

## Capital Project Stage Gate II: OSU-Cascades Academic Building 2

### BACKGROUND

The OSU-Cascades Academic Building 2 project is included in the Ten-Year Capital Forecast. On July 30, 2019, the Finance & Administrative Committee advanced the project to the design development phase. Schematic design is complete and design development is currently underway. The following information is provided for the committee and Board's consideration of advancing this project to the construction phase pursuant to the Board's [Approval of Capital Projects policy](#).

### PROJECT DESCRIPTION, SCOPE AND PROGRAM

The current 10-acre campus at OSU-Cascades includes an academic building (Tykeson Hall), a residence hall, and a dining and classroom building (Obsidian Hall). Academic Building 2 (AB2) will be the first building on the recently reclaimed land that will allow OSU-Cascades' expansion to 56 acres.

AB2 will grow OSU-Cascades' teaching and research capacity for STEAM (science, technology, engineering, arts, and math) disciplines, including specific programs in Engineering, Physical Therapy/Kinesiology, Outdoor Products and Arts Media and Technology. The building will accommodate an additional 500 students at OSU-Cascades and house general-purpose classrooms, flex-laboratories, makerspace, and offices. At 50,000 square feet (SF), AB2 will incorporate innovative use of Oregon and regional manufactured wood products in the structure and finishes. The design for AB2 is intended to be prototypical, allowing future academic buildings on the campus to leverage programming, design and construction lessons, thereby reducing costs and improving building function and aesthetics.

The project will also construct new onsite infrastructure including utilities, landscaping, and roadways necessary to support AB2. A new road accessing the campus from Simpson Avenue will add another entrance to the expanding campus. Site work in the project includes an amphitheater and bowl green adjacent to AB2. AB2 and the associated infrastructure and landscape will showcase the aesthetic and sustainability goals as set forth in the OSU-Cascades Long Range Development Plan (LRDP) while offering visitors exceptional views of the "bowl," natural scenery and skyline.

In addition to the onsite infrastructure, the OSU-Cascades [Master Plan](#), as approved by the city of Bend, requires OSU-Cascades to build offsite infrastructure to mitigate traffic impacts caused by AB2 development. The new offsite infrastructure includes installation of a roundabout as well as improvements at the Simpson Road entrance.

Through our schematic design process, we have chosen a mass timber structural system for AB2. The design team is currently evaluating mass plywood panels and cross-laminated timber as two possible mass timber material options. Highly efficient hydronic mechanical systems will help AB2 meet Energy Trust of Oregon "[Path to Net Zero](#)" requirements.

### ESTIMATED TOTAL PROJECT BUDGET, FUNDING AND TIMELINE

Academic Building 2, and the associated on- and off-site infrastructure, has a project cost of \$50.2M, including design, construction, and contingencies. The project is funded by XI-Q bonds

(\$29M), XI-G bonds (\$10M), gift funds (\$10M) and student fee reserves (\$1.2M). During its May 2019 meeting, the Board approved \$4.4M of the AB2 funding to construct the building's pad and associated parking, landscaping, and geothermal field in the same contract with the Cascades Campus Site Reclamation project (see Table 1 below).

**Table 1**

| <u>Project Funding</u>         |            |            |       |              |         | <u>Contracting Strategy</u> |                            |            |       |              |         |
|--------------------------------|------------|------------|-------|--------------|---------|-----------------------------|----------------------------|------------|-------|--------------|---------|
|                                | XI-Q Bonds | XI-G Bonds | Gifts | Student Fees | TOTAL   |                             | XI-Q Bonds                 | XI-G Bonds | Gifts | Student Fees | TOTAL   |
| 46 Acre Site Reclamation (SRR) | \$9M       |            |       |              | \$9M    | SRR & AB2 Site Work CM/GC   | \$9M (SRR)<br>\$4.4M (AB2) |            |       |              | \$13.4M |
| Academic Building 2 (AB2)      | \$29M      | \$10M      | \$10M | \$1.2M       | \$50.2M | AB2 CM/GC                   | \$24.6M                    | \$10M      | \$10M | \$1.2M       | \$45.8M |
| TOTAL                          | \$38M      | \$10M      | \$10M | \$1.2M       | \$59.2M | TOTAL                       | \$38M                      | \$10M      | \$10M | \$1.2M       | \$59.2M |

The AB2 project was programmed in summer 2018, starts construction spring 2020, and is expected to be completed in the summer 2021.

**IDENTIFICATION OF RISKS AND PROPOSED CONTINGENCY**

SRG Architects was chosen as the AB2 project design team following a design competition process that highlighted not only SRG's ability to design an appealing building but illustrate their passion for the project and problem-solving skills. Swinerton Builders was selected and contracted early in the design process through a Construction Manager / General Contractor (CMGC) contract, which increases collaboration between trades contractors and reduces costs. Swinerton eclipses the industry in mass timber experience having completed five cross-laminated timber (CLT) projects with nine more projects in various states of execution. This experience will be leveraged on the project, and critical trade partners will be contracted early to utilize a target value design (TVD) process that aligns individual work packages with allowable budgets to avoid cost over runs and reduce risk.

In consideration of the risks described in the following table, the contingencies for design, construction, and owner are 2%, 3%, and 4.5%.

| Risks                   | Consequences  | Mitigation Strategy   |
|-------------------------|---|---|
| Construction escalation | Cost of building construction is higher than our budget allows. | 1. Utilize 9.5% contingency (total of the design, construction and owner contingencies for this project).<br>2. Design AB2 to allow for simple low impact scope adjustments as more is known about cost.<br>3. Have a scope priority program that guides the scope adjustments, as more is known about costs. |

|  |   |  |
|--|---|--|
|  |   | 4. Building program developed for 50K SF.  |
| <i>Building design may be higher \$/SF than budgeted</i>           | Cost of building construction is higher than our budget allows.                   | <ol style="list-style-type: none"> <li>1. Include design cost target within the building design RFP process.</li> <li>2. Include cost targeting in design process as part of design RFP.</li> <li>3. Set clear expectation with SRG design team on the funding available.</li> <li>4. Utilize Target Value Design process to drive choices between building system in order keep each system in the building within its budget amount.</li> </ol> <p>3. Building program developed for 50K SF.</p> |
| <i>Offsite infrastructure exceeds estimates</i>                    | Rebalance project budgets and allocate funds appropriately to cover the increase. | <ol style="list-style-type: none"> <li>1. Get 3rd party estimates of offsite infrastructure costs ASAP.</li> <li>2. Lock in design details as soon as possible with city.</li> <li>3. Utilize a total 9.5% contingency.</li> <li>4. Adjust scope as necessary on other portions of AB2 project.</li> </ol>   |
| <i>Schedule dependency risks – AB2 is dependent on SRR project</i> | Construction for AB2 will not start on time.                                      | <ol style="list-style-type: none"> <li>1. Integrate the Site Rec/Rem schedule with the AB2 schedule.</li> <li>2. Focus Site Rec/Rem resources on this critical path.</li> <li>3. Carve out the AB2 pad as a separate scope and drive schedule appropriately.</li> </ol>  |
| <i>Mass timber construction issues</i>                             | Significant rework and schedule delays causing budget overruns.                   | <ol style="list-style-type: none"> <li>1. Meet with the Forest Science Complex construction team to understand their experience/issues on the project.</li> <li>2. Utilize a CMGC with extensive mass timber experience.</li> <li>3. Select mass timber material and manufacturer with proven history of producing a quality product.</li> </ol>   |

**TOTAL COST OF OWNERSHIP**

No OSU debt will be used to fund this project. Estimated operating costs for AB2 in current dollars are \$364,000/year for utilities, maintenance, and other operations. This amount is already carried in OSU-Cascades operating 30-year forecast. Capital renewal cost over the life of the asset is also carried in the 30-year operating forecast for OSU-Cascades.

| <b>Education and General Fund – Forecasted Total Cost of Ownership<br/>OSU-Cascades Academic Building 2</b> |                      |
|---|----------------------|
| <b>ITEM</b>   | <b>COST</b>          |
| <b>Total project cost</b> (state backed bonds and gift funds)   | <b>\$50,200,000</b>  |
| Total debt service for the improvements   | \$0                  |
| Personnel (25 yrs, \$149K/yr - escalated 3% annually)   | \$5,880,709          |
| Operations and maintenance (25 yrs, \$215K/yr - escalated 3% annually)                                      | \$7,824,314          |
| Building Reserves/Capital renewal (25 yrs, \$420K/yr - 1% of owned value) <sup>1</sup>                      | \$10,500,000         |
| <b>Total cost of ownership</b>  | <b>\$24,205,023</b>  |
| Tuition revenue – enrollment associated with additional capacity (25 yrs)                                   | \$25,919,108         |
| <b>Net cost of ownership</b>  | <b>(\$1,714,085)</b> |

<sup>1</sup>Capital renewal is calculated based on each building’s estimated lifespan and associated depreciation, with a 3% annual escalation

**RECOMMENDATION**

Staff recommend that the Finance & Administration Committee recommend to the Board approval of a total capital project budget of \$50.2M for the OSU-Cascades Academic Building 2 project and advancing of the project to construction phase.