



A Prototype for County-Wide Transformation

Hanover Fire Station 17

For firefighters, the most insidious threats are often the ones they carry home. For Hanover Fire-EMS, a persistent threat became a tragic reality with the loss of three senior members to job-related cancers in just four years. These losses were not statistics, but a call to action—one that mandated a fundamental redesign of the fire station itself.

Simultaneously, the Laurel Meadow community was experiencing rapid growth. Call volumes in the proposed district had surged by 23% since 2018, straining the response capabilities of neighboring stations.

The need was clear: a new station that could not only improve response times but also provide a new, healthier model for the county's fire service. Fire Station 17 is the answer to that dual mandate—a 15,000-square-foot prototype born from the conviction that a station must be a sanctuary, not simply a base of operations.

A Balance of Flexibility and Consistency

The decision to make Fire Station 17 a prototype arose midway through the schematic design process, prompted by the county's plan to build four more stations in the coming years. This created an opportunity to develop a flexible and consistent model that improves conditions for firefighters and enhances service to the community.

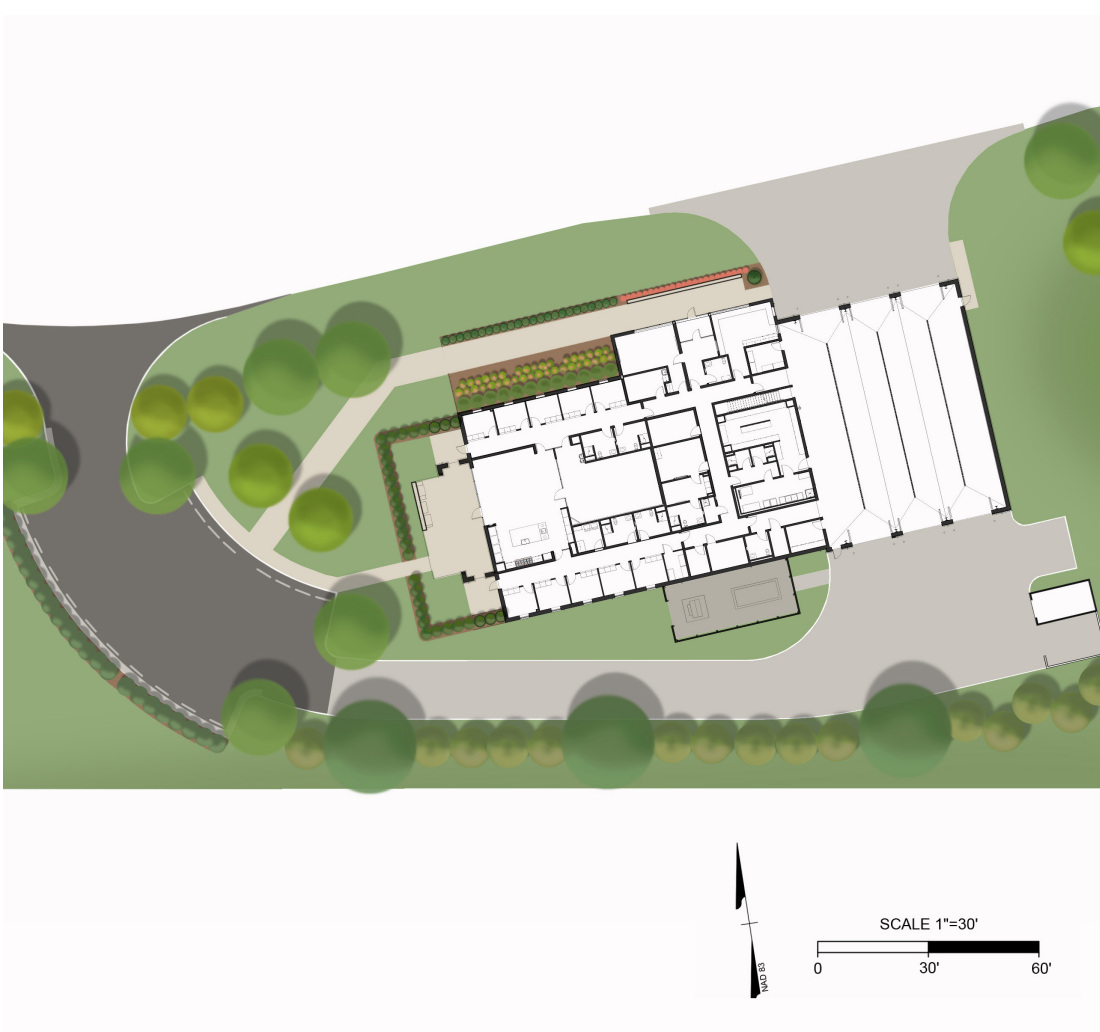
Consistency and Response

By replicating the layout in future stations, firefighters who transfer or provide mutual aid will already be familiar with the building. This familiarity reduces orientation time and can decrease response times, as crews can navigate the station with greater speed and efficiency.

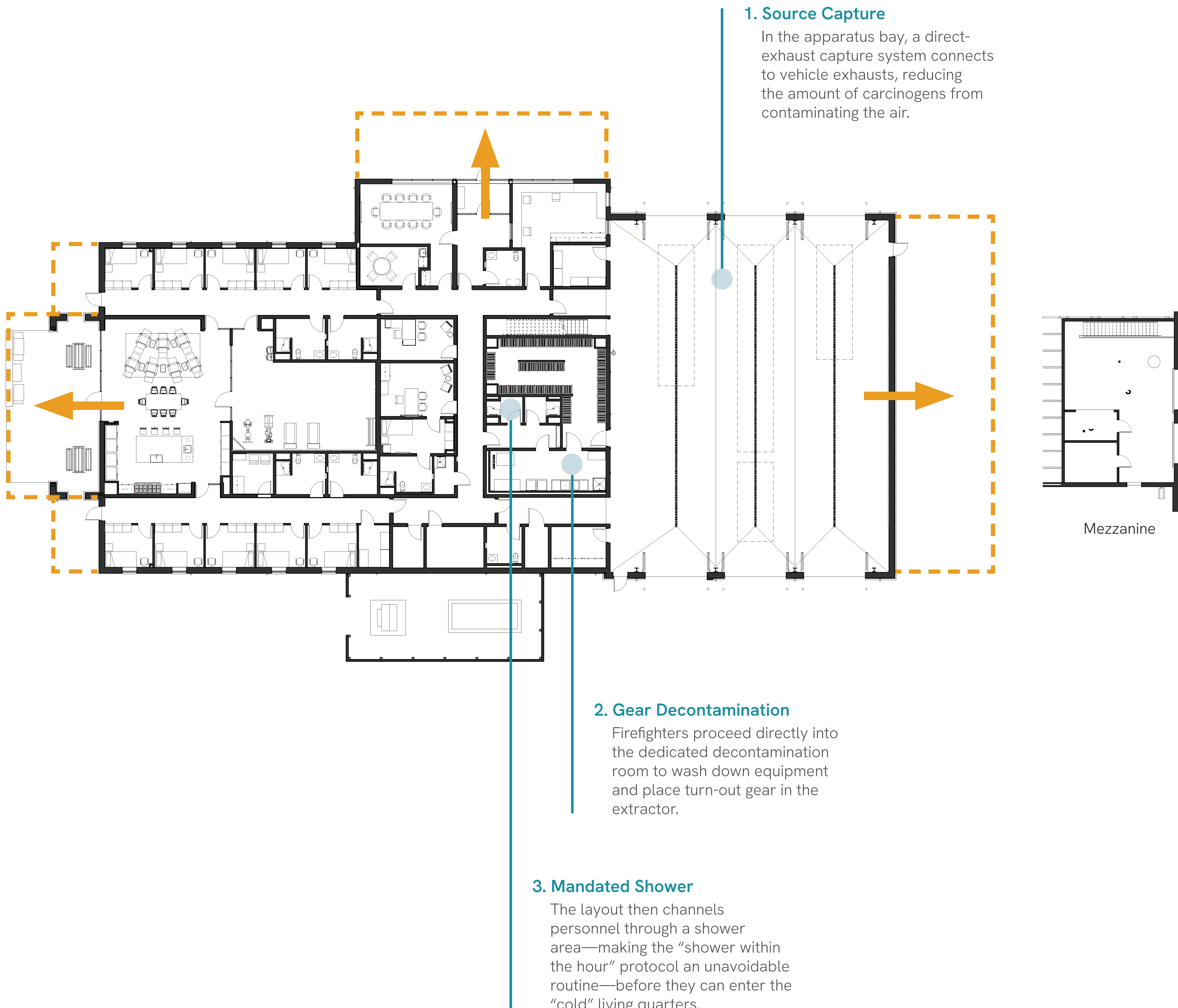
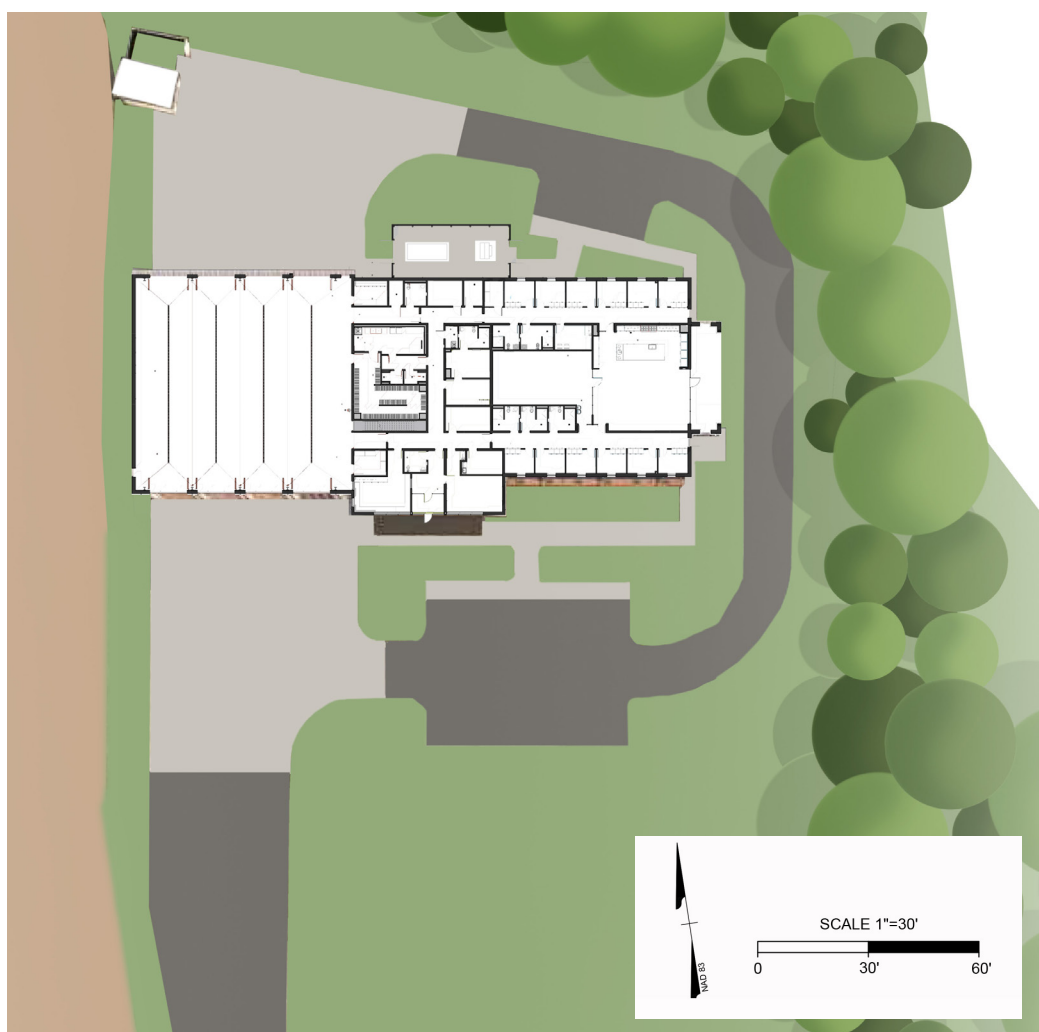
Flexible Framework

The design is an adaptable framework. The core components can be expanded in three directions to accommodate bunk rooms, dayroom/kitchen area, fitness room, additional apparatus bays, living quarters, or administrative spaces, allowing the design to fit different sites and service needs.

Fire Station 17 Site
Mechanicsville, Virginia



Fire Station 4 Site
Dosewell, Virginia



Designed for Decontamination

The station’s floor plan materializes this commitment through a multi-layered decontamination sequence, organized into distinct hot, warm, and cold zones. The design integrates the “shower within the hour” concept, promoting a new operational standard for the county.

Zone Segregation

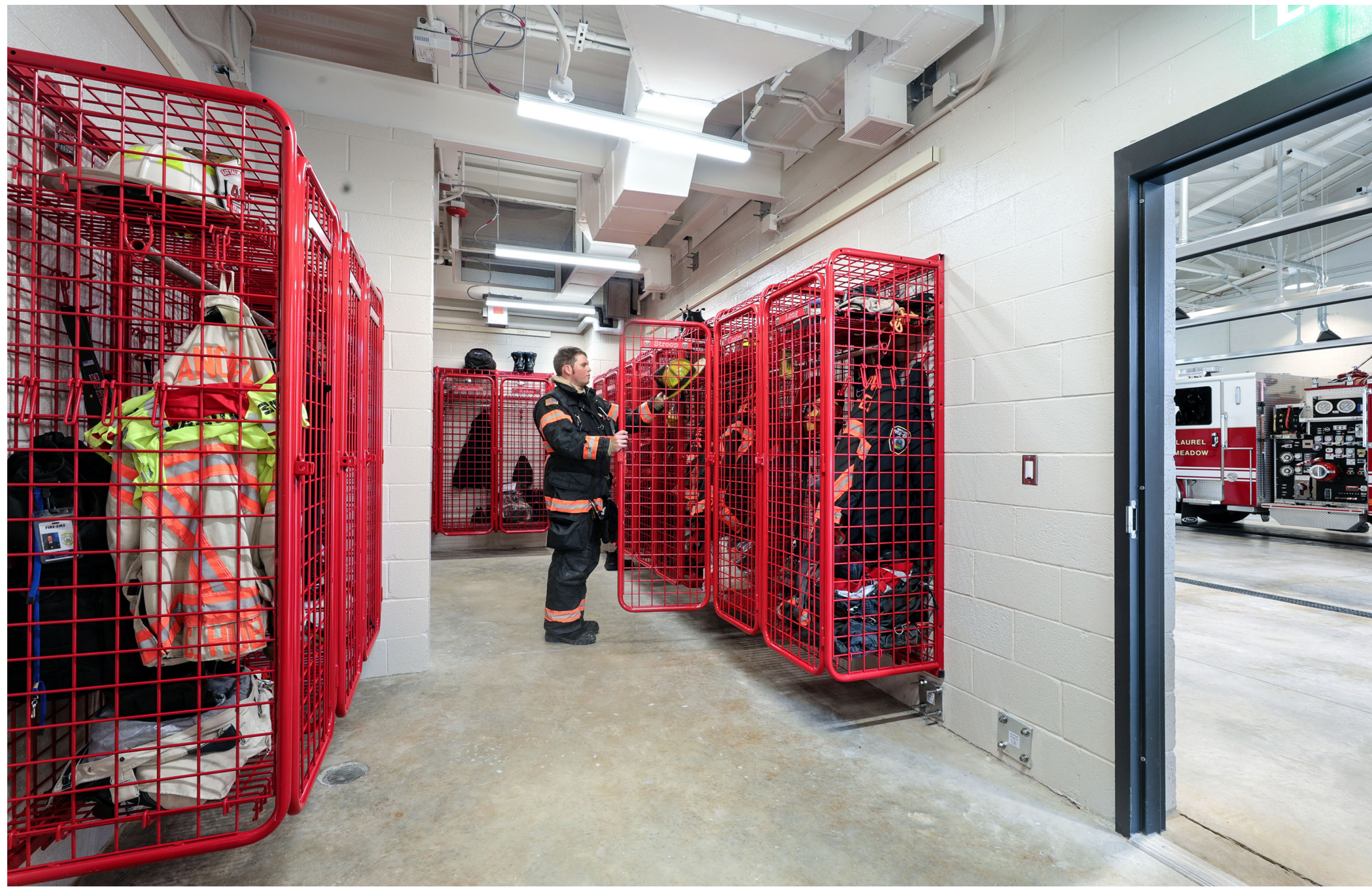
The floor plan is purposefully divided into hot, warm, and cold zones. This segregation creates a physical and operational barrier that prevents contaminants from the “hot” apparatus bay from migrating into the “cold” living quarters where firefighters rest and recover.

One-Way Decontamination Corridor

Upon returning from a call, firefighters follow a deliberate, one-way path from the apparatus to the living area. They move from the decon room, where turnout gear is cleaned in industrial extractors, directly to a dedicated shower room before entering the station’s clean zones. This intuitive path is designed to fundamentally alter ingrained behaviors to prioritize health.

Engineered for Clean Air

The building’s mechanical systems are a crucial line of defense. They create negative pressure in Hot Zones to direct-exhaust contaminated air, ensuring it is never recirculated. Within the apparatus bay, direct-capture exhaust hoses attach to vehicle tailpipes to capture the most potent carcinogens at their source, while CO2 sensors provide an additional layer of safety.



A Focus on Wellness and Performance

This station’s commitment to its crew extends beyond cancer mitigation. The design promotes physical and mental well-being, creating an environment where first responders can decompress, recover, and stay mission-ready.

Connection to Nature

A strong visual link between the interior and exterior was a key design driver. In the fitness room and dayroom, a large glass wall looks out onto a patio. The wood-grain texture of the exterior ceiling panels is carried inside, creating a continuous flow that visually pulls the calming influence of nature indoors.

Acoustic Comfort

In a facility operational 24/7, acoustic control is vital for rest. Custom-designed, sound-absorbing panels in the fitness room and soft-close hardware on custom pass-through lockers are critical details that minimize noise disruptions.

Operational Efficiency

The design shaves seconds off every response with four-fold apparatus bay doors that open in a fraction of the time of conventional doors. The layout also provides a direct, unobstructed path from every bunk room to the apparatus floor.

A Landmark for the Community, A Legacy for the County

Sited next to an elementary school and a residential neighborhood, the station was designed to be a respectful and integrated part of the community. The exterior palette of red brick and fiber-cement siding reflects the local vernacular, while a prominent front porch element breaks down the scale of the building, creating a welcoming, human-centric presence.

As the first new firehouse built to expand services in Hanover County since 1987, Station 17 embodies a new approach for the county. This prototype establishes the standard for a county-wide capital improvement program, ensuring that a higher level of safety, wellness, and efficiency will be replicated across the county

