



Session #706:

## Capital planning for the second half of a building's life cycle

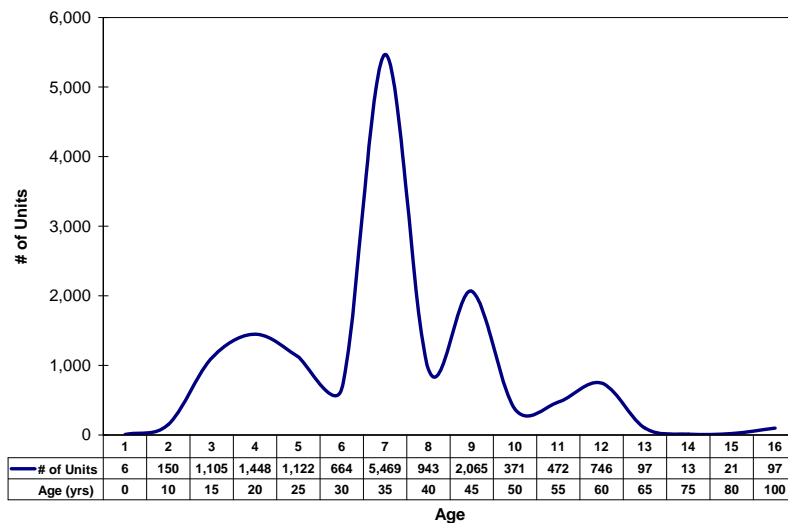
Presented by Ottawa Community Housing Corporation



## Today's Session

- Overview of challenges associated with Portfolio Management in the 2<sup>nd</sup> half of a building's lifecycle
- Lessons learned on community revitalization projects
- Lessons learned on infrastructure repair in aging buildings
- Wrap up and questions

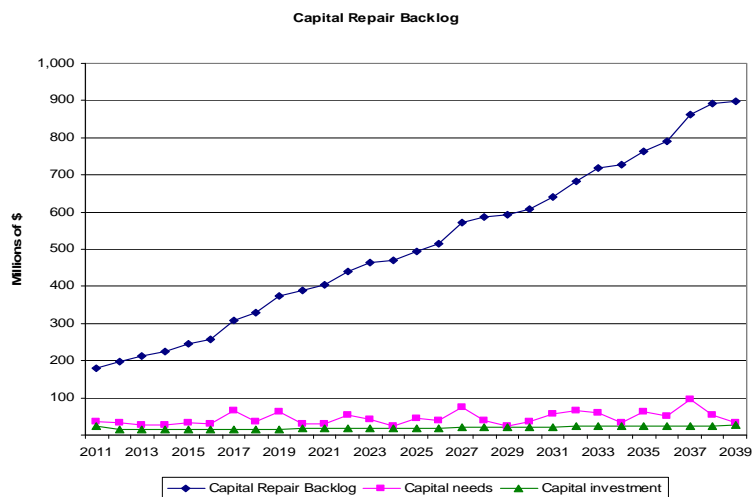
## Distribution of OCH's Buildings by Age



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## Capital Repairs 2011 - 2039



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## Portfolio Management: Challenges

- Quantifying the issues facing an aging portfolio;
- Augmenting and maintaining financially viable portfolio properties;
- Developing a strategic direction and a future vision for the portfolio.



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## What is the Service Life of a Building?

- A building is the sum of the parts - most parts can be replaced;
- Fundamental structural deficiencies occur and affect a portion of the stock;
- Decisions to renew, divest or demolish are usually economic/social - not structural.



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## Approach to Repair – New vs Old

- 1st half of a buildings lifecycle repairs/replacements are:
  - Require minimal strategic visioning;
  - Localized;
  - Low risk.
- 2nd half of a buildings lifecycle repairs/replacements should be:
  - More complex;
  - High risk
  - Greater likelihood of multiple system failures.



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## Why Proactive Management?

- Alignment of stock with future needs;
- Can convert some non-performing assets to performing assets;
- Avoid money pits early;
- Management of limited repair dollars.



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## Portfolio Strategy Required

- Arrive at clear direction = planned, intentional approach
- Preserve the supply of affordable housing
- Align long range financial planning with vision for housing portfolio
- Align housing stock with tenant needs
- Ensure shareholder engagement
- Tactical responses to opportunities presented by grant funding



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## Capital Works in the Second Half of A Building's Life Cycle

Lessons learned on  
community revitalization  
projects

***PLAN SMART***

## Plan Smart...

### Plan Early:

- What is the concern to be addressed?
- Fully define your need
- Evaluations complete by appropriate people



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## Plan Smart...

### Plan Early – When Using Consultants:

- **Full range of solutions** identified, with associated risks well qualified
- **Practicality and logistics** addressed → cause & symptom of problems; pre-, during construction & post-construction
- **Trial repairs** = a trial run → technical solution + logistics
- Full scale remediation as **last resort** → defer replacement with strategic repairs = better cash flow



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## 380 Murray St.



- 11 storeys, 230 units;
- Large mass of concrete and masonry, typical of early-1970s construction;
- 2-storey underground parking garage that extends beyond the building footprint;
- Significant repairs have been required in the past decade, including major concrete balcony and parking garage repair, and major waste piping replacement.



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## Current Conditions



- Exterior aesthetic in need of significant improvement;
- Use of space immediately around the building is not ideal – no clear entrance, poor lighting and signage, poor barrier-free accessibility and flow of pedestrian traffic;
- Waste piping is corroded, causing ongoing leakage in office, garage and daycare;
- Major concrete and waterproofing repairs required on the balconies and parking garage, and in laundry room;
- Emergency generator obsolete.



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## Current Conditions



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## Current Conditions



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## Current Conditions



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## Scope of Work

- Concrete Balcony Railing Removal and Replacement
- Bird Netting at Balconies
- Parking Garage Roof Concrete Repair and Membrane Replacement
- Interior Parking Garage and Laundry Room Concrete Repairs
- Sanitary Piping Replacement
- Sprinkler Piping Replacement
- Site Landscaping / Re-vitalization
- Stairwell Wall Repairs
- Emergency Generator Replacement



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## Proposed Concept



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## Proposed Concept



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## Proposed Concept



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## Proposed Concept



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## Proposed Concept



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## Proposed Concept



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## Proposed Concept



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## 380 Murray St.: Challenges

### CHALLENGES: PLANNING AND COORDINATION

#### Pre-Construction

- Scope of Work → tailor to budget and business model
- Delivery Method → one project at a time over 5+ years  
→ Construction Manager < 2 years
- Logistics: affect on tenants and staff (mobility issues, emergency planning, parking, site office, daycare facility, community impact, Summer construction!)
- Risks: emergency planning, cost overruns, noise, dust



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## 380 Murray St.: Challenges

### PLANNING AND COORDINATION

COMMUNICATE EARLY. COMMUNICATE WELL. COMMUNICATE OFTEN!

#### During Construction

- Scope of Work → continuous review
- Logistics:
  - meetings with tenants to monitor impact and seek
  - input on some items of work;
  - coordinating all trades with Construction Manager
  - air conditioning
  - satellite dishes



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## 251 Donald St.:



- 1974 construction
- 21 storeys
- 240 units
- DW & sanitary piping is corroded, leaking and flooding is frequent
- Original tubs & fixtures
- Elevator, emergency generator obsolete
- Outdated corridor finishes



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## 251 Donald St.: Pipe Replacement

### CHALLENGE 1: PLANNING AND COORDINATION

- Asbestos remediation prior to main project
- # units available to contractor / riser → more = lower cost
- Temporary cooking and washroom facilities: day / night
- Water shut downs
- Fire watches
- Security
- Tenant consultation
- Few contractors capable



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## 251 Donald St.: Pipe Replacement

### CHALLENGE 2: INTERCONNECTED SYSTEMS & “OLD” VS. “NEW” CONSTRUCTION

- Unusual piping arrangement → accessing piping means moving stoves and tubs...tubs likely to be damaged and require replacement...new tubs have different fixture opening locations than originals...new faucets required



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## 251 Donald St.: Pipe Replacement

- **CHALLENGE 2: INTERCONNECTED SYSTEMS & “OLD” VS. “NEW” CONSTRUCTION**
- Below Grade Phase of Work Highly Challenging
  - Building sits on piles
  - Main sanitary sewer pipe directly below building
  - Sanitary pipe runs through and below shear walls and piles
  - Soil conditions include mostly silt and sand, with some construction debris
  - Hydro-excavation with water unsafe

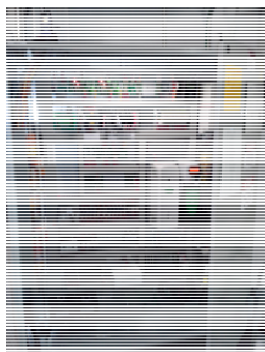


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## Interconnected Systems: Examples

- Elevator Modernization → fire alarm upgrades / replacement → flooring replacement



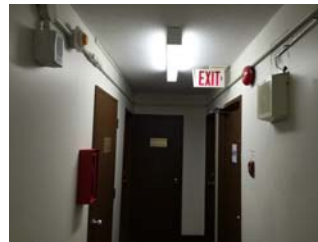
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## Interconnected Systems: Examples

- Fire alarm panel replacement → wiring and device replacement → asbestos removal



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## Trial Repairs:

Can help evaluate the technical issues AND work through the logistics and operational impacts on a smaller scale, with less risk.



**Photo 4:** Trial transit panel removal at ground floor unit - transit panel could not be removed without removing adjacent metal cladding or breaking the panel.

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## SOLUTION: PLAN SMART

- Plan as Early as Possible
- Plan Thoroughly - Try to assess risks, impact on operations & tenants, logistics, etc., prior to finalizing scope of work and implementing project.
- Communicate Plan with all stakeholders at all stages.
- Plan for the Unexpected - Carry contingencies and be prepared to adjust for unexpected surprises.



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## Lessons Learned: PLAN SMART

### RESULT:

- Better economies of scale;
- Fewer surprises;
- Better decision making;
- Happier tenants.



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## Capital Planning in the Second Half of A Building's Life Cycle

Lessons learned on  
infrastructure repair in aging  
buildings

*Did we mention  
planning?*

### A long and winding road

Case Studies:

- Lebreton – Stacked Townhouse Renewal
- Banff Ledbury – Townhouse Renewal
- Britannia Woods – Townhouse Renewal

## Lebreton:

- 118 stacked townhouse units built in the 1980-1982 period;
- Built on NCC land, leased by OCH;
- Community broken into three communities (Lebreton 1,2 and 3);
- Project to address barrier wall along a main Ottawa street: Albert Street;
- Progressed from a wall repair to a \$7.02 million community renewal.



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## Lebreton 1: In the beginning.

- Barrier/retaining wall between street and the community;
- Also served as a walkway for the community and access to Albert Street;
- Improvements and repairs required;
- Selective repairs to the unit siding along barrier wall included in project.



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## Lebreton 1: Didn't see that coming!

- Significant water leaks/mould found during siding repairs.
- Scope increases:
  - exterior and interior mould removal;
  - new siding;
  - kitchens associated with the mould work;
  - exterior lighting;
  - New insulated doors and storm doors; and
  - increase scope of brick removal on barrier wall.



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## Lebreton 1: Really didn't see that coming!

- New City requirements demand greater effort on barrier wall:
  - Improved drainage and connection to City services;
  - Improved grading and barrier free ramps;
  - Increased planting required; and
  - Needed to act as a partial sound barrier.
- Sound attenuation best addressed through building envelope;
- Require new windows and upgraded insulation.



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## Lebreton 1: Really! what else can go wrong?

- Sound attenuation work identifies issues with second and third story balconies which included:
  - Structural repairs;
  - Installation of membranes and flashings;
  - Diversion of runoff from roofs: and
  - Complete replacement as required
- And did we mention Lebreton 2 and 3?



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## Lebreton 1, 2 and 3: In for a penny.....

- Community wide grading undertaken to address site water issues
- Siding, balcony, and roof repairs completed community wide



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## Lebreton 1, 2, and 3:

Main Work Description	Lebreton 1	Lebreton 2	Lebreton 3	Total
# of Units	54	28	36	118
% of Units	46%	24%	31%	
Exterior Cladding, Windows, Doors, Mould Remediation (North Elevation)	\$453,966	\$235,390	\$302,644	\$992,000
Retaining Wall and Associated Landscape	\$1,125,763	\$583,729	\$750,508	\$2,460,000
Exterior Cladding, Windows, Doors, Mould Remediation (Remainder)	\$823,729	\$427,119	\$549,153	\$1,800,000
Masonry Repairs, Balcony Replacement	\$290,000	\$150,000	\$190,000	\$630,000
Landscape	\$205,932	\$106,780	\$137,288	\$450,000
Consultants	\$314,541	\$163,095	\$209,694	\$687,331
<b>Total</b>	<b>\$3,213,931</b>	<b>\$1,666,112</b>	<b>\$2,139,287</b>	<b>\$7,019,331</b>
Average Cost/Unit				<b>\$59,485.86</b>



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## Banff Ledbury:

- 118 two story townhouse units built in 1968
- Project identified to conduct a full community renewal of \$4.2 million
- Priorities identified:
  - Life safety;
  - Damage to structure, envelope, critical systems;
  - Age related items/life cycle replacement.



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## Banff Ledbury: In the beginning.

- Engineering assessments completed;
- Scopes well defined and costed;
- Priorities set;
- Wholesale replacement approach;
- Tenant relocation (temporary) plan established;
- Communications plan in place;
- The execution plan started at priority #1 and went until the budget ran out.



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## Banff Ledbury: Kind'a saw that coming.

- The focus on safety, structural, and life cycle replacement accounted for the bulk of the budget;
- Realization that the “renewal” would not be successful if livability issue was not addressed;
- Opportunity for “green” work should be included;
- Tenant relocation plan allowed for a once in a lifetime opportunity.



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## Banff Ledbury: Kind'a saw that coming.

- Increased scope included:
  - Bathrooms;
  - Kitchens;
  - Flooring;
  - Screen doors; and
  - Garbage collection points.
- Green initiatives included:
  - High efficiency furnaces; and
  - Additional insulation.

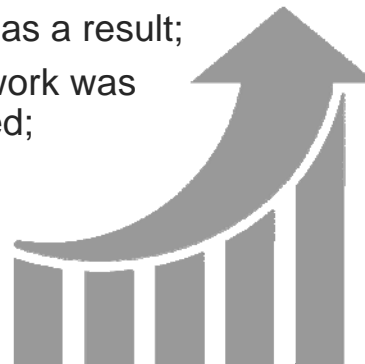


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## Banff Ledbury: What's the down side?

- Unplanned budget increase from \$4.2 million to \$8 million;
- Other planned work deferred as a result;
- Wholesale approach meant work was completed that wasn't required;
- \$67,796 per unit cost.



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## Britannia Woods:

- 179 two story townhouse units built in 1968;
- Project identified to conduct a full community renewal of \$6.8 million;
- Priorities identified:
  - Life safety;
  - Damage to structure, envelope, critical systems;
  - Age related items/life cycle replacement;
  - Livability.



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## Britannia Woods: In the beginning.

- Engineering assessments completed
- All units inspected and requirements set
- Scopes well defined and costed
- Selective replacement approach
- Tenant relocation plan not required
- Communications plan in place
- All priorities included in budget, plus contingency
- Able to include significant site upgrades



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## Britannia Woods: I think we may have got this one right

- Upfront engineering and inspections captured 95% of the required scope;
- Contingency allowed minor additions based on tenant input;
- Minimal tenant impact, maximum satisfaction;
- Included livability and “green” upgrades;
- Included a new playground and water park;
- Best value for dollar - \$37,990 per unit cost.



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## Lessons Learned: And the moral of the story is...

- You cannot plan too much!
- Insufficient planning will:
  - drive up cost;
  - Impact other projects and budgets;
  - Force you to do work you don't want, don't need, or can't afford;
  - Force you to make bad choices and/or choices you don't want.
- Plan smart, plan often!



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## Wrap Up: Lessons Learned

- Understanding long term capital needs for a building is essential;
- Understanding your long term vision for the building dictates your plan;
- Make your decision early whether to maintain, repurpose or rust out;
- Good investments take great planning!



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