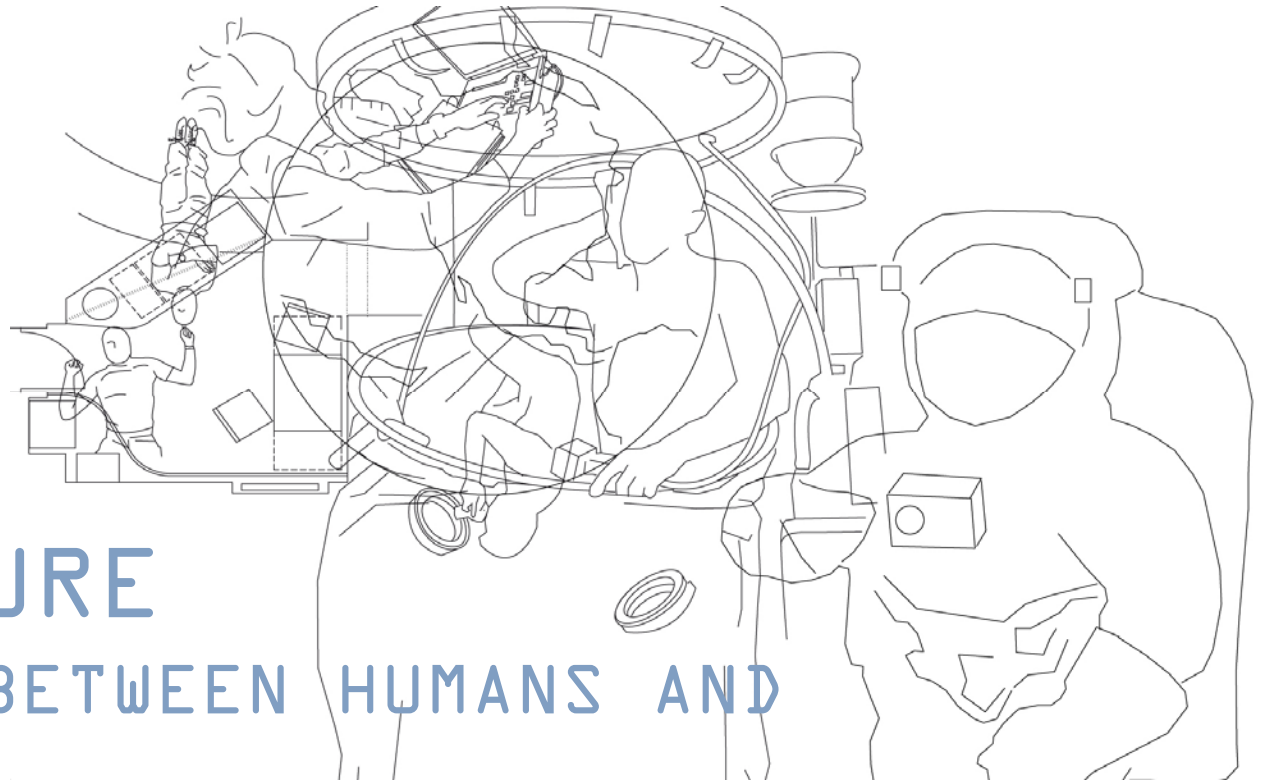




ARCHITECTURE

AS INTERFACE BETWEEN HUMANS AND TECHNOLOGY

Dr.-Ing. Sandra Häuplik-Meusburger
Dr. techn. San-Hwan Lu

TU Wien

Institute for Architecture and Design



Teaching and Research

„Emerging Fields in Architecture“

Modul

Hugh Broughton

Building sustainable Architecture in Antarctica

Mo, 16.11.2015, 18.00 Uhr

HS 7, Schütte-Lihotzky, Karlsplatz 13, Hof 2, Stiege 7, EG.

Modul
Emerging Fields in Architecture (HABITATION)
WS 15/16



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Enrico Gaia

Thales Alenia Space Italia S.p.A.

Building Space Modules

Mo, 30.11.2015, 12.00 Uhr

HS 7, Schütte-Lihotzky, Karlsplatz 13, Hof 2, Stiege 7, EG.

Modul
Emerging Fields in Architecture (HABITATION)
WS 15/16



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Logic of Discovery

From Fiction to Architecture

Ort: HS 7, Schütte-Lihotzky, Karlsplatz 13, Hof 2, Stiege 7, EG.

Modul
Emerging Fields in Architecture (HABITATION)
WS 15/16

1 Frage - 5 Antworten

WIE ENTSTEHT NEUES?

Gerhard Steixner / Film und Architektur / Mo, 19.10.2015, 18.00 Uhr

Georg Friedrich Haas / Musik / Mo, 09.11.2015, 13.00 Uhr

Will Alsop / Kunst und Architektur / Mo, 23.11.2015, 18.00 Uhr

Hans Weigand / Kunst / Mo, 14.12.2015, 18.00 Uhr

Vea Kaiser / Literatur / wird bekanntgegeben

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VORSTAND UNIV.PROF. ARCH. MAG.ARCH. GERHARD STEIXNER

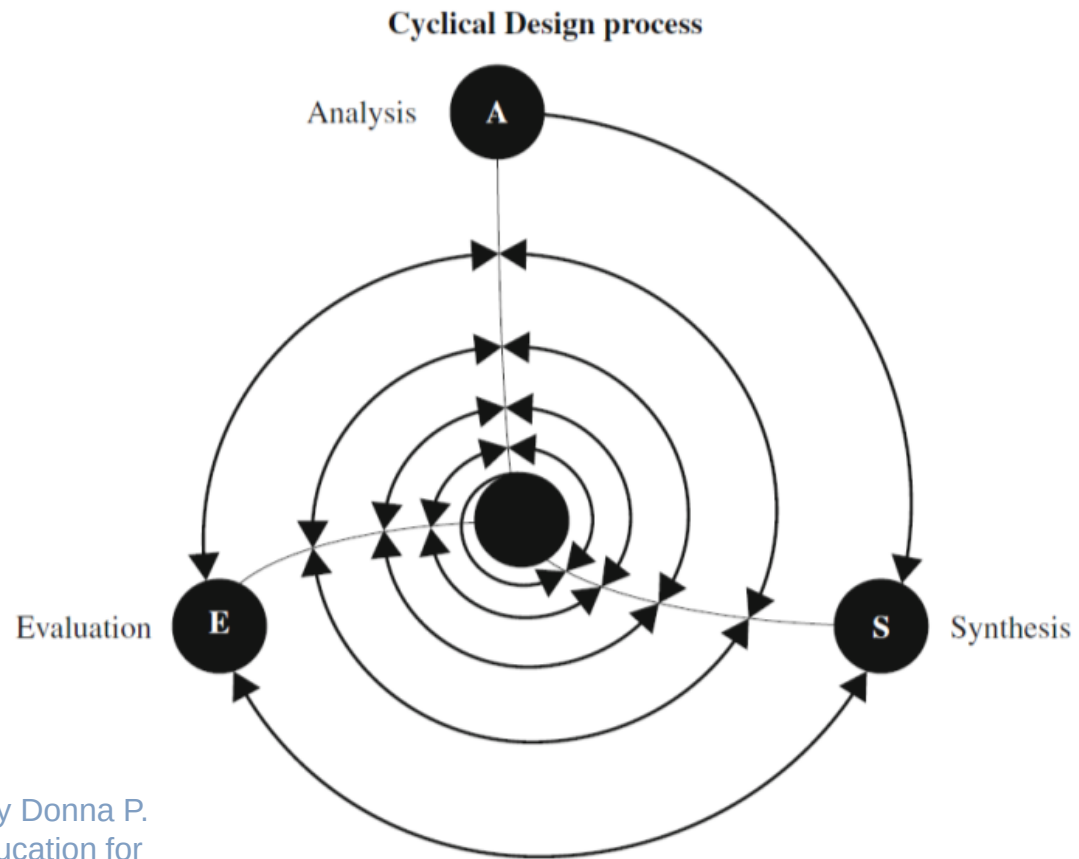
Dr.-Ing. Sandra Häuplik-Meusburger
Dr. techn. San-Hwan Lu

Educational Practices to Habitation Design: The Engineering Approach



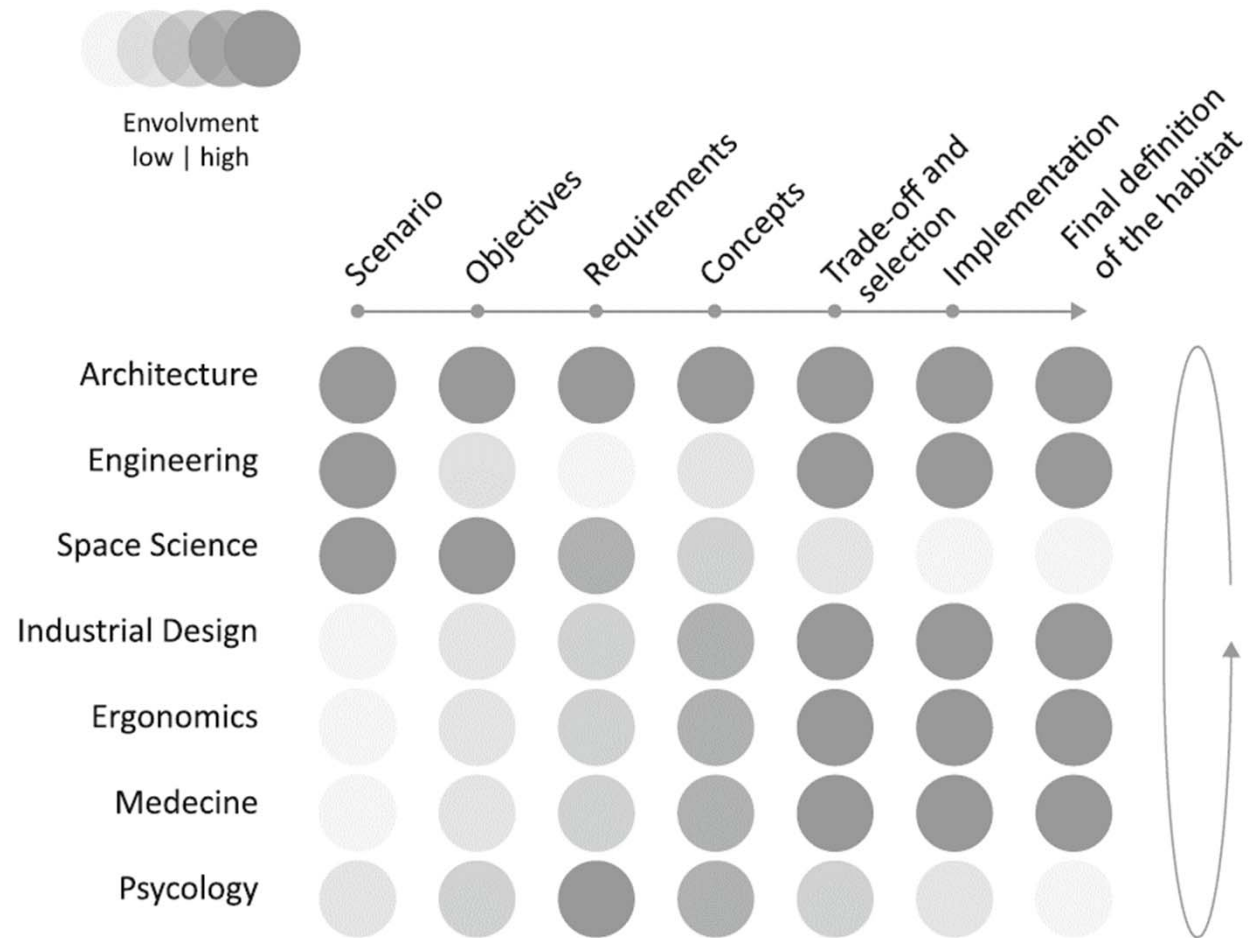
Img: Example of a common engineering design approach as published in ,Space Architecture Education for Engineers and Architects (Springer 2016)

Educational Practices to Habitation Design: The 'Architectural' Approach



Img: Cyclical design process (original model by Donna P. Duerk, as published in 'Space Architecture Education for Engineers and Architects' (Springer 2016))

Interdisciplinary Work



Img: Work process example as published in ,Space Architecture Education for Engineers and Architects (Springer 2016)

Human Factors

The Story of the Window



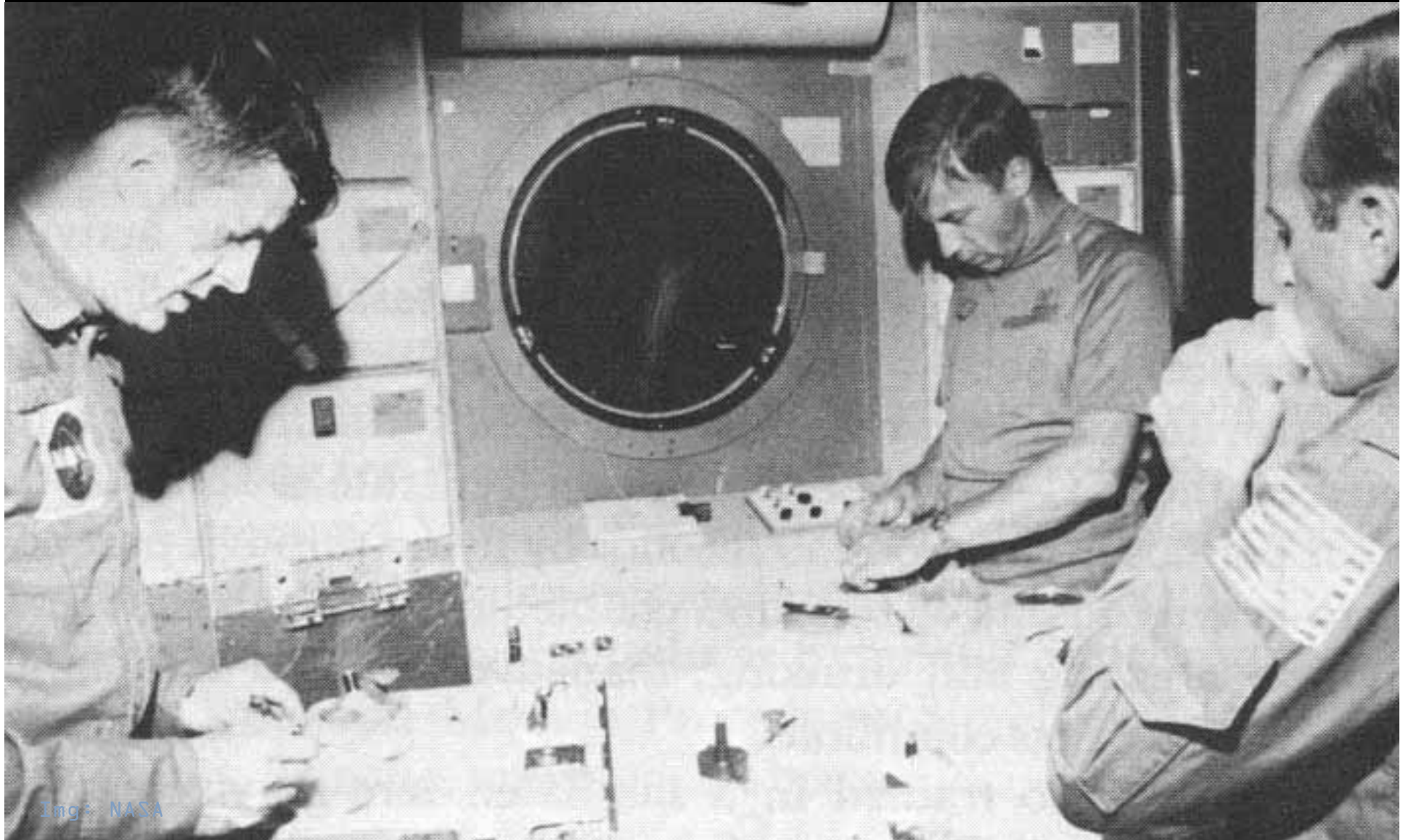
Img: NASA

“You’ve seen one Earth, you’ve seen them all.”
“ No you haven’t, babe [...]” (Quote ... Apollo 17, 1972)



Img: NASA

“Looking out of the window. Yes. We all did” (Skylab 73-74)



Ing: NASA

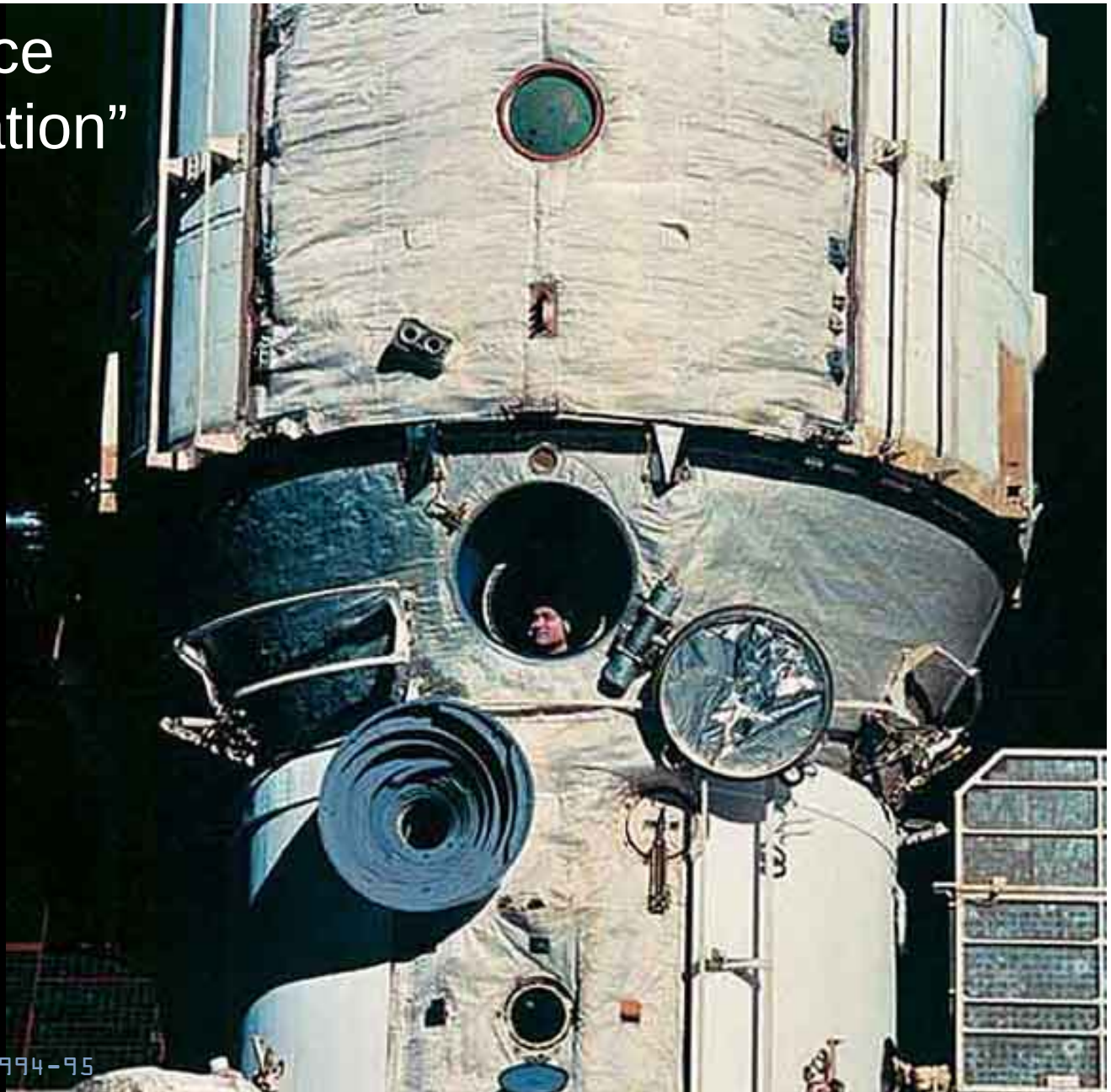
“Each of us does whatever he wants. I took a video of the Earth’s horizon.” (Lebedev, 1990, Salyut 6 1977-1982)



Img: NASA

“A marvellous place for Earth observation”

(Foale, 1999)



Img: NASA, Polyakov on Mir, 1994-95

... to view the geography, oceans, cloud formations, sunrises and sunsets, thunderstorms, ... ” (Williams, Jeff, 2007)



Img: NASA

“If something is going to stick out and make a nice handhold, it’s going to be used for a handhold” (NASA, 1974)



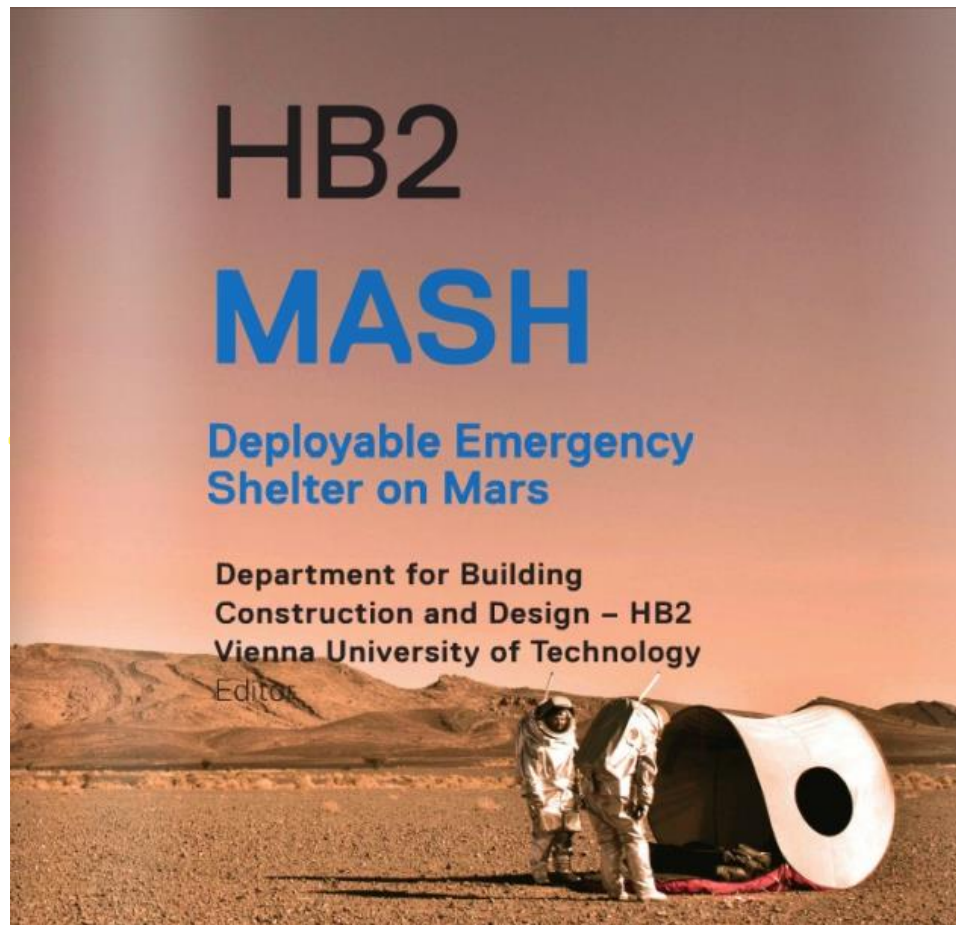
Img: NASA



Img: Susan J. Helms, NASA

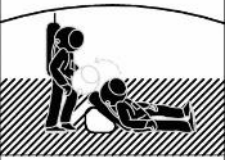
Design Studio:

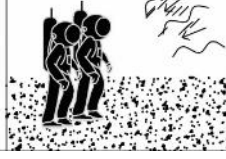
Deployable and Portable Emergency Shelter



<http://issuu.com/hochbau2/docs>

Research

1	Unconsciousness - breathing	
2	Unconsciousness - not breathing	
3	Dizziness	
4	Exhaustion	
5	Unforeseen reason for needing to remove the helmet	

6	Mechanical injury	
7	Space suit malfunction	
8	Rover / quad malfunction	
9	Solar particle event	

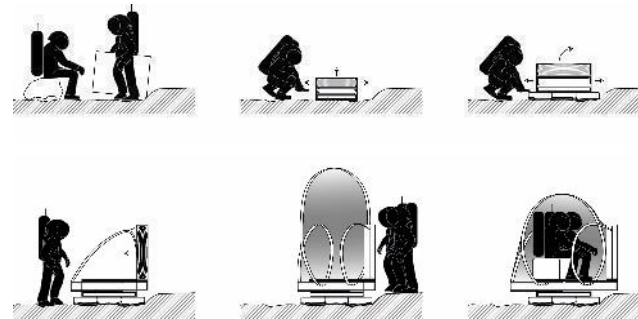
Concept Development



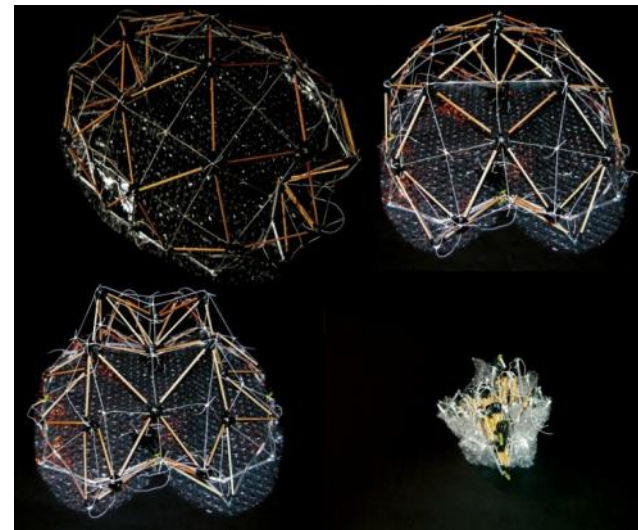
Deployment sequence for the Pneu project
(Image: TU Wien, HB2, Aigner, Nanu, Zodi)



Transportation concept for HTV shelter
(Rendering: TU Wien, HB2, Benesch, Galonja, Milchram)



Deployment Sequence for the spiral system
(Image: TU Wien, HB2, Kerekrétyova, Mathe, Mitrovits)



Model 1:20 to test deployment of the structure
(Photo: TU Wien, HB2, Stefan)

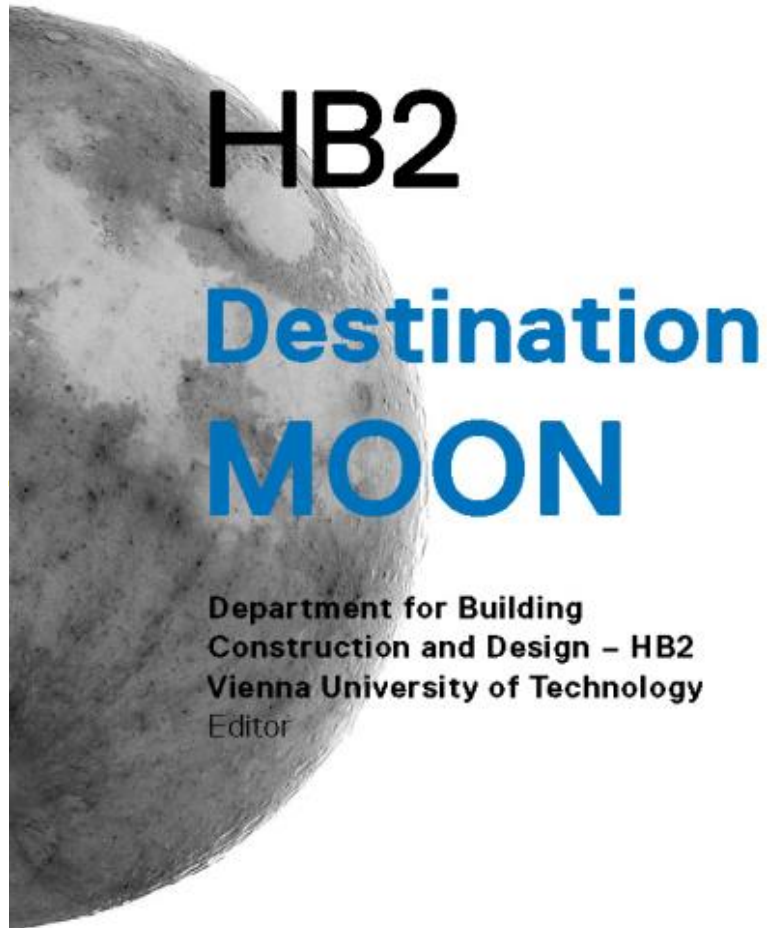
Prototype Development and Testing



Image credits: HB2, TUWien and OEWf (Zanella-Kux)

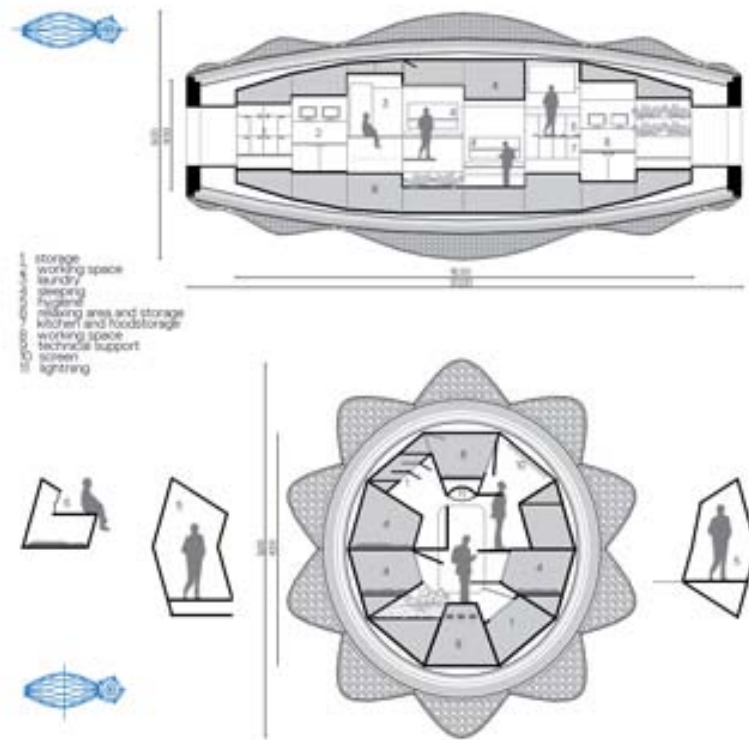


Design Studio: Destination Moon

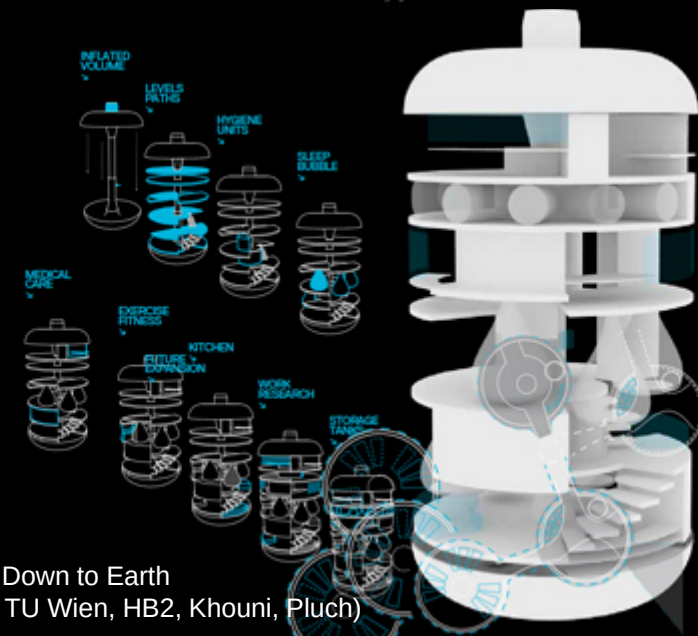
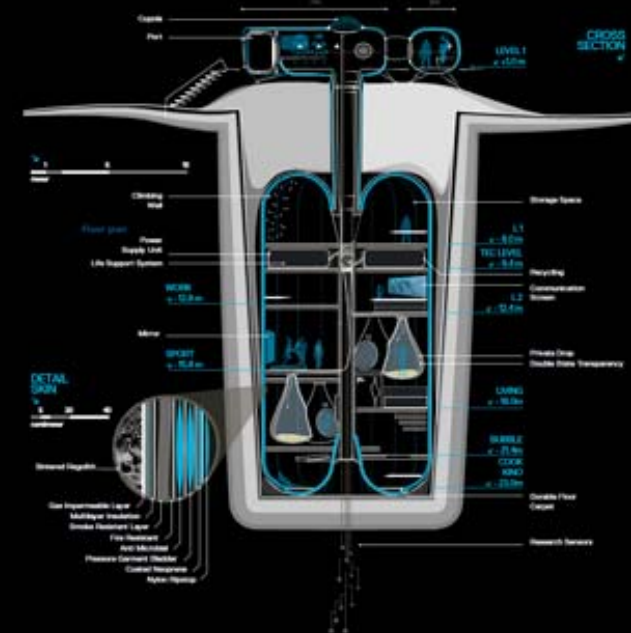


<http://issuu.com/hochbau2/docs>

Design Studio: Destination Moon



Project MYO
(Photo: TU Wien, HB2, Czech, Lang)



Project Down to Earth
(Photo: TU Wien, HB2, Khouni, Pluch)

Design Studio: European Extra-Terrestrial Sample



... in the making

Thank you!