

Queen Creek Library: Green Building

The Queen Creek Library is the first municipal building in the Town of Queen Creek constructed under the Town's Green Building Policy and registered under the U.S Green Building Council to apply for its Leadership in Energy and Environmental Design (LEED) certification program.

What is a Green Building?

LEED is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of green buildings. LEED promotes a whole-building approach to sustainability. It encourages global adoption of sustainable green building and development practices through universally understood tools and performance criteria. (U.S. Green Building Council)

A point rating system is used to qualify projects for LEED certification and compliance with the Town's Green Building Policy. Points are given in the following environmental impact areas:

- Sustainable Sites
- Water Efficiency
- Energy & Atmosphere
- Indoor Environmental Quality
- Innovation & Design Process

Achieving LEED certification for all new and retrofit public construction projects is required by the federal government as well as many state governments, including Arizona.

Queen Creek's Green Building Policy, adopted in 2007, requires new public construction and major remodels of greater than 5,000 square feet to be built to LEED-certified standards. The private sector is encouraged to voluntarily apply LEED principles in the design, construction and operation of buildings within Queen Creek.

Benefits of Green Buildings

Using sustainable practices in building construction:

- Conserves natural resources
- Improves air and water quality as well as the thermal and acoustic environments within the building
- Reduces solid waste
- Saves costs from reduced energy, water and waste
- Reduces operations and maintenance costs
- Enhances productivity and health for those working in and using the building
- Contributes to overall quality of life

Cost of Sustainable Construction

It's estimated that the 2 percent increase in up-front construction costs for making the \$18 million library a green building will be quickly recouped by the Town. The green features, including energy and water-efficient systems, will generate a savings over years to come.

National experience with LEED-certified buildings shows a payback on additional design and construction costs in less than 10 years then continued savings over the life of the building.



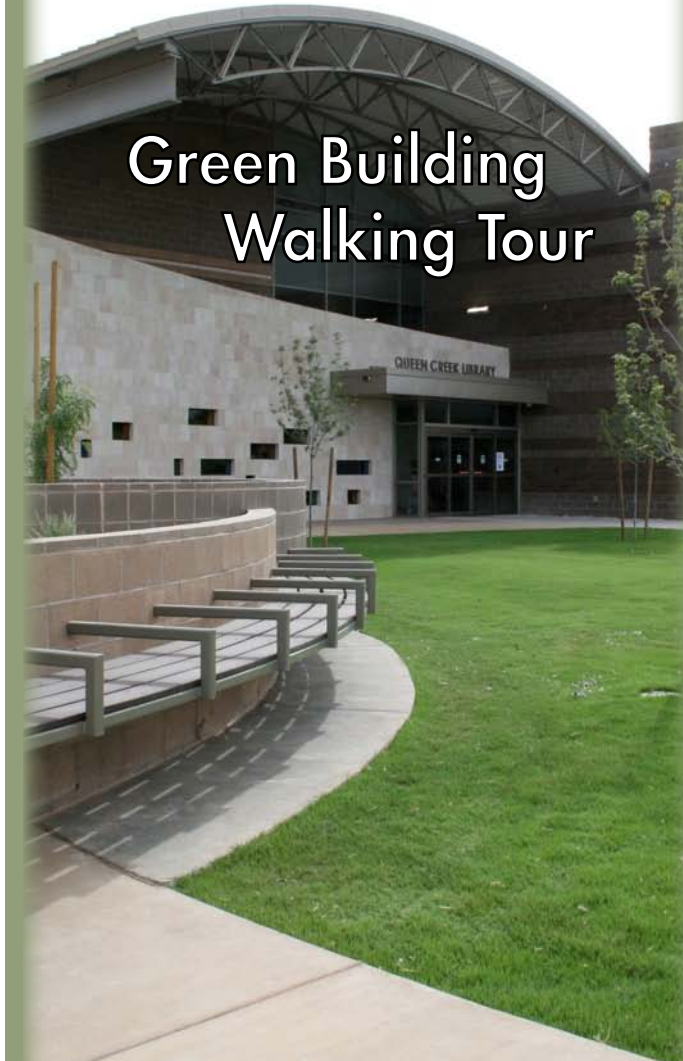
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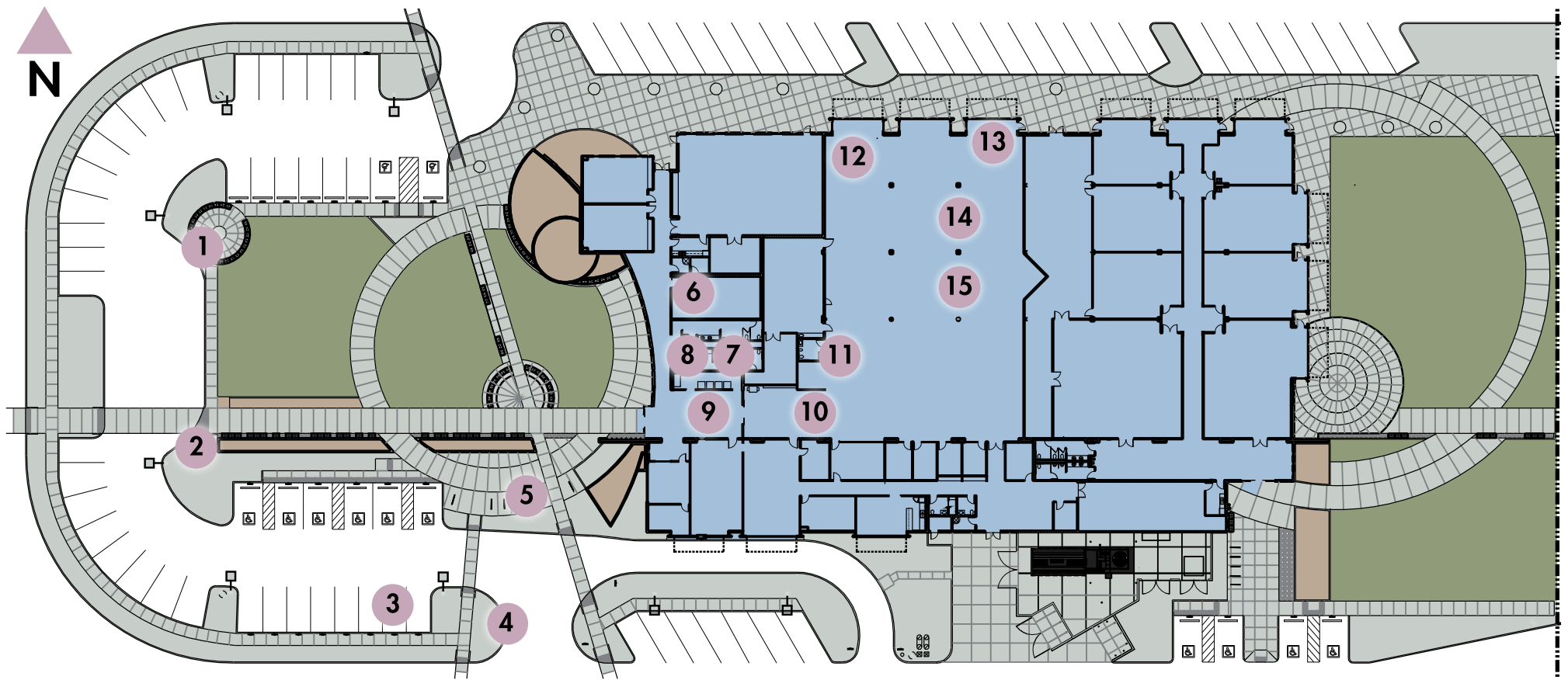
www.queencreek.org

Queen Creek LIBRARY



Green Building Walking Tour





Queen Creek Library Self-Guided Green Building Walking Tour

- 1** - Solar reflective roofing materials diminish the heat-island effect of the building.
- 2** - Exterior lighting is designed to reduce light pollution.
- 3** - Alternative-fuel parking encourages the use of alternative-fuel vehicles to reduce pollution impacts from auto use.
- 4** - The underground storm-water retention system prevents water that may be polluted with oil from nearby streets from reaching the groundwater.
- 5** - Bicycle racks encourage patrons and staff to use alternative modes of transportation to commute to the library site.
- 6** - The library is cooled using a highly energy-efficient electromagnetic chiller. The bearings of the machine are held in a magnetic field without oil. This means that the moving pieces have no friction or drag when they start up, lowering the amount of energy used by the machine.
- 7** - The building's plumbing fixtures are water-efficient, reducing water use by 20 percent.
- 8** - Hand dryers in the restrooms reduce paper waste.
- 9** - All construction waste was sorted, diverted from disposal and recycled.
- 10** - Certified sustainably harvested wood and recycled and regional materials were used in construction.
- 11** - Green housekeeping products are used to clean and maintain the building.
- 12** - All the paints, finishes, carpets and adhesives used in the library interior are low-volatile compound organic compound (VOC)-emitting, which means they do not emit toxic fumes.
- 13** - Library windows are designed to provide natural light to offset the use of electrical lighting and are shaded with overhangs and awnings.
- 14** - The library is heated using hot water, which is more stable than electrical heat and allows for finer control of the building temperature.
- 15** - All lighting fixtures in the library use compact fluorescent or low-electrical-use bulbs.