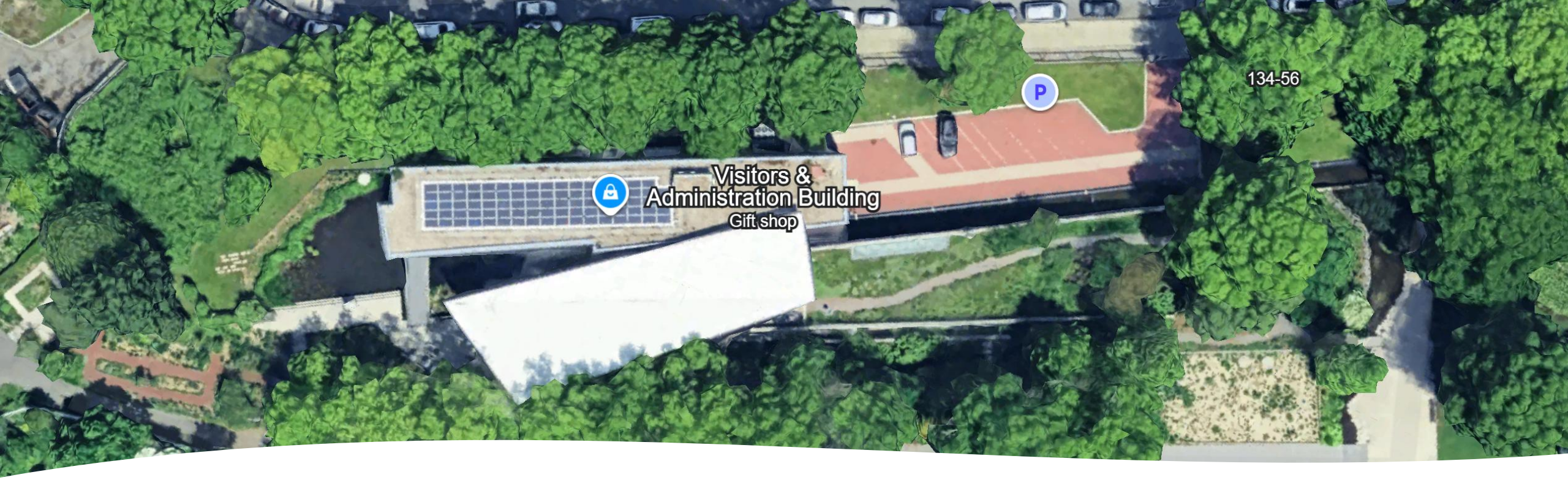

QUEENS BOTANICAL GARDEN FIELD TRIP REPORT

- FALL 2025
- ARC 486
- ARCHITECTURAL DESIGN V
- PHILIP ODDO
- PROFFESSOR LOPICCOLO

https://earth.google.com/web/search/Queens+Botanical+Garden,+Main+Street,+Flushing,+NY/@40.75122603,-73.82710776,7.84749893a,782.45396744d,35y,-89.6548464h,45.00003391t,360r/data=CqABGnlSbAokMHg4OWMyNjA2Y2M1NWMxNDRkOjB4NTJlNWIwMjYwN2VmY2QzGSZ8AJwoYERAIQRxHk7gdFLAKjJRdWVlbnMgQm90YW5pY2FsIEdhcmRlbiwgTWFpbiBTdHJlZXQsIEZsdXNoaW5nLCBOWRgCIAEiJgokCRhVgXbqW0RAEQB2-0XFW0RAGaj3d8xNUFLAlTNkZKNfUFLAQgIIATo DCgEwQgIIAEoNCP_____wEQAA?authuser=0

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BUILDING INFORMATION

- Name: Queens Botanical Garden, Visitor & Administration Building
- Building Style: Contemporary, Modern, Sustainable, Bio-Climatic
- Address/Location: 43-50 Main St, Flushing, Queens, NY 11355
- Architects: BKSK Architects(Lead), Atelier Dreiseitl(Landscape)
- Date Completed: September, 2007
- Area: 15,800sqft
- Total Cost: $12,000,000 ($759.49/sqft)

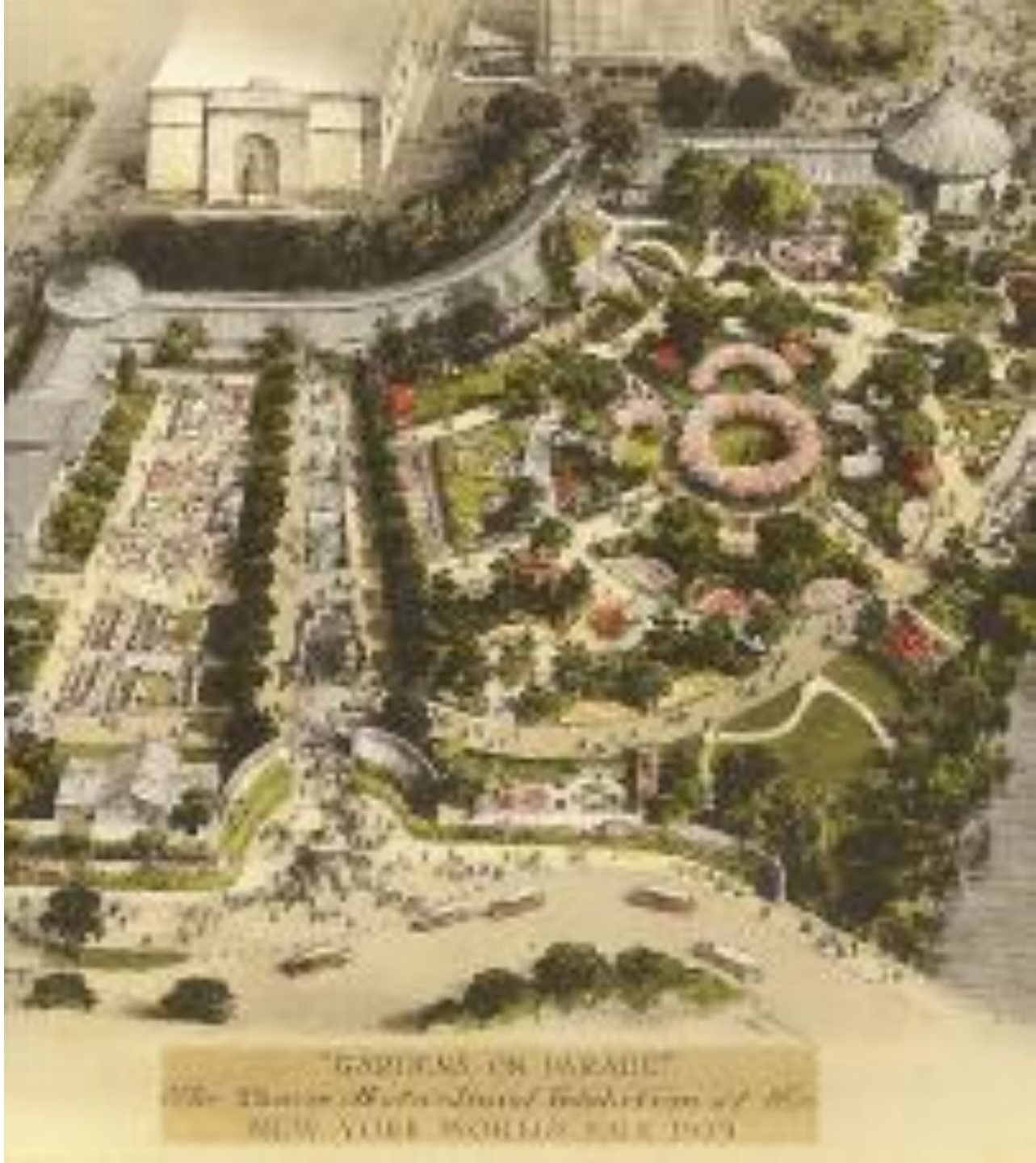
https://queensbotanical.org/?attachment_id=14097

INTERESTING FACTS

- The building has a LEED Platinum rating.
- Certain areas the concrete is styled with the imprint of salvaged native eastern hemlock boards, this means that no trees were harmed in construction to achieve this feature.
- The site is owned by the city and publicly funded.
- The site used to be a marshy wetland, and the sustainable aspects and overall site design uses this to its advantage in both design and sustainability.
- The site was also once a dump that was cleaned and eventually built over, some trees still die from this when the tap root hits the garbage layer.
- The site used to have a geothermal heating system that no longer works but at its peak would provide most heating needs.
- QBG collects both “Browns” and “Greens” to create their own compost.
- The plumbing shakes the pipes to kill harmful bacteria that can be inside.

HISTORY

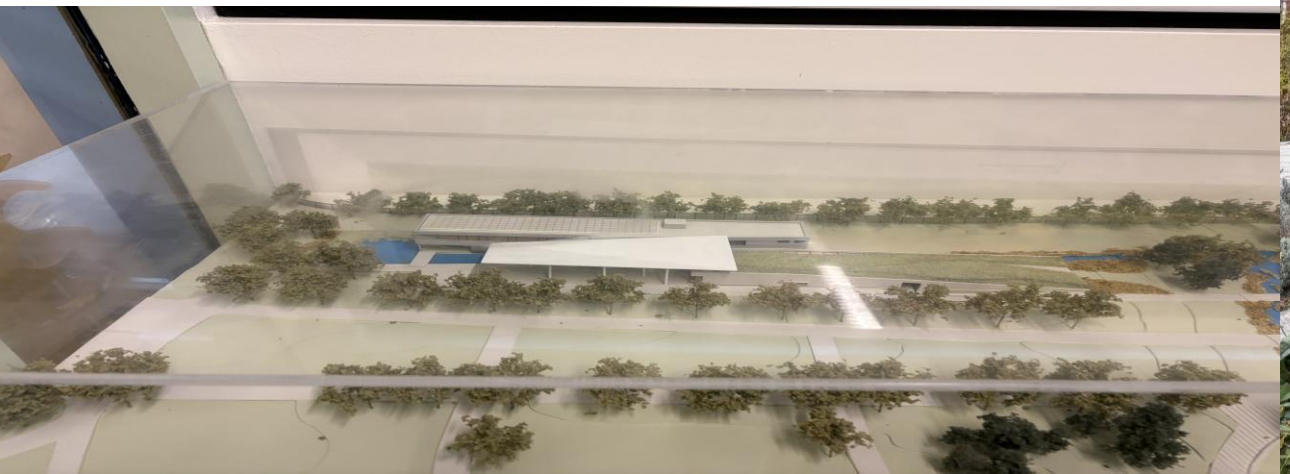
The park itself was created in 1939 as part of the 1939 New York World’s Fair and relocated in 1963 as part of the 1964 New York World’s Fair. The Visitor and Administration building was later completed in 2007 in part to modernize the garden area and be a model of sustainable design. Along with this, it was made to be the administrative hub of the garden and an area to connect and teach both the surrounding community and tourist to ideas of sustainability by showcasing new and innovative technologies. Throughout the years, themed gardens, new structures, and the visitor/administration building have been included on the site. A new education center is set to be completed in 2027 to help the continuation of the garden's goals.



https://queensbotanical.org/about/

CONSTRUCTION TYPE

- Type of Construction: Two-story, steel framed structure with concrete slab, foundation, structural elements.



SUSTAINABLE EXTERIOR FINISHES OF BUILDING & NOTES ON FSC

- Wood Cladding: Wood sourced and certified with the aide of the Forest Stewardship Council (FSC).

The FSC sets standards for healthy forest management, reducing ecological impact by supporting sustainable forestry.

- Designed With Sun Path in Mind: Wood cladding aides in unwanted solar gain. Windows allow ~84%-90% daylight penetration (reduces need for artificial lighting).
- Recycled, Local, Low-emission materials: Locally sourced materials, recycled concrete and plastics, salvaged concrete formwork.
- Solar Roof: Provides for ~17-21% of all building energy needs.
- Water and Landscape: Roof is slopped to allow rainwater to drain into the surrounding water features and biotope which helps filter the water through use of vegetation.

SUSTAINABLE EXTERIOR FINISHES OF GREEN ROOF

- Located on Top of Auditorium: This aides in keeping heat in.
- Semi-Intensive Vegetated Roof: (~6in of dirt) helps in absorption of rain fall.
- Plantings: Plants are mostly native grasses and ferns. Plants that are meant to survive year-round in cold, windy, dry climates.
- Biodiversity Support: Plantings are chosen to attract native birds, butterflies, and other insects and natural wildlife.

SUSTAINABLE INTERIOR FINISHES

- Artificial lightings brightness is altered by the amount of sunlight being let in (photo diodes).
- Recycled wood, carpets, concrete, etc…
- Low VOC and intumescent paints on steel beams and other aspects
- Heat Air to Water System: Pulls ambient heat from air and uses glycol to heat the water.
- Fly-Ash Concrete Floors: uses by-products of coal combustion in concrete floor for strength.
- Compostable Toilets: Uses 3tbsp of water to flush and drops into a compost area which uses wriggler worms to clean waste and brown water.

SITE AND LANDSCAPE FEATURES BIOTOPE:

- Used to catch and treat rainwater and certain sources of grey water on site as to not affect NYC burdened sewer system.
- Excess water from Roof, Green Roof, etc… falls into water canal and into the biotope which uses plants and certain fish in a self-sustaining cycle that cleans the water which is then stored on site and reused.
- It is then directed to the water feature where it goes down the channel again in a constant cycle.

SITE AND LANDSCAPE FEATURES (CONT.) BIOSWALES:

- A bio swale is a sloped landscape feature that catches and receives stormwater runoff.
- Located on site near the parking garden.
- Planted with vegetation that helps with the absorption and filtering of water back into the environment.
- At QBG in particular the bioswales can flood and create a temporary lake/river feature on the site as it slowly drains back into the ground.
- Functional and aesthetic, aiding in the sites once historically wet location and looking pleasing to visitors.

SITE AND LANDSCAPE FEATURES (CONT.)
RAINWATER CATCHMENT SYSTEM & CISTERN

- Water is first diverted from the roof, green roof, and canopy into the water channel and associated biotope.
- The once the water is in the biotope , the plants and associated soils filter the water from damaging elements and is then sent to the cistern. It should be noted that the fish and plants in the biotope live in symbiosis as the fish eat the plants and the plants use the nitrogen from the fish's excrement.
- At the cistern water is stored and directed into the water feature and surrounding irrigation system. It also aides as a buffer for the city's sewer system.
- This process is repeated constantly.

SITE AND LANDSCAPE FEATURES (CONT.)
METHOD TO CLEAN GREY WATER:

- Water from sinks, showers, etc. is directed with pipes to settling tanks and then diverted to the wetland feature.
- From the wetland feature water is filtered through, gravel, sand and wetland plants.
- The now cleansed water is then reused to flush toilets
- This reduces water waste and gives a second purpose to the water already used on site.

REFLECTIONS

What I personally found most interesting was the biotope and the associated water feature and channel. To start off, I was really interested in the absorption aspect of the rainwater into the plants and the unintended symbiosis of the koi and those plants. I feel it's very interesting to note how the community added them and although not all the fish they add are good the koi created this unintended symbiosis that helps in the upkeep of nitrogen levels in the water that aides the plants. Architecturally and design wise I find the water coming from the feature and travelling down the staggered bricks down to the rigid channel, and into the “messy” biotope just be reabsorbed into the cistern and back to the water feature speaks numbers about not only QBG but also about life, sustainability, and the water cycle; not to mention the rainwater adding to this flow. I personally feel as if this staggered, rigid, messy loop incorporates several design styles well and provides a symbolism that can be interpreted in multiple ways by the observer. Personally, I interpreted it as life from start to finish and the ideas of reincarnation and the food chain.

ADDITIONAL SUSTAINABLE BUILDING **BOSCO VERTICALE:**

- Designed by Boeri Studio
- Consists of two towers, 80m(262ft) and 112m(367ft)
- Has 780 trees, over 10,000 perennials, and 5,000 shrubs
- The site takes up 1,500sqm(16,146sqft) of urban space but accounts for the equivalent of 20,000sqm(215,278sqft) of forest and associated undergrowth
- Uses nature to create microclimates that filter sunlight and heat on each floor for each room
- Absorbs CO2, produces oxygen, and prevents residence from noise pollution
- Allows for previously gone bird species and insects to be reintroduced to the surrounding urban environment

https://www.stylepark.com/en/news/stefano-boeri-bosco-verticale-konzept-vertical-forrest-stylepark