Glasshouses at the BGBM

How are spatial ordering logics connected to the BGBM cacti collection translated from the global scale applied in the glass houses?

Research Agenda

Building from the spatial figures theory of Marta Löw, we conducted research to uncovrer and understand the logics applied in collecting, ordering and display of the BGBM cacti collection. We obtained information from multiple personal interviews with Head Curator of the BGBM Living Collection, Dr. Nils Köster, as well as site surveys and observation.

From our time with Nils, we obtained an Excel spreadsheet doccumenting key facts about every cacti in the BGBM collection such as wild origin, date of collection, institutional origin, and location the BGBM grounds. By spatialising this information, we came to understand the wider network and connections that are represented by the BGBM cacti collection.

We catagoraized these different networks into eight different ordering logics which understood to be the main factors that organize the cacti collection on site.

Ordering Logics

Basis Knowledge

1. Climate
The relevant climate zones to the BGBM cacti collection, which span around the globe following horizontal bands parallel to the equator

Af, Am, As, Aw, BSh, BWh, Cfa, Cwa, Cwb

2. Geographical (Old/New World)
In botanic language it is common to use the term 'New World' to talk about the Americas and 'Old World' to mean Europe, Africa, Ozeania and Asia

New World
Old World

3. Taxonomy
People order plants within a taxonometry by finding similar features on them that tell their evolutionary story.

They are named accordingly:
Trichocereus caulescens F. Ritter
genus / species / botanist

Situated Knowledge

4. Educational Gestures
Within the public-accessable areas there is organization to teach the visitor a certain narrative about different aspects of the plant world. In some parts, the plants are ordered after a certain topic in a special relation to each other.

5. Aesthetic
There is a desire to present the plants in a visually appealing way. Therefore a certain principle of aesthetic plays a role in presenting the plants in the display houses. Since some of them grow very big they are cut in a way that they fit into the glasshouses.

6. Social - Institutional Connections
The relationships between researchers and institutions also have an impact on the collection through interchange of plants and knowledge.

7. Individual Research Agenda
The motive of certain individuals working at the BGBM also influence the organization and focus of the collection.

8. Logistics and Technical
Since Space of the bgbm is limited it is only possible to collect and have a certain amount of plants.
Since plants of the tropics are in need to grow in a certain climate it makes the available space even more valuable. The plants in the nurseries are hold vey practical

SFB 1265
Re-Figuration of Spaces
CUD

E. Cacti House

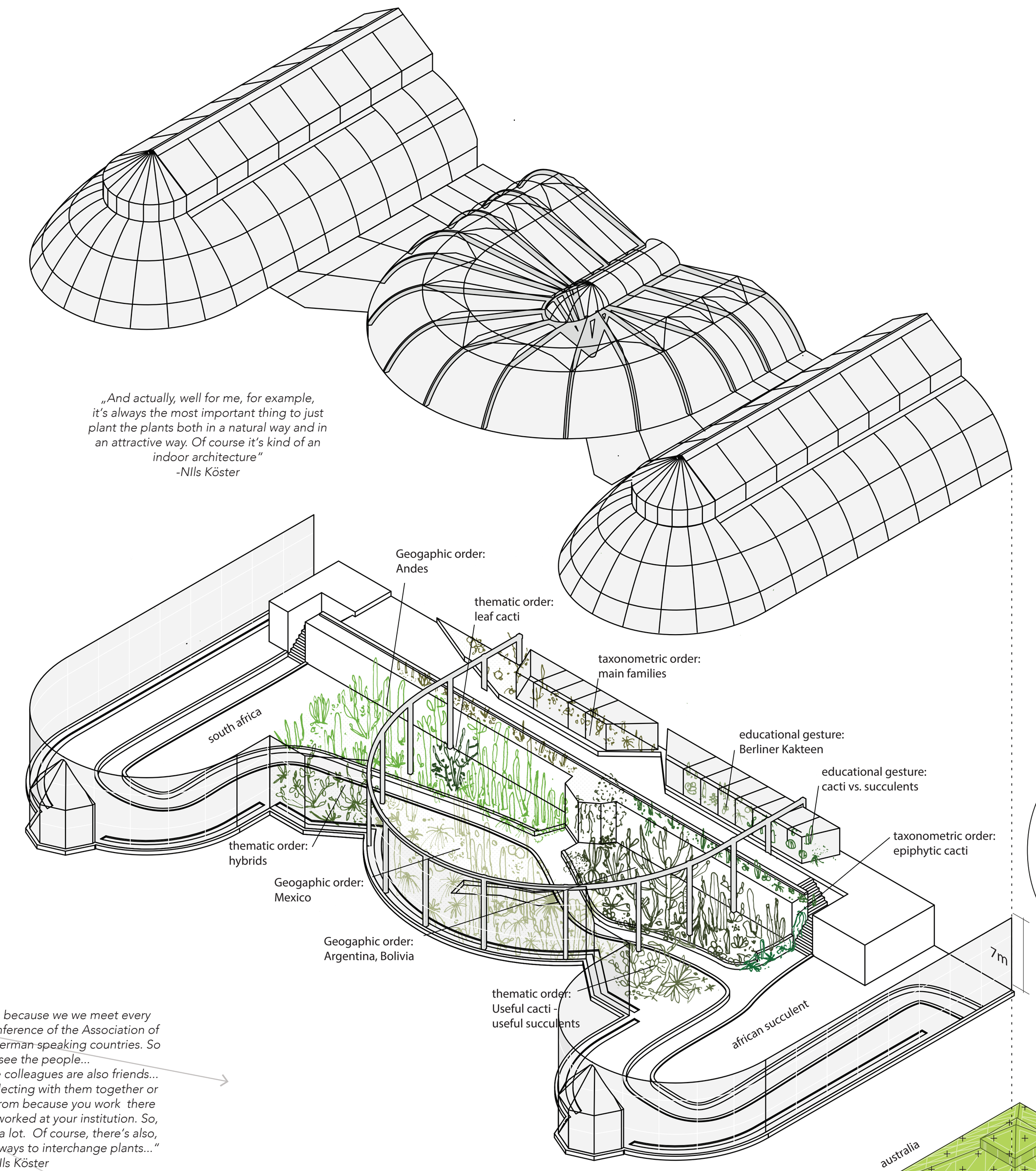
Stats:
493 cacti
400 m2

The cacti house is part of three display houses grouped together, the South Africa and the African succulents share the same path and the same mezzanine level. There are no walls between the houses, so they share the same climate.

The cacti house was build in 1987 and most of the plants are growing in beds, meaningmost of them have been growing there since the building was completed. Beat Ernst Leuenberger was the curator of BGBM during this period, so he decided the set up of the plants. Since many of the of cacti are very big by now, they partly need to be pruned. Some of them need support with sticks or strings to not fall over.

In the cacti house the cacti are ordered by different topics:
- grouped the same geographic origin
- ordered after taxonometry (since taxonometry is changing every year its not actual)
- where cacti hybrids are growing.
- where cacti are compared with other succulents
- useful cacti (eatable etc.) and useful succulents
- 'Berliner Kakteen', named after people from Berlin
- where Carribean leaf cacti grow, which were a special research agenda of Leuenberger
- epiphytic cacti

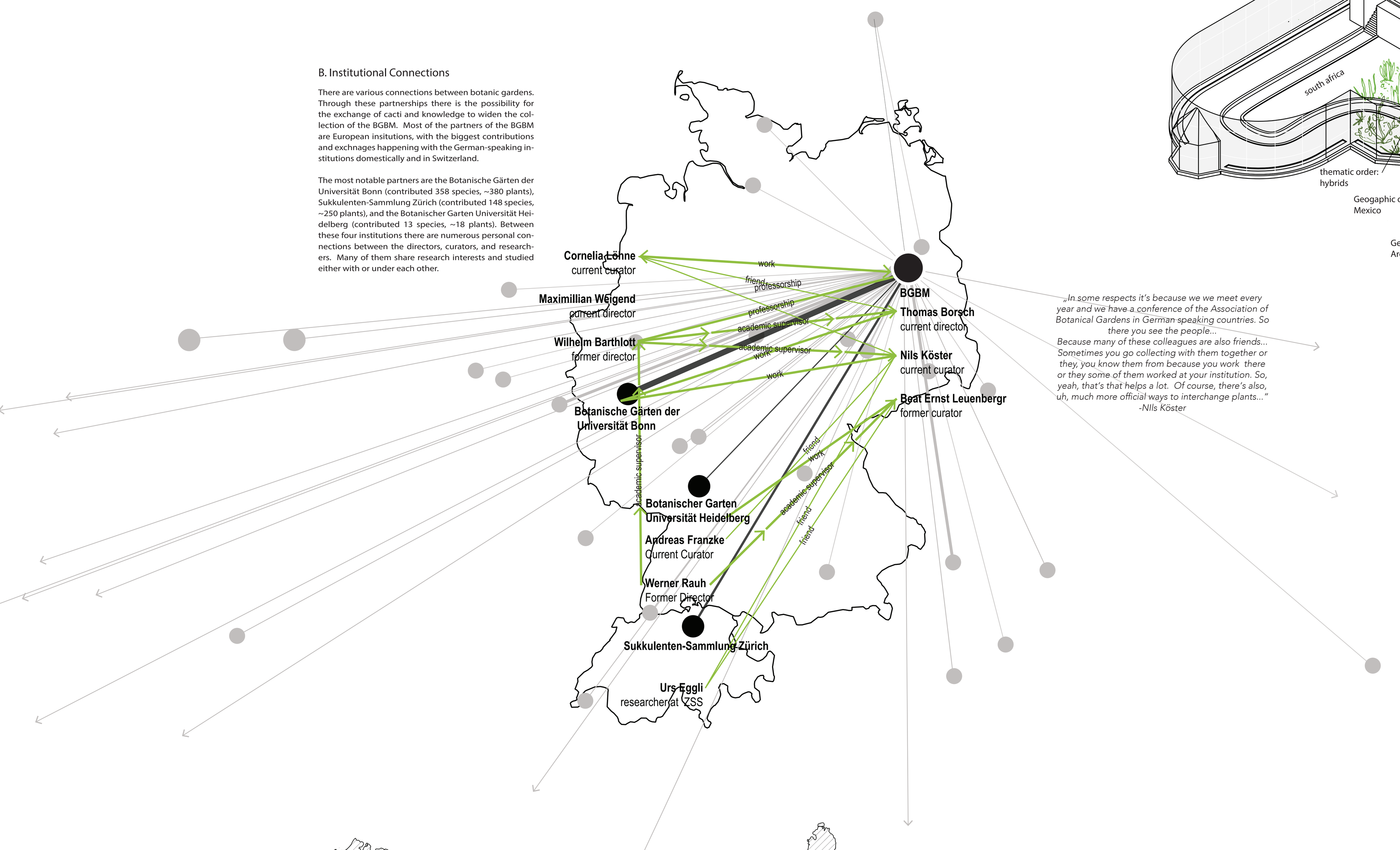
There is also a consideration for the overall appearance of the collection, as it is a display house.

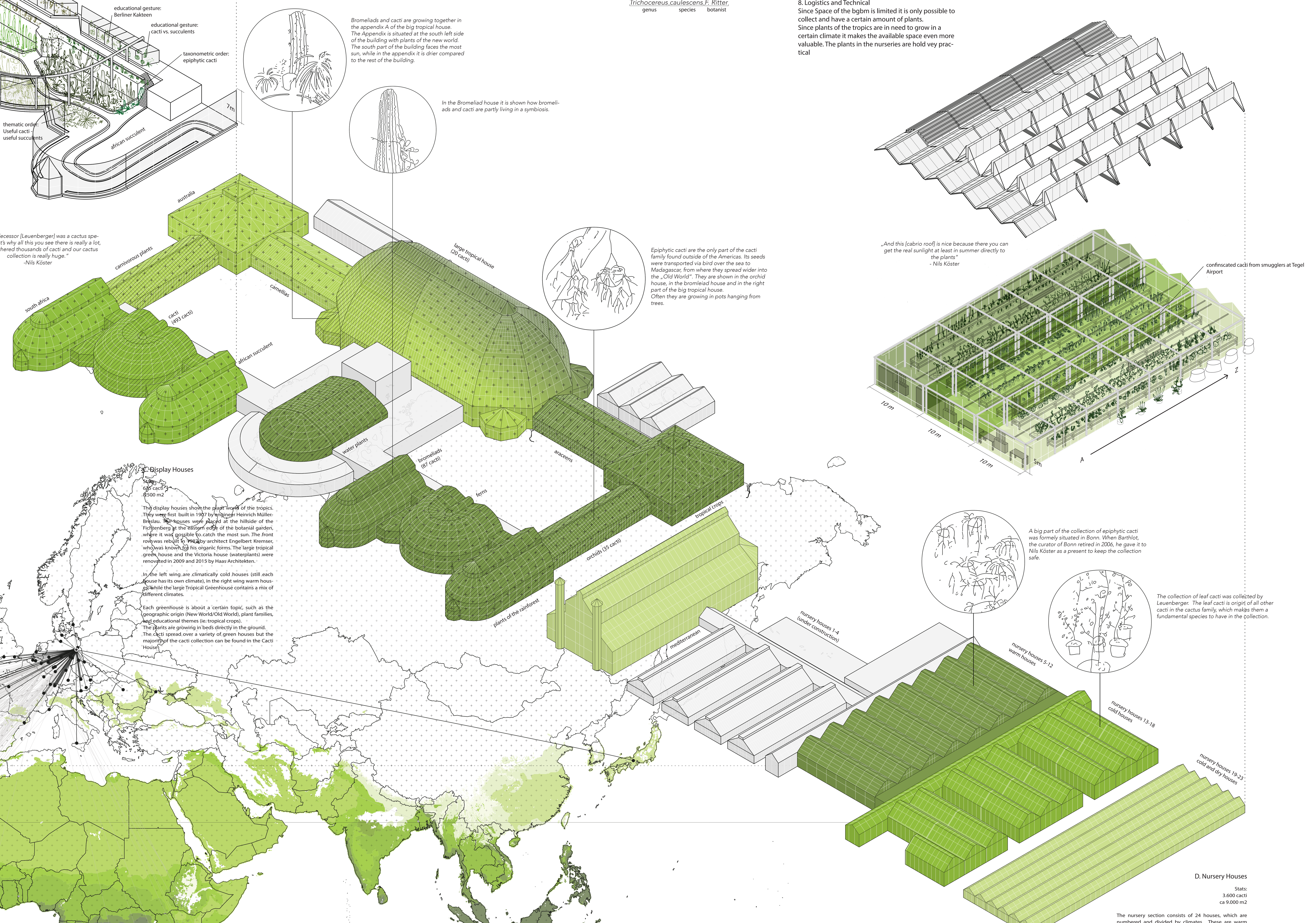


B. Institutional Connections

There are various connections between botanic gardens. Through these partnerships there is the possibility for the exchange of cacti and knowledge to widen the collection of the BGBM. Most of the partners of the BGBM are European insitutions, with the biggest contributions and exchnages happening with the German-speaking institutions domestically and in Switzerland.

The most notable partners are the Botanische Gärten der Universität Bonn (contributed 358 species, ~380 plants), Sukkulenten-Sammlung Zürich (contributed 148 species, ~250 plants), and the Botanischer Garten Universität Heidelberg (contributed 13 species, ~18 plants). Between these four institutions there are numerous personal connections between the directors, curators, and researchers. Many of them share research interests and studied either with or under each other.





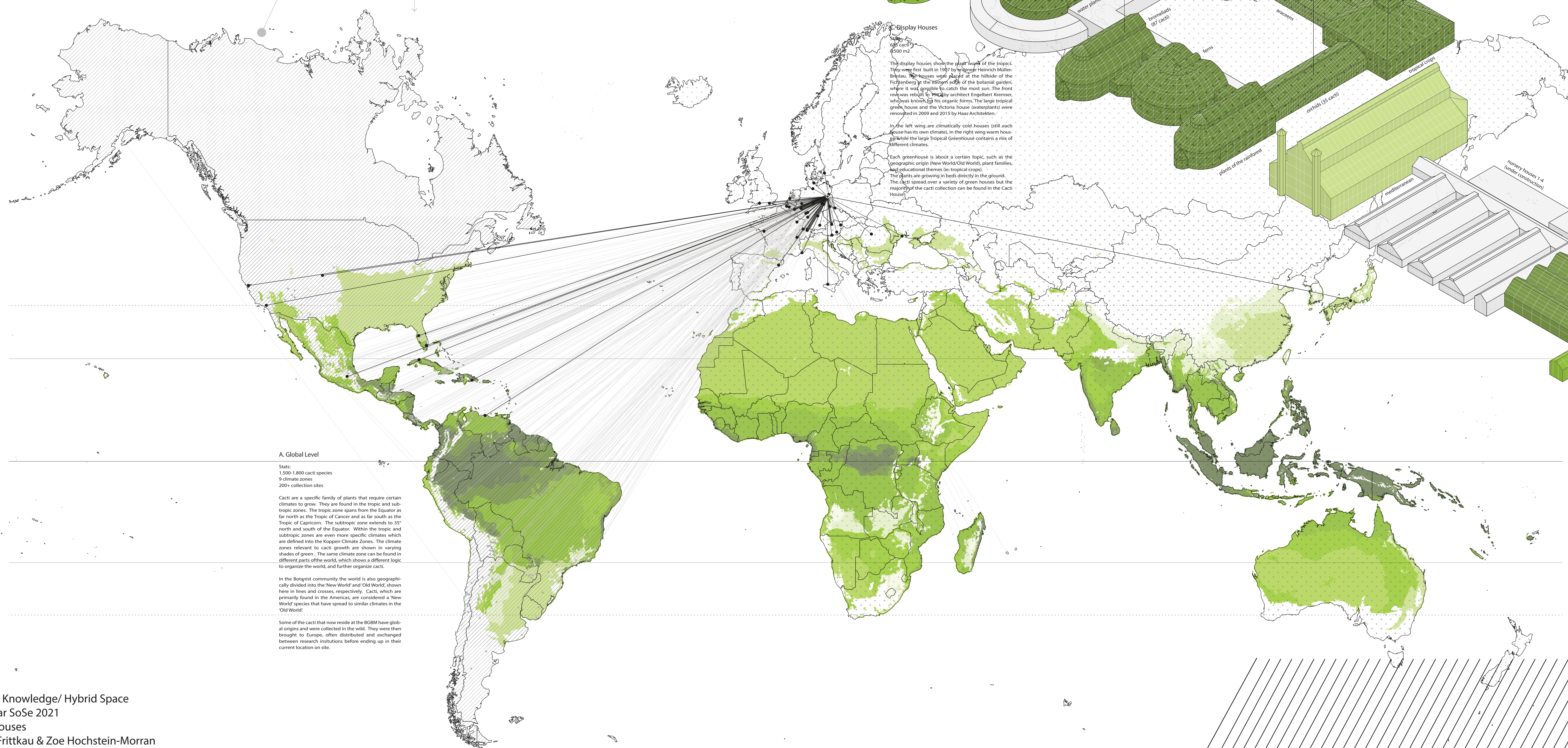
C. Display Houses

Stats:
635 cacti
8.500 m2

The display houses show the plant world of the tropics. They were first built in 1907 by engineer Heinrich Müller-Breslau. The houses were placed at the hillside of the Fichtenberg at the eastern edge of the botanial garden, where it was possible to catch the most sun. The front row was rebuilt in 1987 by architect Engelbert Kremser, who was known for his organic forms. The large tropical green house and the Victoria house (waterplants) were renovated in 2009 and 2015 by Haas Architekten.

In the left wing are climatically cold houses (still each house has its own climate), in the right wing warm houses, while the large Tropical Greenhouse contains a mix of different climates.

Each greenhouse is about a certain topic, such as the geographic origin (New World/Old World), plant families, and educational themes (ie. tropical crops).
The plants are growing in beds directly in the ground.
The cacti spread over a variety of green houses but the majority of the cacti collection can be found in the Cacti House.



A. Global Level

Stats:
1.500-1.800 cacti species
9 climate zones
200+ collection sites

Cacti are a specific family of plants that require certain climates to grow. They are found in the tropic and subtropic zones. The tropic zone spans from the Equator as far north as the Tropic of Cancer and as far south as the Tropic of Capricorn. The subtropic zone extends to 35° north and south of the Equator. Within the tropic and subtropic zones are even more specific climates which are defined into the Koppen Climate Zones. The climate zones relevant to cacti growth are shown in varying shades of green . The same climate zone can be found in different parts ofthe world, which shows a different logic to organize the world, and further organize cacti.

In the Botanist community the world is also geographically divided into the 'New World' and 'Old World', shown here in lines and crosses, respectively. Cacti, which are primarily found in the Americas, are considered a 'New World' species that have spread to similar climates in the 'Old World'.

Some of the cacti that now reside at the BGBM have global origins and were collected in the wild. They were then brought to Europe, often distributed and exchanged between research insitutions before ending up in their current location on site.

D. Nursery Houses

Stats:
3.600 cacti
ca 9.000 m2

The nursery section consists of 24 houses, which are numbered and divided by climates. These are warm houses, cold houses and cold-and-dry-houses. Most of the complex which was first build in 1907 by engineer Heinrich Müller-Breslau was rebuilt in 2010 by Haas Architekten. They are designed after examples from the world of industrial food production and are equiped with various technical supports to help maintain different environments. These include fogging systems, heating systems, energy saving textile, cabrio roofs, lighting and sunshading systems. The houses vary in climate, with warmer houses in the more central/internal buildings to cooler houses in external buildings.

The plants grow in pots situated on top of tables or standing on the ground. Each plant has its own number. The number contains information about the taxonometric name, the date of arrival, etc. They are ordered within the three broader climatic zones by plant families so you find a house where you just find cacti, another with just bromelieads, etc. Within these houses of families, the plants are ordered by alphabet after the taxonometric name from A to Z.

Over time, the plants are often moving around in the BGBM, with some even being sent out to other institutions and new plants arriving from partner institutions.

Hybrid Knowledge/ Hybrid Space
Seminar SoSe 2021
Glasshouses
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