

**Type of Course:** ARCH 51000 Advanced Studio  
**Class Meetings:** M/TH 2:00-5:50pm  
**Office Hours:** By appointment  
**Instructor:** Professor Alejandra Rojas  
**Location:** 322, some sessions on Zoom  
**Semester/Year:** Spring 2022

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rethinking

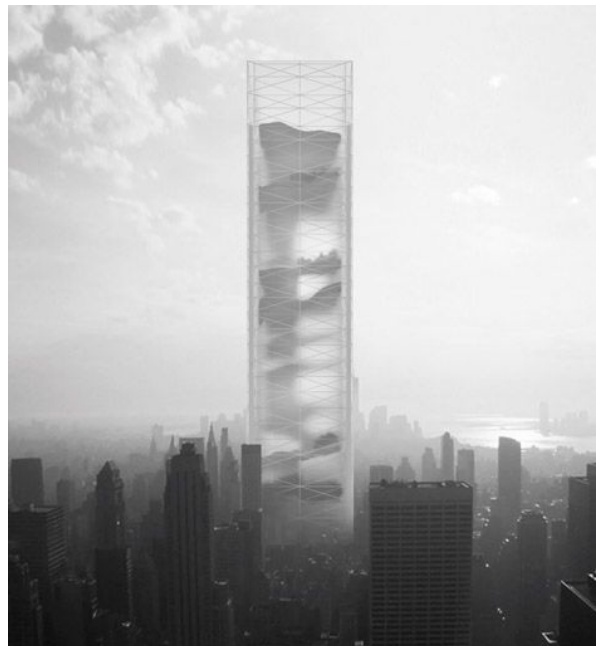
## HIGH-RISE

### OVERVIEW

New York City is known to be the home of innovative and supertall residential buildings in the world, yet these buildings are only financially accessible to a miniscule percentage of the population. The studio will research the socio-economic implications these structures have on the community. Students will be asked to formulate their vision of what a high-rise for the future should look like. How can supertall residential building create communities? What should the new status quo for a “city apartment” be?

The design methodology will focus on the implementation of digital technologies and computational thinking. The students will begin by researching emerging and nontraditional building technologies to understand the current practices. Aspects of materiality, structure, spatial qualities, and sustainable strategies will be explored during the course.

Essence by BOMP



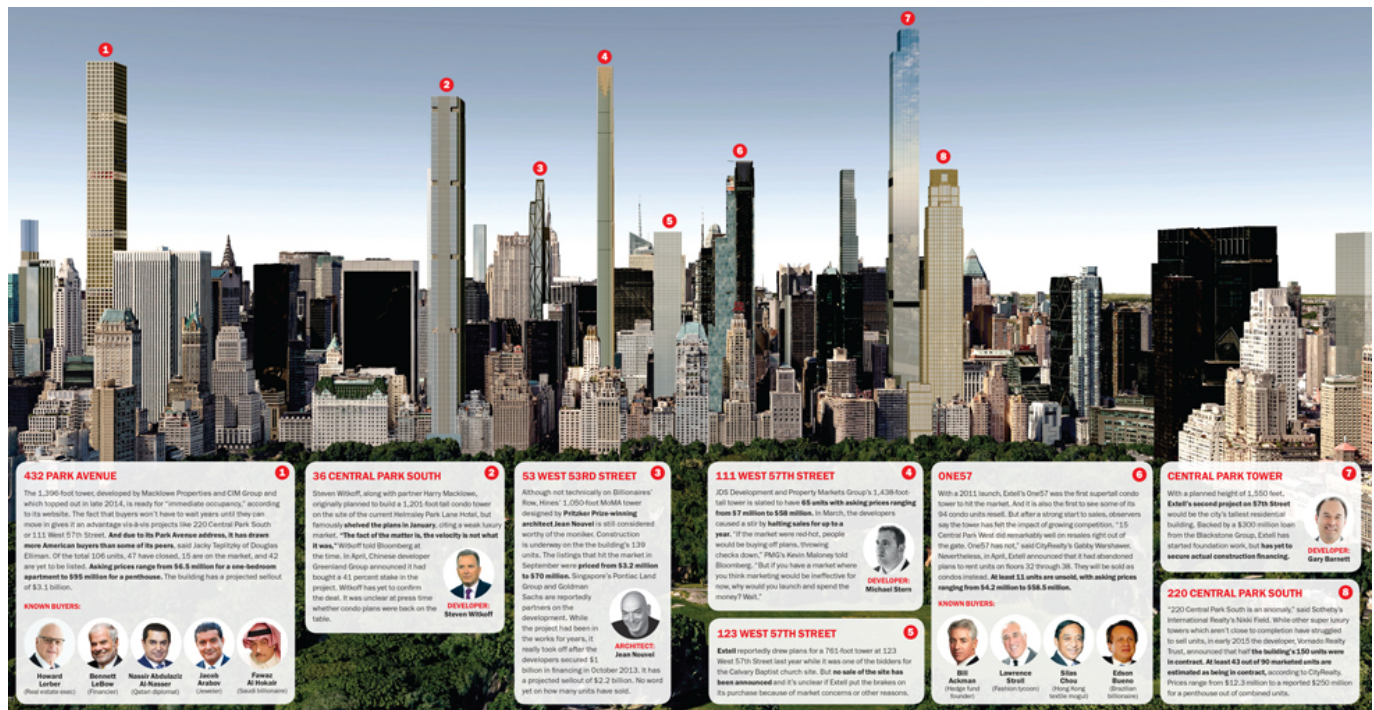
Through performance-driven computational design, the students will have the ability to implement evolutionary algorithms and optimize the building typology for views and daylight within a site. These tools will also establish a starting point for a façade system that responds to solar radiation and human comfort. The design of the façade will encourage students to learn paneling systems through design iterations with attention to the detail connections. The course will ask students to develop a graphic language as a means of representation for their projects.

The project will run in conjunction with SKYHIVE Skyscraper yearly competition. The goal is for students to be able to submit their project in the competition. The final submission requirements will be tailored to align with those of the competition. Students will have time after the course is completed to further develop and improve for their submission: <https://architecturecompetitions.com/skyhive5/>

## SITE

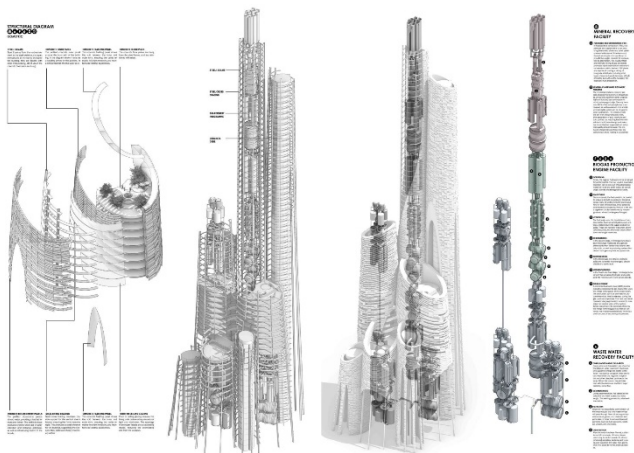
The students will have the option to choose between 2 sites:

1. "Billionaires Row"
2. 5 World Trade Center, 130 Liberty St, NY



## PROGRAM

The program of the building is to design a residential high-rise building. Students will have creative license to propose additional program that relates to their vision of what a high-rise for the future should be like. The students will be challenged to rethink: what type of spaces a "city apartment" should have? How is working from home affecting the way we live and the spaces we inhabit? How can design help create a sense of community within and beyond the boundaries of the high-rise? Students will need to incorporate additional co-sharing and retail spaces to activate the neighborhood on the lower floor levels.



Daniel Hambly, De Montfort University



Ka Wah Francis Cheung, University of Hong Kong

## RESEARCH

The course will be divided into five different phases to breakdown the conception and development of the design. Each phase will address specific questions and challenges for the students to research and develop their design thinking.

### Phase 1

Case study (5%)

- Research existing projects
- Develop critical thinking skills

### Phase 2

Site Analysis (10%)

- Building Code and Zoning Laws
- Understanding of FAR and preliminary massing studies
- Solar Study

### Phase 3

Schematic Design (25%)

- Research of sustainability practices
- Implementation of computational design strategies for iterative design.

### Phase 4

Design Development (40%)

- Optimize facade systems in response to solar radiation and human comfort.
- Exploration of creative paneling systems through design iterations.

### Phase 5

Documentation (10%)

- Develop a cohesive graphic language
- Curate a narrative for presentation

\*Participation will count towards 10% of your final grade

## READINGS/ REFERENCES

The readings provided will be required and necessary for class participation and discussion. Each reading will be aligned with a specific topic for each class and will support lectures, workshops, and discussions. Additional videos and/or films will be assigned to reinforce topics presented in the course. Content and information from the readings, videos, films, will be help students position their vision of what a high-rise for the future should be like.

- Mark Sarkisian, Designing Tall Buildings: Structure as Architecture: Chapter 1 Perspectives  
[https://issuu.com/tdgarden/docs/designing\\_tall\\_buildings\\_-\\_structure\\_as\\_architectu](https://issuu.com/tdgarden/docs/designing_tall_buildings_-_structure_as_architectu)
- Mark Sarkisian, Designing Tall Buildings: Structure as Architecture: Chapter 2 Fundamentals
- Bruce King, The New Carbon Architecture: Chapter Nine, Size Matters: Can Buildings Be Too Tall?
- The B1M, Why New York's Billionaires' Row is Half Empty? <https://www.youtube.com/watch?v=Wehsz38P74g>
- Simon Guy and Graham Farmer, Reinterpreting Sustainable Architecture: The Place of Technology: P140-148
- Kate Ascher, The Heights: Anatomy of a Skyscraper: Section 5 Dreaming It

*Note: schedule below is subject to revision through the duration of the semester.*

### **W1**

Mon	01.31	<b>LOTTERY in Rm 107, followed by first studio meeting, including <i>Hour SSA</i> and development of Community Agreement</b>
Th	02.03	<b>Spitzer School Convocation @ 5:00pm – all students and faculty expected to attend</b>

### **W2**

Mon	02.07	Studio <b>Part 1 Due</b>
Th	02.10	Studio

### **W3**

Mon	02.14	Studio
Th	02.17	Studio <b>Part 2 Due</b>

### **W4**

Mon	02.21	College Closed (Presidents' Day); no class
Th	02.24	Studio <b>Part 3 Pin-up</b>

### **W5**

Mon	02.28	Studio
Th	03.03	Studio

### **W6**

Mon	03.07	Studio <b>Part 3 Mid-Review</b>
Th	03.10	Studio

### **W7**

Mon	03.14	Studio
Th	03.17	Studio

### **W8**

Mon	03.21	Studio <b>Part 3 Due</b>
Th	03.24	<b>Mid-semester assessments &amp; <i>Hour SSA</i></b>

### **W9**

Mon	03.28	Studio
Th	03.31	Studio

### **W10**

Mon	04.04	Studio
Th	04.07	Studio <b>Part 4 Mid-Review</b>

### **W11**

Mon	04.11	<b>ADVANCED STUDIO SHARING Room 107, @ 2:00-3:30pm; Studio</b>
Th	04.14	Studio

04.15-04.22	Spring Recess, no classes
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### **W12**

Mon	04.25	Studio
Th	04.28	Studio

**W13**

Mon 05.02                      Studio  
 Th 05.05                      Studio

**W14**

Mon 05.09                      Studio

**REVIEWS, week of May 11-17**

Wed 11 May	Th 12 May	Fri 13 May	Mon 16 May	Tu 17 May
Advanced	Core Studio 2	Advanced	Core Studio 6	Core Studio 4
Haferd Dotan Sen Cunningham	Aydogan (coord)	Gebert Rojas Ciprian Brahmbhatt	Alspector (coord)	Wines (coord)

**FINALS**

Th 05.19                      End of Semester Assessment (faculty only)  
                                     Studio Clean Up day (students & faculty)

Mon 05.23                      Final Meeting, **Exit interviews**  
                                     Student Portfolios due for: Spitzer School Archive, etc. as directed by instructor

Fri 05.27                      Final Grade Submission Deadline

**TAKE NOTE: ALL personal effects in studios and student lockers to be entirely cleaned out for the summer by Friday May 27.**

**BIBLIOGRAPHY**

## Architecture and Design

- Jhon Hill, How to Build a Skyscraper
- Kate Ascher, The Heights: Anatomy of a Skyscraper
- Mark Sarkisian, Designing Tall Buildings: Structure as Architecture
- Guy Marriage, Tall: The Design and Construction of High-Rise Architecture
- Johann Eisele and Ellen Kloft, High-Rise Manual: Typology and Design, Construction and Technology
- Matthew Soules, Icebergs, Zombies and the Ultra Thin

## Sustainability

- Bruce King, The New Carbon Architecture
- Guy Simon and Graham Farmer, Reinterpreting Sustainable Architecture: The Place of Technology
- David Gissen, Big and Green: Towards Sustainable Architecture in the 21st Century.

## Computational Design Thinking

- Arturo Tedeschi, Algorithms-Aided Design: Parametric Strategies Using Grasshopper.
- Patrik Schumacher and Theodore Spyropoulos, Adaptive Ecologies: Correlated Systems of Living
- Achim Menges and Sean Alquist, AD Reader: Computational Design Thinking

- Reiser and Umemoto, Atlas of Novel Tectonics
- Neil Leach and Philip F Yuan, Computational Design
- Mario Carpa, The Alphabet and the Algorithm
- Bjarke Ingels Group, Formgiving
- Alfredo Andia and Thomas Spiegelhalter, Post-Parametric Automation in Design and Construction
- Carlo Aiello, Digital and Parametric Architecture

## GRADING/ATTENDANCE POLICIES AND STUDIO CULTURE

### Course Expectations:

- That students will develop a high level of independent thought and rigor and a willingness to go beyond both basic project requirements and their own perceived limits and abilities.
- That students will successfully complete all project requirements. No make-up or postponed project submissions will be accepted except in the case of medical emergencies or other extraordinary circumstances. Excused absences and project delays must be officially cleared by professor in advance to be considered valid.

### Community Agreement:

- During the first full studio meeting, the professor will make time for an *Hour SSA* session for a supportive open discussion among students.
- Studio members will work *together* to create a community agreement for interacting together over the semester. Definition: "A consensus on what every person in our group needs from each other and commits to each other in order to feel safe, supported, open, productive and trusting... so that we can do our best work." <https://www.nationalequityproject.org/tools/developing-community-agreements>
- *Hour SSA* will be repeated at the middle of the semester.

### Methods of Assessment:

- Attendance and participation in class discussions and other activities.
- Project development in response to semester schedule.
- Project presentation, level of completion and resolution.
- *Note: The research component of the studio will be weighed more heavily in assessment of graduate student work and class performance, in cases where graduate students are enrolled in the studio.*

### Key areas of Grading Assessment:

- **Studio performance & work habits:** Ability to respond to studio discourse & feedback in a consistent & clear manner throughout the semester as demonstrated in the evolution and development of design work.
- **Clarity of representation & mastery of media:** Ability to utilize both digital and manual drawing and model-making techniques to precisely and creatively represent architectural ideas.
- **Pre-design:** Ability to prepare a comprehensive program for an architectural project that includes such tasks as: an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); a review of the relevant building codes and standards, including relevant sustainability requirements, and an assessment of their implications for the project; and a definition of site selection and design assessment criteria.
- **Research:** Understanding of the theoretical and applied research methodologies and practices used during the design process.
- **Integrated evaluations and decision-making design process:** Ability to demonstrate the skills associated with making integrated decisions across multiple systems and variables in the completion of a design project. This demonstration includes problem identification, setting evaluative criteria, analyzing solutions, and predicting the effectiveness of implementation.
- **Attendance:** Consistent level of preparation and on-time presence for each studio class and scheduled evening lectures.
- **Portfolio:** Completion of final portfolio or collection of studio work as directed by instructor and/or coordinator and attendance at all scheduled portfolio related events.

**Grading Criteria:**

- A (+/-)** Work meets all requirements and exceeds them. Presentations are virtually flawless, complete, and finely detailed. Work exhibits professional, “museum quality” level of craft. Student has developed an individual design process that shows a high level of independent thought and rigor. Work shows evidence of intense ambition and effort to go beyond expectations, and beyond the student’s own perceived limits of their abilities.
- B (+/-)** Work meets all requirements. Presentations are complete and finely detailed. Work exhibits professional level of craft. Student has developed an individual design process that shows a high level of independent thought and rigor.
- C (+/-)** Work meets minimum requirements. Deadlines are missed. While presentations may be somewhat complete, student has struggled to develop an individual design process and/or is lacking in craft or design resolution.
- D** Work is below minimum requirements. Presentations are incomplete, student has struggled to develop an individual design process and/or is lacking in craft or design resolution.
- F** Work is well below minimum requirements. Student does not develop adequate design process, and/or does not finish work.
- INC** Grades of “incomplete” are not given under any circumstances unless there is evidence of a medical or personal emergency. In such cases, instructor and student develop a contract to complete work by a specified date, as per CCNY policy. Classes and/or work missed due to illness must be explained with a physician’s note.

**Notes:**

D is the lowest passing grade for B. Arch students.

Working in teams does not guarantee the same grade for each team member; grades are based on a range of criteria for each individual student.

For more information on grading guidelines and other CCNY policies and procedures, consult the current CCNY academic bulletins: <https://www.ccny.cuny.edu/registrar/bulletins>

**Office Hours:**

Each studio faculty member schedules 30 regular office hours over the semester, as posted at the top of the syllabus. If a student needs to speak in private with a studio critic, they should ask or email in advance to request a specific meeting time. Students may seek office hour appointments to discuss any matters of concern including personal, private matters and general inquiries about course related work, grading, assessment and content.

**Probation & Dismissal:** for program specific information related to grades, academic standing, probation and dismissal, please see your program academic advisors:

Undergrad: Michael Miller [mmiller@ccny.cuny.edu](mailto:mmiller@ccny.cuny.edu)  
Amy Daniel [adaniel@ccny.cuny.edu](mailto:adaniel@ccny.cuny.edu)

**Studio Culture:**



Working collaboratively and respectfully on studio assignments, with and alongside others, is an expectation in studio. Studio culture is an important part of an architectural education, and it extends to expectations for Faculty and the School's Administration as well. Please see the Spitzer School of Architecture Studio Culture Policy, which can be accessed on the SSA website here: <https://ssa.cuny.edu/about/policies/>.

**Absence & Lateness:**

Arriving more than ten minutes late to class will constitute an absence. Two unexcused absences will result in a whole letter grade deduction from a final grade; more than four will result in a failing grade. It is expected that all students will participate in all scheduled working, midterm and final reviews and contribute constructively to the discussions.

**Absences due to Religious Observances:**

Students who will miss any class sessions, exams, presentations, trips, or the like due to a religious observance should notify the instructor at the beginning of the semester so that appropriate adjustments for observance needs can be implemented. This could include an opportunity to make up any examination, study, or work requirement that is missed because of an absence due to a religious observance on any particular day or days.

**Readings & Journals:**

Students are expected to keep a journal or sketchbook throughout the duration of studio to document their thought process & take notes of any texts, books, terms or references that are mentioned by either the studio critic or fellow classmates and to selectively follow up on these and any other assigned readings before the next class.

**Academic Integrity:**

As a student you are expected to conduct yourself in a manner that reflects the ethical ideas of the profession of architecture. Any act of academic dishonesty not only raises questions about an individual's fitness to practice architecture, but also demeans the academic environment in which it occurred. Giving or receiving aid in examinations, and plagiarism are a violation of an assumed trust between the school and the student.

Plagiarism, i.e. the presentation as one's own work of words, drawings, ideas and opinions of someone else, is as serious an instance of academic dishonesty in this context as cheating on examinations. The submission of any piece of work (written, drawn, built, or photocopied) is assumed by the school to guarantee that the thoughts and expressions in it are literally the student's own, executed by the student. All assignments must be the student's original work. Any copying, even short excerpts, from another book, article, or Internet source, published or unpublished, without proper attribution will result in automatic failure of the entire course.

The CCNY Academic Integrity Policy: <https://www.ccnycuny.edu/about/integrity>

For citations, the Chicago Manual of Style is recommended: [http://www.chicagomanualofstyle.org/tools\\_citationguide.html](http://www.chicagomanualofstyle.org/tools_citationguide.html)

**AccessAbility Center (Student Disability Services):**

The AccessAbility center (AAC) facilitates equal access and coordinates reasonable accommodations, academic adjustments, and support services for City College students with disabilities while preserving the integrity of academic standards. Students who have self-identified with AAC to receive accommodations should inform the instructor at the beginning of the semester. (North Academic Center 1/218; 212-650-5913 or 212-650-6910 for TTY/TTD). For further information, go to <http://www.ccnycuny.edu/accessability/> or email [disabilityservices@ccny.cuny.edu](mailto:disabilityservices@ccny.cuny.edu)

**Health And Wellness Support:**

City College's Office of Health and Wellness Services offers free and confidential counseling. Contact: Health and Wellness Services, Marshak Science Building, room J-15: [counseling@ccny.cuny.edu](mailto:counseling@ccny.cuny.edu).

**Gender Based Violence Resources**

City College has resources to support you if you have experienced sexual violence, intimate partner/domestic violence, gender-based discrimination, harassment or stalking. For confidential support, you can contact the Student Psychological



Counselor: Confidential Advocate at (212) 650-8905 or the Gender Resources Program at (212) 650-8222. If you would like to report sexual misconduct, you can contact the Chief Diversity Officer and Title IX Coordinator, Diana Cuzzo, at 212-650- 7330 or [dcuzzo@ccny.cuny.edu](mailto:dcuzzo@ccny.cuny.edu). If there is an emergency on campus, you can call Public Safety at 212-650-777 and off campus call 911. <https://www.ccny.cuny.edu/affirmativeaction>

#### **Library:**

The school's library is a shared resource that is necessary supplement to all research and design work. Please direct questions to the library staff or the Architecture Librarian Nilda Sanchez-Rodriguez: [nsanchez@ccny.cuny.edu](mailto:nsanchez@ccny.cuny.edu)

#### **NAAB (National Architectural Accrediting Board):**

The National Architectural Accrediting Board (NAAB) is the sole agency authorized to accredit US professional degree programs in architecture. Since most state registration boards in the United States require any applicant for licensure to have graduated from a NAAB-accredited program, obtaining such a degree is an essential aspect of preparing for the professional practice of architecture. While graduation from a NAAB-accredited program does not assure registration, the accrediting process is intended to verify that each accredited program substantially meets those standards that, as a whole, comprise an appropriate education for an architect.

More specifically, the NAAB requires an accredited program to produce graduates who: are competent in a range of intellectual, spatial, technical, and interpersonal skills; understand the historical, socio-cultural, and environmental context of architecture; are able to solve architectural design problems, including the integration of technical systems and health and safety requirements; and comprehend architects' roles and responsibilities in society.

The following student performance criteria from the 2014 NAAB Conditions are addressed in this course:

**Realm B: Building Practices, Technical Skills, And Knowledge.** Graduates from NAAB-accredited programs must be able to comprehend the technical aspects of design, systems, and materials and be able to apply that comprehension to architectural solutions. In addition, the impact of such decisions on the environment must be well considered.

**B.1 Pre-Design:** ability to prepare a comprehensive program for an architectural project that includes an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); a review of the relevant building codes and standards, including relevant sustainability requirements, and an assessment of their implications for the project; and a definition of site selection and design assessment criteria.

**Realm C: Integrated Architectural Solutions.** Graduates from NAAB-accredited programs must be able to demonstrate that they have the ability to synthesize a wide range of variables into an integrated design solution.

**C.1 Research:** understanding of the theoretical and applied research methodologies and practices used during the design process.

**C.2 Integrated Evaluations and Decision-Making Design Process:** ability to demonstrate the skills associated with making integrated decisions across multiple systems and variables in the completion of a design project. This demonstration includes problem identification, setting evaluative criteria, analyzing solutions, and predicting the effectiveness of implementation.

*Students should consult the NAAB website [www.naab.org](http://www.naab.org) for additional information regarding student performance criteria and all other conditions for accreditation.*

#### **CONTACT INFORMATION:**

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