

The Berlage Master of Science in Architecture and Urban Design  
Faculty of Architecture and the Built Environment  
Delft University of Technology

Spring 2018 ARB215 Thesis Preparation  
Student: Ramon Scharff  
Thesis Examiner: Kees Kaan

# Thesis Project Proposal Plan

The Berlage.

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## PERSONAL INFORMATION

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## ABOUT THE THESIS PROJECT PROPOSAL

### Thesis project title

One Million New Patients – *Eight Designs in the Irish health landscape*

### Thesis project description

In this project, I will design around the spatial challenges of 1.000.000 new patients in the Irish health landscape; the pharmaceutical industry and the healthcare industry. Intervening within existing and emergent relations, in pursuit of complimentary and contradictory goals, and as they effect simultaneously the doctor's surgery, the pill, the healthcare system and the production line.

### Thesis project site

The project consists of 8 interventions on different sites.

- County of Donegal
- City of Derry
- Biotech manufacturing complex Sligo
- St. Conal Hospital, Letterkenny
- Letterkenny University Hospital
- Boots pharmacies
- Pill Cabinet
- Pill

### Thesis project outcome

The outcome will speculate on the spatial impact and new spatial relations on the (twin/complementary) landscapes of the pharmaceutical and healthcare industries resulting from the targeted 1.000.000 new residents. These interventions / designs will become visible in different spaces (the production of health / the practice of health) and on different scales, from the domestic medicine cabinet to the organisation of healthcare in the county of Donegal, and, ultimately, interrogate the role(s) of architecture and design within these complex systems.

### Relevance to architecture

The pharmaceutical industry is the most valuable sector in the economy of Ireland with 8 of the Top 10 pharmaceutical companies located in the country. Over 55 production sites are in the country with a value of \$ 38.2 billion. Pharmaceuticals are also Ireland's number one export. The pharmaceutical industry and its related program is spatially embedded in the Irish landscape. Different building types locate themselves on specific sites, in the town and in the country, according to the provision of physical and non-physical infrastructure, the presence or absence of population centres (corporate offices in big cities (of which Ireland only has two, Dublin and Cork), hospitals around big settlements, and noxious chemical factories away from the inhabited areas. Underneath the more obvious observations of the pharmaceutical industry lies a complex system of relations between the pharmaceutical industry and the healthcare industry. One could see strong connections between patients, patents, revenue models, quality control, insurances, health organizations, real estate developers etc. With 1.000.000 new patients, an addition of 25% new resident entering Ireland in the coming 20 years, the health landscape will change. New healthcare objectives, aging workforce, aging population, cheaper medicine, pharma tourism will stress the current model and industry of healthcare and pharmaceuticals. The pharmaceutical industry is about to enter a patent cliff which will make certain medicine cheaper, the World Health Organizations is shifting to Integrated People Centred Healthcare services (IPCHS), which creates a new healthcare model, Brexit could affect prices from pharmaceuticals, which could create pharma tourism, and the Irish population is getting older what will make the healthcare insurance and taxes rise to guarantee quality. Taken these conditions into account, one could think about the spatial changes that will occur and how architects and urban planners could work with this change. What is the role of architecture within the Irish health landscape? How does the design of a pill, medicine cabinet, operating room, storage space affect the spatial relationship with the patient, doctor, scientist, CEO's, city and its territory?

### Relevance to the site

When mapping out the pharmaceutical landscape in Ireland — the pharmaceutical factories, corporate offices, distributors, retailers, pharmacy benefit managers, pharmacies, department of health, insurance companies, transport routes and storage facilities — one can see the complexity and the coherence of their underlying spatial systems. Combine this spatial complexity with the landscape of the industry purpose to serve — the healthcare industry — one ends up with a map of the Irish Health landscape. With this overview one could start understanding the competing and complimentary logics of economy, efficiency, industriousness, happiness and healing. 2040's 'one million extra residents' means, one million new patients. This rise of 25% of the national population will transform a healthcare system that was initially designed for 2.8m residents in 1961, and make new demands of the Irish health landscape.

### Bibliography of literature, precedents, and references

Shane Enright & Mary Dalton

The Impact of the Patent Cliff on Pharma-Chem Output in Ireland

Mary E. Daly

The curse of the Irish Hospitals' Sweepstake: A hospital system, not a health system

Chris van Egeraat & Declan Curran

Spatial concentration in the Irish pharmaceutical industry: the role of spatial planning and agglomeration economies

Jamie Smyth in Ringaskiddy

Ireland's 'patent cliff' poses problems for exit of bailout

Mediterranean Journal of Social Sciences

The Challenge of Patent Expiry: A Case Study of Pharmaceutical Industry

Pfizer

Investing in Ireland's Health

Enterprise Europe Network

Pharmaceuticals in Ireland

IDA Ireland

The Pharma Factor

The International Journal of Human Resource Management

The state and industrial policy in Ireland: a case study of the Irish pharmaceutical sector

## Structure, method, and deliverables

The project starts with a clear map and spatial roadmap of the health landscape as it is nowadays. This mapping consists of two systems, the pharmaceutical & the healthcare system and consists of the following objectives;

- Building types
- Relations (spatial, functional, territorial, economic, political)
- Figures
- Territories
- Revenue models

Adding to this health landscape also a research on historical events that have already changed the landscape, think about the following topics;

- Antibiotics
- Anaesthetics
- Sweepstake hospitals
- Drug patents
- WHO
- Irish tax regulations
- Etc.

Deliverables:

- Map of Ireland (scale 1:50000) (Size A0)
- Spatial roadmap / system drawing (Size A0)

In the projection phase, I will examine the spatial impact and architectural design possibilities for 8 different spatial fragments on different scales and locations. The starting point is always an analysis in drawings, diagrams about the existing fragment and afterwards a comparable new scenario, followed by its impact on the whole health landscape. Every fragment will have a representative synthetic patent drawing of the intervention. The fragments are as follow;

### **Territory / County of Donegal** [*Health care system, facilities & Migration*]

How will the pharmaceutical landscape change in the collective site? How many people will move to the County of Donegal, what are the extra requirements for the mass immigration and how will health be provided in this new scenario?

Deliverables:

- Territorial Map (scale 1:200, size A0) [old & new]
- Diagram of healthcare system (size A2) [old & new]

### **City / Derry** [*Pharmacies, Jobs, Border & Brexit*]

The City of Derry, located in Northern Ireland could become an interesting site in the pharmaceutical landscape of 2040. After Brexit one could think about a scenario medicine being cheaper in Ireland or Northern Ireland. Differences in job opportunities could vary between countries. Derry will be the site to look at the change in the health landscape combined with the Irish border conditions and Brexit.

Deliverables:

- Map of Derry (scale 1:5000) (Size A1) [old & new]
- Spatial roadmap / system drawing (Size A0) [old & new]

### **Factory / Biotech Manufacturing Complex - Finisklin / Sligo** [*Production, IDA, Jobs, Landscape*]

In the city of Sligo there is a business district developed by the IDA (Industrial Development Authority). The IDA is a non-commercial semi state owned company that tries to attract foreign investments to develop industrial districts. Now, there is a big Biotech Manufacturing complex for sale, this complex is an interesting case study to search for possible new uses and manufacturing processes. One could look at the relation between the city, their employees, IDA, raw input materials and final produced product. How could the redesign of the Biotech factory affect the pharmaceutical landscape?

Deliverables:

- Urban map (scale 1:200) (Size A1) [old & new]
- floorplans (Size A3, scale 1:200) [old & new]
- production flow drawing (size A3)

### **Abandoned Hospital / St. Conal Hospital, Letterkenny** [*Healthcare system, WHO, ICHS*]

St. Conal's Hospital is a psychiatric hospital located in Letterkenny, County Donegal, Ireland. Situated adjacent to Letterkenny Town Park near Letterkenny University Hospital, it is the only psychiatric hospital located in County Donegal and is considered to be "one of the finest buildings in the country". Since this year the building is abandoned due to the crumbling health care system. The building, located next to the LUH could be an interesting location to search for a new approach in Healthcare in relation to the worldwide changing approach in patientcare according the WHO.

Deliverables:

- floorplans (Size A3, scale 1:100) [old & new]
- facades (Size A3, scale 1:100) [old & new]
- section (Size A3, scale 1:100) [old & new]

### **Hospital / Letterkenny University Hospital** [*Health care system, Immigration, practice of health*]

Letterkenny University Hospital (LUH) is an acute university and maternity hospital serving 147,000 inhabitants of County Donegal in Ireland. LUH has been affected by the problems faced by Ireland's crumbling Health Service, extending back to the Fianna Fáil–Progressive Democrat governments of Bertie Ahern and Mary Harney to the present Fine Gael–Labour coalition. A common feature is the treatment of patients on trolleys due to chronic bed shortages. The emergency department of the hospital was closed for nine months when it was destroyed by flooding in July 2013 which caused €40 million worth of damage. The hospital was closed once again due to flooding following heavy rainfall a year later, in August 2014. With this University hospital being the most important one in the region and already overcrowded, one could see the relevance of redesigning the pharmaceutical landscape. The LUH will be a spatial example of how to intervene within an existing hospital in relation the increasing number of patients and the crumbling Irish Health Service.

Deliverables:

- floorplan fragment (Size A3, scale 1:20) [old & new]
- detail section (Size A3, scale 1:20) [old & new]
- detail fragment (Size A3, scale 1:10) [old & new]
- Impression / Render

### **Pharmacy / Boots** [*Pharmacies, accessibility, distribution, shop layout, furniture*]

Boots a global pharmacy brand is present in 25 countries worldwide and has more then 385.000 employees. It is the largest retail destination for pharmaceuticals, healthcare and personal care products in the United States and Europe. Boots has more then 13.200 shops worldwide, and is the world biggest pharmaceutical distributor with over 390 distribution centres supplying over 230.000 pharmacies, doctor, health centres and hospitals. Boots is the world biggest customer of recipe provided medicine. What will the 1.000.000 new patients mean for Boots Ireland and how will the design of the Boots shop and distribution center be affected by the changing pharmaceutical landscape? Will there be a global effect from the changing Irish pharmaceutical landscape?

Deliverables:

- floorplan fragment (Size A3, scale 1:20)
- detail section (Size A3, scale 1:20)
- detail fragment (Size A3, scale 1:10)
- Impression / Render
- model 1:20

### **Domestic furniture / Medicine Cabinet** [*Immigration, distribution, safety, furniture, pills*]

With 1.000.000 new patients housing is needed on the whole island of Ireland. What will be the consequences of a changing pharmaceutical landscape on the domestic space? Could medicine distribution be improved? How is safety, quality and availability guaranteed with higher demand for pharmaceuticals? One could think about the redesign of the Medicine Cabinet or other health provided at the domestic space.

Deliverables:

- construction drawing (Size A3, scale 1:20)
- detail section (Size A3, scale 1:20) [old & new]
- detail fragment (Size A3, scale 1:10) [old & new]
- model 1:1

**Body / Pill** *[safety, patents, pills, health]*

Pills come in different shapes, sizes and compositions all with a different purpose. There is strong distinction between prescription drugs and of the counter drugs. Most of the medication that is available without prescription is white in normal shapes and used in the right way not immediately lethal. When medication is needed that is only available on prescription, shapes, colors and sizes will change. Bright colors, unusual shapes should warn people that they are something unusual and that they should be aware. Shapes and finishes are also designed to improve consumption and to create an easy access to the body. The design of shapes and colors are strongly related to consumption and production of the pills, new parts should be designed to create shapes. Pills also have a strong visual aspect in warning consumers. When redesign the pill for example in shape and size it will have a spatial implication on packaging, storing, consumption and effectiveness. With 1.000.000 new patients one could imagine the extra demand in quantity. How will quality be maintained when quantity is priority?

Deliverables:

- chemical drawing (Size A3)
- box fold out (size A3)
- model 1:1

*Overview of deliverables:*

**Territory / County of Donegal** *[Health care system, facilities & Migration]*

Territorial Map, scale 1:200, >size A0, [old & new]  
Diagram of healthcare system, size A2, [old & new]

**City / Derry** *[Pharmacies, Jobs, Border & Brexit]*

Map of Derry, scale 1:500, >size A1 [old & new]  
Spatial roadmap / system drawing, >size A0) [old & new]

**Factory / Biotech Manufacturing Complex - Finisklin / Sligo** *[Production, IDA, Jobs, Landscape]*

Urban map, scale 1:200, > size A1, [old & new]  
floorplans, scale 1:200 > size A2, [old & new]  
production flow drawing > size A3

**Abandoned Hospital / St. Conal Hospital, Letterkenny** *[Healthcare system, WHO, ICHS]*

floorplans (Size A3, scale 1:100) [old & new]  
facades (Size A3, scale 1:100) [old & new]  
section (Size A3, scale 1:100) [old & new]

**Hospital / Letterkenny University**

floorplan fragment (Size A3, scale 1:20) [old & new]  
detail section (Size A3, scale 1:20) [old & new]  
detail fragment (Size A3, scale 1:10) [old & new]  
Impression / Render

**Pharmacy / Boots** *[Pharmacies, accessibility, distribution, shop layout, furniture]*

floorplan fragment (Size A3, scale 1:20)  
detail section (Size A3, scale 1:20)  
detail fragment (Size A3, scale 1:10)  
Impression / Render  
model 1:20

**Domestic furniture / Medicine Cabinet** *[Immigration, distribution, safety, furniture, pills]*

construction drawing (Size A3, scale 1:20)  
detail section (Size A3, scale 1:20) [old & new]  
detail fragment (Size A3, scale 1:10) [old & new]  
model 1:1

**Body / Pill** *[safety, patents, pills, health]*

chemical drawing (Size A3)  
box fold out (size A3)  
model 1:1

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## Preliminary schedule and time planning

### WK 30

Preliminary research and design work on Part I & II (set up of drawings)

#### **Territory / County of Donegal** [*Health care system, facilities & Migration*]

Territorial Map, scale 1:200, >size A0, [old & new]

Diagram of healthcare system, size A2, [old & new]

#### **City / Derry** [*Pharmacies, Jobs, Border & Brexit*]

Map of Derry, scale 1:500, >size A1 [old & new]

Spatial roadmap / system drawing, >size A0) [old & new]

### WK 31

Preliminary research and design work on Part III & IV (set up of drawings)

#### **Factory / Biotech Manufacturing Complex - Finisklin / Sligo** [*Production, IDA, Jobs, Landscape*]

Urban map, scale 1:200, > size A1, [old & new]

floorplans, scale 1:200 > size A2, [old & new]

production flow drawing > size A3

#### **Abandoned Hospital / St. Conal Hospital, Letterkenny** [*Healthcare system, WHO, ICHS*]

floorplans (Size A3, scale 1:100) [old & new]

facades (Size A3, scale 1:100) [old & new]

section (Size A3, scale 1:100) [old & new]

### WK 32

Preliminary research and design work on Part V & VI (set up of drawings)

#### **Hospital / Letterkenny University**

floorplan fragment (Size A3, scale 1:20) [old & new]

detail section (Size A3, scale 1:20) [old & new]

detail fragment (Size A3, scale 1:10) [old & new]

Impression / Render

#### **Pharmacy / Boots** [*Pharmacies, accessibility, distribution, shop layout, furniture*]

floorplan fragment (Size A3, scale 1:20)

detail section (Size A3, scale 1:20)

detail fragment (Size A3, scale 1:10)

Impression / Render

model 1:20

### WK 33

Preliminary research and design work on Part VII & VIII (set up of drawings)

#### **Domestic furniture / Medicine Cabinet** [*Immigration, distribution, safety, furniture, pills*]

construction drawing (Size A3, scale 1:20)

detail section (Size A3, scale 1:20) [old & new]

detail fragment (Size A3, scale 1:10) [old & new]

model 1:1

#### **Body / Pill** [*safety, patents, pills, health*]

chemical drawing (Size A3)

box fold out (size A3)

model 1:1

### WK 35

**Monday, August 27–Friday, August 30: Compulsory kick-off workshop**

### WK 36

**Monday, September 3–Friday, September 7: Workshop 1 with Olaf Gipser**

### WK 37

**Monday, September 10: Presentation of collective work**

**Thursday, September 13 and Friday, September 14: Workshop 2 with Ido Avissar**

Discussion research and design work Part I & II

### WK 38

**Monday, September 17: Submission of proposal for collective publication**

**Thursday, September 20 and Friday, September 21: Workshop 3 with Olaf Gipser**

Discussion research and design work Part I & II

### WK 39

**Monday, September 24–Monday, October 1: Excursion to the Poland [Exact dates TBC based on travel]**

**WK 40**

**Thursday, October 4 and Friday, October 5: Workshop 4 with Ido Avissar**

Discussion research and design work Part III & IV

**WK 41**

**Monday, October 8: Presentation of draft collective film for midterm presentation**

**Thursday, October 11 and Friday, October 12: Workshop 4 with Olaf Gipser**

**Friday, October 12: Submission of select midterm materials to thesis examiner and transcription of new conversation with expert**

Discussion research and design work Part III & IV

Preliminary work on research and design work part V-VIII

**WK 42**

**Monday, October 15: Presentation of draft proposal for thesis exhibition and event**

**Wednesday, October 17: Submission of final draft text for publication**

Finishing research and design work Part I-IV

**WK 43**

**Monday, October 22: Pencils down, submission of collective work**

**Wednesday, October 24: Pencils down, submission of individual work**

**Thursday, October 25 and Friday, October 26: Compulsory midterm presentations**

**Wednesday, October 24 and Thursday, October 25: Workshop 5 with Thomas Weaver**

Discussion research and design work IV-VII

**WK 44**

**Thursday, November 1 and Friday, November 2: Workshop 6 with Olaf Gipser**

Discussion research and design work IV-VII

**WK 45**

**Monday, November 5: Submission of final draft images for publication**

Finishing research and design work IV-VIII

**WK 46**

**Thursday, November 15 and Friday, November 16: Workshop 7 with Ido Avissar**

Discussion research and design work I - VIII

**WK 47**

**Thursday, November 22 and Friday, November 23: Workshop 8 with Olaf Gipser**

Discussion research and design work I - VIII

**WK 48**

**Monday, November 26: Pencils down, submission of collective work**

**Wednesday, November 28: Pencils down, submission of individual work**

**Thursday, November 29 and Friday, November 30: Workshop with Thomas Weaver; and dress rehearsal (including collective material, individual projects, draft publication, draft design for exhibition, and draft outline of final public event and presentations)**

**Friday, November 30: Submission of final project dossier to examiner**

Finishing research and design work I-VIII

**WK 49**

**Monday, December 3: Pencils down, submission of all collective work**

**Wednesday, December 5: Pencils down, submission of all individual work**

**Thursday, December 6 and Friday, December 7: E2 (go/no go presentation)**

Finishing research and design work I-VIII



**WK 50**

**Monday, December 10: Submission of all final collective and text for publication**

**Tuesday, December 11: Submission of final exhibition design**

**Wednesday, December 12: Submission of draft portfolio**

**Friday, December 14: Submission of draft final film and short. Book sent to graphic designer.**

**WK 51**

**Monday, December 18: Submission of all final individual drawings and text for publication**

**Wednesday, December 20: Submission of draft *draaiboek* for final event**

**Friday, December 22: Presentation of revised final film and short. Completed publication sent to printer**

**Thursday, December 21 and Friday, December 22: E2 Retakes**

**WK 2**

**Monday, January 7: Dress rehearsal for E3 and submission of final portfolio**

**Friday, January 11: Dress rehearsal for public final event and presentations**

**WK 3**

**Wednesday, January 16: Send all individual panels to print**

**Friday, January 18: Send all collective panels and banners to print. Second dress rehearsal for public final event and presentations**

**WK 4**

**Monday, January 21: Submission of all final models for exhibition**

**Tuesday, January 22 and Wednesday, January 23: Exhibition build-up**

**Thursday, January 24: Exhibition installation**

**Friday, January 25: Submission of all required final materials to the TU Delft Repository.**

**WK 5**

**Monday, January 28: Dress rehearsal for public final event and presentations**

**Tuesday, January 29: Second dress rehearsal for E3**

**Wednesday, January 30: Final preparations for public final event and presentations**

**Thursday, January 31: Public final event and presentations**

**Friday, February 1: E3 with thesis examiner and graduation ceremony**