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The Way of Water: A Cultural Revival

Mariana Munoz

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THE WAY OF WATER:
A CULTURAL REVIVAL

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I WOULD LIKE TO EXPRESS MY SINCERE GRATITUDE TO MY ADVISORS FOR THE INVALUABLE GUIDANCE, SUPPORT, AND ENCOURAGEMENT I RECEIVED THROUGH MY THESIS PROJECT. YOUR EXPERTISE, DEDICATION, AND COMMITMENT TO EXCELLENCE HAVE PLAYED AN INSTRUMENTAL ROLE IN HELPING ME COMPLETE SUCCESSFULLY MY THESIS.

ADVISOR: YUTAKA SHO, DAEKWON PARK, NINA SHARIFI, BESS KRIETEMEYER

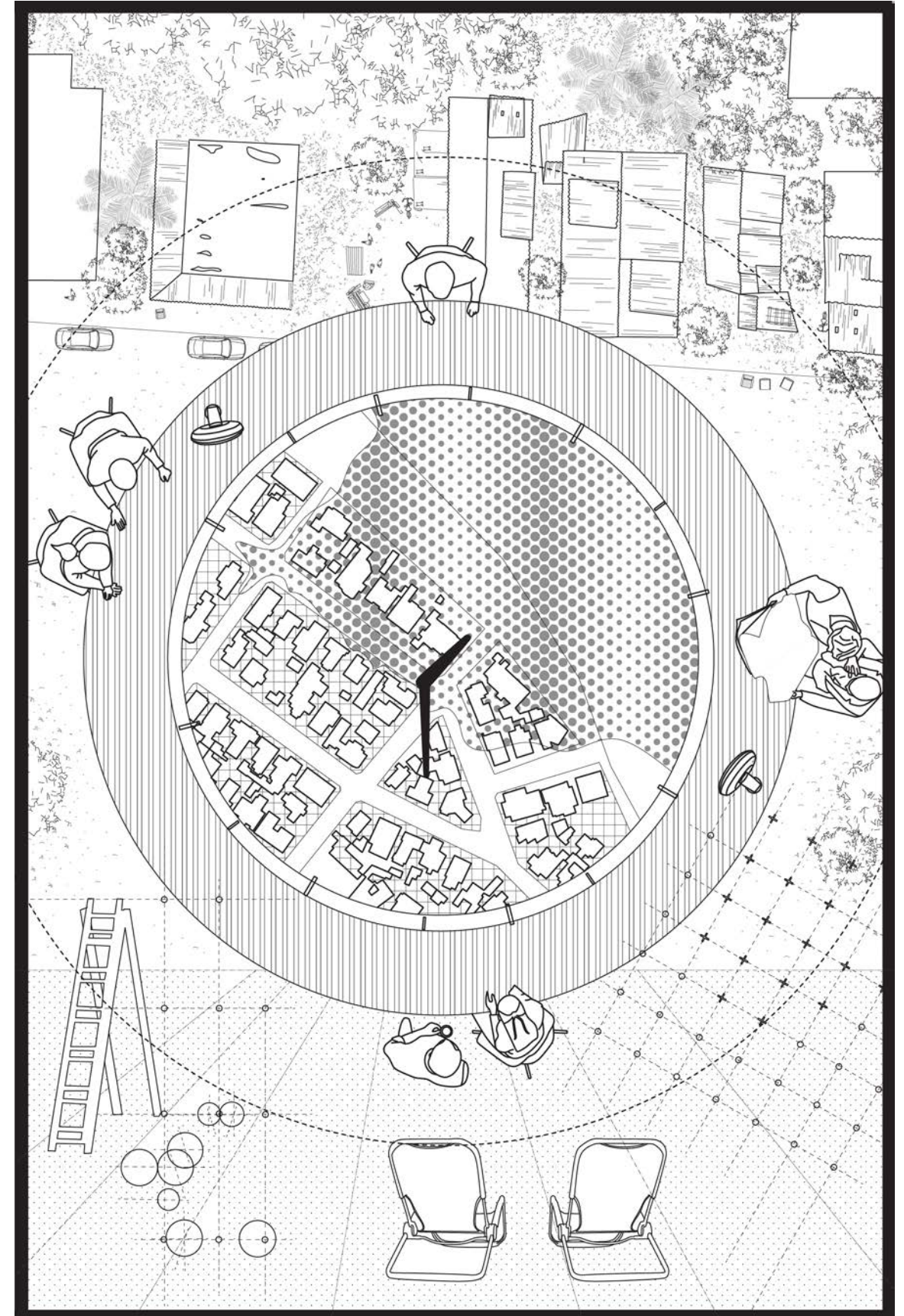
THE WAY OF WATER
A CULTURAL REVIVAL

THE RAPID EXPANSION OF HYPER-CAPITALISM HAS LED TO A LACK OF AWARENESS ABOUT OUR NATURAL ENVIRONMENT AND ENCOURAGED THE DEVELOPMENT OF CITIES ALONG THE COASTLINES. THIS TREND HAS HAD A PROFOUND IMPACT ON OUR WORLD, AS NEARLY 40% OF THE GLOBAL POPULATION, OR 2.4 BILLION PEOPLE, CURRENTLY LIVE WITHIN 100KM OF A COAST, ACCORDING TO THE UNITED NATIONS. IN PUERTO RICO, THIS TREND IS PARTICULARLY PRONOUNCED, AS 66.7% OF THE POPULATION LIVES IN COASTAL COMMUNITIES. THE ENDANGERED EXISTING CONDITION OF THE CONDADO NEIGHBORHOOD IN PUERTO RICO PRESENTS A UNIQUE CASE, GIVEN ITS PROXIMITY TO THE BEACH, SERIOUS EROSION, SEWAGE ISSUES, SHORTAGE OF PUMPS, DESTRUCTION OF DUNES, AND LACK OF BREAKWATERS.

THIS THESIS CRITICALLY EXAMINES THE SOCIAL, CULTURAL, AND HISTORICAL ASPECTS OF THE REGION, ULTIMATELY DEDUCING THAT THE CURRENT ARCHITECTURAL LANDSCAPE IS NOT ADEQUATELY RESPONSIVE OR APPROPRIATE TO THE SPECIFIC SITE AND ITS EXIGENCIES. TO ADDRESS THESE ISSUES, THIS PROJECT PROPOSES AN ADAPTIVE DESIGN THAT TAKES INTO CONSIDERATION PEOPLE'S DAILY ROUTINES AND TRADITIONS THROUGH A TOP-DOWN APPROACH THAT SUGGESTS A MIDDLE GROUND BETWEEN LIVING BY THE SEA; WITHOUT THE DISPLACEMENT OF THE COMMUNITY ALREADY ESTABLISHED IN THE AREA.

FURTHERMORE, THE PROJECT AIMS TO EXPLORE THE CONCEPTS OF DOMESTICITY AND COLLECTIVITY BY CREATING A COMMUNAL SPACE THAT DOES NOT JEOPARDIZE INDIVIDUALITY AND PRIORITIZES CULTURAL PRACTICES. THE PROPOSED INTERVENTIONS INCLUDE THE CONSTRUCTION OF A CANAL SYSTEM TO GIVE EXCESS WATER A SPACE, MITIGATE FLOODS, AND BRING WATER TO COMMUNITIES IN NEED. THE BIOENGINEERED WETLAND AND FARMING AREA WILL PROVIDE A SUSTAINABLE WAY TO MANAGE WASTEWATER AND PROMOTE SUSTAINABLE AGRICULTURE. FINALLY, THE COMMUNAL KITCHEN WILL PROVIDE A SPACE FOR PEOPLE TO COME TOGETHER AND SHARE IN THE RICH CULTURAL TRADITIONS OF PUERTO RICO.

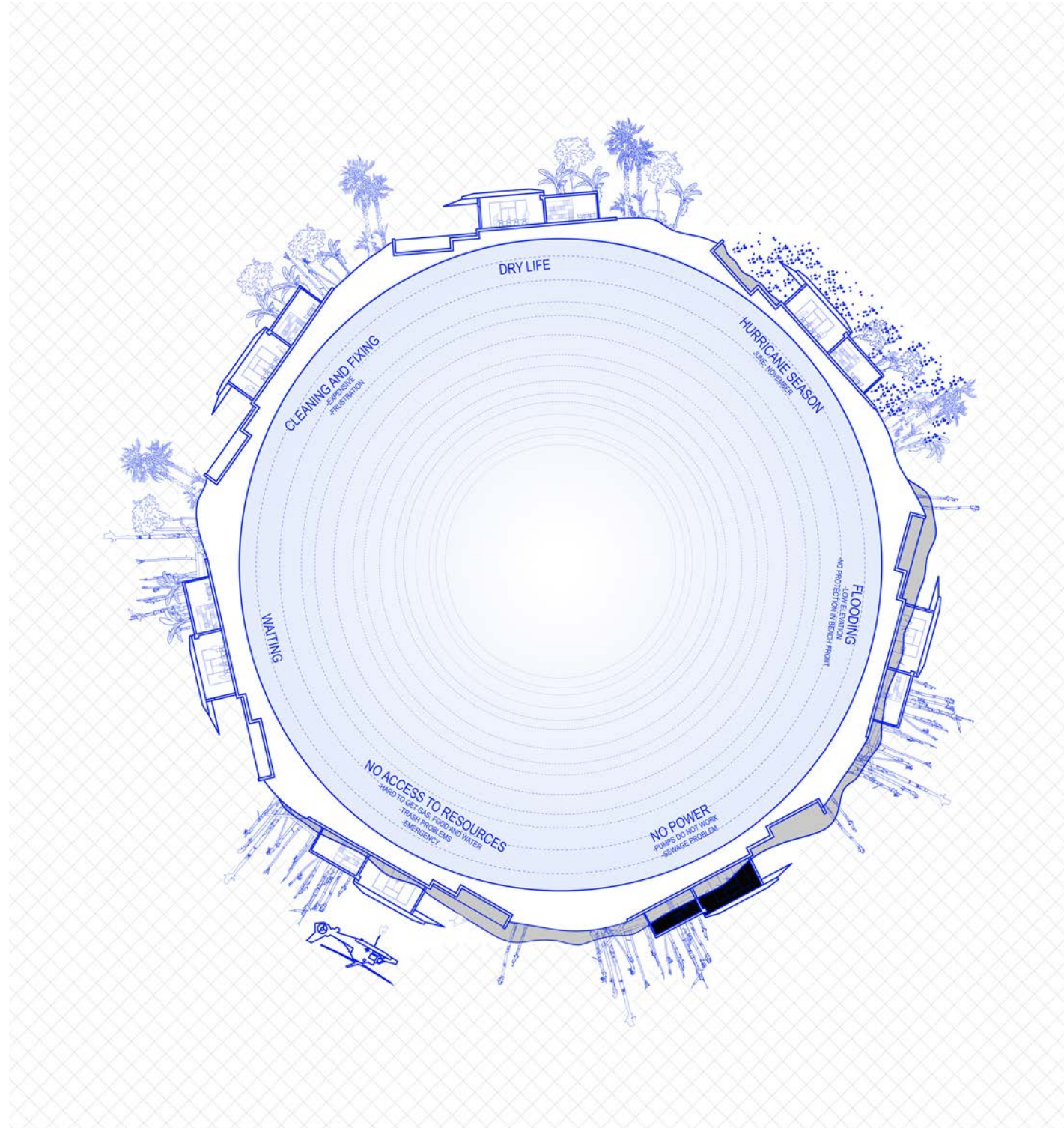
ULTIMATELY, THIS PROJECT AIMS TO ALTER HOW WE LIVE IN RELATIONSHIP WITH WATER AND THE ENVIRONMENT, WHILE SIMULTANEOUSLY ENHANCING CULTURAL DISTINCTIONS THAT DEMONSTRATE THE RICHNESS OF PUERTO RICAN SOCIETY THROUGH ITS TRADITIONS, FOOD, AND GEOGRAPHY. THROUGH AN ADAPTIVE DESIGN THAT PRIORITIZES SUSTAINABILITY, CULTURAL IDENTITY, AND COMMUNITY ENGAGEMENT, WE CAN CREATE A MORE EQUITABLE AND RESILIENT FUTURE FOR COASTAL COMMUNITIES IN PUERTO RICO AND BEYOND.



INTRODUCTION TO PR EXISTING CONDITION AND CULTURE



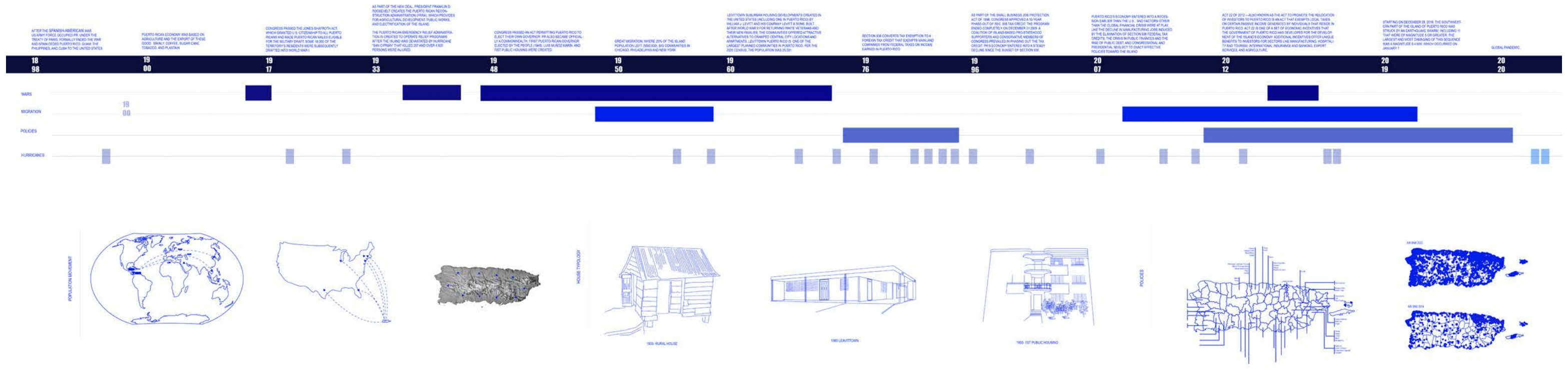
STORM SEASON CYCLE



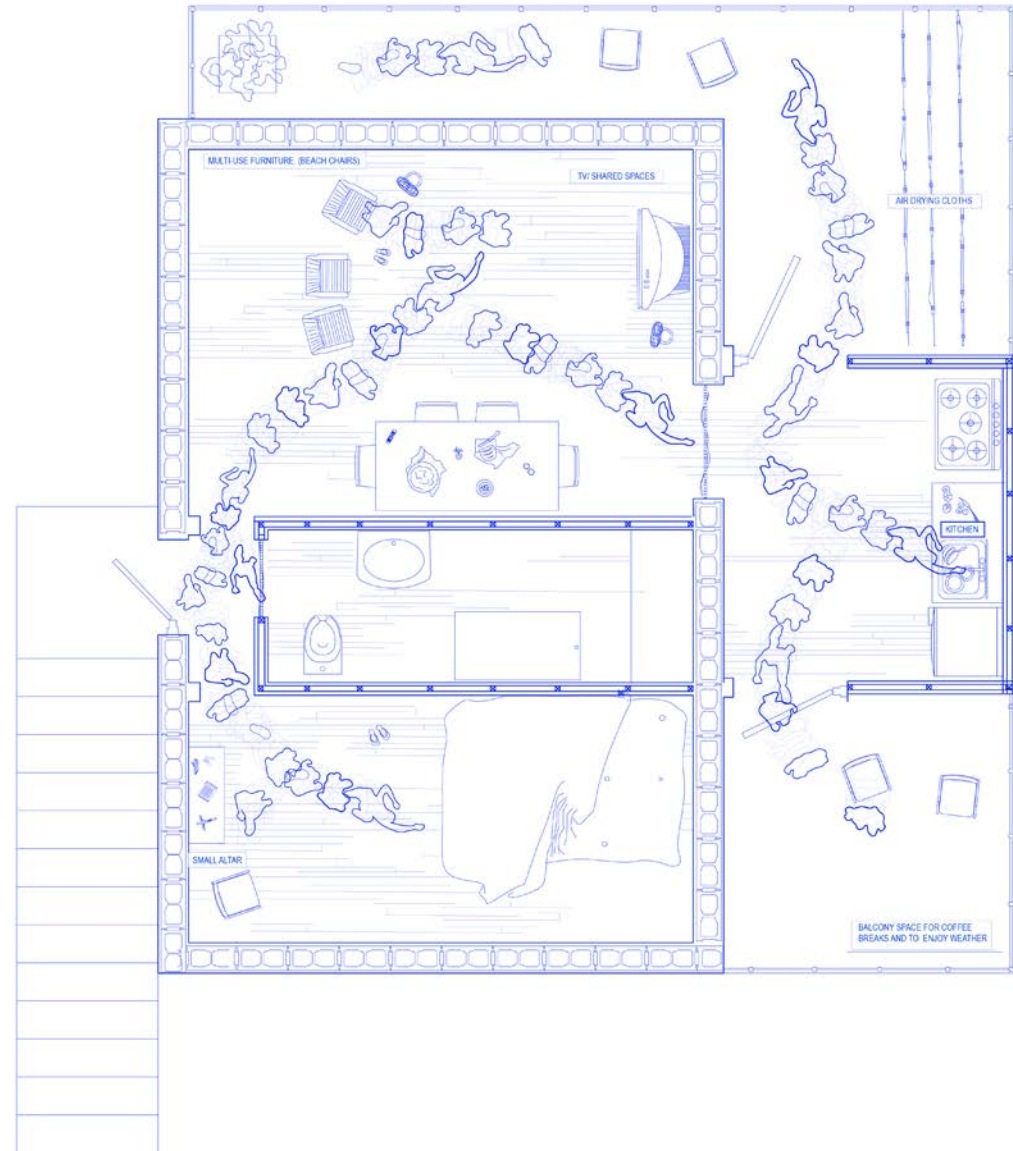
FLOOD MAP IN THE LAST MAJOR HURRICANES



PUERTO RICO TIMELINE



TRADITIONAL MOVEMENT WITHIN A PUERTO RICAN HOUSEHOLD



EXISTING URBAN FABRIC CONDITION



NIGHT OF SAN JUAN TRADITION

- KIDS
- ▲ YOUNG ADULTS
- ◆ ADULTS
- ▬ ELDERS

4



JUMPING BACKWARDS 12 TIMES AT 12:00AM

3



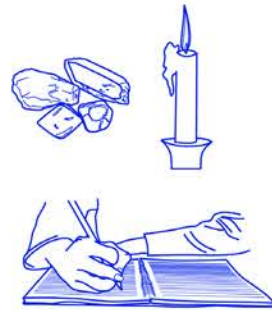
BONFIRES. REPRESENT CLEANSING AND PURIFYING THE BODY

2

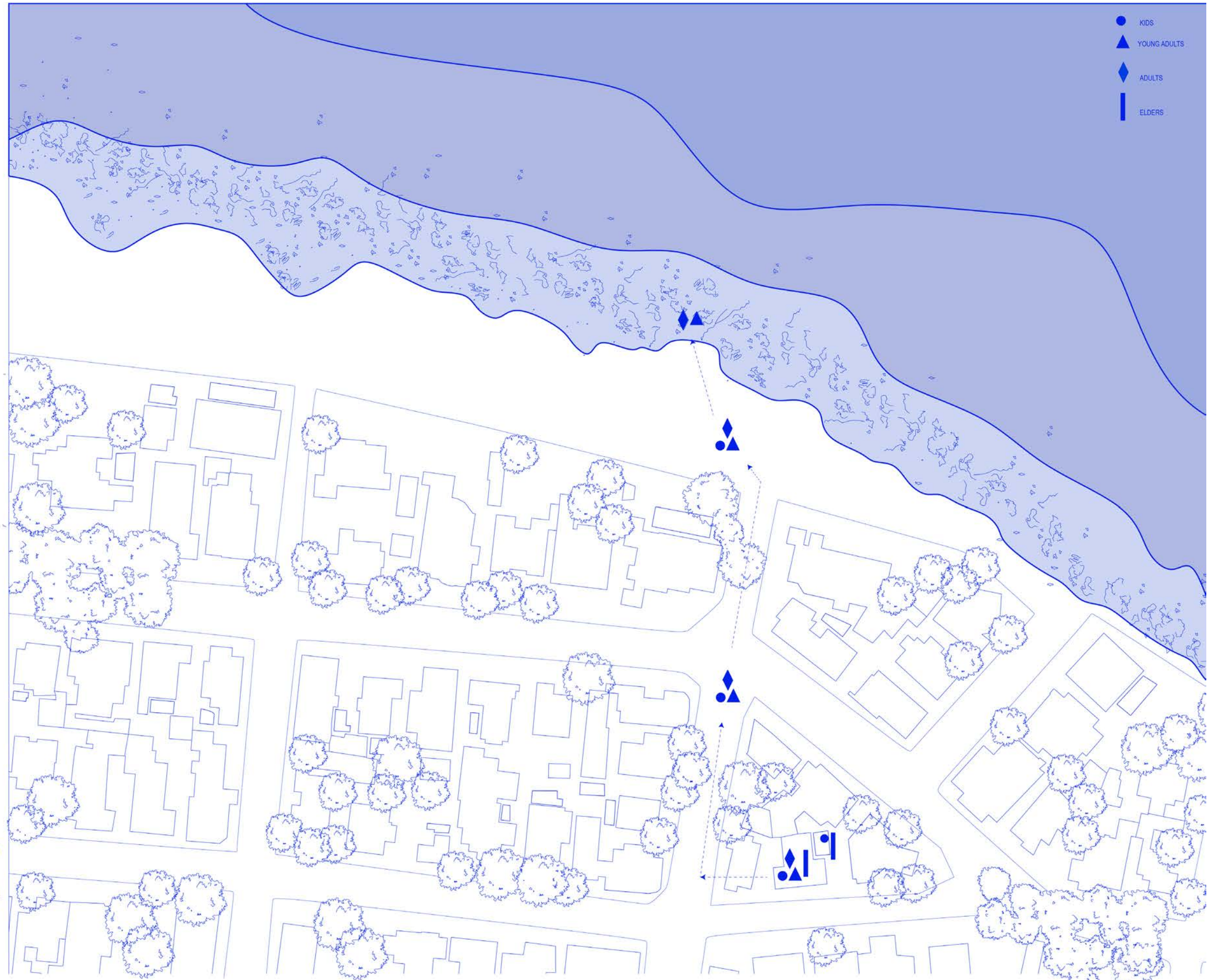


DRINKING WINE WITH FAMILY FOR THE FESTIVITIES

1



SET INTENTIONS. WRITING DOWN WISHES THAT INCLUDE LOVE, FINANCIAL STABILITY AND CAREER SUCCESS. MANIFESTATION WITH STONES AND CANDLES. PICK CANDLES REPRESENT LOVE. WHITE CANDLE REPRESENT FINANCIAL SUCCESS



SITE ANALYSIS

CONDADO, PR

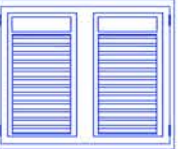



This community is located in the north part of the island, bordering the Atlantic Ocean. Some of the problems this site presents are its proximity to the beach, serious beach erosion, sewage issues, shortage of pumps, destruction of dunes, and lack of breakwaters. Condado has mainly been known to be an area for the privilege and where a lot of luxury hotels are located. This has permitted that a lot of construction code and environmental laws be bended, today we can see the impact of this as rich neighborhood have destroyed the beaches and limit the access for the rest of the community. The beach can only be enjoy for a very small percentage of the population.

SITE PROGRAM DIAGRAM

- RESIDENTIAL
- GROCERY STORE
- COMMERCE
- HOTELS
- SCHOOLS
- PUBLIC HOUSING
- ABANDONED BUILDINGS

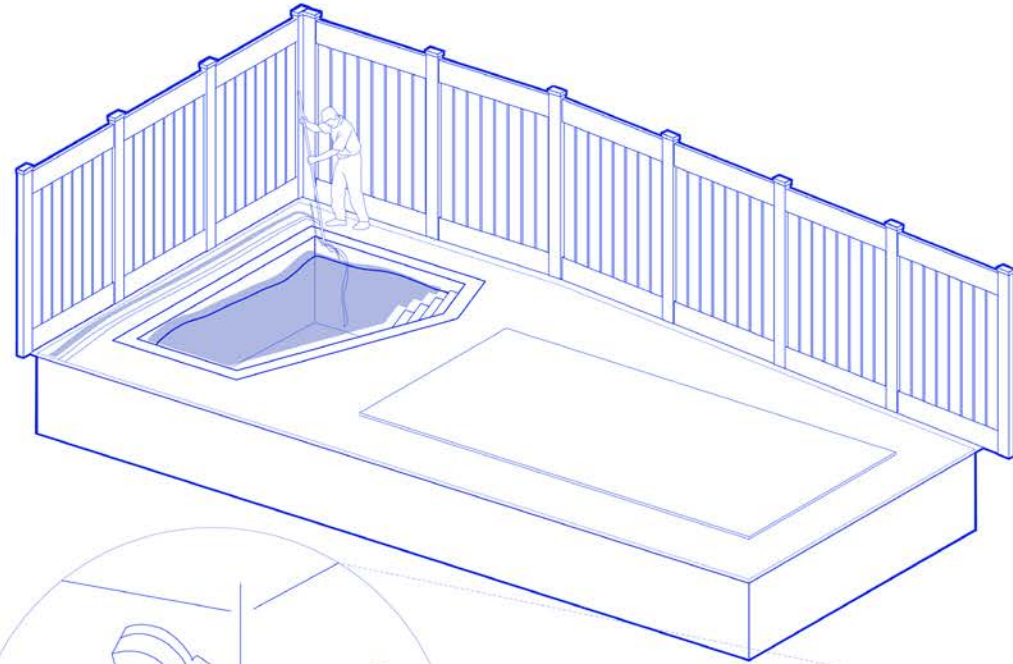


HOUSE CATALOGUE BY AVERAGE PRICE

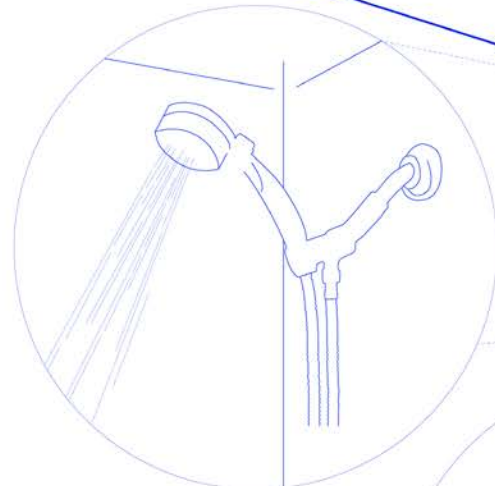
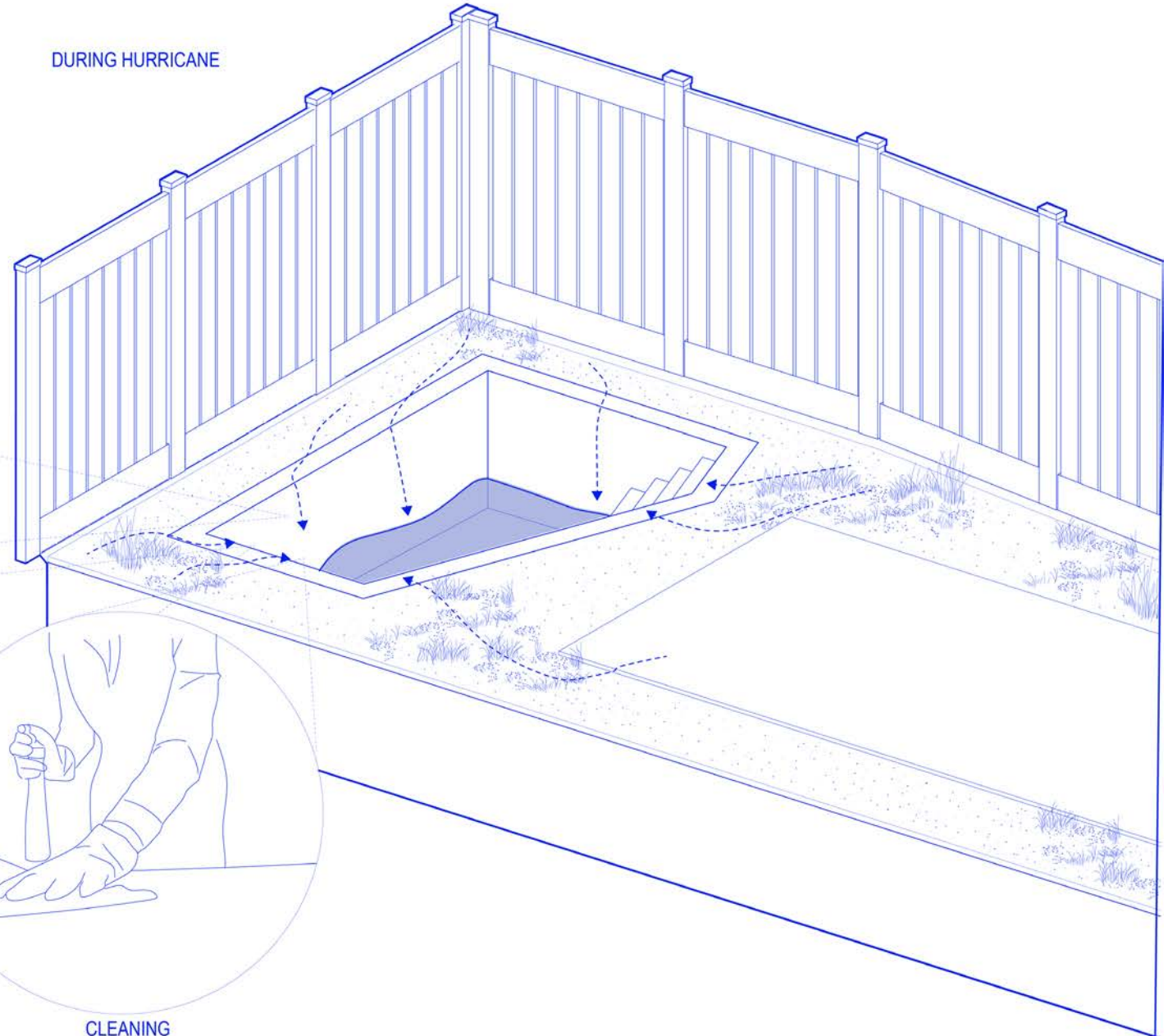
1M+	 6	 6	 6	 4	 1
700+	 3, 1	 1	 4, 1, 3	 4, 1	 2
300+	 3		 5	 6, 1	 3
100+	 2, 1, 5	 2	 1, 5, 3	 5, 3	 4
					 5
					 6

POOL PREPARATION BEFORE AND AFTER STORMS

8 HOURS BEFORE HURRICANE



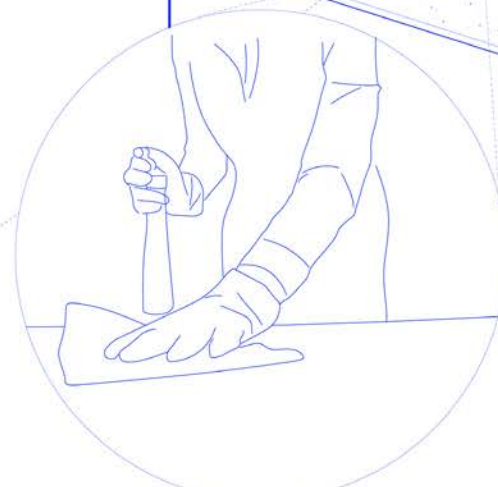
DURING HURRICANE



SHOWERING

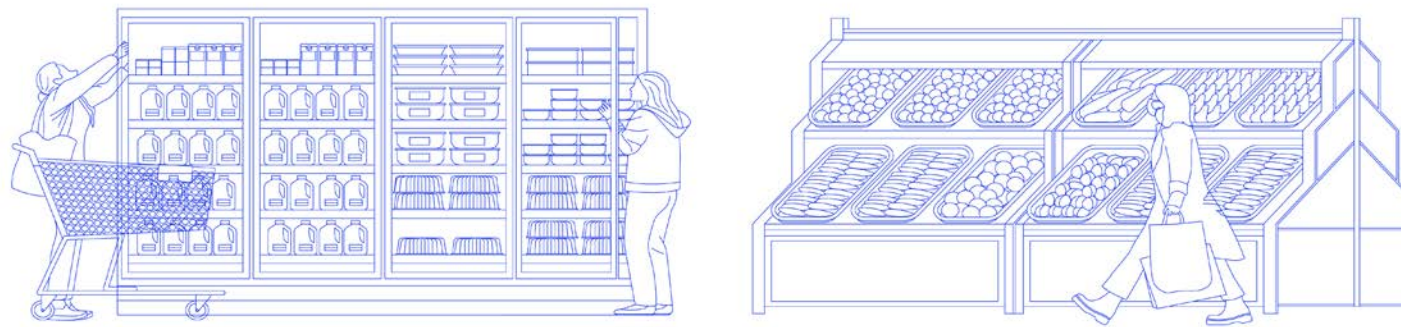


FLUSHING TOILETS



CLEANING

82% OF FOOD IN PUERTO RICO IS IMPORTED



ONIONS

LOCAL 19,439
IMPORTED 323,711

BEANS

LOCAL 632
IMPORTED 10,286

PEEPERS

LOCAL 31,562
IMPORTED 127,908

COFFEE

LOCAL: 28,943
IMPORTED: 329,962

AVOCADO

LOCAL 1,505
IMPORTED 180,419

PORK

LOCAL: 83,000
IMPORTED 2,2253,853

GRAPEFRUIT

LOCAL 2,466
IMPORTED 14,840

YAUTIA ROOT

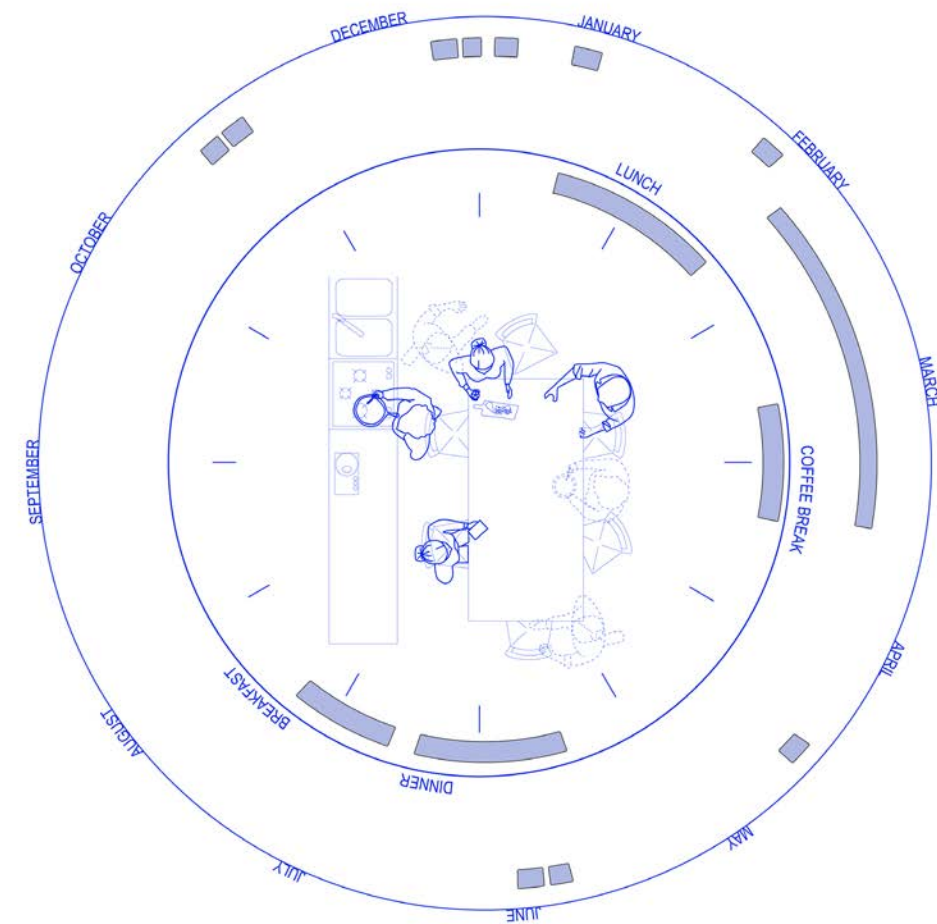
LOCAL 11,531
IMPORTED 168,785

TURKEY

LOCAL 0
IMPORTED 200,741

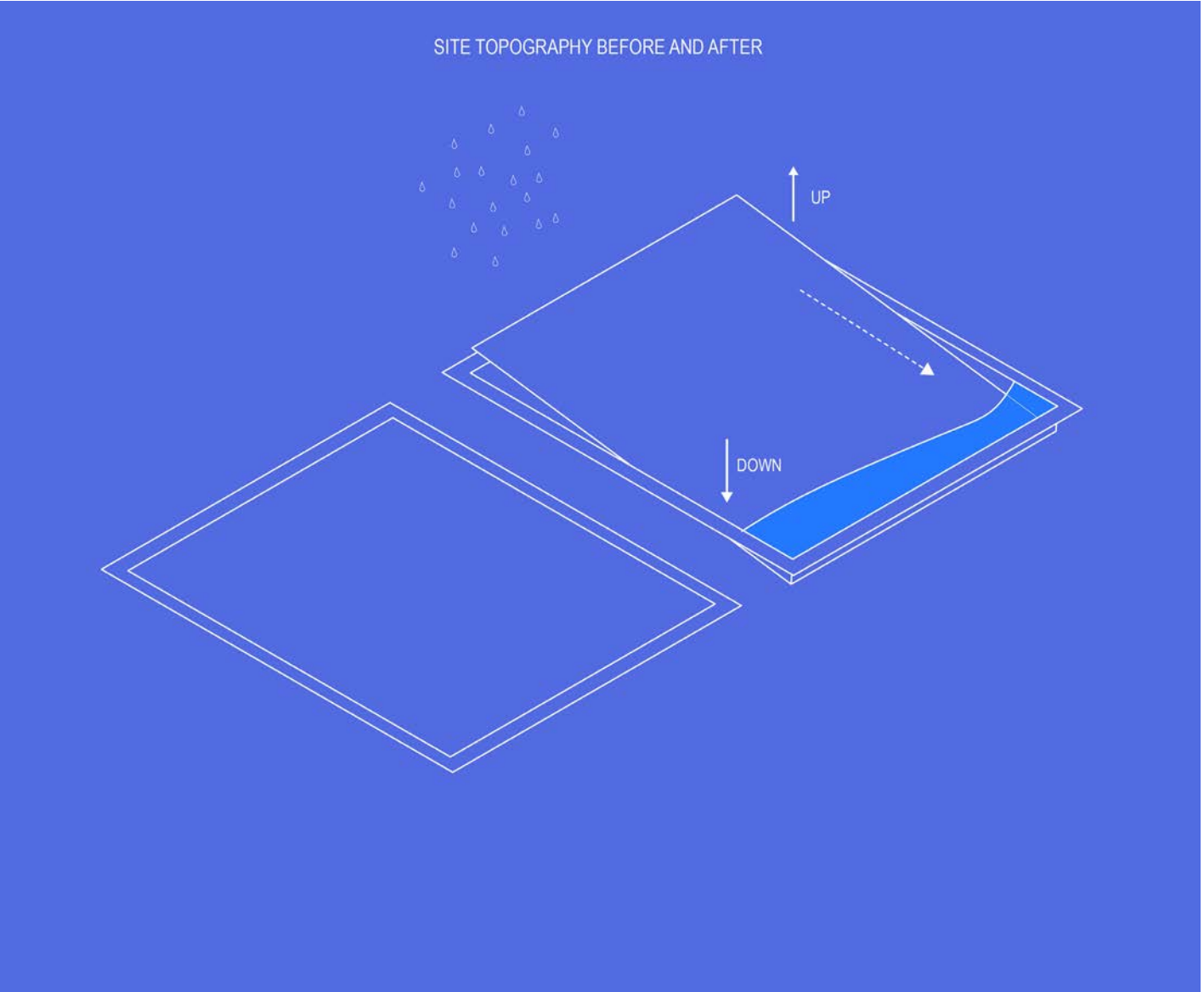
Food is identified as an important element of Puerto Rican culture, bringing people together, celebrating history, and expressing culture. The thesis proposes ways to address food scarcity and dependence on imported goods from the mainland.

FOOD PATTERN

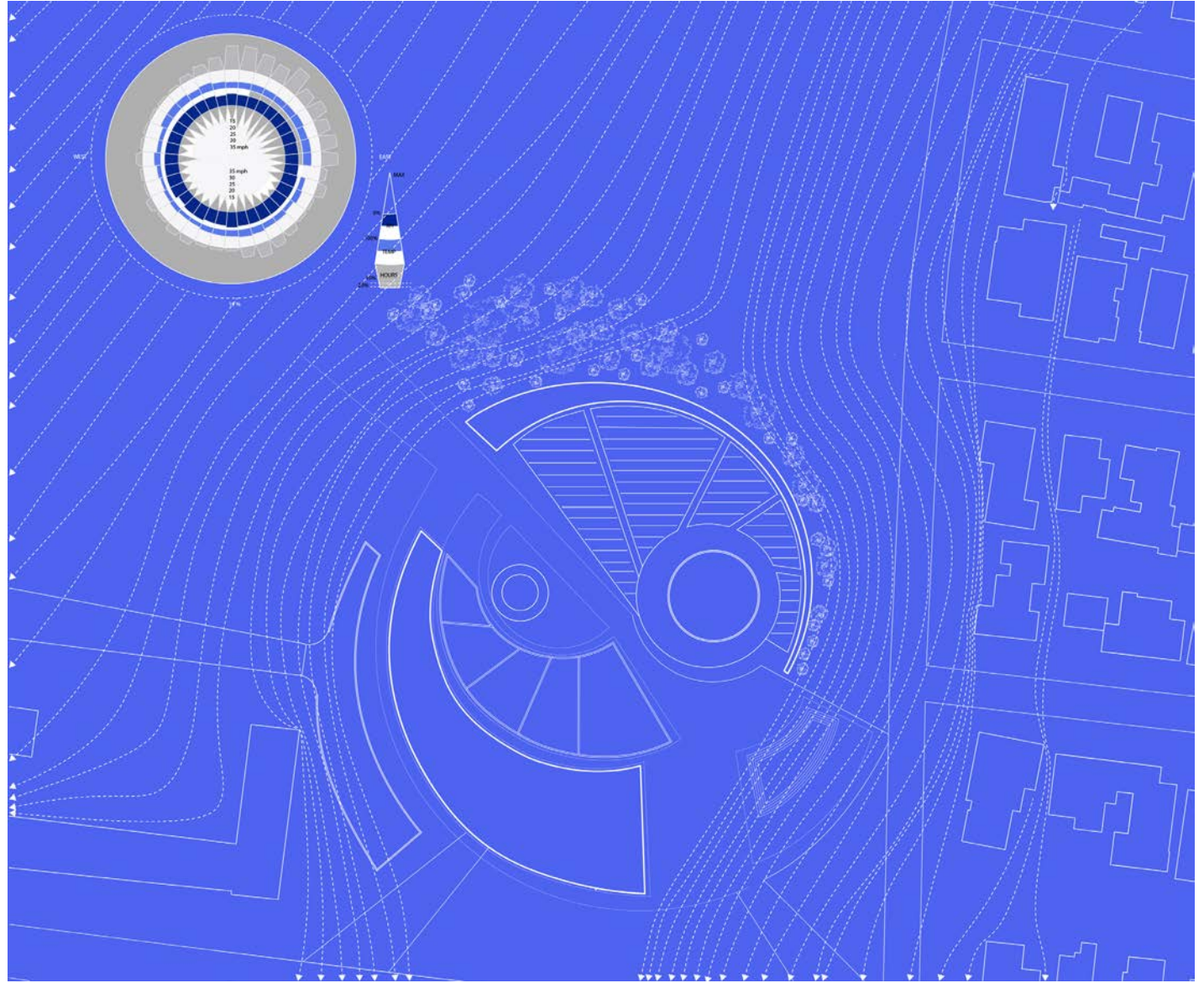
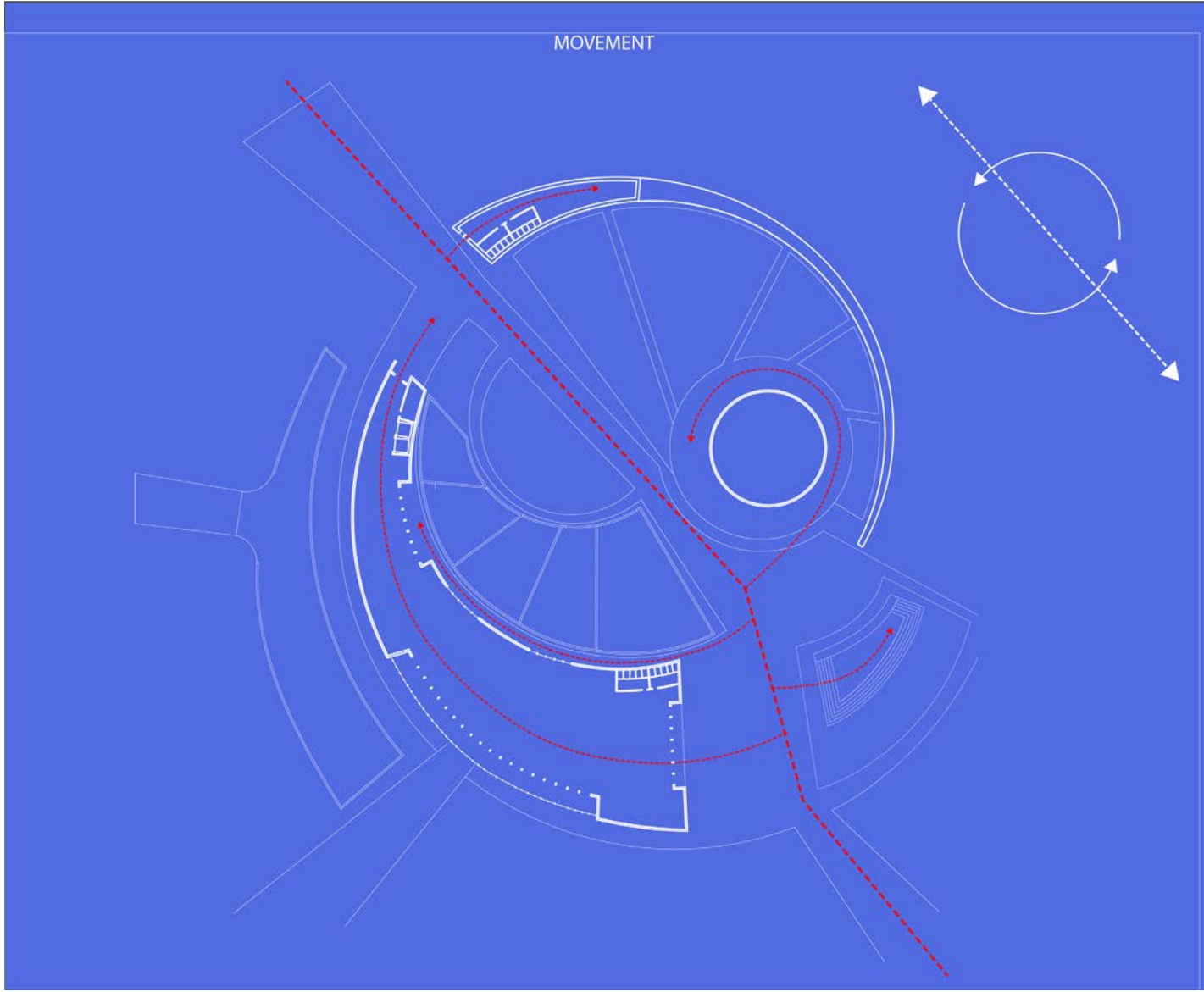


- 1 JAN 6 | THREE KINGS
- 2 JAN 15 | ST. SEBASTIAN
- 3 FEB 14 | SAN VALENTINE'S
- 4 FEB 22 - APRIL 8 | LENT
- 5 MAY 14 | MOTHER'S DAY
- 6 JUNE 18 | FATHER'S DAY
- 7 JUNE 23 | NIGHT OF SAN JUAN
- 8 NOV 19 | DISCOVERY OF PR
- 9 NOV 23 | THANKSGIVING
- 10 DEC 25 | CHRISTMAS
- 11 DEC 31 | NEW YEAR

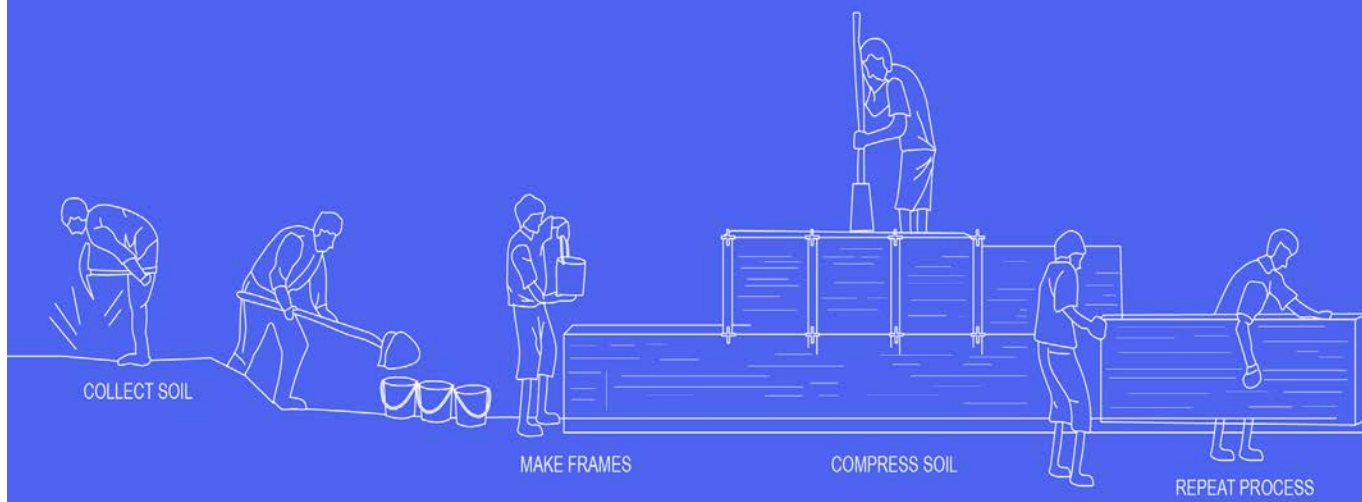
SITE STRATEGY



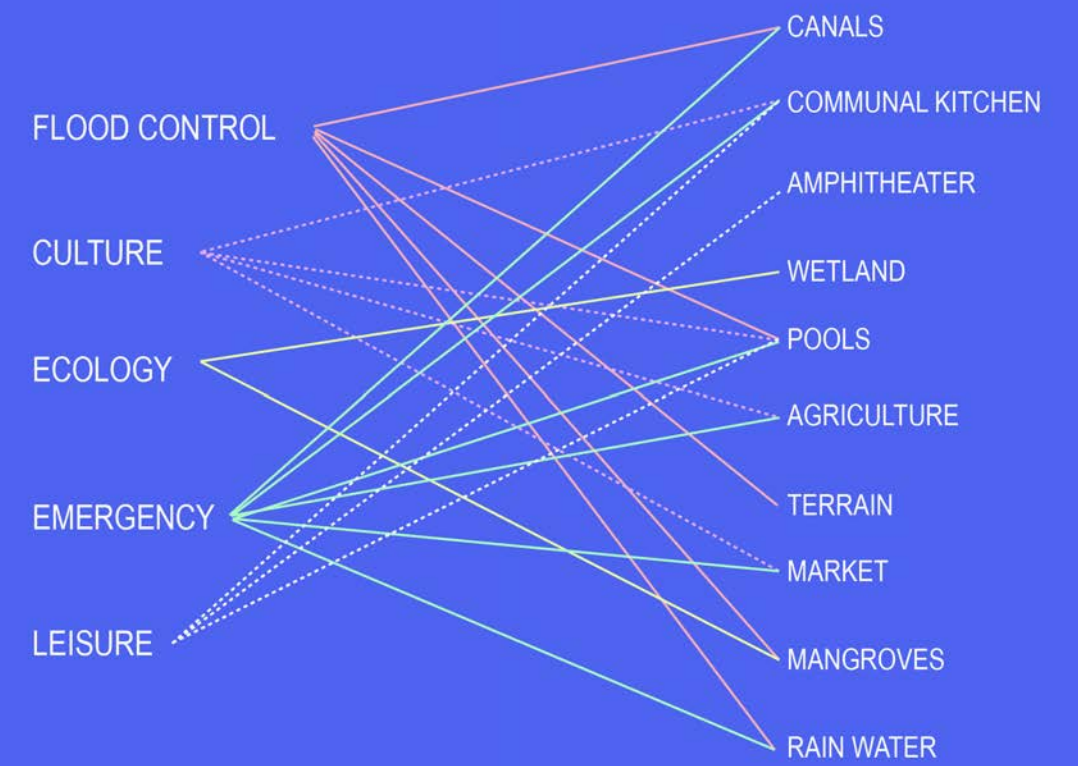
MOVEMENT



RAMMED EARTH BUILDING PROCESS

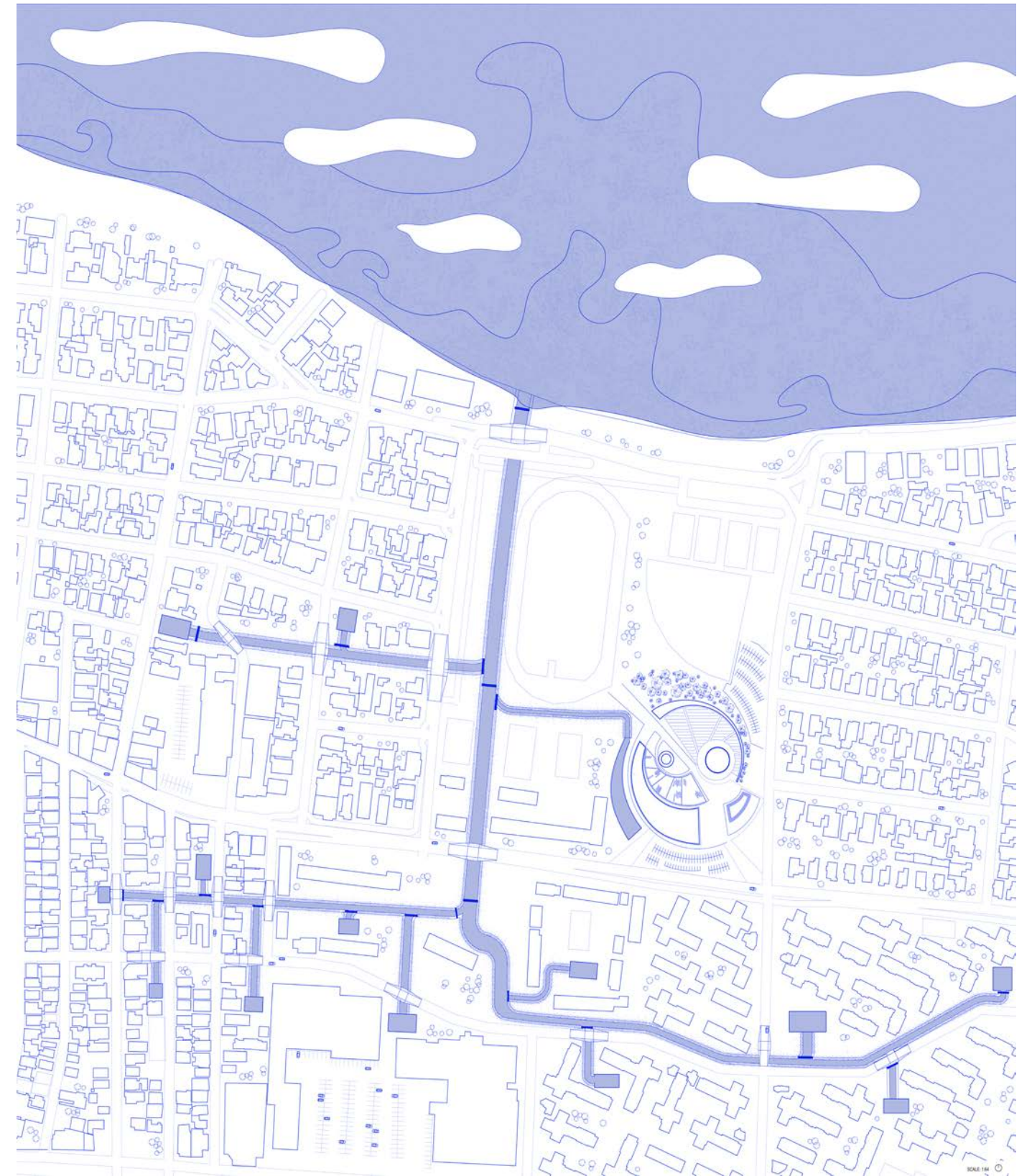


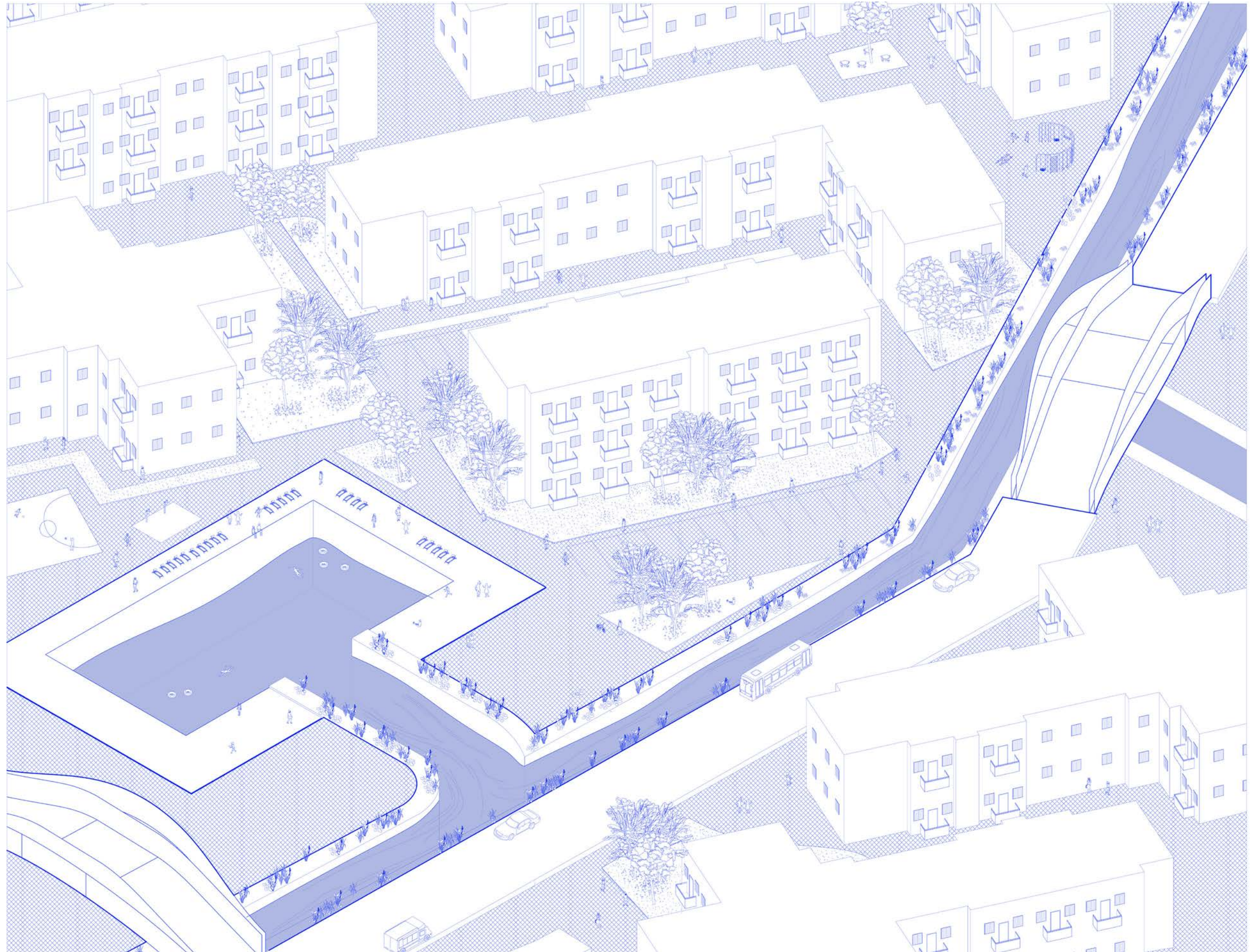
PROGRAMMATIC RELATIONS

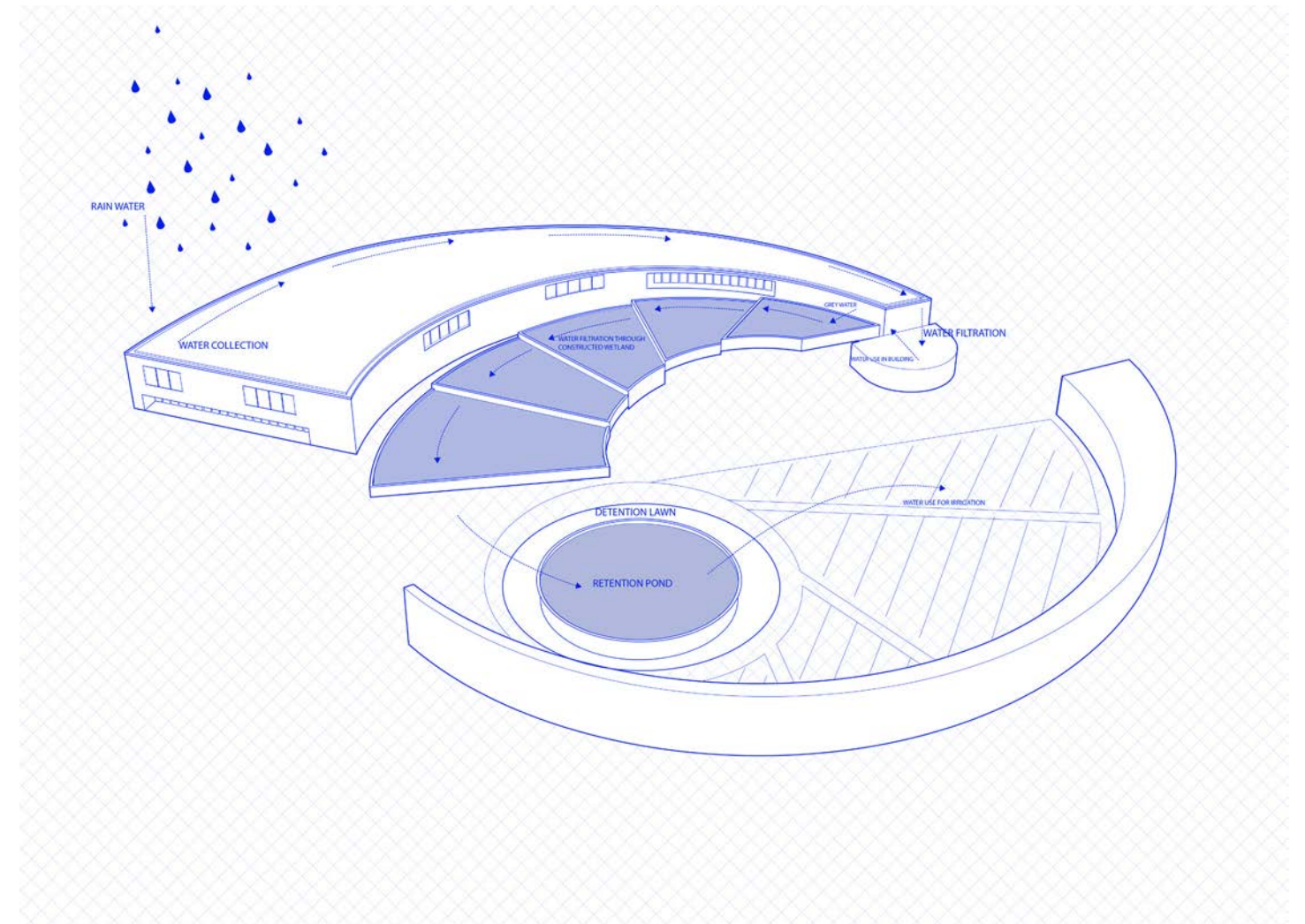


CANAL SYSTEM INTERVENTION

Through this intervention, the aim is to give access to water and create a sense of community for the most vulnerable people in the community. The thesis proposes a canal system to redirect water and mitigate flooding. Instead of the traditional techniques of elevating, blocking, or fleeing, the canal system is designed to revitalize, protect, and embrace the community. The canal system consists of a series of locks that open and close as the tide increases or decreases, pumps to aid the flow of water, and pools that bring ocean water to more people in the community.

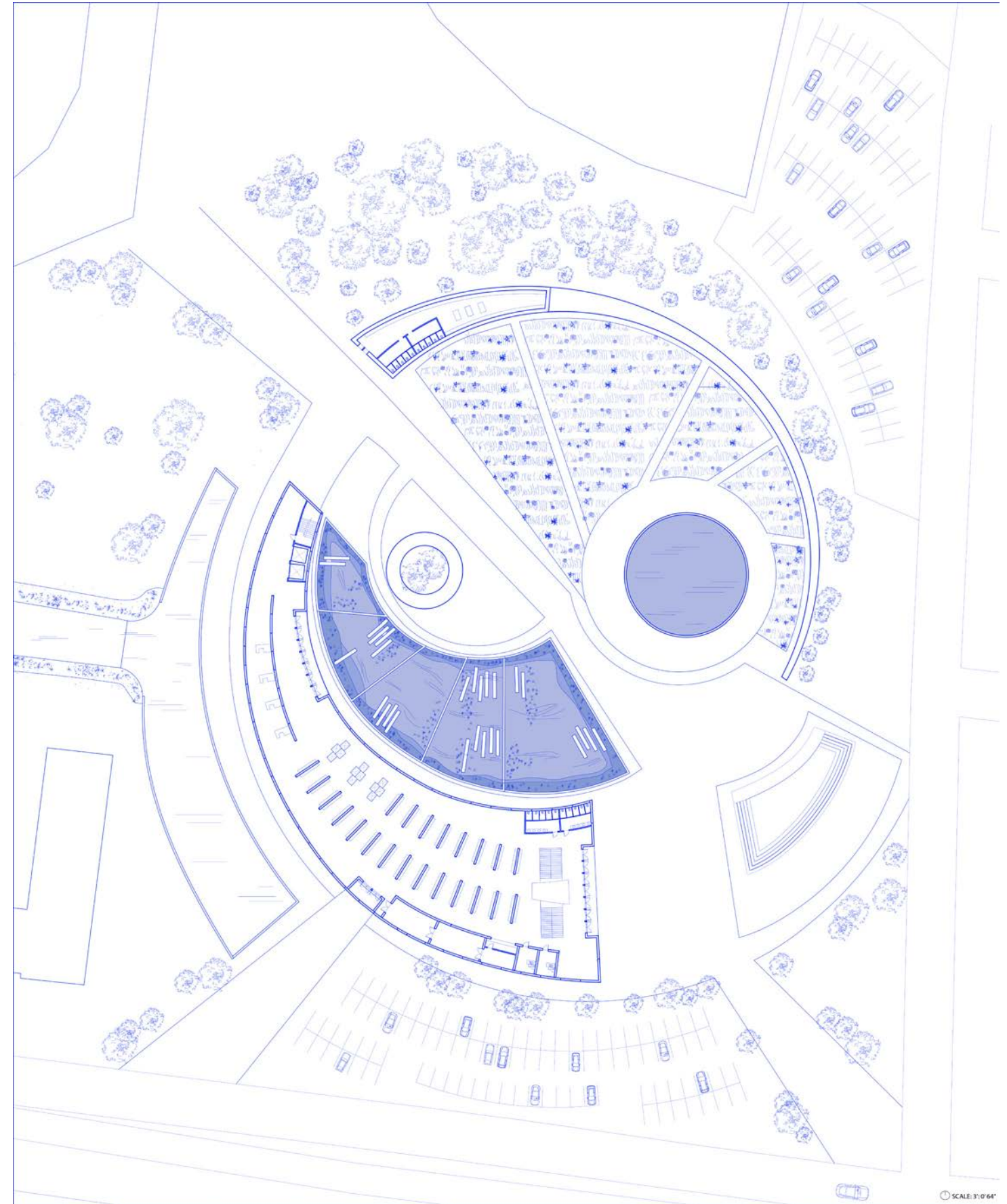
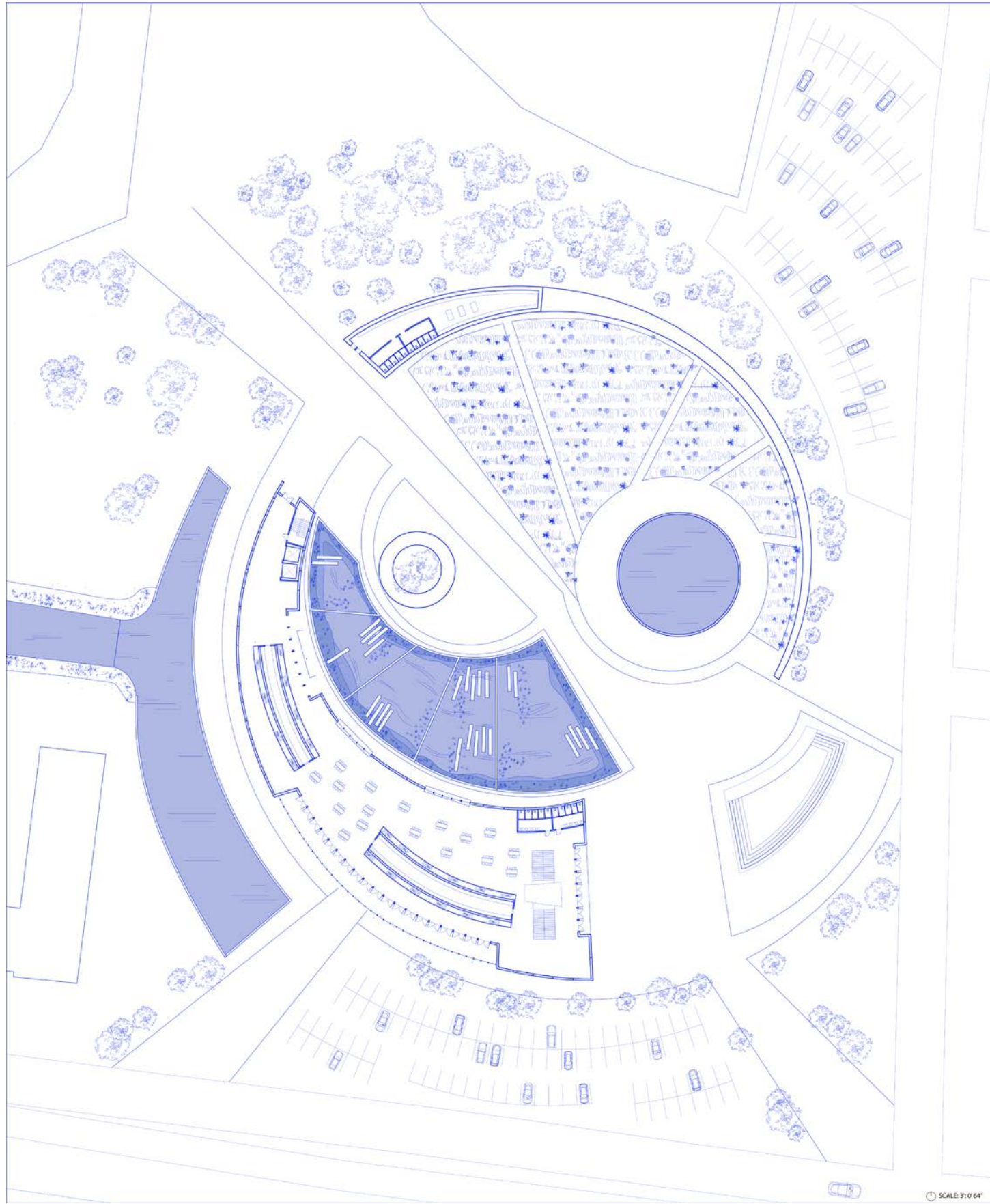


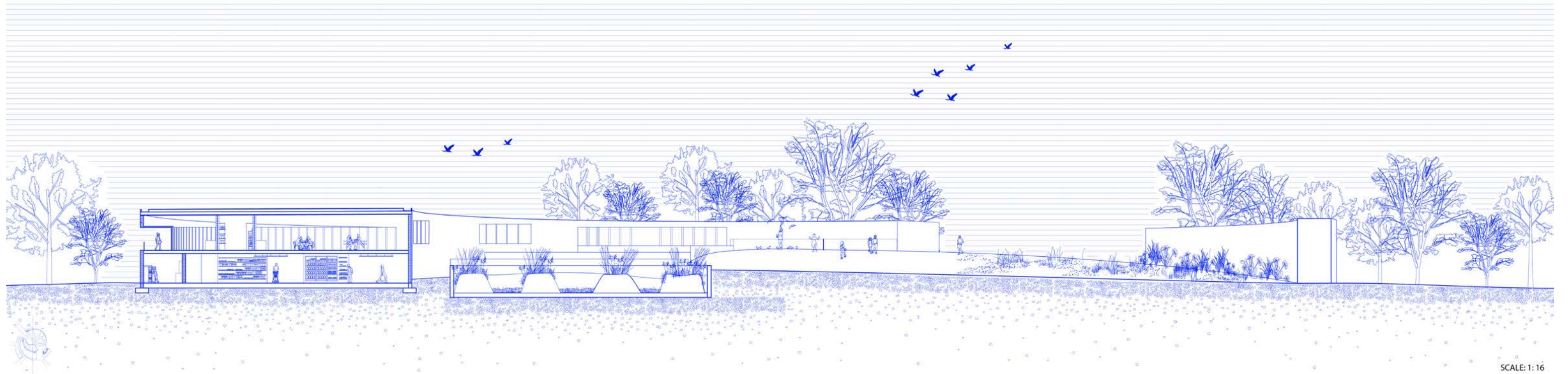




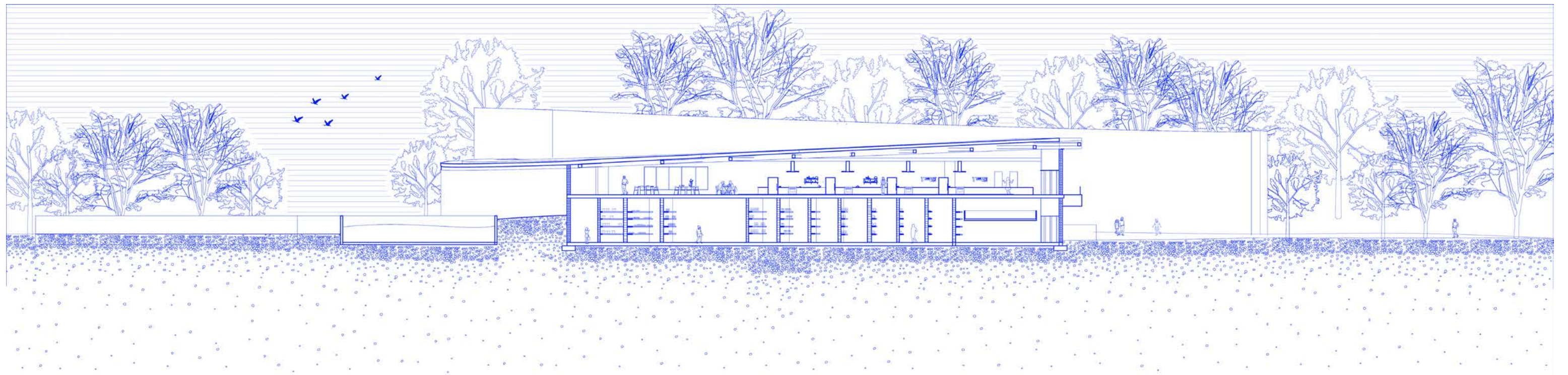
COMMUNAL KITCHEN + CONSTRUCTED WETLAND INTERVENTION

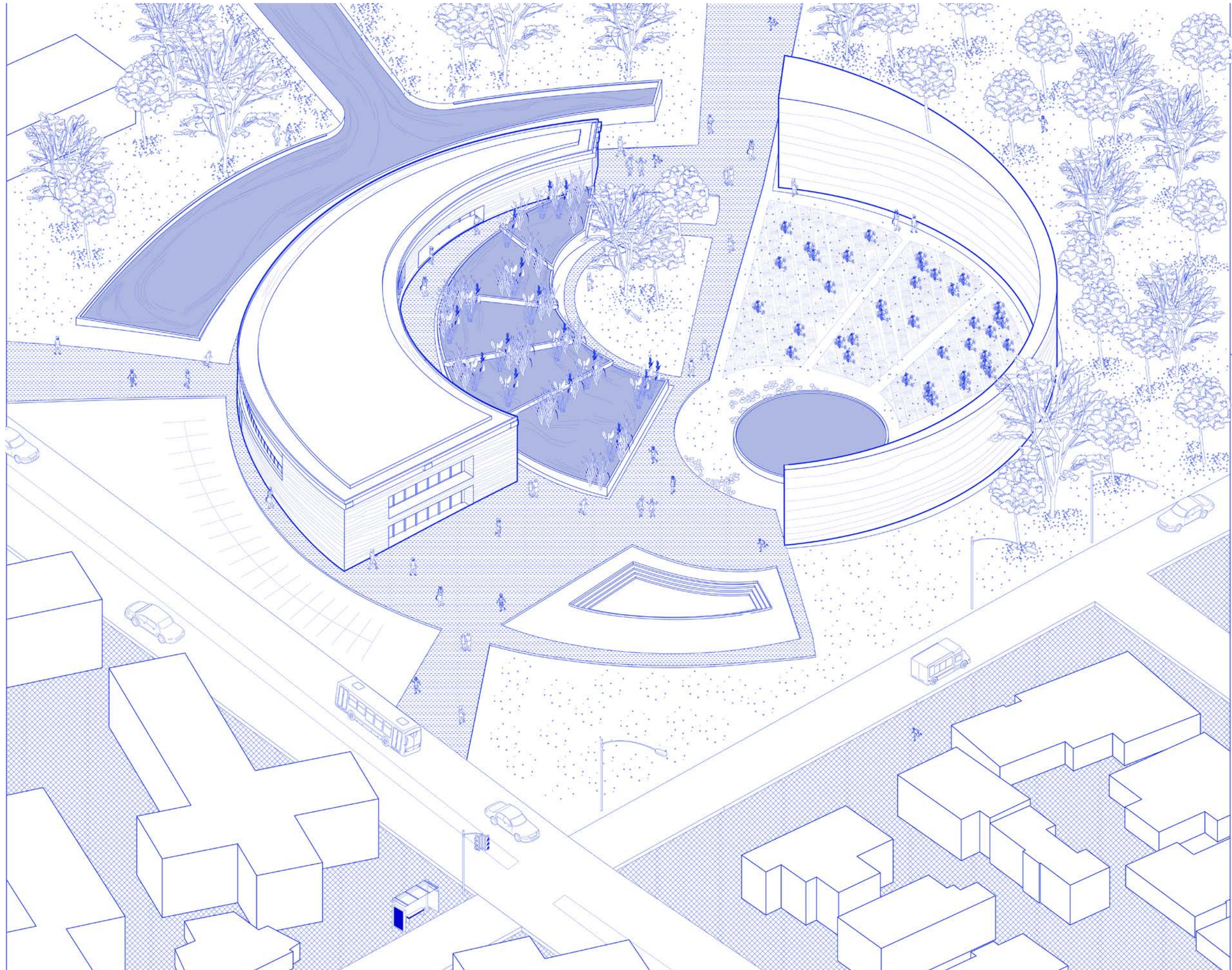
The communal kitchen functions as a hurricane-resistant building. This building is designed to harness the power of gravity and collect, treat, and hold water sustainably to reduce flood risks in surrounding areas. The building also serves as a community center for daily activities and during times of emergency.





SCALE: 1:16





This thesis aims to address the challenges facing the coastal community of Condado, Puerto Rico, by proposing interventions that protect against floods and restore access to water, while also enhancing daily life and cultural practices. Through an examination of the community's existing conditions, and answer three research questions: (1) how to mitigate flooding without displacing the community, (2) how to meet the needs of the community during times of emergency, and (3) how to integrate interventions into daily life and existing practices. The proposed interventions include a canal system to redirect excess water, with breakwaters and locks to control water movement and communal pools to provide access to water, as well as a hurricane-resistant community center with a communal kitchen and sustainable water management system. By drawing on the community's history, traditions, and norms, and prioritizing the needs of the most vulnerable members of the community, this thesis aims to create infrastructure that not only addresses immediate challenges but also fosters community resilience and sustainability.