

2020 JSR Foundation Traveling Fellowship

Beyond House Plants: Abstracted Ecologies of the Cape Floral Kingdom

Project Abstract: (200 words max)

This proposal aims to explore the unique flora of the Cape Floral Kingdom in South Africa to expand our field's knowledge of indoor planting communities. Through the work of naturalistic plantsmen, such as Piet Oudolf, Claudia West, and Dan Pearson, advanced study of outdoor planting communities has seen its rise. Within our field, however, indoor planting ecologies are still murkily understood. High-functioning ecosystems have the capacity to improve human health as well as the health of the plants that sustain them. With the average American spending 90% of their time indoors¹, these novel ecologies have the potential for profound impact and represent a largely untapped market within our field.

The Cape Floral Region was selected for study for two key reasons. The first is great abundance of house plants that come from this area: pencil cactus, asparagus fern, string of pearls. The second is the ecological uniqueness of this region and the environmental threats it faces. The Cape Floral Kingdom is the smallest floral kingdom in the world and among the most biodiverse ecosystems on the planet. Pressures ranging from development to climate change have put enormous pressure on this delicate ecosystem. This proposal will use on-the-ground study of this region to inform the design of indoor, constructed systems and how indoor planting design can preserve, and connect viewers to, a vanishing ecosystem.

¹ U.S. Environmental Protection Agency. 1989. Report to Congress on indoor air quality: Volume 2. EPA/400/1-89/001C. Washington, DC.

2020 JSR Foundation Traveling Fellowship

Beyond House Plants: Abstracted Ecologies of the Cape Floral Kingdom

Proposal:

Leading Question

How can planting design create healthier indoor ecosystems?

Critical Framework



Not since the 1970's has there been such visceral enthusiasm for or abundance of lush interiors as today. Peek into any number of hotel lobbies, restaurants, and retail stores, and you will see ceiling-scraping fiddle leaf fig trees, green walls, and shelves of curated succulents. Social media has supported and escalated this trend with hashtags like #plantmakepeoplehappy (2.4M posts) and #indoorplants (2.2M posts). Influencers, such as Hilton Carter, have commoditized this trend to build a life

Beyond House Plants: Abstracted Ecologies of the Cape Floral Kingdom

and lifestyle around houseplants. Journalists attribute this uptick in interest in indoor plants to a myriad of causes, including Millennials, globalization, and a resurgence of retro aesthetics.²

The idea of an indoor garden, however, is nothing new. Since Roman times, greenhouses have been intricately tied to the development of ornamental planting. In the Eastern hemisphere, heated greenhouses date back to the 1450's in the Korean peninsula.³ It is believed that the first greenhouse was built to bring fresh vegetables to emperor Tiberius' plate all year long.⁴ There is no way to divorce these early indoor gardens from extravagance. At Versailles, the orangerie was engineered, by the order of the King, to have oranges in winter.⁵ This manipulation and mastery of nature—the ability to craft living environments that subverted the rhythms of nature—was and remains at the heart of indoor planting design.

There is an element of theatricality to indoor planting that persists today; it allows us to herald spring in winter, the tropics in the Arctic. In the Victorian era, greenhouses became a way of expressing worldliness. The gardens became a living wunderkammer. The plants, collected abroad and shipped on long voyages home, served as souvenirs of foreign locales. This collector mentality, fueled by colonialism and expanded international travel, led to a proliferation of botanic gardens and arboretums across the globe.⁶ Indeed, many of the best modern-day horticultural institutions, such as the gardens at Kew, hail from this time period.

² Garcia, Sandra E. "On Instagram, Houseplant Sellers Turn Likes into Green Thumbs." *New York Times*. 12 January 2020.

³ Yoon, Sang Jun. "Advanced Horticultural Techniques in Korea: The Earliest Documented Greenhouses". *Garden History*. 1 January 2007. **35** (1): 68–84.

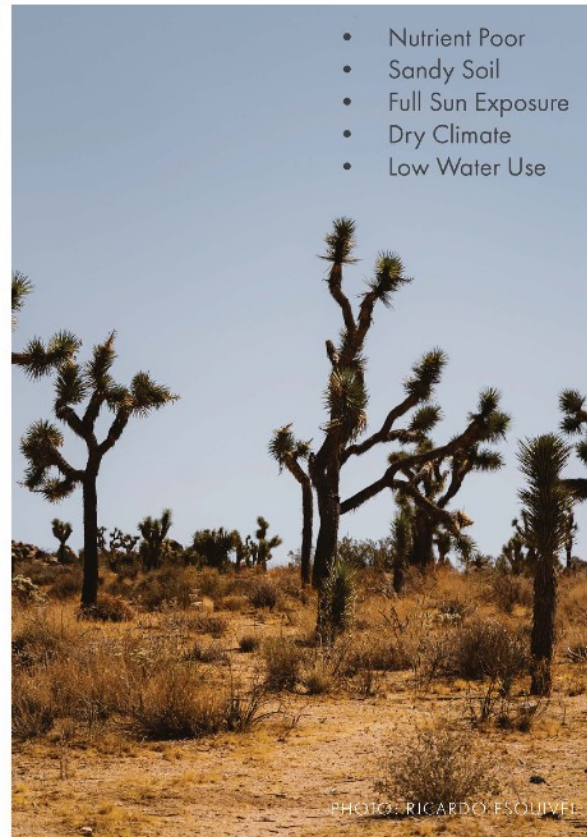
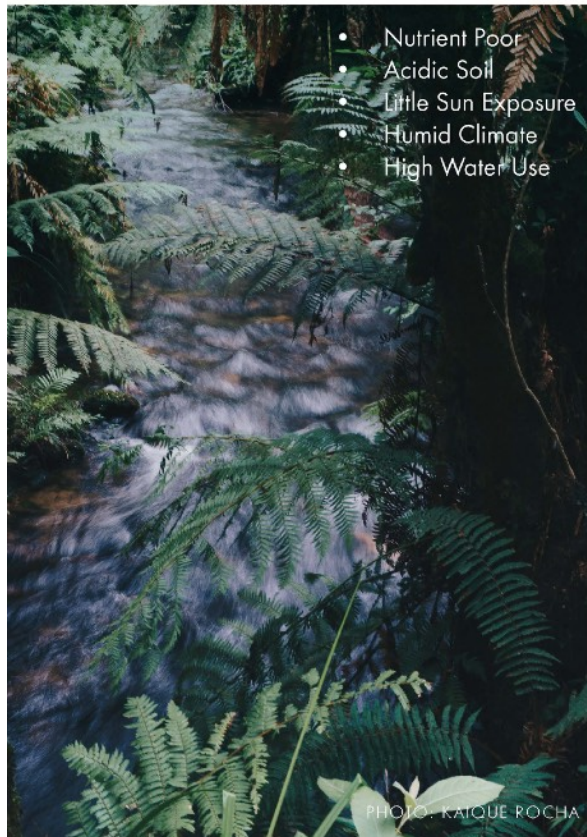
⁴ Janick, J; Paris, HS; Parrish, DC. "The Cucurbits of Mediterranean Antiquity: Identification of Taxa from Ancient Images and Descriptions". *Annals of Botany*. 2007. **100** (7): 1441–1457.

⁵ Scora, Rainer W. "On the History and Origin of Citrus". *Bulletin of the Torrey Botanical Club*. **102** Nov–Dec 1975. (6): 370–1.

⁶ [Spencer, Roger](#); Cross, Rob. "The origins of botanic gardens and their relation to plant science with special reference to horticultural botany and cultivated plant taxonomy". *Muelleria*. 2017. **35**: 43–93.

Anatomy of a Houseplant

HABITAT OF A HOUSEPLANT



Houseplants today rely on two vital characteristics to gain popularity in the mainstream: they must first be beautiful and secondarily tolerate neglect. Beauty is selected for based on foliage and texture; flower color, size, and duration; plant architecture; and sensory attributes, like smell or touch. Neglect tolerance reflects the harshest of interior environments: low light and bright light; humidity; drafts, heaters, and air-conditioning; environmental pollution. Neglect tolerance also covers the downfalls of human care: overwatering, underwatering, lack of nutrients, lack of maintenance and disease.

Many of the houseplants we see everyday hail from a shortlist of hotspots around the world, the Cape Floral Kingdom among them. The locations of these hotspots has a strong correlation to the desirable attributes of a houseplant. Semi-arid deserts give us succulents and cacti that thrive in nutrient-poor soil and can sustain hours of direct light. The understory of tropical rainforests and montane cloud forests offer plants that can thrive with little to no direct light and in nutrient-poor soils. These two types of

2020 JSR Foundation Traveling Fellowship

Beyond House Plants: Abstracted Ecologies of the Cape Floral Kingdom

plants (hardy sun lovers and resilient shade seekers) cover the majority of houseplants we see on the market.

While these plants exist in nature as parts of complex planting communities, they are most often potted as individual specimens indoors. This leads to a diverse palette in which you can have plants from four continents in a single window sill. The problem, as this proposal sees it, is that this approach prioritizes the attributes of the specimen over the health of the planting community. It is unimaginable in contemporary outdoor planting that we would containerize each plant. And yet, the popularization of indoor planting has largely occurred without the expertise of landscape architects. Unlike other green technologies, such as green roofs and green walls, interior gardens and planting are largely undesigned.

In the field of public health, experts attribute exposure to indoor plants to a number of positive human outcomes. Plants calm nerves, provide oxygen, filter airborne contaminants, and speed up recovery times.⁷ Yet, there is rarely advocacy for the health of the plant communities themselves; troubleshooting tends to revolve around the attributes of single plants. This proposal aims to better understand the native ecology of an indoor planting hotspot, in order to better design interior landscape architecture. From soil health to plant symbiosis to how a fire-adapted ecology thrives without fire, this proposal would use the fellowship to gain the knowledge necessary to adapt these communities to interior environments.

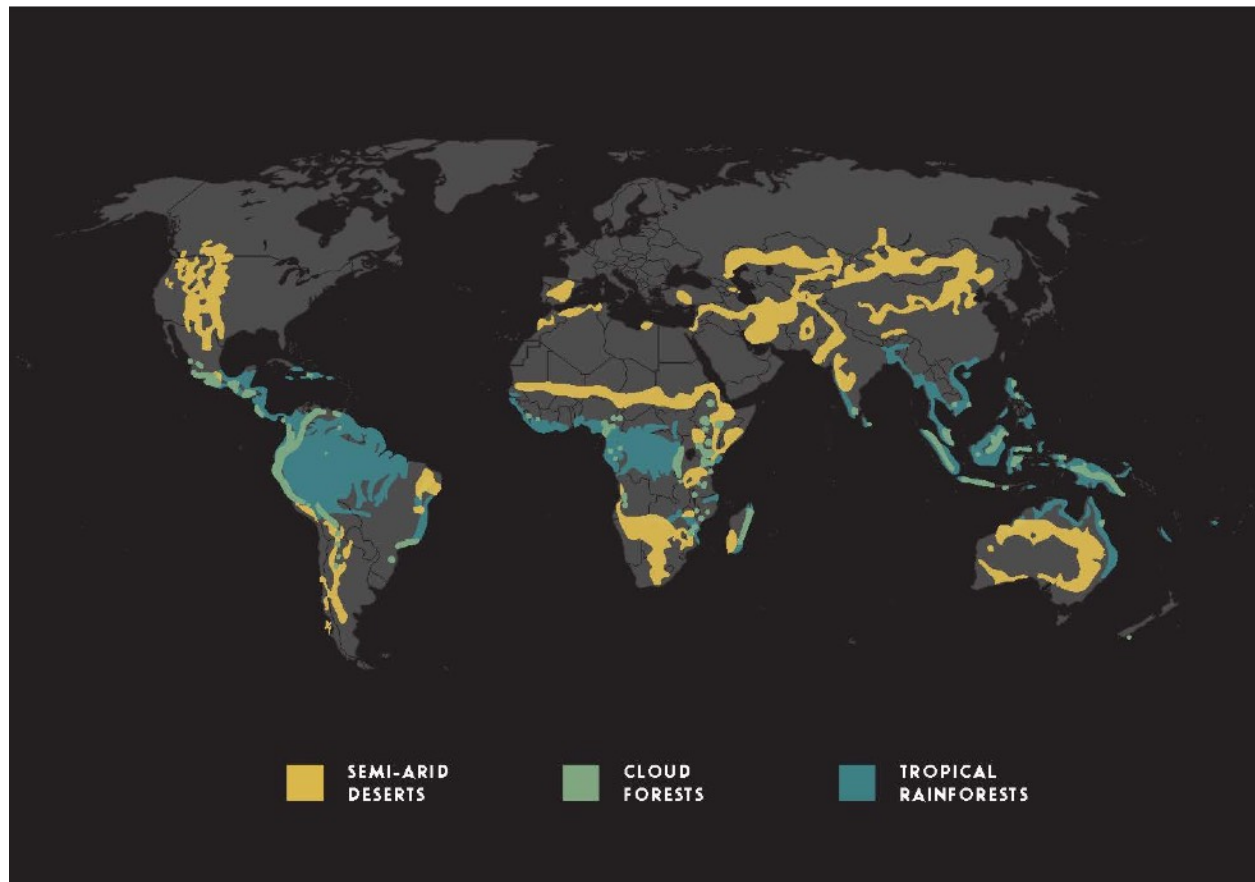
⁷ Peters, Adele. "Doctors are now prescribing houseplants to help treat anxiety and depression." *Fast Company*. 5 September 2019.

2020 JSR Foundation Traveling Fellowship

Beyond House Plants: Abstracted Ecologies of the Cape Floral Kingdom

Relevance to the Field

HOUSEPLANT DIASPORA



While indoor planting has been a cornerstone of horticulture for centuries, it remains a marginal part of the practice of landscape architecture. With the upsurge in interest, lush interior gardens are appearing more and more in architectural renderings. The conundrum, however, is that the architects and interior designers who author these graphics often lack the technical knowledge to deliver on them.

My interest in indoor ecologies developed from that very circumstance: I was discussing a project with Shihomi Kuriyagawa of BrightView where an architect included imagery of statuesque saguaro cactuses in a newly renovated office tower. Not only would these cactus not survive with limited light exposure, they would be incredibly expensive to procure due to their slow-growth. As is often an issue in our field, the landscape architect was called to address the crisis, instead of providing the early input on layout that would have mitigated this problem. As a landscape architect, however, we rarely work with indoor plants. In researching the plants for a proposal for this project, I uncovered more questions than answers. Tracking down the provenance of

2020 JSR Foundation Traveling Fellowship

Beyond House Plants: Abstracted Ecologies of the Cape Floral Kingdom

plants proved challenging, as did substantive examples of healthy indoor ecologies. I believe this to be one of the least explored parts of our field and one that is still largely controlled by architects and interior designers or outsourced to horticulturists and hobbyists.

To draw a parallel to this fellowship, my mentor, Anne Hamilton, was a draftswoman for Jane Silverstein Ries and worked on a number of interior gardens during the Denver office boom in the 1970's. When I told her about the challenges of this project, she revealed that on one project Jane instructed the contractors to change out the plants every 90 days to keep them looking healthy. The plants would be taken away in the middle of the night and replaced with those fresh from the nursery. The ailing plants were shipped back to the nursery to be revived, before reappearing in another 90 days.

There is enormous potential in indoor gardens to innovate and inspire. But to do this, we as practitioners need more institutional knowledge about the plants, their ecology, and how they thrive. There have been huge strides in outdoor plantsmanship in understanding plant communities and incorporating these dynamics into planting design. However, the bulk of this research has come from the study of test plots and experimental gardens over years. Because of the remote location of many indoor planting hotspots, this kind of in situ observation is largely out-of-reach. Our inter-mountain region contains few native houseplants with the exceptions lying in the semi-arid deserts of New Mexico and Arizona.

Cape Floral Kingdom

CAPE FLORAL KINGDOM



AFRICAN DAISY
OSTEOSPERMUM



STRING OF PEARLS
SENECIO ROWLEYANUS



ASPARAGUS FERN
ASPARAGUS AETHIOPICUS



PROTEA
LEUCOSPERMUM



PADDLE PLANT
KALANCHOE THYRSIFLORA



PENCIL PLANT
EUPHORBIA TIRUCALLI

This proposal aims to explore the terrestrial homeland and planting communities of the Cape Floral Kingdom, as research for indoor planting design. According to UNESCO, the Cape Floral Kingdom is “one of the world’s great centers of terrestrial biodiversity.” While the site only covers a less than .5% of Africa’s landmass, it represents over 20% of its flora. The area was designated as World Heritage Site in 2004 and is comprised eight protected areas.

This proposal aims to intensively research two of the eight protected areas through site observation, documentation, and consultation. These two protected areas lie within the fynbos, a fire-adapted ecology that is its most exuberant—with surreal, neon-colored blooms—after a fire event. The fynbos is one of the most biodiverse and most endangered ecosystems on the planet. It is also home to a number of everyday houseplants.

2020 JSR Foundation Traveling Fellowship

Beyond House Plants: Abstracted Ecologies of the Cape Floral Kingdom

This itinerary proposes to divide the trip into two portions. The first is a five-day trek through the De Hoop Nature Reserve. This guided trek travels across 55km of fynbos habitat in an area that is inaccessible by car. There is some of the most well-preserved habitat in the region and only visible through this trekking route. The second portion of the trip is a consultation with staff at the Kirstenbosch Botanical Garden to see firsthand how the fynbos is adapted for an ornamental setting. Out of this visit, I would like to understand the horticultural approach to how to pair these plants and garner a greater understanding of the fynbos plant palette. The Kirstenbosch Botanical Garden is the only botanic garden in the world to be designated as a UNESCO World Heritage Site and it would be an honor to learn from their staff firsthand.

Conclusion

This fellowship represents a unique opportunity for a young landscape architect, keenly interested in this topic, to bring back and share knowledge. The proposal hones in on an endangered ecosystem that, through houseplants, inhabits our everyday lives. This exploration of native planting communities opens the door to expanded and more dynamic plant palettes for interior planting design as well as understanding the ecological processes necessary to sustain them. The ultimate goal of this fellowship is to provide some necessary research for our field to participate more fully in the interior greening renaissance and to create healthier and more robust indoor ecologies.

2020 JSR Foundation Traveling Fellowship

Beyond House Plants: Abstracted Ecologies of the Cape Floral Kingdom

Short Bio:

Cali Pfaff is a landscape architect and urban planner, based in Denver, Colorado. Cali founded Studio Campo—a landscape architecture and plantsmanship practice—in 2019 to explore the potential of plants to enrich human experience. She is a graduate of Harvard's Graduate School of Design, PUC Rio de Janeiro, and Brown University. Cali was previously an Associate at Public Architecture and Design Workshop. She has a background in design writing and publishing, including work for Harvard Design Magazine, Metropolis Books, and Next City.

Cali's design work has received national recognition from the American Society of Landscape Architects and has been featured in Landscape Architecture Magazine, Landscapes, the Denver Post, and the Harvard Gazette. Cali was a member of the Professional Community Advisory Board for Colorado State University and is a frequent guest lecturer and critic at universities. Cali is Creative Director of the sustainable vineyard and winery, Left Coast Estate, that her family runs in Oregon's Willamette Valley. The estate is the Oregon field office of Studio Campo and acts as a proving grounds for experimental planting design and ecological restoration.

2020 JSR Foundation Traveling Fellowship

Beyond House Plants: Abstracted Ecologies of the Cape Floral Kingdom

Proposal for a "Summary of Experience":

To share the knowledge from this fellowship, the "Summary of Experience" would include an annotated chapbook and lecture through ASLA Colorado. The chapbook would aim to document the ecology of the fynbos, catalog the natural habitat of well-known houseplants as well as introduce new species for potential use in indoor landscapes. The chapbook would include field sketches and scientific background on the Cape Floral Kingdom. The research would also inform a prototypical Cape Floral Kingdom planting bed back in Colorado that would be monitored and recorded as part of the "Summary of Experience."

2020 JSR Foundation Traveling Fellowship

Beyond House Plants: Abstracted Ecologies of the Cape Floral Kingdom

Project Itinerary and Complete Timeline:

Day 1: Flight from Denver to Newark, Newark to Cape Town, stay in Cape Town

Day 2: Transport from Cape Town to De Hoop Nature Reserve

Day 3: De Hoop Nature Reserve, Potberg Hut to Cupidoskraal

Day 4: De Hoop Nature Reserve, Cupidoskraal to Noetsie

Day 5: De Hoop Nature Reserve, Noetsie to Hamerkop

Day 6: De Hoop Nature Reserve, Hamerkop to Vaalkrans

Day 7: De Hoop Nature Reserve, Vaalkrans to Koppie Alleen

Day 8: Kirstenbosch Botanical Garden, stay in Cape Town

Day 9: Return Flight to Denver

****Trip to occur between August and October for peak bloom time****