**Facilities Operations**  
**ARCHITECTURE, ENGINEERING AND CONSTRUCTION**  

**Project Description**  
The project includes renovation of approximately 176,000 gross square feet and an addition of approximately 48,000 gross square feet. The renovation has addressed deferred maintenance, including exterior envelope repairs and life safety, electrical, mechanical and plumbing system improvements. The project has created a more welcoming, accessible facility with an improved patient entrance; modern teaching clinics with flexible furniture and equipment that can be reconfigured as needs change. Open, flexible research space has been created to support the school's world class research along with space designed to foster collaboration among faculty and students. The new special needs/inter-professional care clinic will treat patients with complex medical conditions and disabilities.

**Infill Space**  
Existing courtyard space is repurposed to provide additional building square footage without disturbing undeveloped land.

**Accessible Outdoor Open Space**  
The courtyard includes comfortable outdoor space provided for building occupants and the campus community to gather and connect.

**Visual Connection to the Community**  
Collaborative areas added to the ground floor of the existing commons area provide a more inviting visual connection to campus.

**Sun Shading**  
Vertical sun shading provides glare control and shading from low sun angles on the west side of the courtyard addition.

**Natural Daylight**  
Natural daylight reduces lighting load and electrical consumption. Daylight from the courtyard renovation addition is brought further into the building spaces through use of interior windows.

**Flexible Laboratory Space**  
- Open laboratory spaces, mobile lab stations and flexible furniture systems allow future requirements.
- Overhead service distribution provides power, data and other services to laboratory stations further enhance flexibility.

**Enhanced Accessibility**  
The new north addition includes a covered patient drop off and accessible entrance.

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**Sustainability Facts**

**Dental Bldg & Kellogg Institute (Addition Only)**

<table>
<thead>
<tr>
<th>Building Use</th>
<th>Laboratory/Offer/Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Ann Arbor, Michigan</td>
</tr>
<tr>
<td>Size</td>
<td>48,000 sf Addition</td>
</tr>
<tr>
<td>LEED version</td>
<td>v3.005</td>
</tr>
</tbody>
</table>

**Energy Use**

- **Total thermal energy savings:** 747,126 kWh
- **Total electrical savings:** 38,928 kWh
- **Total gas savings:** 96,291 mcft
- **Total water savings:** 3,782,137 gal
- **Energy cost savings compared to ASHRAE baseline:** 22%

**Glazing - Visible Light Transmittance (VT)***

- **Wall assembly - below grade:** 0.55
- **Wall assembly - above grade steel frame:** 0.64

**Wall assembly - concrete**

- **U-value:** 0.30
- **Solar Heat Gain Coefficient (SHGC):** 0.45

**Non-configuration materials diverted from landfill (addition):** 740

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**Project Team**

- **Owner:** University of Michigan - School of Dentistry
- **Architect:** SmithGroup JJR
- **Engineer:** John Scharberg & Associates
- **Construction Manager:** McMillan Construction Company

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**Design Phase:** 09/2018 - 03/2019

**Construction Period:** 07/2019 - 06/2022

* The higher the VT value the more daylight in the space. VT is measured between 0 and 1
** The lower the U-value and SHGC the more energy efficient the window
*** The higher the VT value the more daylight in the space.