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Interdisciplinarity and Innovation: The Virtue of a Challenge

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Abstract

Interdisciplinarity and innovation in 21st-century museums have transformed how these institutions are built, and presented, and how they educate about the cultural heritage they house. Democratizing and reimagining spaces, combining different disciplines, and implementing technological innovations have been key to overcoming challenges, allowing institutions to maintain cultural relevance while expanding their educational and social reach. This paper will explore how these practices have become essential drivers in the evolution of the Museum of Latin American Art (MOLAA), fostering more inclusive and meaningful experiences for diverse audiences and influencing the upcoming architectural expansion the institution is undertaking.

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Introduction

The Museum of Latin American Art (MOLAA) is a visionary 21st-century museum, leading in the exhibition, research, study, preservation, and education of modern and contemporary Latino and Latin American art. Located in Long Beach, California, it is the only museum in the United States dedicated to Latino and Latin American art accredited by the American Alliance of Museums (AAM). With an annual budget of 4.6 million USD, this nonprofit 501(c)(3) organization represents artistic work from 33 countries and artists of Latin descent working worldwide and in the U.S. Latin America spans the continents of North, Central, and South America, including the Caribbean Islands.

In recent years, MOLAA has undergone a remarkable transformation driven by multiple factors, including rapid social changes, the need for greater visibility, and the establishment of new ways to interpret artistic work. There is also a growing emphasis on interaction and integration with local and international communities.

MOLAA is currently facing several critical institutional challenges that limit its ability to serve its growing community. The lack of physical space restricts our capacity to welcome a larger number of visitors and prevents us from expanding our onsite student programs, impacting educational outreach. Additionally, our current collection storage facilities are not suitable for public viewing, limiting access to the museum's rich holdings and limiting scholarship. The aging infrastructure also poses significant environmental concerns, as outdated systems contribute to a high carbon footprint. Compounding these issues is the escalating cost of utilities required to maintain the current structure, diverting vital resources from programming, staff development, and community engagement. These challenges underscore the urgent need for institutional upgrades and expansion to fulfill our mission more sustainably and inclusively.

In the United States, the Latino population has reached approximately 64.6 million, making up 19.4% of the country's total population. This community has grown significantly, especially in states like California, where Latinos now represent 40% of the population. More than half of young Californians—52% of those under 24—are Latino. Globally, it is estimated that there are over 670 million people of Latin American or Hispanic origin, including those in the Latin American diaspora worldwide.

These numbers reflect both the diversity and importance of the Latino community, not only in the U.S. but internationally, with substantial cultural, economic, and social influence across different contexts.

The vast diversity of social and cultural factors surrounding our museum, often combined with structural and economic limitations, has proven to be more of a virtue than a challenge. MOLAA has embraced these circumstances to innovate and adopt an interdisciplinary approach, becoming a dynamic space for learning, interaction, and dialogue. Through this evolution, the museum has not only gained greater cultural relevance but has also expanded its role as an agent of educational and social change. These factors have inspired a future architectural expansion project that will soon be unveiled.

Interdisciplinarity at MOLAA

Interdisciplinarity involves integrating knowledge and methodologies from different fields to address common challenges. At MOLAA, all staff strive to combine insights from various areas to offer richer and more meaningful cultural narratives. This commitment is demonstrated through collaborations between historians, scientists, artists, technologists, sociologists, and educators. This approach not only enriches exhibitions but also promotes continuous learning for both museum staff and visitors.

A recent example of interdisciplinary interaction—and the museum's commitment to inclusion, diversity, and social change—is the exhibition *Vermillion Like Embers* by Brazilian Indigenous artist Andrey Guaianá Zignnatto. Zignnatto, a descendant of the Tupinakyia and Guarani Indigenous communities, began working as a bricklayer at the age of 10. As an Indigenous person whose land was expropriated and culture silenced, the artist seeks to restore his history through ancestral memories, methods, and materials. His works reflect urban themes alongside Indigenous heritage and symbolism. By

addressing Indigenous identity, the exhibition incorporates not only contemporary art but also ritualism as part of the creative act. This enables visitors to understand not just the past but also the current struggles and achievements of Indigenous communities. Such exhibitions function as aesthetic proposals, spaces for healing, and platforms for community dialogue, reflecting on the past to shape a more just and equitable future.

Interdisciplinarity at MOLAA also promotes creativity through technology, fostering the creation of innovative works and projects that would otherwise be impossible within a single field of study. Another example is ARTEÔNICA: Art, Science, and Technology in Latin America Today. It explores the little-known Latin American art movement rooted in the relationship between art, science, and technology from the 1960s to the present. The exhibition features 20 artists from Argentina, Brazil, Chile, Mexico, and Peru. It takes as its starting point the contributions of Brazilian electronic art pioneer Waldemar Cordeiro, exploring the development of electronic and cybernetic arts over the past 60 years. The exhibition creates a dialogue between pioneering artists of the 1960s and 1970s and contemporary artists who respond to their legacy.

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The New MOLAA

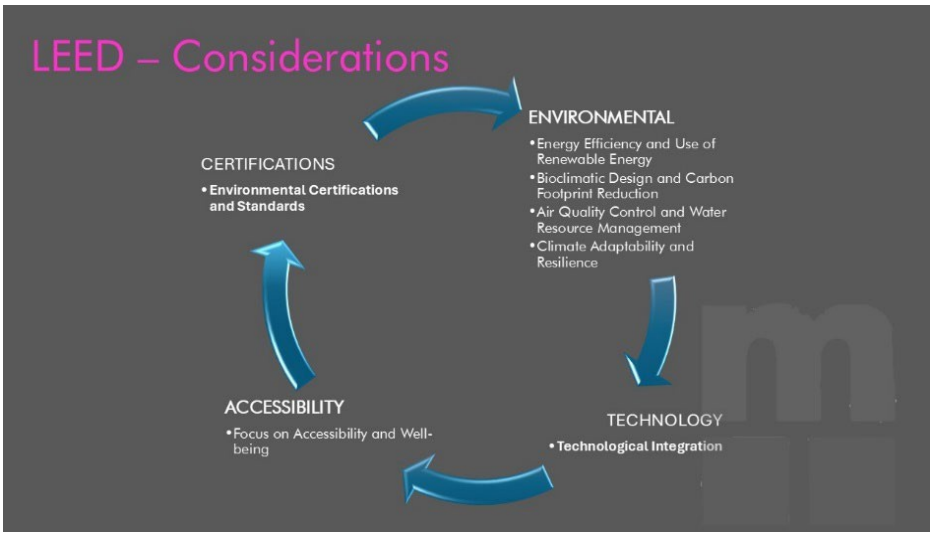
After 28 years since its founding, MOLAA is ready to embark on a new phase of development. MOLAA will become a leading example of a cutting-edge museum that promotes interdisciplinarity, diversity, and innovative collaboration. Its vision is to be an exemplary museum of Latino and Latin American art for the world. To achieve this, the management team create a groundbreaking facility that integrates the collection (open storage), exhibitions, educational programs, a research center, a theater, and a restaurant into a comprehensive experience for those who wish to explore the many facets of Latino and Latin American cultures. This new MOLAA project will integrate with the city and community, enhancing the urban environment beyond its walls. The new and renewed building will be open, transparent, and dynamic. It will be filled with objects, ideas, and knowledge, driven by innovative strategies that allow people to understand and celebrate Latino and Latin American culture locally, nationally, and internationally.

MOLAA also deals with new issues, such as sustainability, LEED and technology while undergoing the future expansion.

LEED (Leadership in Energy and Environmental Design), developed by the U.S. Green Building Council (USGBC), is one of the world's most recognized systems. It allows the design of buildings with higher environmental and energy performance across different stages: design, construction, operations, and maintenance. LEED certifications in the U.S. and BREEAM (Building Research Establishment Environmental Assessment Method) in Europe are international evaluation systems that assess the sustainability and efficiency of buildings.

Their goal is to encourage greener, more efficient, and environmentally responsible constructions.

LEED – Considerations



1. **Energy Efficiency and Use of Renewable Energy**

   Solar panels and wind energy: Utilize renewable energy to reduce dependence on the electrical grid.

   LED lighting and motion sensors: Optimize energy consumption with lighting systems that adjust based on occupancy.

   Geothermal energy: Efficient heating and cooling systems using geothermal energy.

   Building Energy Management Systems (BEMS): Monitor energy consumption in real- time to optimize it automatically.

2. **Bioclimatic Design and Carbon Footprint Reduction**

   Orientation and thermal envelope: Maximize natural light and minimize heat gain with shading systems.

Low-impact materials: Use recycled, local, or low-carbon materials (e.g., certified wood, low-emission concrete, or eco-friendly bricks).

Green roofs and vertical gardens: Reduce interior temperature and improve air quality.

3. Air Quality Control and Water Resource Management

Advanced ventilation systems: Equipment with HEPA filters and automated controls to enhance air quality, especially in critical areas.

Rainwater harvesting: Collect water for restroom use and irrigation.

Water consumption reduction: Use smart faucets and low-flow toilets.

4. Climate Adaptability and Resilience

Infrastructure resistant to extreme weather: Systems to mitigate floods, storms, or temperature extremes (e.g., elevated perimeter walls or pumping systems).

Dynamic facades: Electrochromic glass or systems that adjust to temperature changes.

Climate contingency plans: Strategies to maintain operations and protect assets under adverse conditions (e.g., thermal control, energy backup).

5. Technological Integration

Environmental sensors: Real-time monitoring of temperature, humidity, and air quality, crucial for preserving collections.

Smart management systems: Centralized control of lighting, HVAC, and security, with automatic adjustments based on environmental data.

Apps and interactive experiences: Enhance visitor engagement through apps, augmented reality, or virtual tours.

6. Focus on Accessibility and Well-being

Inclusive and accessible spaces: Adapted for individuals with physical, visual, or hearing disabilities.

Thermal and lighting comfort: Intelligent regulation to ensure optimal temperature and light conditions for both artwork and visitors.

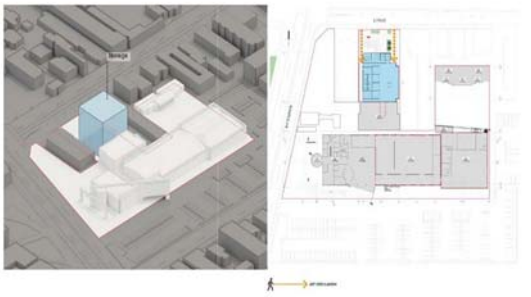
Indoor green spaces: Contribute to visitor well-being and internal climate control.

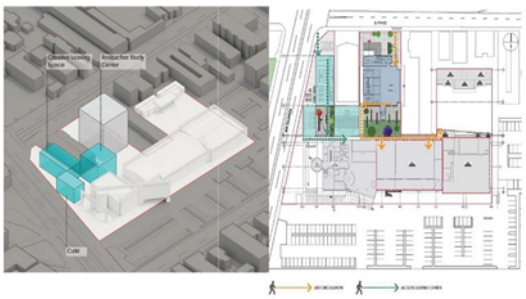
7. Environmental Certifications and Standards

LEED or BREEAM certifications: Guarantee the sustainability of the building.

Emission reduction standards: Comply with local and international regulations on energy efficiency and carbon neutrality.

These are several phases of the new project for the new MOLAA. The first phrase is an additional space for closed and Open Storage. The next phrase is the development of Auditorium, increased art workshop space, restaurant, and welcome lobby. The next is an increase of square footage for exhibition galleries and open areas for events.





MOLAA is also a museum as an educational reference. It is a museum equipped with solar panels, rainwater harvesting, and a smart climate management system not only reduces its environmental impact but also becomes an educational model. It can integrate sustainability programs and strengthen the connection between art, science, and environmental stewardship. These considerations ensure the building is prepared to address climate change challenges while serving as a model of efficiency and sustainability for the community.

Technology has transformed museum experiences, democratizing access and offering more inclusive and diverse educational resources. Technological innovations have enabled institutions like MOLAA to use online platforms to connect with a global audience.

The digitization of collections allows institutions with physical space limitations to expand their reach, showcasing their vast cultural heritage and collections beyond their physical walls through virtual platforms and social media, thus providing greater access to knowledge.

However, innovation also allows us to take responsible action regarding the future of museum architecture as models of social change, in dialogue with community needs and climate change. With these premises in mind, and with the task of reimagining MOLAA as an inclusive space that responds to both climate and social change, we set out to rethink the building from a perspective of sustainability, interdisciplinarity, and innovation, focusing on the expansion, integration, and reinvention of the building under the LEED system.

Designing a museum building in the context of climate change requires integrating innovative, sustainable, efficient, and resilient solutions. Climate change has become one of the greatest challenges facing society on a global scale. When it comes to innovation and climate change, museums face the responsible challenge of creating buildings that commit to sustainability, supported by new technologies and new construction approaches.

1. **Sustainable LEED Building:** A museum that responds to the realities of climate change.
2. **Increased Exhibition Capacity:** With more space, the museum can host larger andmore diverse exhibitions, including major international collaborations.

3. **Collection Expansion:** The new space will allow MOLAA to grow its permanent collection, incorporating more contemporary and historical works by Latin American and Latino artists.
4. **Enhanced Educational Programs:** The museum will offer more educational programs, workshops, and activities for all ages, promoting a deeper understanding and appreciation of Latin American art and culture.
5. **Boost to Cultural Tourism:** A larger museum with more attractions will draw more national and international tourists, benefiting the local economy and raising Long Beach's profile as a cultural destination.
6. **Local Economic Impact:** The expansion will create jobs during construction and in the museum's operations, while increased visitor traffic will support local businesses.
7. **Greater Inclusion and Diversity:** The expansion will provide an opportunity to include a broader range of perspectives and artworks from different Latin American regions and communities, promoting cultural diversity.
8. **Infrastructure Improvements:** Updates to technology and accessibility will offer visitors a more enriching and comfortable experience.
9. **Strengthening International Networks:** With expanded capabilities, MOLAA can forge new partnerships with cultural, academic, and artistic institutions worldwide, fostering cultural and artistic exchange.
10. **Contribution to Global Cultural Dialogue:** By showcasing more artworks addressing contemporary and relevant themes, MOLAA can play an essential role in global cultural conversations, highlighting the contributions of Latin American and Latino art.
11. **Improved Community Well-being:** A vibrant, successful museum can foster a sense of community and belonging among residents, providing a cultural and social gathering space.

Interdisciplinarity and Innovation at the Core of MOLAA's Evolution

Interdisciplinary work, while essential to innovation and inclusive engagement, often encounters limitations such as institutional silos that hinder communication, disciplinary friction stemming from differing methodologies and priorities, and technological inequities that create uneven access to tools and resources. These tensions can limit collaboration and slow progress toward shared goals. Recognizing these challenges, the new design strategically incorporates collaborative workspaces, strengthens cross-departmental procedures, and implements accessible technologies to foster a more integrated and equitable environment. By breaking down barriers between disciplines and ensuring all stakeholders have the tools and support they need, the new design promotes a culture of cooperation, creativity, and shared purpose.

The expansion project's interdisciplinary and innovative approach will not only establish MOLAA as a reference point but also position it as a driving force for community and cultural development across borders.

MOLAA's evolution is grounded in interdisciplinarity and innovation to ensure not only its continued relevance but also its essential role as a catalyst for social and cultural change. These two pillars drive the museum's development, enabling it to preserve cultural heritage while acting as a social and educational agent.

By integrating various disciplines and innovative technologies, museums like MOLAA secure their relevance in today's world while enriching cultural and educational experiences for future generations. These approaches ensure museums' adaptability and resilience in a constantly changing world, transforming them into more than just guardians of cultural heritage—they become leaders in promoting knowledge and social change.