March 25, 2019

Ms. Olga Abinader
Acting Director
Environmental Assessment and Review Division
New York City Department of City Planning
120 Broadway
New York, NY 10271

Dear Ms. Abinader:

Further to the Environmental Impact Study Scoping Hearing on March 12, 2019 and the oral testimony of several of our staff and volunteers, Brooklyn Botanic Garden (BBG) respectfully submits the following written package in support of the commissioning of additional scope of work on the environmental impacts of the proposed rezoning of the 960 Franklin Avenue development.

This documentation elaborates on our publicly-stated position that the tall towers planned in the proposed rezoning will cast as much as four hours of shadow on the BBG’s nurseries, greenhouses and conservatories; that the Garden’s ability to repopulate its living collections would be grossly impeded by such shadows, thereby affecting the entire Garden and its diverse living collections; and that the inability to propagate such plant material represents a dire threat to BBG, a world-renowned urban garden that is visited by between 800,000 and 1,000,000 people annually, many of them children in school groups.

The Garden requests that the Environmental Impact Study therefore:

- Account for all shadow impacts on the Garden;
- Include separate and detailed studies of the shadow impacts of the towers on the Garden’s 23 discrete indoor and outdoor growing spaces, each containing a distinct collection of plants that require individualized light, heat and humidity regimes. This component of the study will likely require specialized consultant expertise in horticulture and glasshouse design and performance;
- Include not only the impacts of shadow and glare from the new, proposed development, but also the cumulative impact of the other new developments currently underway or approved for construction in adjacent areas;
• Include full-day daily shadow studies for the full year, beginning immediately at dawn and not—as proposed in the draft Environmental Impact Study—after the first ninety minutes of sunlight. Because the greenhouses, nurseries and conservatories are elevated, and because plants respond immediately to sunlight, these collections would be affected at the earliest light of day.

• For the shadow studies, accurately represent the light-transmitting nature of the existing glasshouse structures (allowing light to pass through and between them), rather than representing them as solid, light-blocking structures.

Furthermore, and in addition to the above and pursuant to the oral testimony given at the scoping hearing by others, the environment impact also study should:

• Include a complete assessment of the impacts of glare from reflected glazing on the tall towers with respect to plant life (our testimony notes the recent damage to the garden at Dallas’s Nasher Sculpture Center due to a nearby high tower).

• Assess the impacts of wind flow around the proposed structures, in particular forces created by the channel between structures and eddies on the west-facing façade.

• Include a complete assessment of the development’s impacts on traffic and pedestrian safety;

• Consider the impacts to the avian population whose major north-south flight pattern would be adversely affected by the presence of the tall towers;

• Include consideration of the Garden’s ability to fulfill its mission as an educational institution with year-round teaching facilities for hands-on science with severely compromised greenhouse and nursery facilities.

Finally, while primarily focused on the impact of the proposed towers to the Garden itself, BBG hopes that a detailed shadow study on the Medgar Evers campus be undertaken as the shadows of the towers appear to put much of the Medgar Evers Campus into shadow all afternoon in the winter. A CUNY affiliate, Medgar Evers has been a research partner of the Garden’s in the past, and we have long dreamt of partnering to create an applied horticulture program at the Bachelor’s or Associate-level. No such program currently exists in New York City, in spite of the burgeoning interest in urban horticulture and the city's standing as perhaps the world's best urban horticultural laboratory. Shade of the proposed towers would permanently preclude the ability for research and teaching greenhouses to ever be constructed on that campus.

Sincerely,

Scot Medbury
President
BROOKLYN BOTANIC GARDEN

960 Franklin Avenue Rezoning

Scoping Hearing Testimony

March 12, 2019

Speakers Representing Brooklyn Botanic Garden

Scot Medbury, President of Brooklyn Botanic Garden

Donald Reed, Trustee of Brooklyn Botanic Garden

Leonard Paul, Foreman of Steinhardt Conservatory at Brooklyn Botanic Garden

Sonal Bhatt, Vice President of Education & Interpretation at Brooklyn Botanic Garden

Gail Lambert, Principal of Brooklyn Academy of Science and the Environment (BASE)

Ashley Gagñay, Project Green Reach coordinator and alumna of Brooklyn Botanic Garden’s Garden Apprentice Program

Rowan Blaik, Director of Living Collections at Brooklyn Botanic Garden

Ena McPherson, Community greening leader - Tranquility Farm

Pamela Pettyjohn, Community greening leader - Coney Island Beautification Project
Hello, I’m Scot Medbury, President of Brooklyn Botanic Garden or “BBG”. Thank you for the opportunity to give testimony today to help ensure that any and all impacts of the proposed rezoning of 960 Franklin Avenue are carefully studied.

My remarks will address 3 points:

1. that the shadows cast by the proposed tall towers will significantly, negatively, and permanently impact the Garden’s extensive plant-propagation and growing facilities;

2. that the entire Botanic Garden is dependent upon these growing facilities; and

3. that Brooklyn Botanic Garden is not just any other green space in New York City, but rather, is a unique scientific institution, with an unparalleled range of educational and interpretive programs, all of which are dependent on the ability to propagate and display a diverse living collection of plants.

BBG’s conservatories, support greenhouses, and outdoor nursery facilities all lie in the direct path of the morning shadow of the proposed tall towers at 960 Franklin in spring, summer and fall. These facilities house several dozen separate growing spaces, each with their own light, temperature, and humidity regimes. Some of the indoor chambers are used for horticultural display, while others are back-of-house greenhouses used for the propagation of young plants. These facilities contain plant collections of international importance, as others will soon attest.

We expect that a thorough examination of the shadow impacts of the proposed tall towers will be performed on each of these spaces as part of the Environmental Impact Study.

Point #2: I want to underscore that every part of the 52-acre botanic garden-is dependent on the propagation and growing facilities expected to be impacted by the shadows of the proposed tall towers. All of BBG’s annual and perennial plants are produced in one of several nursery spaces for eventual outplanting into the Garden. There is no other place to accomplish this work. Therefore, the direct shadows on BBG’s propagation and growing facilities will have a dire potential impact on the entirety of the Garden’s living collections.
To my third and final point: I want to emphasize BBG’s unique service mission in New York City, and its leadership locally, nationally and internationally.

More than a century ago, BBG created a new model for a botanic garden in the world by ensuring that youth environmental-education was every bit as important as horticultural display and research. We have a reach well beyond the Garden itself, operating an exceptionally broad range of programs throughout New York City schools and neighborhoods. The Garden has an annual attendance ranging from 800,000 to nearly a million visitors, making it easily the most-visited attraction in Brooklyn.

The Garden is not a generic parcel of urban open space – it is a global leader in urban botanical display and education in an era when more than half of the world’s population lives in cities. Shadow impacts on this vital space must therefore be considered in light of the institution’s preeminent stature.
Good morning, my name is Donald Reed. I am a Trustee of Brooklyn Botanic Garden and serve as Chair the Board of Trustee’s Government Affairs Committee.

My testimony today is intended to underscore BBG’s distinctiveness both as an institution and as New York City open space, distinctiveness which we believe substantially compounds the impacts of building shadows on BBG from the proposed rezoning. I would also like highlight an additional potential impact that also should be studied in the EIS.

Brooklyn Botanic Garden was founded in 1910 on City-owned land that had been acquired in the 1870s for Prospect Park and became the 8th New York City cultural institution to join the Cultural Institutions Group or CIG, the consortium of now-33 New York City institutions operated by independent non-profit organizations on City property.

BBG made short work in its first two decades of developing the property into a unique collection of “Gardens within the Garden,” including a number of the Gardens that were the first of their type in North America, or in some cases, in the world.

Over the last decade, BBG has been engaged in the second-most intensive period of site refinement in its history, reconstructing all three of its public entrances, and creating a dozen acres of new sustainable gardens and outdoor learning spaces. All of the capital improvements on the property accrue to the City of New York, which has joined BBG in investing hundreds of millions of dollars into the Garden since BBG’s founding more than a century ago.

This investment has been made at the behest of all New Yorkers, and especially New York children. Children under 12 always enter BBG for free, something quite unusual in the zoo, aquarium and public garden world, which we think is emblematic of BBG’s founding and enduring commitment to youth environmental education.

Among the facilities at risk now with the proposed rezoning is the Steinhardt Conservatory complex, built in 1987 with City funds. In 1985, the Conservatory’s architects, concerned about the potential for high-rise development in Crown Heights, wrote to the City to encourage a downzoning of nearby blocks to protect the Conservatory’s access to sunlight, a process that was completed in 1991. BBG feels
strongly that the zoning that is currently in place is the zoning that should remain - to preserve the Conservatory’s ability to function as intended.

The renderings of the proposed project that we have seen shows the two towers skinned in glass curtain walls. In addition to studying the effects of building shadows on BBG’s growing spaces, we also would ask that the effects of reflective glare on BBG’s growing facilities and outdoor living collections also be carefully and thoroughly studied. We are painfully aware of the cautionary tale supplied by the Nasher Sculpture Garden in Dallas, Texas, where numerous plants have been scorched by the glare from a newly constructed glass tower nearby.

The scoping phase of the ULURP process is one in which it is possible to seriously reconsider a rezoning which we fear will bring significant, negative, permanent impacts to Brooklyn Botanic Garden. We respectfully but very strongly encourage the City to think carefully about the impacts to its property at the Garden and make every effort to protect BBG for future generations.
LEONARD PAUL, FOREMAN OF STEINHARDT CONSERVATORY AT BROOKLYN BOTANIC GARDEN

My name is Leonard Paul, and I am the Foreman of the Steinhardt Conservatory at Brooklyn Botanic Garden. I want to thank you for giving me the opportunity to come before you today.

The conservatory is a year-round operation: we are open in the middle of winter when the temperature dives below zero degrees to the middle of summer when the temperature soars over 100 degrees. We are a special place to our visitors with a display of over 4,500 different taxa of plants ranging from Africa, Asia, Australia, North, South and Central America.

As you enter the conservatory, you can immerse yourself in plants of the tropical rain forest - you are greeted by the Hondurian Mahogany, towering 65 feet into the sky, you can see banana trees, papayas, mangoes, guavas, star fruits, jack fruit, a cacao tree, and a coffee tree, just to name a few. In the warm temperate pavilion, you are greeted by the stunning Wollemi Pine Tree, a tree that was once thought to be extinct by botanist. In the Desert Pavilion, you will see old and new world cacti of the Mohave Desert and Africa. In the Aquatic House, were we display a vast collection of orchids, we have the tiger orchid, one of the largest orchids in the world. We have one of the largest bonsai trees collection in the Northeast.

In total, the conservatory and greenhouses encompass 21 distinct growing chambers. In a conservatory as complex and diverse as this, each and every growing area must be finely calibrated to be the appropriate environment for the plants growing inside.

Towers the size of those proposed by 960 Franklin Avenue would have catastrophic impact on these growing areas. Plants need light to thrive, and these towers would block nearly four hours of sunlight to the greenhouses, nurseries, and conservatories in spring, summer, and fall.

The negative effects would extend to other areas of our plant collection care:

Our ability to use organic methods of pest control and sustainable plant production would be severely compromised meaning we may need to use harsh chemicals that put our gardeners’ health at risk

Plant health would deteriorate, and many plants would not flower without adequate sunlight, which impacts our ability to identify them and to verify what we have in the collection.
In addition to the conservatory and greenhouses, our nursery produced nearly 23,000 annual seedlings last year. We will surpass that amount this year by 2,315. These are displayed all over the grounds annually.

The proposed rezoning would cause severe shade and other lasting negative impacts on BBG’s greenhouses, nurseries, and conservatories, and we must maintain current zoning for the health and longevity of BBG’s world class plant collections.
Hello, I’m Sonal Bhatt, Vice President of Education & Interpretation at Brooklyn Botanic Garden. Thank you for the opportunity to give testimony today on how BBG’s incredibly robust education program relies on our greenhouses, nurseries and conservatories that are under threat from the proposed rezoning of 960 Franklin Avenue.

BBG’s education program was founded over 100 years ago on the premise that hands-on experiences, investigation, observations, the scientific practice creates life-long learners and lovers of nature. The greenhouses, nurseries, and conservatories of the Garden are key to making this work. We can’t teach kids to think globally and understand their role in environmental stewardship and science without them.

BBG today has over 24 programs, mostly free and highly subsidized serving many of the more underserved audiences in NYC. We serve PreK children to adults. Each year we serve 130,000 through targeted programs and have 250,000 children visit including the Garden. In fiscal year 2018 alone, our staff spent more than 10,000 hours teaching 2,000 classes for school groups, serving 70,000 students and teachers from 1610 separate schools, 817 workshops, multi-session courses, and tours. Nearly 25,000 people registered for programs with us. All told, we served 140,000 students. Half of which came to free or highly subsidized programs. And as always, school groups and children under 12 are free.

We are located at the nexus of so many neighborhoods that we are essentially the backyard for countless urban children and adults.

We have a legacy of working with children to develop a love of nature and plants. In the 105-year old Children’s Garden pre-K children to young adults are understanding the context of the food they eat, the importance of protecting the plants and animal connection, the science of their own food and developing nutrition habits, a keystone of creating healthy citizens of NYC.

BBG’s extensive teacher education programs are present in all five boroughs and have deep impact in strengthening in-school science education by modeling inquiry-based science and guiding teachers in how to develop long term investigations with science and nature.
BBG works to provide a ladder of developing young leaders by empowers young adults through a 4-year 9-month teen internship program at the Garden. The goal being to empower young adults to see themselves as environmental stewards and powerful advocates for nature and science.

BBG is a core partner to the DOE and the city in providing equitable and inclusive access to science and STEM. BBG’s science footprint is extensive, present in 70,000 students and teachers from 1610 separate schools. The future of New York City is in STEM, science, technology, engineering and math - subjects engrained in our programs. Through this work, we are training the next generations of science proficient citizens.

Today BBG is in alignment with the issues identified in NYC’s first Cultural Plan that asks the city’s cultural institutions to take significant steps to support people with disabilities in participating in NYC’s cultural life. BBG’s history of valuing inclusivity, includes strides made in the past several years as targeted programs have been developed for families with children with autism, programs for people with memory loss and their caretakers, and partnerships such as district 75 among others.

The plants that serve and fuel all these hallmark programs and so many more start with propagation in our greenhouses and nurseries. And the Conservatory provides a unique opportunity for year-round visits with more than a large portion of our 140,000 children benefiting from the conservatory. We don’t stop in winter, we just take it indoors. There is no other place like the conservatory within all of Brooklyn and even farther where children can explore ecosystems and habitats, big science concepts that build the basis for their understanding of the natural world.

The proposed rezoning allows for massive towers that will cast shade on BBG’s greenhouses, nurseries, and conservatories, an unacceptable consequence that will cause serious lasting damage to the collection and programs we provide to the children, teachers, schools, and visitors each year.
Hello, I’m Gail Lambert, Principal of Brooklyn Academy of Science and the Environment (“BASE”), a public high school in Prospect Heights that was founded in 2003 in partnership with Brooklyn Botanic Garden, which our school uses as a laboratory for learning. Thank you for the opportunity to give testimony today on why protecting BBG’s growing houses is so vital not just to BASE but to all of Brooklyn’s schools.

At BASE, learning moves beyond the classroom walls, using the world-renowned Brooklyn Botanic Garden as a living classroom. BBG provides free admission to all our parents and students and hosts many of our programs for families. BBG has been very instrumental in exposing students of color to the environment and science field.

Francine Camacho one of our graduates, spoke so eloquently about the relationship between BBG and BASE. Here are her words:

In September 2006, I entered BASE. What I didn’t realize the moment I walked through the BASE doors for the first time was that I would be thrust onto a path that would later have me pursuing a Ph.D. at Princeton University.

Visiting the garden many times over my high school days, exposed me to botany, plant conservation, sustainability, and urban ecology, inspiring me to intern at The Nature Conservancy and the National Hispanic Environmental Council.

Between BASE and BBG, I was blessed to have several teachers and scientists as mentors who not only inspired me but instilled the skills needed for me to become a scientist and to be successful in life.

The vision for BASE was a neighborhood school that leverages BBG’s century of experience in education and its world-class collections to connect urban students to plants, ecosystems, environmental science, and agriculture through direct experiences in field-based learning.

High school students who might otherwise never choose to spend recreational time in nature are actively engaged with the natural world through BBG’s outside and conservatory spaces as a “living classroom.”
The proposed rezoning jeopardizes the very founding premise of our high school, the curriculum needs and the students. Science education is predicated on having certain characteristics, and spaces such as the garden which provides important space for inquiry-based, hands-on learning and long-term investigations that help to create STEM literate NYC citizens.

On behalf of students and staff at BASE, we are pleading that you keep the current zoning that was designed to protect BBG.

I thank you for your time.
ASHLEY GAGNAY, PROJECT GREEN REACH COORDINATOR AND GARDEN APPRENTICE PROGRAM ALUM AT BROOKLYN BOTANIC GARDEN

Hello, I’m Ashley Gagnay, Coordinator for Project Green Reach, Brooklyn Botanic Garden’s outreach program for kindergarten through 8th grade teachers and their classes from Brooklyn Title I schools. I am also an alum of BBG’s Garden Apprentice Program, a program designed to expose teens to urban agriculture and the environment. Thank you for the opportunity to give testimony today about why protecting BBG’s growing houses, conservatories, and the programs that use them are so important to nurturing young, city-born environmentalists like myself.

I became a Garden Apprentice at BBG in 2009, I never thought that the Garden would become my second home and that 10 years later, I would still be part of the BBG community. For all these years, I have been commuting from Midtown Manhattan, a neighborhood surrounded by enormous skyscrapers to a green oasis surrounded by flowering plants.

Throughout the years, I have given tours to countless groups of school children, sharing the diverse plant collection in the Garden. One Friday morning in February, I was giving a tour in the aquatic conservatory and my 3rd grade students were admiring the pitcher plants and orchids. A few of my students had never seen the beautiful orchids and asked if the orchids were real. This helped me realized the tremendous opportunity that is given to city students who might not be exposed to a diverse plant life outside of BBG.

The Garden changes lives and helps people find their way to careers in the environment just like it did for me. Without those amazing resources, I would not have been interested in learning more about plants and continuing my environmental career at BBG.

BBG’s education programs were founded on the idea that the most meaningful learning starts with a spark of curiosity. Students see themselves as scientist, and I have seen friends from the program become geneticists, psychologist, arborists, teachers, and powerful advocates for nature, science and conservation.

The enormous towers will cast shade on the conservatories which we use to inspire that spark of curiosity. The nurseries which provide healthy plants for our entire Garden would suffer. The towers would affect our amazing program’s 52-acre natural resource. BBG isn’t just an open space in New York
City; it is a world-renowned institution with collections and programs that inspire a love for plants and foster environmental stewardship.

The zoning was designed to protect BBG’s ability to grow plants that populate our 52-acre site. It must remain unchanged for all ages to enjoy and for our future generations to be able to immerse themselves in the healthy plant life that is found all over the world but is made available in our Garden. Thank you.
Thank you for the opportunity to speak today. My name is Rowan Blaik, I'm Director of Living Collections at BBG, and I've worked there for over two years.

What's a living collection? It's a collection of live plants. Botanic gardens, just like museums, accession their collections, that is, they document what enters and leaves their collections, and label their plants. That's the difference between a park and a botanic garden.

In the areas immediately at risk of shade from re-zoning - namely the greenhouses, nurseries, and conservatories, we have controlled growing conditions replicating climates from around the world – deserts, warm temperate and tropical regions – 21 areas in all, from 36° coolest to 86° warmest, all requiring natural daylight and day length. These areas house over 18,500 plants, representing almost 7,000 species, 194 plant families, and more than 150 endangered species. These are in addition to the 25,000 annual plants mentioned earlier.

These propagation and growing facilities are the heart of the garden - all new plant material comes through there, propagated or grown on for many years, kept in quarantine, at the edge of the garden.

Like a museum, not all of our vast collection can be on display at the same time. 70% of our glasshouse collections are held compactly behind the scenes and swapped out into larger display spaces for our visitors to appreciate them at their very best. Combined, the facilities at risk are just 1¼ of our 52 acres but hold over 19% of our total accessions.

Young plants must constantly be added to the collections. A cycle of acquiring and propagating plants has gone on, unbroken, through the history of the garden. Think of how empty the garden would have been after the loses of hurricane Sandy had the collection been declining in old age.

Our collection has been built up over many years, with material exchanged from thousands of sources around the world. Collections, however, can be irreparably damaged in a much shorter time, as all living things die. Typical to all botanic gardens, around 5% of our collections die and are be replaced annually. That means that with current light levels, should we lose propagation and growing facilities over half our current collection would be gone in a decade. I stress that that is with current light conditions.
There are simply no commercial alternatives to on-site propagation facilities for botanic gardens, especially given the range of rare and unusual plants we grow, and the not-for-profit plant sharing agreements we are bound to. Importing inferior, pre-grown plants risks plant health by importing pests and disease, leading to collections decline. Any decline in collections would be a decline in our global standing, reducing our ability to further acquire plant material.

Shadow analysis will show we're a sunlight sensitive resource that warrants the highest tier of study. Early assessments show some of our facilities could lose around 4 hours of direct sunlight at peak times of the year. Light lost through rezoning would damage the garden every single day of the year.

We have the experts, we have the plants, we have the facilities, but we must also continue to have the environment that allows us to grow plants. The rezoning proposal so close to these facilities would cause serious tangible damage to the garden and its collection.

Thank you.
ENA MCPHERSON, COMMUNITY GREENING LEADER - TRANQUILITY FARM

Good afternoon all, my name is Ena K. McPherson I am a Community Gardener and Community Garden Advocate in Bedford Stuyvesant, Central Brooklyn. I currently Garden I Farm at Tranquility Farm one of four gardens I am closely associated with.

Our connection to Brooklyn Botanic Garden is varied and far reaching. The Garden is not only a respite for all New York City residents, it is also a teaching institution that provides resources and horticultural support to block associations and community gardens through their Garden Alliance Programs and plant give-aways. All the iconic and significant plants in all our gardens are sourced through Brooklyn Botanic Garden.

I am here today to OPPOSE the proposed rezoning at 960 Franklin Avenue. The proposed MASSIVE TOWERS will harm BBG’S world-renowned botanical treasures and the many community programs that rely and receive sustenance from this institution.

BBG vast 52-acre paradise is an inspiration to all. It is of significant importance and provides the life blood to Community Greening efforts to all of Brooklyn.

Outsized towers of this height would block hours of Sunlight to BBG’S conservatories, greenhouse, and nurseries. This would in turn be a devastating impact on the environment that would negatively impact gardeners’ efforts in mitigating the negative implications of CLIMATE CHANGES we are now experiencing. The current zoning was designed to protect BBG’S ability to grow plants that populate its 52-acre site. IT MUST REMAIN UNCHANGED.

The proposed rezoning allows for massive towers that will cast a giant shade on BBG’S greenhouses, nurseries and conservatories, this is an unacceptable consequence that will cause serious lasting damage to the collection.

These spaces grow plants for the entire 52-acre Botanic Garden and its allied partners throughout Brooklyn. Brooklyn Botanic Garden isn’t just any open space in New York City; it is a world-renowned institution with collections and programs that inspire the love of horticulture and plants and fosters environmental Stewardship.

In closing I strongly urge the Department to consider the long ranging implications of allowing the building of these towers and the negative impact it would have in altering the environment and the long
reaching negative impacts and harm that would result.
Greetings:

I’m Pamela Pettyjohn, President and Founder of Coney Island Beautification Project, an environmental organization that came into existence to help our community respond to the huge impacts of Superstorm Sandy. We wanted to help our neighbors care for their local environment and build hope and community through cleanups and plantings. We have grown to become a group that convenes key conversations about important local environmental issues, such as resiliency and flood protection, storm water management, disaster preparedness, waterfront access, egress and alternate forms of transportation, and various green infrastructure interventions. We’ve hosted more than 10 environmental engagement events each year, and partnered with more than 50 schools, community groups and varying sized agencies in bringing resources and expertise to their community members.

In the beginning of the Organization’s community activities were conducted through projects that augmented neighborhood greening such as design, development and/or implementation through greening of public spaces for gardening or the development/enhancement of parks, street tree beds, community gardens or other green spaces for public use.

All of our success is testimony to Brooklyn Botanic Garden. We’ve earned many gardening certifications under the tutelage of BBG. CIBP echoes all of the meritorious accolades given BBG. BBG is a teaching hub for gardeners and educators across New York.

What words can I add to the dialog that would convince you to halt this development that would surely commit irreparable harm to a Brooklyn diamond?

Please Cease and Desist!!!

Thanks
Impact of Towers on the Conservatories, Greenhouses, and Nurseries at Brooklyn Botanic Garden

The 23 propagation spaces, collections growing spaces, Education greenhouses, and public display houses at Brooklyn Botanic Garden have each been designed to maximize natural sunlight. Other built structures in the Garden have been situated and spaced out to avoid casting shadow over the growing facilities.

The majority of the glasshouse structures have a north-south orientation to optimize sunlight interception. South-facing glasshouse zones are used for highly sunlight-intensive operations like propagation and to place those plants requiring maximum sunlight levels. Tiered planting beds, path layout, planting design, and the replacement and pruning of larger specimens ensures that they receive optimum sunlight levels and duration throughout the year.

The Garden’s principal set of concerns lies in the adverse impact that structures permitted under the proposed rezoning would have on the collections propagated, grown, and housed in these structures. The Environmental Impact Study must take the following into consideration and must address the particular concerns we raise.

**Shadow studies:**

Include daily, full-day studies for the entire year, beginning immediately at dawn and not—as proposed in the draft Environmental Impact Study—after the first 90 minutes of sunlight. Because the greenhouses, nurseries and conservatories are elevated, and because
plants respond immediately to sunlight, these collections would be affected at the earliest light of day.

Because sunlight permeates through all the glazed and transmissive parts of the structures and through the plant canopies, and plants grow at all levels of the spaces, it is essential that valid shadows studies should simulate the shadows effects down to the base level of the structures. As minimal internal structures block sunlight, a highly detailed computer simulation with models of the interior layout of the spaces would be required to show impacts. Studies must also take into consideration that the glasshouse structures allow sunlight to pass through and between them. The glazed parts of structures must not be simulated as solid, intervening structures that exclude further areas from incremental shade.

A simplistic shadow study using crudely extruded building footprints to median roof heights, block-like and opaque, would gravely underestimate the negative impacts to the collection.

Some of our structures, like the growing tunnels, can be fully or partially opened out to the sunlight seasonally and can be used as open structures in summer months. Any study must take these seasonal variations of our year-round sunlight requirements into account.

**Reflective glare studies:**

Illustrative renderings show the proposed building with glazing-clad façades. As with the risk of daily damage to the collections from shade, the risk of daily scorch to the collections from light reflected by the proposal must also be carefully assessed. Reflected light has the ability to cause direct scorch damage to both interior and exterior plant...
collections, to adversely increase interior heat in the glasshouses, and to prolong high temperatures in the summer time. These issues cause water-stress in plants and an increase in the associated risks to plant health. Once again, the risk posed to the collections would be daily and permanent. As mentioned in oral testimony provided, the glare caused by a neighboring tower to the Nasher Sculpture Garden in Dallas, Texas, is an example of the potential risk.

**Wind studies:**

Given the extreme differences in relative height and mass between the proposed buildings and BBG’s garden structures, trees and plantings, BBG requests that an assessment of wind flow around the proposed structures be assigned as part of the EIS. Eddies formed by the west-facing façades and high wind speeds from the east and north-east, channeled around and funneled between the two halves of the proposed buildings, are of particular concern.

**Estimating impact to the collections:**

Impacts to collections must assessed at multiple levels: to the overall plant collections as an ensemble; to individual specialist collections (e.g. cacti and orchids); to significant individual specimens; to ongoing plant conservation programs; and to the ability to produce plants for the entire 52 acres. A valid study must also report what notable specimens and plant groups would no longer sustainably form part of BBG’s ongoing plant collections.
Impacts to plant health, plant form and the growing environment must, again, be assessed by suitably experienced professionals. It would be wholly inadequate to apply standards more suited, for example, to the monocultural crops of commercial food crop glasshouses than to our facilities and varied collections.

Any studies should take into account the specific impacts on a diverse collection of plants, a diverse range of simulated climates, and the wide range of specialist horticultural activities carried out onsite. Valid assessment will require knowledgeable consultants, with proven experience of assessing impact to plants and plant collections in a botanical setting.

Although assessments such as these are specialist in nature, they are commonplace curatorial tasks for botanic gardens globally. This is a reasonable and practical request, and should be mandatory considering the serious and permanent damage the rezoning risks pose to Brooklyn Botanic Garden.
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Map of Areas Profiled: Key

1  Education Greenhouse, Desert Plants
2  Education Greenhouse, Warm Temperate Plants
3  Education Greenhouse, Tropical Plants
4  Helen Mattin Warm Temperate Pavilion
5  Tropical Pavilion
6  Desert Pavilion
7  C.V. Starr Bonsai Museum
8  Conservatory Entry House
9  Aquatic House and Orchid Collection
10 Desert, Mediterranean, South African Bulb
11 Humid Tropics Workhouse
12 Lowland Moist Tropical Orchid Workhouse
13 Highland Moist Tropical Orchid Workhouse
14 Tropical Plant Propagation House
15 Tropical and Desert Plant Propagation House
16 Hardy Plant Nursery Yard
17 Temperate Bonsai Tunnel
18 Production House
19 Tropical Bonsai House
20 Auxiliary House
21 New York–Native Flora and Temperate Plant Propagation Tunnel
22 Mediterranean Display Plants Tunnel
23 Children’s Garden Production House
Area Profiles

Areas at risk can be broken down into four categories:

**Propagation Spaces**—the areas that actively grow new plants and repropagate existing plant material.

**Collections Growing Spaces**—the behind-the-scenes areas that hold and grow the bulk of the glasshouse collections;

**Education Greenhouses**—educational growing spaces for school and adult education groups; and

**Display Houses**—the publicly accessible conservatories and pavilions;

An introduction to those types of areas, and a profile of each of the individual areas of that type, their specialty and collection follows:

**PROPAGATION SPACES:**

Propagation is the most vital task for the continuation of BBG’s plant collections and, year-round, is one of the most light-sensitive activities.

More than 25,000 plants are grown annually in these facilities for every part of the Garden. These highly specialized facilities are for propagation of:

- Plants in the permanent collection;
- Plants for exterior seasonal displays;
- Plants for our conservatories and pavilions;
- Protected species under active conservation;
- Plants for all 52 acres of grounds; and
- Plants donated to the community through BBG’s community greening programs.

The climates within these facilities are the most finely controlled of all the protected growing spaces due to the diversity of plant material propagated.

**Children’s Garden Production House (#23 on map)**

The Children’s Garden Production House is an approximately 212 sq. ft. nonpublic glasshouse. The growing environment is managed between 38 and 80°F as an adaptable, specialist growing space. This house is used year-round to grow over 8,000 annual and biennial fruit and vegetable crop plants for the Children's Garden. Major plant families represented in this collection are the Apiaceae, Asteraceae, Brassicaceae, Cucurbitaceae, Fabaceae, Lamiaceae, Poaceae and Solanaceae families.

**Further information:** Reserved for children in our education programs. Established in 1914, this historic garden represents the first of its kind anywhere in the world. Here, kids aged 2 to 17 propagate/sow, attend, and harvest their own crops, many having their first direct experience of growing plants and sharing the bounty of their crops with their families.
Hardy Plant Nursery Yard (#16)

The Nursery Yard is an approximately 17,970 sq. ft. nonpublic exterior growing space. It is home to a plant collection of hardy woody and herbaceous perennials.

The plant collection comprises 56 plant families, 202 taxa, 207 plant accessions, and 2,358 individual plants. Major plant families represented in this collection, in order of frequency, are the Asphodelaceae, Rosaceae and Paeoniaceae families. 9 of these taxa are at-risk protected species on The IUCN Red List of Threatened Species.

The current collection includes plant material introduced to the Garden over the last 84 years from 78 individual sources.

Further information: Outdoor growing space for cold-hardy plants destined for public display in areas throughout the garden.

New York–Native Flora and Temperate Plant Propagation Tunnel (#21)

The New York–Native Flora and Temperate Plant Propagation Tunnel is an approximately 2,320 sq. ft. nonpublic growing tunnel. The growing environment is climate controlled between 55 and 80°F to simulate temperate regions and is home to a plant collection of regional US native plants, rare New York State flora, and temperate woody and herbaceous perennials.
The plant collection comprises 84 plant families, 326 taxa, 348 plant accessions, and 3,820 individual plants. Major plant families represented in this collection, in order of frequency, are the Salicaceae, Asphodelaceae and Oleaceae families. 19 of these taxa are at-risk protected species on *The IUCN Red List of Threatened Species*.

The current collection includes plant material introduced to the Garden over the last 53 years from 96 individual sources.

**Further information:** Greenhouse for temporary storage of plants that will be planted throughout the garden.

**Production House (#18)**

The Production House is an approximately 930 sq. ft. nonpublic glasshouse. The growing environment is climate controlled between 60 and 80°F as an adaptable, specialist growing space. This house is used year-round to grow over 25,000 annual and biennial plants.

**Specialist sunlight requirements:** Highest sunlight levels required—optimally located at southern edge of nursery.

**Further information:** Glasshouse for propagating and growing collection and seasonal plants from seedlings.
**Tropical and Desert Plant Propagation House (#15)**

The Tropical and Desert Plant Propagation House is an approximately 840 sq. ft. nonpublic glazed conservatory space. The growing environment is climate controlled between 70 and 85°F as an adaptable, specialist growing space, and is home to a plant collection of bromeliads, orchids and carnivorous plants.

Its plant collection comprises 26 plant families, 127 taxa, 157 plant accessions, and 232 individual plants. Major plant families represented in this collection, in order of frequency, are the Bromeliaceae, Sarraceniaceae, Orchidaceae and Apocynaceae families. 19 of these taxa are at-risk protected species on *The IUCN Red List of Threatened Species*.

The current collection includes plant material introduced to the Garden over the last 47 years, from 48 individual sources.

**Specialist sunlight requirements:** Highest sunlight levels required—optimally located at very southern edge of conservatory.

**Further information:** Glasshouse for propagating and storing warm-region plants with varied cultural needs destined for the Conservatory collections.
Tropical Plant Propagation House (#14)

The Tropical Plant Propagation House is an approximately 790 sq. ft. nonpublic, glazed conservatory space. The growing environment is climate controlled between 75 and 85°F as an adaptable, specialist growing space, and is home to a plant collection of tropical perennials. It’s used to propagate plants for all the tropical glasshouse spaces.

This plant collection comprises 8 plant families, 9 taxa, 20 plant accessions, and 30 individual plants. Major plant families represented in this collection, in order of frequency, are the Araceae and Araucariaceae families. 3 of these taxa are at-risk protected species on The IUCN Red List of Threatened Species.

The current collection includes plant material introduced to the Garden over the last 39 years, from 8 individual sources.

Specialist sunlight requirements: Highest sunlight levels required—optimally located at southern edge of conservatory.

Further information: Indoor nursery for propagating and growing tropical plants destined for the public Conservatory collections.

COLLECTIONS GROWING SPACES:

Behind-the-scenes growing spaces contain the majority of BBG’s glasshouse plant collections, because, like a fine art museum, BBG’s living collections are so large that they cannot all be on display at any given time. These secure spaces also hold rare and
endangered species, are actively used for \textit{ex-situ} plant conservation, and hold custody of rare plant (CITES) customs seizures for the Federal Government.

They also serve as a backup of the public facing collections, and space is utilized to maximum efficiency. Containerized plants, for example, are grown on roller-mounted mesh benches to minimize space wasted to pathways, and plants are cultivated to stay closer to juvenile stages to reduce space required and to ensure material is always ready for the cyclic replacement of older specimens. Larger specimens are removed towards their end of life or when they outgrow their limited glasshouse space and begin to shade out other specimens. These facilities are subdivided into independently climate-controlled zones best suiting the cultivation requirements of the collection, as follows:

**Auxiliary House (#20 on map)**

The Auxiliary House is an approximately 465 sq. ft. nonpublic glasshouse. The growing environment is climate controlled between 60 and 80°F as an adaptable, specialist growing space, and is home to a plant collection of tender and tropical perennials.

Its plant collection comprises 10 plant families, 22 taxa, 22 plant accessions, and 49 individual plants. The major plant family represented in this collection is the Araceae family.

The current collection includes plant material introduced to the Garden over the last 30 years from 10 individual sources.
Specialist sunlight requirements: Highest sunlight levels required—optimally located at southern edge of nursery site.

Further information: Collections growing space for tender and tropical plants for seasonal display.

Desert, Mediterranean, South African Bulb (Arid) Workhouse (#10)

The Arid Workhouse is an approximately 2,080 sq. ft. nonpublic glazed conservatory space. The growing environment is climate controlled between 60 and 75°F to simulate arid regions of the New and Old World, and is home to a plant collection of cacti, succulents, living stones and bulbs.

Its plant collection comprises 61 plant families, 589 taxa, 633 plant accessions, and 946 individual plants. Major plant families represented in this collection, in order of frequency, are the Iridaceae, Asparagaceae, Asphodelaceae, Cactaceae, Amaryllidaceae, Euphorbiaceae, Oxalidaceae and Crassulaceae families. 33 of these taxa are at-risk protected species on The IUCN Red List of Threatened Species.

The current collection includes plant material introduced to the Garden over the last 52 years from 60 individual sources.

Further information: Collection growing area for plants to be planted or rotated seasonally into the Desert and Warm Temperate houses, including the South African Bulb Collection.
Highland Moist Tropical Orchid Workhouse (#13)

The Orchid Workhouse is an approximately 1,020 sq. ft. nonpublic glazed conservatory space. The growing environment is climate-controlled between 68 and 78˚F to simulate highland moist tropics, and is home to a plant collection of epiphytic orchids.

This plant collection comprises 11 plant families, 2,483 taxa, 4,880 plant accessions, and 5,198 individual plants. The major plant family represented in this collection is the Orchidaceae family. 61 of these taxa are at-risk protected species on *The IUCN Red List of Threatened Species*.

The current collection includes plant material introduced to the Garden over the last 63 years from 102 individual sources.

**Further information:** Indoor growing space where the majority of BBG’s extensive orchid collection, recognized as one of the top collections in the United States, is housed at any given time while not on public display. High density of specimens; temperature controlled for highland moist tropical orchids.

Humid Tropics Workhouse (#11)

The Tropical Workhouse is an approximately 1,480 sq. ft. nonpublic glazed conservatory space. The growing environment is climate controlled between 72 and 80˚F to simulate the moist tropics, and is home to a plant collection of tropical palms, bulbs and ferns.

The plant collection comprises 55 plant families, 141 taxa, 147 plant accessions, and 284 individual plants. Major plant families represented in this collection, in order of
frequency, are the Apocynaceae, Arecaceae, Euphorbiaceae and Amaryllidaceae families. 7 of these taxa are at-risk protected species on The IUCN Red List of Threatened Species.

The current collection includes plant material introduced to the Garden over the last 51 years from 94 individual sources.

**Further information:** Indoor growing space for tropical and seasonal display plants.

**Lowland Moist Tropical Orchid Workhouse (#12)**

The Orchid Workhouse is an approximately 860 sq. ft. nonpublic glazed conservatory space. The growing environment is climate-controlled between 68 and 76˚F to simulate lowland moist tropics, and is home to a plant collection of epiphytic orchids.

The plant collection comprises 5 plant families, 1,177 taxa, 2,000 plant accessions, and 2038 individual plants. 48 of these taxa are at-risk protected species on The IUCN Red List of Threatened Species. The major plant family represented in this collection is the Orchidaceae family.

The current collection includes plant material introduced to the Garden over the last 60 years from 100 individual sources.

**Further information:** Indoor growing space where the majority of BBG’s extensive orchid collection is housed at any given time. High density of specimens; temperature controlled for lowland moist tropical orchids.
**Mediterranean Display Plants Tunnel (#22)**

The Mediterranean Tunnel is an approximately 870 sq. ft. nonpublic growing tunnel. The growing environment is climate controlled between 35 and 45°F to simulate the Mediterranean and is home to a plant collection of citrus and olive plants.

This plant collection comprises 4 plant families, 26 taxa, 28 plant accessions, and 30 individual plants. Major plant families represented in this collection, in order of frequency, are the Rutaceae and Oleaceae families.

The current collection includes plant material introduced to the Garden over the last 29 years, from 12 individual sources.

**Specialist sunlight requirements:** Highest sunlight levels required—optimally located at southern edge of nursery.

**Further information:** Greenhouse primarily growing citrus trees when they are not on public display.

**Temperate Bonsai Tunnel (#17)**

The Temperate Bonsai Tunnel is an approximately 1,190 sq. ft. nonpublic, growing tunnel. The growing environment is climate controlled between 38 and 45°F to simulate temperate regions, and is home to a plant collection of hardy woody perennials, broad-leaf and conifers.
Further detail on the bonsai collection is provided under the entry for the C.V. Starr Bonsai Museum.

**Further information:** Nursery area for growing cold-hardy bonsai trees when they are not on display.

**Tropical Bonsai House (#19)**

The Tropical Bonsai House is an approximately 465 sq. ft. nonpublic glasshouse. The growing environment is climate controlled between 70 and 80˚F to simulate tropical and sub-tropical climates, and is home to a plant collection of tropical woody perennials.

Further detail on the bonsai collection is provided under the entry for the C.V. Starr Bonsai Museum, below.

**Further information:** Greenhouse housing bonsai trees from tropical climates when they are not on public display.

**EDUCATIONAL GREENHOUSES:**

BBG welcomes over 250,000 school-aged children each year, all of whom come into contact with the Garden’s plants. Scientific programs and workshops both on-site and in schools reach 130,000 school-age children annually, and many include a hands-on activity wherein a student receives a plant to steward. The Education Greenhouses are where plants are propagated for school visits and other education groups (including
children and adults with sensory and cognitive disabilities). They are also the only spaces that house and display “touchable” plants in service of hands-on, experiential learning and experimentation.

**Education Greenhouse, Desert Plants (#1 on map)**

The Desert Plants Education Greenhouse is an approximately 900 sq. ft. glazed conservatory space open to school groups and other workshop participants. The growing environment is climate controlled between 70 and 80°F to simulate arid regions and is home to a plant collection of cacti and succulents.

Its plant collection comprises 403 individual plants. Additionally, 3,050 seasonal plants are produced in this space annually for educational use and give-aways. Major plant families represented in this collection, in order of frequency, are the Cactaceae, Asphodelaceae, Asparagaceae and Euphorbiaceae families.

**Further information:** Glasshouse to propagate, grow, and display plants used by visiting school groups; allows hands-on learning experiences (students are able to interact with Garden collections in a meaningful way).

**Education Greenhouse, Tropical Plants (#3)**

The Tropical Plants Education Greenhouse is an approximately 900 sq. ft. glazed conservatory space open to school groups and other workshop participants. The growing
environment is climate controlled between 80 and 85˚F to simulate tropical and subtropical climates and is home to a plant collection of tropical ornamentals and crop plants.

The plant collection comprises 394 individual plants. Additionally, 150 seasonal plants are produced in this space annually for educational use and giveaways. Major plant families represented in this collection, in order of frequency, are the Rutaceae, Zingiberaceae, Rubiaceae, Bromeliaceae and Musaceae families.

**Further information:** Glasshouse to propagate, grow, and display plants used by visiting school groups; allows hands-on learning experiences (students are able to interact with Garden collections in a meaningful way).

**Education Greenhouse, Warm Temperate Plants (#2)**

The Warm Temperate Plants Education Greenhouse is an approximately 900 sq. ft. glazed conservatory space open to school groups and other workshop participants. The growing environment is climate controlled between 60 and 75˚F to simulate warm temperate climates, and is home to a plant collection of warm temperate ornamentals, culinary and medicinal plants.

This plant collection comprises 380 individual plants. Additionally, 1,100 seasonal plants are produced in this space annually for educational use and giveaways. Major plant families represented in this collection, in order of frequency, are the Geraniaceae, Lamiaceae, Fabaceae, Solanaceae and Droseraceae families.
**Further information:** Glasshouse to propagate, grow, and display plants used by visiting school groups; allows hands-on learning experiences (students are able to interact with Garden collections in a meaningful way).

**DISPLAY HOUSES:**

These pavilions and conservatories grow and exhibit long-and short-term plantings on rotation from the collections growing spaces. Long-term plantings may be planted directly into beds and are typically replaced at the end of their natural life or when they have outgrown their space, using plant material held in the collections growing and propagation spaces. The aim of the public displays is to recreate the plants’ natural habitats, including the appearance of the habitat, for example, planted into simulated rock faces. Features such as these also increase the plantable surface area in the structure and elevate smaller plants closer to our visitor’s eye level and to the light. Collections in these spaces are fully labelled, include educational interpretation, and are included in educational tours and programming.

**Aquatic House and Orchid Collection (#9 on map)**

The Aquatic House is an approximately 2,960 sq. ft. glazed conservatory open to the public. The growing environment is climate-controlled between 75 and 82˚F to simulate tropical and subtropical aquatic and moist environments, and is home to a plant collection of aquatics, orchids, aroids, carnivorous plants, ferns and mosses.
The Aquatic House plant collection comprises 28 plant families, 227 taxa, 308 plant accessions, and 616 individual plants. Major plant families represented in this collection, in order of frequency, are the Orchidaceae, Araceae and Alismataceae families. One of these taxa is an at-risk protected species on *The IUCN Red List of Threatened Species*.

The current collection includes plant material introduced to the Garden over the last 39 years from 54 individual sources.

**Specialist sunlight requirements:** Highest sunlight levels required—optimally located at southern edge of conservatory.

**Further information:** Public display and interpretation of tropical and subtropical aquatic and wet environment plants from around the world, plus exhibit of rotating selections from BBG’s extensive cold- and warm-climate orchid collections.

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**C.V. Starr Bonsai Museum (#7)**

The Bonsai Museum is an approximately 2,280 sq. ft. glazed conservatory open to the public. The growing environment is climate controlled between 36 and 42˚F to simulate temperate and Mediterranean to tropical and subtropical climates. It is home to a plant collection of tropical and temperate woody perennials.

The Bonsai Museum’s plant collection comprises 46 plant families, 261 taxa, 496 plant accessions, and 529 individual plants. Major plant families represented in this collection, in order of frequency, are the Cupressaceae, Rosaceae, Pinaceae, Sapindaceae and
Ulmaceae families. 19 of these taxa are at-risk protected species on *The IUCN Red List of Threatened Species*.

The current collection includes plant material introduced to the Garden over the last 93 years from 55 individual sources. The oldest specimen, a Rocky Mountain juniper, is 509 years old.

**Further information:** Public display house for rotating exhibit of approximately 30 specimens from BBG’s world-class collection of bonsai, including the oldest trees in BBG’s collections. The 30 specimens are selected on a rotating basis from the 500+ plants that are housed in nonpublic spaces based on seasonal, cultural, and botanic significance.

**Conservatory Entry House (#8)**

The Conservatory Entry House is an approximately 3,760 sq. ft. glazed conservatory open to the public. The growing environment is climate controlled between 77 and 83˚F to simulate tropical and sub-tropical climates, and is home to a plant collection of aroids, cycads, and palms.

The Conservatory Entry House plant collection comprises 75 plant families, 274 taxa, 292 plant accessions, and 548 individual plants. Major plant families represented in this collection are the Araceae, Zamiaceae and Arecaceae families. 35 of these taxa are at-risk protected species on *The IUCN Red List of Threatened Species*. 
The current collection includes plant material introduced to the Garden over the last 104 years from 92 individual sources.

**Further information:** Public display house at the entry to Steinhardt Conservatory, growing/exhibiting many tropical and subtropical species and home of the Trail of Evolution exhibit.

**Desert Pavilion (#6)**

The Desert Pavilion is an approximately 2,890 sq. ft. glasshouse open to the public. The growing environment is climate controlled between 65 and 85°F to simulate arid regions of the New and Old World, and is home to a plant collection of shrubs, cacti, succulents, wildflowers and living stones.

The Desert plant collection comprises 31 plant families, 275 taxa, 288 plant accessions, and 423 individual plants. 20 of these taxa are at-risk protected species on *The IUCN Red List of Threatened Species*. Major plant families represented in this collection, in order of frequency, are the Cactaceae, Asphodelaceae, Crassulaceae, Aizoaceae and Euphorbiaceae families.

The current collection includes plant material introduced to the Garden over the last 103 years from 87 individual sources.

**Specialist sunlight requirements:** Highest sunlight levels required—optimally located at southern edge of pavilions. Oversized plantings are frequently replaced to ensure high light levels down to soil level.
Further information: Public display house growing, exhibiting, and interpreting plants native to arid regions of the world.

Helen Mattin Warm Temperate Pavilion (#4)

The Warm Temperate Pavilion is an approximately 2,890 sq. ft. glasshouse open to the public. The growing environment is climate controlled between 60 and 70°F to simulate warm temperate and Mediterranean regions of Africa, Australasia and Asia, and western coastal North and South America. It is home to a plant collection of warm temperate herbaceous and woody perennials, bulbs, and ferns.

The plant collection comprises 63 plant families, 181 taxa, 195 plant accessions, and 311 individual plants. Major plant families represented in this collection, in order of frequency, are the Lamiaceae, Amaryllidaceae, Dryopteridaceae, Asparagaceae and Myrtaceae families. 9 of these taxa are at-risk protected species on The IUCN Red List of Threatened Species.

The current collection includes plant material introduced to the Garden over the last 104 years, from 71 individual sources.

Further information: Public display and interpretation of plants adapted to the cool, wet winters and hot, dry summers of warm temperate regions around the world, including BBG’s expansive collection of South African bulbs.
Tropical Pavilion (#5)

The Tropical Pavilion is an approximately 5,840 sq. ft. nonpublic glasshouse pavilion. The growing environment is climate controlled between 80 - 86°F to simulate tropical forests—Amazon Basin, African Rainforest, and tropical Eastern Asia. It is home to a plant collection of palms, aroids, bromeliads, gingers, economic crop plants.

This plant collection comprises 61 plant families, 245 taxa, 252 plant accessions, and 716 individual plants. Major plant families represented in this collection, in order of frequency, are the Araceae, Zingiberaceae and Asparagaceae families. 14 of these taxa are at-risk protected species on The IUCN Red List of Threatened Species.

The current collection includes plant material introduced to the Garden over the last 105 years from 89 individual sources.

Further information: Public display and interpretation of plants native to tropical regions of the world, including the Amazon basin, African rainforests, and tropical eastern Asia.