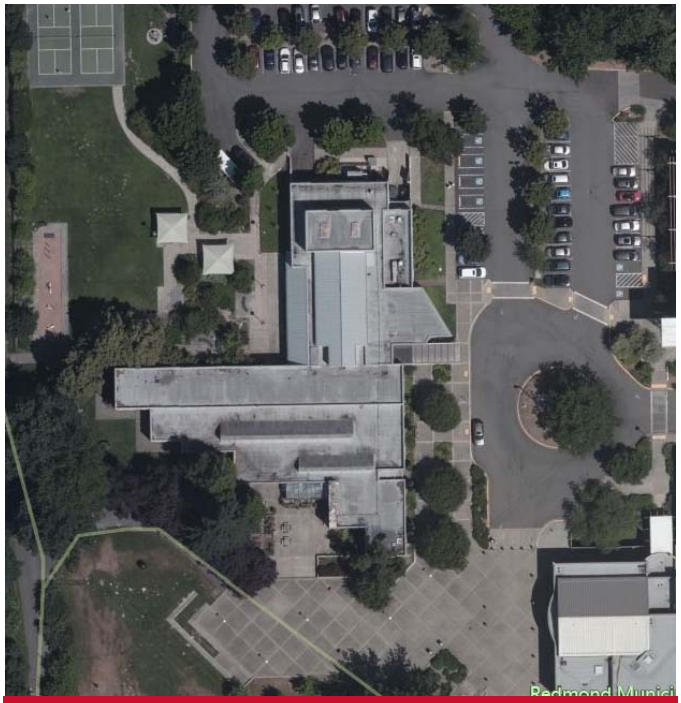

Redmond Senior Center Final Building Investigation Report

City of Redmond Senior Center Building

8703 160th Ave NE, Redmond WA 98052

November 25, 2019

Executive Summary

HDR was asked to provide a building evaluation for the Redmond Senior Center to the City of Redmond when the building was deemed unfit for occupancy. HDR reviewed the work of prior city consultants and worked with the City and its consultants on selective demolition to review the building structure and building envelope that were not performing due to moisture and dry rot conditions. HDR found significant structural and building envelope damage from conditions arising from the exterior detailing on the buildings' exterior stucco and tile cladding. The moisture and dry rot caused most of the buildings shear walls to have a significant loss of structural integrity. The building is not safe to occupy and repairs will need to be made in order to re-occupy the building. There is no scenario where one portion of the building could be occupied while the other portion is repaired due to the amount of damage to the shear walls and the building's systems layout. A cost estimate for the repair of the buildings structure has been provided by Rider Levett Bucknall. The cost to repair the structure and update many major systems is very comparable to the cost of a new building. The question of whether to repair/ remodel or build a new building will require further analysis by the City of Redmond.

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1 Investigative Scope

The City of Redmond engaged HDR to provide a building evaluation after the Authority Having Jurisdiction (AHJ) deemed the Redmond Senior Center (RSC) unfit for occupancy. Prior consultants had discovered a number of the building's shear walls were not performing at capacity due to moisture/dry rot conditions. Moisture or dry rot is fungal timber decay occurring in poorly ventilated wood exposed to moisture. HDR was asked to provide further evaluation of the current state of the RSC building. This further evaluation would entail assessment of the interior and exterior walls which consist of the framing (vertical load) and shear wall integrity (shear loads), evaluation of the exterior envelope with regards to the wall framing, wall sheathing and exterior cladding (stucco, tile, metal coping), and evaluation of the roof integrity including roof structure, roof framing, roof sheathing and roof membrane. HDR reviewed the reports provided by prior consultants and reviewed the conditions found at the site from the prior demolition (by others). HDR, in consultation with the City, directed further selective demolition to assess the condition of the building. This report details the found conditions, describes necessary repairs, and discusses the fiscal viability of those repairs.

1.1 Documents Provided

- *Combined Final Panel and Wood Report*, KPG Interdisciplinary Design, July 10, 2019.
- *Redmond Senior Center Panel Repair and Investigation*, KPG Interdisciplinary Design, July 19, 2019
- *Summary of Wall Conditions*, KPG Interdisciplinary Design, July 7, 2019
- Redmond Senior Center Comparative Market Analysis, Architecture Resource Collaborative, August 16, 2019
- Redmond Senior Center Building Investigation, Swenson Say Faget Structural Engineering (SSF), August 29, 2019.
- *Existing Building Condition Evaluation*, Wetherholt and Associates, August 14, 2013.
- *Facility Summary (Draft) Senior Center Building*, Meng Analysis, October 14, 2013.
- Redmond Senior Center Activity Center Record Drawings, The Henry Klein Partnership, January 5, 1989.

2 Building Description

The Redmond Senior Center building was constructed in 1990 and is approximately 22,000 square feet. It is of Type V-1-hour construction and A-2 Occupancy in the north side wing and A-3 and B-2 Occupancy in the south side wing of the building. The building contains a social hall, stage area, commercial kitchen, and meeting/dining room on the north side. On the south side are the reception area, administrative offices, lounge, restrooms, meeting rooms, library, arts and crafts rooms, game room, greenhouse and a

dance studio. The building is largely a wood-framed, stick-built one-story structure. The building exterior is mostly clad in stucco with a large area of tile located on the east and south side of the building. The building has a low to zero slope, built-up roof with a small area of asphalt shingles on the clerestory area.

Entry canopies are located above the building entries. Above the main entrance the entry canopy consists of translucent plastic paneling supported on glulam beams. Large wood-framed eave canopies cover the west side of the of the north wing of the building adjacent to the ballroom. Canopies also cover the two walkways on the south side of south wing of the building. Smaller door canopies cover inset doors on the east side, northeast corner, and southeast corner. The building floor plan is shown on Figure 4 and 5.

The building's gravity-based supporting structure consists of a timber-framed roof supported on timber stud walls, with a few steel beams and columns. The structure is supported on continuous or spread shallow footings.

The building lateral system consists of wood diaphragms distributing lateral load to wood shear walls, steel braced frames, and steel moment frames. Because of the complexity of the roof layout, the roof diaphragm uses sub-diaphragms, collectors, chords, and ties to route lateral load to the shear walls and frames in an intricate layout. While this layout efficiently distributes lateral load, it results in a system where removing any shear wall affects the entire building. In this way, a partial repair of some shear walls will not accommodate a partial reopening of the building.

Figure 1. Damage at south wall

Figure 2. Damage at base of shear wall sheathing

Figure 3. Damage to framing, base plates, and windowsill

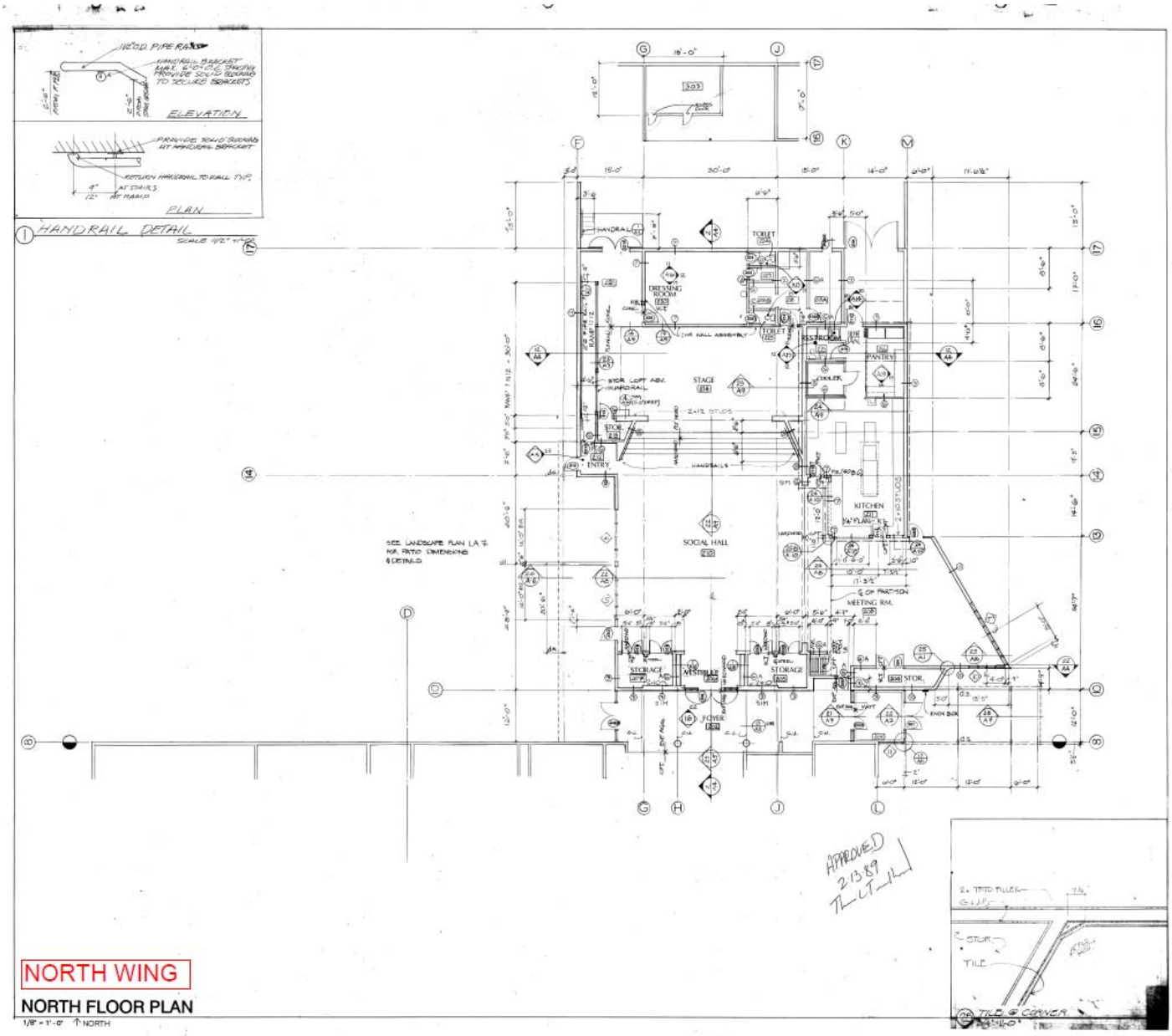

Figure 4. North wing floor plan

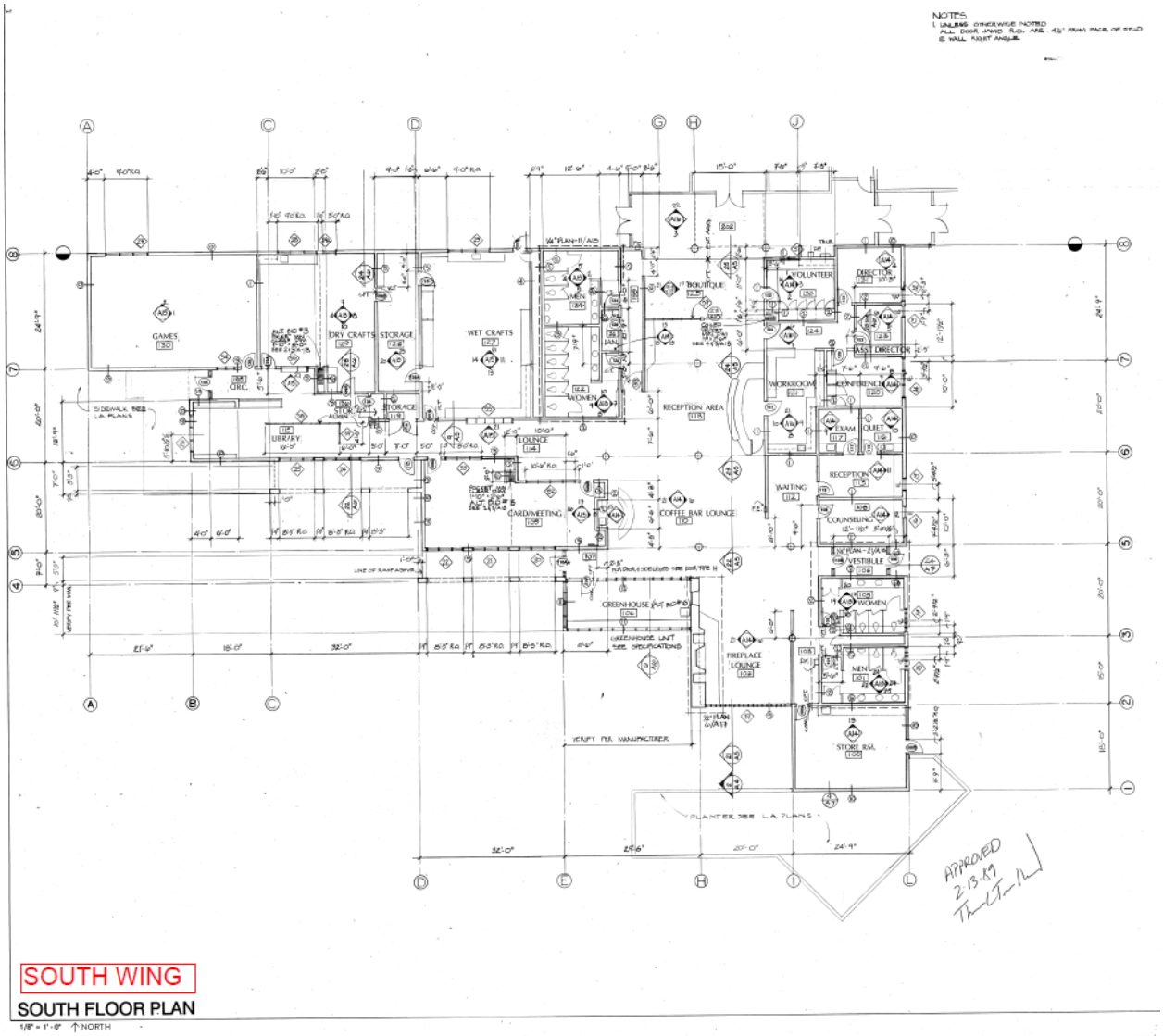

Figure 5. South wing floor plan

3 Investigation

HDR reviewed the material supplied by the City, and in particular the *Redmond Senior Center Building Investigation* prepared by Swenson Say Faget Structural Engineering (SSF) and the *Combined Final Panel and Wood Report*, prepared by KPG Interdisciplinary Design (KPG). HDR made a site visit on September 17, 2019 and reviewed the found conditions in the areas the KPG and SSF had identified. HDR made recommendations for the selective demolition interior shear walls on October 8, 2019, reviewed found conditions on-site, and made further recommendations for additional selective demolition on the roof area in conjunction with the City. After the cladding and sheathing was removed on the exterior north wall of the north wing, HDR observed the exposed structure on October 24, 2019. This observation was intended to determine a representative level of damage in order to develop a cost estimate for repairs.

3.1 Building Exterior

Stucco Wall Assembly

In reviewing the record drawings provided by the City, the building exterior skin is composed of the classic three-part Portland cement plaster stucco system (scratch, brown and finish coats) over metal lath and two layers of building paper. This is attached to 5/8-inch oriented strand board (OSB), which in turn is nailed to the wood wall framing. The cavity between is filled with fiberglass batt insulation, then vapor barrier and interior gypsum board complete the assembly. One deviation from the record drawings is that the building is sheathed in OSB rather than the CDX plywood shown in the record drawings. CDX plywood has a greater ability to withstand some moisture than OSB but over time will degrade like OSB with prolonged moisture exposure.

In reviewing numerous areas at the exterior of the RSC, the stucco finish on the walls terminates in soil or at hardscape conditions like sidewalk. Per the Northwest Wall and Ceiling Bureau (NWCB) the recommended practice is “Termination of the stucco assembly at the base of the building to be located no lower than 4 inches from the finished grade and 2 inches from the hard surface”. The Uniform Building Code (UBC) at the time of the RSC’s construction and the current International Building Code (IBC) have similar language. The building code and recommended practice were not followed, allowing water to wick up behind the stucco plaster and soak into the OSB, damaging the vertical framing studs, sill plate, and sheathing, and causing shear panel failure and cladding failure. See Section 3.2, Building Structure Condition, of this report.

Figure 6. Moisture/dry rot at stucco cladding termination at sidewalk and soil.

Head Flashings

The NWCB is the trade association for Portland cement plaster (stucco) and is the recognized technical authority for contractors in this field. Per NWCB, head flashings are required at all window, door and louver openings in exterior walls. The head flashings must extend ¾-inch minimum past the jamb. The RSC has head flashings, but they do not extend far enough past the jamb opening and they do not have end dams. As the existing head flashings are not correct, it is allowing moisture to enter at the intersection of the end of the stucco and the window, door, and louver jambs, causing moisture/dry rot damage to the sheathing and framing below.

Figure 7. Lack of end dam at head flashing above door frame

Sill Pans

The NWCB recommends that storefront style windows be installed with a sill pan flashing. The sill pan should be constructed with an upturned back edge or back dam and end dams (fully soldered) to prevent moisture from entering the wall cavity. The RSC has sill flashing and at the sill corners protection is offered by sealant only. As the sealant ages, cracks, shrinks and degrades there is no protection at the crucial jamb-sill intersection, allowing water intrusion as is the case at the RSC. Refer to photos included showing wood moisture/dry rot at the window sill area.

Figure 8. Moisture/dry rot damage at window sill plate without a sill pan flashing

Trim Accessory Joints

At RSC there are horizontal aluminum reveals or trim accessory joints. The stucco assembly needs these joints for thermal expansion and contraction. Joints are recommended to limit the maximum size of an unbroken expanse of stucco to a maximum of 180 square feet. As installed at RSC, the trim accessory joint or plaster channel screed also requires careful installation. Per the NWCB, it is recommended that trim accessory joints be weather-sealed by embedment in caulking at intersections when placed end to end, abutting one another at terminations. At RSC some sealant is evident at some of the butt joints. Reveal connector clips should set in sealant at butt joints. HDR did not observe molding at the butt joints at RSC. Factory fabricated inside corner and outside corner molding should be mitered, welded and sealed when used with stucco per the NWCB. At RSC the inside or outside corners were not factory mitered or welded, allowing water to penetrate at the corners of the building. A handful of the outside corner reveals showed signs of aging sealant and this protection is dubious. The detailing was a contributing factor in the moisture/dry rot damage that is present at RSC.

After reviewing found conditions on the building, it appears that original building detailing is a main contributing factor to the water intrusion and decay.

Figure 9. Moisture/dry rot damage behind trim joint above door head flashing

Tile Exterior Wall Assembly

In addition to the Portland cement stucco on the building exterior, there are areas with a nominal 12- x 12-inch ceramic tile used as an exterior cladding material. These areas occur on all the buildings elevations with the majority of tile cladding on the south and east sides of the building. Per the *Exterior Building Condition Evaluation, August 14, 2013,* by Wetherholt and Associates, Inc., RSC was having tile issues at the time of the report. A large portion of the tile exterior wall assembly east façade of RSC was rebuilt in 2013 because of an earlier tile cladding failure. The report notes that there are other areas showing efflorescence (exterior white surface staining), cracked tiles, and replaced tiles. New grout and tile expansion joint repairs have been carried out by the City in the past. HDR reviewed these areas as part of our investigation and found similar conditions.

The tile exterior wall assembly is similar in construction to the stucco wall assembly. The exterior tile is set into a Portland cement mortar bond coat which is adhered to a mortar bed of approximately ½-inch. Grout is used to seal the gaps between the tiles to prevent water intrusion. Under the mortar bed is metal lath and two layers of building paper attached to the 5/8-inch OSB, which is nailed to the wood wall framing. The cavity between is filled with fiberglass batt insulation, then vapor retarder and interior gypsum board complete the assembly.

In reviewing the tile exterior wall assembly at RSC, there are many areas where the tile cladding terminates at or in the soil or the sidewalk. Like the stucco wall assembly noted previously, both the UBC (the code in place when the building was built) and the IBC (current code) both have similar language regarding terminations. The UBC refers to metal lath assemblies (the tile substrate at the RSC) and the IBC refers to exterior adhered masonry veneers – porcelain tile. Whether per the codes or recommended building practice, the terminations of the exterior tile wall assembly at the base of the building are to be located no lower than 4 inches from the finished grade and 2 inches from the hard surface, and this was not followed at RSC from the original construction. Evidence of moisture wicking up behind the tile cladding was evident with tiles coming loose from the mortar bed. In discussion with the City, there has been an ongoing program to replace cracked tiles and re-grouting areas of tile for envelope integrity. This likely helped slow the deterioration but would not have stopped it completely.

Figure 10. Tile cladding termination at soil in planter

Head Flashings

The RSC windows' as-built condition at the tile exterior cladding do not have metal head flashings. Some evidence of sealant is present, which can fail as it ages. There are also tile "eyebrow" architectural features over the windows, offering some protection but these features appear to have damaged tile and could be a source of moisture entering the building.

Figure 11. Tile cladding showing damage at window head

Sill Pans

The RSC windows at the exterior tile cladding do not have metal sill pans with end dams as noted in the Wetherholt report. As the sill condition relies on sealant, over time as the sealant dries and weathers, these areas will fail and be a source for water to get behind the tile and work its way into the building. This condition was found as part of our shear wall investigations.

Figure 12. Sill flashing without end dam and sill pan

Transition Flashings

At the RSC there are areas of the building where the exterior wall tile intersects with a parapet, the Portland cement stucco or a building canopy. At the parapet intersections the transition flashing is metal surface mounted angled flashing set in sealant. Over time as the sealant dries and ages, this becomes a source of water entry into the building. At the intersection between the tile and the stucco, there are no transition flashings and this transition can become a source of moisture entering the building as there is no barrier. Also, where the wood main entry canopy intersects with the tile cladding, this intersection, like the parapet, is a metal surface-mounted angled flashing set in sealant. All these detailing conditions allow moisture to enter the building and get behind the tile exterior wall cladding and cause damage.

Figure 13. Lack of transition flashing at tile and stucco cladding intersection

Building Roof Area

HDR was asked to look at the roof membrane, parapets, coping, roof structure and roof framing as part of the building investigation. HDR was assisted by Rick Hall with KPG, who performed multiple test cuts in the building membrane roof. The test cuts only found evidence of water in one location (which was repaired) and overall the roof deck showed no rot or structural damage as was found on the building exterior. In discussion with the City on the performance of the roof, City staff noted ponding and slow drainage.

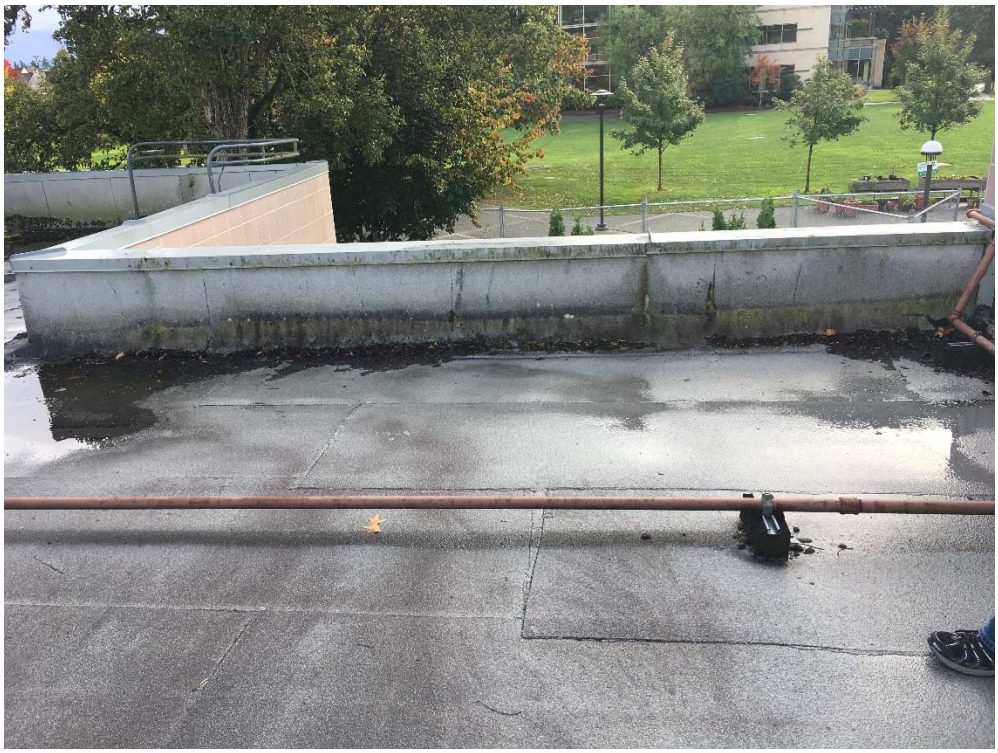

Figure 14. Roof showing evidence of slow draining and ponding

The City also voiced concerns about the number of roof drains on the low slope area of the building. While HDR did not calculate the capacity of the existing roof drains, we did review the original building drawings. These drawings (A-19, 1.5.89) show roof crickets throughout the roof area. Crickets are typically composed of tapered insulation that are installed under the roof membrane and above the roof deck. By the nature of their shape, the roof crickets direct water flow that collects toward the nearest drain due to their positive slope. While not required by the building code, they are a recommended practice by the National Roofing Contractors Association (NRCA) *Roofing and Waterproofing Manual*. Crickets are not currently found on the roof. It is unknown why the crickets are shown in the original building drawings but not in evidence on the roof. The City noted that the original roof, constructed in 1990, was replaced in 2003. The crickets in the original drawings may have been removed during the re-roof. The addition of crickets in any future re-roof project for RSC should be strongly considered and will help alleviate future drainage problems on the roof.

In reviewing the condition of the single-ply asphalt roofing, it had a number of blisters but was in a generally fair condition. No evidence of roof deck insulation was present. While the roof membrane appears in fair condition, the roofing assembly is in poor condition. In any major alteration to the Redmond Senior Center, additional roof insulation should be added and tapered to produce new roof crickets. The asphalt roofing should be replaced and additional drainage constructed, which will prolong future roof membrane life. We understand these roof repairs and roofing replacement are included in the $15M project already budgeted in the current CIP.

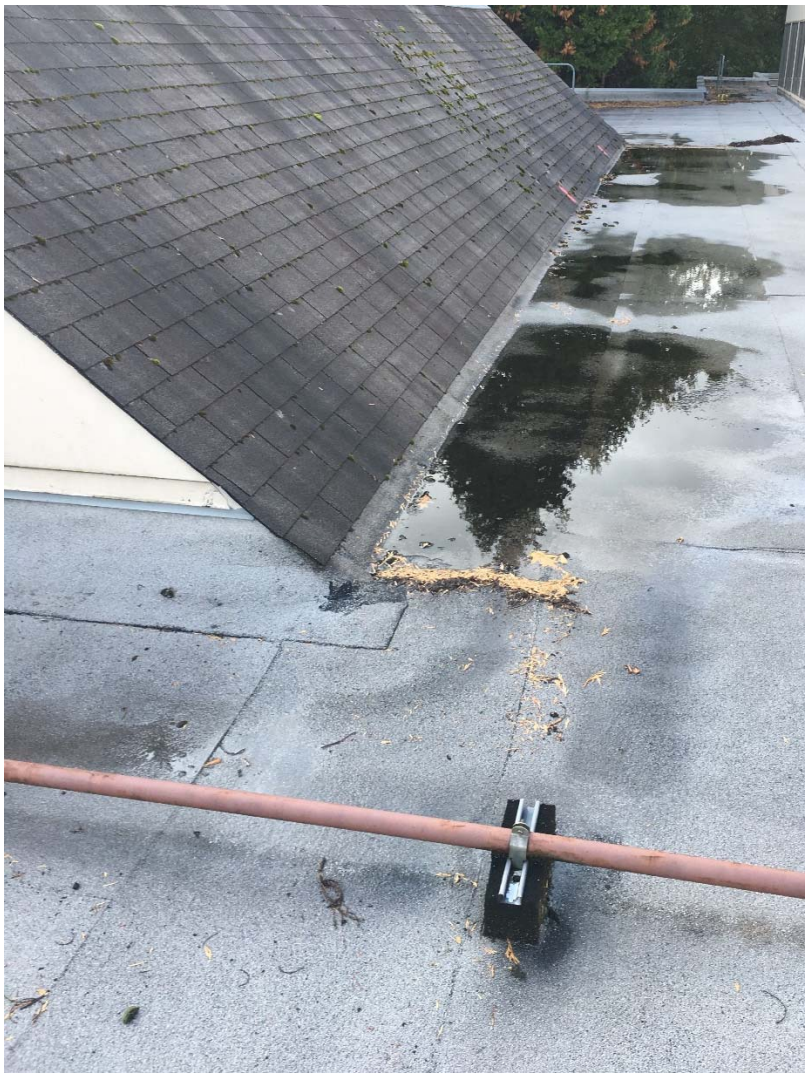

Figure 15. Roof lacking crickets to provide positive slope allowing water to collect and not drain

In reviewing the metal coping that are attached to the parapets, HDR found two conditions. A majority of the coping on the roof is single lock standing seam (which is preferred for weather tightness) and a minority is the original to the building flat formed variety with intermediate butt seams. In the earlier KPG investigation, the flat formed copings were shown to be leaking causing moisture/dry rot to get into the parapets. In any re-roof scenario, the coping should be replaced new throughout with a positive drainage slope which is currently lacking in the existing building coping. KPG removed the single lock standing seam copings in selected areas and found no evidence of leakage or damage. For the roof structure condition, see the Section 3.2, Building Structural Condition.

3.2 Building Structural Condition

Detailing and damage to wall cladding, windows, and canopies have allowed water intrusion into the exterior wall sheathing, studs and base plates.

Our investigation found that the bottom 2 to 3 inches of all the observed exterior shear wall sheathing was damaged by moisture/dry rot. This damage completely compromises the lateral load carrying ability of all exterior shear walls. **Based on this observation it is HDR's opinion that the building is NOT SAFE for general occupancy.** As noted in Section 2, compromising the exterior shear walls affects the lateral load carrying capacity of the entire building. In addition, no portion of the building is unaffected by the damage. This makes it impossible to use a portion of the building while making repairs to rest of the building.

Moisture/dry rot damage is typically hidden behind architectural cladding, and is not discovered until the cladding is removed, exposing the damage. As noted earlier in this report, it is apparent that this moisture/dry rot damage can be traced back to the original design and construction.

South Wing Below-Grade Wood Wall

A raised planting bed abuts the wall surrounding the Storage Room (Room 100). The cladding appears to be inadequately waterproof and allows water intrusion into the stud wall (see photos in Appendix A). Observed conditions show significant damage to the sheathing, studs and base plate (see Figure 1).

This damage significantly impairs the structure's gravity and lateral load bearing abilities at this location. Because the extent of the damage is relatively limited, it is assumed that the adjacent structure is providing gravity support. The lateral capacity of the shear walls are completely compromised by the sheathing damage.

It is anticipated that the entire exterior stud wall, including sheathing, studs, and base plate will need to be removed and reconfigured to provide a more weather resistant wall assembly. Possible solutions would be to 1) raise the 12-inch-tall foundation stemwall so that the top of the stemwall is 6 inches above the adjacent soil, 2) to lower the top of the raised planting bed such that 6 inches of the foundation stemwall would be exposed, 3) to provide a more moisture proof cladding intended for subgrade use, or 4) demolish the planter bed. Additional work, including removing and replacing interior sheathing, wall-mounted electrical, and mechanical equipment and flooring will be required.

Exterior Shear Walls

In addition to the south wing below-grade wall, the exterior walls not covered by an eave also appear to have damage to sheathing, studs, and base plates in varying degrees. The bottom 2 to 3 inches of the sheathing appeared to be consistently damaged with moisture/dry rot; this damage seems to be related to the architectural detailing at the base of the cladding or inadequate separation between the exterior grade and the bottom of the wood wall (Figure 2). In addition, localized dry rot damage relating to architectural detailing, window, louver or canopy penetration detailing was observed in the wall sheathing, studs, and base plates (See Figure 3). This damage was assessed in localized areas where the cladding and plywood were removed.

Based on an assessment of the north wall of the south wing, it is estimated that all the sheathing, 50 percent of the studs and 50 percent of the base plates were damaged (concurrent with stud damage). This damage impairs the structure's gravity and lateral load bearing abilities. The gravity load-bearing abilities are decreased proportional to the

stud damage. Stud damage is often limited to 1 or 2 inches of depth of the stud; however, a damaged stud must be replaced in order to eliminate the dry/moisture rot. Because the bottom 2 to 3 inches of the sheathing transfers shear to the base plate, the lateral capacity of the shear walls is completely compromised.

Any other framing damaged by dry/moisture rot will need to be removed and replaced, including window sills, columns, rim joists, top plates and headers.

All damaged sheathing, studs and base plates will need to be replaced. Where the studs or base plates will be replaced, additional work will be required, including: removing and replacing interior sheathing, wall-mounted cabinetry and flooring; electrical, mechanical, and plumbing penetrations; temporary shoring, if needed; replacing existing shear wall holdowns, if needed; and replacing existing anchor bolts with new adhesive anchor bolts.

Interior Shear Walls

The interior shear walls were assessed by removing sheathing at the base of the walls in localized areas. See appendix for photos showing the interior shear wall conditions.

All observed interior areas had no evidence of water intrusion or dry rot. Based on the observable conditions, it appears no remediation of the interior shear walls is required.

Roof Framing and Sheathing

The roof framing was observed by removing acoustic tile and removing ceiling panels in localized areas and observing the ballroom ceiling from the ballroom floor. The roof sheathing was observed by removing roofing materials to expose the top surface of the sheathing panel. See appendix for photos showing the roof framing and sheathing.

All observed roof framing had no evidence of dry rot damage. In some locations the roof sheathing was wet but had no evidence of dry rot.

Based on the observable conditions, it appears no remediation of the roof framing is required.

Upper Exterior Walls

The wall structure located above the main roof diaphragms was not uncovered or observed. It is assumed that the upper walls have damage similar to the lower walls.

Repair for the upper walls should follow the same recommendations for the lower walls, including replacing damaged materials and any interior sheathing or equipment as required.

Upper Roof

The roof located above the stage was not uncovered or observed. It is assumed that the condition of the upper roof is similar to the lower roof.

Based on this assumption, it appears no remediation of the roof framing is required.

Front Canopy

Framing around the front canopy consists of exposed glulam beams. The beams are damaged to varying degrees by dry rot. Although the damage appears to be significant in nature it was outside the scope of this report. Because of the framing layout, a failure may occur without warning.

In addition, the canopy framing penetrates the building cladding and is supported by the building walls. Replacing the front canopy requires additional consideration to account for wall weatherproofing and wall condition; walls supporting the canopy framing were not observed and may have dry rot damage due to moisture traveling down the canopy framing. Pictures showing the front canopy are in the appendix.

The canopy framing and any damaged wall should be replaced in kind, with weatherproofing as required to prevent future water damage. The canopy framing is scheduled and budgeted to be replaced under a separate task.

Other Canopies

Framing for canopies above the south vestibule (Room 106), west entrance (Room 135) and northeast entrance (Room 217) show areas of moisture/dry rot damage. The damage appears most significant at the beam ends. Pictures showing the front canopy are in the appendix.

Damaged canopy framing should be replaced in kind, with weatherproofing as required to prevent future water damage.

Eaves

Framing for eaves to the west of the social hall (Room 210) consist of 2- x 12-foot rafters supported by a glulam beam over two 4-inch-diameter steel pipe columns. A framed-in gutter is adjacent to the glulam beam. The gutter framing appears to have localized dry rot damage due to leaking from the gutter.

Framing for the eaves to the south of library (Room 115) and to the south of the card/meeting room (Room 109) consists of 2- x 6-foot rafters supported by two 2- x 12-foot beams supported by two 2- x 6-foot studs in a box column. Moisture/dry rot damage was found in the box columns. Pictures showing damage to the eaves are in the appendix.

Damaged eave framing should be replaced in kind, with weatherproofing as required to prevent future water damage.

4 Conclusions

4.1 Code Update Discussion

The project falls under the 2015 International Existing Building Code (IEBC 2015). In general, in section 602, like materials can be replaced with like materials. The Portland cement stucco exterior cladding system could be replaced with a new exterior metal wall cladding system. Repairs to the building structure should conform to 2015 IEBC Chapter

606.2 “Repairs to Damaged Buildings.” The damage to the building structure (sheathing, wood framing, etc.) can also be repaired per the code. The structure can be divided into the gravity load-carrying components and lateral load-carrying components. Lateral load carrying components include sheathing, studs, anchors, hold-downs and base plates in all shear walls. Gravity load-carrying components include components in other walls, including wall elements above and below windows and doors. Based on the building condition, the damage to the gravity load-carrying components is considered to be less than substantial structural damage. According to IEBC 606.2.1, this damage can be restored to the pre-damaged condition. Based on the building condition the damage to the lateral load-carrying components is considered to be substantial. Per IEBC 606.2.2.1, the structure should be evaluated to determine whether the damaged building, repaired to its pre-damaged state would comply with the current Building Code, using reduced IBC-level forces. For the electrical, mechanical and plumbing portion of the building that need repairs as part of the cladding repair, it is largely like materials may be replaced with like materials. These repairs would require further analysis and concurrence with the City of Redmond Building Official.

The City of Redmond has planned and budgeted a number of upgrades for the building (see Repair and Renovation Costs, Section 4.2) including replacing the damaged stucco and tile cladding on the exterior, roof replacement (including new crickets and drains) parapet wall coping/flashing, front entry canopy replacement, window replacement, electrical repairs, plumbing repairs, HVAC (heating, ventilation, and air conditioning) replacement, fire alarm upgrade and seismic retrofits.

The upgrade scenario also would trigger more stringent requirements in the IEBC. As the City would like to upgrade multiple systems and do seismic retrofits at minimum the building would fall under either a Level 2, Chapter 8 alteration or a Level 3, Chapter 9 alteration in the IEBC. Under either chapter the building would have to be brought into full compliance with the Washington State Energy Code which would require substantial improvements to the exterior building envelope, lighting and HVAC.

A second concern is the issue of the buildings non-conformance analysis. A portion of the structure lies within the stream buffer for the Sammamish River (RZC 21.64.020.B.10). Per correspondence with the Planning and Community Development Department, a repair or demolish and re-construct scenario will likely trigger full compliance with the shoreline regulations. According to the Department “Full compliance is required when the gross floor area of the structure is increased by 100 percent or more, or the costs stated on all approved building permit applications for the structure equal or exceed the assessed value of the structure (RZC 21.68.200.B.3)”. Under the upgrade scenario, the portion of the RSC that falls within the existing shoreline buffer would have to be demolished and this area of the building would have to be modified. Potentially this space could be relocated to within another area within the building or the building could be expanded to accommodate this program requirement. Currently the space that houses the former game room and current dance studio space is approximately 550 square feet. One potential location on the RSC site would be to build a new dance studio space in the area now supporting the greenhouse. This would involve demolishing the greenhouse and building the new dance studio space.

All these scenarios would require further analysis and consultation with the City of Redmond Planning and Community Development and the Building Official for concurrence.

4.2 Repair and Renovation Costs

The City has budgeted funds for a renovation project to the RSC in the amount of $14,980,250, ($15M) as per the 2019-2024 CIP, Project #56. These repairs include:

- Replace all exterior cladding with a metal panel system similar to the Public Safety Building
- Replace roof (including new crickets and drains), parapet wall coping/flashing
- Replace front entrance canopy
- Replace windows (material and install only not including WRB or moisture protection)
- Electrical repairs
- Plumbing repairs
- HVAC replacement
- Fire alarm upgrade
- Seismic retrofits

The numbers above do not reflect the cost for structural repairs detailed in this report. The exterior stucco will have to be removed and then repairs can be made to the sheathing and structural framing. This will also involve selective demolition and reconstruction and including a new Water-Resistive Barrier (WRB) moisture protection system on the interior of the building. Rider Levett Bucknall cost estimating Consultants have prepared a detailed cost estimate for this work. The cost estimate is $ 1,812,521. See Redmond Senior Center Envelope Study Concept Estimate, November 19, 2019 in Appendix B. The City of Redmond took this cost and used the standard CITY CIP estimate spreadsheet to determine a total structural repair cost, including contingency and soft costs, to come up with a $3-5M cost for the structural repairs ONLY.

Based on the CIP Renovation project cost of $15M and the additional $4-5M for structural repairs, the total Repair and Renovation Project will cost $19M to $20M.

New Building Costs

In reviewing the Redmond Senior Center Competitive Market Analysis, prepared by ARC Architects, August 16, 2019, the construction-only estimate for a replacement of similar one- story building in Option 1 is $10,923,845. The City of Redmond took this cost and used the standard CITY CIP estimate spreadsheet to determine a total project cost, including contingency and soft costs, to come up with a $21M project cost.

4.3 Schedule

The Repair and Renovation Project will take approximately 2.5 - 3 years to complete construction. That timeline assumes 12 - 18 months to precisely define the scope of renovations, prepare construction plans, and obtain permits.

The New Building Project will take approximately 2.5 - 3 years to complete construction. That timeline also assumes 12 - 18 months to precisely define the use and elements of the building, prepare construction plans, and obtain permits. Given recent discussions on various community center facilities in the City, 12 - 18 months is an aggressive schedule and will require building consensus early on. The City could utilize non-standard construction delivery methodologies such as Design-Build or General Contractor-Construction Manager (GC-CM) to help realize that aggressive schedule.

4.4 Recommendation for Further Evaluation

Based on the information gathered, the Repair and Renovation Project costs will be approximately $19 to $20M and the New Building Project costs will be $21M. It is our recommendation that the City should further evaluate if the New Building Project would provide more value. If the City pursues the new building option, the new senior center would typically have lower operating costs, meet the latest codes and provide an operational layout that better meets the needs of the RSC community. The new building would also have lower maintenance costs.

If the City pursues the repair and renovation option, there will be some operating efficiency, but many of the original systems will be untouched. For example, the Kitchen and Social Hall will not be updated and still have their original equipment. Certain areas of the building will be updated to the current codes but not all areas. The building will still have the original, outdated interior finishes and a layout that does not optimize the available space for the intended use. As the repair and renovation option will trigger more stringent requirement in the IEBC, these factors should be studied carefully by the City.

Option	Construction Includes	Construction Excludes	Anticipated Asset Life	Timeline*	Cost
Repair and Renovate	• Structural repairs • New cladding • New roof • New windows • Electrical repairs • Plumbing repairs • HVAC replacement • Fire alarm upgrade • Seismic retrofits • Move dance room out of stream buffer	• Outdated interior finishes • Flooring • Opportunity for layout revisions to increase operational efficiency • Plumbing fixtures • Electrical fixtures	40 years, but would likely need a "remodel" at approx. 15 years to address construction exclusions	2 - 2.5 years	$19-20M
Demolish and Build New	• Completely new building • New flooring and finishes • New electrical and plumbing fixtures • Energy efficiency • Flexible and built for the future		60 years	2.5 - 3 years	$21M

Timeline shown is for design, permitting, and construction after scope of project is determined. Does not include pre-design scoping and public outreach that might be necessary

Appendix A. Site Photos

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Raised bed planter at SE corner

Damage at base of shearwall sheathing

Damage at window jamb

Typical observed condition of interior shear wall, including hold down

Typical observed condition of glulam roof beam

Typical observed condition of roof sheathing

Damage at front canopy framing

Closeup of front canopy framing damage

Intersection between front canopy beam and wall

View of canopy cross beams

Damage at eave gutter to west of ballroom

Stucco trim joint without factory molded outside corner. Moisture can enter at open corner joint.

Sill flashing without sill pan and sill end dams. Sealant at corner is the only protection from moisture/dry rot

Intersection of parapets at roof showing metal surface mounted angled flashing providing protection with sealant from moisture/dry rot.

Tile cladding showing cracks. Moisture has gotten behind the tile causing cracks from thermal contraction and expansion.

Tile cladding marked for replacement. Tile has pulled away from mortar bed.

Tile at sidewalk without a 2” minimum gap and flashing. Tile grout at corner has failed and will allow moisture / dry rot to damage substrate.

Tile above entry canopy has fallen off exposing mortar bed.

Access port cut in east wall of Meeting Room (208) showing moisture / dry rot at stucco cladding intersection.

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Appendix B. Cost Estimates

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Senior Center Investigation Summary of Planning Level Costs							
Repair and Renovate Option			Planning Level Costs				
	Source	Year of Estimate	Construction	Design*	Contingency*	Escalation*	Total
CIP Renovation Project	2019-2024 CIP, Project #56	2017	$6.5M	$2.5M	$2.3M	$3.7M	$15M
Structural Repairs	HDR/RLB Investigation Report	2019	$2.5M	$1.0M	$0.8M	$0.7M	$5M
				Total for Repair and Renovate			**$20M**
Demolish and Build New Option			Planning Level Costs				
	Source	Year of Estimate	Construction	Design*	Contingency*	Escalation*	Total
Demolition and New Construction	ARC Architects Comparative Market Analysis	2022**	$12.0M	$4.6M	$3.1M	$1.0M**	**$21M**

*These costs calculated per City's standard CIP estimating tool

**ARC report escalated costs to 2022. That estimate was then escalated further to 2023 to provide a common comparison with Repair and Renovate Option

City of Redmond

Planning Level Opinion of Probable Costs

Facilities Template

Project Cost Summary

Project Name: Senior Center New Building One Floor

Project ID: 0 **Created By:** ECD

Concept No.: 0 **Date:** 8/19/2019

	Cost	Risk Assessment	Contingency %	Contingency Amount	Total
Preliminary Design	$1,922,597	Medium	30%	$576,779	**$2,500,000**
Final Design	$2,763,733	Medium	25%	$690,933	**$3,455,000**
Construction	$12,016,230	Medium	15%	$1,802,434	**$13,819,000**
Right of Way	$0	Low	20%	$0	**$0**
Estimate of Probable Cost (2017)			**Subtotal**		**$19,774,000**

Project Escalation **$988,700**

Year of cost index:	2022
Midpoint of Construction:	2023
Escalation Rate:	**5.00%**

TOTAL ESTIMATE OF PROBABLE COST **$20,762,700**

Annual Maintenance and Operations Cost **$0**

Total cost for new Senior Center, one floor, same square footage

See Detail Sheets for Assumptions

The above cost opinion is in 2017 dollars for Comparative Level Evaluation of concepts, Class 4 or Class 5 (0% to 10% design) estimate of the AACE Cost Estimate Classification System. The cost does not include financial costs or operations and maintenance costs. In addition, there are no costs for the mitigation or remediation associated with the potential discovery of hazardous materials. The order of magnitude cost opinion shown has been prepared for guidance in project evaluation at the time of the estimate. The final costs of the project will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final project scope, final project schedule, and other variable factors. As a result, the final project costs will vary from the estimate presented above. Because of these factors, funding needs must be carefully reviewed prior to making specific financial decisions or establishing final budgets.

Template Date: August 2017
Created by: CH2M for the City of Redmond

City of Redmond
Planning Level Opinion of Probable Costs
Facilities Template

Project Cost Summary

Project Name: Senior Center Structural Repairs
Project ID: 0 **Created By:** ECD
Concept No.: 0 **Date:** 10/29/2019

	Cost	Risk Assessment	Contingency %	Contingency Amount	Total
Preliminary Design	$400,205	Medium	30%	$120,061	**$521,000**
Final Design	$575,294	Medium	25%	$143,824	**$720,000**
Construction	$2,501,279	High	20%	$500,256	**$3,002,000**
Right of Way	$0	Low	20%	$0	**$0**
Estimate of Probable Cost (2017)			**Subtotal**		**$4,243,000**
Project Escalation					**$668,803**

Year of cost index:	2020
Midpoint of Construction:	2023
Escalation Rate:	**5.00%**

TOTAL ESTIMATE OF PROBABLE COST **$4,911,803**

Annual Maintenance and Operations Cost **#REF!**

Total cost for Structural Repairs

See Detail Sheets for Assumptions

The above cost opinion is in 2017 dollars for Comparative Level Evaluation of concepts, Class 4 or Class 5 (0% to 10% design) estimate of the AACE Cost Estimate Classification System. The cost does not include financial costs or operations and maintenance costs. In addition, there are no costs for the mitigation or remediation associated with the potential discovery of hazardous materials. The order of magnitude cost opinion shown has been prepared for guidance in project evaluation at the time of the estimate. The final costs of the project will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final project scope, final project schedule, and other variable factors. As a result, the final project costs will vary from the estimate presented above. Because of these factors, funding needs must be carefully reviewed prior to making specific financial decisions or establishing final budgets.

Template Date: August 2017
Created by: CH2M for the City of Redmond

REDMOND SENIOR CENTER ENVELOPE STUDY

8703 160TH AVE NE
CONCEPT ESTIMATE 11.19.19

RLB Rider Levett Bucknall

Redmond Senior Center Envelope Study
Concept Estimate 11.19.19

Project Details

Description

Basis of Estimate

This report has been prepared at the request of HDR to provide a Concept Envelope Structure Replacement Study for the Redmond Senior Center project in Redmond, WA.

The report is based upon the reports provided by HDR and jobsite meeting.

The project provides for the demolition of the envelope structure and replacement. The estimate does not include the demolition or reinstallation of new siding.

Where information was insufficient, assumptions and allowances were made based wherever possible on discussions with the architect and engineers. We have utilized our experience with similar projects, our cost data information from suppliers and subcontractors, taking into consideration the local construction market for the type and size of similar projects.

Unit pricing is based on November 2019 costs.

Construction Project Schedule:

Spring 2020
Envelope Structure Replacement: 3 months

A reasonable allowance of estimating contingency has been included to account for the level of the design and the complexity of the project.

It is assumed that the contractor will have access to the work areas as outlined in the specifications.

The costs used in this estimate are based on the assumption that competitive bids for all trades will be received, unless noted otherwise, and that the contractor will not be required to pay state prevailing wages for the areas including travel and associated fringe benefits.

COMMENTARY ON THE ESTIMATE DETAILS:

Items are represented by standard units of measure. Example; LF, SY, CY, Item, Each, etc

Unless otherwise noted in the cost report, quantities are measures as fixed in position. There is no allowance for waste in the quantity.

UNIT RATES INCLUDE:

Materials, goods, and all costs in connection therewith including material required for lapping, jointing and the like and all connections therewith such as conveyance, delivery, unloading, storing, returning, packings, handling, hoisting and lowering, square and raking straight cutting, circular cutting and splay cutting, waste of materials, protection, progressive and final cleaning, samples, guarantees and warranties, labor and all costs in connection therewith, shop fabrication work, shop drawings, as-built drawings, manuals, testing, establishment costs, overhead costs and profit, plant and equipment, and site allowances.

Redmond Senior Center Envelope Study
Concept Estimate 11.19.19

Project Details

Description

Items Specifically Included

30.00% - Phasing/Temporary Work
30.00% - Estimating Contingency
20.00% - General Conditions/Requirements
2.70% - Bonds & Insurance
10.00% - Overhead & Profit
3.00 % - Escalation

Items Specifically Excluded

. Demolition of existing siding
. Demolition of roofing
. New siding supply and installation
. New roofing
. Demolition and reconstruction of front entry canopy
. Window replacement
. Door and hardware replacement
. Renovation to the interior unless noted in estimate
. Updates to mechanical, electrical, or plumbing systems unless noted in estimate
. State sales tax
. Owner equipment & furniture relocations and replacement
. Hazardous Material Abatement
. Unsuitable/hazardous soils removal or disposal
. Utility tap fees and charges
. Owner's Insurances
. Special testing & inspections
. Permit & plan review fees
. Owner contingency
. Construction phase contingency
. Compression of Schedule
. Work outside the site boundaries unless noted otherwise
. Land and legal costs
. Architectural, Engineering and other professional fees
. Geotechnical, traffic and other studies
. Items marked as "Excl." in the estimate
. Owner Management Fees

Redmond Senior Center Envelope Study
Concept Estimate 11.19.19

Project Details

Description

Documents

See Basis of Estimate

Redmond Senior Center Envelope Study

Concept Estimate 11.19.19

Location Summary

These numbers sum to create the "raw" construction cost that the City then inserts into their planning level cost estimating tool.

GFA: Gross Floor Area
Rates Current At November 2019

Location		GFA SF	Cost/SF	Total Cost
D DEMOLITION				**298,984**
E ENVELOPE STRUCTURE UPDATES		**21,156**	**36.56**	**773,514**
ESTIMATED NET COST		**21,156**	**$50.69**	**$1,072,498**
MARGINS & ADJUSTMENTS				
Allowance for Phasing/Temporary Work	30.0 %			$321,749
Design/Estimating Contingency	30.0 %			$418,274
General Conditions/Equipment/Requirements associated with Envelope structure	20.0 %			$362,504
Insurances and Bonds	2.7 %			$58,726
Overhead and Profit associated with Envelope structure	10.0 %			$223,375
Escalation	3.0 %			$73,714
ESTIMATED TOTAL COST		**21,156**	**$119.63**	**$2,530,840**

Redmond Senior Center Envelope Study
Concept Estimate 11.19.19

Elemental Summary

Gross Floor Area: 21,156 SF
Rates Current At November 2019

Description		%	Cost/SF	Total Cost
A1010	Standard Foundations	0.7 %	$0.81	$17,186
B1020	Roof Construction	1.1 %	$1.36	$28,825
B2010	Exterior Walls	17.8 %	$21.26	$449,862
B3010	Roof Coverings	1.0 %	$1.21	$25,504
C3010	Wall Finishes	0.2 %	$0.24	$5,000
C3020	Floor Finishes	1.7 %	$2.01	$42,500
C3030	Ceiling Finishes	0.5 %	$0.57	$12,000
D2010	Plumbing Fixtures	1.2 %	$1.47	$31,134
D4010	Sprinklers	0.2 %	$0.24	$5,000
D5010	Electrical Service & Distribution	4.2 %	$4.99	$105,524
D5030	Communications & Security	0.5 %	$0.61	$12,973
E1020	Institutional Equipment	0.2 %	$0.24	$5,000
E2010	Fixed Furnishings	0.2 %	$0.28	$6,000
F2010	Building Elements Demolition	11.8 %	$14.13	$298,984
G1020	Site Demolition and Relocations	0.2 %	$0.29	$6,119
G2040	Site Development	0.3 %	$0.32	$6,780
G2050	Landscaping	0.6 %	$0.67	$14,107
PH	Phasing / Temporary Work	12.7 %	$15.21	$321,749
GC	General Conditions	14.3 %	$17.13	$362,504
IN	Insurances and Bonds	2.3 %	$2.78	$58,726
OH	Overhead and Profit	8.8 %	$10.56	$223,375
EC	Estimating Contingency	16.5 %	$19.77	$418,274
EL	Escalation	2.9 %	$3.48	$73,714
	ESTIMATED TOTAL COST		$119.63	$2,530,840

Redmond Senior Center Envelope Study

Concept Estimate 11.19.19

Estimate Details

D DEMOLITION

Rates Current At November 2019

Description		Unit	Qty	Rate	Total
F2010	**Building Elements Demolition**				
1	Demo plywood sheating on exterior walls	SF	20,756.0	2.00	41,512
2	Demo stud walls/insulation/interior GWB and wall finish (30% of wall area)	SF	10,378.0	7.50	77,835
3	Shore walls/roof at wall replacement	SF	10,378.0	6.00	62,268
4	Demo and remove canopy (roofing and structure)	SF	797.0	10.00	7,970
5	Demo and remove greenhouse	SF	303.0	12.00	3,636
6	Demo building structure at Game area	SF	565.0	18.00	10,170
7	Make electrical safe at Game area demo	SF	565.0	5.00	2,825
29	Demo and make safe electrical at full demo of wall area	SF	10,378.0	5.00	51,890
30	Demo and cap plumbing at full demo of wall area	SF	10,378.0	1.00	10,378
31	Allowance for misc. floor demo associated with wall replacement	SF	5,000.0	1.50	7,500
32	Allowance to temporary relocate kitchen equipment	LS	1.0	5,000.00	5,000
35	Temporary relocation of electrical panels	LS	1.0	8,000.00	8,000
44	Allowance for misc. demo	LS	1.0	10,000.00	10,000
	Building Elements Demolition				***$298,984***
	DEMOLITION				***$298,984***

Redmond Senior Center Envelope Study

Concept Estimate 11.19.19

Estimate Details

GFA: 21,156 SF Cost/SF: $36.56
Rates Current At November 2019

E ENVELOPE STRUCTURE UPDATES

Description		Unit	Qty	Rate	Total
A1010	**Standard Foundations**				
8	New foundation at new wall Game area (tie into slab/footings)	LF	26.0	265.00	6,890
23	New CIP wall at landscape planter including dowels	SF	88.0	105.00	9,240
24	Waterproof concrete wall at landscape planter	SF	88.0	12.00	1,056
	Standard Foundations			***$0.81/SF***	***$17,186***
B1020	**Roof Construction**				
9	Roof structure updates at Game area wall	LF	26.0	150.00	3,900
10	Shore wall/roof at Game area	LS	1.0	5,000.00	5,000
42	New wood framed canopy structure including posts, beams, purlins	SF	797.0	25.00	19,925
	Roof Construction			***$1.36/SF***	***$28,825***
B2010	**Exterior Walls**				
11	2x6 wall framing at Game area	SF	492.0	15.00	7,380
12	3/4" Plywood at Game area wall	SF	492.0	4.00	1,968
13	Rainscreen system at Game area wall	SF	492.0	8.00	3,936
14	Wall insulation at ext. wall	SF	10,870.0	1.75	19,023
15	5/8" GWB at ext. wall	SF	10,870.0	3.00	32,610
16	Paint ext wall GWB	SF	10,870.0	1.45	15,762
17	2x6 wall framing including new plate and anchors at wall replacment	SF	10,378.0	16.00	166,048
18	3/4" Plywood at wall replacement	SF	10,378.0	4.25	44,107
19	Rainscreen system at wall replacement	SF	10,378.0	8.50	88,213
20	Weather barrier at wall replacement	SF	10,378.0	4.75	49,296
21	Weather barrier at Game area wall	SF	492.0	4.50	2,214
22	Patch/repair wall at Greenhouse removal	LF	40.0	75.00	3,000
49	Caulkings/Sealants	SF	10,870.0	1.50	16,305
	Exterior Walls			***$21.26/SF***	***$449,862***
B3010	**Roof Coverings**				
43	New metal roofing, trims, gutters, downspouts, flashings at canopy	SF	797.0	32.00	25,504
	Roof Coverings			***$1.21/SF***	***$25,504***
C3010	**Wall Finishes**				
50	Allowance for misc. wall finishes upgrades at wall replacement	LS	1.0	5,000.00	5,000
	Wall Finishes			***$0.24/SF***	***$5,000***
C3020	**Floor Finishes**				
38	Allowance for new replacement flooring/base	SF	5,000.0	8.50	42,500
	Floor Finishes			***$2.01/SF***	***$42,500***
C3030	**Ceiling Finishes**				
41	Allowance for patching of ceilings at wall replacement	LS	1.0	12,000.00	12,000
	Ceiling Finishes			***$0.57/SF***	***$12,000***

Redmond Senior Center Envelope Study

Concept Estimate 11.19.19

Estimate Details

GFA: 21,156 SF Cost/SF: $36.56
Rates Current At November 2019

E ENVELOPE STRUCTURE UPDATES (continued)

Description	Unit	Qty	Rate	Total
D2010 Plumbing Fixtures				
37 New plumbing as required at wall replacement	SF	10,378.0	3.00	31,134
Plumbing Fixtures			***$1.47/SF***	***$31,134***
D4010 Sprinklers				
47 Allowance for fire protection system updates related to game area demo/wall replacement	LS	1.0	5,000.00	5,000
Sprinklers			***$0.24/SF***	***$5,000***
D5010 Electrical Service & Distribution				
34 Reintallation of electrical panels	LS	1.0	12,500.00	12,500
36 Temporary power during relocation of panels	LS	1.0	5,000.00	5,000
39 New electrical wiring/conduit/switches at wall replacement	SF	10,378.0	8.00	83,024
46 Allowance to update electrical and low voltage at Game area	LS	1.0	5,000.00	5,000
Electrical Service & Distribution			***$4.99/SF***	***$105,524***
D5030 Communications & Security				
40 New low voltage at wall replacement	SF	10,378.0	1.25	12,973
Communications & Security			***$0.61/SF***	***$12,973***
E1020 Institutional Equipment				
33 Reinstallation and hookup of kitchen counter/equipment	LS	1.0	5,000.00	5,000
Institutional Equipment			***$0.24/SF***	***$5,000***
E2010 Fixed Furnishings				
48 Allowance for new casework	LS	1.0	6,000.00	6,000
Fixed Furnishings			***$0.28/SF***	***$6,000***
G1020 Site Demolition and Relocations				
25 Remove plantings at planter	SF	1,147.0	2.00	2,294
26 Remove soils at planter	CY	85.0	45.00	3,825
Site Demolition and Relocations			***$0.29/SF***	***$6,119***
G2040 Site Development				
45 Allowance for misc. landscape and hardscape at Game area structure demo	SF	565.0	12.00	6,780
Site Development			***$0.32/SF***	***$6,780***
G2050 Landscaping				
27 Install new soils at planter	CY	85.0	85.00	7,225
28 New plantings/mulch at planter	SF	1,147.0	6.00	6,882
Landscaping			***$0.67/SF***	***$14,107***
ENVELOPE STRUCTURE UPDATES			***$36.56/SF***	***$773,514***

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REDMOND SENIOR CENTER COMPARATIVE MARKET ANALYSIS

City of Redmond Project # 60011921.18.01.02

Prepared by ARC Architects

August 16, 2019

COMPARABLES MAP

COMPARABLE PROJECT NAME		Escalated Construction Cost (3% annual 2007-2018, 5% annual 2018-2021, 7% annual 2022)															
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Rosehill Commmunity Center	Building Cost					$6,214,000	$6,400,420	$6,592,433	$6,790,206	$6,993,912	$7,203,729	$7,419,841	$7,790,833	$8,180,375	$8,589,393	$9,018,863	$9,650,183
1 level, 30,000sf	Building Cost per SF					$207	$213	$220	$226	$233	$240	$247	$260	$273	$286	$301	$322
	Site Cost					$2,520,000	$2,595,600	$2,673,468	$2,753,672	$2,836,282	$2,921,371	$3,009,012	$3,159,462	$3,317,435	$3,483,307	$3,657,473	$3,913,496
	Total Cost					**$8,734,000**	**$8,996,020**	**$9,265,901**	**$9,543,878**	**$9,830,194**	**$10,125,100**	**$10,428,853**	**$10,950,295**	**$11,497,810**	**$12,072,701**	**$12,676,336**	**$13,563,679**
South Bellevue Community Center	Building Cost	$7,414,408	$7,636,840	$7,865,945	$8,101,924	$8,344,982	$8,595,331	$8,853,191	$9,118,787	$9,392,350	$9,674,121	$9,964,344	$10,462,562	$10,985,690	$11,534,974	$12,111,723	$12,959,543
3 level, 32,000sf	Building Cost per SF	$232	$239	$246	$253	$261	$269	$277	$285	$294	$302	$311	$327	$343	$360	$378	$405
	Site Cost	$1,616,592	$1,665,090	$1,715,042	$1,766,494	$1,819,489	$1,874,073	$1,930,295	$1,988,204	$2,047,850	$2,109,286	$2,172,564	$2,281,193	$2,395,252	$2,515,015	$2,640,766	$2,825,619
	Total Cost	**$9,031,000**	**$9,301,930**	**$9,580,988**	**$9,868,418**	**$10,164,470**	**$10,469,404**	**$10,783,486**	**$11,106,991**	**$11,440,201**	**$11,783,407**	**$12,136,909**	**$12,743,754**	**$13,380,942**	**$14,049,989**	**$14,752,489**	**$15,785,163**
Rainier Beach Community Center	Building Cost							$14,567,457	$15,004,481	$15,454,615	$15,918,254	$16,395,801	$17,215,591	$18,076,371	$18,980,189	$19,929,199	$21,324,243
1 level, 48,000sf	Building Cost per SF							$303	$313	$322	$332	$342	$359	$377	$395	$415	$444
	Site Cost							$1,982,543	$2,042,019	$2,103,280	$2,166,378	$2,231,370	$2,342,938	$2,460,085	$2,583,089	$2,712,244	$2,902,101
	Total Cost							**$16,550,000**	**$17,046,500**	**$17,557,895**	**$18,084,632**	**$18,627,171**	**$19,558,529**	**$20,536,456**	**$21,563,279**	**$22,641,443**	**$24,226,344**
Auburn Community Center	Building Cost										$4,680,699	$4,821,120	$5,062,176	$5,315,285	$5,581,049	$5,860,101	$6,270,309
1 level, 21,600sf	Building Cost per SF										$217	$223	$234	$246	$258	$271	$290
	Site Cost										$635,301	$654,360	$687,078	$721,432	$757,504	$795,379	$851,055
	Total Cost										**$5,316,000**	**$5,475,480**	**$5,749,254**	**$6,036,717**	**$6,338,553**	**$6,655,480**	**$7,121,364**
Suquamish Youth & Fitness Center	Building Cost									$9,064,921	$9,336,869	$9,616,975	$10,097,823	$10,602,715	$11,132,850	$11,689,493	$12,507,757
2 level, 35,400sf	Building Cost per SF									$256	$264	$272	$285	$300	$314	$330	$353
	Site Cost									$1,361,079	$1,401,911	$1,443,969	$1,516,167	$1,591,976	$1,671,574	$1,755,153	$1,878,014
	Total Cost									**$10,426,000**	**$10,738,780**	**$11,060,943**	**$11,613,991**	**$12,194,690**	**$12,804,425**	**$13,444,646**	**$14,385,771**
Eastside Tacoma Community Center	Building Cost												$23,654,666	$24,837,399	$26,079,269	$27,383,233	$29,300,059
2 level, 55,400sf	Building Cost per SF												$427	$448	$471	$494	$529
	Site Cost												$2,902,752	$3,047,890	$3,200,284	$3,360,298	$3,595,519
	Total Cost												**$26,557,418**	**$27,885,289**	**$29,279,553**	**$30,743,531**	**$32,895,578**

REDMOND SENIOR CENTER OPTION 1

21,156	Building Square Footage (SF)
$390.57	Median Comparative Market Analysis Building Cost per SF
$8,262,878	Building Cost
$2,660,967	Median Comparative Market Analysis Site Costs
$10,923,845	TOTAL ESTIMATED CONSTRUCTION COSTS
$4,915,730	Soft Costs (45% of Construction Costs)
$15,839,576	**TOTAL ESTIMATED PROJECT COSTS**

This number used to create the "raw" construction cost (+ sales tax) that the City then inserts into their planning level cost estimating tool.

REDMOND SENIOR CENTER OPTION 2

42,312	Building Square Footage (SF)
$390.57	Median Comparative Market Analysis Building Cost per SF
$16,525,756	Building Cost
$2,660,967	Median Comparative Market Analysis Site Costs
$19,186,723	TOTAL ESTIMATED CONSTRUCTION COSTS
$8,634,025	Soft Costs (45% of Construction Costs)
$27,820,749	**TOTAL ESTIMATED PROJECT COSTS**

Median Costs	
Building Cost	$15,335,349
Building Cost per SF	$390.57
Site Cost	$2,660,967