

**Infrastructure Committee (IC) Meeting
May 16, 2011**

AGENDA

I. HVAC Lateral Pipes

Current activity – Annual trends and locations

II. Current Status of Engineering Plans and Specs

III. Construction Considerations

A. Overall time frame for a potential project

B. Engineering support and supervision

-Building standard

-Project oversight

-Inspection and sign off

C. Steps and time for replacement

D. Project management

-Scheduling and coordination

E. Constructability issues

-Contractor space and vertical transportation

F. Other considerations

IV. Action Items

I. HVAC Horizontal Pipes - Current Activity: Duane Hickling, Chair of IC, reviewed various overheads depicting the history of the HVAC horizontal pipe breaks since their onset in 1998 and the portfolio of breaks in terms of unit size and location of the breaks within the units. To date, 24 breaks have occurred with a high number (10) occurring in 2011. There was a question regarding how many total units had received damage by these 24 breaks--to which there was no current accounting. But Duane indicated that a log of this should be kept.

There was also considerable discussion regarding the potential cause of the breaks with questions and comments around whether it was caused by the windows project. There is no evidence of direct cause and effect here. Examples of the broken pipes were on display and it was clear the pipes were severely rusted. Hence--the pipes have reached the end of their useful life.

Discussion also ensued regarding the **greater** potential cause/effect being the impact of a change in pressure that is brought on by the draining and re-filling of the pipes which occurs in a regular 'change over' from heating to cooling (or vice versa)--as well as the draining/re-filling of the vertical pipes (carrying water to the horizontals) which is required whenever a break occurs in order to shut off the water, install check valves (and repair/replace the broken horizontal pipes)--prior to refilling (or recharging) the vertical pipes to regain the heating/cooling for residents in that tier.

There was much discussion about a mandatory versus voluntary approach to the HVAC lateral replacement pipes with pros/cons provided for each. But in the end, the IC agreed that a mandatory approach is the most effective/efficient way to proceed (detail and motion provided later in this report). In addition, there was a brief discussion regarding in what shape are the

verticals. Rich and Duane reported that they had been tested, are also cast iron and are in okay shape. They are in the Reserve Study for future replacement.

II. Engineering support and supervision: Discussion ensued regarding the current specs which were prepared by McGuire Engineering, (who were provided with a drawing that was prepared by TMI, an EMCOR company and mechanical contractor which has been doing the replacement work). The initial general comments were that these specs were in pretty good shape.

However, after subsequent comments by Jim Ehrlich on the differences in the Kilmer horizontal pipes, windows and fan coil units, which are located behind a metal case, it became apparent that the Kilmer horizontal HVAC replacement project (for all 3 floor plans) will be a different challenge and thus will require a different set of specs for repair/replacement. The Kilmer HVAC horizontal units support the windows and the metal case will require being cut into for access to the horizontal HVAC pipes.

Hence the need exists to create specs for Kilmer, which solution will be different in design from James.

Basically there are **4 steps to this HVAC Lateral Pipe Replacement:**

1. Break open the walls to access the horizontals
2. Take the vertical (risers) pipes in that tier down (i.e. drain water) to level where the work is being done and install a valve to isolate the lateral HVAC lines. This allows the risers to be refilled and heat or AC to be restored to the rest of the tier.
3. Replace the lateral HVAC lines in the unit – then open the valve to the riser – restoring the heat or AC to the unit.
4. Repair the wall (plaster and paint). [Note: The Kilmer HVAC lines are behind a metal cabinet requiring a slightly different opening and closing scenario.]

III. Construction Considerations (Issues/Challenges):

A. Overall time frame for a potential project: The discussion included the fact that this will depend on a number of variables including when we get the specs out for bid, interviews of qualified contractors, and completion of a contract (which includes legal reviews by us and the engineering firm) when we get the bids back and reviewed and contract awarded, how many contractors will be involved and the potential number of teams employed by each, how it is coordinated with other JK projects and the general operations of the building, the ability to shut down whole tiers for a period of time (weather considerations), the challenge to the system to drain and recharge it (which seems to be a greater risk to future breaks than anything else), the general ingress/egress challenges of the building (e.g. move ins, other renovation projects, elevator down time, ability to handle moving materials for a number of teams working on this project—as mast climbers will not be available as in the windows project).

B. Engineering support and supervision: Discussion included that any/all work on HVAC horizontals MUST be to a **building standard** as this is one of the most basic infrastructure

systems in JK. This is a full-fledged capital project which impacts all our whole heating/cooling system--both now and in the future (until some other system might be considered e.g. heat pumps etc). This shift to heat pumps was evaluated by Siemens at the time our windows replacement engineering specs were drawn up. But the expense was as great for a shift in the HVAC system as the window replacement project itself and deemed too complex and too financially challenging for residents to assume at the same time of the James window replacement.

Because this project is so basic and critical to our daily operations, a critical component is **project management and oversight** to guarantee excellent short/long term results to this basic JK infrastructure system but also to provide 'owner advocacy'. Duane Hickling indicated that this project oversight includes **ongoing inspections, punch lists and sign offs**, which are required with any other capital project in JK (whether it is another building project or a resident renovation project). So any project that has short term/long term impact on the association and/or other residents' units/assets (either now or in the future) needs to be managed to an association/engineering project management standard.

C. Steps and time for replacement: Again much discussion regarding this is dependant on how we move ahead, how quickly we can get the appropriate specs, bidding, contract awards, financing and project management capabilities in place and managing the integration of yet another building/owner project with the ongoing current projects impacting James and Kilmer.

D. Project management: There was discussion about what we have learned with the James window project, and more than ever before, the project management capability is a critical and time-consuming task. It is a role that is challenging to be taken on by our current staff--who have other full time operations responsibilities. Even with the use of a windows project coordinator (rather than project manager), the full time aspects of the project management job are quite overwhelming, as we have seen. Discussion ensued regarding the complications with the **scheduling and coordination** with other ongoing operations and projects (whether it be windows, owner renovations, remediation work incurred by the current HVAC breaks etc).

E. Constructability issues: Discussion followed regarding a listing of many other considerations during an HVAC horizontal replacement project for which we must plan and include in our thinking:

- 1) ***Vertical transportation*** - with increased elevator use will put yet even more strains on our elevators and usage for residents and contractors—as all material and people will be using elevators (no mast climbers here). This will require massive coordination.
- 2) ***Contractor space and capacity issues*** - will determine how many teams can be deployed to be working at once by contractors. In addition, we must determine what a realistic number of teams to deploy is and what the related coordination, staging, tool/material storage requirements will be. The greater the number of teams requires even greater traffic on our elevators as well as greater engineering coordination with ongoing building operations. In addition ***in general, there will be the need for both a plumbing and restoration team per unit worked on for this HVAC project.***

3) *Getting a list of other suppliers to assist with related projects* - There is lots of debris in the fan coil units, so residents will probably want to clean or replace them, clean or replace pans, and/or possibly install thermostats.

4) *Contractors need to provide precautionary plan in case of a catastrophic failure occurs as the project is underway.*

F. Other considerations – whether the HVAC project is mandatory or voluntary, these constructability issues are present for both. Other related issues that relate to timing are financial and legal as well as project management steps. They include:

1) For contractors, there is also a need for pre-bid meetings, inspections--so they know more about the actual requirements, insurance and performance bond requirements and after the bids are in, time is required for interviews with the bidders. Also price considerations include the fact that metals prices are increasing.

2) Financing must be determined by the association and owners to determine an optimal approach as this is a Limited Common Element (LCE) and is expected to be born by the unit owners.

3) Legal requirements for contracts to be drawn/reviewed by the association and the contractors.

4) Ongoing communication to owners.

IV. Action Items

1) A **motion** was made and seconded as a recommendation from IC to the Board and Finance Committee as follows: “The committee recommends that the board approves a mandatory program of replacing the lateral heating/cooling water pipes in all units plus the installation of shut off valves for each unit ventilator. This project should include appropriate project management to assist with implementation.”

2) The action items include both tightening of the engineering specs/oversight but also pricing oversight to gain the volume pricing for a project of this size—approximately \$3 million.

3) The action items include asking the Finance Committee to determine how to finance such a mandatory LCE program.

JHB

5/18/11