The ‘Future Commons’ 2070
Rethinking the Collective, Urban Morphologies and Climate Change

Course Description:
This studio examines the infrastructure of the metropolis and its influence on urban form and development. Topics include systems for transportation, energy use, water distribution, civic institutions, spaces of social exchange, and ecology. Students develop urban infrastructure propositions with reference to innovative urban projects worldwide.

Specific Description:
Where an architectural approach provides linkages between a multiplicity of elements, scales and programmatic events whether: built or suggestive; past and present; physical and abstract; and the existing context and contingencies making it highly contextual and profoundly human. Excerpt Metabolist Manifesto

This is an international and interdisciplinary graduate design studio, working with students and faculty at TU Delft as well as other experts/professionals in the Netherlands. The focus of this Design Studio is the urbanised Dutch delta landscape and the projected transformations brought about by change, whether due to climate, urbanization, or economic (shifts in modes of production, energy networks etc.), which provide both opportunity and threat. The studio investigates the historic and current landform/water infrastructures, crucial to the formation of the Dutch cultural landscape, its urban form and its architectures and uses change to propel new proposals. In the Dutch Urbanised Delta, notions of a collective or social contract (water boards, governmental policies etc.) are embedded as are the landform/water infrastructures, which act to regulate and control water levels, keeping and constructing their Land. Therefore infrastructures and social contracts mediate the dynamic relation between urban systems and natural processes. The combination - natural and synthetic systems -
the resultant of thousands of years of anthropogenic activity has created a cyborg landscape where “there is no such thing as either man or nature now, only a process that produces the one within the other and couples the machines together”\(^1\)

Ground, here is established, (sold and developed) through the continual pumping and displacement of water. A three-tiered infrastructural system is their defense from both the North Sea and River inundation, but with the unpredictability of climate change: increases in sea level rise (3.5 meters); extreme storm events; and changes to ecosystems, the morphological transformation of the Dutch megalopolis and the eventual erasure either partial or full is assured. Within this scenario, students are asked to develop an idea of ‘the commons’ through an examination of the Dutch landform/water infrastructures (Arch 5199), its history as well as the various regulations, plans set by the various levels of government, the EU and professional proposals in order to sets of parameters, create productive pairings and potential scenarios that are in dialogue with attitudes of control/expand + flood/retreat.

The studio methodology employs a system of layering using: i) systems theory (scalar/temporal), ii) mapping (GIS, video/photographical documentation +analysis) and iii) the scenario, in order to strategize and project alternate realities 2070 for the Dutch – New Worlds. It combines pragmatics and imagination, informed by historical fact (relationships to the North Sea & estuary condition), existing conditions, trends and predictive models, to test and redefine social/urban/landscape paradigms and cartographical borders. It uses, ideas of the commons to provide adaptable, scalar and temporal links between the dynamics of the North Sea and Delta, its existing infrastructures, urban/architectural form, and lived experience of place. It uses a systemic approach, finding within the existing contexts (its urban form and infrastructural systems) opportunities: where infrastructure need to be renewed or replaced (not meeting guidelines mandated by the government), or areas of conflict/pressure to connect strategically addressing temporally and spatially how we might live in 2070.

The Dutch’s long history of adaption, innovation and scenario-projections, as well as other projectie models (the metabolists, etc.) enable us’ to ‘think outside the box,’ and see potentials, ‘rethink’ and create opportunities between sets of relationships? The studio asks can systemic thinking, envision new relationships between the Dutch and their Landscape, and in this way perhaps even ‘reinventing’ in the face of climate change new visions for the future of Dutch Cities using both real data and imaginatively projecting forwards the studio looks to create visions for the ‘Dutch New Worlds’ 2070.

- How can architecture strategically operate within change?
- How can the interplay between architecture and infrastructure be exploited, being more than functional (protection, adapt...) embedded in both natural and cultural processes as well as everyday ritual?
- Can paradigm shifts of ideas for new ‘collectivity’ act as mediator between scales, acting both locally (site specific) & at the scale of the territory & potentially a way forward?
- What is the future geography of the North Sea with its shifting position between land/water, nature/urbanity, and machine/nature? Perhaps these transnational ‘new grounds’ also hold potentials for climate adaptation?
- How can design strategies programmatically address both territorial (environmental, social + economic) and local concerns engaging ‘people’ of varying interests in new ideas of the commons?

\(^1\) Gilles Deleuze and Félix Guattari, (1980) Anti-Oedipus 2)
Sets of productive couplings are developed in both the Humanities course, Arch 5199 - Delta Urbanism and the design studio, using mapping, analysis of infrastructures, scenarios and case studies (both real and utopian scenarios (past and present)) to develop territorial as well as local-site scale understandings of key relationships and processes, and inform potential Design strategies. "The urgency of sustainable and secure urban collectives mobilizes intelligence and ambition that exceeds standard piecemeal solutions to climate change." In taking on these dynamic and complex issues, within the Urbanised-Delta Landscape, a regional scale approach is necessary testing the Design.

Background

**Landscapes of Coexistence a Territorial Perspective – North Sea**

The landform/water infrastructures established along the North Sea and within Delta Landscape, include much of Holland; parts of Belgium; Denmark; France and Great Britain, have enabled urbanization for centuries within these dynamic and transitional landscapes. These urban forms will be greatly affected by issues of climate change. The cultural history of the North Sea territory, bordering as it does Europe’s mainland, has long been a contested one and has often turned into a platform for geopolitics, whether with the UK or the Nordic countries. It’s strategic role, has manifest itself in various military, religious, economic, and social ties and divides, which have consequently made the North Sea a ‘common’ ground of conflict. Ongoing crisis whether refugees or the Brexit, are only very recent examples of it’s long history. As a result, the sea is not seen as a periphery of Europe but rather a central territory and a point of departure through which the idea of Europe would be defined or challenged. Its physical/natural history also yields ‘ground,’ as evidenced by previous habitation – a myth, the city of ‘Atlantis’ and ‘Doggerland’ or fact - submerged after the ice age retreat and dramatic sea level rise, found by archaeologist on the shallow shelf, that would have at one time connected Great Britain to Europe. This arguably also reveals the very real challenge faced by the Netherlands in relations to climate change, but it also reveals that ‘North Sea’ has been previously urbanized. Thus, urbanization is not just what we can see, on top of its’ deceptive continuum - the multiple military platforms, extraction fields, oil platforms, but the network cables, and transport corridors that lye below. So, what we see today as fixed/static is not in fact permanent. These layered histories and processes of urbanization, imply a different idea of reading ‘context’ and also how, we in developing design strategies that conceptualize change/permanence, spatial/temporal, and central to the studio’s investigation.

(left) Map the North Sea + Surround, TUDelft; (right) Sea Level Rise ans North Sea Edge; (above rt bottom) Arial, Jeff Schmaltz, MODIS, NASA/GSFC @ visibleearth.nasa.gov.

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The Dutch - A National Perspective

In the Netherlands, land is in fact fixed, through a continual process of securing it. This process is necessary as large portions of its land mass are well below sea level (-0.8 to -2 meters), and therefore as an urbanized Delta Land is not a given. Therefore the definition of ‘land’ scape, in Dutch land ‘schap’ or ‘schop’ refers literally to the act of forming ‘land’ and the continual process of constructing and reconstructing it and enabling terra firma. Here, systems of ‘land’ scape and water infrastructure form the base of culture, its’ histories and the very foundational form of their urbanity. So entwined that, city names reflect this history - Den Hague (a hedge/wicker enclosure); Leiden (to build into the lee of a hill/natural levee/dune in a lowland/wooded vale); Amsterdam or Rotterdam, both dams; or Antwerp (built on a twerp/mound) all constructive or land forming strategies at the base of their Urban Form. These ground works, are “…arguably the first and most fundamental act of topographical construction. Every terrain that has been transformed is the foundation of a broad range of human purposes. This in reality forms the bases of most cultural practices⁴, and the very base of all cultural development. The Delta urbanized historically due to the easy access to trade, resources (fish, shellfish, peat for heat…) and its seeming malleability.

(left) Photograph early Dike Construction (Getty Collection)

Human manipulation of the delta is dynamic it is both constructive and destructive. The natural Delta, once created a sort of dynamic equilibrium, of ecosystems [peat bogs, water forests…] that engage the hydrological cycles and kept quantities in check, now have been all but erased and fragmented. Nature, here has been replaced by technological mechanisms (Plodder, Windmills or the Dune Machine), creating a ‘new world’, neither human nor nature and where a coupling of cultural and natural processes producing “the one within the other and couples the machines together.”⁵ This is seen throughout history and the struggle over territory, between nature, the North Sea and the Dutch and can be traced in the land, whether lost or won (IJsselmeer/Biesbosch). Land accrued, through planning, and technological innovation (infrastructures such as windmills, dams, plodders, dike rings, sand machines, etc.), it is organized and regulated socially, locally, provincially (water boards), nationally & transnationally, in a continual process of innovation and adaption. The Dutch’s three-tiered protection system (flood gates, sea & river dykes) act together to control water and protect urban centers, these along with continual innovation, as for example adding ‘soft’ systems (‘Make Room for the River’ projects, ‘Blue Green Infrastructures’ in cities), ‘work with nature’ (sand & mud engines, porous break walls, Happy Isles, West 8 (2006), or Dune/Garage at Katwick (2016) etc.), which create a layered and resilient though somewhat artificial nature. Using existing proposals, for the ever-

⁵ Gilles Deleuze and Félix Guattari, (1980) Anti-Oedipus 2

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increasing threat of climate change (sea rise, storm surge, etc.), or to meet other challenges (clean/sustainable energy) OMA’s Roadmap 2050 (2009 for the EU and UN), ‘Zeekracht’ or M.U.D.’s Mare Meum (2005 for Belgium’s coastline) etc. This Studio will develop scenarios at the scale the commons and the territory. The control of land, no longer an autonomous entity by which the political, environmental, economic and societal questions can be addressed, instead spatial proposition, whether landscape, urban or architectural, would be challenged and revisited through the lens of the ‘territory. In this way, students are encouraged to redefine the role of the territory - of the sea, its land/urban borders, addressing the complex and not so visible, spatial, juridical, environmental and geopolitical nature of the North Sea in their designs - spatial interventions informed by ideas of retreat/flood or control/expand paired with ideas of ‘the commons’ and climate adaptation.

Method

This international and interdisciplinary design studio will focus on the transformations of delta landscapes – as a crucial urban system that regulates the dynamic relation between natural processes and societal practices as both an opportunity and threat for future urbanisation. Individual projects of Dalhousie students will focus on the Netherlands Delta Landscape, while other students will focus their research on other regions (England, Denmark…) of the North Sea. Our studios will emphasis the agency of spatial intervention in the production of territory and it traces the narrative of space occupation as drawn on the landscape over time. “In this context, infrastructural space is analysed and designed as a medium – manifesting the programmatic dimensions and the trans-scalar nature of the territorial project combining architecture, urban design and landscape design. The studio takes stock of contemporary landscape urbanism theories and practice, next to the mutual relationships between architecture and territory, to explore potential paths forward for robust design thinking.”

(right) Flood Areas (light-1-2m below water, dark grey .5/.1>5m flood depth), Urban Centers (red), shows that the majority of Holland is under dutchdikes.net;

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Students are asked to formulate their research direction combining research and design. Developing research initiated in Arch 5199 on an infrastructural system and how one of these technologies (Polder; Dykes/Leves, Ring Dike, Road/Rail; Artificial Lakes, Canals or Moats; Twerpen/Artificial Mounds; Windmill/Pump etc.) were developed, applied and adapted temporally in relationship to cultural/technological change. In the Design studio, students are asked to reflect on aspects of spatial morphology (scale, unit-aggregation, form-field, structure-network, performance-outcomes), landform (geology, altimetry/bathymetry, topography), and attachment to urban infrastructures. It takes on complex processes as its main theme, how do we understand, represent, work with and design in relationship to these complex and dynamic process of the changing delta.

Using systems theory and Ian McHarg’s Cartographical Method of Mapping, students compile both physical and digital maps/data, to visualize these interconnected dynamic scalar relationships between infrastructural systems, urbanization and the larger scale of landscapes systems of the North Sea and the Delta both spatially and temporally. They also use a case studies and the scenarios to create strategies that connect territorial, infrastructural and architectural scales (types & formations), and various aggregate/field models that address issues of social, climatic, economic or environmental (the dynamics of the Delta Landscape) change and how adaption could be ‘played out’ to create new ‘Vision’s for the North Sea and the Delta region. These visions for the future create a system of connectivity and ideas for the commons’ that can be applied at the scale of the territory and like Super Studio’s Infinite Grid, or OMA’s Zeekracht ‘city/system’, where a ring infrastructure system is built to with stand and adapt to changes of climate, sea waves, etc. built like the oil platforms far from Land. These, new Models of Urbanization propose new urban/infrastructural/architectural strategies like Kenzo Tange Tokyo Bay, the Smithson’s Mat-City, Unger’s Grossformen, or Constance’s New Babylon which responded to crisis and necessity after WWII and have potential to create new narratives for survival.

The studio develops the scenario to: test their Design Strategies; to play out temporal and scalar relationships; and design potential for adaptability to change. It asks what potentials New Models of Urbanization challenge current urban morphologies in light of climate change, sea level rise, and changes in production through automation, globalization, migration, etc. to project future scenarios for 2070. It asks how architecture can act in the face of change, either reconnecting urban matrixes, shore up existing urban centers/monuments or create new towns/infrastructural propositions for production and living in the Netherlands (agricultural, energy, industry and/or trade). Each scenario brings its own sub-questions:

- How does one depart/arrive, landing/returning from/to the sea and/or urban center; or is it a shoring-up or yet still, a new infrastructure.
- How does it adapt to climate change, attach to or build upon the existing urban/infrastructural context.
- How is infrastructure/architecture inhabited, with what programs, are they temporary/permanent?
- Does this mean settling or grounding areas within the North Sea?
- What does this mean to the existing cities of today?
Students are asked to experiment and learn how to ask a question, set parameters and test their design ideas, working through a cyclical methodology, Systems Theory, to understand the relational parameters (forces, origins, extents) and processes and how their scheme relates to the nested scales, architectural and territorial, as well as the temporal dimensions in which their projects are operating. The studio asks, what are the implied effects of what they are proposing, what does it infer in terms of urban, social, economic, and ecological or hydrological impacts over time.

Course Format:
Design Studio will be composed of a series of activities including: Research and Design, Lectures and Workshops. While in the Netherlands you will be expected to: Research, Analysis, attend Lectures and Tours. Hours expected during an average week for all course-related activities is 18 hours including class time (6 credit-hours x 3) All Course Material, Schedules, Reference Material [Maps, Websites, Readings, Lectures etc.] are found on Course Brightspace.

1. Mapping:
   Research and Mapping is an integral to Design, it is used to Understand, Create Parameters, delineate Extents and Set Relationships: Spatially - dimension and location; Programmatically in terms of use/user groups and Temporally in terms of phasing/change through Time.
   A set of Maps/ Base Drawings should be developed a various scales (XL, L, M, S).
   - **XL Regional Scale - Infrastructural**: Understanding + Visualizing relationships between Dynamic Systems, spatially + temporally - Software GIS, uses Layers of information/data archival historic various types of maps. [Flood (Risk) Maps/LYDAR/Sea Level Rise etc.]
   - **L Urban/Infrastructural Scale**: Using Parameters, Issues/Problems develop an argument/logic, potential programs, attachment rational (Urban Center & Infrastructure(s))
   - **M Local Site Scale**: How Infrastructure and Program/uses develop through time produce various scenarios that you can test both the site specificity and systemic scale of Ecology & Infrastructural scales.

Note: Presentations in Arch 5199, used to build Design Strategy (connects-Site/Infrastructure/Program etc.)

2. Workshops: See Schedule and Due Dates in individual Handouts, all work
   All Workshop Outcomes, Presented at Midterm and Final Presentations and uploaded to Brightspace.
   i) GIS (Base Map) Group
   ii) Local/System; Fabric, Infrastructure+ Common Space Typologies–Documentation & Analysis
   iii) Case Study Analysis

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Course Format:

3. **Travel to the Netherlands** [Sept 21st/22nd - Returning Oct 7th [Week 3 - Week 4]]
   
   **Travel Costs:** are approximate $2000.00 - $2700.00
   
   i) Flight Halifax to Amsterdam Return $970-1300.00;
   
   ii) Accommodations $312/$500 @ +/- $24/night which has a kitchen included (Group Rate)
   
   iii) Train + Bicycle Rental **OV-chip card** - Plastic OV-chip smart card costs €7.50 (non-refundable, lasts 5 years) to which travel credit can be added. Can be used on any public transport at standard fare tariffs. $450/500
   
   iv) Food $12 - $40 dollars a day depending on eating out etc. 168.00 – 500.00
   
   Funding SWIFT information can be found at http://tinyurl.com/dal-swif
   

   
   Note: All Lectures will be uploaded to Brightspace.

5. **Presentation** (Mid Term and Final) and Pinups as well as Exhibition/Publication of Work
   
   All Case Studies, Presentations to be uploaded as PDF and image files to Brightspace see Schedule for Dates.

Learning Objectives

This Urban Systems Studio investigates **Urban/Regional Infrastructures and Delta Systems** developing a design-research methodology that tests the design project, **urban form and development strategies** at various scales and temporal dimensions (including urban/regional, site context/building and habitation/tectonics).

Site/Territorial Strategy, Program and Construction integration inform the Architectural - Infrastructural strategy.

Developing knowledge and skills in:

- Advanced Design Practices and Methodologies, building on site and context studies from other courses, and extending it to include the interconnected relationships between scales, local and regional systems.
- Analytical Research, Innovation and Critical Thinking that link design strategies to the large territorial scale of delta regions, spatially & temporally.
- Exchanging and integrating knowledge from other disciplines (Architecture, Urbanism, Landscape, Water Eng. & Policy) and creating an interdisciplinary design/research methodology.
- Learning to work collaboratively as well as individually through the various stages of a project.
- Formulating an individual design approach that applies innovative design methodologies & creative techniques for their design.
- Expressing & Representing their design ideas at appropriate scales and understanding how construction methods, material usage & site/territorial strategies can are sustainable and adaptable.
- Learning how to define programs based on existing contexts, current events and trends and project design scenarios. Learning how different cultures, urban structure, histories & contexts can help to inform a design project.
- Learning from first principals and defining dynamic relationships between systems, historic & current events/methods and the significance of processes, whether constructed as cultural/urban or natural.

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Evaluation

Workshops 2, 3 Individual workshop components, to be uploaded as PDF to Brightspace, 20%
Midterm, and Penultimate Reviews are your Individual work showing process and development of ideas from regional, urban/infrastructural and to architectural scales. Include Process, Structure - Form, Analysis, Testing, Program Development and Deployment strategies. 30%.

Design Resolution at the End of Term Review will be worth 50% of the final design grade. All work is thought of as cumulative and building to the final presentation.

Attendance and Participation: All students are required to participate in design studio and active dialogue in discussions is encouraged. Critiques: Requirements for each critique will be specified before the pin-up/presentation. Work should stop at 12:00 midnight before each major critique. No work can continue during a critique unless it is designated a “working critique.” There are NO acceptable excuses for not presenting work due to digital media issues.

Midterm, Penultimate Reviews and End of Term Review Students are asked to concentrate on developing 3 Main Types of Representations to set their visual argument (research, documentation, analysis + testing), used help you frame and communicate your ideas and vision for 2070. As part of your process the Scenario is used tested your Design Strategy at various Scales: XL Regional; L Urban System; M Local Area + S habitation.

- The Map (3 Scalar renditions – Regional, Urban + Site) (XL-S);
- The Model with No Ground (L-M) and
- The Vision Drawing/Section (M-S);

These 3 Main Representations should be accompanied with supporting: i) Explanatory Diagrams: could include but are not limited to: Systems, Edges, Connection/Access, Flow/Directionality, Case Study finings; Growth/Adaption & Deployment; ii) Process (Research & Testing of Ideas): attachment to systems at Regional (Hydrological, Ecological and Geological), Infrastructural, Urban and Architectural and/or Programmatic Unit and Aggregation strategies; iii) Habitation & Temporal Flood no Flood scenarios etc., experiential aspects of their project:

Perspective/Arrial (XL-L) Drawings/Models (section/partial plan) showing Details (material, connection/engagement).

Final Design Submission Should Demonstrate:

The final Design submission is developed through out the term and should include:

The Map (3 Scalar renditions – Regional, Urban + Site) (XL-S); The Model with No Ground (L-M) and The Vision Drawing/Section (M-S).

It should include the following:

- a) XL- L Regional/System Scale: Design a contemporary and innovative Regional System [1:10,000+]
- b) XL- M Design Armature engaging Regional - Urban Systems and Delta/Ecological/Water.
- c) L - M Site intervention/ concept, tested within site model [1:500/1000]
- d) M Building Scale Expressing concept and attitude: interior/exterior, public/private; landscape/urban; programmatic relationships; and urban/infrastructural connections and access. [1:200 & 1:100].
- e) S Resolution of Structure/Connection Ground/Below Water, or Experiential Perspectives/Sections/Details, & Tectonic Detail resolving material connections and Enclosure [1:50& 1:20] [1:100]

As well as Process A summary of testing of Designs functionality at both locally and overall for watersheds, ecosystems and humans scales and reflecting concepts of the projects sustainability.

(above lft) portion of Map of Netherlands North Sea Development Government NL (above rt) portion of Map, Areas of Concern Government NL

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Schedule

Classes will be held twice a week Mondays and Thursdays 2:00 pm - 5:30 pm

**Week 1**
- Monday Sept 9th: **Introduction**
- Thursday Sept 12th: **Mapping Lecture 2: Mapping** (Jennifer Strang GIS Center and Matthew Brown)
  - Workshop 1: GIS - Defining Layers (Group)

**Week 2**
- Monday Sept 16th: **Presentation** of Research, Compiled Base Map Material & Discussion + Define Site Areas (Group)
- Thursday Sept 19th: Connection to Infrastructure, Define Units + The Commons

**Week 3 – Week 4**
- Travel Sept 23rd – Oct 4th
  - Presentations/Tours 1,2,3,4 (Group presentations for Arch 5199)
  - Lectures 3 - 6: H. Meyer, T. Bacchin, F. Palmboom, C.Venart @ TU Delft;
    - A. Loes Neilson, Defacto as well as other Tours/Practices (See Field Trip Schedule TBA)
  - Workshop 2-3: Site/System Documentation **Due Oct 12th**
  - Individual Research, Site Work Archive/Map Library

**Week 5**
- New Worlds
  - New Worlds: Design Strategies of the Commons, the Scenario + Systems
    - Lecture 5: Utopia, Systems and Scenarios
    - Strategies, Setting Parameters & Programs and Diagraming [Grossformen, Metabolists…]
  - Workshop 4 Case Study: Analysis + Comparison, **Case Study Due Nov 2**

**Week 6**
- Retreat/Control
  - Monday Oct 7th: No Class - Thanks Giving
  - Thursday Oct 10th: Make Up Class* [Site Workshops **Due Oct 15th** upload PDF Brightspace]

**Week 7**
- Testing
  - Monday Oct 21st: Design Development/Small Group Presentations
  - Thursday Oct 24th: Desk Crits – In Studio

**Week 8**
- Design Development
  - Monday Oct 28th: Desk Crits – In Studio
  - Thursday Oct 31st: Work in Studio [Case Study **Due Oct 28th** upload PDF Brightspace]

**Week 9**
- Midterm Presentations
  - Monday Nov 4th: Midterm
  - Thursday Nov 7th: Desk Crits – In Studio [Individual Midterm Feedback meetings]

**Week 10**
- Study Break
  - Nov 11th - Nov 15th: no classes

**Week 11**
- Design Development
  - Monday Nov 18th: Lecture 7: Vision Drawings Desk Crits – In Studio
  - Thursday Nov 21st: Desk Crits – Work in Studio

**Week 12**
- Pin Up/Penultimate (Small Groups)
  - Monday Nov 25th: Penultimate Pin Up
  - Thursday Nov 28th: SRIs will be scheduled in Week 12

**Week 13**
- Final Presentation Preparation
  - Monday Dec 2nd: Desk Crits – In Studio
  - Thursday Dec 5th: Desk Crits – In Studio

**Week 14**
- Final Reviews
  - Dec 12th and 13th: Final Reviews – Reviewers TBA

Notes:*Travel to the Netherlands Weeks 3-4, Weeks 5-6 Class time & workload reduced to allow students to catch up in other courses.

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Assessment & Evaluation Criteria:
Students are expected to prepare, attend and participate in discussions, presentations, and group workshops. They should bring skill, imagination, critical awareness and self-motivation to all aspects of their design work. Their proposed site strategy and architectural scheme must be developed to a high level of resolution and show refinement at all scales. All studio work will require design development and be comprehensive in scope including: the various scales of ‘territory’ infrastructural system(s), architectural and habitational; it should articulate the juncture between territory, infrastructure, architecture and the human being. Exploring how existing conditions and systems can adapt to the dynamic and changeable aspects of climate change and shifting social/economic/production needs. *Grading will be done with advice from other Design Instructors, using the Dalhousie Graduate Studies grading policies.*

University Grade Standards (Graduate)
The graduate grades below apply only to the final grade for the course. Note: An individual graduate assignment may be assigned any percentage grade from the undergraduate grade scale 0-100%.

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Grading Format
Evaluations will be issued to students as oral and/or written comments. Grades will also be posted on Brightspace.

Course-Specific Polices
Late Assignments or Missed Tests
With a Student Declaration of Absence, a late assignment normally is accepted without a penalty. Without an SDA, the grade deduction per weekday is a third of a letter grade, e.g., from A to A–. Weekend days are not deducted.

Academic Integrity
Plagiarism software will be used to check written portions of assignments.

Lecture Notes
Pdf’s of lecture presentations will be provided; and students may record lectures.

University Policies and Resources
This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate. See the School’s “Academic Regulations” page (http://tinyurl.com/dal-arch-regulations) for links to university policies and resources: i) Academic integrity; ii) Accessibility; Code of student conduct; iii) Diversity and inclusion; iv) culture of respect; v) Student declaration of absence; vi) Recognition of Mi'kmaq territory; vii) Work safety; Services available to students, including writing support; viii) Fair dealing guidelines (copyright); and viii) Dalhousie University Library.

CACB Student Performance Criteria
The BEDS/MArch program enables students to achieve the accreditation standards set by the Canadian Architectural Certification Board. They are described at https://tinyurl.com/cacb-spc-2017 (pages 14–17). This Dalhousie ARCH course addresses the CACB criteria and standards that are noted on the "Accreditation" page of the School of Architecture website: https://tinyurl.com/dal-arch-spc.
References:

Dutch Landscape/Infrastructure References [Reference Books will be available in the Studio throughout the Term]


Landscape References


Digital References

Propsals:
Courtesy of H+N+S: NORTH SEA+ENERGY 2050 – An Energetic Odyssey https://vimeo.com/199825983
The Future Commons 2070, Map C01 – Harwich to Hoek van Holland and Dover Strait.
Density of the Commons http://www.guerrillacartography.org/2017/01/11/30-31-the-future-commons-2070/

Scientific:
http://www.nature.com/news/antarctic-model-raises-prospect-of-unstoppable-ice-collapse-1.19638
http://ec.europa.eu/environment/index_en.htm
https://www.youtube.com/watch?v=V8hOOAQiMys&list=PL45IKIm1ynFFSWgQv-QW_lSm6sy&index=1

Infrastructural:
http://dutchdikes.net
http://pdokviewer.pdok.nl/
https://nederland.risicokaart.nl/risicokaart.html
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