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Historic Preservation as a Tool for Sustainable Community Development

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Abstract

Although the fields of community development and historic preservation are independently successful, there is an increasing need for professionals from each field to collaborate for efficient urban development. By combining the community building aspects of community development and the sustainable practices of historic preservation, urban development endeavors become more sustainable for both the environment and the people in urban communities. The growing pertinence of both community developers and historic preservationists in urban development is shown through analysis of the practices of each field and case studies involving their collaboration.

Author's Note

My interest in this research topic is a combination of my studies in history, political science, and historic preservation practices. My focus throughout these areas has continuously been encompassed by my interest in international development. As I studied various techniques for development, I saw a growing need for historic preservation and regard to historical integrity. While many urban development projects have started using historic preservation practices, it has not yet become widespread criteria for community development agendas. My goal is to encourage the implementation of historic preservation practices in urban development nationwide. I hope to further my research from just the domestic use of historic preservation in community development to the potential of historic preservation in development practice internationally.

Keywords: Community Development, Historic Preservation Technology, Sustainability, Economic Development, LEED Certification

Introduction

The field of historic preservation offers many methods and ideologies that can foster success within other disciplines. One example of this is the collaborative efforts between historic preservationists and community developers. These professionals have used ideas from both disciplines to create projects throughout United States cities that not only employ sustainable practices, but also increase the overall well-being of communities.

The objectives of historic preservation, including historical analysis, sustainability, and repurposing, provide a direct platform for these projects. Community developers can repurpose these ideals to create city plans that revive historical cities and buildings. Case studies involving the synthesis of historic preservation and community development show potential for sustainable advancements and the betterment of communities. The case studies included in this analysis provide examples of how historic preservation practices and community development ideology can be merged for the common causes of sustainability and community development. The importance of this collaboration is shown in each case study, as is the potential for the application of this relationship to future community development initiatives. Before discussing case studies which exemplify the relationship between historic preservation and community development, this article will review background information on each discipline.

The Relationship Between Historic Preservation and Community Development

Historic preservation focuses on the preservation of historically significant buildings, landscapes, and artifacts. Experts in this field are called preservationists, and they possess a deep understanding of the theories and practices involved in conserving historic spaces. Preservationists specialize in different subdivisions including research, consultations, and preservation technology¹. The traditional ideals of historic preservation focus on saving materials and structures that would otherwise be thrown away or demolished and are easily adaptable to contemporary, environmentally aware endeavors. Preservationists have noticed this connection and have begun implementing plans and technology that revolve around the philosophies of both historic preservation and environmental sustainability².

This connection has also attracted the attention of community developers, giving them an avenue to both practice historic preservation in order to save already existing infrastructure and to create an eco-friendly, often more affordable environment for communities. In this growing relationship between historic preservation and community development, those who study preservation technology play the largest role. This technology allows for the incorporation of sustainable

¹ "Historic Preservation," *National Trust for Historic Preservation*, Online, <https://savingplaces.org/>.

² Robert A. Young, *Historic Preservation Technology: A Primer*. Hoboken: John Wiley & Sons, (2008), 10-17.

ideology into refurbishment and conservation practices. Recycled materials, energy-efficient technologies, and tools to repair deteriorated buildings are all part of this process³.

Common materials used in sustainable historic preservation range from salvaged wooden or steel structural elements to refurbished carpeting to insulated window units that allow historic buildings to keep their original windows. These materials are eco-friendly as they are made without harmful chemicals and can support the effects of modern energy-saving technology such as insulated cork board flooring and solar panels. Preservation technology has the important ability to balance historic elements with these modern amenities. Structures can keep their foundation and historical integrity while appealing to contemporary design.

As a result of stylistic and preservation trends, the demand for historically renovated houses has increased substantially in the last two decades. This interest has led to the greater use of preservation technology practices to properly maintain historical structures. These structures include office buildings, residential homes, apartment complexes, and retail spaces. With the growing popularity of renovated spaces, their value and the necessity of historic preservation has also increased. Interior designers for these spaces have begun to combine the historical nature of the structure with contemporary design, and contractors are attracted to the reduced cost and improved sustainability associated with historic preservation. Using refurbished materials decreases the cost of restoration and these materials are proven to result in a longer lifespan for the structures. Historic preservation technology also has the potential to reduce energy costs. An example of such a product is geothermal technology, which uses in-ground receptors to store heat from the Earth and convert this heat into a functioning energy source⁴. Together, these positive externalities offer new methods of approaching community development through preservation technology.

These incentives have led many community developers to incorporate historic preservation into their work. Community development focuses on building community infrastructure and morale and is easily integrated with ideas of historic preservation. This is especially true when working with the homes, community centers, parks, and public facilities of a community. Often in low-income communities, this collaboration plays a vital role; governments and not-for profits are typically the entities implementing development practices, meaning there is usually a tight budget constraint on community development⁵. In the past, such financial limitations have prevented these structures from being environmentally sustainable or long-lived. As a

³ Ibid.

⁴ "How Geothermal Energy Works," *Union of Concerned Scientists*, Online, http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/how-geothermal-energy-works.html#.WEF_ZoWcHJw.

⁵ "Community Development," *United States Department of Housing and Urban Development*, Online, http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communit_ydevelopment.

result, many eventually become inhabitable for the people for whom they were built⁶. This can be detrimental not only to the community's aesthetic but to their morale as well.

To address this, community developers have looked to historic preservation techniques. By using repurposed materials, buildings have been renovated with high quality construction at an affordable cost. Historic preservation technology such as insulated cork board floors and geothermal heating has been used to cut energy costs for these structures, which also results in economic sustainability⁷. The application of historic preservation to community development also gives a community the opportunity to celebrate unique and historically important structures. Without historic preservation these structures would likely be abandoned, creating more of an 'eye-sore' effect rather than one of pride and societal connection. Thus, historic preservation allows community developers to use existing structures to create growth and better morale in developing areas.

While there is significant potential for this collaboration, it is not free from criticism. The main disadvantages of historical preservation and community development projects are the high costs of some historic preservation and sustainability technologies, the negative effects of gentrification, and the economic competition caused by the introduction of large-scale businesses into local economies. As these projects often require large budgets, outside developers and businesses are typically the only ones able to afford the process. When previously deteriorating structures become expertly renovated and modernized, developers who are not community-minded tend to increase the price of those properties so much so that locals can no longer afford them. This leads to housing and small business displacement. These newer, more appealing structures also attract big businesses that have a level of capital and reach unattainable by local businesses. Together, these can substantially harm a community, leaving many neighborhoods to reasonably hesitate at the thought of such development⁸.

With these setbacks in mind, communities still support better, long-term infrastructure while also calling for such development to be done properly, with every aspect meeting the current and future needs of locals. The responsibility of proper community development, therefore, not only lies with community developers and preservationists, but with local organizations and governments who can facilitate community involvement and offer policies and grants that give preferential treatment to locals. Working together, these actors can ensure that community development projects are executed in such a way that residents remain the principal beneficiaries.

Collaborating for Sustainability

⁶ Ted K. Bradshaw, "Theories of poverty and anti-poverty programs in community development," *Community Development* 38, no. 1 (2007): 7-25.

⁷ Robert Young, *Historic Preservation Technology*, 21-24.

⁸ Dan Immergluck and Tharunya Balan, "Sustainable for whom? Green urban development, environmental gentrification, and the Atlanta Beltline," *Urban Geography* 39, no. 4 (2018): 546-562.

The benefits of combining historic preservation and community development are seen at the social and economic level, particularly through sustainability efforts. The Sustainable Development Goals can be used to show the extent to which this collaboration encourages long-term sustainability.

The SDGs were published by the United Nations in 2015. There are seventeen goals, each tackling development issues on a broad spectrum. The collaboration between preservationists and community developers addresses five of these goals: Goal 7 – Affordable and Clean Energy; Goal 8 – Decent Work and Economic Growth; Goal 9 – Industry, Innovation, and Infrastructure; Goal 11 – Sustainable Cities and Communities; and Goal 12 – Responsible Consumption and Production⁹. Efforts aligning with these goals are present in each case study below as they show preservationists and community developers leading communities towards a sustainable future. While these projects were initiated prior to the establishment of the SDGs, their existence and consistent work towards sustainability set examples for similar projects worldwide.

Case Studies

With an understanding of each discipline, the intricate relationship between historic preservation and community development is apparent. Community development benefits from the sustainable practices associated with historic preservation. When possible, community developers and historic preservationists reuse materials to increase morale, encourage economic growth, and create sustainability for communities¹⁰. Historic preservationists use the historical value of an area as a main point in community development, highlighting unique characteristics of the neighborhood that attract outside interest, enhancing economic development¹¹. The positive outcomes of this collaboration can be seen through case studies in which community developers and historic preservationists have worked together to better communities throughout the United States.

Pittsburgh, Pennsylvania

One such case study is the development of Uptown Pittsburgh, Pennsylvania. This community was a frontier village which transformed into an industrial city. Its easily navigable waterways made it ideal for transporting and manufacturing goods. By 1950, Pittsburgh had become one of the nation's largest cities as a result of its mass steel production and increased immigration rates. When steel production slowed down in the 1970s, Pittsburgh evolved into a city for technical and medical innovation. Some areas of Pittsburgh, however, did not recover from the economic turmoil caused by

⁹ United Nation, Sustainable Development Goals, 2015, Online, <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>.

¹⁰ Marilyn E. Swisher, Sandra Rezola, and James Sterns, "Sustainable Community Development," *University of Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, EDIS*, 2003.

¹¹ David Listokin, Barbara Listokin, and Michael Lahr, "The contributions of historic preservation to housing and economic development." (1998): 431-478.

the cessation of steel production¹².

Uptown Pittsburgh, located between the two commercial communities of Downtown Pittsburgh and Oakland, is one of these areas. After steel production came to a halt, Uptown Pittsburgh experienced population decline and its infrastructure deteriorated. Industrial buildings in the area made it seem unsafe, therefore limiting foot traffic and the use of store fronts. Even with these impediments, Uptown Pittsburgh has remained a center for innovation and education, encouraging developers to invest in the revival of the community.

In 2014, Pittsburgh's community development team created a plan for economic development, sustainable structures, and equal wealth distribution. Though these tactics were heavily focused on community development ideals, each included some aspect of historic preservation. To integrate old apartment lots into the modernized city and connect them to businesses, preservationists placed sustainable heating and cooling features in existing structures and helped renovate their exterior complexes while maintaining their historical integrity. These features made the lots more desirable to community members while providing accommodation that was easily accessible from the city. They additionally surveyed the area for appropriate locations to build new structures that would not disturb historical sites but would act as a catalyst to connect the community to the greater Pittsburgh area. Preservationists also helped analyze historic buildings that were already part of the community, highlighting historically and culturally important architecture¹³. Each of these endeavors relates closely to SDG 7 (Affordable and Clean Energy) and SDG 9 (Industry, Innovation, and Infrastructure) as they exemplify the use of green energy technology and sustainable infrastructure design.

Within the development of Uptown Pittsburgh there were many different methods of both community development and historic preservation. One of these methods was the inclusion of Ecodistricts in the creation of sustainable designs for the area. Ecodistricts is a company focused on creating diverse, equitable, and sustainable communities. They are often hired by city governments for their expertise in community development and their specialization in creating futurized urban communities¹⁴. Ecodistricts's 'Implementation Model' was used by Pittsburgh's city developers to construct innovative plans for Uptown Pittsburgh. They also formed a team of consultants to implement this plan¹⁵. Of these consultants, several had backgrounds in historic preservation.

Uptown Pittsburgh has many historical features relating both to its use as a frontier and an industrial sector. There were many structures in need of appropriate historical preservation. These structures served as a basis for designs regarding new

¹² "Pittsburgh History: Introduction to Pittsburgh," *VisitPittsburgh.org*, Online, <http://www.visitpittsburgh.com/about-pittsburgh/history/>.

¹³ Katy Ricchiuto, "Incubator Success Story: Bringing Up Uptown in Pittsburgh, PA," *Ecodistricts*. <http://ecodistricts.org/incubator-success-story-bringing-up-uptown-in-pittsburgh-pa/>.

¹⁴ "About," *Ecodistricts*, <https://ecodistricts.org/about/>.

¹⁵ Ricchiuto, "Incubator Success Story: Bringing Up Uptown in Pittsburgh, PA."

buildings in the area. After historic preservationists assessed each structure, new additions to the neighborhood were able to match the historical buildings in both design and size. The new buildings allowed the community to incorporate modern amenities such as geothermal technology while still celebrating the characteristics that make their community unique. Those same historic preservation techniques were also applied to parks and outdoor public spaces. Park benches and tables were built from salvaged materials and gardens and public facilities were constructed using sustainable water usage techniques. The techniques used in these endeavors show how historic preservation can be used to reach SDG 12 (Responsible Consumption and Production) within communities.

These initiatives consciously provided green spaces for the community and small businesses, evading the problem of gentrification and eventually leading to the creation of Uptown Partners of Pittsburgh, a community group dedicated to the sustainable development of Uptown Pittsburgh. This group currently runs multiple community-based programs, such as the Sustainable Small Business Designation, the Sustainable Pittsburgh Restaurant Program, the MLK Community Garden, and Tree Tenders. These programs are aimed at facilitating small-business growth and bringing members of the community together for environmental projects¹⁶. Uptown Partners of Pittsburgh is just one example of how collaboration between preservationists and community developers resulted in community growth beyond physical infrastructure. This case study also exemplifies how this collaboration can lead to progress for SDG 8 (Decent Work and Economic Growth) and SDG 11 (Sustainable Cities and Communities).

St. Louis, Missouri

Another city undergoing the development process is St. Louis, Missouri. During mass migration, this city was known as the ‘Gateway to the West’ and thousands of passersby traveled through it. After World War II, St. Louis became overcrowded, resulting in the construction of suburban neighborhoods on the outskirts of the city. These neighborhoods eventually resulted in urban population loss. Unfortunately, this geographical separation also created racial and socioeconomic division within the city as affluent white residents were typically the only ones able to move to suburban divisions. In the late twentieth century, city planners developed strategies to combat tensions caused by the rigid division. These efforts were in vain, however, and several areas of St. Louis remain racially and socioeconomically divided¹⁷.

One such area is the New North Side. This area is characterized by its historical features and the role it played in St. Louis’ manufacturing and production past. The community has experienced many setbacks due to racial tensions but despite this adversity has evolved into an active community based on sustainability, cultural

¹⁶ Uptown Partners of Pittsburgh, (2019), <http://www.uptownpartners.org/>.

¹⁷ “A Brief History of St. Louis,” *St.Louis-MO.gov*, Online, <https://www.stlouis-mo.gov/visit-play/stlouis-history.cfm>.

exposure, and equity¹⁸. Community developers have already made great progress in the area and have done so with respect for the community's rich history. Not only do many of the original structures remain standing, but preservationists have also incorporated the wishes of residents by creating spaces highlighting local culture and serving specific needs. These included easily accessible outdoor spaces for community gatherings and innovative recreation facilities that can be used by area youth¹⁹.

This development was made possible by taking advantage of the New North Side's location. The community, once defined by its low income and high unemployment, was able to transition because of its close proximity to a major highway, which allowed easy access to the neighborhood for both St. Louis residents and out-of-town visitors. Community developers received a grant from the United States Department of Housing and Urban Development to capitalize on this location by bringing in long-run investors. These investors secured outside funding for local businesses, increasing the use of existing structures and small business activity within the community. Business owners who received these investments renovated using historic preservation tactics such as utilizing refurbished material and preserving historically significant characteristics. After city planners included Ecodistricts in their planning process, the community grew substantially with an increase in career opportunities, youth engagement, and neighborhood resources such as free childcare and a fully operating food pantry²⁰. The collaboration between historic preservationists and community developers to achieve this success shows the importance of such integration, with partnerships between small businesses and the community continuing to grow well after initial investments²¹. These achievements also show progress towards SDG 8 (Decent Work and Economic Growth) and SDG 11 (Sustainable Cities and Communities).

The many changes that occurred in the New North Side necessitated precise city planning. This planning was ideologically focused on community development, infrastructure, and community morale. The infrastructure of the New North Side included new buildings, sustainable technology, and the appropriate preservation of already standing structures, exemplifying work towards SDG 9 (Industry, Innovation, and Infrastructure). By using the location of the community to gain funding, community developers succeeded in constructing well-rounded infrastructure²². They did so with the advice of historic preservationists and designers. Preservationists were able to save historic storefronts by using preservation techniques and technology that guaranteed long-term sustainability, adhering to SDG 12 (Responsible Consumption and Production). These storefronts were affordably transformed and supported local businesses, therefore improving the economy of the New North Side. Preservationists also created building plans to preserve existing structures and to create modern,

¹⁸ "Historic North St. Louis Made All New," *Northside Regeneration*, Online, <http://www.northstl.com/>.

¹⁹ Ibid.

²⁰ Katy Ricchiuto, "Making the Near North Side New in St. Louis," *Ecodistricts*, Online, <http://ecodistricts.org/making-the-near-north-side-new-in-st-louis/>.

²¹ The Near North Side, Online, <http://www.nearnorthsidedstl.com/partners>.

²² "Making the Near North Side New in St. Louis."

affordable housing for the New North Side community²³. With these preserved structures the New North Side city planners were able to create economic development strategies that included the internal monetary system of the community, instead of relying solely on outside aid.

Another endeavor preservationists contributed to was the addition of sustainable features to existing structures. One of the main goals of the developers was to increase sustainability and ensure affordable energy. This followed the 'Minority Wealth Creation Strategy' created by both developers and individuals within the community. Together, historic preservationists and community developers were able to meet this goal with several strategies currently being implemented on the New North Side including low-energy air circulation and cork board insulation for heat retention²⁴. This collaboration is present in many of the success stories of the New North Side, proving the importance of the relationship between historic preservationists and community developers and showing how this relationship can coincide with SDG 7 (Affordable and Clean Energy).

Lansing, Michigan

Although communities as a whole benefit from the collaboration of historic preservationists and community development, certain aspects of a community such as buildings, parks, and landmarks can also reap the benefits. One example of this is The Christman Building in Lansing, Michigan. From its original construction, The Christman Building has been a landmark in Lansing. It has served as a hub for business and as an important part of the city's overall aesthetic. Even so, for some time the building was vacant and poorly maintained. Since then the building has been added to the National Register of Historic Places and is currently used as an office building for the Christman Company. The company specializes in real estate development and construction and rents out office space to over seventy tenants²⁵.

When the Christman Company purchased the building, they did so with the mindset of community developers. They wanted to revive the building using both historic preservation techniques and sustainable technology²⁶. This restoration was completed in 2007, with the collaboration between community developers and preservationists evident in every decision made throughout the process. In particular, the Christman Company's decision to follow LEED criteria, a set of regulations meant to ensure sustainable construction and operation, shows both an interest in community development and historic preservation. The Christman Building became the first building to receive double-platinum LEED certification, showing their dedication to both disciplines and progress towards SDG 7 (Affordable and Clean Energy), SDG 9

²³ Michael R. Allen, "NorthSide: Historic Preservation," *Preservation Research Office*, <http://preservationresearch.com/north-st-louis/northside-historic-preservation/>.

²⁴ "Historic North St. Louis Made All New."

²⁵ "The Christman Building," Urban Land Institute: Development Case Studies, Online, <http://casestudies.uli.org/wp-content/uploads/sites/98/2015/12/C039012.pdf>.

²⁶ Ibid.

(Industry, Innovation, and Infrastructure), and SDG 11²⁷ (Sustainable Cities and Communities). The importance in renovation which draws on both development and preservation ideology is shown through an analysis of this certification.

The Christman Building's double-platinum LEED certification means their sustainability efforts were beyond pristine. In order to reach this high level of certification the Christman Company had to maintain historical spaces, incorporate sustainable materials into secondary spaces, and use energy-saving devices and materials²⁸. The Christman Company used technology to ensure sustainable siting, sustainable design and construction practices, energy efficiency, and water efficiency, which in turn represented progress towards SDG 12 (Responsible Consumption and Production). Example of these devices and materials include Energy Star appliances, efficient HVAC systems, recycled materials, and insulated carpet tiling. The cost of these renovations was not significantly higher than unsustainable renovations, especially after the Christman Company earned incentives from both the state and federal governments, 'green tax cuts' that saved the company money in the long-term. Along with the green tax cuts, the Christman Company profited from the media attention it received with a double-platinum LEED certified building²⁹. These financial incentives, along with the long-term environmental benefits of sustainability, make the Christman Building a success story of the collaboration between development and historic preservation. The Christman Company's success also aligned with economic community growth as the building brought job opportunities into the area, aligning with SDG 8³⁰ (Decent Work and Economic Growth). Without tactics from both preservationists and community developers, the Christman Building would not be the sustainable landmark it is today, nor would it be a symbol of community growth through sustainability.

Shreveport, Louisiana

Another building that was renovated through a partnership between community development and historic preservation is the Ogilvie Hardware Company Building in Shreveport, Louisiana. This building was originally constructed in 1929 and was added to the National Register of Historic Places in 1999. Its original purpose was to serve as a warehouse, but after sitting vacant for over a decade, developers made the decision to turn the building into affordable housing units. The property was subsequently turned into ninety lofts and five recreational spaces.

Community developers had to consult with historic preservationists to create the affordable housing units. Renovation architects from BGO Architects consulted with the Shreveport Historic Commission to preserve the historical integrity of the

²⁷ "The Christman Building," *United States Green Building Council*, Online, <http://www.usgbc.org/projects/christman-building>.

²⁸ "Historic Rehab Became the First Double Platinum LEED Project," *National Parks Service*, Online, <https://www.nps.gov/tps/sustainability/case-studies.htm#mutual-building>.

²⁹ "The Christman Building," *Urban Land Institute: Development Case Studies*.

³⁰ *Urban Land Institute: Development Case Studies*.

building³¹. Many of the original historical characteristics of the building were maintained. The original industrial architecture is highlighted throughout renovated spaces and the authentic steel windows were repaired. Throughout the renovations, features such as steel beams, exposed concrete, and concrete columns were kept and integrated into the modern interior design.

The Ogilvie Hardware Company Building's renovated exterior also adheres to its historical aesthetic. The original loading docks were kept and transformed into balconies³². Original brick, large windows, and exposed concrete foundation all embody the period in which the building was constructed. They also highlight the original purpose of the building with modern additions representing its current use³³. Together, the additions to the building and the original characteristics show the careful thought processes of community developers and historic preservationists working on this project, while also exemplifying progress towards SDG 9 (Industry, Innovation, and Infrastructure).

One of the main reasons for the project was to create affordable housing for those in the community who needed a safe, reliable place to live. To residents, the Ogilvie Hardware Company Building is known as the Ogilvie Hardware Lofts. The surrounding community suffers from socio-economic division, resulting in many individuals unable to afford decent housing, and the affordable lofts were a necessity. Using sustainable methods, developers were able to make the apartment rents and their energy costs as low as possible, aligning with SDG 7 (Affordable and Clean Energy) and SDG 11 (Sustainable Cities and Communities). While Ogilvie Hardware Lofts was born from this need for community development, they were not completed without the use of historic preservation³⁴.

Preservationists helped developers obtain Gold LEED certification, with the criteria for the certification implemented in each step of renovation. For this certification, preservationists set certain restrictions for each loft based on how tall architects could make the ceiling and what historical elements could not be covered. The height restrictions influenced the square footage of each room and architects kept the original concrete floors, which can be seen in some of the lofts and recreational spaces. Materials available to contractors were also limited as they had to meet the energy-efficient criteria from LEED while being structurally sound. Many refurbished materials were used to meet this requirement, demonstrating progress towards SDG 12 (Responsible Consumption and Production). As the contractors were constructing a building within a building, LEED criteria and structural soundness were critical during construction. Some of the historic beams were even used for further structural

³¹ "LEED Gold National Register Listing, Shreveport, LA," *National Park Service*, Online, <https://www.ncptt.nps.gov/resilience/case-study/warehouse-to-lofts-conversion/>.

³² "LEED-Gold Project Converts Hardware Warehouse to Apartments," *National Park Service*, Online, <https://www.nps.gov/tps/sustainability/case-studies.htm#ogilvie-hardware>

³³ "LEED Gold National Register Listing, Shreveport, LA," *National Park Service*.

³⁴ "Ogilvie Hardware- An Adaptive Rebirth," *Downtown Shreveport*, Online, <http://downtownshreveport.com/history/ogilvie-hardware/>.

support, and new walls were added around the beams³⁵. Overall, the architects and contractors successfully completed the puzzle of fulfilling the needs of both community developers and historic preservationists.

San Francisco, California

The renovation of Pier 15 in San Francisco, California is another example of collaboration between community developers and historic preservationists. Pier 15 is located on the San Francisco Bay, between two piers that are used for ferry boats and a fisherman's wharf. In the early 2000s, the Bay Area was thriving while Pier 15 was deteriorating in appearance and structure³⁶. Meanwhile, one of San Francisco's main attractions, The Exploratorium, was looking for a new location as their current building was causing operational setbacks. These obstacles included low levels of natural light, a lack of space for expansion, and structural issues preventing them from conducting science experiments. While looking for a new location they came upon Pier 15 and decided it fit their needs as it offered solutions to their current constraints.

In 2013, The Exploratorium made the move to Pier 15. This was not an easy transfer; hundreds of exhibits and organism cultures had to be transported to the new location. The workers and scientists of The Exploratorium worked for days to efficiently transport these items and display them properly within the new location³⁷. Pier 15 had space for triple the number of exhibits, double the number of classrooms, and quadruple the amount of meeting spaces³⁸. These new features were important as they encouraged both economic growth and educational development in the San Francisco community³⁹. During its transition, Pier 15 experienced many changes that were supervised by both community developers and preservationists.

Throughout the construction process, Pier 15 was examined based on how its features influenced both the community and the historical setting of the San Francisco Bay. Community developers had to ensure that The Exploratorium complemented other public venues and the historical presence of nearby piers. Historic preservationists were participants in this process so that any changes to Pier 15 were structurally appropriate to the history of the community. They also had to keep in mind the environmental impact The Exploratorium and its foot traffic would bring⁴⁰. These problems were considered by both community developers and historic preservationists. The biggest adjustment that contractors for The Exploratorium

³⁵ "LEED-Gold Project Converts Hardware Warehouse to Apartments," *National Park Service*.

³⁶ "Exploratorium at Pier 15," *The American Institute of Architects*, Online, <http://www.aiaopen.org/node/472>.

³⁷ "The Science of Moving Science Across Town," *The New York Times*, Online, <http://www.nytimes.com/2013/03/21/arts/artsspecial/how-the-exploratorium-in-san-francisco-moved-across-town.html>.

³⁸ "Pier 15 Facts of Interest," *Exploratorium*, Online, <https://www.exploratorium.edu/press-office/press-releases/pier-15-facts-interest>.

³⁹ "Exploratorium at Pier 15," *The American Institute of Architects*.

⁴⁰ "New Addition to the San Francisco Waterfront," *National Parks Service*, Online, <https://www.nps.gov/tps/sustainability/case-studies.htm#pier-15>.

endured was the addition of seventy new steel pilings. These steel pilings were added to ensure structural stability but threatened the historical integrity of the location. Other additions included 5,874 high efficiency solar panels and water pumps that use the San Francisco Bay water to regulate the temperature inside The Exploratorium, an innovative move representing SDG 7 (Affordable and Clean Energy).

These sustainable features allowed The Exploratorium to become the largest net zero energy museum in the United States. In order to ensure that these additions did not disrupt the historical integrity of the building, historic preservationists had to analyze each change and its impact on the structure, exemplifying the objectives of SDG 9 (Industry, Innovation, and Infrastructure) and SDG 12 (Responsible Consumption and Production). In the end, they decided that these sustainable practices met the requirements of preservation and offered ideas on how to maintain both new technology and historical elements. These ideas included using natural light provided by the original storehouse windows and carefully placing large machinery so that it did not ruin irreplaceable characteristics of the property.

The presence of The Exploratorium has been a positive force in educating and entertaining the San Francisco community while also increasing the economic growth of the Bay Area and the museum itself, showing progress on SDG 8 (Decent Work and Economic Growth) and SDG 11 (Sustainable Cities and Communities). Maintaining the original structure of the pier and remaining cognizant of its historical integrity followed the guidelines of historic preservation techniques, showing that this growth was a result of combined efforts from preservationists and developers⁴¹.

The Future of Sustainable Community Development

Discussion

As the world moves toward global sustainable initiatives such as the SDGs, there is a growing need for the collaboration between preservationists and community developers. Before this relationship can reach its full potential, however, several questions must be answered. Perhaps the most pressing challenge is how to incentivize sustainable community development while maintaining local integrity.

Based on the case studies above, the best method of doing this is to ensure community involvement with government programs and grants that offer preferential treatment to sustainable, community-led projects. One example of this is the green tax cuts offered to businesses who incorporate sustainability practices into their operations. These types of policies may be enforced nationally, with possible tariff cuts or trade pacts serving as incentive for the execution of domestic sustainable preservation, design, and development. The SDG framework offers an internationally recognized set of indicators that could be used for such programs, with many countries consistently collecting and reporting data pertinent to their overall sustainability.

⁴¹ "Exploratorium at Pier 15," *The American Institute of Architects*.

While this program would be an ideal start to incorporating both preservationists and community developers into global sustainable development, there are bound to be setbacks. The issues of gentrification and big business competition are just as prominent on the global stage as they are in local neighborhoods, meaning that large-scale tactics must first address these issues. Other potential barriers to such programs include the formulation of set standards for projects, uniform monitoring and evaluation processes, and the policies of countries that may have differing social and economic agendas. Together, these issues call for international actors who are willing to work together to create solutions and to properly implement preservation and community development projects on the global stage.

Other questions regarding the global collaboration between preservationists and community developers continue to require further research, such as how to approach communities that do not traditionally practice historic preservation or those who have had their historical landmarks demolished in times of conflict or natural disaster. Another challenge searches for best practices when navigating this relationship within the foreign aid constraints that are present in many Low Income (LICs) and Middle Income Countries (MICs).

Conclusion

While many questions still remain about the future of collaboration between preservationists and community developers, the success this collaboration can have is undoubtedly present in the case studies examined above. These show not only potential but the need for further exploration of how this relationship could serve global development. By using the SDG framework, the projects completed through these disciplines are directly connected to the international goals of the United Nations and worldwide communities. Therefore, incorporating this collaboration into related programming could result in further progression towards the goals of the SDGs, specifically SDG 7, SDG 8, SDG 9, SDG 11, and SDG 12, and for an overall sustainable future.

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