





designmatters

• Art Center College of Design

hosted bγ: Environmental Design at ACCD



ART CENTER COLLEGE OF DESIGN STUDENTS AND FAMILIES LIVING IN THE INFORMAL SETTLEMENT OF ALTOS DEL PINO, BOGOTÁ, COLOMBIA CO-CREATE INNOVATIVE DESIGN SOLUTIONS TO OVERCOME WATER POVERTY AND MAKE A REAL WORLD IMPACT.



#### DESIGN INNOVATION WITH THE BASE OF THE PYRAMID

driven by field research, trans-disciplinary teams design innovative water solutions and create full-scale working prototypes, to be tested by the community, and implemented with NGO, governmental, and industry partners. SAFE AGUA COLOMBIA builds upon successful and award-winning 2011 SAFE AGUA PERÚ and 2009 CHILE projects.



#### **OBJECTIVE**

how can we work with families living in COLOMBIA's informal settlements to design and develop solutions — products, systems, and services — around water, to help overcome the cycle of poverty?



#### **DESIGN GOALS**

co-create radically affordable products  $\boldsymbol{\delta}$  systems with base of the pyramid families.

seek sustainable, scalable, real-world implementation.

address specific problems, with both quantitative benefits (illness reduction, water conservation, increased time for self-improvement, opportunities to generate income) qualitative impacts (sense of dignity, aspirations).

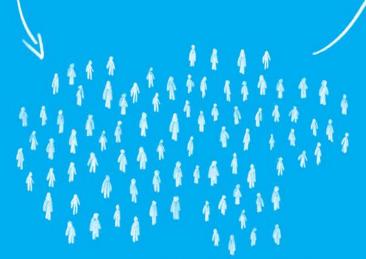
design solutions at the scales of: products for individuals and households; systems, spaces, and services for the community and beyond.

### WATER POYERTY ON



there are TBILLION people in the world!

that is 1 in



768 MILLION of us lack access to safe water

## A GLOBAL SCALE

a people



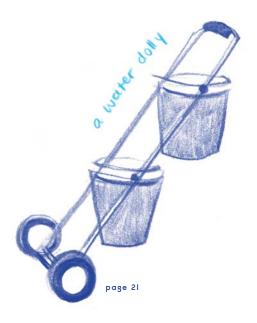
(this is more than 3 times the population in the U.S.)

that is 15.7%.)
of total population



meaning...
there is a lor to be done!







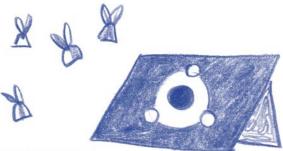


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## SOLUTIONS







empowering women through micro-entrepreneurship

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#### PREPARATION IN LA

exercise in EMPATHY!

Students live a day without running water



learning about methodology cards



#### FIELD RESEARCH IN COLOMBIA

- 2 weeks
- 4 instructors
- 12 stydents 10+ families from

Altor del Pino



the studio

brainstorming session



MIDTERM PRESENTATIONS

THINKIN 6 THROUGH MAKING

showing projects incontext





first prototype iterations

PREPARING FOR COLOMBIA

Isaac, Michael and Javier go back to Altordel Pino for a days to test prototypes





FIELD TESTING

getting feed back from families to refine prototypes



Studio class at Artienter tues & fri 2-6pm



analyzing Insights and Challenges





SOCIAL ENTREPRENEURSHIP BY ADLAI WERTMAN DEFINING PROBLEM AND
MISSION STATEMENT



The R.O.I of a social entrepreneur is on the IMPACT

"Creating sustainable change so when we leave, people's lives are still better"



learning about nicro and macro trends

ITERATING AND REFINING PROTOTYPES

elle

SOCIAL BUSINESS STRATEGY

JAMES BARLOW LECTURES ON STRATEGY MAPPING ADLAI WERTMAN ON 'DOING BYSINE'S WITH THE POOR'









FINAL

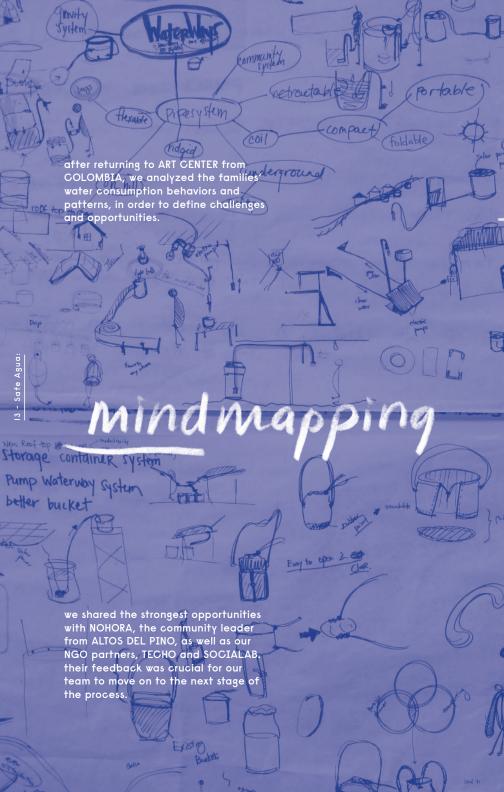
PRESENTATIONS

















# Thinking through the mission is clear the further process.



prototyping is an iterative process: we created multiple versions and revisions to test design solutions.











## field testing

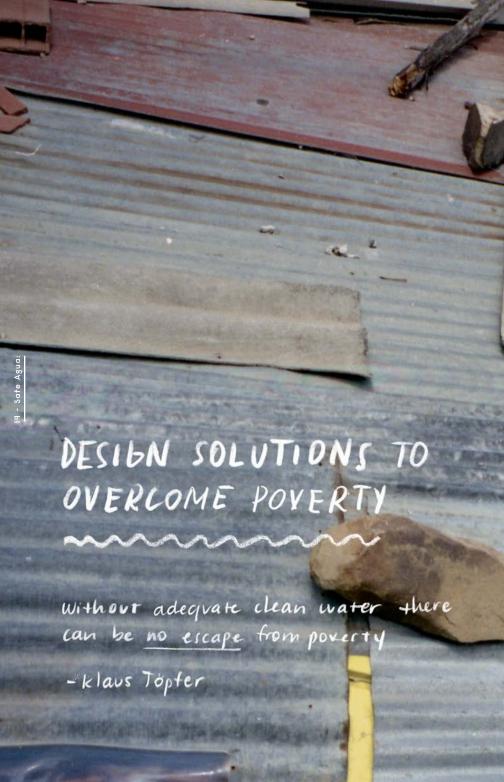
after eight weeks, members of the team returned to COLOMBIA for one week to test the prototypes with the community and NGO partners.

feedback from the families in ALTOS DEL PINO was crucial for our team to incubate and refine prototypes.











# Waterways: balde móvil

Kristina Jesena (GRAD ENV)
+ Shingo Mamiγa (PRD)



Inexpensive, lightweight, and easy-to-roll water dolly for the common 5 gallon bucket

#### **PROBLEM**

Without running water, hand-carrying water within the home and between homes is physically straining, time consuming, wasteful, and makes water prone to contamination.

#### **DESIGN SOLUTION**

Baldemóvil is an inexpensive, lightweight dolly that makes it easy to transport two common 5 gallon buckets, along with other heavy items, even when rolling on hilly terrain. this innovative product makes water accessibility within the domestic sphere more efficient, more sanitary, and less physically stressful.



## CalientaAmigo

Tianyi Sun (PRD) + Della Tosin (PRD) + Kevin Chang (PRD)



Warm, pressurized shower and water heating system

#### **PROBLEM**

Families prioritize warm showers for children, to help kids stay clean for school and prevent their kids from getting sick. Yet waiting for water to boil holds families hostage to a rigid routine, preventing them from growing beyond basic survival.

#### **DESIGN SOLUTION**

The CalientAmigo family of products offers a warm, pressurized shower for kids and adults, with secondary applications for cooking and washing clothes and dishes. The system incorporates a safe, portable electrical heating unit that warms water efficiently, along with the Corazón de Agua foot pump (initiated by Shingo Mamiya and Kristina Jesena) to afford pressurized, running water.



# Learning garden in altos del pino

Stefanie Dhillon (ENV)



Community learning garden for children

#### **PROBLEM**

The children of Altos del Pino are in need of educational tools to learn values and enhance their ability to focus. The community lacks safe green spaces for kids to play and explore.

#### **DESIGN SOLUTION**

The learning garden seeks to enrich the lives of the children of Altos del Pino using gardening as a means for education, building values, teaching responsibility, and strengthening focus. Located next to the TECHO community center, the garden design optimizes reclaimed materials and rainwater, to create a sustainable, fun, educational, natural space for the community's children.



## Tejo Conejo

Connie Bakshi (ENV)

+ Rudy Rummel (PRD)



Empowering women through micro-entrepreneurship

#### **PROBLEM**

The women of Altos del Pino are consistently present, well-networked, and more than eager to take an active part in lifting their families and communities out of poverty. However, a lack of tools, training, resources, and opportunity prevent them from doing so.

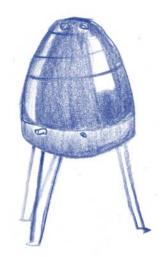
#### **DESIGN SOLUTION**

Tejo Conejo offers women opportunities to take an active part in lifting their families out of poverty, while creating social value for their communities. Women collaborate to produce Tejo Conejo, a highly engaging children's game inspired by the Colombian national sport of Tejo. The micro-entrepreneurship model cultivates market demand and develops infrastructure for successful sewing micro-factories, where women can also collectively care for their children.



# Community water exchange

Carolina Rodríguez (ILL) + Isaac Oaks (PRD)



Community water-sharing system

#### **PROBLEM**

While some families have water to spare, most families in Altos del Pino run out of water each week. El Comedor, a soup kitchen that provides inexpensive meals to 80 children daily, is no exception, and frequently runs out of water. How can we ensure a steady, safe water supply to keep this vital community resource thriving?

#### **DESIGN SOLUTION**

The Community Water Exchange provides safe, reliable drinking water for every child in the community, by ensuring El Comedor's water supply. The water dispenser, Papa, is the only water filtration vessel designed to support and empower locally-run establishments like El Comedor. The Exchange sustains itself through an entrepreneurial model that incentivizes families to share extra water, while engaging all community members to maintain Papa.



## The Team

#### **Project Leads:**

Mariana Amatullo David Mockarski Elisa Ruffino

Community Leader: Nohora Guerrero

TECHO Colombia: Daniel Quintero Marγam Tertel Lina Perez

Socialab: Ignacio Vidal Patricio Guzmán

Compartamos con Colombia: Francisco Noguera





#### Instructors:

Penny Herscovitch Dan Gottlieb Javier Palomares Stella Hernández Arden Stern Tim Kline

#### **Guest Speakers:**

Adlai Wertman James Barlow

#### Student teams:

Connie Bakshi Rudy Rummel

Isaac Oaks Carolina Rodriguez

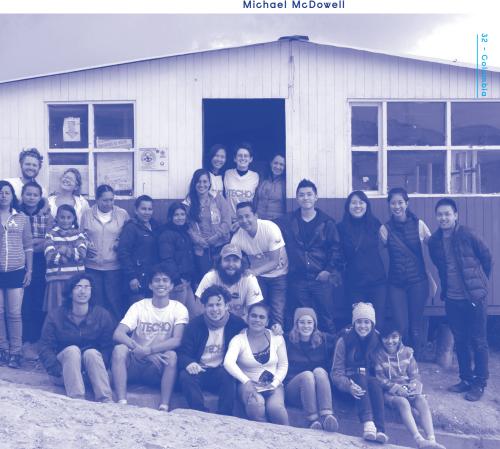
Shingo Mamiya Kristina Jesena

Kevin Chang Tianγi Sun Della Tosin

Stefanie Dhillon

#### Documentarian team:

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