

# Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



## Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners ([Examencommissie-BK@tudelft.nl](mailto:Examencommissie-BK@tudelft.nl)), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	Nadine Tietje
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Studio	
Name / Theme	Transitional Territories
Teachers / tutors	Taneha K. Bacchin Nicola Marzot
Argumentation of choice of the studio	<p>The selection of <i>Transitional Territories</i> as my graduation studio was founded on the topical departure which acknowledges and addresses the immense impact of change on both land and sea. In the light of climate change and globalisation above all, these dynamics and our understanding of it prove highly relevant. Being one of the most urbanised waterbodies in the world, the North Sea and its surrounding coastal area are subject to alarming ecological issues caused by human action. These include sea level rise, pollution, excessive resource extraction and subsequent loss of habitat for flora and fauna.</p> <p>The title 'North Sea - Landscapes of Coexistence' hints at how various areas are so closely intertwined and the subsequent significance of collaboration across disciplines in practice and academia alike. This position is effectively translated into the studio's structure uniting architecture and urbanism students into interdisciplinary groups. Collective work promotes discourse and exchange, and fosters thinking and designing beyond one's familiar scales.</p> <p>I greatly identify myself with the studio's philosophy towards contextual significance; any site or place is informed by its wider territorial context and good design is by default place specific. Within its large, overall framework of the North Sea territory, the studio offers freedom in choice of site and programme allowing to follow one's personal fascination. My own choice of site, Dunkerque, was prompted by the studio field trip and amplified by a personal fascination for industrial heritage and its effects on both ecology and society. Synthesising history with the dynamics and processes of the present and future through a multi-scalar lens form my primary motivation.</p>

<b>Graduation project</b>	
Title of the graduation project	Mindscapes
<b>Goal</b>	
Location:	Dunkerque, France
The posed problem,	<p>The project departs from the subject matter of <i>health</i> and well-being, in particular public mental health, and how it is affected by the built and natural environment. Health is a broad term and functions as overarching theme. Within the framework of the North Sea territory, it can be translated across various scales and fields of interest; <i>environmental/ ecological health</i> (territory), <i>socio-cultural health</i> (city/ landscape), <i>human health</i> (body &amp; mind).</p> <p><u>Territorial – North Sea</u></p> <p>As a highly urbanised waterbody, the North Sea has long formed the centre of northern Europe; politically, economically, logistically and ecological. Consequently, the once rich ecosystem and its flora and fauna is increasingly compromised, and its health threatened. Extraction, industry and coastal urbanisation result in resource depletion and pollution both on land and sea. Awareness is growing, both of the significance of ecosystems and its role in maintaining a balanced, <i>healthy</i> environment. Yet too rarely are purely ecological visions compatible with the primary global drivers, economy and society, and projects require an economic viability which often results in large scale interventions with little room for individual adaptation.</p> <p><u>Urban – Dunkerque</u></p> <p>Being a port city that had its prime during the industrial age, Dunkerque remains exemplary for the ongoing transitions of the North Sea territory. The industrial activities of the past, on one the hand, have shaped the place drawing an invisible boundary between land and sea. On the other hand, two World Wars have irrefutably left their scars. Historically, the city centre and the port have formed a unified whole; socially, economically and spatially. Though along with the post-war boom of the automobile, the vast expansions of the second half of the 20<sup>th</sup> century shifted the industrial centre westwards and</p>

	<p>drove a wedge between port and city. Today a shrinking city, Dunkerque is increasingly confronted with the (largely contaminated) voids of the old port deprived of its original function.</p> <p><u>Body &amp; mind – Inhabitants</u></p> <p>A shift in public health over the last century has manifested in the eradication of near all infectious diseases. Though it was a mere transposition to an equally daunting array of so-called non-communicable diseases<sup>1</sup>. Mental health is a tremendous issue in contemporary societies and cities, which are far from conducive to human, physical and mental health and well-being. This evolution is frequently linked to urbanisation, and studies suggest that lacking access to green infrastructure may be a fundamental factor. Our independence from nature for sustenance, and general disconnection of it in urban contexts has led to a loss of 'reverence', responsibility and stewardship for natural environments, and neglecting its healing benefits for us humans.</p> <p><small>1 Today, commonly experienced health issues include depression and obesity, heart disease, diabetes, asthma, migraines, allergies, pervasive near-sightedness, stress, attention deficit syndromes, anxiety and digital addictions, all of which have an enormous impact on our nervous, endocrine, and immune systems and therefore on our overall health.</small></p>
<p>research questions and</p>	<p><u>Territorial</u></p> <ul style="list-style-type: none"> <li>▪ What kind of green infrastructure intervention can foster remediation and decontamination of the North Sea ecosystem?</li> <li>▪ How can the invisible boundary between 1) land and water, and between 2) the city and the port, formed by Dunkerque's industrial heritage and war history, be redefined through nature?</li> </ul> <p><u>Architectural/ landscape</u></p> <ul style="list-style-type: none"> <li>▪ How can the existing 'wild'<sup>2</sup> nature and a newly created cultivated one synthesise into a novel form of garden, and how does such a garden look like?</li> <li>▪ To what extent can the industrial leftover structures and objects (both habitable and inhabitable) become integrative part of the design?</li> </ul>

	<ul style="list-style-type: none"> <li>▪ How does a health-informed programme spatially and structurally manifest within the framework of a garden?</li> </ul> <p>2 The term 'wild' here refers to a so-called novel wilderness which naturally emerges in abandoned spaces, brownfields and urban voids such as the site in question.</p>
<p>design assignment in which these result.</p>	<p>The proposed design assignment comprehends an 'urban garden' within the former site of the <i>Societe De La Raffinerie de Dunkerque</i> – an existing void of the city of Dunkerque afflicted with industrial leftovers (both structural and in form of contamination). As such, it endeavours to reconnect people and their territory through nature and to become a place of healing. Based on the hypothesis that exposure to green infrastructure is highly beneficial for human well-being on one hand, and in the light of nature's ability of self-remediation on the other, the urban garden forms a synthesis of the health of the place itself and its inhabitants.</p> <p>The assignment is divided in two main steps commencing with a masterplan design on an urban scale, followed by an architectural intervention within the larger framework.</p> <p><u>Masterplan</u></p> <p>A strategic masterplan is postulated in response to the site's size (approx. 35 ha) and condition. Due to former industrial activity, soil, water and air exhibit high levels of contamination and become subject to bioremediation. Based on this, the masterplan is innate of a temporal dimension. The redevelopment begins with the proposed design (t=0) and both progresses and expands (t=n).</p> <p>After careful analysis, existing structure may form the basis for a new spatial order. The 'step by step' rehabilitation and redevelopment of the site and gradually makes it accessible for new functions; informed by the process of decontamination and reestablishment of <i>health</i> itself, relinking land and water and finally integrating in the urban fabric.</p> <p><u>Architectural intervention</u></p> <p>As urban garden, the site becomes by default public and encourages functions of collective interest. The topical umbrella of <i>health</i> informs</p>

the programme of structural interventions within the larger plan. A garden inevitably being a kind of laboratory has the potential to alter perceptions; of the existing and what is yet to come. The rehabilitation of mental health and well-being (and with it, people's awareness, productivity and happiness) is the core objective. Different garden typologies generate spaces of rest, activity and spirituality. The architectural intervention intends to link each with one another and form sequences of diverse experiences.

## Process

### Method description

The trans-scalar approach of the studio prescribes a distinctive order of investigation from the wider context – the territory of the North Sea – to one's project-specific research subject. This naturally proposes a varying body of methods and techniques to be employed. The foundation forms the collective research of the North Sea through different lenses (geological, ecological, political, and social) and the translation of scientific data into maps documenting the current state and future projections. The formulation of scenarios proposing varying 'futures' enables a broadened understanding of certain trends and its effects.

Zooming into the individual project scale increasingly shifts the focus from the territorial to the site-specific. The data collection about Dunkerque is informed by literature and on-site inquiry. Hereby, one relies on different means and methods depending on the scale of investigation. These include mapping, drawing and collage, text, film and photography, and collection of samples. In practice, a large area of interest often exceeds one's research capabilities. A useful method is therefore the 'transect', a composition of multiple techniques depicting one's findings along a selected path. Revisiting this path yet enables the gathering of ephemeral attributes, temporal dynamics and atmospheres, and is therefore a value means for phenomenological inquiry.

Parallel to the first steps, a literary inquiry about health and the environment (and more specifically the growing body of literature discussing the 'biophilia' phenomenon), garden theory and history as well as plants themselves is undertaken. Literature review provides broad knowledge and specific insights on history and theory of the subject and forms the basis for a heuristic 'research by design' approach. Within the broader context of landscape and garden, I gave particular attention to the history Persian gardens, as well as more contemporary blue-green infrastructures. A complementary research method is moreover provided by case-study analysis. Multiple examples (see below) illustrate the various ways of dealing with industrial heritage and brownfield regeneration and remediation in a functional, ecological and poetic manner.

The transitional character of a place, before and after a design implementation, is best depicted by a series of projections. By means of 'backcasting' one begins with a future scenario which comes close to the anticipated, ideal state and from there dissects backwards into individual steps. 'Research by Design' – an inquiry in which design is an essential part of the research process – is applied as a common strategy. It relies on continual reflection and reframing to be made throughout the design process, perpetually testing and adapting to new potential futures.

## Literature and general practical preference

The following listing encompasses the main body of literature consulted and utilised throughout the research process thus far, key sources being **highlighted**. Please note that categorisation is loose and thematic overlaps may occur. Precedents include case studies from landscape and architecture as well as conceptual examples.

### Garden history, theory and design

ABEN, R., WIT, S. de and KIRKPATRICK, J. 1999. *The Enclosed Garden: History and Development of the Hortus Conclusus and its Reintroduction into the Present-day Urban Landscape*, Rotterdam, 010.

BAKER, K. (2012) *Captured Landscape: The Paradox of the Enclosed Garden*, London, Routledge.

**CLÉMENT, G. 2015. *The Planetary Garden and other Writings*, Philadelphia, University of Pennsylvania Press.**

CONAN, M. 2007. *Contemporary Garden Aesthetics, Creations and Interpretations*, Washington DC, Dumbarton Oaks.

CROWE, S. 2003. *Garden Design*, Woodbridge, Garden Art Press.

**HUNT, J. D. 2000. *Greater Perfections: The Practice of Garden Theory* London, Thames & Hudson.**

**MOORE, C. W., MITCHELL, W. J. & TURNBULL, W. 1993. *The Poetics of Gardens*, Cambridge, London, MIT Press.**

RUGGLES, D. F. 2008. *Islamic gardens and Landscapes*, Philadelphia, University of Pennsylvania Press.

TURNER, T. 2005. *Garden History: Philosophy and Design 2000 BC – 2000 AD*, London, New York, Spon Press.

WAUGH, E. (ed.) 2016. *Experimenting Landscapes: Testing the Limits of the Garden*, Basel, Birkhäuser.

WILBER, D. N. 1962. *Persian Gardens & Garden Pavilions*, Rutland, Tokyo, Tuttle.

### Green infrastructures/ landscape/ water

BRAAE, E. 2015. *Beauty Redeemed: Recycling Post-industrial Landscapes*, Risskov, IKAROS Press.

**CLÉMENT, G. 2004. *Manifeste du Tiers paysage*, Paris, Éditions Sujet/Objet.**

CORNER, J. & HIRSCH, A. B. (eds.) 2014. *The Landscape Imagination: Collected Essays of James Corner, 1990-2010*, New York NY, Princeton Architectural Press.

KOWARIK, I. 2018. Urban Wilderness: Supply, Demand, and Access. *Urban Forestry & Urban Greening*, 29, 336–347.

LOHRER, A. 2008. *Designing with Water*, Basel, Boston, Berlin, Birkhäuser.

PÖTZ, H., & BLEUZÉ, P. 2012. *Urban Green-blue Grids for Sustainable and Dynamic Cities*, Delft, Coop for Life.

### Health and nature

ARVAY, C. G. 2018. *The Biophilia Effect: A Scientific and Spiritual Exploration of the Healing Bond between Humans and Nature* Boulder, Colorado, Sounds True.

**COOPER MARCUS, C. & BARNES, M. 1999. *Healing Gardens: Therapeutic Benefits and Design Recommendations*, New York, Wiley.**

JOHNSON, B. R. & HILL, K. 2002. *Ecology and Design: Frameworks for Learning*, Washington, Covelo, London, Island Press.

KELLERT, S. R. 2005. *Building for Life: Designing and Understanding the Human-Nature Connection*, Washington, Covelo, London, Island Press.

KELLERT, S. R., HEERWAGEN, J. H. & MADOR, M. L. (eds.) 2008. *Biophilic Design: The Theory, Science, and Practice of Bringing Buildings to Life*, Hoboken, Wiley.

**KELLERT, S. R. & WILSON, E. O. 1993. *The Biophilia Hypothesis*, Washington, Cavelo, Island Press.**

ULRICH, R. S. 1984. View through a Window may influence Recovery from Surgery. *Science*, 224, 420–421.

WILSON, E. O. 1984. *Biophilia*, Cambridge, London, Harvard University Press.

### Urbanism

BEATLEY, T. 2011. *Biophilic Cities: Integrating Nature into Urban Design and Planning*, Washington DC, Island Press

SALINGAROS, N. A. 2005. *Principles of Urban Structure*, Amsterdam, Techne.

### Case studies/ precedents

- Edinburgh Gardens Raingarden, Melbourne, Australia. GHD Pty Ltd
- Glenorchy Art and Sculpture Park, Glenorchy, Australia. Room11/ McGregor Coxall
- Godsbanearealet, Aalborg, Denmark. Polyform
- High Line, New York. James Corner Field Operations
- Landschaftspark Duisburg Nord, Germany. Latz + Partner
- Matisse Park, Lille, France. Gilles Clément
- Potemkin, Kuramata, Japan. Casagrande & Rintala
- Rosa Luxemburg Garden, Paris, France. In Situ Architectes Paysagistes
- Schöneberger Südgelände Park, Berlin, Germany. Group Odious
- Zollverein Park, Essen, Germany. Planergruppe Oberhausen/ OMA
- Zollhallen Plaza, Breisgau, Germany. Ramboll Studio Dreiseitl

### Conceptual

- Gilles Clément: *The Third Landscape; Gardens of Resistance; The Planetary Garden; The Garden in Motion*.
- Rem Koolhaas: *Exodus, or the Voluntary Prisoners of Architecture*, AA Thesis, 1972.

## **Reflection**

### **Relevance**

With the synergy between environmental and human health at its core, the project points at a subject of immense actuality that deserves evermore attention as mental health problems become a common condition in western individualistic societies. Recent findings frequently interlink the growing rates with people's immediate environs, characterised by a lack of green infrastructure within a largely urbanised world. The supposed disconnection of human and nature is increasingly discussed and the effects of flora and fauna on our (human) health (both physically and mentally) subject to countless studies and publications – our health and our immediate environment are inextricably connected with one another.

While ecological and so-called 'biophilic design' gradually establish themselves in common practice (albeit often arguably owed to the inherent marketing value), developments are yet highly reliant on



market-driven demand through growth. In contrast, the example of Dunkerque is only one of many cities across Europe that is shrinking rather than growing. Primary reason is a shift in industry and increasing monopolisation. As a result, territories deprived of their former use become abandoned; exploited, deserted and transformed into unrecognisable states of contamination and decay.

As such, the project, located on a former industrial site, becomes a case study – a kind of laboratory – for bioremediation for the territory and its inhabitants alike. The shared concern for health has the ability to reunite and reidentify humans with flora and fauna; let them realise that they are really part of nature rather than being isolated from it. Economic benefits<sup>3</sup> may only be evident through a long-term perspective. However, particularly in the case of Dunkerque, the anticipated coexistence attempts to heal more than just that lost connection; it rather strives to bring new life in a dwindling city.

From an architectural point of view, the assignment offers an opportunity to combine nature and culture. Designing in partnership with nature – the sea, flora and fauna – in the context of a heritage of enormous place-specific cultural importance, requires careful mediation and understanding of existing phenomena and the territory itself. The subject of regeneration and decontamination of land will become evermore relevant as we proceed in an era of Anthropocene – an era in which territories are continually transitioning through the many human forces. It is not least up to the designer to change it for the better.

3 Benefits are likely to result from reduced costs for public health care and nature conservation, abandonment of costly mechanical land remediation techniques, stimulation of local economies through new functions with more sustainable business models, as well as improved satisfaction of population through increased health, productivity and general happiness to name only a few.

## Time planning

### P1 [week 1-11]

- territorial research: North Sea
- topical research/ project level (examples)
- topical concept formulation
- draft research

### P2 [week 12-17]

- urban research: Dunkerque
- plans, elevations, cross-section, 1:500 / 1:200
- master plan (appropriate scale)
- site analysis: *Societe De La Raffinerie de Dunkerque*
- programme
- draft design (plans, sections, elevations) 1:1000

### P3 [week 18-25]

- reflection
- plans, elevations, cross-section, 1:500 / 1:200
- building fragments, plan and cross-section (appropriate scale)
- façade fragment with horizontal and vertical cross-section (appropriate scale)
- details draft

### P4 [week 26-28]

- theoretical and thematical framework of research and design
- final reflection on relevance (territorial, architectonic, social, etc.)
- master plan 1:5000 / 1:1000

- site plan 1:500
- plans, elevations, cross-sections 1:200 / 1:100
- building fragments, plan and cross-section 1:50
- façade fragment with horizontal and vertical cross-section (appropriate scale)
- details

P5 [week 29-33]

- Same as for P4
- impressions
- model(s)