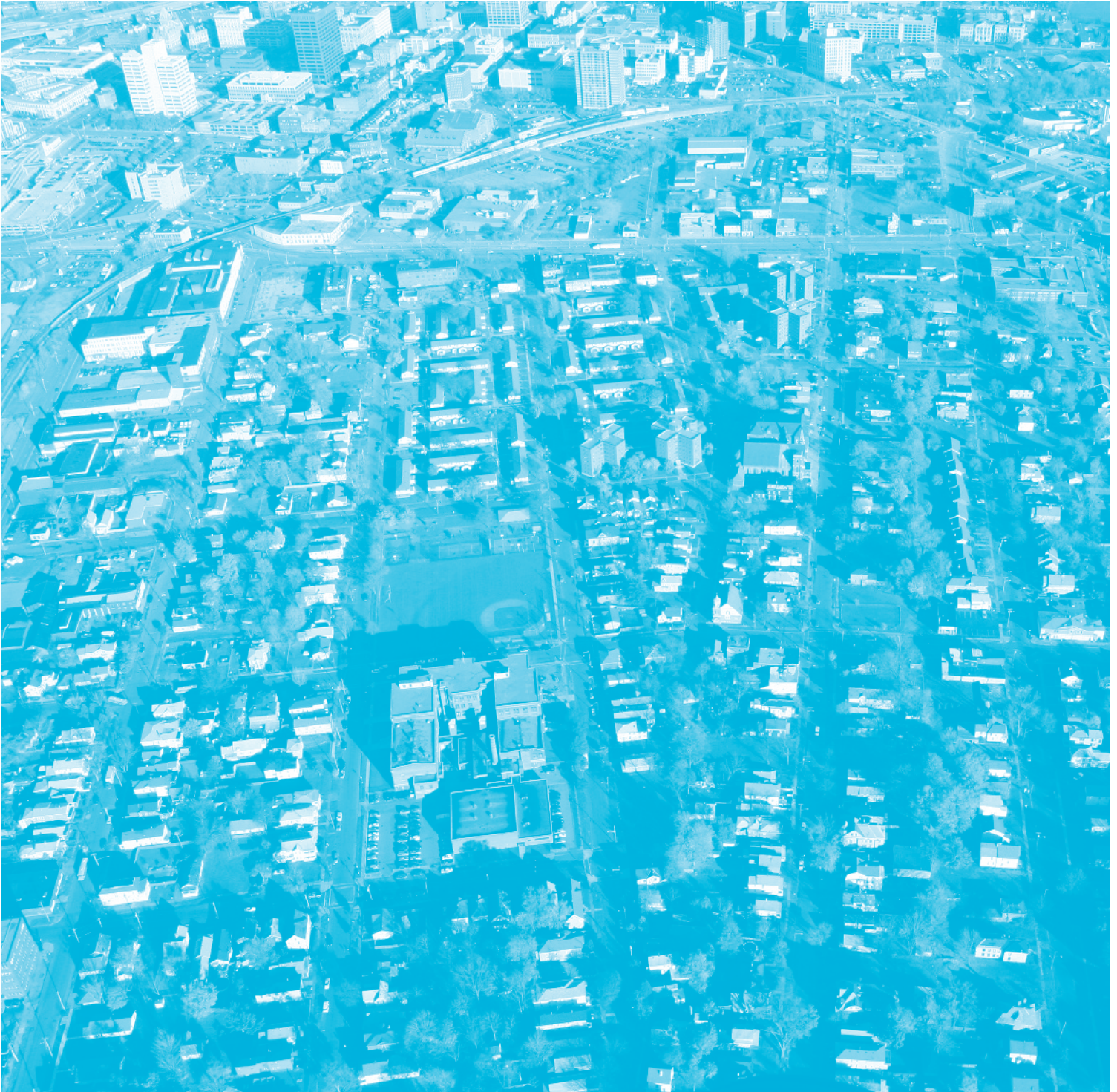




LEED for Neighborhood Development and HISTORIC PRESERVATION

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LEVERAGING COMMON GOALS TO CREATE AND PROTECT VIBRANT PLACES

LEED for Neighborhood Development and Historic Preservation

INTRODUCTION	4
HISTORIC PRESERVATION IS INHERENTLY GREEN	4
<i>What is LEED for Neighborhood Development?</i>	5
USING LEED-ND AS A TOOL FOR HISTORIC PRESERVATION	7
ACHIEVING LEED-ND CREDITS FOR HISTORIC PRESERVATION	7
A NUANCED APPROACH TO HISTORIC PRESERVATION USING THE LEED-ND RATING SYSTEM	8
CASE STUDIES IN GREEN NEIGHBORHOOD PRESERVATION	10
<i>The Brewery: Adaptive Reuse</i>	10
<i>Syracuse Art, Life, and Technology (SALT) District: Traditional Neighborhood Design</i>	11
<i>Currie Barracks: Historic Structures and Cultural Landscapes</i>	12
ROOTED IN HISTORY, LOOKING FORWARD	13
RESOURCES FOR LEED-ND AND HISTORIC PRESERVATION	13

INTRODUCTION

Historic buildings undergoing renovations or retrofits are prime candidates for certification using the LEED for New Construction and Major Renovation (LEED-NC) or LEED for Existing Buildings: Operations & Maintenance (LEED-EBOM) rating systems respectively. The act of preserving historic structures, landmarks, and landscapes is a gift to future generations, so that they may appreciate the rich and complex foundation on which modern society has been built. This intent runs parallel with that of sustainability. Sustainability is often referred to as the practice of meeting the needs of today without compromising the ability of future generations to meet their own needs. Rehabilitating historic buildings using green building practices provides a unique opportunity to stitch past together with future and create vibrant places that are socially and culturally connected, and responsive to the needs of the communities they serve. What better way to ensure the ongoing legacy of a historic site than by incorporating it into a project planned with longevity in mind?

Consider preservation and adaptive reuse value-added in green building projects. Anthropologist Setha Low said, “Place is space made culturally meaningful.” It is with this context that LEED can be considered for larger-scale projects that include historic resources by following the LEED for Neighborhood Development (LEED-ND) rating system. Both LEED-ND projects and historic resources attempt to either create or preserve distinct places, where visitors feel connected to their communities and to the built environment through appreciation of the past or a plan for the future. Combining LEED-ND and historic preservation affords the opportunity to do both: elevate history into the public eye and foster an attitude of environmental stewardship. In many ways it is these synergies that make these types of projects so successful.

This guide is designed to demonstrate how project teams can use LEED for Neighborhood Development as a tool to redevelop projects that include the renovation of historic buildings. If you are a developer, architect, planner, or consultant considering pursuing LEED certification in a historic area, this document will help you understand the ways, some obvious and some nuanced, that the LEED-ND rating system encourages historic preservation.

HISTORIC PRESERVATION IS INHERENTLY GREEN

Incorporating historic buildings into a development project is a green building strategy. Existing structures contain embodied energy acquired during the manufacturing, transport, and assembly of the materials used during construction. Although some energy savings calculations regarding adaptive reuse may not include embodied energy (since the energy has already been ‘spent’ regardless of current plans for the building), there are still savings realized by displacing costs associated with new construction, known as avoided energy (along with other resource impacts such as water use). This measure is significant: The National Trust for Historic Preservation estimates that it takes between 20 and 80 years for even



The Gerding Theater in Portland, Oregon is listed in the National Register of Historic Places and achieved Platinum certification under the LEED-NC rating system. (Credit: Brian Libby)

WHAT IS LEED FOR NEIGHBORHOOD DEVELOPMENT?



The LEED for Neighborhood Development Rating System integrates the principles of smart growth, new urbanism and green building into the first national system for neighborhood planning and design. Areas of focus include smart locations featuring transportation alternatives and preservation of sensitive lands while discouraging sprawl; a neighborhood design that emphasizes vibrant, equitable communities that are healthy, walkable, and mixed-use; and the design and construction of buildings and infrastructure that reduce energy and water use. LEED for Neighborhood Development is the product of collaboration between the U.S. Green Building Council, the Congress for the New Urbanism, and the Natural Resources Defense Council. Unlike the other LEED programs, LEED for Neighborhood

Development is not designed to rate individual buildings. Rather, it takes into account the connections between buildings and their context as well as the natural environment. The prerequisites and credits are divided into three categories: Smart Location and Linkage, Neighborhood Pattern and Design, and Green Infrastructure and Buildings. All three have prerequisites that are required of all projects and credits that reward performance. Beyond that, there also are ten additional points for Innovation and Design Process (exemplary performance and innovative performance) and Regional Priority Credits.



Smart Location and Linkage encourages communities to consider location, transportation alternatives, and preservation of sensitive lands while also discouraging sprawl. Many of these previously developed areas include historic neighborhoods that are rich with buildings significant to local culture, history, or architectural style, and that can be preserved and protected with LEED certification.



Neighborhood Pattern and Design emphasizes vibrant, equitable communities that are healthy, walkable, and mixed-use. The criteria for obtaining credits in this category are sympathetic to the existing conditions found in many historic districts, known for engaging the public realm in this way.



Green Infrastructure and Buildings promotes the design and construction of buildings and infrastructure that reduce energy and water use, while encouraging efficient use of materials, reuse of existing and historic structures, and other sustainable best practices.



Innovation and Design Process recognizes exemplary and innovative performance reaching beyond the existing credits in the rating system, as well as the value of including an accredited professional on the design team.



Regional Priority Credit encourages projects to focus on earning credits of particular significance to the project's local environment.

a new energy efficient building to recover the energy consumed to construct it.

Green buildings are typically thought of as ones newly built, but many historic buildings can be just as sustainable if they are properly maintained and operated. Data from the Energy Information Agency shows that on average, buildings built before 1920 are more efficient than those built between 1920 and 2000. How can this be? Through time, building practices changed to mirror the shifting priorities and technological capabilities of the period. Buildings constructed before the advent of modern HVAC systems had to be designed and sited to make the best use of natural means of heating, cooling, and ventilation. For this reason historic buildings behave differently than modern ones, using passive design strategies that are by nature more efficient. Conversely, modern buildings were designed in an era of seemingly endless (and cheap) resources, compensating for design inefficiencies with more robust mechanical systems. Building retrofits during this period also prioritized technological methods to achieve thermal comfort, indoor air quality, and proper ventilation rather than utilizing existing elements of passive design. Today there is a renewed interest in these strategies, and project teams are learning to combine passive design principles with smarter use of high-tech systems. This 'efficiency first, equipment later' approach can save building owners and operators money by investing in smaller systems, and running them less often.

Additionally, reusing historic buildings ensures that the materials used to build them do not end up in landfills, which puts additional strain on municipal budgets and infrastructure. Older buildings, especially those built before 1920, were often constructed using durable, high-quality materials that may no longer be readily accessible and with methods that may no longer be practiced. Buildings deemed uninhabitable may be good candidates for materials reclamation and reuse strategies that repurpose original materials in new ways onsite or elsewhere, furthering their lifecycle and avoiding the additional costs associated with new materials.

Preserving historic resources is an energy savings force multiplier for green building project teams.

Another benefit of reusing historic buildings is that they are generally located in areas that are already served by transportation and utility infrastructure. Alternatively, greenfield development on the urban fringe requires extending existing roads, communications, and utility networks to service the project, adding to its overall impact. Neighborhoods developed before the rise of the automobile were a human scale – by necessity denser, more compact, and walkable. When a project team chooses to locate a development in one of these smart locations, it reaps the benefits of proximity to diverse uses that coax neighborhood residents and visitors out from behind the steering wheel and onto the sidewalk, providing for more socially and culturally connected communities. These priorities – tenets of smart growth and new urbanism – are not new ideas so much as a return to a traditional neighborhood development paradigm.

From avoided energy to infrastructure and transportation efficiency, preserving historic resources is an energy savings force multiplier for green building project teams.

USING LEED-ND AS A TOOL FOR HISTORIC PRESERVATION

The LEED-ND rating system is designed primarily for the planning, development, and certification of new green neighborhoods and sites with substantial redevelopment activity. This includes infill sites or new developments proximate to diverse uses or adjacent to connected and previously developed land. New construction could take place on vacant land within the project boundary, complementing major renovations of existing buildings, recent or historic. Many infill projects or projects near transit are located in urban areas, which helps direct growth towards places with existing infrastructure and amenities. LEED-ND also promotes the redevelopment of aging brownfield sites into revitalized neighborhoods by rewarding connections beyond the site, walkable streets within the site, and the integration of any historic buildings and structures that will give the new neighborhood development a unique sense of place. It is important to point out that the owner or owners applying for LEED-ND certification should already own, have title to, or have significant control over a majority of the land within the project boundary and be planning for new construction or major renovation for the majority of the project's square footage.

For existing neighborhoods or projects with little new construction or major renovation planned, LEED-ND can provide valuable criteria for informal assessment of baseline conditions and the planning of future improvements to the neighborhood. The rating system's application in this context could be especially beneficial in denser urban areas and historic districts. A main street organization, for example, might consider encouraging a developer or group of owners to pursue LEED-ND for redevelopment projects in their community or using LEED-ND metrics to evaluate and guide any sustainability planning work they are undertaking. Raimi + Associates has developed the following guidelines so that existing neighborhoods that may not be pursuing LEED-ND certification can still use the rating system as a source of sustainability metrics:

- **Assess the existing neighborhood.** Audit your neighborhood using the LEED for Neighborhood Development prerequisites and credits. This can range from a quick audit performed in an afternoon to an in-depth evaluation, depending on your needs.
- **Identify strengths and weaknesses.** Identify areas where the neighborhood performs well under LEED for Neighborhood Development and where it does not.
- **Respond with a plan.** Propose retrofits, targeted redevelopment, infrastructure improvements, or policies for the future that build on the neighborhood's strengths and address its weaknesses. The level of detail and effort can vary widely - from an informal list of suggestions to a detailed design and policy proposal that becomes the backbone of a neighborhood plan.

ACHIEVING LEED-ND CREDITS FOR HISTORIC PRESERVATION

Several LEED-ND credits directly incentivize historic preservation. In the 2009 version of the rating system, the credits related to historic preservation are Green Infrastructure and Buildings (GIB) Credit 5: Existing Building Reuse and GIB Credit 6: Historic Resource Preservation and Adaptive Reuse. GIBc5 includes one point for the reuse of existing habitable building stock. To earn this credit, projects must reuse either 50 percent of one existing building structure or 20 percent of the total existing building stock. There is no requirement that these buildings be historic, but they are of course eligible for this credit. The demolition of any designated historic buildings is prohibited unless the appropriate review body grants permission (i.e. the local historic preservation entity). GIBc6 awards one point for preserving any historic building or cultural landscape. As with GIBc5, demolition

is only allowed when permission is granted by the appropriate review body. The credit encourages the adaptive reuse of designated historic buildings or buildings in a historic district, provided it adheres to a local review or federal standards for rehabilitation (whichever regulations are more stringent).

Of the 106 projects and plans that achieved certification through the LEED-ND Pilot Program, 22 earned Green Construction and Technology* Credit 5: Reuse of Historic Buildings. Though the exact credit language changed slightly between the pilot program and LEED-ND 2009, and will again when LEED Version 4 is released (currently under development), the intent of the credit remains the same.

A NUANCED APPROACH TO HISTORIC PRESERVATION USING THE LEED-ND RATING SYSTEM

While additional points in the LEED-ND rating system are not explicitly dedicated to historic preservation, location and site conditions of historic buildings give them significant advantages over new construction when pursuing certification. Specifically, the LEED-ND Smart Location & Linkage prerequisites encourage projects to be located on previously developed sites that are served by existing infrastructure and street network. While not a requirement, several credits incentivize access to transit service and a well-connected street grid. Typically, these sites will be located in the urban core or in “inner ring” suburbs, such as streetcar suburbs, of a metropolitan region, which typically include a greater concentration of historic buildings. In turn, these urban locations likely have conditions that create the public realm called for in LEED-ND, such as sidewalks, buildings located at the lot line with heights sufficient to create a sense of enclosure at street level, and shade trees. Finally, the location of many sites proximate to or containing historic resources likely offer easy access to amenities, such as retail services, schools, and parks, rewarded in LEED-ND’s Neighborhood Pattern & Design section.

The first Neighborhood Pattern and Design prerequisite Walkable Streets provides some exemptions for a project site that is located in a historic district. The prerequisite calls for 15 percent of existing and new street frontage to have a minimum building-height-to-street-width ratio of 1:3 (i.e., at least one foot of building height for every three feet of street width), continuous wide sidewalks, and less than 20 percent of street frontages to be directly faced by garage and service bay openings. The exemption recognizes that some of these requirements might be impossible to achieve in a historic district where conditions might not conform to these requirements and grants neighborhoods in historic districts certain allowances. For example, sidewalks might be too narrow or there might be a setback due to landscaping in front of buildings.

A building certified through any LEED rating system is eligible for GIBp1 or GIBc1.

As previously discussed, historic buildings can be strong candidates for LEED certification and a commitment to historic preservation is rewarded in LEED-ND. GIBp1: Certified Green Building, which requires at least one building to be LEED certified (or equivalent), and GIBc1: Certified Green Buildings, which awards points for additional certified buildings onsite, do not mention historic preservation overtly but existing buildings are predisposed to score well in these categories. It is often wrongly assumed that in order for a building to qualify for these credits it must be

*In the pilot, Green Construction and Technology was the category containing explicit credits for building reuse. It was re-named Green Infrastructure and Buildings in LEED-ND 2009.

new construction, but a major renovation or retrofit of an existing building, using LEED for New Construction or Major Renovation or LEED for Existing Buildings: Operations & Maintenance also satisfies the requirement. In fact, a building certified through any LEED rating system is eligible for GIBp1 and GIBc1.

These are just a few examples of how certain characteristics of historic buildings and historic districts offer advantages through the LEED-ND certification process. See below for a full list of credit synergies.

Credits that directly address historic resources in LEED-ND 2009:

- GIB c5: Existing Building Reuse
- GIB c6: Historic Resource Preservation and Adaptive Use
- NPD p1: Walkable Streets (exemption for historic districts)

Credits that can benefit from inclusion of historic resources:

- GIB p1: Certified Green Building and GIBc1: Certified Green Buildings
- SLL p1: Smart Location and SLL c1: Preferred Locations
- SLL c2: Brownfield Redevelopment
- SLL c3: Locations with Reduced Automobile Dependence
- NPD p1 and c1: Walkable Streets
- NPD p2 and c2: Compact Development
- NPD c3: Mixed-Use Neighborhood Centers
- NPD c14: Tree-Lined and Shaded Streets

CASE STUDIES IN GREEN NEIGHBORHOOD PRESERVATION

THE BREWERY: ADAPTIVE REUSE



Aerial view of The Brewery complex and an interior of one of the brewing facilities. (Credit: The Brewery)

Over one hundred years of beer-making tradition will come alive through redevelopment of an industrial complex formerly owned and operated by the Pabst Brewing Company. Aptly named The Brewery, this project is a mixed-use development located near downtown Milwaukee, Wisconsin. Guided by a set of sustainability principles that were incorporated into the city's Development Incentive Zone for the district, The Brewery completed both Stage 1 and Stage 2 certification as a LEED-ND pilot project at the Platinum Level.

Most of the buildings on the 20-acre site date from the late 19th Century and are massive in scale, with several of them occupying entire city blocks. The majority of buildings in the complex were involved in the brewing process, although an administrative building and a church are also included. As the nation's number one beer maker for decades, the Pabst brewery is an important landmark representing Milwaukee's history as well as US industrial heritage. The neighborhood's designation as a local historic district and its listing in the National Register of Historic Places reflect this legacy. This link to the past will be incorporated into the marketing of the development, with buildings named after Pabst icons like the Blue Ribbon Lofts.

The plan calls for the development of residential, commercial, and retail spaces within the existing historic buildings, and some planned new construction on vacant parcels. The adaptive reuse of this industrial site is an excellent model for how LEED-ND and LEED-NC can be used as tools to reimagine national landmarks, sometimes turning them into something wholly different from their original use while creating renewed value and cultural identity by embracing their heritage. The Brewery earned an exemplary performance point for reusing more than double the two buildings required for GCTc4.

Project website: www.thebrewerymke.com

Applicable credits earned: GCT c4: Building Reuse and Adaptive Reuse, GCT c5: Reuse of Historic Buildings, IDP c1.3 (Exemplary Performance of GCT c4)

SYRACUSE ART, LIFE, AND TECHNOLOGY (SALT) DISTRICT: TRADITIONAL NEIGHBORHOOD DESIGN



The neighborhood has a rich architectural heritage, and its proximity to downtown Syracuse, at top, adds to its redevelopment potential. (Credit: SyracuseCoe)

The SALT District in Syracuse, New York, received Conditional Approval of a LEED-ND Plan (Stage 1) at the Gold Level. The project is a redevelopment plan of a 156-acre residential, business, and industrial zone within the Near Westside neighborhood. Located only a few minutes' walk from downtown Syracuse, the SALT District is a historic neighborhood characterized by turn-of-the-century housing and a traditional neighborhood configuration that includes many of the characteristics modeled by the LEED for Neighborhood Development rating system: walkable streets, a mix of housing and commercial space, access to open space, and ample linkages and connections to the surrounding urban fabric, including proximity to a major economic center.

The name of the project is both an acronym for Syracuse, Art, Life, and Technology, and a nod to the city's industrial past as a leading salt producer (one of Syracuse's nicknames is the Salt City). The project incorporates Syracuse's industrial history into a new plan that entreats residents and business owners to "be the next great artist and innovator." Since disinvestment in the neighborhood caused much of the housing and commercial stock to deteriorate and be abandoned, the SALT District plan includes incremental revitalization of these spaces for artist housing and studio space. The LEED-ND plan features extensive reuse and rehabilitation of existing buildings, energy and water efficiency retrofits, redevelopment in targeted locations, and green building requirements for new construction. The SALT District is an example of how a transformation plan for an existing neighborhood, with the majority of project square footage consisting of new construction or major renovations, can successfully complete a LEED-ND review.



The plan for the SALT District uses incremental rehabilitation of residential properties to create artist havens. Before and after photos, above. (Credit: Home Headquarters, Inc.)

Project website: www.saltdistrict.com

Applicable credits earned: GCT c4: Building Reuse and Adaptive Reuse and IDP c1.1 (Exemplary performance of GCT c4)

CURRIE BARRACKS: HISTORIC STRUCTURES AND CULTURAL LANDSCAPES

The plan for Currie Barracks, a former military base in Calgary, Alberta, is a LEED-ND pilot project certified at the Gold level. The site contains the highest concentration of provincially designated historic buildings and landscapes in an urban center in Alberta. The project will make use of military buildings dating from the 1930s, including the Administration Building, Barracks, Quartermaster Stores, Base Commander's Residence, and the Officers' Mess. In total the project incorporates 12 historically designated buildings into a new mixed-use development, including 3,200 housing units of various types (some low-income), 225,000 square feet of retail space, and 300,000 square feet of offices. The project will also preserve the two designated cultural landscapes (Parade Square and the Officer's Mess and Formal Garden) with historical significance dating back to the 1890s when the grounds were used for informal military maneuvers and then for formal training prior to World War I. Parade Square will remain a public plaza and function as a focal point of community activity. By reusing 95 percent of the existing buildings, the project preserves a tangible link to Calgary's military history while addressing the needs of present-day Canadians. The project achieved an Innovation and Design Process Credit 1 exemplary performance point by reusing more than double the two buildings required to achieve GCTc5.

Project website: www.curriebarracks.com

Applicable credits earned: GCT c4: Building Reuse and Adaptive Reuse, GCT c5: Reuse of Historic Buildings, IDP c1.3 (Exemplary Performance of GCT c5).

ROOTED IN HISTORY, LOOKING FORWARD

Creative sustainable neighborhood development projects can breathe life into historic buildings, historic brownfield sites, or vacant lands in a historic district that have been neglected or underutilized. By thinking beyond a building's original use, a project team can find innovative ways to reconnect an efficient, culturally and historically significant structure with the surrounding social and urban fabric. After all, a sense of ownership and engagement in preserving the character and quality of a place is a hallmark of lasting communities. Sustainable neighborhood development is about more than just energy efficiency; it's about creating vibrant built environments that are healthy, safe, and community-oriented. As this guide demonstrates, the LEED for Neighborhood Development rating system encourages project teams to achieve these goals by redeveloping historic sites, creating continuity for neighborhoods that celebrate the past while preparing for the future.

RESOURCES FOR LEED-ND AND HISTORIC PRESERVATION

U.S. Green Building Council (USGBC) [usgbc.org](https://www.usgbc.org)

LEED for Neighborhood Development Rating System new.usgbc.org/leed/rating-systems/neighborhoods

LEED for Neighborhood Development Program Resources new.usgbc.org/resources/list/all/neighborhood-development

LEED-ND Certification gbci.org/nd

National Trust for Historic Preservation preservationnation.org

Preservation Green Lab, National Trust for Historic Preservation preservationnation.org/issues/sustainability

If you have any questions about this resource or LEED-ND in general,
please contact neighborhoods@usgbc.org