ARCHITECTURAL DESIGN IV
Farmingdale State College - SUNY

Corporate Incubator Housing on Long Island:
Affordable Living Space for the Next Generation of Workers

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Project Overview:

Long Island is experiencing a growing workforce shortage directly tied to the region's lack of affordable housing. Young, highly educated professionals entering the job market often begin with modest salaries and significant student debt. For many, the cost of living on Long Island is prohibitive, forcing them either to relocate elsewhere or for local businesses to consider alternative solutions. One such solution is the development of **corporate-sponsored incubator housing**—affordable living arrangements that help workers establish themselves during the early stages of their careers.

Research indicates that once workers put down roots on Long Island, they are far more likely to remain, contributing to the long-term vitality, growth, and leadership of the region. Thus, incubator housing is not only a matter of affordability but a strategy for **economic sustainability and regional resilience**.

Project Site:

The site is the 58,000 SF (former) Swissair Headquarters located at 41 Pinelawn Road at the corner of North Service Road, Melville, NY. See architectural firm images and building information at: https://meierpartners.com/project/swissair-headquarters This is project received the AIA New York 1998 Design Award. A 3D AutoCAD model is on Brightspace.
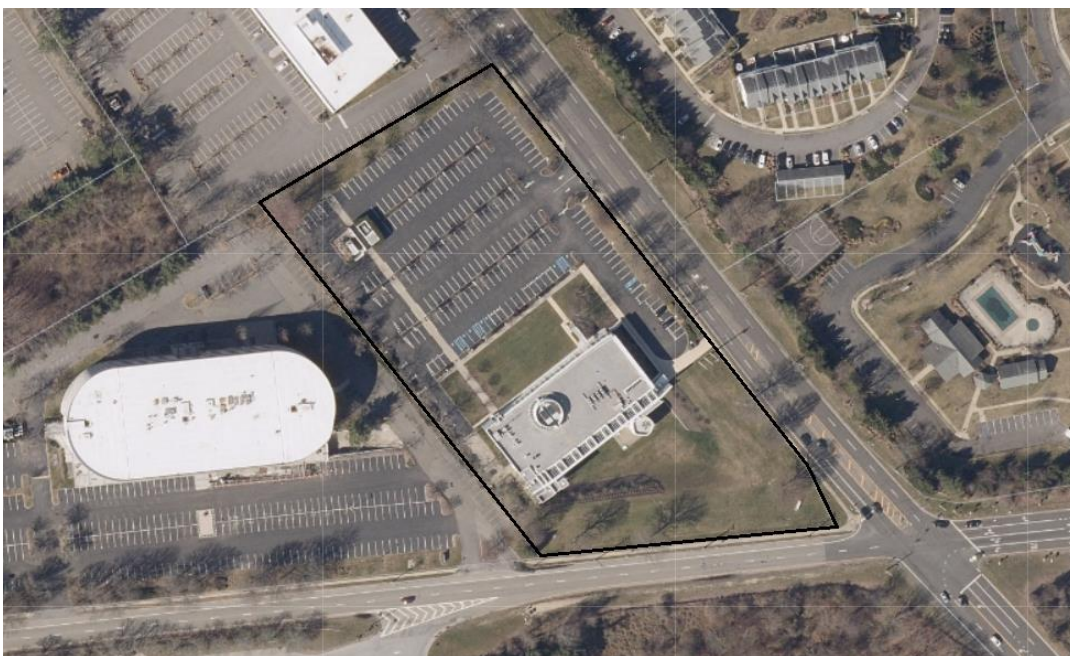
Client Need: Project Program

For the purpose of this project, we will assume building is still occupied as the Swissair Headquarters and they are the client. Their Worker's Housing needs must accommodate for 2% of Swissair's Work Force at 41 Pinelawn Road, Melville, NY 11747, the company's headquarters designed by Architect Richard Meier, a recipient of the Pritzker Architecture Prize in 1984 (*often referred to as the Nobel Prize of architecture*).

Total Occupants:
- 855 Occupants
- 2% of Total Occupancy: 16 Occupants (16 Apartment Units)

Housing Requirements (these are suggested sizes and can vary as the project is developed):
- 14 Studio Apartment Units to be 500 S.F. ea.
- 2 Duplex Apartment Units to be 1,000 S.F. ea.
- Circulation (Hallways) to account for roughly 1,200 S.F.
- Lobby to account for roughly 300 S.F.
- Community space approx. 500 S.F.
- Total Area (Approx.) = 13,000 S.F.

Design Imperative:

Corporate housing must be more than simply economical shelter. It must provide **meaning and community** for its residents. If reduced only to efficiency and cost, such housing risks alienating workers and signaling that their contributions are undervalued. The architectural challenge is then to develop **designs that balance contextual fit with meaning and dignity**, fostering both individual well-being and collective identity.

Learning Objectives:

By completing this project, students will:

1. Understand the relationship between **existing context, housing, workforce dynamics, and regional development**.
2. Apply **Rowe's heuristic reasoning strategies** as design methodology.
3. Develop a housing design that balances **contextual fit, functionality, identity and meaning**.
4. Use **representation (sketches, diagrams, 3D models)** as active tools of reasoning and discovery.
5. Communicate design intent through a clear **condition → action → intent** framework.

Theoretical Lens: Peter Rowe and Heuristic Reasoning

To approach this complex design problem, students will draw on Peter Rowe's framework from *"A Priori Knowledge and Heuristic Reasoning in Architectural Design."* Rowe identifies five heuristic strategies that often guide the design process:

1. **Anthropometric Analogies** – using the human body and its movement through space as a guide.

2. **Literal Analogies** – borrowing existing forms, either:
      o *Iconic*: symbolic or natural references (e.g., Sydney Opera House's shell-like roof).
      o *Canonic*: abstract proportional systems (e.g., grids, platonic solids).
3. **Environmental Relations** – designing in response to climate, materials, behavior, and context.
4. **Typologies** – adapting and reinterpreting architectural precedents and organizational models.
5. **Formal "Languages"** – employing rule-based systems, whether classical, patterned, or personally developed (modern, post-modern, deconstruction, Meier's style, etc.).

These heuristics are not fixed solutions but **generative tools**. They allow new insights to emerge, reframing the problem and suggesting pathways forward. Designers may shift between heuristics throughout the process, sometimes even redefining the problem itself in light of a promising solution.

Design Process:

- **Order matters**: the first heuristic applied often shapes subsequent moves and leaves the strongest imprint on the final design.
- **Representation is central**: drawings, diagrams, and 3D models are not neutral tools but active participants in reasoning. 2D sketches may be quick, capturing ideas efficiently; 3D models may be digital or physical, offering deeper spatial insight. Both are essential for testing and discovery.
- **Condition → Action → Intent**: Students will be asked to articulate their design reasoning through this logical sequence, ensuring clarity in the relationship between *problem, strategy, and solution*.

Condition → Action → Intent:

- **Condition** = the *problem* and contextual situation you are confronted with.
  Example: Young professionals on Long Island cannot afford market-rate apartments in the context of the campus headquarters building concept.
- **Action** = the design response or *strategy* you apply (based on Rowe's theory).
  Example: Develop a heuristic category relationship that connects to the existing building with an ordered pattern, space and form.
- **Intent** = the underlying purpose or meaning that justifies your design *solution*.
  Example: Support workforce retention by creating dignified, community-oriented housing that makes young workers feel valued. The architecture communicates, through patters and forms, these values to the viewer.

Why it matters in design:

This framework helps architects avoid "random" form-making. Instead, every move is tied back to:

1. A **real-world condition** (contextual patterns, zoning, social issue, climate).
2. A **design action** (the specific spatial or formal decision you make).
3. An **intent** (the reason why that decision contributes to solving the problem).

So, in short: **condition → action → intent** is about keeping design moves ***accountable*** — every design move answers *what's happening*, *what I'm doing about it*, and *why it matters*.

Design investigation scope:

Working in teams of two, each student will select **three primary heuristics** as their initial starting points and design drivers, while remaining open to shifts, overlaps, or redefinitions as the design evolves. A total of three different designs will be developed by each team from this process. After an exhaustive testing, a single, or combination of heuristic approaches, will be selected for final development in Phase 3 in the semester.

Project Phases with Group & Individual Work Components:

Phase 1: Background Research & Contextual Analysis (Group work): 10%

- Research historical housing precedents (See list of approved topics to research) and workforce challenges on Long Island.
- Study precedents in corporate housing, incubator housing, co-living, and micro-unit design (students will be free to explore these topics)
- Analysis of existing site, zoning, environmental/climate and building patterns

Deliverables:

- Site Analysis (Diagrams of existing building patterns, sun orientation)
- Zoning Analysis (setback, height, use, etc.)
- Existing building drawings (floor plans, sections, elevations)
- Building Analysis (Diagrams of circulation, structure, enclosure, hierarchy, use)
- Historic precedent studies (minimum 2 examples, diagrammed)
- Basic apartment and short stay living examples
- Presentation in parts

Phase 2: Idea Formation & Heuristic Explorations (Group work): 45%

- Select heuristic strategies (Rowe's five categories).
- Generate at least **3 exploratory design studies** using 2D & 3D sketches, diagrams, and models.
- Reflect on how your heuristic frames the problem differently. Not all heuristic approaches will yield results but that can be used to understand and form new solutions
- Community Integration: Since this is "corporate housing," how does it interface with the *public realm* (streets, amenities, shared outdoor spaces) to avoid isolation.

Deliverables:

- Conceptual heuristic explorations.
- Process portfolio explaining 3 design concepts and heuristic reasoning (condition → action → intent).
- Selection of a preference development.
- Basic floor plans and views of 3D models
- Presentation and critique from a jury of external design professionals.

Phase 3: Design Development & Final Presentation (Individual work): 30%

- Synthesize research, heuristics, and design development into a cohesive architectural proposal. This will include: floor plans, sections, elevations, a wall section, and a simple construction type unit cost estimate (for awareness and a sense of realism as opposed to a design determinant).
- Address design features and overall program requirements such as: Building Codes and ADA requirements, equitable access, inclusivity, and social sustainability: private units, shared amenities, circulation, outdoor space, and community-building features, etc.
- Presentation and critique from Department faculty (10 minutes).

Deliverables:

- Analysis & parti diagrams (from earlier phases) + site plan.
- Massing models (physical or digital).
- 3D views showing spatial or processional experience.
- Final pdf presentation board/s and digital portfolio.
  - o Floor plans, sections, elevations, and wall detail.
  - o Simple unit cost estimate
- Oral presentation (10 minutes).

Evaluation Criteria

Projects will be holistically evaluated based both the sum of the parts on the three Phases noted above and the final project portfolio as a whole:

1. **Clarity of Research & Analysis** – presentation of background.
2. **Heuristic Application** – thoughtful and innovative use of Rowe's strategies.
3. **Design Quality** – creativity, functionality, and spatial richness.
4. **Representation** – effective use of sketches, diagrams, drawings, and models.
5. **Integration** – balance of contextual fit, the making of community, and architectural meaning.
6. **Communication** – clarity in drawings, boards, portfolio, and oral presentation.

Class participation, group teamwork, attitude & attendance is 15% of the evaluation. Failure to do this properly will result in failing grade for the course. If you can't do this properly, you will not be employable! All students must make an oral presentation as part of the project (**No absences or late projects will be allowed**). Peer journals will be collected.

Project Timeline

- **Week 1–2**: Background Research & Contextual Analysis.
- **Week 3-8**: Idea Formation & Heuristic Explorations (2-3D diagrams and models).
- **Week 9 Preliminary Presentation (External Reviewers)**
- **Week 10–14**: Design development (conventional architectural drawings).
- **Week 15**: **Final presentation (Department Faculty)**