Integrating LEED® High-Performance Building Elements into The Pomeroy Project in Mesa, Arizona.

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Sustainable Urban Living in Mesa, Arizona

Across the rapidly expanding cities of the American Southwest, developers are facing a unique sustainability challenge: how to create dense urban housing that responds to extreme heat, water scarcity, and growing energy demand. In Mesa, Arizona, one new residential development is demonstrating how thoughtful design and green building strategies can reshape the future of desert urban living.

The Pomeroy, a modern multifamily residential community, has been developed with a strong focus on sustainability and long-term environmental performance. The project incorporates a comprehensive set of strategies aligned with **LEED v4 for Building Design and Construction**, addressing energy efficiency, water conservation, materials selection, and healthy indoor environments.

Located in the rapidly evolving East Valley region of the Phoenix metropolitan area, The Pomeroy offers residents a contemporary living environment that integrates environmental stewardship with urban convenience. The building reflects a broader shift within the housing market: sustainability is no longer a niche feature…it is becoming a core expectation for residential development.

Rather than approaching sustainability as a checklist, Green Ideas Building Science Consultants has directed the project team towards integrated green design principles throughout the building—from site planning and construction practices to building operations and resident experience. The result is a high-performance building designed specifically for the environmental conditions of the Sonoran Desert.

Project Overview

Mesa is one of the fastest-growing cities in the United States, with strong economic growth and expanding urban infrastructure. As the city grows, the need for efficient multifamily housing close to employment centers and transportation corridors is becoming increasingly important.

The Pomeroy responds to this demand by delivering a thoughtfully designed residential community that supports both density and livability. The project provides modern apartment units complemented by shared amenities and outdoor spaces that reflect the desert environment.

Key characteristics of the project include:

- Contemporary multifamily residential design
- Urban infill development supporting smart growth
- Access to nearby transit, services, and employment centers
- Landscape design adapted to arid climate conditions
- Integration of LEED-based high-performance building strategies

The design balances architectural quality with environmental responsibility, demonstrating how new residential developments can contribute to both climate resilience and community vitality.

Sustainable Site Planning

Site design is a critical component of sustainable building performance, particularly in desert climates where heat and water management are key concerns.

The Pomeroy incorporates multiple LEED Sustainable Sites strategies to reduce environmental impacts while improving the quality of outdoor spaces for residents.

Urban Infill Development

By locating the project within an established urban area, the development supports smart growth principles. Urban infill reduces pressure on undeveloped land and encourages more efficient use of existing infrastructure. Residents benefit from proximity to services, retail, and employment centers, which helps reduce vehicle travel and associated emissions.

Heat Island Reduction

One of the most significant environmental challenges in desert cities is the urban heat island effect, where buildings and paved surfaces absorb and retain heat, then radiate that heat back into the microclimate. The Pomeroy addresses this issue through:

- Reflective roofing materials
- Shaded outdoor spaces
- Landscape design that reduces exposed pavement
- High-albedo paving materials where applicable

These strategies help lower surface temperatures, improving outdoor comfort while reducing cooling loads within the building.

Desert-Adapted Landscaping

Traditional landscaping can require large amounts of water—an unsustainable approach in the Sonoran Desert. Instead, the project uses xeriscaping principles, emphasizing native and drought-tolerant plants. This approach significantly reduces irrigation demand while maintaining visually attractive outdoor spaces.

Water Efficiency in an Arid Climate

Water conservation is one of the most critical sustainability issues in Arizona. The Pomeroy addresses this challenge through a combination of efficient fixtures and responsible landscape water management.

High-Efficiency Plumbing Fixtures

The building incorporates **low-flow plumbing fixtures** designed to reduce potable water consumption while maintaining user comfort. These fixtures include:

- Water-efficient showerheads
- High-efficiency toilets
- Low-flow lavatory faucets
- Efficient kitchen fixtures

Collectively, these systems significantly reduce indoor water demand compared with conventional residential buildings.

Efficient Landscape Irrigation

Landscape irrigation is often one of the largest sources of water consumption in residential developments. To minimize potable water use, the project incorporates:

- Drip irrigation systems
- Climate-appropriate plant species
- Smart irrigation controls

These technologies deliver water directly to plant roots while minimizing evaporation losses, a particularly important feature in hot desert climates.

High-Performance Energy Design

Energy efficiency is one of the most significant contributors to environmental performance in buildings. In hot climates such as Arizona, cooling loads can represent a major portion of building energy consumption. The Pomeroy incorporates several strategies to improve energy performance and reduce operating costs.

Efficient Mechanical Systems

The project uses high-efficiency HVAC systems designed to maintain comfortable indoor conditions while minimizing energy use. These systems are carefully selected to meet the demands of desert climates, where cooling efficiency is especially important.

LED Lighting Throughout

Lighting design plays an important role in reducing electricity consumption. The Pomeroy incorporates LED lighting across residential units and common areas, providing high-quality illumination while significantly lowering energy demand.

High-Performance Building Envelope

The building envelope—the walls, windows, and roof separating interior spaces from outdoor conditions—has a major influence on energy consumption. Key envelope strategies include:

- Improved insulation performance
- Energy-efficient glazing
- Reduced air infiltration

Together, these elements help maintain stable indoor temperatures and reduce cooling loads during Arizona's hot summers.

Commissioning and Performance Verification

An important part of LEED energy strategies is building systems commissioning, which ensures that systems operate as intended. Commissioning includes testing and verification of mechanical, electrical, and control systems, helping guarantee that the building achieves its projected energy performance.

Sustainable Materials and Responsible Construction

Environmental responsibility extends beyond building operations to include the materials used during construction. The Pomeroy incorporates several strategies aimed at reducing the environmental impact of building materials.

Construction Waste Management

During construction, the general contractor implemented waste diversion practices through development of a construction waste management plan, ensuring that a large portion of construction debris was recycled rather than sent to landfills. This approach reduces environmental impacts and supports the circular economy within the construction industry.

Material Transparency and Environmental Impact

LEED encourages the use of materials with transparent environmental reporting. The project prioritizes products with Environmental Product Declarations (EPDs) and other sustainability certifications, helping ensure responsible sourcing and reduced lifecycle impacts. Durable materials were also selected to extend the building's lifespan, reducing the need for maintenance, future replacement and associated environmental impacts.

Healthy Indoor Living Environments

Sustainability is not only about reducing environmental impacts—it is also about creating healthier places for people to live. The Pomeroy incorporates several design strategies aimed at improving indoor environmental quality for residents.

Low-Emitting Materials

The project uses materials that minimize emissions of volatile organic compounds (VOCs), including:

- Low-VOC paints and coatings
- Low-emitting adhesives and sealants
- Sustainable flooring materials

These products contribute to improved indoor air quality and a healthier living environment.

Enhanced Ventilation

Proper ventilation is essential for maintaining indoor air quality. The building incorporates ventilation systems designed to deliver fresh air while maintaining energy efficiency.

Daylight and Views

Access to natural daylight and outdoor views enhances occupant well-being while reducing reliance on artificial lighting. Large windows and carefully designed unit layouts maximize daylight penetration throughout residential spaces.

Supporting Mesa's Sustainability Goals

Cities across the Southwest are increasingly recognizing the importance of sustainable development in addressing climate challenges. Mesa's rapid growth places pressure on infrastructure, water resources, and energy systems. Projects like The Pomeroy demonstrate how residential developments can help address these challenges through thoughtful design.

By integrating LEED strategies and climate-appropriate solutions, the project contributes to:

- Reduced water consumption
- Lower building energy demand
- Improved urban heat resilience
- Healthier residential environments

These benefits extend beyond the building itself, supporting broader regional sustainability goals.

A Model for Sustainable Desert Development

The Pomeroy reflects a broader transformation in residential architecture across the American Southwest. Developers, architects, and sustainability professionals increasingly recognize that high-performance design is essential in desert environments where energy, water, and heat management are critical. Through its integration of LEED strategies, climate-responsive design, and thoughtful urban planning, The Pomeroy demonstrates how multifamily housing can deliver both environmental and social value.

As cities like Mesa continue to grow, projects like this will play an important role in shaping the next generation of sustainable urban communities—places where modern living and environmental responsibility work together to create resilient, livable cities.

For those of you interested in the LEED score achieved by The Pomeroy project, a breakdown of LEED points achieved in each category follows:

1. **Location & Transportation Category (11 of 16 possible points achieved)**

Eleven points were earned in this category that encourages projects to create more sustainable communities by limiting single occupancy vehicle use and providing easy access to mass transit and local amenities. Bicycle storage facilities and preferred parking for green vehicles were provided, along with reducing the project's parking footprint. By locating the building in an urban area, LEED points were earned in the Sensitive Land Protection, Surrounding Density and Diverse Uses, Access to Quality Transit, Reduced Parking Footprint and Green Vehicles credits. When combined, these strategies provide an extremely usable building that is easily accessible, while saving fuel and contributing to a healthy macro environment.

2. **Sustainable Sites Category (3 of 10 possible points achieved)**

The project earned three points in this category for developing a sustainable project site which included conducting a site assessment prior to construction and implementing a construction activity pollution prevention plan during the construction phase. LEED points were also earned by mitigating the urban heat island effect through specification of reflective roof surfaces and installing permeable hardscape elements.

3. **Water Efficiency Category (4 of 11 possible points achieved)**

Low-flow plumbing fixtures that are WaterSense certified were specified and installed throughout the project, reducing potable water for domestic use by over 40%. Potable water used for irrigation purposes was reduced by 76%.

4. **Energy & Atmosphere Category (15 of 33 possible points achieved)**

Fifteen of the 33 points available were earned in this all-important category for providing energy cost savings above the ASHRAE 90.1-2010 energy baseline standard by 27%! Energy use reduction was achieved through maximizing orientation of the building, designing an energy efficient building envelope and then specifying efficient mechanical systems. These strategies fed into the computerized energy model that Green Ideas completed to confirm the building's future energy use. Other targeted credits include Enhanced Commissioning of the building's mechanical systems which ensures the owner that all energy and water-using systems were installed, calibrated, and are operating according to the Mechanical Engineer's specifications. The Enhanced Commissioning credit also includes a design phase

review of the mechanical system design and a post-occupancy re-commissioning procedure at ten months after occupancy to give the owner confidence that the building's systems continue to operate at peak efficiency before the construction warranty expires at the twelve-month point.

5. Materials & Resources Category (6 of 13 possible points achieved)

Building products that have Environmental Product Declarations (EPDs) and Health Product Declarations (HPDs) available were specified throughout the building. EPDs and HPDs are essentially a report card for a building product, which gives confidence to specifiers about product environmental attributes such as recycled content and the amount of volatile organic compounds (VOCs) contained within a building product. These material strategies will ensure that the project has minimal impact on the environment. The General Contractor also implemented a construction waste management program for the project, which diverted more than 75% of the construction waste from landfills.

6. Indoor Environmental Quality Category (5 of 16 possible points achieved)

This very important category is focused on providing additional outside air to the interior portions of the building to improve indoor air quality (IAQ) and specifying low-emitting materials that contain a very low or zero amount of VOCs or formaldehyde, all contributing to the building's superior IAQ. The General Contractor also developed and followed an Indoor Air Quality Management Plan during the construction phase to minimize contaminants that would have been brought into the building during construction. These indoor environmental quality strategies combined to provide the healthiest possible living environment for occupants of the building units.

7. Innovation Category (5 of 6 possible points achieved)

Points within the Innovation category are made available to project teams for either exceeding the requirements of an existing LEED credit or implementing truly high-performance building or operating strategies that do not exist as a LEED credit. The Pomeroy earned five of six possible points by developing a healthy Green Janitorial Program which utilizes non-toxic cleaning fluids and other janitorial materials. An additional point was earned by exceeding the requirements of the Environmental Product Declaration credit and yet another by increasing onsite carbon sequestration by demonstrating a minimum of 10% increase in carbon that was sequestered by planting trees and shrubs onsite as compared to the established baseline. These strategies resulted in raising the innovation level of this signature multi-family building.

8. Regional Priority Category (2 of 4 possible points achieved)

Other "extra credit" points are available in this LEED category for exceeding a U.S. Green Building Council pre-defined threshold for existing credits that are deemed to be very important to the region where the project is located. The Regional Priority credits that were targeted and achieved by The Pomeroy include Optimize Energy Performance (threshold of 10 points), and by further reducing the urban heat island effect by implementing reflective roof and hardscape surfaces (threshold of 2 points).

Application of an Integrative Design Process and a motivated owner enabled the project to earn the coveted LEED Silver level of certification on March 5, 2026. The project earned 51 out of a possible 110 points and earned the distinction of being one of the first LEED Silver level certified multi-family projects within the City of Mesa! Green Ideas Building Science Consultants is proud to have worked with such a dedicated team, and we truly appreciate the StarPoint Properties' commitment to sustainable, high-performance design, construction and operation for their buildings. The end result is an incredibility

energy, water and materials efficient building that is the healthiest that it can be. The Pomeroy project is a hallmark structure that will continue to serve the owner and the Mesa, Arizona community at large for many years into the future.

About Green Ideas® Building Science Consultants

Charlie Popeck is President and CEO of Green Ideas, a full-service building science consulting firm offering 3D energy and daylight modeling, building commissioning, and world-class LEED certification services. The firm is designated as a LEED Proven Provider by Green Business Certification Inc. and is a certified B Corporation. Its clients are building owners, architects, engineers, contractors, real estate developers, facility managers, and corporate entities wishing to establish business advantages through high-performance building practices. With a vision as bold as the results they achieve, Green Ideas is dedicated to transforming the market by promoting building science through a "triple bottom line" approach to business operations.