

# BUILDING KNOWLEDGE



This case study series highlights what worked, challenges, lessons learned, and outcomes, regarding several key components of the SRO Renewal Initiative (SRORI). Series topics include: heritage restorations, tenant relocation during renovation, hazmat issues and exploring Public Private Partnership (P3 model). This information may be used to help improve processes for those considering P3 or renovation projects.

SROs provide single-room accommodation, usually with shared bathrooms and kitchens. In partnership with non-profit operators, provincially-owned SROs offer on-site supports such as 24-hour staffing and referrals to community support services to help residents maintain their housing and, as appropriate, move along the housing continuum. Rent in provincially-owned SROs is typically the shelter allowance portion provided by income assistance.

## SRO Renewal Initiative Series: Hazmat Issues

Since 2007, the provincial government purchased or leased 24 Single Room Occupancy hotels (SROs) in the Downtown Eastside (DTES) and surrounding area to preserve affordable housing for low-income people at risk of homelessness. At time of purchase, many SRO hotels were approximately 100 years old needing substantial repairs. In 2011 BC Housing announced SRORI to begin renovation and restoration of 13 provincially-owned SRO hotels starting in 2012.

### Case Study Purpose

This case study examines hazmat components of the SRORI. It highlights achievements from addressing hazmat issues of the buildings and captures the learnings particular to hazmat-related remediation issues when renovating 100-year-old buildings housing vulnerable clients.



*Dominion Hotel*



### SRORI Objectives

- › **Support and facilitate revitalization of Vancouver’s DTES through job creation, safer streets, healthy communities and improved living conditions**
- › **Provide satisfactory accommodation for 900 people within the next 10 years**
- › **Provide flexibility to meet future demand and to reduce the number of people at risk of homelessness in DTES**
- › **Reduce BC Housing’s unfunded liabilities and increase the useable life of the SROs by more than 25 years**

Due to the age and condition of the buildings, the majority did not meet current Building Code requirements and needed comprehensive seismic upgrades. BC Housing further identified, remediated or abated existing hazardous materials such as: asbestos, lead paint and underground storage tanks. The hazardous materials renovation and remediation scope included:

- › Fire and life safety
- › Heritage preservation

- › Interior room upgrades, such as lighting, locks and windows
- › New plumbing and electrical infrastructure
- › Remediation of harmful infestations, such as bed bugs and rodents
- › Safe removal, identification and remediation of hazardous materials
- › Renewed living and program spaces
- › Seismic upgrades for basic life safety

### Methods

Research was conducted by BC Housing’s Research and Corporate Planning in 2017. Data was collected through:

- › Key informant interviews with BC Housing staff involved in SRORI
- › Key informant interviews with external partners and contractors involved in the hazmat components of the project
- › SRORI document review



Gastown  
Hotel  
hallway





**Benefits and Positive Outcomes**

Interviewees said residents and staff reported really appreciating their new, safe, attractive homes and workspaces. There were many benefits and positive outcomes related specifically to the hazmat remediation:

- › Improved livability for the residents and staff in terms of health and safety
- › Greater building safety as hazardous materials including: rot, mould, lead paint, infestations and leaks, are remediated or contained
- › Some buildings were on the verge of being condemned, but with renovations, the life of the buildings was extended
- › Outstanding hazmat issues were inventoried to ensure future work can be completed with caution under WorkSafeBC guidelines
- › Included features to prevent future hazmat issues (e.g. installation of bed bug saunas, coved flooring where flooring comes five inches up the walls to reduce the transfer of bed bugs, rodents and flooding, etc. between units)



*Gastown Hotel stairway before renovation*

**Factors of Success**

Interviewees pointed to a number of strategies that led to positive outcomes for SRORI hazmat remediation.

STRATEGY	DETAILS
<b>Up-front planning</b>	<ul style="list-style-type: none"> <li>• BC Housing performed hazmat testing early in the project to help identify potential issues</li> </ul>
<b>Stakeholder engagement</b>	<ul style="list-style-type: none"> <li>• Had regular stakeholder meetings</li> <li>• Contracted technical experts to verify any hazmat issues not identified in the project scope</li> <li>• Had open, discussions about issues to ensure solutions that addressed everyone’s concerns</li> <li>• Team remained consistent throughout the project</li> <li>• Together, Project Co. and BC Housing worked towards a hazmat process for identifying, reviewing, categorizing and costing unknown hazmat issues</li> <li>• Working together, Project Co. and BC Housing agreed on how to inventory and encapsulate hazmat-not-remediated issues so all future work could be safely completed under WorkSafeBC guidelines</li> </ul>
<b>Address emerging issues</b>	<ul style="list-style-type: none"> <li>• Unexpected issues were addressed quickly to keep the project on schedule</li> <li>• Applied lessons learned from buildings scheduled earlier in the project to those scheduled later</li> </ul>

**Challenges and Lessons Learned**

Interviewees discussed a number of hazmat-related challenges, both anticipated and unanticipated. They also discussed which mitigation strategies were used and what would they do differently next time if they were to do similar initiatives in the future to address hazmat challenges.

CHALLENGES	IMPLICATIONS OF CHALLENGES	MITIGATION STRATEGIES (what was done)	LESSONS LEARNED (considerations for potential future projects)
<p><b>Age of Buildings</b></p> <ul style="list-style-type: none"> <li>• Unanticipated hazmat issues were discovered once building layers were peeled back (e.g. undocumented fire damage behind walls)</li> <li>• Previous repairs to the buildings were done but not to current codes and standards</li> <li>• Large unanticipated hazmat issues were discovered (e.g. a basement storage tank requiring environmental remediation)</li> <li>• Though testing was done, conditions varied significantly throughout the building</li> <li>• Hazmat conditions changed between financial close date and the staggered building handover schedule</li> </ul>	<ul style="list-style-type: none"> <li>• Unexpected hazmat discoveries affected the schedule leading to additional costs for BC Housing</li> <li>• Previous repairs had to be brought up to current codes and standards, which was costly</li> <li>• Contractor billed for each additional month of work to cover costs like site superintendent, site trailer, scaffolding and site safety officer</li> </ul>	<ul style="list-style-type: none"> <li>• As issues emerged, stakeholders negotiated how to address each one and in some cases it was found to be within the scope of responsibilities to be covered by the private partner and in some cases was found to be a supervening event for which costs were covered by BC Housing</li> <li>• Changes to scope were documented, and the construction team provided estimates of costs for each change</li> <li>• Sometimes the construction team had to make decisions right away</li> <li>• Developed a communication protocol for supervening hazmat-related events</li> <li>• Cash allowances were used in some cases to reduce risk for Project Co.</li> </ul>	<ul style="list-style-type: none"> <li>• Ideally, three units per building should be vacated and gutted to structure to determine what is behind the walls, so bidding teams have more information about actual wall conditions instead of relying on historical records</li> <li>• The contract could include a fixed price for overhead to allow for each month of extra work or provide a lump sum to cover all unexpected delays to control costs for the building owners (e.g. perhaps contractor could provide discounts on schedule extension related costs if an agreement was reached during the contracting phase)</li> <li>• Larger contingency funds can help address the unknown hazmat issues in 100-year-old buildings</li> <li>• Contracts can require the contractor get multiple quotes to address unexpected issues (e.g. storage tanks) rather than the owner being required to pay contractor’s requested fees</li> </ul>
<p><b>Assessing Scope of Hazmat Work</b></p> <ul style="list-style-type: none"> <li>• Hazmat was easier to assess in the flooring than in the walls</li> <li>• Project Agreement language was too deliberate and specific to hazardous materials abatement, causing it to become a BC Housing cost for materials discovered outside of the specified language</li> </ul>	<ul style="list-style-type: none"> <li>• Bidders were not willing to take on unknown risks of hazmat issues behind-the-walls</li> <li>• BC Housing was responsible for covering the costs of removing hazmat issues not identified in the project scope</li> </ul>	<ul style="list-style-type: none"> <li>• BC Housing developed a set scope for hazmat abatement in the flooring, but unknowns were considered beyond the scope of the contract and, therefore, BC Housing’s financial responsibility</li> <li>• Developed several protocols to guide how unanticipated hazmat issues should be handled (e.g. a hazmat review protocol)</li> </ul>	<ul style="list-style-type: none"> <li>• Project Agreement language should be accurate and descriptive to mitigate building owner cost overruns re: schedule and other costing risks</li> </ul>
<p><b>Working with Residents in Place</b></p> <ul style="list-style-type: none"> <li>• Some buildings were not fully vacated during renovations</li> </ul>	<ul style="list-style-type: none"> <li>• Contractors and residents were in each other’s space</li> <li>• Led to additional hazardous material considerations and costs, as each morning sweeps for needles and other hazardous materials had to be done to ensure worker safety</li> </ul>	<ul style="list-style-type: none"> <li>• Worked one floor at a time for tenanted buildings. Residents from upper floors were relocated to the lower floors while their suites were under construction</li> </ul>	<ul style="list-style-type: none"> <li>• Vacate all units in buildings under renovation</li> </ul>



### Conclusions

Based on the successful strategies used in SRORI, along with the strategies to mitigate challenges and lessons learned, the following hazmat and heritage-related learnings could be applied to future projects as appropriate:

- › Ensure early identification of potential issues and inform bidders to avoid costly project delays and other unexpected costs with up front exploratory testing
- › Help resolve emerging issues with regular stakeholder meetings with transparent, solutions-oriented discussions
  - Three units per building could be vacated and gutted to structure to identify issues ahead of bid submissions
- › Address unexpected issues quickly to keep the project on schedule
  - Having a protocol in place to prioritize hazmat related issues can help improve efficiency of decision-making when unexpected issues emerge
- › Though sometimes the construction team needs to make decisions on the spot, where possible, changes to scope due to unexpected issues should be documented, priced and verified
- › It can be more cost effective to get multiple quotes to address unexpected additional work
- › Expect that some previous repairs will need to be redone to meet current Building Code and other requirements
- › Ensure that Project Agreement language accurately describes building conditions to avoid additional costs to the building owner
- › Cash allowances can help inform bids plus manage unexpected costs
- › Consider using fixed price amounts at a discounted rate per month to cover project extensions
- › Consider larger contingency funds, especially when renovating older buildings
- › Vacate all units in buildings under renovation



*Gastown Hotel room*

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