



City of Richmond

Report to Committee

To: Planning Committee **Date:** April 27, 2017
From: Gavin Woo, P. Eng. **File:** 08-4375-00/Vol01
 Senior Manager, Building Approvals
Re: **Salvage of Building Materials and Structural Relocation of Houses**

Staff Recommendation

That Council endorses the following measures to encourage the relocation of existing houses and salvage of building materials from demolition sites:

1. Develop an online list for houses scheduled for demolition to allow house moving companies to contact home owners arranging for potential house moves.
2. Promote the options to relocate existing houses and to salvage building materials by informing the public of the benefits.
3. That the cost of a temporary full time staff to implement the proposed program estimated to be up to \$110,000.00 funded by the 2017 Building Permits Revenue be included as amendment to the 5 Year Financial Plan (2017-2021).

Gavin Woo, P. Eng.
Senior Manager, Building Approvals
(604-276-4113)

REPORT CONCURRENCE		
ROUTED TO: Environmental Programs Information Technology Policy Planning Transportation	CONCURRENCE <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	CONCURRENCE OF GENERAL MANAGER
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: CJ	APPROVED BY CAO

Staff Report

Origin

This report is in response to Council's referral from the Planning Committee Meeting on February 22, 2016:

That staff be directed to review and report on strategies to encourage homeowners to sell their homes intact and to dismantle and recycle useable lumber and other building materials.

Background

In efforts to enhance sustainable construction practices, the City on March 14, 2016 made recycling of demolition waste mandatory through the Demolition Waste and Recyclable Materials Bylaw 9516 that requires 70% recycling from single family house demolitions. Utilizing a refundable deposit system, we are achieving close to 100% program participation with only 8 out of 196 demolitions not qualifying for full refunds at achieving target goals.

To further these current efforts, staff conducted research and furnished recommendations in response to Council's referral to encourage the whole recycling of existing houses and enhance the recycling content of demolitions materials.

Analysis

House Recycling: Moving Existing Houses for Reuse

Moving an existing home for re-use in another location represents the highest level of recycling that can be achieved, diverting the entire structure from becoming demolition waste. Not only are the materials reused with exception of the foundations, the built form and energy imbued in the original efforts to construct are preserved. After factoring recycling of the concrete from the existing foundations, the recycling rate of building materials is better than 90%. There is also conservation of materials and energy otherwise required for building anew. For these reasons, staff stresses the benefits of efforts to encourage the practice of re-using structures in entirety.

Staff approached four structural moving companies that operate in the Metro Vancouver and the Vancouver Island areas: Nickel Brothers (Nickel Bros.), Supreme Structural Transport Ltd (Supreme), Belton Brothers and Pridy Brothers to inquire about the process of house moving within Richmond. Of the four companies, Nickel Bros. and Supreme provided input to inform our discovery process.

Commercial rationale:

- Some purchasers of moved houses live in remote areas where it is difficult to build new houses due to lack of skilled trades and access to building materials.
- The cost of moving a recycled house and installation on a new site may be significantly lower than the cost of building anew. The extent of this cost advantage depends on factors such as purchase cost of the recycled house, and difficulty of transportation.

- Market for purchasers who prefer the style of an older home.

Technical Processes:

- Safety inspection to determine structural integrity of the house to be moved.
- Preplanning to coordinate the transport route ensuring access, obtaining necessary permits and minimizing obstructions. Frequently transport over large distances will involve river access sites to facilitate barging.
- Preparation of the building for moving and the destination site with foundations to receive the structure.
- Extraction off foundations and transportation to a new location.
- Installation onto new site-built foundations.
- Demolition of Existing foundations at original site.

Challenges to the industry:

- Not all houses are moveable. Those that are, are typically constructed with wood floor joists over crawlspaces. Moving an existing house with the ground floor having been constructed as a concrete slab is cost prohibitive.
- Multi-story buildings present clearance challenges from overhead obstructions and finding suitable moving routes.
- Environmental regulations tend to limit river access sites to barging.
- Coordinating a move of a desirable house may be prevented by the owner/developers' construction schedule.
- The moving requires jurisdictional approvals from multiple levels and departments that may become onerous to the point of cancelling the move. Some companies are unaware of the many of the regulations.

The benefits:

- Reduce demolition and construction waste through A very high percentage of overall building materials recycled.
- Improve sustainable practices of building industry.
- Economic benefit to property owners derived from decreased demolition costs.
- Economic benefit to the purchaser derived from lower cost alternative to new construction.

Conclusion:

Where it is possible to move a house, the process provides an opportunity to maximize the amount of materials that can be recycled. Although there are some limitations such as storey configuration and diminishing availability of suitable houses, staff have identified key processes in the recommendations where the City may encourage house moving as an alternative to demolition. Amongst those measures, Building Approvals and Transportation Departments have begun to combine presently separate permits into one for submission to a single department and coordination of requirements in order to streamline the process considerably.

Recommendations

1. Develop and operate an online list on the City's Website where owners or builders may post for viewing by moving and material salvage companies houses scheduled for demolition. This will allow moving companies to become aware of a larger inventory of possible houses to move and allow them to approach property owners directly. In order to provide longer lead times to obtain the necessary permits, houses may be added to this list prior to a demolition permit application. This online list will also allow owners and builders to indicate availability of the existing house for salvage of building materials.

It is important to note that this will not be a mercantile trading site such as a "craigslist" for trading building materials, but simply a listing where addresses and contact information may be acquired in order to better connect house movers with supply. Postings shall be limited to contact information and intentions for moving or salvage alone.

- **Timeline to Implementation:** upon approval from Council to commence this component, Information Technology will size and scope solution options for the online database/system and report back to Council for the cost of the online website. Estimated 3 months after Council approval.
 - **Area of Responsibility:** Information Technology with input from Building Approvals Department
2. Formally introduce the Small Builders' Group to the option of house relocation. Not all builders are aware of the option to move houses as opposed to demolishing them. Informing the Small Builders' Group has the potential to increase the number of houses made available for relocation and improve the total number moved as more builders become aware of the potential to reduce demolition costs.
 - **Timeline to Implementation:** up to 3 months after Council approval
 - **Area of Responsibility:** Building Approvals Department
 3. Arrange meetings between house moving companies and City Staff in order to inform the industry of the City's requirements. This will help in ensuring compliance to City regulations in future and aid streamlining the review process through clear delineation of expectations and coordinating regulations.

- Timeline to Implementation: up to 6 months after Council approval
 - Area of Responsibility: Building Approvals Department
4. Issue bulletins and information pamphlets and use other means of informing the public and builders of the option to move houses as opposed to demolishing them.
- Timeline to Implementation: up to 6 months after Council approval
 - Area of Responsibility: Building Approvals Department

Salvaging Building Materials

The salvage of building materials from existing homes improves recycling since building materials are re-purposed rather than merely processed as recycled waste material. Staff contacted recycling companies that salvage building materials and located three within 50 km of the City of Richmond; Habitat for Humanity's ReStore (ReStore), Jack's New and Used in Burnaby (JNU), and Surrey New and Used (SNU) in Surrey. Habitat for Humanity has three ReStore locations in North Vancouver, Burnaby and Vancouver. These provided input to inform staff's discovery process.

Commercial rationale:

- Demand for recycled materials is generally constant, although some materials tend to be oversupplied items such as hardwood floors, cabinets, windows and lumber are in high demand.
- Salvaged building materials tend to be purchased by landscapers, artists, film crew, and people conducting home renovations.
- Salvage material is sourced for specialty renovations where period correct elements are required.
- Salvage companies offer either money or tax receipts for materials to benefit property owners.

Challenges to the industry:

- Recycling companies vary in terms of the building materials that they accept, deconstruction services provided, and compensation to property owners for salvage material. The industry approach is inconsistent, causing uncertainty for owners of potential sources of salvage.
- Only ReStore, offers partial or complete deconstruction of existing houses through complete or partial deconstruction for a fee as an alternative to demolition.
- Depending on the scope of salvage work, the overall time required for building demolition may increase and coordination with demolition may be onerous.

- Of the three salvaging companies, only JNU issues a weigh bill. Depending on the amount of materials salvaged, this may conflict with the requirement in Bylaw 9516 to show proof of a minimum 70% demolition waste materials diverted to a recycling facility.

The benefits:

- Economic benefits for the owner who either gets paid or receives a tax receipt for the salvaged materials.
- For houses scheduled to be demolished, limited interior deconstruction or salvage work (i.e. salvage of millwork, plumbing fixtures, windows and doors) can be done in advance of receiving demolition permit.
- Depending on the extent of salvage work involved, there may be a decrease in recycling and disposal cost for demolished buildings.
- Homeowners conducting renovations may save on costs by retaining a salvaging company removing materials resulting in reduced disposal content and costs.

Conclusion:

The salvage of building components from a demolition site results in the reuse of materials, rather than the recycling of demolition waste. This practice should be encouraged as the reuse of salvaged goods will result in a reduction in the amount of waste generated during demolition as well as lengthening the useful lifespan of building materials. Despite market challenges for recycled building product, staff have identified ways the City may encourage salvage activity as a means to reduce demolition waste.

Recommendations

1. Issue bulletins and information pamphlets and use of other means of informing owners of the option of contacting salvage companies or posting their salvaged goods for sale on online commercial sites. Home owners may also post contact information indicating their interest to provide salvage materials on the proposed online list on the City's Webpage as mentioned earlier in conjunction with house moving. The intent is to inform property owners of the option to donate or sell unwanted building materials and possible benefits.
 - Timeline to Implementation: up to 6 months after Council approval
 - Area of Responsibility: Building Approvals Department
2. Work with the Small Builders Group regarding options for salvaging building materials. Informing builders of the option to sell or donate building salvage for tax receipts may help incentivize the salvage of building materials.
 - Timeline to Implementation: up to 3 months after Council approval
 - Area of Responsibility: Building Approvals Department

Financial Impact

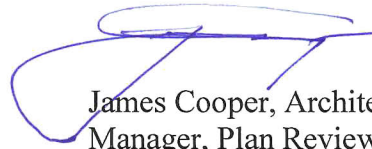
The financial impact is difficult to accurately determine but should include provisions for hiring one Temporary Full Time staff person to fully implement the program. It is expected that this will take 6 months as a minimum and could extend as long as 12 months. The salary and fringe benefit cost is \$110,360 for a 12 month period maximum should the scope of work expand in response to industry's interaction with the proposed measures. The budget will be sourced from Building Approvals Department's 2017 revenue surplus.

Conclusion

The practice of salvaging building materials for resale and moving existing houses will have an overall positive impact on the City of Richmond, through reducing construction waste, making more sustainable our building practices, and contributing to other communities by providing home ownership at lowered cost. The recommendations from staff will help encourage these practices by educating potential applicants, streamlining the City's application processes and providing incentives, all with a minimal financial impact to the City.



Wesley Lim, P. Eng.
Code Engineer
(604) 204-8515



James Cooper, Architect AIBC
Manager, Plan Review
(604) 247-4606