North Aurora Fire Protection District – Fire Station No. 1
North Aurora, IL

ICivic01-00

Built

Location: Village of North Aurora
Site size: Approximately 1.7 acres
Parking: 30 Staff Designated

Total building square footage – 25,479

Number of stories – Two

Program Statement

North Aurora Fire Protection District has created a new headquarters appropriate to the modern age. Designed to accommodate current equipment in size and support, the apparatus bay contains five double-deep pull-through bays and an adjoining hose and training tower and mezzanine. With systems for in-bay water overhead filling, exhaust filtration and scrubbing, and a best practices approach to cross-contamination mitigation with identified dirty, transitional, and clean zones supported by handwashing and decontamination spaces, this station is primed to protect the Village of North Aurora and the first responders that serve them for many years.

Eight critical success factors were established by the District with the Design Team: aid emergency response time, preserve and build relationships, firefighter and staff health and wellness, good stewardship of resources, future proof technology assets, support staff family atmosphere, ability to maintain the facility and grounds, and be a good neighbor - fit the context.

Site layout was prioritized to a proven response orientation, this is supported by living quarters for ten firefighters in private bunk rooms, dual locker rooms, individual changing and shower spaces, and a combined day room, dining, and kitchen area which fronts out onto a semi-private patio with a view of the Fox River. The connection to the site is very intentional with opportunities to provide firefighter mental wellness and decompression support with physical recreation, social interaction, and private contemplation.

Administrative functions incorporate a dedicated training space which can accommodate community use with food service support and public restrooms from an elevated public lobby. Fire protection offices, meeting spaces, and work rooms, are located across from this training space with an open-glazed east facade overlooking the Fox River.

Exterior views from the project are very selective and precious to reduce the costs associated with large expanses of glass and to control the unwanted solar heat gain to interior environments. This creates the opportunity to deliberately frame views out to the urban context, the landscaped buffer yard, and the Fox River and trail system.

Considerations for the mental health impacts of first responder facilities is paramount. Contemplative spaces have been woven into exterior site and interior use spaces alike. The concept for interior space development puts an emphasis on a residential scale and materiality. Conceived as a concrete box lined with wood and linen, the color palette is warm, natural, and calming. Highlighted by punches of accent color which celebrate fire service and nods to history and tradition, the building becomes the home for the band of kindred firefighters as a unit which is the North Aurora Fire Protection District family.

By placing the public in close contact with the watershed of the Fox River and local Park District assets, users are encouraged to adopt healthy lifestyles including walking, running, biking, and boating along the trail system. By utilizing the site design to clearly communicate the appropriate access and use of the site, the public is kept safely away from highly active apparatus bay aprons where large firefighting equipment often enters the roadway.

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The Operations Gradient

The Three "L's"

Preferred Slide

ICivic01-01

Design for Integration

The main concept parti for this project is a focus on a public access to controlled operations gradient to promote the integration of the fire house into the community and support public safety with clear delineation of site use areas. By utilizing the site design to clearly communicate the appropriate access and use of the site, the public is kept safely away from highly active apparatus bay aprons where large fire fighting equipment often enter the roadway.

Fire Station No. 1 is the first major intervention planned for this block which has been identified by the Village of North Aurora as the ideal location to establish a development pattern and building language to set the bar for future community work to come. It is New Urbanist, Form-Based, Walkable, and Natural Site context informed.

The Three "L's"

This organization allows the public to engage the facility in parking areas, a landscaped intermediate space, and in a community/ training room. These interlocking "L's" of Public, Semi-Public, and Private Community provide an interface with Private Administrative and Controlled Operational areas along the bridge which creates connection.

The landscape design of the project is intentionally executed at a civic scale. There is a strong desire for the project to hold the southeast corner of the intersection of IL Route 31 and Oak Streets with a civic presence. The concept design curving planting beds transition into a dry creek bed feature which serves as a Best Management Practices storm water channel and precipitation event ground infiltration asset. This creates another "L" shaped zone which mediates between public and controlled "L's" and crosses over, once again, at the axis in a metaphorical footbridge feature.

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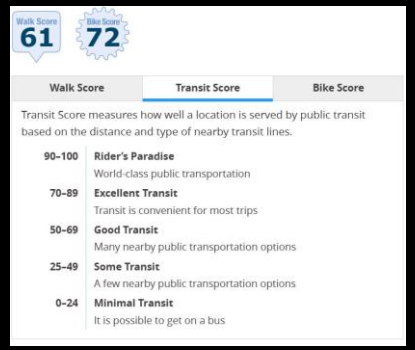

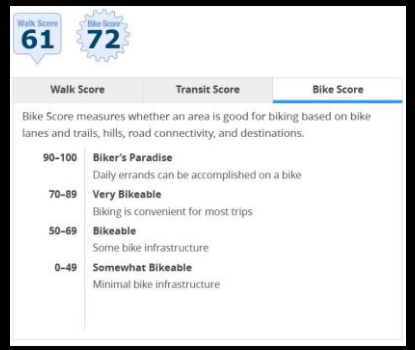

Walk Score 61

Somewhat Walkable
Some errands can be accomplished on foot.

Bike Score 72

Very Bikeable
Biking is very convenient for most trips.

Project improved Walk Score by 5 points (56 to 61)

Data credit: Walkscore.com

ICivic01-02

Design for Equitable Communities

This project is designed to be the first pace setting piece of a more walkable community development pattern. With a starting Walk Score of 56 and a Bike Score of 72, several elements were included to increase this access for the area. The Fox River Trail network, which connects walkers and bikers to pedestrian circulation and recreation along the riverfront extends along the east end of the development block. Fostering useful connections to this social infrastructure is an obvious way to increase the connectivity of the main thoroughfares of IL Route 31 and Oak Streets on the low bluff to the waterfront and path system. The inclusion of mixed-use development in the associated Planned Unit Development promises to expand the diversity of the land use on the block with a mixture of public safety, retail, office, multi-family residential, and single-family homes. This will increase the proximity of access to the site and increase the foot traffic with the associated uses. This mix also affords a diversity of housing access with options at several levels serving multiple socioeconomic strata. Shared parking at the core or side of the site, shielded from views by the building volumes and landscaping and avoiding parking in front of buildings allows for an overlap of evening residential intensity with spaces that can be utilized during peak hours of the daytime for retail and businesses. Placing these along a park-like central spine provides greater access and encouragement to engage with natural and economic amenities and across the river to the Island Park.

By acting as an extension of the public access river front and developing public park style site circulation, this block has the potential to extend a welcoming environment to a full diversity of local resident users and communities.

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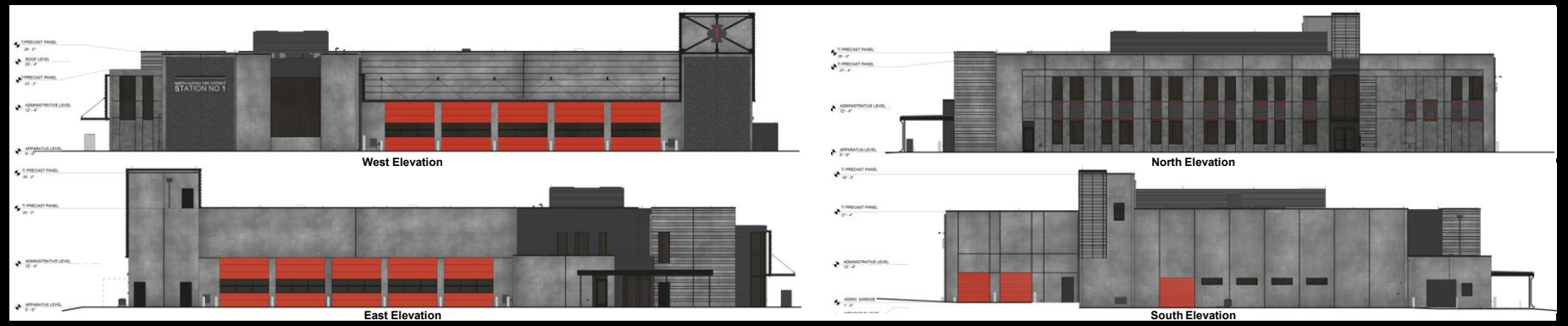

Rendered Elevations

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Design for Ecosystems

Filter Stormwater Prior To Reintroduction Into The Watershed

-Brings users into contact with natural resources

Stormwater Management Approach Best Management Practices

-surfaced based utilizing natural materials

Site Design With A Wide Variety Of Native Plant Species

-reversing the monocrop of imported European turn grass

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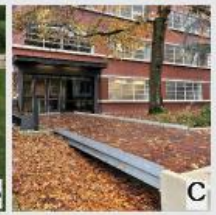

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Design for Water

The entire concept landscape design is conceived as drought resistant without need for irrigation and with little need for mowing except in limited recreation turf areas. All fixtures are low flow type and private restrooms are shared.

As a first responder building, the facility will be supported by an emergency generator. Critical systems will be connected to this energy asset to support sustained operations including water filtration and circulation pumping.

Best Management Practices were initially planned to capture, direct, clean, and absorb surface stormwater on-site through use of bioswales, simulated dry creek bed features, and filtration pools integrated within usable landscapes. With project evolution, this element evolved into a more lawn type feature for use with public engagement and firefighter staff, family, and community activities.

Adjacent to the Fox River, the entire site block is conceived as a stormwater and urban runoff pre-filtration environment with the use of vegetative pocket parks, green roofs, and meandering swales to reduce river pollution.

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Design for Economy

Tilt-up Precast Concrete Wall System

-Fabricated off-site in factory-controlled environment with modular approach

Future-sized Square Footages

-Not just planning for the needs of the Fire District today

Minimal Maintenance

-Durable facades and interior finishes

Ample Daylight

-Reduce the need for artificial lighting sources and energy use

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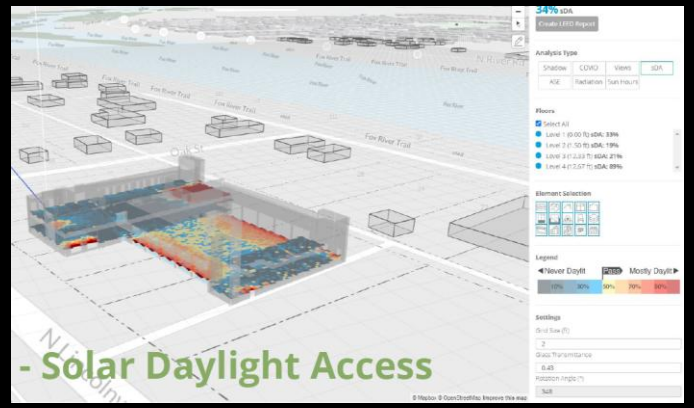

Energy Modeling Visualizations

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Design for Energy

Passive design strategies shape the building to minimize unwanted solar heat gain. The apparatus bay and support areas are typically heated only, so overhead doors with minimal glazing face east and west to limit heat while allowing necessary driver visibility. The solid south wall, containing fitness and support spaces, has clerestory to allow and utilize the minimal daylight to support climbing vegetation. Living and administrative areas are placed on the north side, where exterior glazing provides diffuse, even daylight without heat gain. West and east-facing portals are limited to key moments – public engagement to the west and river views to the east.

Building massing is arranged to allow low angle daylight into the apparatus bay via east and west vision glass, while regularly occupied areas benefit from shaded, diffused light. The large, uninterrupted south-facing roof over the apparatus bay offers future potential for photovoltaic solar arrays, supporting net-zero goals. Energy modeling helps inform early deign decisions, including future integration of EV charging and electric apparatus, supported by upgraded electrical infrastructure.

All high-use spaces are oriented toward quality views: public westward sightlines, calming north landscapes, and river views to the east.

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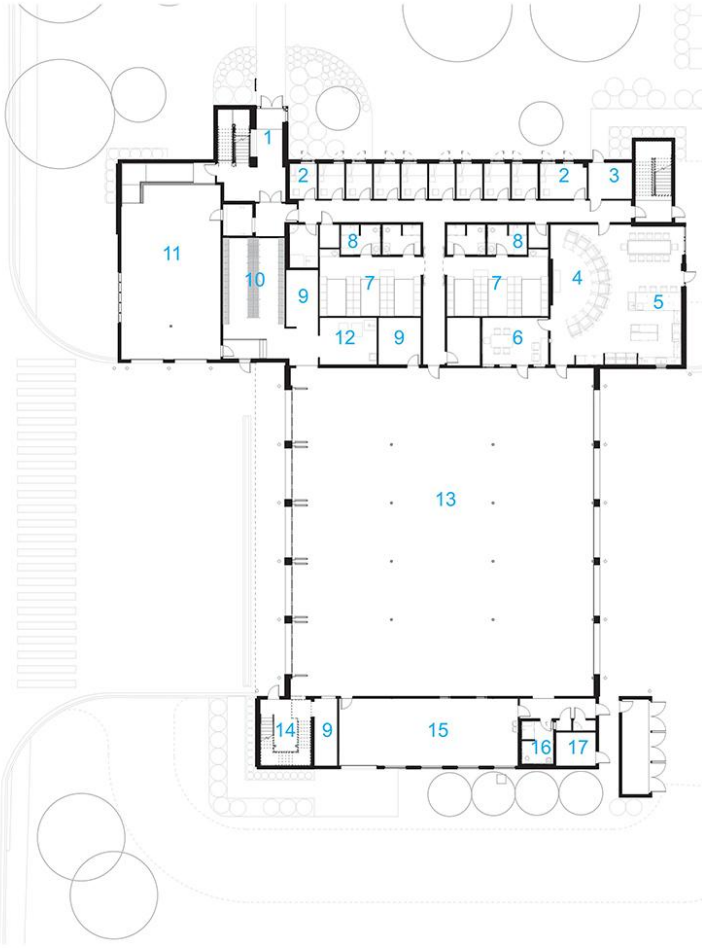
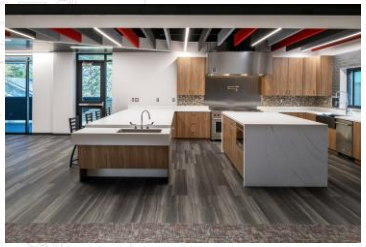
LEVEL 1 **1.** entry **2.** bunk room **3.** electrical **4.** day room **5.** kitchen **6.** report writing room **7.** locker room **8.** changing/restroom **9.** storage **10.** bunker gear **11. administrative garage 12.** gear laundry room **13.** apparatus bay **14.** hose tower **15.** fitness room **16.** decon room **17.** fire protection LEVEL 2 **18.** lobby **19.** executive assistant **20.** office **21.** mechanical **22.** admin conference room **23.** pre function **24.** break room **25.** restroom **26.** training room **27.** mezzazine



LEVEL 1



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13

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LEVEL 2

ICivic01-07

Design for Well-being

By placing the public in close contact with the watershed of the Fox River and local Park District assets, users are encouraged to adopt healthy lifestyles including walking, running, biking, and boating along the trail system.

Making considerations for the mental health impacts of first responder facilities is paramount. Contemplative element spaces have been woven into exterior site and interior use spaces alike.

The concept for the interior space development puts an emphasis on a residential scale and materiality. Conceived as a concrete box lined with wood and linen, the color palette is warm, natural, and calming. Highlighted by punches of accent color which celebrate fire service and nods to history and tradition, the building becomes the home for the band of kindred firefighters as a unit which is the North Aurora Fire Protection District family.

Exterior views from the project are very selective and precious to reduce the costs associated with large expanses of glass and to control the unwanted solar heat gain to interior environments. This creates the opportunity to intentionally frame views out to the urban context, the landscaped buffer yard, and the Fox River and trail system.

The design of the exterior building volume organization is resolved through use of CPTED (Crime Prevention Through Environmental Design) principles. Originally created to consider management of controlled space, these approaches are very helpful across a variety of applications including fire station apparatus bay to street interactions. Interior finish selections also promote infectious disease control by being durable, streamlined, and highly cleanable.

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Design for Resources

All exterior building materials are selected to be minimal maintenance, clean lined, and sympathetic to local materials.

Concrete as an exterior cladding is not a low carbon material but the use of this system vastly reduces the need for steel in the structural frame that would otherwise be required for the perimeter structure of the building. The precast panels are load-bearing and serve as the structure, the exterior finish, thermal layer, and the interior finish.

The major building system is comprised of precast tilt-up panels. These are produced in a factory-controlled environment where lighting, air quality, process, equipment, and safety can be highly studied and controlled. These factors eliminate many of the typical hazards encountered by construction workers on construction sites. This approach involves almost zero waste as materials are continuously introduced in the exact amounts required.

The anticipated awarded precast supplier is just 5 miles from the project build site. This makes the production, transportation, and erection of this system extremely efficient and supports local workforce and craft.

This facility needs to last 60-75 years at a minimum to satisfy owner requirements. A well executed roof and sealant maintenance routine should easily support these life spans for the concrete and metal panel accents as selected.

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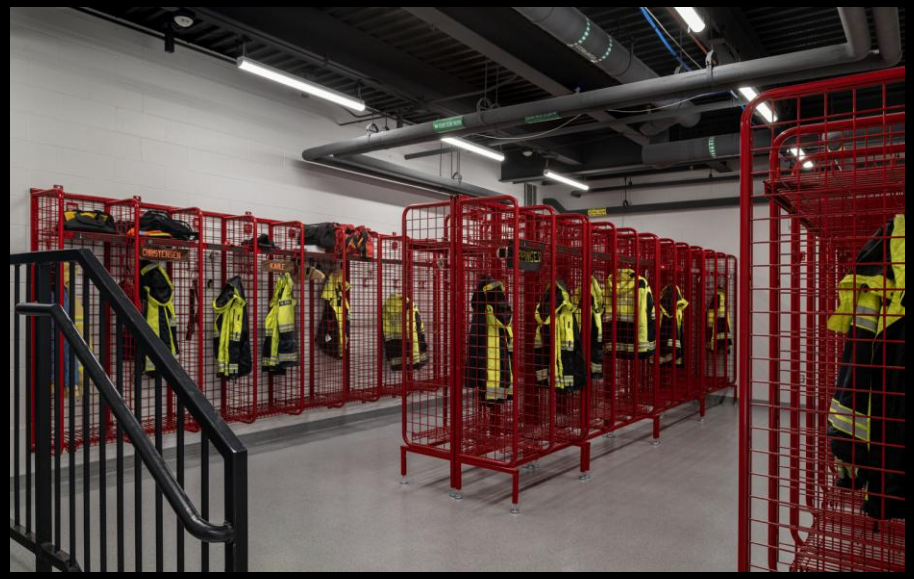

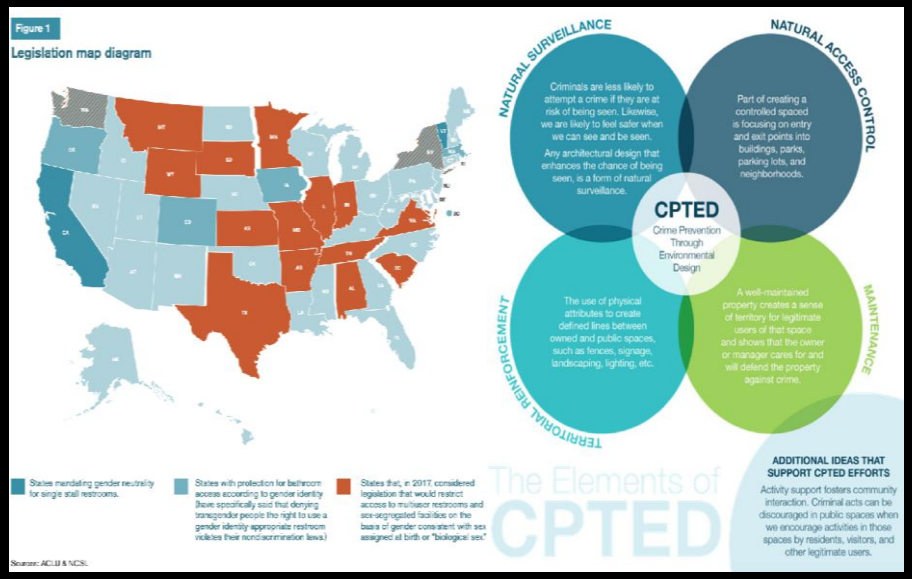

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Design for Change

Social changes have inspired substantive changes in fire house design. Emergent dialogue around gender identity for the staff and users have prompted a shift to private, single user, bunk rooms. Locker spaces are also open access areas with adjacent restroom/ changing/ shower rooms provided to accommodate a diverse station crew.

As an initial design strategy building site organization and massing always begins with taking advantage of passive potentials within the context and environment. This, combined with features like selective operable windows and direct access to outdoor roof and patio areas, ensures that even in an energy loss scenario the building will be quite pleasant in terms of human comfort and facility function.

CPTED (Crime Prevention Through Environmental Design) principles have been used for all aspect of the station design. This is supported by clear public and private zones and intentional sight lines and site design to deter the public from potentially dangerous portions of the site while encouraging use of public amenity features.

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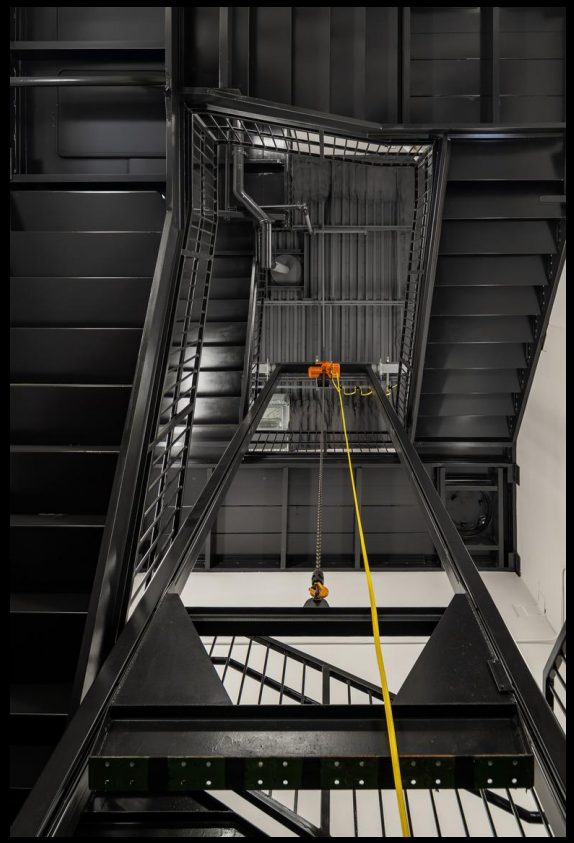
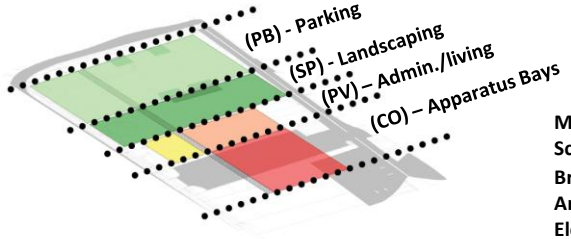
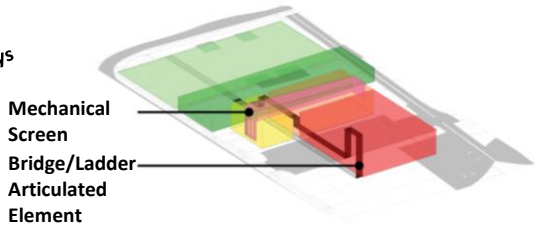


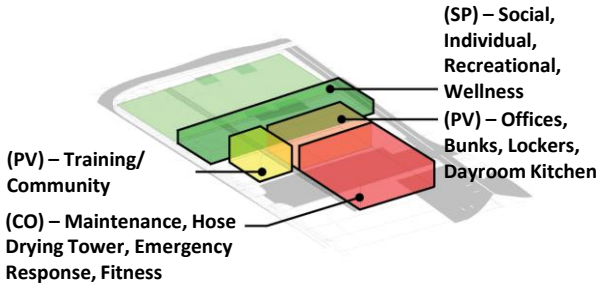
Conference Space

Community/ Training Space

Hose Drying/ Training Tower







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Design for Discovery

The design Team is currently developing many Public Safety projects throughout the Fox River Valley region. This network of Police Departments, Fire Departments, and Fire Protection Districts forms an active dialogue of best practices feedbacks, testing and implementation of solutions at a variety of scales, and a mechanism for the development of Evidence-Based Design practices. These acquired knowledge resources inform this and future projects.

A fire house is a natural typology to capture the imagination of the public, inspire a sense of duty and service, and act as a platform for community engagement and education with a focus on early education towards safety. The organization of the building massing on the site push the community/ training space up close to the IL Route 31 frontage with a large glazed portal, inviting the community into ongoing continuing education and engagement. Similarly, the wide frontage of the apparatus bay displays gleaming fire service vehicles to the passing public.

The organization of site massing steps upwards from the north (Public Zone) with the increasing height of the landscaping materials (12'), private building volume (28'), mechanical screen (38'), culminating in the hose drying tower (48'). The expected Planned Unit Development to the south of this site is anticipated to follow this pattern with buildings that are multi-story mixed use.

Directions

Once your presentation is completed, please email Becky Gilbert at bgilbert@aianei.org. A link will be emailed to you as to where to upload your presentation.

Applications and presentations are due by July 25, 2025.