



ARCHSTORMING
ARCHITECTURE COMPETITIONS

EMERGENCY HOUSING MEXICO

A HOME FOR EVERYONE

/OPEN IDEAS COMPETITION/

in collaboration with
TECHO

INTRODUCTION

The social catastrophe of Latin America has its epicenter in the popular settlements.

It is in Latin America, the most urbanized and unequal region in the world, where 104 million people live in popular settlements. Here, 1 of every 4 inhabitants of urban areas, lives in a slum, villa, favela or camp, in a situation of poverty. These populations must subsist by their own means, with the constant violation of their rights.

A settlement is a set of a minimum of 8 families grouped or contiguous, where more than half of the population does not have title to land, nor regular access to at least two of the basic services: running water, electric power and / or excreta disposal system through the regular sewerage network.

The emergence of irregular settlements has several causes, one of the main ones is the little time that local and regional governments devote to territorial ordering. They generally do not have valid housing solutions to offer to low-income populations and to migrants who continuously arrive from rural areas to enlarge the peri-urban cords. These areas are characterized by having a very rapid level of development, unstructured and unplanned.

Only in Mexico City, there are more than 859 human settlements that represent 40 thousand dwellings located in an irregular manner. There are 241,853 inhabitants who occupy 2,700 hectares in the capital of the country and who need urgent help.



WHO IS TECHO

For this competition, **Archstorming is working together with TECHO Mexico**. TECHO is a youth led non-profit organization present in Latin America & the Caribbean.

They started in 1997, when a group of young people began working towards the dream of overcoming poverty. The sense of urgency that existed in these slums massively mobilized them to build transitional houses together with the families that were living in these unacceptable conditions. This group of young people focused their energy on finding concrete solutions to the problems that the communities faced every day.

This initiative became an institutional challenge that today is shared across the continent. Since its beginnings in Chile, TECHO undertook an expansion, and **after 15 years has maintained operations in 19 countries across Latin America**.

TECHO pursues three strategic objectives:

- The **promotion of community development in slums**, through a process of community strengthening that promotes representative and validated leadership, and drives the organization and participation of thousands of families living in slums to generate solutions to their own problems.
- **Fostering social awareness and action**, with special emphasis on generating critical and determined volunteers working with the families living in slums while involving different social entities.
- **Political advocacy that promotes necessary structural changes** to ensure that poverty does not continue reproducing, and that it begins to decrease rapidly.



MEXICO: CLIMATE

TECHO builds emergency houses for people from all across Mexico, that is why it is very important to understand that **climate varies a lot depending on where in Mexico you are.**

The current model of TECHO is the same regardless of where it has to be build. For this competition, **we encourage participants to design a model that can change depending on the climate of its location.**

Areas south of the twentieth-fourth parallel with elevations up to 1,000 meters (3,281 ft) have a yearly median temperature between 24 and 28 °C (75.2 and 82.4 °F). Temperatures here remain high throughout the year, with only a 5 °C (9 °F) difference between winter and summer median temperatures.

Between 1,000 and 2,000 meters (3,281 and 6,562 ft), one encounters yearly average temperatures between 16 and 20 °C (60.8 and 68.0 °F). Towns and cities at this elevation south of the twenty-fourth parallel have relatively constant, pleasant temperatures throughout the year, whereas more northerly locations experience sizeable seasonal variations. Above 2,000 meters (6,562 ft), temperatures drop as low as an average yearly range between 8 and 12 °C (46.4 and 53.6 °F) in the Cordillera Neovolcánica. At 2,300 meters (7,546 ft), Mexico City (primarily highland oceanic climate) has a yearly median temperature of 15 °C (59 °F) with pleasant summers and mild winters.

Rainfall varies widely both by location and season. Arid or semiarid conditions are encountered in the Baja California Peninsula, the northwestern state of Sonora, the northern altiplano, and also significant portions of the southern altiplano. Average rainfall totals are between 600 and 1,000 millimeters (23.6 and 39.4 in) in most of the major populated areas of the southern altiplano, including Mexico City and Guadalajara. Low-lying areas along the Gulf of Mexico receive in excess of 1,000 millimeters (39.4 in) of rainfall in an average year, with the wettest region being the southeastern state of Tabasco, which typically receives approximately 2,000 millimeters (78.7 in) of rainfall on an annual basis.

Mexico has pronounced wet and dry seasons. Most of the country experiences a rainy season from June to mid-October and significantly less rain during the remainder of the year. February and July generally are the driest and wettest months, respectively. Mexico City, for example, receives an average of only 5 millimeters (0.2 in) of rain during February but more than 160 millimeters (6.3 in) in July.

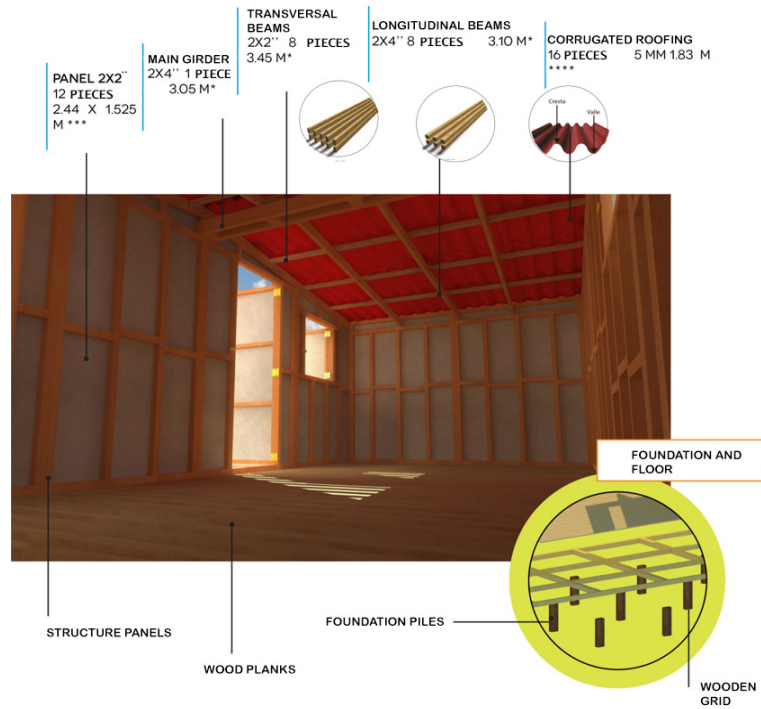


CURRENT MODEL

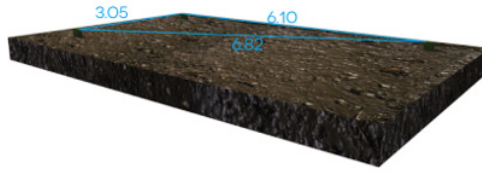
TECHO's current emergency house is a temporary solution to the housing vulnerability of communities in a situation of poverty. **It is based on a modular design of 18 square meters, removable and transportable, structurally composed of wood and covered with fiber cement.**

Its total cost includes several expenses, including materials, transportation or supplies, among others. The full budget, broken down by items, will be sent after registration.

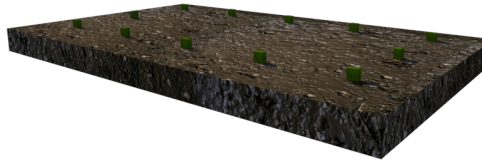
You can check this video to get more information about the building process: <https://www.youtube.com/watch?v=sxj4MbH7fhQ>



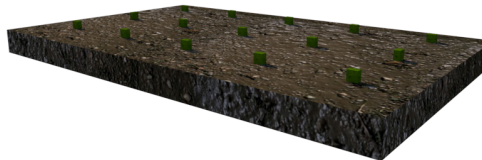
CURRENT MODEL: BUILDING PROCESS



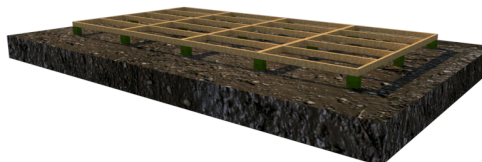
To correctly dimension the foundations, the short side between **wood piles** is 3,05m, long side is 6,10m and the hypotenuse 6,82m.



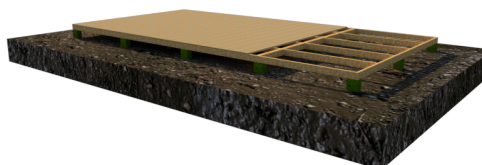
The distance between piles is 1,52m (in the long side). Make sure the piles are at the same level before and after fixing them to the ground.



After fixing the piles, fill them around with gravel and soil and compress it until it is completely packed.

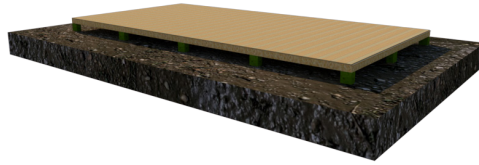


Install the **wooden grid** and fix it to the piles with 4" nails. Make sure they are perfectly aligned.

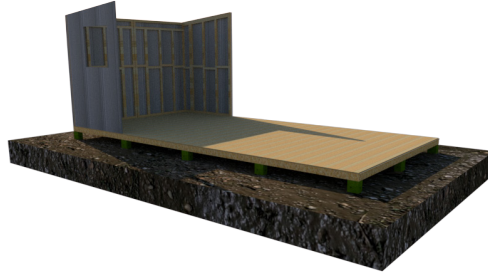


Place the **wood planks** above the grid. That will be the house floor.

CURRENT MODEL: BUILDING PROCESS



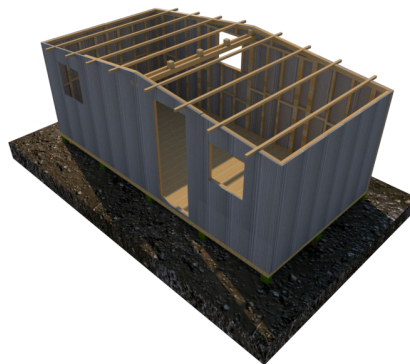
Fix the planks to the grid with 2 1/2" nails. Use a jimmy pry bar to push the planks so there's no space between them.



Set the panels 1 and 2. Nail them to each other with 3" nails. Place the panels 3 and 4 the same way. Each panel is fixed to the floor with 4" nails.



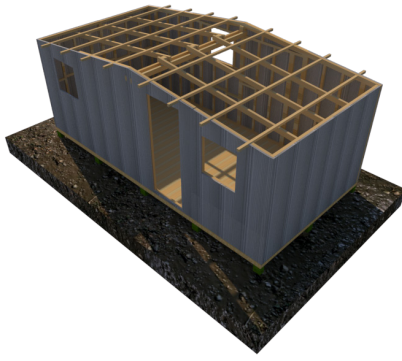
Place the first beams. They should jut out 20 cm on each side.



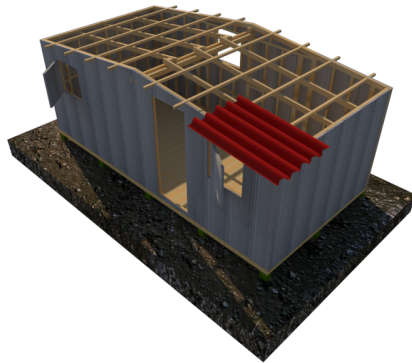
Fix the beams to the panel with 4" nails. Place the main girder in the center.



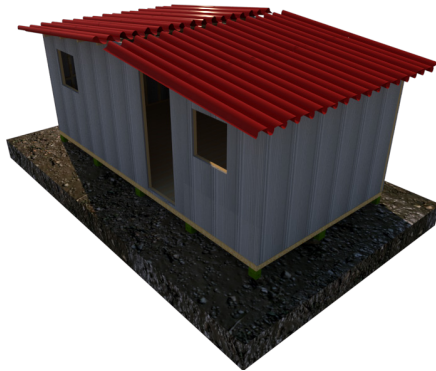
CURRENT MODEL: BUILDING PROCESS



Place the long beams above the first ones. Nail them to the main girder with 4" nails.



The last step is installing the corrugated fiber cement roofing.



THE CHALLENGE

Archstorming is calling for proposals to redesign the current emergency house model of TECHO.

The winning proposal will be used as a new model and it will be built all across the country for those who need it.

The main goals of this competition are:

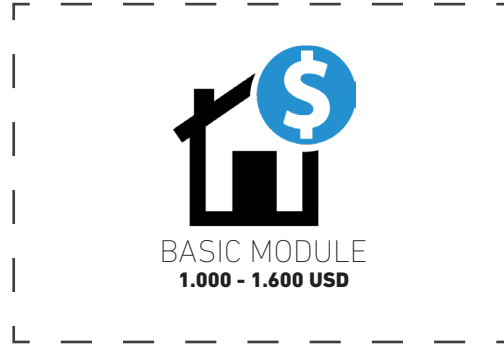
- Reduce build times and the logistical difficulties that the current model present.
- Decrease the assembly complexity from the manufacturing process.
- Increase the lifespan of foundations and structures as well as improve the almost nonexistent thermal insulation.
- Facilitate the future growth of the house unit (modular).
- Increase the flexibility to locate the house's doors and windows.
- Possibility to add extra modules to the house (bathroom, kitchen or others)
- Use sustainable and easy to get materials.
- Have a more liveable space as a house.

All details regarding these and other goals of the competition can be found in the following pages.



HOUSE REQUIREMENTS

BASIC MODULE AND BUDGET



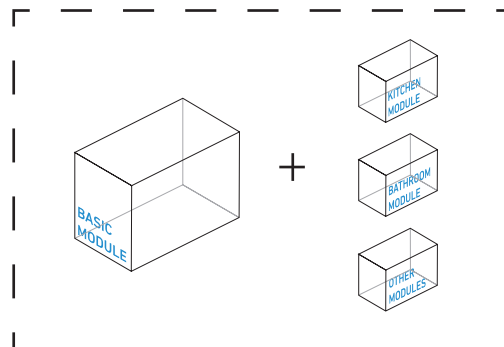
Each house unit has to be composed of at least a **basic module**. That is the main space of the house, where the family spends most of their time. That space will include a night area where they will sleep, as well as a daytime living area. Interior divisions between them are up to you.

Its size has to be around 18m², but the design should be expandable up to 40m² if the family is bigger. You can consider that a person needs a space of 3 to 3,5m², so a house of 18m² can fit up to 5 people, while a house of 40m² will be able to accommodate 11 people. Your design should contemplate a modular system so we can build a house that satisfies each family needs regarding space.

The budget for each basic module is between 1.000 and 1.600 USD (including all materials and transportation). That restriction is for the smallest module: 18m². The budget increases proportionally as the house is expanded to a bigger size.

That budget is only for the basic module and does not include any extra module.

EXTRA MODULES



Additional modules can be added to the house at the moment of construction or later. These new spaces are not included in the budget limitation.

- **Bathroom module.** It will include at least a dry toilet. Depending on the water collection solution of your design, it can also include a sink and shower. Keep in mind that materials have to be cheap and easy to install. Water recycling is also a plus.

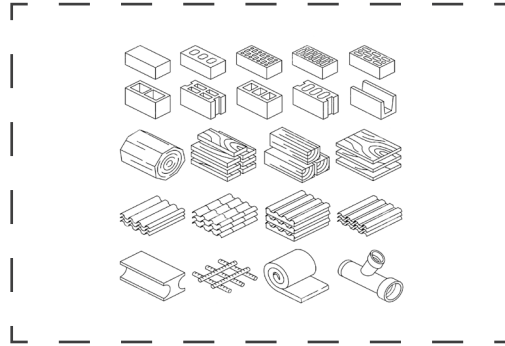
- **Kitchen module.** A very basic kitchen and cooking space can be added to the house. It can be a gas stove or wood-fueled stove.

- **Other modules.** If you have any other module with a different use you are free to show it to us.

Remember that these modules are optional, they can be added or not depending on each family situation.

HOUSE REQUIREMENTS

MATERIALS



The house has to be built using a **dry construction system**, which means that materials like concrete or bricks are not allowed.

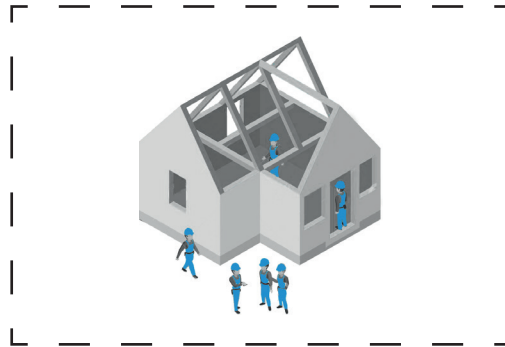
The current houses are being built using **wood for all the structure, fiber cement siding to cover the exterior, and corrugated fiber cement roofing.**

Since TECHO Mexico **has its own wood workshop**, we suggest for the new design structure to be maintained in this material. All other nonstructural materials can be changed depending on your proposal. Please make sure that all materials of your design are available in Mexico and don't exceed the set budget.

Current windows don't have glass, since its fragility has retarded its implementation. The new house can come with glazed windows or any other translucent material.

The house has no thermal insulation now. The new proposals should work on that.

CONSTRUCTION TECHNIQUES



The house must be self-build by 5-10 volunteers (non-specialists). They must be able to build it in two days, which means that simple constructive systems will be highly evaluated.

Since the solution is temporal, **dry construction systems** have to be used. The house must be **removable and transportable** if needed.

The building techniques shouldn't require the use of any electrical tool (since the volunteers don't necessarily have to know how to use them). **The house should be built using only mechanical hand tools such as shovels, hammers, screwdrivers, etc.**

Also, it is important that panels or wood strips can be carried by two people, so **they shouldn't be too big or too heavy.**

All elements of the house must be transported by land to places with difficult accessibility (take into account roads in settlements are often narrow and in poor condition).

HOUSE REQUIREMENTS

OTHER CONSIDERATIONS



WATER COLLECTION SYSTEM: each participant can design a system to collect rainwater. This way the families can use water to cook, wash or shower. Keep in mind that Mexico has pronounced wet and dry seasons. Most of the country experiences a rainy season from June to mid-October and significantly less rain during the remainder of the year.

SUSTAINABLE BUILDING: You should take into consideration that, since it is very difficult to get an energy source, green methods will have to be used in order to maximize the building's efficiency. For example its ventilation, the insulation or the natural light. Installing a solar panel is not planned yet since it requires a maintenance that the NGO can't provide.

CONVERTIBILITY: it could be interesting (but not mandatory), if the design provides a system to transform the temporary house into the families' final one. This system would accept materials such as bricks or concrete since the house would not need to be moved in the future.

CLIMATE ADAPTATION: As told before, the climate of Mexico is highly varied. While the north experiences lower temperatures during the winter months, in the south temperatures are fairly constant year-round and vary solely as a function of elevation. Also, the north of the country generally receives less precipitation than the south. Since TECHO works in the whole country, keep in mind that the house should be able to adapt to the north's desertic climate, the winters of Mexico City, or the heavy rains of the south.

COMPETITION DETAILS

ELEGIBILITY

Any architecture student or actual architect can participate in EMERGENCY HOUSING MEXICO, regardless of their nationality. Likewise, people from other disciplines can also participate, such as engineers, sociologists, photographers, etc. Not being necessary the presence of an architect in the team.

Teams may be formed by a maximum of four (4) members and a minimum of one (1).

All team members must be 18 years of age or older.

The registration fee must be paid per team, regardless of the number of members (1-4 people).

In the event that a team or participant wants to participate with more than one proposal, it will be necessary to register twice (or as many times as proposals will be submitted), paying the full price corresponding to each registration.

Under no circumstances may jurors, the organization or persons directly related to the jury participate in this competition.

AWARDS

When competition reaches 500 participating teams, registration will be immediately closed and prizes will be 20.000€, broken down as follows:

1st PRIZE
10.000€
+ PROJECT CONSTRUCTION

2nd PRIZE
5.000€

3rd PRIZE
3.000€

4th PRIZE
1.500€

5th PRIZE
500€

+10 HONORABLE MENTIONS

Prizes will depend on how many teams have registered successfully after registration deadline. If, after that date, teams don't reach 500, prizes will be:

001-100 registered teams:	1 2.000€	2 1.000€	3 500€
101-201 registered teams:	1 3.000€	2 1.500€	3 500€
201-300 registered teams:	1 4.000€	2 2.500€	3 1.000€
301-350 registered teams:	1 5.000€	2 3.500€	3 1.500€
351-400 registered teams:	1 6.000€	2 3.500€	3 1.500€
	4 1.000€	5 500€	
401-450 registered teams:	1 8.000€	2 4.000	3 1.500€
	4 1.000€	5 500€	
451-475 registered teams:	1 9.000€	2 4.500	3 2.000€
	4 1.500€	5 500€	
476-500 registered teams:	1 10.000€	2 5.000	3 3.000€
	4 1.500€	5 500€	

*Depending on the country of residence of the winners, the prize may be subject to the withholding or payment of taxes foreseen in the law of that country.

COMPETITION DETAILS

CALENDAR

MARCH 6th 2019	REGISTRATION OPENS
JULY 3rd 2019	REGISTRATION CLOSES
JULY 3rd 2019	SUBMISSION DEADLINE
JULY 18th 2019	WINNERS ANNOUNCED

* Registration can close earlier if the competition reaches 500 teams registered. In that scenario, submission deadline won't change

*No submissions will be accepted after the general deadline indicated above: 23:59:59 Los Angeles time (UCT / GMT-8) or CDT.

PAYMENT

Registration fees will depend on how many teams are already registered in the moment of registration, and will evolve as follows:

001-100 registered teams:	50€+ VAT
101-201 registered teams:	65€+ VAT
201-300 registered teams:	80€+ VAT
301-350 registered teams:	100€+VAT
351-400 registered teams:	110€+ VAT
301-450 registered teams:	120€+ VAT
451-475 registered teams:	135€+ VAT
476-500 registered teams:	150€+ VAT

VAT: 21%

Registration process must be completed on the official Archstorming website. In order for the registration to be successful, the team must pay the fee corresponding to the registration date. Once the registration and payment process have been completed, there will be no refunds.

PAYMENT METHODS

Visa, Mastercard, Discover and American Express credit or debit cards may be used. The Archstorming team will not have access to credit card details. Please provide the information on the card as it appears on it.

Likewise, payments are accepted through Paypal.

REGISTRATION

Just after registration and payment, the Archstorming Team will send a confirmation email that will include working material such as pictures, budget etc. and the registration number. This number must be placed in a visible spot on the team's competition board, preferably the lower right corner.

At the time of completing the submission form when sending the proposals, the registration number will also be required to identify the team.

<http://www.archstorming.com/register.html>



COMPETITION DETAILS

SUBMISSION MATERIALS

Participants must submit **one (1) A1 format board** (594x841 mm or 23.4x33.1 inches) oriented either landscape or portrait with the registration number in the lower right corner.

The content of the boards is open, as long as the idea that the participants want to communicate is clearly expressed. However, it is important to detail the proposal with the materials and constructive systems thought. The boards must be delivered in JPEG or JPG format and its name must be the registration number provided by the Archstorming Team (eg 340118156.jpg)

In addition, **one (1) description of the project no longer than 400 words** must be submitted. The description must be submitted in PDF format and its name must be the registration number provided by the Archstorming Team (eg 340118156.pdf)

All the materials must be submitted in the Submit section on the Archstorming's website.

<http://www.archstorming.com/submit.html>

EVALUATION CRITERIA

The jury will evaluate the projects based on the proposed objectives, the main being the creation of a new model for the NGO TECHO, that doesn't exceed the budget and can be built by volunteers in a limited time.

The jury is free to add other criteria that they consider important for the project needs.

A total of 50 proposals will be selected for the final round. Among the 50 finalists, the jury will choose the winner, the second and third place, and the 10 honorable mentions.

FAQ

You can check the most common questions in the corresponding section on the Archstorming website:

<http://www.archstorming.com/faq.html>

Also, during the competition, all questions sent by email will be answered individually and uploaded to the section of the website mentioned above.

COMPETITION DETAILS

INTELLECTUAL PROPERTY AND COPYRIGHT

All materials submitted to the competition will become property of Archstorming, and therefore give Archstorming all rights to that material from that moment on.

Archstorming will publish all materials given appropriate attributes to the authors.

Archstorming reserves the right to modify the proposals and text in order to better adapt them to any publication format, without changing the essence of the proposal itself and **since the project is going to be built in a near future, we reserve the right to modify the winner proposal according to the real needs of the place, always keeping the essence of the idea and working along with the author.**

The participant is responsible for using copyright-free images. Archstorming is not responsible for the use of protected images by the participants.

THE CONSTRUCTION

TECHO Mexico is the NGO in charge of the project. **They plan to start the construction by the end of 2019.**

Archstorming is collaborating with the project but not responsible of the house's construction. It is totally managed by the NGO and it is also the one in charge of the construction timeline as well as the details of the option of going to the construction place. If for any reason the NGO in charge of the project finally decides not to build it, Archstorming will not be responsible of the fact.

NOTES

Archstorming reserves the right to make any changes in the rules of the competition (dates, requirements, etc.). It is the obligation of the participants to check on a regular basis the website of Archstorming to verify if the Terms and Conditions or the competition information have been modified.

Archstorming is not responsible for any research done by participants in the area.

The breach of the norms and terms defined in this briefing or in the Terms and Conditions of the website of Archstorming will result in the immediate disqualification of the team without any refund of the payments made.

Archstorming reserves the right to cancel this contest in case it does not reach a minimum number of participants, defined in the Terms and Conditions. In that case Archstorming will return the full amount of registration fees to the participants enrolled at the time of cancellation.

<http://www.archstorming.com/terms.html>