

# VILLA ON THE MOON 2050

## ENVISIONING LUNAR LIVING

02/01/2024



# NON ARCHITECTURE

We can consider “architecture” everything that has already been designed and/or built. That would define a realm of conventional solutions, often repeated in a self-referential system. We imagined a counterpart, a “non architecture”. A world of unexplored designs and countless possibilities, that if found, could enlarge and change permanently the boundaries of architecture. A universe of chances and opportunities never challenged by architects before. A limitless field of investigation that includes **everything that is not architecture, yet.**

Non Architecture Competitions aims to find unconventional and unexplored design solutions in the field of architecture. The second phase of competitions is structured in 9+1 themes: a Research Ecosystem with the purpose of exploring each theme from different perspectives. All competitions have their focus on tackling the big issues of tomorrow, by seeking nontraditional approaches in the architect’s work.

**Villa on the Moon 2050** is one of the Non Architecture “**Culture**” Competitions.

# INTRODUCTION

In this competition, we invite imaginative architects, designers, and dreamers to embark on a journey beyond Earth's atmosphere. The challenge is to conceive a visionary concept for a residential villa on the moon, set in the year 2050. As humanity extends its reach into space, how do we translate the essence of earthly living to an extraterrestrial environment?

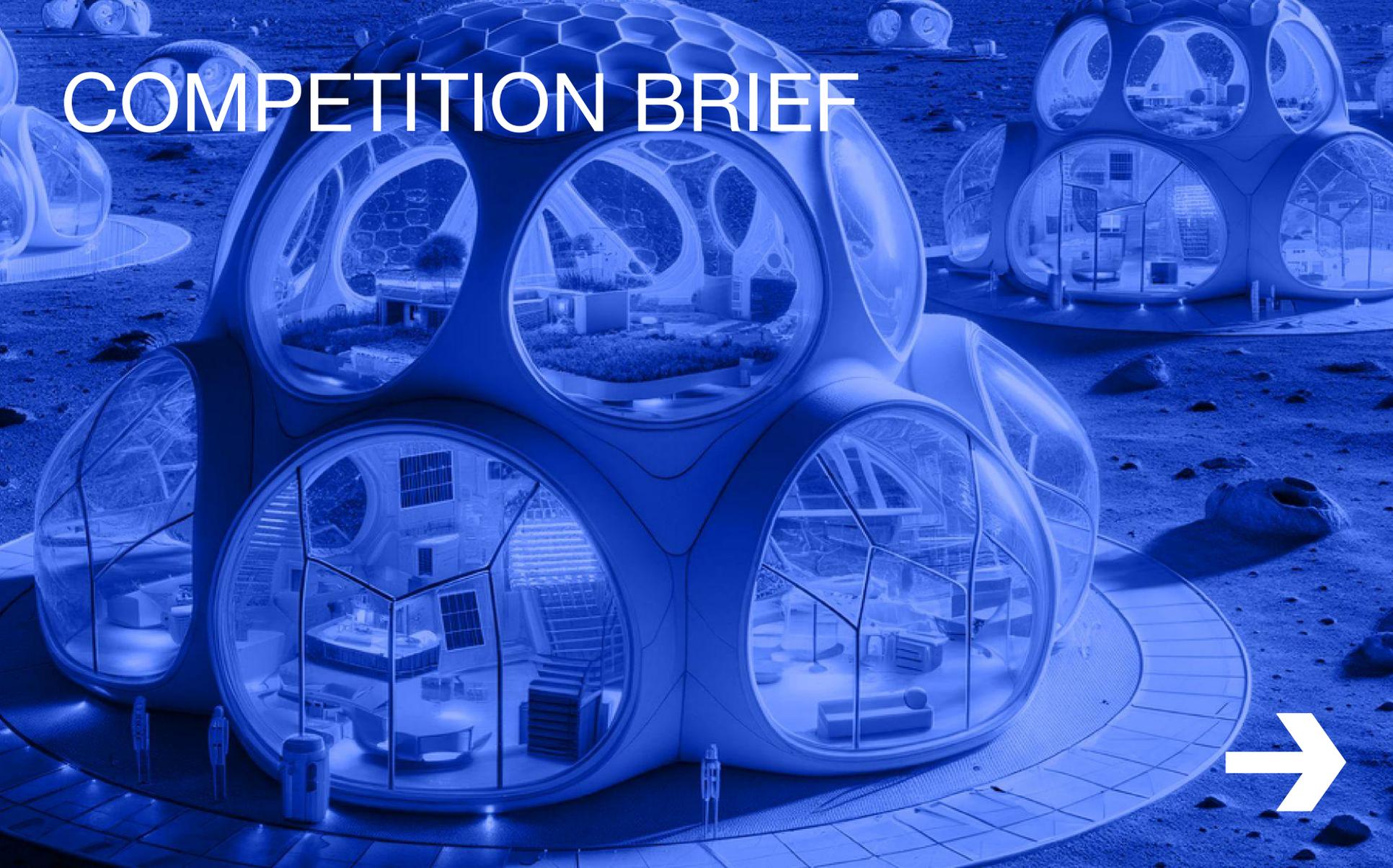
Participants are encouraged to explore uncharted territories of architectural design. Proposals should consider the extreme conditions of the moon, such as reduced gravity, extreme temperatures, and the absence of atmosphere, and how these factors impact architectural design and the overall living experience.

How can architectural innovation on the moon lead to breakthroughs in sustainability, self-sufficiency, and living in harmony with a new environment? How can your villa enhance the experience of its residents, offering them a serene yet stimulating space amidst the desolation of the lunar landscape?

**Villa on the Moon 2050** aims to answer these questions, to contribute to the narrative of humanity's future in space, encapsulating a vision of life on the Moon that is as practical as it is inspirational.

This is an opportunity to push the boundaries of your creativity and envision a future where the moon becomes a new frontier for human habitation.

# COMPETITION BRIEF



# ENVISIONING LUNAR LIVING

As humanity extends its reach into space and begins to contemplate life in extraterrestrial environments, architects are facing an unprecedented challenge: how to translate the essence of earthly living into habitats beyond our planet. This task requires a profound rethinking of architectural principles, as designers must adapt to unique conditions such as extreme temperatures, reduced gravity, and the absence of atmosphere, while also fostering human well-being and sustainability.

The fast development of technology, alongside concerns like world population growth and the climate crisis, has created a perfect setting to

consider life outside Earth. The new space race of the 21st century involves a broad spectrum of professionals, including architects, sociologists, entrepreneurs, and investors, all joining the challenge of designing extraterrestrial built environments. This interdisciplinary approach is crucial, as the problems of living in space are not just technical but also deeply human.

One of the primary concerns in space architecture is creating an environment that supports human life both physically and psychologically. This includes ensuring water efficiency, as water is a scarce resource in space. For instance, on Mars, architects

have to rethink all water-related processes, from consumption to agriculture, and devise systems for efficient water use and recycling.

Renewable energy is another critical area, as there are no fossil fuels on planets like Mars. Therefore, energy sources have to be entirely renewable, with options like solar, wind, and nuclear power being explored. This constraint necessitates a complete reimagining of energy use and efficiency in architectural designs.

Addressing the extreme environments of space, especially the high radiation, low pressure, and low temperatures, is another significant challenge. Architectural solutions must include building structures that can sustain air and protect humans from radiation. Various building structures, such as rigid metal or plastic-based structures, expandable structures, underground tunnels, and structures

made of brick and rocks, have been proposed for habitats on Mars.

Moreover, the need for cost efficiency in construction is driving innovation in using in-situ materials and robotics. For instance, the idea of using lunar or Martian materials as feedstock for robotically 3D-printed buildings and infrastructure has gained traction. This approach not only saves costs on transporting materials from Earth but also aligns with sustainable and self-sufficient living principles.

Projects such as Mars Habitat by Foster and Partners and Mars Ice House by Clouds AO and SEArch+ demonstrate these principles in action. These habitats are designed to be constructed with minimal human intervention, using native Martian materials and addressing the unique challenges of living on Mars, such as radiation and the need for efficient use of resources.

Architects' role in extraterrestrial environments involves innovating in areas like water and energy efficiency, building materials and methods, and designs that protect against extreme conditions, all while ensuring the psychological and physical well-being of inhabitants.

This competition challenges participants to envision lunar living by exploring these aspects and contribute to the evolving narrative of humanity's future in space, capturing a vision of life on the Moon that is practical, sustainable, and inspirational. This challenge is not confined to traditional architectural solutions; instead, it opens the door to a wide array of possibilities.

Within this context, with critical thinking and creative attitude, the participants are asked to develop a proposal, merging considerable programmatic innovation and valuable design tools. The proposal

should envision lunar living spaces. Scale of intervention and program dimensions are not given and they can be arranged by the participants to better suit their project.

This flexibility encourages architects and designers to think beyond the limitations of Earth-bound architecture and consider the unique environmental, physical, and psychological challenges of living on the Moon.

How can your design integrate with the Moon's unique landscape and environmental conditions? How can your design adapt to the evolving needs of its inhabitants? Can it grow, transform, or be repurposed over time to accommodate different uses or an expanding population? Is your design scalable and replicable for potential future expansion or application in other extraterrestrial environments?

# VILLA ON THE MOON 2050

Non Architecture and all the supporting organizations collaborated in identifying a range of 30 design issues related to the research theme of Culture. Within our longlist, we highlighted a few that could be relevant to this competition.

In relation to the **Ecology**:

1. Biomimicry,
2. Ecological systems,
3. Sustainable materials,
4. Environmental impact,
5. Eco-friendly practices,

6. Natural ecosystems,
7. Biodiversity,
8. Renewable resources.

In relation to **Society & Culture**:

9. Community engagement,
10. Cultural heritage,
11. Social sustainability,
12. Urban activism,
13. Inclusive design,

14. Public spaces,
15. Cultural identity,
16. Community resilience.

In relation to **Architectural Design**:

17. Design principles,
18. Urban landscapes,
19. Spatial dynamics,
20. Building techniques,
21. Design innovation.

In relation to **Climate Change**:

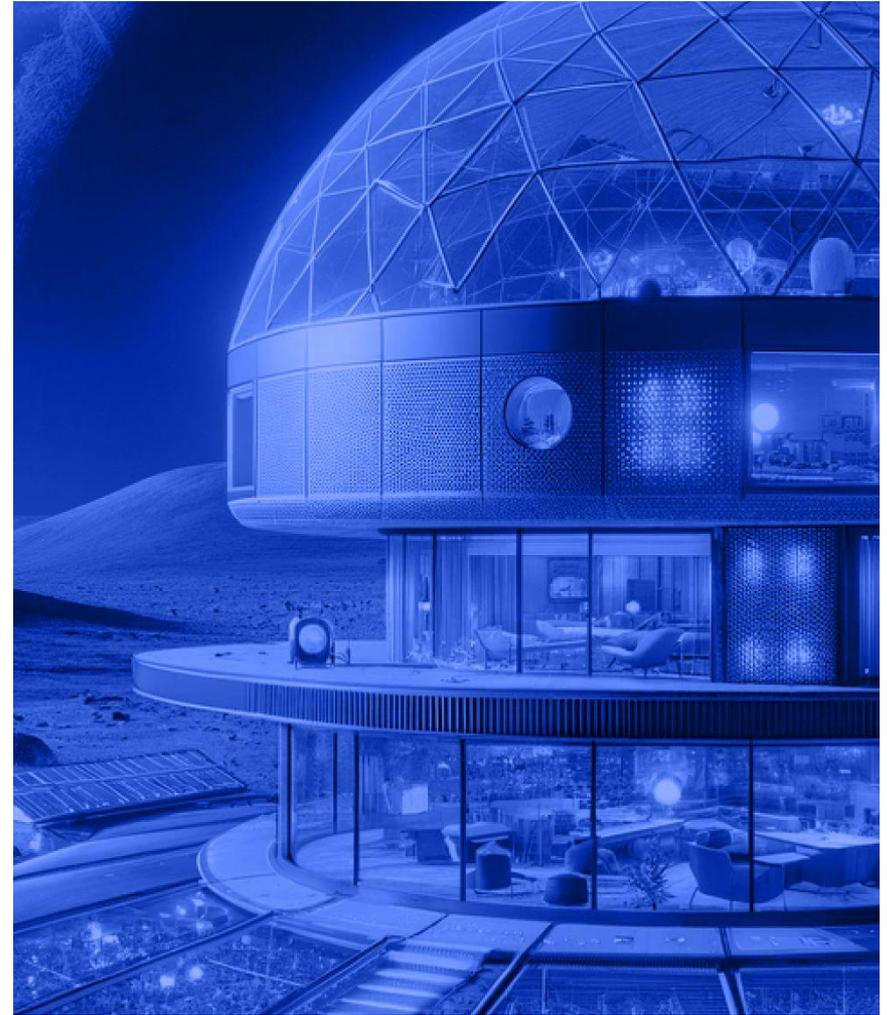
22. Climate adaptation,
23. Resilience planning,
24. Energy efficiency,
25. Sustainable urbanism,
26. Carbon footprint reduction,
27. Thermal comfort,
28. Passive design,
29. Stormwater management,
30. Heat island effect.

These are only a few of the critical aspects to address around the theme of Culture. **Projects should take into consideration one or more of these themes.** They can also come up with new ones, as long as they are relevant to the topic of the competition.

We ask participants to select a maximum of 5 keywords to explain their design. Keywords can be picked from our list or they can be proposed by the design team. See the submission requirements for further reference.

If you want to receive more insights on these topics you can subscribe to our [newsletter](#) or visit our [website](#).

You will get articles, essays and references from our editorial team.

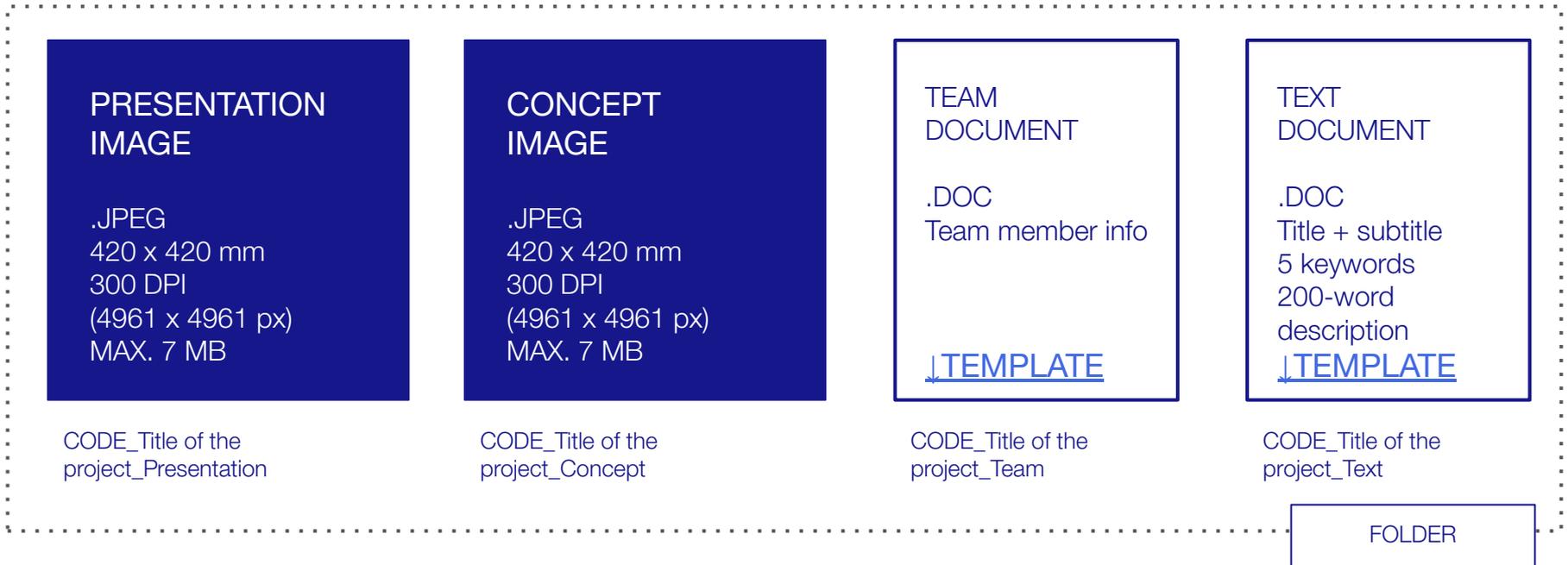


# RULES



# PRESENTATION REQUIREMENTS

Non Architecture is also unconventional in its submission requirements. The participants are asked to submit 1 folder, named with the registration code and the title of the project (CODE\_Title), containing:



**01. A presentation image** (.JPEG) showing the qualities of your design, in one catchy and representative impression.

File name: "CODE\_Title of the project\_Presentation".

**02. A concept image** (.JPEG) showing the qualities of your design, in one catchy and representative impression.

File name: "CODE\_Title of the project\_Concept".

**03. A team document in Word** (.DOC), containing / the title and subtitle of the project (maximum of 10 words)

And the team's info in the following format:

/ Name + Surname of each team member (separated clearly),

/ Nationality (multiple options can be added),

/ Institution/company (company or university attended, to be included just in case you want it to be visible once your project is published).

There is no need to create a team name. One team should consist of 1-4 people.

File name: "CODE\_Title of the project\_Team"

**USE THIS TEMPLATE**

**04. A text document in Word** (.DOC), clearly stating / the title and subtitle of the project (maximum of 10 words)

/ 5 keywords, at least 1 from the given list (page 8-9), that better explain your project,

/ a short project description (maximum of 200 words, must be written in English).

File name: "CODE\_Title of the project\_Text"

**USE THIS TEMPLATE**

The **CODE** refers to the **5-digit number** you receive during the registration process (same as the order number, in a format of #12345), it is going to serve as your **registration code for the competition**.

Do not include your name, your registration code, or any other reference to you in the images. After being evaluated by the jury, the projects will be reconnected to their authors through the submission code.

Additional details on the team members and on the projects will be required during the submission procedure.

An example of naming the files correctly:

CODE: #56789

Title of the project: Villa on the Moon

**01. Presentation Image:**

56789\_Villa on the Moon\_Presentation

**02. Concept Image:**

56789\_Villa on the Moon\_Concept

**03. Team Document:**

56789\_Villa on the Moon\_Team

**04. Keywords Document:**

56789\_Villa on the Moon\_Keywords

Folder: 56789\_Villa on the Moon

Please, do not use the # in the file names.

/ You need to come up with your own project title and replace “Villa on the Moon” in the example.

## IMAGE REQUIREMENTS

/ Square format 420 x 420 mm, 300 dpi (4961 x 4961 px),

/ High Quality (for example, in Photoshop JPEG output quality: 8, or 80-85 in Gimp is recommended),

/ 7 MB maximum file size.

If the submitted images don't respect these criteria, may lead to the disqualification of the team.

# PRESENTATION REQUIREMENTS

/ The Presentation and Concept Images should display ONE SINGLE VISUALIZATION each (ex. one drawing or one rendering). We recommend not to create a layout of several images.

/ There is no need to entirely fill the images or to add a frame.

/ The images do not demand for any kind of specific technique of representation, as long as they respect the given guidelines. Be creative!

/ We highly recommend you to not add text to the images, please use the #KeyWords in the Word Document for further explanation. The projects should be explanatory enough through the graphic material, without the usage of flowing text.

/ It is compulsory to use the provided Word templates to create your Team and Keywords Documents. In case the Team and Keywords Documents are submitted in any other format than a Word file (.DOC), its content might be excluded from publishing.

/ The language of the submission is ENGLISH, any text written in a different language will not be taken into account during the evaluation.

**EVERY SUBMISSION THAT DOESN'T RESPECT THE PRESENTATION REQUIREMENTS, MIGHT GET DISQUALIFIED FROM THE COMPETITION.**

# PRIZE

Non Architecture Competitions will award only one winner, selected by the jury collectively, and 7 honourable mentions.

## WINNER (1 PRIZE)

/ 1.000 euros\*

/ Publication in the Non Architecture Competitions books and website

/ Reviews in digital magazines and several architecture blogs

## HONOURABLE MENTIONS (7 PRIZES)

/ Publication in the Non Architecture Competitions books and website

## FINALISTS (UP TO 17 PRIZES)

/ Publication in the Non Architecture Website

## SPECIAL PRIZE

The organization might establish additional special prizes and awards during the competition development and in the evaluation phase.

All participants submitting a project can request a certificate of participation at [info@nonarchitecture.eu](mailto:info@nonarchitecture.eu). Winner, HMs, and Finalists, will be awarded with a badge on their non-a.com profiles.

\*Taxes will be deducted and retained by overall prize amount. The prize will be taxed as professional income or other sorts of income according to Italian law, with a range from 20 to 30% according to winners' country of residence.

Note: The appearance on the involved architectural platforms are subject to the agenda and availability of the external platforms involved.

# CALENDAR AND PRICING

02 January 2024	Competition launch.
02 - 31 January 01 - 29 February 01 - 31 March 01 - 30 April	Special registration period (40€*). Early registration period (55€*). Regular registration period (70€*). Last minute registration period (100€*).
15 April 2024 30 April 2024 11:59 PM	Submission opens on our website. Submission closes.
20 May - 24 May 2024	Winner announcement.

\* +22% VAT.

The timing always refers to Central European Time (CET).

To avoid confusion, please check the countdown on the competition page.

After completing the payment, you will receive a first email from Paypal which confirms the transaction. Non Architecture will later accept your payment and provide you with a registration code. **THE REGISTRATION CODE WILL BE THE FIVE DIGITS CODE INDICATED AS “ORDER NUMBER”**, which will be sent to you once your payment is accepted.

You can always find your order number in My Account page, under My Order.

After your Non Architecture confirmation is sent, you can't cancel your payment anymore and it is not possible to get a refund of the registration fee.

In case you have issues with payments, contact us at [info@nonarchitecture.eu](mailto:info@nonarchitecture.eu)

By registering to the competition, you are stating that you and your team are accepting all the conditions stated in the competition brief and that you are familiar with the generic [Terms and Conditions of Competition](#) displayed on our website.

# JURY

The jury will be composed by a pool of platforms and experts specialized in the theme addressed by the competition. They will act as partners in the competition and final jurors of your work.

The jury members are the following:

Cas Esbach

Project Leader at MVRDV

Hanjun Kim

Associate of SoomeenHahm Design Ltd.

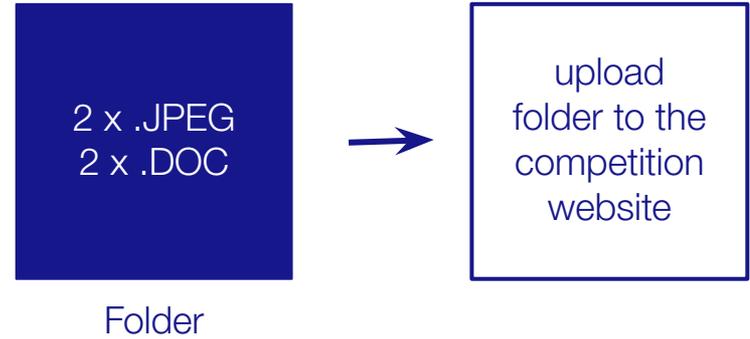
All jury members expressed their formal commitment in reviewing shortlisted projects and selecting winners according to the awarding criteria expressed in the brief.

# SUBMISSION

Submissions must be done through the Non Architecture website ([non-a.com](http://non-a.com)), before the submission period ends, the deadline is indicated in the calendar. You will find the submission tab within the Competition Group. We recommend to create an account on non-a.com before the submissions open.

The submission group on non-a.com opens 2 weeks before the submission deadline. It is going to be placed on the Non Architecture website, on the corresponding competition page.

Simply follow the submission instructions and upload the project directly on the website.



No submissions will be accepted by e-mail or any other medium.

The submission page will be automatically closed after the submission date and time are reached, not allowing any modifications.

We suggest uploading your project 24 hours in advance to make sure that everything works out correctly. This way you have time to solve any issues that might come up along the submission process.

# ELIGIBILITY

Non Architecture Competitions are open to all human beings, from every age and cultural background, working in groups or individually.

Teams can be formed by a maximum number of 4 people. The registration fee is paid per team, regardless of how many members form it. Personal information of all the team members can be uploaded during the submission procedure of the final drawing.

# EVALUATION

The core values of the competitions are:

- / Effective communication of the design qualities through the drawing
- / Innovation and Originality of the design
- / Relevance to the building function addressed by the competition

These values will lead the selection of the finalists' projects and they will be used by the jury as a guideline in their decision.

All jury members have agreed to assess the projects. Should any juror(s) fail to adhere to this agreement and not submit their evaluation on time, the Non Architecture team reserves the rights to select the winners and honourable mentions.

# CONTACTS

For additional info please check the FAQ on our website: [www.non-a.com/faq](http://www.non-a.com/faq)

**Terms and conditions of competing:** <https://www.non-a.com/terms-and-conditions/>

During the competition, all participants are permitted to ask questions which help them better understand the project description and/or any other aspect of the competition.

Any questions that are not resolved in this document must be made via email at [info@nonarchitecture.eu](mailto:info@nonarchitecture.eu) - if you didn't register yet - or through our server on Discord - if you already registered to the competition.

You will find there a dedicated channel for the competition Q&A. Access to the Discord can be found in your [personal account page](#) after registration to the competition.

This ensures that all participants have access to the same amount of information. Questions via any other social media channel will not be addressed.

THE NON ARCHITECTURE TEAM AND  
ALL THE COMPETITION PARTNERS  
WISH YOU THE BEST LUCK,  
CONFIDENT THAT YOU WILL  
APPROACH THE CONTEST  
WITH ALL YOUR CREATIVITY AND  
INNOVATIVE MIND.

[info@nonarchitecture.eu](mailto:info@nonarchitecture.eu)

[www.non-a.com](http://www.non-a.com)

# CURATOR

non|  
architecture

# RESEARCH PARTNERS

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A Visionary Platform for Architectural Research

**TRUST**  
Transdisciplinary for Urban Sustainability Transition

Future  
*Urban Legacy*  
Lab

in  
rch

**ROMA  
TRE**  
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**Rhino**  
Rhino  
modeling tools for designers

European Urban  
Knowledge Network



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C A G E

