

WILLIAMSTOWN FIRE STATION

Hot Zone/Warm Zone/Cold Zone Separation – Fundamental to the design of a modern fire station is the acknowledgement that firefighters and their equipment return to the fire station highly contaminated from the byproducts of combustion of modern structures, as well as hazardous biological matter from accident scenes, and pests such as bedbugs, fleas and lice. In response to this, the station is designed to have what is referred to a hot zone, warm zone, and cold zone. The hot zone includes the apparatus bay and the firematic operations support spaces. The cold zone includes administrative, living, and public spaces. The warm zone is predominantly airlocks between the hot and cold zones.

These zones are isolated from each other both by air-tight separation walls and by the design of the mechanical systems in order to prevent cross contamination.

NOTE: Polycyclic Aromatic Hydrocarbons (PAHs) are created when materials are burned and many that are encountered at fire scenes are toxic. [*Adverse health effects associated with these agents include elevated incidences of coronary heart disease and several cancers. PAHs have been detected at fire scenes, and in most firehouse rest area and kitchen, routinely adjoining the truck bay, and where firefighters spend a major part of each shift.*]¹. Other toxins commonly found in fire scene smoke include arsenic, formaldehyde, benzene, toluene, and isocyanates.

FIRST FLOOR

Hot Zone

Apparatus Bay – Housing for:

- Five large trucks
- One command vehicle
- Two brush trucks
- One six-wheel ATV with trailer
- One four-wheel ATV
- Ice/cold-water rescue equipment
- One anticipated pick-up truck
- Safe clearance around all of the vehicles
- Wall space for emergency decontamination shower and turnout gear air-drying racks
- Ample, open space to lay out hoses, firefighter gear, and other equipment after returning from response calls to prepare them for reuse on the next call.

The current apparatus bay is congested with equipment for which there is no storage space, creating inefficient operation and trip hazards. The limited space between vehicles is extremely hazardous for firefighters donning their Personal Protective Equipment (PPE) adjacent vehicles that are attempting to exit the station.

Turnout Gear/Decon/Laundry/Showers: Firefighter Health & Safety – These are phased spaces for the safe removal and handling of toxic substances brought to the station on firefighter clothing and equipment.

The current station has no such confined spaces to safely handle contaminated firefighting gear and stop the spread of poisonous byproducts of combustions including carcinogens such as (PAHs) from the other areas of the station.

Turnout Gear Storage - Firefighters will be able to enter the turnout gear storage room from outdoors or from the apparatus bay. Ventilated lockers for the personal protective equipment (PPE) for up to 40 firefighters and forest warden personnel are provided.

There is no such space in the current station. Turnout gear is stored in the apparatus bay where it is exposed to contamination from the apparatus. Firefighters must don and doff their PPE in congested space, adjacent exiting apparatus.

Decon – After a fire or vehicular accident, firefighters will use this room to perform gross decontamination of their PPE before taking it to the adjacent laundry room.

There is no such space in the current station. Firefighters do this task out in the driveway, even in the winter and at night.

Laundry – Space for specialized, heavy-duty washer/extractors, designed to clean and decontaminate PPE, two gear dryers, and a residential-style washer/dryer for firefighters' personal clothing worn beneath their PPE.

There is no such space in the current station.

Hot Zone Showers – Combustion byproducts encountered at the fire scene include many toxic particles that are small enough to pass through the PPE onto the firefighter's skin. If not removed promptly, these particles are absorbed into the firefighters' bodies and are a significant cancer hazard. Firefighters should shower as soon as possible after returning to the station in a space that is in the "hot zone" of the building in order to not contaminate the living and office quarters. In addition to showers, the space contains small lockers where firefighters store personnel clothing to wear after showering. This area has been designed for gender neutrality for male and female firefighters by offering private shower booths within the Shower Room.

There is no such space in the current station.

SCBA Fill – Space to decontaminate and maintain self-contained breathing equipment. Returning from a call, firefighters will shed their masks and air packs in this sealed-off space. Three explosion-proof chambers will refill air tanks in a way that confines fill noise to this space. There is also space provided to maintain and repair air packs.

There is no such space in the current station.

Hose Cleaning and Storage – Space for equipment involved in the cleaning and rewinding of hoses.

There is no such space in the current station.

Ice and Swift Water Rescue Equipment Storage – Space to store and maintain specialized equipment for non-land rescue duties:

- Six ice/cold water rescue suits
- Rescue sled
- Ropes
- Flotation devices
- Devices for retrieving small animals
- Other related rescue equipment

There is no such space in the current station.

Yard Storage – Space for lawn, snow, and other outdoor equipment; fuel storage; two emergency generators; and trash and recycling bins. All items necessary for the firefighters to maintain the property, driveways, and walkways of the building.

There is no such space in the current station.

Mezzanine – Training area created within the high ceiling space of the Apparatus Bay necessary for the large fire trucks. This space will be used for search and rescue training activities including maze training, confined space, and manhole navigation, ladder/window bailouts, interior ladder work, etc.

There is no such space in the current station.

Tower – Training for multiple aspects of firefighter training including, ladder use, hose evolutions, standpipe connecting, confined space rescue, and rappelling. Also provides access to roof.

There is no such space in the current station.

Compressor Room – Houses two compressors—one for use with trucks and one for use with air packs.

There is no such space in the current station.

Warm Zone

Ready Room – Staging area for district and mutual aid firefighters. Firefighters typically stand by in their personal protective equipment to enable quick response. This space enables them to do so outside the clean (“cold zone”) parts of the station. Without a space such as this, contaminants and PAHs can spread to the clean, living/working spaces of the fire station.

There is no such space in the current station.

Watch Room – The command and communication center for the fire station. This watch area will control access to the station as people enter the vestibule. It will have line-of-sight coverage of the Apparatus Bay as well as the front of the building and is equipped with monitors for the security cameras located at the rear of the building.

The current watch room is in the middle of the building with no outside views and thus does not have the ability to perform the tasks for which it is intended.

Cold Zone

Lobby – Main public entrance to building providing access to Administrative/Living Spaces and Apparatus Bay/Firematic Work & Storage Spaces.

There is no such space in the current station.

Administrative Assistant – This space is in anticipation of the eventual need for this position to support the expanding responsibilities of the Fire District.

There is no such space in the current station.

Chief's Office – Sized to enable one-on-one meetings of a confidential nature— personnel and otherwise.

Deputy Chief's Office – An existing position which requires adequate room for daily Deputy Chief functions and duties.

There is no such space in the current station.

Treasurer – An existing position.

Conference Room – Sized for small to medium-sized meetings, among district members and with members of the public.

There is no such space in the current station.

Officers – Workspace for four officers.

There is no such space in the current station.

Exercise Room – Now a standard feature of fire stations, in compliance with National Fire Protection Association standards for Firefighter Health, Safety & Wellness.

There is no such space in the current station.

Day Room/Living Room – Space for firefighters to congregate when in the building for long stretches. Place to prepare food and build relationships among people who need to rely on each other.

There is no such space in the current station.

Study/Report Room – Space for members to study online for firefighter exams and complete incident-related reports.

There is no such space in the current station.

SECOND FLOOR

Historic Display – Items from Fire District history to connect firefighters and the public with previous generations.

There is no such space in the current station.

Training/Emergency Operation Center – Space for instructors to train personnel in sessions that typically include multiple pieces of equipment. District and Prudential Committee meetings, along with public information sessions, could also take place here. Space can be divided into two, separate meeting rooms for simultaneous uses. Would also function as an operation center for coordinated response to Williamstown emergencies. Capacity of 50 for training and up to 100 with tables removed.

Space in the current building for this purpose is too small, not ADA compliant, and not serviced by proper bathrooms.

Kitchenette – For use in this public section of the building, the main kitchen being in the non-public section.

There is no such space in the current station.

Bunk Rooms – Places for firefighters to sleep while on duty or providing station coverage, both district members and mutual aid firefighters from other towns covering the station, while members are out on call.

There is no such space in the current station.

Fire Prevention and Education – Storage of materials for these functions.

Keynotes

¹ Excerpt from ‘*Exposure of Firefighters to Particulates and Polycyclic Aromatic Hydrocarbons*’ by C. Stuart Baxter, Joseph D. Hoffman, Michael J. Knipp, Tiina Reponen and Erin N. Haynes. Department of Environmental Health, University of Cincinnati, Cincinnati, Ohio - 2014