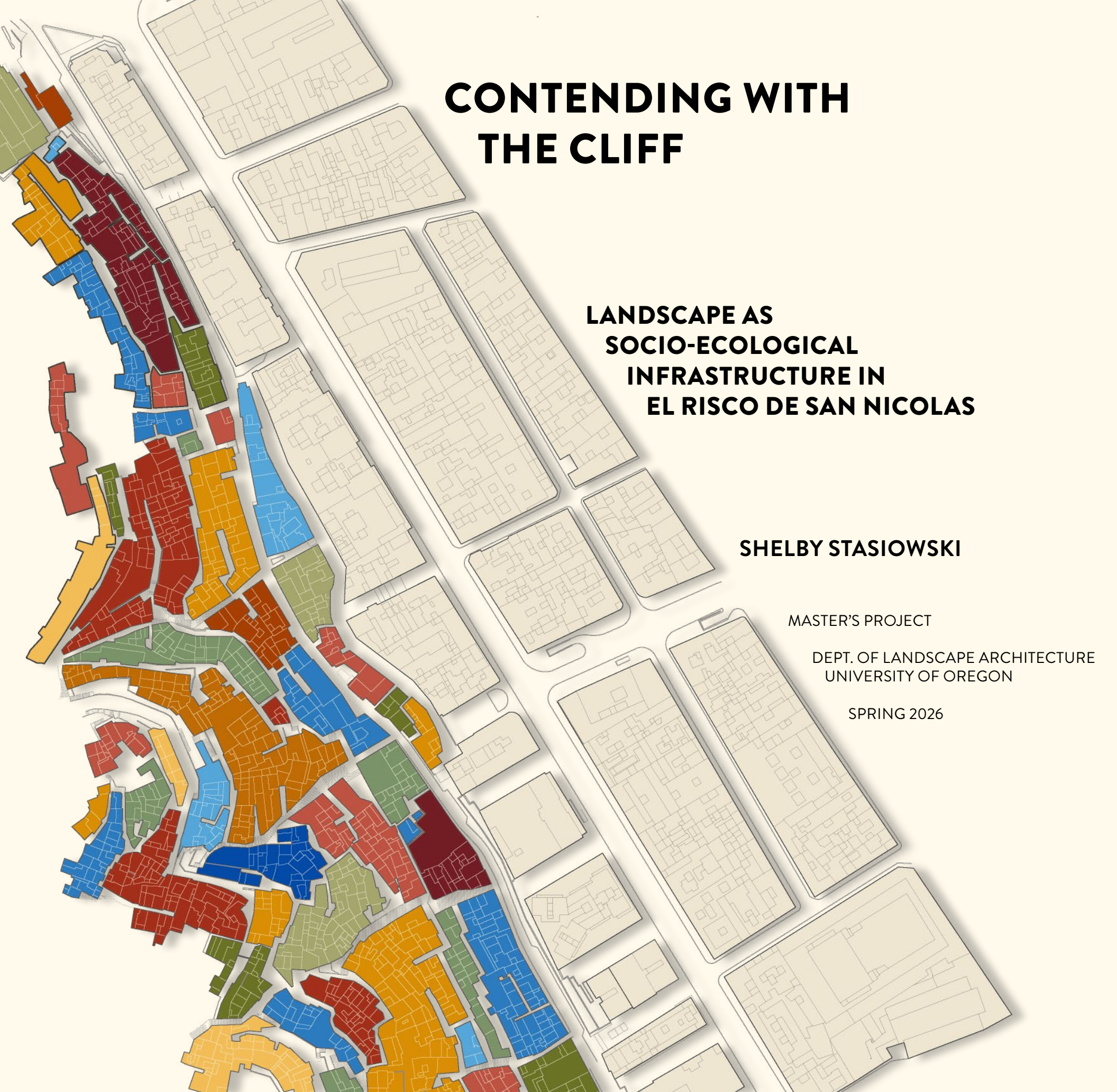




CONTENDING WITH THE CLIFF

**LANDSCAPE AS
SOCIO-ECOLOGICAL
INFRASTRUCTURE IN
EL RISCO DE SAN NICOLAS**

SHELBY STASIEWSKI

MASTER'S PROJECT

DEPT. OF LANDSCAPE ARCHITECTURE
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Contending with the Cliff:Landscape as Socio-Ecological Infrstructure
in El Risco de San Nicolas

by Shelby Stasiowski

A design-research project executed in partial fulfillment of the
requirements for the degree of Master of Landscape Architecture

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...for the endless guidance, support, and inspiration.

All images by author unless otherwise noted.
Images by author captured in July and December 2025.



NOTES ON THE EMERGENCE OF THIS PROJECT...

This project emerged from a field trip during the final days of a 5-week summer term abroad in the Canary Islands (Landscape Urbanism for Climate Change in the Canary Islands, July-August 2025). During a neighborhood visit organized by Cristina Suarez Lacalle of local landscape architecture firm LPA Studio, summer program instructor Ignacio Lopez Buson, architect and resident Elodie “Didi” Tchaves, and neighborhood leaders Tana Suárez Ruano and Aurora Ramón Molina of community-based advocacy group Amirisco, our cohort hiked the steep, winding corridors of historic El Risco de San Nicolas. Immersed in all its color, citizen ingenuity, vistas, and creativity, its crumbling canyons, derelict plots, and pervasive rubble felt unjust.

Taken by both the magic of the local identity and hardship endured by social perception and municipal neglect, I connected with the place as one that is culturally rich yet overlooked. Despite the city’s reliance on the neighborhood’s external image for tourist capital gain, a historic lack of investment in the public infrastructure and social policies maintains a state of marginalization that began centuries before. Predatory land speculation for a housing development in the neighborhood’s last remaining open space further pressures the already sub-par infrastructure and strained social fabric. Even so, the community refuses to be unheard. The community events, murals, ramps, sculptures, container gardens are all self-initiated, ad-hoc tactics that informally beautify space and create community—a power of local agency that I deeply admire.

There are limits, however, to what residents can be responsible for in the built public realm. A palpable lack of vegetation and public space exists in the neighborhood, particularly within the steep, primarily pedestrian neighborhood interior. Citizen desire for improved environmental quality expressed both in conversation and in community-led engagement efforts prompted my interest: what is the role of landscape architecture in a neighborhood like this? This project aims to introduce a fresh landscape planning and design lens to the local residents, designers, and public entities involved with El Risco de San Nicolas. Every neighborhood is worthy of beauty and comfort and investment, and here, we can envision a future for El Risco that is resilient, celebratory, and just.

ABSTRACT

A changing climate affects the livability of our cities, and due to a lack of financial and political resources, low-income communities are often the most vulnerable to its negative effects. Those with limited access to public open space face an undue burden when built infrastructure does not adequately address rising temperatures, increasing aridity, and intensifying precipitation events.

The unique morphological and social processes behind informal urbanism often lead to marginalized neighborhoods with highly constrained public spaces, particularly vegetated ones, resulting in increased climate vulnerability. Improvement efforts in these contexts, however, tend to lack planning for future climate conditions. To address this gap, this project positions green infrastructure as a viable approach to climate resilience and asserts that it must exist in tandem with established social hot spots to cultivate long-term success and local relevance.

Centering El Risco de San Nicolas, Las Palmas de Gran Canaria, Spain as a case study, this project synthesizes literature on informal urbanism, morphological neighborhood analysis, and fieldwork findings to develop a replicable siting methodology for climate-forward, community-focused public space projects. The application of the mapping methodology reveals opportune locations for such interventions and identifies six general typologies for intervention. Lastly, a set of locally responsive speculative design proposals models how opportunity locations can improve the neighborhood's public spaces in a contextually appropriate way. Amid a changing climate, this project offers a strategic approach and vision for improved public realms in constrained and marginalized urban neighborhoods that are more fit for an uncertain future.





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INTRODUCTION

“...informal settlement is a paradox. It is identified on the one hand with illegality, inferiority, and insecurity...On the other hand, informal settlement is identified as self-organized urbanism that adds vitality, affordability, diversity, creativity, and adaptability to the city—a form of radical democracy that embodies the ‘right to the city.’ Informal settlement is a mode of production that operates outside the control of the modern nation state, yet is also produced by it”
(Dovey et. al 2023)

INTRODUCTION

PROJECT CONTEXT

LIFE ON CLIFFS

People have made use of the rocky, volcanic slopes of Gran Canaria for centuries, building a vernacular of terraces and cliff-side dwellings adapted to the dramatic topography of the finite available land. At the mouth of the ravine feeding the island’s capital city, Las Palmas de Gran Canaria, these cliffside neighborhoods, or ‘riscos,’ developed during the mid-16th century (Batista et al. 2000) as the nearby city center expanded and prospered. As housing became too expensive for blue-collar fishermen, artisans, bakers, banana farmers, and shepherds to afford, they occupied the only affordable nearby land: the slopes. Rooted in self-construction, these neighborhoods are born out of informal urbanism, a process of urban development led by communities, without traditional systematic, municipal oversight (Werthmann 2021; Gouverneur 2015).

Since initial occupation, these historic neighborhoods have become colorful visual icons of the city. Their development, however, has persisted under different circumstances than the rest of the city as a product of both their difficult morphology and social marginalization. Through a process called consolidation (Gouverneur 2015), the neighborhoods transformed over time from impermanent structures and access trails speckled among the cliffs into dense, winding corridors codified in concrete and asphalt. Today, they exist as highly dense, heterogeneous, and impervious urban residential neighborhoods that are largely inaccessible to vehicles, difficult for

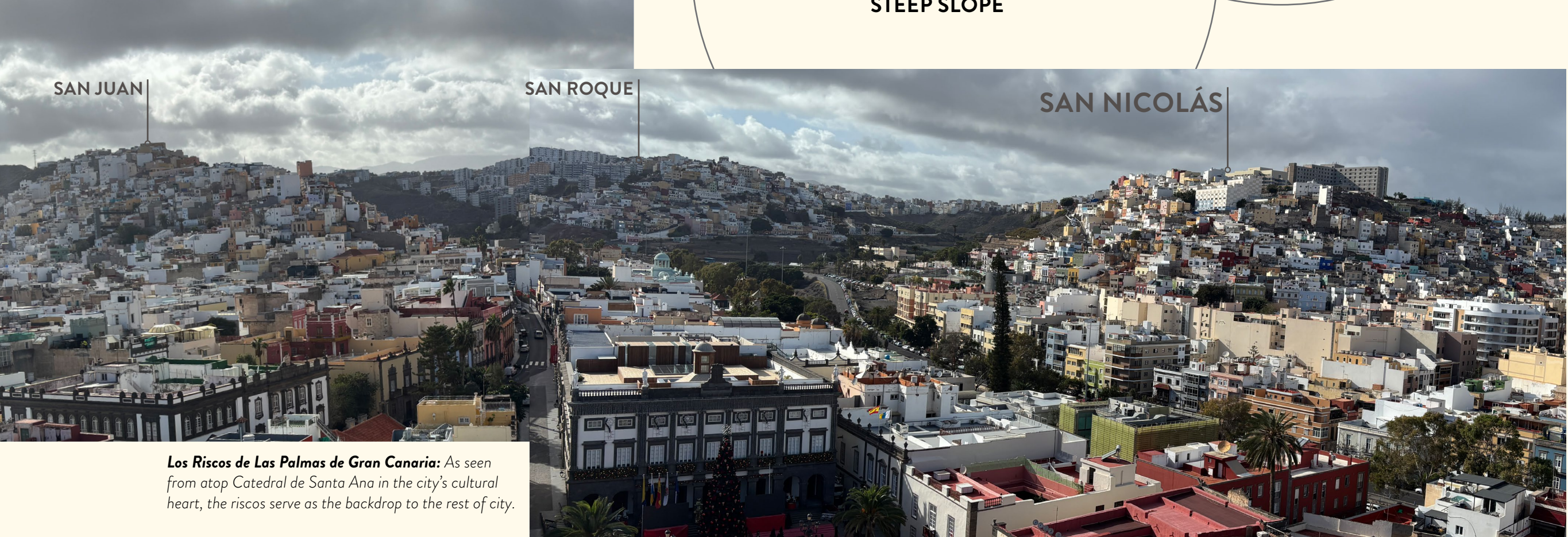
elderly or mobility-impaired people to navigate, and are primarily occupied by disadvantaged populations.

This history of informal urbanism and historic disinvestment currently leaves the neighborhoods without adequate access to public green space, canopy cover, and stormwater management systems. As climate projections suggest a warmer, drier, dustier, and stormier future for the islands (Carrillo et al. 2023; Hernandez et al. 2018; Ley Bosch et al. 2023), these low-income neighborhoods are particularly vulnerable to the adverse effects of climate change (Levy and Patz 2015b; Gouverneur 2015).

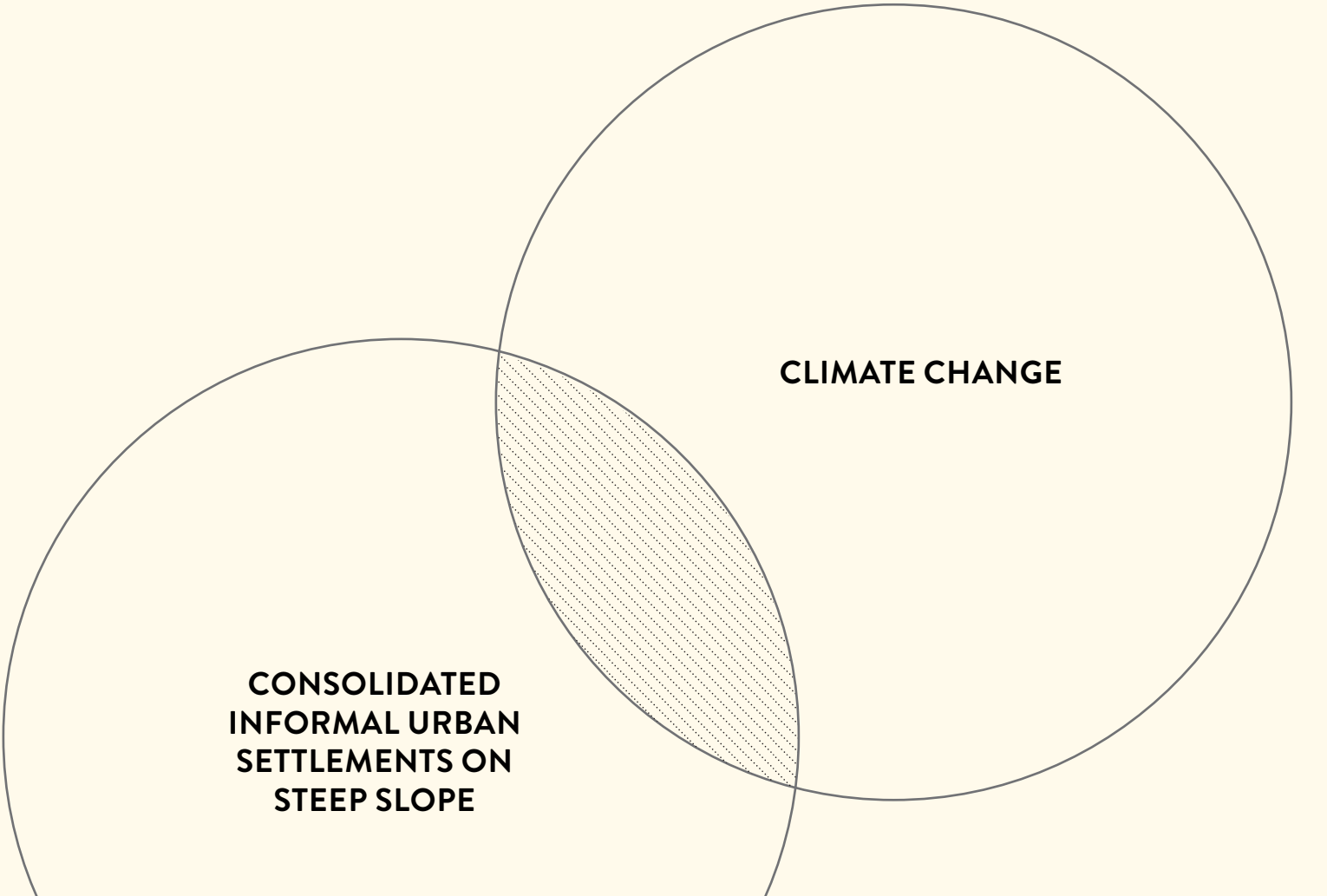
Without extensive precedents for climate change planning and interventions in the unique morphology of consolidated informal urban settlements on steep slopes, this project aims to understand where and how to integrate landscape interventions into these complex urban contexts to help ameliorate climate woes and increase neighborhood-scale climate resilience. Specifically looking to the neighborhood of El Risco de San Nicolas, the following project situates socio-ecological infrastructure–landscape interventions that support environmental functions while contributing to a vibrant public realm—as a possible viable solution to developing the neighborhood’s climate resilience and adaptive capacity while reinforcing its existing network of socially significant places and institutions.

risko: cliff; crag; bluff; sheer, high place; rough, steep mountain or rock, often with difficult access

Definition adapted from: dictionary.cambridge.org, spanishdict.com, and wordmeaning.org



Los Riscos de Las Palmas de Gran Canaria: As seen from atop Catedral de Santa Ana in the city’s cultural heart, the riscos serve as the backdrop to the rest of city.



INTRODUCTION

INFORMAL URBANISM

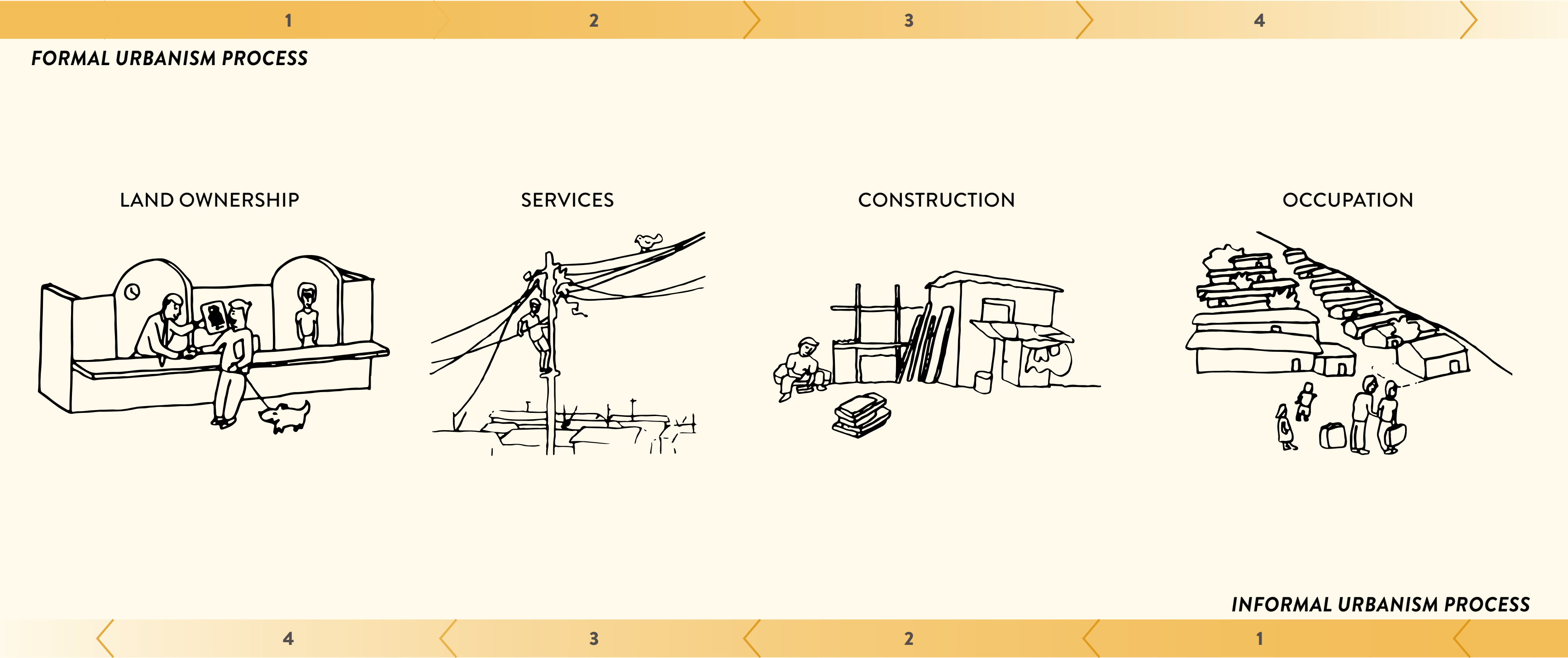
THE SELF-CONSTRUCTED URBAN TYPOLOGY

A flexible term in urban design and planning literature, in the context of this project, *informal urbanization* refers to grassroots, citizen-initiated processes of self-construction within a society where nearby planning efforts or municipal authorities exist. Informal settlements are those that are self-constructed by their inhabitants rather than through the traditional framework of legal planning efforts (Gouverneur 2015; Werthmann 2021; Kamalipour and Dovey 2017). They tend to emerge through self-organization, embody a state of constant transformation, and dynamically adapt and reflect local conditions (Kamalipour 2018; Gouverneur 2015).

Ranging in scale from pocket neighborhoods to entire sprawling cities and in contexts from constrained urban remnants to expansive rural countrysides, this urban typology spontaneously emerges in reaction to the formal city. While formal urbanization begins with land ownership and ends with occupation only after construction and infrastructure integration are complete, informal urbanism tends to operate in reverse. Beginning with land occupation, often of marginalized contexts considered unfit for urbanization, including steep slopes, flood plains, ravines, and post-industrial sites, residents lead independent planning, construction, and development efforts by incrementally building out their homes. Services like sewer, water, electricity, and roads are integrated between residences as the settlement grows. Locals receive land tenure far in the future after a governing body formally recognizes the settlement as an established place, if at all.

As a verb, informal settlement emerges as “a practice of adaptation to the forces of real urban conditions—to available land, transit networks, employment markets, [and] local politics and climate...” (Dovey et. al 2023,19). Reframed as a process rather than product, informal settlement can demonstrate high-agency and initiative among a community, and it becomes an act of resilience against formal urbanism that does not serve all city residents equally.

“Just as the over-informalized needs to be formalized in order to achieve standards of safety and quality, so the over-formalized needs to be informalized to achieve standards of adaptability and local agency”
(Dovey et. al 2023)



INTRODUCTION

CONSOLIDATION AND ITS MORPHOLOGICAL LEGACY

THE DISADVANTAGEOUS LEGACY OF SPONTENEOUS MORPHOGENISIS

Given their grassroots origins, informal settlements tend to reflect strong, rich self-made identities, sense of place, and belonging as “personalized urban products” with rich, organic forms (Gouverneur 2015; Haiek Coll and Souto 2024). These forms ratify as an informal settlement matures, or “consolidates.” Consolidation is the process of infill, improvement, and upgrading of a neighborhood into a relatively permanent, stable state. Nearly all available space in the settlement becomes occupied, and materials and infrastructures are upgraded to more formal standards—dirt becomes concrete, homes gain plumbing, sanitation, and electrical systems, and pedestrian and vehicular access throughout the settlement improves.

Despite incremental improvements, however, fundamental ailments produced by the consolidated informal morphology can perpetuate a state of marginalization that is often difficult to ameliorate without external funding and support. These traits include: a lacking or nearly non-existent public realm and system of open spaces (Kamalipour 2023; Gouverneur 2015; Dovey and King 2011), inadequate vehicular and pedestrian accessibility within the settlement (especially for emergency vehicles and elderly populations), vegetation and green space fall far below sustainable development standards (UN DESA 2024), and sharp edge conditions where informal and formal meet cause social and civic isolation through a physical and culturally perceived disconnect between the ‘formal’ and

the ‘informal’ parts of the city (Cebir Meral and Özsoy 2021; Gouverneur 2015).

Physical and political abandonment of informal settlements by their formal counterparts can breed poor environmental conditions that accumulate through time. Settlements in advanced stages of consolidation often reach an inflection point where improvement plateaus and an overall state of regression takes hold as deterioration from intensive use outpaces improvement due to lack of maintenance, investment, and policy response (Azhar et al. 2021). Without the execution of meaningful, socially specific revitalization measures, these consolidated settlements face a trajectory of abandonment and vacancy as residents lack the time, means, and resources to correct years of accumulated infrastructural shortcomings and deterioration—a predicament exacerbated by climate change pressures. This project identifies El Risco de San Nicolas as a neighborhood currently facing this crucial inflection point.

INFORMAL
URBANISM

SELF-CONSTRUCTED
SPONTANEOUS GROWTH

INFILL

CONSOLIDATION

IMPROVEMENT

FORMAL
SETTLEMENT

CONSOLIDATION PROCESS

REGRESSION

INTEGRATION WITH FORMAL CITY



Image Credit: James Nel



Image: Nic Bothma via Daily Maverick



Image: United Nations University



Image: Medellín Metro via POMa



Image: Madrid ES

EL RISCO DE SAN NICOLAS

APPROACHING AN INFLECTION POINT

LACK OF WIDESPREAD
PEDESTRIAN ACCESSIBILITY

FEW OR ABSENT
GREEN SPACES

LACKING PUBLIC
SPACE NETWORK

LIMITED VEHICULAR ACCESS

LACK OF NON-RESIDENTIAL
AMENITIES

HIGH DEGREE OF SEPARATION
FROM FORMAL CONTEXT

MORPHOLOGICAL LEGACY
OF CONSOLIDATION

Informal Urbanization in Latin America (Werthmann 2022)
Planning and Design for Future Informal Settlements (Gouverneur 2015)
Atlas of Informal Settlement (Dovey et. al. 2023)

INTRODUCTION

IMPROVEMENT THROUGH INCREMENTAL URBANISM

LEARNING FROM LATIN AMERICA

Formal cities engage with their informal counterparts differently across cultures and political contexts. From outright denial of their existence to clearance of entire communities, *improvement* of informal neighborhoods by the formal city is a more recent approach that moves towards an ethic of social and environmental justice (see “Modes of Engagement” figure on p.10).

Across published precedent literature (Werthmann 2021; Gouverneur 2015; Dovey et al. 2023; Caravallo Baretto 2021), scholars often look to Latin America for examples of robust and successful urban improvement and planning efforts in consolidated urban settlements. Prompted by production-era urban economic opportunity, a “rural-urban shift” beginning in the 1950’s resulted in an urbanization explosion in Latin American cities. By 1990, sprawling favelas and barrios developed on marginalized lands at the peripheries as the formal city had neither the means nor the political will to accept low-income migrants at such scale (Caravallo Baretto 2021). Violence, lack of sanitation, and precarious social conditions generated by the neighborhoods’ insecure physical conditions prompted upgrading and improvement efforts.

Supported by great political will, Medellin, Colombia’s Social Urbanism / Library Parks in the early 2000’s and Caracas, Venezuela’s Catuche Project in the mid to late 1990’s are considered exemplary models of social and environmental transformation (Gouverneur 2015). By strategically fore-fronting citizen participation in the planning and implementation process to generate a sense of ownership, conducting and responding to extensive contextual site analysis, and focusing on the physical and non-physical integration of the formal and informal cities, these projects set the standard for site-specific design and cultivating a sense of belonging. These tenets have been replicated in settlement improvement projects across Latin America and around the world, most importantly teaching us that creation and amplification of social capital is the essential core to real settlement improvement.



Medellin, Colombia¹: One of ten Library Parks developed as part of the city’s Social Urbanism strategy.



Rio de Janeiro, Brazil³: Outdoor sport courts built as part of the Favela Barrio Project renewal initiative.



Caracas, Venezuela²: La y 5 de Julio recreation space from Espacios de Paz urban regeneration projects.



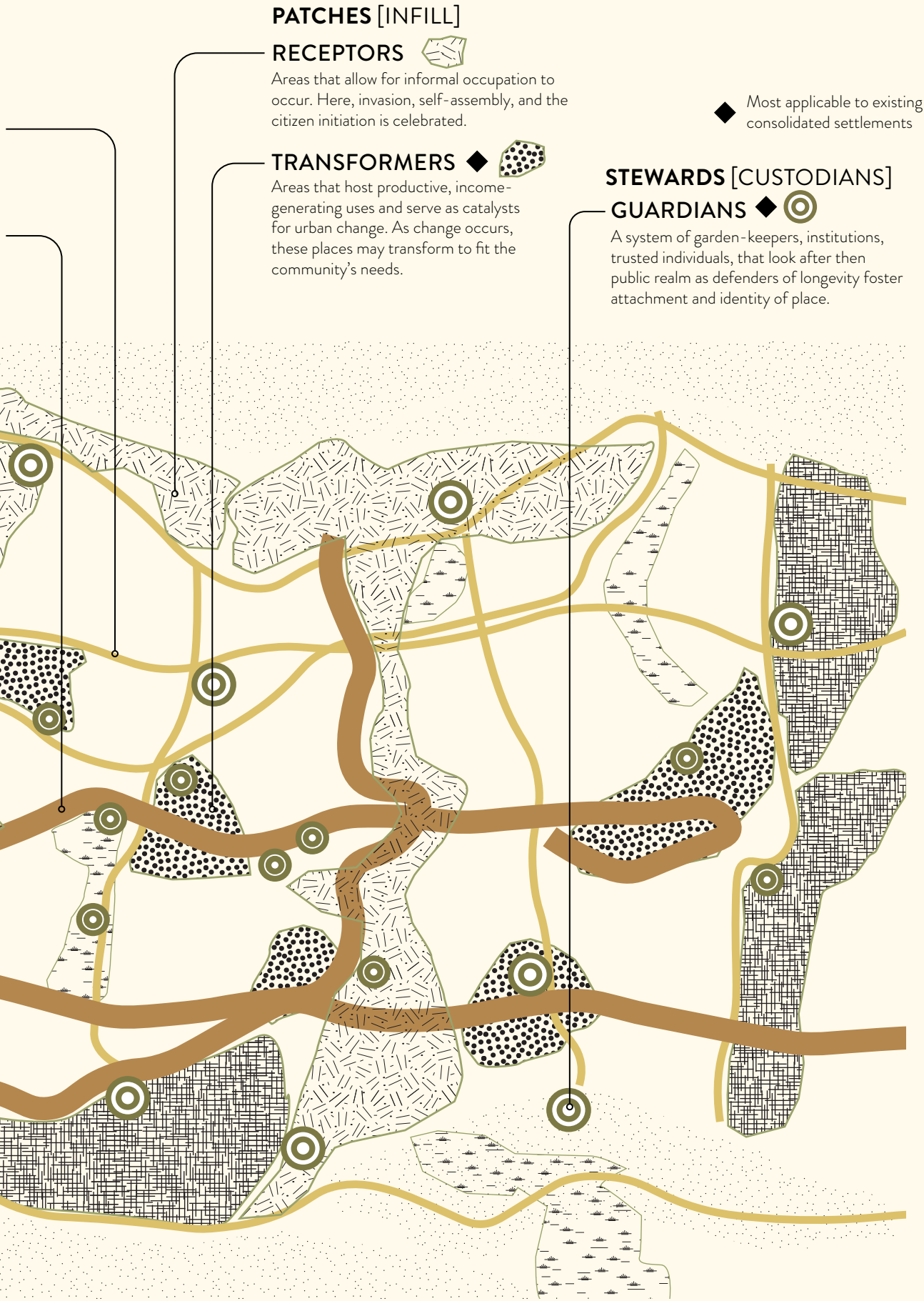
Sao Paulo, Brazil⁴: Cantinho do Céu project reconnecting four informal neighborhoods to the reservior.

INFORMAL ARMATURES SPATIAL FRAMEWORK²

Recognizing the shortcomings and sheer political will required of improvement projects in these existing consolidated contexts, David Gouverneur, current Associate Professor of Practice in Landscape Architecture at University of Pennsylvania and former National Director of Urbanism at the Ministry of Urban Development of Venezuela, developed *Informal Armatures* (2015), a planning methodology to guide the growth of young informal settlements before urban issues are codified through the consolidation process.

Through simple and flexible landscape-scale design system of corridors, patches, and stewards, the spatial framework of Informal Armatures aims to close the physical and social gap between the informal and formal city to help cultivate stable, healthy urban environments while honoring the dynamism of informality. It centers the idea of aggregating social activity and natural resource protection in and along these patches and corridors with assigned neighborhood stewards to advocate and look after their continued quality and vitality.

Informal Armatures is intended to guide the growth of *future* informal settlements, however this project extrapolates its theory in stewardship, amplification of existing social initiatives, and cultivation of transformational spaces to inform and conceptually guide the socially sound improvement of environmental quality and social capital in existing consolidated contexts.



²Graphic adapted from 'Q+A: David Gouverneur on Landscape's Potential for Serving Informal Settlements (Metropolis Magazine, 2013). Accessed December 10, 2025

INTRODUCTION

CLIMATE CHANGE AND THE GREEN INFRASTRUCTURE GAP

PUBLIC SPACE EMPHASIS

In the consolidated informal settlement context, improvement efforts are incremental and aim to correct the environmental and social woes that informal urbanism tends to create. They are often referenced in medical terms, like “corrective surgery,” to describe the in-situ, precise, and specific efforts necessary for intervening in such spatially constrained and unique conditions.

Through incremental upgrades of varying scales and types, successful improvement efforts described in aforementioned Latin American case studies and the ethos of Informal Armatures reflect a set of general principles that respond to the social and environmental legacy of informal urbanism: 1) prioritize the creation and improvement of communal spaces; 2) focus on improvements to the public realm; 3) mitigate environmental hazards and risk areas; 4) respond specifically to local context (no one size fits all solutions); 5) incorporate robust and extensive community engagement into the visioning process to ensure long-term success.

As opposed to focusing on housing or expanded residential realm, learnings from successful improvement projects all point in a shared direction: enhancement of public space and focus on social uplift as a means of overall revitalization. These principles lay the conceptual foundation for improvements efforts elsewhere. However, given the complicated physical form of these urban contexts, improvement projects generally respond to the high degree of morphological heterogeneity on a case-by-case basis rather than approaching improvements with systematic design or spatial methodologies.

MODES OF ENGAGEMENT¹:

THE INFORMAL CITY FROM THE FORMAL CITY’S PERSPECTIVE

1

DENIAL

2

CLEARANCE

3

TOLERANCE

4

IMPROVEMENT

5

ANTICIPATION

“EVERYTHING BUT THE HOUSING”

PRIORITIZE SOCIAL, COMMUNAL SPACES

MITIGATE ENVIRONMENTAL RISK

RESPOND TO DEEP CONTEXTUAL UNDERSTANDING

INCORPORATE ROBUST PUBLIC ENGAGEMENT

¹Modes of Engagement’ adapted from *Informal Urbanization in Latin America* (Werthmann 2022, p. 28)

GREEN INFRASTRUCTURE AS A MISSING LINK

In addition to a lack of a methodological approach to improvement, examples of consolidated informal settlement improvement show a dominant focus on the integration of social services and revitalization of environmental quality in public spaces in response to *present* conditions and hazards. In a world of climate upheaval, the marginalized nature of many of these settlements make them particularly vulnerable to the ailments of a changing climate (UN DESA 2024; IPCC 2022; Wolch et al. 2014). To proactively and meaningfully improve these places, consideration of *future* conditions and hazards is necessary as well. Augmenting settlement improvements with a perspective that considers and responds to anticipated climate hardships, such as heat, drought, aridity, and increased storm intensity, is an arguably essential means of achieving mindful and successful long-term environmental justice.

Green infrastructures—physical interventions that incorporate vegetation and natural systems to solve environmental issues—are increasingly cited as a leading solution to climate resilience and adaptation in urban contexts (US EPA 2014; IPCC 2022). Under tenets of *landscape urbanism*, an urban planning theory that argues for landscape rather than architecture as the “basic building block of urban form” in the contemporary city (Waldheim 2016), integrating green infrastructure into the urban fabric is an effective and appropriate way of adapting rigid environments to the plastic conditions that climate change brings. Due to their low material cost relative to traditional grey infrastructures as well as their dual social and environmental benefits, green infrastructure may be particularly well suited to addressing climate vulnerabilities in low income, developing communities, especially those with inadequate access to green space.



Calle Guadiana, El Risco de San Nicolas: One of many public spaces oriented towards exposed, south-facing slopes.



Mirador Sierra Nevada, El Risco de San Nicolas: Sparse vegetation and canopy cover in public overlook.



Barranco Guiniguada, Las Palmas de Gran Canaria: Stranded car in flooded ravine. Storm Therese, March ‘26.



Calle Nogal, El Risco de San Nicolas: Runoff accumulation in the public right of way.

INTRODUCTION

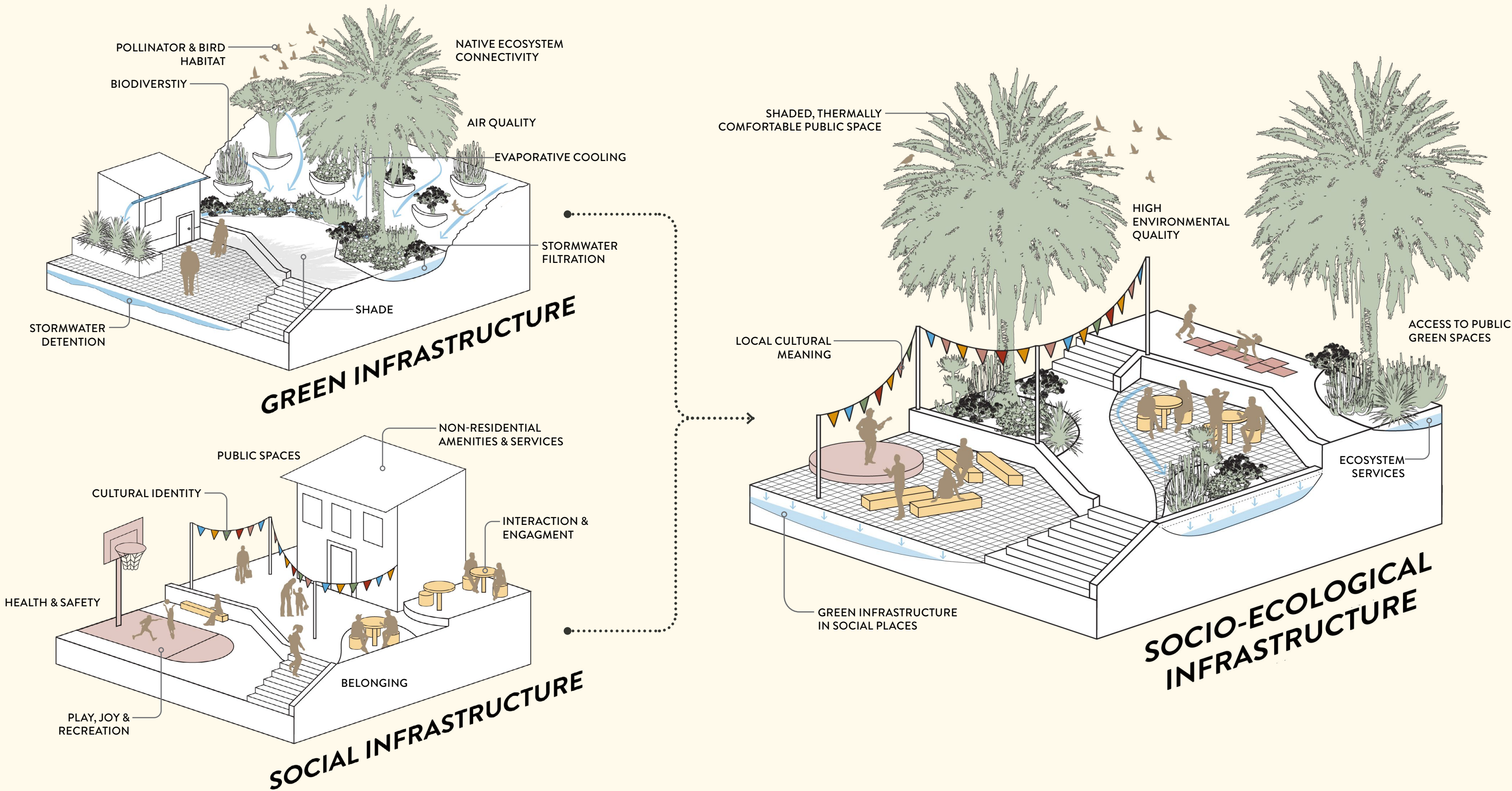
SOCIO-ECOLOGICAL INFRASTRUCTURE AS A SOLUTION

LANDSCAPE AS INFRASTRUCTURE

Combining the climate resilience ethos of landscape urbanism and green infrastructure with social uplift reflected in Informal Armatures and case-study literature, the integration of socio-ecological infrastructure into dense, disadvantaged urban neighborhoods offers a compelling way to achieve climate-related environmental justice that responds to the social amplification interventions relevant in consolidated informal urban settlements.

In this case, *green infrastructure* refers to physical spaces that incorporate vegetation and natural systems to address problems in the urban environment including stormwater runoff, heat, pollution while providing ecological support; *social infrastructure* refers to places, amenities, programming, and objects that cultivate a sense of neighborly cohesion and interaction that support community connection and well-being; *socio-ecological infrastructure* refers to systems or physical spaces that simultaneously support ecological processes and social life, aiming to create or support social equity, environmental integrity, and cultural meaning.

Rather than tokenizing the utility of natural systems towards solely human ends, this project seeks to incorporate vegetation and living material in a way that also supports the biodiversity and native ecosystems of Gran Canaria's local ecology.



INTRODUCTION

PROJECT OVERVIEW

PROJECT GOALS

At the most fundamental level, the goal of this project is to respond to community desires for revitalization of El Risco de San Nicolas’ public realm by augmenting recent formal planning efforts with a systematic, climate-informed, and design-forward perspective that helps migrate revitalization efforts from paper to reality. At a broader level, this project aims to contribute value and insight to dense urban neighborhoods everywhere, especially those built on steep slopes by offering a replicable methodology for improving environmental quality and social vitality through the strategic siting of socio-ecological infrastructure.

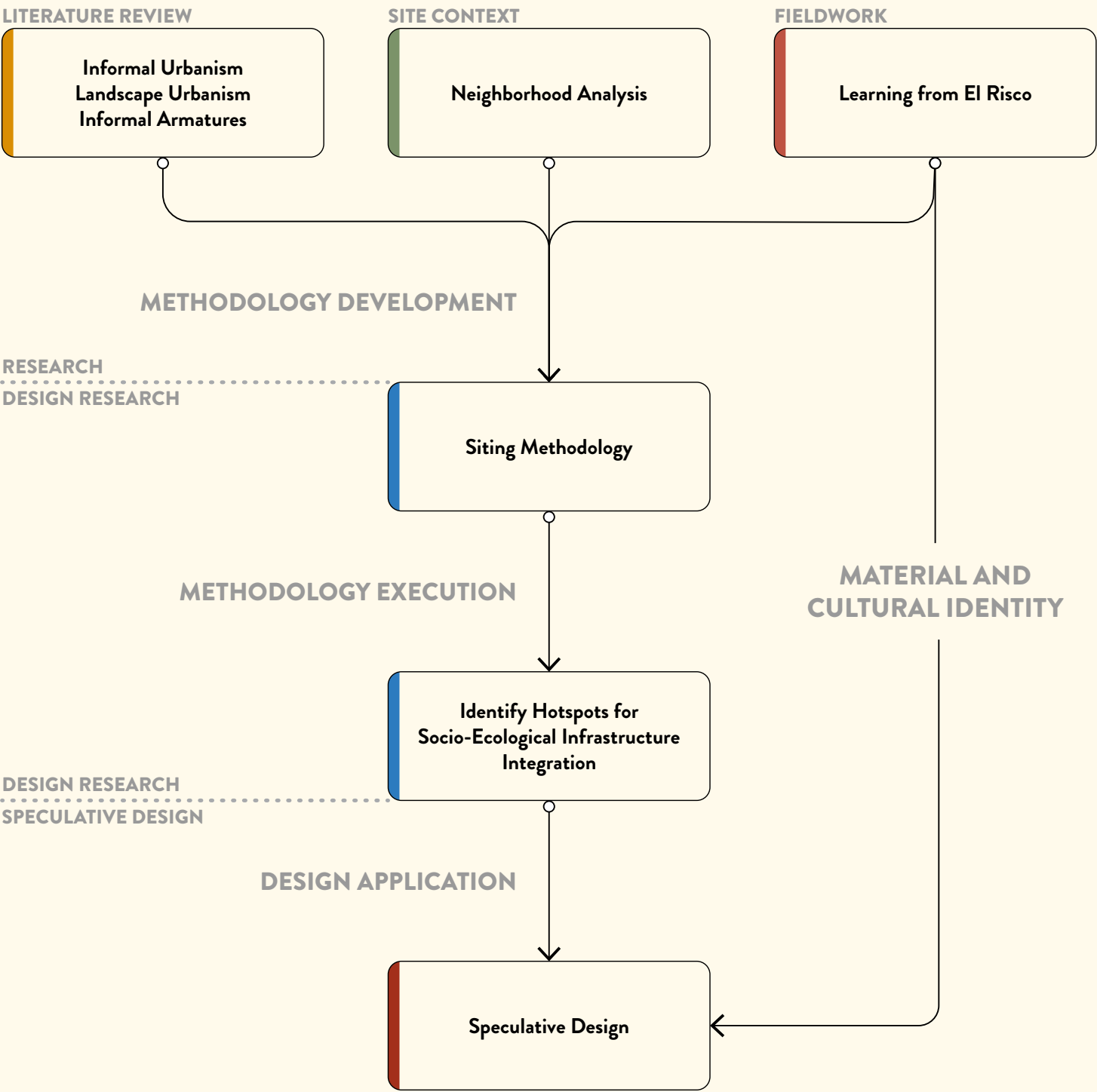
PROJECT METHODOLOGY

Using El Risco de San Nicolas as a case study to respond to the gap between climate change planning and improvement efforts in consolidated urban settlements, this project asks the question: how might we site public socio-ecological infrastructure

interventions to achieve both climate resiliency and socially significant outcomes in dense, socially disadvantaged urban neighborhoods? To investigate this question, this design-research project manifests in three phases: 1) development of a mapping methodology to strategically site socio-ecological infrastructure 2) execution of that methodology to discover hotspots for socio-ecological infrastructure integration in El Risco, and 3) speculative design development demonstrating possible interventions that are responsive to local community identity and culture.

GUIDING QUESTION

How might we site public socio-ecological infrastructure interventions to achieve both climate resiliency and socially significant outcomes in dense, socially disadvantaged urban neighborhoods?



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Images

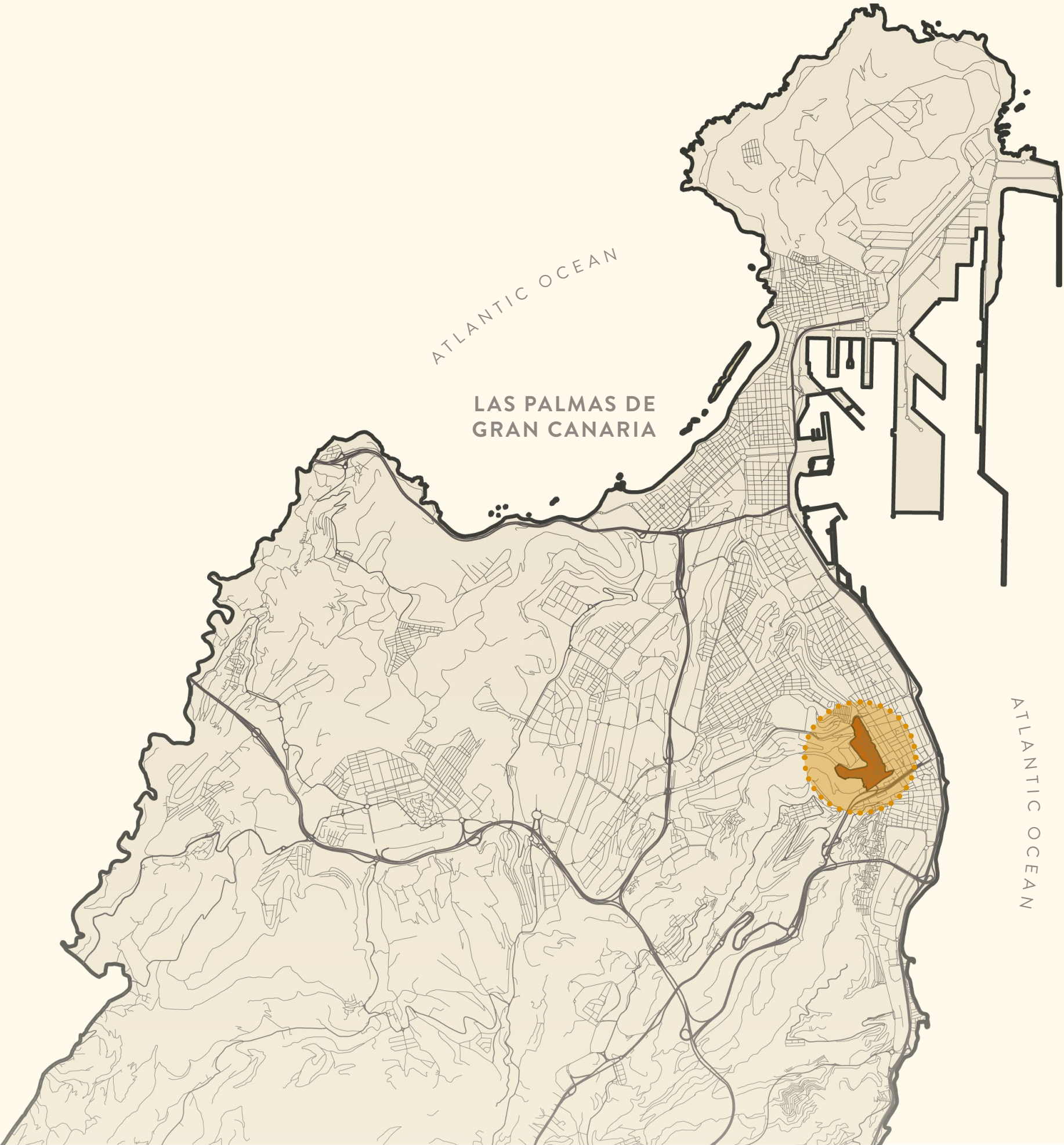
1) Medellin Library Park: <https://www.poma.net/en/work/line-m-metrocable-medellin/>. Accessed February 16, 2026.

2) Caracas, La y 5 Julio: <https://www.archdaily.com/556620/how-venezuela-s-espacios-de-paz-project-is-transforming-community-spaces>. Accessed February 16, 2026.

3) Rio de Janiero, Favela Barrio Project: <https://udcsa.gsd.harvard.edu/projects/7>. Accessed February 16, 2026.

4) Sao Paulo, Cantinho do Ceu: <https://www.dezeen.com/2024/03/19/cantinho-do-ceu-sao-paulo-boldarini-arquitetura-public-space-social-housing-revival/>. Accessed February 16, 2026.

SITE CONTEXT



SITE CONTEXT

LOS RISCOS DE LAS PALMAS

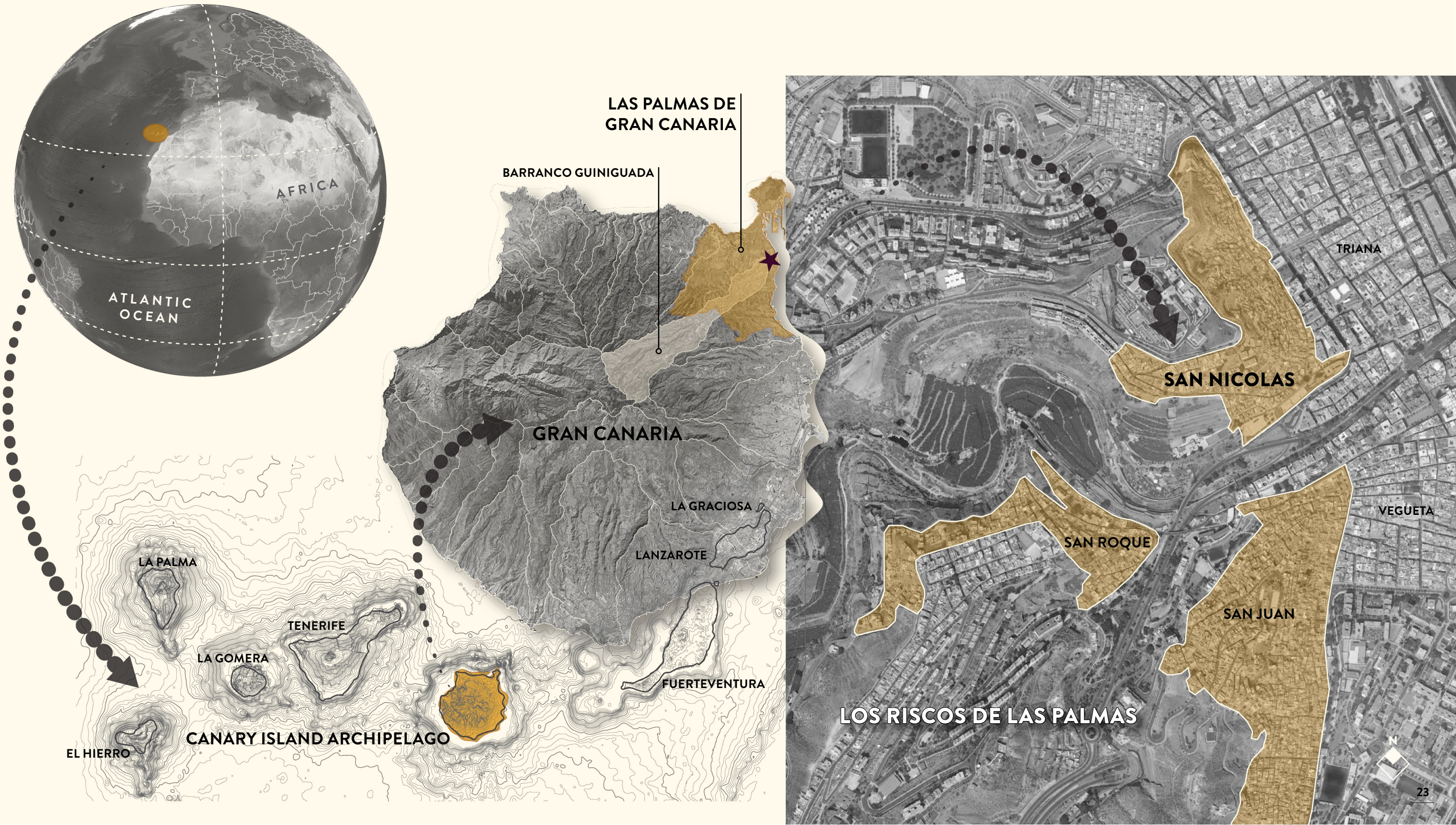
WHERE IN THE WORLD

The Canary Island archipelago, an autonomous community of Spain, is one of four Macaronesian island groups in the Atlantic Ocean. With geologic origins dating back 20 million years, a stationary geothermal hot spot under the northeastward-rotating African plate formed today's volcanic island chain. Sitting at 28-degrees north latitude, the archipelago's eastern-most edge measures only 96 kilometers from the coast of Morocco.

At the center of the archipelago, Gran Canaria is the second-most populous island, housing approximately 860,000 (39%) of the 2.2 million permanent archipelago residents. The island hosted over 4 million (26%) of the archipelago's 15.5 million tourists in 2024 (Turismo de Islas Canarias, n.d.). An island characterized by its rugged inland ravines, historic agricultural terraces, and expansive coastline, it is colloquially called a 'miniature continent' given its rich and varied ecosystems across its relatively small land area.

Located at the mouth of the Guinguada ravine, Gran Canaria's capital city, Las Palmas de Gran Canaria, is home to nearly half of the island's population. The city emerged as a Spanish military base in the latter half of the 15th century, serving as their logistical and cultural headquarters for conquest further west. The colonial quarter of Vegueta and its surrounding neighborhood, Tirana, became and remains the cultural heart of the city. As this area consolidated by the late 17th century, trade workers such as seamen, artisans, and agricultural laborers, were priced out of the formalized city. To maintain access to economic center of the city, these workers occupied the only nearby remaining lands: the ravine slopes. The agricultural terraces in the Guinguada ravine and the developing seaport drew additional rural populations from the interior of the island, and these spontaneous communities expanded as affordable places to live within economic reach of the expensive, formal city.

Keepers of rich culture and identity, today these established neighborhoods are 'Los Riscos de Las Palmas.' They serve as the colorful iconographic backdrop to the city, yet house some of the most vulnerable populations and suffer from municipal neglect and negative local perceptions. El Risco de San Nicolas, one of these three neighborhoods, serves as the case study for this project.



SITE CONTEXT

EL RISCO DE SAN NICOLAS

Latitude: 28.102235
Longitude: -15.419521

A NEIGHBORHOOD OF CONTRAST

El Risco de San Nicolás is made up of three 'lomas' or ridges that define its three sub-neighborhoods: San Nicolás, San Lázaro, and San Bernardo. Together, they occupy approximately 25 hectares (62 acres) of steep, rocky slopes of the Barranco Guiniguada's ravine banks above the neighborhoods of Triana—a bustling shopping district—and Vegueta—the city's historical and cultural heart. Home to just over 2400 residents, El Risco, the local colloquial name for El Risco de San Nicolás and name by which the neighborhood will continue to be referenced, has a population density of over 9600 people per square kilometer, with 50.2% of neighborhood area dedicated solely to building footprints. From an urbanist perspective, El Risco is considered a highly dense urban fabric (Hanberry 2022).

The neighborhood is characterized by its labyrinth of irregular, winding streets, brightly painted, colorful facades, and spectacular views from the ridgeline. As one of the first settlements in Gran Canaria following Spanish conquest, the neighborhood also holds great historical significance. Such significance, however, is not reflected in the city's treatment of the neighborhood. Deprioritization and institutional neglect leave many historical sites in ruins.

Despite proximity to civic assets in the surrounding historic and commercial districts and natural assets in Barranco Guiniguada, its social and morphological origins in informal urbanism leave a legacy of walls and slopes that foster a fortress-ness that isolates the neighborhood from its context. Such separation creates an insulation that requires much of the neighborhood to be responsible for itself and fortifies a sense of otherness or difference from the formal city.



Image Credit: Google Earth, retrieved April 10, 2026

SITE CONTEXT

THE EVOLUTION OF THE SLOPE



500 BCE
INDIGENOUS INHABITATION
The Amazigh/Berber people arrive from North Africa and colonize the island, becoming Canarios. Dwellings are caves carved into the steep terrain at the interior of the island and along the coasts.

1402 - 1483
SPANISH COLONIZATION
The Castilian Conquistadores arrive and conquer the island, officially claiming Gran Canaria by 1483 and the remainder of the archipelago by 1496.

1478
VEGUETA BECOMES HEART OF THE CITY
First established as a military camp, Las Palmas becomes the island's first colonial city with Vegueta as the city center.



1580's
EL RISCO ON THE MAP
Historical maps show settlement on the slopes of Barranco Guiniguada at the nexus of farmland and the city center. Artisans, laundresses, fishermen, sailors, migrants, beggars, and proletariats are the primary settlers.

1599
CASTILLO DE MATA DEFENDS LAS PALMAS
The Dutch attack the city and the Castillo at the north end of El Risco is partially destroyed in defensive efforts.

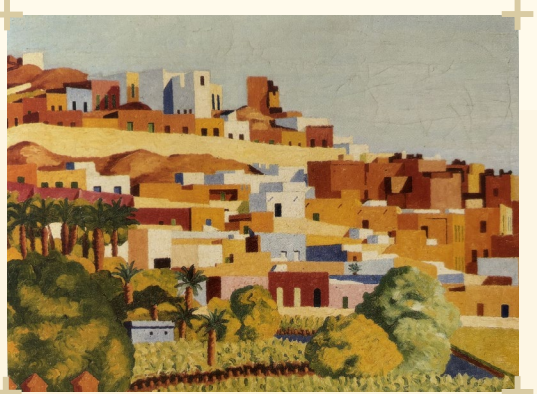
1697
THE SAN NICOLÁS NAMESAKE
The neighborhood officially receives its namesake after the ordering of the construction of Ermita de San Nicolás, honoring the saint.



1700's
PRICE OF LOW-LYING LAND INCREASES
As the city develops and urbanizes, the price of low-lying, flat land increases and the 'upper city' begins to more distinctly urbanize.

1883
ATLANTIC TRADE POST
The construction of Puerto de La Luz established the city as important Atlantic seaport, accelerating the city's economic development.

1890's - 1920's
GROWTH AND CONSOLIDATION
The population of the slopes increases and settlement densifies up the height of the slope as working people continue to immigrate to Las Palmas.



1930's
ARTISTIC MUSE
Artist Jorge Oramas painted El Risco de San Nicolas from his hospital window from across the ravine. The barrio served as artistic inspiration for many Canarian artists including Nicolás Massieu, Santiago Santana, and Néstor Martín-Fernández.

1950's - 1970's
EXODUS
With a lack of social policy dedicated to the residents of the neighborhood, aging housing, deteriorating conditions and after fires destroy portions of the neighborhood, residents (especially young people) leave to take advantage of social housing programs elsewhere.



1975
'UNION EL RISCO' ESTABLISHED
An organization dedicated to rekindling community, local culture, and a sense of neighborhood unity.

1980's +
SOCIAL HARDSHIP
'Shanty'-type housing, drug trade, and theft persisted among the inaccessible slopes above Triana, contributing to negative perceptions of the neighborhood as unsafe.



2010's
CULTURAL AND SOCIAL ACTIVISM

2016
AMIRISCO ESTABLISHED

2017
RISCOMAPEO / RISQUEANDO

2023
CITY PUBLISHES SAN NICOLAS SPECIAL PLAN

2025
CANDIDACY FOR EUROPEAN CAPITAL OF CULTURE 2031
A series of initiatives and community organizations advocate for the heal, prosperity, and revitalization of El Risco de San Nicolas's social and physical fabric.

Terraces or 'bancales' emerge as the typology for farming crops like sugar cane, lentils, cereals, and olives on the island's steep slopes.

1490's
AGRICULTURAL ECONOMY

An economic boom following free trade policy under the "Porto-Franco" regime brought many people to Las Palmas in search of economic prosperity.

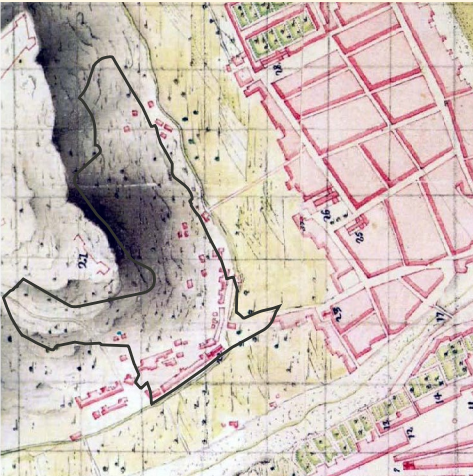
1850's
INDUSTRIAL DEVELOPMENT

The commodification of the coastline transformed the urban fabric and transitioned the island's economy towards one centered on tourism.

1950's
MASS TOURISM & SERVICE ECONOMY



1592: by Leonardo Torriani¹



1742: by Antonio Riviere²



1883: by Luis F. López Echegarreta³



1911: by Fernando Navarro⁴



1976 / 1986: Interministerial Aerial⁵



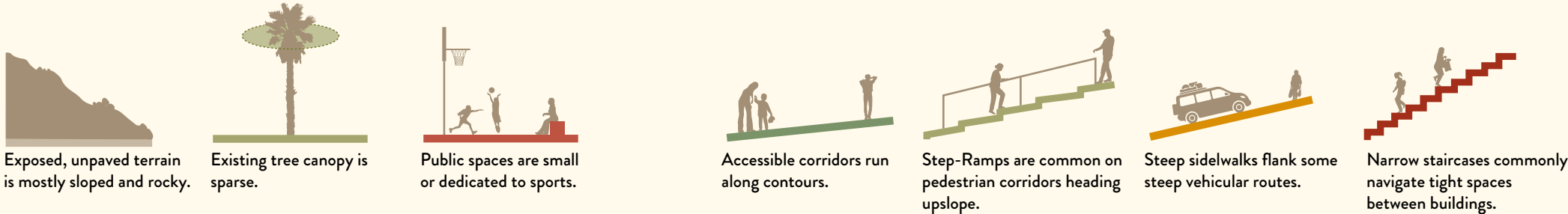
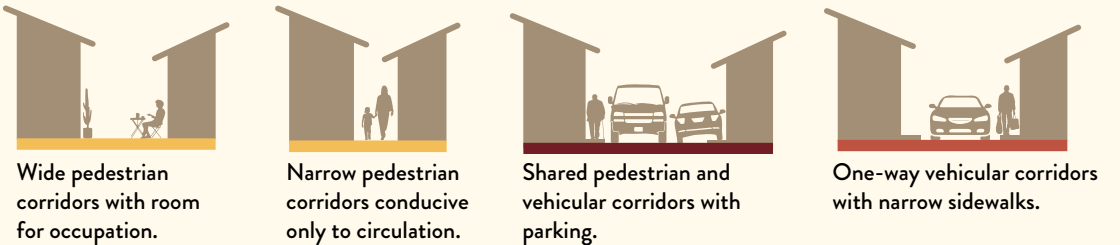
2005: PNOA Orthophoto⁶



2021: PNOA Orthophoto⁷

SITE CONTEXT

THE PUBLIC REALM



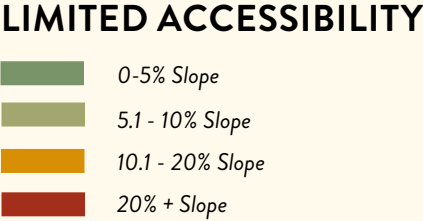
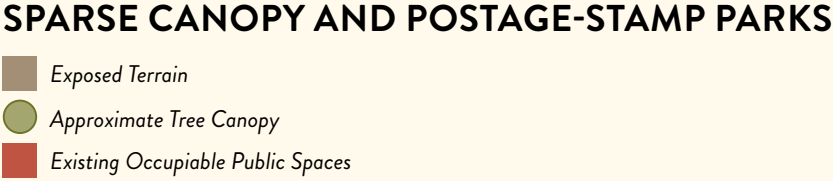
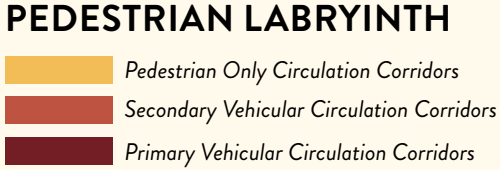
THE STREET IS EVERYTHING

When we look at El Risco’s public urban fabric, we can see how consolidation and informal urbanism leave behind a morphological legacy that affects the public realm’s quality, form, and efficacy as vibrant and healthy community space.

Without much formal open space worked into El Risco’s urban fabric, public life happens in the streets. Corridors serve as the primary public space across the majority the neighborhood. Some corridors are wide and conducive to gathering, while others are narrow and serve only movement. Those that host vehicle access are generally relegated to the perimeter of the neighborhood, leaving the steepest parts at the interior accessible only by foot.

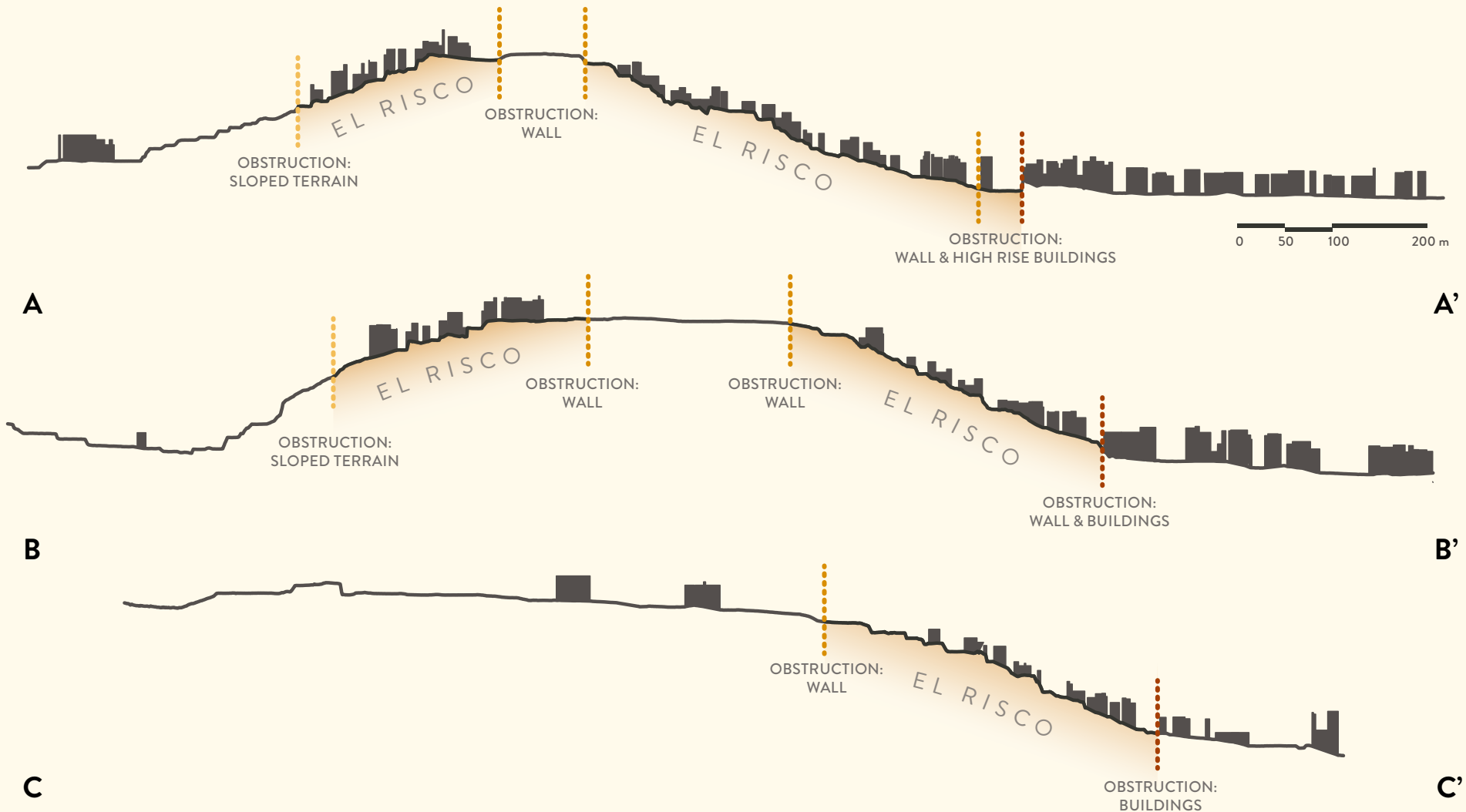
Like many neighborhoods born from informal urbanism on steep slopes, the neighborhood fabric is characterized by long residential blocks parallel to the slope’s contours, breaking the neighborhood up into an informal set of terraces adapted to the cliff’s topography. The blocks are connected by staircases running perpendicular to the slope. While corridors running parallel to the cliff’s contours are, from a grading perspective, accessible, navigating between these on-contour terraces generally involves steps and ramps, with many corridor grades measuring over 10% slope. The vertical disconnect and long distances between corridors, results in a lack of continuity between public spaces that urban designers consider necessary for a thriving, vibrant public realm (Jacobs 1961).

Beyond corridors as public space, there are also a few formalized parks. These tend to be small plazas tucked away in the neighborhood interior, and the large ones at the neighborhood perimeter are hyper-programmed towards sports or children’s play. While an important step in increasing residents’ access to open space, as observed during fieldwork (see chapter 3: Learning from El Risco), the social and environmental quality of these spaces is lacking given the few canopy trees, pervasive pavement, and few provisions for gathering.



SITE CONTEXT

FORTRESSNESS AND ISOLATION

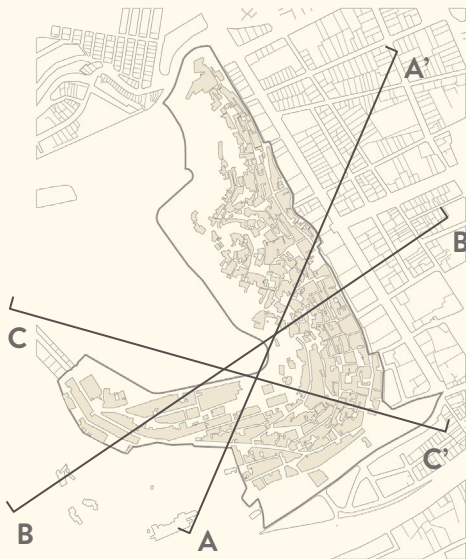


IMPERMEABLE EDGE

Despite El Risco's relatively central city location, access *to* it is somewhat limited. Neighborhood entrances are relegated to discrete points, the majority of which involve staircases, while the rest of the edge is abutted by steep terrain, buildings, or walls¹. Such obstructions make for an impermeable edge that reinforces El Risco's difference and separation from the rest of the city—an edge fortification and separation regarded as a hallmark of the informal-formal city relationship (Kamalipour 2018; Cebir Meral and Özsoy 2021; Gouverneur 2015). Locals and

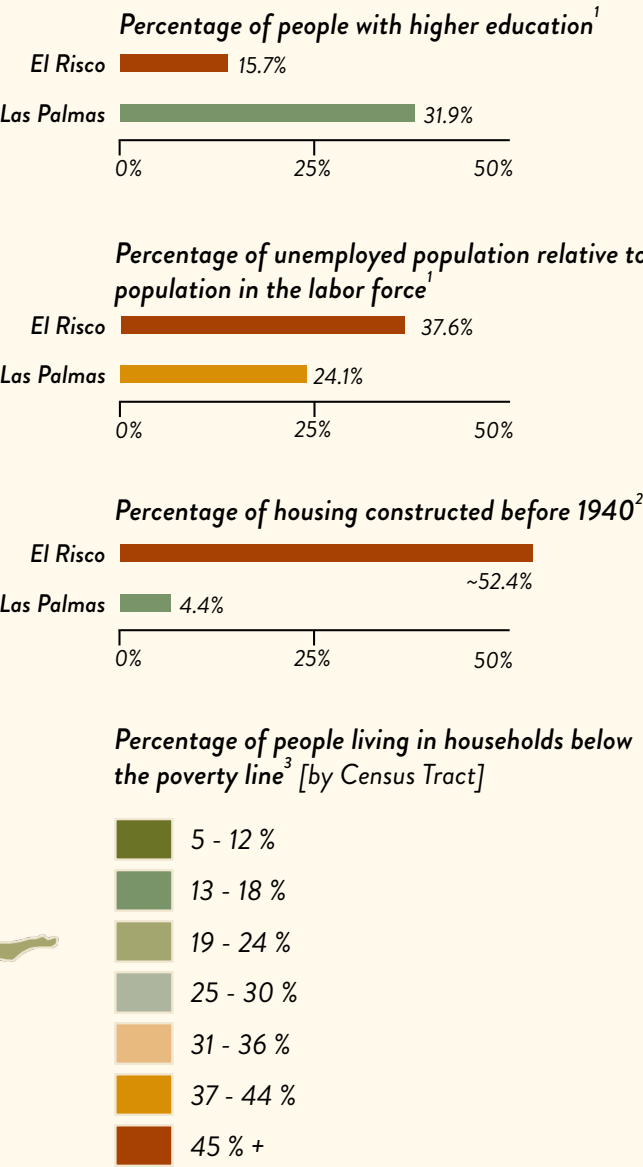
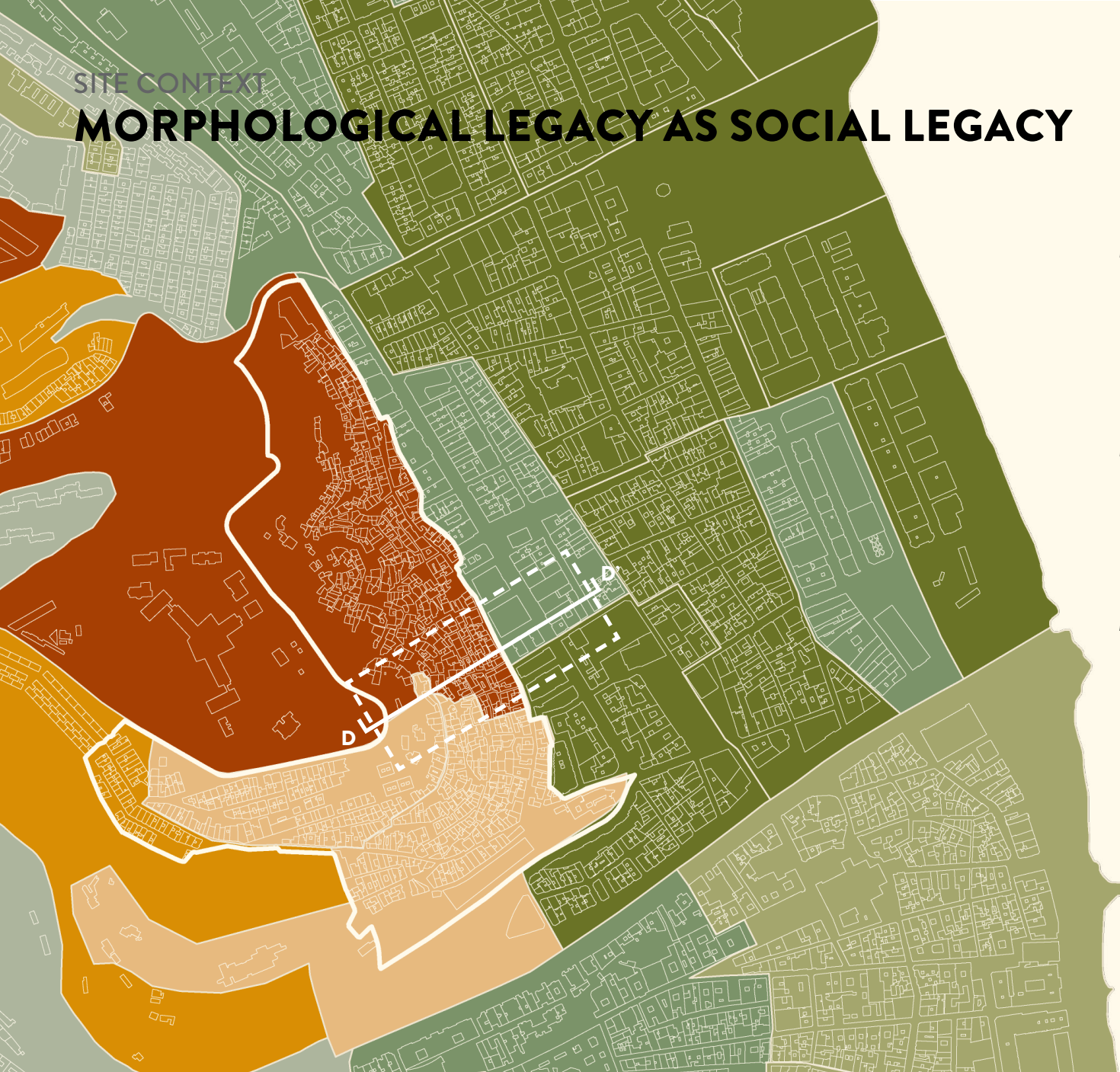
visitors have a clear awareness and perception of the neighborhood boundary given the distinct edge and the difference in conditions and culture that fall on either side¹.

¹ According to data collected during fieldwork. See Chapter 3: Learning from El Risco



SITE CONTEXT

MORPHOLOGICAL LEGACY AS SOCIAL LEGACY



ACKNOWLEDGING THE DIVIDE

A sample transect examining El Risco and the adjacent low-lying neighborhoods, Triana and Vegueta reveals how morphological isolation correlates with social conditions. Separating the two is Primero de Mayo, an arterial avenue, a row of high-rise apartment buildings, and a retaining wall negotiating the 45 ft elevation difference between the two neighborhoods. Overlaying this area with census tract data describing poverty level reveals a stark socioeconomic contrast between the formal city and El Risco: the percentage of people living in households below the poverty line is much higher on the slope (Instituto Nacional de Estadística 2021). Since its earliest days, El Risco has been home to people with low economic power (Batista

et al. 2000; Sanchez and Amador Armas, n.d.). Additional statistics reported by Instituto Nacional de Estadística, Spain's census-counting institute, including lower rates of higher education, higher rates of unemployment, and disproportionately aging built infrastructures demonstrate El Risco's marginalization relative to the rest of the city.

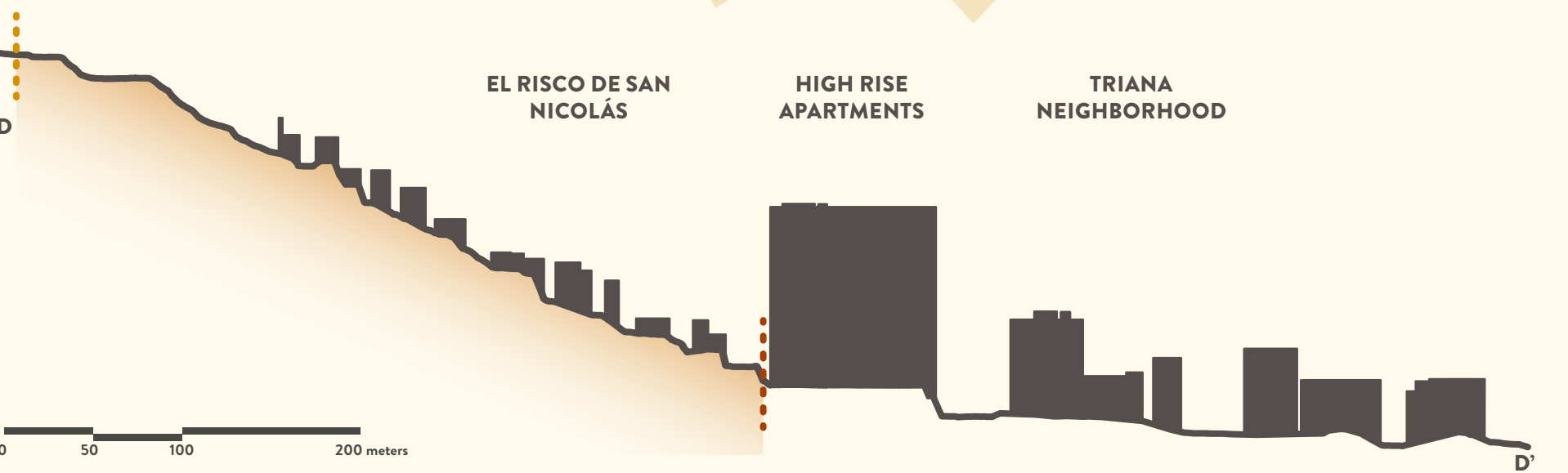
CURRENT ACTIVISM

To draw attention to the neglect that the neighborhood faces, efforts to revitalize the neighborhood have emerged from the community over the last few years. AmiRisco, or Friends of the Risco, is a community-based organization leading the call for investment and revitalization efforts of the neighborhood fabric. Working with the city, they

organized the "RisqueAndo" conference in March 2017—one of many community events—with the aim of highlighting the unique character of the riscos and advocating for their comprehensive rehabilitation. The production of the San Nicolas Special Plan, an official urban planning document published by the city in 2023 (Colectivo MICROmacro 2017), was a direct outcome of these community efforts.

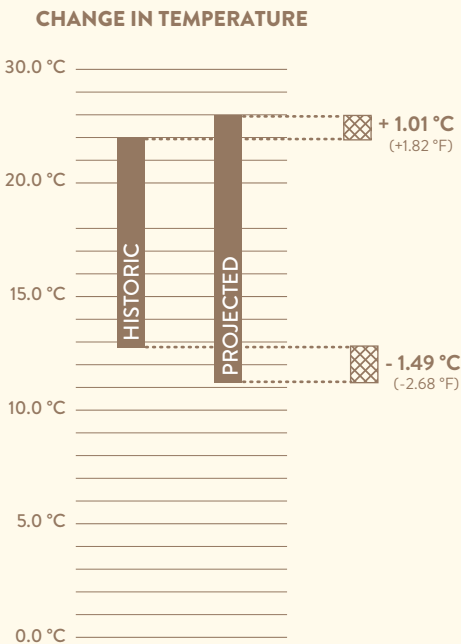
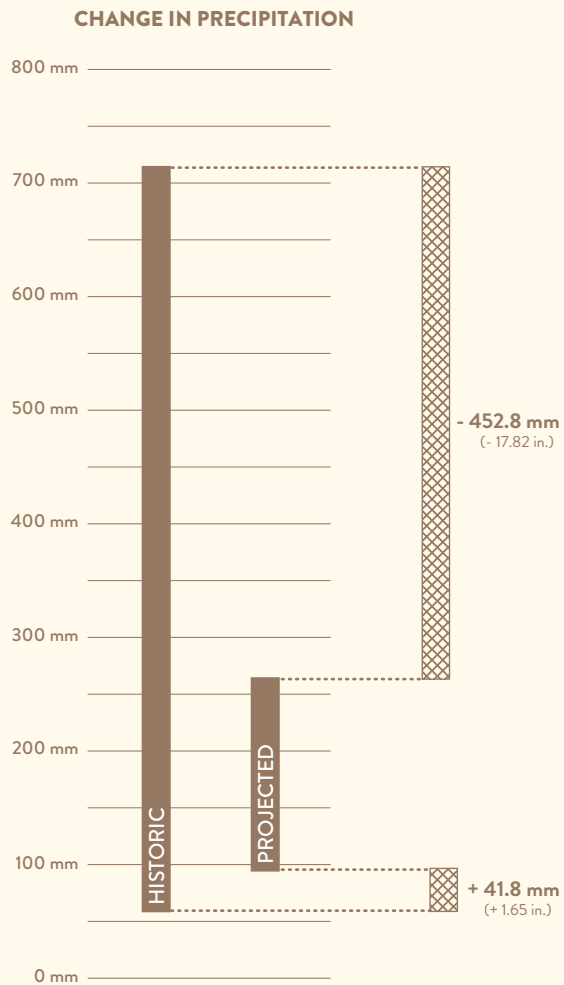
This project aims to fortify the current activism efforts by drawing attention to the worthiness of neighborhood improvement, while offering a climate-informed perspective yet to emerge from current plans.

¹ Censos de Población y Viviendas, INE (Instituto Nacional de Estadística), 2021
² INE (Instituto Nacional de Estadística) via PAI Tejiendo Riscos a borde del Guiniguada
³ INE (Instituto Nacional de Estadística) via Las Palmas GIS Portal



SITE CONTEXT

THE CASE FOR CLIMATE RESILIENCE INFRASTRUCTURE



Island-Scale Change by Numbers: Comparing historic annual precipitation and temperature averages to their projected averages (see map and legend on right), we see a drier, warmer future for the island. The projected precipitation range dramatically contracts, while the projected temperature range expands, relative to historic levels. The map shows how these changes are spatially distributed across the island.

CURRENT CLIMATE CONDITIONS

Gran Canaria’s climate can be characterized as sub-tropical to Mediterranean—warm to hot, dry summers and mild, dry winters. At a more resolute scale, El Risco sits at the border of Koppen Climate Classification zones BWh, Hot Desert, and BSh, Warm Steppe (Luque Söllheim et al. 2024) with typical summer high temperatures averaging over 33°C (91°F) (Lawrie and Drury 2022) and 177 mm (7 in) (Luque Söllheim et al. 2024) of mean annual rainfall. Spanning an elevation of 10 to 110 meters above sea level (about 34 to 350 ft), the neighborhood sits within the subdesert coastal scrub ecological community. Coastal influence brings the Sea of Clouds from the

north, colloquially called ‘Panza del Burro’ or ‘Donkey Belly’ by the locals, resulting in the humid, overcast days, iconic of the Las Palmas summer.

MANAGING THE EXTREMES

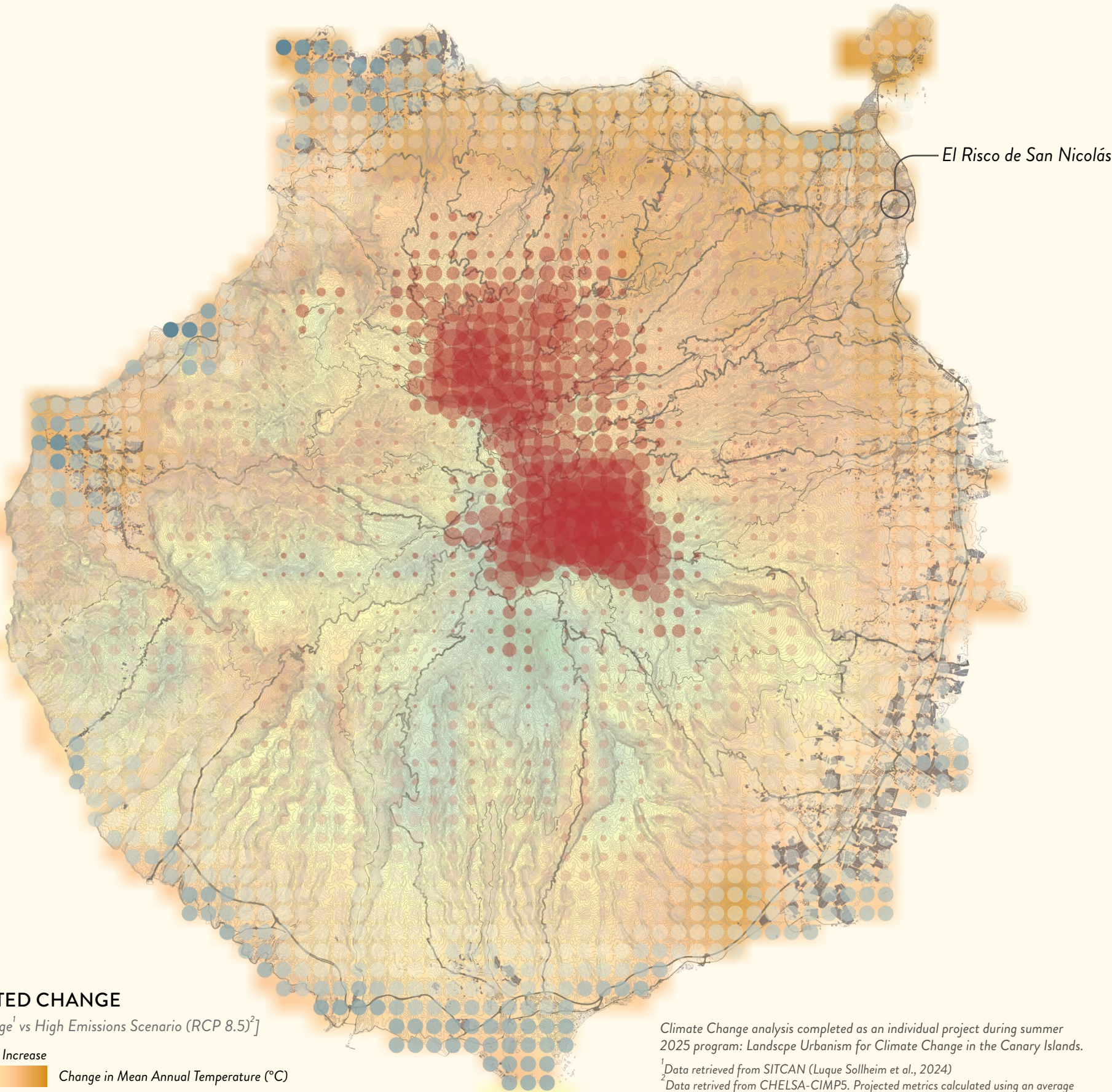
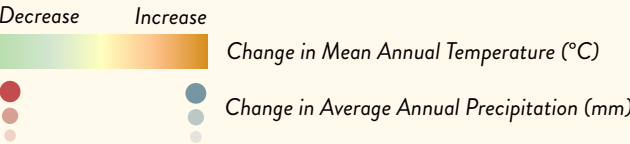
The climate future of the island is heat, drought, aridity, and increased intensity of infrequent storms (Hernandez et al. 2018; Carrillo et al. 2023; López Díez et al. 2019; Ley Bosch et al. 2023). Due to lack of data with enough spatial resolution to describe climate change at the neighborhood scale, island-scale patterns are extrapolated to speculate on El Risco’s climate future. Coastal areas are expected to see a trend of increased temperatures and increased

annual rainfall, and climate projection studies (Ley Bosch et al. 2023) and fieldwork experience point toward increased storm volatility and intensity.

Low-income communities are often more vulnerable to adverse climate effects than their middle- and upper-class counterparts (Levy and Patz 2015; IPCC 2022). This project positions socio-ecological infrastructure to help close this gap by improving environmental justice and environmental quality in El Risco de San Nicolas through social activation and amelioration of climate woes, specifically heat and flooding.

PROJECTED CHANGE

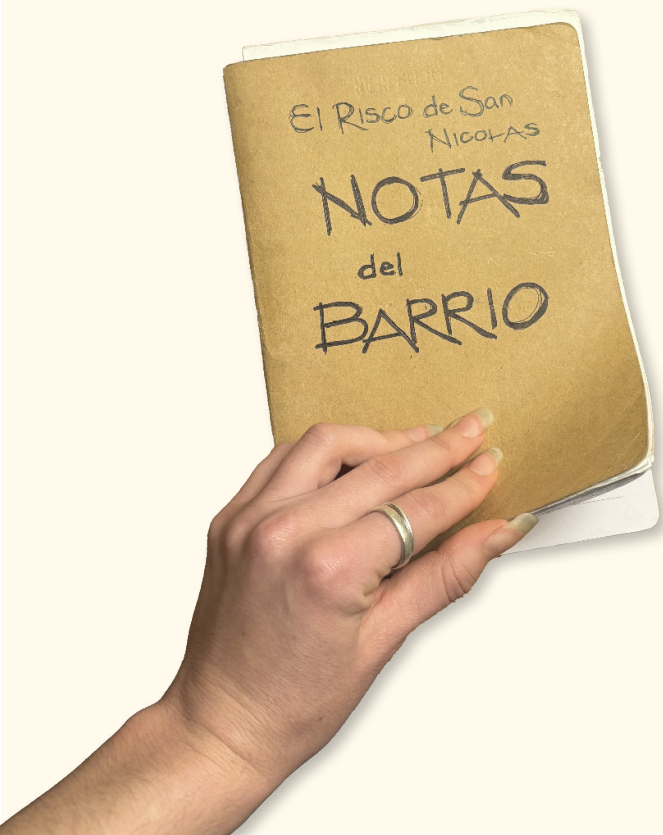
[30 yr. Average¹ vs High Emissions Scenario (RCP 8.5)²]



Climate Change analysis completed as an individual project during summer 2025 program: Landscape Urbanism for Climate Change in the Canary Islands.

¹Data retrieved from SITCAN (Luque Sollheim et al., 2024)
²Data retrived from CHELSA-CIMP5. Projected metrics calculated using an average of five 1km resolution global climate models: CMCC-CM, MIROC5, ACCESS1-3, MPI-ESDM-MR, CESM1-BGC of the 2061-2080 RCP8.5 ‘High Emissions Scenario’. Temperature dataset: Bio1, Precipitation dataset: Bio12

LEARNING FROM EL RISCO



LEARNING FROM EL RISCO

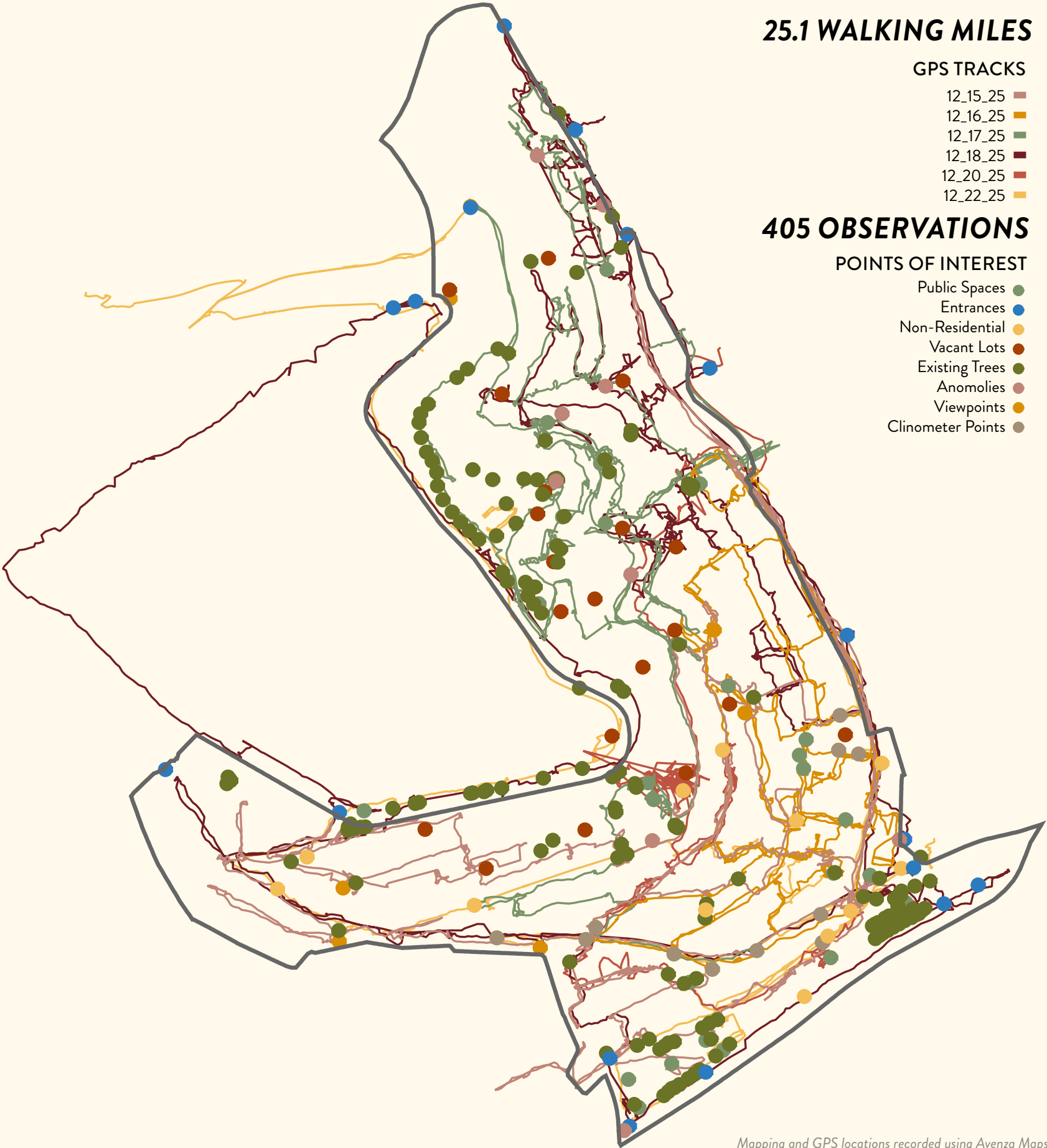
FIELDNOTES

WALKING THE LABYRINTH

Any appropriate or meaningful landscape investigation begins with the landscape itself. To characterize the identity of the place and understand a complex morphology that digital tools cannot accurately describe, we must get our feet on the ground. In addition to ground-truthing digital data, the goal of fieldwork in El Risco was to develop useful datasets for future analysis and to gain a robust understanding of material culture, local community logics, and identity of El Risco. Such observations ensure that the recommended green infrastructure and public space improvements are meaningful, responsive, and relevant to both the tangible and intangible aspects of the neighborhood and its people.

FIELDWORK METHODS: MAPPING, LISTENING, OBSERVING

Fieldwork occurred over the course of nine days in December 2025. Methods included photo documentation, mapping, attendance and participation in community events, and qualitative observation through notetaking. As a means of systematically and comprehensively observing the neighborhood, as well as generating data to use across the course of analysis, four complete datasets were collected during fieldwork. These datasets included a tree inventory, public space inventory, mapping of neighborhood entrances and edge conditions, and corridor classification map. In addition to these four datasets, numerous other points of interest were recorded, including vacant spaces, non-residential buildings, notable viewpoints and outlooks, historical points of interest, and anomalies that contribute to the identity of the neighborhood. Collecting these datasets and recording observations and impressions revealed a set of place-specific themes across the whole of the neighborhood. These themes inform the cultural and material identity of the place as well as reveal opportunities for improvements in the public urban fabric's environmental quality and function.



25.1 WALKING MILES

GPS TRACKS

- 12_15_25
- 12_16_25
- 12_17_25
- 12_18_25
- 12_20_25
- 12_22_25

405 OBSERVATIONS

POINTS OF INTEREST

- Public Spaces
- Entrances
- Non-Residential
- Vacant Lots
- Existing Trees
- Anomalies
- Viewpoints
- Clinometer Points

CORRIDOR CLASSIFICATION

- Pedestrian Only
- Stairs [Narrow / Wide]
- Vehicular Only
- Pedestrian+Vehicular
- Parking Presence

EXISTING TREES

- Genus
- Approximate DBH
- Approx. Canopy
- Health status
- Image

4 COMPLETE DATASETS

ENTRANCES

- Edge Condition
- Photo Documentation
- Location

PUBLIC SPACES

- Location
- Photo Documentation
- Programming
- Activation

678 + MAPPED IMAGES



2 COMMUNITY EVENTS



Mapping and GPS locations recorded using Avenza Maps Pro.

Image Credit: Bientrato

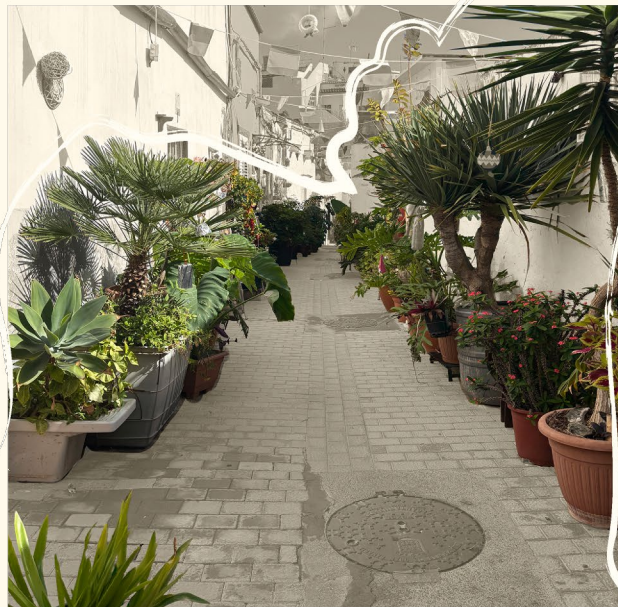
Image Credit: Tania Suárez Ruano

LEARNING FROM EL RISCO

OBSERVATIONS

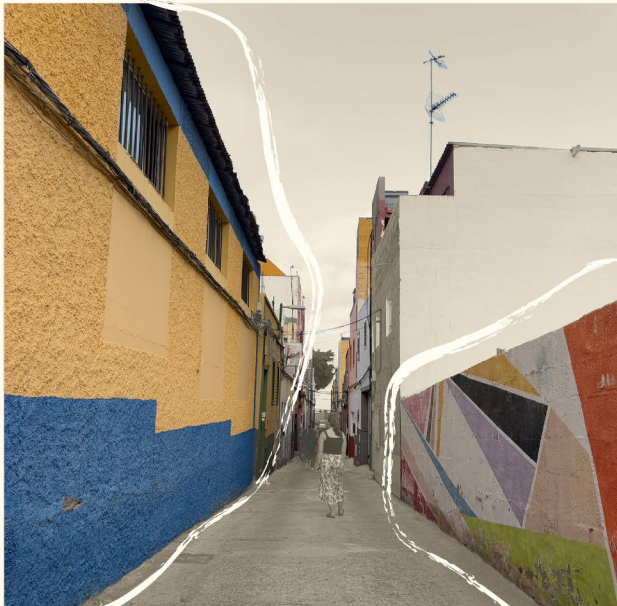
PLANTS AS PLACEMAKING

Along pedestrian corridors, neighbors decorate porches and, in some cases, entire alleys with potted plants. They exist singularly on porches or in conglomerations along entire corridors. As a primary method of place-making across the neighborhood, the affinity for beauty and care for the public realm is evident through plants while also revealing the deficit in green space that currently exists within the urban fabric.



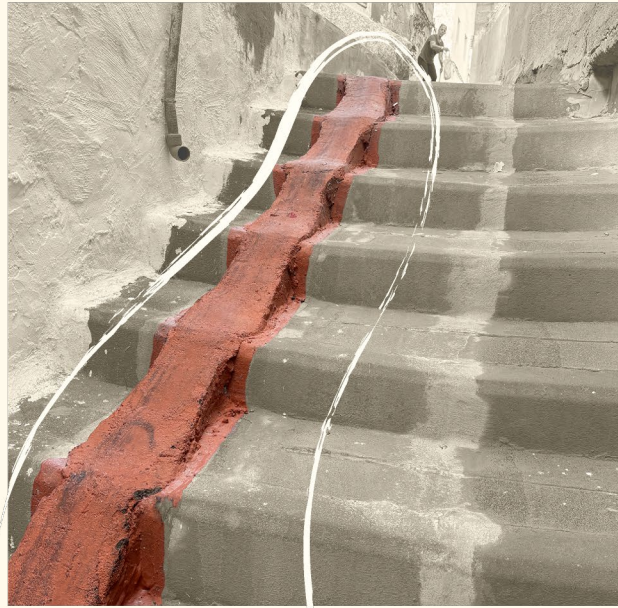
COLOR AND MATERIAL HETEROGENEITY

The material language of the neighborhood is highly diverse and eclectic. Deeply pigmented paint colors and a conglomeration of hardscape and building materials ranging from boulders, bricks, tiles, asphalt concrete, homemade composites produce a collage-like assemblage, giving the neighborhood a highly textured and liveliness across its corridors.



TACTICAL APPROACHES

From guerilla gardens to sculptures, murals, patios and potted plants, residents have beautified, functionalized, and occupied the public realm with self-initiated tactical strategies and ad-hoc methods to improve environmental quality and cultivate a sense of ownership and place. These strategies teach us that opportunity for community space exists everywhere, that no space is too small to be overlooked, as well as illustrate the informal logic that has persisted since neighborhood inception.



LEARNING FROM EL RISCO

OBSERVATIONS

PERSISTENCE OF RUBBLE AND VACANCY

Among the dense, colorful slopes, abandoned and vacant lots pepper the neighborhood, the majority of which serve as receptacles of construction rubble, litter, and feral cats. Many of these lots were never developed given their excessively steep grade or lack of accessibility, while others were once developed but now house ruins of derelict structures. Abandonment patterns indicate deteriorating environmental quality and lack of supportive social policy to facilitate repairs and maintenance for those who cannot afford it.



PAVED PUBLIC SPACES

Public space in El Risco is primarily relegated to the street. In the few formalized public spaces that do exist, however, programming is either extremely precise—generally revolving around children’s play or exercise—or does not exist at all, resulting in open, empty planes of level ground. In both cases, pavement is pervasive, seating is minimal, and canopy cover and vegetation are lacking. Activation and human-centered improvement of existing public spaces could greatly enhance El Risco’s public realm without costly development of new spaces.

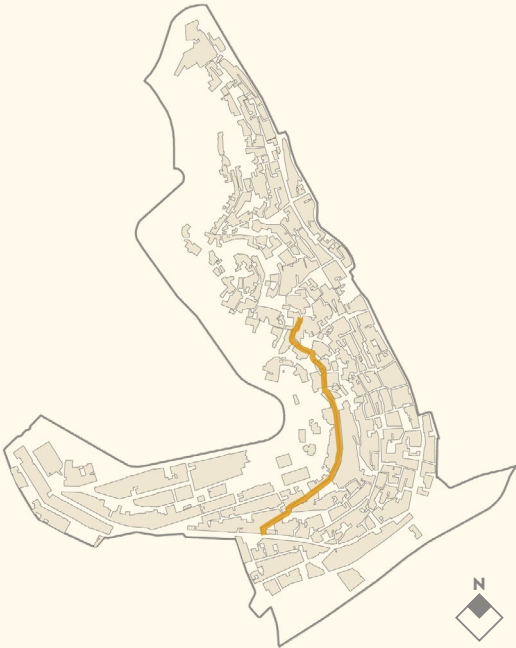


VIEWS AS BORROWED SPACE

A positive trade-off to the inaccessibility that comes with life on cliffs, El Risco’s expansive views are a local point of pride and are morphological assets in a place that is otherwise highly constrained. The ability to borrow scenery from the adjacent landscape allows for a sense of openness among the narrow corridors. With only two formalized locations in the neighborhood dedicated to observing the surrounding landscape, access to views is a vastly underutilized quality across the neighborhood’s public spaces.



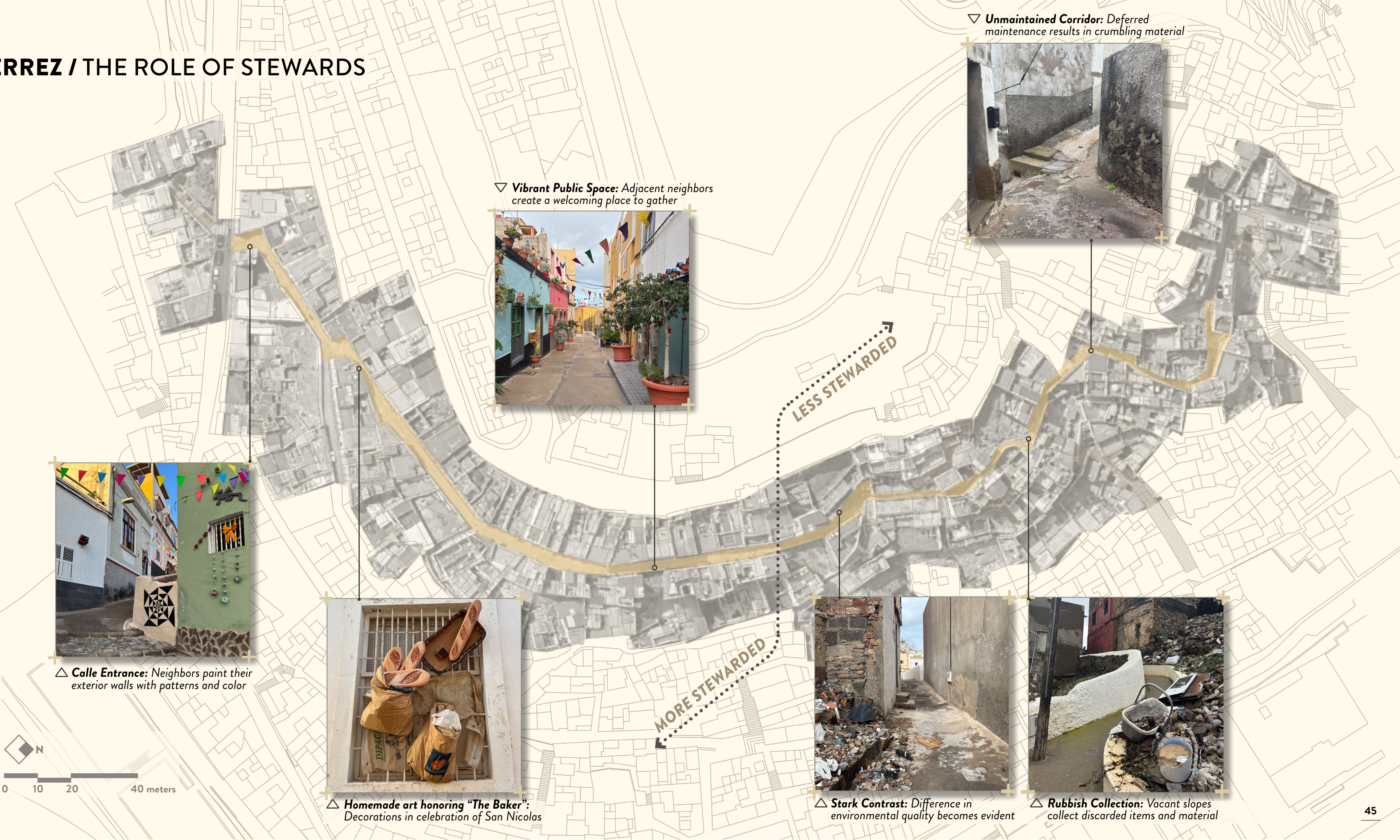
CALLE GREGORIO GUTIÉRREZ / THE ROLE OF STEWARDS



TWO SIDES OF THE SAME STREET

Given the relative isolation of the neighborhood, residents are responsible for the maintenance and environmental quality (or lack thereof) in the public realm across much of the urban fabric. Calle Gregorio Guterrez, a primary pedestrian promenade running north to south in the center of the neighborhood, is one of several examples illustrating the role that neighbors, stewards, and “garden-keepers” play in environmental quality of the community’s shared spaces.

Filled with murals, sculptures, container gardens, and recycled art pieces celebrating the San Nicolas fiesta, the southern half of the calle serves as a community hub, a space for gathering and celebration, made and maintained entirely by the residents. The northern half of the street, however, has neither the stewards nor the resources, and consequently suffers from dilapidated, rubble-ridden, and unmaintained corridors. Here, materials need replacement. The difference in quality and success of the public realm as a place that holds cultural identity, creates community pride, and fosters interaction may be entirely attributed to the presence (or absence) of the adjacent self-initiated stewards. Landscape interventions and other investments improving the neighborhood’s public spaces must operate with the logic of stewards in mind: success only comes with custodianship and relevance to nearby neighbors.



▽ **Vibrant Public Space:** Adjacent neighbors create a welcoming place to gather

▽ **Unmaintained Corridor:** Deferred maintenance results in crumbling material

△ **Calle Entrance:** Neighbors paint their exterior walls with patterns and color

△ **Homemade art honoring “The Baker”:** Decorations in celebration of San Nicolas

△ **Stark Contrast:** Difference in environmental quality becomes evident

△ **Rubbish Collection:** Vacant slopes collect discarded items and material

LEARNING FROM EL RISCO

KEY TAKEAWAYS

UP TO THE PEOPLE

Walking the corridors of El Risco revealed intricacies of material culture, spatial patterns, and unique underlying logic of the neighborhood's fabric that only in-person immersion can describe.

At the neighborhood scale, field observation revealed an environmental quality dichotomy between El Risco's exterior edges and interior core. Areas on the neighborhood's exterior, especially those accessible by vehicle, have a higher concentration of open public spaces and a greater degree of maintenance and formality—they are planned and cared for in ways similar to the rest of the formal city. On the neighborhood interior, however, informal logics of ad-hocism, self-construction, and self-initiation persist more palpably, and maintenance and sanitation are lacking as access (due to slope and building density) becomes more difficult.

At the corridor scale, one of the most useful components of the field research was the serendipitous observation of the neighborhood during somewhat anomalous winter storms (Storm Emilia, Dec. 2025). During the short but relatively heavy precipitation events, the high degree of impervious ground proved to overwhelm the aging, undersized existing combined sewer-stormwater infrastructure. After just 10 minutes of rain, the rights-of-way became ravines as water accumulated in the center of circulation paths, making many highly dangerous or even impassible for the duration of the storm. These observations validate the need and opportunity for the integration of green infrastructure into El Risco's urban fabric not merely for green space access but as a means of tempering climate related events that currently overwhelm built infrastructures.

The site observations, mapping pursuits, and community conversations involved with this fieldwork reveal qualitative and quantitative aspects of El Risco's public realm that inform the *what* and the *how* of developing socio-ecological infrastructure in its dense, sloped urban fabric. By celebrating the neighborhood's existing culture and identity while improving its environmental aliments and shortcomings, socio-ecological infrastructure can strengthen the performance of El Risco's public realm. Given the heterogenous morphology and social fabric, however, the question remains: *where?*

CELEBRATE
CULTURE AND
PLACE

PLANTS AS PLACEMAKING

COLOR AND MATERIAL
HETEROGENEITY

TACTICAL URBANISM

VIEWS AS MORPHOLOGICAL
ASSETS

ROLE OF STEWARDS

IMPROVE
ENVIRONMENTAL
QUALITY

PERVASIVE IMPERMEABILITY

LACK OF ROBUST IN-GROUND
VEGETATIVE HEALTH

EXCESS OF LITTER AND
ANIMAL WASTE

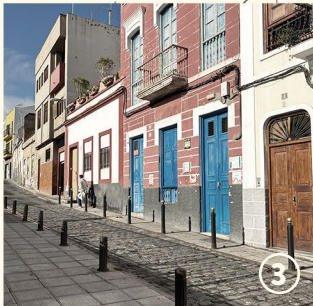
UNACTIVATED PUBLIC SPACES

PERSISTENCE OF RUBBLE AND
VACANCY

THE EXTERIOR VS. THE INTERIOR

Corridors adjacent to
vehicular access

Corridors with pedestrian
surrounds



Spacious / more investment

Narrow / less investment

OBSERVED FLOW

Stormwater accumulates,
turning corridors into streams



HISTORICAL ARTIFACTS

1697: Ermita de San Nicolas de
Bari, neighborhood's namesake.



TREE CANOPY AS LANDMARKS

A sparse, primarily non-native canopy that
serve as wayfinding above buildings.



Royal Poinciana
Delonix regia



Chinese Banyan
Ficus microcarpa



Date Palm
Phoenix dactylifera



Pepper Tree
Schinus terebinthifolia



Mexican Fan Palm
Washingtonia robusta



1890: The neighborhood's first
clean water source.

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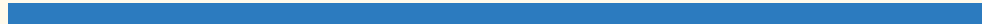
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SITING METHODOLOGY

SITING METHODOLOGY

METHODOLOGY OVERVIEW

THE CLIMATE-ATTRACTOR LOGIC

This project provides an approach for improving the climate resilience of El Risco’s public realm through shade and stormwater management provisions. Given the neighborhood’s sparse vegetative cover and low per capita green space, marginalized socioeconomic and sociopolitical status, and constrained access to municipal resources, this project looks specifically at incorporating green infrastructure into the fabric as a low-cost way. Informed by literature on informal urbanism and the Informal Armatures approach to improving informal settlements, this methodology looks to amplify, fortify, and draw energy from neighborhood structures that inspire social capital— the “social networks and interactions that inspire trust and reciprocity among citizens” (Leyden 2003)— concentrating improvements where social these structures already exist. This approach to strategically siting green infrastructure leverages sparse resources to move towards the creation of ‘attractor corridors’—concentrations of activity, interaction, and services within the neighborhood fabric to ultimately strengthen social ties and community cohesion (Gouverneur 2015). Green infrastructure, in this case, amplifies social outcomes in two ways: 1) it enhances the climate resilience of shared spaces, improving their efficacy as comfortable, high quality gathering places, and 2) it draws attention and energy to areas with some pre-existing social value to fortify, reinforce, and uplift it.

The mapping analysis methodology used in this project, therefore, seeks to find the spatial coincidence of climate vulnerabilities and existing social significance, ultimately aiming to respond to the question: in a place so heterogeneous and morphologically constrained, how can we approach integrating climate-responsive green infrastructure that amplifies and reinforces existing social significance? Aligning with the spirit and ethos of informal urbanism, this approach highlights patterns that emerge from the context as it is, rather than conforming the context to imposed patterns preconceived from ideas of traditional urban structure.

THE GEOMETRIC BASIS

The following analyses utilize both 2D and 3D spatial datasets processed using GIS—geographic information systems—software (QGIS) or three-dimensional modeling software (Rhino 8),

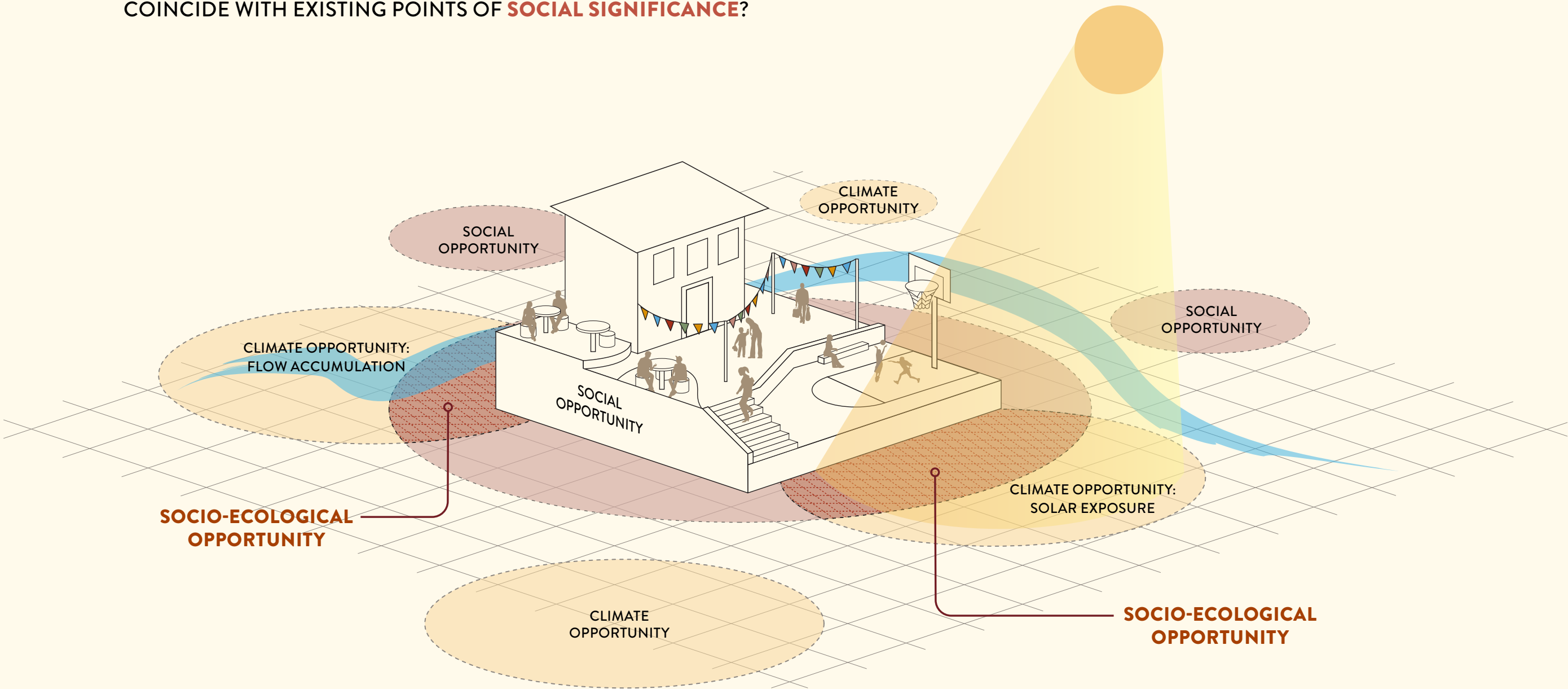
respectively. Each dataset was analyzed and processed in appropriate software, where it was then exported to Rhino 8 for aggregation and testing of coincidence. All datasets are geolocated and utilize the REGCAN95 map projection (Red Geodesica de Canarias 1995 or UTM 28N, EPSG:4083). Datasets relying on the three-dimensional morphology of the neighborhood, such as solar exposure, water accumulation, slope, viewshed and openness utilize a mesh-based digital twin of the neighborhood for calculation. The digital model was generated using high resolution LiDAR data (IGN 2023) in conjunction with building footprints published by the Las Palmas municipality (Dirección General del Catastro, n.d.). Precise modeling of detailed neighborhood structures such as curbs and freestanding walls was outside of the scope of this project and therefore relies on LiDAR to estimate the neighborhood morphology. Datasets relying on weather data, namely solar radiation, utilize meteorological data generated by the nearest weather station to El Risco as possible (the LPA Airport, 19.5 km south of the neighborhood) (Lawrie and Drury 2022). The spatial limits of this study utilize the municipally recognized boundary defined in the San Nicolas Special Plan (Ayuntamiento de Las Palmas de Gran Canaria 2023).

NOTES ON VARIABLE SELECTION

As this project specifically seeks to site green infrastructure that respond to climate related environmental conditions, this mapping methodology analyzes climate vulnerability through the lens of two discrete, intervenable factors: solar exposure and water accumulation zones. Climate vulnerability is a complex topic with social, cultural, environmental, and political dimensions, many of which are outside of the scope of this project. However, these two variables are appropriate proxies for identifying areas of the neighborhood that are most likely to be unduly exposed to climate these extremes. Social conditions are similarly complex, however this study focuses on specific social variables informed by fieldwork observations and principles gleaned from literature on informal urbanism. While the selection of different variables for both climate and social factors could yield different spatial results, this flexibility allows for the methodology to be adapted to other contexts and social zones of interest.

GUIDING QUESTION:

WHERE DO INTERVENTION OPPORTUNITIES FOR **CLIMATE RESILIENCE** COINCIDE WITH EXISTING POINTS OF **SOCIAL SIGNIFICANCE**?



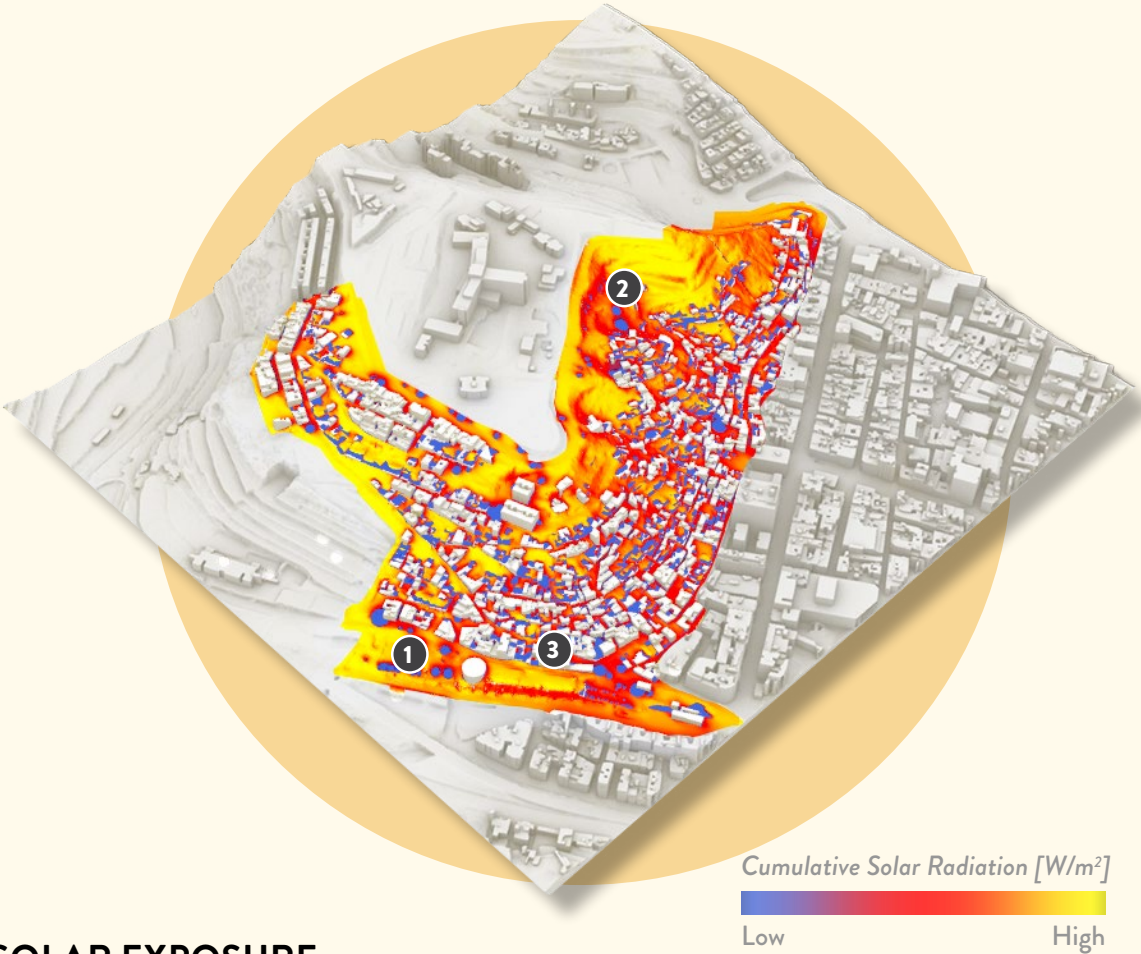
THE MEANING OF OPPORTUNITY

This methodology targets *opportunity* for intervention. Climate opportunities are areas of vulnerability to target and change. Social opportunities are sources of community to enhance and amplify. These exist individually across the neighborhood fabric. To define areas of socio-ecological opportunity, the following methodology seeks to spatialize them and find where they overlap.

SITING METHODOLOGY

ISOLATING OPPORTUNITY VARIABLES

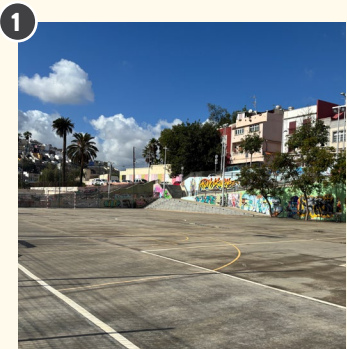
TARGETING CLIMATE VULNERABILITES



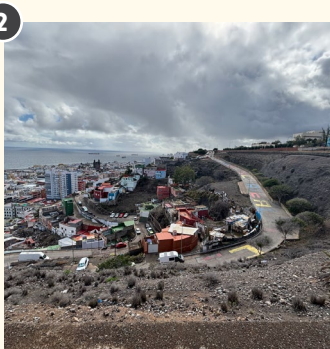
SOLAR EXPOSURE

SOLAR RADIATION AND SUMMER SUNLIGHT HOURS

Urban spaces with high solar exposure and thermally massive materials contribute to the urban heat island. Without adequate access to shade, summer heat can threaten human vitality and well-being. As the climate trends towards hotter, drier summer conditions, shade provisions become a necessary tactic for achieving climate resilience.



South-facing public spaces with expansive paving and little shade.



Exposed ridgelines with expansive views and sparse overhead cover.



Narrow corridors with little direct sunlight ever reaching the groundplane.



FLOW ACCUMULATION

STORMWATER INTERCEPTION

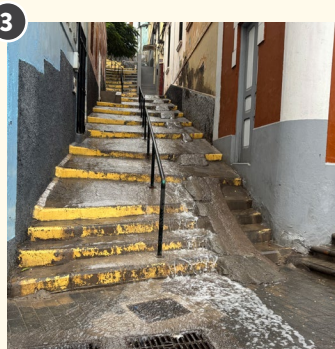
Adequate stormwater management is crucial in any urban environment to prevent flooding, sewer overflows, maintain water quality of natural water bodies, and allow for year-round accessibility across the urban fabric. Planning to accommodate current and future increased storm intensities is necessary for achieving climate resilience in highly impermeable urban environments.



Steep, unvegetated slopes shed stormwater toward infrastructure downslope.



Rooftops drain directly onto pedestrian corridors.



Surface runoff collects on impermeable surfaces upslope and accumulates in the public right of way.

AMPLIFYING SOCIAL INFRASTRUCTURE



COMMUNITY CONNECTION

SOCIAL HUBS AND NEIGHBORHOOD IDENTITY

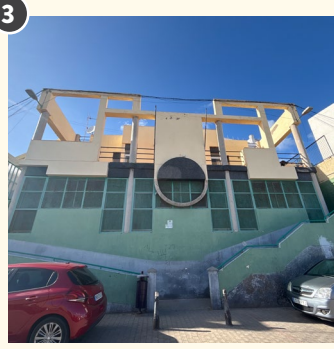
Social capital, the “social networks and interactions that inspire trust and reciprocity among citizens,” is largely cultivated in a neighborhood’s public realm (Leyden 2003). Amplifying and intensifying existing services, cultural identity, resources, and gathering spaces reinforces community assets and furthers social uplift (Gouverneur 2015).



Stewarded corridors are a local point of pride and cultivate high environmental quality.



The pharmacy is one of few non-residential services available in the neighborhood.



Community spaces, like the Club de Mayores, are critical for social cohesion.

SITING METHODOLOGY

MAPPING METHODOLOGY HOW-TO

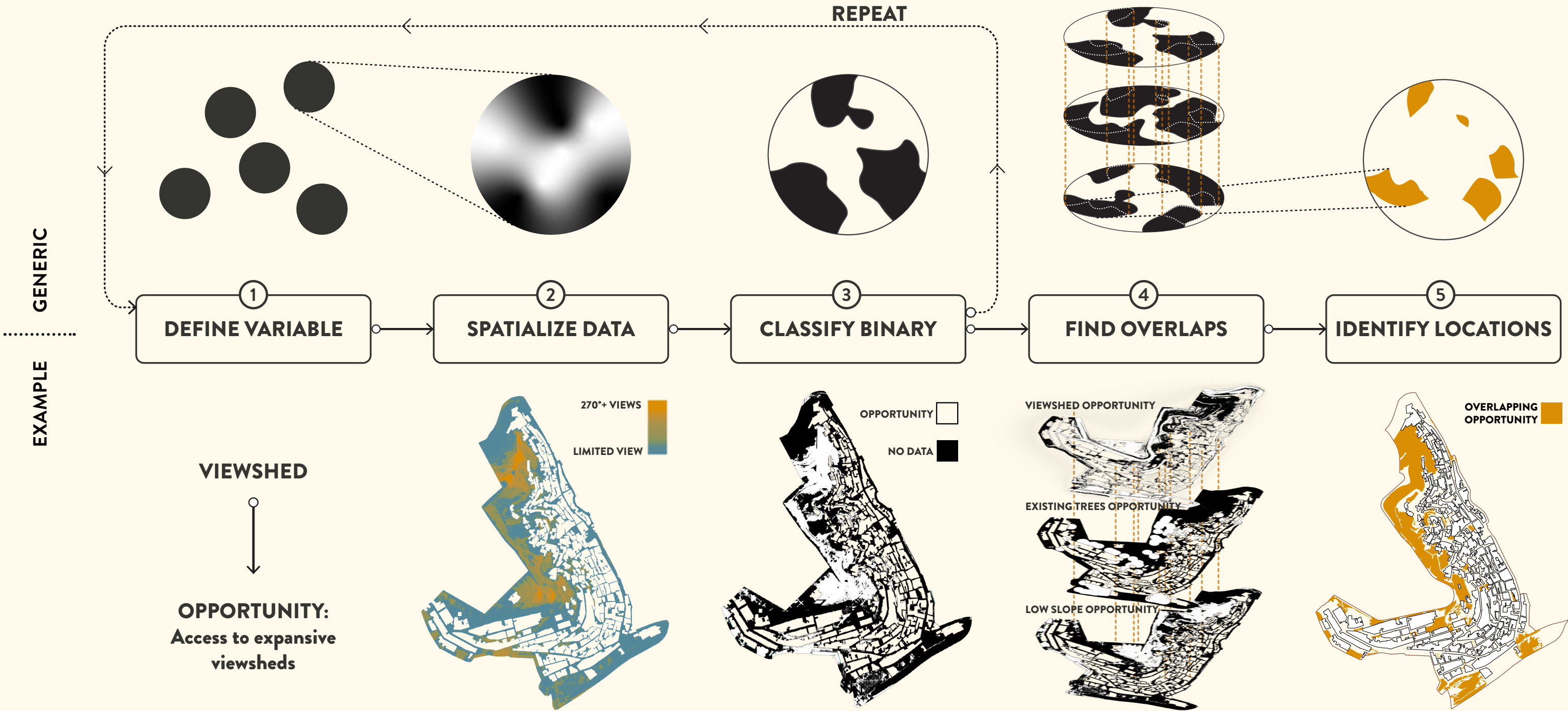
REVEALING SPATIAL COINCIDENCE

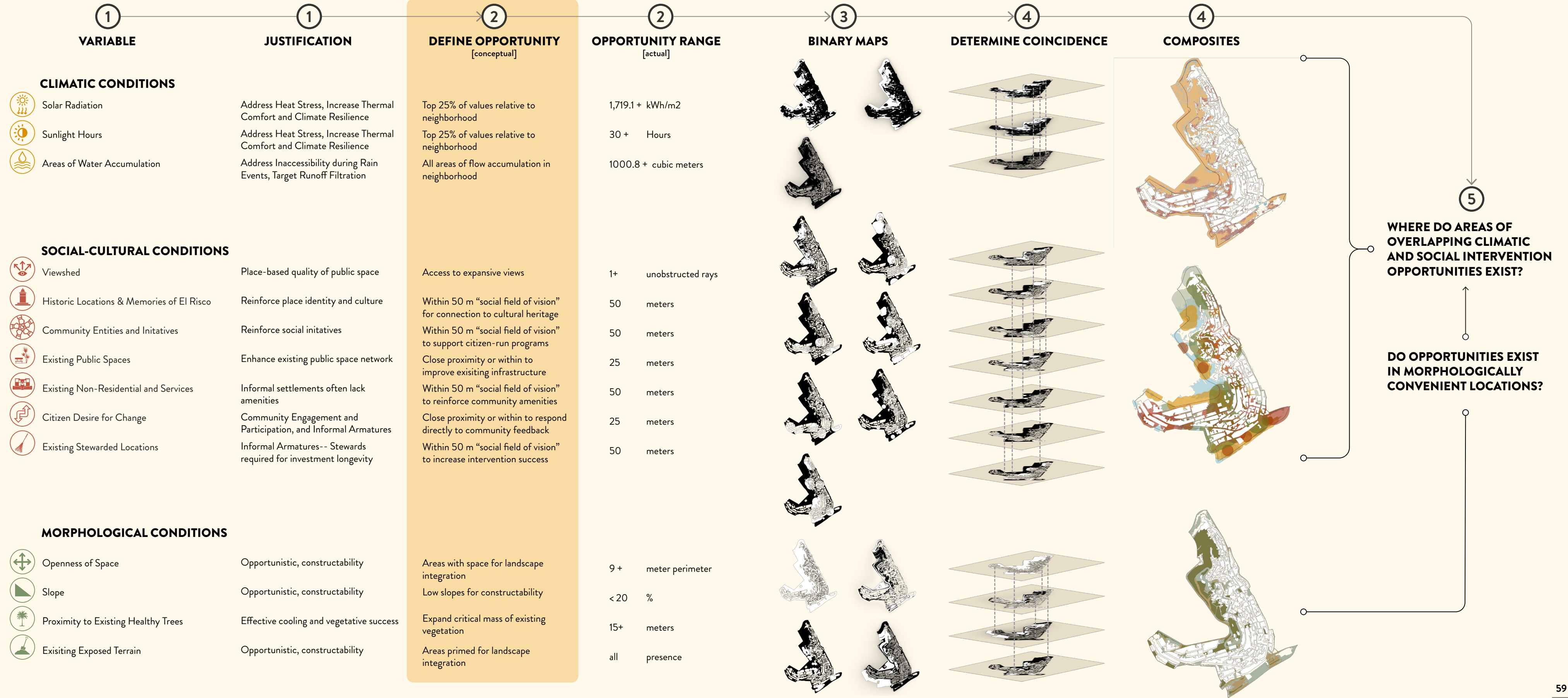
This mapping methodology draws on and modifies the now-ubiquitous layer cake mapping technique made notable by Ian McHarg in *Design with Nature* (McHarg 1969). By mapping the spatial extent of individual variables of interest, then stacking them to find locations of overlap, we can find where multiple areas of interest coincide. To strategically place socio-ecological infrastructures in El Risco de San Nicolas, this project utilizes mapping overlays to understand where potential climate vulnerabilities coincide with existing social significance.

The first step in this process is to define factors or variables of interest. In this analysis, variable choices are guided by climate resilience and consolidated informal settlement improvement principles and defined based on data availability and contextual knowledge. Once defined, data is collected and mapped across the extent of the neighborhood. Next, a range of opportunity for intervention is identified within each variable's data. In this analysis, the opportunity range is informed by literature and logic, and is expanded upon later in this document. The data is reclassified into a binary map that includes only two classes: areas of opportunity and areas of 'no data' or those that fall outside of the range of opportunity. These binaries, then, only reveal locations throughout the neighborhood where opportunity exists. The binary variable maps are overlaid to find areas of coincidence.

In this project, the overlays are first performed in two groups: climatic—to reveal opportunities for addressing climate resilience, social—to reveal opportunities for amplifying existing social structures. In a second round of overlays, the thematic composite maps are overlaid with one another to create another composite that reveal locations in the neighborhood where both climatic and social opportunities exist. These represent the most opportune locations for integration of socio-ecological infrastructure.

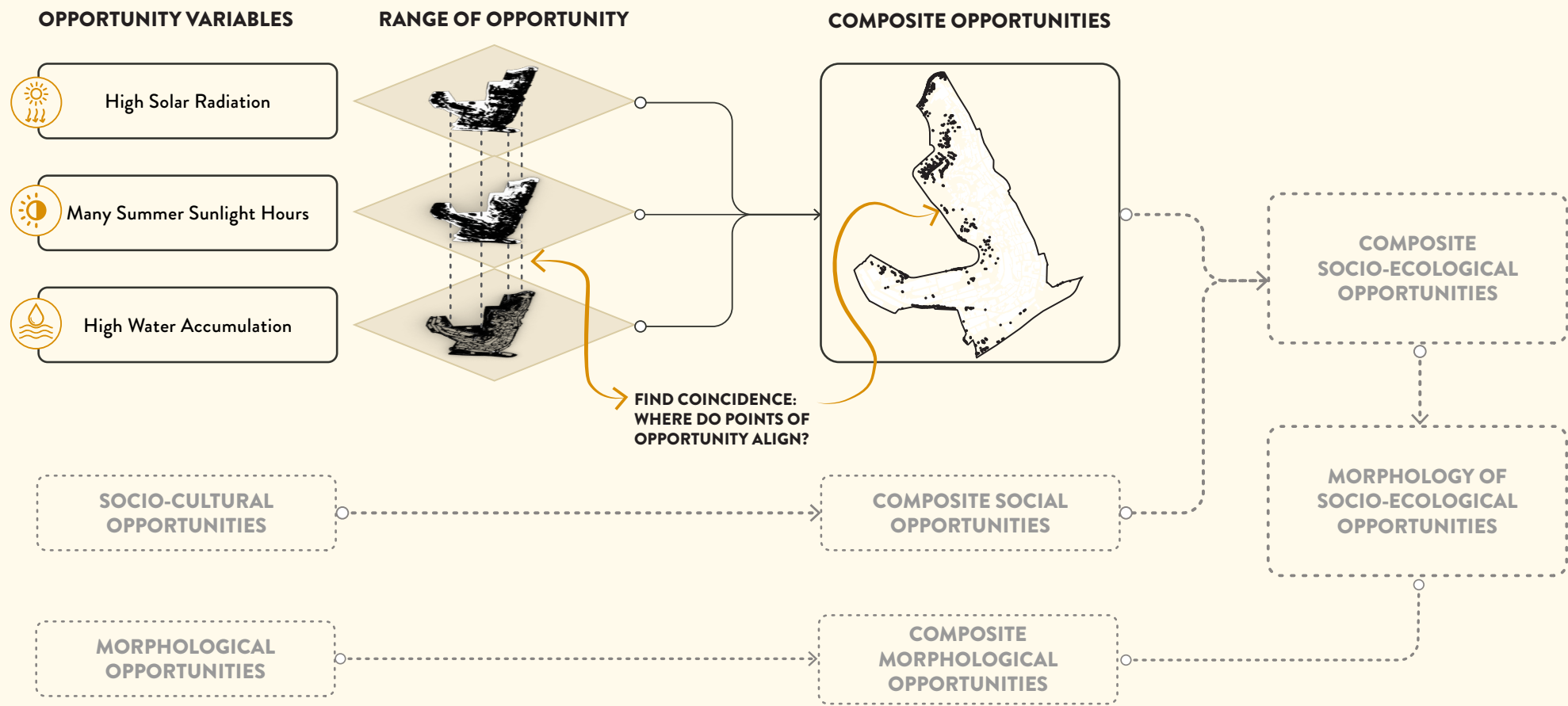
To account for feasibility of construction and implementation, a third group of variables that describe morphological opportunity are overlaid into a morphological composite. Overlaying morphological opportunity with socio-ecological hotspots reveals a gradient of 'construction ease' across the identified locations that allows for insight into types, scale, and construction techniques, and ease for each potential intervention location.





SITING METHODOLOGY

CLIMATE OPPORTUNITIES



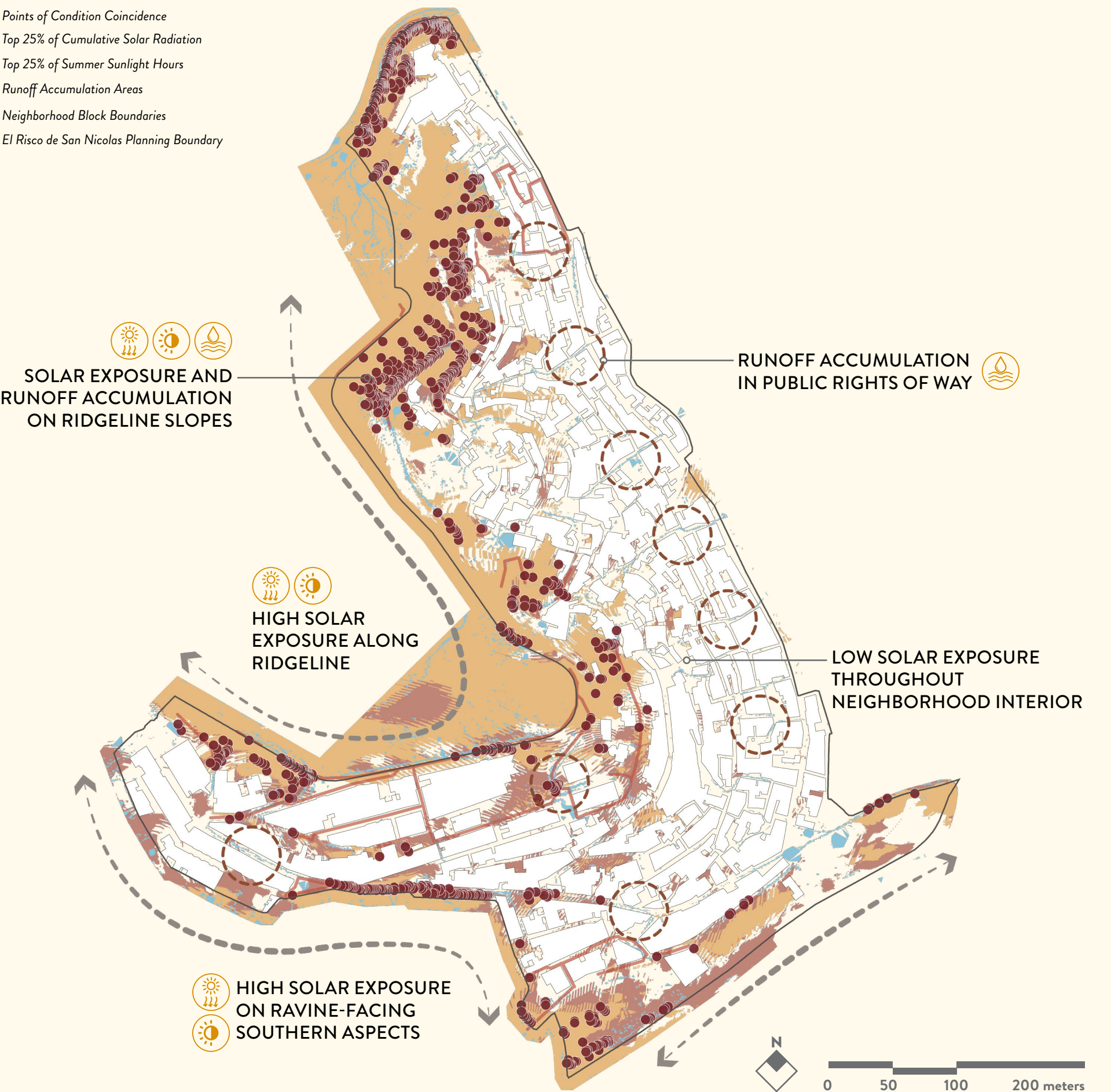
IDENTIFYING POTENTIAL CLIMATE VULNERABILITIES

Areas of high solar exposure and areas of water accumulation are classified as climate vulnerable. Spaces with a high degree of solar exposure and little access to shade are less conducive to thermal comfort and well-being as temperatures rise. In this study, the degree of solar exposure was calculated using two variables: 1) annual cumulative solar radiation—the total amount of solar energy (light, heat, and ultraviolet waves) that reaches the ground plane during the year (measured in kilowatts per square meter), and 2) summer sunlight hours—the total number of hours of direct sunlight reaching the ground plane during the months of June, July and August. *High* solar exposure was defined as locations falling within the top 25% of values of these two metrics. Unsurprisingly, these areas most expansively occur in the least built-up areas of the neighborhood, where buildings

cast fewer shadows. Areas without tree canopy, constructed shade structures, or a northly aspect receive high levels of solar radiation. The analysis reveals additional small solar openings within the neighborhood interior. While solar access is an important part of dense urban fabrics, access to shade in public gathering spaces is necessary for public health, especially in summer months. Flow accumulation in the urban fabric poses a threat to public space functionality when flow volumes exceed those planned for drainage infrastructure. Based on fieldwork observations and community input, the existing drainage infrastructure in El Risco is an aging combined sewer-stormwater system that is not adequately sized to handle flash storms, resulting in sanitation issues related to sewer overflows and inundated public rights-of-way. The flow accumulation

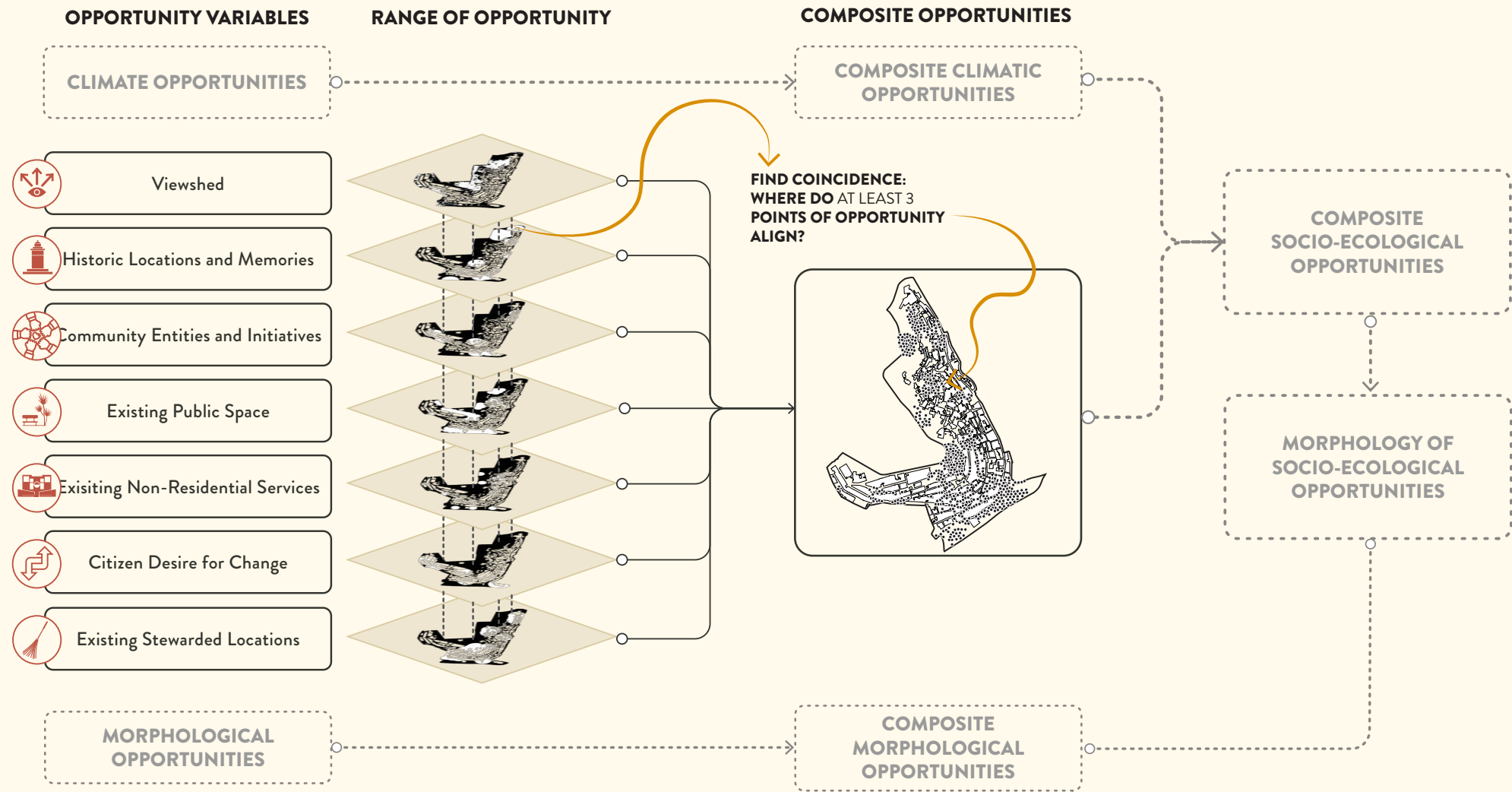
analysis assumes an entirely impermeable public realm ground plane to identify all areas of potential water flow accumulation and inform all opportunities of stormwater interception. The locations of flow accumulation are clearest in public rights of way as corridors become ephemeral ravines. Water accumulation is also apparent at the base of exposed, rocky slopes at the neighborhood ridgeline. Areas of high solar exposure and water accumulation coincide at the points in the adjacent figure. These most commonly occur at the bottom of exposed parcels along the ridgeline of the neighborhood and in open, paved public spaces and rights-of-way at the southern, ravine-facing reaches of the neighborhood.

- Points of Condition Coincidence
- Top 25% of Cumulative Solar Radiation
- Top 25% of Summer Sunlight Hours
- Runoff Accumulation Areas
- Neighborhood Block Boundaries
- El Risco de San Nicolas Planning Boundary



SITING METHODOLOGY

SOCIAL OPPORTUNITIES



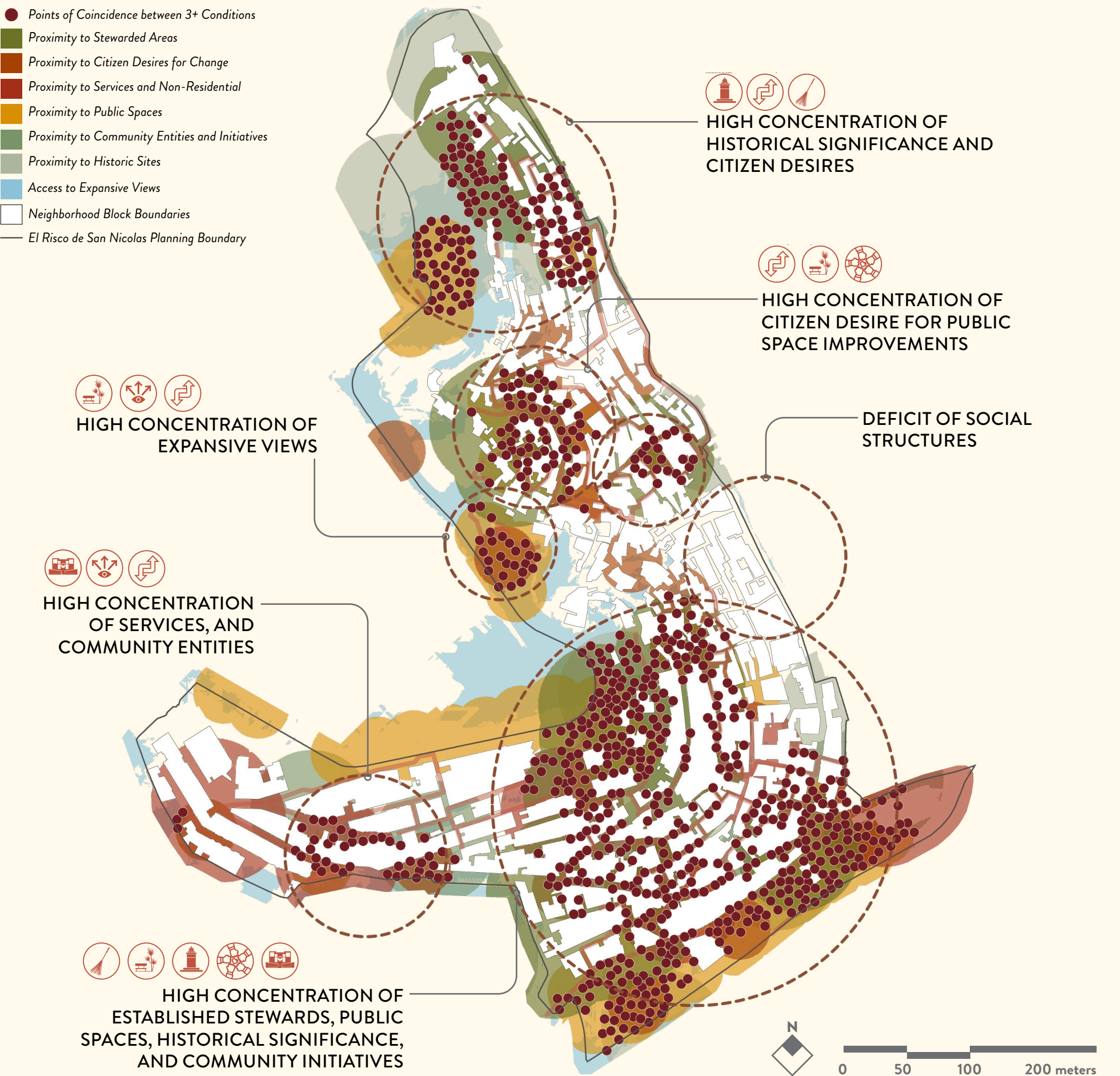
AMPLIFYING EXISITING SOCIAL INFRASTRUCTURE

Variables describing social structures and assets in El Risco were informed both by in-person community interactions and principles of improvement in informal settlements (Gouverneur 2015; Werthmann and Beardsley 2008). Locations of social importance incorporate datapoints collected during fieldwork as well as those developed in the 2017 Riscopapaeo collaborative community mapping project held in El Risco as part of Encuentro Internacional de Arquitecturas Colectivas, a periodic event focused on participatory urbanism (Colectivo MICRÓmacro 2017). As the raw data for most of these variables are singular points, defining areas of opportunity for social interventions utilizes proximity as a metric for their sphere of influence. Proximity

to these social structures draws on the “social field of vision” described in urbanist Jan Gehl’s *Cities for People* and *Life Between Buildings* (Gehl 2013, 2011). The threshold at which figures are recognized as human individuals occurs 70-100 meters from a viewer, and he argues that within this zone is where meaningful, socially relevant interaction can begin to take place. As distances shorten, the degree of meaningful human contact increases. Given the constrained morphological conditions present in El Risco, this project defines the social field of vision as a 25- or 50-meter range—depending on the variable type and assumed necessity for precision—and the range of opportunity is defined as existence within this proximity. Overall areas of opportunity in the social realm

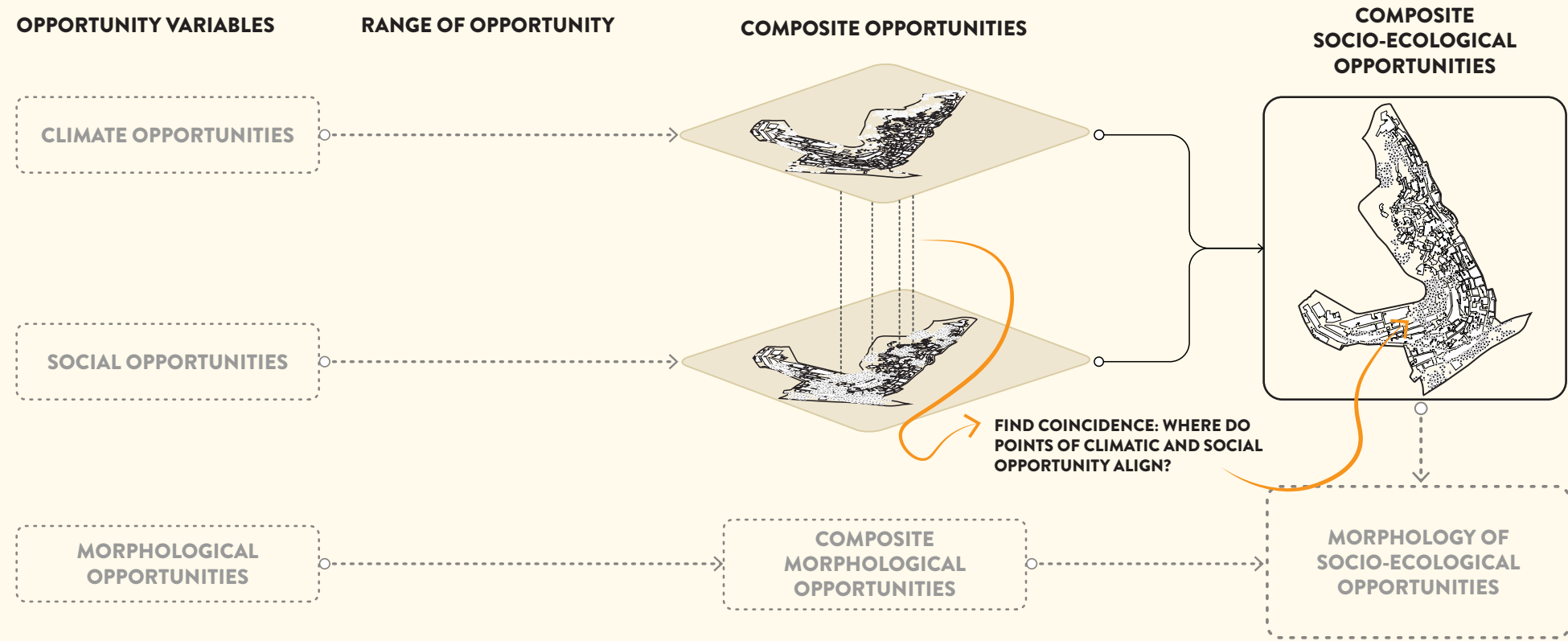
are defined as the coincidence of three or more social variables.

Shown as red dots, areas of coincidence occur across the whole of the neighborhood, with four primary concentrations: 1) San Nicolas sub-neighborhood, 2) Castillo de Mata area of San Lazaro at the neighborhood’s northern end, 3) San Lazaro-San Bernardo sub-neighborhood border, and 4) ravine-facing plazas and public spaces at the neighborhood’s southern border. Overall, these results convey that opportunities for amplifying existing social structures occur frequently across the neighborhood, making way for many small-scale interventions across the neighborhood fabric.



SITING METHODOLOGY

SOCIO-ECOLOGICAL OPPORTUNITIES

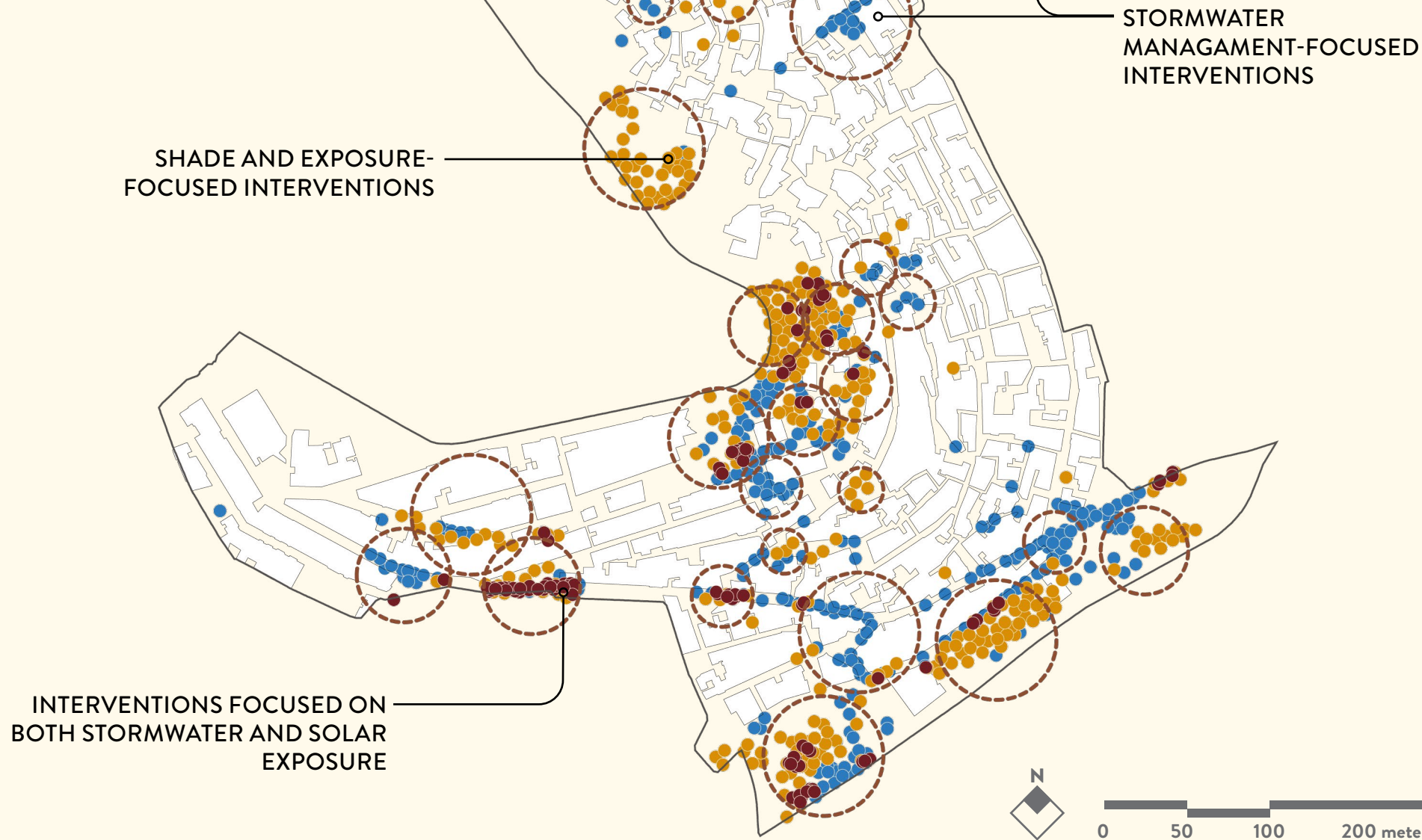
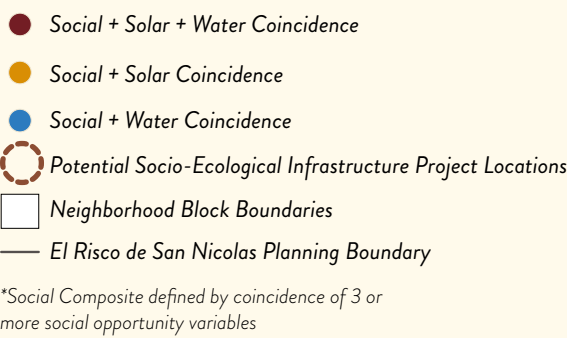


ALIGNING DUAL OPPORTUNITIES

To identify areas of alignment between climate opportunities and social opportunities, the two opportunity datasets were combined into a single socio-ecological composite dataset. Because the goal of this project is to site infrastructure that specifically address climate resilience, the socio-ecological composite only identifies social opportunities that coincide with areas identified as climate opportunities. The composite breaks down opportunity areas into three typologies of coincidence: social with solar exposure (yellow hits), social with flow accumulation (blue hits), and social with both solar and flow accumulation (red hits).

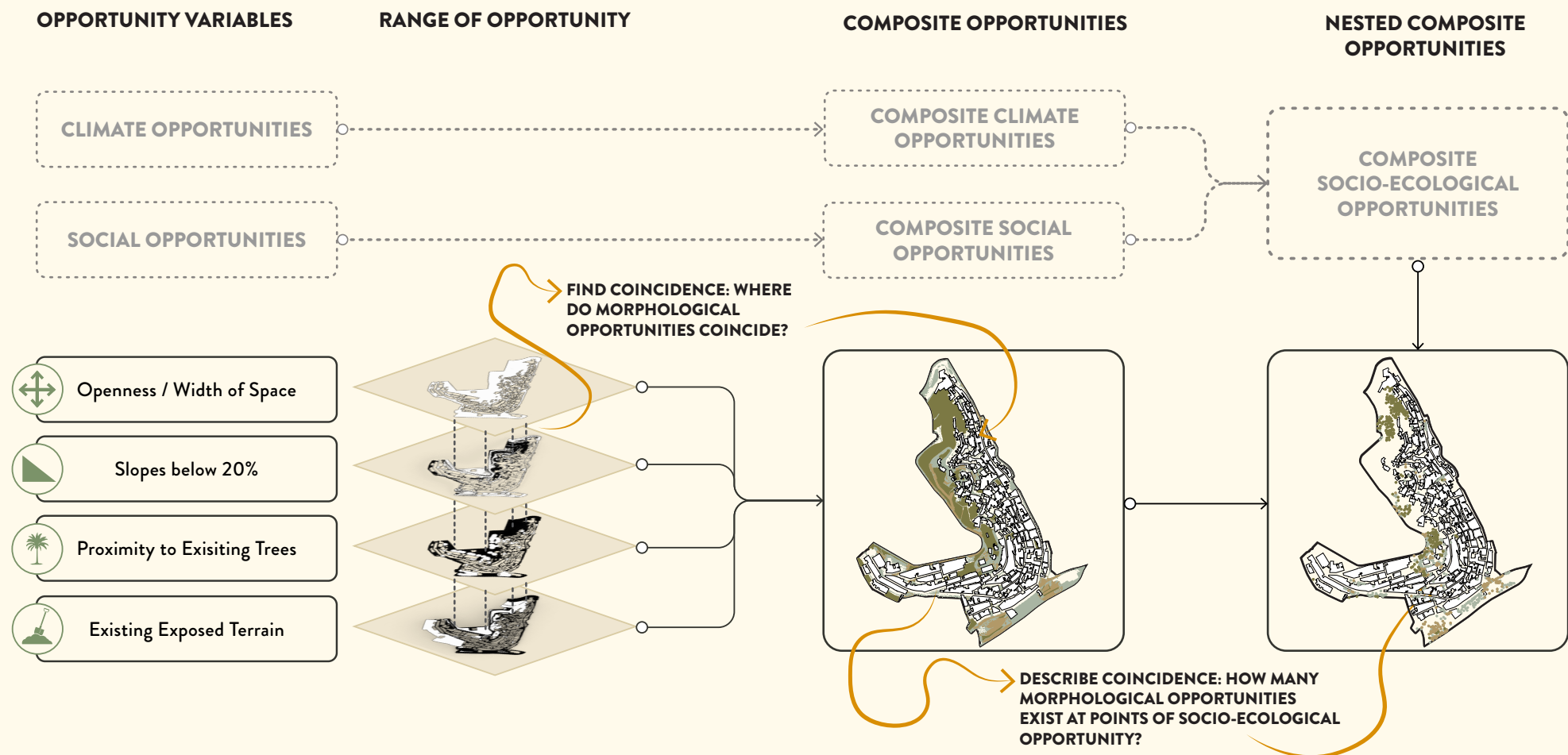
This differentiation helps target the green infrastructure component of interventions to address either solar exposure, stormwater, or both. This analysis reveals possible priority locations for investment in climate-forward, community-focused public space projects across El Risco. The analysis shows clear concentrations of opportunity on the neighborhood's southern edge, at the central portion of the neighborhood's ridgeline, and at the northern end of the neighborhood, both atop the ridge and at the base of the slope. Based on the spatial

conglomeration of these opportunities, these areas suggest opportunities for larger scale improvement projects. Smaller, more dispersed opportunities exist in the neighborhood interior, presenting opportunity for a series of small-scale public space improvements. From a master planning and urban design perspective, these project locations can serve as indicators for singular, individual public space improvements, or they may be combined into block-scale, corridor-scale, sub-neighborhood, or even full neighborhood-scale improvement strategies.



SITING METHODOLOGY

RANKING MORPHOLOGICAL OPPORTUNITIES



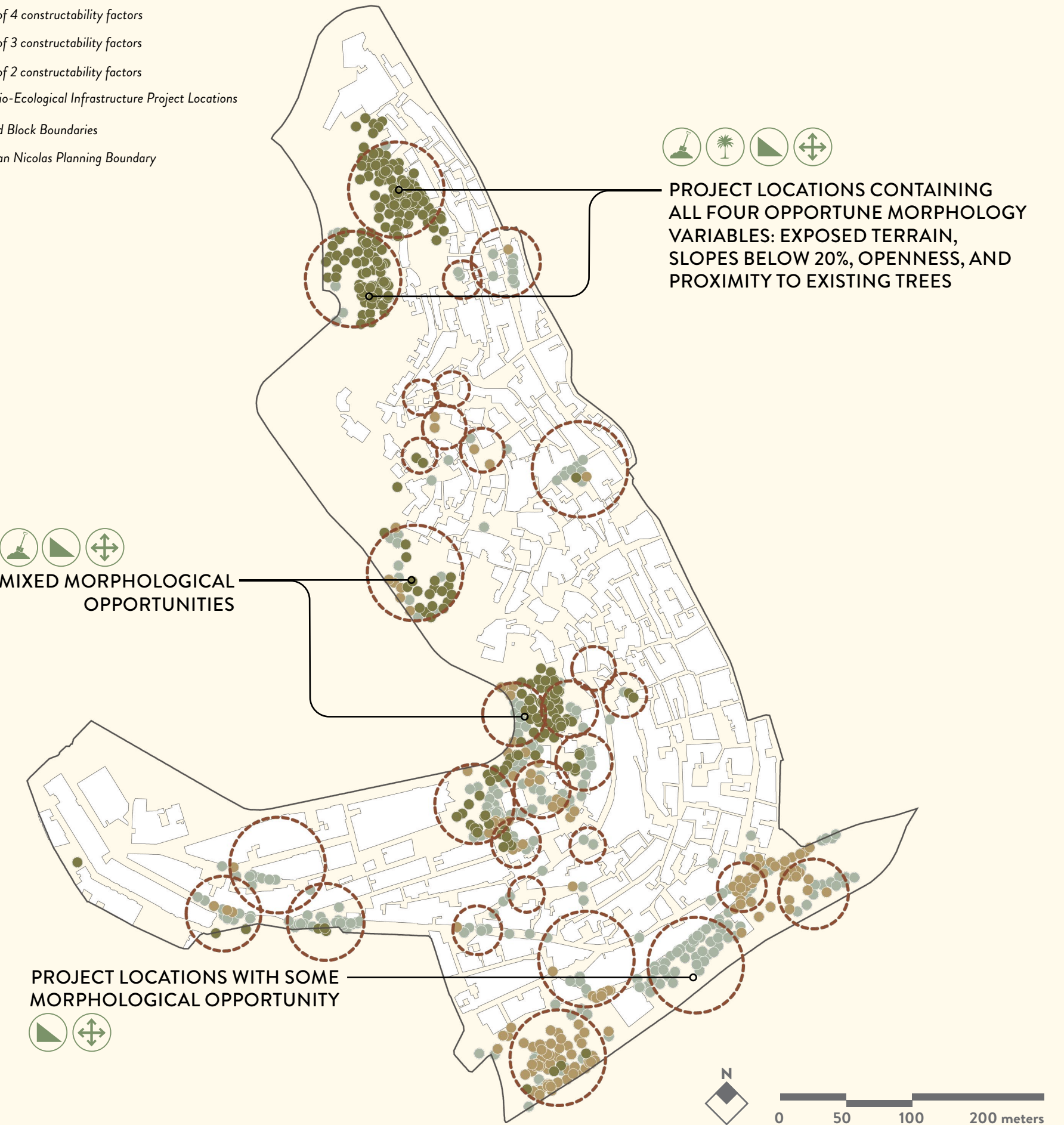
LEVERAGING CONSTRUCTION EASE

Overlaying socio-ecological opportunity areas with morphological conditions helps designers, community members, and other stakeholders understand which opportunity areas may be most feasible and cost-effective to develop. In this final analysis, slopes below 20%, existing exposed terrain, relative openness of space, and proximity to existing vegetation represent potential conditions of morphological opportunity, and coincidence of socio-ecological opportunities with zero to all four of these conditions reveals a gradient of ‘construction ease’ that allows

for insight into types and scale of project intervention. Areas possessing high degrees of morphological opportunity are generally concentrated on the neighborhood peripheries, namely along the ridgeline and on the southern edge where El Risco meets the city. More constrained potential project locations on the neighborhood interior fall out of the morphological opportunity dataset. While meaningful interventions are important at all scales and locations throughout

the neighborhood, this analysis reveals that large-scale grant funded landscape architecture projects focused on socio-ecological infrastructure are most probable to occur at the neighborhood periphery, and smaller scale, people-powered projects are suitable for the neighborhood interior.

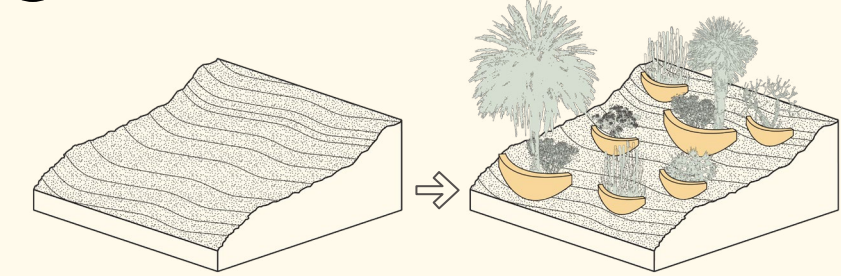
- Coincidence of 4 constructability factors
- Coincidence of 3 constructability factors
- Coincidence of 2 constructability factors
- Potential Socio-Ecological Infrastructure Project Locations
- Neighborhood Block Boundaries
- El Risco de San Nicolas Planning Boundary



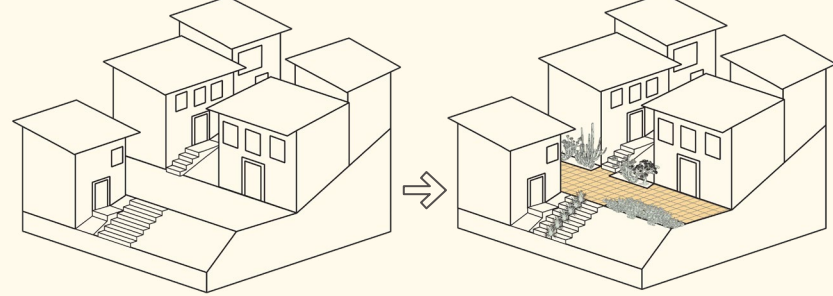
SITING METHODOLOGY

IDENTIFYING INTERVENTION TYPOLOGIES

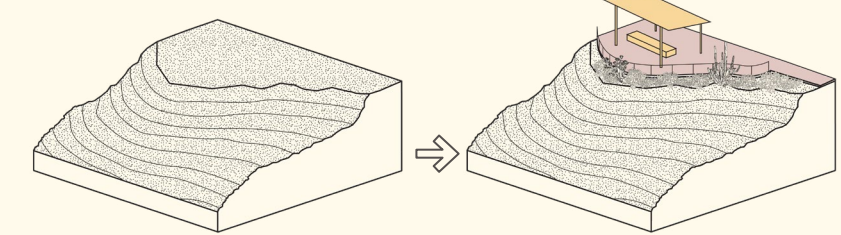
1 VEGETATE BARE SLOPES



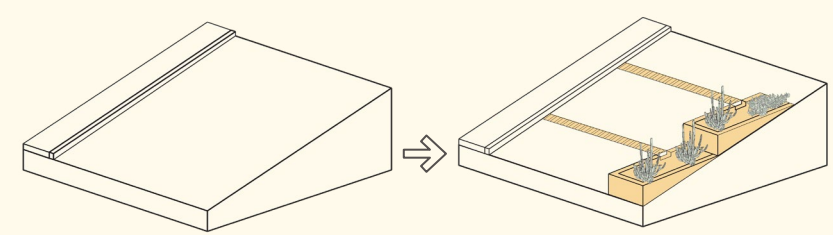
4 DEPAVE PEDESTRIAN CIRCULATION



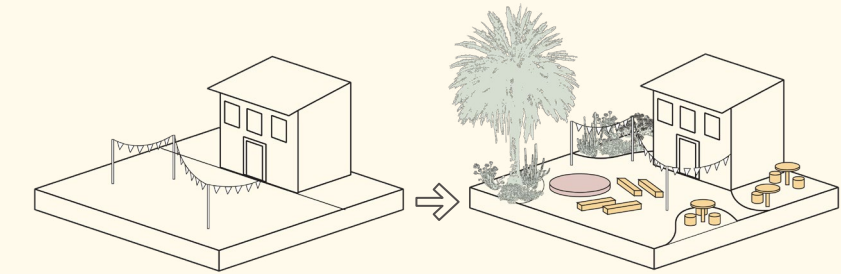
2 ACTIVATE EXPOSED RIDGELINE



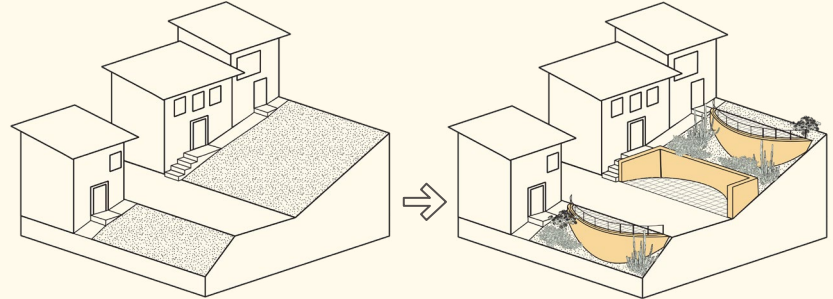
5 DEPAVE VEHICULAR CIRCULATION



3 UPGRADE EXISTING PUBLIC SPACES



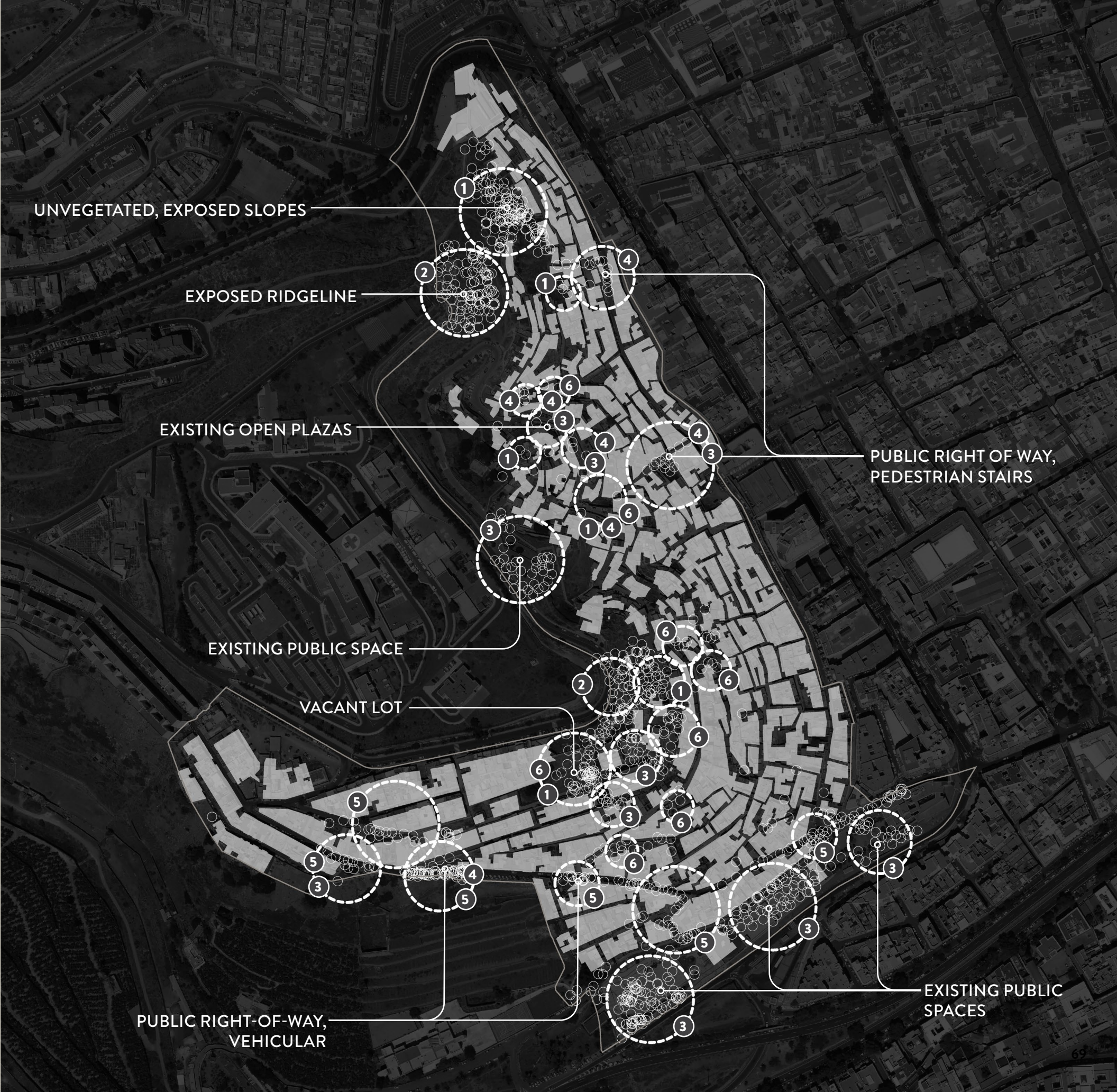
6 REIMAGINE VACANT LOTS



NEIGHBORHOOD PATTERNS

Drawing on field observation and spatial knowledge of the neighborhood fabric, intervention opportunities can be roughly classified into six design intervention typologies. These typologies recognize both morphological patterns and their corresponding needs for green infrastructure as informed by the socio-

ecological opportunity composite. This resulting map serves as a conceptual neighborhood-scale plan for siting different types of socio-ecological infrastructure integration in El Risco.



SITING METHODOLOGY

GROUNDING INTERVENTION LOCATIONS

1 VEGETATE BARE SLOPES

- Slopes behind Calle Saturno Residences
- Exposed slopes and neighborhood garden at Calle Mirasol / Nilo
- Open Hillside at Trasera Guadiana
- Hillside at Calle Real Del Castillo / Guadiana
- Exposed slopes at Calle Plataforma de San Nicolas

2 ACTIVATE EXPOSED RIDGELINE

- Mirador Punta de Diamante
- Exposed ridgeline at Calle Sierra Nevada / San Nicolas de Bari

3 UPGRADE EXISTING PUBLIC SPACES

- Plaza at Calle Nilo
- Mirador Sierra Nevada
- Mirador de Calle Francisco Rodriguez Perez
- Plaza and mirador at Calle Nogal / Nilo
- Sport courts and plazas at Calle San Nicolas de Bari
- Plaza Nueva de San Nicolas
- Plaza Mercadona
- Campo de futbol & Skatepark

FROM ELUSIVE TO EL RISCO

Transforming abstract, conceptual typologies into grounded, actionable possibilities for intervention begins with connecting them with place. Rectifying abstract intervention points with real locations across El Risco lays the foundations for future strategy-building for neighborhood-wide improvement and

revitalization of the public realm. In a real-world project setting, the next step towards project development is engaging the local community to understand and ground-truth the identified locations with locals’ priorities, knowledge, and insights.

4 DEPAVE PEDESTRIAN CIRCULATION

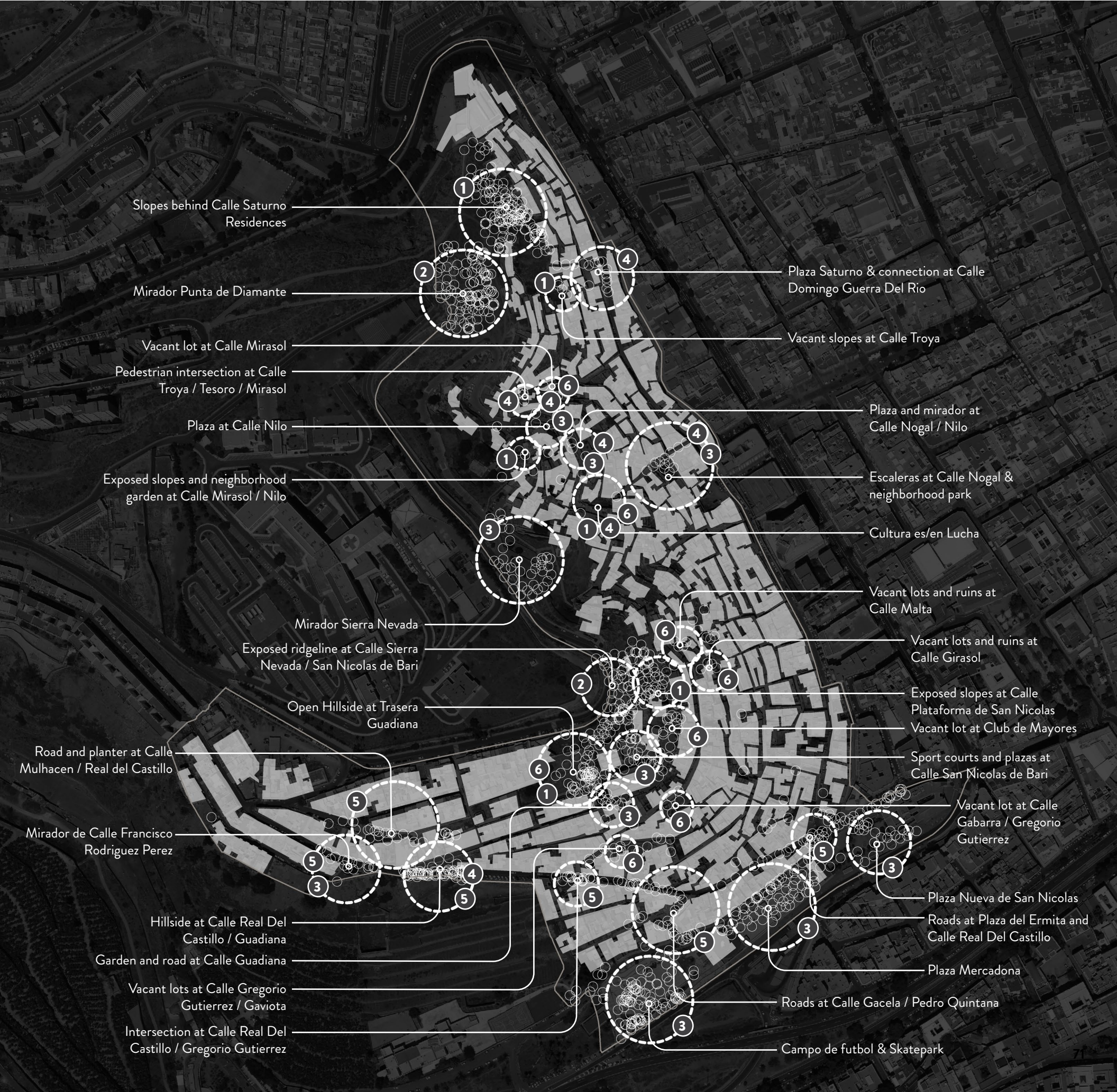
- Plaza Saturno & connection at Calle Domingo Guerra Del Rio
- Pedestrian intersection at Calle Troya / Tesoro / Mirasol
- Escaleras at Calle Nogal & neighborhood park

5 DEPAVE VEHICULAR CIRCULATION

- Road and planter at Calle Mulhacen / Real del Castillo
- Garden and road at Calle Guadiana
- Roads at Plaza del Ermita and Calle Real Del Castillo
- Roads at Calle Gacela / Pedro Quintana
- Intersection at Calle Real Del Castillo / Gregorio Gutierrez

6 REIMAGINE VACANT LOTS

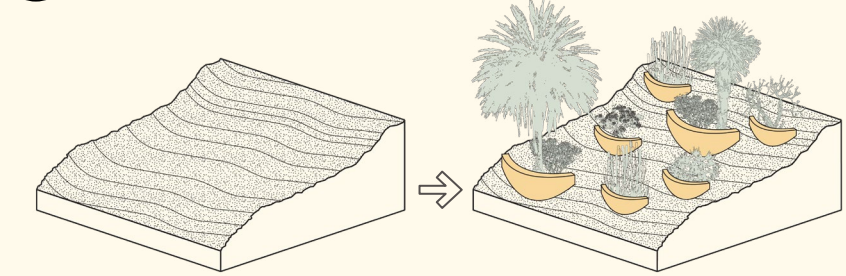
- Vacant slopes at Calle Troya
- Vacant lot at Calle Mirasol
- Vacant lots at Calle Gregorio Gutierrez / Gaviota
- Vacant lots and ruins at Calle Malta
- Vacant lots and ruins at Calle Girasol
- Vacant lot at Club de Mayores
- Vacant lot at Calle Gabarra / Gregorio Gutierrez
- Vacant lot at Cultura es/en Lucha



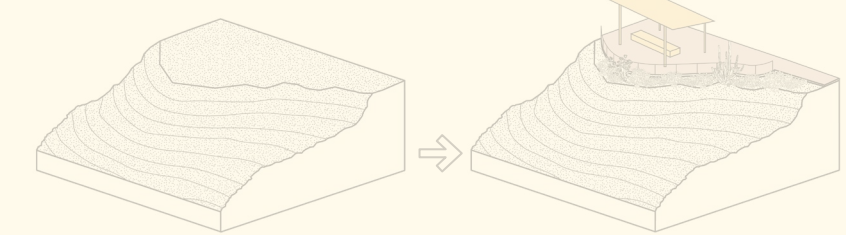
SITING METHODOLOGY

DESIGN CASE STUDY SELECTION

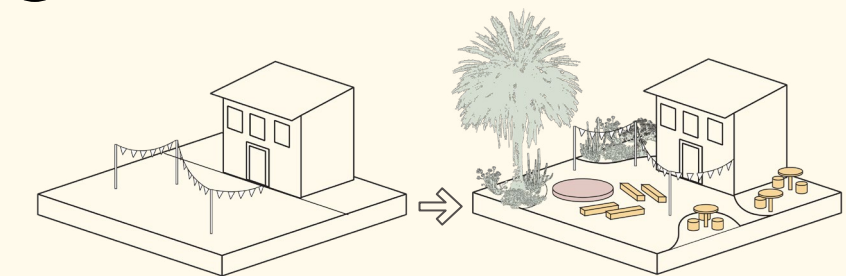
1 VEGETATE BARE SLOPES



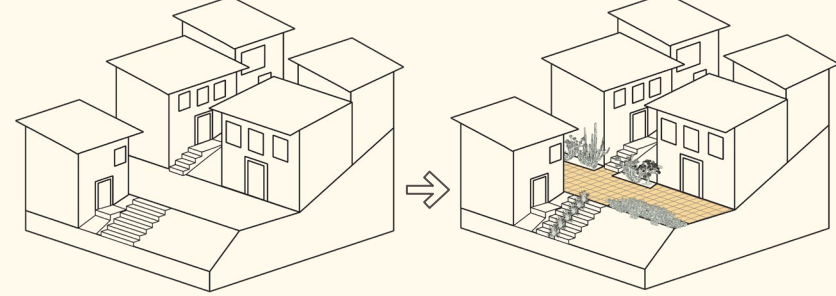
2 ACTIVATE EXPOSED RIDGELINE



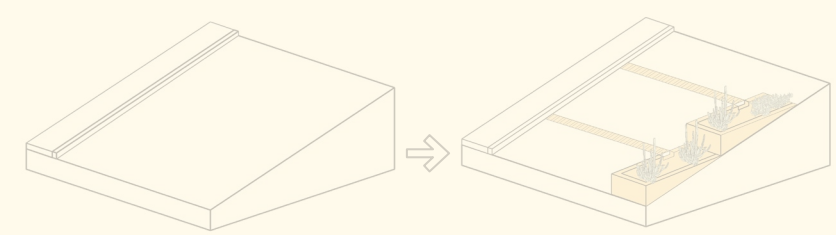
3 UPGRADE EXISTING PUBLIC SPACES



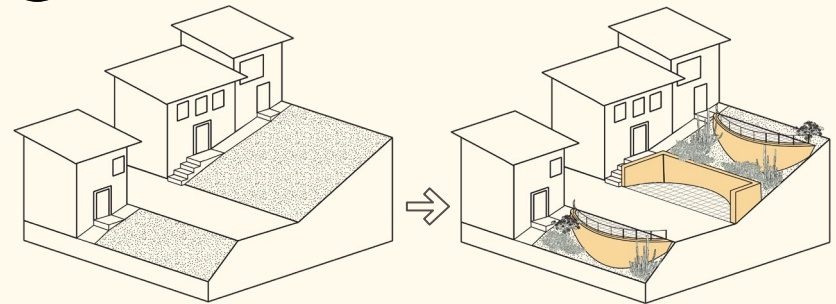
4 DEPAVE PEDESTRIAN CIRCULATION



5 DEPAVE VEHICULAR CIRCULATION



6 REIMAGINE VACANT LOTS

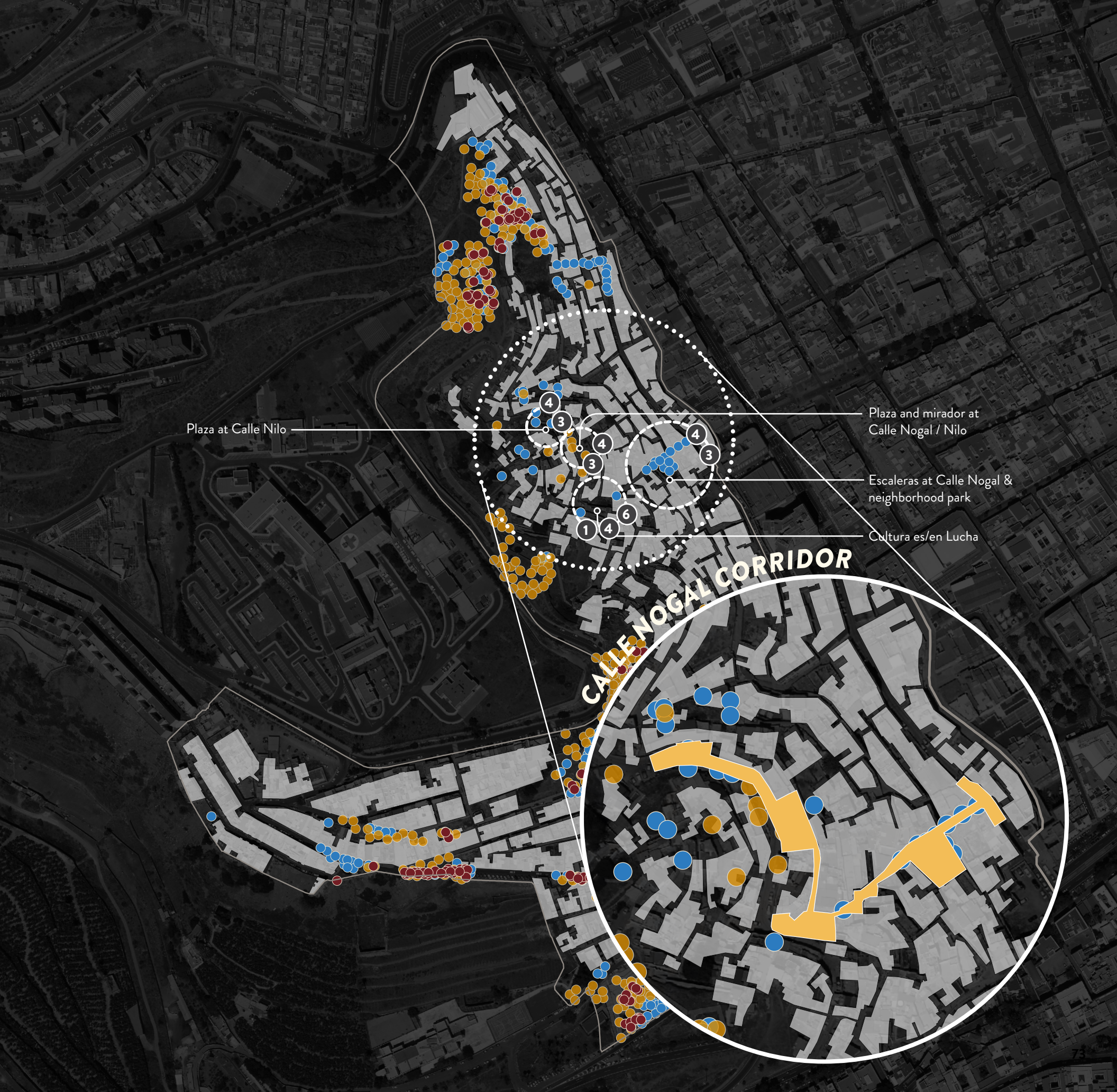


AN ATTRACTOR CORRIDOR

In order to demonstrate the relevance of this siting methodology, this project investigates how identified intervention locations can translate into socio-ecological infrastructures through a speculative design exercise. Despite the many design opportunities across the neighborhood, this speculative design focuses on small scale interventions

on the neighborhood interior, an area where grant-funded planning efforts tend to focus less. Using the model of “attractor corridors” (Gouverneur 2015), this design exercise aims to improve a sequence of public spaces to illustrate how the nodes and their connections can potentially fortify as an activated, vibrant attractor of social action while addressing its

solar exposure and stormwater accumulation ailments. Calle Nogal was selected as an apt location for this exercise because it links multiple opportunity locations and builds upon previous community engagement and public space improvement work along the corridor (Colectivo MICROmacro 2017).



SPECULATIVE DESIGN

“I have always nurtured the dream and hope that with the prick of a needle, diseases may be cured. The notion of restoring the vital signs of an ailing spot with a simple healing touch has everything to do with revitalizing not only that specific place but also the entire area that surrounds it” - Jaïmer Lerner from Urban Acupuncture, 2014

SPECULATIVE DESIGN

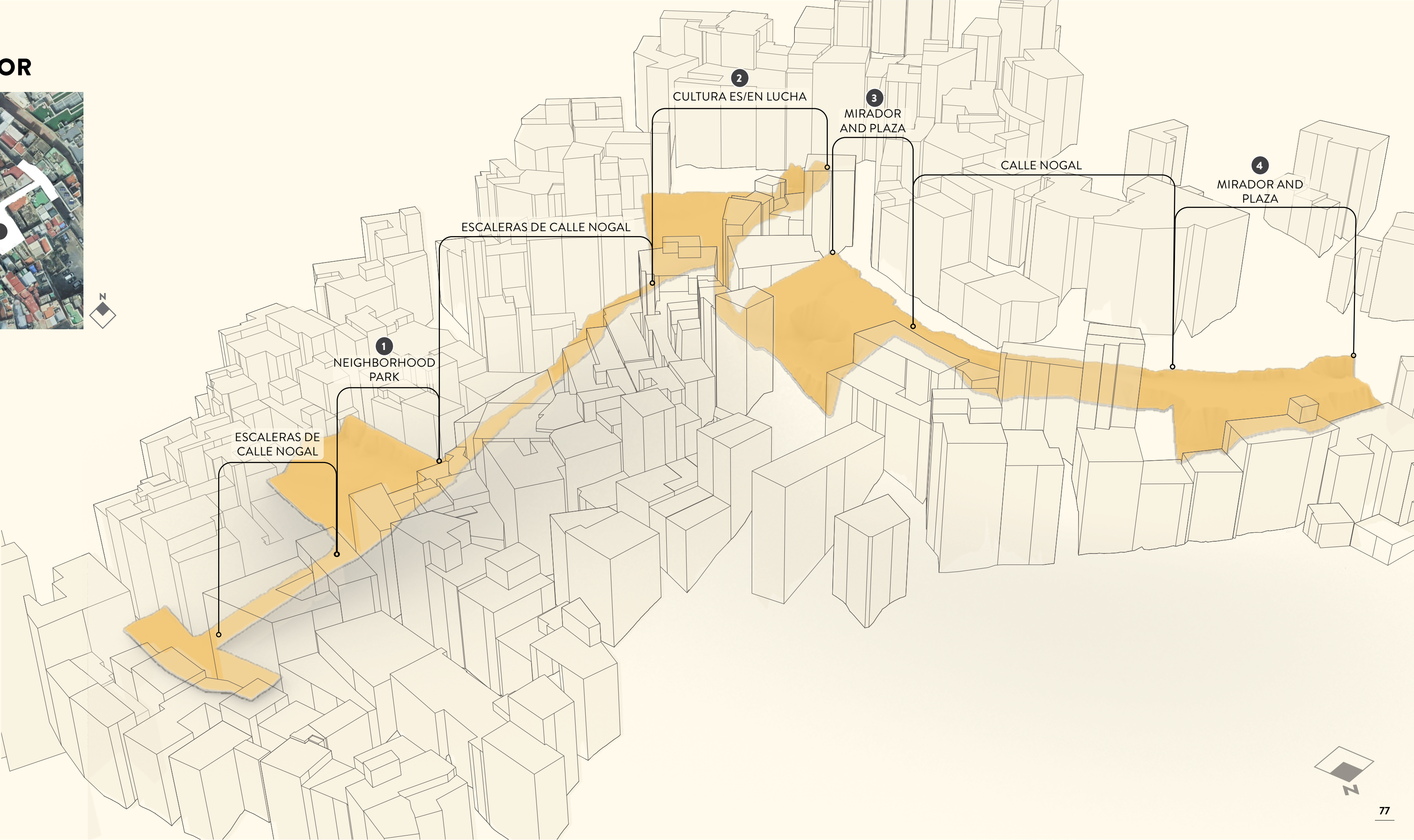
CALLE NOGAL CORRIDOR



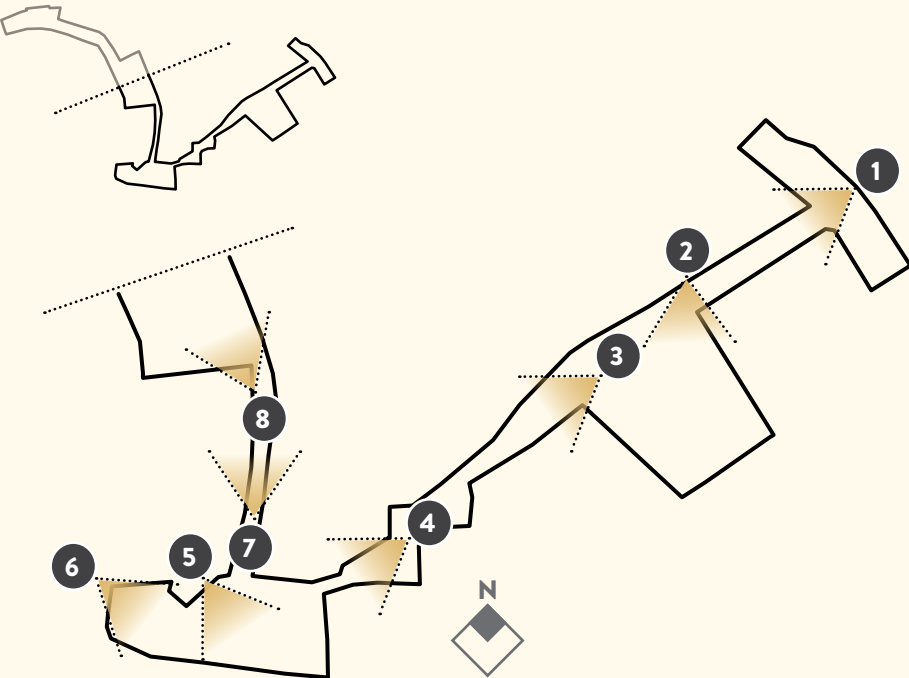
NODES AND LINKS

The Calle Nogal corridor is made up of a series of four public space nodes connected by narrow, pedestrian-only circulation paths. The Calle serves as pedestrian connector between two primary vehicular arteries of the neighborhood, Calle Domingo Guerra del Rio at the base of the slope and Calle Nilo approximately halfway to the neighborhood’s ridge line and covers just over 40 meters of elevation in between the two. With the exception of node #2, the vacant lot at the “Cultura es/en Lucha” mural, the corridor and its nodes are considered public spaces and public rights-of way, falling under jurisdiction of the Las Palmas municipality.

The Calle marks the informal boundary between sub-neighborhood San Bernardo (south) and San Lazaro (north) and serves as a primary pedestrian artery for residential access navigating the slope. As the subject of public space upgrades over time, including the installation of one of the only vegetated “parks” in the neighborhood, painting of stair risers, incorporation of murals and public art, and construction of open plazas on terraces, the corridor currently holds social significance as a robust sequence of public spaces with cultural value in the form of art. This project outlines a set of design proposals aimed at amplifying the Calle even further as an attractor corridor by augmenting these spaces with green infrastructure to enhance their climate resilience and improve resident access to green space.



CALLE NOGAL CORRIDOR EXISTING CONDITIONS



PHOTOWALK PART 1: STAIRWAY SPINE

STORMWATER ACCUMULATION AND SLOPE

Beginning at the base of El Risco’s slope, the first portion of the corridor runs perpendicular to the slope’s contours, characterized by a long step ramp navigating the elevation gain up the slope. According to residents, the sloped, elongated treads of the escaleras are less preferable to traditional, level stair treads from an accessibility standpoint, as the sloped ramps do not provide sufficient resting space as pedestrians work their way upslope. Aside from the gathering nodes, it’s canyon-like and narrow, reducing the need for solar interventions. However, notable on this portion of the corridor is the surface flow accumulation that occurs during precipitation events. As a stormwater collector of smaller lateral corridors, runoff converges along the Calle’s centerline, rendering the corridor impassable during precipitation events.



△ **Calle Nogal Entrance:** Stormwater accumulates in the public right-of-way at the bottom of the slope.

▽ **Residential Trails:** Accessible only by foot, these residences have only staircase access in both up- and downslope directions.



△ **Neighborhood Park:** Improved as part of the Arquitecturas Colectivas initiative, this once vacant lot is now one of El Risco’s most vegetated public spaces.

▽ **Narrow Canyon:** A pass-through with little space for intervention on the ground plane.



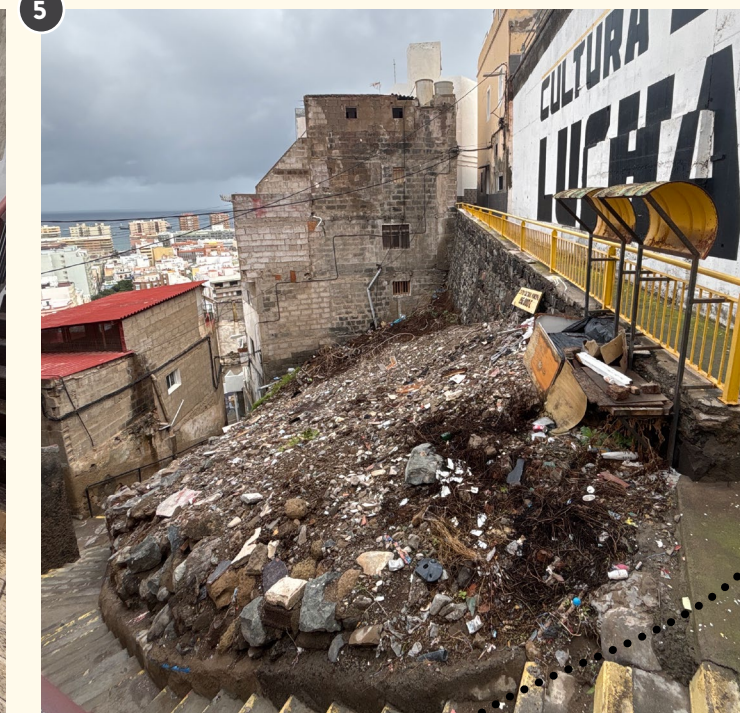
△ **Escaleras:** Step-ramp style staircase retrofitted by neighbors with asphalt between risers to allow for wheeled ascent.

▽ **Painted Plaza:** A small landing-sized plaza serving as a critical juncture between two locally significant murals.

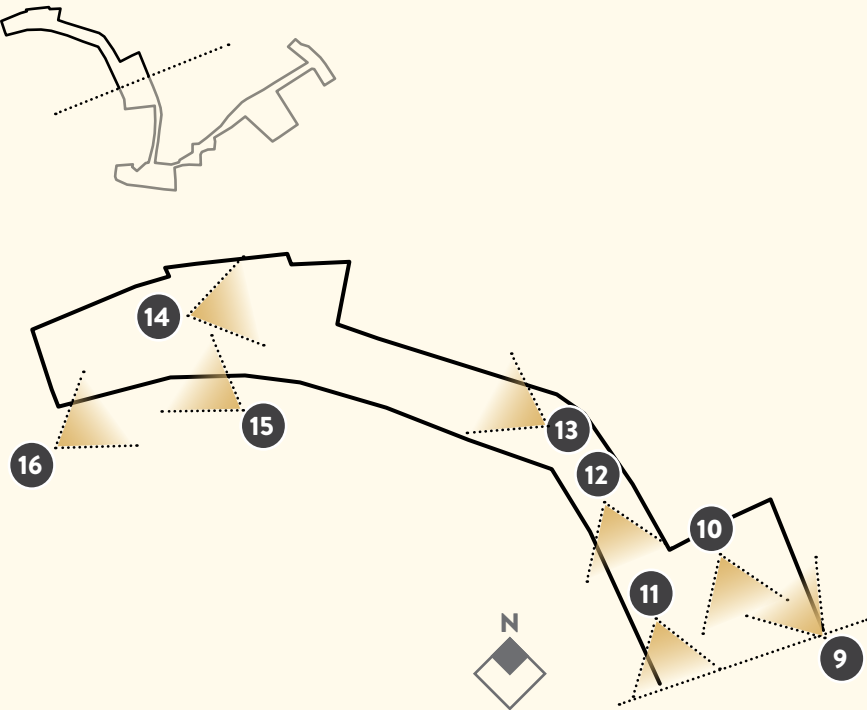


△ **Narrowing:** Double-wide steps shrink to single-width pedestrain access as circulation snakes through buildings.

▽ **Cultura es/en Lucha:** A vacant slope serving as a ‘trash collector’ below a mural reading “Culture is/in Struggle.”



CALLE NOGAL CORRIDOR EXISTING CONDITIONS



PHOTOWALK PART 2: ON CONSTRUCTED CONTOUR

SOLAR EXPOSURE AND LACK OF ACTIVATION

After ascending the slope, the second portion of Calle Nogal is characterized by its connection of public spaces on contour. Nearing the neighborhood's ridgeline, this section of corridor sits above the more enclosed canyons of the interior fabric and has a much higher degree of solar gain on the ground plane as well as improved access to the expansive views of the Atlantic and Las Palmas, iconic of the Risco typology. The public realm on this section of corridor notably lacks activation from a programming perspective, despite its more improved material conditions.

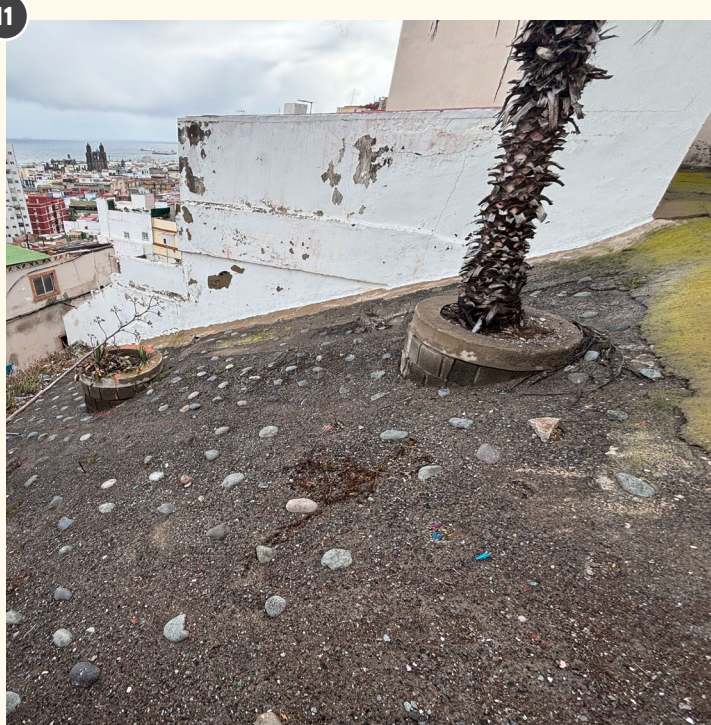
Across the corridor, heterogenous textures and its sequence of compression and expansion and constraint give the corridor qualities of collage and assemblage and demonstrate its incremental development.



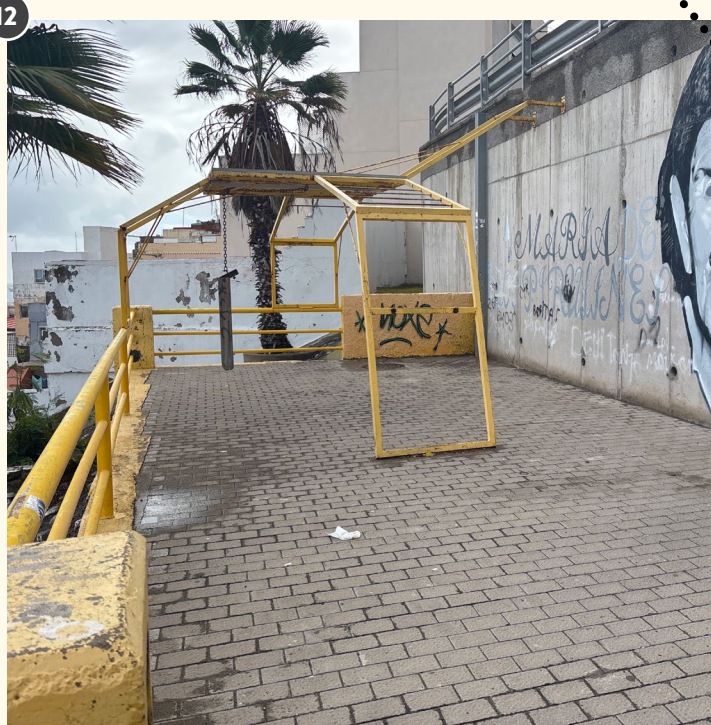
- △ **Dead End:** The canyon widens approaching the stairwell switchback that facilitates movement to the next terrace.
- ▽ **Unactivated Views:** Access to expansive views in public spaces remains under appreciated without creature comforts such as sitting space and access to shade during summer heat.



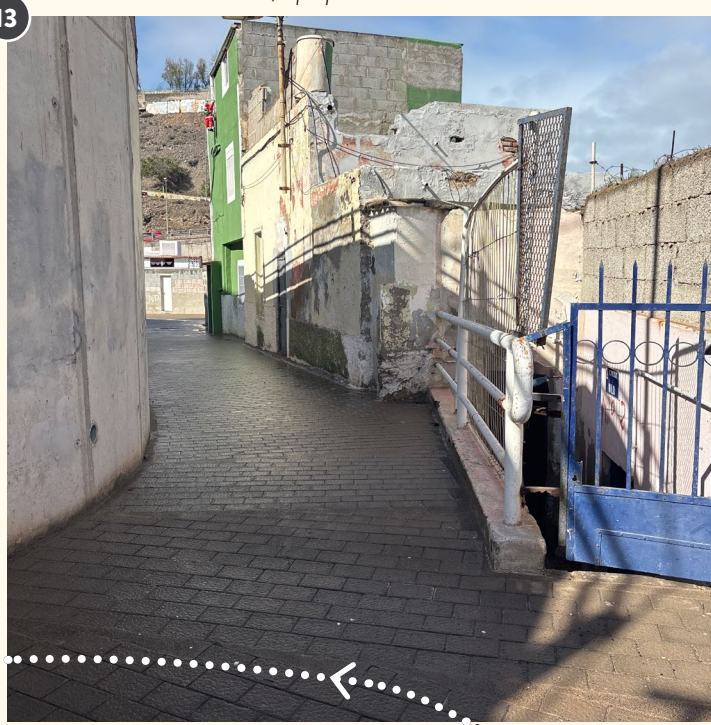
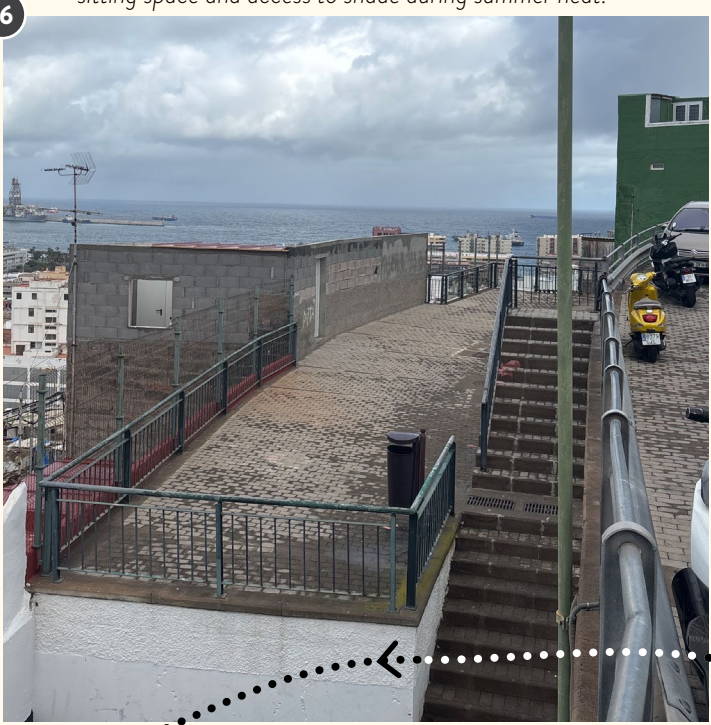
- △ **Seven-Drain Stairwell:** Numerous weepholes outfall at the stairwell landing, relieving hydrostatic pressure accumulated behind the retaining walls upslope.
- ▽ **Blank Corners:** Open plaza space remains unused without provisions for lingering.



- △ **Paved Slopes and Tiny Treewells:** Across El Risco, residual sloped areas are paved over rather than planted or terraced, contributing to impervious coverage.
- ▽ **Centered Drainage:** Staining reveals a predicted surface flow towards the plaza center--an opportunity for interception.



- △ **Gym Relic at Maria de los Pirulines:** A plaza dedicated to historical figure, "Maria de Los Pirulines" sits underutilized as an exposed terrace with a derelict exercise structure.
- ▽ **Plaza Linkage:** A wide corridor links two improved plaza terraces on contour, ripe for tactical activation.

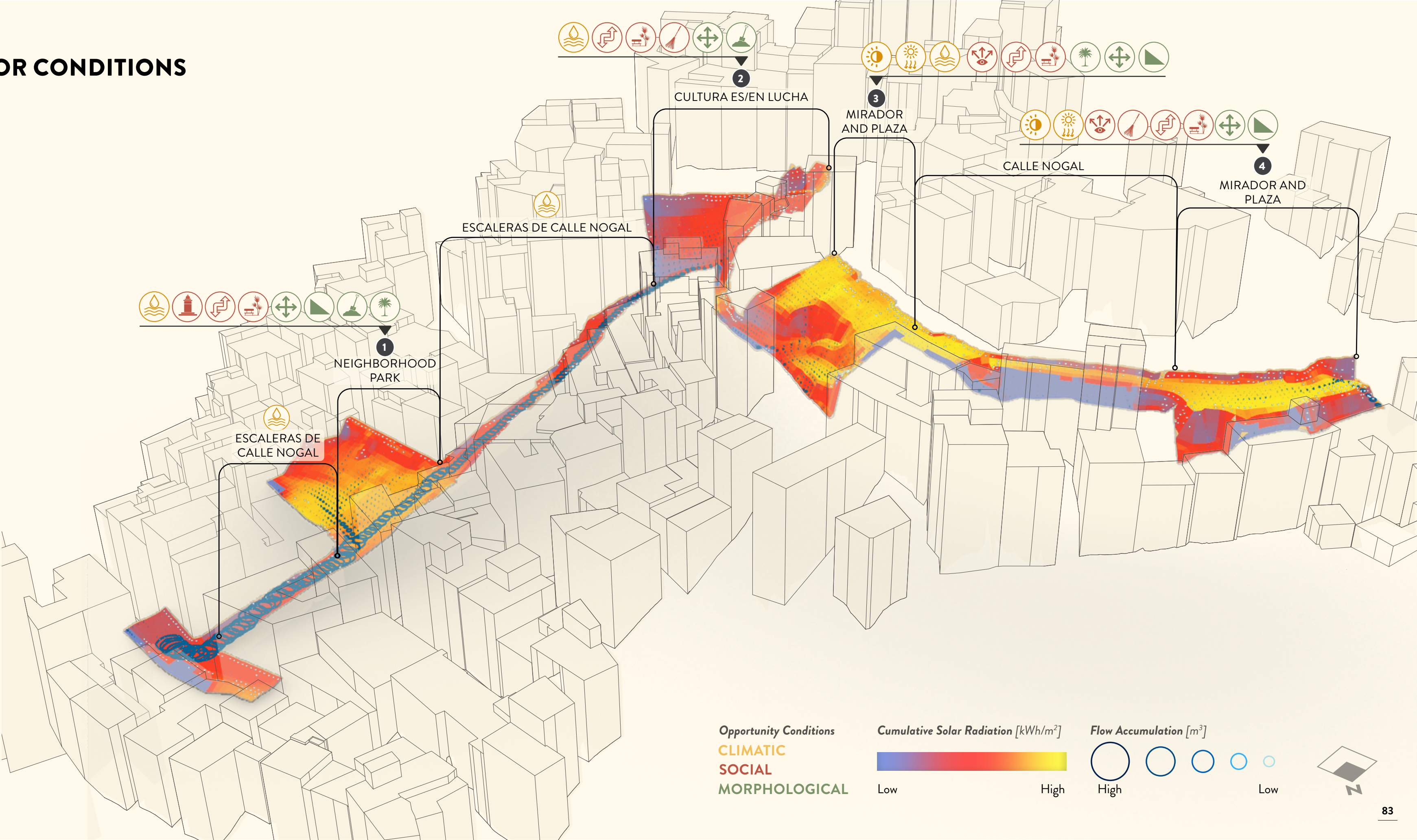


SPECULATIVE DESIGN

IDENTIFYING CORRIDOR CONDITIONS

CANYON TO CLIFF

In the siting methodology, points on Calle Nogal were identified as socio-ecological infrastructure opportunity locations, or places in the public realm where opportunities for building both climate resilience and social amplification coincide. Isolating these variables along the corridor helps inform discrete actions and design tactics that specifically respond to conditions affecting these spaces. From a climate perspective, varying morphologies across the corridor call for various green infrastructure design tactics to address stormwater management and solar exposure. From a social perspective, the identification of the corridor as an opportunity location is embedded within the siting methodology. Image analysis findings and field notes help inform design intervention proposals that are sensitive to the sense of place and existing social context within El Risco.



SPECULATIVE DESIGN

MATERIAL INTENTIONS

LO-FI LANDSCAPES FOR COMMUNITY OWNERSHIP

Discovering *where* socio-ecological infrastructure interventions should go for intended resilience outcomes is one half of the equation. Defining the *how* of such interventions—their material, aesthetic, and construction approach—is the second, crucial half.

Lo-Fi landscapes, or “low-fidelity” landscapes, describe an unofficial but growing landscape philosophy, aesthetic and construction movement in landscape architecture. It centers local resourcefulness, embraces material imperfection, and relies on practical, tactical approaches to landscape development as opposed to an entirely predetermined top-down strategy. The results are low-cost landscapes that cultivate a strong sense of place through ecological contextualization and material vernacular (Breedon and Mouritz 2021; Al-Quaddoomi 2025; Bargmann 2021).

This type of landscape philosophy aligns with that of urban acupuncture. In his influential on urban design and public life book *Urban Acupuncture*, Jamie Lerner likens healing or revitalization of urban areas to the medical practice of acupuncture. Through targeted, small, rapid low-cost “pinprick” interventions throughout the

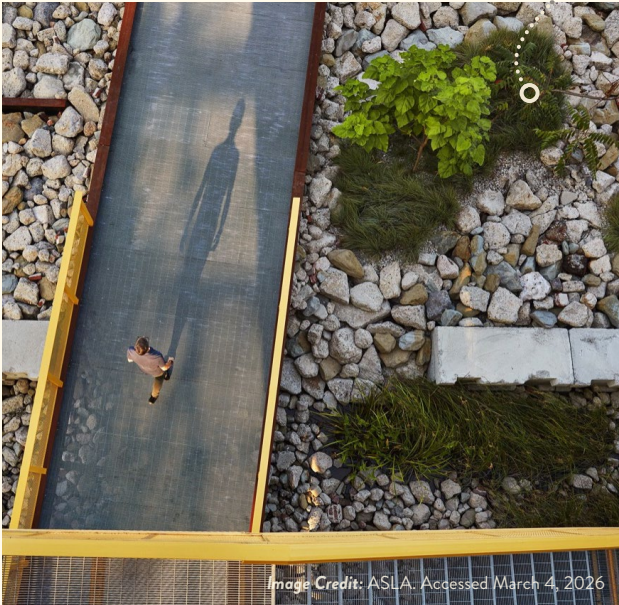
urban fabric, the sluggish organism that is the city can be effectively awakened and stimulated with energy. He acknowledges that planning processes can be overly bureaucratic, taking excessive amounts of time and effort before any real change hits the ground. He claims that “a simple, focused intervention can create new energy, demonstrating the possibilities of a space in a way that motivates others to engage with their community” (Lerner 2014, 4). Good urban acupuncture is precise and quick and radiates outward to initiate other broad cultural changes (Lerner 2014, 3).

Coupling urban acupuncture tactics with a lo-fi landscape philosophy is a landscape intervention approach particularly well-suited to El Risco. By tapping into its legacy of self-initiation by foregrounding small-scale, low cost, low input landscapes, the people of El Risco have the opportunity to step outside of the bureaucracy behind formal improvements and further cultivate a uniquely El Riscan sense of place. The infusion of community ownership through participatory space-making with these low-tech tactics can also help strengthen the resistance to gentrification that pressures this neighborhood.

LOW-COST & LOW -INPUT PAVED AREA TRANSFORMATION BY **DE-PAVING** WITH ASPHALT **SAWCUTS** EMPHASIS ON **PLANTS AS PLACE MAKING** MATERIAL



“Texture” by Studio Basta and Wagon Landscaping, Kortrijk, Belgium (2014): Public square and flax garden created from a depaved asphalt parking lot.



“Mill 19” by TenxTen, Pittsburgh, Pennsylvania, USA (2022): Disturbance-adapted plantings in rubble gardens created from on-site post-industrial remnant materials.

URBANITE AND RUBBLE MATERIAL REUSE WITH PLANT PALETTE CURATED FOR ARID **ROCK GARDENS**

GABION AS LANDSCAPE STRUCTURE FEATURING **LOCAL MATERIAL REUSE** AND ARTFUL ARRANGMENT AS VISUAL LANGUAGE



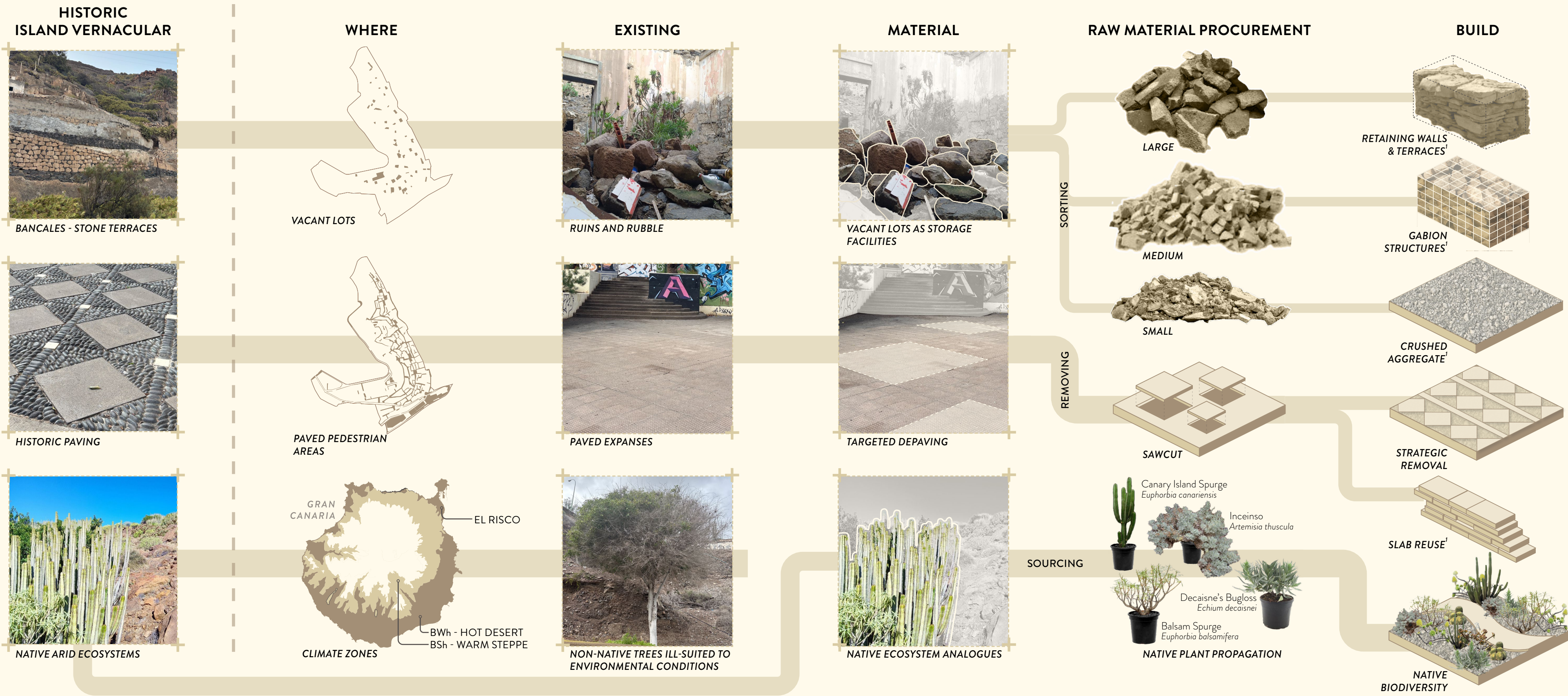
“No Time to Waste” by Brasebin-Terrisse, Tallin, Estonia (2024): A bus stop pavillion built from construction demolition rubble-filled gabion cages with reused corrugated metal roofing and wooden beams.

EMPHASIS ON **PLANT MATERIAL** AS LANDSCAPE FEATURES THROUGH **LOW-TECH** AND **LOW-COST PARTICIPATORY** LANDSCAPE MAKING **PROCESS** WITH **TACTICAL** ELEMENTS SUCH AS PAINTING



“Folly Forest” by Straub Thurmayr Landscape Architects, Winnipeg, Canada (2013): A low-cost, low-input revegetation of an asphalt schoolyard through depaving and painting uniquely shaped tree-wells.

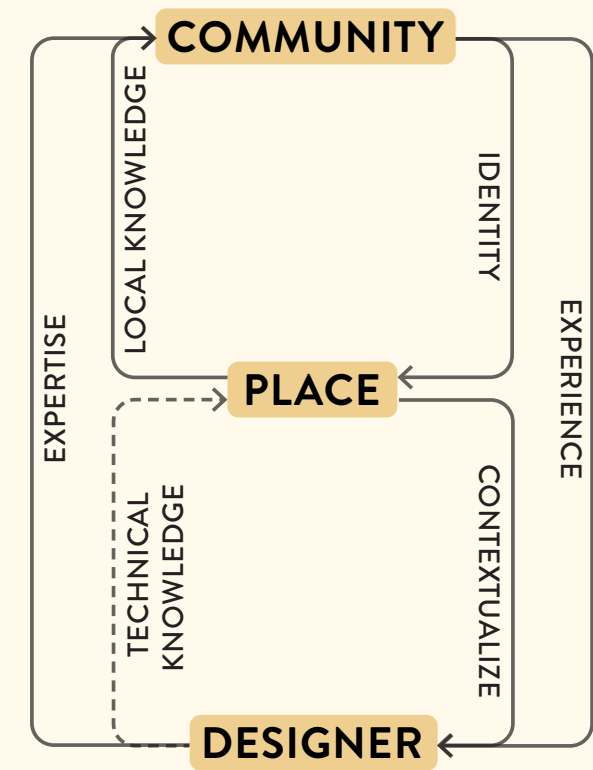
MATERIAL INTENTIONS: REMADE ISLAND VERNACULAR



¹ Reuse feasibility informed by Hankin, 2025

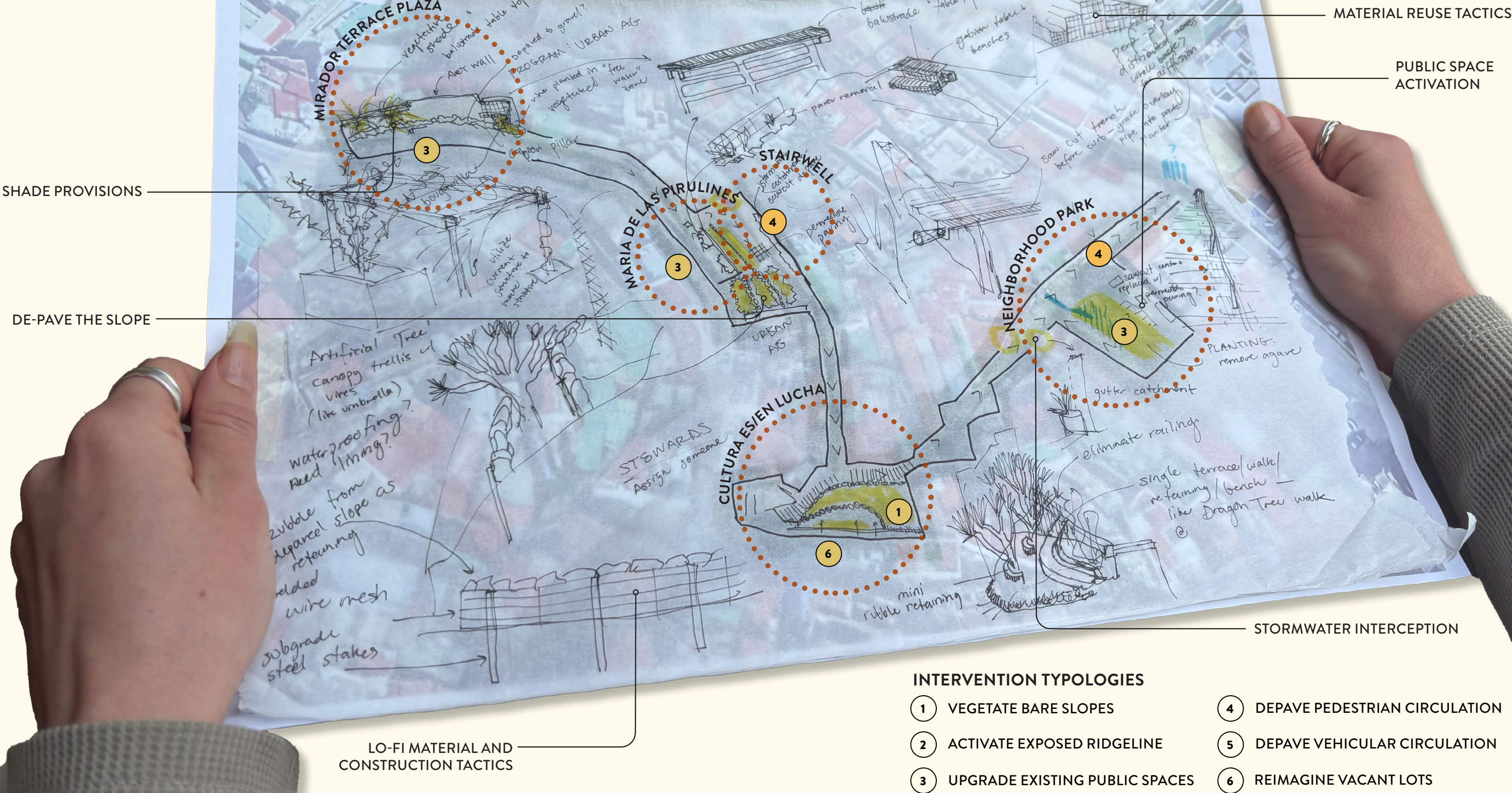
SPECULATIVE DESIGN

SOCIO-ECOLOGICAL INFRASTRUCTURE IN THE CORRIDOR



SPECULATIVE TACTICS AS STRATEGY

Drawing on the material identity, informal roots, and limited resource availability in El Risco de San Nicolas, this speculative design investigation champions the revitalization ethos of urban acupuncture through the lens of lo-fi landscape construction and aesthetics to envision socio-ecological infrastructure tactics that are suitable and responsive to the El Riscan identity. These interventions prioritize material reuse and intend to tap into the logics of self-construction and self-initiative living at the heart of the community to reinforce local ownership and shed light on the fact that revitalization can happen by the neighbors, for the neighbors. Functionally, these design interventions aim to intercept and reduce stormwater flow accumulation in the public right of way, provide access to shade in over-exposed gathering spaces, and facilitate greater degrees of community interaction by encouraging lingering in un-activated public spaces.

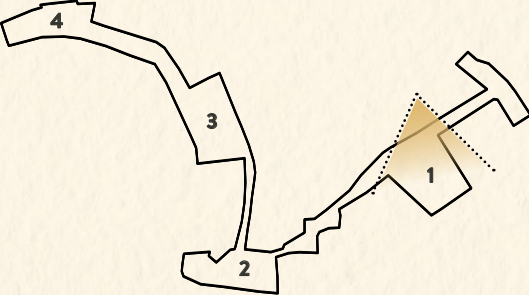


INTERVENTION TYPOLOGIES

- | | |
|----------------------------------|---------------------------------|
| ① VEGETATE BARE SLOPES | ④ DEPAVE PEDESTRIAN CIRCULATION |
| ② ACTIVATE EXPOSED RIDGELINE | ⑤ DEPAVE VEHICULAR CIRCULATION |
| ③ UPGRADE EXISTING PUBLIC SPACES | ⑥ REIMAGINE VACANT LOTS |

SPECULATIVE DESIGN

ENCLOSED SLAB › NEIGHBORHOOD COURTYARD



SAWCUT CONCRETE IN
ENGAGING PATTERNS AS
LO-FI DEPAVING TACTIC



AT-GRADE PLANTINGS AS MICRO-
STORMWATER CATCHMENT



NATIVE GRAN CANARIAN COASTAL
SCRUB AND WARM STEPPE PLANTINGS

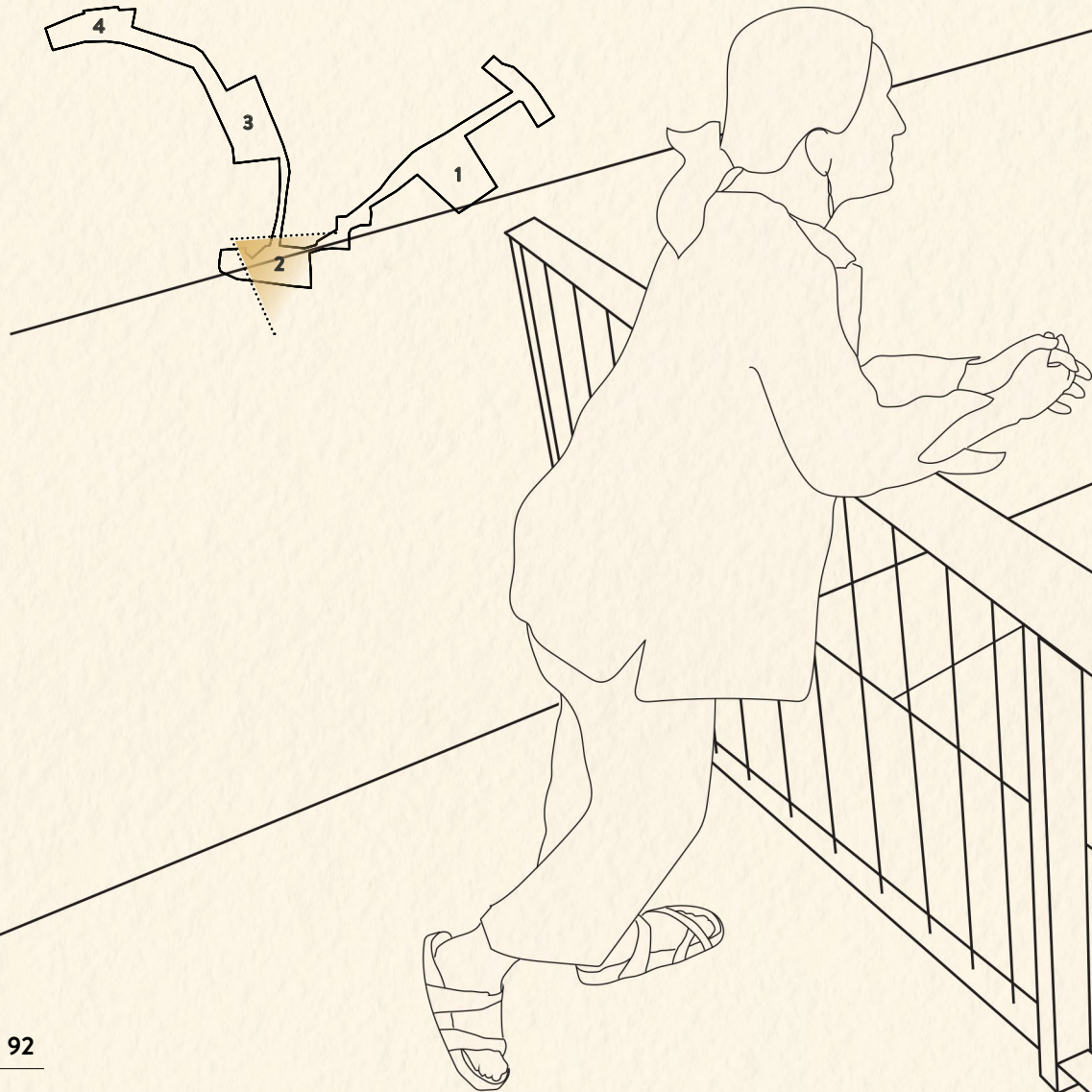
PROTECT AND CELEBRATE THE
FEW EXISTING CANOPY TREES

ACTIVATE SPACE WITH GABION
SEATING THAT MAKES USE OF
READILY AVAILABLE MATERIAL

CRUSHED URBANITE AS
AGGREGATE

SPECULATIVE DESIGN

VACANT SLOPES › GRAN CANARIAN GARDENS



PLANTED SLOPES FOR EROSION CONTROL AND STORMWATER INFILTRATION FOREFRONTING GRAN CANARIAN NATIVES WITH A DRAGON TREE OVERSTORY

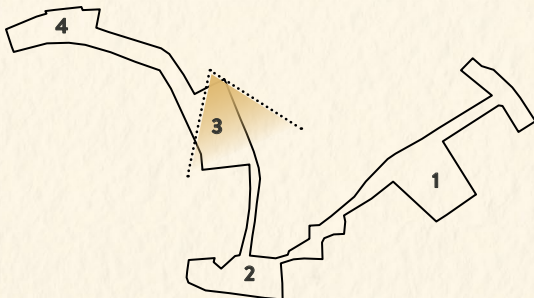
RAILING PANEL REMOVED FOR SECONDARY ACCESS POINT

GABION SEATWALL FILLED WITH REUSED MATERIALS FROM PRE-EXISTING SLOPE

LOOKOUT TERRACE WITH URBANITE FLAGSTONE WALKING SURFACE AND RUBBLE RETAINING STRUCTURE

STAIRWELL LANDING › CONSTRUCTED BARRANCO

PHOENIX CANARIENSIS SHADE CANOPY



'WE ARE EL RISCO' NEIGHBORS-
ONLY BRICK PAINTING TO REFLECT
NEIGHBORHOOD OWNERSHIP

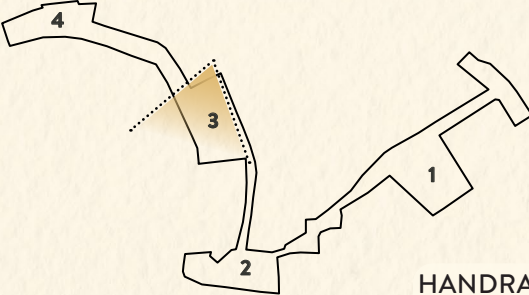
TRENCH DRAIN RETROFIT CONVEYING
WATER FROM RESERVIOR BENEATH
LANDING TO STORMWATER PLANTER

STORMWATER PLANTER
AND NATIVE PLANT GARDEN



URBANITE LANDING WITH WIDE
AGGREGATE JOINTS TO COLLECT DRAIN
OUTFALL IN OPEN-GRADED RESERVOIR
BELOW

SPECULATIVE DESIGN
PAVED TERRACE › THE EL RISCAN PROSPECT



HANDRAIL TABLE-TOPS MADE WITH RECLAIMED WOOD

CENTRAL GABION BENCH WITH VIEWING OPPORTUNITIES TOWARDS BOTH MURAL AND OCEAN

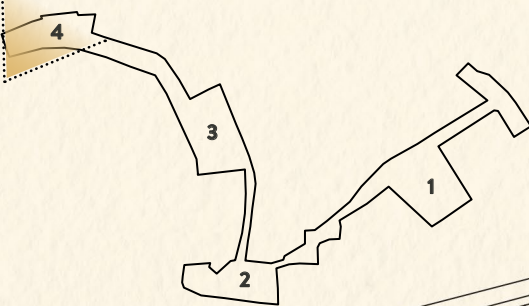
SELECT PAVER REMOVAL FOR AT-GRADE PLANTING AS STORMWATER INTERCEPTION ZONES



DERELICT EXERCISE STRUCTURE
REPURPOSED AS TRELLIS FOR SHADE-
PROVISIONING GRAPE VINES

SPECULATIVE DESIGN

PAVED TERRACE › EL RISCAN BANCALES



'EL RISCAN BANCALES' NEIGHBORHOOD
PRODUCE GARDEN COMMUNITY BOARD

SHADE STRUCTURE AT PLAZA VIEW POINT
UTILIZING WIRE MESH WITH STONE AND
URBANITE AS SHADING ELEMENTS

INTEGRATED GABION SEATING WITH
SAWCUT URBANITE BENCH TOPS

RAISED PLANTER BEDS CONSTRUCTED
OUT OF RECLAIMED MATERIALS

RISCOS BEYOND / BEYOND RISCOS

Retrofitting the public urban environment to better field the shocks and pressures brought by a changing climate is a crucial topic of exploration in landscape architecture. In morphologically constrained neighborhoods, especially those that have roots in informal urbanism and a history of social marginalization, approaching improvements can be overwhelming and difficult to prioritize. Among the local landscape architecture community in Las Palmas, the Riscos are well known as “difficult places.” Excessive slopes, narrow corridors, limited access, few existing vegetated spaces, and social marginalization make these neighborhoods difficult to approach from a traditional urban planning perspective. The siting methodology and design speculation developed in this project aims to dispel some of the “impossibility” associated with such complicated and constrained urban contexts by providing a systematic approach for integrating landscape in a meaningful way.

By combining green infrastructure with social capital, this siting approach sheds light on how to allocate sparse resources to address environmental performance issues while creating and fortifying activation of existing social spaces and assets. While the composites in this mapping methodology are specifically tuned to find social-climate overlap, the flexibility in variable choice and definition of opportunity range allow for the identification of opportunity zones for landscape infrastructure in any heterogeneous urban fabric where project locations are difficult to prioritize.

The mapping and supporting methodology behind this analysis and material landscape design approach hopes to provide inspiration to other cliff-side neighborhoods in the City of Las Palmas and across the island of Gran Canaria to develop green infrastructures that help prepare neighborhoods for climate change while celebrating and uplifting the very things that make them great.



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APPENDIX

APPENDIX

SITING METHODOLOGY METADATA



APPENDIX

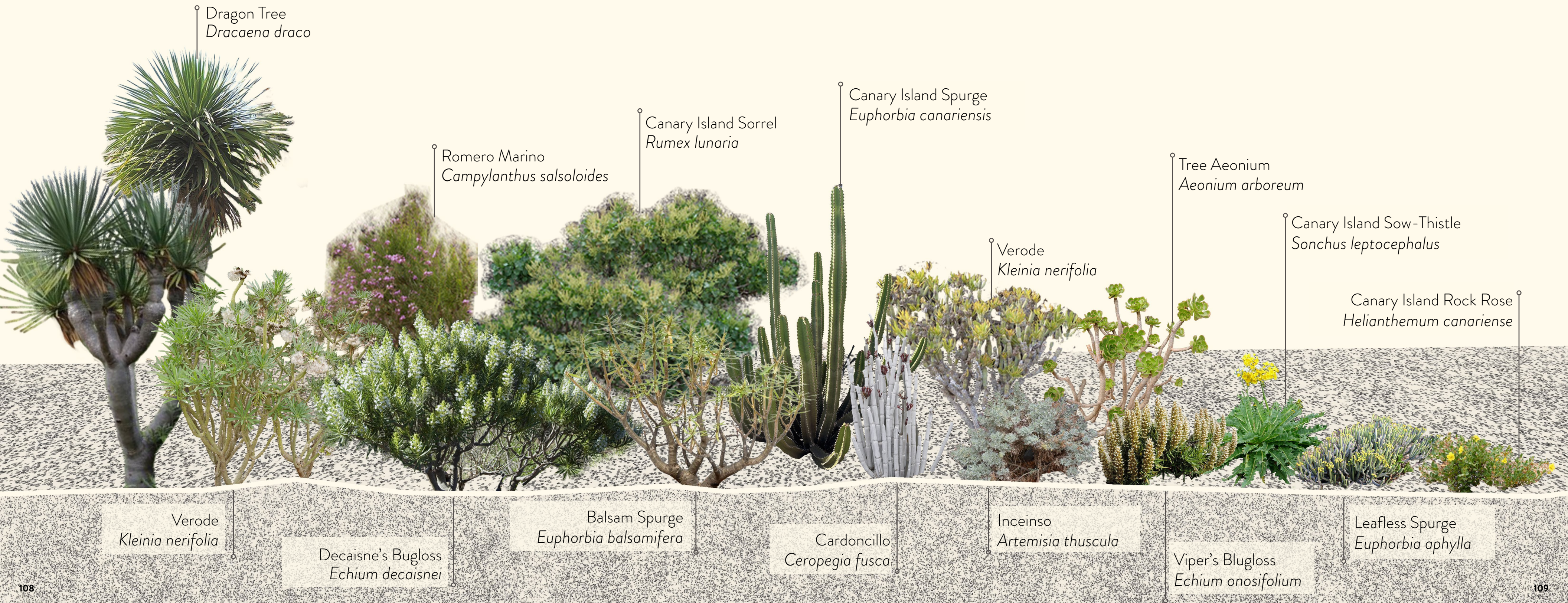
MATERIAL INTENTIONS: PLANT PALETTE

Warm Steppe, Coastal Scrub ecosystem natives

Arid to semi-arid conditions on steep, rocky cliffs

Low elevation soils of El Risco: Aridisols - slightly alkaline, low organic matter

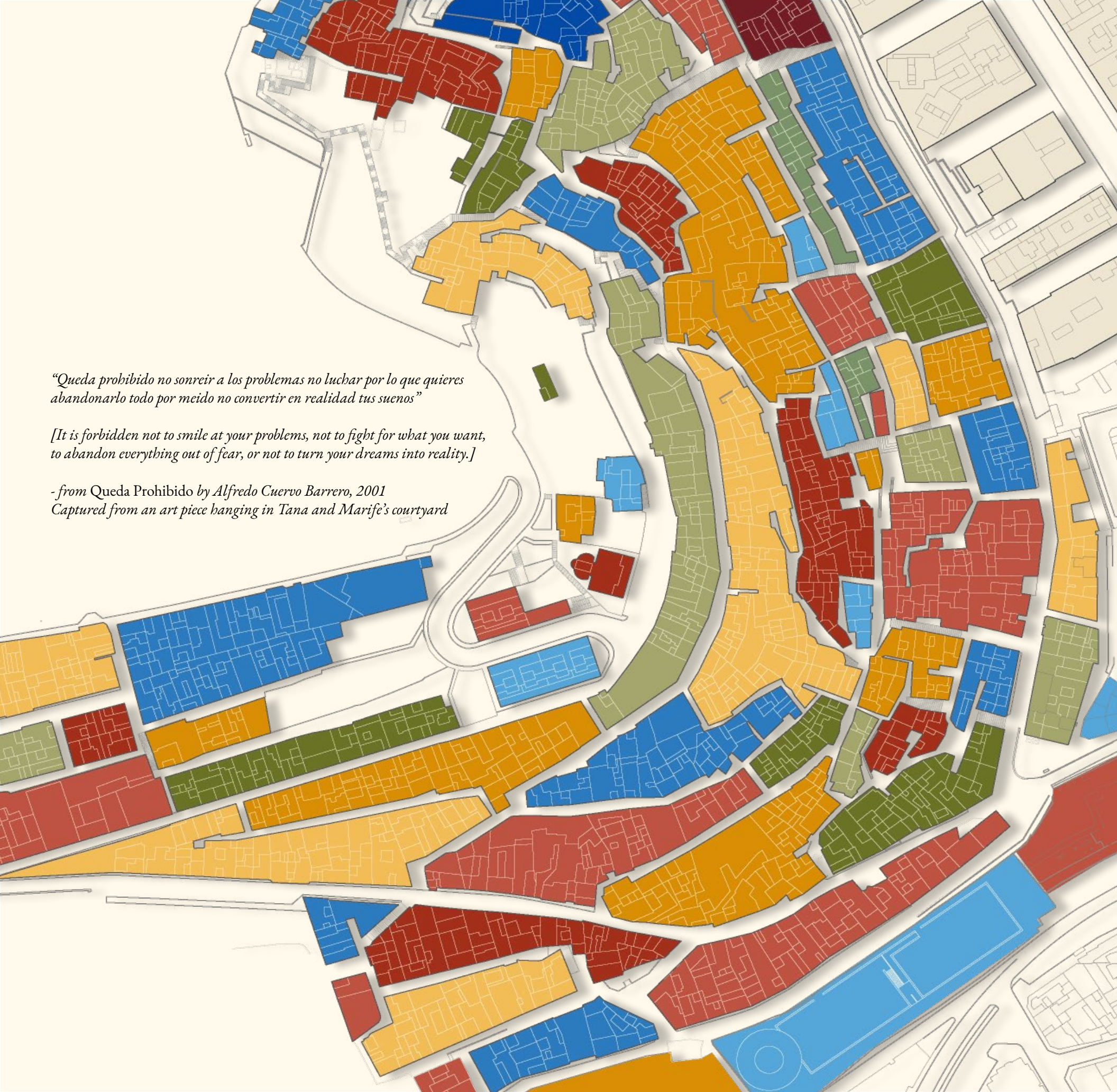
Native / Endemic status verified with FloCan: Flora of the Canary Islands, Beierkuhnlein et al. 2021



APPENDIX

ADDITIONAL SITE PHOTOS





*“Queda prohibido no sonreir a los problemas no luchar por lo que quieres
abandonarlo todo por medo no convertir en realidad tus sueños”*

*[It is forbidden not to smile at your problems, not to fight for what you want,
to abandon everything out of fear, or not to turn your dreams into reality.]*

*-from Queda Prohibido by Alfredo Cuervo Barrero, 2001
Captured from an art piece hanging in Tana and Marife’s courtyard*