

# “THE FUTURE OF HOUSING”

After a successful completion of our first challenge last year, **SkyCity** again, is pleased to invite architects, designers, artists, engineers, scientists, conservationists, digital nomads, craftsmen or basically anyone with great ideas from around the globe to take part in the **SkyCity Challenge 19, “THE FUTURE OF HOUSING”**.

The current ways of building are affecting the environment we are living in, they are limited and outdated. We believe with the modern technology available, we are able to create far more sophisticated homes that could revolutionize the future of housing.

We hope this new prefab construction prototype will be one of its kind, openly shared around the globe, with each location representing a unique culture inspired by world communities. We hope to create a sustainable building set available to the cooperatives around the world. Therefore, we invite you to co-create this **“FUTURE OF HOUSING”** in **SkyCity** with us.



We will be dividing **\$15,000 USD** altogether, for the best ideas. The winning team will be then invited to co-live with us during the **SkyCity Residence** month in Changsha, set in March of 2020. We will also grant the winning team with an additional \$2,000 USD as traveling allowance and fully cover their stay in China (housing + food included).

\*The winners will be announced on the **1st of November 2019** on our media platforms as well as published in several international magazines and their online platforms.

## AWARDS./

1st Place

**\$5,000**

+ **\$2,000 TRAVEL ALLOWANCE**

+ **A ONE MONTH STAY**

**IN SKYCITY, CHANGSHA [ CHINA ]**

2nd Place

**\$3,000**

3rd Place

**\$2,000**

4 - 8th Place

**\$1,000**

# THE CHALLENGE./

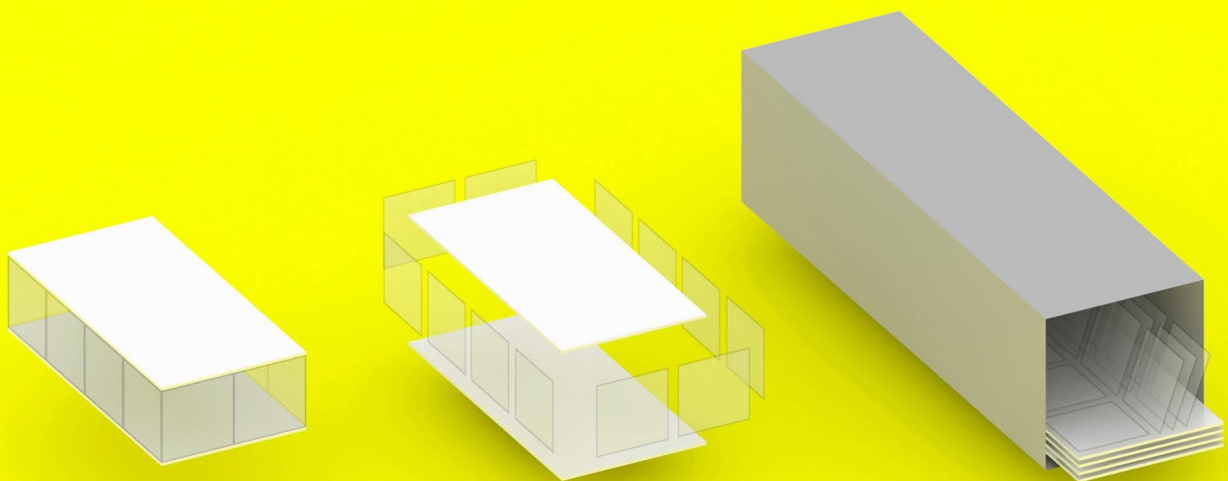
We want you to design a home that can be dismantled after a time period and used again as if it were just simple prefab modular pieces (eg. LEGO® or IKEA®). **A home made out of ready-made slabs which together form a simple disassemblable set.** We want you to design this system partially out of **BCORE** ( a special stainless steel material ). The pieces must be easily transportable using traditional shipping containers which when flat-packed can fit into a **2.43m** (8ft) wide, **2.59m** (8.5ft) high and **12.2m** (40ft) long shipping container and assemblable anywhere on our planet by the use of a small crew with equipment.

We will be judging the projects according to several aspects:

- overall cost
- disassemblability
- energy efficiency / energy productivity
- prefabrication
- stackability
- ability to withstand natural disasters
- eco-friendliness
- off grid possibility
- building / dismantling requirements
- aesthetics
- upkeep
- the percentage of bcore used

You can situate your project in any kind of environment on any location around our planet, however we need you to design your set fully or at least partially out of BCORE. **BROAD** group developed this material exactly for this purpose and we believe that currently it is the most firm, specialized and sustainable building material allowing us to build almost any type of building. Since we are planning to develop this modular home with the future winning team, we are **focused on finding the most convincing and technologically sophisticated building set for the housing of the future!**

Remember, we are inviting you not just to design a simple home but a whole construction set that will form a future startup, which will be operating worldwide. Our goal in the future is being able to ship our housing set around the globe to anyone in need.



# REGULATIONS./

1. It's a non-anonymous competition, however the **register code** which you'll receive is your only identification.
2. It's an online competition, only digital materials and attachments will be accepted. However we would like you to organize your thoughts into a presentable format. We require you to send us 2 high quality printable PDF files (A0 – **841 x 1189mm** ISO paper size international dimensions in min.150dpi) which we will be able to print on project boards for its presentation purposes.
3. The official language of the competition is **English**, however you can communicate with us in **English, Spanish and Chinese**. Official time of the competition is set according to EST.
4. You can contact the organizers if you have questions. We will upload documents and provide all the necessary information also on our **Facebook** page and group.
5. Participants may submit various projects, however you must register each entry as a different project.
6. There is a limit to the number of maximum of **5** participants per team. Entry as an individual is also accepted.
7. We ask the participants to keep in mind that the use of **BCORE** is our essential aspect for your evaluation. We recommend you to use it above at least **25%** of the overall material mass of your designs. However you are allowed to modify the non-structural part of **BCORE** like the surface finish, insulation, wiring and plumbing.
8. The results will be announced on the **SkyCity** website, worldwide media and exhibitions.
9. The winning team will be invited to **BROAD Town**, Changsha for the **SkyCity Residence** in 2020. Where we will discuss the following foundation of the Future of House project. Therefore we prefer designs or ideas that we can actually build with the winning team in the future.
10. **Broad Sustainable Building Co Ltd** will grant the winning team **\$2,000 USD** for their travels to and from **SkyCity**.
11. **Broad Sustainable Building Co Ltd** will provide accommodation and food for all the team members while their stay in **Broad Town**, during the residence.
12. **SkyCity**, as the competition organizer, reserves the right to modify the competition schedule if deemed necessary.
13. Entrants will be disqualified if any of the competition rules are not followed.
14. Participation assumes acceptance of the regulations.
15. By participating in the challenge, you authorize **SkyCity** and **Broad Sustainable Building Co Ltd** to study your design in discretion. In case of any future development of your project, we will contact you.

# REQUIREMENTS./

## 2 PROJECT BOARDS

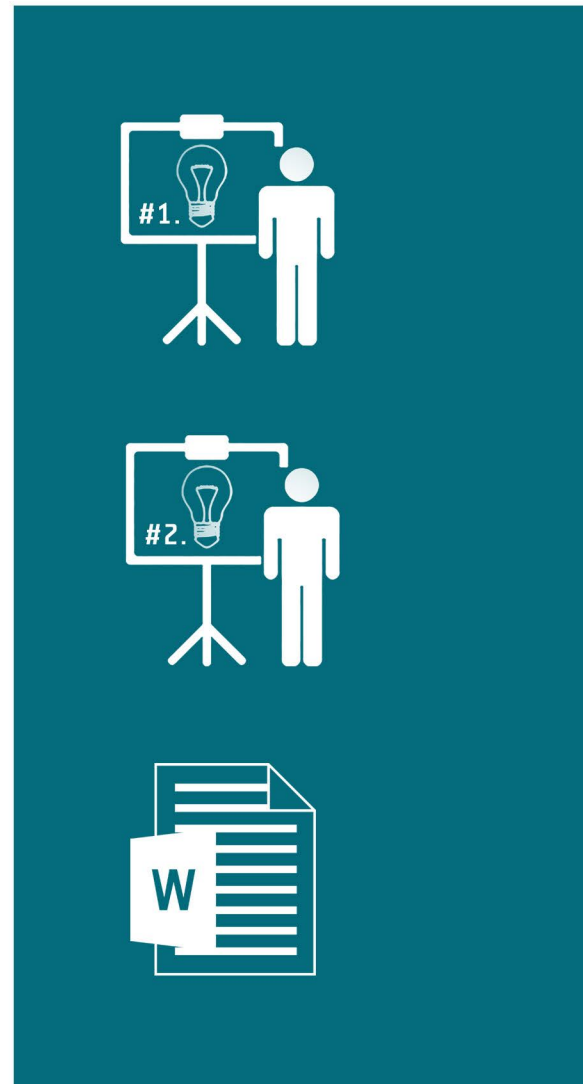
All the competition files should be submitted in digital form, however we still want to print your file on foam boards for their presentation. Please organize your thoughts into 2 vertical project board files (**A0 – 841 x 1189mm ISO paper size international dimensions**) in high quality (min. 150 dpi) PDF format which we can print ourselves. We recommend you to organize the **Project Board #1** with presentation about your system ( pieces design / visualizations / ways of assembly schemes) and **Project Board #2** with a presentation of your Future Prefab Home made out of your building set that fits into a traditional shipping container. Each board must include your verification **ID number** (which you'll receive from us via email upon registration) on its lower right hand corner.

## 1 TEXT DOCUMENT

A text document (**A4 international format**) containing **500 – 1000 words**, with a language requirement of English. This document must explain your concept on the project boards. The text must include your verification **ID number** (which you'll receive from us via email upon registration) on its lower right hand corner.

\*Everything mentioned should be included in a **ZIP** file sent to **join@skycity.net** via **WeTransfer**. You will receive a confirmation email within **72 hours** of submitting your entry. If we don't confirm your submission, please feel free to contact us.

\*All submissions are due by 11:59 pm EST on **October 1st 2019**.



# TIMELINE OF EVENTS./

LAUNCH OF THE CHALLENGE  
APRIL  
2019

DEADLINE FOR ENTRIES  
1ST OF OCTOBER  
2019

WINNERS ANNOUCEMENT  
1ST OF NOVEMBER  
2019

RESIDENCE OF THE WINNING TEAM STARTS  
MARCH  
2020

RESIDENCE ENDS  
PROTOTYPE BLUEPRINTS READY  
APRIL  
2020

2020

# THE JURY./



## CARLO RATTI

Architect Engineer CRA  
Director of MIT SENSEABLE CITY Lab



## LIU XIAODU

Principal Architect and Co-founder of URBANUS



## DAAN ROOSEGAARDE

Technology & Art in urban environments,  
Studio ROOSEGAARDE



## ZHANG YUE

Founder & Chairman of BROAD Group



## SKYCITY TEAM

Daniel Zhang / Gábor Szentpétery / Dan Gamboa



## FRANCISCO BROWN

Architect, Journalist ARQUINE  
International Organization for Migration member

# ELIGIBILITY./

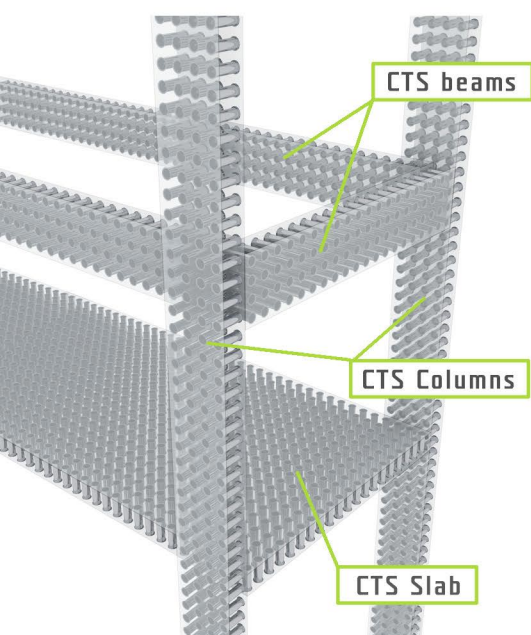
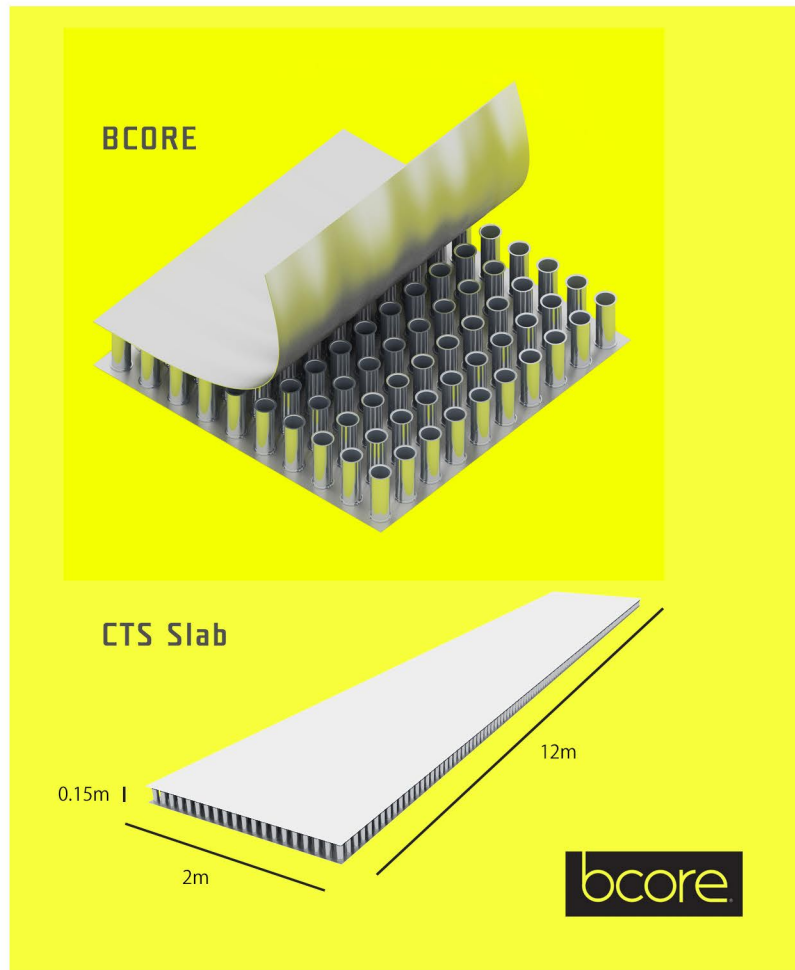
Everyone is invited to participate, from any part of the world. At least one member of the group must be fluent in one of world's 3 most used languages: **English, Spanish** or **Chinese**. However all of the entries must be submitted in **English**. Each team can consist of 5 members at most, but you may also submit an entry alone. Members with different fields of expertise per each team are highly encouraged. We think globally.

## BCORE./

**CTS Slab** (Core Tubular Steel) is the technical term for the prefabricated panels made out of **BCORE**.

The parts of a **CTS Slab** are prefabricated in the factory and installed on site, which greatly reduces assembly time unlike concrete constructions, thus freeing the construction site from dust, noise and waste. The structures made out of **CTS slabs** have the advantage of energy conservation, earthquake resistance, long service life and can be completely recycled.

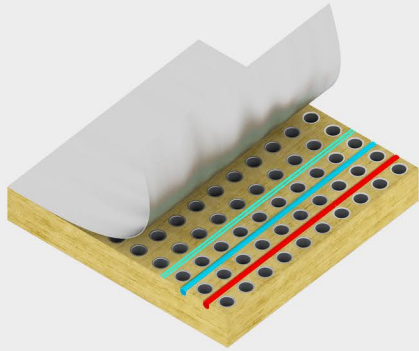
A **CTS Slab** is made out of thin-walled core tubes, sandwiched between two steel plates. The flanged edge of the core tubes increases the area of connection to the steel plates. The core tubes are integrated onto the steel plates by the use of a thin layer of copper coil foil placed between them and then melted together in 1100°C hot air ovens in order to create a very firm joint.



## CTS SLAB SYSTEM./

A standard **CTS Slab** is 12m long, 2m wide and 0.15m thick. They can be used as load-bearing columns, beams or floors. They can be also cut into smaller pieces depending on the design.

The building process from CTS slabs consist of three phases;  
**First phase:** CTS slabs are manufactured in factory. The core tubes and plates are welded into slabs and then processed into specific shapes like beams or columns, according to the design requirements.  
**Second phase:** CTS slabs are transported and assembled on site, forming main structure with shear walls, columns, beams etc.  
**Third phase:** Elements such as doors, windows, balconies, handrails and stairs are installed along with interior finishes and electromechanical installations.



## YOUR OWN BUILD SYSTEM./

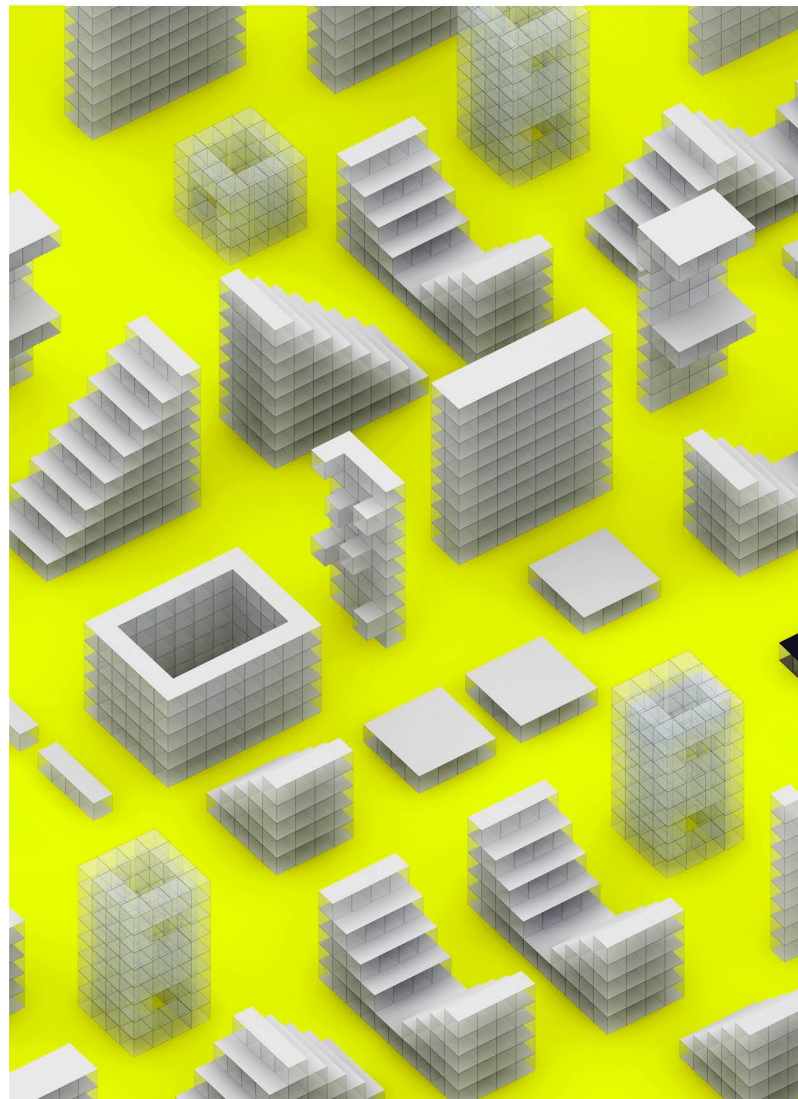
The voids between core tubes of all **CTS slabs** in buildings are filled with **ROCKWOOL** insulation with a heat transfer coefficient of  $0.5W/m^2.K$ . As participants of the **SkyCity Challenge 19** you are restricted to use the standard **CTS Slab** for your design, however we are open to any modification of the distribution of internal elements of the panel itself. Eg. You can lay the electrical wiring or any necessary piping within the voids of the panel itself. Also you are free to design any aesthetic surface finish or thermal/hydro - coating depending on your design. For more information please revise the **BTS Slab systems' brochure** (download the pdf version on our website: [www.skycity.net/challenge](http://www.skycity.net/challenge) ).

## ECOLOGICAL IMPACT./

The **CTS slab** is used as a building structure, which is 10 times lighter than reinforced concrete and can effectively resist earthquake and land subsidence. The CTS slab is over 100 times more resistant to corrosion than carbon steel, and the building structure has very long service life. The CTS slab can be easily and completely recycled without leaving any construction waste on site.

Broad Core Building adopts ISO and OHSAS management systems to ensure a clear, efficient, clean and safe working environment. The highly productive manufacturing method of the automated assembly line ensures efficient use of energy.

Today, as the ecological overload continue to advance, the total amount of greenhouse gas emissions exceeds the absorption capacity of the Earth's ecosystem. **BCORE** can greatly extend the service life of the buildings and can be completely recycled after demolition. This fact could greatly reduce the demand for concrete, construction waste and carbon emissions in order to save resources but mostly protect the overall environment.





## SKYCITY./

**SkyCity** is a platform that wants to unify creativity, reflection, art, media, sustainability and technology. An online think - tank and physical space located within **Broad Town** in China, for creators exploring sustainable ways of co-living & co-working.

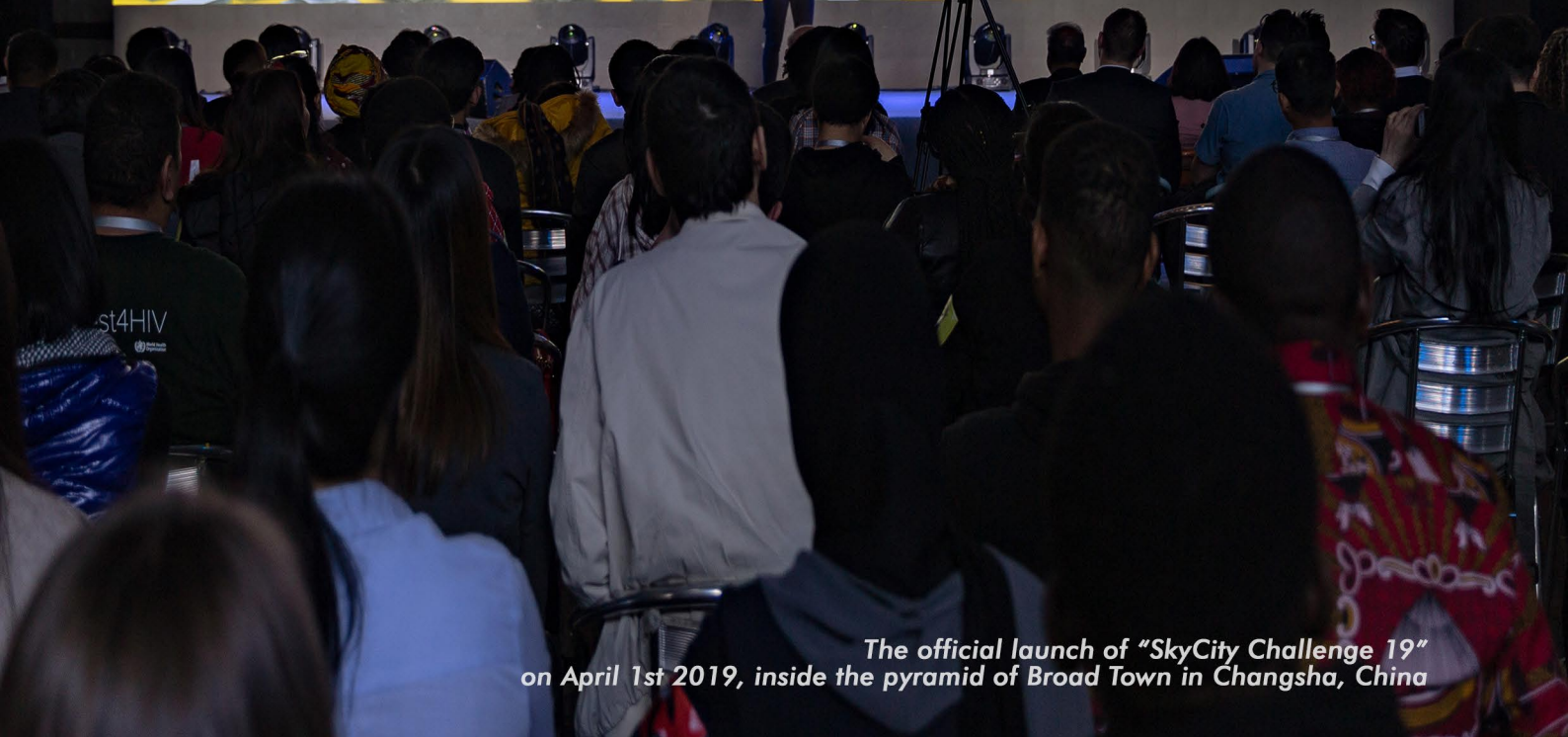
In 2017 **SkyCity** founded it's biannual design Challenge series, opening with "**SkyCity Challenge 17**" with over 400 registered teams from around the globe resulting in the invitation of **17 teams** (cca 50people) for a week long stay with a workshop in **Broad Town**. (more info at [www.skycity.net](http://www.skycity.net))



## BROAD & BROAD TOWN./

**BROAD Group** is a private manufacturer of central air conditioning non-electric absorption chillers that are powered by natural gas and waste heat based in **Changsha**, China. It is also the parent company of **Broad Sustainable Building** and **BCORE Buildings Ltd.**, a prefab building company using **BCORE** for constructions. The company was established in 1996 and exports products to over 60 countries. Broad is one of the few Chinese manufacturing companies that has been widely recognized for its green policies and commitment to countering climate change. It has expanded its business in recent years to include other energy saving products and sustainable buildings through its subsidiary **Broad Sustainable Building**, and achieved building a **57-story** tall skyscraper in **19 days**.

**BROAD Town** is the headquarters of **BROAD Group**. It is located in the eastern suburbs of **Changsha** City, 16km from the city center and 12km from the airport. It is home to dozens of technological inventions that have a worldwide significance, like the world's first non-electric exhaust air conditioning, the world's first fresh air purification machine, the world's first factory - making sustainable buildings ... **BROAD Town** also covers an area which is reserved as ecological protection zone and organic farm. **BROAD Town** produces it's own organic food, uses reversed osmosis water technology to access clean water. All accommodations provide 100% fresh air with pm2.5 filters. **BROAD Town** has many facilities for startups, a theatre, gym, a boutique hotel and dining facilities scattered on the campus, making this place a harmonious community.



The official launch of "SkyCity Challenge 19" on April 1st 2019, inside the pyramid of Broad Town in Changsha, China

SKYCITY

**CHALLENGE 19**

[www.skycity.net](http://www.skycity.net)

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