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 from the Metabolist Manifesto

In rethinking the collective, altered natures and extremes of climate predicted to morphologically transform the megalopolis of tomorrow, this Masters Design Studio investigates the Dutch Urbanised Delta landscape. Interrogating notions of the commons, the Dutch’s long relationship to the North Sea and redefining cartographical borders in relationship to imminent change and the extremes of climate.

The Dutch have a social contract that has enabled them to work together, for centuries to keep control of the constructed ‘ground.’ Here, Water is pumped and displaced to create this seemingly fixed relationship, controlling the line between ground and water. Their defenses against the North sea, are threatened and they face erasure, with the ever increasing predictions of sea water rise (3.5 meters) and change in ecosystems. Students are asked to examine the Dutch landform/water infrastructures (Arch 5199), parameters and plans/proposals set by the EU, and Countries surrounding the North Sea, in order to set parameters and create potential scenarios in dialogue with attitudes of control/expand + flood/retreat.
The Design studio develops ideas of ‘the commons’ to enable scalar linkages between: infrastructure + architecture; everyday habitation + the larger dynamics of the North Sea Delta. Structural and enclosure operations connect cultural/symbolic/social to urban, infrastructural and territorial scales both temporally and spatially, and should be adaptable to social/cultural demands, as well as change in program or production (manual, digital or automated, etc.) and climate adjusting to growth or shrinkage and the existing urban and infrastructural systems. It looks for places within the existing: where infrastructures/systems need to be renewed or replaced, as they do not meet current or even earlier guidelines mandated by the Dutch government. As well within the history of innovation and scenario-projections, to ‘think outside the box,’ and create opportunities and potentials to ‘rethink’ relationships between the Dutch and their Landscape and perhaps even ‘reinvent’ in the face of climate change new visions for the future of Dutch Cities?

The studio asks:

• How can the interplay between architecture and infrastructure be exploited?
• Can paradigm shifts for a new ‘collectivity’ act as mediator between scales + a way forward?
• How can infrastructure be more than purely functional (act as protection) but be embedded in both natural and cultural processes and everyday rituals?
• 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?

Productive couplings are developed through research in both the Humanities course, Arch 5199 - Delta Urbanism and in the design studio, where mapping, analysis of scenarios and case studies [both real and utopian scenarios (past and present)] develop territorial and 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.1" In taking on the interconnected scalar dynamics of the Dutch Urbanised-Delta ‘Landscape’ part of the River and North Sea dynamics, a regional scale approach is necessary.

Background: Landscapes of Coexistence a Territorial Perspective

The urban systems established along the North Sea, within Delta ‘Landscapes,’ - include much of Holland; parts of Belgium; Denmark; France and Great Britain - have enabled urbanization for centuries within these dynamic and transitional landscapes, and 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,’ evidence of previous habitation as per myth, the city of ‘Atlantis’ and ‘Doggerland’ lie submerged after the ice age retreat and dramatic sea level rise, and found by archaeologist on the shallow shelf between Great Britain and Europe, of which Holland

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1 Rem Koolhaas, OMA, Zeekracht, The North Sea, Client: Natuur en Milieu UN. Commissioned Study. 2008
would have been connected. This arguably reveals not only the very real challenge faced by the Netherlands in relations to climate change, but also that the ‘North Sea’ has been previously urbanized. Thus, urbanization of this ocean territory is not just what we can see, on top of its’ deceptive continuum, or the multiple military platforms, extraction fields, oil platforms, network cables, and transport corridors. Nor, that what we see today as fixed/static is not in fact permanent. These layered histories and processes of urbanization within the North Sea Delta, imply a different idea of reading context and How we conceptualize change and develop design strategies that perform spatially (location dimension/scale) and temporally (past, present & future contexts) are central to the studio investigation.

A National Perspective

The Netherlands, a large portions of which are well below sea level (-.8 to -2 meters) – is an urbanized Delta where Land is not a given. In fact, in defining ‘landscape’ - in Dutch land ‘schap’ or ‘schop’ refers literally to the act of forming ‘land’ - the continually constructing and reconstructing process – to enable terra firma. Here, systems of ‘landscape’ 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, Leatherbarrow suggests, 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 practices” and the very base of all cultural development. The Delta was historically urbanized due to easy access to trade, resources (fish, shellfish…peat for heat) and to its seeming ease of adaption/malleability.

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

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Human manipulation of the zone between land and water – this ‘line’ between salt and sweet waters, is dynamic, constructed both naturally and culturally. It is destructive, as well, where the 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 has been replaced by technological mechanisms (Plodder, Windmills or the Dune Machine), creating a ‘new world’, neither human nor nature and 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”4. This is seen in the long history between nature, the North Sea and the Dutch over territory, which reveals in its’ continual struggle, and where the history of the Delta, traced in lands lost and won (IJsselmeer/ Biesbosch), are embedded. Land is accrued, through planning, organizations (water boards) and technological innovation (infrastructures such as windmills, dams, plodders, dike rings, sand machines, etc.), are regulated socially, locally, provincially, nationally & transnationally and a continual process of adaption. The Dutch’s three-tiered protection system (flood gates, sea & river dykes) act together to control water and protect urban centers. By continually innovating adding ‘soft’ systems (‘Make Room for the River’ projects, ‘Blue Green Infrastructures’ in cities), ‘working with nature’ and creating artificial nature (sand and mud engines, porous break walls, Happy Isles, West 8 (2006), or Dune/Garage at Katwick (2016) etc.). Examples of real design proposals, for how to cope with issues of clean energy and the ever-increasing threat of climate change (sea rise, storm surge, etc.) OMA’s Roadmap 2050 (2009 for the EU and UN), ‘Zeekracht’ or M.U.D.’s Mare Meum (2005 for Belgiums coastline) have been developed using worse case scenarios at the scale of the territory. In this Studio we celebrate the very controversial aspects of the sea as commons, not as an extra-territorial space and a limit to the land, but rather as the main point, an autonomous entity through which the political, environmental, economic and societal questions could be addressed. In this way any spatial proposition, whether landscape, urban or architectural, would be challenged and revisited through the lens of the North Sea as a referenced territory for new spatial interventions. 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.

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

This is an international and interdisciplinary (architecture, urbanism, landscape architecture, hydraulic structures/flood risk, water management, policy analysis) design studio. It 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 at TUDelft and Dalhousie will be sited in different geographic locations: Norway, Scotland and The Netherlands, along the North Sea’s east and west coastlines. Within the scope of this studio, Dalhousie students will focus on the Netherlands. The studios emphasise both 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.”

Students are asked to formulate their research direction combining research and design, developing research initiated in Arch 5199 on an infrastructural system and how these technologies (Polder; Dykes/Levees, 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 withstand 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 to respond to crisis and necessity after WWII devastation and have potential to create new narratives for survival.

The studio questions proposals, using the scenario to test their Design Strategies through time and space; to play out scalar relationships; and how it is able to adapt 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
- If it is a shoring-up or yet still, a new infrastructure and then 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 idea. 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 – and temporal dimensions in which they 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:
Students will use Research and Mapping as integral to Design. 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. Maps/ Base Drawings should be developed a various scales (XL, M, S).
Scales of the Map would include:

- **Regional Scale - Infrastructural:** Understanding + Visualizing relationships between Dynamic Systems, both spatially + temporally through use of GIS, Layers, historic and existing maps. [Flood (Risk) Maps/LYDAR/Sea Level Rise etc.]
- **Urban/Infrastructural Scale:** Using Existing Parameters, Issues/Problems in order to develop logic, potential programs, attachment rational (Urban Center & Infrastructure(s))
- **Local Site Scale:** How Infrastructure and Program/uses develop through time various scenarios that you can test both the site specificity and Infrastructure

Note: Presentations for Arch 5199, will help to build your Design Strategy i.e. connection to 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

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.

4. 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.
**Schedule**

*Classes will be held twice a week Tuesdays and Fridays 2:00 pm - 5:30 pm*

### Week 1  
**Definitions**
Tuesday Sept 11th  
Course Introduction: *Delta Dynamics, Infrastructure/Landscape/Urban Form & the Dutch*  
Lecture 1: Introduction: The Dutch Delta Hybridity + Territorial Scales
Frida Sept 14th  
Mapping  
Lecture 2: Mapping (Jennifer Strange GIS Center and Matthew Brown)  
Workshop 1: GIS - Defining Layers (Group)

### Week 2  
**Research & Setting Parameters**
Tuesday Sept 18th - Friday Sept 21st  
Research and Compile Base Map Material (Group)

### Week 3 – Week 4  
**Travel Sept 23rd – Oct 7th**
*Presentations/Tours 1,2,3,4 (Group presentations for Arch5199)*  
Lectures 3&4: H. Meyer, TU Delft; A. Loes Neilson, office Defacto + Tours  
Workshop: Site/System Documentation  
Individual Research, Site Work Archive/Map Library

### Week 5  
**New Worlds**
Tuesday Oct 9th  
The Commons: Utopian Visions, Scenario + System Design  
Lecture 5: Utopia, Systems and Scenarios  
Strategies, Setting Parameters & Programs and Diagraming [Grossformen, Metabolists…]  
Workshop: Analysis + Comparison, *Case Study Due Oct 28th*
Friday Oct 12th  
Make Up Class*

### Week 6  
**Retreat/Control**
Tuesday Oct 16th  
Landscape/Infrastructural/Urban System – Setting Scenarios & Design Strategies  
Discussion: Retreat/Control + Setting Parameters, Strategies and Diagraming (Program Development)
Friday Oct 19th  
Make Up Class*

### Week 7  
**Testing**
Tuesday Oct 23rd  
Design Development
Friday Oct 28th  
Desk Cirts – In Studio [Case Study Due Oct 28th upload PDF Brightspace]

### Week 8  
**Midterm Presentations**
Tuesday Oct 30th  
Midterm
Friday Nov 4th  
Work in Studio [Individual Midterm Feedback meetings]

### Week 9  
**Study Break**
Nov 6th  
Nov, 5-9 - no classes

### Week 10  
**Design Development**
Tuesday Nov 13th  
Lecture 7: Vision Drawings
Friday Nov 16th  
Desk Cirts – Work in Studio

### Week 11  
**Design Development**
Tuesday Nov 20th - Friday Nov 23rd  
Desk Cirts – In Studio

### Week 12  
**Pin Up/Penultimate (Small Groups)**
Tuesday Nov 27th  
Penultimate Pin Up
Friday Nov 30th

### Week 13  
**Final Presentation Preparation**
Tuesday Dec 4th - Friday Dec 7th  
Desk Cirts – In Studio

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

Notes:  
****Travel to the Netherlands occurs in Weeks 3-4, make-up for classes missed will occur in Weeks 5-6*  
SRIs will be scheduled in Week 12 or 13
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. The 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 meet comprehensive design guidelines and include: the scales of the larger ‘territory’ infrastructural system(s), architectural and habitational scales; articulating the juncture between the territory, infrastructure, architecture and the human being. Exploring how existing conditions (systems) can be dynamic and changeable in the face of Climate Change and Sea Level Rise as well as adaptable to social or means of production. All work submitted late will be subject to a penalty equal to a third of a letter grade per day. Grading will be done with advice from other Design Instructors and using the grading policies upheld by Dalhousie Graduate Studies.

Students are asked to concentrate on developing 3 Main Representations to set up their visual argument (research, documentation, analysis + testing), used help you to think how you communicate your ideas/vision 2070. Your Scenario/Design Strategy should be tested at the Scale of: 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);

The 3 Main Representations should be accompanied with supporting visual argumentation through: i) Explanatory Diagrams: these should include but are not limited to the following: Map (Systems, Edges, Connection/Access, Flow/Directionality, Case Study finings; Growth/Adaption & Deployment; ii) Process (Research & Testing Ideas):

Scalar attachment to systems at Regional (Hydrological, Ecological and Geological), Infrastructural, Urban and Architectural and/or Programmatic Unit and various Aggregation strategies; iii) Habitation and Temporal

Experiential and Temporal (Flood no Flood scenarios etc.) aspects of their project: Perspective/Arial (XL-L) Drawings and Details (S) showing material, connection and Habitation.

Final Design Submission Should Demonstrate:

- Regional/System Scale: Design a contemporary and innovative Regional System [1:10,000+]
- Design Armature engaging Regional - Urban Systems and Delta/Ecological/Water.
- Site intervention/ concept, tested within site model [1:500/1000]
- Building Scale - Expressing concept and attitude: interior/exterior, public/private; landscape/urban; programmatic relationships; and urban/infrastructural connections and access. [1:200 & 1:100].
- 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]
- 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.

Evaluation

- Workshops 2, 3 Group/Individual, 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: Three unexcused absences will automatically drop your grade by one letter-grade. All students are required to participate in class; 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.
Learning Objectives

This Urban Systems Studio looks at Urban/Regional Infrastructures and Delta Systems to develop a design-research methodology that investigates the interconnected scales and nested contexts of a design project, and its influence on urban form and development. It tests a hypothesis through various scales (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.

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 (tinyurl.com/dalarch-regulations) for links to university policies and resources: Academic integrity; Services available to students, including writing support; Dalhousie University Library; Accessibility; Fair dealing guidelines (copyright); Code of student conduct; Diversity and inclusion; Culture of respect; Student Declaration of Absence.
References:

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


Landscape References


Urban References


**Digital References**


Desvigne, Michel. *Intermediate Natures*, (Zurich; Birkhauser Press, 2009). [https://www.youtube.com/watch?v=0TAMpQ2mlkE](https://www.youtube.com/watch?v=0TAMpQ2mlkE)

**Proposals:**


The Future Commons 2070, Map C01 – Harwich to Hoek van Holland and Dover Strait.


**Scientific:**


[https://www.youtube.com/watch?v=V8hOOAQiMys&list=PL45IKIm1yuntFFFSwqQv-Qw_loSsmu6sy&index=1](https://www.youtube.com/watch?v=V8hOOAQiMys&list=PL45IKIm1yuntFFFSwqQv-Qw_loSsmu6sy&index=1)

**Infrastructural:**

[http://dutchdikes.net](http://dutchdikes.net)

[http://pdokviewer.pdok.nl/](http://pdokviewer.pdok.nl/)

[https://www.government.nl/topics/climate-change](https://www.government.nl/topics/climate-change)

[https://www.government.nl/topics/water-management](https://www.government.nl/topics/water-management)


**Utopian Schemes:**

[http://www.hiddenarchitecture.net/2016/06/linear-city.html](http://www.hiddenarchitecture.net/2016/06/linear-city.html)


[http://www.spatialagency.net/database/price](http://www.spatialagency.net/database/price)