FIRE HALL NO. 15

Combining heritage and contemporary function

Researched and written by Katie Filek, Vancouver Heritage Foundation

project at a glance

location	3003 East 22nd Ave
original size	6975 ft^2
new size	11840 ft^2
year built	1913
style	Edwardian
rehabilitation	2012
cost	$5 million
heritage status	registered, B

building team

owner	City of Vancouver
architect	Hughes Condon Marler Architects
heritage consultant	McGinn Engineering & Preservation Ltd.

The history of organized firefighting in Vancouver extends back nearly as far as the city itself. The City of Vancouver was incorporated on April 6, 1886, the fire brigade (lacking any official equipment) formed on May 28th, and the city was almost completely destroyed by a fire merely two weeks later. Following this rather rough start, the profession in Vancouver has developed from a small group of volunteers in 1886 to over 800 firefighters operating out of 20 fire halls today.

As fighting fires demands relatively large pieces of equipment, and those pieces of equipment in turn require storage, the practice is inherently tied to buildings. The fire hall is a typology that has consistently evolved to accommodate increasingly larger apparatus. Vancouver's first fire hall was built in 1886 to house one engine and the horses required to pull it; today, fire halls are built to house numerous fire trucks, some up to 24 metres in length. Other functions might remain largely unchanged (living quarters, storage space, offices), but fire hall buildings are still regularly torn down and rebuilt when they cease to function efficiently. Unfortunately, this often means that historic buildings rich in heritage value are demolished and lost forever.

In a practice where function is integral, how, then, might such historic fire halls be saved? An impressive example may be found in the recent rehabilitation and expansion of Fire Hall No. 15 – a 101 year-old, Edwardian structure located in Vancouver's Renfrew-Collingwood neighbourhood. After years of contention and debate by the City of Vancouver about its future, the building has been carefully restored to its original aesthetic, while upgraded interiors and an expansion allow it to serve effectively as a fire hall. An exploration of this project shows how contemporary function and heritage can, indeed, co-exist.

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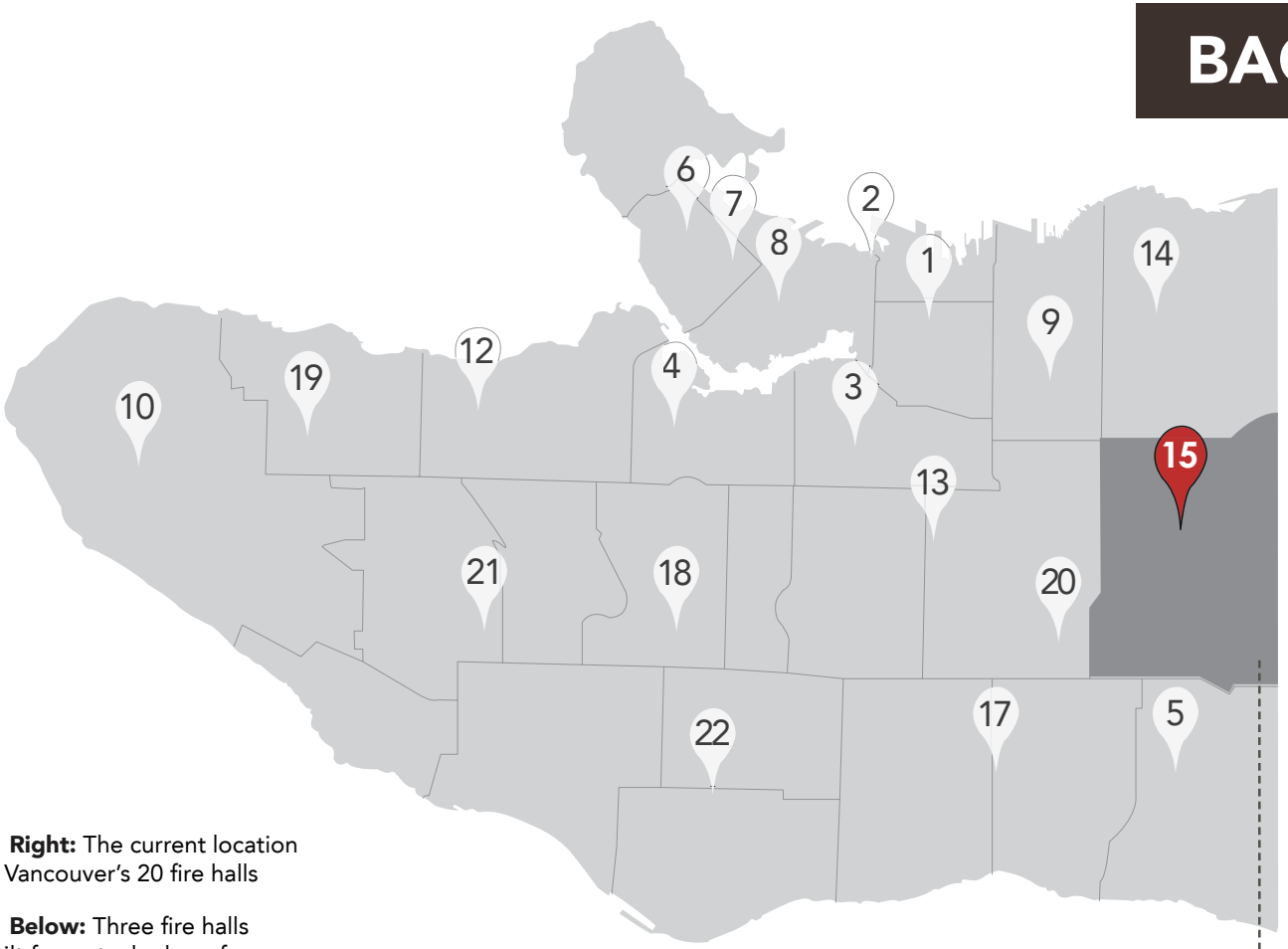
BACKGROUND



Right: The current location of Vancouver's 20 fire halls

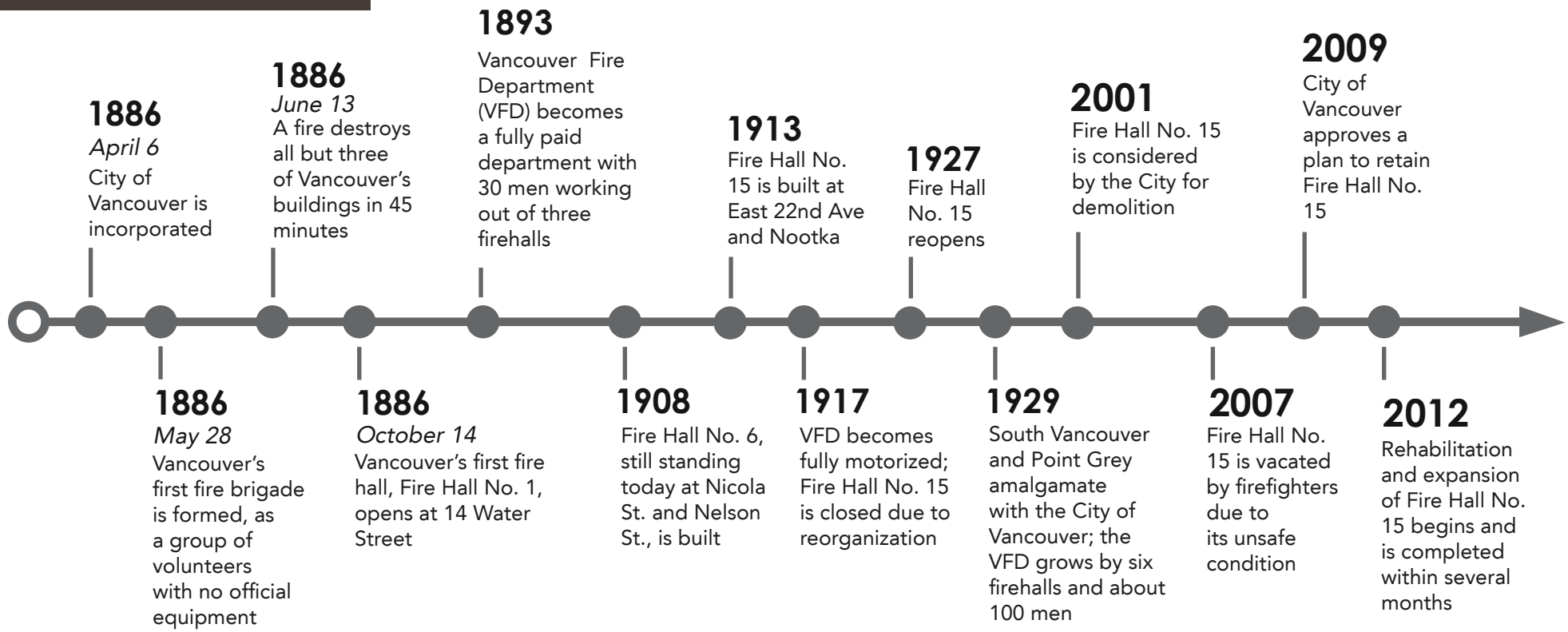
Below: Three fire halls built from stock plans, from left to right No. 12, 15 and 14

Photos courtesy of Vancouver Fire Fighters Historical Society (VFFHS)

Vancouver's first fire hall was built in Gastown in 1886. The city's first fire engine was acquired in July of the same year: a Ronald steamer, to be pulled by hand as the fire brigade did not yet have horses. They slowly accumulated new fire apparatus as both the city and the profession grew. More steamers and hose trucks were purchased, a self-propelled steamer came into service in 1908, and by 1917 the Fire Department was fully motorized with a fleet of fourteen engines.

Vancouver's geographical expansion and fast-growing population demanded that the resources of the Vancouver Fire Department (now Vancouver Fire and Rescue Services) grow along with it. The city's first 15 fire halls were built within a relatively short time frame of 28 years, with four being built in 1913 and 1914 alone. The halls were spread across the city and into its expanding suburbs in order to reach fires in each area as quickly as possible. Fire Hall No. 15 itself was built in 1913,

timeline



at the corner of East 22nd Ave and Nootka Street in what was then the municipality of South Vancouver. It was one of four wood-frame Edwardian fire halls built from a stock plan developed by the City of Vancouver. Its first fire engine was a motorized Seagrave hose wagon; however, due to poor road conditions in the district, the vehicle often became stuck in the mud and was soon replaced with a horse-drawn wagon. As such, the fire hall was Vancouver's last remaining hall to use horses.

Following the conversion to a fully motorized fleet, changes continued to occur in the department's fire equipment as technologies evolved and apparatus became aged and outdated. Each decade of the twentieth century saw an average of 20 new apparatus acquired (excluding the 1930's, during which economic conditions only allowed for the purchase of five new fire vehicles). Engines continued to grow bigger in size as the century advanced. One significant change occurred in the 1930's, when the increasing size of buildings demanded a way for fire fighters to reach the upper floors and turntable ladders began to be installed directly on trucks. Another such development took place following World War II, when aerial work platforms (also known as cherry pickers, buckets on long bending arms attached to the fire truck) were introduced and furthered the firefighters' vertical reach. It was in the 1960's that the modern-day fire engine was born – the closed cab fire truck was introduced, with enclosed seating for crew members, and the multiple functions of pump, booster hose, water tank, hose and ladders were

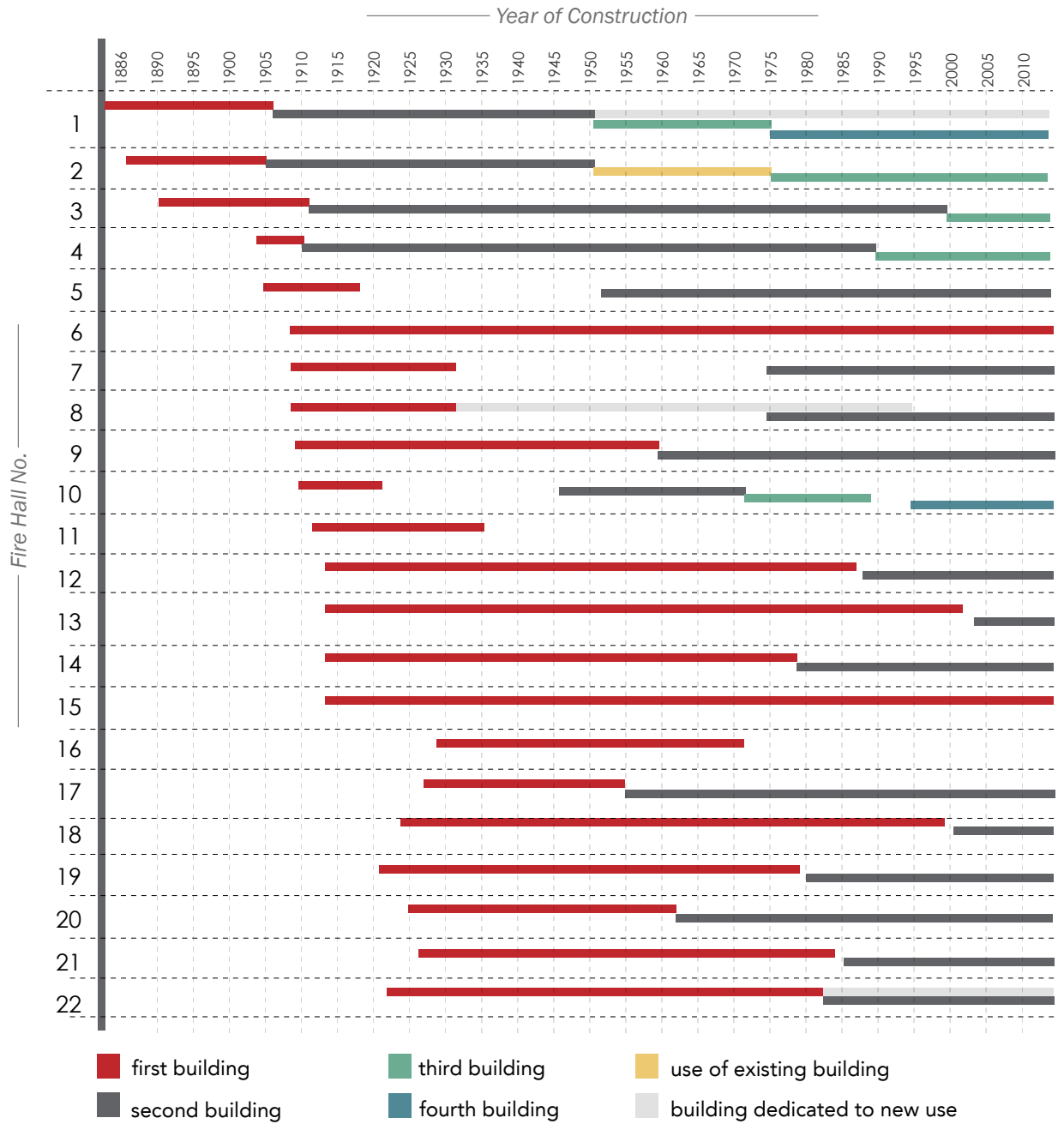
combined in one vehicle. This truck became known as the "quint" – short for quintuple, as it combined five functions. Most modern-day fire halls possess several types of engine, including both multifunctional quints and specialized vehicles such as pumpers and trucks with aerial platforms.

While fire apparatus were regularly upgraded and replaced, so too were fire halls. All except two of Vancouver's halls have been replaced at least one time since their initial construction. This replacement is due partly to changing functional and spatial requirements, as well as aesthetics and structural integrity of buildings. Two of Vancouver's fire halls are the fourth replacement for the original – each predecessor torn down after a period of 30 – 45 years. Vancouver's first fire hall was built to house horse-drawn hose wagons; today's buildings house a mix of quints, aerial trucks and pumpers.

Source for history of firefighting in Vancouver:

- Matches, Alex. Vancouver's Bravest: 120 Years of Firefighting History. Surrey, BC. Hancock House, 2007. Print.

The Longevity of Vancouver's Fire Halls



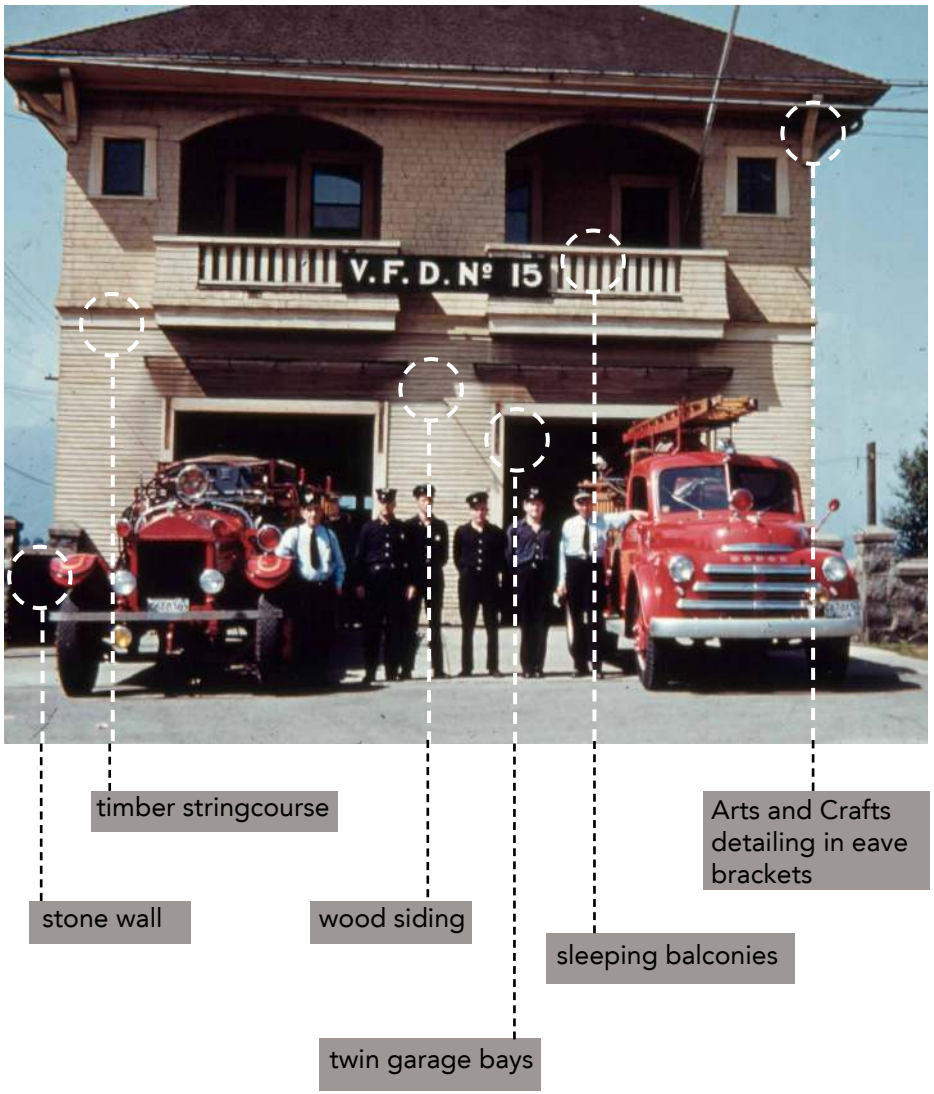
Fire Hall No. 15

As it was built in 1913, Fire Hall No. 15 was designed to house much smaller engines than today's modern giants, and fewer of them. It was this lack of modern-day functionality combined with the building's deteriorating state (due to lack of maintenance) that nearly led to its demolition and replacement by the city. The building was, however, recognized by many as a valuable historic landmark in a neighbourhood that had lost nearly all built signs of its earliest settlement, and as being an architecturally significant structure for all of Vancouver. It stood as one of two remaining Edwardian-era fire halls in the city.

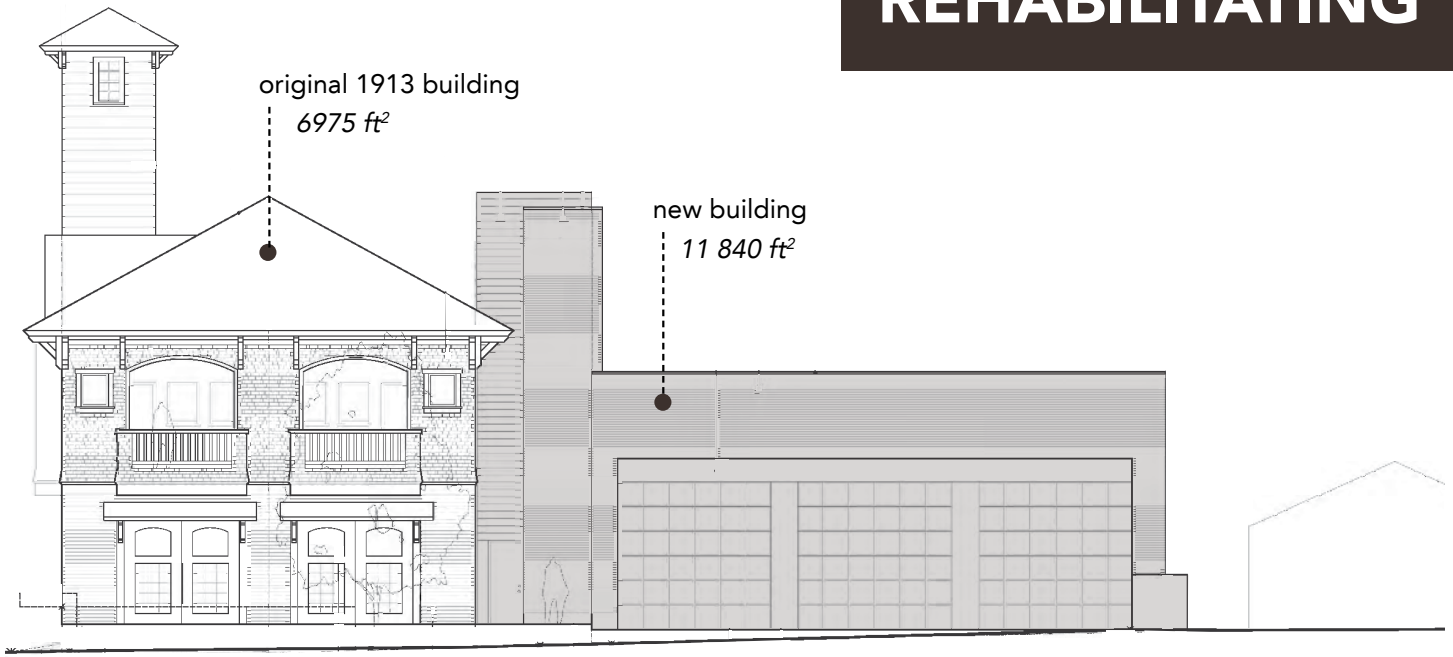
Significant architectural elements could be found in the fire hall's shingled upper storey with its flared belt line; narrow lap siding on the first floor and a 40-foot hose tower at the rear; an interior with pressed tin ceilings and a brass fire pole; and a low granite wall enclosing the site. Although the building had been encased in stucco in a typical 1950's renovation, the potential for restoration to its original Edwardian aesthetic remained. As such, even when deteriorating sections of roof had to be covered with tarps and fire fighters vacated the building in 2007 due to unsafe conditions, many in the community still fought for the preservation of this local landmark. The Council voted in 2009 to preserve and restore Fire Hall No. 15, incorporating it into designs for a new three-bay fire facility.

Left: No. 6 Hall in 1908, with the type of motorized engine that would have originally been used at Fire Hall No. 15.
Photo courtesy of VFFHS

Right: Fire Hall No. 15 in 1954, with several character-defining elements identified.
Photo courtesy of VFFHS



REHABILITATING THE FIRE HALL



Drawing courtesy of HCMA

The hall in 2009, prior to restoration

Photo courtesy of Hughes Condon Marler Architects (HCMA)

As with many heritage conservation projects, Fire Hall No. 15 required a mix of preservation, restoration and rehabilitation. Elements such as the character-defining balconies had been closed in and were restored with reference to historical photographs; the hose tower and massing of the building were preserved; and overall the building was reconfigured and rehabilitated to accommodate the needs of a contemporary fire hall. The building was also expanded to connect with a new hose tower and a new single span, three-bay structure that would house the fire station's apparatus. An addition at the back, or north side of the fire hall, was put in place to house a new kitchen. The design of each new structure was carefully considered to ensure coherency with and respect for the original 1913 building.

Various operations on both the interior and exterior of the building were carried out in the rehabilitation. The stucco from the 1950's renovation was removed with the hope that the original wood drop siding would still be intact; however, the siding was found to be degraded and the exteriors were instead restored using new siding with a matching profile. In restoring the roof, the existing wood shingles were replaced with new cedar shakes. The institutional, utilitarian massing of the building was maintained through conservation of the hipped roof, gabled wall dormer on the west elevation, the bay window set underneath, and the hose tower at the northeast corner. The siding

Sources for history of fire hall:

- Donald Luxton and Associates Inc. Fire Hall No. 15 Statement of Significance. September 2005. Print.
- McGinn Engineering and Preservation Ltd. Barry McGinn Architect. Fire Hall No. 15 Conservation Plan. August 2009. Print.

on this hose tower was also hoped to be original, but upon inspection was revealed to have been installed at a later date. New siding that matched the original was applied. The superstructure of the tower was kept. The fire bays on the south side of the building – that had been enlarged at least once to facilitate larger equipment - were kept in place but restored to their original design and received new doors. One of these is operable and opens to a community room; the other serves an aesthetic purpose of maintaining the façade's heritage character.

Other major changes to the building included the rehabilitation of the building as a post-disaster facility and the updating of its interior spaces. Rehabilitation to a post-disaster facility entailed seismic upgrading through installation of a steel moment-resisting frame and installation of new foundations. The latter meant that the entire building was lifted and moved to the adjacent lot while its new foundations were poured. The interiors of the original

Original fire bay doors and openings
Photo courtesy of McGinn Preservation & Engineering Ltd.

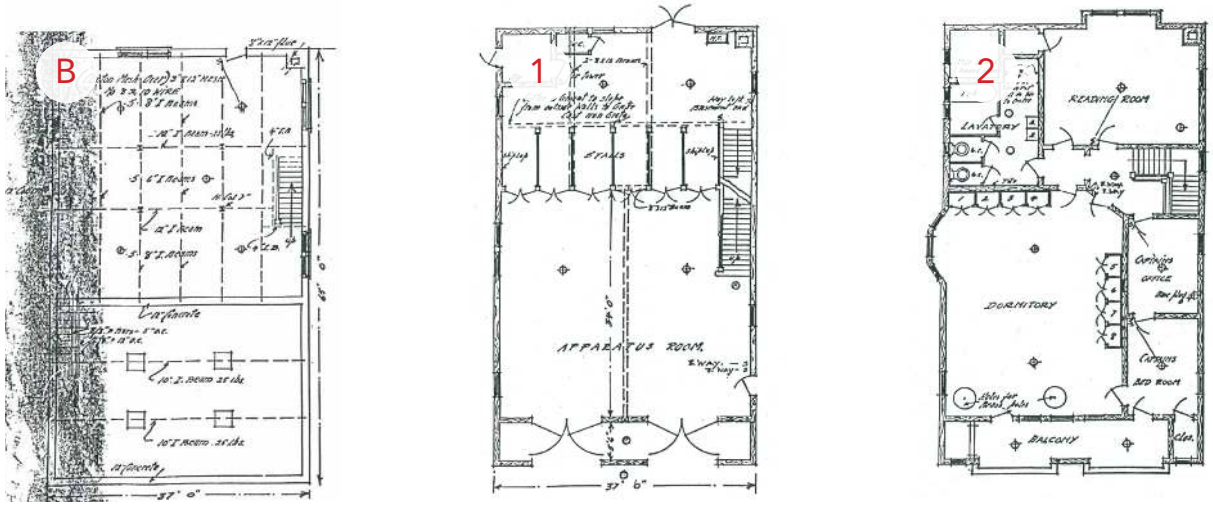
Fire bays with garage doors in 2009, prior to restoration
Photo courtesy of HCMA

Restored front of fire hall with new fire bay doors (the doors on the left are still functioning, and open to a community meeting room)

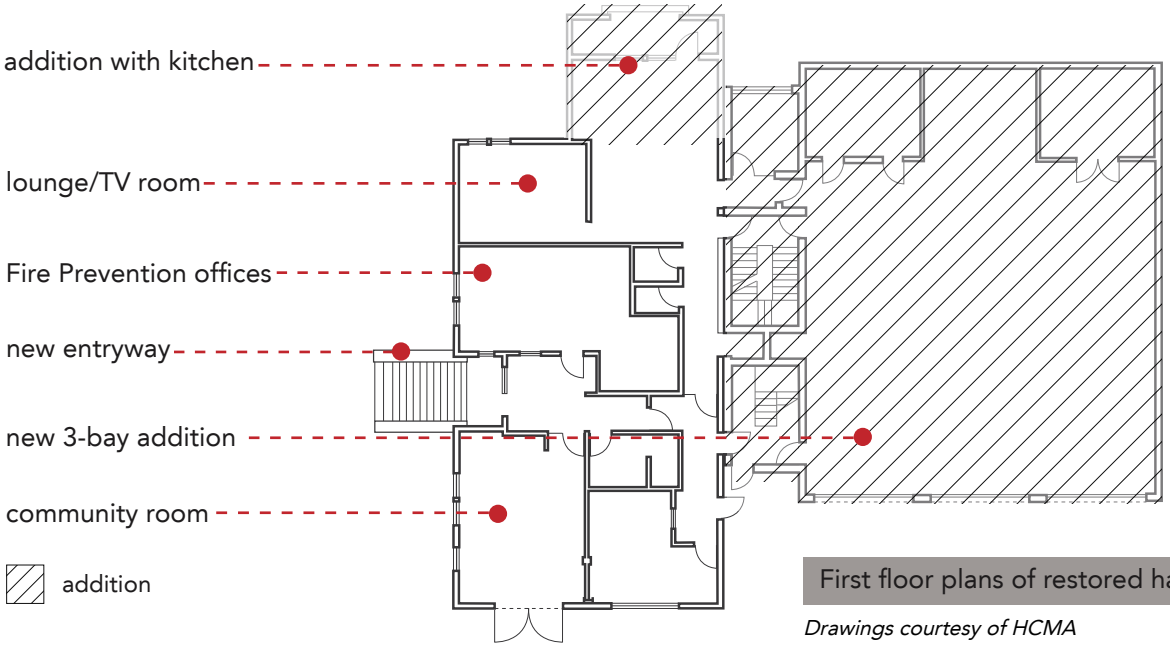
The interiors of the hall were highly redone and reconfigured - this hallway, the offices and meeting room to the left in this photo are now where two fire bays would have been previously

building were reconfigured to both accommodate new uses and better facilitate existing ones: a community room, lounge, office space, offices for the fire inspection branch, a side entrance, hallway and storage were added to the first floor, where the fire engine bays (and at one point the horse stalls) had previously been. The kitchen was kept on this floor but extended out into the addition at the rear of the building. The second floor retained its use as a dormitory and washrooms, but was also largely reconfigured.

Overall, the original building was rehabilitated to allow for new uses, while the adjoining brick and concrete building was constructed to house the hall's original intended use: the storage and maintenance of fire apparatus.



The 1913 blue prints for the original fire hall (from left to right: basement, ground floor, second floor)



First floor plans of restored hall

Drawings courtesy of HCMA

the fire hall and the environment

Retaining an existing building is inherently sustainable. It keeps materials from the landfill, reduces energy expended on demolition, construction, transportation and manufacture of new materials, and maintains historic materials that are often of high quality from local sources. Additionally, the embodied energy of a building (the energy already expended in its production) is conserved.

In addition to these inherently sustainable elements, the architects of Fire Hall No. 15's rehabilitation took advantage of the opportunity to implement several upgrades to its energy efficiency. The 1913 building was retrofitted with geothermal heating, an efficient mode of heating that collects heat from the ground and concentrates it for interior use. In-floor radiant heating was implemented in the new fire bay building. To reduce heat loss, increase occupant comfort and reduce outside noise, double-glazed panes were installed in the dormitory's windows. As the building's cladding was completely removed, insulation was able to be installed throughout the building, further increasing energy efficiency.

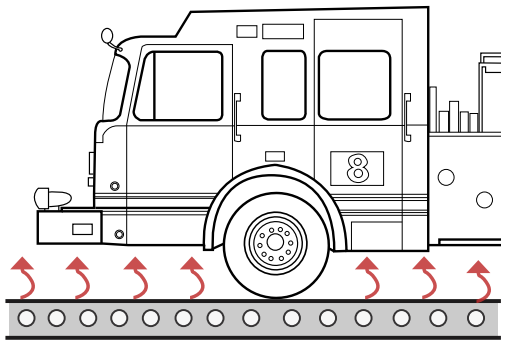
The architects are in the process of applying for LEED Gold certification and are expecting their application to be approved.

Geothermal heating

Fire Hall No. 15 was retroffited with geothermal heating, an energy efficient option for updating a building's heating system. This heating method collects heat from the ground and concentrates it for interior use. Geothermal heat pumps don't actually create heat, but instead move heated air in the winter (and cooler air in the summer) from one area to another by running it through a compressor and into a building.

Geothermal systems are quiet, low maintenance and can provide comfortable interior environments year round. Although this method involves digging pipes up to 400 feet deep and is expensive to install initially, a geothermal heat pump's energy efficiency is such that costs can be regained in as little as 3 to 5 years.[1]

[1]Johnston, David and Kim Master. Green Remodeling: Changing the World One Room at a Time. Gabriola Island, BC: New Society Publishers, 2004

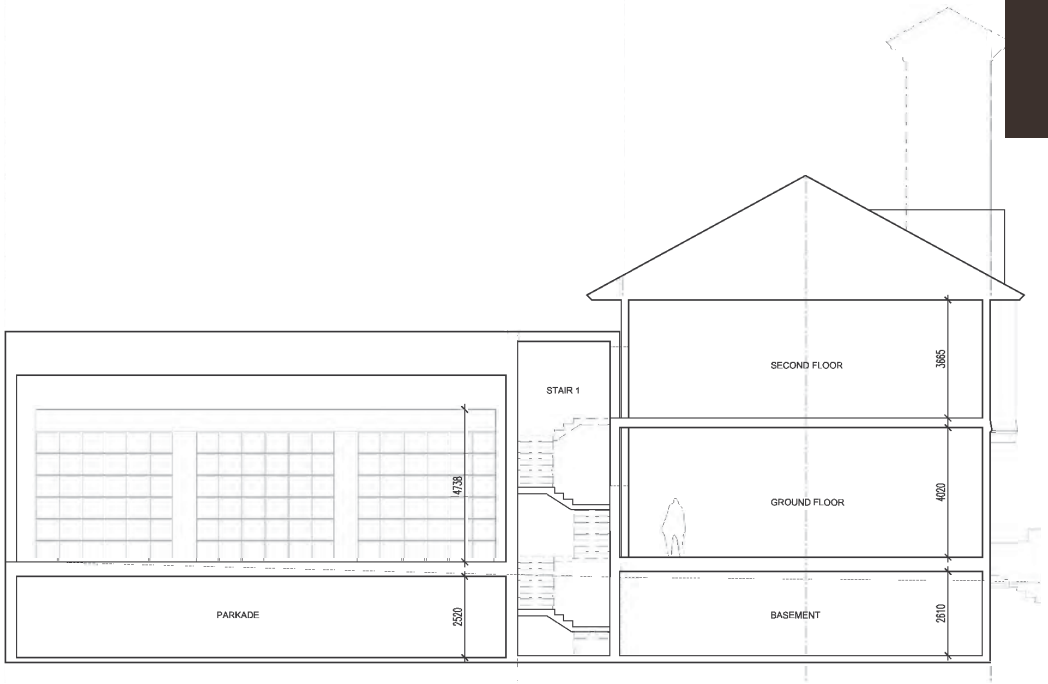


A suitable heating option: in-floor radiant heating was installed in the new fire bay building, with tubes containing hot water running through the floor slab. This method of heating is especially suited for use in the fire bays as it allows the floors, often wet from the cleaning of fire trucks, to quickly dry out.

The dormitory's original windows were replaced with double-glazed units in order to increase energy efficiency and reduce noise transmission. Parts of the original wood frames were saved and repaired where possible.

Although the existing single panes were found to be in generally good condition, the decision was made to install double-glazed units in order to ensure entirely comfortable, quiet living conditions so that firefighters can sleep, even in the day when necessary. This is an example of where function took precedent over preserving historic material.

adapting an historic building for contemporary use



This architects' drawing shows new functions that have been included in the new building - 3 fire engine bays, a parkade, a new central staircase and a new hose tower.

Drawing courtesy of HCMA

Early practices: fighting a fire on Hastings Street in 1943.
Photo courtesy of VFFHS

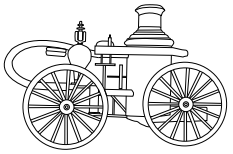
Fire halls are largely based on function, and with good reason. Firefighters are first responders that are called not only to fires but to a range of situations, including medical emergencies and trapped people or animals. The ability to respond quickly and to ensure that all equipment is functioning properly is essential. Additionally, fire fighters require adequate space and equipment for drills and physical training, and facilities that allow for a high quality of life within the hall itself.

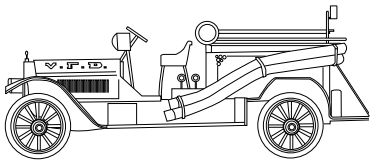
Fire Hall No. 15 had ceased to function efficiently in accommodating twenty-first century firefighting practices. Its fire chief was keen for an entirely new fire hall building – one which would allow sufficient room for multiple modern fire apparatus, for office space and for living more comfortably in the hall. The original 1913 building was already densely filled with program, as is typical of urban fire halls. Additionally, and perhaps most importantly, the building's maintenance had been neglected to the point that it was physically failing. Firefighters were using tarps to keep rain out of openings in the roof and it was at one point deemed unsafe for occupation. The fire hall was therefore viewed by many as unsuitable for continued use and even for rehabilitation. In 2007, the 1913 building was recommended by the City for demolition and replacement with a new hall. However, following community outcry and a subsequent vote by City Council to retain the building, the parties involved in the project's design were able to find a way to

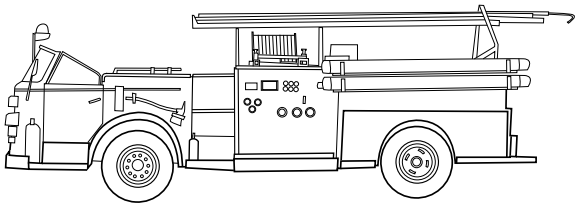
incorporate the desired program into the existing hall and proposed three-bay addition.

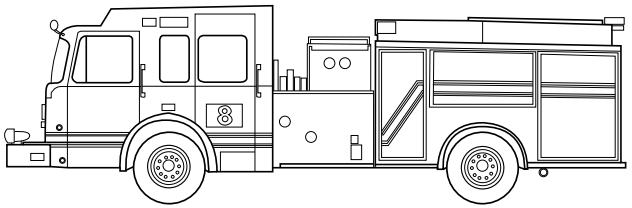
A challenge in adapting the fire hall to contemporary use was fitting in all contemporary spatial needs. These changed spatial requirements included dormitories that now need to accommodate both male and female firefighters, private bedrooms for fire chiefs, and a larger fire bay facility to provide space for both larger vehicles and indoor maintenance of those vehicles. Entirely new programmatic requirements included a parking garage (as fire fighters may now drive to work, but wouldn't have in 1913), separate washrooms for female firefighters, a lounge, additional office space, a modern hose tower, and a community meeting room, available as a public amenity. This amount of program would have been difficult if not impossible to incorporate into the existing building, without the addition. Moving the fire bays into the new, adjoining and more spacious facility allowed for implementation of new office space and a conference room in the previous bays, as well as more space for existing uses.

The three additions to the building – the three-bay addition to the east, the rear addition that houses the kitchen, and the entrance on the west side of the building – presented their own challenges, specifically in defining an approach to how old and new constructions would relate to one another. In the end the additions were addressed differently, each according to their relationship to the existing building. The new entrance was integrated directly into the building, with character-appropriate white wood trim and a stone wall lining its stairway. The entrance sits directly under the existing bay window on the west façade, further tying it into the original building. In comparison, the new fire bay and the rear addition stand out as unique elements, flat-roofed and clad in brick. These additions demonstrate a contemporary design approach that is clearly of its time. However, the new fire bay is set back from the front of the property, simple in its geometric









Changing needs: The fire apparatus belonging to the Vancouver Fire Department (now Vancouver Fire and Rescue Services) have evolved according to technology and need since the Deparment's beginnings in 1886. Fire Hall No. 15 was built to house engines most similar to the 1929 Bickle motorized engine, second from the top above.

Photos courtesy of VFFHS

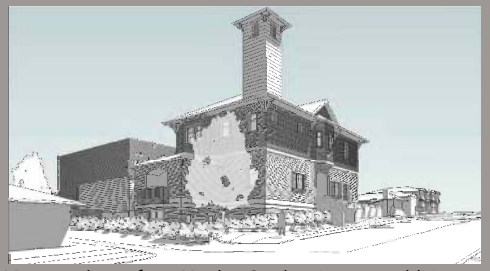
form and neutral in its cladding, and a respectful foil to the rich character of its historic counterpart. The rear addition is similarly neutral in its design. The connection between the heritage building and the new construction becomes a critical design factor and a much-observed characteristic; in this case, it was resolved with a recessed "neck" that houses stairwells and the new hose tower, and subtly connects the two buildings.

The rehabilitation of Firehall No. 15 was successful in providing spaces that conformed to twenty-first century needs without the loss of a heritage structure. It is largely a new building within (and adjacent to) a restored frame and exterior, and is able to satisfy the demands of the Fire Department by providing a building up to the latest standards, while still existing as a distinctive historic marker within the community.

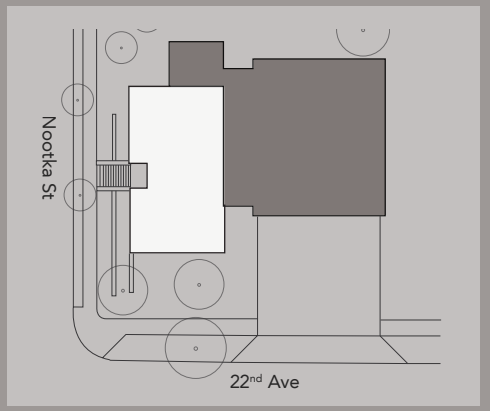
Centre, top: The architects' renderings of the restored fire hall with the additions
Renderings courtesy of HCMA

Centre, bottom: A site plan shows the setback of the three bay addition from the road and its relationship to the 1913 structure


View northeast from 22nd Ave


View southeast from Nookta St, showing rear addition


View northwest from 22nd Ave




The "neck", where old and new buildings come together, joined by a stairwell and new hose tower

why retain historic fabric?

There were many who questioned keeping the original Fire Hall No. 15. As previously mentioned, the hall's fire chief had wanted a new building for his men, to bring them into the twenty-first century and ensure that they had up to date, modern facilities that would allow for proper fire protection. City Council had at one point agreed to a recommendation for its demolition and replacement. It was only with creative thinking and careful collaboration between the users, stakeholders and consultants that a solution was reached – one that would allow for both a modern facility and the retention of the historic building. It was a project that took time to develop and met with many challenges along the way. Many elements had to be replicated as opposed to preserved. One might ask: why bother?

The importance of such a fire hall in Vancouver lies in its heritage value, as it creates a connection to the past and serves as a physical manifestation of Vancouver's history. The building stands raised on a slight hill, high above the surrounding structures, where it acts as an orienting, historic landmark for the Renfrew-Collingwood community. Such historic buildings are integral in creating a sense of place – a sense of attachment, distinctiveness and identity – for an area's residents. As nearly all of its earliest building stock has been replaced in successive waves of development, this neighbourhood in particular is one in need of retaining what historic structures it can. From

The fire hall prior to its restoration, with blue tarps covering the roof where its surface was failing.

Photo courtesy of HCMA

Flooring is repurposed as ceiling paneling in the kitchen and stairwells

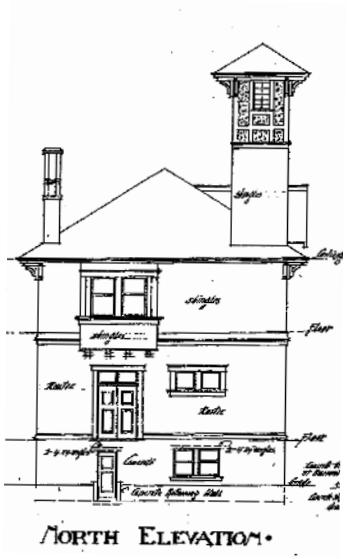
The hall's aged brass fire pole was kept, although is now rarely used

Original zinc ceilings extend throughout the entryway and community room

Several historic cast iron radiators maintain a prominent place in the hall

Character-defining Element:
The Hose Tower

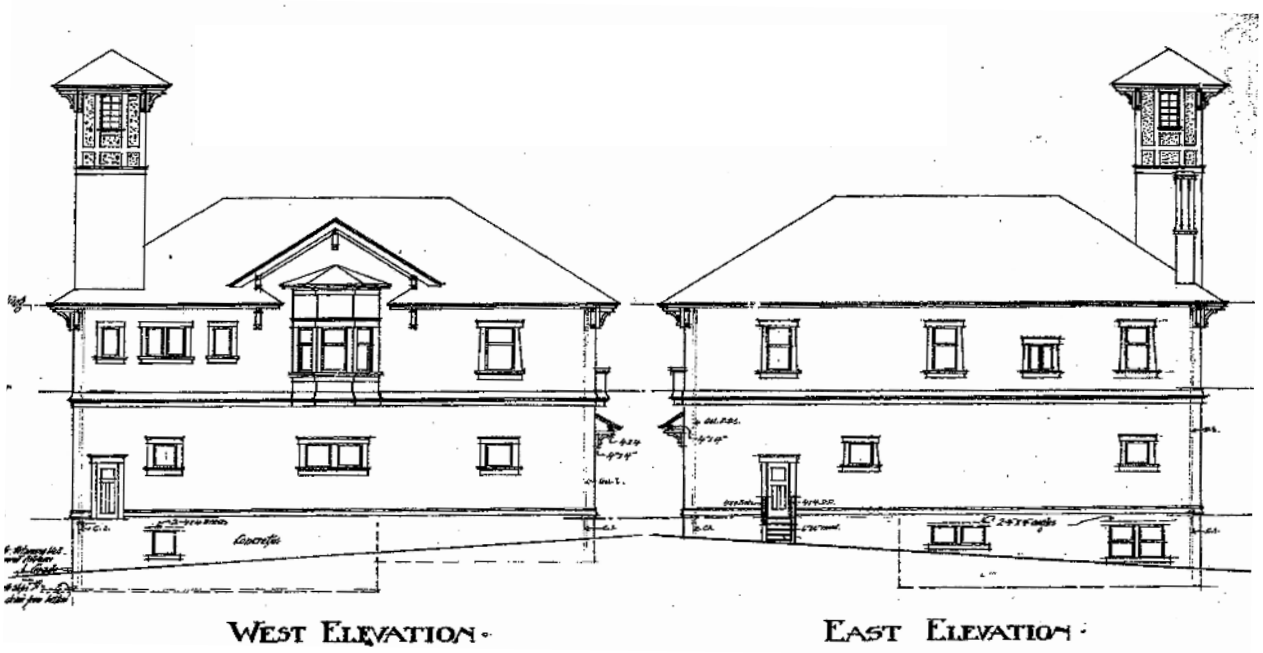
Tall and distinctive, the hose tower is an element that belongs to all fire halls and is used to hang and dry out fire hoses. Fire Hall No. 15's hose tower, dating from 1913, would also have been used as a vantage point from which to spot smoke in the city. The wood superstructure of the tower was preserved and the exterior restored.



an architectural standpoint, Fire Hall No. 15 is important as the only remaining Edwardian fire hall in the city. It is also the only surviving fire hall of the four that were constructed from stock plans around the same time.

Retention of the fire hall's heritage character was accomplished through saving many of its character-defining elements. The building's massing was maintained, through the retention of its two storey height, hipped roof and gabled wall dormer on the west elevation. Other distinguishing features on the exterior, such as the hose tower, the two large truck doors at the front of the building, and triangular eave brackets – elements of the building's Arts and Crafts detailing – were saved as well. Siding with a matching profile to that of the original was applied to further relate the building to its historical past.

On the interiors, original materials were saved where possible. The truck bays' ornate pressed metal ceilings were still in excellent condition; these were salvaged and extend into what is now an



Drawings for the original 1913 fire hall, issued by the City of Vancouver *(courtesy of Barry McGinn)*

Vancouver's oldest existing fire hall: Fire Hall No. 6

Built in 1908, Vancouver's oldest existing fire hall sits at the corner of Nicola and Denman streets, from where it serves the West End neighbourhood. This hall is thought to be the first in North America to be built specifically to house motorized vehicles.

Beyond an interior renovation in 1988, the building has not undergone any major changes and continues to function effectively. A few trucks have, however, lost their side mirrors on entering and leaving the relatively small fire bays - perhaps the cost of keeping this historic building intact.

entrance foyer (new pressed metal ceilings were fabricated for use in the community room). Fir trim and flooring were repurposed as paneling on the kitchen's ceiling. The hall's brass fire pole, early if not original, was moved but saved. Even several cast iron radiators were found to be salvageable and now have a place in the rehabilitated building. And although the windows needed repair and single panes were replaced with double glazing, at least part of the wood frames themselves are the originals.

Overall, preserving these numerous historic elements lends continuity not only to the neighbourhood, but also to the building's identity as a fire hall and its relation to the long history of firefighting in Vancouver. Firefighters who currently occupy Fire Hall No. 15 can proudly relate back to a tradition of community service. Where elements such as graffiti-like carvings of names into the original hose tower remain, they provide a tangible connection back to past members of the same profession. Horse-gnawed pieces of wood allow for reflection on what the practice once was, and how it has evolved today.

New cedar shakes were installed on the 1913 building's roof - a decision that is not standard practice in new construction projects, but is important in restoring the building's heritage character

The fire hall's original rock wall, running parallel to Nootka St, was an important heritage landscape feature on the site.

Although it looked to be in good condition, the wall was found to be in need of remediation and was ultimately rebuilt. Many of the original stones were reused.

The essentially new wall is built around a concrete core, meaning it is more seismically sound.

Photos courtesy of Barry McGinn

CONCLUDING POINTS

rehabilitating for sustainability:

environmental sustainability

- improving building's energy efficiency
- reusing existing materials where possible

cultural/social sustainability

- maintaining a historical marker for Renfrew-Collingwood
- providing firefighters with a material and historic connection back to the tradition of their profession
- preserving a unique example of an architectural style
- nurturing a sense of pride for firefighters and a sense of place for members of the surrounding community

economic sustainability

- supporting jobs in the heritage sector, in specialties such as window repair and masonry

Photo courtesy of Barry McGinn

The rehabilitation of Fire Hall No. 15 was, at one time, an ongoing point of contention in Vancouver, but is now viewed by most as a success. The conservation of the fire hall, whether through preservation of historic fabric or restoration of significant features, allows for continuity in both the community and the firefighting profession. The expansion of the fire hall to include a new three-bay structure allows it to function as a modern fire facility. Additionally, the rehabilitation allowed for upgrading to meet contemporary standards of energy efficiency.

This project stands as a strong and important example of how seemingly competing values can work together. Function and heritage values can indeed co-exist, and both a neighbourhood and a profession are benefitting from the results.

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acknowledgments

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