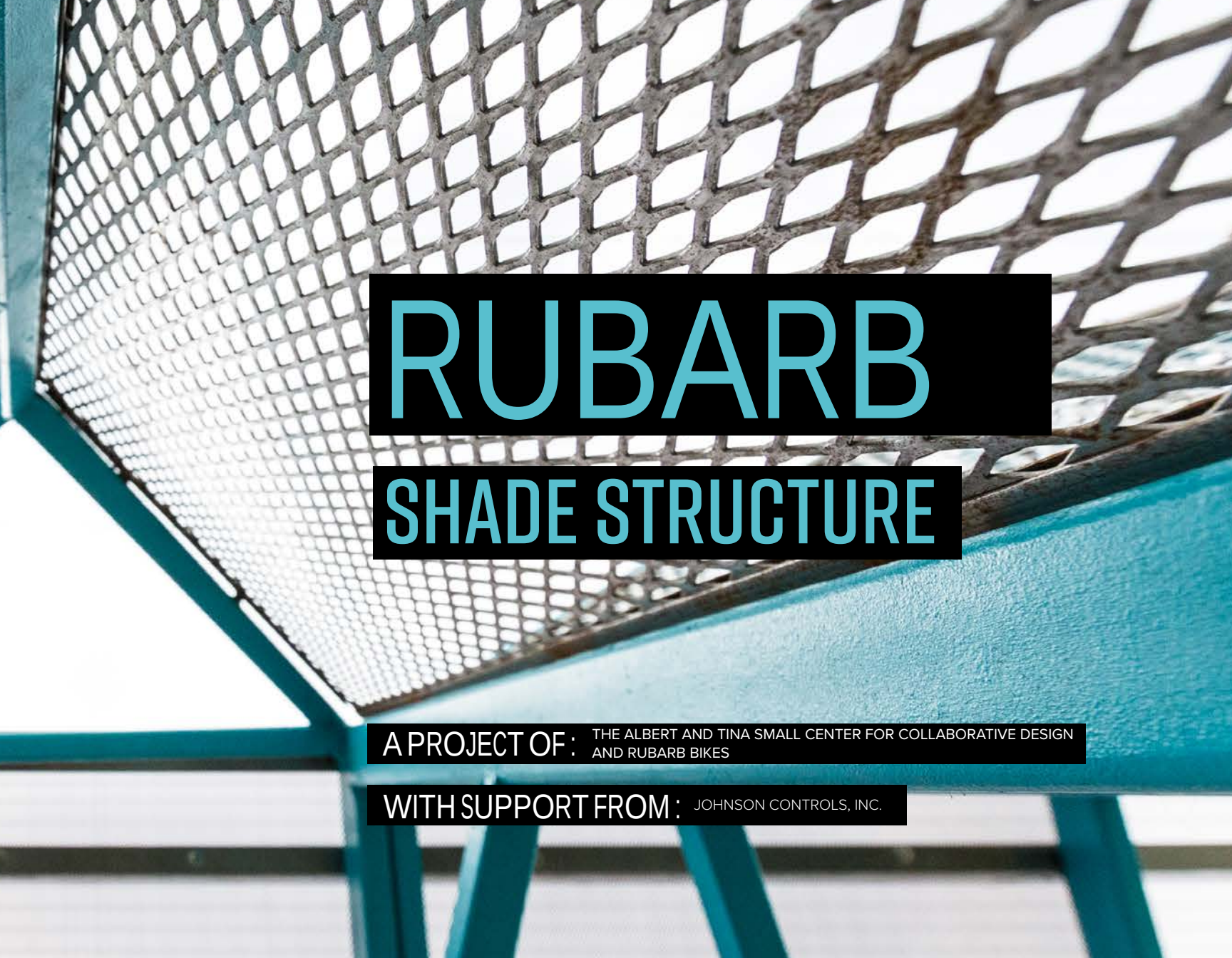


RUBARB

SHADE STRUCTURE

A PROJECT OF : THE ALBERT AND TINA SMALL CENTER FOR COLLABORATIVE DESIGN AND RUBARB BIKES

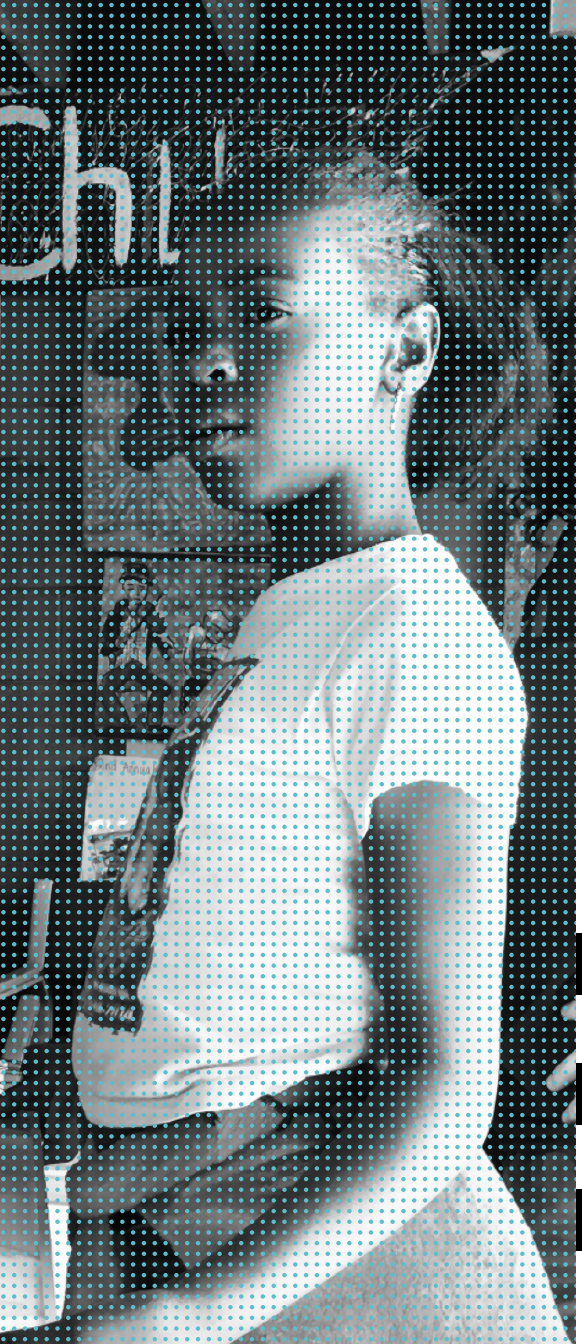
WITH SUPPORT FROM : JOHNSON CONTROLS, INC.


RUSTED
UP
BEYOND
ALL
RECOGNITION
BIKES

BACKGROUND

PROCESS

IMPLEMENTATION

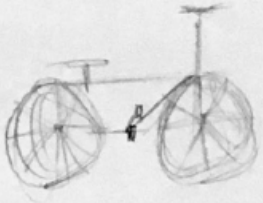


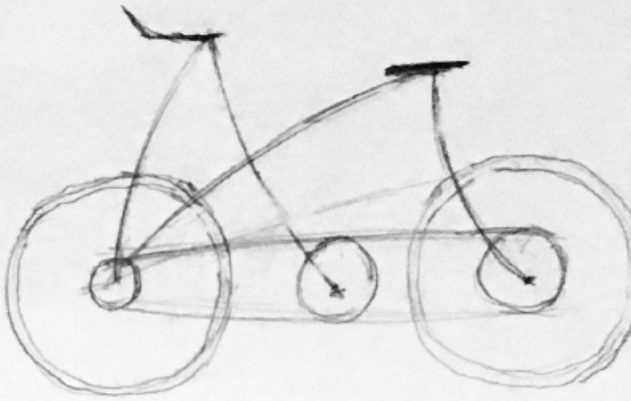
BACKGROUND

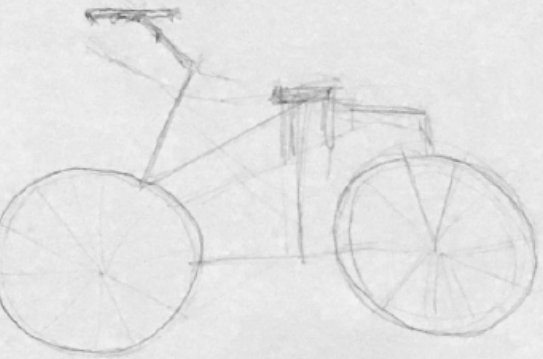
ABOUT

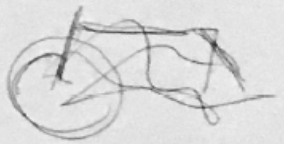
BIKING IN NOLA

SITE ANALYSIS





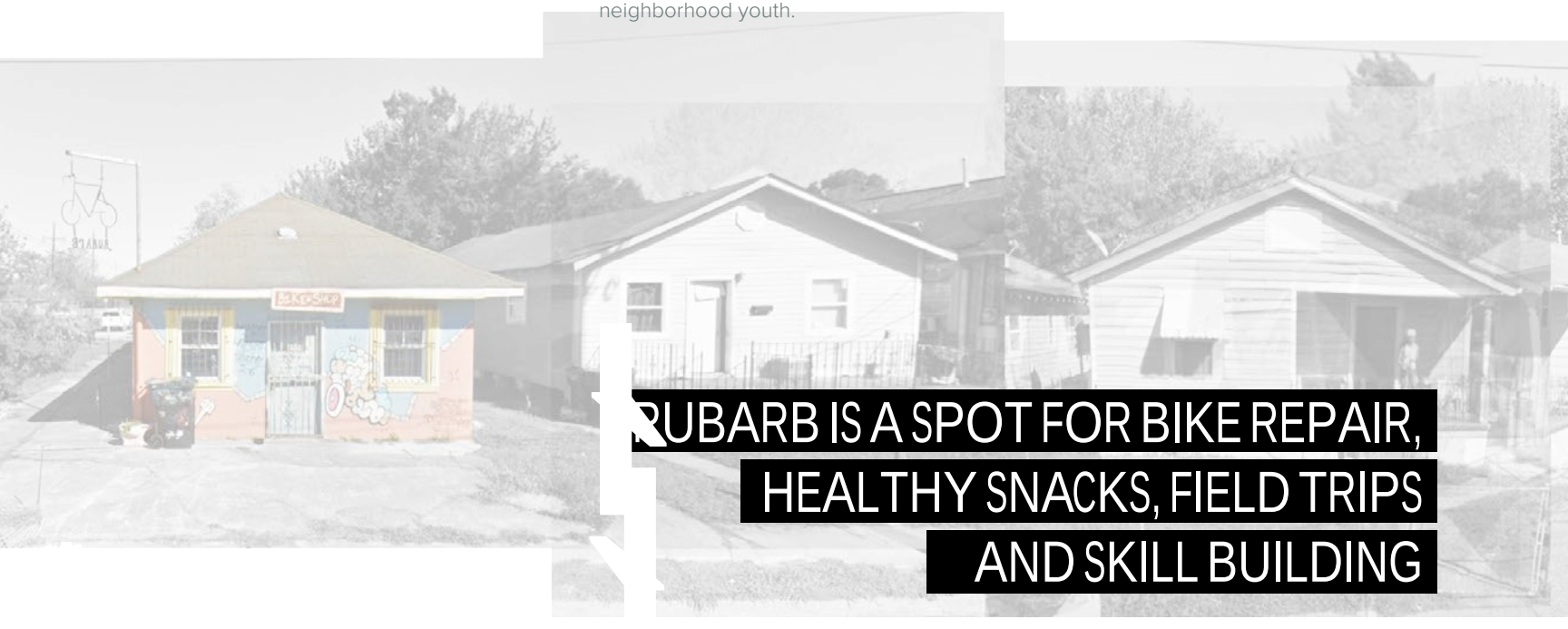




ABOUT

RUBARB [Rusted Up Beyond All Recognition Bikes] is a volunteer-run community bike shop in the upper ninth ward.

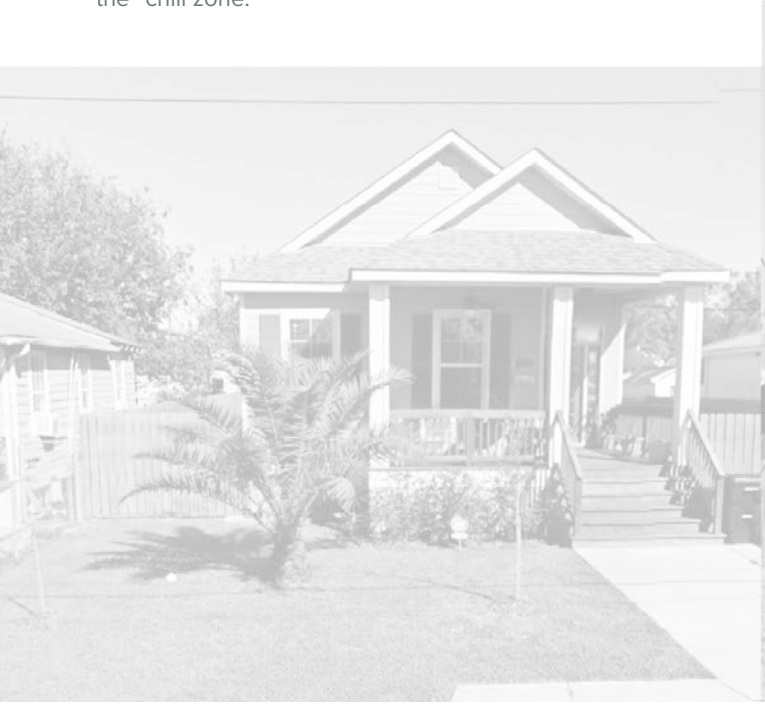
The shop launched its operations after Katrina—when its founders collected bikes and bike parts abandoned around the city to restore into new bikes to give and sell cheap to those who needed and wanted them. As donations of bike parts grew, RUBARB moved into its current location, a shotgun-shaped building made of concrete block. While a large part of the shop's mission centers around teaching and equipping people to repair their own bikes, The rest of RUBARB's work focuses on engaging the local community, particularly the neighborhood youth.



RUBARB IS A SPOT FOR BIKE REPAIR, HEALTHY SNACKS, FIELD TRIPS AND SKILL BUILDING

New Orleans' Upper 9th Ward neighborhood provides few after-school, recreational, and skill-building opportunities for neighborhood youth. RUBARB is a community bike shop helping to fill that gap with dynamic programming run out of a small workshop on the corner of Piety and N. Tonti St. Open since 2006, RUBARB's mission has been shaped by the dual role they play both as a community space and a bike shop. Their services include bike building, repair, and maintenance, healthy snacks, educational workshops, and related field trips.

RUBARB's interior is playful and completely home-made, with brightly painted walls, recycled crates and shelves for storage, and hand-painted labels and signs for everything, giving the space an extra welcoming feel. Art pieces such as a Mardi-Gras-bead chandelier and paintings by the kids and local artists adorn the space; photos of beaming kids at parties and field trips hang over the side-door in the "chill zone."

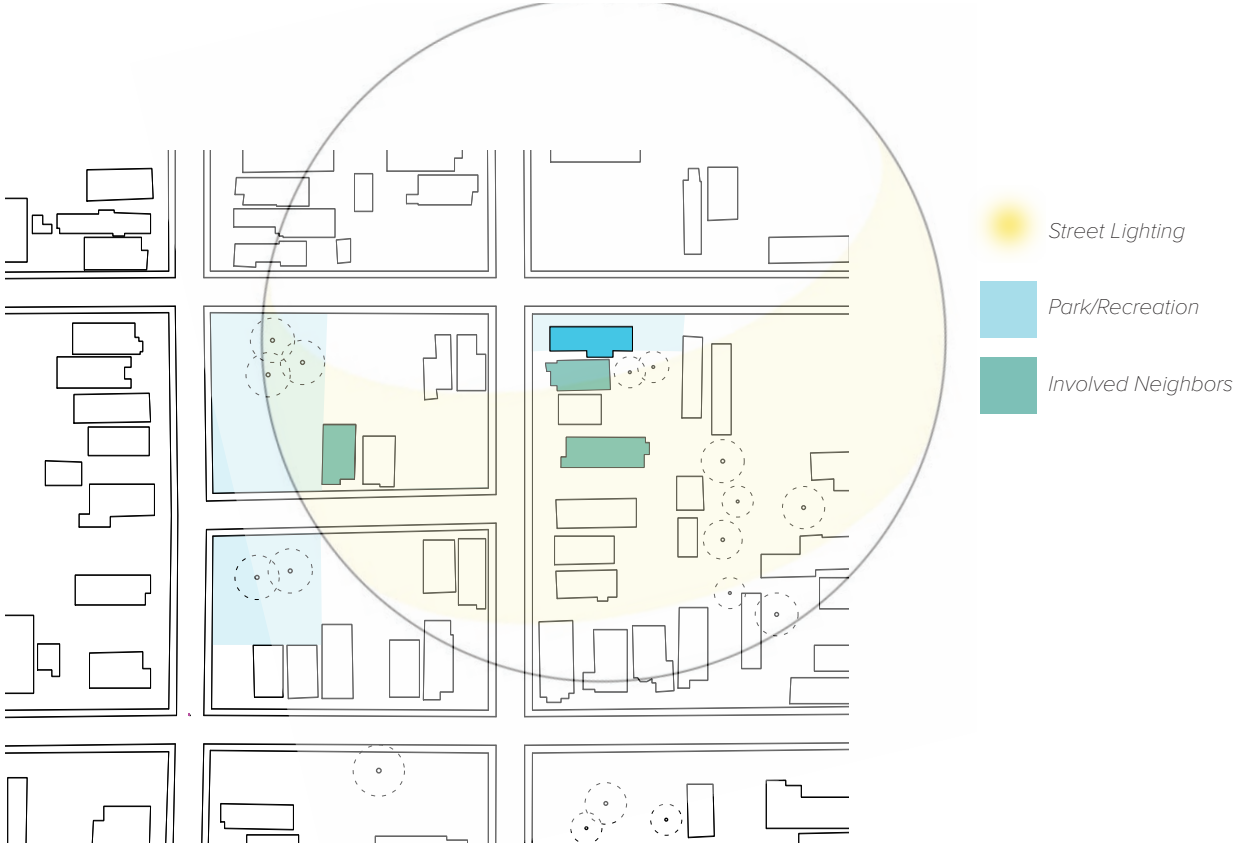


BIKING IN NOLA

Affordability, accessibility, style, necessity, environmental responsibility, tricked out carnival transportation, work commuting, flat land joy riding.

The reasons people ride bikes in New Orleans are varied and defy stereotype. Keeping biking affordable, RUBARB provides a community bike shop that is open to all, for bike building and maintenance. With a sliding scale of services and volunteer workers,

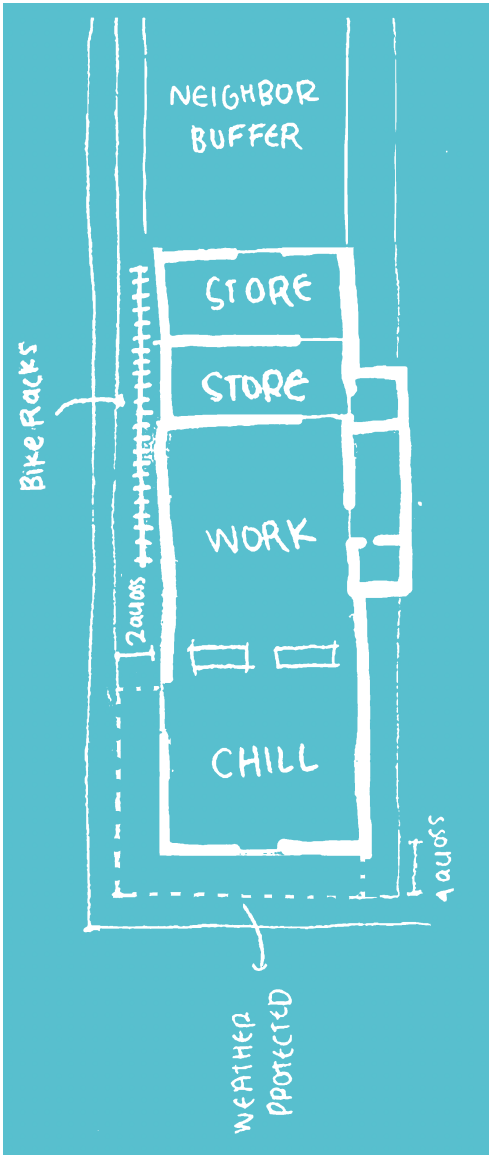
RUBARB works to ensure that everyone who wants to bike can.

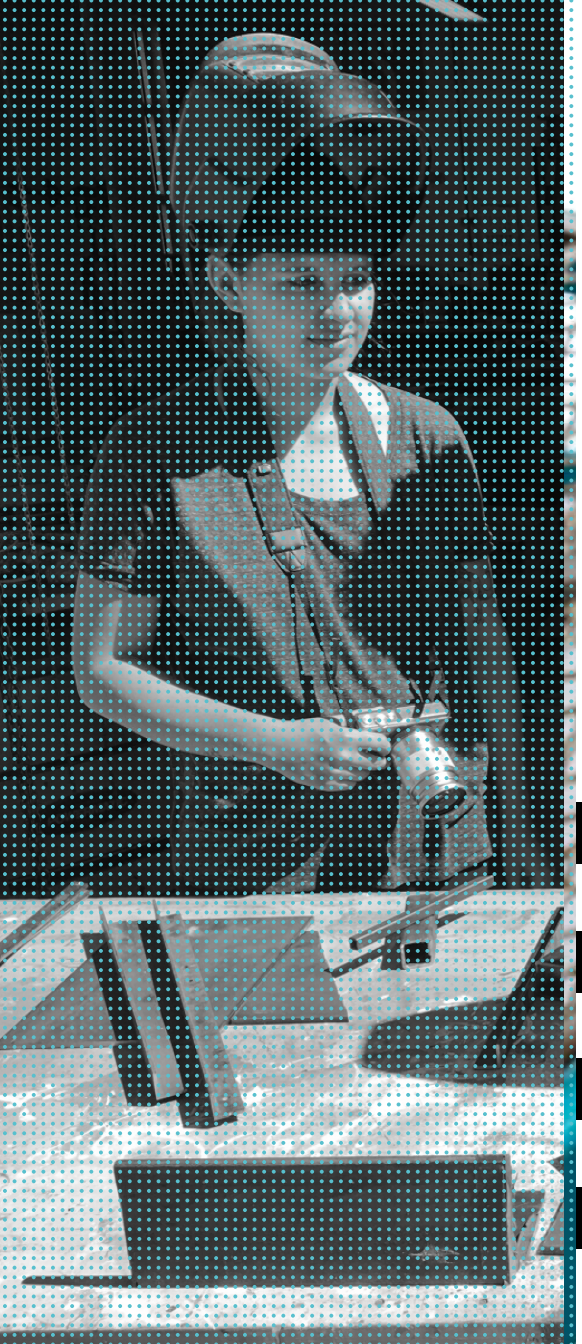

Street Lighting
Park/Recreation
Involved Neighbors

SITE ANALYSIS

The project team's early process included observing, analyzing, and understanding the project site. Collectively the class gathered quantitative and qualitative information about the physical site, its visitors, neighbors, and neighborhood. Much of the analysis and observation occurred while volunteering at the bike shop where the design team gained an understanding about how RUBARB functions on its block, and in the broader neighborhood context. Recording not only dimensions of the site but nearby greenspace, gathering spots, patterns of shadow and night-time lighting as well as additional youth resources created a layered baseline understanding of how this one bike shop is woven into the broader neighborhood and the daily lives of neighbors, staff, and users in the RUBARB community. Several neighbors were supportive of the project and the bike shop, lending their time, expertise, labor, and opinions to the design and construction of the project.

The existing bike shop's interior was divided into three parts: 1) the "productivity zone," which is full of recycled tires, seats, chains, frame bits, cables, nuts, bolts 2) the smaller "chill zone," with tables, chairs, games, books, and art for kids to hang out and pass the time. 3) storage. Separating the active zones is a front desk and tire-changing station.





PROCESS

ENGAGEMENT

EXPLORATION

DESIGN PROPOSALS

FINAL SCHEME

ENGAGEMENT

At Small Center we use the design process as a powerful coalition building tool. Through this process we prove that design excellence and engagement are not mutually exclusive and shift conventions around who architects serve and what they work on. A key piece of our process includes engagement with stakeholders, allies, staff, neighbors, and as many of the project's community members as possible to shape the design work and strengthen the organization's network at a moment of change.

With RUBARB, our engagement took the form of volunteer days on site, initial scoping exercises and interactive activities with neighbors in the site's outdoor spaces. As the project narrowed in scope engagement took the form of reviews, prototype feedback, and volunteer night input sessions.

Project goals:

> Create a design process that encourages ownership and respect of the space

> Design within RUBARB's established reclaimed/reuse aesthetic

> Improve functionality of the space

The main design objective was to create an inviting after school hangout space for the neighborhood's youth and to create a positive link between the shop's activities to the surrounding community.

EXPLORATION

In the first few weeks of studio the design team researched projects of similar scale, function, and aesthetic goals as RUBARB's. The team heard from guest speakers and peers who informed their understanding of the design build process.

As students gained skills and experience in woodwork and welding their early design investigations included representations of the site as well as functional speculations of bike part assemblies. The experiments gave students the chance to play with materials and connections, and to understand more fully the logic of bicycle design's structure and function.

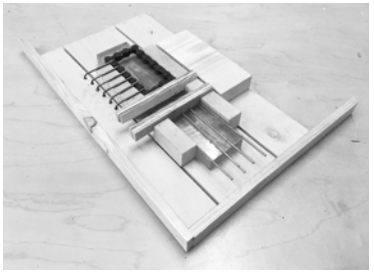
Building on precedent knowledge and material experimentation the design team proposed early ideas and concepts to cyclists, volunteers, and neighbors that make up RUBARB's community. Teams were investigating strategies of modular construction, material reuse, and combining and expanding existing shop components to meet the project goals. Feedback from on-site reviews was used to shape the iterative design process as the scheme went from many ideas down to a few final designs driven by teams of 3-4 students. Each team built one-to-one prototypes of components of their design to explore scale, material options, and connections, and to further refine their schemes.

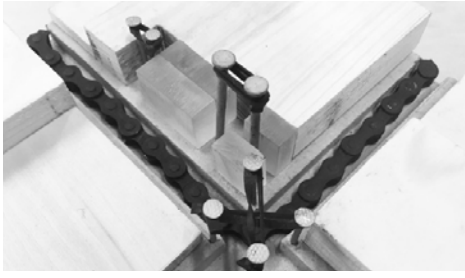
READING LIST ??!!!

Top images from left to right: photocollage of a Lebbius Wood drawing on the project site, Pangolin Gridshell structure by University of Arizona, lecture by Coleman Coker of Gulf Coast DesignLab
All other images of and by the Small Center design team.

Research

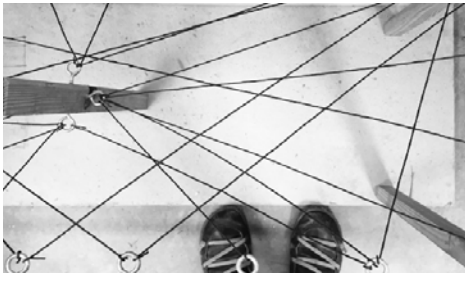
Experimentation





Investigations

Prototyping



DESIGN PROPOSALS

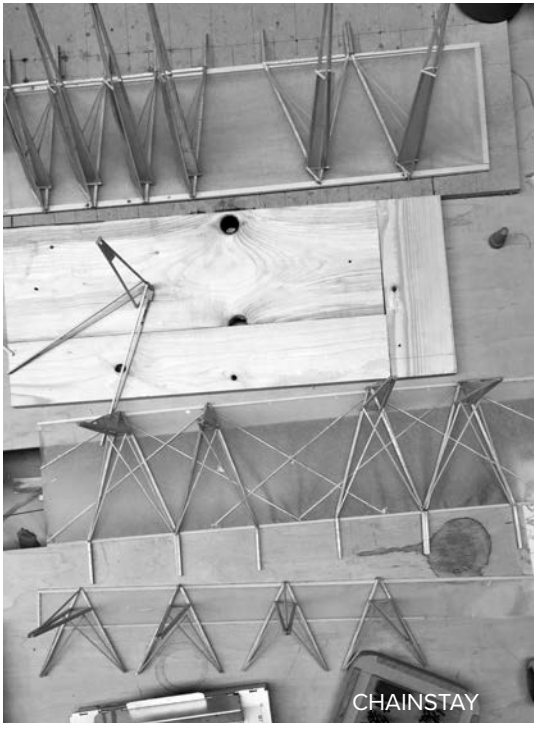
Students began design proposals with individual ideas and areas of investigation and converged into larger teams with each step in the design and review process. The final three areas of investigation into structural and formal proposals fell under the following themes:

RIDE Emphasizing the rider, not the bike, this team looked at the experience of bike riding as generative to the form and structure of a front porch. The canopy supports worked to direct water, protect from direct sun, and suggest to newcomers the purpose of the shop beyond.

SPOKE Exploring the delicate and dynamic structure of bike wheels, this team investigated a spoke like canopy with a structural logic that relied on angles and an aggregation of smaller components to form a welcoming canopy. Overhead structure and logic was repeated below to form a seating area.

CHAINSTAY Focusing on triangular and fixed bike frame components, this team investigated repetitive angular combinations to form structural columns. Growing out of an original intention to upcycle construction materials this team embedded ideas of screening and seating into the column pieces.

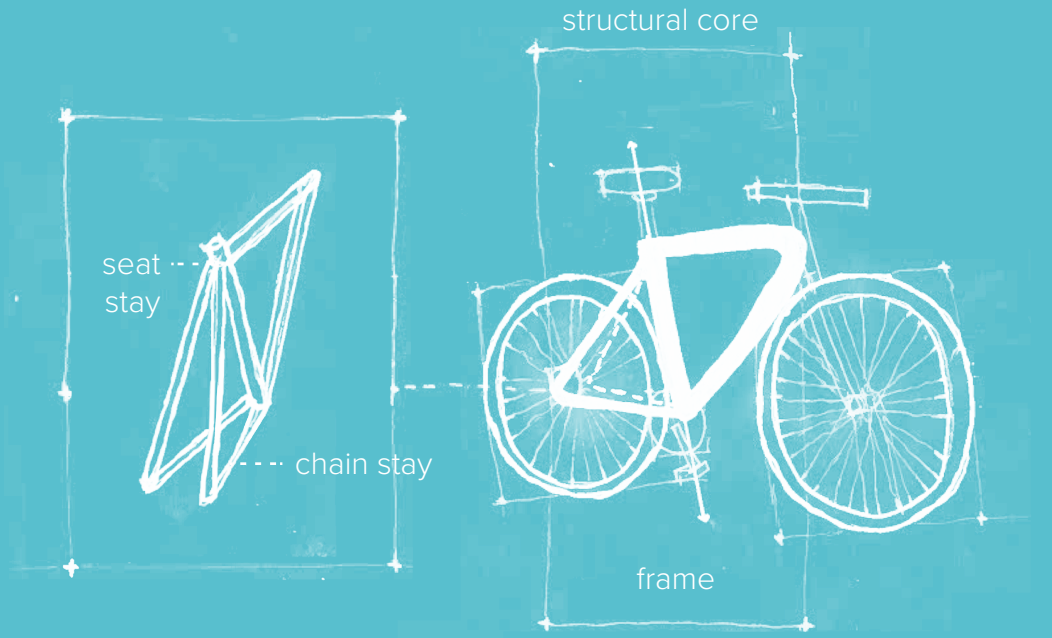
RIDE

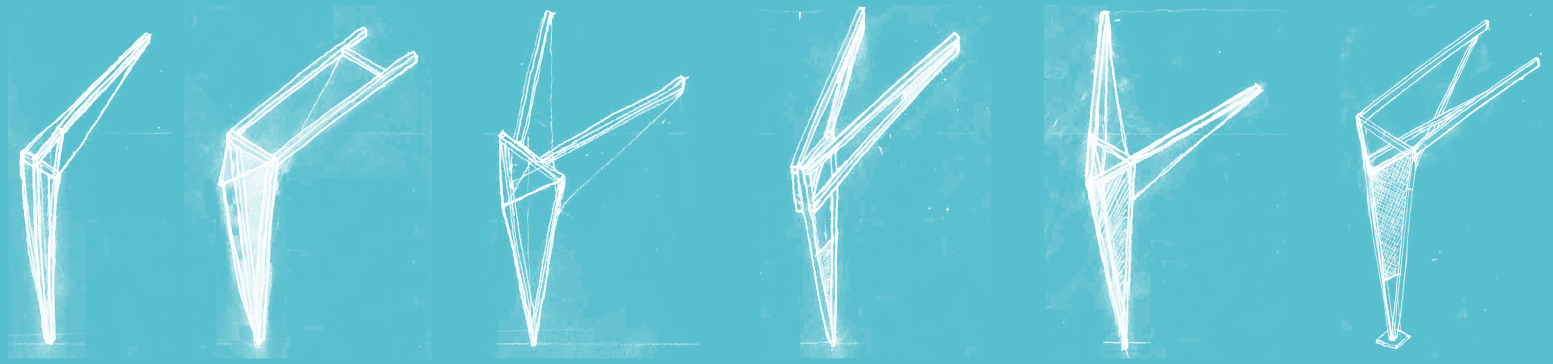


CHAINSTAY

SPOKE

EFFORTS TO COMBINE STRUCTURAL LOGICS





column evolution

FINAL SCHEME

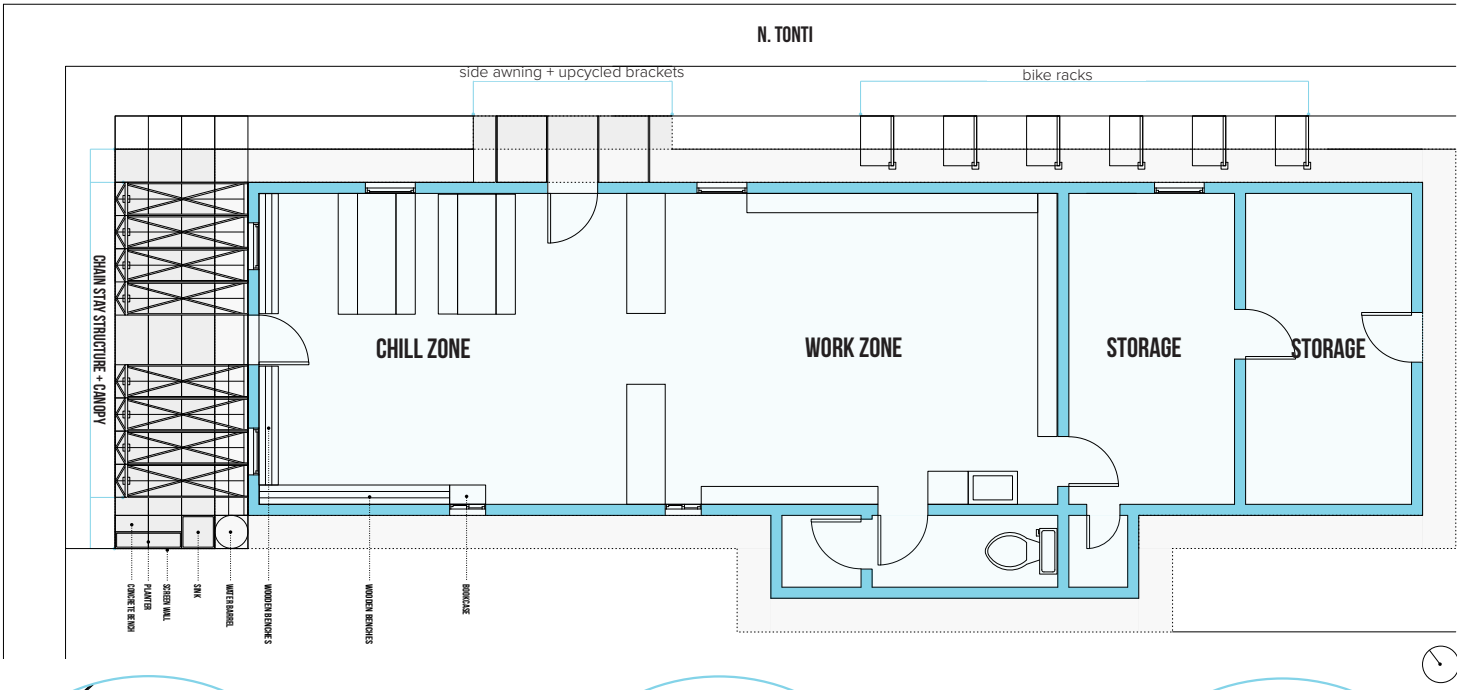
CONCEPT The final scheme borrows bike frame logic to form a series of structural columns that support and frame the front porch. The column design evolved from early sketches of the seat-stay and chain-stay logic of a bike frame. The resulting combination of steel tubes forms an inviting space that suggests the program of RUBARB's building without being literal in its expression.

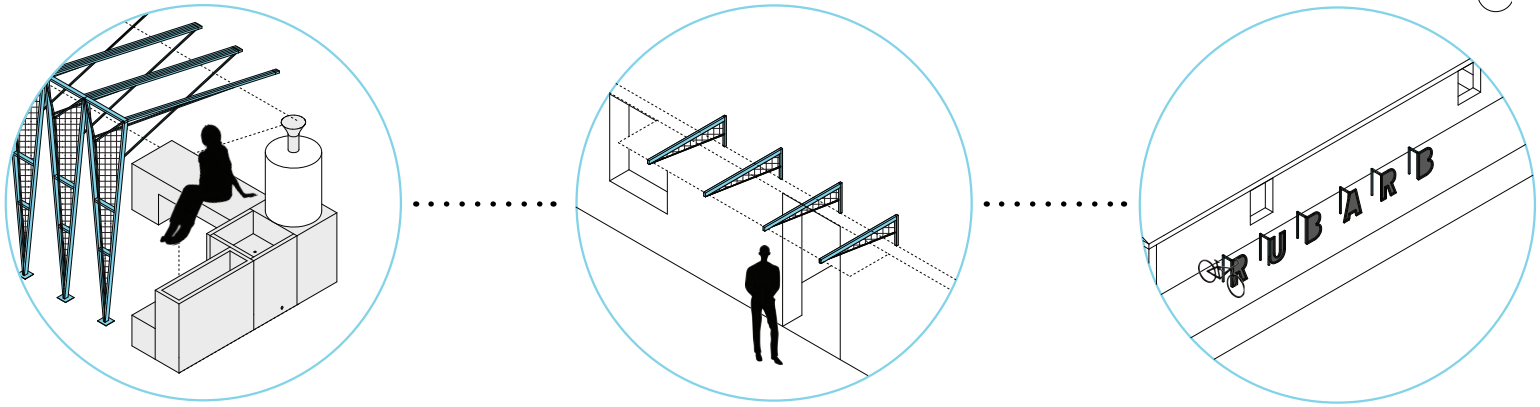
The space framed by the columns includes seating and rainwater collection which feeds a raised planter on the back of the bench. The space serves as a welcoming entry and a shaded outdoor extension of the chill zone and a space for RUBARB to further their youth extracurricular initiatives.

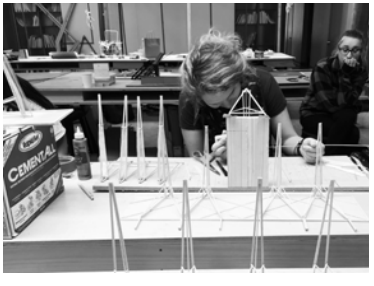
The roof is made of polycarbonate sheets to protect the porch from rain yet allow light to filter through. The resulting canopy is a layered arrangement of steel, screen, and polycarbonate which expand the modest space and create shadow patterns that change and animate the space throughout the day. Furthermore, the columns are clad in a series of reclaimed steel and aluminum panels that will weather and rust over time.

EXPANSION With a structural logic established in the porch columns and roof, the design team expanded the scope of the project to help RUBARB realize their goals for the site. The side door gained an expanded awning to protect those waiting for open shop hours from the rain, and a bike rack that spells out RUBARB was added to the side yard.

Inside the bike shop, the Chill Zone was redesigned to include benches and bookshelves that support after school homework, arts and crafts, and additional programming that happens during open hours.


N. TONTI
side awning + upcycled brackets
bike racks
PIETY ST.
CHAIN STAY STRUCTURE + CANOPY
CHILL ZONE
WORK ZONE
STORAGE
STORAGE
CONCRETE BENCH
PLANTER
SCREEN WALL
SINK
WATER BARREL
WOODEN BENCHES
WOODEN BENCHES
BOOKCASE


RUBAIRB


CEMENTAL

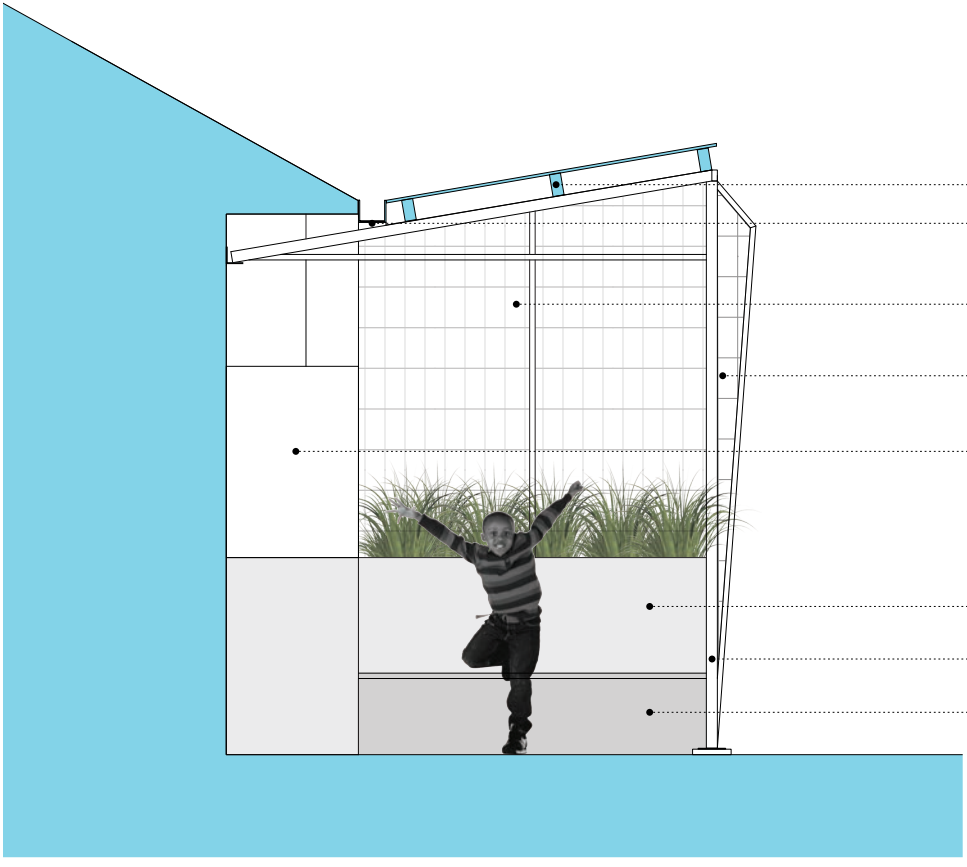

TULANE

Symbiosis

The structural supports for the porch take rhythm, scale, and placement from the nearby residential front porches but add a new formal language that references the work and spirit of RUBARB. The eight columns reach over to structure the shade canopy and grab hold of the existing building for support. The triangle formed as the column reaches back to the building provides the roof slope necessary to collect rainwater in a gutter that runs between the new and existing structure.

Though redundant, the repetitive structure and triangular bracing add shadow, rhythm, and an expanded sense of space to the outside chill zone. The street facing facets of the columns are clad in expanded metal of various sizes to provide additional shading from the harsh afternoon light. Those expanded metal pieces were salvaged from a local machine shop and re-purposed uncoated to allow the material to wear naturally and add to the rusted aesthetic of the bike shop.

The large concrete benches under the canopy provides a sturdy and shaded spot to rest. The RUBARB volunteers wanted a space that was useful even when the bike shop was closed. To add to the upcycled and playful aesthetic, the concrete bench includes recycled glass bottle pieces.



DOUBLE LAYERED CANOPY SYSTEM
CENTRAL GUTTER

SCREEN WALL//SUNSHADE

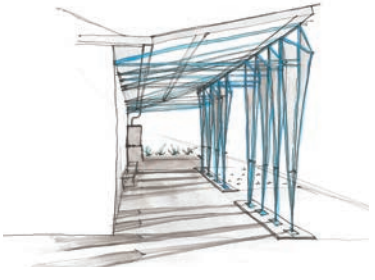
UP-CYCLED INFILL PANEL//SUNSHADE

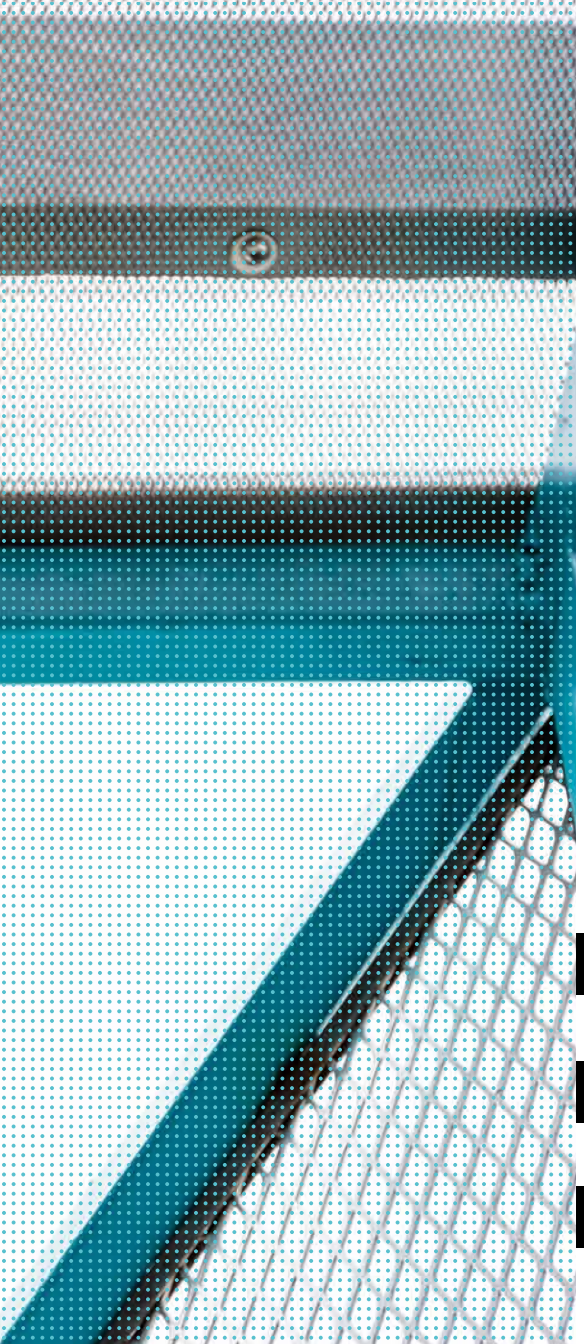
RAINWATER COLLECTION

PLANTER

CHAIN STAY COLUMN

CONCRETE KIDS BENCH





IMPLEMENTATIO

CONSTRUCTION

BUILT PROJECT

TEAM


ON


KOBALT


NEED/WANT
SOMETHING
PAINTED?
704-277-7698

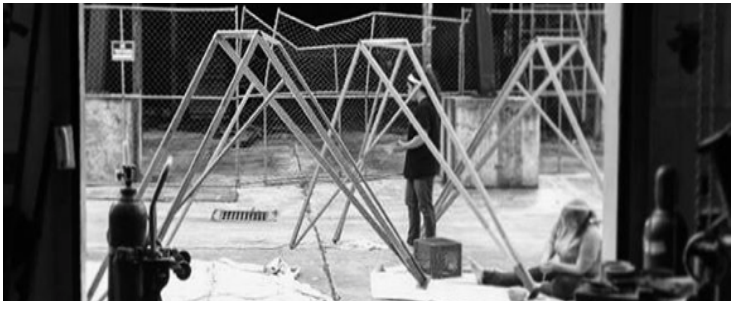

BIKES

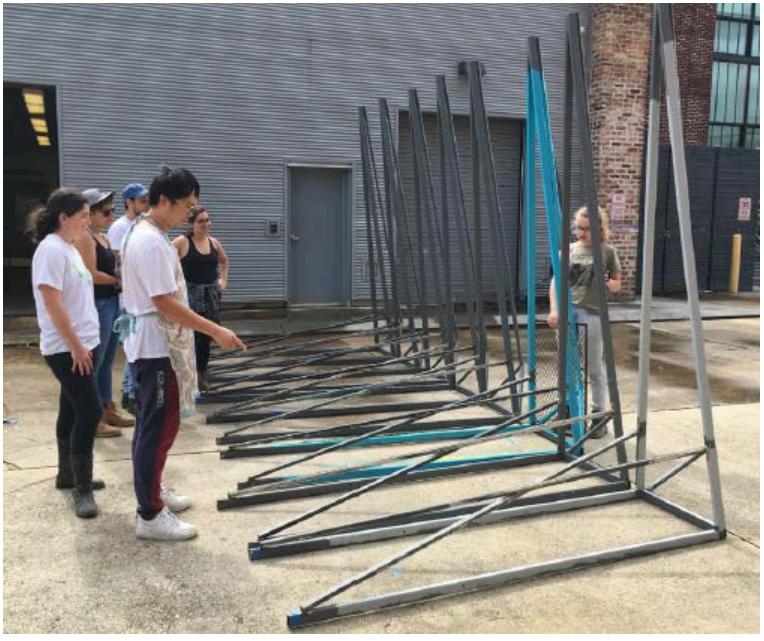
CONSTRUCTION

The fabrication phase of Small Center projects is an intensive 7 weeks of shop based prefabrication and on-site preparation and installation.

Once the RUBARB community and a structural engineer gave final approvals on the design, the team purchased materials, built jigs, welded, problem solved, and jackhammered their way to a final project. Recognizing RUBARB's desire for upcycled materials, the team scoured the New Orleans area for reused rain barrels and shade screens, and worked to reduce building waste. Concrete removed from the original slab was re-purposed as aggregate and gravel underlay in the new foundation and slab.

To execute the project students broke into a site team and a shop team with demolition and foundation work happening on site while structural and interior components were fabricated in the Construction Zone and transported to site for installation. This strategy ensured that the bike shop was open as much as possible throughout the intensive process.





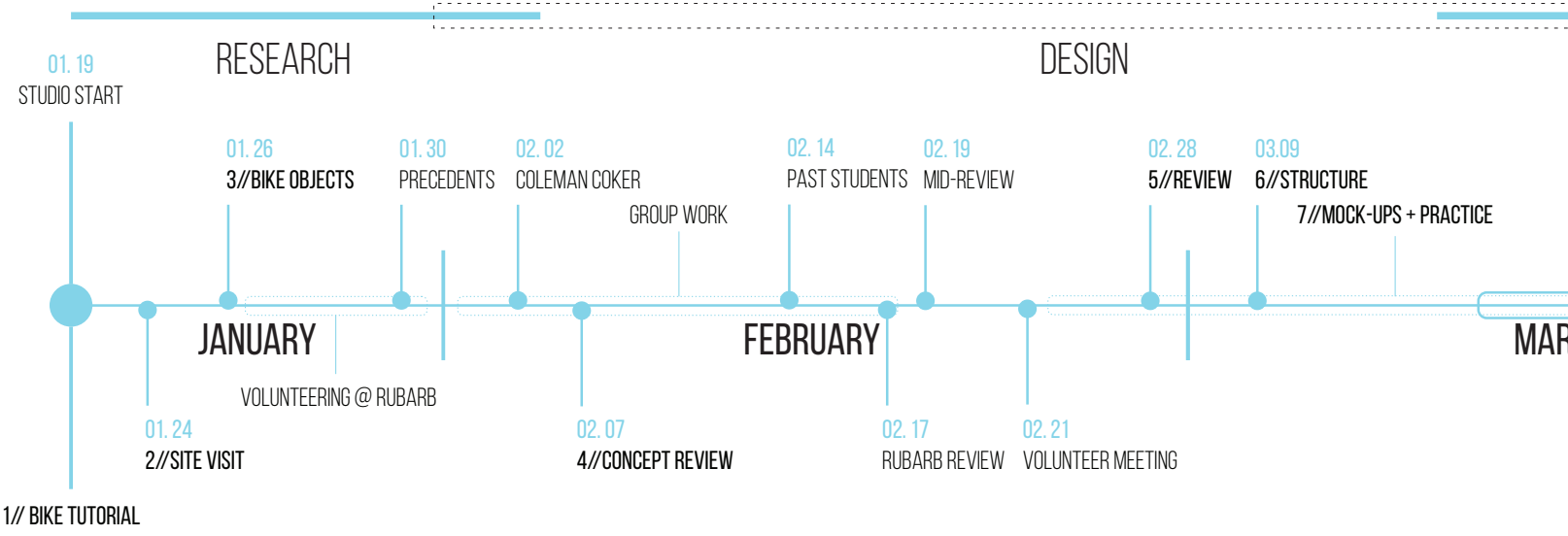

BIKE SHOP


R5
R7
R6
R4
R3
R2


RUBARB

Timeline

Small Center studio-based design build projects take 15 weeks to complete from the time students first interview the partner to when the project is complete. Below is the timeline for RUBARB's shade structure with moments of engagement noted below the blue line and design assignments and stages indicated above the blue line.



BUILD

RCH

APRIL

MAY

03. 26
8//FOUNDATION PART 1

9//COLUMN CONSTRUCTION

04. 09
FOUNDATION PART 2

04. 11
LEDGER INSTALL

04. 13
10//COLUMN INSTALL

11//FURNITURE + BIKE RACKS + INFILL

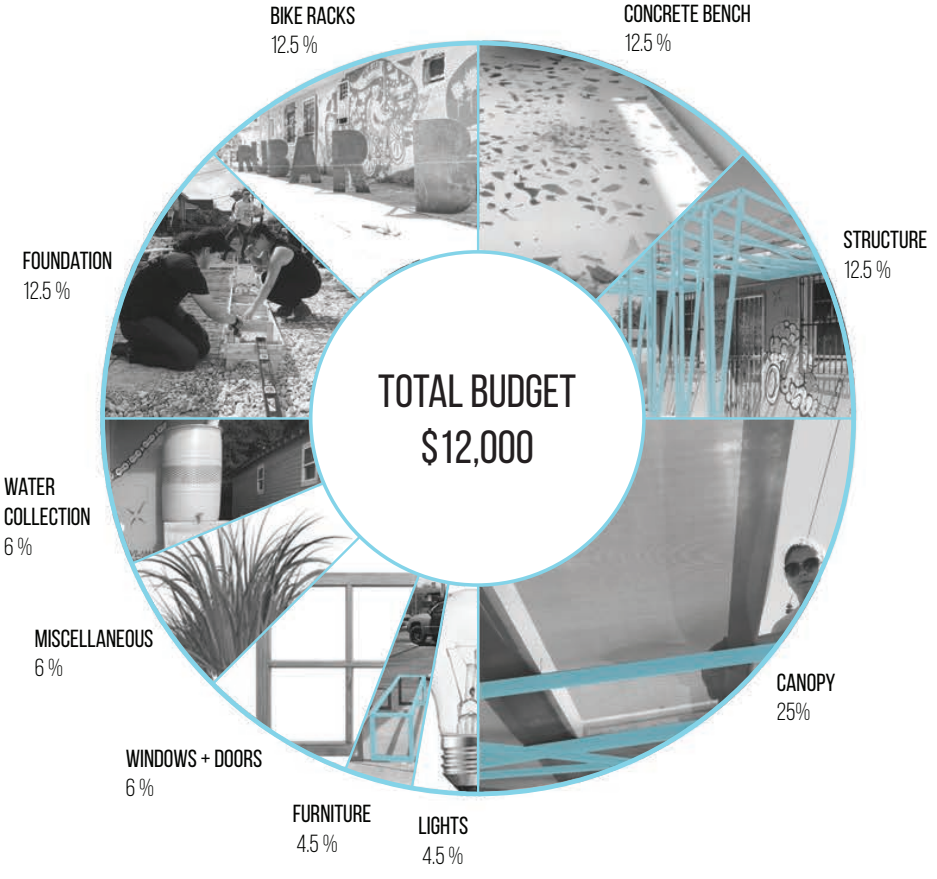
12//CANOPY CONSTRUCTION + FURNITURE INSTALL

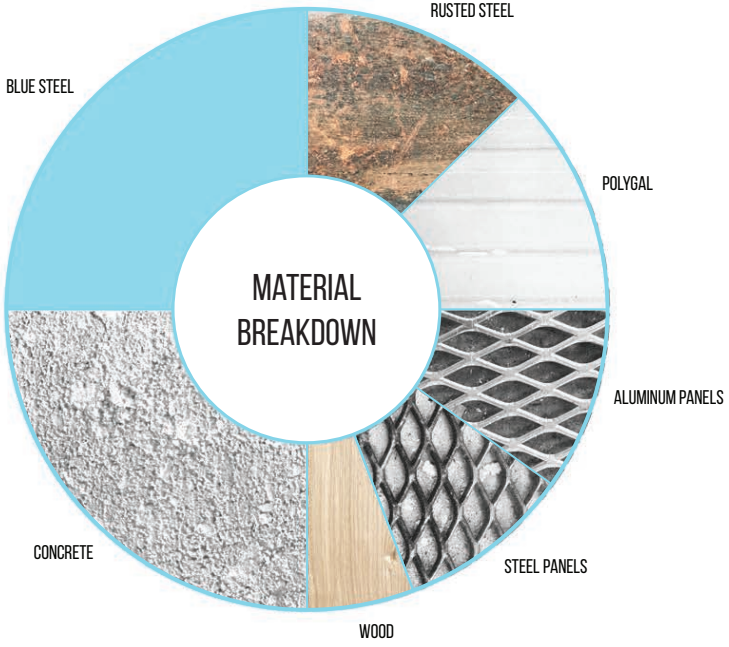
05.02
FINAL REVIEW

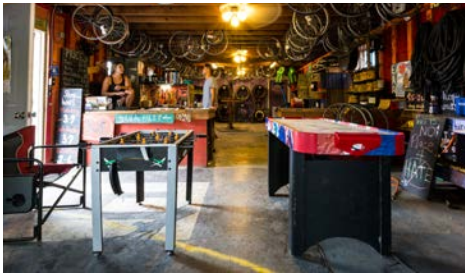
05. 09
STUDIO END

CELEBRATION

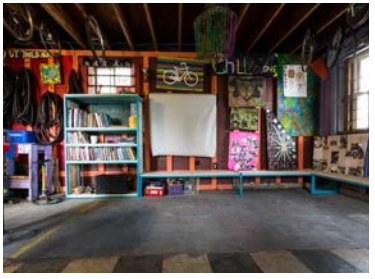
Construction Breakdown



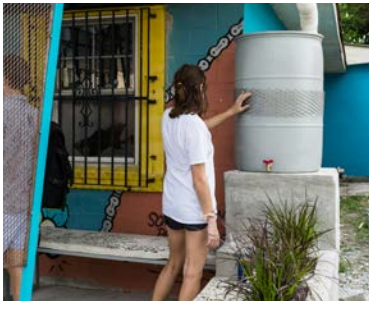

RUSTED STEEL
BLUE STEEL
POLYGAL
MATERIAL
BREAKDOWN
ALUMINUM PANELS
CONCRETE
STEEL PANELS
WOOD




MONDAY
3-7
WEDNESDAY
3-7
SATURDAY
2-6



BUILT PROJECT



Opening Day photos by Micahel Wong

Photo by Michael Wong (left), Paula Birch (above)

TEAM

RUBARB

Liz Lichtman, Virginia Brisley, Woody Joseph
David Meza, Christopher Martin, Emily Zastrow

SMALL CENTER

Emilie Taylor Welty, Design Lead + Studio Instructor, Nick Jenisch, Project Manager
+ Ann Yoachim, Rashidah Williams, Sue Mobley, and Donn Peabody
Student Design-Builders: Abigail Allshouse, Zach Banks, Elisa Bernstein
Maddy Capezzoli, Allison Conn, Alyson Demskie, Andres Hartman Blau, Leo Liu,
Kristen McDaniel, Ana Chu Noriega, Erica Perine, Sarah Rivard, Isa Zannier Trejo

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Jenny Snape, Batture Engineering,
Coleman Coker, Gulf Coast DesignLab
Bikeworks at the Youth Empowerment Project
Michael Wong Photography
Mr. Lloyd, Ms. Johnson

CRITICS

Jose Cotto, Marianne Desmarais, William Doran
Charles Jones, Marty McKelven, Adam Modesitt
Katie Nguyen, Cordula Roser, Seth Welty

TULANE SCHOOL OF ARCHITECTURE

THE ALBERT AND TINA SMALL CENTER FOR COLLABORATIVE DESIGN

Johnson Controls