



# Hothouse

## Layering Thresholds and Prolonging Seasons

848106 PJ Design Studio 1 (Group 0): Andreas **Körner** & Jade **Bailey**

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### Brief

In 'Hothouse' (1962), British science fiction author Brian Aldiss envisioned a future Earth as a veritable hothouse where plants filled almost all ecological niches. Inspired by this utopia (!), the studio will investigate architectural notions of greenhouses and conservatories. Rather than conceiving them as functional spaces, we will see them as architectural thresholds between the inside and the outside. In Innsbruck, such extensions on building facades often act as winter gardens and are commonly constructed from alternative materials to the main structure. The studio will consider such vertical attachments as seasonally changing spaces with migrating functions and varying extremes.

### Methods

In this design studio, you will work in groups to develop and apply strategies for building design, focusing on thermodynamics, mass, and layers. Together, you will use this knowledge to shape architectural volumes and design structures that adapt to seasons. Through this, you will create diverse microclimates using passive techniques. The 15-week-long studio is roughly structured into the following steps:

- Identify a thermal/spatial/vegetative condition at the Palmenhaus
- Analyse the given site, document and represent this information
- Analysis of precedents, research, and formulation of architectural concepts and possible functions
- Understand thermal conditions on the surface and apply this knowledge to develop a massing

- Design additional layers in front of the façade to inform an articulated threshold space, working in sections and 3d models, both physical and digital
- Use an iterative design process to drive the development of programmed spaces into the cavities, layers, and enclaves
- Consider seasonal changes and weathering over time
- Physical group model with interchangeable facades, individual multi-material models at a scale of 1:50

### Case study and site

During the first weeks, we will visit the *Palmenhaus* in Innsbruck together. It will act as a case study and inspiration throughout the semester. The projects will be situated on the façade of an existing building, engaging with the public space.

### Learning outcomes

You will understand how to design resilient, adaptable, and sensitive buildings to their changing contexts, embodying the principles of thermodynamics, passive systems, and 'Shearing Layers'.

### Evaluation criteria

- Innovative design solution: Creativity and originality in translating the brief into architectural design.
- Technical Proficiency: Ability to develop a coherent concept and corresponding intervention.
- Contextual Sensitivity: Responsiveness of the design to the site and its challenges/temporal conditions.
- Presentation Quality: Clarity and professionalism in presenting the design process and final proposal.

### Requirements

We expect an affinity for digital design tools and specifically invite those students to express their interest. While focusing on concepts and design development, we ask students to embrace the opportunities presented using advanced modelling and simulation software.

### First meeting

2.10.2024, 13:00 at SR HB West (3<sup>rd</sup> floor)





## Bibliography

Reading the literature is integral for the design studio, and selected texts will be made available to students via OLAT. You are encouraged to engage with the literature to enrich your design projects and to establish contextual links to the history and theory of architecture:

Aldiss, B. (2008) *Hothouse*. Penguin: London.

Addington, M. (2017) The Unbound Boundary. In: García-Germán, J. (Ed.) *Thermodynamic Interactions: An Exploration into Physiological, Material and Territorial Atmospheres*. Actar: New York, Barcelona, pp. 79–87.

Barber, D. (2021) *Climate Histories* [Podcast]. Available from:

<https://nightwhiteskies.com/episodes/climate-histories> (Downloaded: 27 October 2021).

Brand, S. (2007) Shearing. In: Braham, W.W., Hale, J.A. & Sadar, J.S. (Eds.) *Rethinking Technology: A reader in architectural theory*. Routledge: New York, pp. 350–353.

Bridle, J. (2022) *Ways of Being: Animals Plants, Machines: The Search for Planetary Intelligence*. Penguin Books, London, New York.

Jencks, L. (2012) An Ornament of Sustainability, or, How Do I Keep This Damn Orchid Alive? In:

Born, M., Furján, H.M., Jencks, L. & Crosby, P.M. (Eds.) *Dirt*. PennDesign; The MIT Press: Philadelphia, Cambridge, pp. 290–301.

Rahm, P. (2011) *Meteorological Architecture, Sustainable by Design*, 31 March. Available from:

<https://www.youtube.com/watch?v=RLBCRhYIXZQ>.