

ADV V

NAVIGATOR

GSAPP FALL 2019

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GSAPP

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T 01

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GSAPP EVENT
MS. RED SCHEDULE
HOLIDAY
LOG BOOK DUE

1/2

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OCTOBER

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28 31

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W 06

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3/4

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11 14

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AIR



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18 21

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25

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T 28 THANKSGIVING BREAK

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S 01

AIR



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(02) 05

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(09) 11

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M (09) FINAL REVIEW
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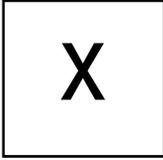
FINAL



- REVIEWS
- STUDIO MINI
- LECTURE SERIES
- & GUEST LECTURES
- TRAVEL/WORK-
- SHOPS
- BRIEF HAND-OUT
- ROVING CRITICS
- GSAPP EVENT
- MS. RED SCHEDULE
- HOLIDAY
- LOG BOOK DUE

NOVEMBER

BRIEF 4



STUDIO
SCHEDULE

> **PART [1] : INTRODUCTION TO RESILIENT DESIGN AND DEVELOPMENT**

WEEK 1

- KA/CK to provide prompt and materials for initial individual assignment relating to precedent economic development/resiliency project
 - > Students to get approval on choice of precedent
 - > Students to do presentation for class and one graphic deliverable summarizing case
 - > KA/CK to identify possible precedents

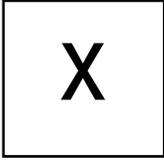
WEEK 2

- First full class: **Monday, September 9**
 - > Class agenda
 1. Half class: student presentation of precedents
 2. Half class:
 - a. Instructors' overview of studio
 - i. goals: overly of development feasibility with design
 - ii. studio themes: economic and physical resilience
 - iii. "Reimagine the canals" initiative
 - iv. mechanics: how the studio will work
 - b. introduction to "the Amsterdams"
 - i. Amsterdam NY - KA
 - ii. Amsterdam, Netherlands - CK
 - c. perspectives: the architect vs. the planner vs. the developer
- Next class: **Thursday, September 12**
 - > AAS students only
 - > agenda TBD (CK)

PART [2] : CONTEXTUALIZING THE AMSTERDAMS

WEEK 3

- Site visit/trip to Amsterdam, NY; Saturday, September 14
 - > Departure: 8:30 am
 - > First stop: OMI (11 am-12 pm)
 - > Lunch on bus between OMI and Amsterdam
 - > Second stop: Amsterdam (1 – 4:00 pm)
 1. Site visit: Erie Canal Lock, movable dam and Guy Park Manor
 2. Site visit: shopping center, amphitheater and downtown
 3. Site visit: redevelopment site/pedestrian bridge
 4. Mohawk Carpet Mills
 - > Third stop (en route home): (4:30 – 5:30 pm)
 - i. Waterford flight
 - ii. Cohoes Falls
 - > Arrival at Columbia: 8:30 pm
 - > KA/CK to give short assignment for Monday relating to site visit takeaways



STUDIO
STATEMENT

>

- Joint class: **Monday, September 16:**
 - > Half class: Howard Goebels, NYPA/Canals Corporation chief hydrologist
 - i. Ice jams: causes
 - ii. summer flooding: causes
 - iii. history of the Mohawk River Valley interventions
 - iv. 1918 Barge Canal impact and consequences over time
 - v. recent flooding and capital investment
 - > Half class: site visit show and tell: students
- AAS only: **Thursday, September 19**
 - > Prepare for site analysis pin-ups

WEEK 4

- Joint class: **Monday, September 23**
 - > Site analysis pin-ups: presentations by teams, e.g.
 - i. topography
 - ii. mobility/transport
 - iii. green/open space
 - iv. city organization and community assets
 - v. cultural/historic assets
 - > Urban geography
 - i. demographics: age, employment, class, etc
 - ii. industry and the local economy
 - iii. market analysis (land values, supply and demand)
 - iv. politics and people
 - > Identification of key geographic, spatial or economic concepts of interest
- AAS only: Thursday, September 26
 - > review/completion of site models, etc.

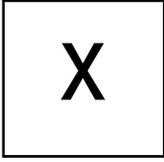
WEEK 5

- Site visit to Amsterdam, Netherlands: Monday, September 30-Friday, October 4
- Students to be teamed up before departure
- Itinerary tbd

PART [3] : DEVELOPPING PROPOSALS FOR AMSTERDAM, NY

WEEK 6

- Joint class: Monday, October 7
 - > Understanding final deliverables
 - i. ideation: what is it and how does it work?
 - ii. "water-based spatial plan"
 - iii. "economic development strategy"
 - > Understanding financial models and viability; tutorial
 - > Articulating individual resilience frameworks: one-minute video trailer by groups
 - > Desk crits
- AAS: Thursday, October 10



**STUDIO
STATEMENT**

> **WEEK 7**

- Joint class: Monday, October 14
 - > Desk crits; design proposals
 - > Preliminary financial model reviews
- AAS: Thursday, October 17

WEEK 8

- Joint class: Monday, October 21
 - > MID-TERM REVIEWS
- AAS: Thursday October 24

WEEK 9

- Joint class: Monday, October 28
- AAS: Thursday, October 31

WEEK 10

- NO CLASS: Monday, November 4
- AAS: Thursday, November 7

WEEK 11

- Joint class: Monday, November 11
 - > ¾ reviews
- AAS: Thursday November 14
 - > ¾ reviews

WEEK 12

- Joint class: Monday, November 18
- AAS: Thursday, November 21

WEEK 13

- Last joint class: Monday November 25th
- NO CLASS: Thursday, November 28

WEEK 14

- Joint final review prep: Monday, December 2
- AAS: Friday, December 6

WEEK 15

- JOINT FINAL REVIEW: Monday, December 9
- AAS: Super Final Review: Wednesday, December 11

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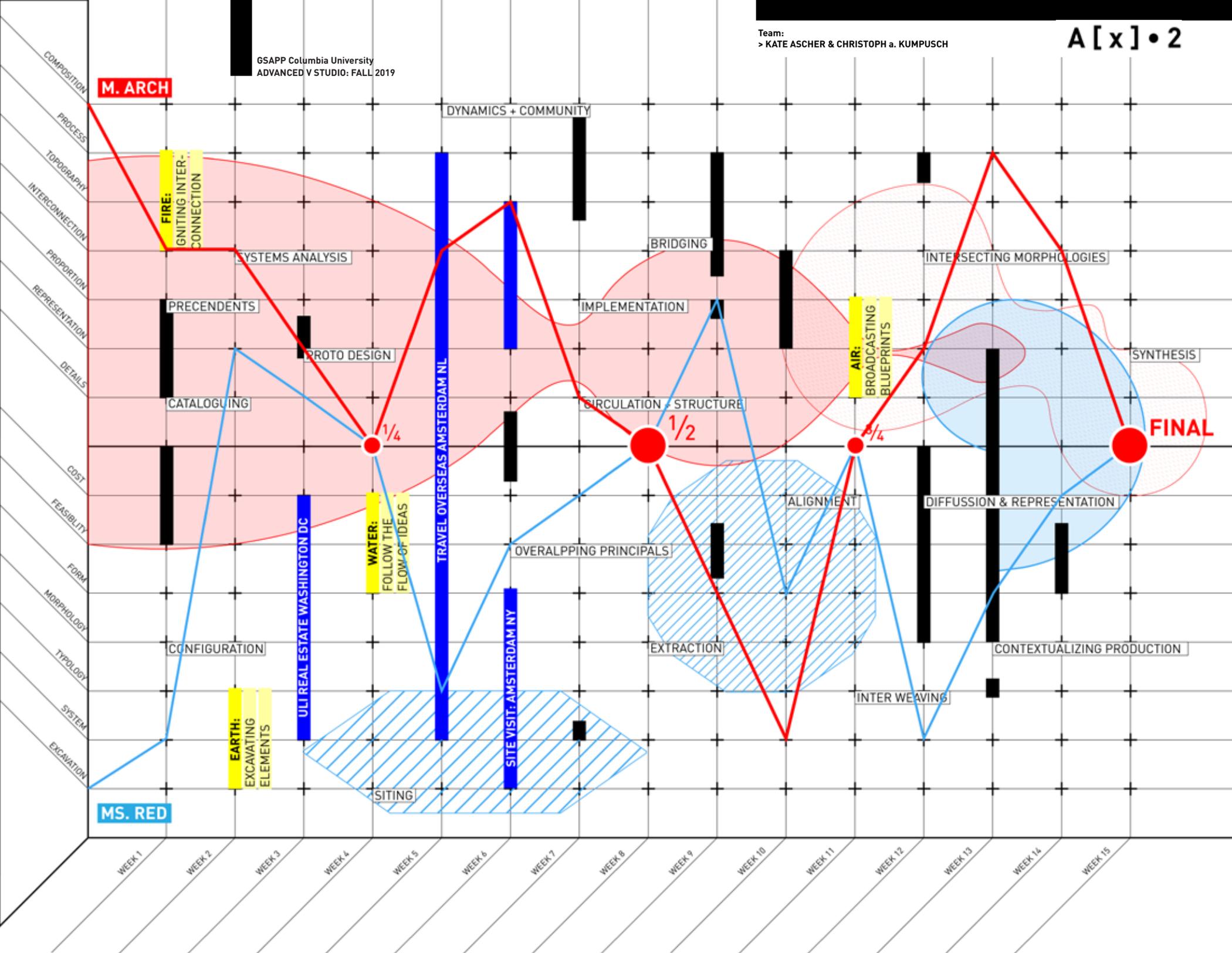
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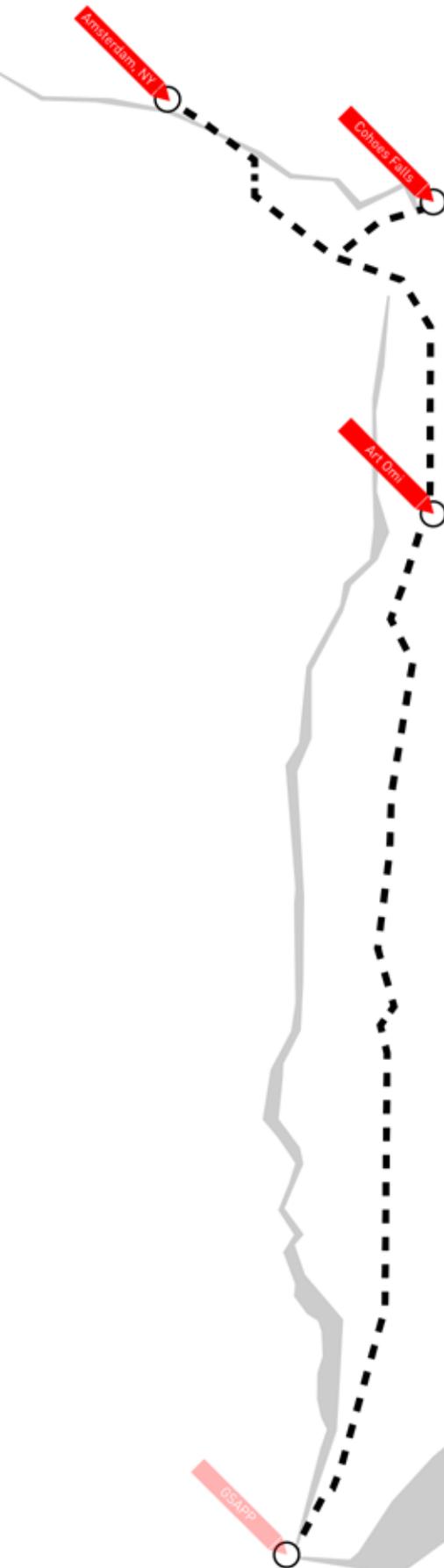
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A [x] • 2 ON TOUR

September 14th, 2019



8:30 AM
START : **CHAPEL GATE**
Meet at the Chapel Gate behind Avery to board the bus.

11:00 AM
STOP 1: **ART OMI**

Art Omi
Art Omi is a not-for-profit arts center with a 120-acre sculpture and architecture park and gallery, residency programs for international practitioners.

12:00 PM
CONTINUE: **ART OMI TO AMSTERDAM, NY**
Meet at the arrival point to board the bus.

1:00 PM
STOP 2: **AMSTERDAM, NY**
Amsterdam, NY.

Amsterdam is a city in Montgomery County, New York, United States.

Site 1: Erie Canal Lock, movable dam and Guy Park Manor

Site 2: Shopping center, amphitheater and downtown

Site 3: Redevelopment site/pedestrian bridge

Site 4: Mohawk Carpet Mills

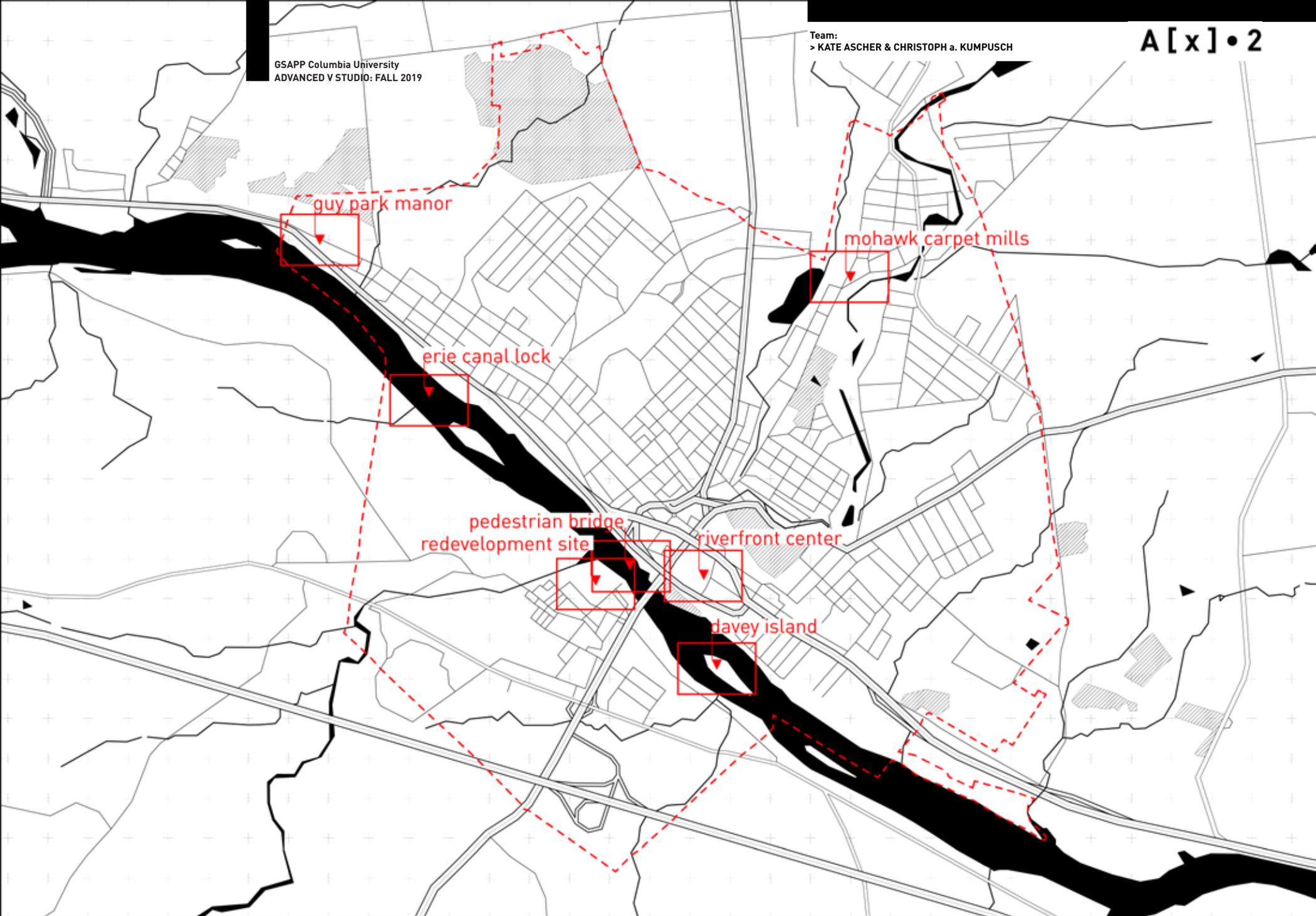
4:30 PM
CONTINUE: **AMSTERDAM, NY TO COHOES FALLS & WATERFORD FLIGHT OF LOCKS**

Cohoes Falls is a waterfall on the Mohawk River shared by the city of Cohoes and the town of Waterford

When built in 1907 the 5 original locks that comprise the Waterford Flight of Locks raised watercraft 165 feet in just over a mile. To this day, this is the greatest lift in the shortest distance on any canal system in the world.

5:30 PM
CONTINUE: **COHOES FALLS TO CHAPEL GATE**
Meet at the arrival point to board the bus.

8:30 PM
END : **CHAPEL GATE**



DAY 0

START : **NEW YORK**

Fly overnight to Amsterdam Airport Schiphol.

DAY 1

STOP 1: **AMSTERDAM**

TALK: HENK OVINK

Special Envoy for International Water Affairs, Kingdom of The Netherlands
Sherpa to the UN/WB High Level Panel on Water.

Spend entire day in Amsterdam.

Stay over in Amsterdam.

DAY 2

STOP 2: **NAARDEN**

Naarden is an example of a star fort, complete with fortified walls and a moat. It was previously developed into a fortified garrison town with a textile industry.

STOP 3: **ALMERE**

Almere is the newest city in the Netherlands: the land on which the city sits, the Southern Flevoland polder, which is land that was reclaimed from the IJsselmeer through a man-made system of dams and dikes, and water drainage work (in total the largest hydraulic engineering project undertaken by the Netherlands during the twentieth century).

Stay over in Deventer.

DAY 3

STOP 4: **DEVENTER**

Movable floating dams were built in the Lower Rhine and Waal rivers. By diverting the flow of water from Germany into the IJssel River, the entire IJssel valley of 127 km could be inundated to form a line of defence against an anticipated Soviet invasion.

STOP 5: **KINDERDIJK-ELSHOUT**

UNESCO World Heritage, the largest network of Working Historical Windmills in Holland.

Stay over in Rotterdam.

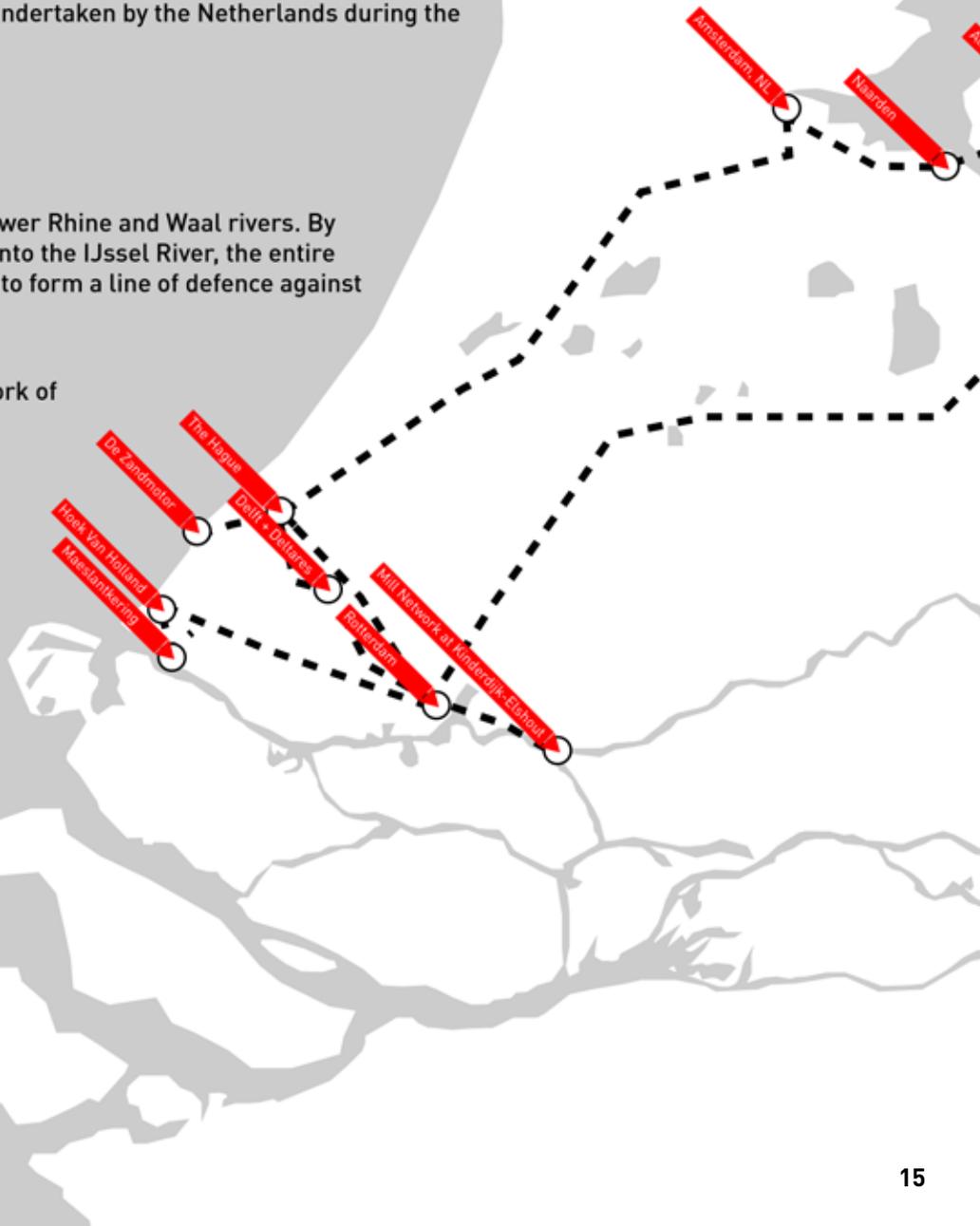
DAY 4

STOP 6: **ROTTERDAM**

Rotterdam is a major port on the Rhine-Meuse-Scheldt delta, which gives waterway access into the heart of Western Europe

Spend entire day in Rotterdam.

Stay over in Rotterdam.



A [x] • 2 ON TOUR

September 29th, 2019 —
October 6th, 2019

DAY 5

STOP 7: **HOEK VAN HOLLAND**

The Hook of Holland is a town at the mouth of the New Waterway shipping canal into the North Sea.

STOP 8: **MAESLANTKERING**

The Maeslantkering is a storm surge barrier on the Nieuwe Waterweg, in South Holland, Netherlands. Controlled by a supercomputer, it automatically closes when Rotterdam is threatened by floods

STOP 9: **MAASVLAKTE**

The Maasvlakte is a massive man-made westward extension of the Europoort port and industrial facility within the Port of Rotterdam.

Stay over in Rotterdam.

DAY 6

STOP 10: **DE ZANDMOTOR**

The sand engine is an experiment in the management of dynamic coastline.

STOP 11: **THE HAGUE**

The Hague is the seat of government of the Netherlands. The Rotterdam-The Hague metropolitan area is the most populous in the country.

STOP 12: **TU DELFT**

TU Delft is the largest and oldest Dutch public technological university, ranked in the top 20 of best universities for engineering and technology. worldwide

STOP 13: **DELTA RES**

Deltares is an independent, institute for applied research in the field of water, subsurface and infrastructure.

Last night stay over in Rotterdam.

DAY 7

STOP 14: **AMSTERDAM**

Fly back to New York from Amsterdam Airport Schiphol.





stedelijk museum

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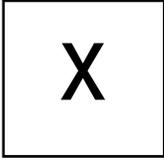
A [x] • 2 : REDEFINING URBAN RESILIENCE IN THE AMSTERDAMS

OVERVIEW

- > Urban resilience is a complex process, with economic, social, temporal and physical dimensions. Nowhere is this more true than in the flood-prone communities still served by one of the 19th centuries engineering wonders – the Erie Canal. Along with other former industrial centers, the town of Amsterdam, NY has struggled over the last half century to address issues of shrinking tax base, loss of jobs and population and a general decline in property values and quality of life. To tackle these issues, it first must confront questions of physical resilience, which hang like a pallor over the city's future. How can infrastructure and geography that gave rise to the town itself now be redeployed to greatly reduce the risk of flooding in Amsterdam – allowing property values to rise, development to occur, population to stabilize, and tourism be attracted?

To address the challenges of climate change, the class will take inspiration from another Amsterdam, in the Netherlands – where a comprehensive spatial and design plan was undertaken in the first decade of the 21st century to address rising risks of flooding. The Dutch “Room for the River” plan, initiated in 2003, comprised roughly 40 projects implemented at a cost of over 2.5 billion dollars. The integrated spatial plan, which extends well beyond Amsterdam to the broader delta where three rivers meet, aims to achieve greater protection by modifying existing floodplain structures to lower flood levels. Simultaneously new ways of “living with water” have included the development of new neighborhoods on existed and newly created waterfront lands and islands.

This studio will use the experience of the Netherlands “Make Room for Water” approach as the foundation for developing a water-based development plan for a series of sites in Amsterdam, New York. Once familiar with the history, urban geography and hydrology of the area, MSRED and advanced architecture students (AAS) will work in teams to identify development strategies and interventions underpinned by appropriate flood reduction initiatives. A week-long visit to Amsterdam, Netherlands early in the semester will assist in identifying alternative flood-reduction approaches and potential development approaches that may be considered. Students will then produce conceptual designs for one of four sites, and justify the feasibility of their proposed program based on high-level financial models. These designs will be refined and articulated over a series of pin-ups and external reviews.



A [x] • 2 : REDEFINING URBAN RESILIENCE IN THE AMSTERDAMS

APPROACH

- > In this joint Advanced V design studio, students are made familiar with Amsterdam, NY, a city developed in the 19th century on both sides of the Mohawk River and Erie Canal. They are asked to investigate resiliency-based spatial planning through field observation and analytical & physical construction. In studying the environmental and economic challenges that present themselves to Amsterdam, NY, we will turn to the Dutch city of Amsterdam, NL, for study of water-based and related interventions. Particular to this studio, economic thinking is introduced as part of the curriculum, with a focus on financial feasibility and economic development as related considerations that are socially and politically relevant beyond aesthetics.

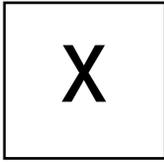
The backbone of the course revolves around four main axes - Fire, Earth, Water and Air - that sequentially feed into each other to support the development and deployment of a single spatial strategy and program. While the trajectory of the first assignment is individual, subsequent phases of the project become collaborative endeavors and participants are asked to pair up across disciplines for their primary studio deliverables. Each project builds on the last, and threads of each assignment run throughout the semester.

This studio is a space for conceptualization and critical exchange, as well as new grounds for graphic and material research and production. We will be investigating the relationships between community, space and technology as rethought in the context of ecological and economic discourse. Student will consider both economic and spatial realities as building medium, starting point, parameter and guiding framework, giving equal interest to the social conditions as well as the political context of the architectonic components of our spaces.

This class is a platform for debate, new terrains, for exploration to fuse with reflection and for research and design to foster discovery. Founded on an interdisciplinary and collective approach, the studio will value the tools relevant to the specific disciplines of the student, as well as others (the tools of the geographer, the hydrologist, the urban planner, the designer). High energy, open-mindedness and passionate engagement are the prerequisites for engagement in this studio. We work intensely and collaboratively; ideas will be valued and clearly represented; constructive criticism and bold design responses constitute our primary means of communication.

Operative Terminology:

| FIRE | EARTH | WATER | AIR | PHASE |
|---|---|---|--|--------------------|
| | | | | LENSE |
| <ul style="list-style-type: none"> > Dissolving > Cataloguing | <ul style="list-style-type: none"> > Extracting > Configuring | <ul style="list-style-type: none"> > Implementation > Inter-weaving | <ul style="list-style-type: none"> > Synthesis > Alignment | MDOEIL'S TERRITORY |
| 1 | 2 | 3 | 4 | |
| *FRAGMENTS | *DOMAIN | *TERRAIN | *PLACE | |



STUDIO
BREAKDOWN

> Projects:

[1] FIRE : *ignite the studio*. Student will fragment and analyze chosen urban resiliency-based plan/system, identifying the way manipulations of the physical environment have redefined the nature and perceptions of 'place' and simultaneously addressed more immediate and temporal climate change-related challenges. **Students will select and engage with a selected relevant precedent, deconstructing its context and rationale through drawing and diagramming.**

[2] EARTH : *extract elements*. Students will then turn to Amsterdam, NY, digging into the history and current characteristics of the city and exploring the relationship between the two. Serving as a structured transition between Precedent and Site Research, the assignment is a process of uncovering the operative principles of 'place', including its unique relationships and hierarchies at multiple scales. A site visit to Amsterdam, NY will allow students to draw and diagram the layered project context, better understanding the political, economic, and physical networks of the city. They are tasked with addressing existing patterns, densities and connections on the site(s) through careful definition and re-definition of the many layers of its existing and past urban fabrics and infrastructures.

In this exercise, student will conduct a comprehensive site analysis simultaneous to the development of layered site-model. Through information gathering and the making of a collective site-model, students will create linkages between sites and systems to identify the potential for innovation at the scale of the system as well as the scale of the site.

[3] WATER : *follow the flow of ideas*. Students will visit and Amsterdam, NL to study the interplay of ecology and economy, reinterpreting ground, territory and topography by exploring interlocking systems, networks and structures. Understanding the city as a series of systems of hard and soft infrastructure, **students will develop a spatial proposition for the city of Amsterdam NY with a focus on viability and feasibility of implementation.** This includes identifying a proposed resilience strategy or framework, defining a development rationale, and then designing a program and/or structure that serves as a speculative argument for the future of Amsterdam and as such would find local appeal, a local market and funding. The creative process includes overlaying economic and market considerations on previous research: this informs the argument for a design proposal and provides the framework and narration for design decisions. In this sense, drawings and models are not 'final' representations of proposals, but rather material evidence for the process of 'thinking through making'.

[4] AIR: *broadcasting blueprints*. **Collectively, students will develop a plan to broadcast the semester's work, whether through a film, an event, a website, a publication.** This plan should include components well-suited to share the semester's output with residents of the town of Amsterdam as well as the broader design community, potential investors or partners and public officials. Students will also sustain the creation of a Record Book throughout the semester, as a regular and systematic documentation of design incidents and observation.

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FIRE: IGNITING INTERCONNECTION

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ASSIGNMENT :

1_eSep 05-
Sep 09*FIRE: igniting interconnection*
*E-assignment**MYTHS*
RITUALS
SYSTEMS
*DYNAMICS**MOLDING*
MELTING
CONFLAGRATION
*COMBUSTION**FUEL*
COIL
BLAZE
*IGNITION***FIRE****FRAGMENTATION/
RECONSTRUCTION**

- > Over the course of history, cities have grown up on water – rivers, bays, lakes and coastlines – in large part due to the access these waterways afforded to maritime trade in raw materials and finished products. But the water and location that powered these cities' growth poses new challenges in the modern era of post-industrialization, adaptive reuse of waterfront property and climate change and rising sea levels. In response, many cities have found ways to adapt historic waterfront resources, meet the challenges that rising sea levels present, and simultaneously create new destinations, attractions and senses of place.

The first assignment of the semester is a short, individual research and analysis exercise intended to serve as an ignitor for the studio. Findings from this assignment will serve as an inspirational foundation for the work that will unfold over the semester.

**DYNAMICS/
EXPRESSION**

- > You are to identify a city or town or other governance entity (county, water authority, special development corporation) that has embraced a plan, policy or physical intervention (or some combination of the three) to promote urban resilience while at the same promoting economic development. Your work will involve understanding the factors that led to their program, the parameters of their resilience strategy, the physical implications of any proposed interventions, the costs and funders of the initiative, and the results to date of the approach embraced. Consider this selected initiative as a 'system' to study, diagram, and interpret, with interacting and interrelated entities (stakeholders) that form a whole and help explain the origins, nature and success of the project.

Freely and critically use the language of architecture, diagrams, economic models and other systems to explain your precedent. Look to concepts of historic preservation and adaptive reuse, resilience and climate adaptation, architecture and engineering, and urban planning, economics and real estate development.

Fragmentation /,frægmen'täSH(ə)n/

Etymology
< early 15c., "small piece or part," from Latin fragmentum "a fragment, remnant," literally "a piece broken off," from base of frangere "to break"

1: the act or process of fragmenting; state of being fragmented. 2: the disintegration, collapse, or breakdown of norms of thought, behavior, or social relationship. 3: the pieces of an exploded fragmentation bomb or grenade. 4: Computers, the process, or result, of storing a file in non-contiguous sectors on a disk. As files are created, modified, deleted, etc., both the allocation of the files and the remaining free space on the disk become fragmented, slowing down data access speed on the disk.

Dynamic /dī'namik/

Etymology
< early 19th century (as a term in physics): from French dynamique, from Greek dunamikos, from dunamis 'power'.

1: physics : a branch of mechanics (see MECHANICS sense (a) that deals with forces and their relation primarily to the motion but sometimes also to the equilibrium (see EQUILIBRIUM (b) of bodies 2 : a pattern or process of change, growth, or activity
population dynamics 3 : variation and contrast in force or intensity (as in music)

Objectives:

- > Complete a precedent study and analysis to serve as an inspiration for subsequent Design decisions
- > Investigate parallel and divergent systems informing urban resilience and economic development
- > Introduce Financialization in Architecture as a Design Practice

ASSIGNMENT :

1

FIRE 

REQUIREMENTS

- > Your deliverable should be completed as two parts:

The first is a **24" x 36" visual summary** of your findings that includes key information and images that explain and translate the 'system' into a visual representation. You should diagrammatically represent each of its constituting parts. Think of the spatial and temporal boundaries of the 'system' (**where? when?**), of its external influences and influencers (**who?**) (political, environmental, economic, etc.), its structure and purpose (**how? why?**). Include all and any fragments fueling these system(s); however immeasurable or intangible. Think of the overlap of principles (or absence of) at the root of this system (e.g., mechanical, physical, kinetic, energy, political, economic, cultural, social). All your findings and their interrelationship should be clearly communicated in the visual summary.

The second is a short powerpoint presentation summarizing your research, which will assist you in presenting your findings to the class on September 9th.

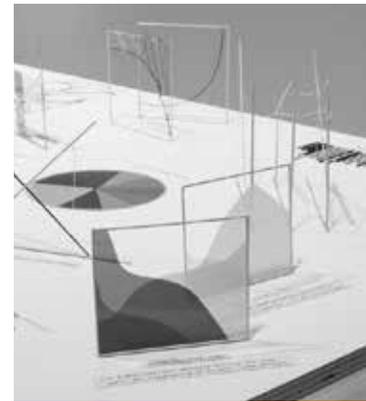
Please submit both (drawing as PDF + powerpoint as PDF) to Canvas and bring a plotted copy of the visual summary to class. On September 9th, we will collectively present our findings (Powerpoint + Drawing) and discuss cross-disciplinary pairings (one Ms. RED student + one M. Arch student), which will be in place for the following assignment.

DELIVERABLES

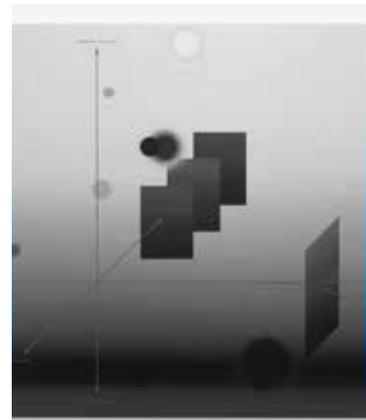
- > > one 24 x 36" in Heavy weight visual summary
- > one short Powerpoint

CONSTRAINTS

- > > *geographic*: precedent should be situated in an urbanized area on an inland waterway (river or lake) or coastline, in the US or abroad
- > > *temporal*: the relevant program or intervention should have occurred in the last 30 years
- > > *site*: can be an area, building, neighborhood or watershed



The Prophets, installation view, La Biennale de Montréal, Musée d'art contemporain de Montréal, Canada, 2014



Nicholas Grenier, *Selected Absolutes (III)*, 2016-2018. oil and acrylic on linen, 40" X 50"

ADV V

NAVIGATOR

GSAPP FALL 2019
EARTH: EXCAVATING ELEMENTS

A [x] • 2

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ASSIGNMENT :

2_aSep 09-
Sep 30

EARTH

*EARTH: excavating elements*

| | | |
|--------------------------|----------------------|-------------------|
| <i>ARCHEOLOGY</i> | <i>SURFACE</i> | <i>SITE</i> |
| <i>ACCUMULATION</i> | <i>LANDS</i> | <i>PLACE</i> |
| <i>GROUND / GROUDING</i> | <i>CARTOGRAPHY</i> | <i>EXTRACTION</i> |
| <i>LAND</i> | <i>DETERIORATION</i> | <i>BURROWING</i> |

EXTRACTING/
INSERTING

- > In this second assignment, you will be exploring a series of sites along the Mohawk River in Amsterdam, NY, in teams of two decided upon at the end of the last assignment (one student from each program). To begin your understanding of what might be developed there, we will be visiting the sites on Saturday, September 14th. This second portion of the semester is threefold:

The **first segment** of this assignment consists of on-site live-extraction from a study of pre-identified sites in Amsterdam NY. Once you have visited the sites, you are to answer the following questions in a written response of no more than 2-3 pages. In this very short portion of the Earth assignment, do NOT conduct or include any desk research at all – your assignment is simply to perceive, react and connect.

1. What three things strike you most about the site?
2. What challenges or opportunities do you see at first visit, if any?
3. What other information would you want to begin envisioning a future for this site?

Be sure to take ample photographs of the sites during your visit, which you can attach to your response when relevant. Your response should be in outline form, with each question clearly delineated. Your response should be submitted digitally on Canvas before class begins, and please also bring a paper copy to class on September 16th. In class, we will discuss our site visit experience.

The **second segment** of the 'Earth' assignment consists of diving deeper in your extraction of the site. At this stage, you are asked to prepare a site analysis of one of the sites identified on our site visit to Amsterdam NY. This issues you address will be a subset of those identified and discussed in class and on the visit, as well as any other not mentioned in class that you believe are relevant to further your consideration of the site as the location for a potential development project.

Your site analysis, which is a desk research exercise to be conducted over the course of a week, will focus on the economic, physical and social organization and characteristics of the city. In undertaking it, you should focus on information publicly available through government agencies, real estate brokers, news media, websites and other sources of information. You should in no circumstances pay money for any information.

Possible modes of analysis/site comparative research include: patterns of movement, topography, mobility/transport, overlays, openings, city organization, community assets, civic nodes, cultural/historical assets, translated patterns, etc. You should employ metrics of urban geography, such as demographics (age, employment, class, etc.), local economic indicators, market analysis (density, land values, supply and demand), politics and community factors, etc. to identify the key geographical, spatial, temporal and economic concepts of interest.

Extraction /ik' strakt/

Etymology

< late Middle English: from Latin extract- 'drawn out', from the verb extrahere, from ex- 'out' + trahere 'draw'.

- 1a : to draw forth (as by research)
 extract data b : to pull or take out forcibly
 extracted a wisdom tooth c : to obtain by much effort from someone unwilling
 extracted a confession 2a : to withdraw (something, such as a juice or a constituent element) by physical or chemical process
 b : to treat with a solvent so as to remove a soluble substance 3 : to separate (a metal) from an ore 4 : to determine (a mathematical root) by calculation
 5 : to select (excerpts) and copy out or cite

Objectives:

- > Develop collaborative strategies
- > Gain familiarity with the political, economic, social and physical context of Amsterdam, NY
- > Conduct and present research, articulating key geographic, spatial or economic concepts of interest

ASSIGNMENT :

2_b

EARTH

SITING/
SIGHTING

- > This could include research on, for example: historic uses, locations of cultural, educational and religious institutions, waterside and waterway activity, recent and proposed development activity (public and private), age and typology of existing building stock, rental rates, etc. Throughout your analysis, be sure to focus on and understand the distinctiveness of your site within the framework of the regularities that define the city and its environments.

Your analysis should include visuals as appropriate, including maps, graphs, bar charts or other diagrammatic tools. It should be organized within appropriate headings, and should be written in paragraph style – with lists incorporated as and where relevant. Convey information clearly and where possible graphically, and include reference to your source for all information. We are interested in what you see, but only insofar as it helps to define a range of possible development options – ruling out some and perhaps pursuing others. Your ‘takeaway’ or ‘so what?’ from the facts, connections or trends you discern should be clearly stated.

In addition to a document summarizing your research, you are asked to summarize your findings in a “development map” of your site and its wider area (you are to determine how wide a circle to draw around the site). On the map you will depict, both graphically and in words as required, the significant aspects drawn from your research that might affect your decision as to how or what to develop on a certain site. Do not limit yourself to mapping ‘where things are’ in a static sense. Further, the “neighborhood map” you produce should not incorporate every single feature that you have identified, but rather those you believe are most relevant in considering development options for the site.

We will present our site analyses during a pin-up on September 23rd. Please bring a plotted 24” x 36” version of your neighborhood map.

The **third and final segment** of the assignment is the collective making of a site-model of Amsterdam, NY. From our previous research, we will together decide on specifics for the model. This site-model should serve as both a record and an instrument, in that it measures as much as it performs. We will develop the model over the course of the semester, but its specifics must be locked in before departing for Amsterdam, NL, and the site model must be completed for the Midterm Review (October 21st).

Later in the semester, the model will receive ‘plug-in’ models of proposed interventions, in addition to serving as a canvas for literal projections onto the site. In this sense, it will serve to curate a vision of a potential future for the site, representing the possibilities of the convergence of overlapping situational conditions. Consider the making of this ‘instrument site model’ as connecting the site(s) to previously studied systems and your site analysis. Manipulate the relationship between the model space/surface and the projected components with intent, to define and bound your vision for Amsterdam, NY.

Site /sīt/

Etymology

< late Middle English (as a noun): from Anglo-Norman French, or from Latin situs ‘local position’. The verb dates from the late 16th century.

1: (a) the spatial location of an actual or planned structure or set of structures (such as a building, town, or monuments) (b) a space of ground occupied or to be occupied by a building 2 : (a) the place, scene, or point of an occurrence or event a picnic site (b) one or more Internet addresses at which an individual or organization provides information to others

ASSIGNMENT :

2

EARTH



DELIVERABLES

- > >part 1 :
2-3 page site visit response
- >part 2 :
site analysis document
neighbourhood map 24" x 26"
- >part 3 :
Collective site model @ 1/16" scale
Visuals to project onto the site model
(later) Plug-in model of proposal

CONSTRAINTS

- > >for site model (part 3):
1/16"= 1' scale
must cover the territory of all 5 of the sites in Amsterdam, NY
must be prepared to receive a 'plug-in' model of interventions later in the semester
must be prepared to serve as a canvas for projecting site analysis findings



Future Relic series (2013–2018), Daniel Arsham



*Ancient Pre-Islamic
Architecture of Iran.
Paula Youens.*

ADV V

NAVIGATOR

GSAPP FALL 2019
WATER: FOLLOW THE FLOW

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ASSIGNMENT :

3

Oct 01 -
Nov 11

WATER

*WATER: follow the flow of ideas*

SUBMERGE
EMMERGE
SATURATE
DELUGE

FLOOD
INUNDATE
DUNK
CHANNEL

COURSE
FLOW
PRECIPITATE
IRRIGATE

IMPLEMENTATION/
ANTICIPATION

- > Water infrastructure, from water pipes to dams and dykes, is enabled in and through space, but also shapes the production of space. Property regimes—who owns or accesses property and by what legal, political, or customary arrangements—mold the trajectory of water infrastructure and the distribution of water resources. The building and upkeep of water infrastructure, in turn, affects the valuation and organization of land, property, and housing. These intimate and multidirectional relationships between property and water—between spatial production and resource production—are multidimensional and interrelated.

Assignment:

In the first two assignments, you:

1. Studied precedents concerning a specific urbanized area and a physical intervention promoting urban resiliency and economic development
2. Studied in depth the area of Amsterdam and your chosen site
3. Learned the approaches taken in the Netherlands to reduce flood risk and develop a resilience framework (i.e. set of water-related interventions).

This third assignment serves as the heart of the semester. In this new assignment, you will continue working in multidisciplinary pairs to develop specific “urban resiliency” development proposals for Amsterdam. These proposals will be geared towards (1) minimizing or eliminating flooding in one or more areas of the town (2) activating previously underutilized infrastructure assets (3) improving quality of life and (4) maximizing new economic activity. Each team will identify both a broader or spatial plan for the chosen area as well as a specific site development plan and program for a particular physical asset.

Because our study sites are in vulnerable waterfront locations, your proposal must specifically address ongoing threats of flood risk to ensure its viability. You will be assisted by experts in water control infrastructure and hydrology to identify opportunities to protect against the chronic flooding that the town experiences. In addition, you must defend your program’s ability to contribute to the future economic resurgence of the town of Amsterdam. Economic development experts will also be available to help shape and support the commercial viability of your proposal.

In identifying a viable and creative development program for your site in Amsterdam, NY, you will be expected to include relevant data from previous assignments, namely the Fire (precedent research) and Earth (site + neighborhood analysis). Additionally, you will incorporate any relevant market analysis or data that support your chosen program, as well as any pertinent information about stakeholder or community issues. The economics of your program must be fully supported through appropriate financial analysis, and your work must include an implementation strategy.

Implementation / ˌɪmpləˈmeɪnˈtʃ(ə)n/

Etymology

< “to complete, perform, carry into effect,” 1707, originally chiefly in Scottish English, where the noun was a legal term meaning “fulfillment,” from implement

1: an act or instance of implementing something
: the process of making something active or effective



Wasserkraftwerk Hagneck.
Penzel Valier.

Objective:

> develop an urban resiliency proposal for Amsterdam NY

ASSIGNMENT :

3

WATER

EVALUATION/
OMISSION

> Approach:

With increased familiarity to the history, urban geography and hydrology of Amsterdam NY, you will work to develop initiatives underpinned by an economic development strategy. New found conclusions of the city(ies) as a series of systems of hard and soft infrastructure will help you develop spatial proposition for the city of Amsterdam NY with a focus on implementation strategies (who are the actors with agency? who would advocate, finance or benefit from the proposal?). Your project should respond to an in-depth study of topography, typology, and morphology by synthesizing the aesthetic, tectonic, sociological, economic and cultural attributes you have studied thus far into your design.

Your speculative argument for the future of Amsterdam NY should build on and reframe the existing context, working in multiple simultaneous scales and across different time frames. Structure, use, content, and history, informed by fiscal feasibility, reframe the site with the primary focus on pairing Ecology with Economy. These considerations should inform your argument for a design proposal, providing the framework and narration for design decisions. In this sense, drawings and models are not 'final' representations of proposals, but rather material evidence for the process of 'thinking through making'.

Use the following as a launchpad for innovation:

TYPOLOGIES

Barge
Dock
Bridge
Terminal
Pier
Peninsula
Lagoon
Filter
Island
Platform
Water curtain
Underpass
Overpass
Wharf

PROGRAM

Monument
Theater
Museum / Gallery
Library
Sun barge
Farm
Park
Market
Power Plant
Flood protection / storms surge
Educational facility
Water filtration
Oyster bar / farm / fishery
Fitness / recreation

Event canopy, sculptured pedestrian terrain, technology boulevard, water curtain/digital projection, recreation barge, lookout platform, underpass occupier, vertical resurfacing, commercial path, floating exhibition, mobile games pavilion, etc.... Push the envelope of what mediums can define 'space(s)': sound, event, installation, scenography, ephemeral building, functional object, ritual, party, system, situation; a club, a garden, a public square, a cinema, a playground, a protest, a summer camp, a plaza, a house, a bar, a campfire.

Evaluation /ɪˌvæljuːˈeɪʃən/

Etymology

< 1755, "action of appraising or valuing," from French *évaluation*, noun of action from *évaluer* "to find the value of," from *é-* "out" (see *ex-*) + *valuer*, from Latin *valere* "be strong, be well; be of value, be worth" (from PIE root **wal-* "to be strong"). Meaning "job performance review" attested by 1947.

1: act of ascertaining or fixing the value or worth
of 2: an appraisal of the value of something



Rock pool.
Paula Youens.

ASSIGNMENT :

3

WATER



DELIVERABLES

- > Your *development deliverables* should include a combination of graphic images and prose, with specific attention given to producing a stakeholders diagram, a financial feasibility study and a development timeline. At a minimum, your work should incorporate:
- explanation of the resilience intervention that is assumed, whether it will be undertaken by private or public sector, and high-level cost and timeline
 - identification and assessment of the site, including opportunities and constraints
 - the rationale for your development based on the above
 - > what need or demand are you meeting?
 - > what is the target market you are attempting to reach?
 - > what are your financial or other goals?
 - a statement as to whether your building complies with zoning and/or requires some discretionary action
 - your development program
 - > how many square feet of what types of space
 - > any proposed partners of key tenants
 - a stacking diagram, identifying uses, location and square footages
 - a plan view of where your building would sit on the site
 - a description of amenities, open space, parking or other features as relevant
 - any risks associated with the project, including an assessment of community reaction, historic preservation issues, etc.
 - any relevant precedents for this project
 - financial justification
 - > an estimate of project cost
 - > a calculation of forecast net operating income

Your *architectural deliverables* should include, at a minimum:

- 500-word thesis of the driving concepts behind project, describing the synopsis of your own urban ecology and living system.
- Evolved site/systems map: network composed of form and structure, shifting over time with outside pressures and vectors
- Plan (minimum 1 ground floor + 1 typical if necessary)
- 2 sections :
 - > 1 @ urban scale, connecting the proposal to larger relevant networks
 - > 1 @ building scale
- 2 interior views, 2 exterior views
- Axonometric drawing
- Models @ 1/16", @ 1/8"
- X-ray drawing of primary system
- Assembly diagram



Floating University Berlin.
Domus.



Woodpecker Lake.
Antonello Zoffoli.

ADV V

NAVIGATOR

GSAPP FALL 2019
AIR: BROADCASTING BLUEPRINTS

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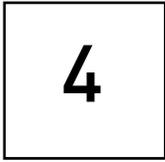


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ASSIGNMENT :

Nov 11-
Dec 06*AIR: broadcasting blueprints*

| | | |
|-------------------|------------------|--------------|
| <i>AIRWAVE</i> | <i>PUBLICIZE</i> | <i>GAS</i> |
| <i>ATMOSPHERE</i> | <i>BEAM</i> | <i>FLY</i> |
| <i>FLIGHT</i> | <i>REGION</i> | <i>RADIO</i> |

SYNTHESIS/
PARTITION

- > This final assignment happens in two parts: **in the first, collective, we will find and produce a shared platform to broadcast the studio's work.** Together, we will devise a method that transports the work you have been doing outside the confines of the school to the general public.

This can take the shape of a website, a podcast series, a publication, a series of youtube videos, a social media page, a blog, etc. In planning this exercise, each team will be responsible for writing a short proposal for a broadcasting strategy (a media strategy), which should clearly delineate the broadcasting strategy. Think of your medium in relation to the intended audience: who is this for? the residents? the design community? the real estate community? governing bodies? This executive summary should break down the proposal into the following:

- > justification of your media choice + your strategy
- > layout of the content and how it is curated
- > the rationale for its audience

Consequently, what the relationship between the medium, the message and the audience should be carefully considered.

The second portion of the Air assignment is the completion of an individual record book, which should keep track of your progress, experimentations, thought processes, off-cuts, etc. Although you have been working collaboratively throughout the semester, the Record Book should be completed individually (you may and should include joint work in book, but identify it as such).

A template for the Record Book will be distributed alongside this assignment.

DELIVERABLES

- > a half-page media strategy for Broadcasting the studio's work (team submission)
- > record book, following the template (individual submission)

Synthesis /ˈsɪnθəsəs/

Etymology
< early 17th century: via Latin from Greek
synthesis, from suntithenai 'place together'."

1 (a) the composition or combination of parts or elements so as to form a whole (b) the production of a substance by the union of chemical elements, groups, or simpler compounds or by the degradation of a complex compound (c) the combining of often diverse conceptions into a coherent whole 2 : (a) deductive reasoning (b) the dialectic combination of thesis and antithesis into a higher stage of truth 3 : the frequent and systematic use of inflected forms as a characteristic device of a language

Objectives:

- > identify means appropriate to distribute your work in ways that educate, stimulate discussion and increase its chance of implementation

ADV V

NAVIGATOR

GSAPP FALL 2019

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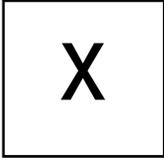


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**STUDIO
DECLARATIONS**

> We will work intensely and collaboratively.

Futurity demands an architectural thinking that is situational, responding in real-time to conditional, urgent forces.

Ideas must be valued and clearly represented.

Objects are imperfect; they make 1d an abstract idea, down-grading dimensionality, incapable of processing dynamic patterns or implicating situational spatiality.

High energy, open-mindedness and engagement with the wider world prerequisites.

We focus on situations, as a dynamic set of conditions, or intensified systems.

Constructive criticism and bold design responses constitute our communication.

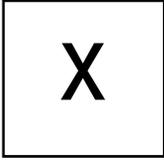
We extract core samples of data, mediating overloaded sensorial inputs, fast happening systems, troubleshooting to find what is relevant extraction.

Our creative palette includes the interconnection of complexity and simplicity, light and shadow, form and space, materiality and structure.

We operate in situ-immersive mode, rapid fire reactionary / reactive testing in order to develop logics of situational resilience.

We depart from a standard point of departure, seeking hyper-awareness, phenomena initiating state changes, implicating scale, yet scaleless, moving target.

We create a feed-back loop for architecture, response driven, yet limitless in implications.



**STUDIO
BACKGROUND**

> The Industrial Revolution left its mark on America, as it did on Europe and other developed economies of the 19th century. The invention of new means of transportation, power production, communications and manufacturing transformed tens of thousands of communities on rivers and canals - with easy access to water power and transport - into engines of growth. Nowhere was this more notable in the Northeast US than in upstate New York, where the ability to ship goods from the Atlantic to the Great Lakes brought about by the opening of the Erie Canal in 1825 gave life to cities far from traditional ports - cities like Syracuse, Utica, Rome, Rochester and Amsterdam.

These canalside cities, and countless mill towns like them across New England, became magnets for immigrants who found jobs in factories located to take advantage of water power and waterborne transport. Two centuries later, manufacturing in these places barely exists; products once produced in these mill towns are now imported from Southeast Asia, China or South America. Yet much of the physical fabric of that era lives on - factories, power plants, dams, and many of the commercial and civic buildings borne of the wealth created in these unlikely places.

The overwhelming proportion of this industrial-era infrastructure across upstate New York is silent - shuttered, abandoned, and in varying states of decay. Unlike the double-stack trains, expressways, transmission lines and internet servers that today connect former industrial towns, older forms of infrastructure no longer serve their original purposes. Yet the needs of these communities have only grown with time and changes in the global economy: towns and cities have lost population and grown older, their economies have shrunk as land values and tax bases diminished, and they are more vulnerable than ever to the disruptions wrought by climate change.

For the last of these problems, a number of once-thriving upstate towns have to thank their location on inland waterways. Particularly in riverine settings, rapid growth in storm and storm-surge activity has left former mill towns vulnerable to chronic flooding. Large sections of these towns now sit within the 100-year FEMA floodplain, for which the federal government requires flood insurance. The result is a double-whammy: towns whose economies were once bolstered by water are now weakened by it, with flooding, ice jams and flood risk undermining the quality of life in places already left behind by changes in the global economy.

X

AMSTERDAM [S]

SITE / CONTEXT

> The city of Amsterdam sits on the Mohawk River, roughly 35 miles northwest of Albany. Squeezed into a tight stretch of the Mohawk River, the steep drop from the surrounding cliffs that once hindered development became an ec cheap source of water power during the 19th century – giving rise to a variety of manufacturing businesses, including broom, clothing, iron and, most notably, carpet production. These industries remained viable until the middle of the 20th century, when foreign competition undermined their place in the domestic market and led to dramatic shrinkage in Amsterdam’s economy. A decade later, urban renewal and arterial roadway construction would make the physical and civic heart of Amsterdam all but invisible to passers-by – who speed up the Northway to the Adirondacks, bypassing the town itself.

The economic challenges Amsterdam faces today are significant. Of its 18,000 residents, roughly 28 percent fall below the poverty line. It is also an old city – the median age is 37. There are few major employers. Median household income is \$35,000, and median property value is \$86,000 – as compared to a median home value of \$294,000 in the state as a whole. Recent state grants have allowed the construction of a new canal-side amphitheatre and pedestrian bridge, but they are bounded by deactivated malls, undeveloped former industrial sites, and unattractive cement floodwalls.

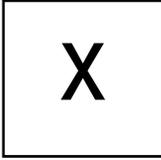
The environmental challenges facing Amsterdam are as significant as the economic ones. Because of its location along the Mohawk River, the city of Amsterdam experiences both winter and summertime flooding. This situation, which dates back to __, became particularly acute in the 20th century, when the NY State Barge Canal effectively “canalized” the Mohawk River by inserting large movable dams to raise water levels in summer to enable barges to pass through locks. Summer floodwaters, like those of Tropical Storm Irene in 2011, can easily breach the river’s banks - ignoring the railroad tracks that separate the city from the canal and pouring into the neighborhoods beyond. In winter, ice break-up events due to rising spring temperatures, rain or snow melt endanger the same flood-prone areas.

Urban resilience is a complex process, with economic, social and physical dimensions. Along with other Mohawk towns, Amsterdam struggles to address issues of economic resilience (i.e., creating jobs, boosting land values and tax base) and social resilience (i.e., stabilizing the population, retaining young people and improving quality of life). But above all it must first confront questions of physical resilience, which hang like a pallor over the city’s future. How can infrastructure and geography that gave rise to the town itself now be redeployed to greatly reduce the risk of flooding in Amsterdam – allowing property values to rise, development to occur, and tourism to return?

To address the challenges of climate change, the class will take inspiration from another Amsterdam, in the Netherlands – where a comprehensive spatial and design plan was undertaken in the first decade of the 21st century to address rising risks and incidences of flooding.

The Dutch city of Amsterdam, like most of the Netherlands, lies below sea level. Its dependence on maritime trade has meant that the elaborate flood defenses built up over centuries have had to accommodate letting the sea – and the ships – in. As climate change has gathered pace and sea levels have risen, incidences of flooding and levels of flood risk have grown around Amsterdam and the lowlands of the Netherlands as a whole. In response, the Dutch developed a new approach to the management of water – ‘working with nature,’ to make more room for the water to flow without undermining homes and businesses.

The Dutch “Room for the River” plan, initiated in 2003, comprised roughly 40 projects implemented over the next decade and a half at a cost of over 2.5 billion dollars. The integrated spatial plan, which extends well beyond Amsterdam to the broader delta where three rivers (the Rhine, the Meuse and the Scheldt) meet, aims to achieve greater protection by modifying existing floodplain structures to lower flood levels (other goals include improved master landscaping and improvement in environmental conditions). Specific measures in the plan include placing and moving dykes, depoldering, creating and increasing the depth of flood channels, reducing the height of groynes, removing obstacles, and constructing a flood bypass system (“Green River”).



AMSTERDAM [NEW YORK]

HISTORY

- > Amsterdam is a city in Montgomery County, New York, United States. As of the 2010 census, the city had a population of 18,620. The city developed on both sides of the Mohawk River, with the majority located on the north bank.

The first Europeans to settle here were Dutch immigrants about 1710. They called the community Veeders Mills and Veedersburgh after Albert Veeder, an early mill owner. After the American Revolutionary War, many settlers came from New England. Anglo-American residents changed the name to Amsterdam in 1803. In the 19th century, the city of Amsterdam was known for carpet, textile, and pearl button manufacturing. It continued to be a center for carpet-making in the 20th century, when the Bigelow-Sanford and Mohawk Mills Carpet companies both were located in Amsterdam, but these companies have relocated to other regions. Amsterdam was also the home of Coleco, makers of the ColecoVision, Cabbage Patch Kids and the Coleco Adam. Founded in 1932 as the Connecticut Leather Company, Coleco went bankrupt in 1988 after a failed attempt to enter the electronics market, and pulled out of Amsterdam, as well as its other North American manufacturing sites.

The enclosed shopping center is named the Amsterdam Riverfront Center. Once filled with clothing shops, the mall complex has been adapted for offices of doctors, public assistance services, community organizations, a radio station WCSS, and an off-track betting site.

The completion of the Erie Canal in 1825 was an economic boon to the city, which became an important manufacturing center. It was known for its carpets. In 1865, the population of Amsterdam was 5,135; by 1920, it had grown to 33,524. Through the late 19th and early 20th centuries, it was a destination for immigrants from southern and eastern Europe, who primarily worked in the factories.

Amsterdam experienced serious flooding damage in the aftermath of Hurricane Irene in late August 2011. This flooding threatened properties at the river's edge due to erosion and water damage.

| | | |
|--|----------------------|---------------------------|
| | Males: | 8,604 47.4% |
| | Females: | 9,531 52.6% |
| | Median resident age: | 36.7 years |
| | New York median age: | 38.4 years |
| | Zip codes: | 12010 |
| Estimated median household income in 2016: | \$35,564 | (it was \$27,517 in 2000) |
| | | NY: %62,909\$ |
| Estimated per capita income in 2016: | \$21,337 | (it was \$16,680 in 2000) |
| Estimated median house or condo value in 2016: | \$91,364 | (it was \$61,400 in 2000) |
| | | NY: \$302,400 |

MEAN PRICES IN 2016

| | |
|-------------------------------------|------------|
| All housing units: | \$107,773; |
| Detached houses: | \$113,244; |
| Townhouses or other attached units: | \$77,934; |
| In 2-unit structures: | \$81,185; |
| In 3-to-4-unit structures: | \$177,709 |
| Median gross rent in 2016: | \$769. |

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AMSTERDAM [NEW YORK] Mohawk Carpet Mills / McCleary, Wallin and Crouse Mills

- > Set back from the city of Amsterdam and not noticed by travelers on the New York State Thruway is this mill site, or what's left of it - several large buildings were demolished at the end of the 2000's. Although identified variously on the internet as the "Mohasco Mills" or maybe the Mohawk Mills, it was the McCleary, Wallin and Crouse Rug and Carpet company that was one of the earliest, if not the first, major manufacturer to occupy this site.

The company is identified on the 1911 Sanborn Insurance map. As the industry expanded and competition grew, directors sought new ways to gain higher profits, and many firms merged. The Mohawk name belonged to one of the larger conglomerates, and formed in 1920 when the Shuttleworth Brothers Company merged with McCleary, Wallin and Crouse. The Mohawk name appeared at this site on the 1926 insurance map.

By mid-century, the Mohasco name was introduced following Mohawk's merger with downstate Alexander Smith. It is that name that Amsterdammers remember these mills by. However much of an imprint Mohasco left on the collective memory of the city, the company itself didn't last very long here. The carpet makers were courted by Southern states offering new factory buildings and financial incentives to relocate (first Sanford in 1955, and Mohawk by the end of the 1960s), and Amsterdam found itself with vast amounts of available commercial real estate. Of little consolation to Amsterdam, the Mohawk name still lives on following numerous mergers, moves, and reorganizations.

Like the Sanford mill downtown, which was occupied by toy-maker Coleco in the early 1980s, the McCleary & Co. mill was taken over by the Esquire Novelty in the latter half of the 20th-century. Esquire's specialty was toy guns. The company moved to Amsterdam in 1968, and left for China around the end of 2000. Just two years earlier, Esquire had earned 20 million dollars in sales and renovated the factory with the help of a New York State grant to help the firm stay competitive and stay local.

The mill site was largely intact though some fires broke out in the early 1990s. The mill itself is well-documented; numerous photographs appear on the internet, including the Urban Exploration Database. Although interesting on the outside, mill buildings like these are generally emptied and devoid of any machinery that might indicate what once was made here. The machines may have been broken down and sold for scrap, or purchased at auction piecemeal by smaller manufacturers.



Mohawk Mills.
Source.



Mohawk Mills.
Source.

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AMSTERDAM [NEW YORK] Stephen Sanford & Sons Inc.

- > The Stephen Sanford & Sons mills (more popularly known as Bigelow-Sanford) appear to have lost some buildings, judging by aerial photographs seen at this website. After the great carpet manufacturing flight to the southern United States in the 1950s, some of the factories found reuse. The last major tenant to occupy this site was toy manufacturer Coleco, which arrived here in the late 1960s for a run that lasted twenty years. Coleco didn't use the site for manufacturing, but rather for packaging and shipping popular '80s toys such as Cabbage Patch Dolls.

v

Also of interest, the Friends of Sanford Stud Farm are partnering with the Town of Amsterdam to help oversee the restoration and preservation of the former Sanford Stud Farm as a Heritage Center because of its historical, educational, architectural and cultural significance. Stephen Sanford turned to recreational pursuits as an outlet from the stress of business life and established one of the largest and most recognized thoroughbred breeding facilities in the nation. The Broodmare barn has suffered neglect in recent years and is in urgent need of preservation.

Today, the mills house a variety of businesses, though the hustle and bustle of the days of carpet-making are long over. Current tenants produce solar pool covers, tent sidewalls, kitchen cabinets, and dog agility equipment. Willow Street Lace (formerly Bojud knitting mill) manufactures lace.



Stephen Sanford & Sons Inc.
Source: Rob Yasinsac.



Stephen Sanford & Sons Inc.
Source: Rob Yasinsac.

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AMSTERDAM [NEW YORK] Chalmers Knitting Mill.

- > Not nearly as extensive as the Sanford or Mohawk/McCleary & Co mills had been, the Chalmers Knitting Mill nonetheless was a formidable presence on Amsterdam's south shore of the Mohawk River, where it is the major industrial ruin today. The Chalmers mill was built in the 1910s on what previously had been F. Gilliland Son's Planing Mill, the Amsterdam Lumber Company's yard, and the City Dumping Ground. Chalmers's was not a rug factory like the big players in town, but a textile mill that produced underwear -not "boxers or briefs," but basically long underwear that was common in the late 19th and early 20th century. The underwear factory closed in 1959, but the buildings remained in use by other small industrial firms. None lasted too long, and the mill slowly became vacant over the next several decades.

The ruin is something of a political ping-pong ball at the moment. In 2007, the building was slated for demolition. The City of Amsterdam received 1.4 million dollars through a state program called Restore NY for demolishing the Chalmers mill. Part of the program required a review from the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP), which did not find the mill of historical significance and signed off on the demolition.

A year later, developer Uri Kaufman (of Harmony Mills lofts in Cohoes, NY) announced plans to renovate the mill into condominium loft apartments. The City's Common Council rejected Kaufman's plan in 2009, and demolition plans were put in place once again. Contractors were invited to tour the building late in 2010 prior to submitting bids for abatement and demolition. In early 2011, Kaufman filed a lawsuit to block the demolition. Also early in 2011, the Chalmers Knitting Mill was listed on the National Register of Historic Places (presumably following a more positive review by New York State OPRHP). For now the Chalmers mill remains a south side landmark.



Chalmers Knitting Mill.
Source: Rob Yasinsac.



Chalmers Knitting Mill.
Source: Rob Yasinsac.

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AMSTERDAM [NEW YORK] Guy Park Manor

- > Guy Park, also known as Guy Park State Historic Site, is a house built in 1774 in the Georgian architectural style for Guy Johnson, the Irish-born nephew and son-in-law to Sir William Johnson, 1st Baronet, the British Superintendent for Indian Affairs in colonial New York. Built of limestone, the house was originally situated on a square mile of land on the north side of the Mohawk River and near it for access to water transportation.

Born in Ireland, Guy Johnson emigrated to New York as a young man, moving to the Mohawk Valley where his uncle had his base. Guy Johnson commissioned a limestone house in the Georgian architectural style, which was built in 1774. After his uncle William Johnson died in 1774, Guy was appointed by the Crown to succeed him as British Superintendent for Indian Affairs. As a Loyalist Johnson risked imprisonment, because of the hostility of local settlers who favored independence in the coming American Revolutionary War.

He gathered allies and friends and left the area in 1775 for Canada, abandoning his mansion. By 1779, he had established headquarters in Niagara, Ontario, from where he directed military forces against the rebels in the Mohawk Valley. After the war, he returned to London, where he died in 1788.

In 1779 the new governments of the United States and New York declared as traitors those Loyalists who had gone to Canada, and the state confiscated their properties. The state sold Guy Park to a private owner. A steady flow of migrants moved along the road in the plain by the Mohawk River as part of the European-American settlement of former Iroquois lands. At this time, the state and speculators were selling millions of acres of land to the west; thousands of migrants from New England crossed the state seeking such lands; some veterans were awarded grants of land in lieu of pay.

Guy Park was used for years in the early nineteenth century as a tavern and stagecoach stop, as it was on the Mohawk Turnpike next to the river, the two main transportation routes across the state. The Erie Canal was completed in 1825, and a lock is located near the house. Later, the house was sold and served again as a private residence for many years.

In 1907 the mansion was purchased by the state for preservation as a historic site. In the early 21st century, it was adapted for use as a local history museum, the Walter Elwood Museum. Elwood, a history teacher, began collecting in the 1930s. The museum has featured exhibits from his large collection of local artifacts, ranging from historic objects crafted by the Mohawk and other Iroquois tribes of New York, to items related to the development and history of the Erie Canal, the local carpet industry, and the city of Amsterdam.

In August 2011, shortly after being occupied by the museum, the house was severely damaged by flooding of the Mohawk River in the aftermath of Hurricane Irene. Half of two floors were destroyed and contents soaked and scattered. The state has struggled to stabilize the building.[4] The museum has moved to a new location.

The house is listed on the National Register of Historic Places.



Old Guy Park House, Amsterdam, NY. 1912, unknown photographer.



Floodwater damage on Guy Park Manor in Amsterdam, N.Y. Guy Solimano for The New York Times, 2011.

X

AMSTERDAM [NEW YORK] Erie Canal Locks 11

- > There are 34 locks on the Erie Canal that separate the Hudson River at Waterford with the Niagara River near Buffalo. Each lock is very similar to the others, each with chamber dimensions capable of raising and lowering boats up to 300 feet long, 43.5 feet wide and have a 12' Draft. The maximum height above the waterline is 21.5 feet east of Three Rivers (Oswego Canal junction) and 15.5 feet to the west. These dimensions allow most recreational cruisers to travel the Erie Canal.

The locks along the Erie Canal are all very similar and operated by electricity. The locks service barges, cruise ships and recreational boaters alike. At each lock there are both large capstans for pulling barges and smaller dropped lined for the recreational cruiser. Waiting times are typically very short for entering a lock and locking through usually takes approximately 15-20 minutes depending on the size of lock.

All the NYS Canal Corporation locks are open to the general public for visiting, some also include picnic tables, grills, viewing platforms, and other park-like amenities. Visitors can watch the boats lock through, fish, picnic and some locks offer even more. Boats are welcome to tie up for the night at many locks free of charge. Check with the lock master for approval as some approach walls are not large enough to allow docking and provide access for larger boats and barges to enter the lock safely.

Erie Canal Lock 11 in Amsterdam is a nice place to visit for a number of reasons. It is located next to the Guy Park Mansion which hosts a museum to visit. The primary contractor for Lock E-11 was Alexander Murdock of Baltimore, Maryland. Work began in 1907 and was completed by 1912 at a cost of about \$450,000. Over 113,000 cubic yards of earth and 2,400 cubic yards of solid rock were excavated. Concrete used in the construction totaled 28,650 cubic yards. Much of the stone was quarried from a site located across the street. Almost 4,000,000 pounds of structural steel were used in the lock, and 200,000 pounds of iron chain. The lock has a usable width of 44 and 1/2 feet and a length of 300 feet.



The spillway at Lock E11.
nycanals.com



Lock along the Erie Canal.
Matt Ossowski, 2017.

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AMSTERDAM [NEW YORK] Riverfront Center / Amphitheater / Downtown

- > Now titled “The Amsterdam Riverfront Center”, the old Amsterdam Mall is almost entirely offices. The only stores that remain are a watch repair store, a medical equipment store, a chinese take-out restaurant and a pizza joint in the middle of the second floor. Also on the outside of the mall are a True Value Hardware Store and a JCPenney Catalog Store which can only be accessed from the outside.

Anchored in the heart of downtown Amsterdam, NY the Riverfront Center offers 255,000 square feet of economical office space. The facilities present businesses with convenient access to the New York State Thruway and a cost friendly alternative to the Capital Region. The facility is home to a variety of traditional enterprises including corporations, medical practices and attorney offices.

Amsterdam experienced serious flooding damage in the aftermath of Hurricane Irene in late August 2011. This flooding threatened properties at the river’s edge due to erosion and water damage.

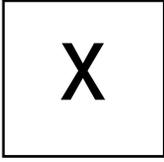
Most of the downtown was destroyed by urban renewal efforts. A few historic buildings and sites mostly from the 19th and 20th centuries remain, including the Amsterdam (46th Separate Company) Armory, Amsterdam City Hall, Gray-Jewett House, Green Hill Cemetery, Greene Mansion, Guy Park, Guy Park Avenue School, Saint Stanislaus Roman Catholic Church Complex, Temple of Israel, United States Post Office, and Vrooman Avenue School, are listed on the National Register of Historic Places.



Interior of the Mall, 2005.
deadmalls.com



Interior of the Mall, 2005.
deadmalls.com



AMSTERDAM [NEW YORK]
Davey Island

- > Davey Island, New York is an island and is southeast of South Amsterdam and south of Amsterdam. Davey Island is nearby to North Chuctanunda Creek Bridge and Coessens Park.



Davey Island, 2015.
John Klos.

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AMSTERDAM [NEW YORK] Pedestrian Bridge / Re-Development Site

- > The Mohawk Valley Gateway Overlook is a public pedestrian bridge located in the City of Amsterdam, New York. It is 30 feet wide and spans 511 feet (156 m) over the Mohawk River. The bridge connects Riverlink Park, which is located on the north shore of the river, to Bridge Street, which is on the south shore. Construction began on the bridge in June 2014 and it was opened to the public in August 2016. It features numerous trees and flower plantings, as well as local historical and cultural information engraved into the decking and on plaques along the railings. It is the first bridge spanning over water to include live trees planted on its surface.[citation needed]

The primary source of funding for the project was \$16.5 million allocated in the Rebuild and Renew New York Transportation Bond Act of 2005. An additional \$1.65 million for artistic elements and other amenities was provided by grants from New York State.

The opening of the bridge was marked by a ribbon-cutting ceremony on August 31, 2016. New York Lieutenant Governor Kathy Hochul, Congressman Paul Tonko, State Assemblyman Angelo Santabarbara, Montgomery County Executive Matthew Ossenfort, Amsterdam Mayor Michael Villa, and New York State Canal Corporation directors William Finch and Brian Stratton, were speakers at the ceremony.

The bridge is maintained by the City of Amsterdam and the New York State Canal Corporation.

The idea to build a pedestrian bridge to connect the north and south sides of the city was proposed in an updated version of the city's comprehensive plan which was released in 2003. Paul Tonko, who was a New York State assemblyman, fought for the inclusion of \$16.5 million for the project in the Rebuild and Renew New York Transportation Bond Act of 2005. The act authorized a total of \$2.9 billion in borrowing for statewide transportation-related projects and was approved by referendum in November 2005.

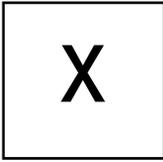
In 2015, von Hasseln presented an economic case for the bridge to city residents. Citing statistics from Erie Canal Way National Historic Corridor studies, he proposed that if the bridge drew 30,000 visitors per year, the potential economic impact for local businesses could total \$10,210,460 per year, which would generate an additional \$408,418 in Montgomery County sales tax, and \$64,121 for the city. The visitor estimate was based on the actual number of guest book signers per year at the Bridge of Flowers in Shelburne Falls, Massachusetts. Von Hasseln said that given Shelburne's lower regional population, greater distance from a major highway, and lack of any other major attractions in comparison to the Amsterdam location, that he saw no reason why the MVGO shouldn't at least be able to draw the same numbers.



Dial of the Mohawk Valley Gateway Overlook pedestrian bridge, 2016.
Jess Mann



Mohawk Valley Gateway Overlook pedestrian bridge, 2016.
Saratoga Associates



AMSTERDAM [NETHERLANDS]

HISTORY

- > Amsterdam is the capital city and most populous municipality of the Netherlands. It has a population of 866,737 within the city proper, 1,380,872 in the urban area and 2,410,960 in the metropolitan area.

Amsterdam's name derives from Amstelredamme, indicative of the city's origin around a dam in the river Amstel. Originating as a small fishing village in the late 12th century, Amsterdam became one of the most important ports in the world during the Dutch Golden Age (17th century), as a result of its innovative developments in trade. During that time, the city was the leading center for finance and trade.

In the 19th and 20th centuries the city expanded, and many new neighborhoods and suburbs were planned and built. The 17th-century canals of Amsterdam and the 19–20th century Defence Line of Amsterdam are on the UNESCO World Heritage List.

The city has more than one hundred kilometers of grachten (canals), about 90 islands and 1,500 bridges. The three main canals (Herengracht, Prinsengracht and Keizersgracht), dug in the 17th century during the Dutch Golden Age, form concentric belts around the city, known as the Grachtengordel. Alongside the main canals are 1550 monumental buildings.

Amsterdam is located in the Western Netherlands, in the province of North Holland, although it is not its capital (which is Haarlem). The river Amstel ends in the city centre and connects to a large number of canals that eventually terminate in the IJ. Amsterdam is about 2 metres (6.6 feet) below sea level. The surrounding land is flat as it is formed of large polders. A man-made forest, Amsterdamse Bos, is in the southwest. Amsterdam is connected to the North Sea through the long North Sea Canal.

The city boasts more than 100 kilometres (60 miles) of canals, most of which are navigable by boat. In the Middle Ages, Amsterdam was surrounded by a moat, called the Singel, which now forms the innermost ring in the city, and makes the city center a horseshoe shape. The city is also served by a seaport. It has been compared with Venice, due to its division into about 90 islands, which are linked by more than 1,200 bridges.

| | |
|--|----------------------------|
| Males: | 418 127 (49.5%) |
| Females: | 426 820 (50.5%) |
| Total Population: | 844 947 |
| Median resident age: | 42.1 years |
| Netherlands median age: | 38.6 years |
| Estimated median household income in 2018: | €48 036 |
| | NL: €37 000 |
| Estimated per capita income in 2018: | €19 981 |
| Estimated median property value in 2019: | €472 375 (US\$536 686) |
| | NL: €301 279 (US\$341 161) |

MEAN PRICES IN 2019

| | |
|----------------------|-------------------------|
| All housing units: | €301 279 (US\$341 161); |
| Apartment: | €264 409 (US\$301 147); |
| Terraced house: | €278 167 (US\$316 817); |
| Detached house: | €437 633 (US\$498 440); |
| Semi-detached house: | 319 663 (US\$364 079); |
| Corner houses: | €287 343 (US\$327 268). |

Source: Statistics Netherlands (CBS)
and Centraal Planbureau (CPB),
accessed July 2019.

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AMSTERDAM [NETHERLANDS] FLOOD CONTROL IN THE NETHERLANDS

- > The Amsterdam canal system is the result of conscious city planning. In the early 17th century, when immigration was at a peak, a comprehensive plan was developed that was based on four concentric half-circles of canals with their ends emerging at the IJ bay. Known as the Grachtengordel, three of the canals were mostly for residential development: the Herengracht (where "Heren" refers to Heren Regeerders van de stad Amsterdam (ruling lords of Amsterdam), and gracht means canal, so the name can be roughly translated as "Canal of the Lords"), Keizersgracht (Emperor's Canal), and Prinsengracht (Prince's Canal). [136] The fourth and outermost canal is the Singelgracht, which is often not mentioned on maps, because it is a collective name for all canals in the outer ring. The Singelgracht should not be confused with the oldest and most inner canal Singel.

The canals served for defence, water management and transport. The defences took the form of a moat and earthen dikes, with gates at transit points, but otherwise no masonry superstructures. Flood control is an important issue for the Netherlands: due to its low elevation, approximately two thirds of its area is vulnerable to flooding, while the country is densely populated. Natural sand dunes and constructed dikes, dams, and floodgates provide defense against storm surges from the sea. River dikes prevent flooding from water flowing into the country by the major rivers Rhine and Meuse, while a complicated system of drainage ditches, canals, and pumping stations (historically powered by windmills) keep the low-lying parts dry for habitation and agriculture. Water control boards are the independent local government bodies responsible for maintaining this system.

After AD 1000 the population grew, which meant there was a greater demand for arable land but also that there was a greater workforce available and dike construction was taken up more seriously. The major contributors in later dike building were the monasteries. As the largest landowners they had the organization, resources and manpower to undertake the large construction. By 1250 most dikes had been connected into a continuous sea defense.

The next step was to move the dikes ever-more seawards. Every cycle of high and low tide left a small layer of sediment. Over the years these layers had built up to such a height that they were rarely flooded. It was then considered safe to build a new dike around this area. The old dike was often kept as a secondary defense, called a sleeper dike.

A dike couldn't always be moved seawards. Especially in the southwest river delta it was often the case that the primary sea dike was undermined by a tidal channel. A secondary dike was then built, called an inlaagdijk. With an inland dike, when the seaward dike collapses the secondary inland dike becomes the primary. Although the redundancy provides security, the land from the first to second dike is lost; over the years the loss can become significant.

Taking land from the cycle of flooding by putting a dike around it prevents it from being raised by silt left behind after a flooding. At the same time the drained soil consolidates and peat decomposes leading to land subsidence. In this way the difference between the water level on one side and land level on the other side of the dike grew. While floods became more rare, if the dike did overflow or was breached the destruction was much larger.



The Nederrijn in 1995.
Credit: Henri Cormont.



Water-pumping windmills.
Credit: Henk Monster.

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AMSTERDAM [NETHERLANDS] FLOOD CONTROL IN THE NETHERLANDS [2]

- > The construction method of dikes has changed over the centuries. Popular in the Middle Ages were wierdijken, earth dikes with a protective layer of seaweed. An earth embankment was cut vertically on the sea-facing side. Seaweed was then stacked against this edge, held into place with poles. Compression and rotting processes resulted in a solid residue that proved very effective against wave action and they needed very little maintenance. In places where seaweed was unavailable, other materials such as reeds or wicker mats were used.

Another system used much and for a long time was that of a vertical screen of timbers backed by an earth bank. Technically these vertical constructions were less successful as vibration from crashing waves and washing out of the dike foundations weakened the dike.

Much damage was done to these wood constructions with the arrival of the shipworm (*Teredo navalis*), a bivalve thought to have been brought to the Netherlands by trading ships, that ate its way through Dutch sea defenses around 1730. The change was made from wood to using stone for reinforcement. This was a great financial setback as there is no natural occurring rock in the Netherlands and it all had to be imported from abroad.

Current dikes are made with a core of sand, covered by a thick layer of clay to provide waterproofing and resistance against erosion. Dikes without a foreland have a layer of crushed rock below the waterline to slow wave action. Up to the high waterline the dike is often covered with carefully laid basalt stones or a layer of tarmac. The remainder is covered by grass and maintained by grazing sheep. Sheep keep the grass dense and compact the soil, in contrast to cattle.

At about the same time as the building of dikes, the first swamps were made suitable for agriculture by colonists. By digging a system of parallel drainage ditches, water was drained from the land to be able to grow grain. However the peat settled much more than other soil types when drained and land subsidence resulted in developed areas becoming wet again. Cultivated lands which were at first primarily used for growing grain thus became too wet and the switch was made to dairy farming. A new area behind the existing field was then cultivated, heading deeper into the wild. This cycle repeated itself several times until the different developments met each other and no further undeveloped land was available. All land was then used for grazing cattle.

Because of the continuous land subsidence, it became ever more difficult to remove excess water. The mouths of streams and rivers were dammed to prevent high water levels flowing back upstream and overflowing cultivated lands. These dams had a wooden culvert equipped with a valve, allowing drainage but preventing water from flowing upstream. These dams, however, blocked shipping and the economic activity caused by the need to transship goods caused villages to grow up near the dam, some famous examples are Amsterdam (dam in the river Amstel) and Rotterdam (dam in the Rotte). Only in later centuries were locks developed to allow ships to pass.



Oosterscheldekering.
Vladimir Siman, Creative Commons license.



The Maeslant Barrier seen from the north.
DeltaWorks Online.

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AMSTERDAM [NETHERLANDS] FLOOD CONTROL IN THE NETHERLANDS [3]

- > Further drainage could only be accomplished after the development of the polder windmill in the 15th century. The first drainage mills used a scoop wheel that could raise water at most 1.5 m. By combining mills, the pumping height could be increased. Later mills were equipped with an Archimedes' screw which could raise water much higher. The polders, now often below sea level, were kept dry with mills pumping water from the polder ditches and canals to the boezem ("bosom"), a system of canals and lakes connecting the different polders and acting as a storage basin until the water could be let out to river or sea, either by a sluice gate at low tide or using further pumps. This system is still in use today, though drainage mills have been replaced by first steam and later diesel and electric pumping stations.

Three major European rivers, the Rhine, Meuse, and Scheldt, flow through the Netherlands, of which the Rhine and Meuse cross the country from east to west. The first river dikes appeared near the river mouths in the 11th century, where incursions from the sea added to the danger from high water levels on the river. Local rulers dammed branches of rivers to prevent flooding on their lands only to cause problems to others living further upstream. Large scale deforestation upstream caused the river levels to become ever more extreme, while the demand for arable land led to more land being protected by dikes, giving less space to the river stream bed and so causing even higher water levels. Local dikes to protect villages were connected to create a ban dike to contain the river at all times. These developments meant that while the regular floods for the first inhabitants of the river valleys were just a nuisance, in contrast the later incidental floods when dikes burst were much more destructive.

The 17th–18th centuries were a period of many infamous river floods resulting in much loss of life. They were often caused by ice dams blocking the river. Land reclamation works, large willow plantations and building in the winter bed of the river all worsened the problem. Next to the obvious clearing of the winter bed, overflows (overlaten) were created. These were intentionally low dikes where the excess water could be diverted downstream. The land in such a diversion channel was kept clear of buildings and obstructions. As this so-called green river could therefore essentially only be used for grazing cattle, it was in later centuries seen as a wasteful use of land. Most overflows have now been removed, focusing instead on stronger dikes and more control over the distribution of water across the river branches. To achieve this, canals such as the Pannerdens Kanaal and Nieuwe Merwede were dug.

In 1997, a committee reported in 1977 the weakness of the river dikes, but there was too much resistance from the local population about demolishing houses and straightening and strengthening the old meandering dikes. It took the flood threats in 1993 and again in 1995, when over 200,000 people had to be evacuated and the dikes only just held, to put plans into action. Now the risk of a river flooding has been reduced from once every 100 years to once every 1,250 years. Further works in the "Room for the River" project are being carried out to give the rivers more space to flood and in this way reduce the flood height.



Flevopolder.
Beeld Google, bewerking NRC.



Watersnoodramp.
Credit: Pieter Kuiper.

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AMSTERDAM [NETHERLANDS] ROOM FOR THE RIVER

- > In the Netherlands, Room for the River (Dutch: Ruimte voor de Rivier), is a government design plan intended to address flood protection, master landscaping and the improvement of environmental conditions in the areas surrounding the Netherlands' rivers. The project was active from 2006–2015.

The Rhine delta experiences annual flooding. In 1993 and 1995, floods threatened to devastate regions surrounding the delta. In the neighboring vicinity, over 200,000 people were evacuated. Contrary to popular belief, no dikes broke. But climate change is ongoing, and as river floods annually distribute sediment throughout the floodplain space that was initially allowed for annual flooding diminishes. In 2006, the Dutch Cabinet proposed the Spatial Planning Key Decision (SPKD). The SPKD is a design plan for more highly innovated structures and the modification of existing structures in the immediate floodplain areas. The project was active from 2006 to 2015.

The Room for the River project site encompasses four rivers: the Rhine, the Meuse, the Waal, and the IJssel. The project area is in the Netherlands, but morphological impacts extend upstream into Germany, portions of France and Belgium, and may reach to the Rhine headwaters in Switzerland over time.

The design presents an integrated spatial plan with the main objectives of flood protection, master landscaping and the improvement of overall environmental conditions. Completion of a basic package of forty projects is foreseen for 2015, with a budget of €2.2 billion.

Measures in the plan include: placing and moving dykes, depoldering, creating and increasing the depth of flood channels, reducing the height of the groynes, removing obstacles, and the construction of a "Green River" which would serve as a flood bypass. This will result in lower flood levels. Rhine branches will be able to safely cope with an outlet capacity of 16,000 cubic metres of water per second. Measures implemented to achieve this were designed to simultaneously improve the quality of the environment of the river basin.

- **Relocation of dykes**

Dykes will be relocated farther from the river shore. This will create additional space within the flood plain for the river during annual floods.

- **Lower the level of floodplain**

In addition to the relocation of the dykes, the floodplain bottom will be lowered in depth. Increasing the depth in the floodplain must occur due to the collection of sediments in the area after years of regular flooding.

- **Reduce height of the groynes**

The groynes within the riverbed will be lowered to allow for more drainage to occur during an increase in water levels more quickly than presently positioned. Groynes will be added in specified locations in addition to the modifications occurring to the existing structures.

- **Construction of a "Green Channel"**

A "Green Channel" will be constructed serving as a flood bypass around Veessen-Wapenveld.

- **Increase the depth of the side channels**

Side channels will be lowered in depth to increase the barrier between the river and infrastructures and residents. It will also allow for more water to be removed from the flooded location thus reducing the breach of the dykes.

- **Removal of obstacles**

Locations along the river where there are obstacles will be addressed. For example, the hydraulic bridge at Oosterbeek will be removed.



Room for the River.
Siebe Swart.



Room for the River.
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