

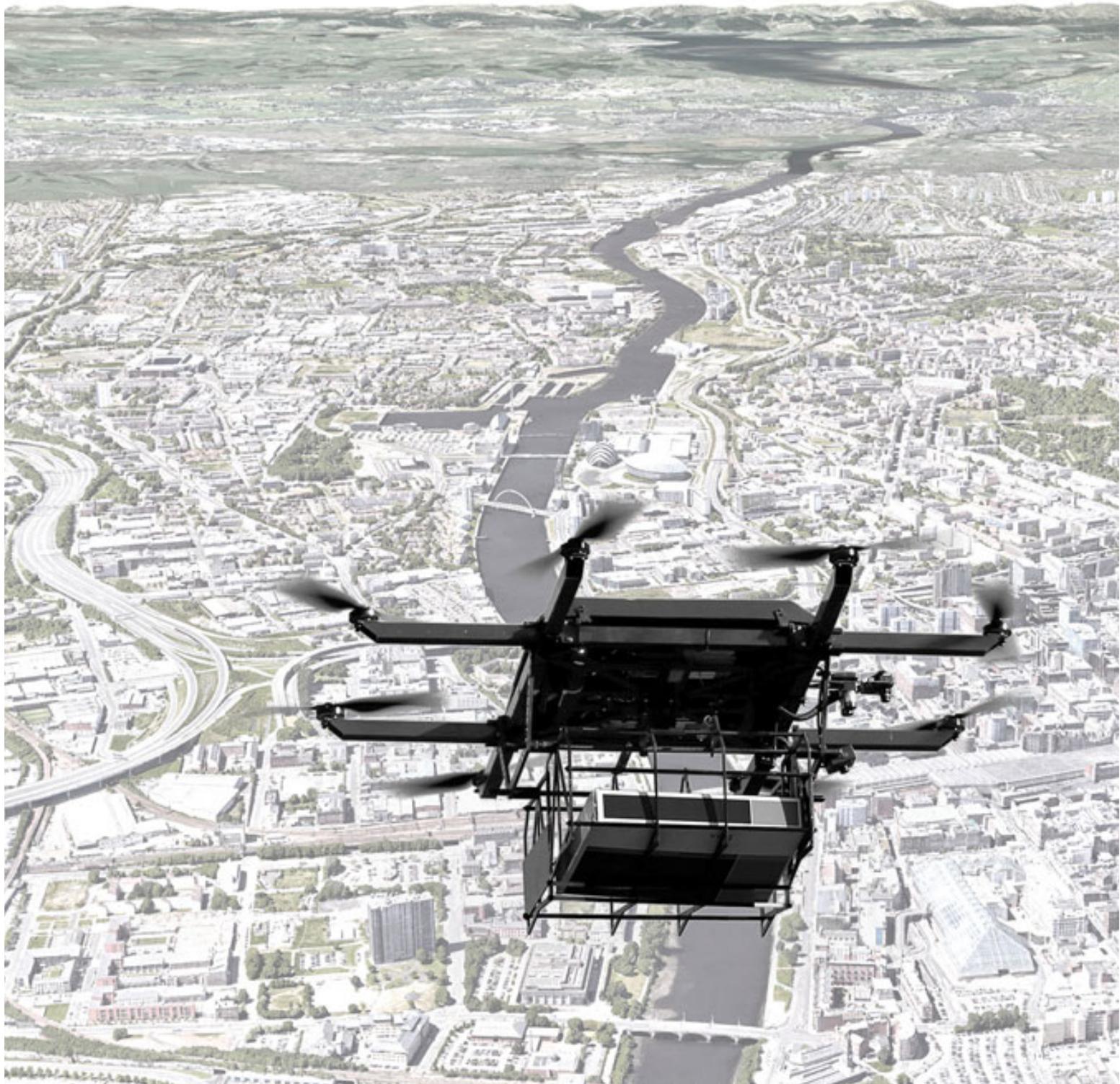
MADE IN GLASGOW

EPFL STUDIO 2018/2019

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/ Made in Glasgow

Whether we like it or not, the near future will be defined by automation, artificial intelligence, smart infrastructure and urban intensification. This rapidly approaching reality begs several questions: How will we co-exist with machines? How will we perceive and relate to destinations with unpopulated architecture? In the absence of universal access to technology, how will we promote diversity in thinking, living and working without succumbing to the creation of smart societal enclaves?

This fourth industrial revolution promises to change the way the economy produces goods (manufacturing) as well as how goods are procured and delivered to consumers (urban logistics, click n collect).

Paradoxically, the new technologies, which promise to replace the human worker, desire proximity to their human customers- to rapidly deliver more highly customized commodities (the last mile problem). This desire for proximity is leading to the development of mass customization and on-demand manufacturing which is cleaner and less impactful environmentally. Can the integration of these technologies in the city provide an impetus for their humanization?

This calls for fresh perspectives and novel approaches to ideation and a redesign of this new urban mix. Introducing an equality to previously narrow technocratic organization of space by introducing artistic modes of enquiry, access and understanding ranging from irony, empathy to affect and valorization which combined with analytics, coding, modeling and parametric design facilitates a semiotization of space.

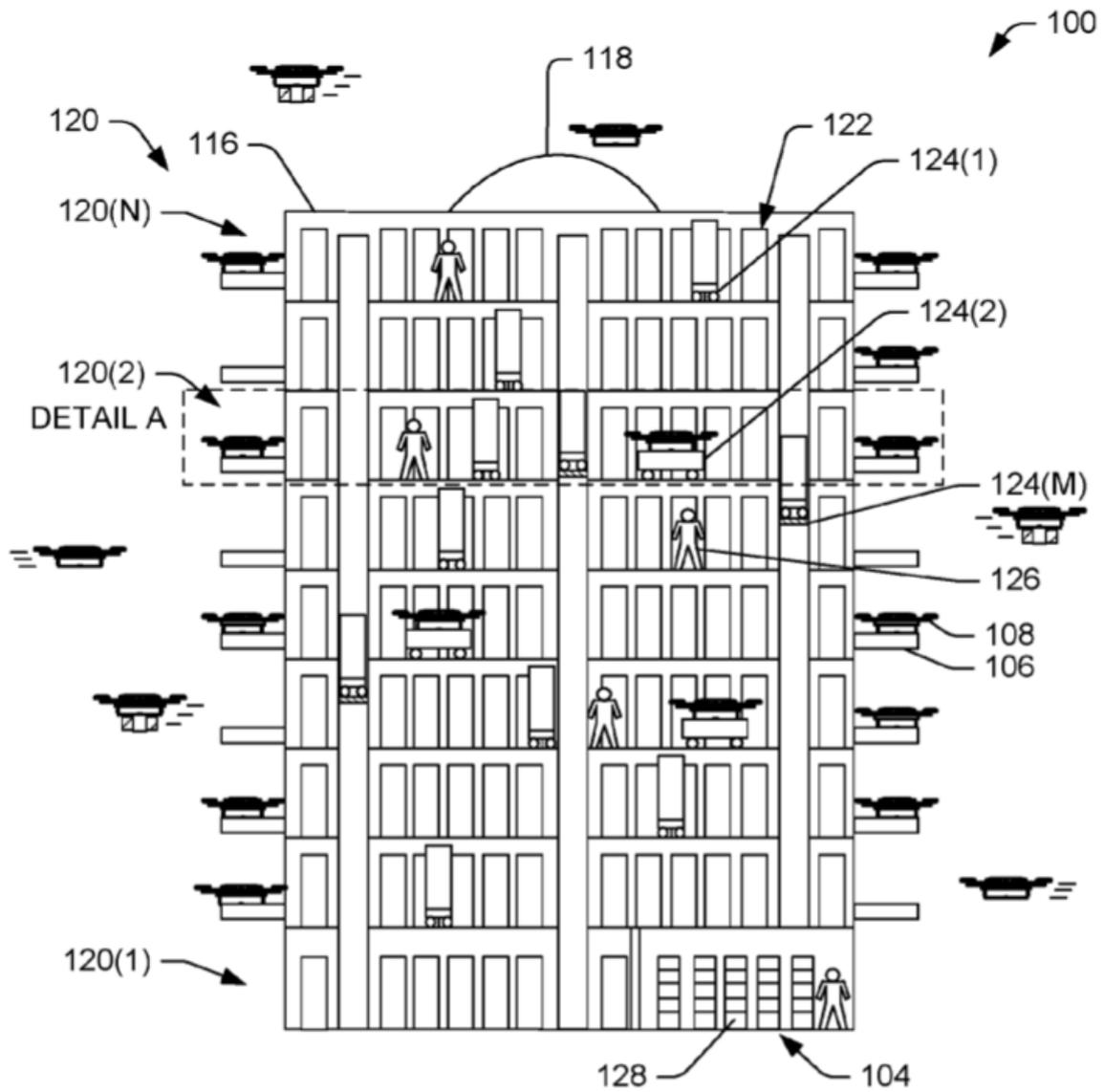


FIGURE 1

Amazon Patent US 2017/0175413 for urban drone port: "Multi-level fulfillment center for unmanned aerial vehicles. Section.

/ Site

Glasgow, once in the vanguard of the Industrial Revolution, giving rise to the trademark “Clyde Built,” today reflects the problem facing many cities, that is, how to transition culture towards a digital economy embodied in what can be described as “productive architecture.”

The inner city borough of Tradeston provides us with a case study of a central yet neglected area that stands in for any number of urban centers where manufacturing previously provided a base for the local economy but has receded during the last forty years of globalization. In this context we will work not with green fields, but with punctual interventions within existing the existing infrastructure and fabric of the city.

We will study buildings and spaces in between soon to be made obsolete by the revolution in automation: shops and malls, culture and leisure, car dealerships, warehouses, parking garages. Furthermore, we will engage with the typological traditions of Glasgow’s urban grid, architecture, and its Arts and Crafts heritage, considering how the city can accommodate and adapt to a new set of programs.



/ Program

The fall semester studio will play out as a design game, where the potentials and hazards of drone-delivery, and real-time manufacturing provide the impetus for new arrangements of prototypical urban elements.

Each project will be advanced as an urban thought experiment, remaining at an abstract level and advancing a provocative or extreme position. Though traditional urban design and architectural features will be taken into consideration, this will not be a traditional urban design studio.



/ Mixing Productive Space with Living Space

The new industry of manufacturing, anchored in advances in mass-customized production, has become cleaner and greener. Automation has reduced the need for a massive labor force, but the increasing affordability of the means of production and the diversification of demand has led to the birth of a new cottage industries. Living space and productive space no longer require clear separation, as was the case in the first industrial revolution.

In light of these changes, the studio asks each student to distribute a fixed area of productive and residential space across the Tradeston site. Students will focus in particular on the implications of a new distribution system – drone delivery – to propose prototypical urbanisms responsive to this new technology. Areas of production are assumed to be highly automated but must be closely connected to its urban owners, a class of highly-skilled maintainers, a smaller group of manual laborers and, of course, other urban consumers.

Students will consider the following questions as they lay out a new vision for the district of Tradeston: Where do workers, owners, owner/workers live? Where are production facilities? Where is (are) the center of distribution – the ‘drone port’? What is being produced? Where are customers- what is the catchment area of the drone port? What paths will the drones take in the airspace? How do these paths affect the shape of the urban fabric?

/ Centralization vs. Decentralization

The urban plan must be designed by taking a position on centralization vs. decentralization. Centralizing areas of production and distribution makes a more hierarchical master plan, and potentially allows for the accretion of economies of scale. Conversely, centralization increases the impacts of unwanted secondary effects (like drone noise) in specific areas creating the potential for blight. Each student must take an illustrative, provocative, or extreme position that delineates a possible problem or opportunity in the new productive urbanism.

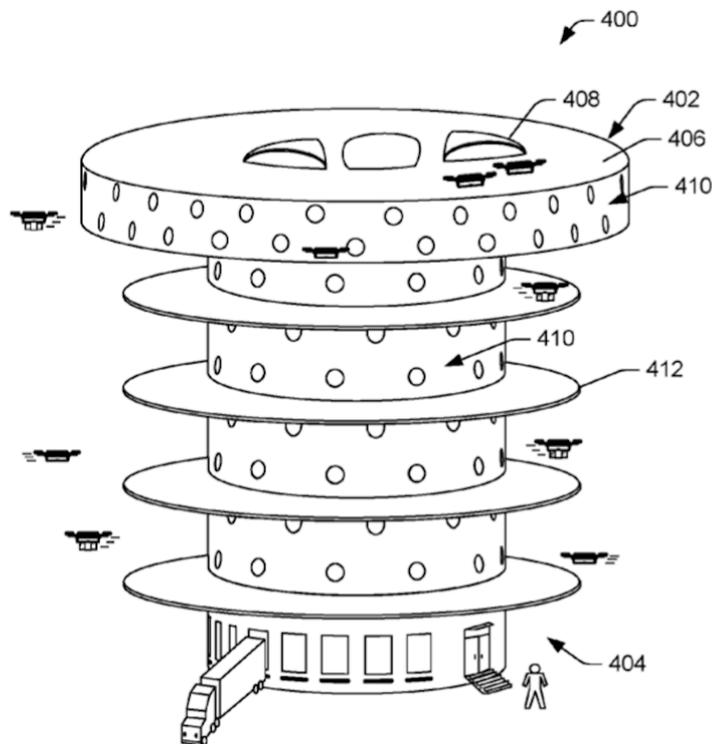


FIGURE 2

Amazon Patent US 2017/0175413 for urban drone port: "Multi-level fulfillment center for unmanned aerial vehicles. Birds-eye view.

/ Drone Paths

Just as production can be centralized or decentralized (factory vs. cottage industry) distribution has the potential to be centralized or decentralized. One large drone port can be replaced by several smaller drone ports that serve different industries. Similarly the paths that drones take through airspace can be grouped together creating a 'highway' in the sky – or drone paths can be deliberately distributed over time and space for purposes of efficiency or in an effort to limit drone nuisance. As students consider drone paths they should map out the impacts on the city with noise maps and with privacy maps that describe the sight lines of drones as they over-fly the district.

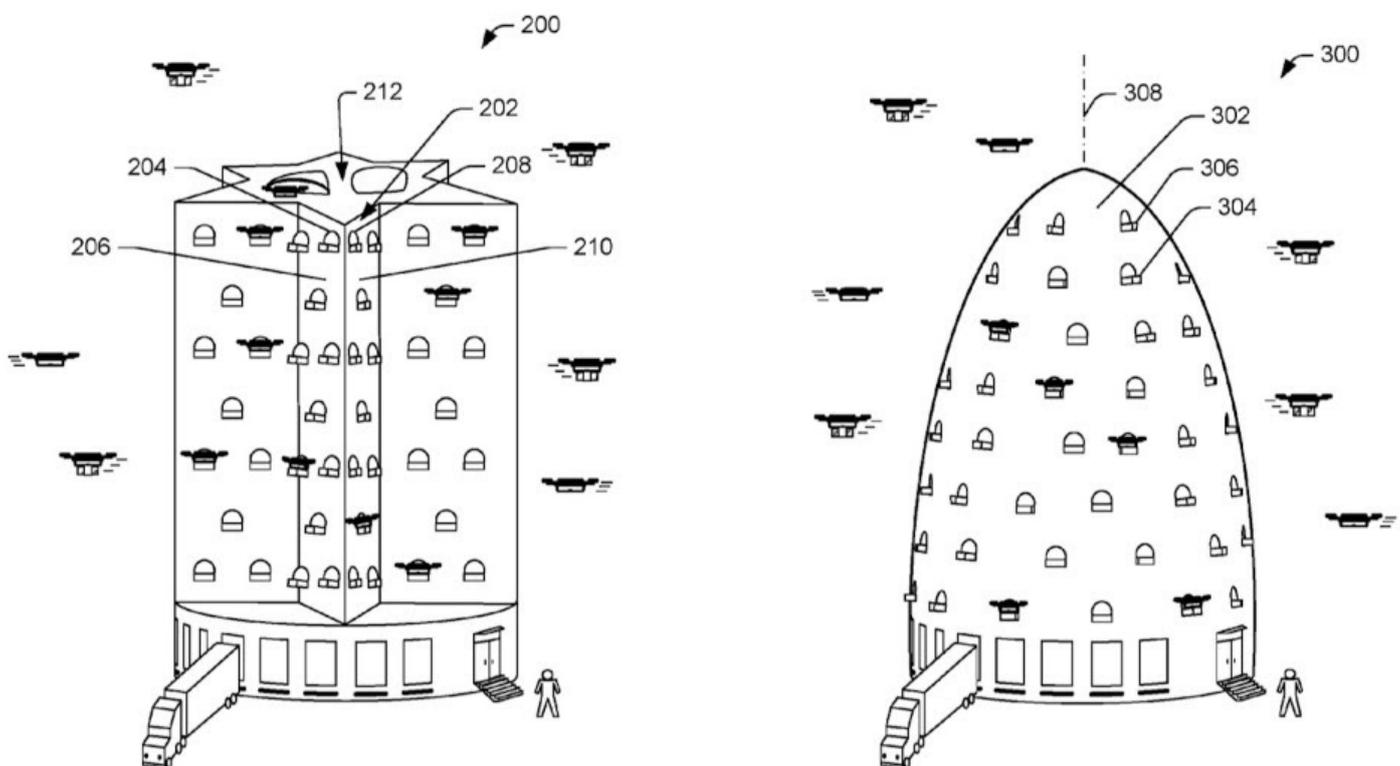


FIGURE 3

Amazon Patent US 2017/0175413 for urban drone port: "Multi-level fulfillment center for unmanned aerial vehicles. Diagrams.

/ Building Form

Students will focus on four constraints in determining the urban massing of the Tradeston district.

1. Combination/ interaction of residential and productive space
2. Drone access infrastructure (unit by unit, or collective) for consumers
3. Drone noise response (noise avoidance, noise shielding)
4. Drone sight-line response (privacy screening, overhands, setbacks, etc.)

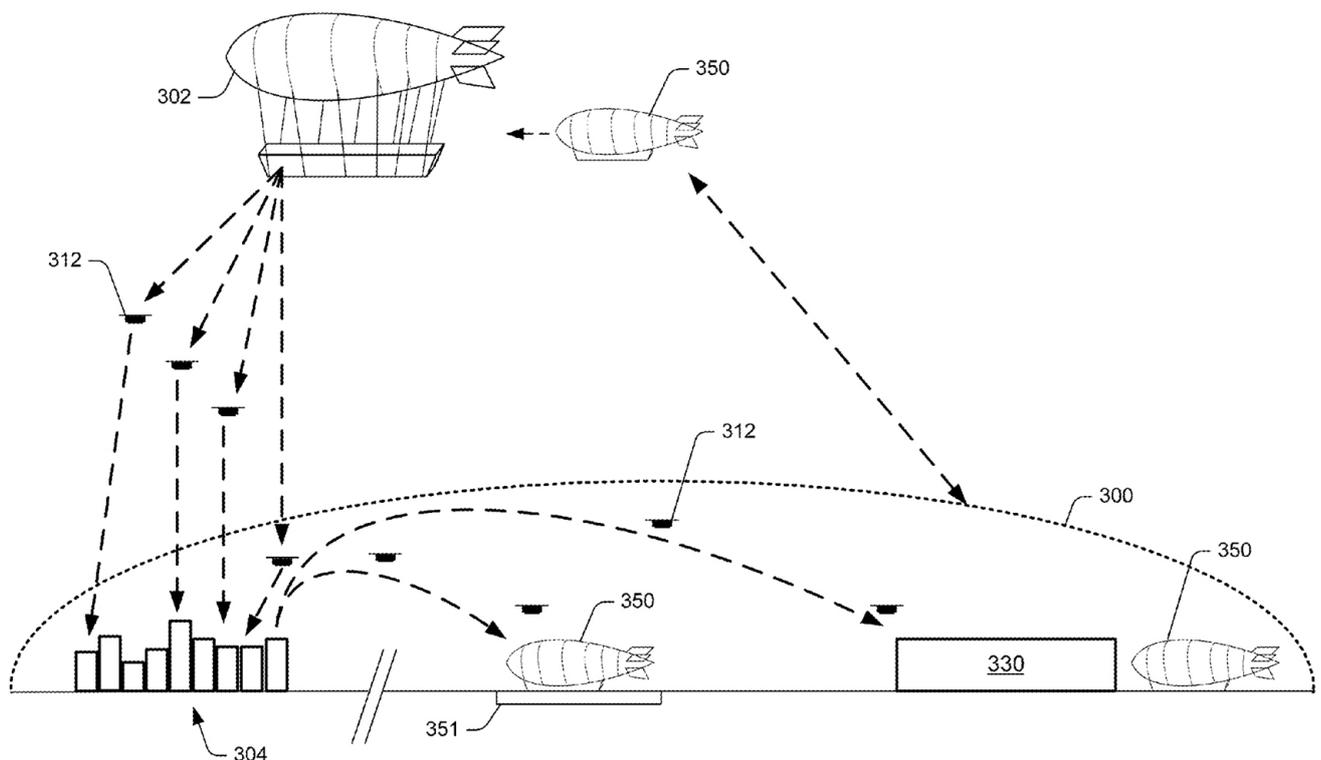


FIGURE 4

Amazon Patent US 2016/9305280B1 for airborne fulfillment center utilizing unmanned aerial vehicles for item delivery.

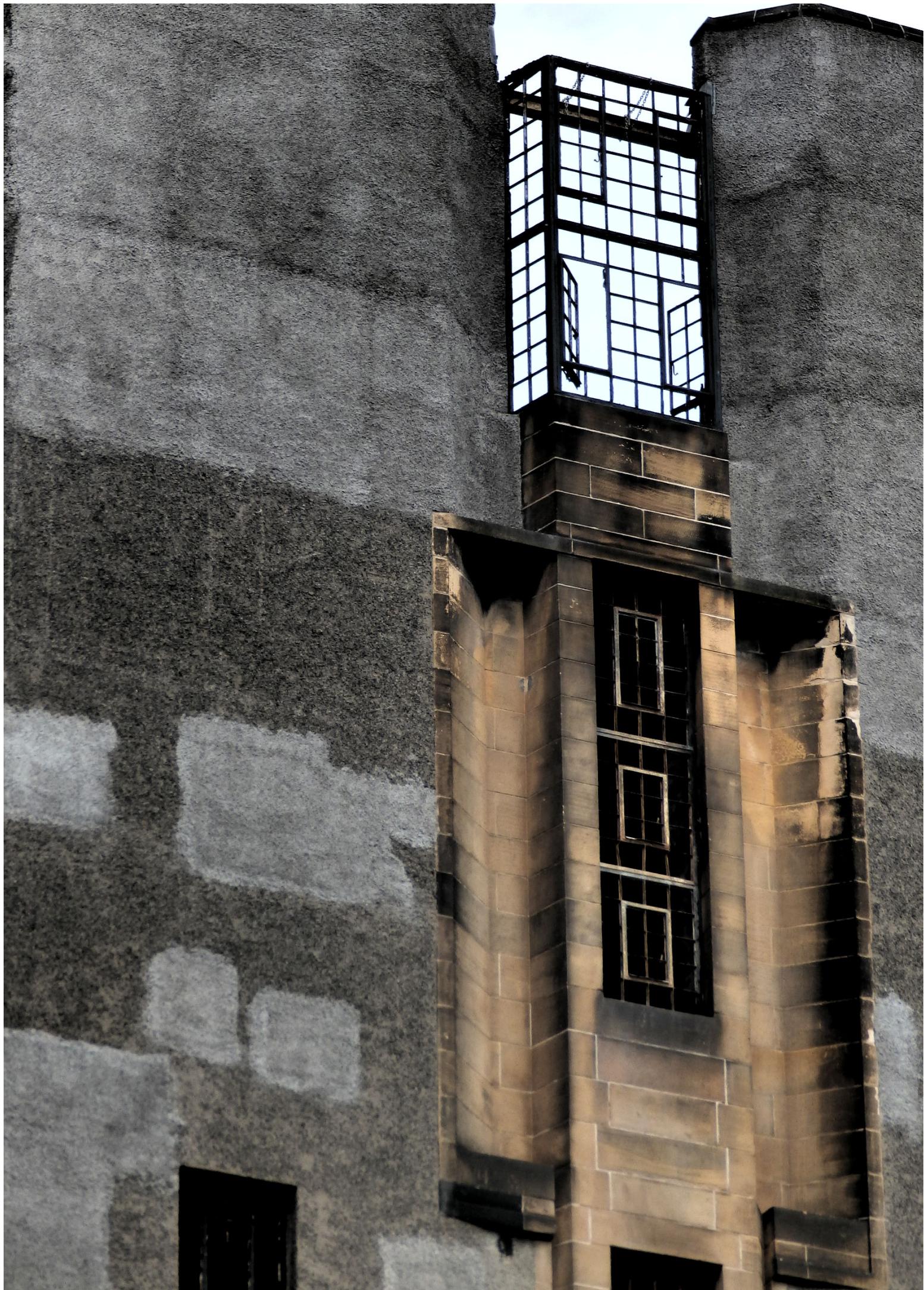
/ Organization

The fall semester investigates this year's topic at an urban scale through urban analysis, research on automation and logistics infrastructure and urban mapping. The spring semester will then study different architectural options (proto-typologies) for integrating urban manufacturing into the local urban fabric.

Our schedule for the fall semester will tentatively feature the following steps:

"Collage of Precedents" A visual exercise aiming at bringing together an existing building typology of urban services and manufacturing to the selected site. Suggested typologies: a) Amazon Fulfillment Complex in Dunfermline, Scotland, b) Google Data-Center in Eemshaven, Netherlands, c) Linn Products Manufacturing, in Glasgow, UK, d) Tesla Giga-factory in Sparks, Nevada e) Station F, Paris, f) The Camp, Aix-en-Provence, g) Dyson Institute, Malmesbury, UK, etc.

"Urban Analysis" A group exercise featuring an investigation of: a) site history (arts and crafts, riverfront, manufacturing and economy), b) obsolete typologies in Glasgow and beyond, c) emerging typologies (post-digital, post-industrial). We will also investigate how diversity in form, image and language can either enforce or disrupt our relationship with urban space. Whether it can move the digital interface beyond work systems (office, factory, school) to the generator of contemporary cultural engagement and practices at a meta-level (social, media, public realm). Output: site maps with overlays and hotspots and diagrams. The exercise will be assisted by the implementation of digital and parametric tools for Data Visualisation and Urban Simulation (urban network analysis, space syntax, environmental evolutionary design).



“Lifestyle, Manufacturing, Distribution and Logistics.” This exercise will focus on the analysis of existing schemes and infrastructure for just-in-time manufacturing, last-mile logistics and supply chain distribution. Output: mixed media representation and diagrams of systems and systemic logics.

“Adaptation”. The exercise refers to the design development of a project by bringing together ‘urban analysis’ and ‘lifestyle, manufacturing, distribution, logistics’. Output: 1:100 architectural drawings, diagrams, render.

/ Important Dates

The studio theme will span the entire academic year 2018/19. Accordingly, there will be continuity between the fall and spring semester, but each semester can be followed independently.

2018 Studio Introduction: September 18
 Midreview: November 12
 Studio Trip: November 3-6
 Final review: December 18

2019 Studio Introduction: February 18
 Midreview: April 15
 Final review: May 29-30





