ENGINEERING DEPARTMENT

INFORMATION TO BIDDERS
for

Contract No. BE21-030
Augustus Brown Pool
Upper Roof Replacement

ISSUED BY:

City and Borough of Juneau
ENGINEERING DEPARTMENT
155 South Seward Street
Juneau, Alaska 99801

Date Issued: July 20, 2020

The following information is posted online. Please refer to the CBJ Engineering Contracts Division webpage at: http://www.juneau.org/engineering_ftp/contracts/Contracts.php. This is ***not*** an addendum.

- Bidders are provided the following items for informational purposes.

Item 1: Image 1: AB Pool Intake Snorkel to be removed
Item 2: Image 2: AB Pool Flat Roof Ponding – View to N.E.
Item 3: Image 3: AB Pool Flat Roof Ponding – View to North
Item 4: Image 4: AB Pool Flat Roof Interior Staining
Item 5: Image 5: AB Pool Flat Roof – View to South
Item 6: R&M Memo


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R&M ENGINEERING, INC.
ENGINEERS
GEOLOGISTS
SURVEYORS

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November 14, 1997

Brent Fischer
Parks & Recreation Department
City and Borough of Juneau
155 S. Seward St.
Juneau, Alaska 99801

Re: Augustus Brown Swimming Pool
Partial Roof Inspection
R&M Project No. 971496

Dear Brent,

At your request we made a site inspection of a part of the Augustus Brown Swimming Pool roof on Thursday November 13, 1997. Present were Brent Fischer, Parks & Recreation; Bryce of Industrial Roofing Inc.; and Adrian Slater, R&M Engineering. The weather was clear and sunny following a sharp overnight frost. The temperature was in the low 40°.

SCOPE OF WORK

The scope of this investigation was;

1. Inspect structural roof members in an area where there had been known leaks.

2. Inspect part of the inspection gallery of the east side of the roof where there was suspected water damage from the leaks.

3. Check the adequacy of the structural framing supporting the mechanical ventilation equipment.

OBSERVATIONS

Bryce had removed pavers from an area approximately 20'x30' adjacent to the roof drain at the northeast corner of the building. This central portion of the roof is flat. A section of the EPDM membrane had been cut and opened to expose the 6" deep EPS rigid foam insulation boards beneath. A number of these had been removed and were saturated with water. The visqueen vapor barrier beneath the insulation was intact apart from one or two small penetrations by heads of fasteners which were in the 2" T&G wood decking.

Bryce cut back a section of the vapor barrier in order to enable us to examine the wood deck. The area exposed was where he reported that water had been ponded when they had opened the roof membrane. The underside of the vapor barrier was damp. Moisture readings taken in the top of the decking showed considerable variation. The majority of the exposed area was at a moisture content less than 18%. In small isolated areas moisture contents as high as 60% were noted. There was no indication of any surface mold, mildew, staining or rot. There was no way to determine how long wet areas had been wet.

We also examined the inspection gallery which runs along the east side of the roof. In this area, directly below the roof drain, extensive leaks were noted in June, 1997. Since roof repairs were made in June, no further leaks have been noted. All timbers examined, though showing signs of water staining, were dry, with moisture content readings less than 19%. There was no evidence of rot within the timber members. The underside of the roof decking around the ventilation unit was not accessible for examination. Moisture content readings were taken on the underside of the roof decking at a lower elevation. These readings along with readings in adjacent structural beams were all less than 19% moisture.

FRAMING ANALYSIS

You drew attention to the deflection noticeable in the area where the heating and ventilation equipment is installed on top of the roof. As you requested I have run computations for the structural members which were used to support this unit. I assumed the beam sizes which were shown on drawing A2.3 by Minch Ritter Forrest Architects, dated 2/22/89. The mechanical unit is situated equidistance between two of the main structural frames which run from east to west. Two 6 3/4"x15" glue lam beams are located below the east and west sides of the unit. The total load of the mechanical unit was stated to be 7,400 pounds over a footprint area of 9'7"x13'7". This equates to approximately 53 psf of load over this area of roof. The information about the mechanical unit was provided by Paul Voelckers of Minch Ritter Forrest in 1989. At this time we were not able to verify either the actual sizes of structural members installed nor the weight of the mechanical unit.

The calculations indicated that the framing, as designed, can safely carry the weight of the unit, assuming there is no snow build up on top of the unit. The expected deflection of the beams was approximately 1" at the center of the beams. No actual deflection readings could be made on top of the uneven surface of the roof. The deflections noted did not appear to be in excess of 1". We also noted that deflections could be observed between each of the main support beams on the roof surface where there are no additional dead loads in place. Thus, there is no reason to doubt that the structural framing can safely carry the loads for the mechanical unit.

CONCLUSIONS

1. Roof leaks, in the past, had resulted in ponding of water above the vapor barrier resulting in saturated insulation material adjacent to the roof drain.

2. In limited areas water had penetrated beneath the vapor barrier and had resulted in some wet areas of timber roof decking.

3. There was no evidence of rot within the portions of the roof which were exposed for inspection.

4. With the vapor barrier resealed, the insulation replaced with new dry material and with the EPDM membrane correctly repaired and sealed, it is reasonable to anticipate that there will not be further problems of water leaking through to the interior.

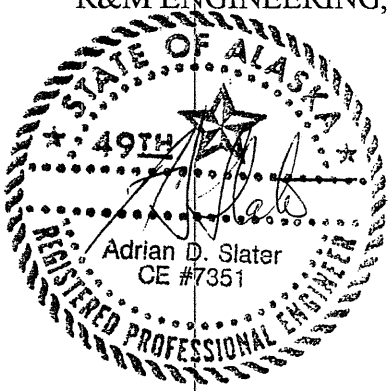
5. Though there is noticeable deflection between each of the main roof beams, this is not excessive. The structural analysis of the members assumed to be supporting the mechanical unit indicates that there is sufficient capacity to safely carry all the design loads for this area.

The inspection carried out was limited to visual inspection and probing of surface of timbers. At the limits of the area opened for inspection, the insulation appeared to be dry. However, there may be leaks or hidden decay in other areas which were not exposed at this time.

Should you desire any further investigation, or if we may be of further assistance, please do not hesitate to contact us at your convenience.

Sincerely,

R&M ENGINEERING, INC.



Adrian D. Slater, P.E.
Civil Engineer

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