Re-Designing the Casa Museo Ismael Rivera Park

D23 IQP Report

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Preface

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Acknowledgements

Special thanks to Professor Omayra Rivera Crespo of UPR and her team for their assistance throughout our project. Also, a special thanks to La Goyco, the Ismael Rivera Foundation, and the community around the Casa Museo Ismael Rivera that supported and participated in our events.

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Project Website

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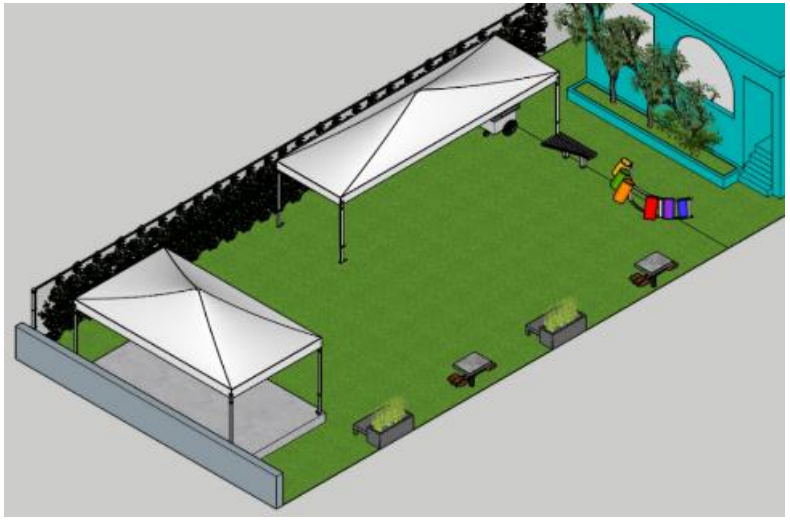
https://wp.wpi.edu/puertorico/projects/2023-mar-may-2/rivera/

Abstract

The Casa Museo Ismael Rivera is a 'house museum' that highlights the legacy of Ismael Rivera, a renowned salsa singer born in Santurce, Puerto Rico. The Casa Museo Ismael Rivera's front yard hosted large community events to celebrate Ismael Rivera's life and impact on Puerto Rican culture but was damaged during Hurricane Maria. Our project was to clean the front yard and to engage with the local community surrounding the Casa Museo Ismael Rivera using participatory design events to create visions for transforming the yard into a community pocket park. Through these participatory design activities, we created a portfolio displaying strong community-made park designs, a participatory design toolkit, and a cost estimation tool.



Executive Summary

In the past, the Casa Museo Ismael Rivera held communal celebrations such as Las Fiestas de Cruz and Ismael Rivera's birthday. These festivities helped unite Barrio Machuchal through cultural celebrations and events honoring what Ismael "Maelo" Rivera meant to the island (Fundación Rivera, 2020).

Since the destruction of Hurricane Maria in 2017, the yard has remained abandoned and unable to host neighborhood celebrations or help people remember Ismael Rivera. Over the past few years, the neighborhood has used the space as a parking lot, trash has piled up, and the land has become a walking hazard due to deep holes, tree roots, and elevated surfaces. The state of the yard has discouraged neighbors and visitors alike from embracing the Casa Museo and seeing its importance. If transformed into a "pocket park" or small-scale green space, however, the yard could contribute to Barrio Machuchal's sense of community and safety. Not only would the park help bring the community together through celebrations, but it could also serve as a usable outdoor space for residents old and young, including those from the next-door nursery school.

On arrival in Puerto Rico, the IQP team had four main objectives; analyze the current Casa Museo Ismael Rivera Park conditions; use participatory design methods to involve the community; generate CAD drawings of all potential designs; and finally identify park design funding and maintenance costs.

To satisfy the first objective, the team traveled to the site and extensively mapped and photographed the current conditions of the Casa Museo. Then cleaned and removed all the overgrown vegetation and trash.

For objective two, we pursued three main phases of participatory design. Phase 1, the preparation period, focused on finalizing design activities and hosting a public design event at the Casa Museo to stimulate excitement within the community. Phase 2,

participatory design, featured three participatory design activities. Phase 3 focused on finalizing designs using participant input, and meeting with stakeholders to gather feedback.

The third objective was satisfied simultaneously with the second by creating detailed CAD drawings of community based designs. These design are the key deliverables for the project.

The fourth objective was fulfilled by creating a cost estimation tool in Microsoft Excel.

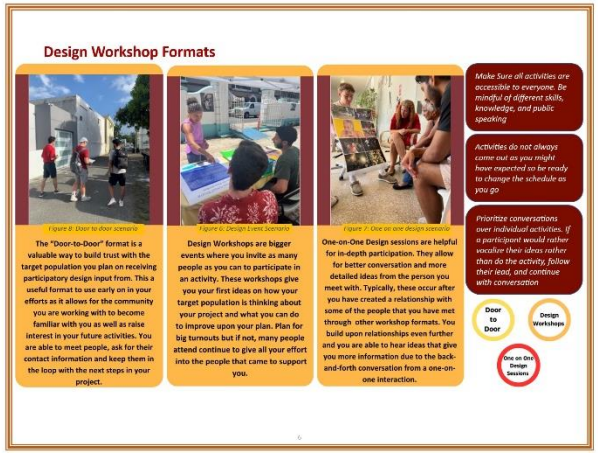
Findings

The community that surrounds the Casa Museo Ismael Rivera provided powerful insight in participatory design sessions for pocket parks. We found:

- **The Memory Box stimulated an emotional connection to this project.**
- **The Participatory Mapping activity was a gateway between the past and the future of the Casa Museo Pocket Park.**
- **The Image Ranking Activity invited participants to refine designs and imagine themselves in the future park.**
- **Design workshop engagement formed a bond between participants and facilitators through conversation.**
- **"One-on-One" Engagement strengthened relationships and vocalized deeper design ideas.**
- **Ivelisse Rivera, Ismael's sister and founder of the Fundación Ismael Rivera, provided important historic context for this project.**
- **Mari, owner of Divino Niño Day Care, expressed the need for children's features in the park.**
- **3D Modeling potential park designs allowed us to fulfill the ideas of the community in a quick and visual way.**
- **Materials on the Casa Museo property continues Taller Creando Sin Encargos idea of reusing materials.**
- **Creating a Cost Estimate Tool simplifies the cost of a project and how to divide resources.**

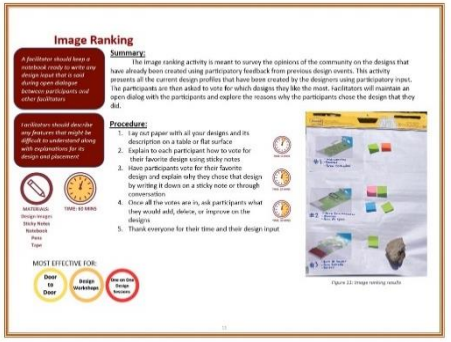
Outcomes & Deliverables

This project was successful in involving stakeholders and engaging the community in the design process. The three design activities and the input they gathered were used to create the two key deliverables of the project, The Casa Museo Ismael Rivera Pocket Park Design Portfolio, and the Participatory Design Toolkit.



The Pocket Park Portfolio highlights design options and community input. Each design displays a 3D model of the park, showing park features and their location. Each design has a description explaining the unique features of the design, the design's creation process and the community's feedback on the design. The Portfolio then breaks down each feature in the design and describes its purpose within the context of the park and notes other feature considerations. The document also displays a variety of aesthetic options for common park features. Lastly, a cost estimate tool has been attached that allows for the easy calculation of the design's cost. This cost estimator accounts for the pricing differences between size and materials of difference features.

The Participatory Design Toolkit highlights the strategies used in the project including the workshop formats that were followed. This document features detailed descriptions, procedures, images, materials, and findings regarding the participatory design activities. This step-by-step manual for participatory park design is meant for students, researchers, and community members interested in using participatory design. The toolkit is focused on the three main participatory design events used to engage the community and gather their insights and input on design options. Those three events are the Memory Box activity; the Participatory Park Mapping activity; and the Visual Ranking activity.



In addition to the physical deliverables, the project also achieved non-tangible outcomes that benefited the Casa Museo pocket park project. One such outcome is the promotion of the

project within the community. This was done through handing out flyers, going door to door, and holding events.

Another outcome is the creation of a strong foundation for the project to continue in the future. Through the design portfolio and participatory design activities the team was able to lay the groundwork for the Ismael Rivera Foundation to continue the project. Our design portfolio is meant to introduce the project and to appeal to potential investors.

Recommendations

After completing the project and reflecting on the methodologies, our team has composed a list of recommendations to assist Casa Museo Park redevelopment in the future. These sets of recommendations will improve and streamline the following processes.

- **Creating a Memory Box**
- **Planning a Participatory Design Event**
- **Recommendations for Running a Participatory Design Event**
- **Community Engagement**
- **Creating a CAD Model of a Potential Park Design**

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El Comienzo/The Beginning

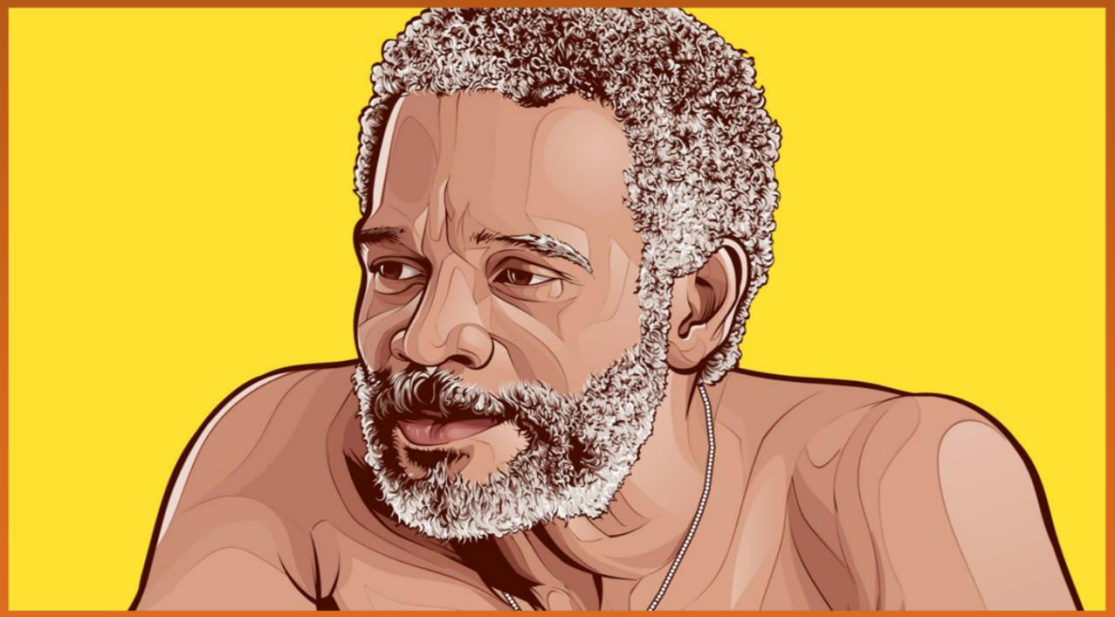


Figure 1. Image of Ismael Rivera (Fundación Rivera, 2020).

Ismael Rivera and The Casa Museo

From the streets of Barrio Machuchal in Santurce, Ismael Rivera brought himself up into salsa stardom with his Puerto Rican style and flair. His unique style of "rompiendo la clave," or "breaking the key" while singing boosted his musical career as an Afro-Caribbean Salsa singer and cemented his role in Puerto Rican culture (Sanchez, 2016). The Casa Museo (House Museum) Ismael Rivera honors his dedication to a form of music that is now engrained in the Island's culture. The Casa Museo Ismael Rivera, managed by the Ismael Rivera Foundation, shares the story of "El Sonero Mayor," or "the great singer," through pictures, tours, and celebrations. Previously, residents from the surrounding barrio and others attended various celebrations such as Las Fiestas de Cruz and Ismael Rivera's birthday in the front yard of the Casa Museo. These festivities helped unite Barrio Machuchal through cultural celebrations and events honoring what Ismael "Maelo" Rivera meant to the island (Fundación Rivera, 2020).

Hurricane Maria and the Casa Museo Yard

Community gatherings were regularly held in the Casa Museo Ismael Rivera yard until Hurricane Maria severely damaged the home and front yard. In 2017, Hurricane Maria made landfall in Puerto Rico as a powerful Category 4 storm with heavy rains and wind gusts of 155 mph (US DOC, 2017). The storm left the Casa Museo's front yard littered with fallen trees, debris from destruction and

Figure 2. Image of the Casa Museo Ismael Rivera yard after hurricane Maria (Omayra Rivera Crespo 2017).

currently, vegetation that is overrunning the lot. The property's fence was also knocked down, leaving the lot open for unintended use by the neighborhood.

Since 2017, the yard has remained a battered plot of land that is unable to host neighborhood celebrations or help people remember Ismael Rivera. Over the past few years, the neighborhood has used the space as a parking lot, and currently a large, abandoned truck takes up half of the front yard. Trash has piled up since Hurricane Maria and the land has become a walking hazard due to deep holes, tree roots, and elevated surfaces. The dilapidated state of the front yard makes it difficult for visitors to understand why the house is important or if it is open. This "pocket park," or small-scale green space, if renovated, could contribute to Barrio Machuchal's sense of community and safety.

La Fundación Ismael Rivera

Despite previous clean-up efforts on the Casa Museo and in the front yard, the space is still in need of significant repair. With the former president of the Ismael Rivera foundation, Ivelisse Rivera, Ismael Rivera's sister, stepping down, work on the lot has stalled. The community has begun to question how the family foundation will continue to support the historical home.

Figure 3. Ivelisse Rivera (right) posing with famous Salsa songwriter and singer Ismael Miranda inside the Casa Museo Ismael Rivera (Fundación Rivera, 2020).

Taller Creando Sin Engargos

Taller Creando Sin Encargos is an architectural design collective in San Juan. The firm specializes in participatory design processes to revitalize public spaces. The architects and planners at the firm, led by Yazmín M. Crespo, Omayra Rivera, Ph.D., and Irmaris Santiago, have successfully created community spaces throughout San Juan and are experienced in park design methods. The use of participatory design is an important aspect of their project planning. Taller Creando Sin Encargos has created uplifting architectural projects in Puerto Rico through architectural collective workshops that redesign areas of the capital and give them new meaning (TCSE Tumblr, 2022).

Participatory Design for the Casa Museo Yard

This project is dedicated to helping Taller Creando Sin Encargos' participatory design mission by conducting co-design workshops to support the revitalization of the Casa Museo Ismael Rivera yard to restore the lot and create a cultural space for members of the community to enjoy. The team has conducted participatory design activities with residents to bring the neighborhood together to voice their design opinions for the Casa Museo's front yard. Through community collaboration and cooperation, park design options were represented in CAD drawings informed by community input. We also investigated funding possibilities to create and maintain the park.

Figure 4. Table sitting at La Goyco.

Hecho en Puerto Rico/Made in Puerto Rico

Figure 5. Old San Juan pocket park (Hughes. T, 2016).

Ismael “El Sonero Mayor” Rivera

Ismael Rivera, born on October 5th, 1931, in Santurce, San Juan, Puerto Rico, was infatuated with music and rhythm from an early age. Known as an “impoverished barrio,” Rivera’s family lived in Barrio Machuchal, Santurce, in San Juan (Guadalupe Perez, 2016). Throughout his childhood, Rivera was exposed to different forms of musical culture and many of his musical rhythms came from the streets of Santurce, where Rivera discovered several types of Afro-Puerto Rican music that mixed well with traditional music of the time (Carrasquillo, 2014). Rivera was expected to help provide for his parents and siblings and his first job was as a shoeshine (Carrasquillo, 2014). According to biographer, Rosa Elena Carrasquillo, Ismael Rivera’s biographer, he often sang and pictured himself performing in front of crowds as he shined shoes. He dropped out of high school during his first year to pursue full-time work to support his family (Carrasquillo, 2014). Like his father, Rivera worked in government construction as a mason, and continued masonry work until his first job as a professional musician in 1954 (Perez, 2016).

The first band Ismael Rivera played with was the Panamericana Orchestra, led by Lito Peña (Guadalupe Perez, 2016). Rivera’s great singing voice threw him into the center of the stage for the orchestra, later earning him his first hit song “El Charlatan” (Guadalupe Perez, 2016). His popularity exploded after the song was released in 1954, as it was played all around the island in nightclubs, parties, and on the radio. In 1954, Rivera became performing partners with his best friend, Rafael Cortijo, and became one of the most popular musical duos in Puerto Rican music, writing many Puerto Rican classics together (Carrasquillo, 2014). In 1962, Ismael Rivera was arrested on drug possession charges after returning to

Figure 6. Ismael 'Maelo' Rivera (Ismael Rivera Foundation, n.d.).

Puerto Rico from a trip to Panama (Mao 2023). He was convicted and spent four years inside the U.S. Narcotics Farm Federal Penitentiary and Rehabilitation Center in Kentucky (Mao, 2023). After his release in 1966, Ismael Rivera launched into the world of Salsa by signing a contract with the Tico record label. Rivera created the “Los Cachimbos” orchestra and wrote and performed 11 albums, earning him the Puerto Rican title of “El Sonero Major” or “the great singer” (Guadalupe Perez, 2016).

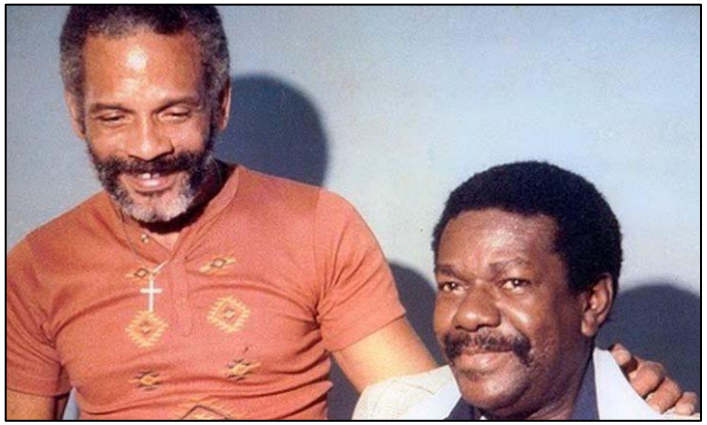


Figure 7. Ismael Rivera (left) with Rafael Cortijo (2nd from right), (Radio La Kalle, n.d.).

During his collaboration with Cortijo, Rivera helped pioneer a fresh style of music known as "*candente*," translating to "hot" and "glowing," blending modern trends with more traditional Afro-Puerto Rican music that was being created in Santurce at the time (Carrasquillo, 2014). In *The People's Poet: Life and Myth of Ismael Rivera, an Afro-Caribbean Icon*, Rosa Elena Carrasquillo (2014) draws parallels between Rivera's new genre and American jazz, saying "its value was as much about social change as it was about music (p. 60)." As an Afro-Puerto Rican performer, Rivera was admired by many fellow Afro-Puerto Ricans and Afro Caribbeans (Carrasquillo, 2014). Rivera's music began to connect 'white' Puerto Ricans and Afro-Caribbeans, destigmatizing what was previously known as "savage music (Carrasquillo, 2014)." Ismael Rivera died of a heart attack on May 13th, 1987, in Santurce, Puerto Rico. His music remains popular to this day, and as of February 2023, Ismael Rivera, has more than 640,000 monthly listeners on Spotify.

Figure 8. Photo of Casa Museo Ismael Rivera

Figure 9. People enjoying the Casa Museo Ismael Rivera (Fundación Rivera, 2020).

The Casa Museo Ismael Rivera

The Casa Museo Ismael Rivera is a 'house museum' located in Barrio Machuchal, San Juan that pays tribute to the renowned artist, Ismael Rivera. Ismael Rivera built the house for his mother, Margarita Rivera Garcia (Doña Margó). Doña Margó lived in the house until she moved to a nearby nursing home. In 1997, Ismael Rivera's sister, Eugenia Ivelisse Rivera, founded the Ismael Rivera Foundation and continued to maintain the Casa Museo Ismael Rivera and opened it to the public. The Ismael Rivera Foundation organization is dedicated to the preservation, documentation, and diffusion of the artistic legacy of Ismael Rivera (Fundación Rivera, 2020). The Rivera house museum now features pictures and artifacts belonging to El Sonero Mayor.

Prior to the devastation of Hurricane Maria in 2017, the yard was used for community events including Las Fiestas de Cruz and the Festival Al Son de Maelo. At Las Fiestas de Cruz, people pray around a cross to keep them safe (Fundación Rivera, 2020). The tradition had not been celebrated for several years in Barrio Machuchal until the Ismael Rivera Foundation resuscitated the celebration in 2000 (Fundación Rivera, 2020). The Festival Al Son de Maelo was a dual-purpose collaboration between the Ismael Rivera Foundation and the Instituto de Cultura Puertorriquena. It promoted Ismael Rivera's Afro-Caribbean musical legacy while helping small businesses in the community display and sell their products in a public celebratory space (Fundación Rivera, 2020). In 2022, the Festival al Son de Maelo was held at the Museum of Contemporary Art of Puerto Rico, and many people visited the Casa Museo Ismael Rivera where attendees expressed their interest in having the festival hosted in the Casa Museo Ismael Rivera yard once again. Community is a key component to the Ismael Rivera Foundation, so having the Casa Museo's front yard revitalized for the neighborhood with input by the community would help the Fundación meet its mission of culture through community.

Figure 10. People celebrating Las Fiestas de Cruz in the Casa Museo Ismael Rivera's front yard (Fundación Rivera, 2020).

Taller Creando Sin Encargos

Taller Creando Sin Encargos, a design collective based in San Juan, is led by Yazmín M. Crespo, Omayra Rivera, PhD and Irmaris Santiago. Taller Creando Sin Encargos has been responsible for various architectural workshops around the island's capital such as

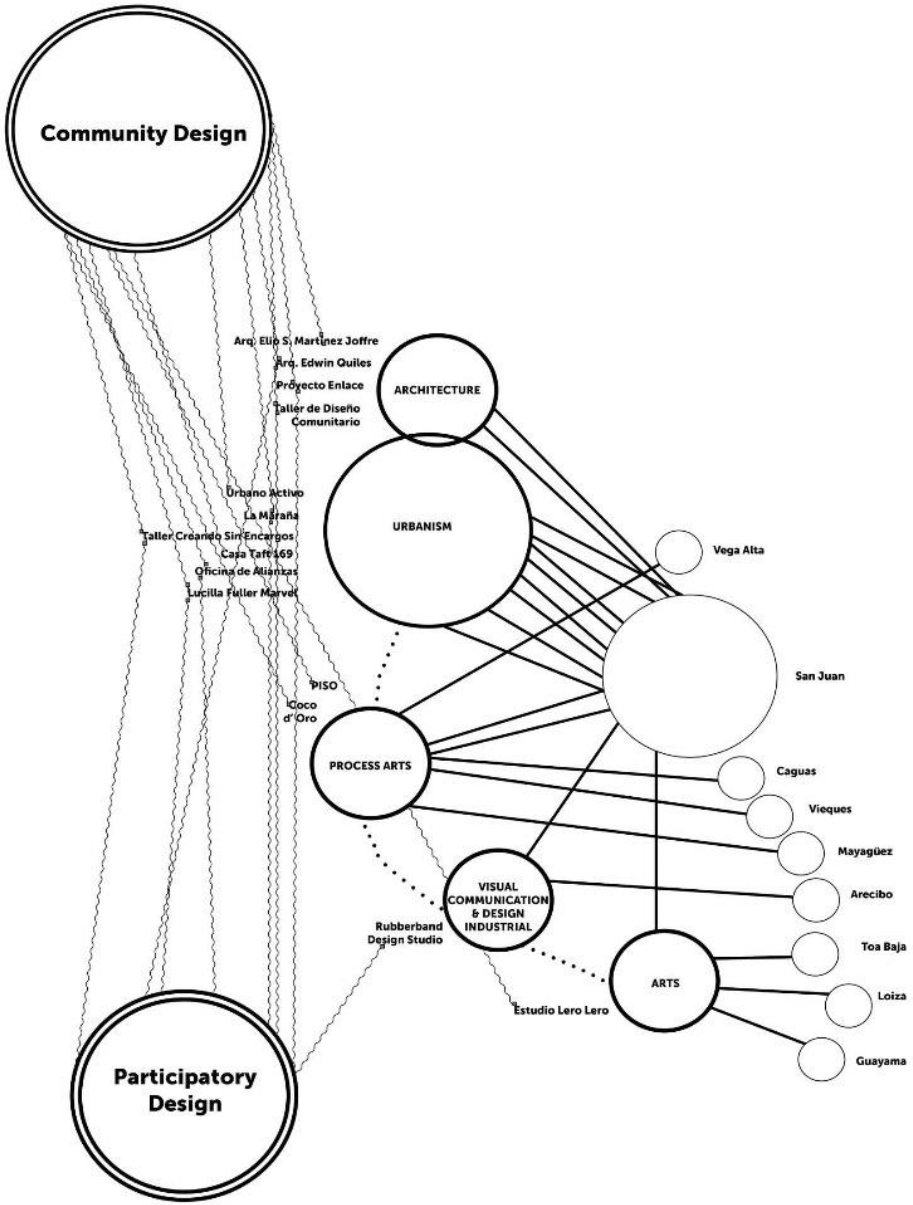


Figure 11. Graphic describing the methodology behind "Listening to Their Voices" (O'Neil & Crespo, 2018).

waterfront renovation in La Perla, la Parada el Almendro in Puerta de Tierra, and artistic playgrounds for kids in San Ciprián (TCSE Tumblr, 2022). Their architectural workshop collectives are planned out in phases. Prior to the building phase of the project, they spend months researching and preparing their designs. Once the design phase is complete, they spend time at the project location where they do on-location collaborative design workshops and construct their design ideas. Residents of the community, students and various volunteers typically participate in Taller Creando Sin Encargos' participatory design workshops. These workshops have included activities such as scavenger hunts, map placement, and community events.

Omayra Rivera Crespo, PhD, is the IQP project sponsor and is an important source of information on participatory design processes. She graduated from the Polytechnic Institute of Catalonia with a postgraduate degree in Architecture, Art, and Ephemeral Space. She is an expert in participatory design, and authored *Participatory processes: design, build and inhabit contemporary housing* (ORCID, 2023). Her project *Listening to Their Voices* highlights the use of participatory design in Puerto Rico. The project consisted of 14 interlocking cardboard panels that use graphics and texts to describe different projects in Puerto Rico that used participatory design or co-creation.

Participatory Design Methods

Participatory design strategies link designers and users in a co-design process, allowing people to actively participate in the design process (Hartson & Pyla, 2019). Ideally, the designers in this process serve as coordinators to gather the ideas of the community

and transform them into a final deliverable. Participatory design is best used in a feedback loop manner where designers create prototypes, interact with the community, implement the received input, and re-design (Hwang & Fellow, 2012). This invites many design iterations, creating a balanced final design (Hwang & Fellow, 2012). According to O'Neil and Crespo (2018), participatory design is a strong force for enacting change in the community and can be used to "inflict" change on social, cultural, economic, and policy issues, meaning that participatory design can be used in many sectors other than physical design. An example of this is *The Cantera Peninsula Project* in San Juan, which utilized co-design with representatives of the community. This project involved using community input to draw up the *Comprehensive Cantera Peninsula Development Plan,* meant

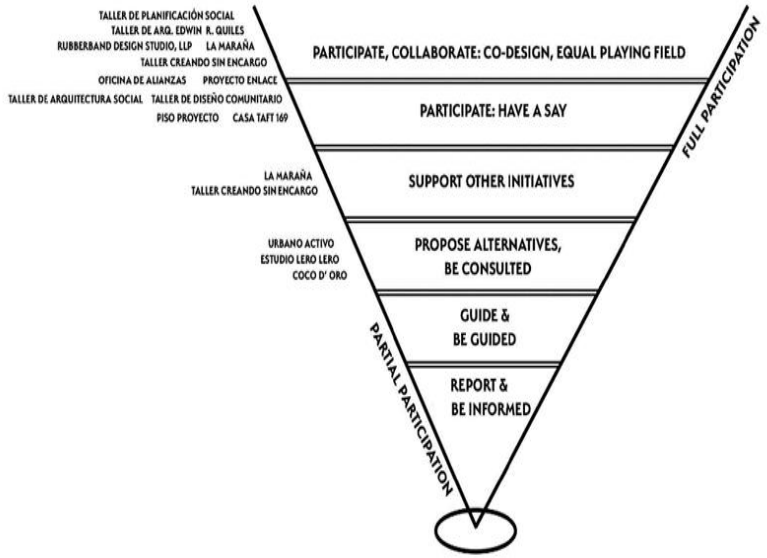


Figure 13. The 6 Modes of Participation (O'Neil & Crespo, 2018).

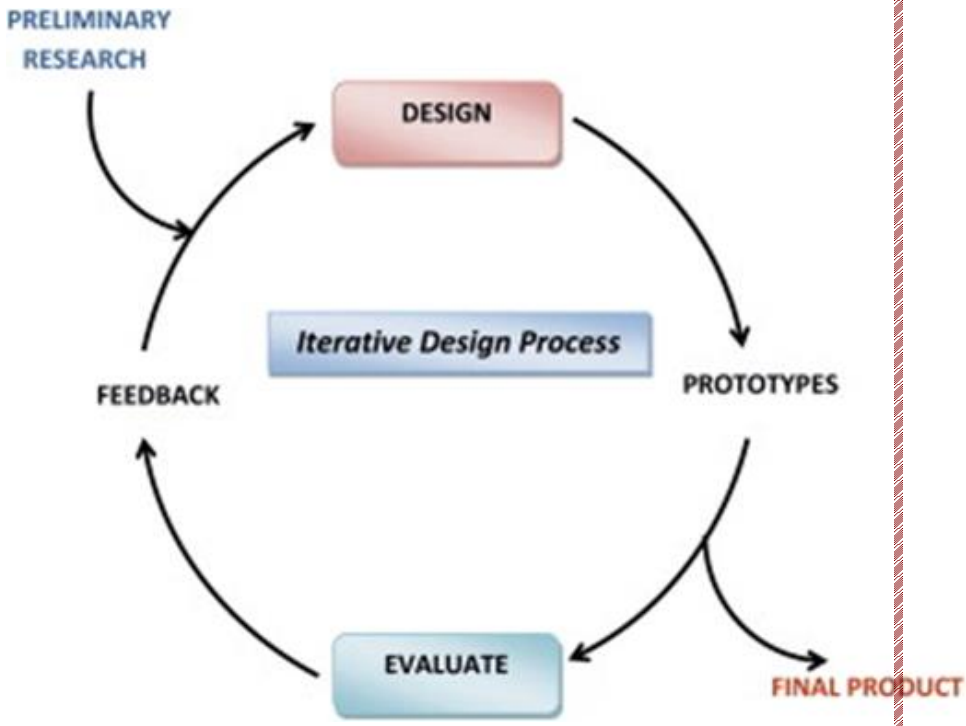


Figure 12. Thought diagram of iterative design process (Vedanthan, 2014).

to "ensure social, economic and cultural development of the Cantera Peninsula community" (O'Neil & Crespo, 2018).

While participatory design processes for parks are unique to each project, all of them share a similar general structure and method of input-design-repeat (Vedanthan, 2014). The first step is crucial in engaging the community with the design process. Gathering input from participants is best done via an open dialog, where community members learn from each other and build off their ideas (O'Neil & Crespo, 2018). The second step in the design process is to implement community feedback into the design, creating new designs that

emphasize the wants of the community (Hwang & Fellow, 2012). Finally, the last step of the design process is to repeat the process. Participatory designs are always evolving and changing, so repeating the design process through multiple rounds of iteration is crucial (Hwang & Fellow, 2012).

The most important part of participatory design is engaging the project stakeholders. In the *Participatory Design Toolkit*, Hwang, and Fellow (2012) state that designers must consider ways to reach out to stakeholders involved in the project, not just the contractor of the project. When looking to access a population, working with community leaders, such as church leaders or school officials, can be valuable in gaining the trust of the community (University of Illinois, 2023). These community leaders can help expand the project to reach stakeholders that normally might be hard to access (University of Illinois, 2023).

Participatory design can be used in scenarios ranging from large public projects to smaller-scale private projects. Public projects have lots of potential for using participatory design for such things as designing parks and community gathering spaces. Participatory design for parks is often used to decide what features to include, the layout of the park, and the types of activities that the space would be used for (Stokke, 2018).

One example of participatory design for a public project was done at Oslo University College where participatory design was used to find the optimal design for a small park (Nordh & Østby, 2013). Researchers presented 75 images of small parks to the study participants. Each participant was asked to write down how likely they were to rest at the park; park components that they would rank high or low; and what activities they could see themselves doing at the park (Nordh & Østby, 2013). The researchers then used the park ratings to categorize what park features and activities provide the most optimal park design that would satisfy a range of potential park users. The methods to rank the importance of park features can be useful to other designs of community-based parks (Nordh & Østby, 2013).

Another example of participatory design is the park design movement by Fundación Mi Parque in Chile. Mi Parque is a non-profit that has helped Chile invest in open community spaces (Stokke, 2018). The Fundación used two methods to implement participatory park design. First, they held community brainstorming sessions where participants were asked broad questions about the park. Staff

Figure 14. Examples of parks used in the Oslo College study (Nordh & Østby, 2013).

then grouped the findings into themes such as safety or activities and created a vision statement for the site. Next, Mi Parque designers held participatory design sessions where they used to-scale cutouts of park features and had participants create mock layouts for the park (Stokke, 2018). Researchers then took the information on which park features are most important, and the most popular park layout, to create a design for the proposed park. These methods where participants physically design the layout of the park are relevant to the design of a small park such as a small performance space park at Casa Museo Ismael Rivera, where features must fit into a limited space.

Other important aspects to consider when working directly with communities in design processes are the different levels of participation. Omayra Rivera Crespo and María de Mater O'Neill (2018) developed *The Six Modes of Participation* system ranking how much participation a project allows its participants to engage in (Figure 3). The top of the pyramid represents a fully participatory project where participants are seen as equal to designers. The next level of the pyramid are projects where participants have a say in the design but are not seen as full co-designers. Decreasing involvement in participation continues down through the inverted pyramid until final steps where participants are only used to guide decisions or are only informed of the project's progress. *The Six Modes of Participation* can be a helpful resource when deciding which participatory methods to use to maximize community involvement.

Park Design

Park design involves creating functional and aesthetically pleasing outdoor spaces for communities to enjoy, incorporating elements such as vegetation, walkways, seating areas, and art pieces. According to the National Reaction and Park Association (2011), park designs should consider factors such as accessibility, safety, sustainability, and the main demographic of the park, as well as reflecting the unique character of the surrounding community. A well-designed park should not only provide a comfortable space for people to relax and host activities, but also contribute to the culture of the local community and the environment around it (Trust for Public Land, 2022). In urban areas where open spaces for parks are scarce, small-scale "pocket parks" provide much-needed green spaces. The design of these parks, including seating areas, walkways, gardens, and art features, has a large impact on its usefulness to the community (Trust for Public Land, 2022). The Trust for Public Land (2022) suggests that pocket park creators get community feedback on the design. The Trust (2022) states that the goal of the community park design is to facilitate the ideas of the community and allow them to create a space where they can enjoy time with their friends and family.

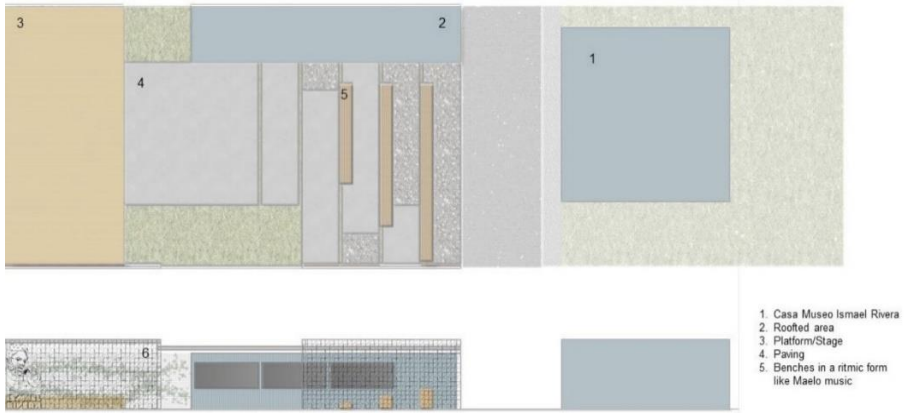


Figure 15. Initial plan for Casa Museo Park (Omayra Rivera Crespo 2023).

According to the National Recreation and Park Association (2011), one of the most important aspects of designing a park is ensuring that a park meets the needs of as many people in the community as possible. Maximizing the benefits of a park for all users requires careful consideration of the different needs and interests of the community. A successful park should provide a mix of active and passive recreational opportunities, as well as accessible amenities for individuals of all ages and abilities (Trust for Public Land, 2022). The Trust encourages designers to incorporate a variety of play structures for children of different ages, as well as fitness equipment for adults, which can encourage physical activity for all visitors. The Trust for Public Land (2022) also notes that including quiet, shaded areas for relaxing, as well as open spaces for gathering and socializing, can also provide benefits for individuals seeking a break from surrounding urban environments. Additionally, incorporating sustainable design elements, such as water conservation systems and native plantings, can provide educational and environmental benefits for visitors (Trust for Public Land, 2022).

The design of any park is heavily influenced by the specifics of the site. Designers need to be aware of the size, shape and existing vegetation that can affect what features are able to be implemented in the park and where they are placed (National Reaction and Park Association, 2011). The presence of trees or wildlife habitats can also influence the design, as these elements can be preserved or incorporated into the park to provide natural beauty (Trust for Public Land, 2022). The surrounding community and its needs should also be considered in the design process. This means considering the type of activities that the community would like to have in the park, such as sports fields, picnic areas, or playgrounds, and incorporating them into the design in a way that fits with the site's unique features (National Reaction and Park Association, 2011).

Pocket Parks

In densely populated urban areas, large open areas of land that can be used for parks have become scarce, leading to a rise of small-scale parks, known as pocket parks. Pocket parks provide much-needed green space in highly populated areas (Trust for Public Land, 2022). The design of these parks can vary, but many typically have seating areas, walkways, gardens, vegetation, or art features.

Experts say community input is a crucial aspect of pocket park design, helping the designers to create a space that fits the needs and culture of the community. There are many ways to involve the local community in design. An example of this is the Sung-Seo pocket park project (Ahn & Park 2007). This park project is in the

Figure 16. Puzzle Problem from the Sung-Seo Park Project (Ahn & Park 2007).

Sungmisan neighborhood in Seoul, Korea on the northern section of the Han River. In this project, designer's reference three different strategies to achieve their three key steps: public information, design workshop and feedback (Figure 17).

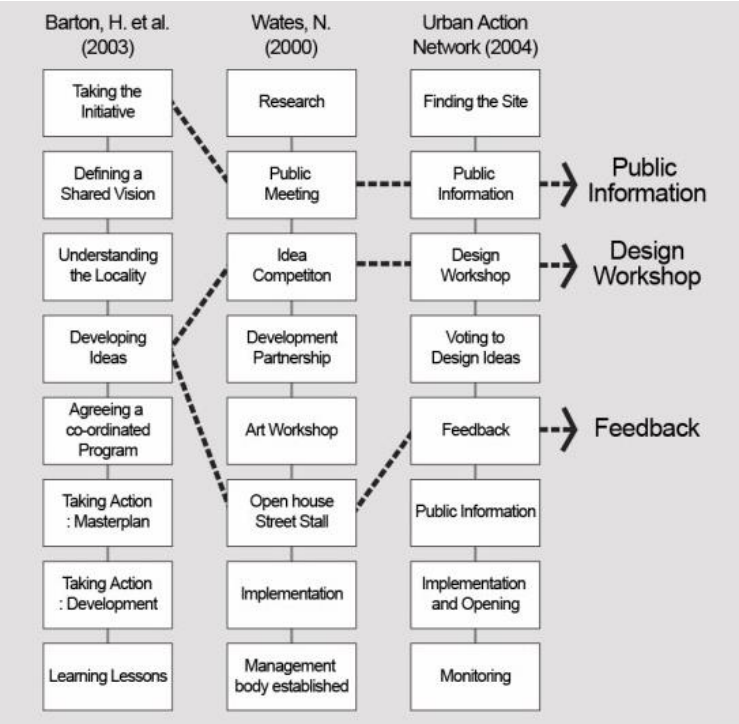


Figure 17. Participatory Design Strategy Used in Sung-Seo Park Project (Ahn & Park 2007).

To achieve the first step, designers used two design tools: a puzzle problem and a model kit for the park (Ahn & Park 2007). The puzzle problem showed pictures of the neighborhood and informed residents of some of the dangers that were around the park. The model kit was designed to give the community more information about the design process and increase the degree of resident participation. In the design workshop, the team gathered a group of 150 elementary school students who were thought to be the main users of the park, to determine their ideas and desires for the park and integrate them into the design (Ahn & Park 2007). Participants were divided into groups and placed pictures of features around a model of the park and described their reasoning for doing so. In the feedback step, designers focused on substituting the traditional methods of visualizing ideas such as graphs, drawings and professional plans for methods that could be better understood by non-experts, such as presenting unique design elements, such as color texture and materials used (Ahn & Park 2007).

Figure.18 Modeling Kit from the Sung-Seo Park Project (Ahn & Park 2007).

Park Design Software

Creating a well-thought-out plan for a park's design can be done using different software to create sketches, layouts, and 3D models of the future park (Trimble, 2023). Software allows park designers to create and visualize designs in a virtual environment that can quickly and easily be adapted and changed to fit new

requirements. It can also allow designers to communicate design ideas efficiently to project sponsors and stakeholders.

Software such as SketchUp provides a platform for designers to experiment with different ideas and assess the look of different design elements (Trimble, 2023). SketchUp is versatile and user-friendly software for landscape design that allows users to create 3D models of their designs (Trimble, 2023). Simple interface and intuitive controls make it accessible for beginners who may not have much experience with 3D modeling software. SketchUp offers a comprehensive set of features for creating accurate and realistic visualizations of the park. It has a large library of pre-made components, such as trees, furniture, and other landscape elements, which can be easily added to the design. Additionally, SketchUp allows users to import and incorporate aerial imagery, providing a more accurate representation of the park's surrounding area (Trimble, 2023).

Park Funding and Support Strategies

According to the (Trust for Public Land (2020), a funding and operation plan is the backbone for any community park. A clear understanding of where money is allocated for the park's construction and maintenance is vital to the long-term success of a park.

Capital Investment Budget

A Capital Investment Budget, or CIB, is a type of park budget that covers all initial payments for land acquisition and park construction (Trust for Public Land, 2020). Payments under CIB are paid only once and are normally a large sum at the beginning of the park planning process. Specific payments that fall under CIB are split into three different sub-categories: hard costs, soft costs, and contingencies (Trust for Public Land, 2020). 'Hard' costs cover paid labor required to develop the site and build the park itself (Trust for Public Land, 2020). This includes all park features such as benches, sidewalks, plants, and steps. Additionally, hard costs cover all forms of land development, covering any scenario where soil needs to be added or removed to the park or if the site needed to be cleaned of debris (Trust for Public Land, 2020). 'Soft' costs cover indirect fees that occur during the park's construction, such as permits, investigations, examinations, legal and administration fees, and appraisals. 'Soft' costs often correlate with hard costs since the hard costs dictate what permits/fees are needed. The last sub-category in CIB is contingencies (Trust for Public Land, 2020). Many times, construction does not go exactly as planned. A budget should have a portion of the total cost dedicated to unknown circumstances, such as replacing a broken part. A contingencies budget is crucial for the completion of a park's construction, as unexpected costs could slow down or even stop construction (Trust for Public Land, 2020).

Despite the smaller size of pocket parks, capital investment budgets remain expensive. The City of Essex, for example, approved a budget for a pocket park on Main Street in December 2022 costing up to $650,000 (Table 1).

Purpose	Estimated Cost	Percent of Budget
Pergola	$100,000	15.4%
Shade Sails	$30,000	4.6%
Lighting	$20,000	3.1%
Soil Work	$14,000	2.2%
Project Design/Management Fees	$54,000	8.3%
General Conditions/Mobilizations	$45,000	6.9%
Planting and Soils	$39,000	6.0%
Plant Maintenance and Establishment (60 days)	$6,000	0.9%
1750 SF Pine Hall Pavers (on aggregate)	$55,000	8.5%
520 SF WB Granite Pavers (on aggregate)	$52,000	8.0%
Granite Curb and Steps	$8,500	1.3%
Hexagon Precast Concrete (inc. 6" slab)	$70,650	10.9%
Brick Pillars (Need footing detail) (Exc. & concrete inc.)	$91,600	14.1%
Fencing Allowance	$52,500	8.1%
Bike Rack Allowance	$3,000	0.5%
Tree Grate Allowance	$6,000	0.9%
Total Cost	**$650,000**	**100%**

Table 1. Budget for the pocket park for the City of Essex (City of Essex Junction City Council, 2022).

Operating Budget

Once the park is constructed, an operating budget supports maintenance and operation (Trust for Public Land, 2020). The operating budget is used to pay utility bills, wages for park workers, landscaping, and general maintenance of park features. The expected use of the park feature, its durability, and its cost efficiency are all vital to the decision-making for a park design and can have a significant effect on the operating budget (Trust for Public Land, 2020). Examples include building durable benches to prevent people sitting on and damaging the landscape or using ideal placements of trash cans to prevent littering. At times, it may be beneficial to have a higher CIB to lower the costs of the operating budget, as the CIB could pay for higher quality features that would last through weather events and long-term routine use (Trust for Public Land, 2020).

Funding Sources for Parks

There are many sources of funding a park can utilize for construction and operation. Local governments can use tax money and funds from Parks and Recreation Department budgets to maintain the park (Walls, 2014). Pocket parks often count on philanthropies to provide large portions of required funds (Walls, 2014). The Kronkosky Charitable Foundation encourages pocket parks to apply for funding through their organization ("Pocket Park and Community Gardens" n.d). In 2015, the Foundation gave $830,000 to 43 different active pocket parks. The Trust for Public Land, a national non-profit organization, has preserved approximately 4,000,000 acres of land for the public and completed the funding and construction of 5,000 parks, trails, and schoolyards. Government grants also generate funding, especially for the capital investment budget. The Main Street Pocket Park in Essex, Vermont, received a state brownfield grant to cover the costs of construction for the park's soil work (Vanni, 2022). Combining support from both the local government and philanthropic purposes allows for parks to develop a public-private dynamic, creating flexible financial stability (Walls, 2014). This dynamic has supported small pocket parks as well as national parks in New York City and San Francisco (Walls, 2014).

Methodology

Methodology

Our mission is to help the Ismael Rivera Foundation by cleaning, co-designing, and supporting the restoration and development of a park in the Ismael Rivera Casa Museo yard.

Figure 19. The 4 main project objectives to generate designs though participatory design feedback.

Our first objective was to analyze the current condition of the Casa Museo Park. This was important so the team could gather inpat information on the park before creating designs.

The second objective was to use participatory design activities to involve the community in the park's design. This was an important step in designing a park that would serve the needs of the community.

The third objective was to create a set of CAD diagrams using the communities design input. These designs are the key deliverable of the project and will be crucial in presenting to investors.

Our fourth and final objective was to create a tool that can estimate the cost of the park designs, and then gives estimates on yearly upkeep costs.

Analyzed the Current Casa Museo Yard Conditions

We analyzed the current situation of the park, recording the condition of park features, utilities, municipalities, vegetation, and damages.

- **Recorded the current condition of the park.**
  - Took note of vegetation, locations, and species and condition.
  - Recorded damage to be fixed or objects to remove.
  - We took photographs and recorded videos of the site.
  - Created a 3D scan of the park using the free app Polycam.
  - Created a list of recycled materials salvaged from the clean-up.

- ❑ **Cleaned the yard and visited parks.**
    - Within the first week we cleaned all trash and cut vegetation from the park.
    - We visited and documented two parks designed by Taller Creando Sin Encargos using participatory design methods.
        - We visited the children's afterschool park and the Community Garden of Capetillo.
        - We recorded features, layouts, designs and looked for inspiration from these parks.

Participatory Design and CAD Development

We pursued three main phases of participatory design (Figure 15). Phase 1, the preparation period, focused on finalizing design activities and hosting a public design event at the Casa Museo to stimulate excitement within the community. Phase 2, participatory design featured participatory design sessions and multiple CAD design iterations. See the Participatory Design Toolkit for more details on activities. Phase 3 focused on finalizing designs using participant input, and meeting with stakeholders to gather feedback.

- ❑ **Created invitations and awareness-raising material for participatory design events.**
    - Created a flyer to raise awareness of the Ismael Rivera pocket park project (See Appendix A1) and put them up around the neighborhood and at La Goyco community center and handed them out to individuals.
    - Created posters with information on the project (See Appendices 2A, 6A, 7A)

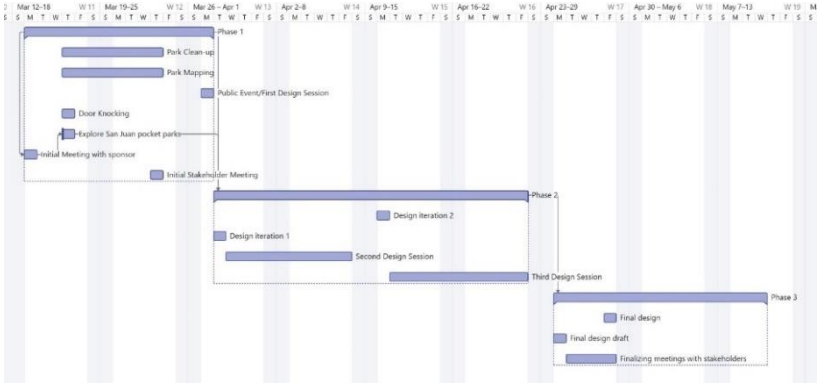


Figure 20. Gantt chart of initial participatory design methodologies.

- ❑ **Conducted 'door-knocking' to gather input and invite people to events.**
    - We went door to door in the community surrounding the Casa Museo and gathered resident's input on the remodel and memories of the original park. We asked:
        - Have you ever gone to an event held on the Casa Museo front yard?
        - What did you like about it?
        - Do you have any ideas about what you would like the park to have?
- ❑ **Memory Box design activity**
    - The memory box activity asks participants to reflect on past experiences in parks or the area the park is being designed for. This is meant to bring some of those previous experiences and past design features into the future design. This activity also can function as a suggestion box for the pocket park.
    - This paper mâché suggestion box was a small-scale model of the Ismael Rivera Casa Museo. It had an

opening in the 'roof' where participants could submit memories or past experiences at the park (See Appendix 5A)

- **Participatory Park Mapping Activity**
  - The participatory park mapping activity focused on surveying participants for layouts and specific features that participants wanted in the park. This activity invited participants to fill out blank park templates with their ideal park layout (See Appendices 8A – 14A).
- **Image Ranking Activity**
  - The image ranking activity was a visual ranking activity based on the processes discussed in *A study of park design and use* (Nordh & Østby, 2013)
  - The image ranking activity gathers preferences and reactions to designs from previous design events. The Image Ranking design activity includes multiple park designs that are physically printed out. Each park design had different features and layouts.
  - Participants voted on which designs they liked most and ranked the park design based on how likely they would be to spend time at the location.
- **Table sitting at the La Goyco Community Fair**
  - Set up a table at the La Goyco community fair to facilitate impromptu design sessions with community members at the fair.
  - Set up a memory box on the table with slips of paper for people to write on.
  - Displayed posters showing the park and explaining the goal of the project.
  - Engaged with community members to gather input for potential park designs.

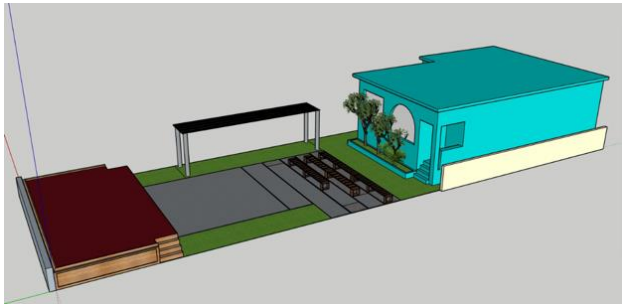


Figure 21. First model of the park based on a design from Omayra Rivera Crespo.

- **Created CAD models of the park** based on the designs from the participants in the Participatory Mapping activity.
  - These models were based on the drawings made by the participants during the community mapping activity.
  - We used CAD drawings to communicate community ideas for a park including:
    - Benches
    - Stage
    - Shaded area
    - Vegetation
    - Open area

- **Attended a press conference hosted by institute of Puerto Rican Culture at the Casa Museo Ismael Rivera for a Project called "Tiznado el país."**
    - We spread awareness for our project and talked to some of the attendees about the Casa Museo Ismael Rivera Park idea.

Figure 22. Press conference at Casa Museo Ismael Rivera.

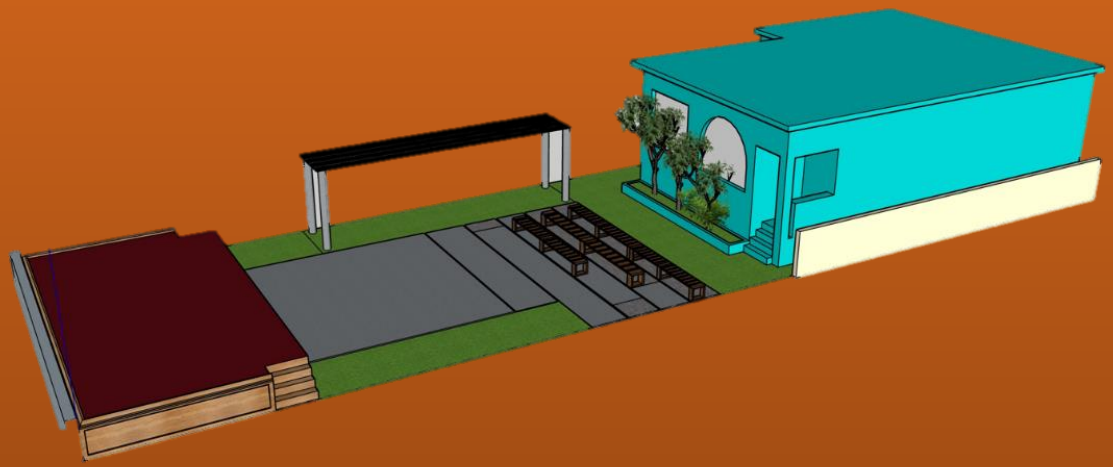
Created Final Deliverables

- **Created a Participatory Design Toolkit**
    - This toolkit combines the participatory design methods used in this project and provides it in an easy-to-use manual format. See the deliverable section below for more information.
- **Created a Design Portfolio**
    - The design portfolio gives a brief description of the project and the park, and then provides all the possible designs that were created. In the portfolio there is a funding analysis and discussion of each feature. See the deliverable section below for more information.

Generated a Cost Estimate Tool to Gauge Design Price

- **Made a cost estimate tool to estimate a range of costs for different park features.**
    - To begin constructing a pocket park, it is important to identify the costs of constructing and operating the park. This includes the costs of materials, features, general construction fees, and contingency funds. We made a tool that could quickly estimate the final cost of a design and a cost list template to assist those who plan to continue with this project, or to be used in other pocket park projects.

Findings, Deliverables & Recommendations



Findings

- **The Memory Box stimulated an emotional connection to this project.**

  The Memory Box was an effective physical tool to discuss potential park designs as it provided a more emotional connection to the project and allowed participants to reflect on their experiences with the previous park and events. It also encouraged participants to share stories about the old park and the entire community. Many participants described past events and fond memories such as El Cumpleaños de Maelo (Maelo's Birthday) which used to spread throughout multiple blocks around the Casa Museo Ismael Rivera. Big artists like Tito Matos performed during past events as different kiosks sold food, drink, and artisans.

Figure 24. Constructing the Memory Box

Figure 23. Finished Memory Box

- **The Participatory Park Mapping activity was a gateway between the past and the future of the Casa Museo Pocket Park**

  Participatory Park Mapping showed us that participants preferred to vocalize their ideas while facilitators drew their designs. Participants expressed their favorite features of the lot in the past and then thought about how those same features can return into a new design in an updated way. Time and day of the week was also important to maximize the number of visitors to the events as weekends around midday work better than weekday. During our conversations with the neighborhood, it was told to us that the lot had not been used for anything in years so the neighbors felt skeptical if anything would come out of this. They also told us that the Casa Museo is rarely open, making the community unaware of the contents of the

home. For the lot to become a more open space the community proposed the following:

- Dog Park
- Water Features
- In-ground Instruments
- Domino Tables
- Planters
- Moveable Benches

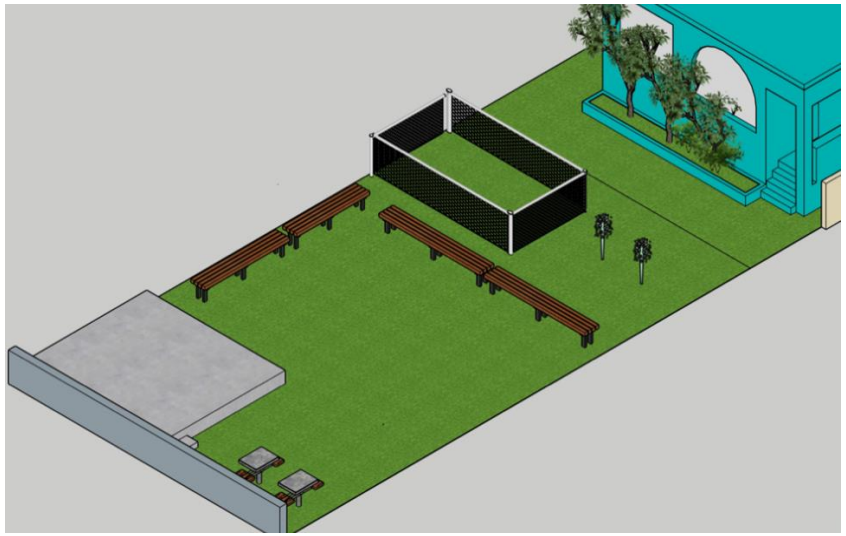


Figure 25. 1st model created from a participant's park design.

Figure 26. 2nd model created from a participant's park design.

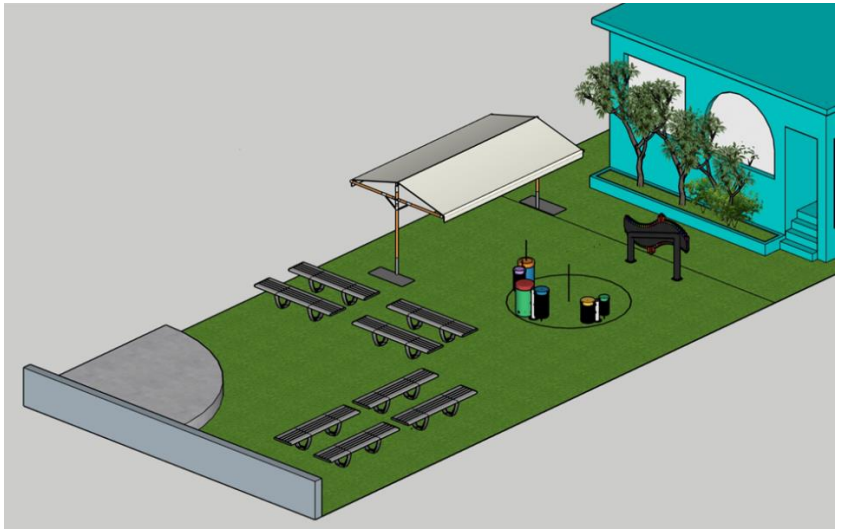


Figure 27. 3rd model created from a participant's park design.

- **The Image Ranking Activity invited participants to refine designs and imagine themselves in the park in the future**.

  The Image Ranking Activity provided crucial findings that gave the team final touches on the community idea CAD drawings. This activity allowed people to look at visual possibilities rather than vocalized ideas. Creating more excitement on the project and in turn allowed us to Receive specific and detailed ideas on designs such as the need for more shaded areas in the park to protect from sun and rain. People responded better when a visual of the design was presented as it gave them more assurance that the project was a possibility.

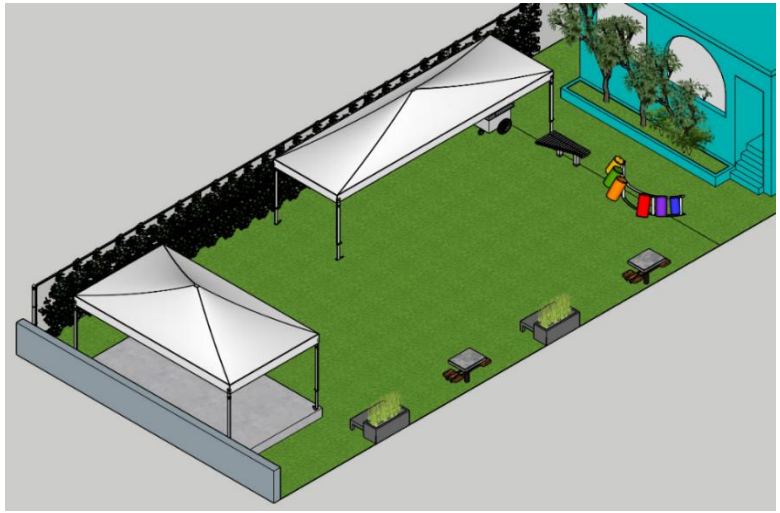


Figure 28. 5th model made by combing the top 2 highest voted designs.

Figure 29. Image ranking event.

Figure 30. One on one image ranking activity.

- **Design workshop engagement formed a bond between participants and facilitator through conversation.**

  Design Workshop Engagement is aimed towards bigger groups but works just as well with smaller groups. A layout for a workshop is important, but it became more successful when we followed the participants' lead such as having conversations about designs rather than doing paper activities or being mobile for participants to show us more of their neighborhood. Design Workshops work like ice breakers for the project as they create a base relationship with the community and inform them about plans for the Casa Museo pocket park.

- **"One-on-One" Engagement strengthen relationships and vocalized deeper design ideas.**

  One-on-One Engagement allowed us to learn more about people's lives around the neighborhood and in turn became more passionate about the people and the project. It also provided insight into what a potential pocket park can provide to the community such as the significance of arts and culture within the community and their history with large cultural events in and around the Casa Museo Ismael Rivera. Knocking on doors increased the quantity of one-on-one engagements and it created a more casual, relaxing environment.

- **Ivelisse Rivera, Ismael's sister and founder of the Fundación Ismael Rivera, provided important historic context for this project.**

  Ivelisse Rivera had a conversation with us regarding her family, her time at the house when she was younger and the Fundación Ismael Rivera. She remembers going to school with her brother at La Goyco and having her mother at home with the rest of her family. She expressed great ideas to us that were both for the people of the neighborhood but also in remembrance to her late brother such as his favorite flower being planted in the park, murals with his face and musical instruments that he played that could be added onto the property. Ivelisse liked the idea of having a space for children and having in-ground instruments but not pets. She wanted the space to be open for events so having most of the park's features moveable was important for her. She told us stories of all the events she has had on the property and what to take from them to add into the design to better accommodate the park's use.

Figure 31. Meeting with key stakeholder Ivelisse Rivera.

- **Mari, owner of Divino Niño Day Care expresses the representation of children in the design.**

Divino Niño Day Care is next door neighbors with the Casa Museo Ismael Rivera on Calle Ismael Rivera. We had the pleasure of meeting with the owner, Mari, where she talked to us about her memories of the Casa Museo. She remembers the festivities on the lot being block wide with various artist performances, kiosks with artisans being sold and people eating, drinking, and dancing. Through these recounts she emphasized the aspect of dancing and music that led to design ideas such as making the lot concrete, artificial grass, or gravel to create a safer and cleaner surface. Mari has lived in Puerto Rico for all her life, so she made it known how unpredictable the weather is on any given day. With the lot being primarily grass and dirt, the rain quickly turns into a muddy and uneven mess that can become a tripping hazard for event goers. To create a better location for Puerto Rican parties under Puerto Rican weather is lots of shaded areas with covered by tents to shield people from sun and rain. With her kids in mind, Mari mentioned the ideas of an area for children where they could enjoy the lot during their time at the daycare or when they spend time at the Casa Museo during events. Mari has been a member of the community for many years and would love to see the front lot of the Casa Museo be a community run park that can be used by anyone at any time. To continue that idea, Mari believes adding signs and park hours would stop any neglect of the park along with adding cameras in the case of any emergencies. Mari reiterated multiple times that she would love to help with anything she could as the project continues to move forward, and she is certain the rest of the neighborhood would love to offer help as well.

Figure 32. Andrew S. (Right) Listening to Ivelisse Rivera's (Left) thoughts on CAD drawings.

Technical Findings

- **3D Modeling a potential park design allowed us to fulfill the ideas of the community in a quick and visual way.**

Sketch-Up provides plenty of public models for use in park designs along with allowing for easy manipulation of models for quick changes to a model's shape and/or dimensions. Sketch-Up files export in a .skp file to allow for different users and different machines to edit the model but despite the easy ability to share files, the free version of Sketch-Up does not allow for multiple users to edit a file at the same time. As a free mobile app, it will still allow for an easy and portable way to present a design to stakeholders from someone's phone or a tablet.

- **Materials on the Casa Museo property continues Taller Creando Sin Encargos ideas of reusing materials.**

  Taller Creando Sin Encargos use various recycled materials in their projects around San Juan such as unused tires, milk creates and wood that have been left out on the street or that companies no longer need. During the clean-up of the Casa Museo's lot the team looked for anything that could be of value for the construction of the park and the following was recovered: two galvanized roof panels of 12ft X 3ft and 17ft X 3ft, four galvanized gutters each 17ft, Scrap pieces of gutters with various sizes that add up to 20ft and coconut tree saplings.

- **Creating a cost estimate tool simplifies the cost of a project and how to divide resources.**

  Cost Estimates have many different variables to consider such as the type of materials, the quantity and quality of materials, and different potential vendors. A very rough estimate can be created using general averages of material cost and construction fees so doing more research and planning must be done to increase the accuracy of the cost estimate for a design. Continued work from volunteers or Ismael Rivera Foundation is required to create an accurate assessment of cost as some potential fees that the Casa Museo Ismael Rivera may be charged are the following: general conditions, contractor bonds, overhead, and contingencies. The general conditions fee accounts for the purchase of materials and tools that are used for the park's construction but will not be part of the final product. For example, a contractor may pull from this budget to purchase a required tool to build a park feature. The average fee is 8% of the construction cost (Trust for Public Land, 2022). A contractor bond is a form of protection against disruptions that prevent the completion of a project. This is to ensure good quality work from the contractors (Trust for Public Land, 2022). Overhead covers operational business costs, such as salaries, utilities, and additional fees faced by the contractors (Trust for Public Land, 2022).

  Combined, overhead and contractor bonds have an estimated cost of 13% of the construction cost (Trust for Public Land, 2022). Contingency money is provided for unexpected costs and fees throughout the construction process, allowing for work to continue smoothly. The estimated budget for contingencies is 15% of the sum of the construction cost and the fees described above (Trust for Public Land, 2022).

Recommendations

- **Recommendations for Creating a Memory Box**

When creating a memory box, it is crucial to have a clear design beforehand and to use durable materials for longevity. Also, when creating the questionnaire forms, keep them brief, but probe their memories for meaningful input. Finally, it is helpful to have a poster or visual display that explains the project and purpose of the memory box.

- **Recommendations for Planning a Participatory Design Event**

When planning a participatory design event, it is important to create a structured plan with a lift of materials, and a clear set of objectives and desired outcomes. Have a "Plan B" for if your original plan goes wrong, practice for these scenarios by doing dry runs and getting feedback. Finally make sure to welcome participants and emphasize that their input is the center of the project.

- **Recommendations for Running a Participatory Design Event**

When running a participatory design event consider the weather if the event is run outside and be informed on precipitation and/or wind to plan accordingly. Do not be discouraged if the attendance is not as high as you thought, working with the community takes time. Finally, if the attendance is low, still run the event as if attendance were high.

- **Recommendations for Engagement**

To increase community engagement, create flyers and pass them around the neighborhood for upcoming events. Try splitting up into smaller groups while talking to people to create a less intimidating environment. Finally, provide a phone number to continue communication with people after the event.

- **Recommendations for Creating a CAD Model of a Potential Park Design**

When creating multiple CAD designs create a scale blank template of the space from which to base multiple designs. Use Sketch-Up's free database of public models to use for potential park design features, and model existing features from images of the park. Keep models in an easy to edit format so quick changes can be made per the request of a stakeholder. Finally, create a structured system to share and store CAD files within the group.

Outcomes and Deliverables

Participatory Design Toolkit

The Participatory Design Toolkit highlights the participatory design strategies used in the project including the workshop formats that were followed. This document features detailed descriptions, procedures, images, materials, and findings regarding the participatory design activities. This step-by-step manual for participatory park design is meant for students, researchers, and community members interested in using participatory design. The toolkit is focused on the three main participatory design events that were used to engage the community, gather insightful input, and receive feedback on current designs. Those three events are the Memory Box activity; the Participatory Park Mapping activity; and the Visual Ranking activity.

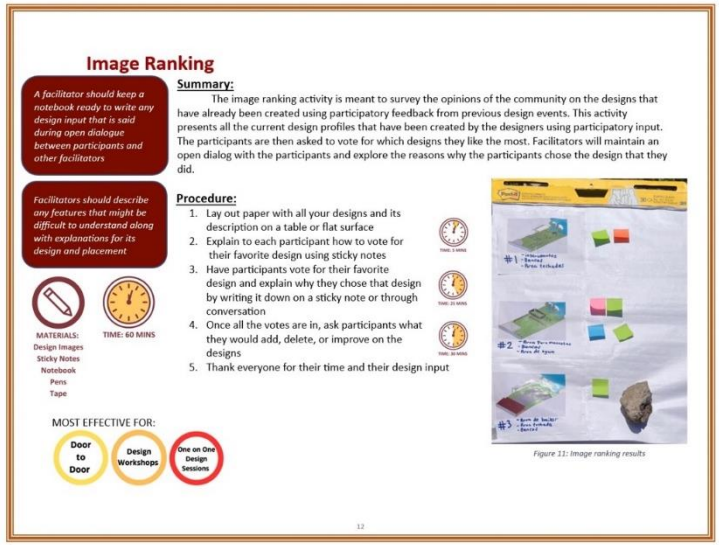


Figure 33. Example page from participatory design toolkit.

Casa Museo Ismael Rivera Pocket Park Design Portfolio

The purpose of the Casa Museo Ismael Rivera Pocket Park Design Portfolio is to highlight the designs created and voted on by the community. Each design displays a 3D model of the community space, showing all the park features and their positioning in the park. Each design has a description explaining the unique features of the design, the design's creation process and the community's feedback to the design. After, the portfolio will break down each feature in the design and describe its purpose within the context of the design, as well as any pros and cons about the specific feature. The document also displays a variety of aesthetic options for common park features. Lastly, a cost estimate tool has been attached that allows for the easy calculation of the design's cost. This cost estimator accounts for the pricing differences between size and materials of difference features.

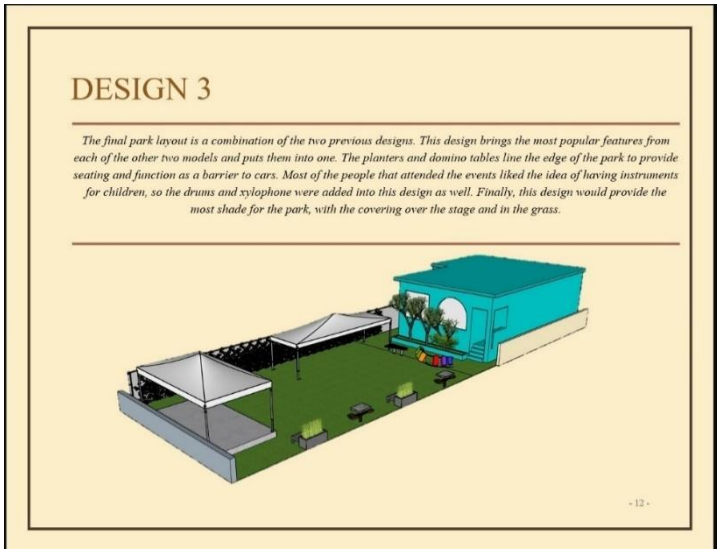


Figure 34. Example page from design portfolio.

Promotional and Educational Infographics and Posters

The team created a series of posters and flyers to advertise and educate the community on the project. The Summary Poster focused on summarizing the project, another was the Picture Poster, which was a visual collage of the park's past, and the third poster was the Event Poster and was used to advertise the events at the park. We also created a small flyer meant to be handed out to people, containing information for upcoming design events at the time (Appendix A, B, C, D).

Figure 35. Informational poster

Figure 36. Event flyer.

Figure 37. Event here poster.

Figure 38. Collage Poster

Laid a Foundation for Project Continuance

Through the design portfolio and participatory design activities the team was able to lay a foundation for the Ismael Rivera Foundation to continue the project. Our design portfolio is meant to introduce the project and to appeal to potential investors.

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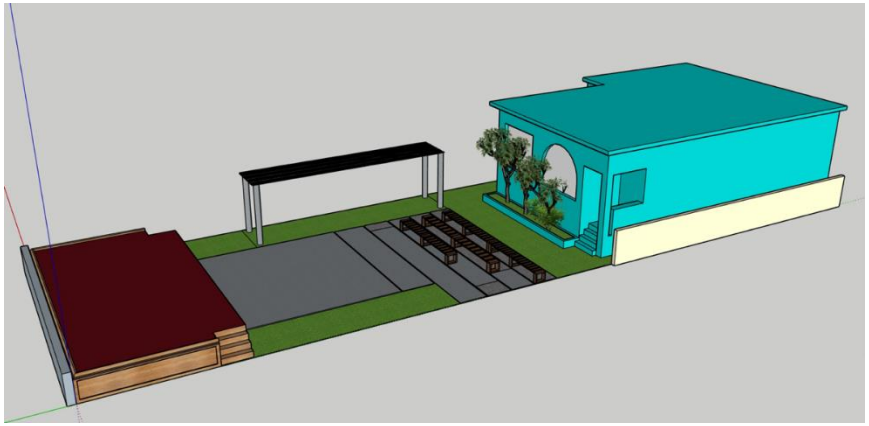
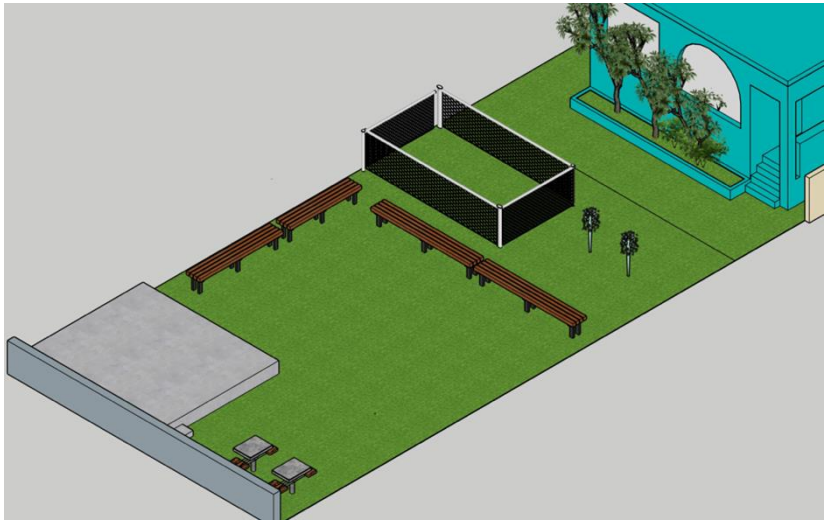
Appendices

Appendix A

This appendix contains CAD Drawings of the Casa Museo Ismael Rivera.

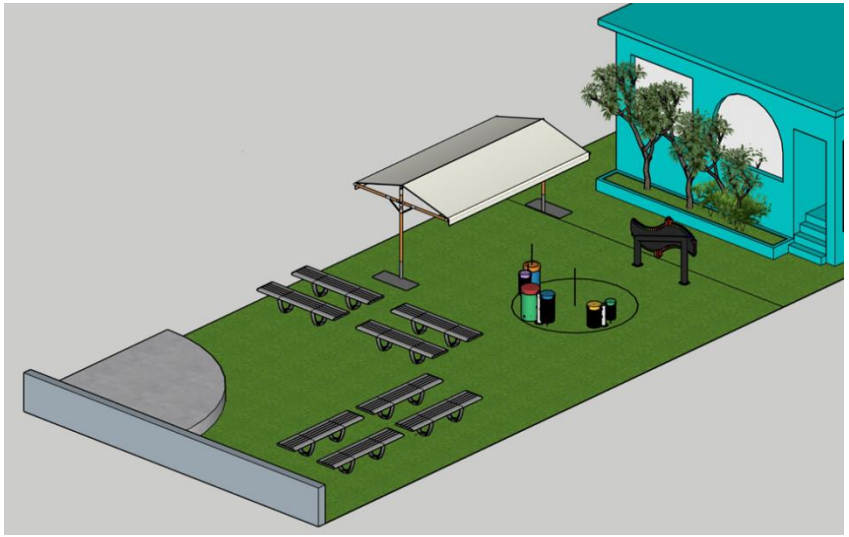


Appendices Figure 1A. CAD model based off sponsor's initial design.

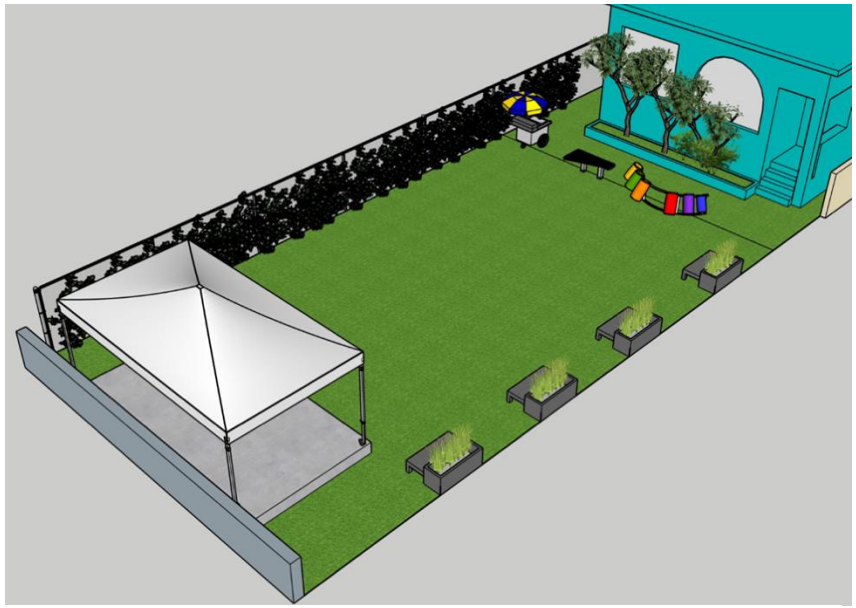


Appendices Figure 2A. First CAD model based off feedback from our participants.

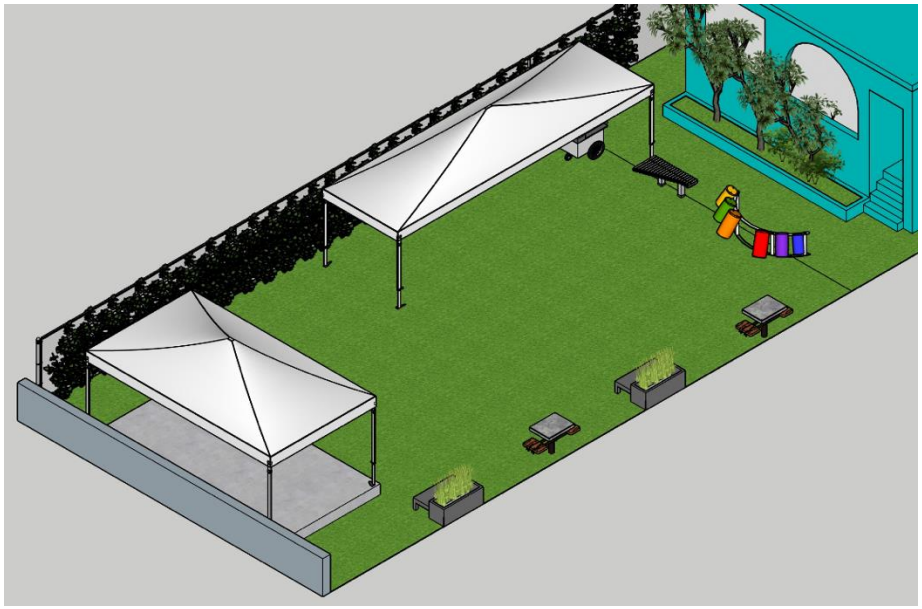
Appendices Figure 3A. Second CAD model based off feedback from our participants.



Appendices Figure 4A. Third CAD model based off feedback from our participants.



Appendices Figure 5A. Fourth CAD model based off feedback from our participants.



Appendices Figure 6A. CAD model based off feedback from Ivelisse Rivera.

Appendix B

Promotional and educational materials for participatory design events.

Appendices Figure 1B. The flyer used to raise awareness for the first participatory design event #1.

Appendices Figure 2B. An informational poster describing the project in Spanish.

Appendices Figure 3B. Event here poster.

Appendices Figure 4B. Visual Collage poster.