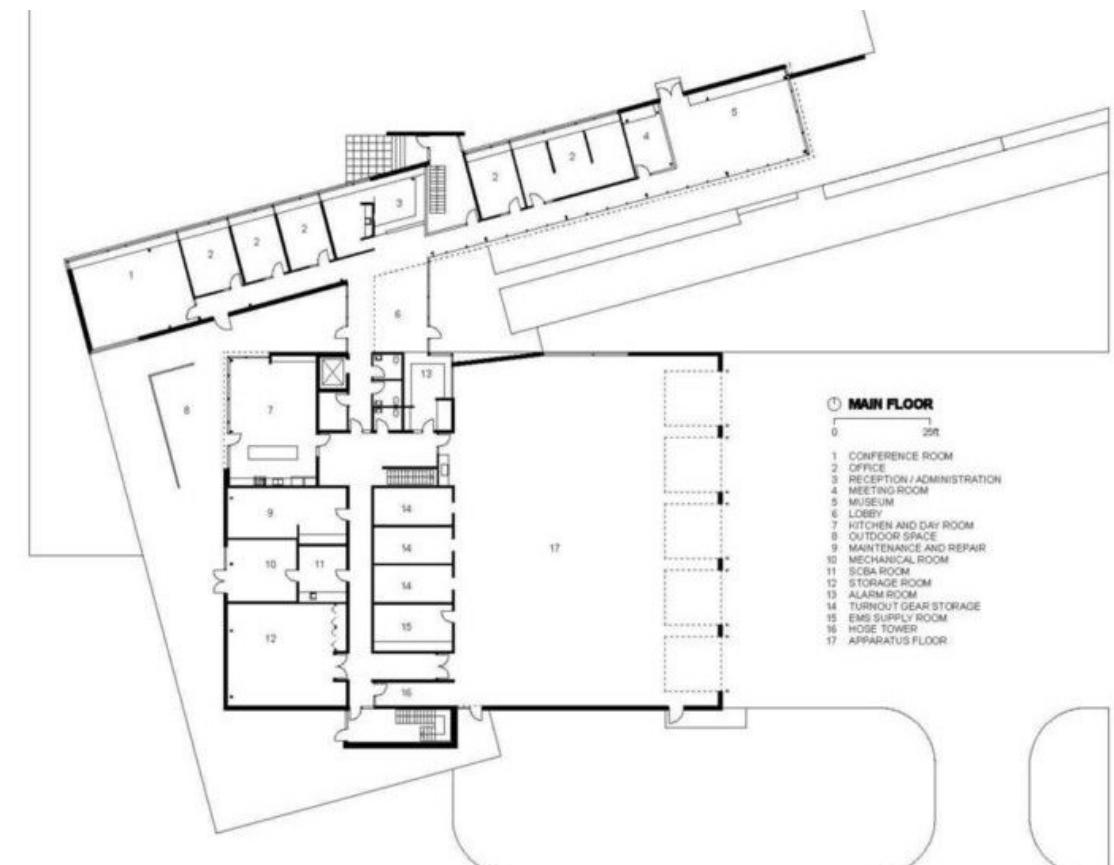
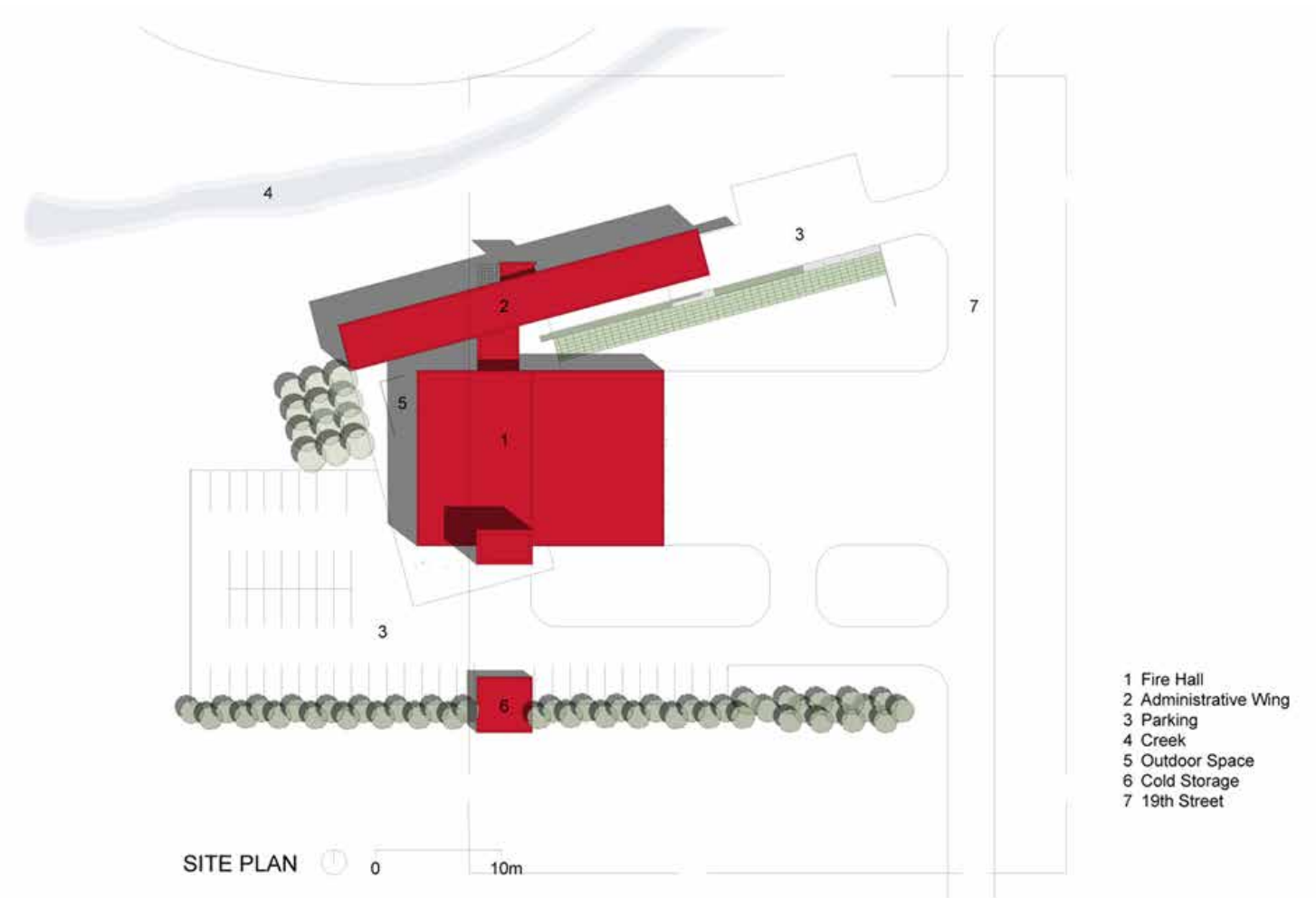


Brandon Firehall No. 1

By: Cibinel Architects

The firehall wing to the south, aligns with the street. Its program includes spaces geared for the working life of the users. Such program includes; the apparatus bays, the kitchen, a gym, various forms of equipment specific storages, a maintenance repair center and a general gathering spaces.

The Hall to the North, is the public & administrative wing, It includes the museum towards end most portion on the right side, a meeting area and has a lobby. The Entry and main circulation of this wing features a double height space with a main stairwell.



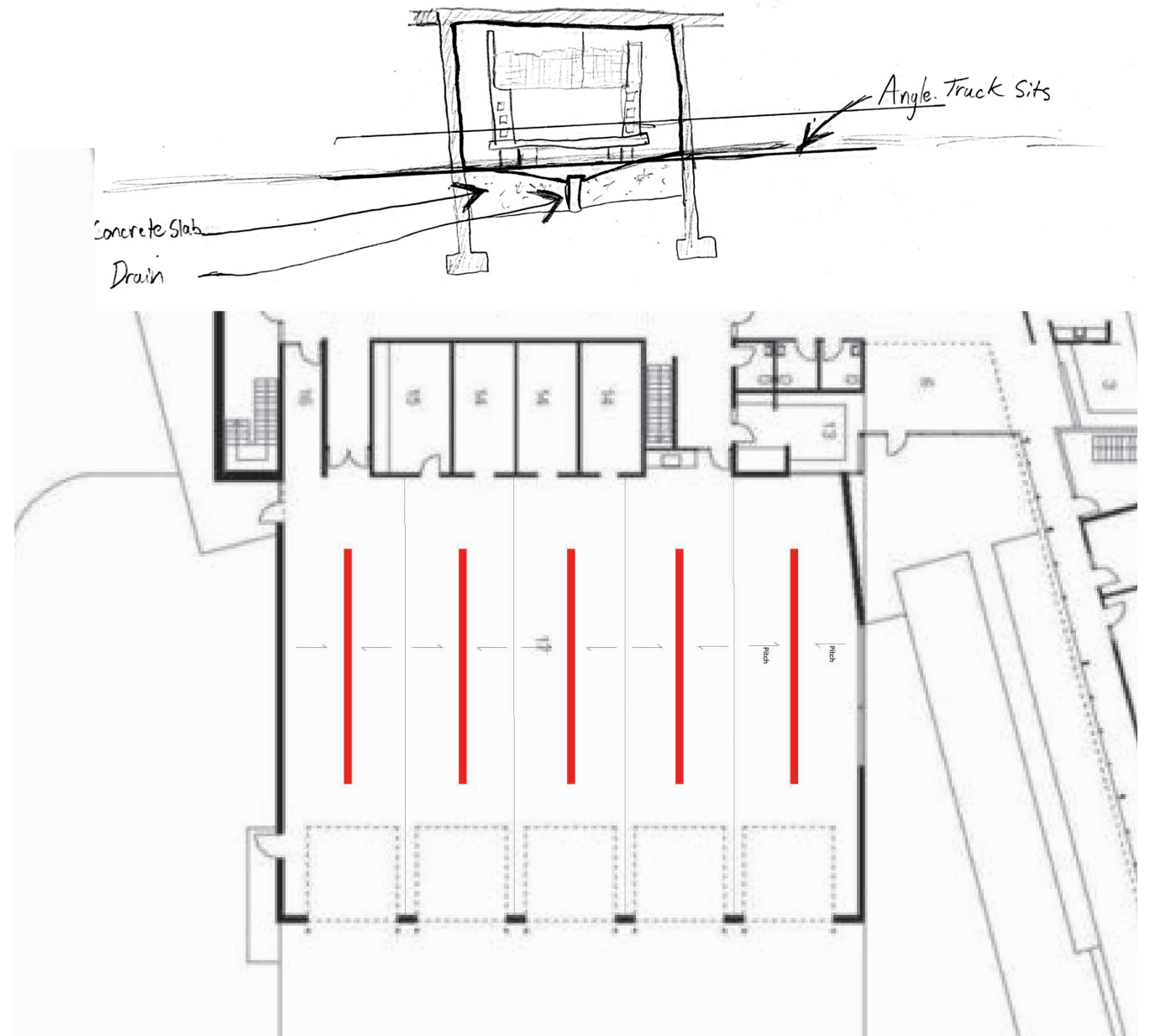
Brandon Firehall No. 1

By: Cibinel Architects

Brandon Firehall No. 1 gives off a rather modern appearance and accomodates a multi-use program in like fashion. It uses some minor design choices however that have subtle long-term affects on performance. One choice they made that benefits the equipment it houses is the use of Drain choices.

According to the NFPA, a long trench drain that takes up the entirety of an apparatus floor can have negative long term affects on Ambulances or Fire Apparatus stored in Emergency response departments' bays. Though it is cheaper in construction, it could potentially cost the department money on maintaining their equipment down the line since storing any vehicle in a bay designed with one long trench drain that services multiple other bays, involves pitching the entire floor the vehicles rest on. Allowing the vehicles to rest on a sloped floor, creates for vehicle suspension problems later in its life.

In this department, they chose to have drains directly below the vehicles, which benefits their suspension lifetime.



Precedent #2

Steveston Firehall No. 2

By: HCMA

This Firehall in Richmond British Columbia, was created with a focal point of attempting to bring the services of local first responders back into a noticeable light. How they went about doing this was by focusing on the ideas of community; its needs and how they interact with the users of this Firehall. This facility serves to be seen as a "gate" to the fishing community in Steveston, while also doing its best to serve as a home away from home. HCMA saw it important that those working and using the building the most, can use the building as their second home being that first responders often have to spend days away from their real home.

Residences in Richmond, say it is a strong visual building. HCMA's modern approach creates a very appealing, architecturally sound building which balances its uses quite well.



Steveston Firehall No. 2

By: HCMA

The design as quoted from HCMA; “provides a highly efficient operational layout that allows our staff to quickly access dispatch information and then proceed directly to the vehicle and out onto the call more effectively.” This can be evidenced just by looking at the general layout. All of the main operational program sits outside of the Apparatus bay, which includes entry points on either side. As shown in one of their process diagrams (Figure A), the building acts as a sort of pass through for the two bordering streets the site sits cornered by. This paired with the quick and easy access to the Apparatus floor, helps make for a ready response to any call in either direction within Richmond, for the First responders, as well as reinforces the idea of the “community gateway” which HCMA talks about attempting to accomplish when designing the building in the first place.



- Ground Floor plan
- 1 Community room
 - 2 Day room
 - 3 Kitchen
 - 4 Apparatus bay
 - 5 Gear room
 - 6 Training/hose tower
 - 7 Work shop
 - 8 Entry
 - 9 Fire planning office
 - 10 Captain's office

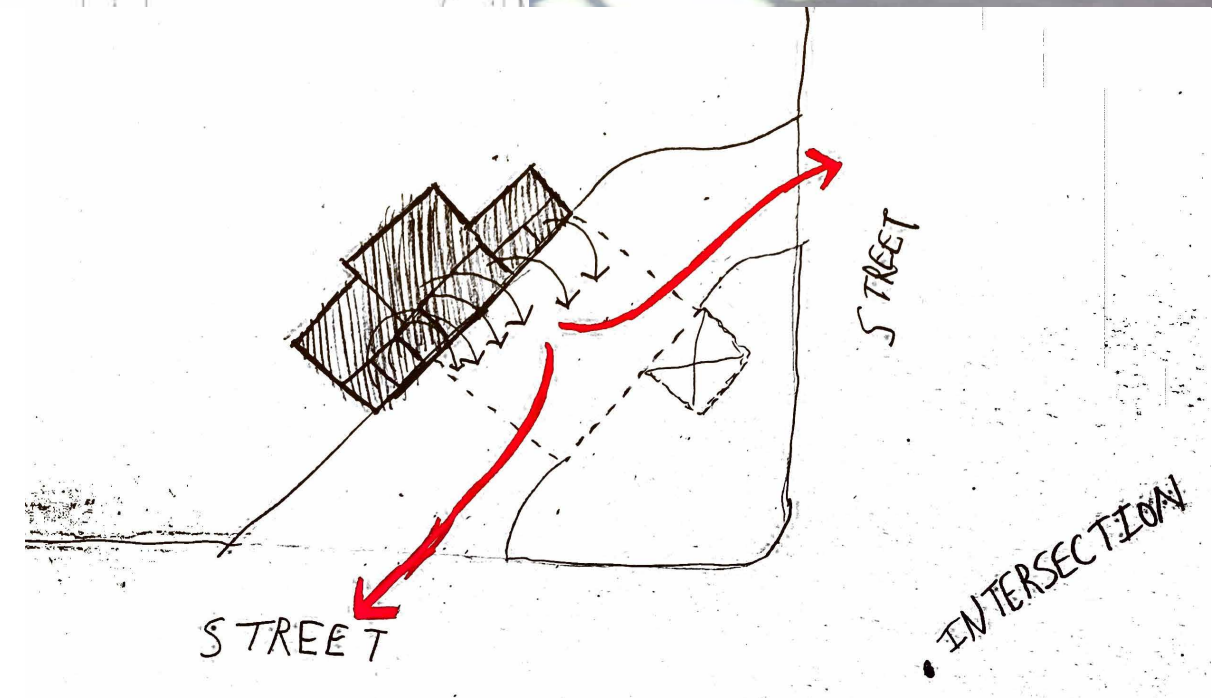


Steveston Firehall No. 2

By: HCMA

As evidenced by the design choices by the Architects at HCMA, this building is made for speed from activity outside of the Apparatus floor, to any activity in it. The building is made to accommodate the users in a home like way, and still have them ready to disperse from the station into action wherever that may be needed within the city.

The Apparatus floor becomes framed as a street which connect the two different streets that neighbor the site. This friendly gesture into the building is serving a huge purpose in insuring that the efficiency of dispatch is high.



Precedent #3

Fire Station Thal

By: Dietrich-Untrifaller Architects

This project was put up for competition in 2008, and completed in 2010-2011. The firehouse sits in a village that holds a distinct character to it. The designers in the competition were asked not to design something that didn't fit in with the fabric of the village.

This design was ultimately chosen because of the fact it fit in with its surroundings while also being modern and sustainable for the Fire Department using it.

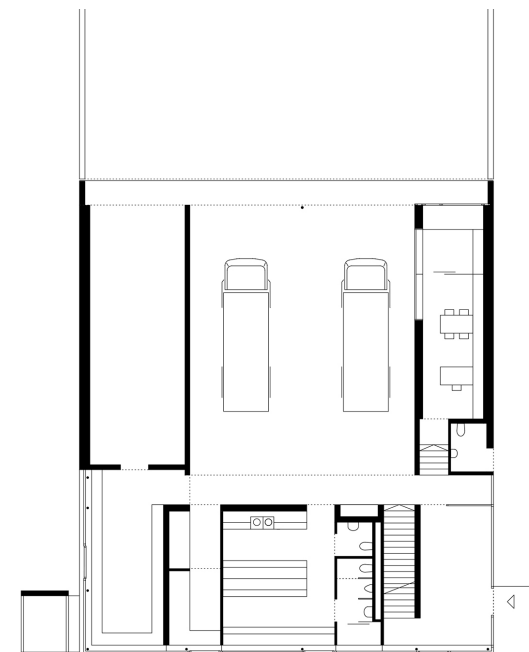
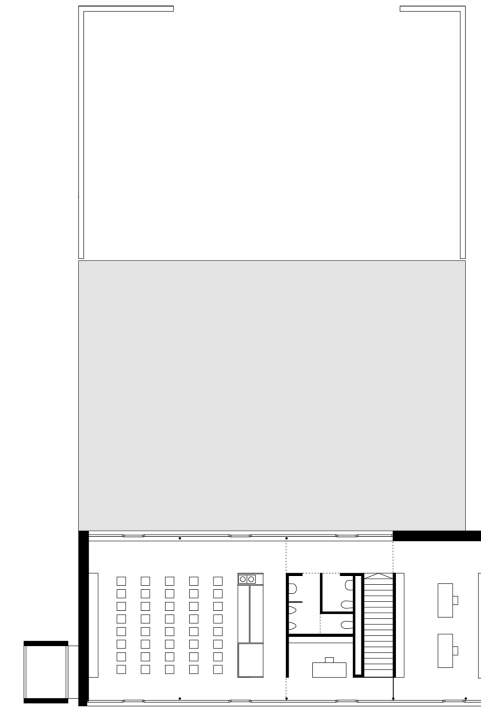


Fire Station Thal

By: Dietrich-Untrifaller Architects

The layout of this building is fairly simple. On the lower floor, program is loaded around the apparatus floor. While this provides easy access to the emergency vehicles, this also organizes the light and air use to primarily the front and back elevations of the building. The natural light and shading with the window locations involved, create a building that does not need to spend much on heating or air conditioning costs.

The upper floor, also includes a front & back window placement. The spaces there are much more administrative however. The upstairs includes a second restroom area, as well as an office and conference room, whereas the downstairs remains primarily functional to the lives of the firefighters who use the space.

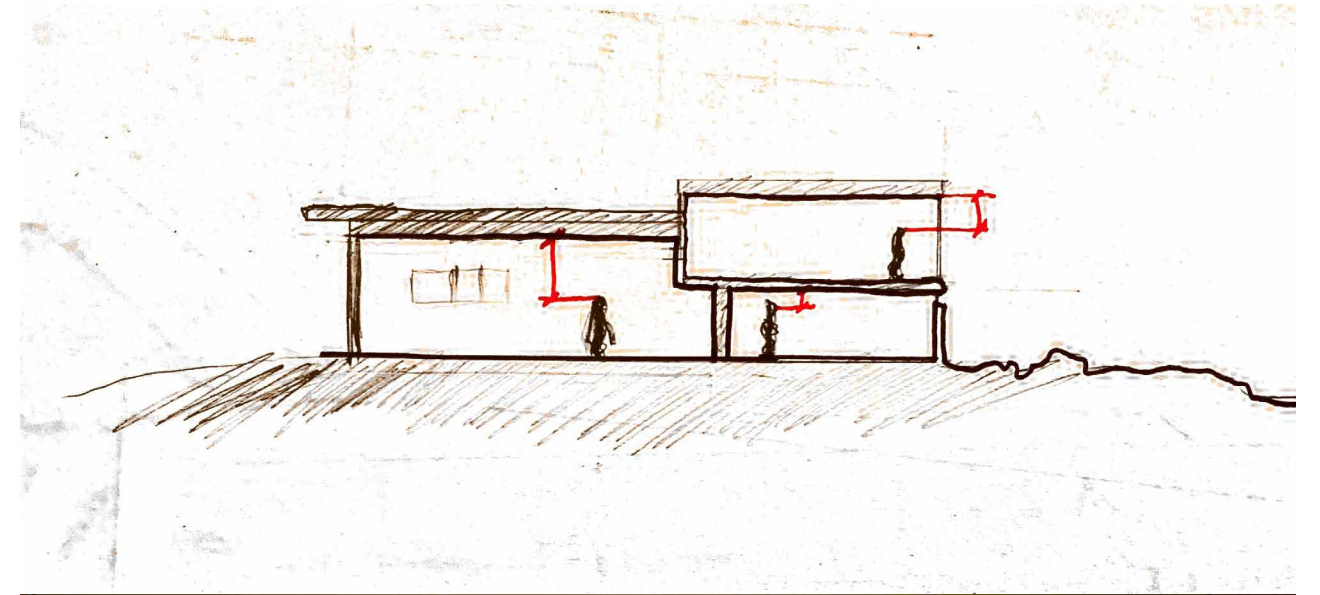


Fire Station Thal

By: Dietrich-Untrifaller Architects

Fire station Thal manages thermal energy quantities with its windows, per room function. Each room has an appropriate amount of energy being designed into the space to cut down on energy costs. Each room is also given an appropriate size to allow enough energy circulation. The Upstairs conference room for instance, is much taller than the gear storage below, and is also given more light due to its specific fixed purpose.

The stressing of energy efficiency in this building helps it serve its purpose in the most economical way for the building overtime. The department can avoid needless spending on HVAC costs, because of its thermal awareness and air circulation.



Precedent #4

Ambulance Station

By: het Architectenforum

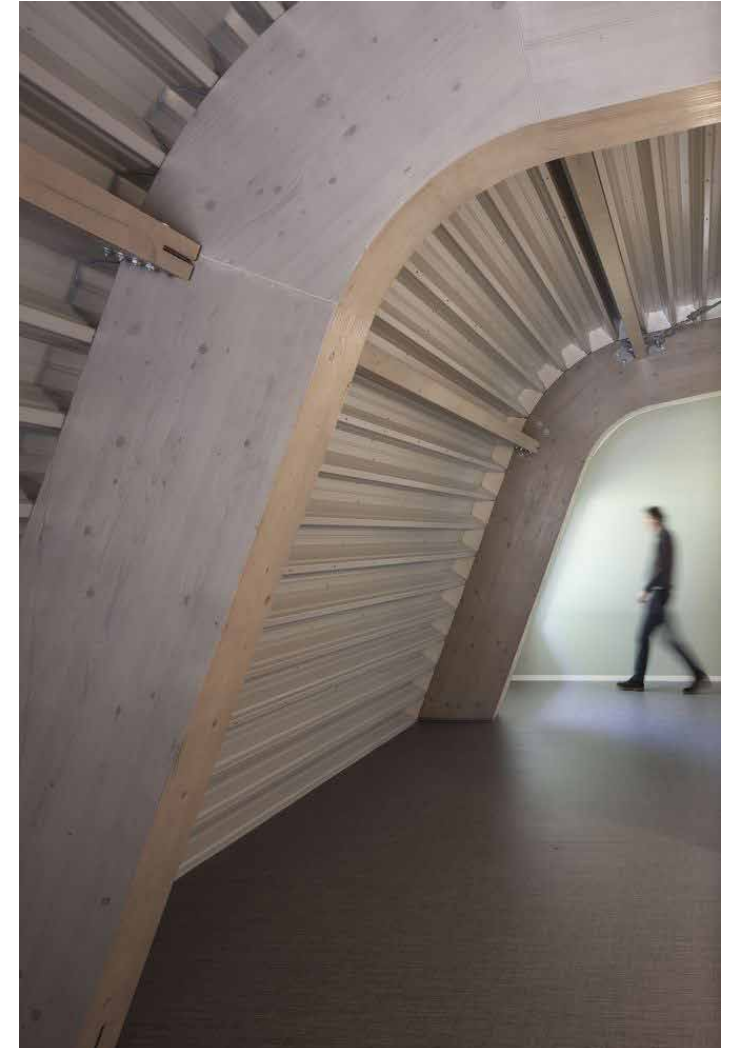
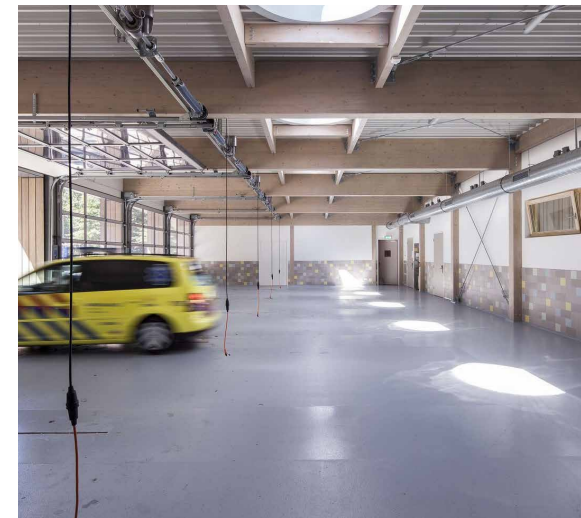
This Ambulance corps in the Netherlands was completed in 2016. The Station includes 6 bays, solar powered accommodations and a strong integration with its surroundings. The building sits at a total size of 550 square meters. The designers aimed to create an isolated space for the ambulance workers, saying there is no need to integrate the workers' lives with the public. With that said, the workers are given very comfortable accommodations including an outdoor area to the rear of the building.



Ambulance Station

By: het Architectenforum

The architects of this project wanted a strong connection with nature. The site of the ambulance station is in front of a forest. Interrupting the forest at all with construction was something they did not want to do. The building does not cut into the forest anymore than it is emerged into it. The building uses wood native to the area for construction as well, so that way the trees they did have to clear weren't wasted. The building has multiple uses for natural light, and uses wood for the structure all the way down to the trim in certain areas of the building. It stresses views into the forest through the rear common space that is provided to the workers. The ideology that these workers must be isolated from the public is complemented with the notion that the station is a private, peaceful place as well as a secondary living quarters.



Ambulance Station

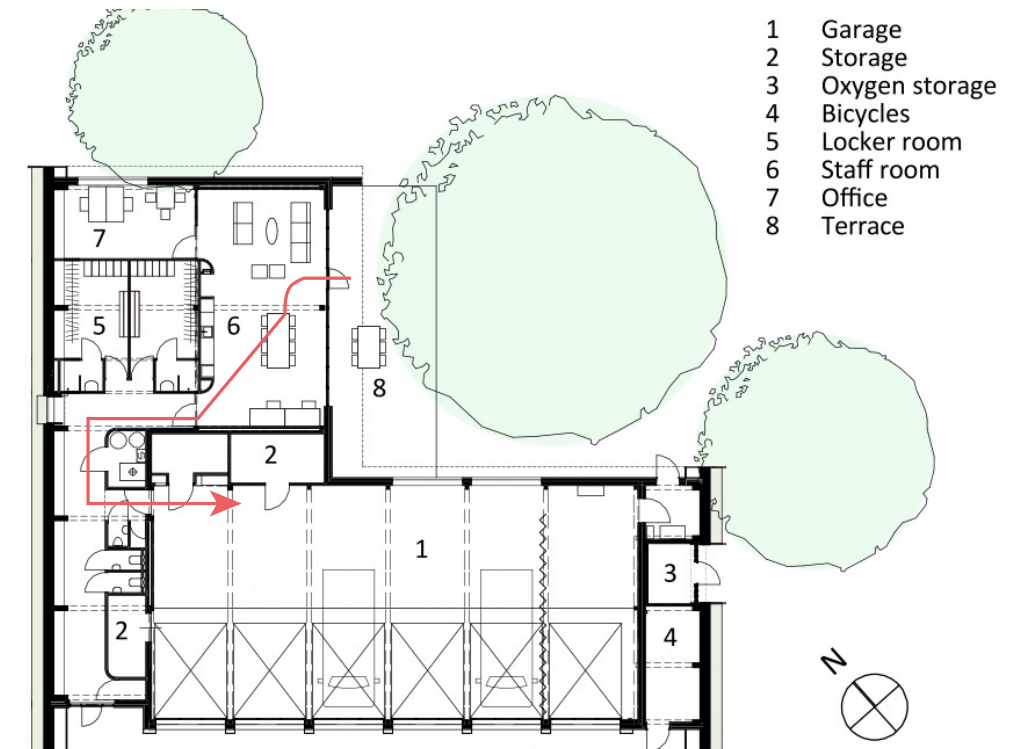
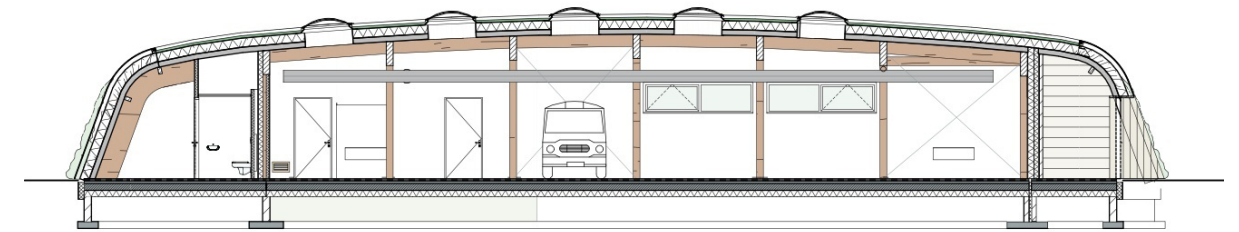
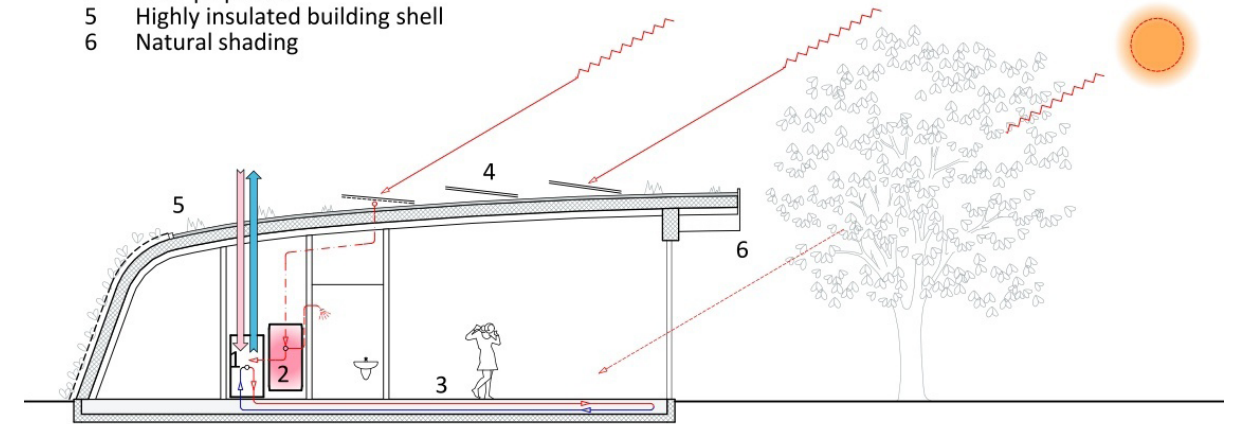
By: het Architectenforum

For an emergency service building, this one is extremely environmentally conscious and in touch with its surroundings. The use of light is great in this building and can definitely help in the lifespan of the building itself.

It is unfortunate that the building does not have any public interaction. While privacy may be justified to a degree, the building is seemingly completely isolated from the community it serves, which begs the question of if this building efficiently serves its community with appropriate response times.

Needless to say, its use of materials is definitely admirable, and makes the building unique and gives it a strong connection to its surrounding environment, in the forest.

- 1 Heat pump
- 2 Solar water heater
- 3 Under floor heating
- 4 Solar pv panels
- 5 Highly insulated building shell
- 6 Natural shading



Precedent #5

Monash RESUS Center

By: SPACECUBE

This additional wing of Monash Hospital in Clayton, Australia was made in order to combat COVID-19. A RESUS center serves as a trauma center for patients, and with the pandemic came an increased need for diagnosing and treating COVID-19 related trauma. This wing was constructed off site by SPACECUBE, in under three weeks. The on site construction was approximately 15 hours. This additional wing of Monash hospital, includes all the requirements for a RESUS center in Australia. The choice of using SPACECUBE, came because of the need of quick response to the pandemic as well as a need for lack of interaction with the neighboring Emergency Room, and the Ambulances' access to it.



Monash RESUS Center

By: SPACECUBE

According to SPACECUBE, the building was built using 25 “cubes,” and is over 360 square meters in size. The design proposed came into fruition in under a week. The whole addition includes 2 levels, houses 6 negative pressure resuscitation beds and a nurses station.

During a pandemic, the timing of construction is wildly important. The SPACECUBE team had to work around the clock to achieve government regulations, but they accomplished every requirement in enough time and managed to get the addition done when needed.

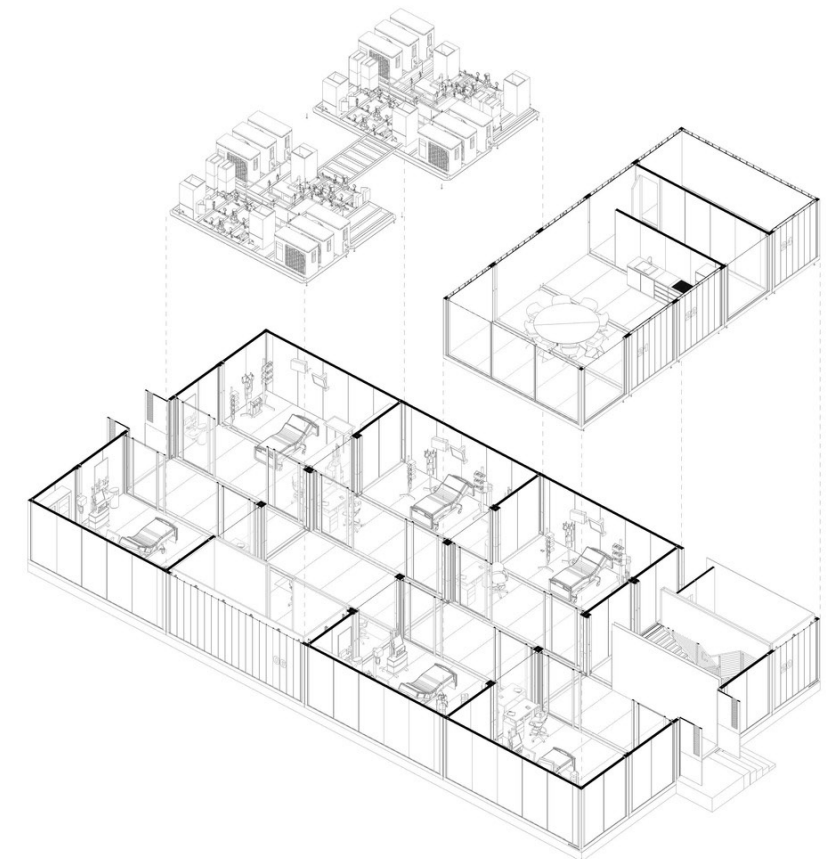
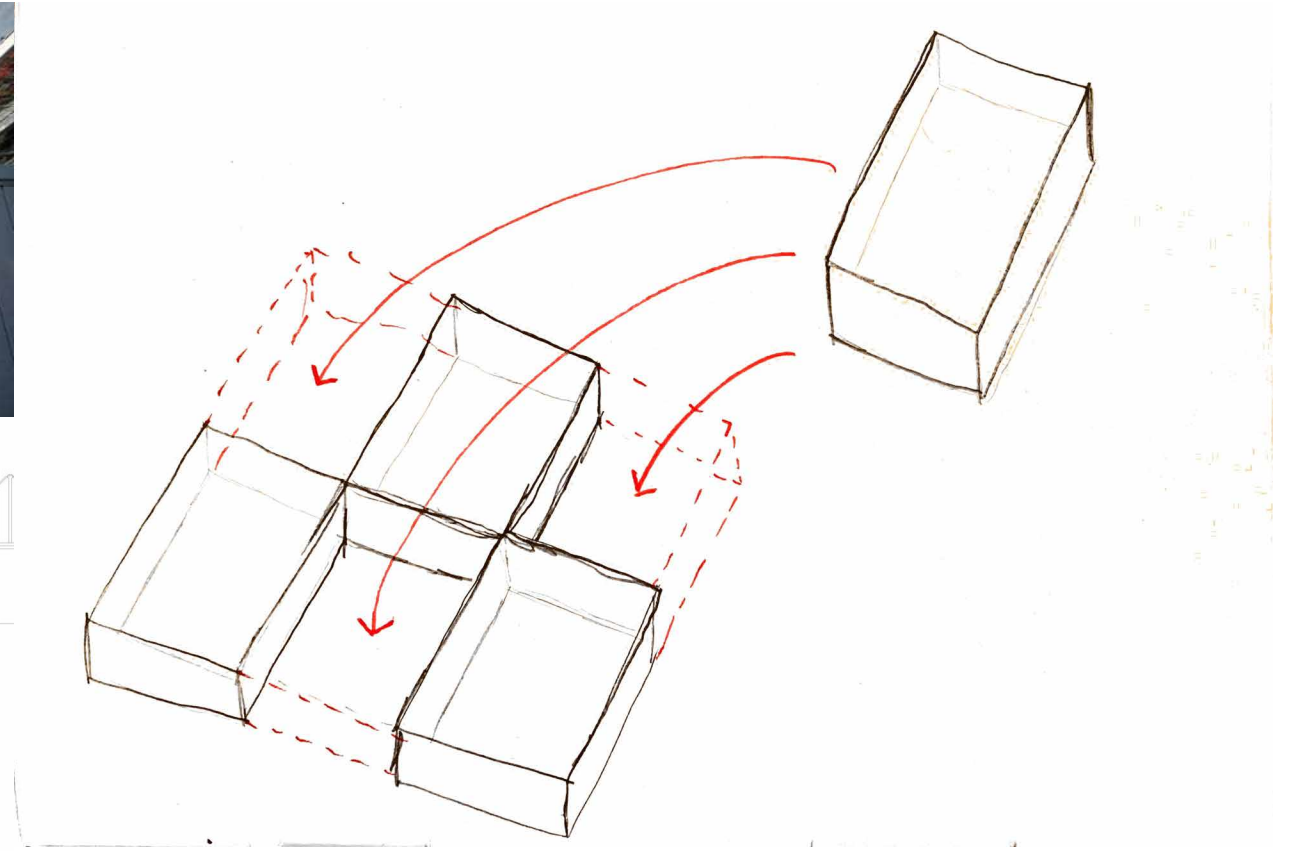
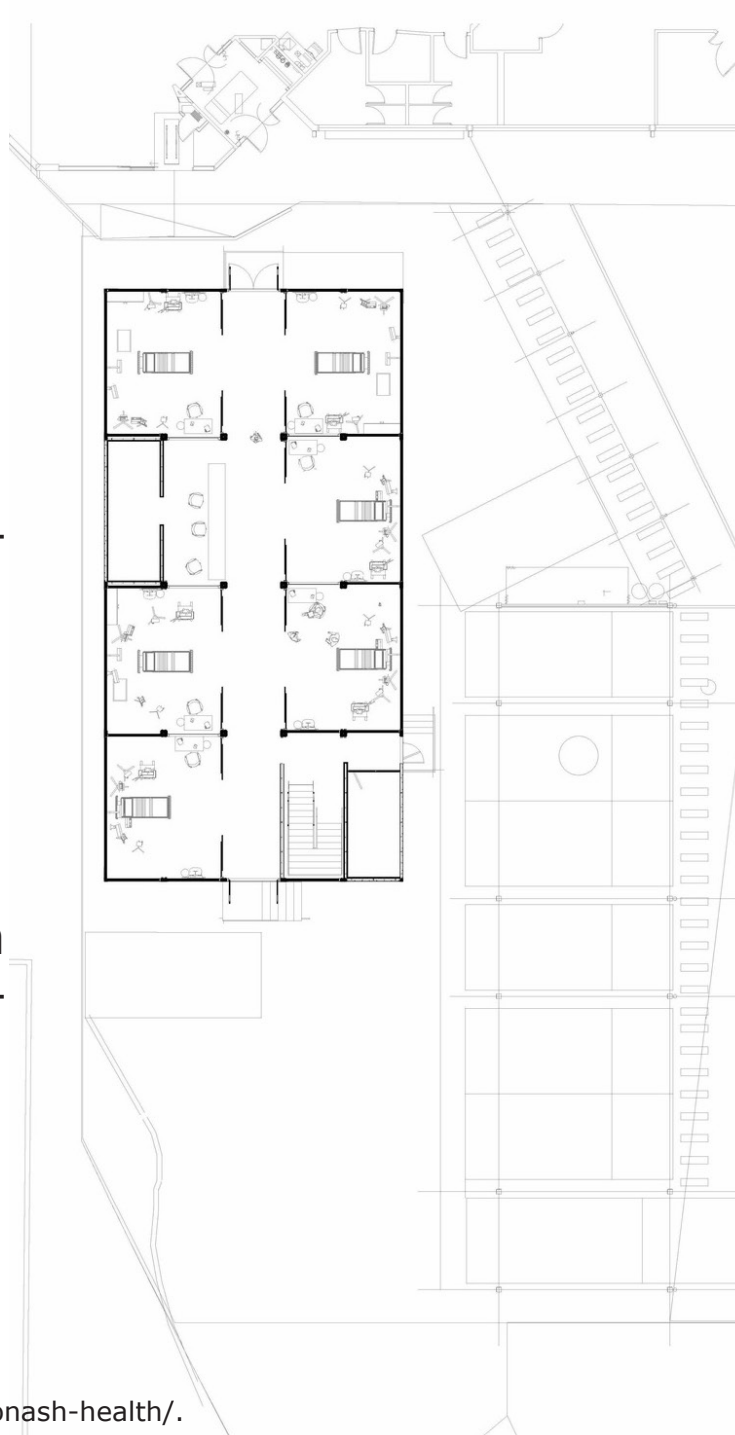


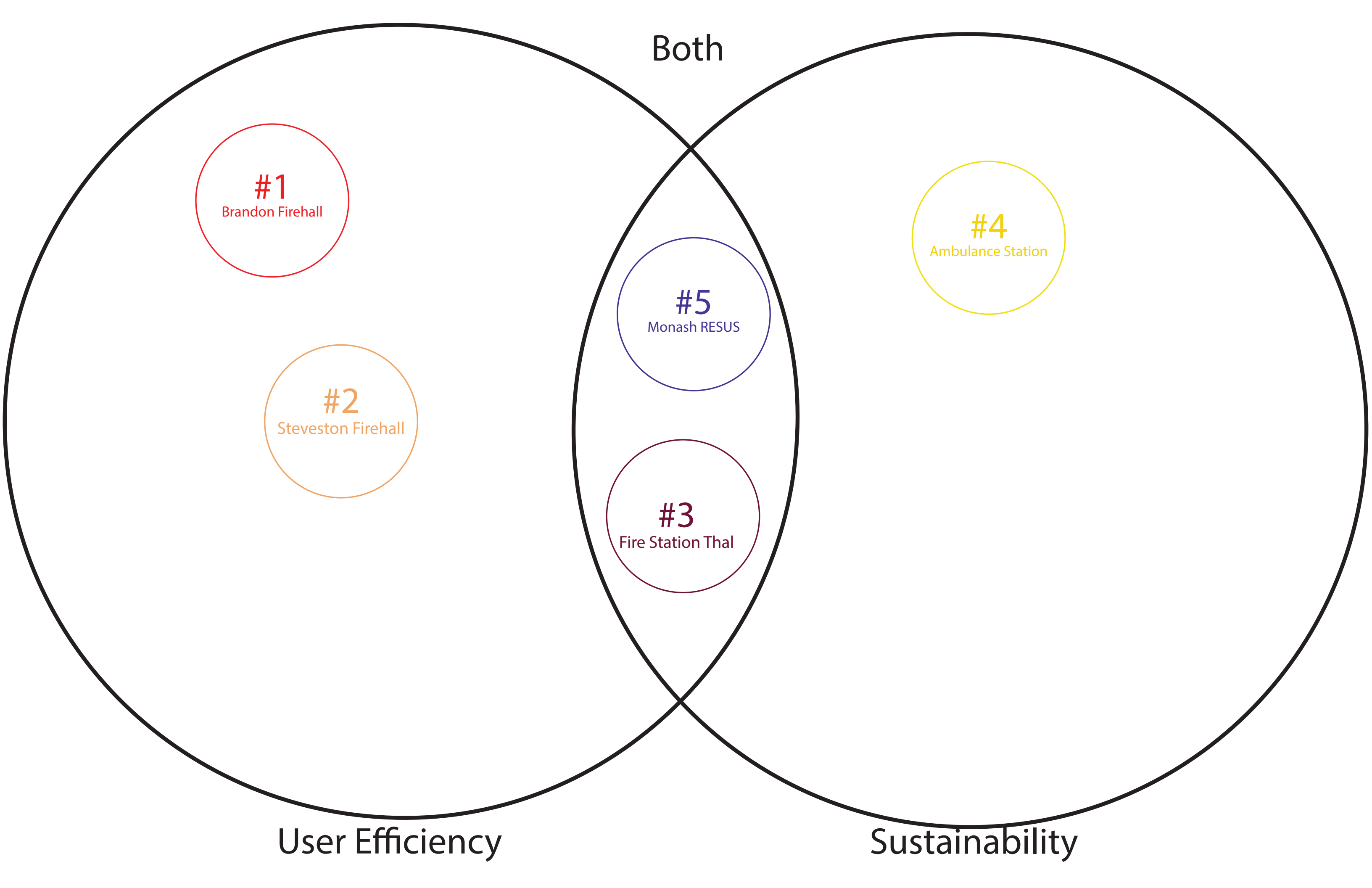
Monash RESUS Center

By: SPACECUBE

The obvious draw with SPACECUBE in emergency services, is its speed and options. A pandemic had to come through to test the companies ability to be ready in short notice, but the thing that gives this project an edge, is the possibilities that can come, if this project wasn't designed in a short span of time.

In order to create an efficient space in emergency services, the best qualities must be sought out and a weighing of the positives and negatives must be conducted. This project provides a vision, of not only the speed of which these emergency buildings can be produced, but of the possibilities that can be observed and put to work, when designing a building with the SPACECUBE format.





Both

#1
Brandon Firehall

#2
Steveston Firehall

#5
Monash RESUS

#3
Fire Station Thal

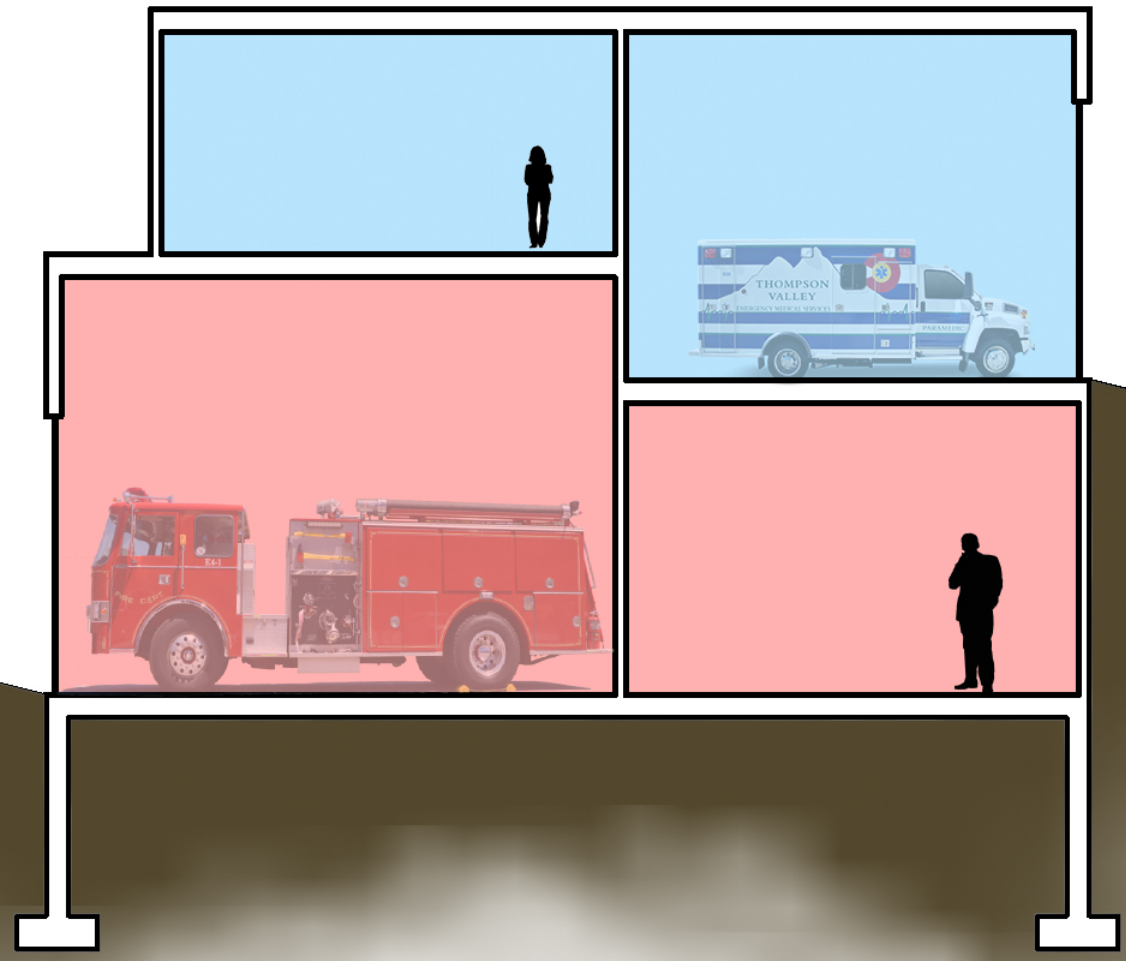
#4
Ambulance Station

User Efficiency

Sustainability

How much of a departments funding & supplies
on average, become wasted resources?



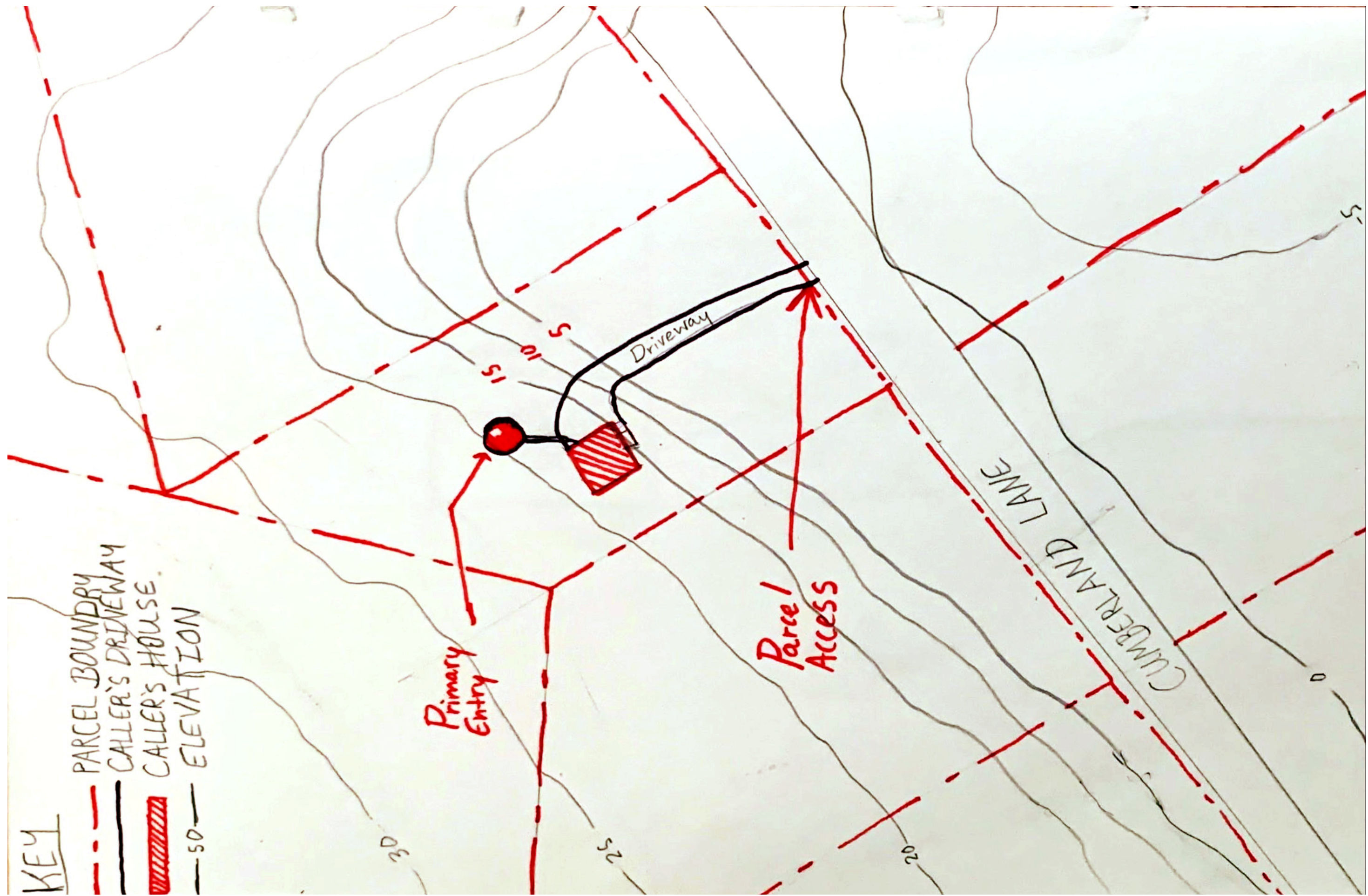


If G.I.S. are used by emergency departments and government agencies for mapping out districts and for determining which department covers what area, can its use be furthered to being used during response?

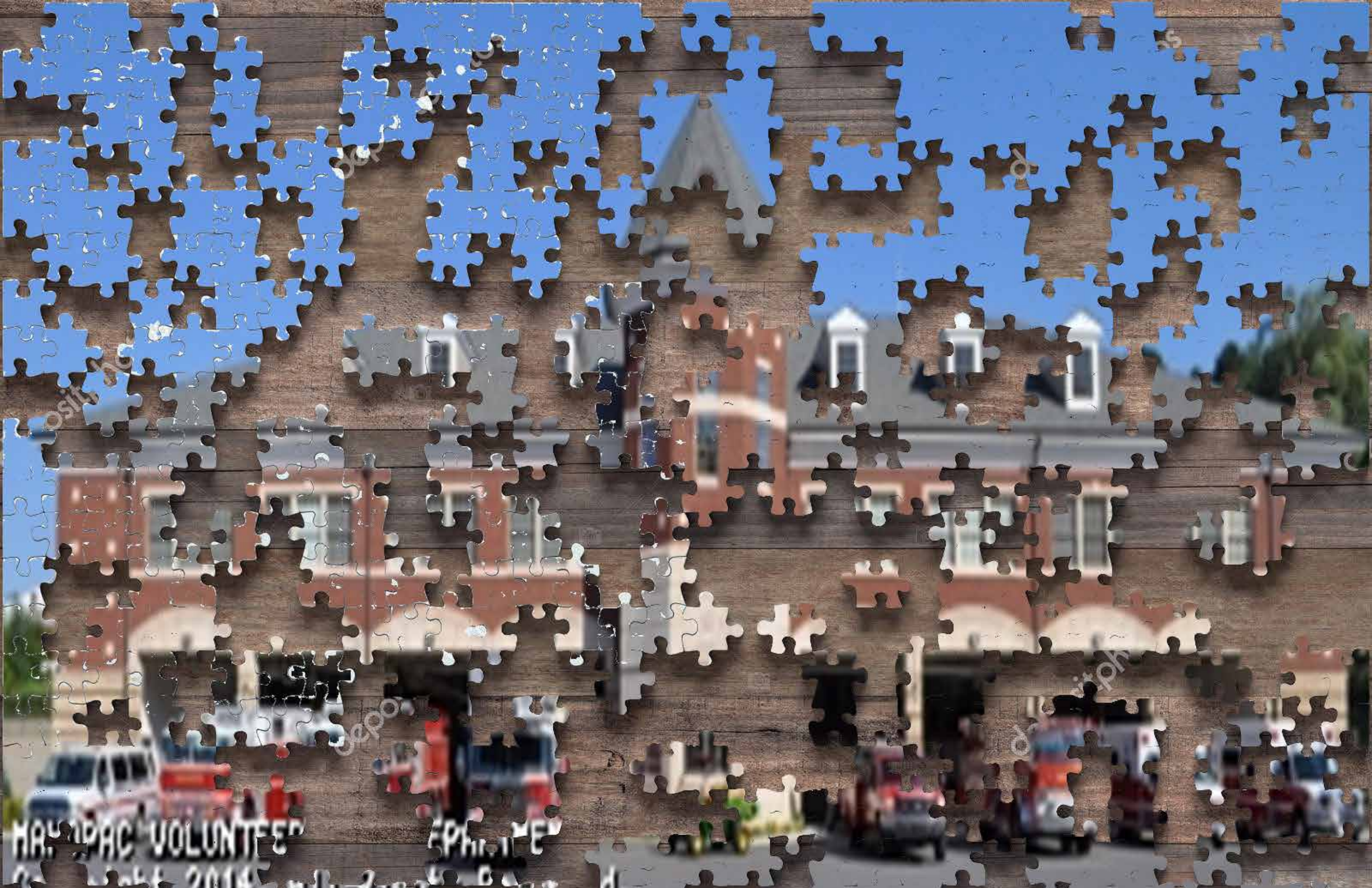


KEY

- - - PARCEL BOUNDARY
- CALLER'S DRIVEWAY
- ▨ CALLER'S HOUSE
- 50 — ELEVATION



How feasible is it to create a standard of design that improves overall functionality of the building which first responders use?



HA. PAC VOLUNTEER

Sept 2014

EPH. I MEV

LIVING
(REST, ADMIN)
KITCHEN

INTERMEDIATE
(GEAR, GEAR WASH
& GEAR STORAGE)

VARIANTS
OF PROGRAM

OPERATIONAL
(EQUIPMENT &
VEHICLES)

