CAMPUS SUSTAINABILITY
AT ARIZONA STATE UNIVERSITY

The Biodesign Institute
at
Arizona State University
Building A

Achieving USGBC
LEED Gold . . .

Sustainable Sites
- Site Selection
- Development Density
- Alternative Transportation
- Site Development
- Stormwater Design
- Heat Island Effect
- Light Pollution Reduction

Water Efficiency
- Landscaping
- Use Reduction

Energy & Atmosphere
- Optimize Energy Performance
- Enhanced Refrigerant Management
- Green Power

Materials & Resources
- Storage & Collection of Recyclables
- Recycled Content
- Regional Materials

Indoor Environmental Quality
- Outdoor Air Delivery Monitoring
- Increased Ventilation
- Low-Emitting Materials
- Indoor Chemical & Pollutant source control
- Controlability of Systems
- Thermal Comfort
- Daylight & Views

Innovation & Design Process
- Innovation in Design
- LEED Accredited Professional
Environmentally friendly features incorporated into the design of Biodesign A range in scale from site and urban planning to interior finishes. The building met LEED prerequisites including Construction Activity Pollution Prevention, Fundamental Commissioning of the Building Energy Systems, Minimum Energy Performance, Fundamental Refrigerant Management, Storage & Collection of Recyclables, Minimum IAQ Performance, and Environmental Tobacco Smoke Control, and was credited with 40 of the possible 69 points. Following are a few of the highlights that earned Biodesign A its LEED Gold designation:

Sustainable Sites - Over 83% of the site area was restored using native and/or adaptive plantings. In addition, vegetated open space is almost 2x greater than the building footprint, thereby maximizing open space. Storm water control measures include a contact filtration bioswale, catch basins with inlet infiltration inserts and drainage piping that diverts storm water to a retention pond. The pond is designed to capture 100% of the rainfall from a 100-year, 2-hour storm.

Water Efficiency - A 50% reduction in landscape water use was obtained by installing high efficiency drip irrigation supplied by greywater captured on-site. This greywater consists primarily of recycled HVAC condensate from Building B cooling units and is stored in a 5,000 gallon underground fiberglass storage tank.

Energy & Atmosphere - Energy efficiency measures include a CHP plant, an improved thermal envelope, fixed exterior shades and occupancy sensors.

Indoor Environmental Quality - Breathing-zone outdoor air ventilation rates, in all occupied spaces, were designed to exceed minimum ASHRAE standards by at least 30%. For lab areas, the air handling system consists of a 100% outside and exhaust air stream with a one-time pass system and no return air grills. For office spaces, outside and exhaust air handling units use both return fans and return dampers.

In addition to adhering to LEED standards, the Biodesign buildings were designed to foster cross-disciplinary interaction. Their height was limited to four levels to encourage using stairs, rather than elevators. Glass-walled laboratories and office space offer transparent views of each other and the atrium that separates them, encouraging researchers to interact with other groups throughout the buildings.

“What we created was the idea of a large connecting space — or, as we call it, a three-dimensional collaborative space. So all the floors are associated with an atrium that goes north and south — and then, in the future, east and west — so that everyone is connected in a bigger sense within the buildings.”

Larry Lord,
Science Principal,
Lord Aeck & Sargent,
Architectural Firm