The University of Texas at Arlington Life Sciences Building [LSB] was designed in the late 1960s and several 100+ interior renovations over the life of the building. The building and its infrastructure are currently under construction to create a higher performance, healthier and more resilient building.

Per the RFQ, the Design Team was challenged to update the existing building systems as part of the deferred maintenance. Air handlers and electrical gear are spread throughout the building and are not easily accessible with tight constraints in the basement. The engineers address the quantifiable, intangible, and economic impacts of systems with an aim toward designing the most energy-efficient and budget-conscious systems that meet this project needs.

In doing so, HVAC systems will be replaced to meet ventilation and air quality standards, and recent code requirements. New rooftop AHUs are manifold together for redundancy and variable volume air terminals are utilized with repurposed existing ducted areas. Additionally, the use of active chilled beams reduces the overall sizes of AHU (reduction in electrical energy) that equates to smaller ductwork in ceiling plenum, and use of chilled water piping for cooling spaces.

Electrical system transformers moved from within the interior basement to pad-mounted exterior location. New normal and emergency gear is located on first floor and additional electrical rooms are stacked to feed instructional and research labs, teaching classrooms, and faculty and staff offices. Additional capacity will be provided to allow future flexibility and emergency generators to keep the entire building active if loss of power occurs. Additionally, all existing florescent lighting fixtures will be replaced and will be upgraded to energy efficient LED fixtures. Fixture updates will comprise of code requirements for occupancy/vacancy sensors throughout.

The LSB exterior façade will be refreshed with new fluid-applied membrane air barrier system. Additionally, all fenestrations (existing single pane glazing system) will be replaced with energy efficient and thermally broken glazing system. The north addition will consist of new full height curtainwall glazing system that will reflect northern light deep into the open research labs. Furthermore, additional interior glazing will be provided to allow natural daylight to funnel deep inside the footprint of the building. One key feature is the off-center lightwell that is created with the new southeast addition as it intersects with the old façade.

Lastly, the site embraces the requirements within Campus Masterplan. Native plantings and trees are utilized to define pedestrian circulation routes in and around the building. Rainwater harvesting is integrated into the southern plantings, which incorporates filtration through the bioswale, prior to entering in the storm system and Johnson Creek watershed.