

SCHOOL OF
DISRUPTION

TITAN
DISRUPTIVE
INNOVATION
CENTER 

3rd Edition

SPACE ARCHITECTURE WORKSHOP

Designing for Two Worlds

Taking place on **July 15th – July 19th 2024**

Milan, Italy

Special Guest Professors
Space architecture experts
Barbara Imhof and **René Wacławicek**

LIQUIFER
SYSTEMS
GROUP





The climate crisis and increasingly widespread conflicts are forcing more and more human beings to live in extreme environments.

**How can we design
sustainable living
environments for places
where life seems
impossible?**

Bridging Worlds to Design **Regenerative** and **Sustainable** Buildings

Life in space and on other planets faces challenges similar to those in the extreme environments of Earth.

The climate crisis is triggering irreversible changes on our planet that force humanity to find new paradigms and rethink our living future.

Resource scarcity, temperature polarization, and energy crisis are just some of the extreme conditions that are increasingly making life in space similar to life on earth.

Transferring the knowledge developed from space design research to design a more sustainable and planet-friendly life on earth can have an immediate impact on our future.



Discover the third edition of the Space Architecture & Design workshop

The journey goes on

Following the previous two editions, which involved participants from more than **30 countries** around the world, the **School of Disruption** continues its mission to democratize access to innovation.

The **third edition** of the in-person chapter of the Space Architecture & Design online course will once again not only be an extremely hands-on experience but will offer concrete opportunities and network with the people and organizations that are moving things forward.



This workshop is designed by

LIQUIFER
SYSTEMS
GROUP



Barbara Imhof

Managing Partner & co-owner of LIQUIFER

Barbara Imhof is an internationally active space architect and design researcher. Barbara did a stint at NASA Johnson Space Center in Houston. She has been a member of the American Institute of Aeronautics and Astronautics (AIAA) and the Space Architecture Technical Committee (SATC) since more than 20 years. Since October 2023 she holds a professorship in Integrative Design in Architecture with a focus on Extremes at the University of Innsbruck.



René Wacławicek

Managing Partner & co-owner of LIQUIFER

René Wacławicek started his career in design and construction planning for terrestrial buildings. Since more than 20 years he is working as space designer on LIQUIFER projects for the European Space industry and European Space Industry. Currently he is leading the work efforts for LIQUIFER as part of the design for the International Habitat module of the Gateway lunar space station.

A composite image of space. In the upper left, a bright sun with a starburst effect shines. In the upper right, a large, curved portion of the Earth is visible, showing blue oceans and white clouds. The foreground is a dark, cratered lunar surface. The background is a deep black space filled with numerous small, distant stars.

Designing for Two Worlds

The program



Lecture topics

- Life-support **systems**
- Mission planning of a Lunar Base **engineering architecture, water recycling systems**
- Space design for **terrestrial living spaces**
- Greenhouses
- 3d printing **with in-situ materials**
- Human performances
- Metabolic Houses circular economy in LEO orbit and beyond

Workshop structure

Space architecture goes beyond the traditional concept of architecture and design.

The workshop will be contaminated by the different fields indispensable for designing human life to design human life on earth from space know-how.

Design work will be highly practical and focused on specific objectives. Participants will be divided into small groups and accompanied by mentors who will guide them in developing the project.



Instructors

Several internationally renowned experts, who work in the space industry daily, take turns in lectures covering the essential topics of Space Architecture.

Jury Panel

A panel of experts will evaluate the different teams' projects

Evaluation and Final Award



Workshop participants will receive an official certificate from Titan, and their companies/studies will be included in our international directory.



Each team will present its project at the end of the workshop and a jury will evaluate the best one, which will receive recognition and a special award.

This year's prize is the Perseverance rover, kindly offered by our sponsor LEGO.

Workshop Contest

Extreme Environments Module

Workshop participants will be divided into groups and will have to present a design idea. The goal is to design a hypothetical living module suitable for the lunar surface or extreme environment. The designs will have to meet specific parameters and demonstrate effective feasibility.



General Parameters

The design must consider fundamental parameters such as habitability, mission scenarios and logistics.

Specific Parameters

- Compact Living
- **Life support systems:**
 - Resource management
 - Water and air management
 - Material recycling and re-use

Extra Parameters

- Autonomous building
- 3d printing
- IoT

Designing for Two Worlds

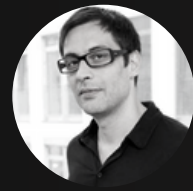
Experts and Jurors



Instructors



Barbara Imhof
Managing Partner & co-owner of
LIQUIFER



René Wacławicek
Managing Partner & co-owner of
LIQUIFER



Advenit Makaya
Advanced Manufacturing Engineer
European Space Agency



Daniel Schubert
Deputy Head Of Department - EDEN Initiative
German Aerospace Center



Miranda Fateri
Prof. of Mech Eng. and Materials Science
Aalen University



Brent Sherwood
Former Senior Vice President
Blue Origin



Igor Ciminelli
Founder
School of Disruption



Maria Antonietta Perino
Dir. International Network Opportunities
Thales Alenia Space

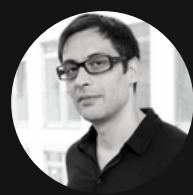
Planning

	Monday July 15th	Tuesday July 16th	Wednesday July 17th	Thursday July 18th	Friday July 19th
09.10 - 10.00	Introduction	Recap & Questions	Recap & Questions	Recap & Questions	Finalising projects
10.15- 11.30	Lecture Cyrcular Systems Barbara Imhof	Workshop	Lecture Lunar resources Miranda Fateri	Lecture Pitch and presentation training Igor Ciminelli	
11.45 - 12.30	Lecture Designing a lunar base René Waclavicek		Lecture Greenhouses Daniel Schubert	Workshop	Workshop
12.30 - 14.30	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK
14.30 - 15.00	Lecture Mission planning of a lunar base Maria Antonietta Perino	Lecture Four futures for the moon Brent Sherwood	Workshop	Workshop	Workshop
15.15- 17.30	Workshop	Workshop	Workshop	Workshop	FINAL PRESENTATION

Jury for the design contest



Barbara Imhof
Managing Partner & co-owner of
Liquifer System Group



René Waclavicek
Managing Partner & co-owner of
Liquifer System Group



Igor Ciminelli
Founder
School of Disruption



Adolfo Suarez
Partner and Director L22 Retail
LOMBARDINI22



Carlotta Zucchini
Founder and Editor in Chief
The Plan



Simonetta Di Pippo
Director of the Space Economy
Evolution Lab (SEE Lab), at **SDA Bocconi**

Lombardini22
DESIGN THINKING

**LIQUIFER
SYSTEMS
GROUP**

■ ■ ■
THE PLAN

SDA Bocconi
SCHOOL OF MANAGEMENT
SEE LAB
SPACE ECONOMY EVOLUTION

Sponsors & Allies

SCHOOL OF
DISRUPTION

TITAN
DISRUPTIVE
INNOVATION
CENTER

TITAN

DISRUPTIVE
INNOVATION
CENTER

INTERNATIONAL
SPACE UNIVERSITY
ISU

LEGO

Lombardini22
DESIGN THINKING

esa

design
boom

ThalesAlenia
Space
a Thales / Leonardo company

LIQUIFER
SYSTEMS
GROUP

THE PLAN

SPACEARCHITECT.ORG

spacewatch
global
AN INDEPENDENT
PERSPECTIVE ON SPACE

edilportale

archiportale

TICINO
MANAGEMENT

Trusted partners

SCHOOL OF
DISRUPTION

TITAN
DISRUPTIVE
INNOVATION
CENTER



European
Investment
Bank



LIQUIFER
SYSTEMS
GROUP

Details

Language: **English**

Dates: **15 July - 19 July**

Location: **Milan, Italy**

Prices (also payable in installments): **1'397 CHF**

If you are already a member of the School of Disruption, you will receive an extra discount for attending the Workshop.

Official Certificate: **Included**

Accommodations: **Not included**

All participants will receive the on-demand Space Architecture & Design and 3D Printing of Buildings courses from the School of Disruption.

THIS WORKSHOP IS HIGHLY RECOMMENDED FOR:

- ✓ Construction companies
- ✓ Architectural firms
- ✓ Engineering offices
- ✓ Sustainability practitioners
- ✓ Plant managers
- ✓ Students

For more information

You can book a call with the workshop promoters or get in touch through the email:

info@disruption.school

Reserve your spot now

[Click here to Book a Call](#)



TITAN

DISRUPTIVE
INNOVATION
CENTER 

SCHOOL OF
DISRUPTION

TITAN
DISRUPTIVE
INNOVATION
CENTER 

Via Cantonale 38, Manno 692

Switzerland

T: +41 91 610 42 23

M: info@titanswiss.com

W: titanswiss.com

W: disruption.school

W: universe.wiki