2017 Top 10 List of Hot Trends in Greenroof & Greenwall Design

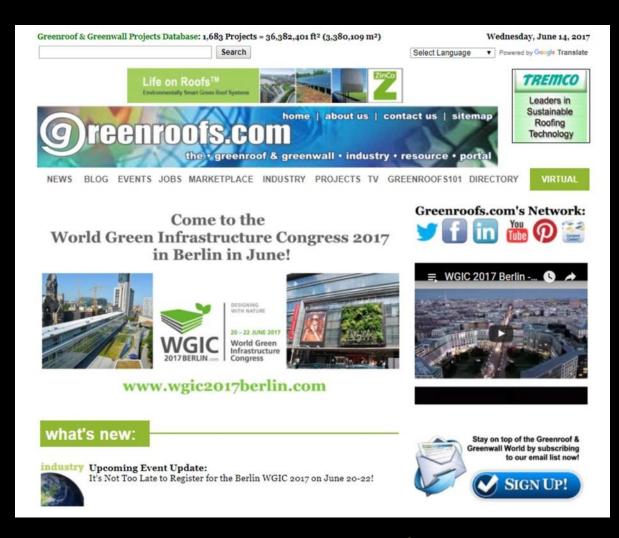




WGIC 2017, Berlin

By Linda S. Velazquez, ASLA, LEED AP, GRP, Greenroofs.com Publisher & Editor

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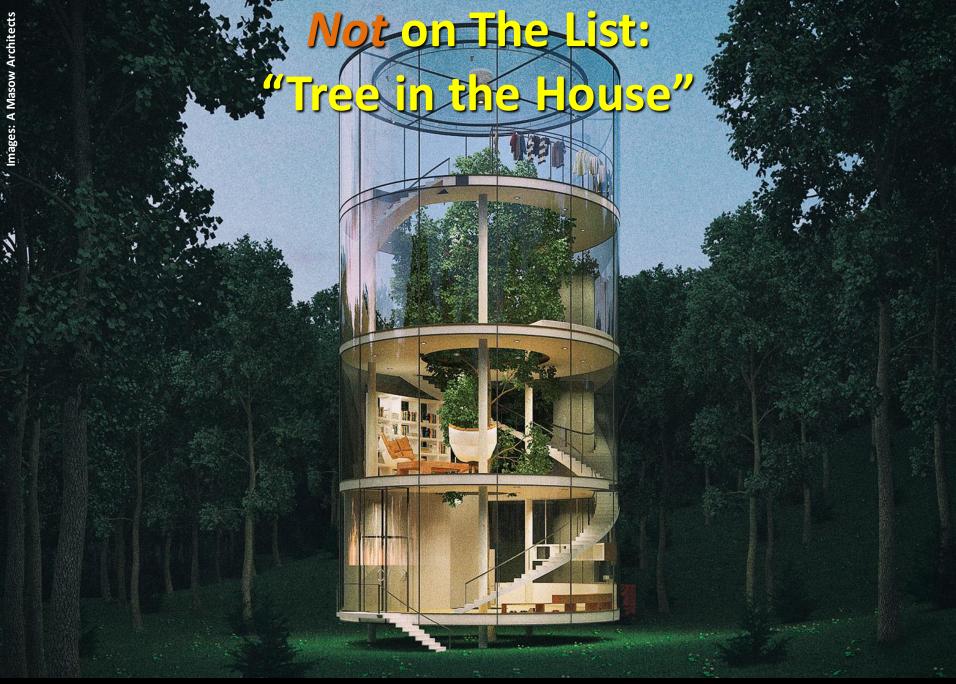
A Few Favorites Not on "The List"

Extension of public space - riding your bike on a greenroof?









Communing with nature in a tubular glass enclosure and fir tree







Minimal space & minimalist decorating

Not on "The List!"

Great for decorating a Christmas tree?

Nature-based living or trapped nature?

Maybe it should be called "Tree in a Cage"!

Proposed in Kazakhstan By: A Masow Architects





10:

Client Specific

'Boutique'
Greenroofs & Greenwalls

Lucas Museum of Narrative Art: May the (Green) Force Be with You!



Los Angeles, CA: 2021. \$1B sinuous space ship museum w/ undulating ribbons of plant life set on sprawling, lush 6-7 acre greenroof park atop underground parking.





Below: *Otoh Gunga City* STAR WARS™: Episode I The Phantom Menace





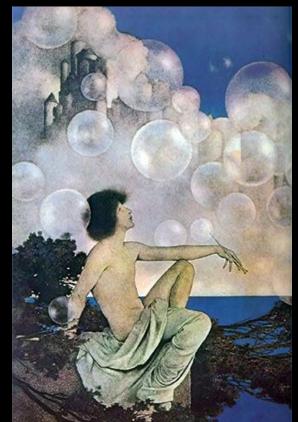
Lucas' personal \$B collection:

Narrative Art

The Art of Cinema

Digital Art









By: Ma Yansong of MAD Architects+

Image: Lucas Museum of Narrative Art

Novartis Building: green origami-influenced scheme



Shanghai, China: 2015. Amidst tall glass & concrete research campus, company wanted intimate 'house' for meetings, events & café space.

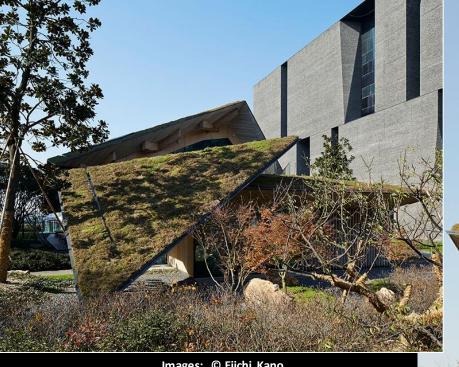




lmages: © Eiichi Kano, Novartis AG

Imags: © Eiichi Kano

V-shaped columns and lattice-formed beams. Folded greenroof almost touches the ground plane...



Images: © Eiichi Kano

...connecting with the earth.



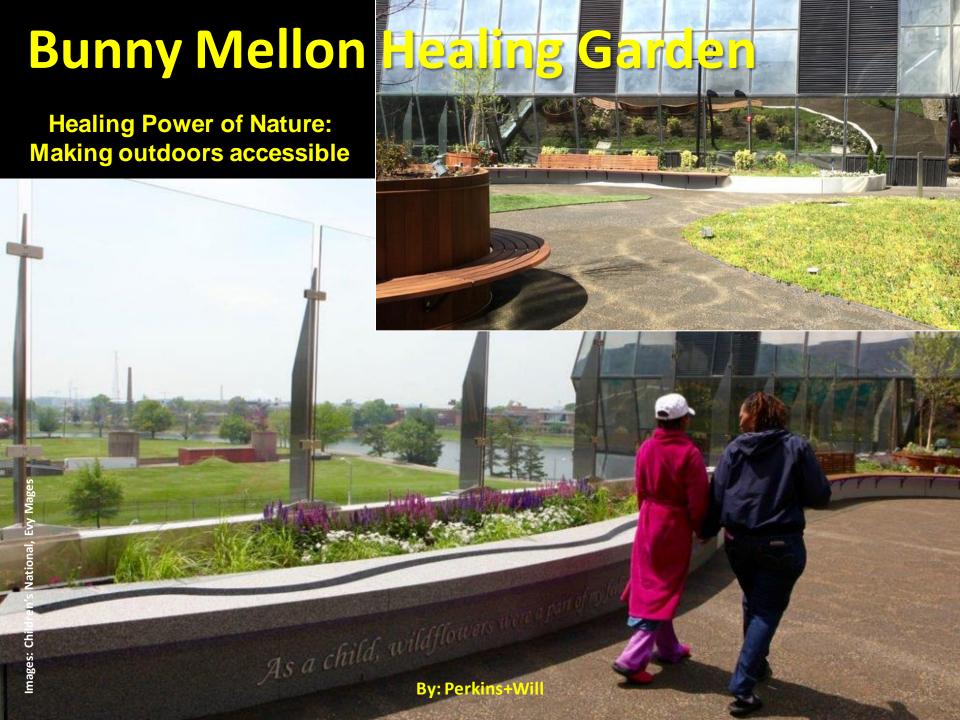


Bunny Mellon Healing Garden:

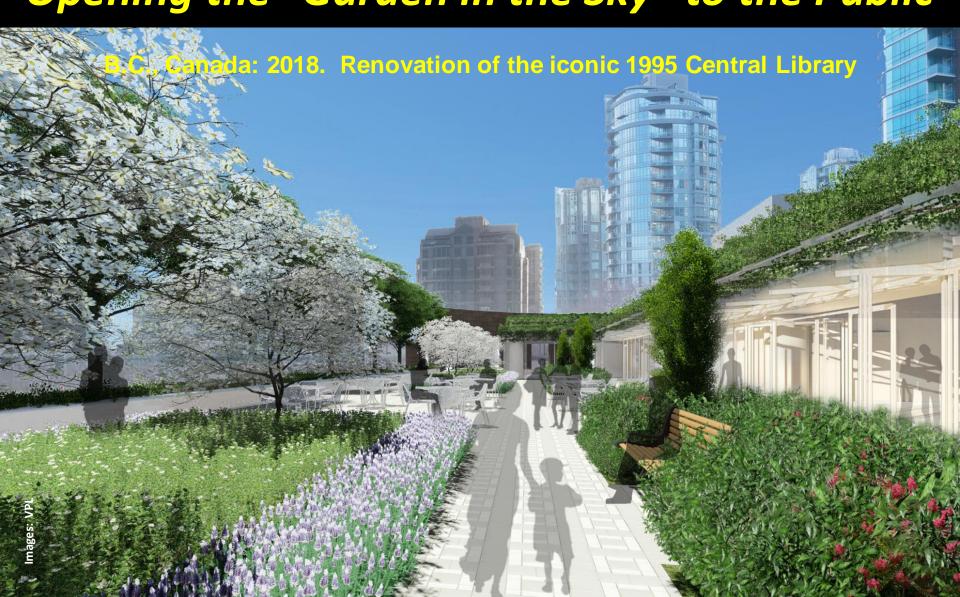


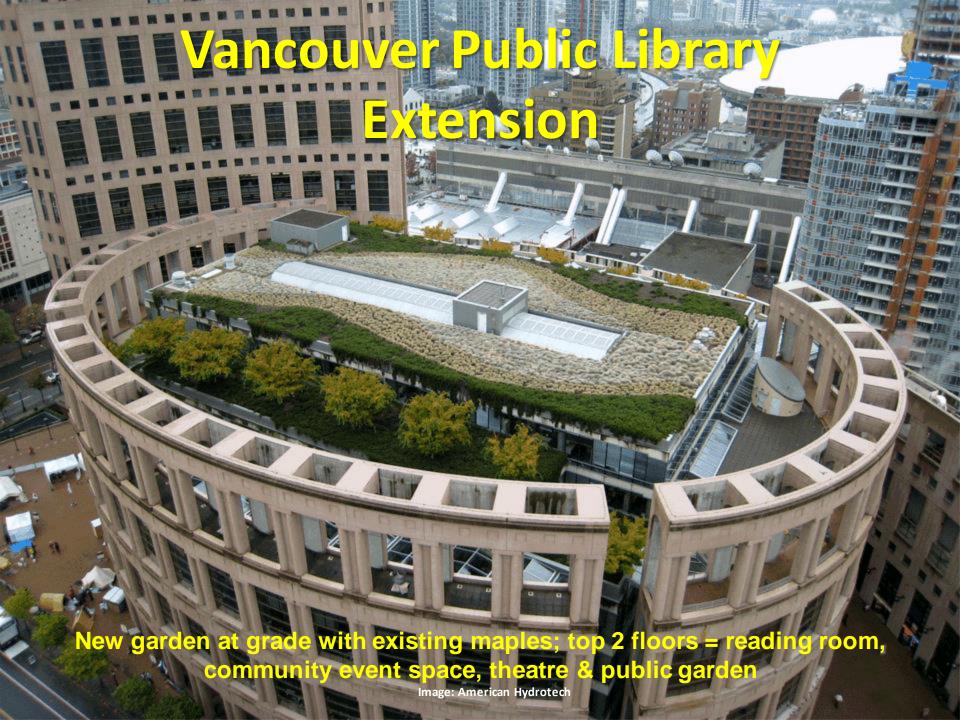
Washington, DC: 2017. Long tradition of supporting Children's National & children of the D.C. community. Inspiration was patient's last wish to go outside.





Vancouver Public Library: Opening the "Garden in the Sky" to the Public













IGA 2017 Visitor Center:

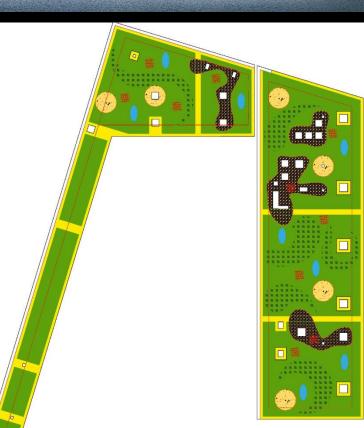




Special selection of plants: 70 different species & deadwood, sand pockets, coarse gravel beds



Images: IGA 2017, ZinCo Internatio





IGA 2017 Visitor Center



Temporary water bodies, & nesting aids for insects also added

Can be visited from adjacent small tower

Images: ZinCo International, IGA 2017







Floating dykes protect marina from flooding; Upper building for leisure & recreation; Observation deck with rooftop orchard.





Manta Ray's soft-slope landscape allows wandering; marshlike ground landscape







VINCENT CALLEBAUT ARCHITECTURES, PARIS

SEOUL YEOUIDO HAN-RIVER PARK & YEOUI-NARU FERRY TERMINAL

AERIAL VIEW FROM THE YEOUIDO PARK TOWARDS THE BAM ISLAND

9:

Greening Remote Residences

Culardoch Shieling



Upper Glen Gairn, The Cairngorms National Park, Scotland: 2016. 'The big back place' is an escape & intimate for entertaining on highland estate.

Moves Architects

47 m² vernacular timber hut allows minimal impact on terrain & also references modernist architecture







Irregular cut-out windows frame views of granite tors & across remote upper Glen Gairn expanse; spruce wrapped interiors



Images: © Moxon Architects

Culardoch Shieling

Greenroof covered in heather, moss & stone to blend seamlessly

Completely off the grid





Culardoch Shieling

Humble & casual, but also precise, playful & sophisticated

Images: © Moxon Architects



Villa Ypsilon



Finikounda, Greece: 2017. Y shaped greenroof becomes extension of olive grove landscape. Accessible roof offers elevated views towards Bay of Schiza & Sapientza Island.



Height of house is limited to tip of the olive trees



Images: © NAARO





Villa Ypsilon

Great mountain views to the east



Villa Ypsilon





Morelia, Mexico: 2015. Private residence overlooking hills & Guayangareo Valley has 13 separate hydroponic greenwalls inside & out ~ 4,000 sf.



Villa 3 Marias

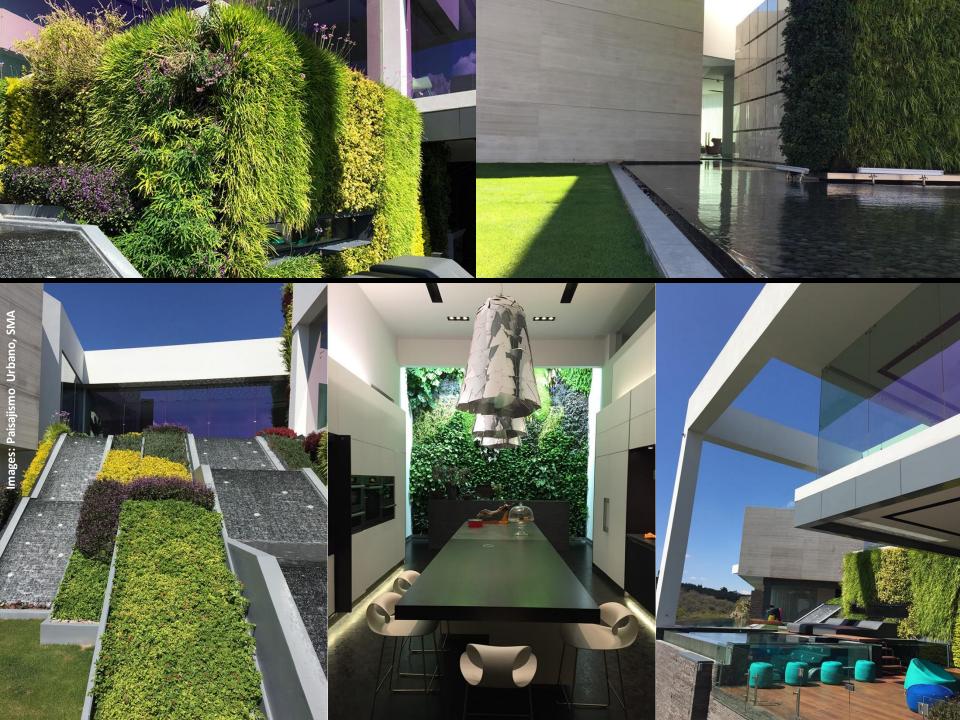
- 11,000 plants
 - 35 species
 - 15 varieties

Careful consideration of light, humidity & temperature levels



Images: SMA, Paisajismo Urbano





Villa 3 Marias no of Paisajismo Urbano

#8:

Innovative Uses for Spacious Green Civic Spaces



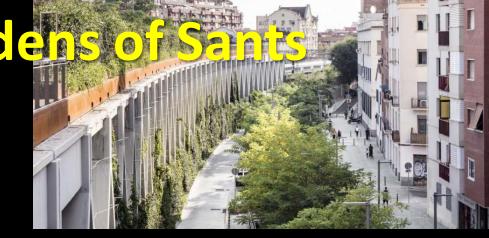
mages: Adrià Goula Sardà

Barcelona, Spain: 2016. Urban renewal project for Sants railway corridor = ~51,000 sf, 5-km-long "green corridor."

3 green inclines rise to greenroof level w/ roof heights between 4 & 12 meters.















Raised Gardens of Sants

Complex artificial topography w/ high density of trees & rich plantings of shrubs & ground cover

By: Sergi Godia Architects, Ana Molino Architects



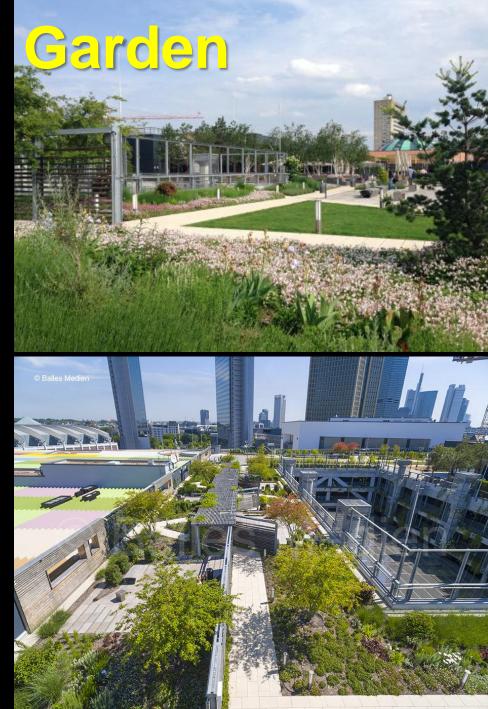
lmages: Adrià Goula Sardà





2.7-acre rooftop garden: huge network of paths, lawns & playground

DGNB certification in Gold





Seoullo

Former 1970s inner city highway now 983m-long public park of 50 types of plants:

Trees, shrubs & flowers displayed in 645 tree pots ~ 228 species & sub-species

Images: by bloom © OMA







Transforming existing overpass into public garden, overlaying matrix of Korean flora onto elevated steel & concrete structure



mages: by bloom © OMA





24,000 plants; new bridges & stairs connect viaduct with hotels, shops & gardens at the heart of the city

By: MVRDV, Ben Kuipers, DMP+

#7:

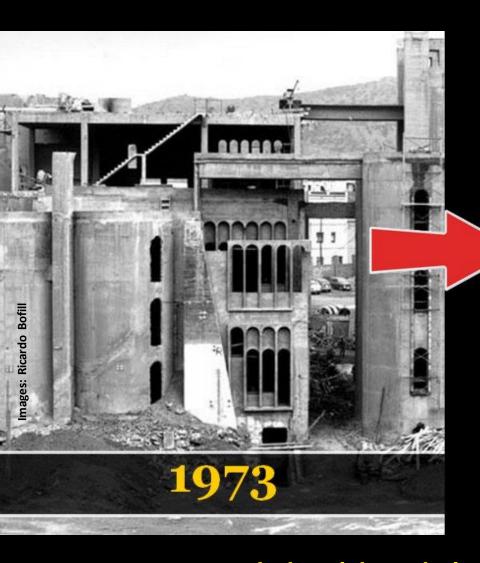
Buildings Gone Wild(in a Green Cultivated Way)

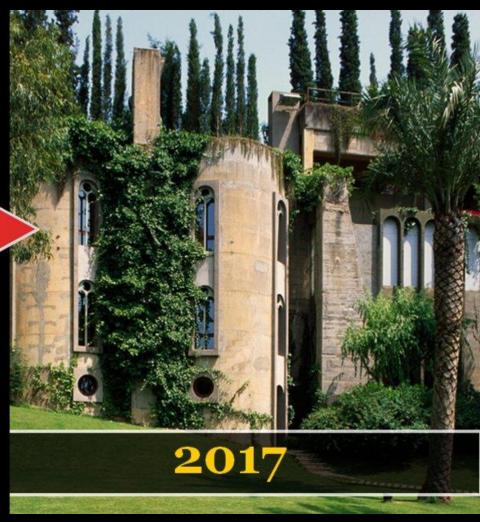
La Fabrica



Sant Just Desvern, Spain: 1975-ongoing. Architect Ricardo Bofill's studio & home: library, model laboratory, exhibition space & gardens.

La Fabrica





Industrial revolution to fairy tale castle: abandoned concrete factory + lush abstract surrealism = green paradise



"green plinths" & vines = romantic ruins





La Fabrica

Eucalyptus, palms, olive & prune trees, mimosas, grass & climbing plants

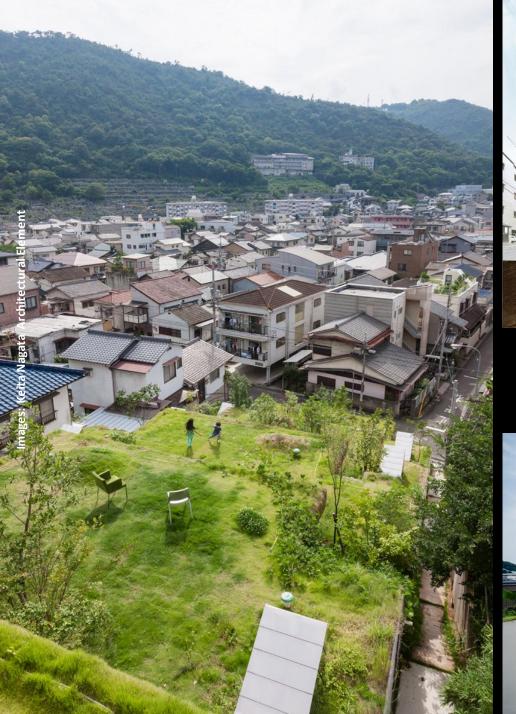


Greendo



Takamatsu, Japan: 2015. 5 residences sandwiched between 2 roads into the terrain.

Greened terraces form roofs of the homes below.





"Continuation between the ground and roof to create a new ecosystem."



Greendo

mage: Keita Nagata Architectural Element



Each dwelling has own outdoor garden & indoors remain at stabilized temperatures.



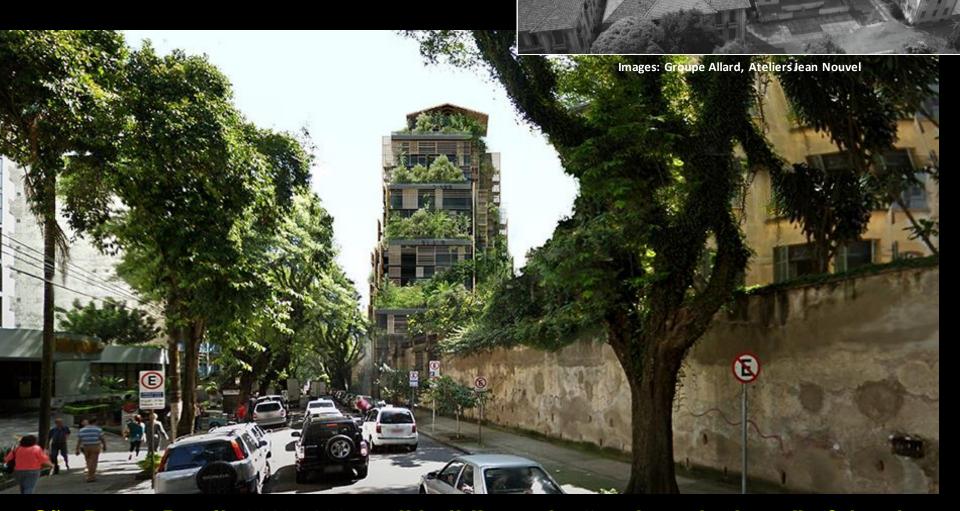
Greendo



Images: Keita Nagata Architectural Element

By: Keita Nagata Architectural Element

Cidade Matarazzo's Rosewood Tower



São Paulo, Brazil: 2019. 100m tall building to be "oasis at the heart" of the city. 30,000 m² complex = hotel & residences & tribute to Atlantic Forest.



Native vegetation populates 'landscape building' of 151 guest rooms & 122 owners' suites w/ flowers, plants & trees protruding through & above structure's latticed steel façade







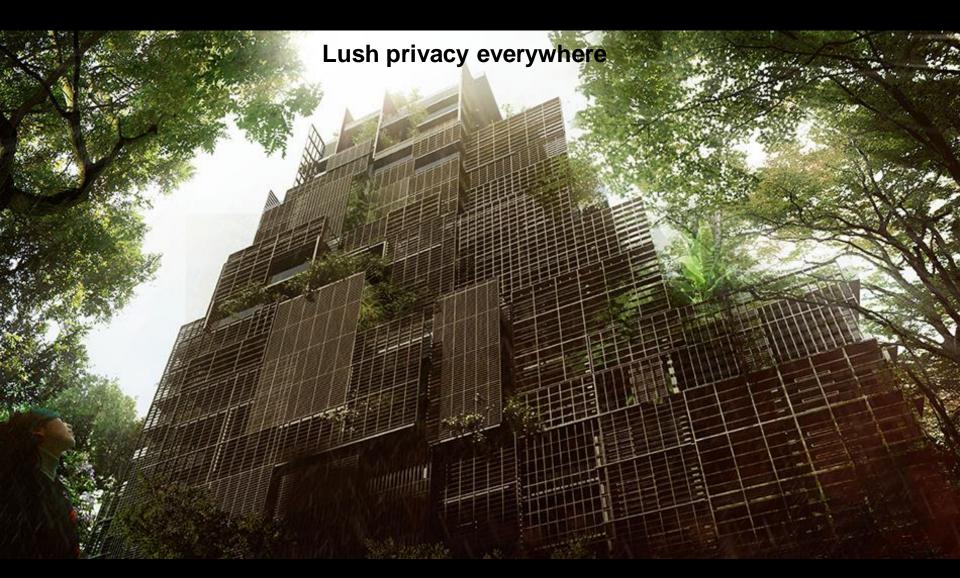






"Vertical garden" seeks to create sense of continuity between tower & its surroundings. Restaurants, bars, 2 pools, spas

Cidade Matarazzo



Bringing new life to a historic building
By: Jean Nouvel, Groupe Allard, Philippe Starck+

6:

Bringing the Outdoors In: Surrounded by Nature



Zürich, Switzerland: 2002. Public park as redevelopment. "Park-Haus": double-walled steel-framed construction covered by trellis system & climbing plants = conservatory without glass

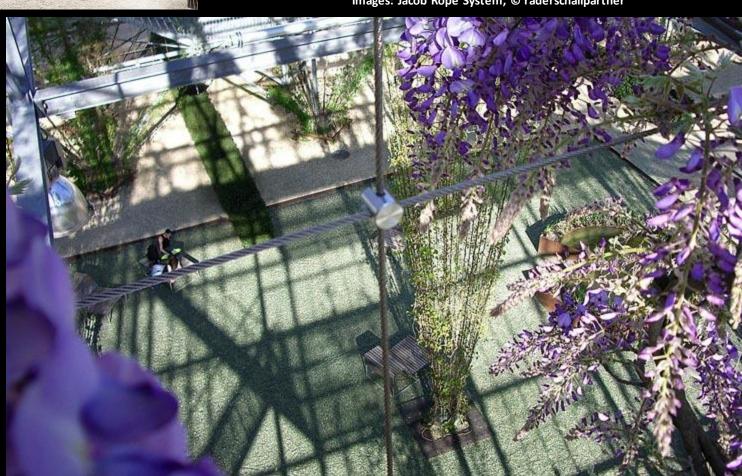




At 100m long, 34m wide & 18m high = largest pergola in the world

30,000m of steel rope installed

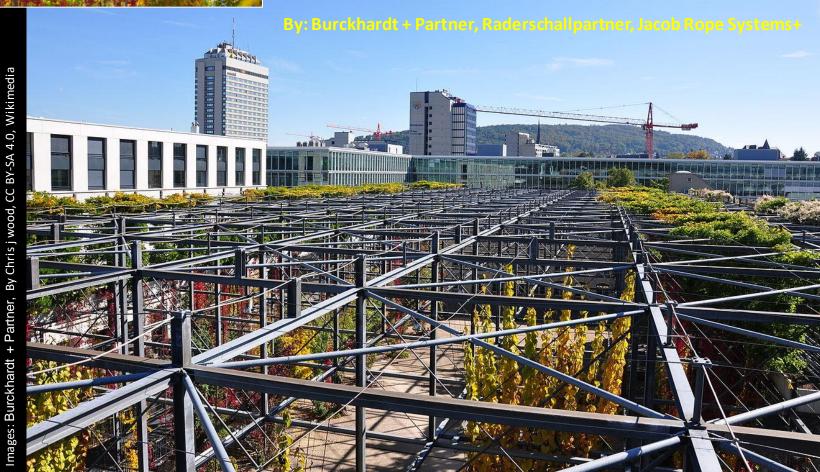
Images: Jacob Rope System, © raderschallpartner





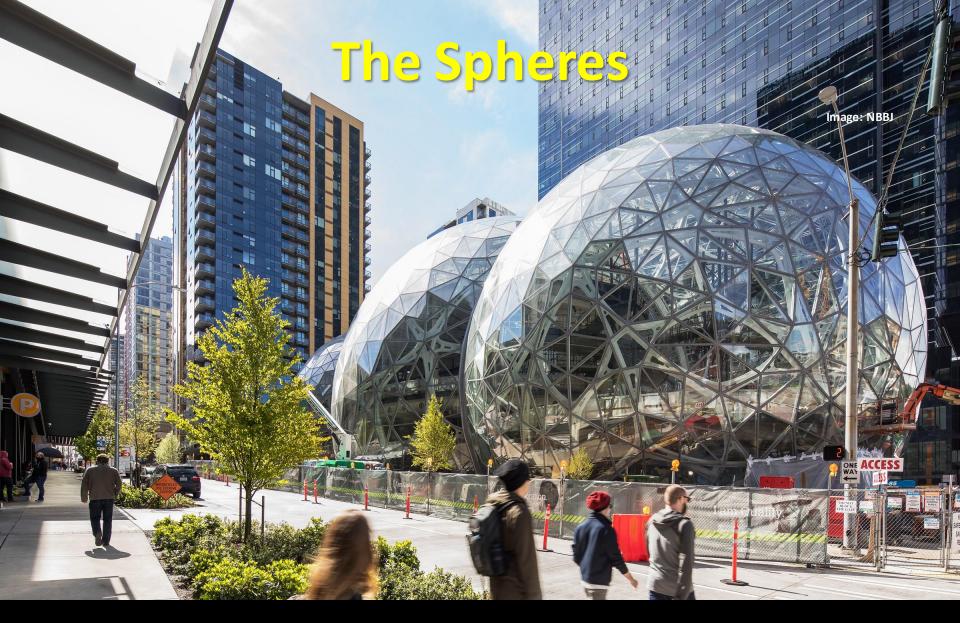
MFO-Park

104 woody vines & creepers: wisteria, clematis, climbing rose, jasmine, honeysuckle, hops, knotweed, & silver lace vine



The Spheres: Amazon HQ





The 3 conjoined spheres are both meeting rooms & conservatories to house over 400 species of rare (and non-rare) plants.





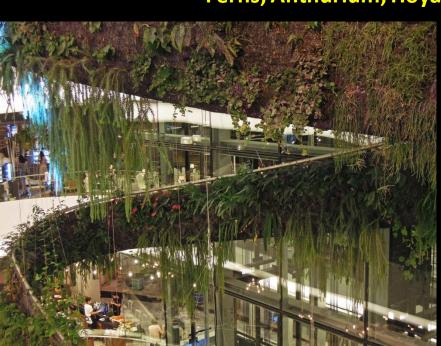


Bangkok, Thailand: 2015. Patrick Blanc: longest free hanging structure in the world totally covered by plants at 103 m long for EmQuartier shopping mall renovation.





Ferns, Anthurium, Hoya, Cissus sicyoides & many more





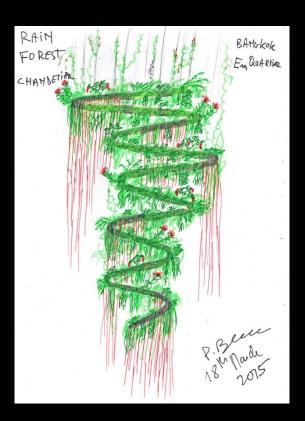




Spiral blade chandelier suspended on stainless steel cables



Rainforest Chandelier



Images: Patrick Blanc

By: Patrick Blanc, Leeser and J+H Boiffils

5:

Living Green Hotel Façades:

Hanging Gardens in the City

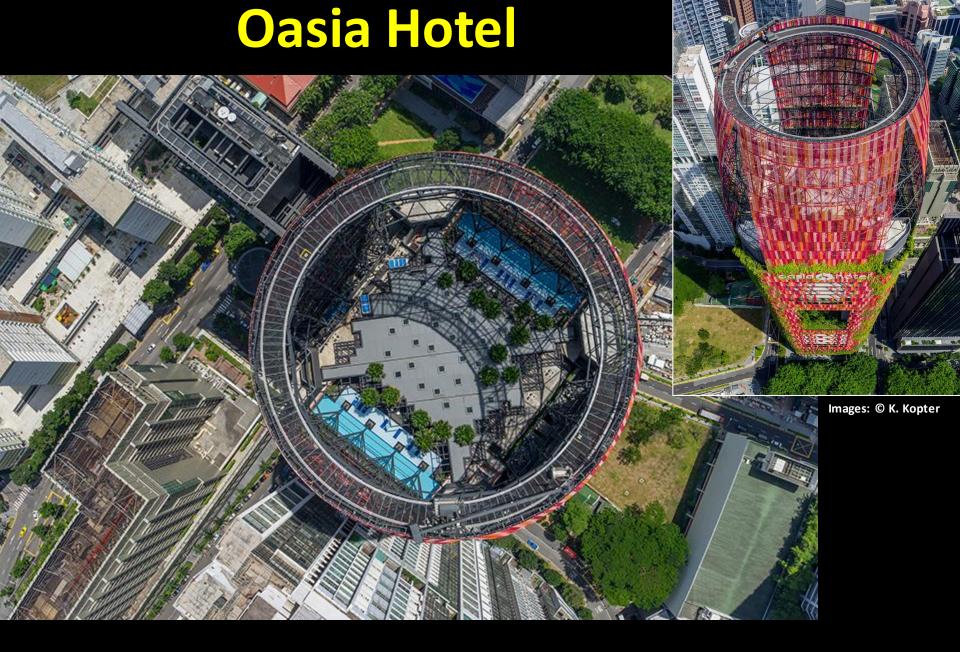


Oasia Hotel



Singapore: 2016. 190.15 m living tower, 4 sky terraces & sky garden.

21 sp of creepers on aluminum mesh cladding; 33 plants & trees



Sky garden crowns the roof. Openness promotes cross-ventilation.

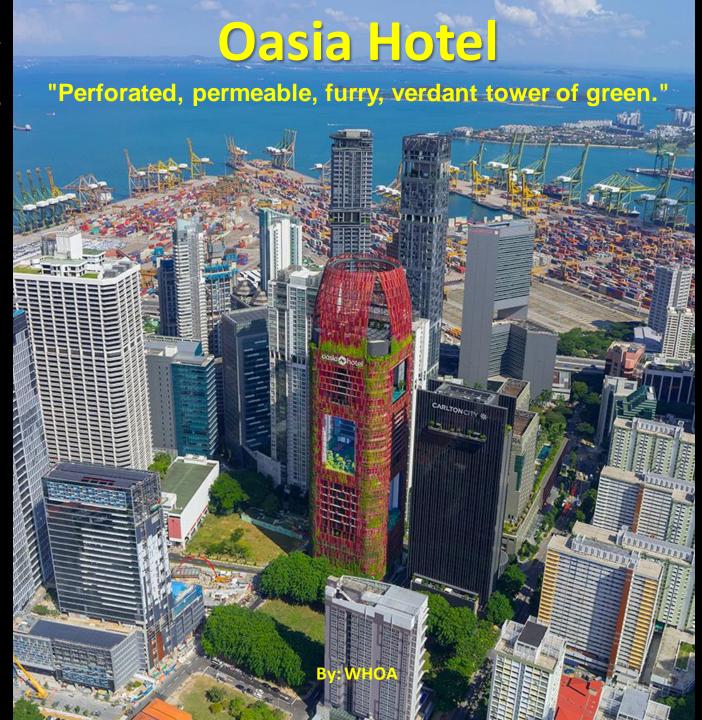


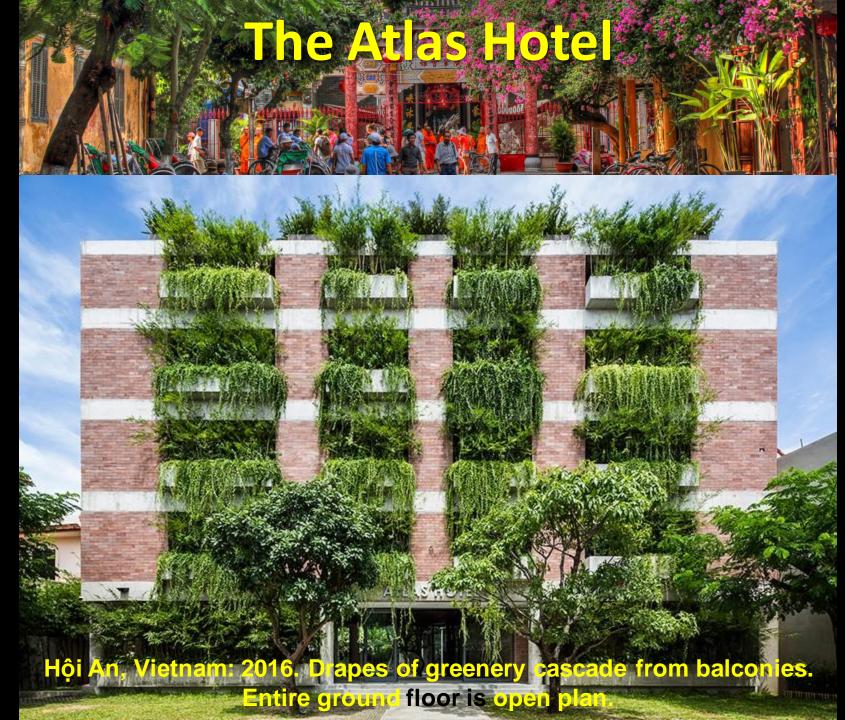
Images: © K. Kopter

Intensifies land use w/ tropical approach & layers of elevated ground space.

Plants = "architectural surface treatment."













Sheltered interconnected courtyards & rooms all immersed

Images: © Hiroyuki Oki

Atlas Hotel

Plants:

- Soften hardscape
- Provide solar shading
- Rejuvenate old town
 - Welcome guests



By: Vo Trong Nghia Architects

Images: © Hiroyuki Oki





Madrid, Spain: 2011. Interior facades greened w/soil-based greenwalls = 11,000+ sf w/ 20-m high waterfall & LED light show day & night.





2,500 varieties: trees & shrubs, climbing plants & herbs in 400 staggered planters





Images: © Alberto Clavijo, Hotel Santo Domingo



Vegetated wall:

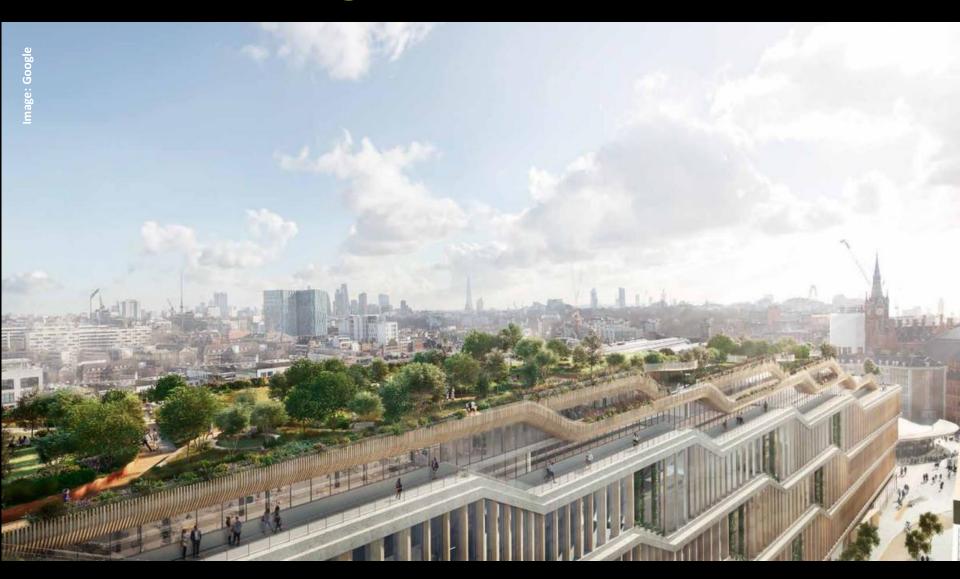
- 8 trees reach 5 m high
 - ~30 smaller shrubs
 - 300 linear meters of scaffolding
- absorbs ~25,000 kg
 of CO2 /yr



4:

Cascading Terraced Gardens Are All the Rage

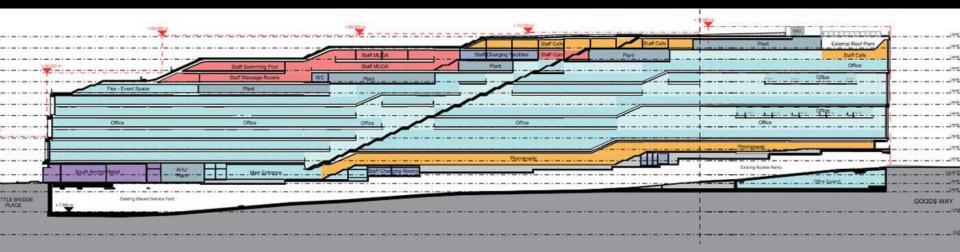
Google's London HQ



UK: 2018. £1 B "Landscraper" to be as long as it's tall & will bring all Googlers into 1 campus.



11 stories; gardens will be stepped just like building; grand interior staircase.





Images: Google

The 300-meter long rooftop garden's many zones include a "pause area" filled with wildflowers & woodland plants, a cafe & 200m running trail.

Inside: basketball court & swimming pool. Vast structure = 1 M sf.

Google London HQ Images: Google By: Bjarke Ingels Group and Heatherwick Studios Figure 109: Illustrative view of the Zone A Building roof j south-west overlooking Battle Bridge Place and King's Boulevard





Images: © Herzog and de Meuron

Lebanon: 2017. 119 m-tall highrise of staggered plates = large planted overhangs

5 key principles: layers & terraces; inside & outside; vegetation, views & privacy; light & identity





Lush vegetation offers privacy screens, creates cooler micro climates & frames views





Beirut Terraces

Encourages outdoor living

By: Herzog and de Meuron

670 Mesquit



Image: © Bjarke Ingels Group

Los Angeles, CA: In progress-2020. Mixed-use for rapidly growing arts district by LA River. Customizable concrete ziggurat encloses recessed glass volume.



Reclaiming & transforming river bank into vital new urban landscape

Enliven warehouse district & renew arts district





30 stories at highest, each frame topped with landscaped terrace



Images: © Bjarke Ingels Group



#3:

Dazzling Starchitect-designed Luxury Condos in Miami



Miami Beach, FL: 2018. 59 individually designed waterfront residences overlooking Biscayne Bay. Lagoon infinity pool functions as naturally filtered ecosystem hosting native landscaping & receiving flooding.







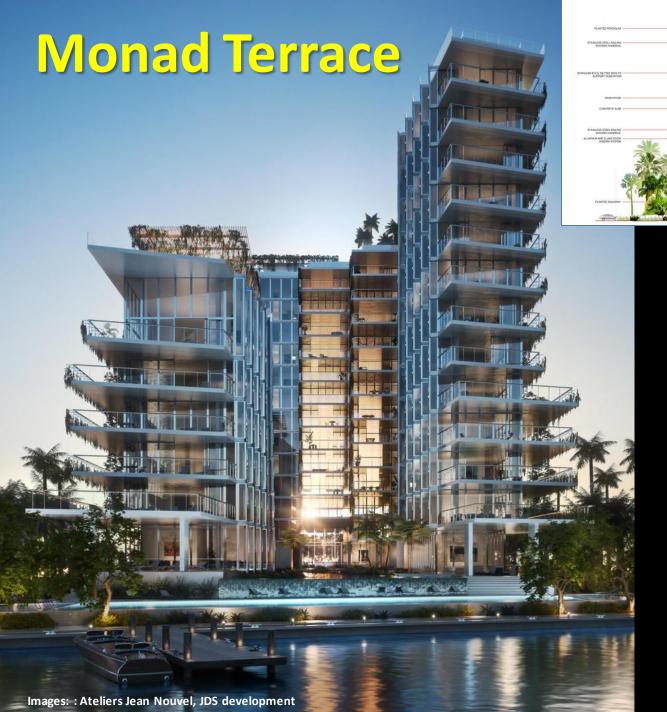




"Curated climbing gardens" run along N & S façades.

Bougainvillea, Spanish Moss, Tillandsias, Passion Vine+









By: Ateliers Jean Nouvel, Kobi Karp Architecture & Interior Design, JDS Development Group+





350 condos w/ 2 penthouse sky villas greenroof sky bridge

Elevated plinth: commercial & retail space, parking & palm tree court



One River Point Towers





Images: © KAR Properties, : Rafael Viñoly Architecture

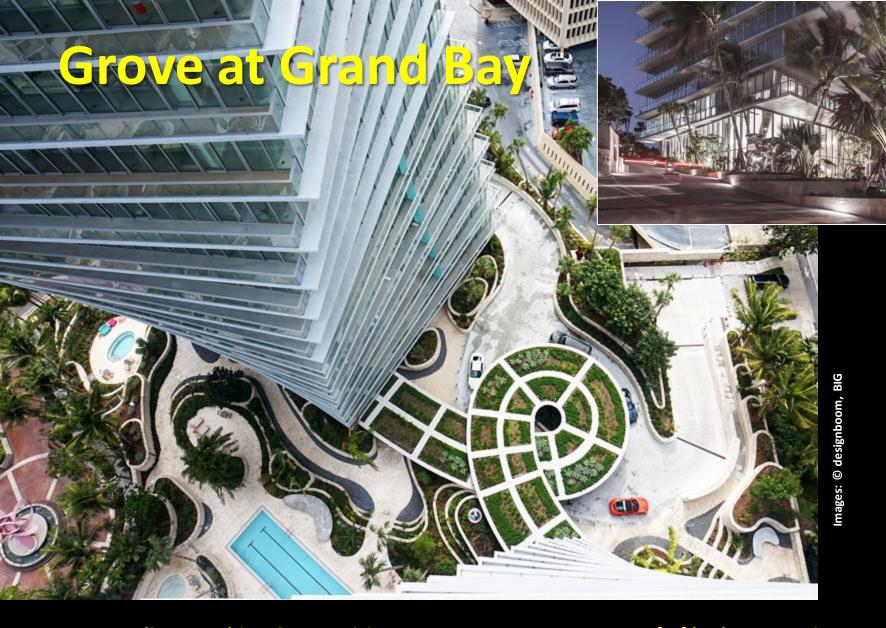
Private Sky Club at level 56, 800' up

Plinth topped by open-air pool deck, cabanas, spa, fitness center, lounge laundry & children's activity areas

One River Point Towers







Podium parking & amenities = over structure greenroof of lush vegetation.

Curving greenroofed porte-cochere at base = covered walkway connecting 2 towers.





"Re-grove The Grove" native plantings

Images: Rasmus Hjortshøj, © designboom, Rasmus Hjortshøj, Raymond Jungles



Grove at Grand Bay



By: BIG (Bjarke Ingels Group); Nichols, Brosch, Wrust, Wolfe + Associates; Raymond Jungles; Terra+

2:

Leadership Designer Spotlight: SWA Group

landscape architecture, urban design & planning

SWA: Library of Congress Packard Campus

Culpeper, VA: 2005. 80% of structure below grade; 228,000 sf greenroofs

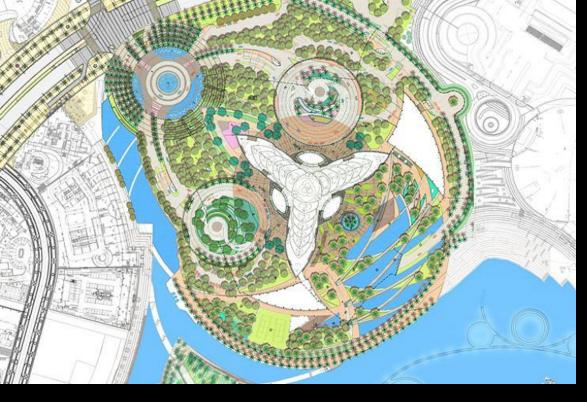


SWA: California Academy of Sciences





Dubai, UAE: 2010. World's tallest building, 828 m-high, 160 stories, 11 ha green oasis w/ 85% planting on structure, merging landscape to building.



Plazas, native gardens, pools & promenades create human-scale setting

Covered garage below grade uses slope as design technique

Images: ©SWA Group







Traditional Islamic patterns, concentric & radiating arcs cross over.

15 million annual gallons of condensed water is collected for site irrigation.







China: 2014. World's 1st super highrise precinct: 632 m-high

9 vertical zones w/ Sky Garden Terraces at every 22nd floor.



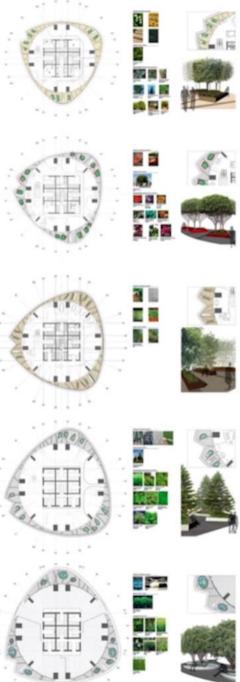


121 stories 20+ gardens inside

Public gardens at ground level overstructure

Images: SWA, Gensler







Podium trees & plants:
~ 700 m²
Sky roof garden &
Specialty gardens

Platinum LEED



Images: Gensler, Zhang Suoqing, Connie Zhou via My Modern Met









On access to lake - towers are gateway to Suzhou; all greenroofs over structure

Retail street terraces up to shops, restaurants & theaters

Images: © SWA Group









Images: © SWA Group

2 land bridges connect to park & recreational sports side; skylights to bring light through below; recent construction.





Suzhou Center



High density development & ecological conservation

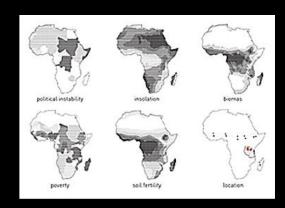
By: SWA Group, Ojanen_Chiou Architects+

1:

Fantastic & Fantastical Designs to Enrich the Planet

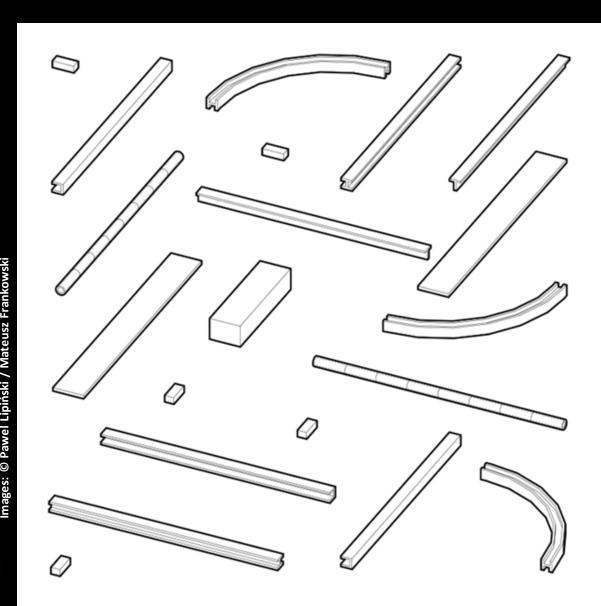
Levels cater to different services: drone service, classrooms & interior planting fields. Once community becomes self-sufficient it moves on.

Mashambas Skyscraper



Scalable skyscraper conceived to reduce hunger in sub-Saharan – over 40% live in absolute poverty

Marketplace for new agricultural communities



By: Pawel Lipiński and Mateusz Frankowski

Rail Deck Park

Images: City of Toronto





Toronto, Canada: Proposed new major park bridge over rail corridor. Deck structure designed to minimize impacts on train operations below.

"Rail Deck Park...presents an opportunity to create the city's next great civic space, where all Torontonians can come to play, relax, connect, and celebrate."

Rail Deck Park renderings & feasibility

City invested \$2M to form task force - to be partnership-based city building project.

VISION TARGETS

Images: Jenny Leung, Carleton Studio at DIALOG







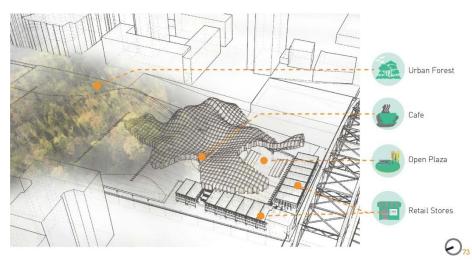
connecting the immediate green spaces

define the threshold into the park from the West end

connect back to the urban fabric

DIALOG sponsored 6-week Carlton Studio w/ 15 graduate students to develop concepts.

Design Strategies: Programming





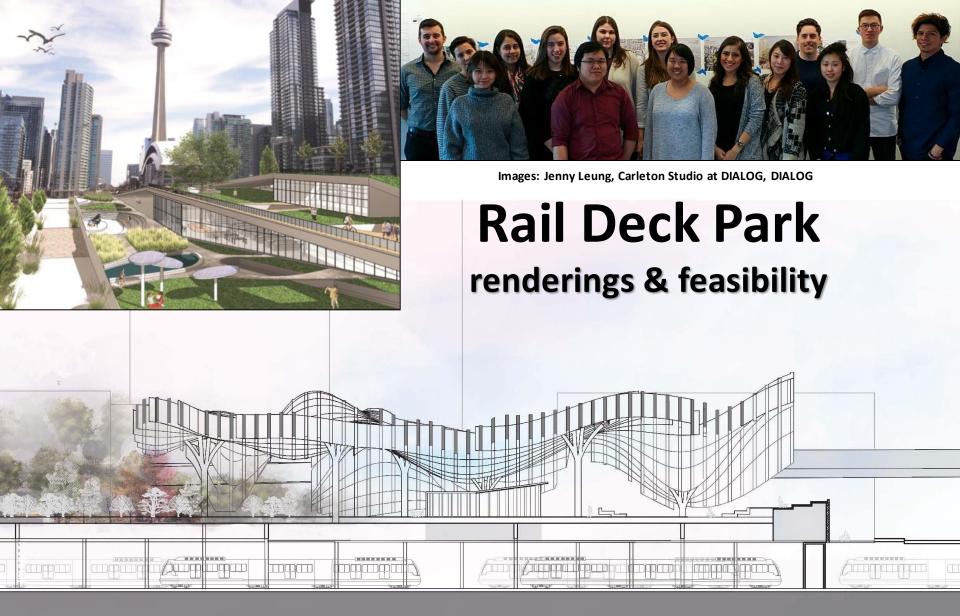
Images: Jenny Leung, Carleton Studio at DIALOG



Designed master plans in teams, later in individual projects at DIALOG:

Architecture, Mechanical, Electrical & Structural Engineering; Sustainability; Urban Planning; Landscape Architecture; & Interior Design Mentors

Under the Canopy Perspective



By: Graduate students from the Azrieli School of Architecture & Urbanism at Carleton University

Longitudinal Section





Sydney, Australia: Proposed, Phase 2.





Circular Quay development's \$1B crown jewel = stacked glass angled volumes both sculptural & functional w/ optimal views



QQT

Upcycling existing AMP Centre,
"Vertical village" = 11,000 m²
220 m-high, 49 stories &
spans 2 city blocks

'Stack and shift' creates sky gardens

5 separate volumes w/ atria



Images: 3XN/GXN

QQT

Flex space for retail commercial & residential

24/7 destination to employ 10,000+ people





Images: 3XN/GXN



Quay Quarter Tower

Ratings:

- 6-star Green Star Office Energy
 - 5.5 Star NABERS Energy

By: 3XN Architects, AMP Capital, GXN Innovation BVN Architects, Design Research Studio



VINCENT CALLEBAUT ARCHITECTURES, PARIS EXTENSA, PROJECT T&T S.A., BRUSSELS THE METAMORPHOSIS OF THE GARE MARITIME TOUR & TAXIS, BELGIUM

MASTERPLAN / GARE MARITIME AND ZONE B OFFICES, HOUSINGS, LEISURE & LANDSCAPE









Villas in the sky; landscape ramps; "idea labs"; retail below & open offices top.

Images: Vincent Callebaut Architectures

Tour & Taxis



"Energy Plus Building" View along marsh pond – connects to Brussels Canal.

By: Vincent Callebaut Architectures

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