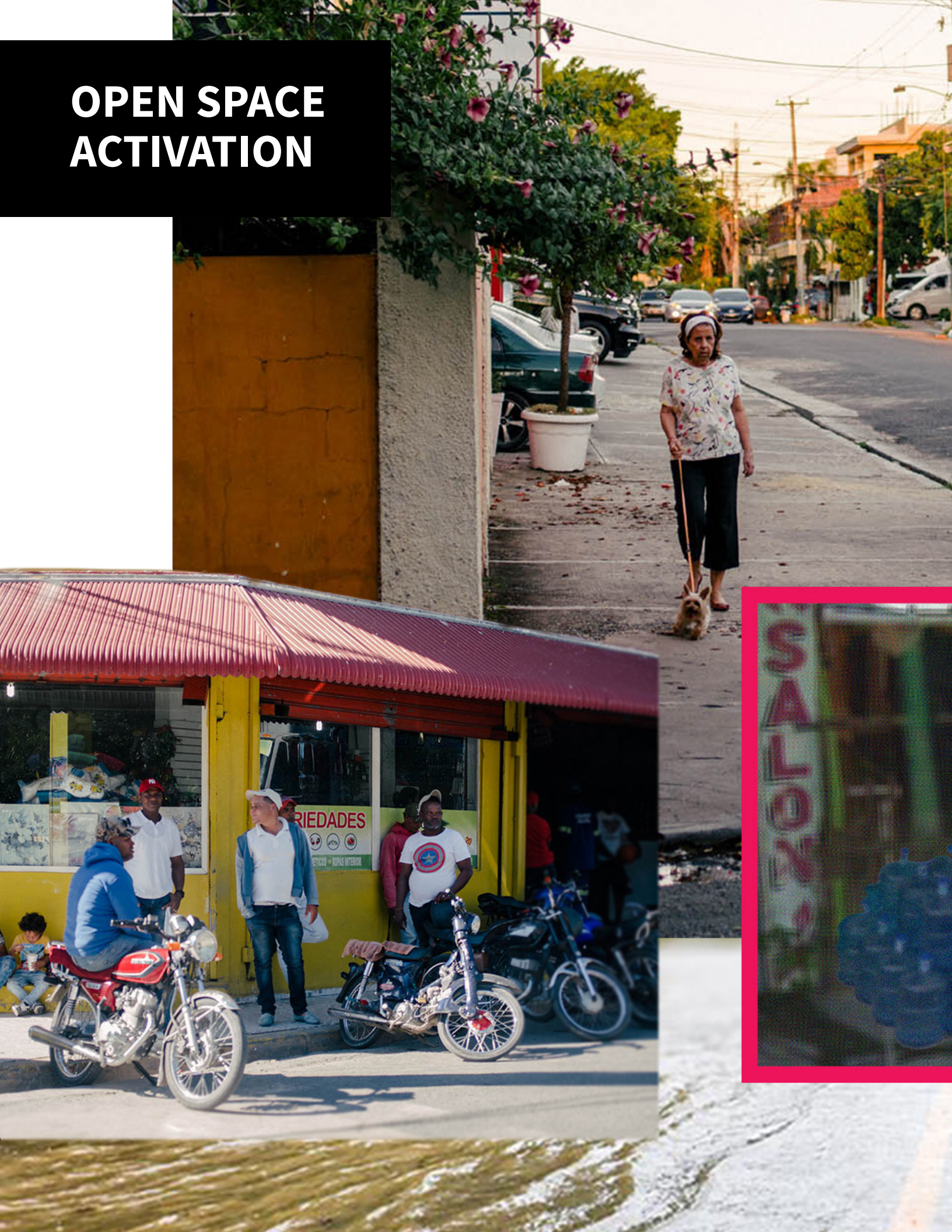


OPEN SPACE ACTIVATION





OPEN SPACE ACTIVATION

ABSTRACT

Cities develop densely and irregularly, a process which often sidelines public open space—and the many community benefits they provide—forcing ordinary activity onto narrow neighborhood streets. Recognizing this gap in everyday life, Community Resilience Hubs can respond by including **open and off-street public space** in their design, which will also serve as an agile, unprogrammed, and resource-rich space for rapid response activities. A new generation of resilience hubs can more intentionally incorporate open space as part of their overall social service and design plans, furthering the hub’s mission and community social resilience.

Open spaces are commonly used to enhance sustainability and quality of life in cities. Among other benefits, well-planned open space

benefits social resiliency by improving and providing healthy green spaces, arts and culture programming, and economic development opportunities. They also provide vital and accessible areas for gathering and community building. Working alongside a Community Resilience Hub, the effects of community-centric open space can **build local social resilience** and a basis of knowledge for disaster response.

Through a response and recovery lens, open space creates needed “loose space” for rapid resilience: **agile areas** that can be utilized and moved through easily, often supporting a greater network of open spaces. These areas do not have to be large; small areas can create vital safe and accessible zones. In particular, open spaces can provide a safe place for gathering and recreation

following disruption, appropriately site and service emergency response vehicles and auxiliary structures, and support post-disaster activities like aid distribution. Furthermore, open spaces can mitigate the environmental effects of disaster through adaptive and green design applications.

As such, there is a case for all community resilience centers to incorporate off-street open spaces into their design, including the Cristo Rey Community Resilience Center in Santo Domingo. The site of the planned resilience hub offers an opportunity to design utilitarian open space along the street frontage, which will aid the hub’s resilience activities and provide a needed and **attractive community resource** to the densely built and underserved Cristo Rey neighborhood.





THE STREETS IN THE DOMINICAN REPUBLIC

CURRENT CONDITIONS

While the role of shared open spaces in disaster management is understudied, some cases point to their importance in recovery to promote needed social resilience. Looking at disaster response and recovery case studies, we see that public spaces frequently host emergency aid activities like aid distribution, temporary shelter siting, and queuing for social services. At the same time, congested streets complicate the rapid response required.

EXISTING OPEN SPACE

Santo Domingo lacks formal open spaces. Emphasized through spatial and anecdotal data, this lack has been identified by local planning initiatives which look to expand and connect a number of new and existing spaces throughout the city. While plazas and parks are central convening spaces, most residential neighborhoods are dense, influenced by **informal settlement patterns**, and lack significant open spaces. As such, **public life lives on the street**, a space for parties and celebrations, communication and storytelling, playtime, and informal business and vending. That this space is activated in a lively way is significant; however, outside activities should not be constrained to the streetscape. How can we create more dignified, welcoming, and well-resourced spaces that remain accessible and open?

CRISTO REY SITE ANALYSIS

Cristo Rey is relatively underserved by open spaces; a small park anchors the southern part of the neighborhood, and a dense, walled-in cemetery is sited on the northern edge. As planned, the Resilience Hub has dedicated its street frontage to twenty paved parking spaces. This area creates a large space between the street and the building, making it relatively **uninviting and removed** from the public sphere.



OPEN SPACE SYSTEM OF THE NATIONAL DISTRICT

Plan de Ordenamiento Territorial 2030



VEGETATION MAP OF CRISTO REY



3D RENDERING OF CRISTO REY RESILIENCE CENTER

RESEARCH & FINDINGS

Resilience activities utilize informal open spaces throughout disaster response. The demand for open spaces for both everyday activities and rapid resilience bolsters the overall need for open space; open space development is also furthered by additional environmental, community, and economic development opportunities. In all, this development is **the formalization and advancement of naturally occurring uses**.

CASE COMPARISON & LITERATURE REVIEW

This research’s methodological approach is based on a comparative case study and literature review on disaster response case scenarios and open space and disaster academic literature. Analyzing the needs and responses to gas explosions in Massachusetts and the Dominican Republic—the 2018 Merrimack Valley and 2019 Santo Domingo gas explosions—a number of effective uses of auxiliary open space can be identified for building everyday resilience,

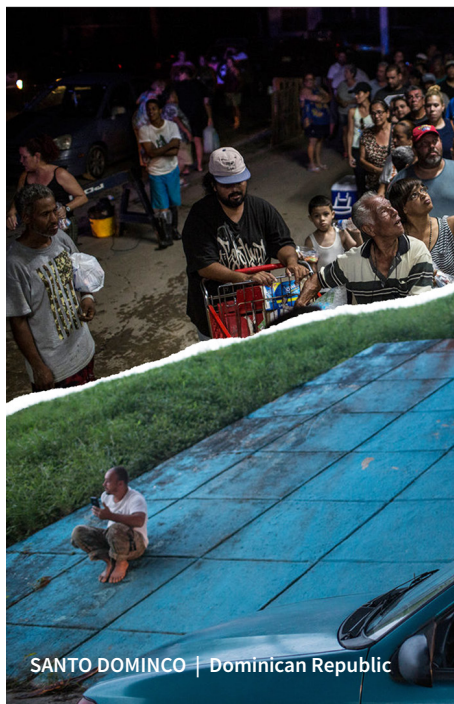
responding to disasters and disruptions, and community recovery. Physically, open spaces connected community members and emergency responders via **access to transportation routes**, improving response time, accessibility, and aid distribution. They provided **spaces for emergency rescue and temporary shelter**, with emergency trailers in the park to house evacuees in the Merrimack Valley. However, these open spaces were often **undignified** and included dangerous streetscapes.

Looking more broadly at global response and recovery activities, shared public spaces are used for various sociocultural activities for both public and private life; in many densely and informally settled communities, these shared spaces are constrained in size and may consist of sidewalks and street space. In this way, we can **reinterpret open space as the urban streetscape**, moving away from ideas of lush parks and formal plazas.

For communities in recovery, streets (and off-street spaces) serve important functions: as a center of exchange (transportation, interpersonal communication) and activity (socialization and recreation), as well as the extension of private space (e.g., home storage). They are open gathering places connected to thoroughfares, which can aid in distributing relief supplies (e.g., water, electricity) and connect with or site permanent or temporary support facilities, including bathrooms and emergency vehicles. During emergency scenarios, open spaces can serve as an emergency evacuation and rescue site and mitigate the impact of environmental hazards through design (e.g., stormwater capture). However, these spaces can also hinder urban communities; for example, they can host criminal activity, especially at night, furthering fear of crime. In all, open spaces are flexible host sites for many vital activities, especially when they are well-planned and designed.



LAWRENCE | Massachusetts



SANTO DOMINICO | Dominican Republic

POST-DISASTER CAMPS | The Philippines
Japan



USES & OPERATIONS

Building Everyday Resilience

- Community recreation and social space
- Site for social gathering, and play
- Auxiliary space for indoor hub programming
- Space for local vendors and extension of private activities
- Informal programming, does not require regular oversight
- Welcomes community in and minimized local on-street activities

Disasters & Disruptions

- Emergency gathering place and evacuation point
- Communication center
- Design-based disaster mitigation

Post-Disaster Recovery

- Distribution center with easy access to street and transportation networks
- Dignified gathering place for social services
- Accessible utilities hook-ups (electricity, water, internet)
- Space for temporary structures and vehicles

DESIGN FEATURES

Green design

For open spaces, green design strategies can include absorptive design elements such as **rainwater reservoirs** and above-grade features that can help mitigate the effects of flooding events. Additionally, urban greenery and street trees can help to reduce the **heat island effect**.

Welcomes community-in

A well-designed space welcomes people of all ages and backgrounds, providing a visual and physical **connection to interior** resilience activities. A non-sterile municipal space is **inviting**, making people want to return through comfortable seating and greenery. Lighting is a crucial aspect of such spaces, especially for evening activities and safety.

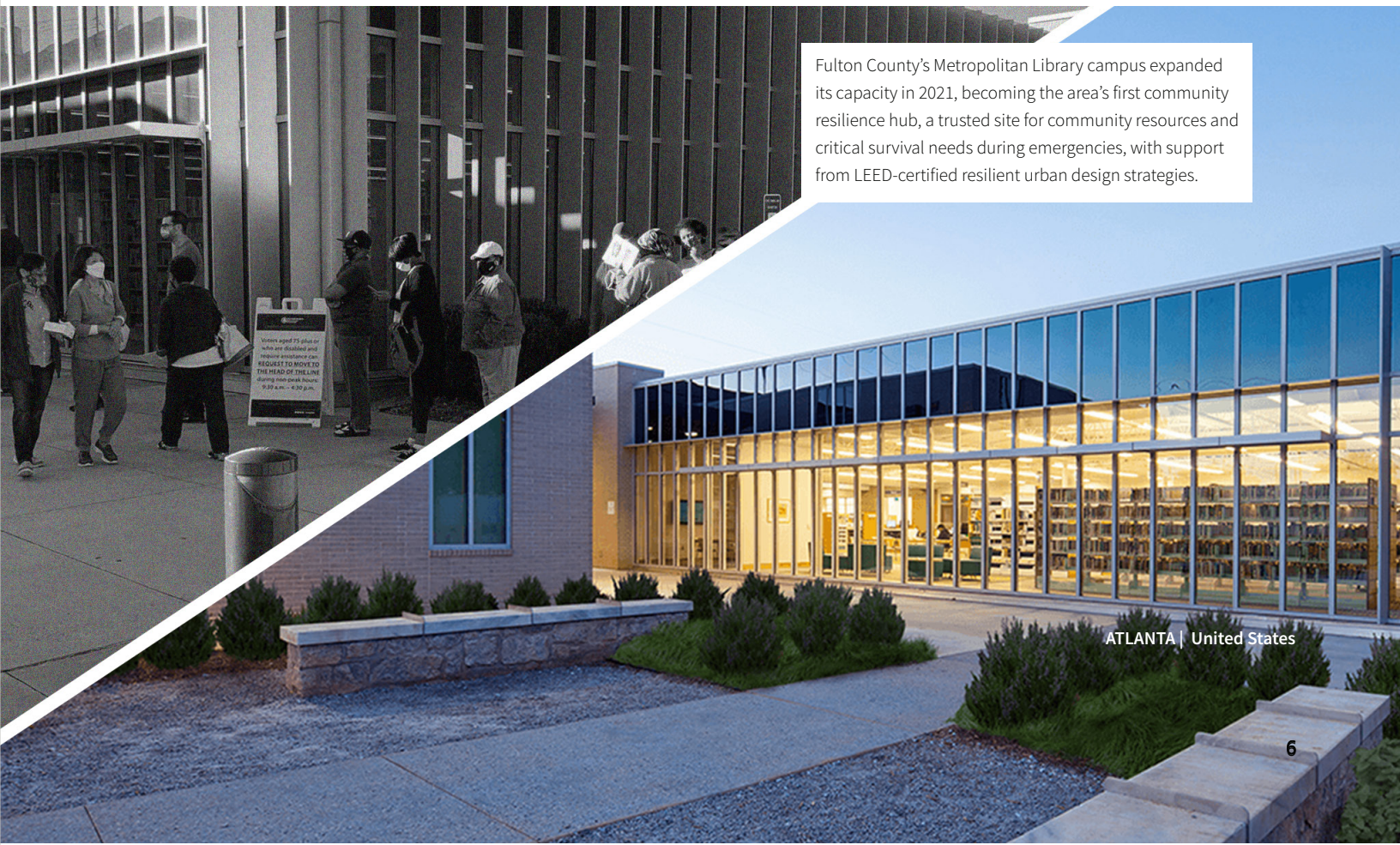
Open and flexible space

Exterior spaces can be more **agile** with smaller **sub-areas** for different purposes, such as quiet study areas, play spaces, or outdoor classrooms. s such, the space can accommodate a wider range of activities and be more inclusive. Other applications that enhance the space include Wi-Fi access and electricity and water hook-ups. Let's be **imaginative** about how this space can be used in new and exciting ways.

COMMUNITY & ECONOMIC ADVANCEMENT

By activating open space adjacent to resiliency centers, additional support from stakeholders and funders can be generated for the hub. In regards to **community engagement**, this local resource will provide long-term and highly-visible uses, work as a local connector of open space and resources, and provide existing local groups space for programming (and regular engagement for the center). It is also an avenue for a sense of community ownership.

Open space activation can be presented as a **local economic development tool** to decision-makers. This could win further political favor and opportunity for municipal funding to resiliency centers. While there are additional upfront capital and O&M costs, new municipal and philanthropic funding is accessible from the open and green space field. Additionally, there is a value capture opportunity through possible user fees for particular community group use of the space. Overall, open space activation and resilient design is a small-scale, low-cost, and high-impact intervention for community resiliency centers. is a small-scale, low-cost, and high-impact intervention for resiliency centers.



Fulton County's Metropolitan Library campus expanded its capacity in 2021, becoming the area's first community resilience hub, a trusted site for community resources and critical survival needs during emergencies, with support from LEED-certified resilient urban design strategies.

PROJECT PROPOSAL

The Cristo Rey Community Resilience Hub offers an excellent opportunity for exterior space activation. As is, there is a significant street-adjacent parking lot dedicated to twenty parking spots for center staff and a few small plant beds. Instead, the project can embrace a resilient green design that **supports social resilience** through a welcoming, open, and flexible community programming space. Concerning **environmental resiliency** and mitigation, this parking lot can embrace a more permeable, absorptive design; if the lot is built above grade, low-level flooding can be mitigated from this space, and a small stormwater reservoir can be built underneath. Additional greenery and plantings can provide needed shade, create a more comfortable and less sterile space, and mitigate the heat island effect. For social resilience, a more organic-looking space will visually invite local residents into the center (and its existing programming); clustered seating and lighting will aid, especially for more socially-oriented evening programming.

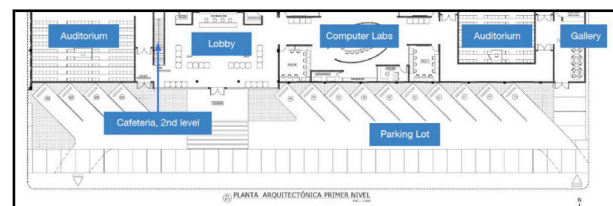
As stated, shared community spaces are vital for building everyday resilience. By activating the off-street space at the resilience center, the center could benefit its own community programs. Center programs could utilize accessible and comfortable areas in their activities. At other times, this would function as an auxiliary community space, much like a plaza, that promotes regular recreation and social activities, as well as an operating place for local vendors. Children could play safely off of the street. Community organizations could host events in the evenings, or more informal teteos can occur. However, the space does not require regular programming and can be used for more passive informal uses. Some residents will be naturally drawn to

the space if public Wi-Fi and charging ports for devices were available. A limited number of electric car charging stations may be available to the public.

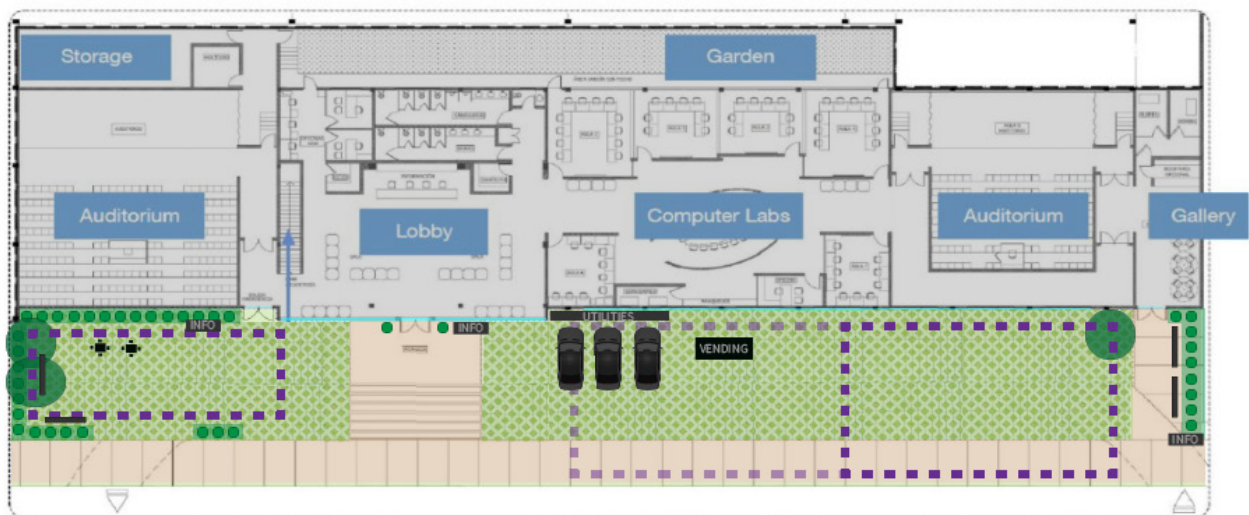
In disaster response and recovery, the **unbuilt nature** of this space is vital. It is a natural emergency gathering place, and its location off-street and near main transportation thoroughfares provide for emergency transportation for residents as well. Connection to the road network also supports the distribution of aid. During post-disaster recovery, open space can serve as a dignified place for expanded social service (particularly some public health activities which may be better suited for the outdoors). If necessary, the site can also serve auxiliary vehicles and structures (e.g., emergency management trailers, portable toilets). This activity will benefit from existing utility hookups. Electricity and water sources can support both structures and residents; additionally, locals will be able to use planned emergency internet services.

Rethinking the urban and landscape design could insert new energy into the project for all stakeholders and serve as a **model for future** hubs to embrace sustainable, community-oriented design strategies.

RESILIENCE CENTER PLAN AS OF 2023



CRISTO REY COMMUNITY RESEILIENCE CENTER



PASSIVE ACTIVITY	ADMINISTRATIVE/FLEX	ACTIVE ACTIVITY
Youth & Elderly	Limited Administrative Parking	Sports & Creative Activities
Movable Tables & Benches	Utilities Hook-Ups	Supporting Hub Activities
Wi-Fi	Commercial Activity	Community Gatherings
Security Lighting	Extension of Active Space	Movable Furniture & Fences
Canopy & Greenery	Visual Connection to Interior	Unprogrammed Space



MIAMI | United States