



City of Bethel
Parks, Recreation, Aquatic, Health & Safety Center Committee Special
Meeting - Monday, February 3, 2020 6:00 pm
City Hall Council Chambers, Bethel, AK

Brian Lefferts
Committee Chair
Term Expires 2020

Judy Wasierski
Vice-Chair
Term Expires 2021

Kathy Hanson
Committee Member
Term Expires 2021

Beverly Hoffman
Committee Member
Term Expires 2021

Peter Evon
Committee Member
Term Expires 2020

Garrett Hussion
Committee Member
Term Expires 2022

Kathryn Baldwin
Alt. Committee Member
Term Expires 2020

Michelle DeWitt
Council Representative
Term Expires 2020

Stacey Reardon
YK Fitness Center Director

Corbin Ford
Property Maint. Forman
Ex Officio Member

- I. CALL TO ORDER
- II. ROLL CALL
- III. PEOPLE TO BE HEARD – Three minutes per person
- IV. APPROVAL OF AGENDA
- V. SPECIAL ORDER OF BUSINESS
 - A. Pool and Fitness Center Program Goals and Metrics
 - B. Pool and Fitness Center Budget
 - C. Yukon Kuskokwim Fitness Center Issues
 - D. AM 19-72, Regarding Finances of Yukon Kuskokwim Fitness Center
- VI. PROPERTY MAINTENANCE REPORT
- VII. YK FITNESS FACILITY DIRECTOR REPORT
- VIII. COMMITTEE MEMBER COMMENTS
- IX. ADJOURNMENT

Posted January 28, 2020 at City Hall, AC Co., Swanson's, and the Post Office.

Charlie Dan, Public Works Assistant

City of Bethel Action Memorandum

Action memorandum No.	19-72		
Date action introduced:	November 12, 2019	Introduced by:	Council Member DeWitt
Date action taken:	November 12, 2019	<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Denied
Confirmed by:	KM		

Request the Finance Committee and the Parks, Recreation, Aquatic Health, and Safety Center Committee to, through joint meetings:

1. Evaluate the profit loss totals from July 2014 through year to date actuals provided by Administration.
2. Evaluate transfer dates and amounts from the YK Fitness Center's dedicated fund provided by Administration
3. Identify potential revenue opportunities for the facility with the goal to reduce or eliminate the need for transfers from the dedicated fund.

Attachment(s): None

Amount of fiscal impact:		Account information:
X	No fiscal impact at this time.	

The City Council wishes to engage the two committees through joint meetings, in an evaluation of financial operations and determination future revenue concepts to help reduce or eliminate the facilities use of the designated funds.

The City of Bethel has been funding the operation of the YK Fitness Center since 2014. Through a number of ordinances, the City had allocated a percentage of sales tax to be allocated to an interest bearing account to help fund the continued operations and maintenance of the facility. The Council also directed that funds be transferred monthly to the interest bearing account. The Council wishes to have the Committees review the collections, allocations, and transfers of the designated fund and operations of the facility and confirm accuracy.

As the City begins the preparation of the next fiscal year operations, and the negotiation of the contract for pool operations, the Council finds it necessary to evaluate the operations to determine if there is an opportunity for additional revenue that would reduce the dependence on the interest bearing account.

Ideally, Administration would have the details of the finance related material available to both Committees by December 1st. Once provided the members with support from the City's Ex Officio members, can begin collaborating on meeting dates and times. It is the Council's hope that the findings of the joint committee meetings would be available to council by February 1st to help ensure and adjustments to the next fiscal year budget and the contract for the facility operations.



City of Bethel Yukon-Kuskokwim Fitness Center Leak Investigation and Mitigation Report

Date: 23 January 2020

SERVICE
TEAMWORK
RESPECT
INTEGRITY
DEVOTION
EXCELLENCE

Chase Nelson, DOWL Engineers

Subject: Yukon Kuskokwim Fitness Center, Leak Investigation and Mitigation Report

Project Number: 12044.01

Dear Mr. Nelson,

On January 2nd, 2020, Architects Alaska was informed of various concerns threatening the structure and operation of the Yukon-Kuskokwim Fitness Center (YKFC). I was requested to visit the building to make recommendations for mitigation and repair. These are addressed in detail below. Please note that, for the purpose of clarity and consistency, room names and numbers, referenced locations, cardinal directions, and drawings all refer to those used in the Construction Drawings titled, *Yukon Kuskokwim Regional Aquatic Health and Safety Center Construction Documents*, dated April 15th, 2013.

On January 13th and 14th, I toured the YKHC with various City of Bethel personnel to observe, discuss, and document the issues that affect the building's performance. To aid in the observations, I used an Extech I5 FLIR thermal imaging camera. Personal history of the facility, design considerations, and several construction observation visits were also valuable assets in the site visit.

PROJECT BACKGROUND

Architects Alaska designed the facility along with PDC Inc. Engineers, BBFM Engineers Inc., AMC Engineers, and Counsilman Hunsaker. The building was constructed by Bethel Service Incorporated and UNIT Company. AAI made several site visits throughout its construction. The facility was opened in November 2014.

PROBLEMS REPORTED

The Yukon Kuskokwim Regional Fitness Center experienced frozen water, sewer, and sprinkler piping, and resulted in burst water piping and cracked sprinkler piping fittings starting December 25th, 2019 and continuing for several days after. These issues were brought to the attention of Architects Alaska on January 2, 2020 by Mr. Corbin Ford, Foreman of the City of Bethel Facilities and Property.



City of Bethel Yukon-Kuskokwim Fitness Center Leak Investigation and Mitigation Report

Mr. Ford indicated the problems and associated locations that were currently affecting the use of the YKFC facility. These include:

- Burst domestic water line in the concealed soffit space below Reception/Concessions Room 104
- Multiple frozen waste pipes running east/west north of Grid 8
- Frozen sprinkler piping above the ceiling of Conference Room 102, resulting in cracked fittings discovered before piping thawed.

A detailed description of the problems, including sequence of events and activities taken by Facilities and Property personnel, can be found in Mr. Ford's "Pool Building Report" attached to this report.

The likely cause of these issues is an unfortunate combination of extreme weather (within the anticipated design range), one of two boilers being inoperable and inability to reach the set temperature of the radiant floor, inoperable heating controls, and significant gaps in the insulation of the building envelope.

The facility has been in operation since November 2014 and has not experienced any of these issues before this winter season. The combination of sustained cold weather and the boiler being down showed the previously unknown flaws of missing insulation and failed mechanical actuators.

GENERAL OBSERVATIONS

On January 13th, I visited the pool facility with City of Bethel Facilities and Property employees Corbin Ford (foreman) and Gary Poe, and DOWL Engineers PM Chase Nelson. Mr. Ford pointed out the areas that had been damaged and work that his crew had done to prevent further damage. In general, the conditions I observed were as reported by Mr. Ford prior to my visit. Several icicles were hanging from soffit construction, and a significant amount of ice coated the ground that had poured out of the soffit space. Two access holes were cut into the concealed soffit space from below, a portable Frost Fighter indirect fired heater was pumping warm air into the soffit, temporary measures to limit cold air intrusion were in place, and the sprinkler system had been drained with a manual "fire watch" in action per the requirements of the Bethel Fire Department. These measures had allowed the facility to reopen that morning.

The following day, I was informed of roof leaks that had previously been reported at the facility, but not made known to the design team. I returned with Public Works Director Bill Arnold and Yukon-Kuskokwim Fitness Center Facility Director, Stacey Reardon. The locations of leaks were pointed out, as well as the conditions in which they occur. These leaks are not active, but should be expected to reoccur if not addressed.

The weather on both days of my visit was approximately 20 degrees, calm winds, and cloudy skies with occasional flurries. This weather was significantly warmer and calmer than the previous weeks when the problems occurred.

CORRECTIVE ACTIONS

This report addresses the various building concerns and proposes corrective actions to be taken to prevent further damage. Each reported and observed problem is addressed in isolation. The proposed solutions, if accepted by the City of Bethel, should be designed and constructed by qualified persons.



City of Bethel Yukon-Kuskokwim Fitness Center Leak Investigation and Mitigation Report

ISSUE 1, Cold concealed soffit space and associated frozen and burst piping.

This is perhaps the most immediate concern for the YKFC facility and the original reason that Architects Alaska was asked to visit the facility. As addressed above, a combination of factors, including construction, climatic conditions, and maintenance problems contributed to the burst pipes. These factors are addressed in individually.

ISSUE 1.1, No insulation at several pile caps in the concealed soffit space. (Note: The same conditions were noted at several pile caps in the accessible soffit space as well. This section applies to all similar conditions.)

Reported Problem: No insulation is present between wood pile caps and insulated metal panels at several locations, resulting in significant cold air intrusion into the unheated concealed soffit.

Emergency Repairs: At my suggestion on January 2nd, the City of Bethel Facilities and Property Crew stuffed all observed gaps in the thermal envelope with unfaced batt insulation as a measure to slow air intrusion.

Observed conditions: During my site visit, I saw several such gaps between the insulated metal soffit panels and wood pile caps. These were filled with batt insulation as suggested. Mr. Ford removed some insulation in several locations, and daylight could be seen through large, previously unfilled gaps, demonstrating that it was a significant breach in the thermal envelope. Using a thermal camera, I was able to tell that the temporary batt insulation infill was performing nearly as well as the adjacent insulated metal panels. However, it should be pointed out that the soffit was being positively pressurized with Frost Fighter indirect fired heater. Without this pressurization, we anticipate that the lack of an air barrier would result in some cold air intrusion at these locations, although significantly less than without any insulation.

Using the thermal camera outside of the soffit, I pointed out several other pile cap locations that are likely resulting in significant heat loss from the accessible soffit space.

Proposed Solution: Check all pile cap locations to verify which locations are missing insulation. When weather conditions allow, add foam-in-place insulation between pile caps and soffit panels as indicated in Detail C1/A5.01 of the construction drawings. Where the gap between pile caps and soffit panels exceeds 0'-1", provide prefinished metal flashing flush with the bottom (exterior) surface of the soffit panels, and fill gaps with foam-in-place insulation. See modified detail in Figure 1.1e.



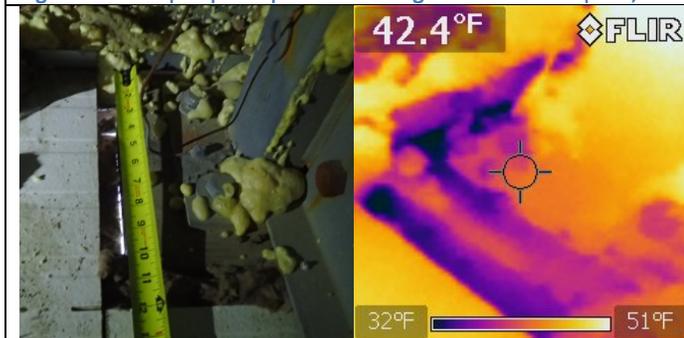
City of Bethel Yukon-Kuskokwim Fitness Center Leak Investigation and Mitigation Report



Figure -1.1a. Gap at pile cap as seen during construction on April 3, 2014



Figure -1.1b. Batt insulation added to fill gaps at pile cap and soffit



Figures -1.1c. and -1.1d. Pile cap at Grid H:10, with +/- 2" of missing insulation on two sides of pile cap, and daylight visible. (Note that spray foam was an attempt at emergency repair prior to filling gap with batt insulation.)

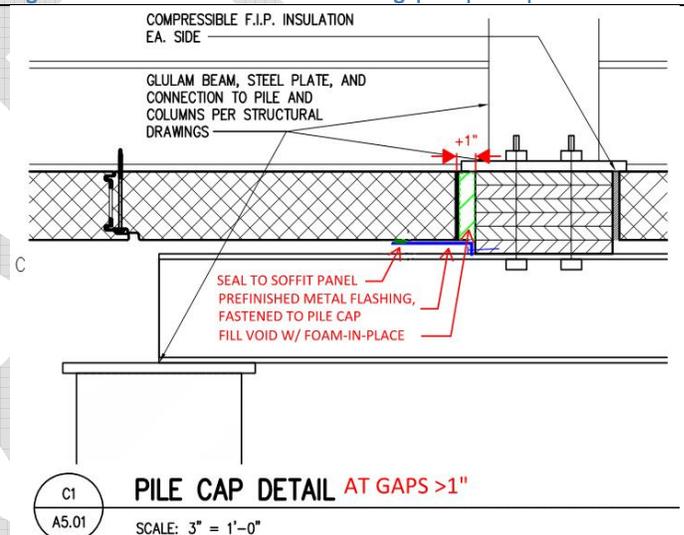


Fig 1.1e. Proposed gap insulation

ISSUE 1.2, Missing butyl sealant suspected between several soffit panels

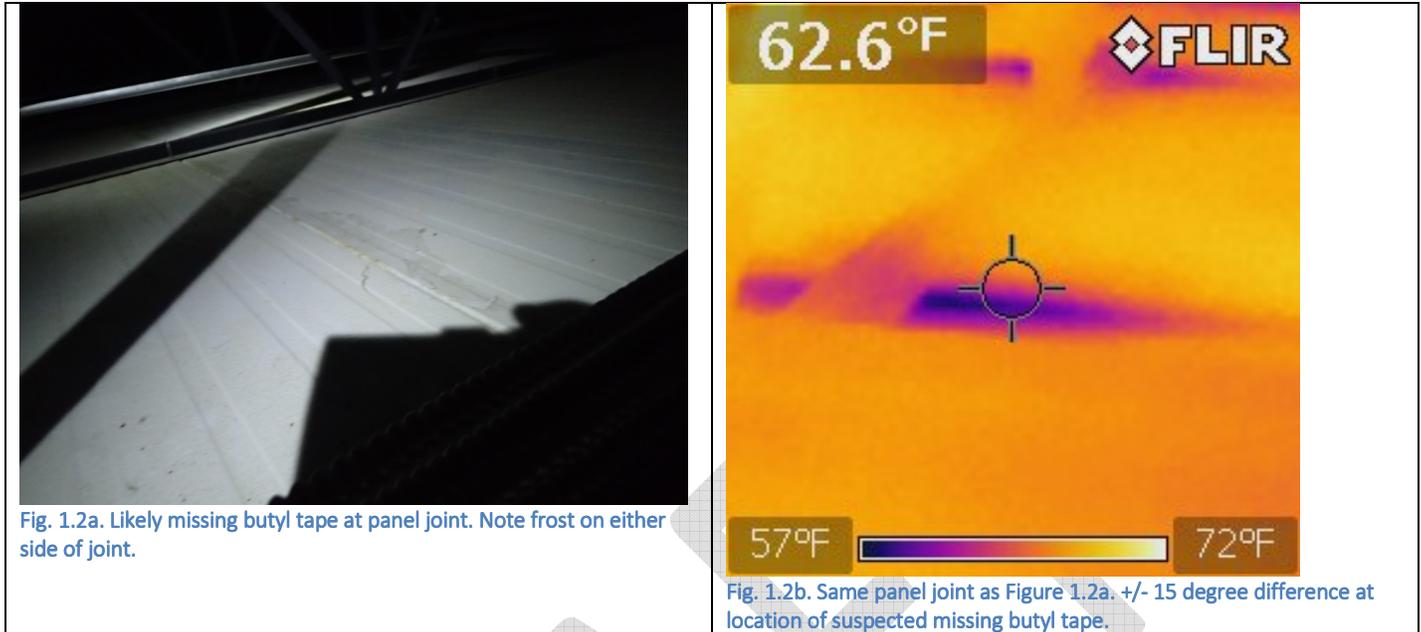
Reported Problem: Gaps in soffit panel joints permit cold air intrusion in several areas. This was reported both within the concealed and the accessible soffit spaces.

Observed Conditions: Cold air could be felt in the locations indicated by Mr. Ford. In addition, frost was visible on the interior surface of several panels where the surface temperature was lower than freezing point.

Proposed Solution: Mark all known locations of cold air intrusion. Apply sealant recommended by insulated metal panel manufacturer to seal gaps between panels.



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ISSUE 1.3, Add heat to concealed soffit.

Reported Problem: No heat within the concealed soffit space.

Observed Conditions: The space was designed to be heated with surplus heat from the adjacent accessible crawlspace and from the radiant floor above. If HVAC systems were operating correctly and insulation was continuous, the concealed space should be able to maintain above freezing temperatures. However, it appears that this may be insufficient to maintain above freezing temperatures during extended cold weather. Accessing and heating the space is made difficult by wide flange beams running the length of Grids 8 and Grids 9 which divide the concealed soffit space into two zones and limit air circulation.

Proposed Solution: If desired by the City of Bethel, supplemental heat in these spaces would provide one more safeguard to prevent frozen pipes in the future. We recommend a few different strategies to accommodate the various plumbing elements:

- *North of Grid 9:* Install lengths of fintube adjacent to waste lines coming from Conference Room sink. Provide insulation around plumbing traps serving FD-1 (Vestibule) and FD-2 (Boiler Room) floor drains.
- *North of Grid 8, South of Grid 9:* Install two small unit heaters within the concealed soffit space; install one unit heater near Concessions 104 sink, and one near Boiler Room 129 plumbing. Heaters should be readily accessible to new access hatches from below the building. Aim unit heaters in such a way as to create a convection current when unit heaters are operating. HWS/HWR piping that is added to feed these new terminal heating units needs to connect to the 4" HWS/HWR mains located north of grid 7 (running between grids D and H). See drawing M201.

See memo from AMC Engineers attached to this report for further information. It should be noted that continuity of the thermal envelope should take precedence over supplemental heat.

ISSUE 1.4, Ensure water is removed from soffit space.



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Reported Problem: A significant amounts of water was introduced into the soffit space when the domestic water to the Concessions sink burst.

Observed Conditions: Ice was present in many (exterior) locations that had dripped from gaps in the soffit and wall framing of the concealed soffit space. The interior of the soffit north of Grid 9 did not have any water present at the time of my visit. I did not access the soffit between Grids 8 and 9 due to the presence of the Frost Fighter.

Proposed Solution: Ensure that all moisture is removed from the soffit space. The Frost Fighter is likely dehumidifying the space while it is operating. However, crews should use a moisture meter to confirm that water has drained and evaporated to ensure that it does not create additional damage due to saturation, nor create an unhealthy environment due to mold.



Fig. 1.4a. Significant amounts of ice at panel joints where water had leaked from burst piping.



Fig. 1.4b. Ice present at access door cut into soffit panel.

ISSUE 1.X, Missing insulation at transition from soffit to wall panel. (THIS SECTION MAY BE ADDED, PENDING CONFIRMATION FROM CORBIN)



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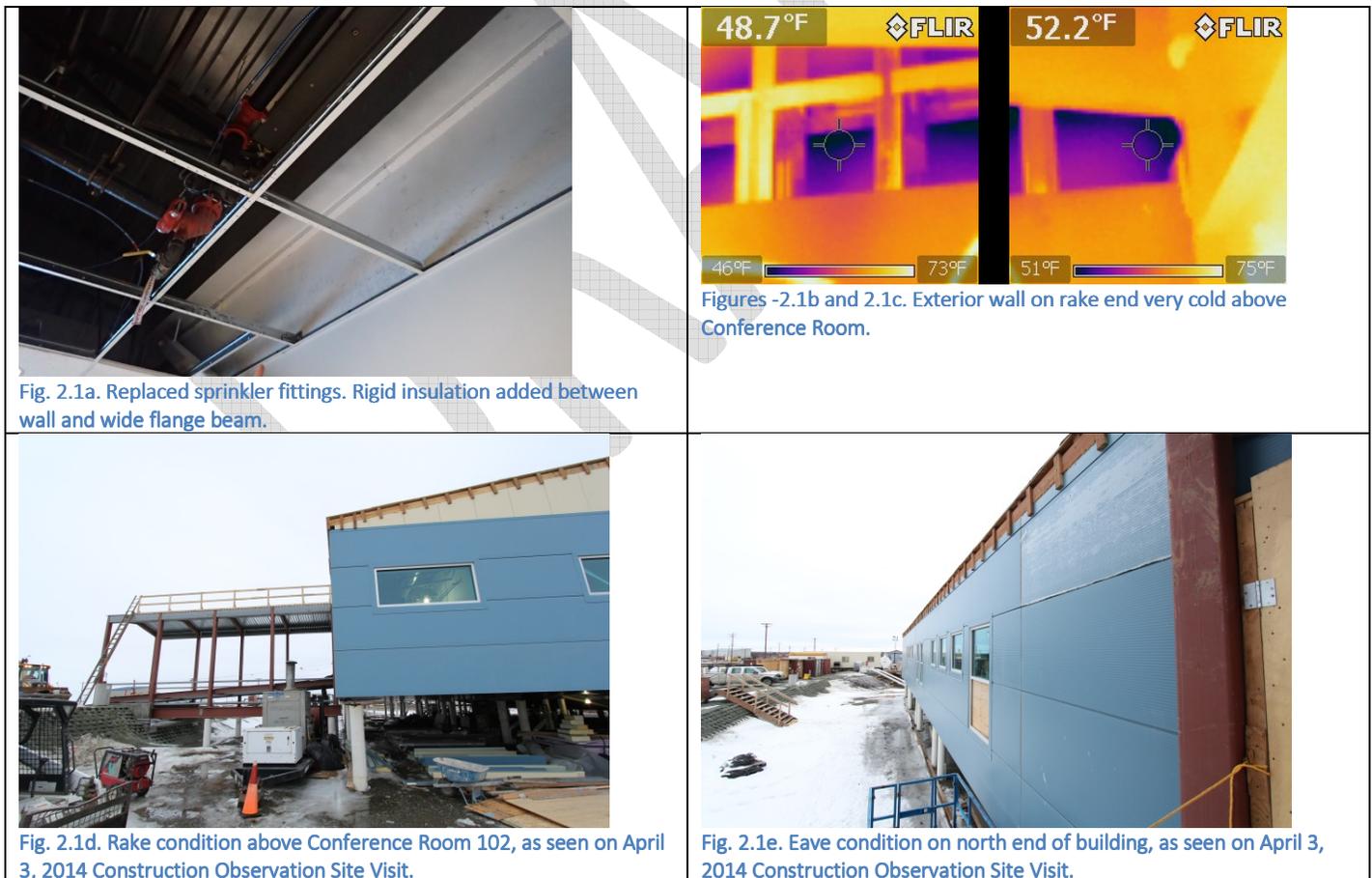
ISSUE 2, Cold concealed ceiling space above Conference Room 102 and Vestibule 100, and associated frozen and burst sprinkler piping.

ISSUE 2.1, Conference Room 102

Reported Problem: frozen sprinkler piping was discovered above the ceilings of Conference Room 102 and Vestibule 100. Frozen pipes were reportedly discovered due to slow leaks into the rooms below; the system was drained before significant damage occurred. Significant cold air was felt in the area of the wide flange beam at the building eave.

Emergency Repairs: Accel Fire had performed emergency repairs to remove broken pipe fittings, pressurized the system to test them, and then drained the sprinkler system to prevent the possibility of additional freezing. The facility is now on a 24 hour fire watch. Mr. Ford indicated that his crew had placed 2" rigid insulation wedged up between the inside face of the exterior insulated metal wall panels and the wide flange roof beam. This reportedly significantly slowed cold air intrusion. See also attached report from Accel Fire.

Observed Conditions: Several ceiling tiles were removed in the Conference Room to allow for air circulation. Mr. Ford showed the cracked fittings that had been removed by Accel Fire. The thermal camera showed that the eave beam was warm; however, it was evident that the wide flange beam at the rake was extremely cold, likely due to missing insulation.





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Proposed Solution: Check that insulation has been installed as indicated in the Construction Drawings. See details A1/A5.01 and B1/A5.01. Add insulation where missing. If insulation cannot be applied from exterior, an interior approach may be possible. However, care must be taken to ensure that structural steel does not become a cold bridge. See also memo from AMC Engineers regarding building controls.

ISSUE 2.2, Cold concealed ceiling space above Vestibule 100 and associated frozen and burst piping.

Reported Problem: Same as Issue 2.1.

Observed Conditions: Same as Issue 2.1. In addition, it was noted that the wall separating Vestibule 100 from Corridor 101 was extended to the underside of the roof deck. This wall was shown in the construction drawings to terminate above the level of the ceiling, and then be open to other ceiling spaces above. (See Building Section A1/A3.01). The higher wall results in an enclosed space in which air cannot communicate to other ceiling spaces; this stagnant air puts wet piping further at risk of freezing because the arctic vestibule below and frequently open exterior doors results in a frequently cold room.

Proposed Solution: Same as Issue 2.2. In addition, cut and remove GWB from 1'-0" above level of ceiling at north wall of Corridor 101 to the underside of the roof for the full width of the corridor, allowing air to communicate between ceiling spaces.



Fig. 2.2a. Eave condition above Vestibule 102. Note that it appears there is missing insulation at the transitions between soffit, wall, and roof.

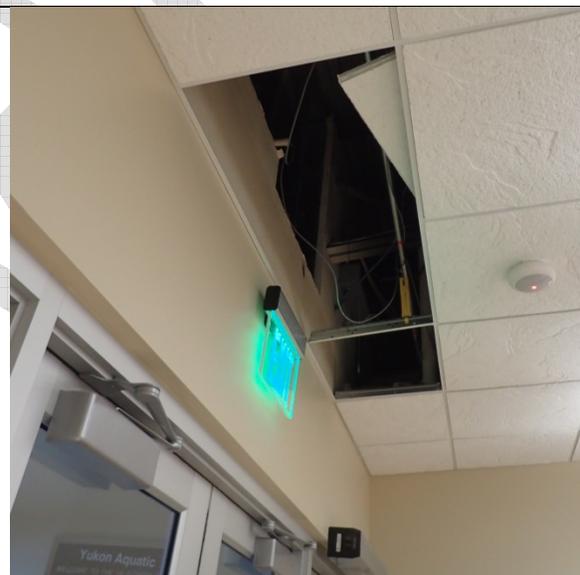


Fig. 2.2b. Wall framing and drywall continues vertically above vestibule doors..



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ISSUE 3, Leaking roofs at transition between roof levels.

ISSUE 3.1, Leaking Roof in Natatorium

Reported Problem: Roof leaks reported between Grids 2 and 1, B and G during precipitation concurrent with South winds. Facility Manager Stacey Reardon reports that the length of the “mega truss” on Grid 2 between Grids B and G leaks into the pool, and that water drips down the length of the exposed roof joists to Grid 1. She also indicated that the windows on the south wall between grids B and D, and D and E leaked at the head condition during the same rain/wind events. Mr. Arnold indicates that south winds are predominant during the summer months, which corresponds to the times that Ms. Reardon indicates the leaks occur.

Observed Conditions: small areas of rust were apparent at the lowest point of open web joists in the area reported to leak. It appears evident that rain water penetrates along Grid 2, migrates down the structure, and follows the path of the bottom chords of trusses towards the south wall of the building. It is very likely that the windows do not leak, but instead, are subject to this same roof leak following the path of the joists, which then drips through the ventilated plenum assembly, and manifests itself at the head condition of the windows. I could not access the roof to see the condition of wall panels, roofing, or flashings.

Note: rust was also noted on Column A:1. The source of this is unknown.

Proposed Solution: Inspect the roof and high wall assembly for obvious gaps in the transition between the high wall and the roof assembly. Specifically, check the condition and presence of flashing, self-adhered membrane, and foam closure as indicated in Detail D2/A5.01 of the Construction Drawings. If these items are present, it seems probable that wind-driven rain is being pushed through the foam closure and into the ventilated roof assembly below. If so, the flashing should be extended and an addition foam closure should be added. See revised detail D2/A5.01, shown in Figure 3.1f below. Clean areas of rust and apply touch-up paint to prevent further corrosion. Replace damaged GWB near Grid G:2.



Fig.3.1a. Small areas of rust on open web joists and wide flange, associated with leaking roof.



Figures -3.1b Rust noted on Column A:1.



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Fig. 3.1c. Efflorescence on CMU and Grout near Pool Equipment Storage



Fig. 3.1d. Damaged GWB at bulkhead near Grid G:2.



Fig. 3.1e. Cracked tile in soffit of window well. Cracks may be associated with water damage, but may also be associated with building movement. Monitor for further movement.

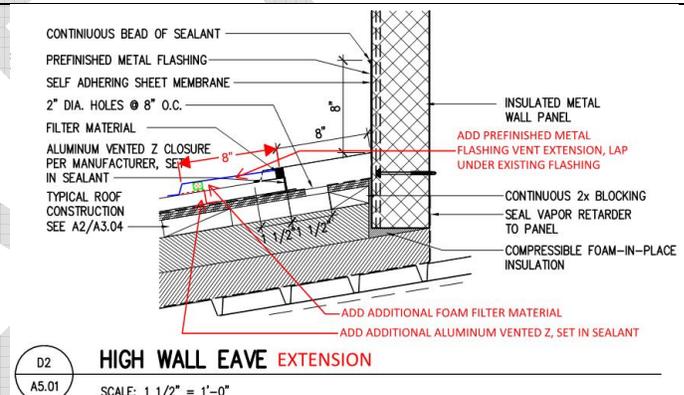


Fig. 3.1f. Extend highwall eave flashing. Add additional vented z closure and additional foam closure.



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ISSUE 3.2, Leaking roof in Fitness and Exercise rooms

Reported Conditions: Similar to Issue 3.1, except that leaks on the north side of the building occur during precipitation concurrent with North winds. These leaks are reported to occur much less frequently than those in the Natatorium. Mr. Arnold indicates that the north winds are predominant during winter months, and Ms. Reardon confirmed that the leaks occur primarily during winter rains and winter snow melts. Leaking has been reported on either side of the wall separating Gallery 105 from Fitness Room 106 and Exercise Room 107

Observed Conditions: Same as Issue 3.1. Windows in these rooms have not been reported to leak. Note that one fire alarm device in Exercise Room 107 shows signs of water intrusion in the strobe.

Proposed Solution: Same as Issue 3.1. Also, check the affected fire alarm device and replace if inoperable. We also suggest adding a temporary piece of flashing “uphill” from the fire alarm to divert drip water away from fire alarm until the roof leaks can be fixed.



Fig. 3.2a. Damaged strobe/annunciator. Inspect to ensure it is still operational and replace if not. Install metal flashing to divert leaking from causing further damage.

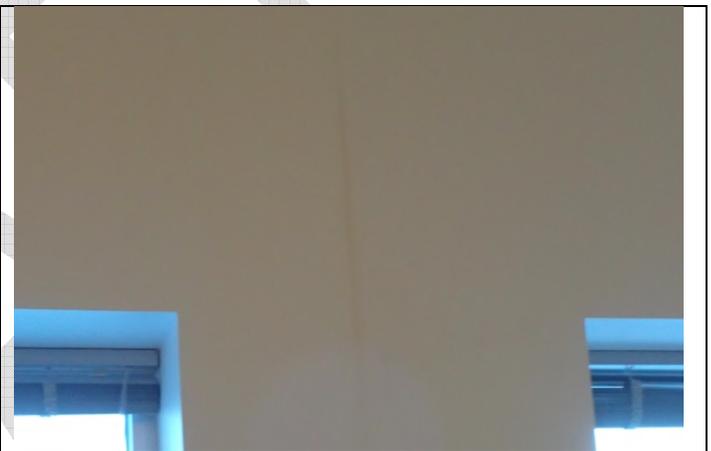


Fig. 3.2b. Minor water damage noted between windows in Exercise Room.



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ISSUE 4, Cold air penetration along rake end of high-wall.

Reported Conditions: Several City of Bethel personnel indicated a “cloud” or “weather system” that occurred at the Natatorium ceiling in the area of Grid G:2 last winter. Apparently cold air was entering the building, and the warm humid interior air was condensing and creating mist. Maintenance personnel reported that they had added significant amounts of insulation to the interior side of the high wall along Grid G between Grids 2 and 3, and that has prevented this condition from occurring since.

Observed Conditions:

- East Side: the added insulation could be seen between wall framing. At Grid G:2, water damage was evident in the form of bubbling paint and efflorescence in the CMU.
- West Side: although no problems have been reported, it was evident with the thermal camera that the transition between the low roof and the high wall was significantly colder than the surrounding roof and wall construction.

Proposed solution: (Applies to both west and east high walls). Inspect roof flashings and membranes for weather-tight and air-tight construction, and repair any damage found. Supplemental insulation may be needed: install closed-cell foam insulation on the interior side of the low roof to high wall transition for full length of high walls. Check for similar conditions on the north side of the building. See proposed detail in Figure 4c.

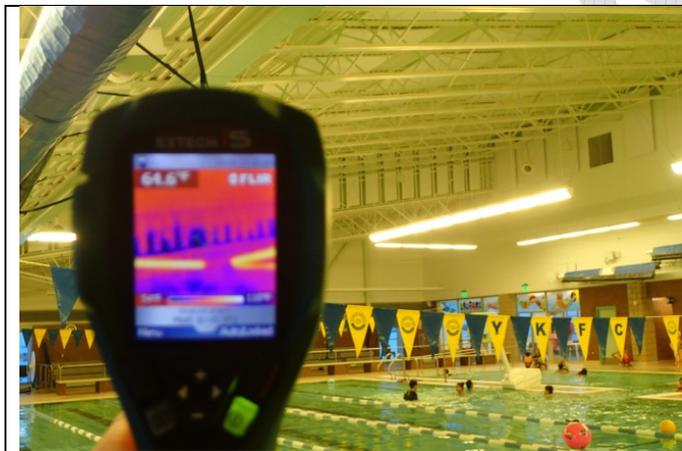


Fig. 4a. Very cold roof:high wall transition

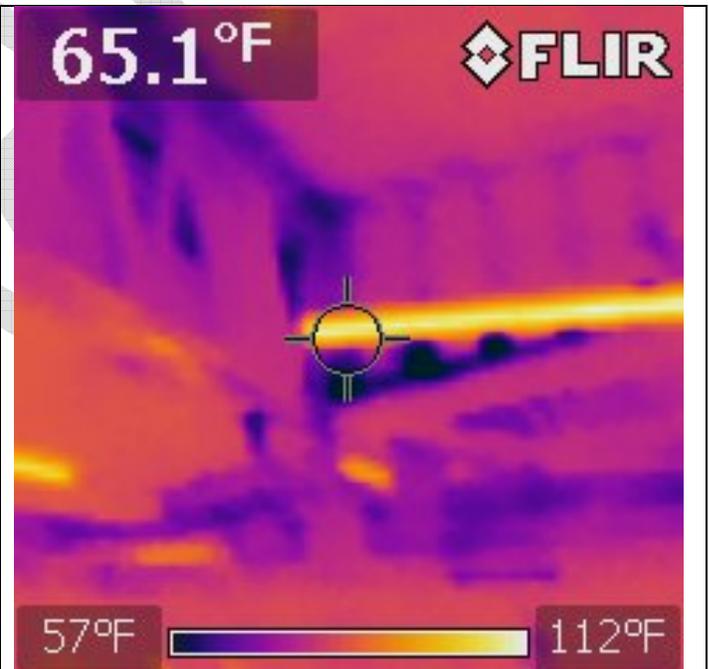


Fig. 4b. Roof to High wall transition at Grid B:2



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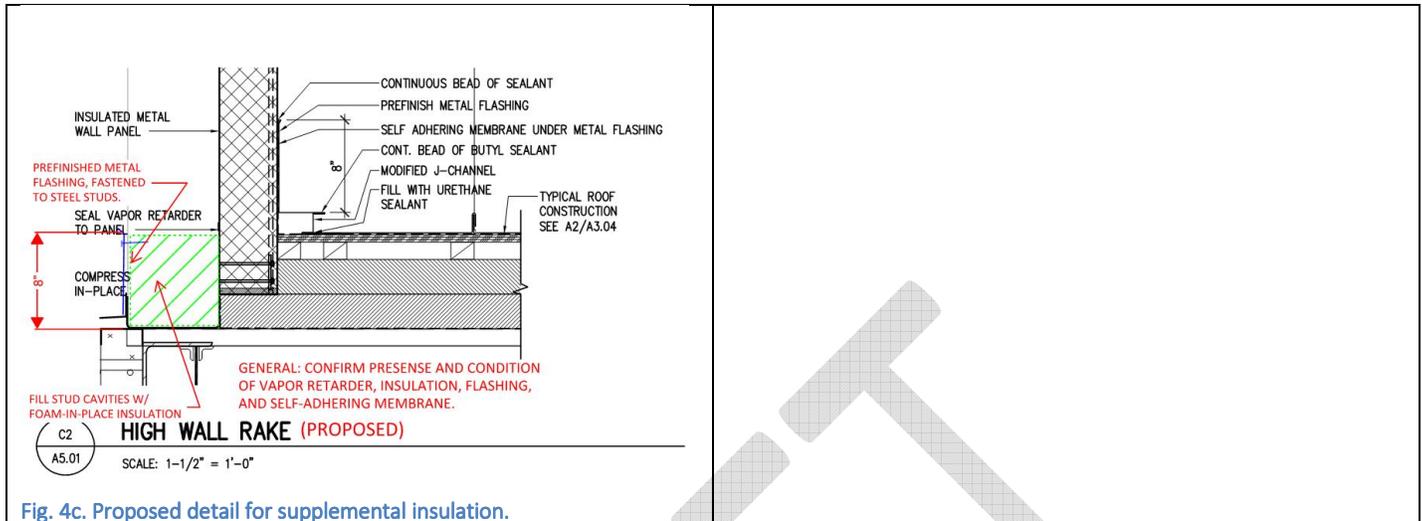


Fig. 4c. Proposed detail for supplemental insulation.

ISSUE 5, Problem: staining on tiles near spa.

Reported Conditions: none.

Observed Conditions: Standing water on the deck of the Viewing Area from the Spa pool covers has resulted in stained tile and grout on the viewing area deck. Mildew was seen on the floor tile indicating that standing water in this location is common. Rust staining was seen in the inset area of tile on the spa wall, and staining continued up the surface of the wall.

Proposed Solution: Clean mildew from tile and grout. Monitor rust staining for advancement. Develop operational protocols to a) place wet pool covers on an area of the deck with positive drainage, and b) use a squeegee to remove standing water from the Viewing Area deck.

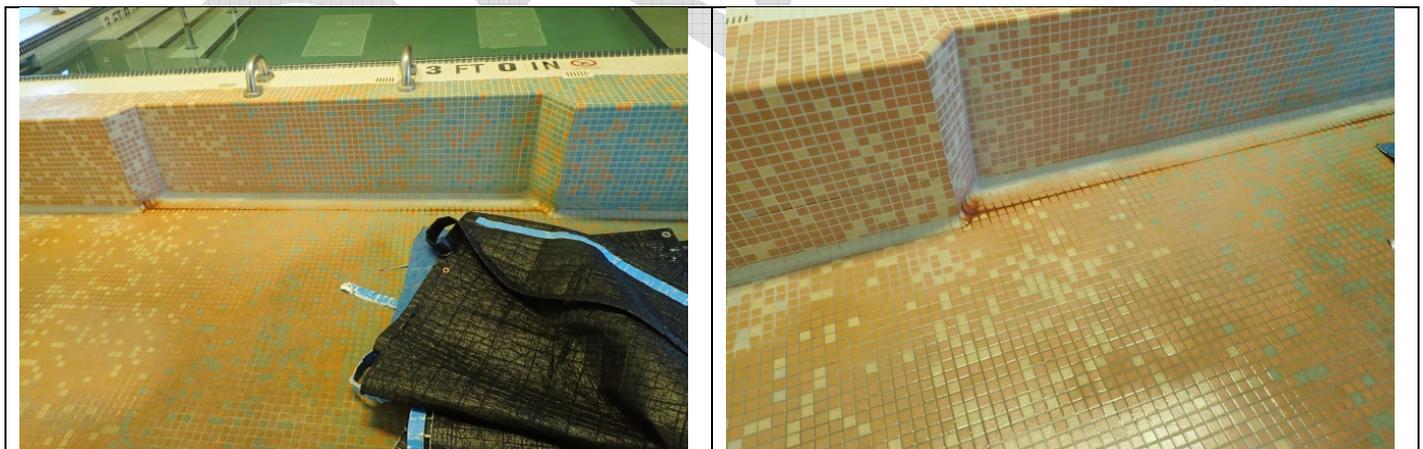


Fig. 5a. Pool cover results in standing water, staining of tile and grout, and saturation of concrete deck to rebar below.

Figures -5b: detail of staining.



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CONCLUSIONS

The Yukon-Kuskokwim Fitness Center is an important asset for the City of Bethel and the surrounding region. Although it is a relatively new facility, it is normal for a building to show flaws for a variety of reasons. This report is intended to suggest solutions to ensure the building's longevity and usefulness.

The YKFC is a necessarily complicated building. The pool creates a difficult interior environment to manage; the harsh exterior environment and its seasonal extremes must be handled; the fragile permafrost that it sits on must be protected; and most importantly, the building must be inviting and welcoming, giving its users and staff a healthy environment to continue their recreational and lifesaving mission. The challenges that these factors pose were visible in our site visit, and it's important that they be mitigated.

Simply put, the building must keep the difficult exterior outside so that it can effectively manage its interior environment. As such, we recommend that the City of Bethel and its personnel prioritize these repair, maintenance, and operational tasks.

Please review this report as well as the referenced reports that follow. Please don't hesitate to contact Architects Alaska if you have any questions or concerns.

Regards,

Steve Schell

Encl:

- *Pool Building Report* by City of Bethel Facilities and Property Foreman, Corbin Ford
- *Memo* by AMC Engineers Mechanical Engineer, Mark Langberg
- *Daily Work Log* by Accel Fire Systems