Breaking the Mold: Cornell NYC Tech & the 21<sup>st</sup> Century University CORNELL UNIVERSITY | U3 ADVISORS | SOM

#### Learning Objectives

 How to recognize opportunities to partner with private developers to implement campus buildings with limited direct investment.

2. Strategies to promote campus longevity and resiliency by using an integrated and comprehensive approach to address climate change and extreme weather events.

3. Methods for encouraging openness and communication through a public and permeable campus design that utilizes open interior spaces and programmed exterior rooms.

4. Understanding processes to achieve campus-wide coherence in the face of multiple building owners, using a structured design process in lieu of strict guidelines.

#### Presenters

#### Gilbert Delgado, AIA

University Architect Sr. Director of Capital Projects & Planning Cornell University

#### Karen Backus Co-CEO U3 Advisors

#### Colin Koop, AIA

Associate Director of Design Skidmore, Owings, & Merrill Applied Sciences Facility in New York City Press Announcement



New York Is Vying to Become Global High-Tech Hub **Forbes** 

Former Twitter CTO Throws Down with New York Tech Campus

#### The New York Times

Cornell's High-Tech Campus Will Have a Temporary Home at Google



CornellNYC's First Prof. is Tech Brain



Applications are being accepted

#### Newsweek

Roosevelt Island: New York's New Tech Hub

# The New Jork TimesDecember 16, 2010City Seeks Partner to OpenGraduate School of Engineering

"...worried that New York City is not spawning enough technology-based start-up companies with the potential to become big employers like Google, city officials are inviting universities around the world to create an engineering campus on cityowned land..." Applied Sciences Facility in New York City Background

- Bloomberg administration recognized need for city to materially change economic base
- Identified "Applied Sciences and Engineering" (excluding life sciences) as underinvested
  - Competition for modern day land grant
    - 12+ acres plus \$100M for site development and construction
    - Four City-owned sites offered at no cost
- One-year selection process launched in December 2010
- Major interest from top institutions from around the world



Applied Sciences Facility in New York City Benefits

#### For NYC:

- Diversify economy
- Leverage existing NYC industries
- Create high-value jobs



#### For Cornell:

- Accelerate and provide funding source for plans already underway
- Expand NYC presence
- Enhance land grant mission



### Cornell NYC Tech

- Attract best and brightest faculty and grad students from global pool
- Create a new tech center for a new century, global and urban
  - Accelerate existing sectors of city's economy: media, finance, advertising, real estate, design, entertainment
  - Drive formation of new technology businesses through close ties to customers and unique domain knowledge
- Serve as focal point of NYC's tech ecosystem

## CORNELL NYC TECH CAMPUS CORPORATE PARTNERS HIGH QUALITY, GOOD INVESTMENT PAYING JOB CREATION

BUILDING A TECH ECOSYSTEM IN NEW YORK CITY THROUGH THE

CORNELLNYC TECH CAMPUS

Cornell NYC Tech Organizing an Institution

#### Top to Bottom Engagement

Commitment at the top: Trustees + President

#### Provost-led working team

- 2 deans + senior administrator as project lead
- Staff support from numerous departments

#### Faculty

 Four committees already working on planning interdisciplinary core program + engagement across disciplines

#### Students and Alumni

• Student government support, viral petition garnered 20,000+ signatures





#### **Decision Making Process**

#### **Tight Timeline for Decision Making**

- Request for Expressions of Interest
  - Released: December 16, 2010
  - Due: March 16, 2011
- Request for Proposals
  - Released: July 19, 2011
  - Due: October 28, 2011

Request for Expression of Interest			
3 MONTHS	City Review		
		Request for Proposals	
		3.5 MONTHS	
December 2010	March 2011	July 2011	October 2011

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#### **Key Decision Points**

- Which site?
- How much development?
- Mix of academic vs. other uses?
- Schedule how fast?
- How to pay for it?
- Partners academic and financial
- How much subsidy to request?



#### Building a NYC-Based Team Consulting Team

#### Core Consulting Team:

- K. Backus & Associates as project manager and development advisor
- Sirefman Ventures as sub-consultant for strategy
- SOM as designer and master planner for competition phase

#### Other team members:

- Government Relations / Outreach Kasirer Consulting
  - Communications
  - Economic Impact Analysis
  - Landscape Architect
  - MEP / Sustainability Engineer
  - Structural Engineer
  - Civil, Transportation, Environmental
  - Pre-Construction / Cost Estimating
  - Graphic Design
  - Real Estate & Land Use Counsel

Kasirer Consulting BerlinRosen Appleseed James Corner Field Operations AKF / In-Posse Robert Silliman Philip Habib Associates Tishman Construction TwoTwelve Fried Frank **Competitive Strategy** 

#### Address competitive disadvantages

- Partnership with Technion-Israel Institute
   of Technology
- Documented rate of new company formation by alumni
- \$350M single gift to fund 100% of cost of Phase I academic building

#### *Emphasize competitive advantages*

- New York institution / alumni base of 50,000 in NYC metro area
- Development track record in NYC and abroad
- Ability to open campus early

#### Highlight other unique Cornell strengths

- Innovative, interdisciplinary academic program with direct pathway to business formation and job creation
- Net zero energy + design strategy
- Business and legal negotiation grounded in deep experience with NYCEDC



Over 2,600 Cornell related companies since 2006 employ more than 34,000 people



Technion is responsible for half the Israeli companies on NASDAQ

#### Cornell NYC Tech Hubs: Innovative Academic Program



#### **Connective Media Hub**

Cornell is ideally positioned to help New York City grow its technology sector in a way that bridges the gap between technology and its use.

#### **Healthier Life Hub**

Research will focus on developing promising technologies that address issues driving healthcare costs up or quality of services down.

#### **Built Environment Hub**

Faculty and students will utilize research and technology to help make the vision of a more sustainable built environment a reality.

#### Cornell NYC Tech Hubs: Innovative Academic Program



#### **Project Vision**

#### **Establishing a Variety of Uses**

 Build up to 2.1 million SF of program over 25 years to house academic/research uses, corporate colocation space, housing, and executive education facilities

#### Creating a Sense of Place

 Establish a vibrant, mixed-use campus with top quality architecture and public open spaces for university and community use

#### Being a Responsible Steward

Promote sustainability through use of traditional and innovative technology





#### Project Progress Recent History

#### 2012 -2013

- Temporary campus hosted by Google
- First class of masters' students started January, 2013
- Private sector initiatives launched: blue-chip advisory panel, Entrepreneur-in-Residence, partnership with US Department of Commerce
- Completed master plan and design guidelines
- Completed environmental review
- Secured rezoning and other land use approvals
- Commenced design of First Academic Building
- Selected development partners via RFP
- Closed on land with City of New York





**Design Excellence** by setting the bar.



Sustainability expressed.

Photo voltaic and Net-Zero.





**Collaboration** as an organizing concept.



#### Public space as connective tissue









The world's **tallest and largest passive-house building**, expected to save 882 tons of CO2 each year compared to a normal building.

#### **Phased Implementation**

#### PHASE 1: Open in 2017

• Academic, Co-location, Residential, Exec. Ed. Ctr. (790,000 SF)

#### PHASE 2: Open in 2027

• Additional Academic, Co-location, Residential (cumulative of at least 1 million SF)

#### PHASE 3: Open in 2037

• Academic, Co-location, Residential (total campus up to 2.1M SF)





June 16th, 2015 Ceremonial Groundbreaking

#### Private Enterprise and Third Party Development

#### At the Heart of Vision for CornellNYC Tech

- Breaking down boundaries between academia and business
- Integration of entrepreneurship into degreegranting programs
- \$150 M venture fund for start-ups
- Incubators, accelerators, demo space
- Corporate mentors and partnerships

#### But Also A Necessity

- Large site
- Need to create vibrant Phase I campus
- Limited financial resources
- Balance sheet impact



QUEENS

Southpoint Parl

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Franklin D. Roosevel Four Freedoms Park Private Enterprise and Third Party Development

#### **Outcomes**

- Early decision to pursue private partners and outside sources of capital
- Tested market interest via RFEI and RFP
  process: significant response
- Settled on hybrid development approach
- Forest City Ratner Companies selected as master developer; developer "experts" for select buildings



#### Third Party Development: Overview of Phase I Buildings

#### Academic Building

- Owned by Cornell
- Developed on fee basis by Forest City
- 150,000 SF

#### **Corporate Co-Location Building**

- Owned and developed by Forest City
- 238,000 SF commercial office building Cornell will lease 1/3 for academic space





Third Party Development: Overview of Phase I Buildings

#### **Residential Building**

- Owned by JV of Cornell and developer; developed by JV of the Hudson Companies and the Related Companies
- 256,000 SF apartment building for graduate students, post-doctoral candidates, faculty and staff

#### **Executive Education Center**

- Owner/developer: TBD
- 31,000 SF state-of-the-art conference center
   + 224-room hotel 220,000 SF total
- Destination restaurant, bar/lounge, retail





Third Party Development: Corporate Co-Location Building Case Study

#### Challenges

- Unproven location on Roosevelt Island
- No rent comparables
- No as-of-right tax abatement vs. other outer borough locations
- Target tenants not creditworthy
- How to finance?

#### **Outcomes**

- Contribution of Cornell land and site development cost as patient equity
- Cornell space lease
- "Gap rent" deal for spec space
- Tax abatement
- Cornell receives return of invested capital and shares in upside





#### Third Party Development Residential Building Case Study

#### **Residential Building**

- Innovative building to express essence of campus
  - Mixing of students and faculty
  - Experimental "micro units"
  - Sustainability aspirations
- Also a challenge to finance due to "start-up" campus and need for affordable rents
- Cornell decision to co-invest its lower-cost capital and share in upside
- Project should make money for Cornell





#### Third Party Development

#### Reflections

 Free land and "ready to go" sites not sufficient to attract private capital to pathbreaking project

Cornell had to provide subsidy to leverage developer investment

- Tax relief essential
- "Smart" subsidy
  - Address Cornell needs
  - "Surgical" application of dollars to core developer needs
  - Clear limits
  - Return of invested capital
  - Share of NOI and proceeds of capital events
  - Successful collaboration between City, University, and development community in service of shared vision



#### Roosevelt Island Goldwater Hospital and Adaptive Reuse Concepts

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#### Goldwater Hospital Adaptive Reuse Concepts


#### Goldwater Hospital Adaptive Reuse Concepts



Bulk Analysis Additional Program Components

Full Build	
Core Uses	600,000 SF
Classroom space	315,000 SF
<ul> <li>Dry Lab/Commercialization space</li> </ul>	265,000 SF
Conference Center	20,000 SF
Housing	400,000 – 500,000 SF
Additional Potential Components	
Hotel	100,000 SF
Public School	100,000 SF
Retail/Interactive	20,000 SF
Commercial Partners	300,000 – 500,000

TOTAL PROJECT

 $\sim$ 1.5 – 1.8 million SF

## Bulk Analysis No Open Space



Bulk Analysis Towers and Podiums



## Bulk Analysis Green and Open Space



#### Bulk Analysis 2.1 Million GSF at Full Build

PHASE I - HOUSING 22 Floors @ 12,800 SF + 1 Floor @ 18,400 SF = 300,000 SF 1 Basement Parking Level @ 40,000 SF Housing @ 300,000 SF + Parking @ 40,000 SF = 340,000 Total SF

PHASE I - ACADEMIC Footprint Sizes (Levels 1-4) @ 14,000 SF; 28,800 SF; 40,000 SF; 23,000 SF; 52,200 SF = 200,000 SF 1 Basement Parking Level @ 60,000 SF Combined Power Plant Academic @ 200,000 SF + Parking @ 60,000 SF = 260,000 Total SF

> PHASE I - CONFERENCE CENTER 6 Floors @ 16,660 SF = 100,000 SF

PHASE I - CORPORATE CO-LOCATION 2 Floors @ 50,000 SF = 100,000 SF

> PHASE III - HOUSING 3 Floors @ 15,834 SF + 15 Floors @ 13,500 SF = 250,000 SF

PHASE III - ACADEMIC Footprint Sizes (Levels B-4) @ 14,000 SF; 28,800 SF; 40,000 SF; 23,000 SF; 50, 200 SF; 23,000 SF = 235,000 SF

PHASE III - CORPORATE CO-LOCATION
 2 Floors @ 50,000 SF + 1 Floor @
 100,000 SF = 200,000 SF

PHASE I - HIGH SCHOOL 7 Floors @ 11,428 SF = 80,000 SF

PHASE II - CORPORATE CO-LOCATION 2 Floors @ 100,000 SF = 200,000 SF

> PHASE II - HOUSING 10 Floors @ 13,500 SF = 135,000 SF

PHASE II - ACADEMIC 2 Floors @ 92,500 SF = 185,000 SF

PHASE II - HOUSING 10 Floors @ 11,500 SF = 115,000 SF

# RFP Submission Scheme

-maximum a

#### Planning Principles 6 Key Design Concepts



1. A River to River Campus



2. A Diverse Collection of Active Open Spaces



3. Relationship Between Indoor and Outdoor Spaces



4. The North-South Pedestrian Spine



5. Buildings Optimized for Use & Performance



6. A Livable & Sustainable Campus

#### RFP Submission Scheme Sustainability Goals



#### RFP Submission Scheme Sustainability Goals



## Roosevelt Island



Roosevelt Island Rising Sea Waters

+12'



+10'

500 YR

100 YR

RISING FLOODPLAIN

The **"Ridge"** - Natural high point on the site

#### Roosevelt Island Designing for Flood Resiliency



#### Master Plan Raised Ridge and Connections



#### Master Plan Overview

FULL BUILD : 2037



0 20' 40' 80' 160'

#### Master Plan Overview



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#### Evolution of the Master Plan Morphosis and the First Academic Building



EAST RIVER

#### Evolution of the Master Plan Morphosis and the First Academic Building



#### Evolution of the Master Plan Morphosis and the First Academic Building





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The "Ridge" – Primary Circulation Network

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CAR. Secondary Circulation Network: More relaxed geometry of secondary circulation network Manhattan 824 Real and 10 Grid the 1.2-10.00 



## Evolution of the Master Plan



#### Evolution of the Master Plan

EAST RIVER WEST CHANNEL





EAST RIVER EAST CHANNEL

## Overall Massing



Evolution of the Master Plan Weiss Manfredi and the Co-Location Building

#### Evolution of the Master Plan Weiss Manfredi and the Co-Location Building



#### Evolution of the Master Plan Weiss Manfredi and the Co-Location Building



Integrated Design for Sustainability PV Canopy

#### First Academic Building

#### **Co-Location Building**



Current Master Plan Phase 1: 2017



EAST RIVER WEST CHANNEL










