

a local refuge

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master's thesis programme
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a local refuge

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field of engagement

introduction

Streets are the largest coherent public space and today cars occupy a great part of that space in many big cities. Copenhagen is no exception. The city seems devoted to cars even though only 9% of the transport in Copenhagen is transportation by car. While the city is densifying due to the still increasing number of inhabitants, it seems obvious to consider alternative infrastructural solutions¹. Over the last decade, ideas for a car-free city and specifically a transformation of the busiest stretch of road in Copenhagen (fig. 2) have emerged. This has led to a variety of proposals and preliminary studies by the involved municipalities of Copenhagen and Frederiksberg².

This thesis project will be based on one of these preliminary proposals that provide a diagrammatic and atmospheric masterplan of how such a conversion could be. With that in mind, the thesis project will therefore not propose a masterplan but instead zoom in on a specific section of Ågade in the preliminary proposal and give a detailed design proposal on how to organize an urban space in a specific context.

In great contrast to the current car-dominated situation, this project will have humans as a focal point emphasised by stimulating the human senses through spatial design. The project will also seek to strengthen the interrelations between the districts *Nørrebro* and *Frederiksberg* to achieve a more coherent experience of the public spaces. Finally, the design proposal will accentuate the local architectural quality in the context, since local identity is often lost in contemporary architecture³, and hence the citizens connection to their surroundings.



fig. 1 ågade, copenhagen 2022

¹ Martin, Robert, Arkitektforeningen.dk, 2020

² Appendix 1

³ Beim, Anne, 2014

background

Copenhagen wants to be a city for people with sustainable urban solutions and an urban development with edge according to the Copenhagen Municipal Plan from 2019⁴. But the current situation proves differently, as a heavy traffic artery is penetrating the city. This large car-dominated public space is causing severe air and sound pollution and moreover sensory overload at street level. The endless stream of cars separates the city in two and creates an incoherent city environment⁵. Together these factors challenge the wish of creating a city for the people with sustainable urban solutions.

In the chronicle *Hvert døgn kører her 62.000 biler, men en firesporet tunnel kan gøre asfaltjunglen til et grønt paradis* (Everyday 62,000 cars drive here, but a four-laned tunnel can turn the asphalt jungle into a green paradise) from 2020 by Danish Architect MAA Jan Koed, the same problematic is suggested: “Copenhagen prides itself as being among the elite of the world’s major cities on the hit list of the cities’ environment and quality of life” (berlingske.dk, 2020). Nevertheless, Koed continuously states that, many other big cities is further in tackling “the multiple traffical challenges that are the result of the metropolises’ insatiable need of intensive traffic”. If Copenhagen wants to unceasingly be present among the elite in the future, there must happen some drastic changes in how the urban development proceeds. We need brave and radical visions and successively engagements that act as a forerunner in terms of both the city environment and quality of life.



fig. 2 the traffic artery in Copenhagen, map 1:50,000

📍 site

⁴ kp19.kk.dk, 2019

⁵ berlingske.dk, 2020



fig. 3 ågade, copenhagen 2022

a failed urban planning

Ågade is an urban motorway in a residential area that contributes to the car-dominated environment within Copenhagen. *Ågade* is part of the traffic artery running from Bispeengbuen to Langebro; consisting of Bispeengbuen, *Ågade*, *Åboulevarden*, Gyldenløvesgade, H.C. Andersens Boulevard, and Langebro (fig. 2). A disputed street section where around 62,000 cars are daily occupying the many lanes⁶.

Formerly, at the area of *Ågade* and *Åboulevarden*, the creek *Ladegårdsåen* was silently running alongside residential areas and H.C. Andersens Boulevard was originally thought of as a parade street with a Parisian ideal and dimensioned for four rows of avenue trees, a lush area and only the local traffic with two lanes. Today, both are transformed into an urban motorway with up to eight lanes. Bispeengbuen reveals itself as the cherry on top: *"a result of the future optimism of the post-war period and blind faith in the blessings of motorizing and its first priority to the city's areas. [Bispeengbuen] stands as a monument to a brutal and failed traffic planning"* (berlingske.dk, 2020).

In traffic studies about the potential Havnetunnel, self-driving cars and analyses by Trængselskommissionen all predict that the number of cars will increase by 50% within 20 years. Hence, 90,000 cars will daily drive on this street course from Bispeengbuen to Langebro⁷. This would obviously aggravate the current car-dominated environment and further exclude the human from the urban space.

⁶ berlingske.dk, 2020

⁷ politiken.dk, 2017



fig. 4 render of the green boulevard, Tredje Natur



fig. 5 diagramme of *coherent identity and connections*, Tredje Natur

the green boulevard

Copenhagen has seemingly acknowledged the traffic issues, and current ideas about restructuring and converting this heavy traffic artery into a tunnel running underground and a “blue-green” refuge on street level could reach international standards for sustainable urban development. After several years of insistent pressure from the citizens, a political decision about doing a preliminary analysis of the conversion of the traffic artery has finally occurred; a burial of the traffic on the street course and releasing Ladegårdsåen from its pipes and bringing it up to the surface again. A transformation into a green refuge known under the name *The Green Boulevard (Den Grønne Boulevard)*⁸.

Several actors have been part of the idea about “turning the urban motorway upside down” and initial structural and financial studies of the potential genesis of The Green Boulevard. This thesis project will have a point of departure in a future scenario from the preliminary analysis *Omdannelse af Åboulevard* (appendix 1) developed by Copenhagen and Frederiksberg Municipality in collaboration with Engineering Consultants COWI and Danish Architecture Studio Tredje Natur in 2016.

⁸ berlingske.dk, 2020



fig. 6 Ladegårdsåen, Museum of Copenhagen

ågade

Ågade is one of the sections on the urban motorway placed in a densely inhabited residential area and hence causing damage to the quality of life for numerous people. This street course marks the division between *Frederiksberg* and *Nørrebro* but it also separates the two city districts quite significantly. This causes an incoherent city environment with an unsafe and unsatisfactory accessibility for people.

Along this urban motorway you find pieces of Danish architectural heritage. An example is the first deaf church in Europe *Døves Kirke* from 1904 made in a National Romantic style. Opposite the church you find a number of residential buildings side by side built between 1888-1894 with an impressive level of detailing in Historicistic styles. All of which has drowned in the endless stream of cars because of the lack of desire for pausing and staying at Ågade.

thesis statement

This thesis will be based on *scenario 2* from the preliminary analysis *Omdannelse af Åboulevarden* from 2016 by Copenhagen and Frederiksberg Municipality that gives a proposal to the conversion from urban motorway to *The Green Boulevard*.

As the future scenario only gives a diagrammatic proposal, this project will provide a detailed proposal on how to create the best possible urban space for people on a section of Ågade (fig x). Through spatial design, the thesis will focus on creating and strengthening:

- a physical and architectural cohesion of the two city districts *Frederiksberg* and *Nørrebro*
- an accentuation of the architectural context
- a sensory balanced urban interior that acts as a refuge for people
- an urban space that accommodates several different users

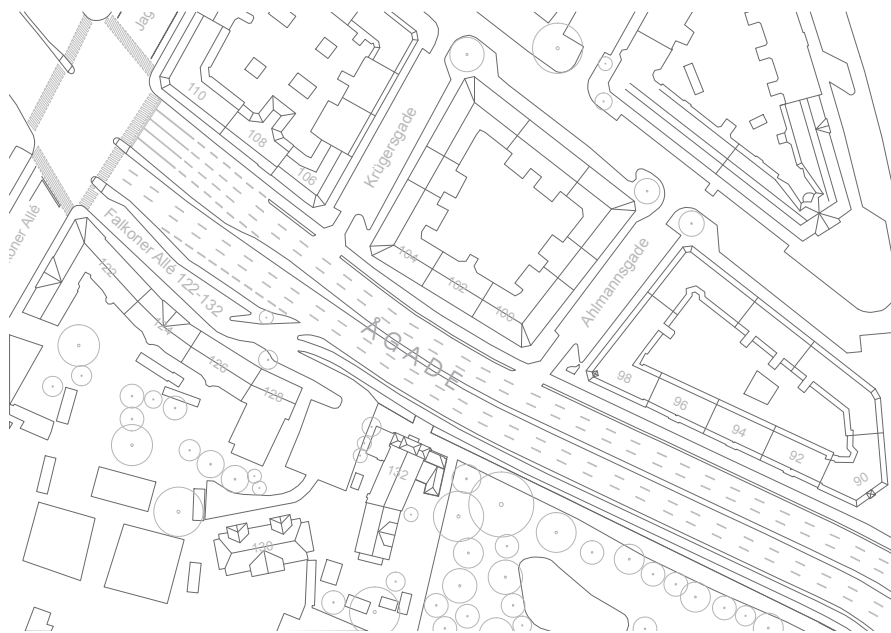


fig. 7 site plan, ågade, 1:2000

context

introduction to the existing spatial context

The location of the site is a section of Ågade stretching from Ågade 90 to 110. The current situation consists of a six-lane urban motorway and along the side facing Nørrebro five storey residential buildings are rising. Facing towards Frederiksberg there are a few residential apartment buildings as well in the Western end against Falkoner Allé, followed by Døves Kirke adjacent to a fenced off park that belongs to *Institut for Geovidenskab og Naturforvaltning* at *University of Copenhagen*. In the very Eastern end of the plot, Den Grønne Sti, a path for pedestrians and cyclists, is crossing the roadway on a bridge.



fig. 8 aerial photograph of the current situation at ågade

Nørrebro seems easy to access from this part of Ågade with several access roads, while Frederiksberg seems more unaccessible with a fenced off park and dead end roads.

As visible in fig. 8 Frederiksberg appear to be more lushly planted in this exact section compared to Nørrebro.

existing spatial context: the urban motorway



fig. 9 the 6-laned urban motorway of ågade, 2022



fig. 10 cars passing by at the urban motorway of ågade, 2022

existing spatial context:

facades



fig. 11 Ågade 110-106, copenhagen 2022



fig. 12 Ågade 100-104, copenhagen 2022



fig. 13 Ågade 90-98, copenhagen 2022

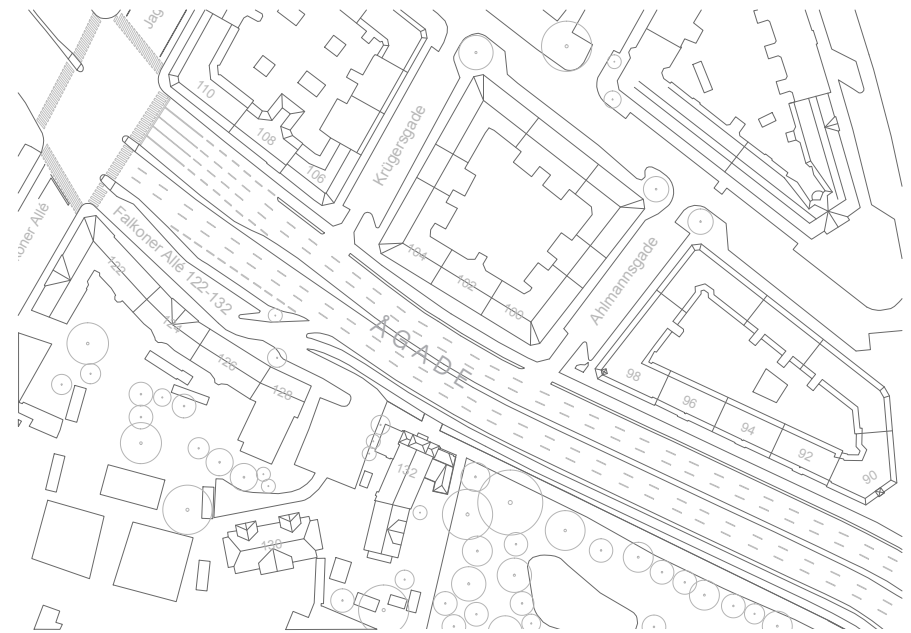


fig. 7 site plan, Ågade, 1:2000

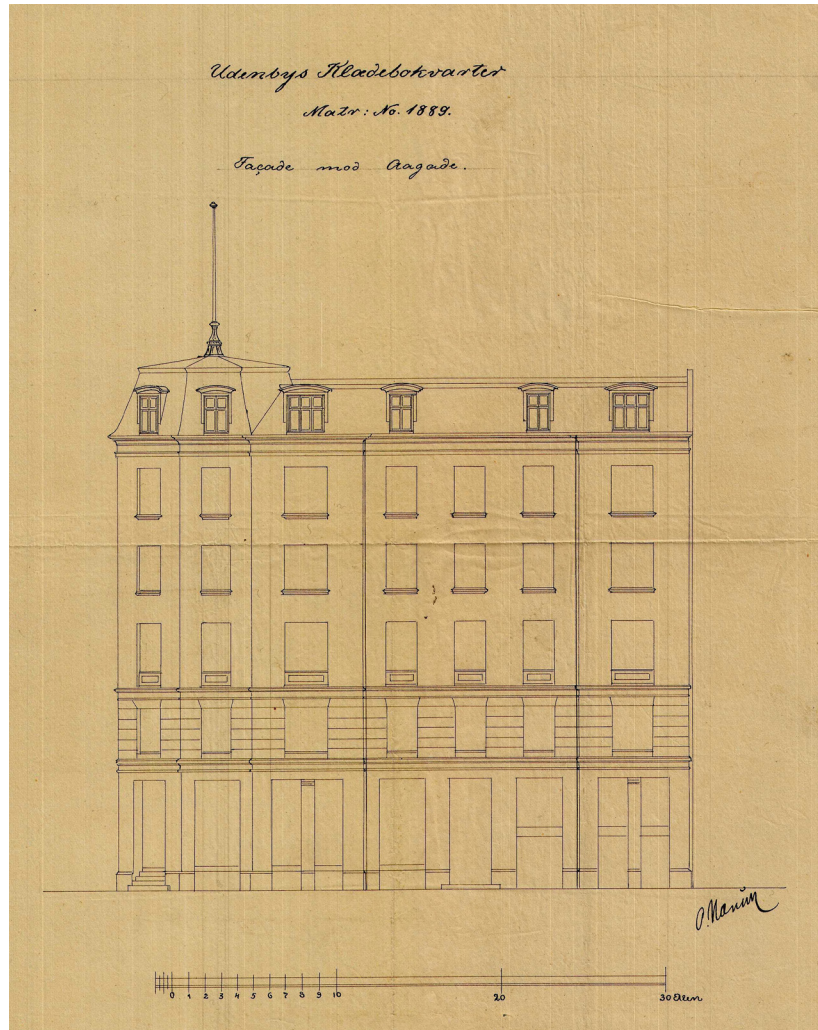


fig. 14 elevation ågade 110, 1888, architect mandrup-poulsen



fig. 15 details from the facade of ågade 110, copenhagen

existing spatial context:

facades



fig. 16

elevation ågade 108, 1893



fig. 17 details from the facade of ågade 108, copenhagen



fig. 18 elevation ågade 106, 1894



fig. 19 details from the facade of ågade 106, copenhagen

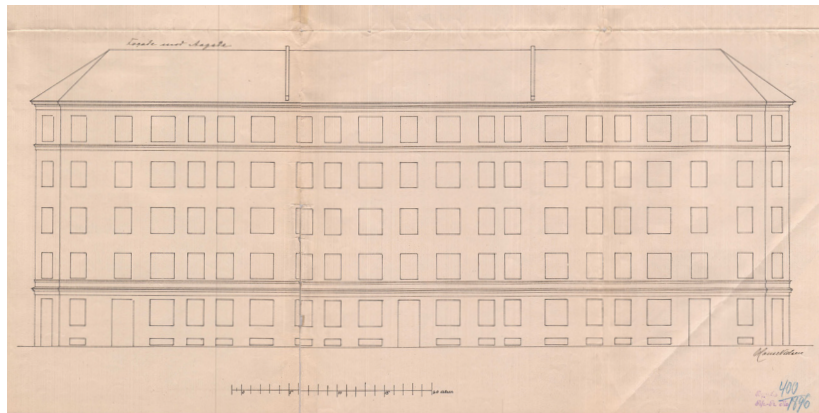


fig. 20 elevation ågade 100-104, 1896



fig. 21 detail from the facade of ågade 104, copenhagen

existing spatial context:

facades

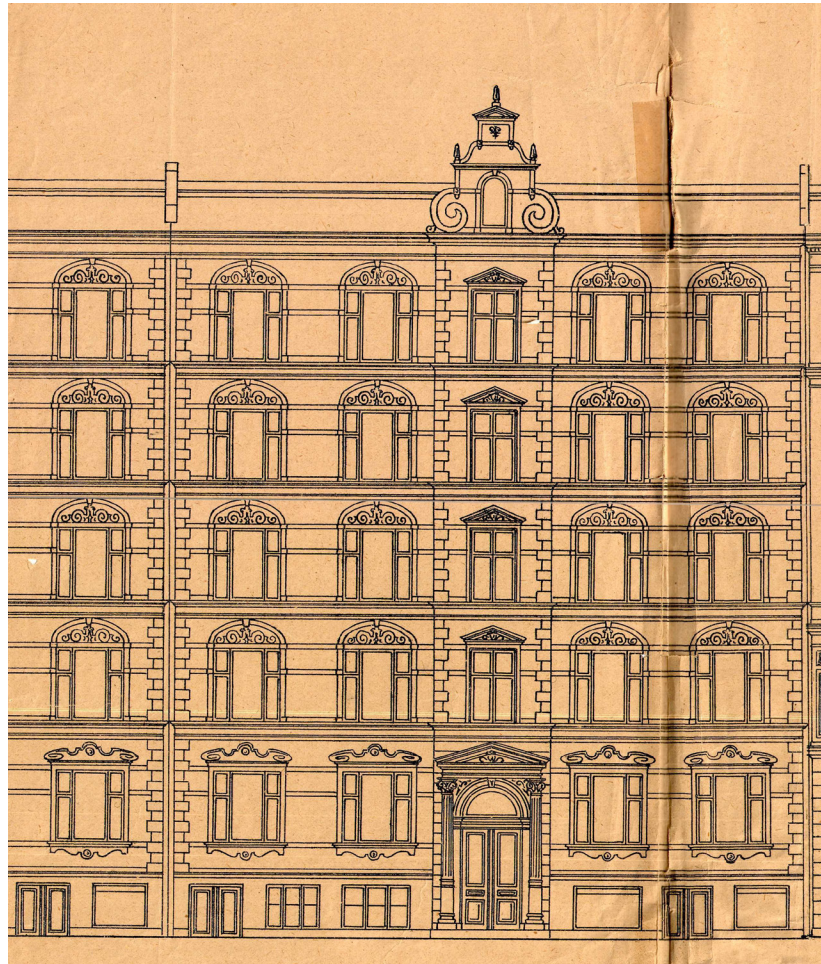


fig. 22 elevation ågade 92-96, 1896



fig. 23 details from the facade of ågade 92-96, copenhagen



fig. 24 elevation ågade 90, 1897



fig. 25 the facade of ågade 90, copenhagen

Sgn. N. 79

KIRKE FOR DØVSTUMME
FALKONERGAARDSVEI N^o 16.

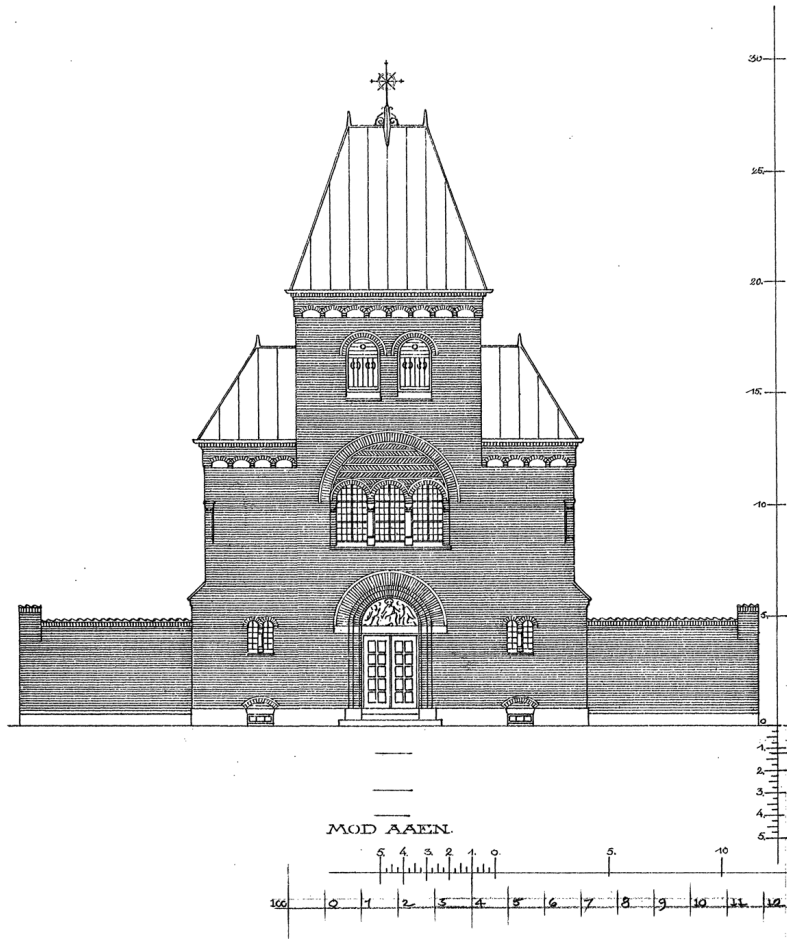


fig. 26 Ladegårdsåen, Museum Of Copenhagen

existing spatial context: døves kirke

On Falkoner Alle 132, Frederiksberg, facing Ågade, lies Døves Kirke, a church for deaf people designed by Emil Jørgensen in a National Romantic style. It was initiated on December 18th in 1904 and was the first deaf church in Europe⁹.

Døves Kirke is one of three deaf congregations in Denmark and covers the eastern part of Denmark including Sealand, Lolland-Falster and Bornholm.

As any other church, Døves Kirke handles the life events baptisms, confirmations, weddings, and funerals. Several of these events include rituals that involve the entrance area outside the church, which today does not cherish these emotional events.

⁹ doveskirke.dk, 2022

existing spatial context:

døves kirke



fig. 27 Døves Kirke, year unknown, Museum Of Copenhagen



fig. 28 Døves Kirke at Ågade, 2022

historical context

In past times Ladegårdsåen was established to embrace the rising need for drinking water in the growing Copenhagen and hence used as water supply for the citizens. The creek supplied water from the higher-lying lakes Damhussøen, Utterslev Mose and Emdrup Sø and was snaking through the city marking the border between Frederiksberg and Copenhagen and finally flowing into Peblingesøen. Besides water supply, Ladegårdsåen was visited by the citizens for recreation and bathing.

Copenhagen was victim for a hastily growth through the 1900s and the residential areas began to expand across the green areas around the creek. Ladegårdsåen transformed from water supply into becoming an open sewer and consequently the piping and cover of the creek began due to public health.

In line with the rising number of cars in Copenhagen in the 1960s and a belief in the increasing motoring, the former area of the piped Ladegårdså was developed into the urban motorway we see today¹⁰.



fig. 29 map of the area around Copenhagen in the 1500s reproduced by SKALK in 1968

¹⁰ ladegaardsaaen.dk, 2022



fig. 30 Ladegårdsåen is covered, year unknown





fig. 31 Ladegårdsåen as water supply, Frederiksberg Stadsarkiv

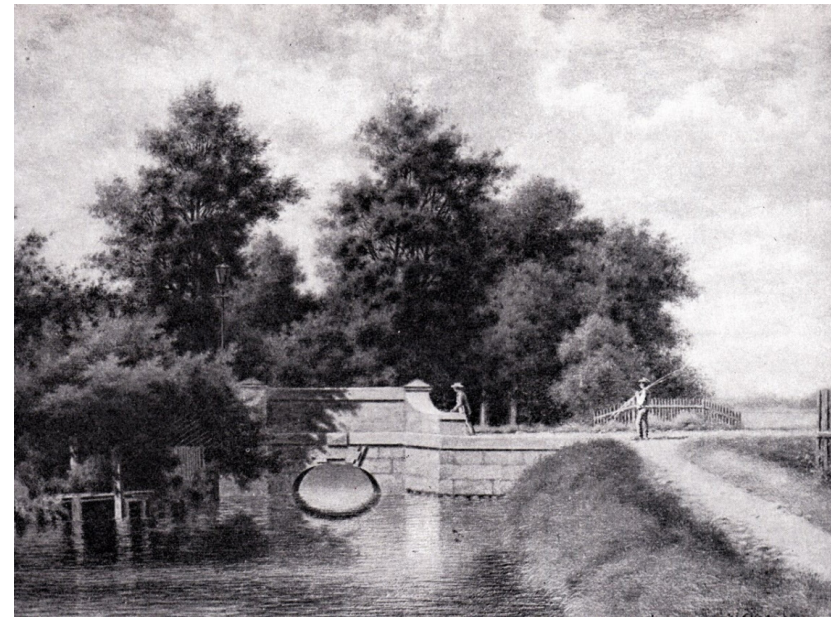


fig. 32 bridge connecting Falkoner Allé and Jagtvej, 1850



fig. 33 Ågade, app. 1910, Museum of Copenhagen



fig. 34 children bathing in Ladegårdsåen, Museum of Copenhagen

Copenhagen and Frederiksberg Municipality initiated a technical preliminary analysis in 2016 of the possibility of tunnelling the current urban motorway and then transforming the area into an urban space with Ladegårdsåen released from its pipes. This analysis was created as a result of the locally initiated idea of releasing Ladegårdsåen and establishing a tunnel for the traffic.

The purpose of the report was to inform the politicians in Frederiksberg and Copenhagen about the calculations and valuations made in collaboration with Engineering Consultants COWI and Architecture Studio Tredje Natur. If there are enough benefits to initiate the project with the costs and inconveniences it will cause.

The preliminary analysis proposes three possible scenarios of how this transformation could look like in a diagrammatic and atmospheric way. The scenarios are made to visualise a variety of technically feasible solutions and in the potential following phases a concretisation and the level of detail should be increased. The scenarios should include a solution to traffic, a release of Ladegårdsåen, cloudburst management, and a transformed urban space¹¹.



fig. 35 Scenario 2B - KU Life / Falkoner Allé / Jagtvej
Omdannelse af Åboulevard, preliminary analysis 2016

scenario 2

Scenario 2 propose a conversion of the urban motorway from Nordre Fasanvej to Peblinge Sø. This solution is focusing on improving the accessibility for the traffic passing through the area in a shorter extent than the other scenarios. The water solution is focusing on sporadic water elements instead of a full release of Ladegårdsåen. Moreover, scenario 2 is by far the cheapest solution to a conversion of the urban motorway¹².

This scenario allows the recreation of a calmer exterior space in front of the church for church rituals. Also, it will make it possible to activate the noteworthy vertical facades from the context in a horizontal square. Finally, this area is in need of better transverse connections between the city districts, and this will at the same time create a rupture in the large elongated urban space, that enables the possibility of creating more intimate spaces in the entirety.



fig. 36 Scenario 2, Omdannelse af Åboulevard, preliminary analysis 2016 by Copenhagen and Frederiksberg Municipality

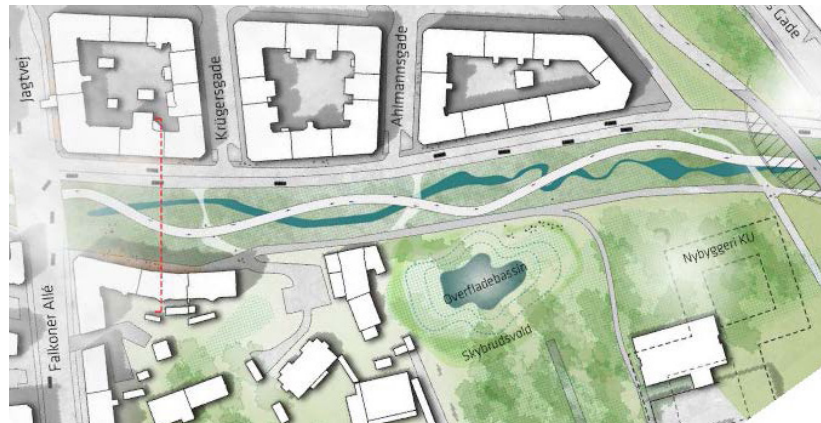


fig. 37 Scenario 2B - KU Life / Falkoner Allé / Jagtvej
Omdannelse af Åboulevard, preliminary analysis 2016

scenario 2 at ågade

The area of Ågade 90-110 in scenario 2 is thought of as an expansion and strengthening of Den Grønne Sti, a path for pedestrians and cyclists that today run across Frederiksberg and Nørrebro. Compared to the existing situation near the intersection at Jagtvej today which is characterised by traffic, noise and high speed, a conversion will enhance the conditions here in particular.

The scenario includes an urban space with recreational areas, water elements and cloudburst management, sidewalks and paths, and finally cycling lanes and driving lanes.

Today, the University garden is fenced off and almost secluded, but this scenario enables a possibility for synergies and greater accessibility by expanding the garden by opening up to the public in the southern part of Ågade. This allows pedestrians and cyclists along Ågade to get the experience of moving through a lush park. Parts of the existing park is thought of as rainwater collection in case of cloudburst with a wall or rampart to protect lower lying areas. The local car traffic is handled in two lanes along the residential buildings to the North¹³.

¹³ appendix 1

project framing

scope of the project

This thesis will provide a detailed proposal on how to create the best possible local refuge for people on a section of Ågade based on the transformation proposal *scenario 2* (fig. 37) from *Omdannelse af Åboluevarden*.

To accommodate the visions from the thesis statement, the project will work in different scales. In a 1:200 site plan it will mainly be investigated how to create a physical cohesion of Frederiksberg and Nørrebro. In a smaller section in 1:50 the spatial design of an urban square will be focusing on paving, furnishing of a sensory balanced urban space, designing for diverse users, and finally an architectural accentuation of the context and the architectural meeting between the city districts. In this scale it will also be investigated how this urban space will relate to the large elongated urban space as The Green Boulevard will become.

delimitation

As the project place itself in the framework of spatial design, it is delimited to mainly focus on a smaller section of Ågade (fig. 38). Therefore, it exclusively focuses on designing a sectional urban space in detail at Ågade based on the proposed transformation in *scenario 2* (appendix 1) and hence not a masterplan of the complete road stretch.

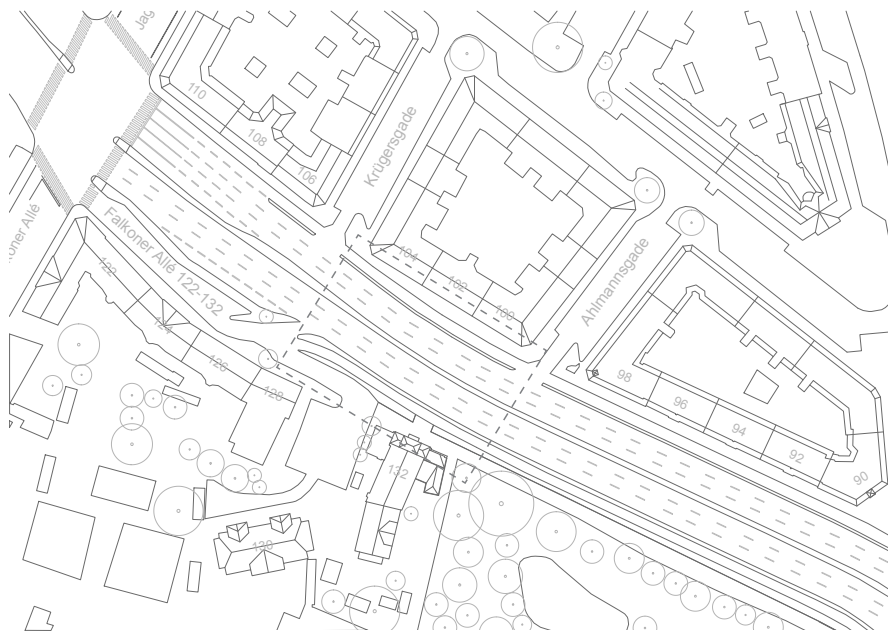


fig. 38 site plan with plot, ågade, 1:2000
original scale 1:200

design strategy and approach

design strategy

- design a sensory balanced urban refuge for people
- accentuate the local architectural context
- strengthening the cohesion of the city

approach

The project seeks to design a sensory balanced urban refuge for people by:

- creating an urban space with possibility of recreation
- designing a sensory balanced urban interior that allows the citizens to connect with their surroundings
- fostering the desire to pause and stay in the urban space
- creating a polyvalent urban space that embraces multifaceted needs

Furthermore, the project will try to accentuate the local architectural context by:

- emphasise the meeting of the two city districts
- registering and studying the architecture of both Nørrebro and Frederiksberg and translate materials, textures and tectonics into new relations and compositions in the design proposal.

Also, the thesis should strengthen the cohesion of the city:

- creating a physical and architectural connection of Frederiksberg and Nørrebro

programmatic reference



fig. 39 paving, Munkestræde, NOAA architects, Svendborg

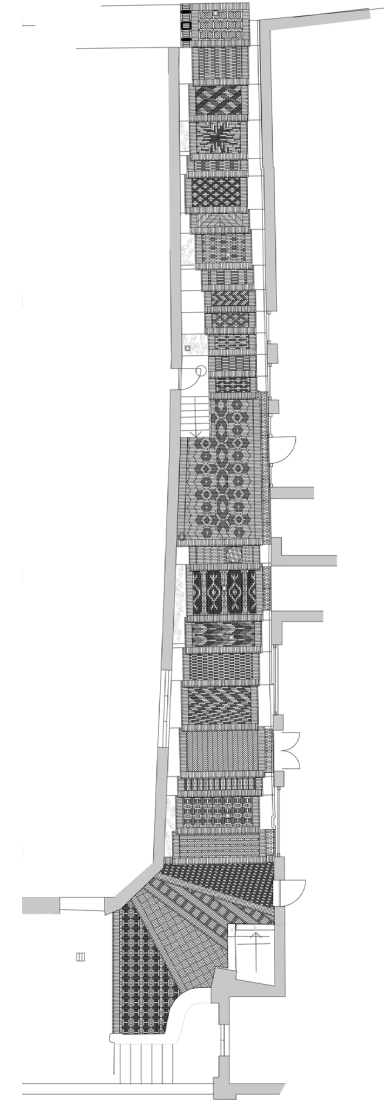


fig. 40 flooring plan, Munkestræde, NOAA architects, Svendborg



fig. 41 water element, Barbican, Chamberlain, Powell & Bon, London



fig. 42 water element, Fondazione Querini Stampalia, Carlo Scarpa, Venice 2021

programmatic reference



fig. 43 urban elements, Fondazione Querini Stampalia, Carlo Scarpa, Venice 2021



fig. 44 urban details, Barbican, Chamberlain, Powell & Bon, London 2022

programmatic reference



fig. 45 modular tile system, Tilescape, Jon Marshall



fig. 46 modular tile system, Tilescape, Jon Marshall

programmatic reference



fig. 47 Entrance at Bispebjerg Kirkegård, Vega Landskab, Copenhagen



fig. 48 paving at Projekt Vestled, Schönherr, Hvide Sande

programmatic reference



fig. 49 bridge under water, Loopgrafbrug, RO&AD Architecten,
The Netherlands

Experiencing Architecture

Stein Eiler Rasmussen

The Eyes Of The Skin, Architecture And The Senses

Juhani Pallasmaa

Cities for People

Jan Gehl

Byen, rummet og det fælles

Carsten Thau

Byhuset

Søren Vadstrup

approach to outcome

methods and techniques

historical approach

- registering and studying the historical precedents of the site

anthropological approach

- ethnographic qualitative interview with Parish Clerk, Parish Assistant and Daily Manager Of Døves Kirke Heidi Nissen Moesby.
- participant observation from a service in Døves Kirke.
- detail registrations of the city districts Nørrebro and Frederiksberg in two separate catalogues.

tectonic approach

- a study focusing on the interrelation of the different tectonic solutions and materials in the design proposal and in relation to the context in drawing and model
- study of the layout and furnishing of referential urban interiors, demarcation and encounters with the surrounding space
- 1:5/1:2/1:1 tectonic detail
- 1:1 material experimentation and sampling

deliverables

phase 1
programme

phase 2
site analysis
theoretical research on urban spaces
ethnographic interview: Heidi Nissen Moesby, Døves Kirke
participant observation at a service in Døves Kirke
detail registration catalogues of Nørrebro and Frederiksberg
1:10,000 site plan/diagram
1:200/1:500 site plan
1:50 plan
1:50 urban interior sections/elevations
sketch site model 1:50
study of referential urban interiors

phase 3
sketching
design proposal in drawing material
1:200/1:500 site model
1:50 site model + model photos
spatial visualisations
1:1 or 1:2 tectonic model
material samples

phase 4
refining material
refining 1:1 or 1:2 tectonic model

phase 5
oral presentation

schedule

september			october			november			december			january		
t	1		s	1		t	1		t	1		s	1	
f	2		s	2		w	2		f	2		m	2	
s	3		m	3		t	3		s	3		t	3	
s	4		t	4		f	4		s	4		w	4	
m	5	semester intro	w	5		s	5		m	5		t	5	hand-in thesis project
t	6		t	6		s	6		t	6		f	6	
w	7		f	7		m	7		w	7		s	7	
t	8		s	8		t	8		t	8		s	8	
f	9		s	9		w	9		f	9		m	9	
s	10		m	10		t	10		s	10		t	10	
s	11		t	11		f	11		s	11		w	11	
m	12		w	12		s	12		m	12		t	12	
t	13		t	13		s	13		t	13		f	13	
w	14		f	14		m	14		w	14		s	14	
t	15		s	15		t	15		t	15		s	15	
f	16		s	16		w	16		f	16		m	16	exams
s	17		m	17		t	17		s	17		t	17	exams
s	18		t	18		f	18		s	18		w	18	exams
m	19		w	19		s	19		m	19		t	19	exams
t	20		t	20		s	20		t	20		f	20	exams
w	21		f	21		m	21		w	21		s	21	
t	22		s	22		t	22		t	22		s	22	
f	23		s	23		w	23		f	23		m	23	
s	24		m	24		t	24		s	24		t	24	
s	25		t	25		f	25		s	25		w	25	
m	26	hand-in thesis programme (12:00)	w	26		s	26		m	26		t	26	
t	27		t	27		s	27		t	27		f	27	
w	28		f	28		m	28		w	28		s	28	
t	29		s	29		t	29		t	29		s	29	
f	30		s	30		w	30		f	30		m	30	
			m	31					s	31				

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Fig. 1: Renlef, P., 2022 (photography)
 Fig. 2: <https://sdfekort.dk/spatialmap> + Renlef, P., 2022 (drawing)
 Fig. 3: Renlef, P., 2022 (photograph)
 Fig. 4: Tredje Natur, 2021, <https://www.magasinetkbh.dk/indhold/ned-gravning-hc-andersens-boulevard-foranalyse-start> [08.09.2022]
 Fig. 5: appendix 1, 2016
 Fig. 6: <https://kbhbilleder.dk> [09.09.2022]
 Fig. 7: Renlef, P., 2022, site plan, (drawing)
 Fig. 8: <https://www.dingeo.dk/adresse/2200-k%C3%B8benhavn-n/%C3%A5gade-100/foto/>, [09.09.2022]
 Fig. 9: Renlef, P., 2022 (photography)
 Fig. 10: Renlef, P., 2022 (photography)
 Fig. 11: Renlef, P., 2022 (photography)
 Fig. 12: Renlef, P., 2022 (photography)
 Fig. 13: Renlef, P., 2022 (photography)
 Fig. 14: <https://public.filarkiv.dk>, [21.09.2022]
 Fig. 15: Renlef, P., 2022 (photography)
 Fig. 16: <https://public.filarkiv.dk>, [21.09.2022]
 Fig. 17: Renlef, P., 2022 (photography)
 Fig. 18: <https://public.filarkiv.dk>, [21.09.2022]
 Fig. 19: Renlef, P., 2022 (photography)
 Fig. 20: <https://public.filarkiv.dk>, [21.09.2022]
 Fig. 21: Renlef, P., 2022 (photography)
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