

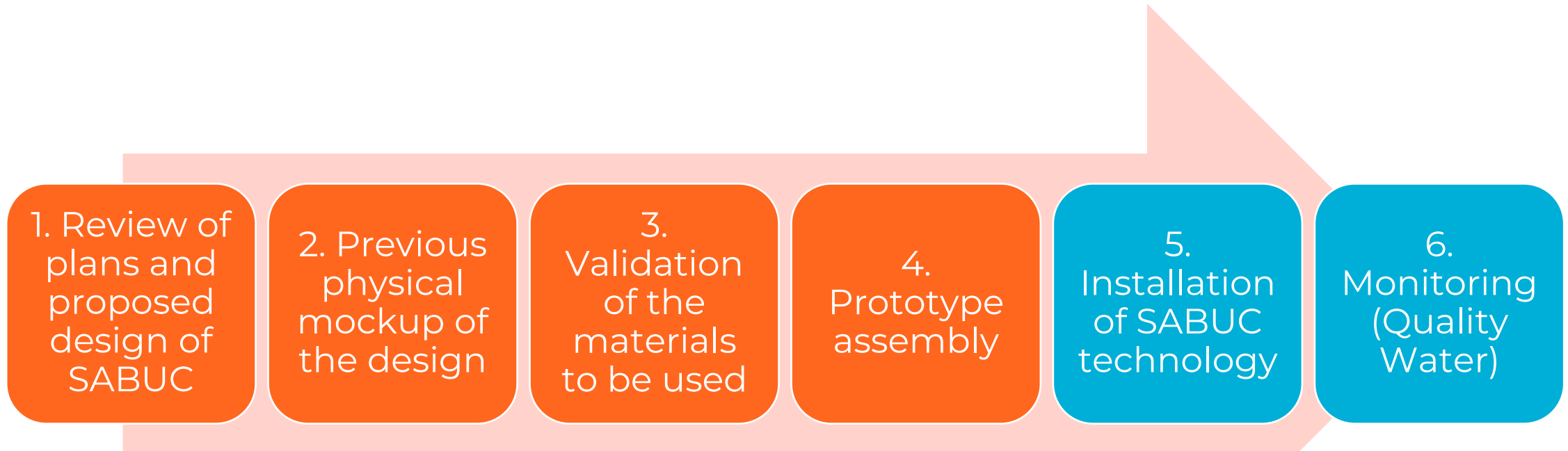


**Terwilliger Center for
Innovation in Shelter**



SABUC System

What part of the process are we in?



In Alliance with the Metropolitan Autonomous University, through the AgUAM Network and the UAM Research Department



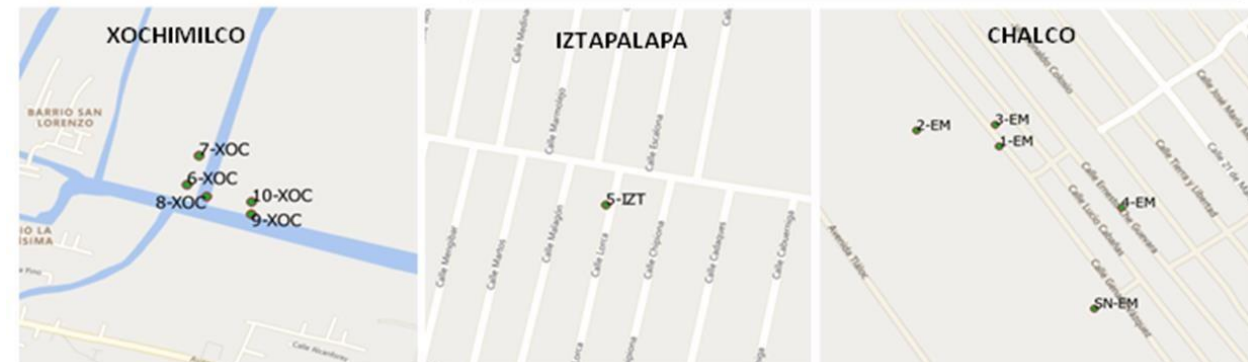
Where are we working?

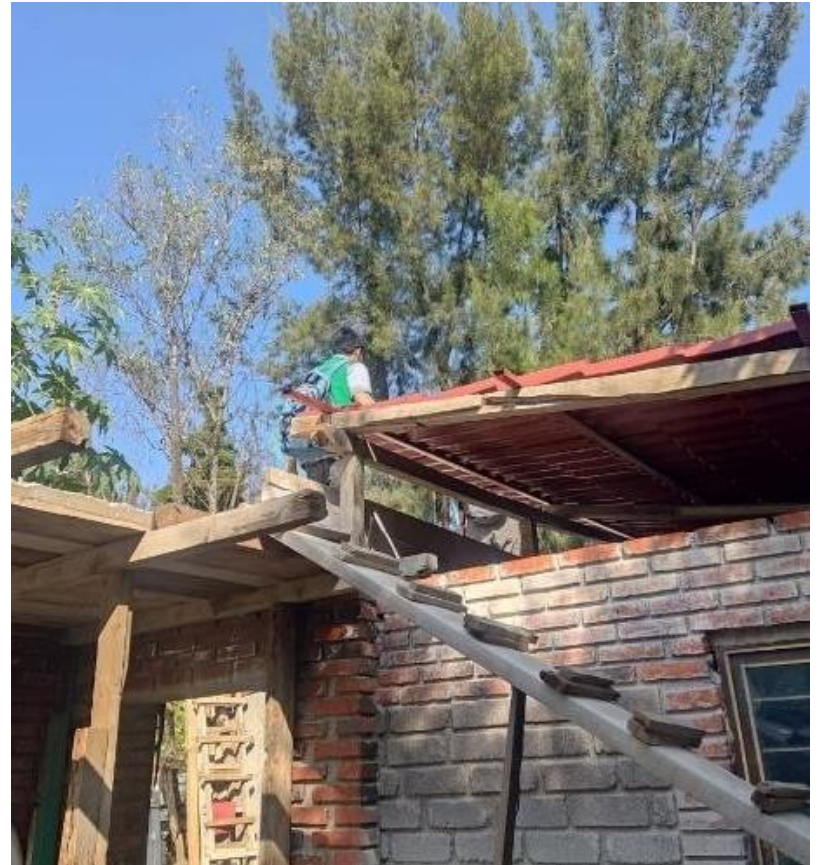
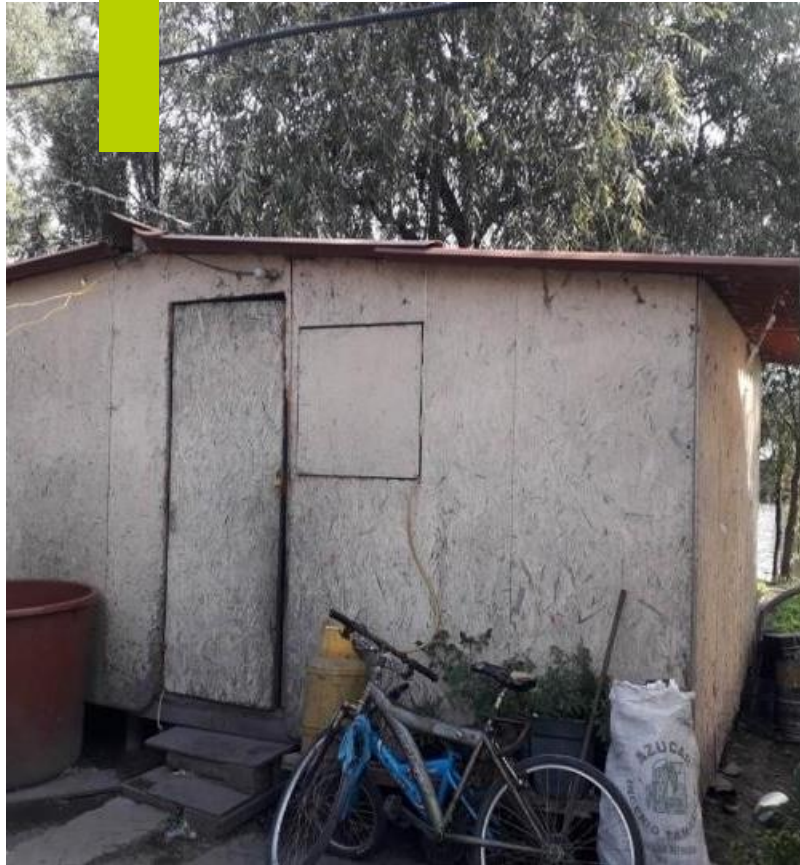
- The areas of Valle de Chalco, State of Mexico and Xochimilco, Mexico City were selected.
- They are areas with high poverty rates and that face shortages in water service. It is received by batch (every third or fourth day a week)
- 4 families in Valle de Chalco
- 1 family in Iztapalapa
- 5 families in Xochimilco



COLONIAS:

- 1-EM. Covadonga (C.P. 56607)
- 2-EM. Covadonga (C.P. 56607)
- 3-EM. Covadonga (C.P. 56607)
- 4-EM. Covadonga (C.P. 54435)
- SN-EM. Covadonga (C.P. 54435)
- 5-IZT. Cerro de la Estrella (C.P. 9860)
- 6-XOC. La Santísima (C.P. 16040)
- 7-XOC. La Santísima (C.P. 16040)
- 8-XOC. La Santísima (C.P. 16045)
- 9-XOC. Canal de apatlaco Aguilar (C.P. 16090)
- 10-XOC. Canal de apatlaco Aguilar (C.P. 16090)





Xochimilco

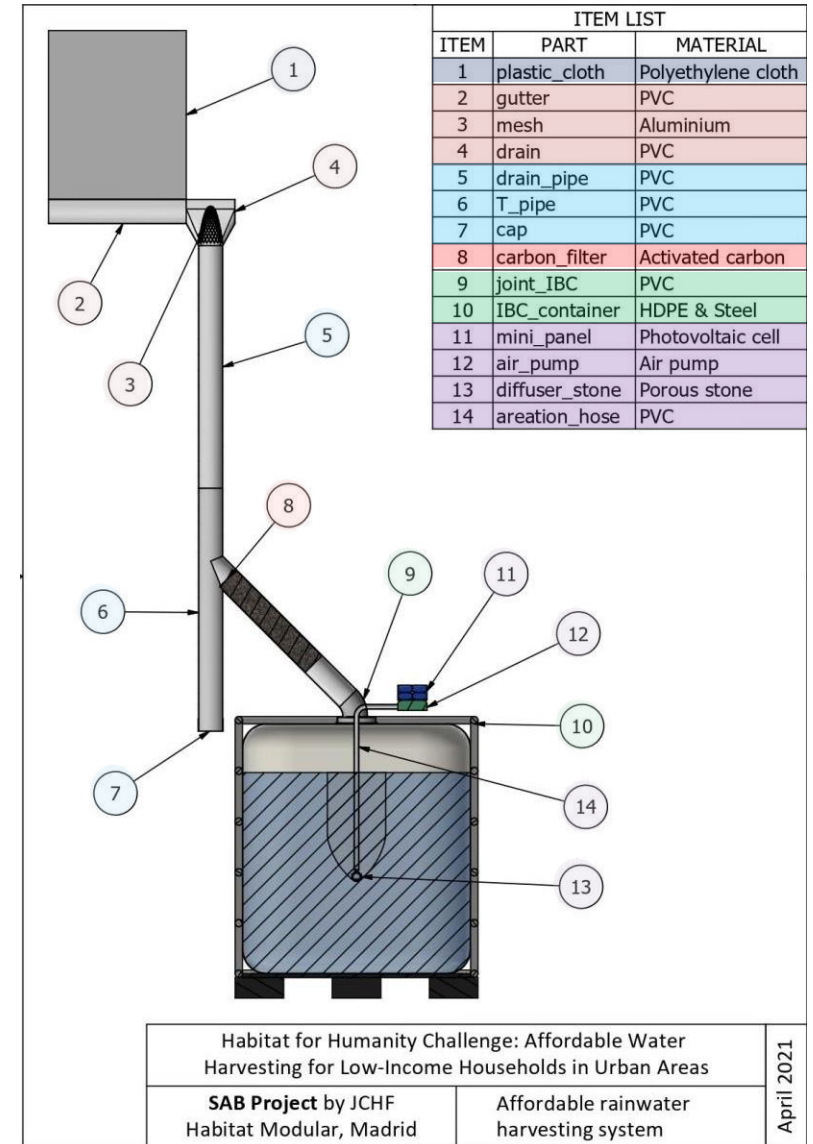


Valle de Chalco e Iztapalapa

How did we do with the original SABUC design?

The original design of SABUC did not consider specific functionalities for the operation of the system, this implied changes in the design to be able to install them.

- IBC to Water Tank Storage System (1,100 liters to 2,500 liters)
- Connection to solar panel for aeration pump and UV filter
- Adding Activated Carbon Filter
- Linking the pipes with the SABUC system
- Higher capacity aeration pump.
- Replacing Canvas with waterproofing when necessary
- The surface of the roofs are larger in homes in urban areas, more water can be captured.



Habitat for Humanity Challenge: Affordable Water Harvesting for Low-Income Households in Urban Areas

SAB Project by JCHF
Habitat Modular, Madrid

Affordable rainwater harvesting system

April 2021



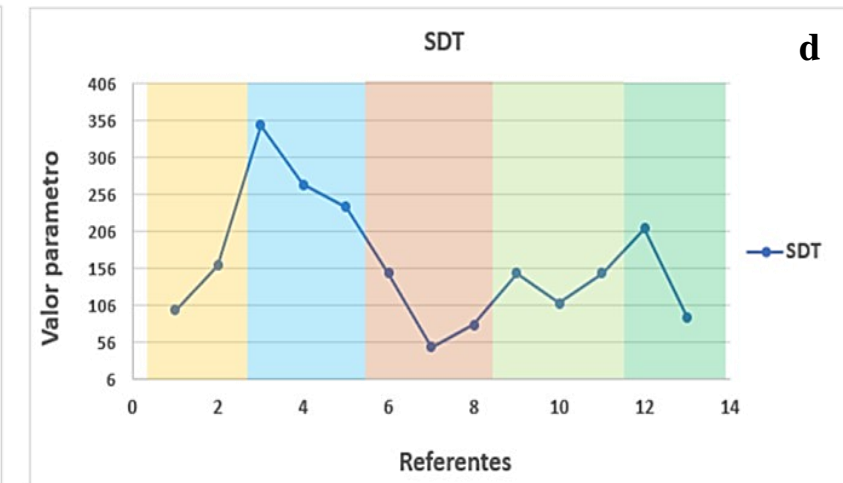
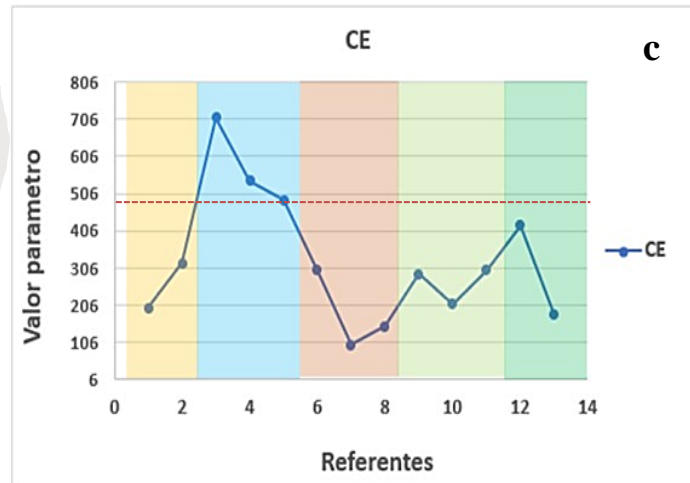
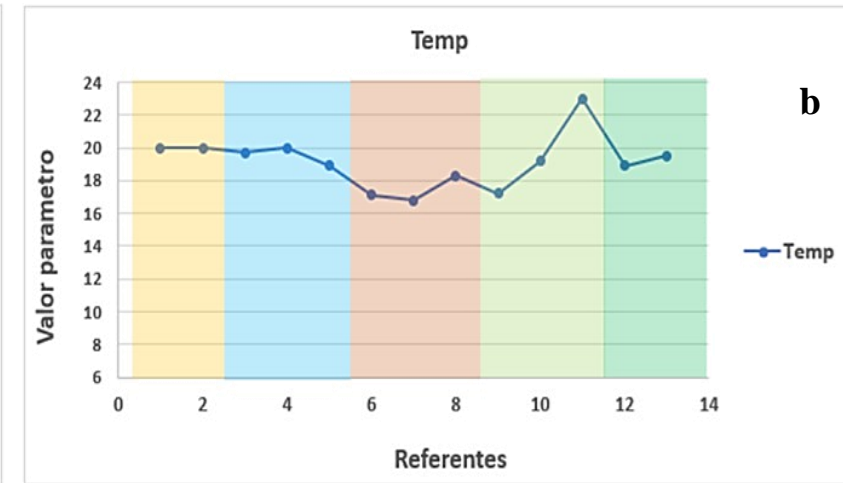
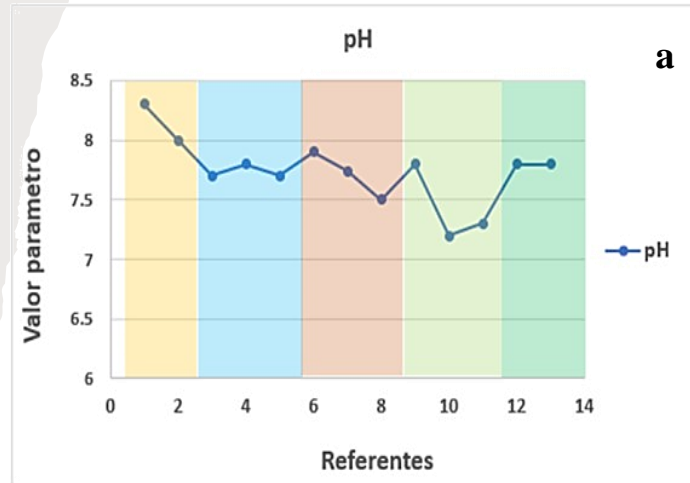
- 4 families have the complete system installed
- 2 families have 40% of the system installed (will be completed this week)
- 3 families will have the system installed the week of April 8
- 1 family rejected the system, we replaced it with another family, and it will be installed at the end of April.

SABUC Installations



How has it worked?

- THE UAM began to carry out water quality measurements that the systems have captured
- 4 relevant rains have been recorded since its installation.
- January to May (June due to climate change) is rainy season
- The PH, temperature, contamination and minerals show a better performance, compared to the water service by the jug. The water is suitable for household activities; however it is still necessary to review whether it is suitable for human consumption.



And the Costs?...

UNIVERSIDAD AUTÓNOMA METROPOLITANA Unidad Iztapalapa		REGISTRO GASTOS GENERALES	
REFERENCIA: CASA 2 - CH		CASA 2 - CH; FAMILIA ANGELA GERONIMO	
CONCEPTO		GASTOS GENERALES DE INSTALACION DE LA TECNOLOGIA SABUC	
DESCRIPCION	P. U.	CANTIDAD	TOTAL
ROTOPLAS MULTICAPA BEIGE 2500L	\$ 7,276	1	\$ 7,276
TE' 3"	\$ 20	4	\$ 80
YE' 3"	\$ 25	1	\$ 25
CODO 3" 90°	\$ 15	10	\$ 150
CODOS 3" 45°	\$ 15	10	\$ 150
COPLÉ 3"	\$ 10	8	\$ 80
TUBO PVC 3"	\$ 200	1	\$ 200
PEGAMENTO PVC	\$ 150	1	\$ 150
ALAMBRE GALVANIZADO	\$ 10	13	\$ 130
CLAVOS 2" 1/2 500GR	\$ 30	1	\$ 30
RONDANAS 500GR	\$ 30	1	\$ 30
PVC HIDRAULICO	\$ 25	1	\$ 25
CONECTOR HEM	\$ 10	1	\$ 10
CODO 3/4 90°	\$ 8	3	\$ 24
FLEXOMETRO 5M	\$ 85	1	\$ 85
ABRAZADERAS 3/4	\$ 12	9	\$ 108
MANGUERA 5/8 3MTS	\$ 16	3	\$ 48
SILICON TRANS.	\$ 30	1	\$ 30
TABIQUE ROJO	\$ 4	200	\$ 892
ABRAZADERAS 3"	\$ 20	10	\$ 200
CARBON ACTIVADO	\$ 90	1	\$ 90
BOMBA DE OXIGENACION	\$ 400	1	\$ 400
LAMPARA UV (FILTRO)	\$ 500	1	\$ 500
PANEL SOLAR 200V 50W	\$ 500	1	\$ 500
TOTAL = \$			11,212.69

- There is an average cost of \$673 USD for materials
- The plumber's cost is \$30 USD per day
- A total cost of \$703 USD per system, however costs have been decreasing as more systems are installed.
- Logistics and travel challenges are not considered so as not to affect the price of the product.

What are our next steps?

We have validated that the SABUC system works and is family-friendly, however, there are some missing considerations.

- A redesign of the SABUC system is required, currently adaptations have been made so that it works at the prototype level, but for a commercial and production phase a product that is easy to handle and install is sought.
- We are seeking funds to start a commercialization phase through alliances with other actors (we are NGOs)
 - Redesign
 - Feasibility Study





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Thanks