



Sveriges lantbruksuniversitet
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Agricultural Sciences

SKEPPSBRON ReLINKED

- A SITE SPECIFIC DEVELOPMENT PROPOSAL FOR A HISTORICAL QUAY

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Master's Thesis • 30 credits
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Uppsala 2019

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Department of Urban and Rural Development, Division of Landscape Architecture, Uppsala
Master's thesis for the Landscape Architecture Programme, Uppsala
Course: EX0860, Independent Project in Landscape Architecture, A2E - Landscape Architecture Programme - Uppsala, 30 credits
Course coordinating department: Department of Urban and Rural Development
Level: Advanced A2E
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Title in English: Skeppsbron ReLinked - a site specific development proposal of a historical quay
Title in Swedish: Skeppsbron ReLinked - ett platsspecifikt utvecklingsförslag för en kulturhistorisk kaj
Supervisor: Hildegun Nilsson Varhelyi, SLU, Department of Urban and Rural Development
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Cover image: Illuminated rails. Image produced by the author
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Original format: A3. Posters A1. Please consider the environment before printing.
Keywords: quay, wharf, skeppsbron, skeppsbrokajen, waterfront, historical development, medieval quay, site specific.
Online publication: <https://stud.epsilon.slu.se>

ABSTRACT

Traffic routes and parked vehicles are frequently directed to quays. This urban pattern disrupt and depopulate the unique interface of the city and sea. Research unanimously confirms the causality between new roads and new traffic. The current planning policies point out; “If Stockholm’s traffic system is to work effectively, total volumes of traffic must be reduced, particularly car traffic”. Despite this, traffic flows are planned to be canalized along Stockholm’s most central and historic waterfronts - Skeppsbron. The aim of this project is thus to provide a strategy and design underlay to decision makers, suggesting how Skeppsbron can be developed in the scope of current city planning policies. Given its central location and historical importance to the city, external and internal factors were assessed following an analytical framework. The site based analytical framework was complemented by a reference study, a workshop and parallel sketching process – supplementing the pragmatic approach. The synthesis consists of four strategies; connect the city with the quay, vitalize the street, vitalize the quay and balance historical aspects and contemporary needs. The result shows that a reduction in traffic flow is a viable solution. That also enables stormwater management to be implemented, creating a resilient and aesthetic streetscape. Furthermore, connections to the surroundings are reinforced through accessible materials and elevated passages. The proposal displays how the quay can be developed with regard to the history of the place using small measures. The pragmatic approach was practical to gather thorough site-based information. The disadvantage being that the product is at risk of becoming overcast. Consideration for many separate - at times subjective - factors can take the edge of creative design. Also, based on the amount of decisions the designer needs to make that lack objective truths, makes the output plausible to become biased. Developing a strategy and applying it should therefore be made by separate, independent instances.

SAMMANFATTNING

BAKGRUND

Anläggandet och tillväxten av städer delar historiskt en gemensam nämnare - närhet till vatten. Handelsrutter utgjordes främst av vattenvägar fram till den industriella revolutionen. Kajerna var således dagens motsvarighet till centralstationen, flygplatsen och logistikcentrum. I takt med att världen har blivit allt mindre, har städerna växt sig större. Internationella transporthubbar har i huvudsak förlagts i städers utkanter. I samband med bilens intåg skiftade svenska planeringsideal. Staden expanderade med utbredda förorter med stora byggnadskomplex kompletterade med parkeringsplatser. Men även stadsväven förändrades. Många svenska innerstäder byggdes om och planerades för att bli tillgänglig för biltrafikanter, däribland Stockholms innerstad. Kajerna som förlorat sitt funktionsmonopol stoltserade med fri eftersträvansvärd yta, vilken den snabbt ökande mängden motorburna fordon kunde ta i anspråk.

Den modernistiska stadsplaneringen har lämnat ett mönster i stadsväven vars effekter kvarstår. Det bygger på att trafikleder och parkerade fordon inte sällan tillåts att ta plats på kajer, som avskärmar och avbefolkar det unika gränslandet mellan stad och hav. Postmoderna och samtida exploateringar av uttjänade hamnmiljöer har dessutom alltjämt homogeniserats till att bestå av generiska kontors- och handelskomplex blandat med dyra bostadsrätter.

SKEPPSBRON

Stockholm är en stad omgiven av vatten belägen i sundet mellan Mälaren och Östersjön. Dess knutpunkt som Mälardalens port till omvärlden gjorde det möjligt för staden att gro. Skeppsbron är den äldsta av stadens kajer. Den anlades på order av Gustav II Adolf i början av 1600-talet. Kajen blomstrade med köpmän i fyra sekel, som bidrog till förekomsten av Stockholm och spelade en viktig roll i den svenska handels- och sjöfartshistorien (Skeppsbroggruppen 2005).

Kajen har gått från att vara en livlig miljö, en stor arbetsgivare och porten till omvärlden till att domineras av rörlig och stillastående biltrafik. I Stockholms översiktsplan anges att en minskning i biltrafiken måste ske för att trafiksystemet ska fungera effektivt. De påpekas även att stadens populära strandpromenader och kajer är en mycket stor tillgång att utveckla. Vad som aktualiserar en utredning av just Skeppsbron är Slussenprojektet – ett av de största infrastrukturprojekt i staden som ansluter till kajen. Skeppsbron, som under byggtiden är en återvändsgata, planeras att öppna för ett flöde om 10 000 fordon per dygn.

MÅL, SYFTE & FRÅGESTÄLLNING

Målet med uppsatsen är att producera en strategi för och gestaltning av Skeppsbron i enlighet med politiska riktlinjer.

Syftet är att inspirera till en alternativ utveckling av Skeppsbron för beslutsfattare och visa på dess tillämplighet.

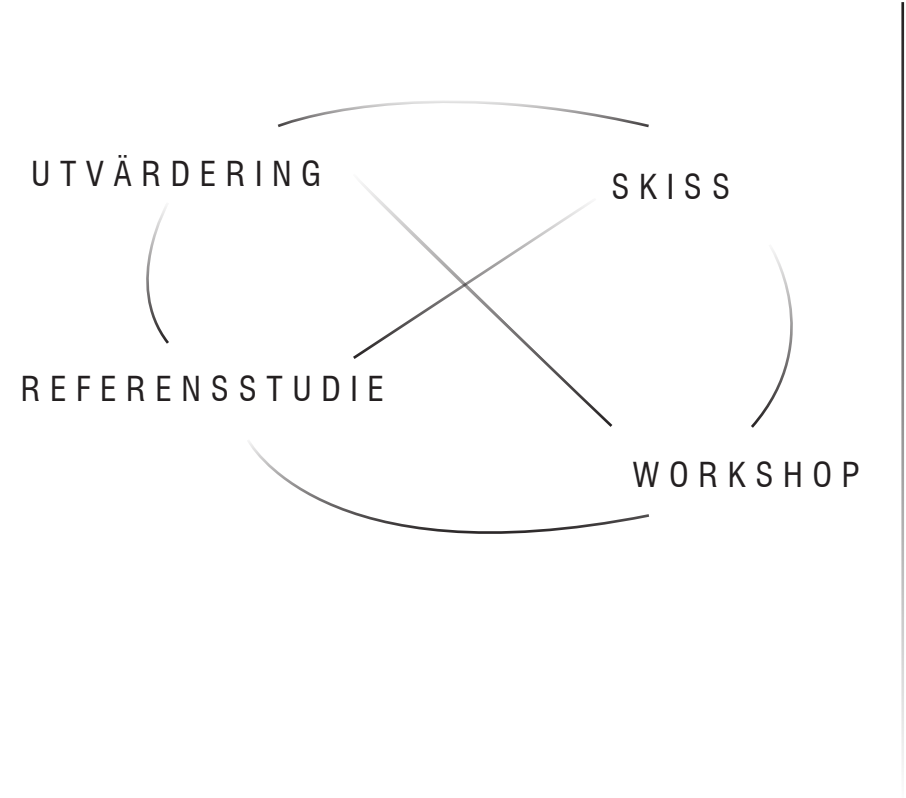
- Vilka är huvudaspekterna att överväga för utveckling av Skeppsbron?*
- Hur kan Skeppsbron gestaltas utifrån funna begränsningar och förutsättningar?*

METOD

Rapporten grundar sig i en pragmatisk utvärdering av platsen. Den pragmatiska utvärderingen utgörs av ett ramverk som kategoriserar externa och interna faktorer som påverkar varje plats. Externa faktorer bestod bland annat av lagar/riktlinjer, siktlinjer, hydrologi, trafik och angränsande material och strukturer. Interna faktorer bestod exempelvis av platsens historia, användning, formspråk och funktioner. Informationen till den pragmatiska utvärderingen baseras på litteraturstudier, platsobservationer, studier av visuellt material och intervjuer med trafik och vattenutredare. Avgörande fynd inom respektive fält utgjorde förutsättningar som var styrande i vidare gestaltning och strategi. Grundprinciper definierade vilka upptäckter inom respektive fält som var avgörande för gestaltungsprocessen.

Den pragmatiska utvärderingen kompletterades med tre designmetoder. En referensplatsstudie vars syfte var att inspirera, en workshop som syftade till att generera idéer och en skissprocess som löpte parallellt med övriga metoder. Referensstudien bestod av två platser som valdes ut efter likheter med Skeppsbron och dess problembild. Kriterier som filtrerade urvalet var i synnerhet restaurering senaste årtiondet, innerstadskaj, skala och trafik. Referensplatserna utvärderades därpå efter formspråk, tidsanda, platskänsla och rumslighet. Workshopen bestod av två grupper yrkesverksamma landskapsarkitekter som arbetade med varsin modell, en storskalig över hela området och ett delutsnitt. Skissandet pågick parallellt med resterande delar av arbetet och utfördes för hand, i AutoCad och i SketchUp.

SKISS AV ARBETSPROCESSEN -



STRATEGI

IMPLEMENTERING

FÖRSLAG

RESULTAT

ANALYTISKT RAMVERK

Det analytiska ramverket redovisar att en minskning av trafikflödet är en gångbar lösning genom att bevara Skeppsbron som en återvändsgata för biltrafik. Kollektivtrafiken ska fortsatt kunna nyttja sträckan för genomfart. Det möjliggör dessutom dagvattenhantering som bidrar till en resilient och dynamisk gatumiljö. Dagvattenhaneringen har inte en nämnvärd inverkan på den ekologiska statusen av recipienten, men bidrar med estetiska kvaliteter.

Vidare redogörs att kopplingen mellan kaj och stad ska stärkas genom upphöjda gångpassager och tillgängliga markmaterial. Utformningen ökar säkerheten för fotgängare men kan ha en negativ påverkan för yrkestrafikanter såsom busschaufförer.

Ur ett kulturhistoriskt perspektiv de bör nedgångna tullhusen bevaras men renoveras. Tillbyggnationerna har en negativ påverkan på kajens utemiljö och bör utformas mer inkluderande. Fasaderna på tullhusen bör göras genomsiktliga i största möjliga mån. Den nordligaste byggnaden är avvikande i stil och dess användning är inte offentlig vilket strider mot kajstrategin.

REFERENSPLATSER

Referensobjekten som studerades var Norr Mälarstrand och Strömkajen. Norr Mälarstrands växtlighet tillförde harmoni och rumslighet till platsen. Medan det kantiga och hårdgjorda Strömkajen uttryckte styrkan av en samlad identitet som platsbildande. Likhetera mellan referensobjekten och platsen var fortplantningen av kajkantens skarpa formspråk. Referensobjektsstudien väckte en tanke om att skissa på organiska former som motpol till kajers alltjämt kantiga formspråk. Vidare inspirerades jag av Strömkajens lösning på att hantera höjdskillnad mellan kaj och gata, samt tillgänglighetsanpassningen utmed Norr Mälarstrand som bevarade de ursprungliga markmaterialet.

WORKSHOP

Workshoppen bidrog med idéer som jag vidareutvecklade på ett konceptuellt plan. Idéerna tillät mig att flytta fokus från att lösa tilltänkta problem som upptäcktes under utvärderingen, till att fokusera på att skapa och tillämpa lösningar. En föreslagen sekvensering av kajen tillämpades vertikalt genom vegetation utmed vägen för att skapa dynamik längs den monotona vägsträckan. Ett frö planterades om att skapa en spektakulär sittplats för utblickar.

SKISSARBETE

Skissarbetet redovisar sex avgörande skeden under arbetes gång som format det slutgiltiga förslaget. En ursprunglig skiss av platsen som redogör mina första tankar om utformningen av platsen. Skissarbetet redovisar en initialt svepande design till platsbunden respektfull gestaltning.

FÖRSLAG

RELINKED

ReLinked är förslagets konceptuella kärna, den gemensamma nämnaren som förbinder dess olika delar. Inspirationen till konceptet är hämtat från tunga kedjor som är fästade mellan pollare på kajen, som separerar köryta från fotgängare. Förslaget vänder på dess ursprungliga användning och består av två delar. En övergripande strategi som omfattar hela Skeppsbron till implementering av denna som består av gestaltningar på delar av platsen. Förslagets kärna är att sammanlänka Skeppsbron med dess omgivning, historiskt och funktionellt.

Strategin består i att gatan ska levandegöras, kopplingarna mellan Gamla stan och kajen förbättras, ett tillvaratagande av historiska lager, rivning av en byggnad och avskaffandet av parkeringsplatser på kajen. Den strategin implementeras genom att bevara Skeppsbron som en återvändsgata för biltrafik och reducera gatubredden. Utmed gatan föreslås anläggningen av dagvattenbäddar. Kopplingen förstärks av fler och nya passager mellan Gamla stans gränder och kajen på noga avvägda platser. Visuellt förstärks kopplingen genom att ett av tullhusen bryts upp. Tullhusen bevaras men renoveras i övrigt och förslås vara genomsiktliga i största möjliga mån. Sträckningar med granithållar anläggs som tillgängliggör strandlinjen ytterligare. Ljusslingor belyser bevarade tågspår, vars historiska dragning symboliseras av granitstråken.

En arkitektoniskt imiterande byggnad ersätts med en ny identitetsstark byggnad som är anpassad efter platsens behov. I anslutning runt byggnaden skapas en platsbildning som en följd av avskaffade parkeringsplatser och en ny passage mellan stad och kaj.

DISKUSSION

All landskapsarkitektur är platsbunden, men all är inte platsspecifik. Metoden är ett gott tillvägagångssätt för att producera en platsspecifik realiserbar strategi och design. Nackdelen är att gestaltningen riskerar att bli friktionslös eftersom ett hänsynstagande till många åtskilda, emellanåt subjektiva synsätt och faktorer kan ta udden av vågad och nyskapande design. Samtidigt riskerar resultatet att bli snedvridet, på grund av beslut fattade utifrån underlag som saknar objektiva sanningar. Att ta fram en strategi och tillämpa denna bör därför göras av separata och oberoende instanser.

Slutsatsen är att se platsen från ett större perspektiv och avgöra om platsspecifik design är *mer* eller *mindre* relevant. Vissa platser möjliggör en större frihet för arkitekten att dra inspiration från hennes intuition - att se platsen som ett tomt ark - medan andra behöver hanteras mer varsamt. Skeppsbron är ett synnerligen gott exempel på en miljö som borde utvecklas utifrån ett mer platsspecifikt tillvägagångssätt.



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Figure 1. Mooring detail.

INTRODUCTION

This thesis raises the topic of urban waterfront development. Post-modern developments of European harbors have followed a pattern of generic office and shopping centers mixed with luxury housing. All too often, the transformation has been based on tabula rasa - Latin for blank sheet - where possibly single historical artefacts have been saved. Modernism has been criticized for its lack of respect for local circumstances and conditions, where everything that does not fit into the universal notion of “international design” is erased. Concepts such as *genus loci* – the spirit of the place” - and critical regionalism were introduced opposing the modernistic concept of placelessness.

Lisa Diedrich - professor in landscape architecture - has introduced an evaluation tool to assess site-specificity of contemporary harbour developments. She promotes a pragmatic approach, which is an updated understanding of site-specificity. Where the function and use of the site should direct the design approach rather than searching for the “spirit of the place”. Diedrich promotes two concepts first described by architects Burns and Kahn, “Site thinking” and “Thinking about site”. Site thinking describes how designers interpret the site and its original ideas - the designer’s reading of the site. While thinking about a site highlights how designers create their sites – editing or writing, that is translating findings and creating something completely new.

“Local uniqueness matters.. Spatial differentiation, geographical variety, is not just an outcome; it is integral to the reproduction of society and its dominant social relations. The challenge is to hold the two sides together; to understand the general underlying causes while at the same time recognizing and appreciating the importance of the specific and unique.” - Doreen Massey 1984.



INTRODUCING THE SITE

Stockholm is a city surrounded by water. The foundation and steady growth of various major cities, share a common denominator, which is proximity to water. Trade routes were mainly waterways up until the industrial revolution and its shoreline enabled the city to flourish.

Skeppsbron is a historical quay in the Old town of Stockholm. The current appearance of the quay was built - on orders of King Gustav II Adolf - in early 17th century. The Kings vision - when the city wall lost its function and was demolished - was to establish an astounding facade towards the water to impress traders that arrived in ships. The colorful houses that were built are well preserved and iconic for Stockholm to this date. The quay flourished with merchants for four decades, whom contributed to the existence of Stockholm and played a significant role in the Swedish trade and shipping history. (Skeppsbroguppen 2005)

The quay was characterized by open space until the industrial revolution in the 1870s when railway tracks and various warehouses were established. During the postwar era the customs houses were mainly used as passenger ports to Finland and the Baltic countries. Since 1976 the quay is trafficked by commuter and archipelago boats. The customs houses are leased to restaurant franchises and have no connection to the shipping business. Nowadays the quay is also used by smaller cruisers, during state visits and as a display for various ships. (Stockholms hamnar 2019)

With its older settlement and wide quay, Skeppsbron is the most significant facade of Stockholm’s face towards the sea. Views towards the city’s inlet and urban archipelago landscape are some of the quays very high values.

“The sea wall itself, the interface between land and the force of the sea, has always provided a point of interest”
- Wylson 1986

STOCKHOLM



Figure 2. Map of Stockholm. Produced by author.

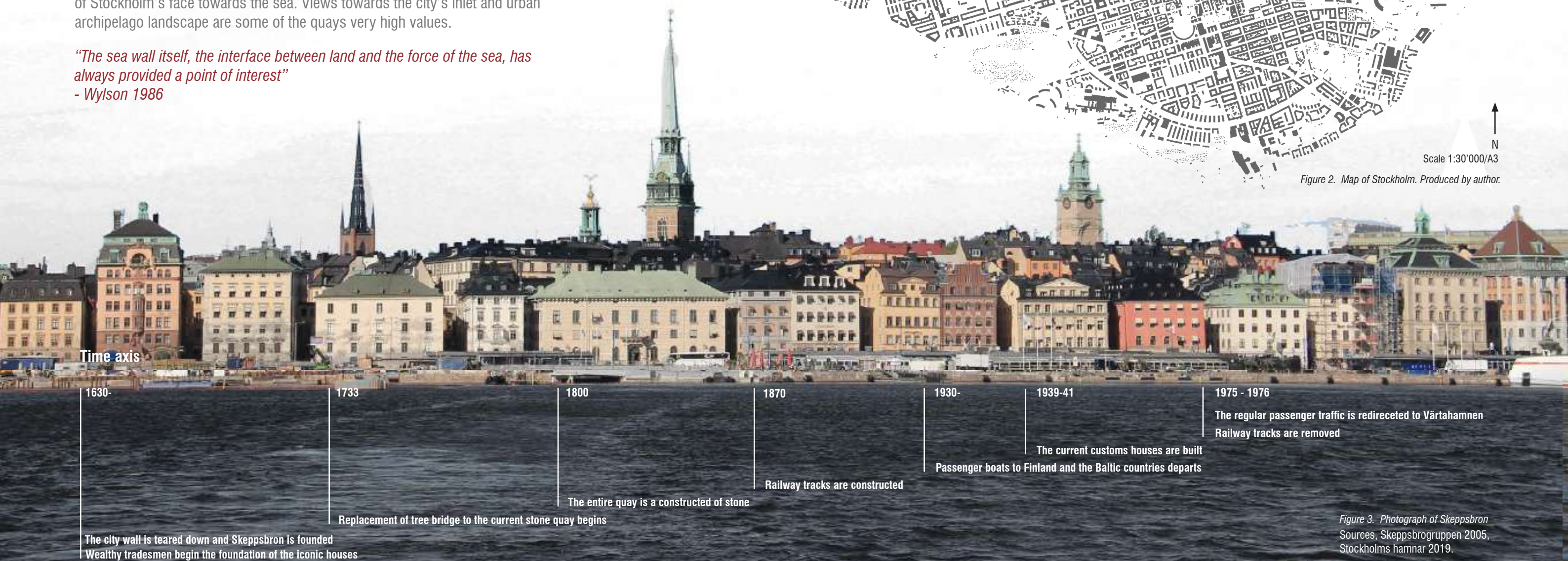


Figure 3. Photograph of Skeppsbron
Sources, Skeppsbroguppen 2005,
Stockholms hamnar 2019.

WHAT'S THE ISSUE?

Slussen - the southern transit node of Stockholm - is an ongoing project that will finish in 2025. Project Slussen connects directly to Skeppsbron, which raises attention of developing a basis for future upgrading. Further arguments to investigate the given area can be found in the city plan of Stockholm, where the first stated strategy is to continue to strengthen central Stockholm.

Stockholms hamnar (2019) states that there are several current needs that call for a review of Skeppsbron:

“The Slussen project affects the area by connecting the new site to Skeppsbron.”

“Skeppsbron is largely used for transit traffic for cars, buses, bicycles, pedestrians and at present, traffic is not optimal, and needs to be reviewed.”

“The customs houses located at Skeppsbron are in need of renovation and need to change to accommodate a more efficient traffic solution.”

The focus on creating an “efficient traffic solution” - a vague statement - concerns me. In short, when motorism began in the 1950s Swedish city planners focused on car accessibility and cities became increasingly unwelcome to pedestrians (Gehl 2010). This trend is reversing due to shifts in city planning preferences, research and environmental awareness. Introducing pedestrians and cyclists to be given more space in cities. Technological advances, on the other hand, result in cars and vehicles becoming increasingly climate-friendly over time. Although, the amount and especially the size of vehicles can increase or stay more or less constant (Alla Bäck 2018). Efficient land use is thus the topic on which city planners should focus.

The once lively quay has lost its function and turned into an adverse site. The street was heavily trafficked and is currently over dimensioned and parking lots are widespread on the dock, as are randomly dispersed containers, witnessing that the waste disposal is rather disorganized. The old customs houses are worn out, no longer serve the shipping industry and leased to various restaurant owners. Now, there's a unique chance to utilize and restore the high qualities of Skeppsbron.



Figure 5. The monotonous expression of the expressway.



Figure 8. Containers intended for shipping industry.



Figure 7. Recycling station of dwellers.



Figure 9. Randomly placed bins.



Figure 6. Wide spread parking lots on Skeppsbrogajen.



Figure 10. Worn out customs houses.



Figure 4. Wide spread parking lots on Skeppsbrogajen.

AIM & PURPOSE

The aim of the thesis is to produce a strategy for and design of Skeppsbron in accordance with political guidelines.

The purpose is to inspire to an alternative development of Skeppsbron for decision makers and validate its applicability through site-specific methodology.

RESEARCH QUESTION

- What are the key aspects to consider in a future development of Skeppsbron?
- How can Skeppsbron be designed based on discovered limitations and preconditions?

DELIMITATION

The report will focus on the applied strategy. The design will be limited to certain parts of Skeppsbrokajen in detail - the northern part in particular. Whereas the strategy will explain how entire Skeppsbron can be developed and how the parts interact. Financial calculations are not a part of this essay but the proposal is to stay within a reasonable budget to coincide with the aim.

Reports on increasing sea levels is not an aspect taken into account in this essay. I find it more realistic that large scale projects will take place to protect the residents around Saltsjön from rising seas. However, local adaptations to climate changes, for instance increased precipitation, is a significant aspect to investigate in all urban construction and planning.

Traffic noise investigations report that noise values are above 70 dB along the expressway. The noise decreases but spreads to the quay reaching values of 55-59 dB at lowest. At low speeds, the engine is the main source of noises, whereas at higher speeds, the primary source is tire and road surface noise. (Växsjö kommun 2019) Technological advancements has enabled engines to work more silently in the last 20 years. Hence, the most efficient way to lower noise is by regulating the speed limits. Given the trend of constantly increasing electric and hybrid cars, a decrease of noise caused by traffic in this situation is promising. Hence, a design that focus on lowering the noise by physical barriers is not a primary necessity.

The design of the streetscape will adapt to current run-off system and elevation points to minimize edits to the site and thus construction costs – upholding a viable solution.

An unedited quayside promotes flexibility to the boat traffic and docking possibilities. Hence, the design will not edit the quayside nor extend beyond it. However, this does not mean that special docking solutions to the boat traffic is not a main aspect to take into account and further investigate.

Reference studies are limited to inner city quays of Stockholm due to the limited time frame.

TERMINOLOGY

Area of control - a concept that refer to aspects that are limited to the administrative site boundary, such as history and surface material.

Area of influence - a concept that refers to forces that act upon the site outside its administrative boundaries, such as weather phenomenons and policies.

Area of effect - a concept that refers to consequences of the design on its surrounds.

Area of tolerance - an area where vertical edits are adequate.

Hardscape - refers to the inorganic components of a built up landscape, opposed to soft landscape, i.e. vegetation and plants.

Mobile boat traffic - public or commercial boats that are in regular traffic. Such as hop-on-hop-off boats, commuter ferries or taxi boats.

Operative findings -discoveries that have been driving or decisive for the continued process.

Skeppsbroraden - stretch of iconic houses of Old town, also called facade of Stockholm.

Skeppsbron - encompasses the entire site; expressway and quay.

Skeppsbrokajen - the outer quay.

HOW IT’S DONE

INTRODUCTION OF METHODS

The sequential order of this thesis does not reflect the true nature of the actual design process that is parallel and looping, but is reconstructed and structured to fit certain academic requirements and facilitate reading.

The general design method that landscape architects use is described by architect Bryan Lawson in the book How Designers Think: The Design Process Demystified. Lawson breaks down the process into three fundamental parts. Analysis, synthesis, and evaluation. These stages must not come in any specific order - they rather go in loops - hence, a decision sequence of all parts is needed to fully understand the design process (Lawson, 2006, p 27). In order to be transparent and clarify decisions taken, information that has driven the design and had definite impact is highlighted as key notes in the report.

PRAGMATIC APPROACH

At an early stage of the process my preconceived notions - as a landscape architect student - consisted of various opinions based on prejudice, considering the place, embodying both general design preferences as biases on certain situational aspects. I had a strong opinion on what the problem was - the expressway was depraving the potential of Skeppsbron as popular place to travel by and to for dwellers and tourists - and many ideas of how it could be improved. I had only a vague understanding of the forces that acted upon the site and thus the actual possibilities of improving it. This led me to widen the scope and analyze the site in a contextual and site-specific manner.

Burns and Kahn, describe three areas of a site in their book Site matters, that I find useful. Area of influence, area of control and area of effect. The area of influence compromises forces that act upon the site outside its boundary, such as hydrology and traffic flows. Area of control compromises aspects within the site administrative boundary, such as history and surface material. The area of effect permits evaluation of the design’s consequences on its surrounds in a larger scale.

“Any design action for a limited site in a city is at once influenced by, and has consequences for, the city as site” - Carol Burns

Lisa Diedrich, professor of landscape architecture, illuminates that various disciplines promote their own agendas (2013, p 30): “Urban planners and real estate developers focus on future uses Cultural heritage researchers and conservationists concentrate on preservation. Architects work with buildings. Urban studies researchers are concerned with societal issues. Environmentalists deal with identifying ecologically relevant aspects. Artists engage in expressing experiential features”.

She further argues that landscape architects extend a transversal approach, by combining issues that are otherwise segregated to each discipline. Working methodically across scales and disciplines discloses that consideration and choices are made by the designer.

Diedrich categorizes main properties of a site to physical, dynamic and immaterial aspects. Physical aspects compromise structures and materials/fabric. Dynamic aspects introduces the temporal dimension and focus on natural processes and practices that is ecology and sociology. The immaterial aspects consists of memories, atmospheres and discourses. Memories, are the designer’s personal experiences combined with objective history, the “absolute” truth of the past. (2013) Atmospheres, a familiar yet vague phenomenon - described by German philosopher Gernot Böhme - are produced between the site and the visitor. Discourses regard various political documents, involving official visions for the future and current local legislations.

By studying inputs from various disciplines and interpreting the site’s aspects from an inside (control) and outside perspective (influence) the aim has been to create a comprehension of the sites context - specific opportunities, requirements and constraints. Upon which a decision sequence is presented and the proposal thus motivated.

To gather comprehensive site knowledge, create an interpretation of the site and in order to provide a decision sequence, the method compromised a study of:

- Literature including current and future plans and regulations, historical documents and design theory.
- Visual material including personal photographs, historical maps and project drawings and illustrations.
- Observation on site by foot, bus, bike and boat.
- Interviews with experts in water management and traffic planning.

CONNECTIVITY ANALYSIS - SERIAL VISION

As the disconnecting effect of the expressway was identified as a main problem, a connectivity analysis was an apt method to perform and include in the analytical framework. Serial vision is a phenomenon introduced by Gordon Cullen (1961- p.17) and can best be described as following:

“To walk from one end of the plan to another, at uniform space, will provide a sequence of revelations... the slightest deviation in alignment and quite small variations in projections or setbacks on plan have a disproportionately powerful effect in the third dimension”

Österlånggatan is the street that runs parallel to Skeppsbron and several alleyways connect these two routes. Walking along the alleyways and main routes, in all possible directions was a powerful method to investigate desired locations of potential pedestrian crossings and visual connectivity. By serial vision the alleyways were analyzed in regards of continuity and sightlines.

The result of the analysis was applied to mappings of city functions such as commuter, plazas, landmarks, which generated an output of prioritized alleyways in a broad context. The alleyways were also analyzed in terms of location to one another, in order to enable pedestrian flow and permeability at optimized spots.

MATRIX OF ANALYTICAL FRAMEWORK

	IMMATERIAL	DYNAMIC	PHYSICAL
AREA OF INFLUENCE NON-SITE BOUND	DISCOURSES SIGHTLINES SERIAL VISION	TRAFFIC FLOW HYDROLOGY	STRUCTURES MATERIALS
AREA OF CONTROL SITE BOUND	SPATIALITY MEMORIES/ HISTORY	SOCIOLOGICAL - PRACTICE USAGE	MATERIALS ARTEFACTS DESIGN LANGUAGE STRUCTURES
AREA OF EFFECT	EVALUATION	EVALUATION	EVALUATION

Table 1. Aspects on top are general categories of main properties that all sites have. Area of influence is a concept of forces that act upon the site. Area of control refer to aspects within the site boundary. The matrix discloses under what categories various phenomenon or aspects fall. Given subjects are classified as shown, assessed and presented accordingly in the report. Area of effect (evalutation) is the last chapter where consequences of design edits are discussed, amongst other topics.

DESIGN METHODS

REFERENCE SITES - AREAS OF INSPIRATION

Given that no locale is disconnected, an assessment of certain similar sites was apt to gather useful insights and solutions to make use of in this project. The reference sites were selected through criteria's of relevance to Skeppsbrokajen and the scope of this project.

- inner city quay in Stockholm
- restored during past decade
- trafficked by commercial and/or commuter boats
- similarities in scale

Selected sites where assessed in terms of;

- design language, sharp - organic
- perceived temporal dimension, contemporary - historical
- sense of place, dissociative - affinity
- spatiality, openness - enclosure.

WORKSHOP

Workshop is a method with the aim to gather ideas to a project, often in the early stage of a creative working process. The principle is that everyone's ideas should be heard, making it a democratic way of working. There are some parameters that are important to consider in order to host a successful workshop. The aim, purpose and time-limit should be evident, the attributes of participants should be as diverse as possible (i.e. age, education, experience) and everything produced during the workshop should be documented (Inhouse 2019). The participants were selected by profession as the essay was written in an office consisting of landscape architects.

The workshop was conducted following this set of principles. Two groups - strategic and conceptual - consisting of five people each, were given two separate physical models each. The strategic group a large scale model, encompassing the entire site. The conceptual group one at a more detailed level, encompassing a site where a cross-link-connection possibly could be located. Both groups were given following scenario to relate to, a set of mixed materials to sketch with and 15 minutes to do so.

- WHAT WOULD SKEPPSBRON LOOK LIKE IF YOU WERE TO DECIDE? DISREGARD TECHNICALITIES SUCH AS CURRENT ENACTMENTS AND CITY FUNCTIONS LIKE TRANSPORTATION.

At a final stage, a discussion of following topics was suggested.

Strategic group:

- WORK WITH ONE COMPONENT THAT CAN BE DUPLICATED

Conceptual group:

- HOW IS SPATIALITY CREATED WITHOUT USING SOFT LANDSCAPE MATERIALS?

SKETCHING

A sketching process was conducted parallel to the rest of the methods. Sketches were produced by hand and in computer programs AutoCAD and SketchUp. The sketches followed no theory or scientific method, but constituted an investigation of responses to the findings made during the pragmatic approach, reference and workshop studies.

The process was generally dividable to three distinct parts – concept – applicability – communication.

Rough structures and ideas were mainly drawn and tested by hand. Solid concepts were transferred to the computer and its technical practicalities were further scrutinized and perfected in AutoCAD. Spatial relationships were studied in SketchUp that was also used to ultimately produce communicative visual material of the design proposal.

P T . 1

P R A G M A T I C A P P R O A C H

A R E A O F I N F L U E N C E

A R E A O F C O N T R O L

AREA OF INFLUENCE

THE CONTEXTUAL ANALYSIS IS AN IN DEPTH ASSESSMENT OF OUTSIDE FORCES THAT ACT UPON SKEPPSBRON.

AREA OF INFLUENCE	IMMATERIAL DISCOURSES CULTURAL ASSESSMENT INBOUND SIGHTLINES SERIAL VISION	DYNAMIC SOCIOLOGICAL - TRAFFIC FLOW ECOLOGICAL - HYDROLOGY	PHYSICAL MATERIALS STRUCTURES
AREA OF CONTROL	SPATIALITY MEMORIES	SOCIOLOGICAL - PRACTICE USAGE	MATERIALS ARTEFACTS DESIGN LANGUAGE STRUCTURES
AREA OF EFFECT	EVALUATION	EVALUATION	EVALUATION

Table 2. Highlighted row of assessed aspects in following subchapter.

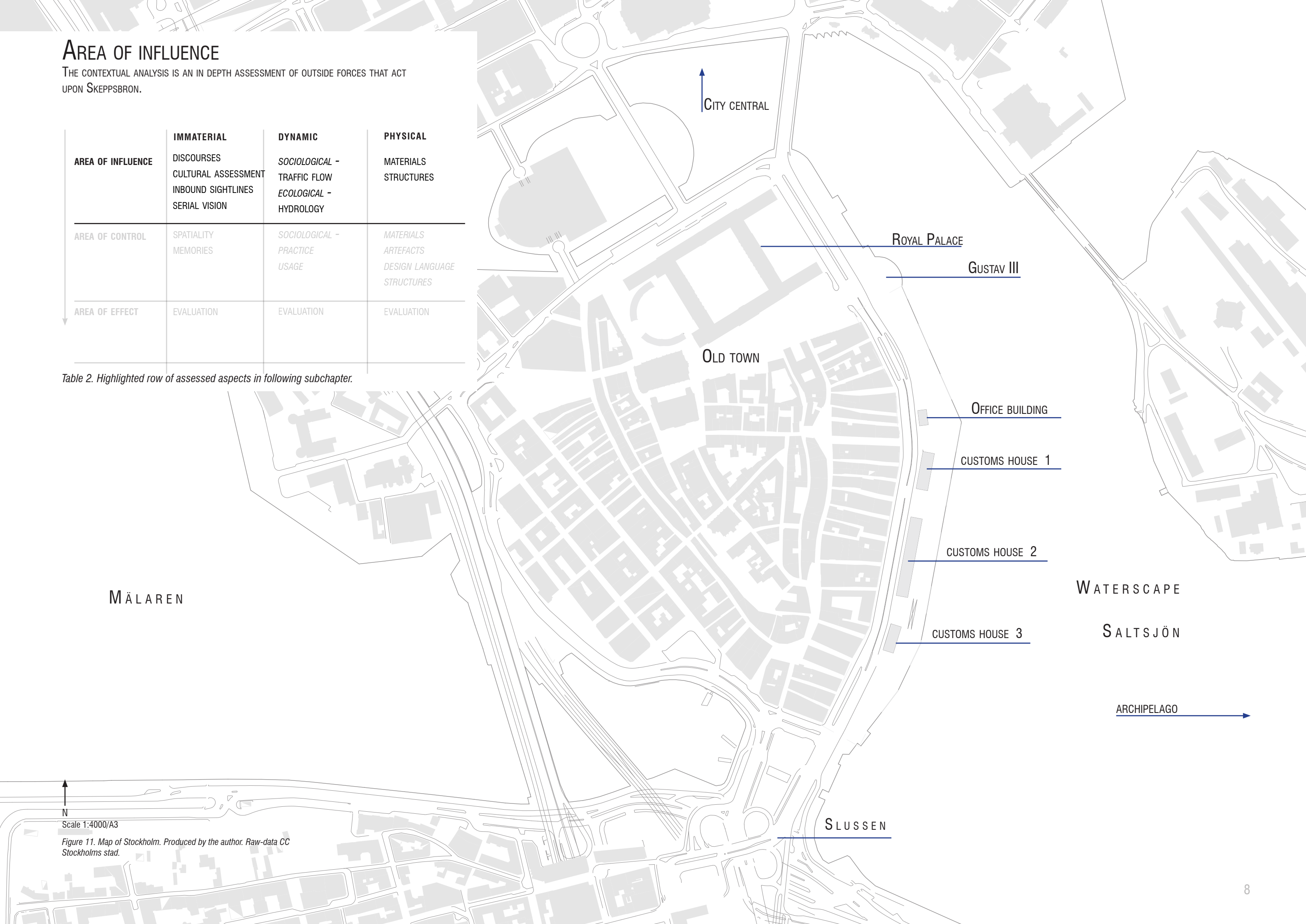


Figure 11. Map of Stockholm. Produced by the author. Raw-data CC Stockholms stad.

DISCOURSES

POLITICAL GUIDELINES

There are no development plans of Skeppsbron that are legally apprenticed. However, there are two relevant policy documents and one pervious assessment to consider.

The first being the Stockholm city plan from 2018. This development plan is general and encompasses the entire municipality of Stockholm. Statements made in this document signal an overall direction of development, supported by politicians. Hence, an evaluation of the relevance of site specific implementations is apt out of respect to the general development intentions of the municipality. In the Stockholm city plan there are three main scopes - cultural history, traffic and climate change - that are applicable to further investigate to answer the research question. Set scopes supported by following quotes;

“Gamla stan and Riddarholmen are of great value in terms of cultural heritage and opportunities for new development here are extremely limited. It is essential that the value of Gamla Stan and Riddarholmen as outstanding examples of Sweden’s cultural heritage is protected” (Stockholm stad 2018, p 140).

“If Stockholm’s traffic system is to work effectively, total volumes of traffic must be reduced, particularly car traffic” (ibid, p 26).

“In city planning it is vital to [...] adapt existing urban environments to cope with climate change” (ibid, p 27).

The second policy document is fairly detailed in comparison to the city plan. Stockholms hamnar – an instance of the municipal body - have been commissioned to coordinate the work between various managers of the city’s quays and to develop a strategy on how to use the city’s quays and the principles that should apply (Kajstrategi 2014).

Key notes of this report that regard Skeppsbron mainly focuses on buildings located on the outer quay. According to the strategy the most rational decision is to demolish and construct new buildings. Motivated by the poor condition, costs and that the Slussen project may induce some of them to be demolished anyway. New buildings are proposed to be raised so that the views from the alleys of the Old town opens up towards the water. The buildings are recommended to be used for cultural activities, restaurants and cafés when needs of the shipping industry has been accommodated.

Regarding the function of the actual quayside, it should continue to be reserved for international cruisers, commercial and commuter ships.

Furthermore, improved crossings over the road are suggested to reduce the barrier that the traffic and buildings currently create. Finally stated is that areas must be reserved to be able to serve events, that is, being kept open (ibid)

PREVIOUS ASSESSMENT

In 2003 the municipality of Stockholm formed a group that assessed Skeppsbrokajen. The aim was to create a basis for future development of a lively boardwalk and businesses. The group consisted of boards with various approaches such as the Beauty council, Waste Management Committee, Market hall board, Traffic and Property Management Department and Urban Planning Committee amongst others (Skeppsbrogruppen 2005). The diverse combination of expertise resulted in a full spectrum of inputs.

The board proposed, opposed to the development strategy, that the facades of the houses should be renovated but otherwise preserved. Future functions should agreeably be open to the public. Skeppsbron is again identified as a site that should serve as place for public events. Although, consideration of this unique and sensitive environment must be taken.

The recycle stations was stated to be decayed, and the possibility of an underground recycling station was deemed to be assessed no later than 2005. Likewise, the parking lots were stated to be heavily reduced, and a similar assessment of an underground garage was made and deemed too expensive (ibid).

Fact is that 15 years later, the same issues persist.

KEY NOTES

There is a conflict regarding the faith of buildings on the quay. Some sort of transformation is however agreed upon.

There is a consensus that the buildings should serve the public and the site’s ability to host public evets.

The car traffic, mobile and immobile, is identified as an external and internal issue.

The site’s history must be taken into consideration for development strategies.

CULTURAL HISTORICAL PERSEVERANCE

The development of the houses and the quay itself is carefully regulated. According to the planning and building act, a building that is considered of significant value can not be distorted. Stadsmuseet is a part of the political assembly Cultural committee that has developed a method of classifying valuable properties in Stockholm. The system constitute of three categories; blue, green and yellow. The classification acts as a basis when managements within the municipality produces detailed development plans and area regulations and building permits. (Stadsmuseet 2019)

The old town facade - Skeppsbroraden - is a landmark with the highest protection of development. The 1940s customs houses and the northernmost building are marked as green, which bears the second highest protection value. The old town including the quay itself is a national interest, labeled as waterfront of Stockholm (Stockholms stad 2010).

National interest does not bear any legislative protection and are not as detailed as the classification system mentioned above. However, as cultural historical classification assessments, national interests acts as a basis during the progress of granting detailed development plans (ibis).

Current and future requirements may conflict with restrictions regarding development of given sites. The neighboring Slussen project is an example of how cultural historical values were neglected in favor of current and future needs, such as transport and the ability to regulate water levels. Sites that lack the city's core functions such as transit nodes, that hold strict perseverance status, are at risk to decay as development stagnates.

Blue - highest cultural historical value. The property holds remarkable values to the cultural history.

Green - high cultural historical value. The property is of considerate value in a historical, cultural historical, environmental or aesthetic sense.

Yellow - The building property has a positive effect on the image of the city or/and a certain cultural historical value.



Figure 12. Mapping of the old town. The entire medieval ensemble has the highest cultural classification value, including the city quays. The customs houses are valued green, the second highest value.

KEY NOTES

The northernmost house located on the quay is not part of the original customs houses.

The cultural classifications system acts as a basis to the procedure of developing detailed development plans, but is not legally conclusive.

SIGHTLINES - INBOUND

“One should remember that the views towards Skeppsbron, the old town’s facade, is equally important as what you see when walking along the street and quay” - Beauty council

I disagree with this quote, stated by the Beauty council in the previous assessment of Skeppsbrokajen published in 2005. However, in my opinion the experience of Skeppsbron on site should be prioritized views towards the site. That does not indicate that the inbound sightlines should be neglected, but changes that substantially improve the experience on site should outweigh vistas. Depending on your point of view, the vistas towards Skeppsbron are in need of improvement. Restoration of the customs houses, planting vegetation and contribute light are changes that, depending on the execution/ design, will likely enhance both views towards Skeppsbron and the experience on site.

THE INBOUND SIGHTLINE ANALYSIS DEPICTS AN AREA OF VERTICAL TOLERANCE

The facade of the old town - Skeppsbroraden - that is labeled as a national interest can be traced back to Gustav II whose aim was to build an astounding facade to impress traders arriving by ships. Hence, one can argue that the facade as seen from Saltsjön should be the vista of interest to conservatory interests. Why - I argue - outlooks from Skeppsholmen and Blaiseholmen are subject to greater tolerance. The area of tolerance depicts the part of Skeppsbron where vertical implementations can be made, where the views towards the stretch of iconic buildings seen from Saltsjön are not jeopardized.

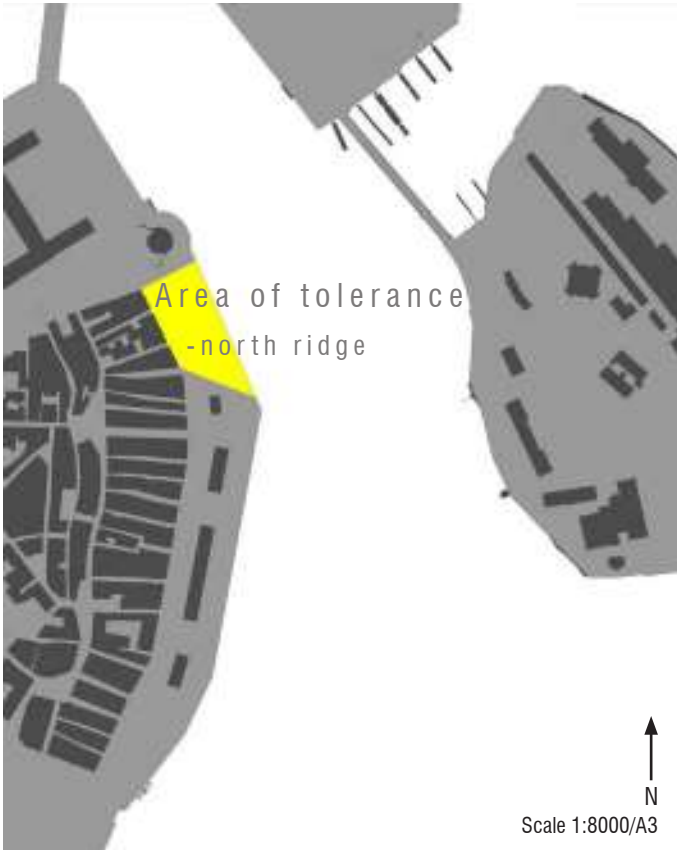


Figure 13. Part of Skeppsbron which background is not Skeppsbroraden seen from ships approaching by Saltsjön.

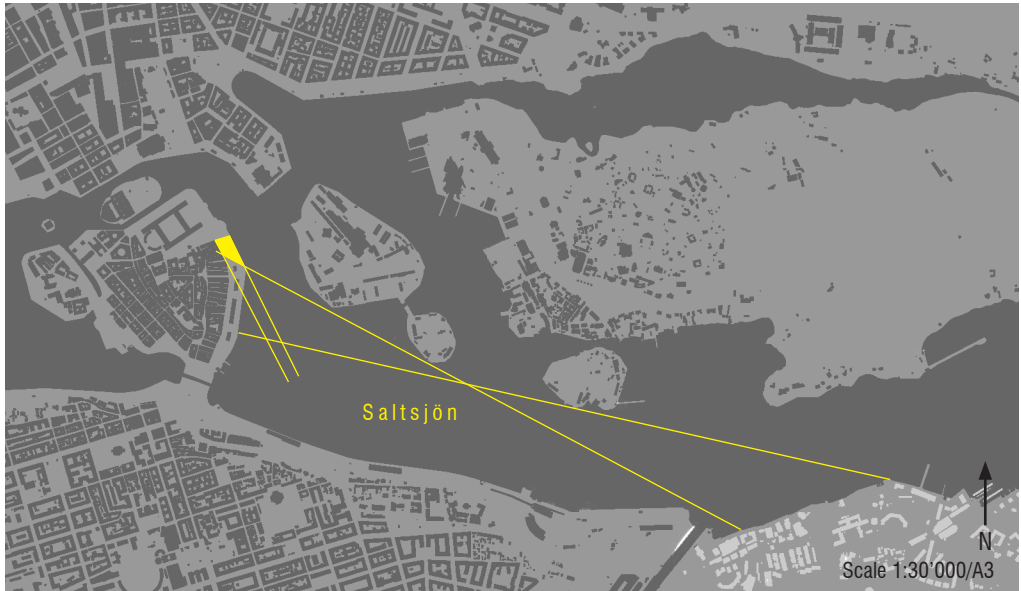


Figure 15. The north ridge is not part the sightlines towards Skeppsbroraden when approaching the Old town by the inlet of Stockholm



Figure 14. Current sightline seen from a ship towards the Old town displays Skeppsbroraden in full. Other parts of the cityscape, such as the opera, behind the yellow box. The view towards this facade have not changed notably since the 1600s.

KEY NOTE

The north ridge of Skeppsbron constitute an area of tolerance.

SERIAL VISION - CONNECTIVITY ANALYSIS

A. Södra and Norra bankgränd connect Järntorget - a vibrant plaza - with the quay. These alleys are also the extension of the tourist and shopping street Västerlånggatan. The alleys end up at a bus stop where crossings can be designed to facilitate permeability.

B. The second customs house is the largest of the three. Its nearly 100 meter facade, oriented perpendicular to Österlånggatan, emphasizes the expressways dissociative effect on Skeppsbrokajen. The sightline along Johannesgränd or Packhusgränd are the alleys where visual connection is suitable to enhance. Given the disrupting customs house, vistas towards the amusement park and the impermeable and narrow neighboring alleys.

C. Drakens gränd is currently a visually and physically permeable alley. The outfall towards a gap between the buildings creates a unique possibility of a plaza on the quay - increasing its attraction.

D. Brunnsgränd is the broadest and thus the most attractive of all alleys that connect Skeppsbron with Österlånggatan. At the end of the alley Österlånggatan there is a small plaza - Köpmanstorget - clustered with restaurants and a fountain. Also there is a group of trees planted, that catches ones attention, as vegetation is a rather alien sight in the Old town. The alley further leads to Stortorget that is the main square in the Old town.



Figure 16. Outbound sightlines from the Old town. Intriguing visual connection.



Figure 21. Vibrant plaza of Järntorget.



Figure 22. A, Norra Bankgränd.



Figure 20. B, Sightline towards the amusement park along Johannesgränd. Customs house one preventing visual and physical permeability to the waterfront.



Figure 23. C, Sightline along Drakens gränd. The waterfront is within reach.



Figure 17. D, Looking upwards Brunnsgränd.



Figure 18. Looking down Brunnsgränd towards the quay. Note the parked vehicles in the background, obstructing movement between city and sea.

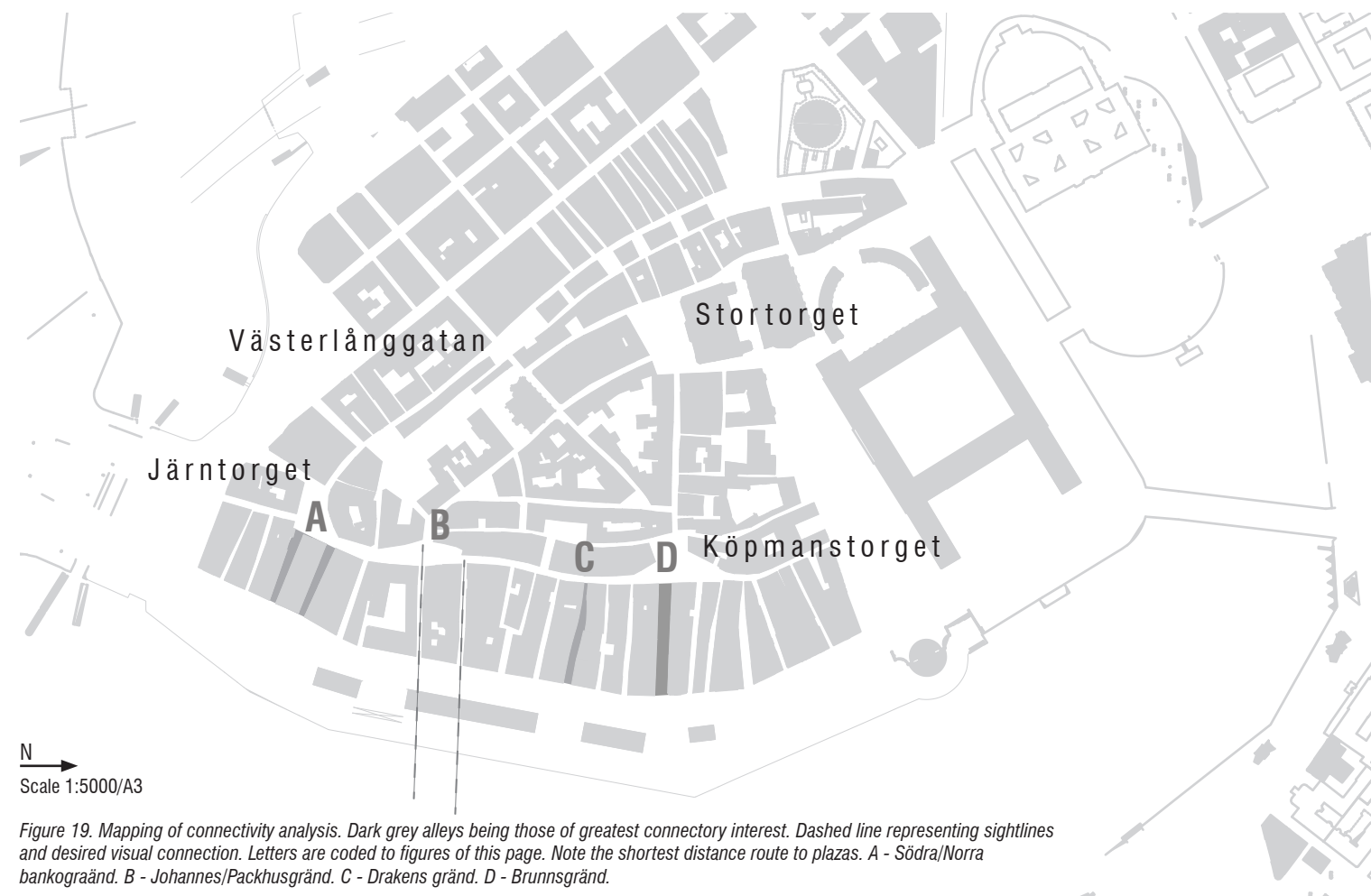


Figure 19. Mapping of connectivity analysis. Dark grey alleys being those of greatest connectory interest. Dashed line representing sightlines and desired visual connection. Letters are coded to figures of this page. Note the shortest distance route to plazas. A - Södra/Norra bankgränd. B - Johannes/Packhusgränd. C - Drakens gränd. D - Brunnsgränd.

KEY NOTES

Brunnsgränd and Södra/Norra bankgränd are alleyways where permeability is most desirable and crossings are lacking.

Visual connection to Skeppsbrokajen from Johannesgränd or Packhusgränd is desirable.

Drakens gränd is visually and physically permeable and suitable to develop.

TRAFFIC ASSESSMENT

HISTORY OF THE URBAN PATTERN

Areas in the vicinity of water are used in many different ways. Streets along the quays have been expanded in favor of increasing car traffic in many places. In these cases the traffic disrupts the contact of the city with the water. (Björk, Reppen, Nordling, 2000)

Gordon Cullen, visualizes this historic urban pattern in this photographic picture of the Old town and Skeppsbron. "Inside is the tightly built-up pedestrian town with its enclosures and no doubt areas of viscosity, its focal points and enclaves. Outside are the expressways for car and lorry, train and ship which exist to vitalize the precincts. This is the traditional pattern at its clearest" (Cullen 1961, p 27).

HOW TO PROGRESS?

Skeppsbron is a textbook example of this urban progress. As Stockholm has expanded, goods terminals has been relocated to large facilities in the suburbs and the current expressways that vitalize the city are placed further from the city center. However, the old expressway remains which lobbies inner city car use. According to Alla Bäck, the expressway is not an important link for private motoring. The link is primarily used of people that travel from eastern suburbs to eastern inner city. She further explains if another easily accessible route existed, such as Ostlänken (the east link), which politicians are at odds of, that's the route these road users would chose to drive (2018).

Sten Sedin, professional traffic planner, states that there are two ways of approaching a traffic problem. Swedish transport administration, Trafikverket, practice a problem focused strategy. Basically, prognoses/forecasts of traffic flows are calculated that constitutes the key aspect in further planning and design process. Where, the design is restricted to fit these parameters (2018). A solution focused strategy is another way to approach a problem. The strategy is to visualize the desired output. Ask yourself; how do we desire this place to be? What is the optimal outcome? and; Is this the right place to maintain an expressway? The design is thus not restricted to solve one specific problem but rather to provide a holistic solution.

During the construction of Slussen, Skeppsbron is a temporary cul de sac by physical obstacles road to automobiles but not buses and public transport. Sten Sedin (2018), argues that the principle of a cul de sac is a sustainable design solution that should turn permanent. Bäck further states that compliance of traffic rules is regulated best by physical measures. This traffic solution would according to estimations by Sedin lower the traffic flow from 10'000 vehicles per day according to the prognosis to 1'500 vehicles per day (2018).

BOAT TRAFFIC

Given Skeppsbron's central location there is a great potential to develop this site into a popular venue. The quay shall continue to be an interface to vitalize the boat traffic. According to Stockholm Hamnar's investigation, the functions of the quay shall prioritize archipelago and mobile boat traffic. While the outer quay should continuously be adapted to be able to host events, such as Volvo ocean race - a circumnavigation of the world. Skeppsbron is also a popular berth to international cruiser during summers. Hence, a stretch of the quay shall continuously stay reserved to accommodate these vessels. (Stockholms hamnar 2014)

Boat stops along the city quays are submerged, constructed to level with local ferries - facilitating boarding. Ränmästartrappan, a boat stop to the mobile traffic, is currently within the construction site of Slussen. Hence, pontoons are dispersed to enable the mobile traffic to function. A new boat terminal can possibly be relocated closer to Slussen, thus increasing connectivity within the public transport system.

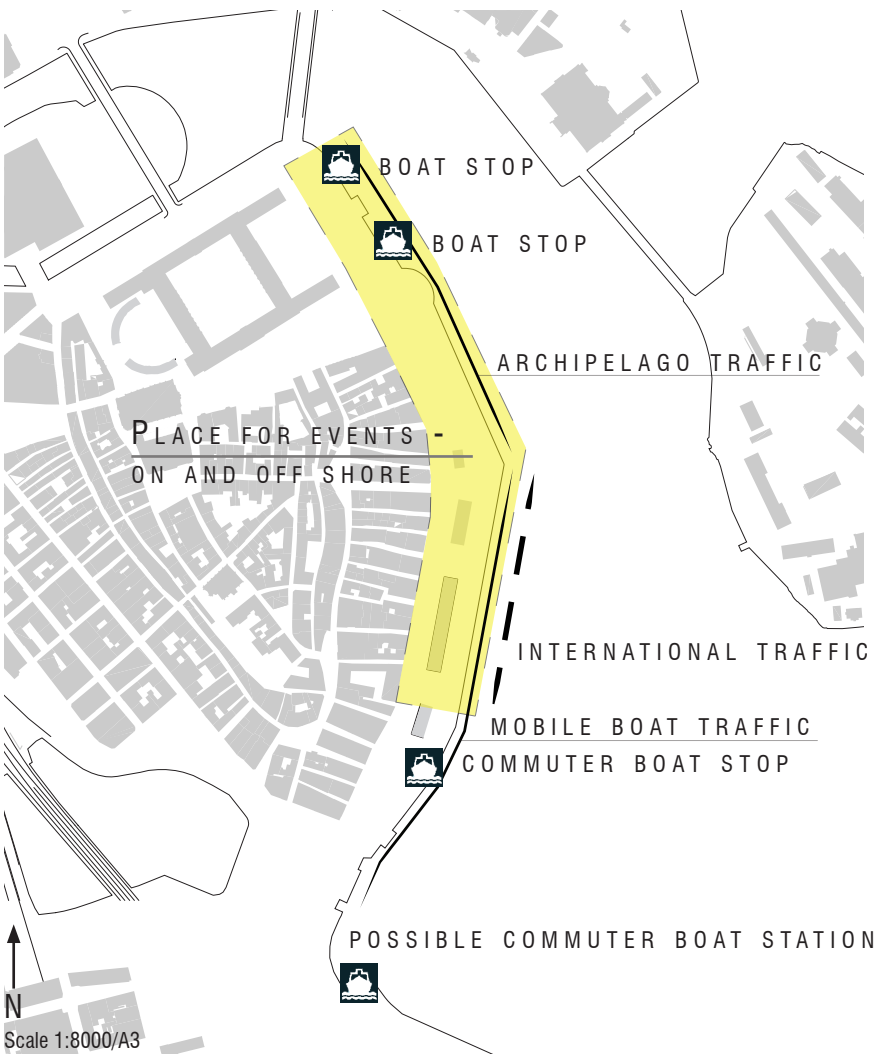


Figure 25. Future plans and location of boat traffic on Skeppsbron.



Figure 24. Ortho photo visualizing the urban pattern described by Cullen. © Lantmäteriet 1960.

KEY NOTES

The expressway disassociates Skeppsbrogajen.

Current plans of maintaining the expressway can be questioned. Alternative solutions are viable and supported by non-legislative documents.

The bridge that will connect to Skeppsbron cannot be influenced at present, but it is possible to divert the traffic flow.

The quay shall continue to be kept open to the mobile boat traffic, alterations of the quayside are limited.

Improved permeability for pedestrians between the Old town and Skeppsbron has been identified as one of the key aspects to consider in a strategic development. Hence, an assessment of the design of pedestrian crossings is apt.

On behalf of Sweden’s municipalities and county council, Lund University has conducted a study in which the design of walking passages and pedestrian crossings influenced road safety. The focus has been on the experienced duty to give way versus compliance. The report shows that traditional pedestrian crossings, also called zebra crossings, are perceived as safest by pedestrians. These crossings are perceived to be the most certain to pedestrians who has a duty to give way (SKL 2015).

ALLEYWAYS TRAFFIC DIRECTION MAPPING



Figure 26. Alleys in dark grey are dead-ends to vehicles - entry by Skeppsbron. Arrowheads display the driving direction.

The researchers do not recommend changing the traditional pedestrian crossings in any form to walking passages. The traditional, zebra crossing with traffic sign Herr Gårman gave the study “surprisingly good give-way behavior”. They further argue that elevated passageways are not enough to offer a safe passage for pedestrians. However it is stated that speed regulatory measures, such as speed bumps, should be taken to reduce the chance of accidents occurring. (ibid)

Studying the design on the researched elevated pedestrian crossing, a more correct term would be speed bump. There is nothing in the design apart from speed bumps covered by cobblestone that indicates that it’s a walking passage. In addition, by design, encourage pedestrians to cross the street without precedence - with the law on their side - is in my opinion irresponsible.

As the researchers add, the classic pedestrian crossings should be speed-regulated. The optimal crossing type for pedestrians would thus be to integrate attributes of traditional pedestrian crossing with elevated pedestrian crossings. In this scenario, pedestrians can cross the road with the law on their side, which is important, not least from the insurance point of view, while the actual safety increases when the speed of vehicles is reduced by physical obstacles.

Furthermore, thoroughgoing walkways offers a continuity in the pedestrians’ physical environment. This statement emphasizes that cars cross the pedestrian routes, not the other way around, as traditional crossings do.

However, core bus routes of the public transport network run through Skeppsbron. Both Sedin and Bäck argue that speed bumps or other design measures that affect the smoothness of the bus ride are best avoided. One study indicate that bus drivers are at risk of incurring mechanical back injuries as an effect of daily driving over speed-reducing bumps (Johansson, C, Lyckman, M, Rosander, P. 2007). Sedin further argues that a decrease of the overall car traffic on Skeppsbron would be measure enough to promote safe pedestrian crossings in this case (2018).



Figure 27. Traditional “zebra” crossing. Sign that signals duty to give way to automobiles and stripes that indicate where to cross the street.

DIMENSIONS

ONE-WAY CYCLE PATHS	2.25 M
SECURITY ZONE	1.05 M
INNER CITY AUTOMOBILE STREET	5.5 M
INNER CITY BUS STREET	7 M
CLEARANCE RADIUS TRUCKS	10 M

Table 3. Information sources: Trafikverket 2012, Stockholms stad 2009.

KEY NOTES

Regulatory dimensions.

Elevated pedestrian crossings are safest but may be harmful to bus drivers.

Alley analysis provides an underlay of alleys that must not be accessible by vehicles from the expressway.

HYDROLOGY ASSESSMENT

RECIPIENT CLASSIFICATION AND PURIFICATION STRATEGIES ON STORMWATER

Stockholm vatten & avfall have conducted a daily water survey on approaches to recipients and set guidelines for water treatment. The inner parts of Lake Saltsjön (Strömmen, Nybroviken) are loaded with traffic water from Slussen, Stadsgårdsleden, Skeppsbron and Strandvägen. However, the secondary supply of pollutants via outflow from Lake Mälaren is the dominant source in the inner parts of Saltsjön. (Stockholms vatten 2000)

According to the survey's conclusion it is doubtful whether measures on stormwater management would significantly relieve the recipient along the inner parts of Saltsjön, including Skeppsbron.

However, establishing stormwater pods with plants heightens aesthetic values as adding seasonal changes and is an approach to manage the ultra-uniform expression of the street. Stormwater pods also increase resilience towards weather extremes, by lowering the risk of marine submersion.

ADAPTATION TO CLIMATE CHANGE

Meteorologist speculate that Sweden will experience a 20 -60 % increase in precipitation given the climate change. The extreme short duration precipitation is expected to become more intense. Intense precipitation in short duration is the precipitation that causes runoff problems in cities that induces chance of submerges. (SMHI 2014, 2017)

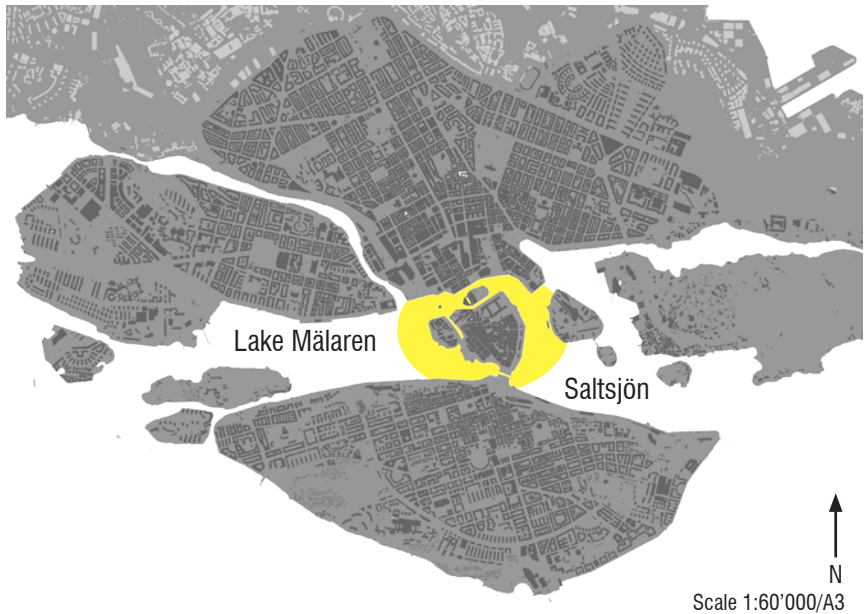


Figure 28. Reproduced mapping of ecologically sensitive area shown in yellow (Stockholms stad 2015).

STORMWATER & SEWER SYSTEMS

In order to investigate where and how stormwater can be managed a mapping of the existing hydrological system is an essential part to investigate.

There are two types of sewer systems, combined and duplicate. A combined sewer system consists of one pipeline that collects stormwater and wastewater. A duplicate system consists of two pipelines that separates wastewater from stormwater. A duplicate system, also called separated system, can also be designed that stormwater is drained in trenches or open stormwater facilities. (Länsstyrelsen Västra Götaland 2014)

Up until the 1950s combined systems were the standard design which has now changed to duplicate systems. (ibid) During periods of heavy precipitation the volumes that enter the combined sewer system may exceed the capacity. To prevent flooding of properties the flow must be diverted untreated, directly to lakes, rivers or sea.

The pipelines at Skeppsbokajen compromises a combined system. There are three overflow point where untreated water is diverted directly to Saltsjön, which causes a negative effect on the ecological status. When combined systems were built, the pipeline diameter was roughly estimated, hence it's likely to be under dimensioned. Thus, the chance of a continuous overflow diversion is probable to occur. (Jonasson 2019)

The construction cost of new pipelines is very high hence municipalities evade replacing combined systems (ibid). This urges for alternative solutions to stormwater management.



Figure 29. Conceptual image of pipeline outlines below Skeppsbron. Note the pipe line free zone.

PIPELINE SCHEME

Water and sewage systems are central parts of infrastructure. To prevent sabotage pipeline expansion is often security classified information. Hence, pipeline mapping is an estimate of information gathered from Stockholm municipality that has been reconstructed schematically. The pipelines are widespread along the quay, especially beneath the street. The depth of the sewage system is of interest to construct suitable stormwater pods. A greater depth allows greater volumes of water to be detained during periods of heavy precipitation, but also open up possibilities to select from a variety of suitable species. Alla Bäck speculates that it is likely that the pipelines run at depth greater than 0, 5 meters. (2018)

Tyréns has been able to inform that a buffer zone reaching 11-14 meters from the waterfront is pipeline free. However, there is a possibility that there are secret lines not shown in that specific underlay. (Lundgren 2018) Also there are power lines as there are lighting poles within this zone that possibly are easier to manage than sewers. This is a subsubject that will not be further speculated upon.

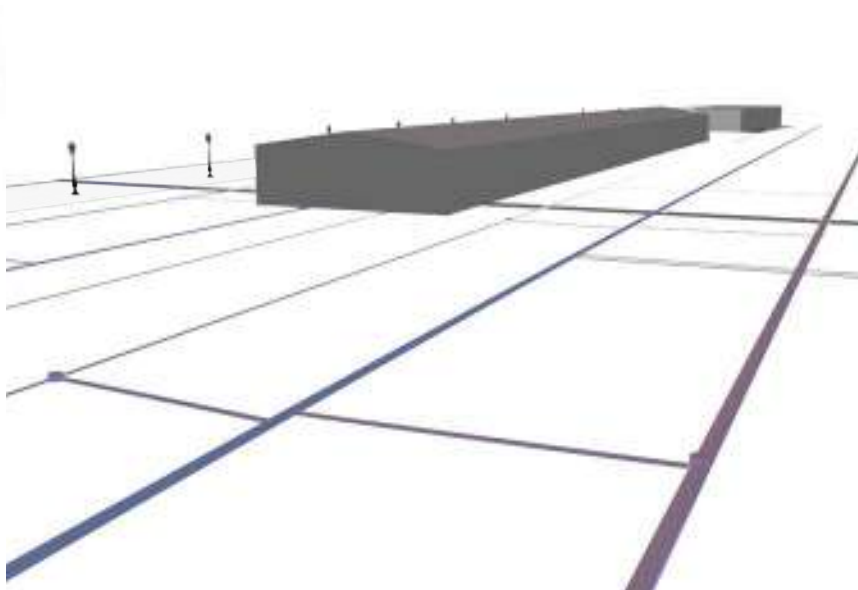


Figure 30. Schematic image of pipeline colors. Red, wastewater pipeline. Blue - stormwater pipeline. Fat green pipe - diverted overflow.

STREET INLET MAPPING

Skeppsbron is cambered with a safety isle dividing the carriageways. Street inlets are located adjacent to the curbstone of the sidewalks in no particular pattern. The catchment area of the inlets is limited to the street. There is an extensive system of inlets that collects stormwater from the alleys.

The quay is negatively cambered and the inlets are organized in a linear pattern - placed along a line - offset 18 meters from the quayside, catching precipitation of the entire outer quay.

The main source of possible pollutants on the quay is most likely to be car combustion. The traffic flow is low and constitutes of entry and exits to the parking area. Thus, irrespective of regulations on parking abilities, these inlets induce a larger catchment area that contributes to overflow diversion to Saltsjön.



STORMWATER POD DESIGN

The main function of stormwater pods is to detain stormwater so that water flows are equalized to unburden the sewer system. The layers of the plant bed consist of an open space reaching from 80 - 300 mm where water can evaporate, 500 millimeter layer of sandy soil, followed by a drain pipe enclosed by macadam. (Stockholm vatten och avfall 2019)

The infiltration speed defines the dimension of stormwater pods. Slower infiltration speed induces larger pods. An infiltration speed of 50 mm/h requires an area that is 10 percent of the total catchment area. (Stockholm vatten och avfall 2017)

In Portland, Oregon, the relation between hard surface areas and plant beds is 3-5 %. In Norra Djurgårdsstaden, Stockholm, the plant bed area is 6-17 % of the total catchment area. (Pettersson Skog 2018)



Figure 32. Street inlet on the quay.



Figure 33. Street inlet along the street.

SELECTION OF SPECIES

When considering plant species for stormwater pods the name can be rather devious. Since rain generally falls in short durations, most of the time the stormwater pods experience a mixture of dry and wet conditions. Accordingly, planting species that thrive in mixed dry and wet conditions is of vital importance. (Folkesson 2017)

The soil depth is a delimiting variable on possible species. Generally trees require at least 100 cm of soil depth to establish firmly, for mechanical and physiological reasons. Furthermore, cultural aspects such as uninterrupted outlooks towards Skeppsbroraden impose difficulties. Hence, shrubs and perennials are suitable in this given situation.

PLANTING RHYTHM

Motive spaces can gain much of their dynamism from the tension set up by irregularities of shape. The enclosing sides may approach one another, then recede; they may be interrupted by sudden changes in direction or their density may vary along their length. This variation is like the rhythm of the space. It can be regular and simple, or more complex and varied, and it should carry you along. (Robinson 1992)

KEY NOTES

A stormwater detainment solution will mainly have an aesthetic function.

The available soil depth is estimated to 50 cm.

SPATIALITY'S AND STRUCTURES

BAROQUE



Figure 34. The Royal castle is typical baroque. Bombastic with straight symmetrical axes.

The castle and its rather extensive parvis - front yard - is typically baroque. Straight axes and symmetry to perfection distinguish the northern part of the quay, just north of the site's administrative boundary.

MEDIEVAL ENSEMBLE



Figure 35. Typical alleyway in the Old town. Tight, colorful and assymetrical.

The old town consists of a dense, tightly build up ensemble. The structure is highly irregular and one cannot see far ahead. Hence the experience is unpredictable as vistas are short and the environment is in constant change. Distances traveled through such spaces feels shorter compared to straight and uniform (Gehl, 2010). The contrast to Skeppsbron is naturally very high.

WATERSCAPE



Figure 37. The waterscape of inner Saltsjön is the main entrance and parvis of Stockholm.

Skeppsbron constitutes a portal - figuratively and literally - to the rural archipelago landscape, despite being locate in the very center of the capital. Outlooks from the quayside, alleyways and plazas, extend a spatial continuity past the physical limitation of the quayside (Wylson 1996). The proximity to the widespread element of sea, erratically rendering nature's dispassionate moods, comes through evidently to the spectator.



EVERCHANGING STILL AND PEACEFUL
OPEN AND CHAOTIC DYNAMIC

KEY NOTES
The waterscape has the most profound effect on the site. The medieval ensemble constitute the largest contrast to the site.

The surrounds of Skeppsbron present a wide variety of spatiality's, the open waterscape being the most prevailing.

MATERIALS

SLUSSEN PROJECT PLANS

Slussen has a decisive influence on the bicycle traffic in Stockholm. With the new Slussen the various pedestrian and cycle lanes are connected at Skeppsbron. Some of Sweden’s busiest cycle routes run through the site: Götgatan - Skeppsbron and Götgatan - Tegelbacken. Since Slussen is one of the few connections between the workplace-dense city area and Södermalm as well as southern suburbs, most of the cycle paths are commuter routes. (Stockholms stad 2016)

To provide a safe and secure environment for pedestrians and cyclists, a separation by material difference and level difference between walking and cycling lanes is planned, alternatively a cobble stone frieze in accordance with the city’s bike manual. Pathways along the quay are planned to be laid out of granite pavers with bush hammered or flamed finish. Peripheral sidewalks joining existing surfaces are planned to be paved with the same material as the existing surfaces, which are mostly the traditional Stockholm 35x35 cm concrete pavers. (ibid)

Areas of the quay that are not pedestrian and cycle paths, are to be paved with cobble stones, sawn and flamed where the surfaces need to be accessible, otherwise crude wedges are kept. Granite pavers may follow where smoother surfaces are desired, for instance in connection with boat traffic terminals and other commercial spaces. (ibid)

The existing street lighting is extended along Skeppsbron to meet the northern abutment of the main bridge. The decorative lighting along Skeppsbrogajen is preserved due to the fact that they are strongly associated with the location. (ibid)

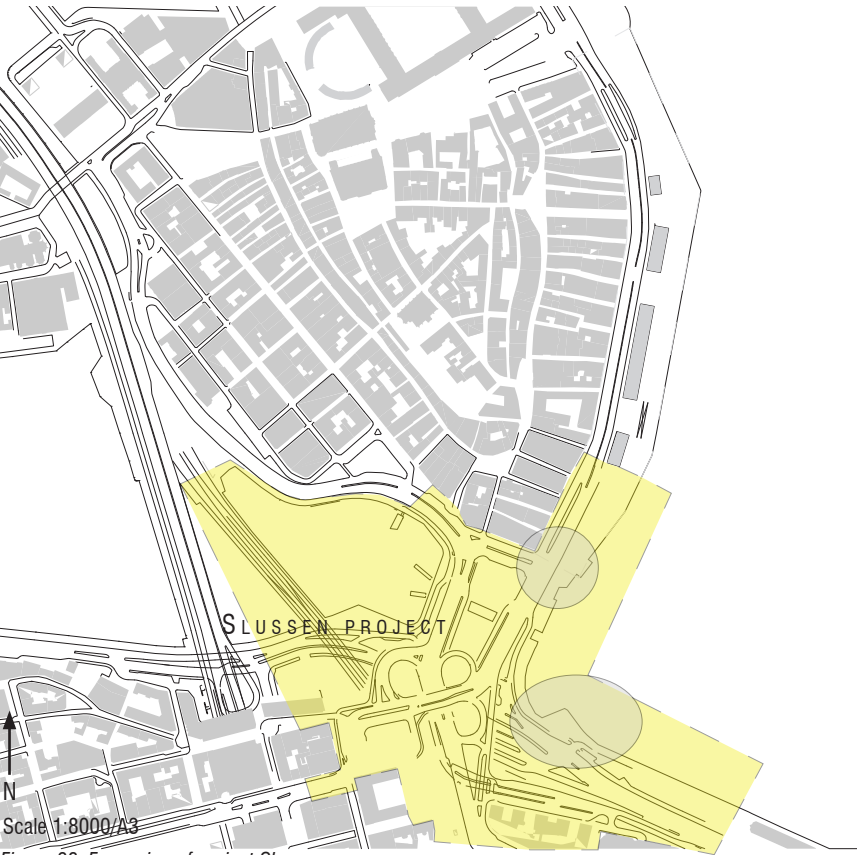


Figure 38. Expansion of project Slussen.

ROYAL DISTRICT

The surface material on the connecting sidewalk towards the royal castle consist of traditional concrete pavers on the western side. The eastern pavement consists of large cobble stones. There is also a sections of rectangular granite pavers stretching through the pavement in order to increase accessibility.



Figure 41. The circles illuminates the site where the new bridge lands that injects Skeppsbron with a steady stream of vehicles according to current plans of Slussen. The ellipsoid depicts a possible site of a boat terminal.

MEDIEVAL ENSEMBLE

The surface material on the alleys and streets of the Old town mainly consists of large cobble stone.



Figure 39. Large cobble stones on the quay in front of the royal castle.



Figure 40. Line of granite pavers on the side walk in front of the royal castle.

KEY NOTES

Pathways along the quay extending from Slussen will constitute of granite pavers.

Ornamental lights are strongly associated with Skeppsbron and will be preserved in the development of Slussen.

The cycle paths will be separated by difference in material and level.

||

AREA OF CONTROL

THE SITE-SPECIFIC ANALYSIS IS AN IN DEPTH ASSESSMENT OF INSIDE ASPECTS THAT AFFECT SKEPPSBRON.

AREA OF INFLUENCE	IMMATERIAL DISCOURSES ATMOSPHERES SIGHTLINES SERIAL VISION	DYNAMIC <i>ECOLOGICAL -</i> HYDROLOGY <i>SOCIOLOGICAL -</i> TRAFFIC FLOW	PHYSICAL STRUCTURES MATERIALS
AREA OF CONTROL	HISTORY MEMORIES	SOCIOLOGICAL - PRACTICE USAGE	MATERIALS ARTEFACTS DESIGN LANGUAGE STRUCTURES
AREA OF EFFECT	EVALUATION	EVALUATION	EVALUATION

Table 3. Highlighted row of assessed aspects in following subchapter.

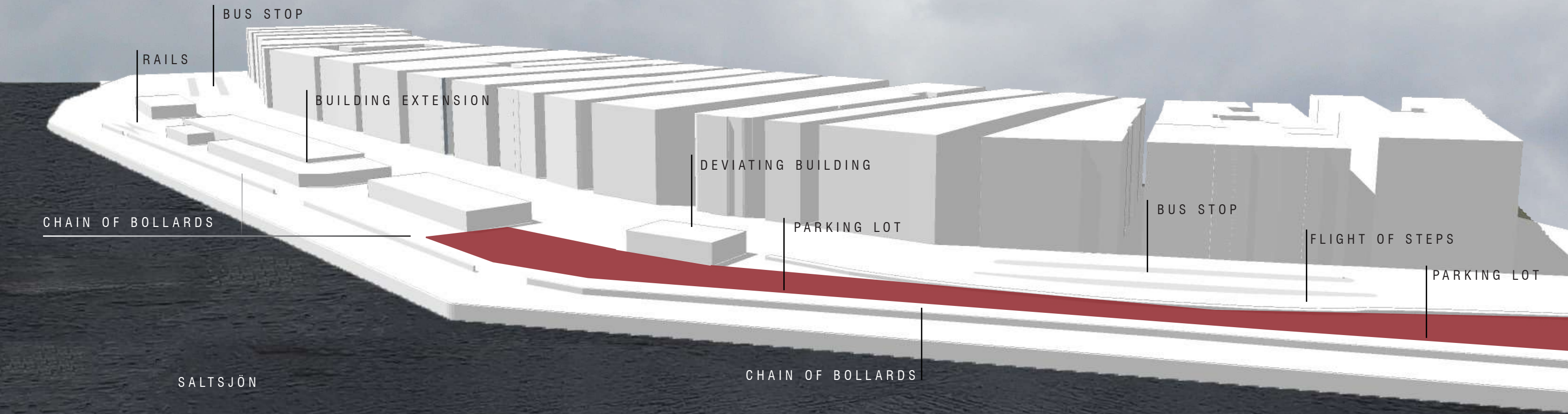


Figure 42. Location of objects, fucntions and areas along the quay. Produced by author.

ATMOSPHERE AND MEMORIES

CHARACTER OF SKEPPSBRON IN PAST TIMES

As paintings from the 17th and 18th century show Skeppsbron has been characterized by an open space - it still is. Reading its history the atmosphere has shifted significantly.

In the mid-1660s the Swedish empire reached its greatest geographical expansion. During the following century, Sweden dominated the world trade of iron and tar. Two thirds of the import and export went through Stockholm and thus Skeppsbrogajen. (Stockholms hamnar 2015a)

When Skeppsbron was constructed in the 1630s, the quay quickly became one of the city's major work places. It was a lively district and in the coming years, various work tasks that were created by and connected to the shipping industry, were categorized to professions with exclusive work permits. Some common professions were Port rower, Warehouse-packer, Herring packer and Wine-carrier. In 1846, this guild system was revoked, but some of the professions retained their exclusive right to perform their specific work. (2015b)

In the past, stevedores were a mythical workforce. The labor was hard and unsafe, and the demand for workers varied. This led, less diligent, drifters to seek their way to ports where short term works could be found which gave the workforce a bad reputation. The Wine-carriers were the first guild to become an organized workforce in the 15th century and was not disclaimed until 1924. Which indicates the continuously high status that imported wine and liquor had. Booze was in other words abundant and accessible along the quays, which contributed to extensive unhealthy relationships to alcohol. (Stockholms hamnar 2015c) One can only imagine what the crowd and atmosphere that characterized the quay must have been like.

A poem written by Elias Sehlestedt (Stockholms hamnar 2015d), a lyricist and customs inspector, reflects the vibrant atmosphere of Skeppsbron in the mid-1850s.

"Fraktgods hela Skeppsbron packas, kaffe stackas – buffelhudar och bokhållarspring! Skepp och skutor, som till land sig närma lustigt svärma mäklare som flugor kring. Hamnkaptener och grossörer, kontrollörer lotsbestyr om lästetal och fot! Ångbåtspipor, rök och vin i tågen, 'Gamla vågen', Reisens portvin mitt emot! Kättingskrammel, packhusherrar, häst och märrar, rodd och stadsbud och visitation! Strömingsskorgar, vita jungfrustubbar, Dihlströmsgubbar, prat och dunst på Fiskarbron! Skräll och skrammel uti slussar, omnibussar, vinsch- och pumpspel hela hamnen rund; ålandsostar trillas om och borrar, skånska knorras, knick och knack i brännvinssprund."

KEY NOTES

Skeppsbron has been characterized by a busy atmosphere throughout history.

The consequences of industrialization combined with the entry of motorism de-populated Skeppsbron.

HISTORICAL MAPS

As mentioned in the introduction, railways were built on the wharf in the 1870s. The railway tracks shown in the map was connected to the regional railway system and used by carriages to transport goods to and from docking ships. In 1875, the construction of Stadsgården and Värtahamnen began, where a big part of passenger and freight traffic later on would relocate. At the same time, the city acquired the first steam cranes that were placed along the quays and industrialized a large part of the un-/load work. The railway tracks and cranes were deconstructed in 1975 - Skeppsbron solely became a passenger port.



Figure 43. Note the layout of the railway tracks in 1899.



Figure 44. The space is wide open and business is booming.



Figure 45. Seventy years have passed but the similarities of the quay are striking.



Figure 46. A lively day on the quay. Note that the current lighting armature is present in this photograph but lacking in the two latter.



Figure 47. The photograph from 1937 show how cranes - rolling on tracks between quayside and customs houses un-/loaded the ships and carriages.



Figure 48. The photograph from 1960 reflects the present atmosphere. Note the constant movement of vehicles' along the expressway and the void on the quay at the dawn of the post-industrial era.

PRACTICES AND USERS

BUSINESSES

Stockholms hamnar AB, a municipal company, leases, manages and maintains buildings on Skeppsbrokajen and many other ports in Stockholm. The real-estate leasing businesses provide Stockholms Hamnar with necessary financial funding's that is an important source of income to rearm and finance maintenance of the inner city quays (Stockholms Hamnar, 2019). The current customs houses are leased on short term contracts (Åkerfeldt, 2018). Basically this mean that the buildings are superannuated and are awaiting either reconstruction or deconstruction. This contract is generally short-term - temporary - and usually applied to housing that would otherwise go unused. This may explain why the extension of the second customs house has been permitted to be raised in an impermanent style.

At the moment the buildings houses locales to five companies, two bakeries, two restaurants/bars and one tourist company.

EXCLUDING



Figure 55. The use of the buildings affect the perceived experience of place.

INCLUDING



Figure 56. Businesses' physical design impact on public space.



Figure 57. Example of including open air-cafe.



Figure 58. Example of including open air-cafe.

PEOPLE'S USAGE OF SITE

The quay is populated from early morning to late night, mainly as a result of the restaurants opening hours that span to one a.m. People use the place for recreation, wandering about with no particular place to go, but also as place for mere transportation. As both sightseeing boats and commuter boats traffic Skeppsbrokajen, there's a demand of seating. Especially as commuter boat traffic within the city boundaries and its suburbs is likely to continue its increase as a result of political consensus. Dwellers and visiting ships dispose their garbage at recycle stations and randomly placed containers.



Figure 49. Recreation.



Figure 50. Tinker.



Figure 54. Commute and sightseeing.



Figure 51. Stroll and ferry wait.



Figure 53. Running.



Figure 52. Study.

KEY NOTES

The extensions of the customs houses are secluding. Flexible open air cafés are including.

There is a variety of users on the quay demanding functional surfaces and seating.

PHYSICAL PROPERTIES AND STRUCTURES

MATERIALS

The ground material, pavement, play an important role in both the expression and experience of a site. Cobblestones is the main material on the quay and influence the atmosphere of the site towards a historical sensation. Cobblestones may however act excluding on citizens with reduced mobility. As people in general grow older for each generation, in the future we will experience more elderly that desire accessible surfaces (Gehl 2010).

ARTEFACTS

Artefact tell stories of the place and add emotional depth. I have chosen to differentiate immaterial historical aspects from those that are represented physically on site.

As previously presented maps and photographs have shown, there were railway tracks running along the quayside. When removed in 1975, a stretch was preserved that tell stories about the site’s historical use.



Figure 59. Part of preserved railway tracks.



Figure 62. Preserved railway tracks



Figure 60. Bollards connected with chains



Figure 63. Statue of sculpturer Carl Milles.



Figure 61. Small and large cobblestones



Figure 64. Mooring detail

BUILDINGS

The structure of the building ensemble within the site boundary is rather uniform. The three custom houses are low and rectangular in shape with uniform futile expressions. The office building on the wharf is of deviating architectural style, but it is similar to shape and size.

The second customs house in particular, reaching close to 100 meters in length, has no entrances facing the street and the windows are blind. Jan Gehl, architect and professor in urban planning, labels this kind of facades as inactive and states that “these developments have robbed many city streets of casual pedestrians, removed life from the streets and increase the feeling of insecurity once it gets dark” (Gehl 2010, pX).

The development plan for Skeppsbrokajen, produced by Stockholms hamnar AB in 2014, states that more separate buildings should replace the current to open up views towards the water.



Figure 65. Inactive facade of customs house 2, according to Gehl.

INACTIVE FACADES

(Gehl 2010)

Large units, few or no doors (0-2 per 100 m)

No visible variation in function

Blind or passive units

Uniform facades, no details, nothing to look at, blind windows.



Figure 66. Inactive, worn down facade.



Figure 67. Deviating office building.

DESIGN LANGUAGE

The majority of coastal promenades are linear (Wylson 1986). The quayside of Skeppsbron is no exception, it constitutes a sharp, straight and definitive border and physical barrier to the place. The very strict line contributes a clear direction to the site that also has an effect on the usage. Rectangular - elongate spaces in particular - are perceived as spaces mainly designed for movement. Square or circular shaped spaces, in contrary, encourages abidance (Robinson 1992).

The street begins a low gradient at the northernmost building. Steps elevate the expressway and retains Skeppsbrokajen plane - reaching a difference of 60 cm in height.



Figure 68. Flight of steps in organic design language.



Figure 69. Straight sharp line of the quayside - the prevailing design language of Skeppsbron. Quayside is ~ 2,5 meters.

KEY NOTES

The facades of the customs houses are inactive which has a negative impact on public life.

The dominant design language is sharp, although organic shapes are present at the north ridge where the sole perceivable elevation also is found.

Identified artefacts are associated with and characterizes Skeppsbrokajen.

HARDSCAPE STREETSCAPE

As earlier mentioned, one of the busiest cycle route runs along Skeppsbron. The sidewalks are divided in concrete paver and asphalt that narrates the previous outline of the cycle path. As the number of commuting cyclist are growing in Stockholm, bicycle infrastructure is given more public space. Nowadays, there are broad cycle fields in both directions in level with the traffic lanes, space previously intended for motorized vehicles’.

Vehicles must cross the bike lane as parking spaces are located along the western side walk. This disrupts the cyclist movement, inducing risk taking maneuvers’ as swaying to the street lane to avoid collision or losing energy of motion by braking.

This behavior can be further observed. As most people are familiar with this phenomenon, pedestrians are stressed to cross the street quickly to give way for incoming cyclist.

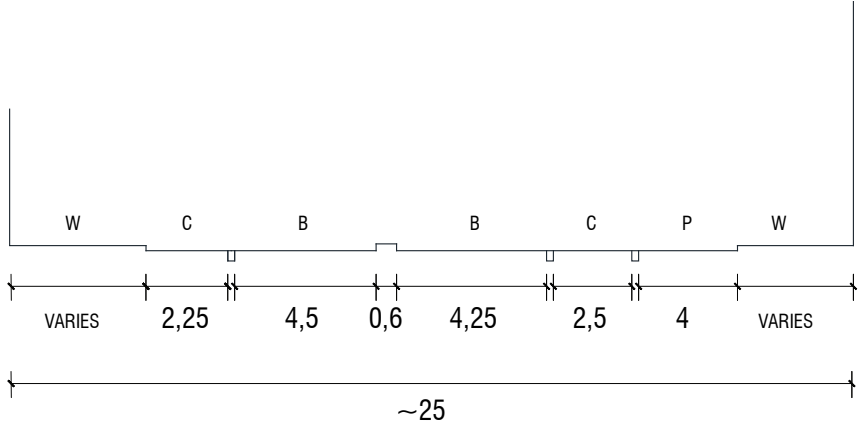


Figure 71. Section of current expressway. The street is on average 25 meter wide. W - side walk, P - parking space, C - cycle path, B - commuter/car lane (m).



Figure 70. The hardscape streetscape.



Figure 72. A person trying to cross the street. Note that cyclist have duty to give way.



Figure 73. Note how the person is stressed to cross the street in a hurry.



Figure 74. Almost reached the safe side-walk.



Figure 75. Vehicles must cross the cycle path when parking, disrupting the cyclists movement.



Figure 76. Cyclist turns to the car lane to avoid braking.

KEY NOTES

The design of the current cycle paths is unsafe.

Traditional crossings do not regulate cycling speed.

CONCLUSION

AREA OF CONTROL AND INFLUENCE

Reducing private car traffic in the inner city is a political stance taken by Stockholm city. It has been found that the traffic route along the Skeppsbrokajen is part of a recurring urban pattern that fragment the city and its contact with water. There is a desire to enhance the connections between the old town and Skeppsbrokajen in various political documents. During the construction period of Slussen, the traffic route is a dead-end street that will again open for passage when project Slussen is finished. One can argue that there is a conflict of statements in the overview plan, such as “If Stockholm’s traffic system is to work effectively, total volumes of traffic must be reduced, particularly car traffic”, and the traffic assessment has investigated and proven that there are alternative solutions that can be implemented, such as preserving the traffic route as a dead-end street but keep it open for public transport and tourist buses.

Apart from the fact that traffic flow itself disconnects the outer quay, the design of the street does not contribute to a pleasant environment. The street is long, the facades of the customs houses are monotonous, run down and lacking entrances, the asphalt and curbs are worn, and the lack of plants creates an inanimate atmosphere. Vegetation is at the same time foreign from a historical perspective on Skeppsbrokajen and trees may obscure Skeppsbroraden - that is an icon of the city. In addition to these aspects, the many pipelines running under the street, the buildings and parts of the quay constitute problems for the construction of plant beds, especially for trees because of the low available soil depth.

According to forecasts, climate change will lead to an increase in precipitation in the Stockholm region, and rain will fall during short and therefore intense periods. These downpours are problematic in hardscape environments where stormwater cannot infiltrate and therefore increases the risk of flooding. The pipes that run below the Skeppsbron are probably undersized and combined where wastewater and stormwater is diverted into the same pipe. To avoid flooding, storm- and wastewater is diverted to overflow points into Saltsjön at high flows, which pollutes the sea. According to an investigation that has been carried out on the ecological standard at Saltsjön, it

is stated, however, that stormwater solutions at Skeppsbron are not probable to have a significant impact on the ecological status of Saltsjön.

The aesthetic values of plant material in stormwater pods combined with increased resistance to submersion and, although small, positive impact on the ecological status of Saltsjön, are incentives in favor of construction. Along the northernmost part of the quay, the difference in elevation between the street and the quay increases to a maximum of 60 cm, which is taken up by steps. Thus, it is possible to construct sufficiently deep plant beds for trees without affecting the underlying pipes. According to the sightline analysis, it appears that the northernmost houses of Skeppsbroraden are not part of the historical views, seen from ships arriving on Saltsjön. In other words, there are valid arguments that the outlooks towards this part of Skeppsbroraden are not of cultural-historical importance to the same extent as the rest of the facades.

Furthermore, the customs houses on the quay are classified as green, the second highest cultural environment classification a building can hold. Three of the buildings are old customs houses that are designed by the same architect and thus visually connected aesthetically. The northernmost building’s architecture is deviant, and its use is apparently not public, which is conflicting to the city’s quay strategy.

The run-down condition and the long inactive facades that contribute to the quay’s disconnection to the city insist they should be demolished so better adapted buildings can be erected. At the same time, they have a relatively high preservation value and form part of the city’s historical layers and should therefore be preserved. Since the cultural environment classification is not statutory, it does not exclude the possibility of ruling against it, but the reason for doing so should be well-motivated.

Skeppsbron has been a busy district of Stockholm. Trade of goods produced a cluster of workplaces. With the industrial revolution many jobs were rationalized and eventually the relocation of the freight

trade made Skeppsbron a solely passenger port. Paradoxically this didn’t vitalize the precinct. The entry of motorism and its effect on city planning had cut off Skeppsbron from other parts of the city. The parking lots occupy extensive space on the quay to this day.

Decreasing the car traffic may be measure enough to promote pedestrian permeability and safety. Still, irrespective of a decrease in motorized traffic, the cycle route is one of the busiest in the country, disrupting pedestrian permeability possibly to an even greater extent. Elevated crossings are the safest and contribute to a continuity in the physical environment to pedestrians. However, they may have a negative impact on bus chauffeurs that regularly traffic the route. The current design of the street is furthermore unsafe to cyclist as vehicles must cross it to reach parking spaces. This disrupts the flow of cyclists, causing some to take risky maneuvers turning to the car lane.

Physical historical layers on Skeppsbron constitute of cobblestone – that is the main surface material on the outer quay. It is inaccessible but add sentimental depth to the quay and can arguably be preserved to greatest possible extent. Other artefacts of the site are railway tracks, mooring details and bollards connected by chains. Serving physical or immaterial functions, they should be preserved and even illuminated.

Skeppsbron is currently used by - commuters for arrival and departure, tourist for exploration, dwellers for recreation and runners for workout to name a few.

P T . 2

D E S I G N A P P R O A C H

R E F E R E N C E S T U D Y

W O R K S H O P

S K E T C H E S

NORR MÄLARSTRAND

FOUNDED 1635
REARMAMENT 2008
LENGHT 720

Design language



Temporal



Sense of place



Spatiality



The waterfront promenade along Norr Mälarstrand is one of the city’s most popular promenades. The investigated site has two separable areas with distinct spatiality’s and atmospheres. The square that is basically an open space with some scattered trees, and the promenade along the quay with plant beds and moored private boats reaching along its respective sides.

The promenade was restored in 2008. The site edit did not leave the site with a new soul, but merely improved the performance of the site in a functional perspective. The restoration encompassed improved accessibility for pedestrians, consisting of coherent granite pavers laid out along the quayside. An open flexible area was retained to maintain the possibility of hosting events or markets on site. Other improvements include, traffic safety measures as replacing shrubs with trees, improved lighting and relocation of a recycling station (Stockholms stad 2009a).



Figure 77. Map of Stockholm. Produced by author.

EXPERIENCE ON SITE

- views expressed are personal and subject to subjectivity

Walking along the quay, the variety on both sides, entail a less predictable and rather intriguing sequential experience. The promenade hold a distinct spatiality. The canopy of the trees creates an outdoor ceiling. Moored boats and empty berths, which ever-changing constitute walls or provide glimpses, like open doorways towards the waterscape. On opposite side, repeated trunks rises like pillars, providing the site with perfect equilibrium of dynamics and statics.

The square is rather disassociated. The space’s urban functions, such as car parking, petrol station and restaurants are disjointed. Trees are either scattered at random or planted strictly along an alley, leaving the site’s affinity low. The open atmosphere, combined with low cohesiveness, produces a sensation of chaos and disharmony.

KEY NOTES

The storm water pods and the canopy of the trees vitalizes the atmosphere, experienced on site and observed from distance.

Granite pavers promotes accessibility.

Re-use of existent hardscape components, such as outdoor city floors, is important to express the site’s historical layers and thus depth.

Open spaces need structure or consistency to bring harmony

A sequential approach heightens the experience of elongated spaces



Figure 78. Stormwater pods with willows and perennials along Norr Mälarstrand.

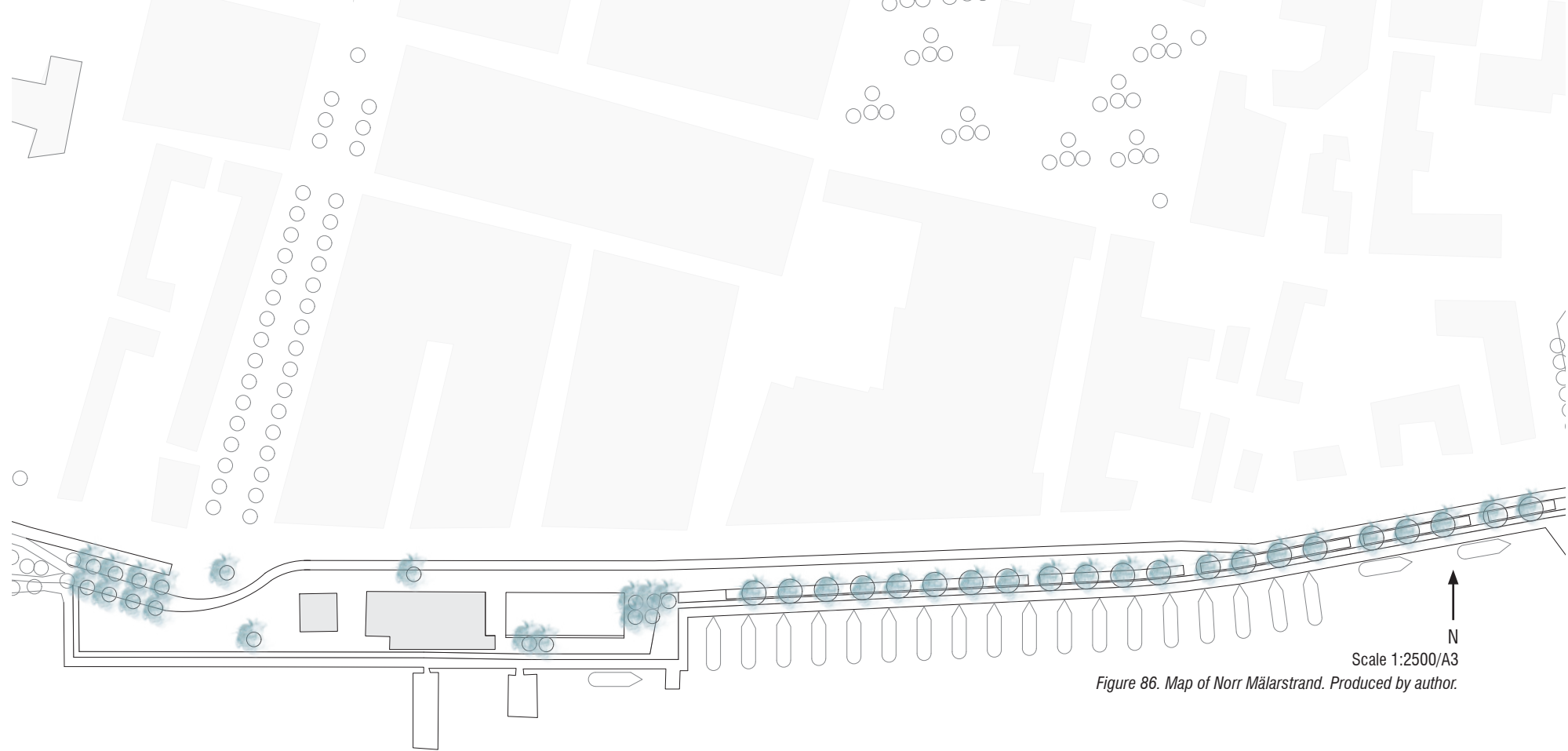


Figure 86. Map of Norr Mälarstrand. Produced by author.



Figure 79. Bush hammered cobblestones.



Figure 80. Blazed cobblestones.



Figure 81. Granite pavers.



Figure 82. Cobblestone vault pattern.



Figure 85. Building on the quay with historical facades in the background.



Figure 87. Tree canopies.



Figure 84. Willows planted along the path, increasing spatiality.



Figure 83. Willows planted along the path, obscuring the views of buildings.

STRÖMKAJEN

FOUNDED	1785
REARMAMENT	2009 - 2013
LENGHT	330
FIRM	Sweco

Design language



Temporal



Sense of place



Spatiality



Strömkajen constitutes a parvis to the Grand hotel and it functions as a main hub for archipelago boats. Hence, the site is mainly used as a place of departure to various islands. The promenade is also frequently used, often by tourists, as there are several museums located nearby and present monumental views towards the royal castle, the opera and parliament.

This quay was restored in 2013 and the design language is edgy. The exposed space and the lack of vegetation entails a raw atmosphere. This atmosphere is emphasized by robust fabric that is typically associated to industries and waterfront environments. The sites physical components - fabric of walls, city floors, benches - compose a pattern as similar characteristics that are repeated, leaving the site's affinity high.

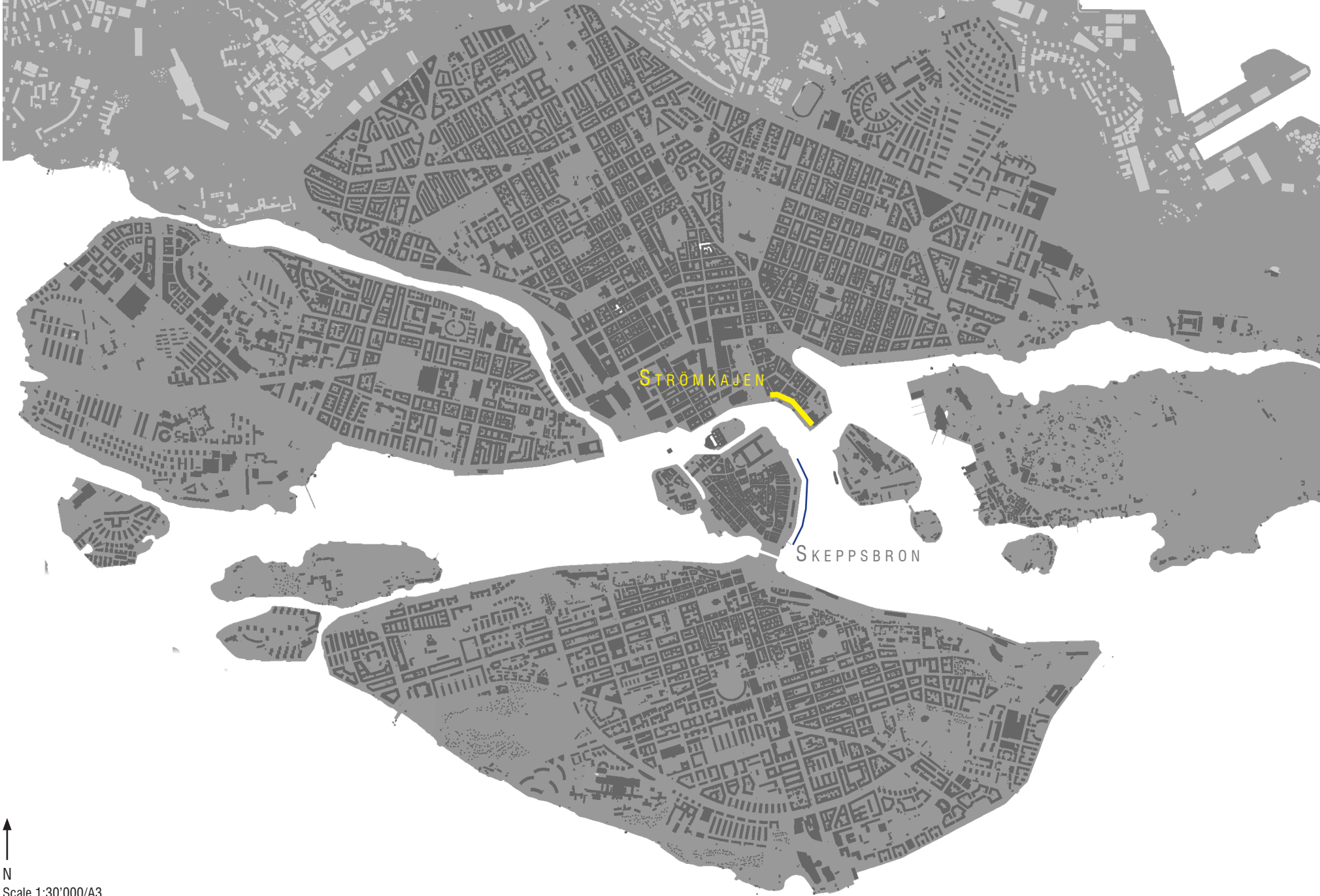


Figure 88. Map of Stockholm. Produced by author.

EXPERIENCE OF SITE

- views expressed are personal and subject to subjectivity

The high affinity of the site emphasizes a sensation of residing in a place, rather than simply a space. Despite this, the site somewhat seamlessly connects to its surrounds making it stand out and interweave in an impressive manner.

However, the site does not inspire spontaneous abundance. The openness and lack of refuge - that is enclosed spaces that induces a feeling of safety and thus harmony - combined with high levels of movement does not constitute a place for recreation.

KEY NOTES

Seating gallery's design is elegant.

Integrating public use of the recycling building is an applicable model of functional design.

The constructed raw atmosphere is aesthetically soothing but does not invite one to spend time here spontaneously.

Affinity heightens placeness.



Figure 89. Straight lines of seating gallery.



Figure 92. Mooring places adapted to sightseeing boats.



Figure 93. Seating along the quay,



Figure 94. Trifunctional building including, café, recycling room and outlook station.



Figure 90. Surface materials.



Figure 91. Surface materials.



Figure 95. Facade of a building.

CONCLUSION

Both Strömkajen and the quay along Norr Mälarstrand have clear design languages. The constantly straight shoreline has an unwavering influence that is reflected on the design language in its vicinity, on quays along Stockholm. The quays are robust, the firm and sharp meet the wild sea. Perhaps the sea is seen as so vivid and uncontrollable that only rough-cut granite can tame its strength. Or maybe the explanation is a simple functional reason, however, the sharp edge tends to transmit further on land. Organic shapes are an alien sight along the quays in the inner city, unlike natural shorelines. However, the trees and perennial plantings of Norr Mälarstrand, balances the edginess and thus adds harmony to the site.

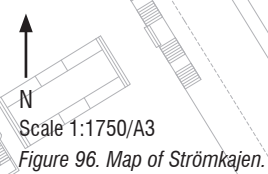


Figure 96. Map of Strömkajen.

WORKSHOP

STRATEGIC GROUP

The strategic group identified two nodes, where clusters of seating, open-air cafés and flexible spaces - intended for various events such as fish markets – were coordinated with berths of private and public boats. Two buildings – suggested to accommodate cafés – replacing the northern and southernmost buildings were proposed to have transparent facades. Furthermore, the restaurants and pubs of Skeppsbroraden were suggested to place open-dining areas along the quayside.

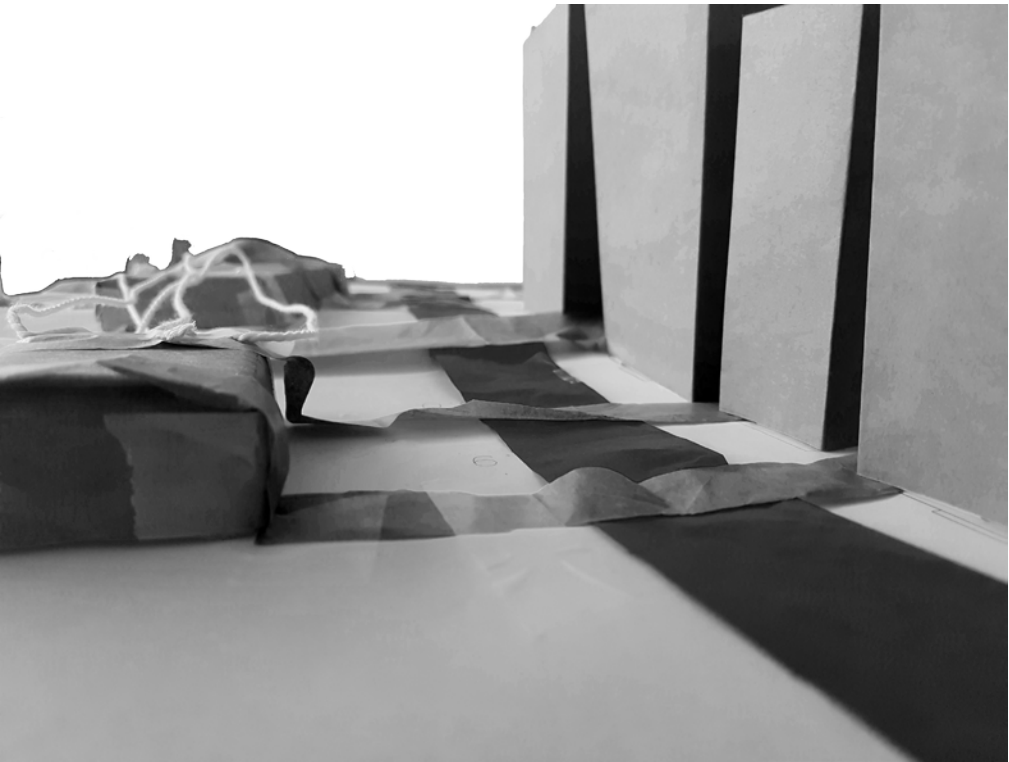


Figure 97. Workshop model conceptual group proposed crossings.

CONCEPTUAL GROUP

The conceptual group focused on interweaving the Old town with the quay. Extending the alleyways to the waterfront and beyond at one place by constructing a pier, providing an entry to the waterscape in an immaterial and physical essence. The extensions sequenced the quay, creating outlined spaces for distinct activities. The members named the concept “Let the sun shine” - referring to the extended alleyways as beaming sunrays.

The conceptual group also applied the questionnaire for discussion in the sketching design by installing wire suspension lightning between two waterfront buildings, creating an outdoor ceiling of hardscape materials, thus enhancing spatiality. Furthermore, a big, informal artsy seating object, design in a stylish manner was proposed to be placed strategically - where sightlines intersect.

CONCLUSION

Both groups proposed measures that enhances the connection of the spaces cut off by the expressway, visually and physically. The identified nodes correlated with locations of desired physical permeability identified in the serial vision analysis, conducted before this workshop.

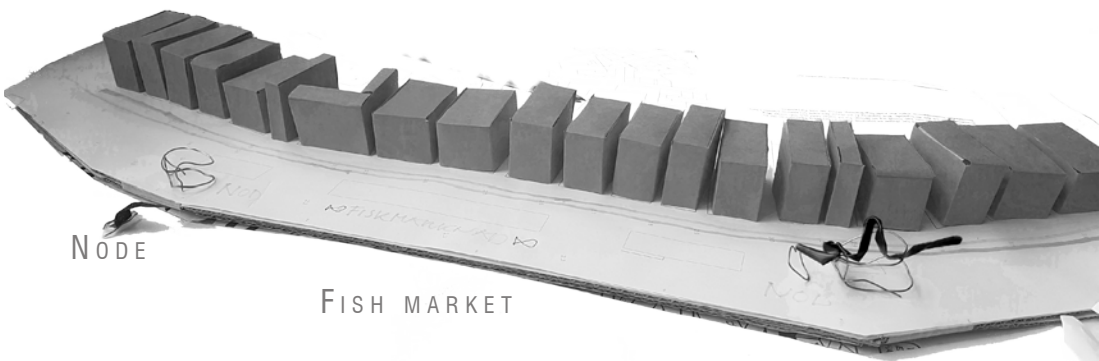


Figure 98. Strategic group's identified nodes and transparent facades.

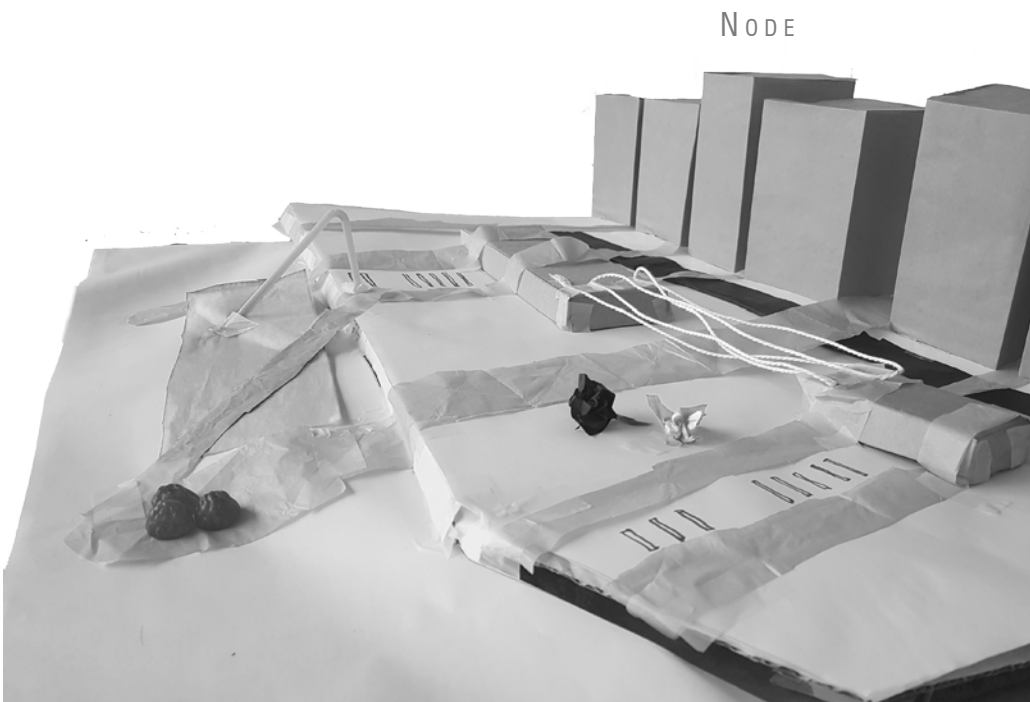


Figure 99. Elongated crossings resulting in a pier. Cable lighting creating a perceived ceiling and artsy seating objects. Benches placed in rows facing the sea.

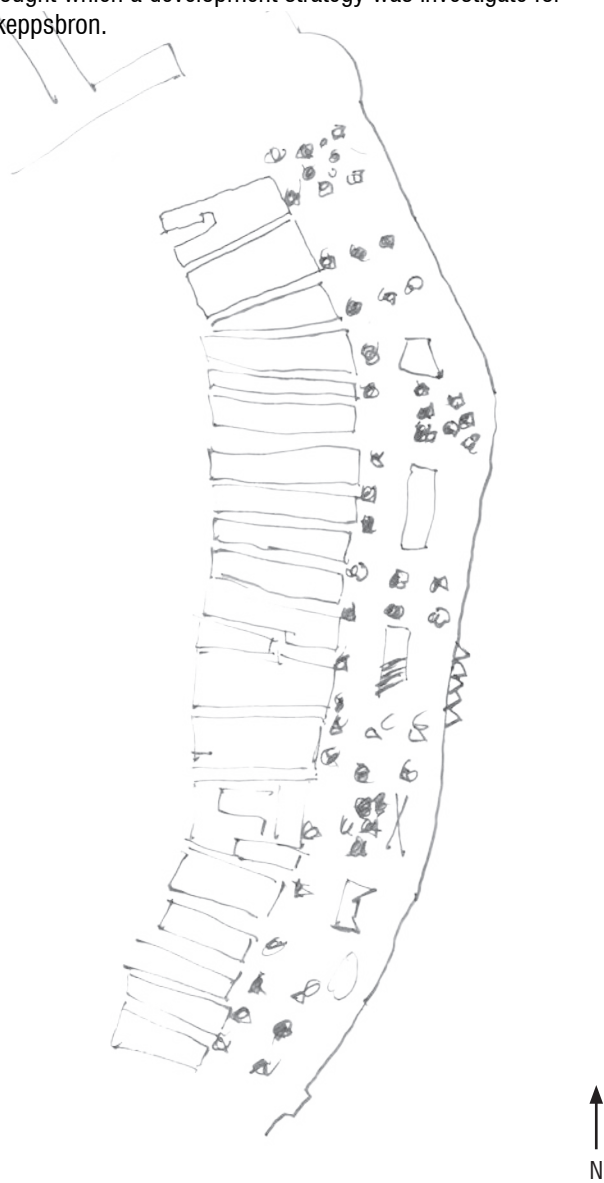
KEY NOTES

- Strategic emplacement of a point of interest.
- Sequence the elongated site, extend the alleyways.
- Investigate the location of possible nodes on site.

SKETCHING PROCESS - OPERATIVE FINDINGS

PRE- SKETCH

To define the design approach I turned to the overview plan, which highlighted the importance of reducing car traffic in order for traffic to function in the inner city. Furthermore, the importance of adapting environments to cope with climate change was highlighted. These guidelines became a scope thought which a development strategy was investigate for Skeppsbron.



Based on the framework, I made operational findings that were driving the strategic and pragmatic part of the thesis. The reference study and workshop contributed mainly with conceptual ideas and inspiration. The results of these methods had decisive influence on the course of the design process that is represented by following sketches.

As landscape architect, my original thoughts were to contribute vegetation to the site. An underlying research question was how greenery could be integrated into quay environments. Note how trees are scattered throughout the quay and the current buildings are replaced initially.

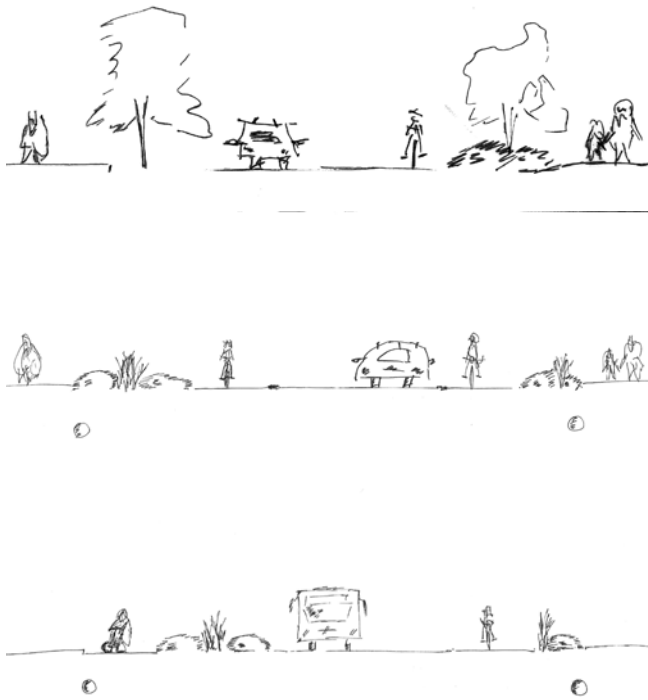
SERIAL VISION



The connectivity analysis reports where crossings and passages are apt. The result constitute the basis upon which possible movement patterns are designed and where on the quay new plazas are suitable. The idea of breaking up the longest customs house is being formed and tested.

PRAGMATIC APPROACH

- HYDROLOGY
- TRAFFIC
- CULTURAL HISTORY



The pipeline trace and culturally historical classification and views argue strongly against the planting of trees. The stormwater management, on the other hand, proved to be relevant due to the combined systems, but mainly as a way to make the monotonous streetscape vital. Cul de sac solution infused stormwater pods to be broader and utilize current car lanes.

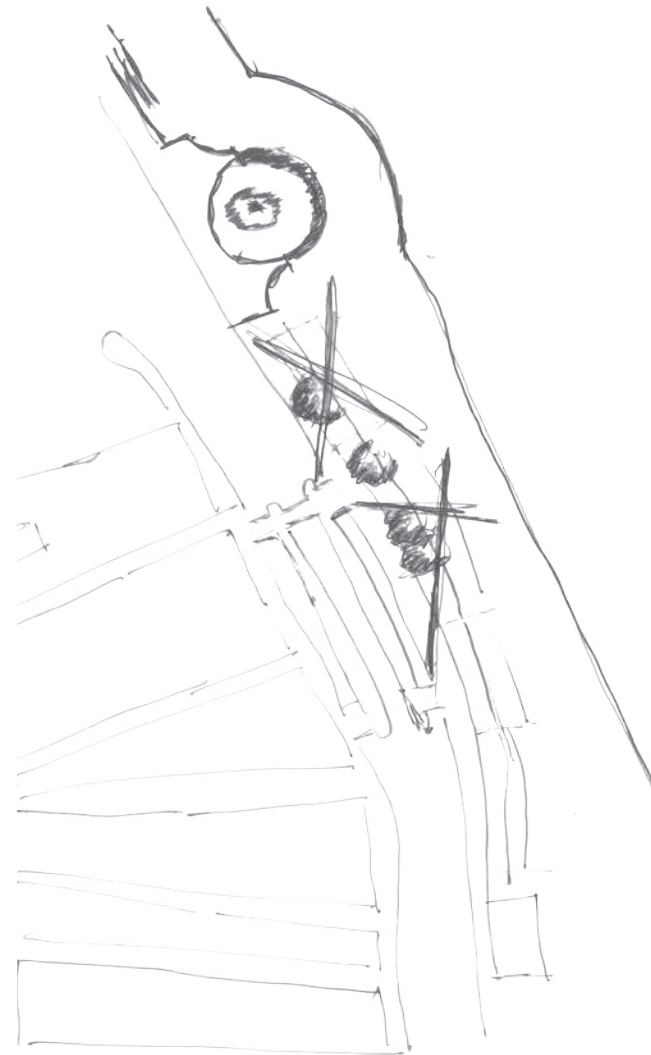
An open atmosphere is stated to be an important part of the quays character, as are the customs houses hence the site is kept open and buildings preserved in following sketches.

ALLEY TRACE & GULLY MAPPING



Alley trace and gully mapping forms the basis for how the street section should be divided and where openings to the alleys should be provided apart from those identified in the serial vision analysis.

ELEVATION TRACE
VERTICAL TOLERANCE



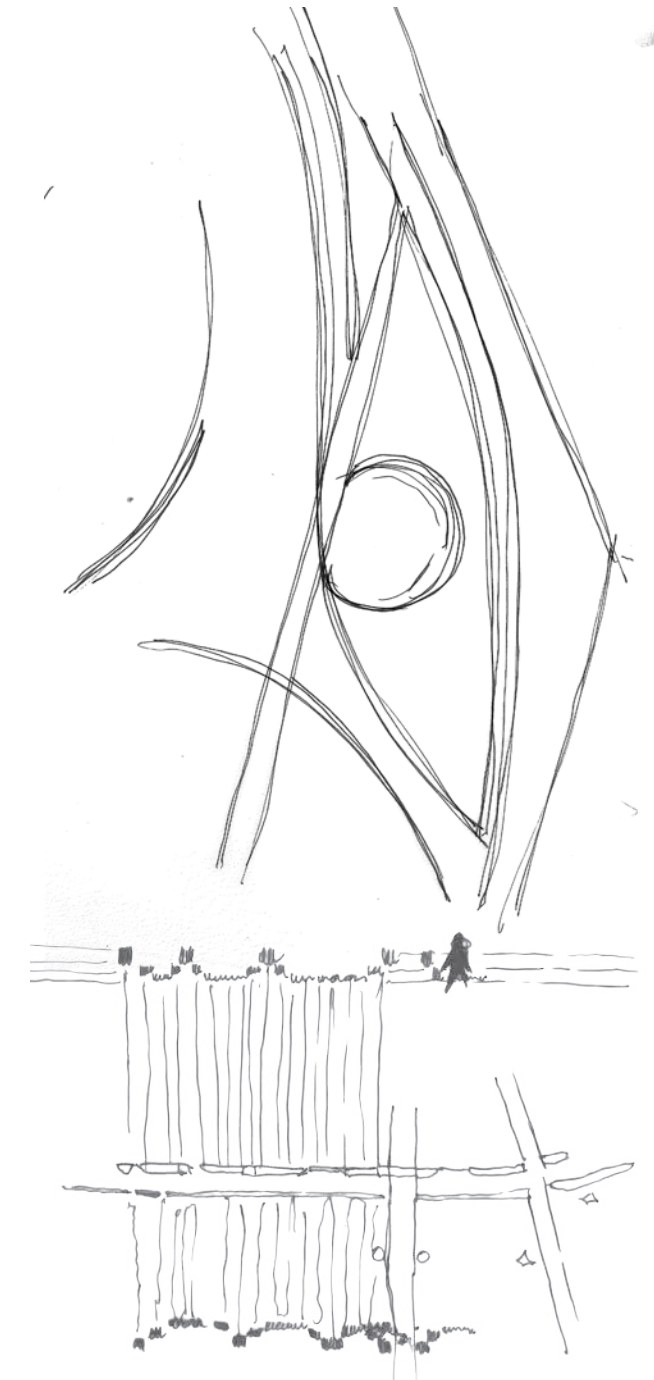
The change of elevation can be utilized to create seating gallery. The soil depth is ample for trees at a spot correlating with the area of tolerance. Sketches are initially obliged to movement patterns between bus stop and the quay.

REFERENCE SITES &
HISTORICAL MAPPING



The sharp design language of quays drove me to sketch contrasting organic shapes. Inspired by the outline of the railway tracks, accessible paths were offset the quayside. The idea of a multifunctional building starts to linger as found on Strömkajen.

WORKSHOP & PURE SKETCH



The idea of sequences were conceptually applied to the vertical rise of plants of the stormwater pods. Sea shell house is inspired by a spectacular seating proposed by conceptual group, brought to life by the need of a recycle station.

P T . 3

R E S U L T , P R O P O S A L & D I S C U S S I O N

A R E A O F E F F E C T

RESULT

VITALIZE THE STREET

*RETAIN THE STREET AS A CUL-DE-SAC AS IT CURRENTLY IS DURING THE CONSTRUCTION PHASE OF SLUSSEN.
REDUCE STREET WIDTH INTENDED FOR MOTOR VEHICLES, DIMENSION THIS FOR PUBLIC TRANSPORT
ESTABLISH STORMWATER PODS ALONG THE STREET ACCORDING TO ASSESSMENT.*

IMPROVE THE CONNECTION BETWEEN THE OLD TOWN AND SKEPPSBRON

*PRODUCE AND IMPROVE PEDESTRIAN CROSSINGS AT GIVEN LOCATIONS.
BREAK UP THE SECOND CUSTOMS HOUSE AT GIVEN LOCATION*

UTILIZE HISTORICAL LAYERS

*PRESERVE BUT RESTORE THE ORIGINAL CUSTOMS HOUSES.
PRESERVE HISTORICAL LAYERS
ILLUMINATE RAILWAY TRACKS*

DECONSTRUCT THE NORTHERNMOST BUILDING

ESTABLISH AN ADAPTED BUILDING THAT MEET CURRENT NEEDS.

REMOVE PARKING SPACES

DESIGN SPACE FOR FLEXIBLE USE

STORMWATER PODS

VITALIZE THE STREET

- ESTABLISH STORM WATER PODS ALONG THE STREET ACCORDING TO ASSESSMENT.
- REDUCE STREET WIDTH INTENDED FOR MOTOR VEHICLES, DIMENSION THIS FOR PUBLIC TRANSPORT (GOODS TRANSPORT / GARBAGE TRUCK INCLUDED).

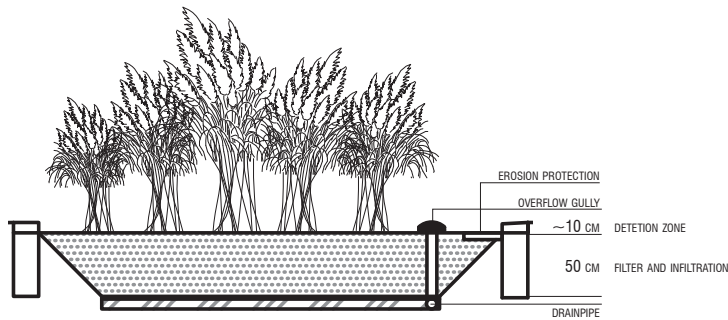


Figure 103. Section of a stormwater pod.

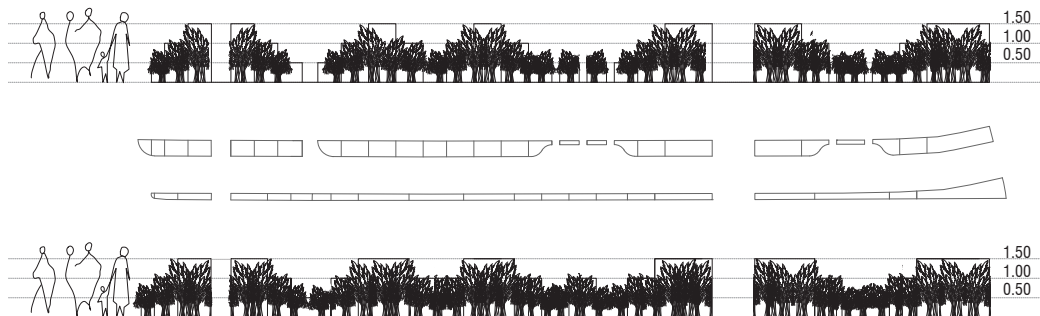


Figure 101. Section showing the varying height (m) of plants in stormwater pods on respective side of the street. Note the rhythm and how the wavelength of the western (lower) pods is slightly accentuated.

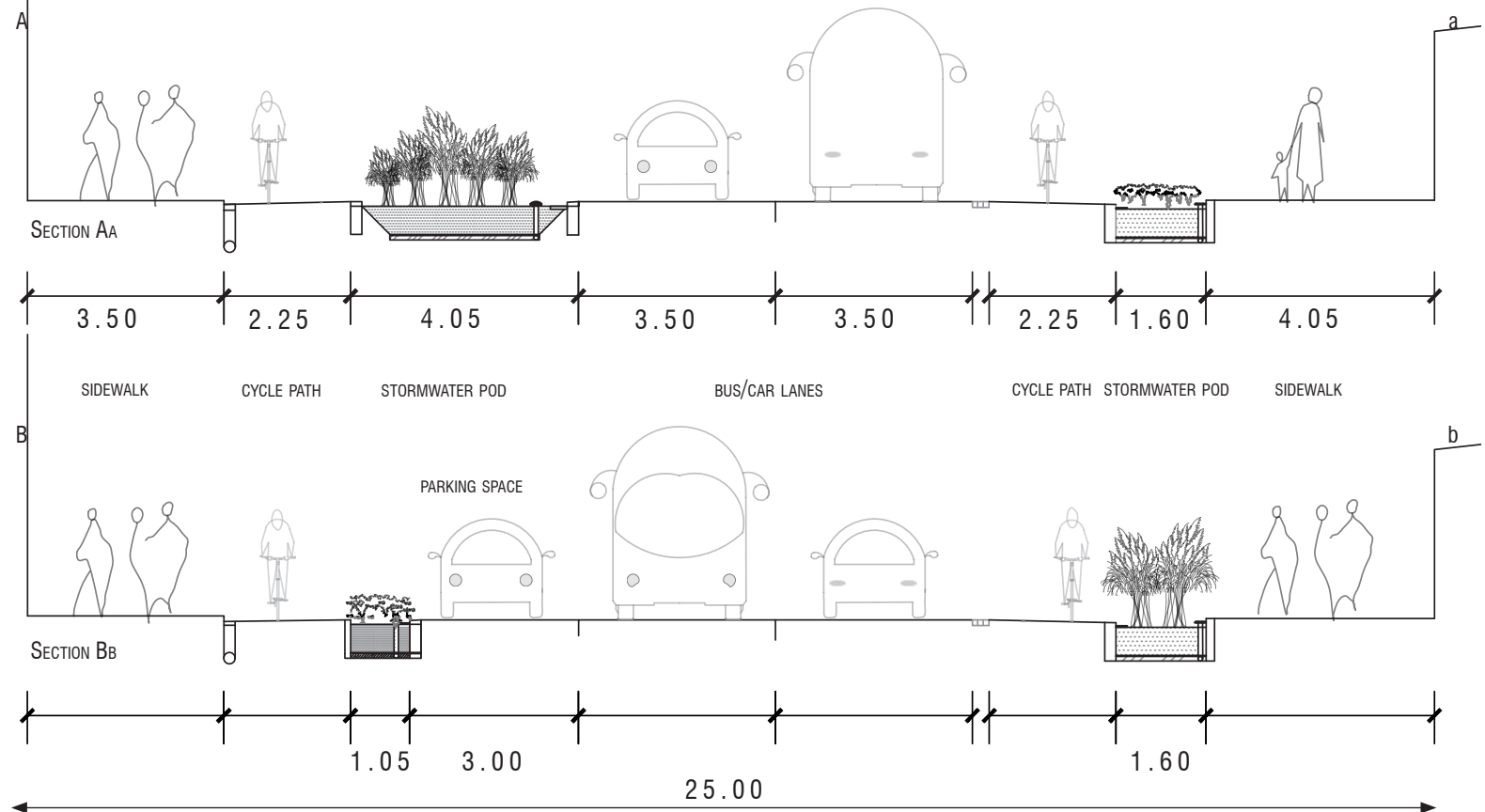


Figure 102. Cross-sections of the street - the top showing the maximum width of the stormwater pods and the bottom where parking pocket is fitted (m). Scale 1:125/A3

STORMWATER POD DESIGN

Stormwater pods are constructed along the traffic route. The pods make up about 15% of the total catchment area for the current road wells. The vegetation along the road rises from low shrubs reaching 50 cm in height to perennials rising up to 1.50 meters.

There are three basic dimensions of the stormwater pods. Universal constrain is the available soil depth limited to half a meter. The width of the western pods is either 4.05 meters or 1.05 meters, depending on whether there is a traffic bay on the side of the street. Along the east side of the street the pods are 1.60 meter wide. The eastern and western pods also differ in connection to the sewer systems.

The cycle path is planned to run alongside the pedestrian sidewalk on the western side of the street, separated by difference in elevation. Whereas the stormwater pods function as the required security zone towards parking lots and street. The current drains are located in the cycle path, but the catchment area has decreased substantially. Overflow gullies and drain pipes from the stormwater pods must be connected to the existing sewer system.

The location of the stormwater pods is an equilibration of matter of available space. Placing the stormwater pods between the cycle path and the sidewalk induces a direct connection to existing drains, however that would induce the necessity to make use of additional space of the already cramped section.

The eastern stormwater pods are connected to the existing drains. The gullies are slightly elevated to enable stormwater to infiltrate or evaporate to a certain degree, whereas pods are drained when reached maximum capacity.

The sides of the plant beds are typically tilted, inducing loss of the total volume. Hence 1.05 and 1.60 stormwater pods sides are fortified and constructed in a 90 degree angle.

SECTION A
SECTION B

N
Scale 1:2000/A3

Figure 100. Stormwater pods location along the street.

STREET & CROSSINGS

ENHANCED EXISTING CROSSING

NEW ELEVATED CROSSING

ELEVATED EXISTING CROSSING

VISUAL CONNECTION

ELEVATED EXISTING CROSSING

ELEVATED EXISTING CROSSING

ENHANCED EXISTING CROSSING

CROSSING EXTENSION

CROSSING EXTENSION

EXTENSION

CROSSING EXTENSION

N
Scale 1:2000/A3

Figure 104. Connections between the waterfront and Old town.

VITALIZE THE STREET

- *RETAIN THE STREET AS A CUL-DE-SAC AS IT CURRENTLY IS DURING THE CONSTRUCTION PHASE OF SLUSSEN.*

IMPROVE THE CONNECTION BETWEEN THE OLD TOWN AND SKEPPSBRON

- *PRODUCE AND IMPROVE PEDESTRIAN CROSSINGS AT GIVEN LOCATIONS.*
- *BREAK UP THE SECOND CUSTOMS HOUSE AT GIVEN LOCATION*

CONNECTIONS

The street will permanently become a cul-de-sac and the traffic flow is rerouted to Munkbroleden. Henceforth the route will function as a passage exclusively for buses and public transport. Physical obstacles prevent cars from motorist of bypassing traffic regulations.

Better and more pedestrian crossings reinforce the connection to the Old Town. A new passage is proposed where a connection is currently missing. The new passage is built of granite pavers to increase the continuity in the pedestrian landscape, with contrasting features indicating zebra stripes, legally obliging vehicles yield to pedestrians. The passage is elevated - in level with the pavement - as the road is submerged. A flat slope makes the transition safer for pedestrians and at the same time spares the back of the bus drivers. The existing crossings are redesigned according to this model.

The passages of granite pavers are extended to the quayside, making the waterfront accessible. Furthermore the extensions also constitute a smooth surfaced docking area to visiting cruising ships, as well as a robust preparation for an increase of mobile traffic.

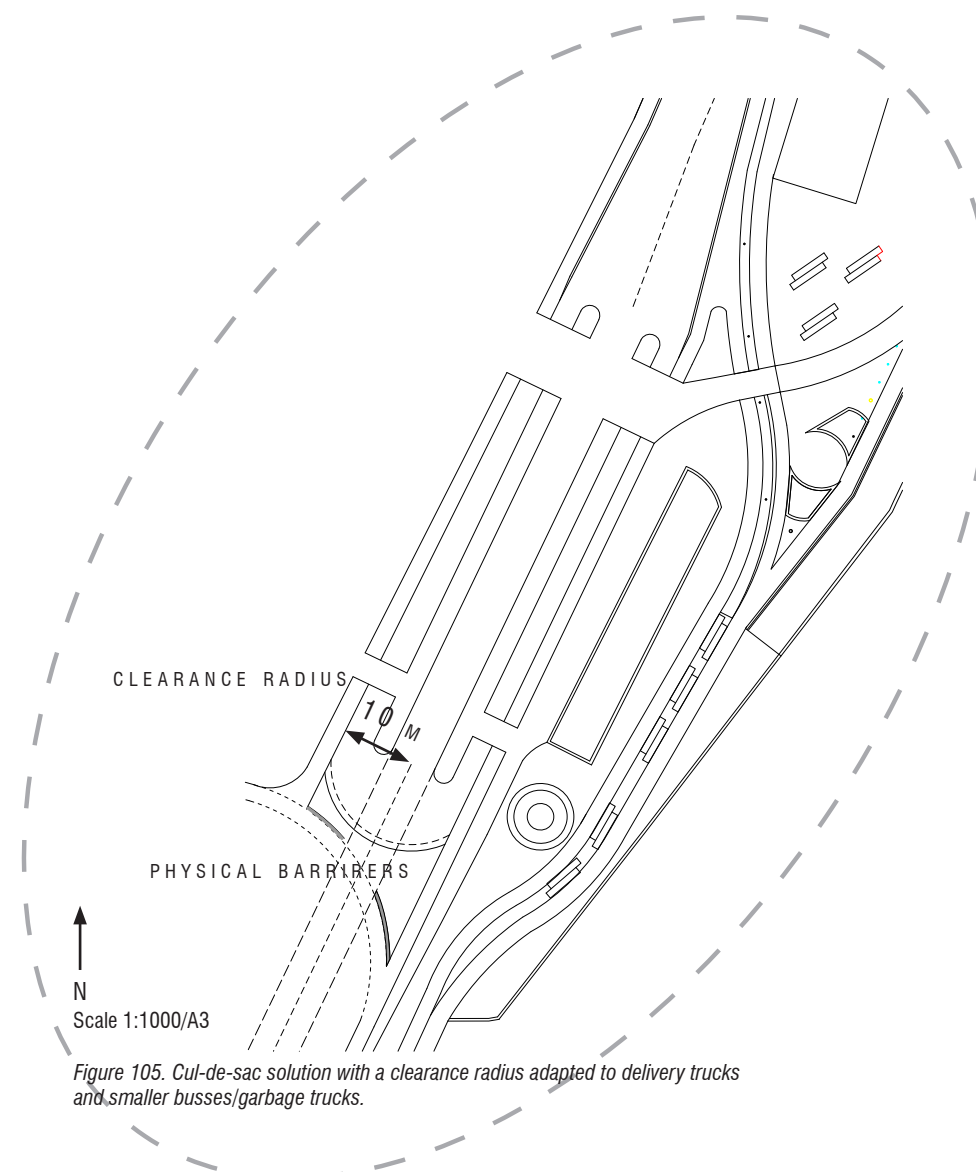


Figure 105. Cul-de-sac solution with a clearance radius adapted to delivery trucks and smaller busses/garbage trucks.

OUTER QUAY DESIGN

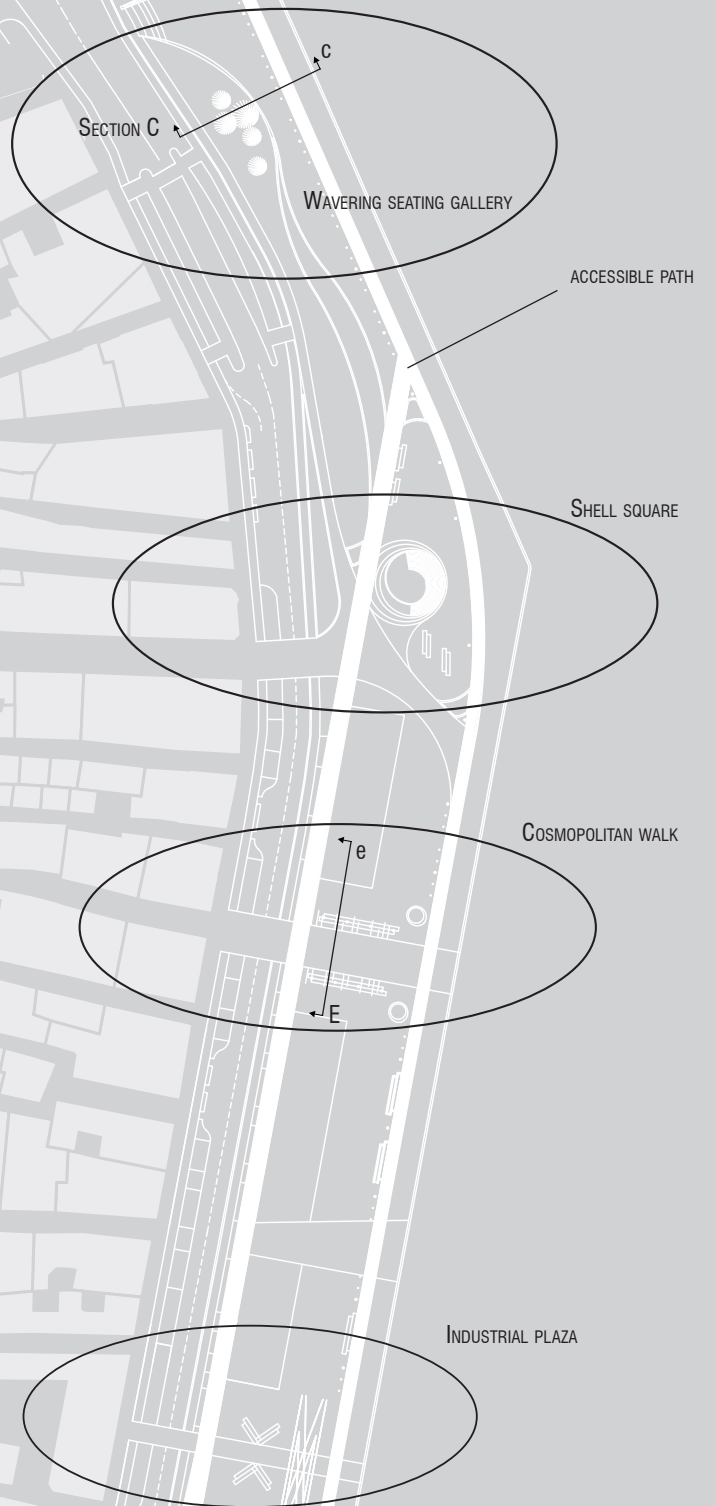


Figure 106. Accessible paths connecting the quay in to north/-southbound directions and new plazas formed.

Scale 1:2000/A3

- UTILIZE HISTORICAL LAYERS**
- PRESERVE BUT RESTORE THE ORIGINAL CUSTOMS HOUSES
 - PRESERVE HISTORICAL LAYERS
 - ILLUMINATE RAILWAY TRACKS

- DECONSTRUCT THE NORTHERNMOST BUILDING**
- ESTABLISH AN ADAPTED BUILDING THAT MEET CURRENT NEEDS

- REMOVE PARKING SPACES**
- DESIGN SPACE FOR FLEXIBLE USE

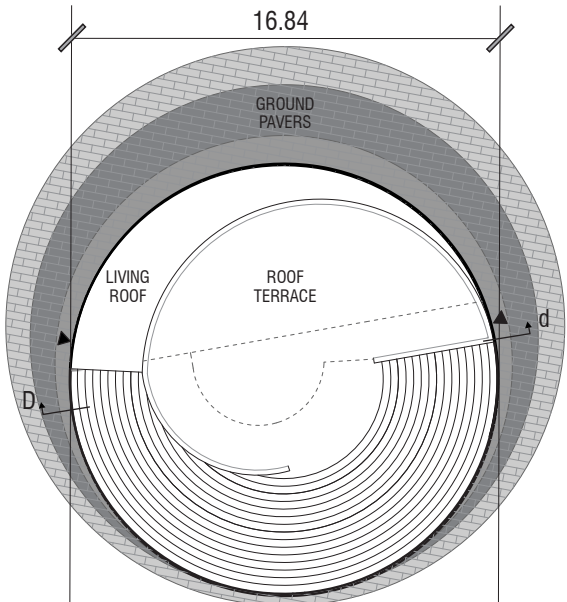


Figure 107. Top view of Sea Shell Shack. Dotted outline shows the recycle room beneath the rooftop terrace (m). Next to the recycle room is a rental premise.

Scale 1:300/A3

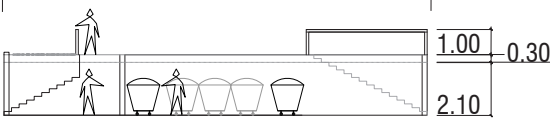


Figure 108. Section D-d of Sea Shell Shack (m). 16 steps, each 15 cm in height. The building is 2.40 meters tall, 3.40 including the handrail.

Scale 1:300/A3

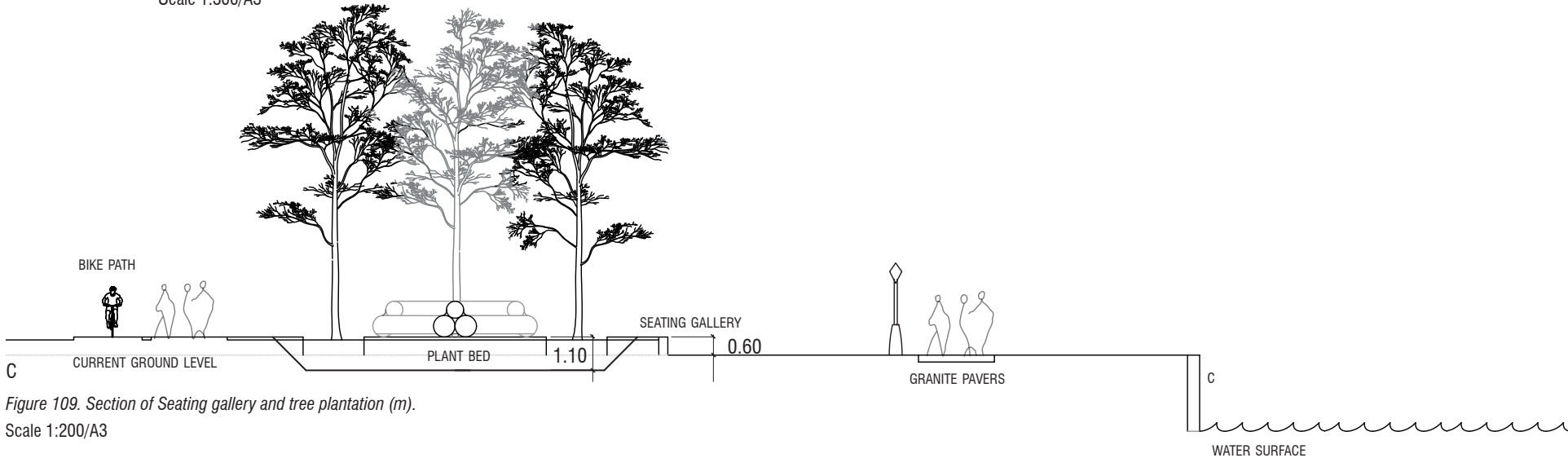


Figure 109. Section of Seating gallery and tree plantation (m).

Scale 1:200/A3

DESIGN EDIT

The northernmost building is replaced with a better adapted building. The new building is circular in shape and strategically placed where southbound and northbound vistas converge, producing a point of interest, with no dominant side. Its appearance resemble a sea shell and the proportions of Fibonacci sequence – considered the perfect harmony during the renaissance. Its locales function as recycle room for residents and visiting cruisers, as well as a premise reserved for public businesses. The side facing the sea is a sitting staircase, leading to a rooftop viewpoint for the public and possible café guests.

The temporary extension of customs houses are removed in favor of including open-air café areas. The buildings are restored and the second customs house is split to open up for visual connection between the Old town, street and waterfront.

The principle of restoration of the customs houses covers the outside of the houses. The lower part of the facades consists of tiles that are replaced by new equivalent tiles placed according to the current pattern. Window mouldings are repainted and the window glasses are preserved. The parts of the houses that have grids and or are embarras, open up so that transparent facades are created. It should be possible to look straight through 70 percent of the customs houses in the east-west direction. The parts of the customs houses that are used for storage, offices or other non-public activities are excluded and leased to open cultural or business activities in accordance with the quay strategy.

Accessible paths are laid out parallel to the quay and on the eastern side of the street, inspired by the outline of historical railway racks. The accessible paths are 2.5 and 4 meters wide on the quay and respectively along the street, constituted of granite pavers. Founded plazas, for example around the shell building, are also made accessible. Paths are laid out by contrasting granite of lighter heritage, contrasting granite pavers of plazas and cobblestones of the quay.

Vegetation on the quay is limited to preserve the open atmosphere that is characteristic to the site and views towards Skeppsbroraden. The few plant beds constructed, are placed to accentuate plazas. At the north ridge, where historical views are not obstructed, a group of trees is planted that accentuates the entry to the site from the royal precinct. Tree plantation is made physiologically possible by an existing difference in elevation that is exploited. The plane of the quay is raised, producing a seating gallery that gently submerges wavering towards the Sea Shell building.

The parking lots are removed. Space is aesthetically designed and preserved open to suit public events.

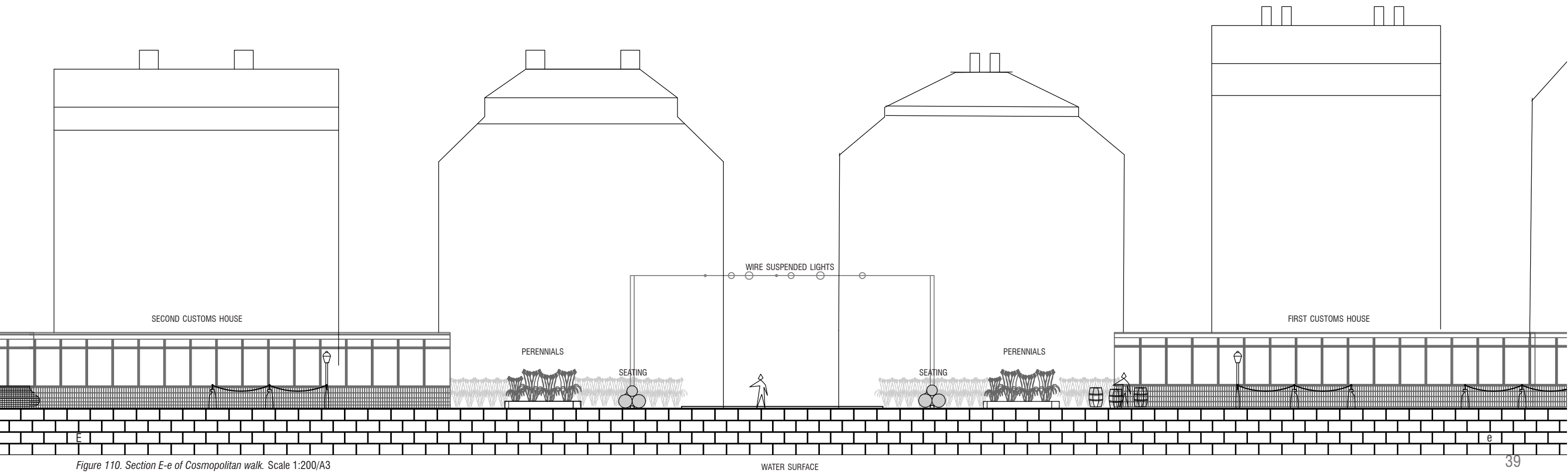
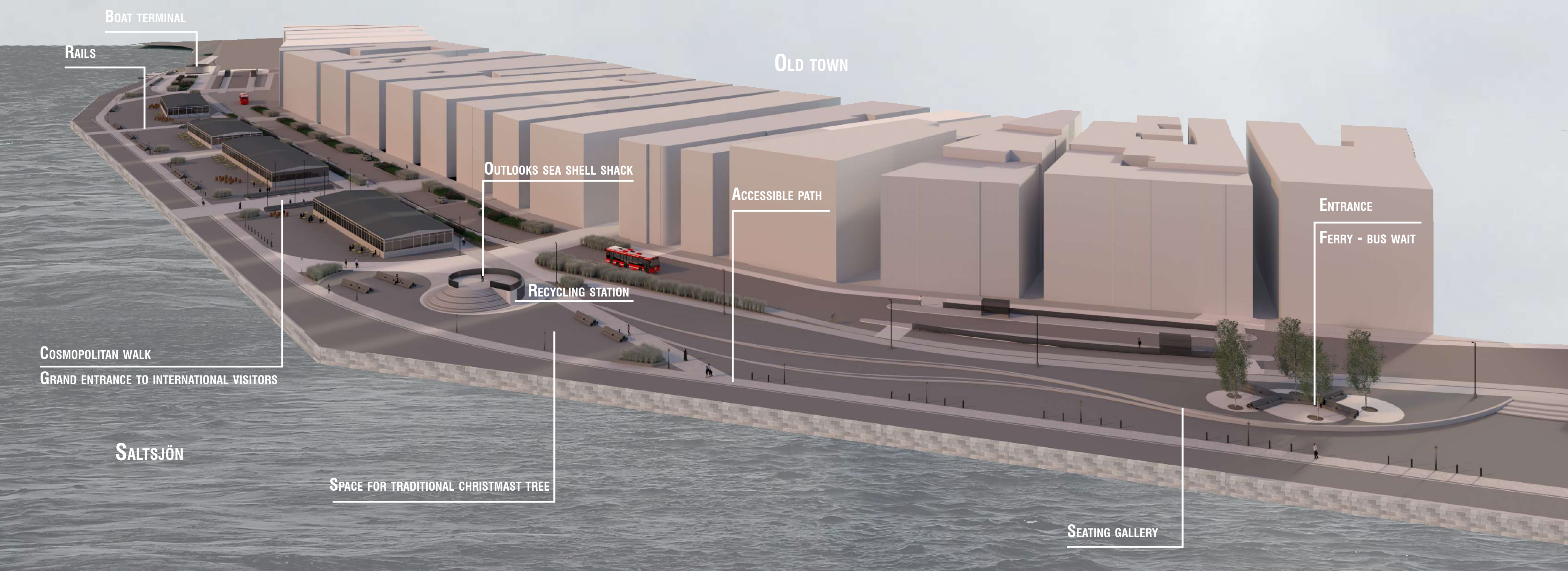


Figure 110. Section E-e of Cosmopolitan walk. Scale 1:200/A3

SKEPPSBRON

ReLINKED



CHALLENGE

CURRENTLY THERE IS A UNIQUE WINDOW OF TIME OF REDEEMING THIS INNER CITY QUAY. ACTIONS MUST BE TAKEN TOWARDS CURRENT BUILDING PLANS THAT OTHERWISE WILL HAVE PARAMOUNT NEGATIVE EFFECT ON THE QUAY. THIS ROUND IS SETTLING THE BATTLE BETWEEN MAN AND MACHINE ONCE AND FOR ALL. THIS GIVEN LOCALE HAS THE UTMOST NUMBER OF RESTRAINTS AND IS THUS THE ARENA TO SHOWCASE DELICATE DEVELOPMENT OF HISTORICAL URBAN WATERFRONTS.

CONCEPT

ReLINKED CONNECTS THE SITE'S HISTORY WITH CONTEMPORARY NEEDS. HISTORY AND FUNCTION MAKE UP THE CORE OF THE PROPOSAL - A CONCEPTUALLY DESIGNED POST-INDUSTRIAL LANDSCAPE.

THE FORMER OUTLINE OF THE TRAIN TRACKS CONSTITUTES THE BACK BONE OF THE MOVEMENT STRUCTURE. PASSAGES EXTEND FROM ALLEYS, CUT THROUGH THE STREET AS SLEEPERS THAT STRENGTHENS THE CONNECTION OF THE SITE AND THE CITY. CHAIN OF BOLLARDS INSPIRES VEGETATION TO ARISE AS WILD FLOWERS ALONG CONCEPTUAL RAILWAY EMBANKMENTS - GROWING DENSELY ALONG THE STREET AND EMERGING IN PATCHES ON THE QUAY. THE WEAVING SEATING GALLERY REPRESENTS THE FLUIDITY OF TIME - DENOTING WORN OUT TRACKS BUCKLED UNDER THE HEAT OF SUN - ON PARTS LACKING SLEEPERS.

CLUE

NEVER MINDING THE POST-PRODUCTION CONCEPT, THE STRATEGY OF THE SITE IS PRAGMATICALLY WORKED OUT AND MANKIND IS YET TO BE OVERCOME. THE STREETScape IS GENTLY DESIGNED TO FAVOR THE LIVING. NOT TO WORRY, THE TRAFFIC SYSTEM OF STOCKHOLM WILL UPSCALE ITS EFFECTIVE CAPACITY. IMMATERIAL MATTERS ARE GENTLY RESOLVED, THE SIGNIFICANT FACADE IS UNOBSTRUCTED AND THIS UNIQUE OPEN AND VAST ATMOSPHERE OF THE DENSELY BUILT UP ENSEMBLE ENGAGES WITH THE WATERSCAPE, MULTIPLYING ITS PROFOUND EFFECT. NO PEOPLE NO PLACE, BUSINESSES ARE FACED OUTWARDS WELCOMING PEOPLE TO RESIDE, WHILST SEA SHELL SHACK KEEPS THE QUAY TIDY AND CLEAN - AFTER ALL - SKEPPSBRON IS THE FIRST SITE IN STOCKHOLM THAT SOME PEOPLE VISIT.

DISRUPTED SITE

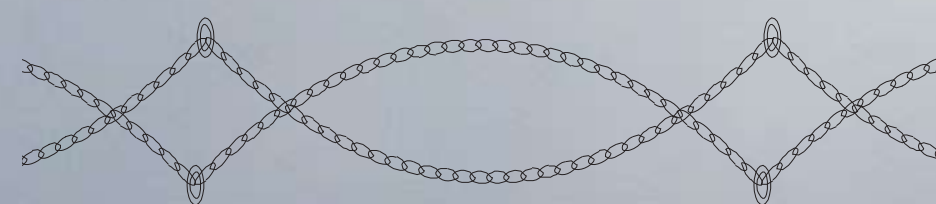
CARS, LORRIES, BUSES, CYCLIST, SCOOTERS. MANY ROAD USERS MUST SHARE A LIMITED SPACE - SCIENCE SHOW THAT INCREASING ROAD CAPACITY ACTUALLY DECREASES TRANSPORT EFFICIENCY. SLUSSEN MUST NOT CONNECT 8 LANES OF CAR TRAFFIC ONTO THIS UNIQUE SITE. SOMETHING MUST BE DONE...

SITE THINKING

ON SITE OBSERVATIONS TELLS ME THAT THERE ARE SOME ISSUES. BETTER RESEARCH FURTHER ON LEGISLATIONS. OH, THERE ARE TOP DOWN REGULATIONS LET'S SEE, HIMM. WELL, WHAT'S THE SCOPE HERE, THE QUAY IS DISCONNECTED, THE STREETScape IS THE PROBLEM, WAIT CLIMATE CHANGE ADAPTATION IS KEY, AND WHAT ABOUT.. YOU GET IT. PRAGMATISM HAS FORMED THE PROPOSAL.

THINKING ABOUT A SITE

OK, THE FACTS ARE SET. TRAFFIC CAN BE RESOLVED, CLIMATE ADAPTATION DOES NOT SEEM TO HAVE SIGNIFICANT POSITIVE IMPACT ON ECOLOGICAL SYSTEMS. HOWEVER, PLANTS MAKE PEOPLE SMILE, FROM THE INSIDE, IF NOT APPARENTLY. WHAT UNIFIES THIS PROCESS? COBBLESTONES, RAILS, BARRELS, CHAINS.. CHAINS! CHAINS SECLUDE AND ARE LINKED. WHAT A PARADOX. DUPLICATE AND TWIST, VOILÀ - PLAZAS ARE SHAPED, A RHYTHM IS BORN AND THE SITE IS CONNECTED. PROPERTIES CORRESPOND WITH THE PROCESS. THIS IS THE THREAD THAT TIES IT ALL TOGETHER.



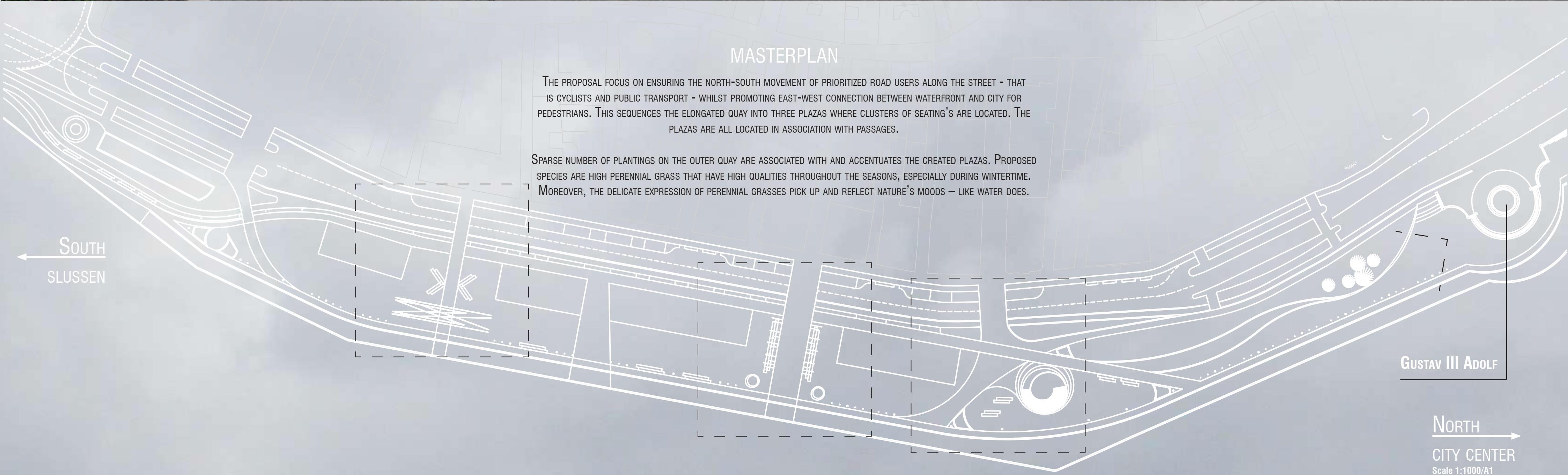
COSMOPOLITAN WALK

ALL CROSSINGS ARE ELEVATED, PROMOTING A SMOOTH CONTINUITY TO THE PEDESTRIANS PHYSICAL ENVIRONMENT WHILST INCREASING TRAFFIC SAFETY. THE PASSAGES ARE ILLUMINATED WITH DOWNLIGHTS, SHOWCASTING THE QUAYSIDE AT NIGHT AND AVOIDING REFLECTIONS ON THE WATER.



STREETSCAPE

VARIOUS SHRUBS AND PERENNIAL GRASSES ARE PLANTED IN SECTIONS ALONG A RHYTHM - VITALIZING THE STREETSCAPE AND PROMOTING AESTHETIC, HYDROLOGICAL AND SAFETY FUNCTIONS FOR ROAD USERS.



MASTERPLAN

THE PROPOSAL FOCUS ON ENSURING THE NORTH-SOUTH MOVEMENT OF PRIORITIZED ROAD USERS ALONG THE STREET - THAT IS CYCLISTS AND PUBLIC TRANSPORT - WHILST PROMOTING EAST-WEST CONNECTION BETWEEN WATERFRONT AND CITY FOR PEDESTRIANS. THIS SEQUENCES THE ELONGATED QUAY INTO THREE PLAZAS WHERE CLUSTERS OF SEATING'S ARE LOCATED. THE PLAZAS ARE ALL LOCATED IN ASSOCIATION WITH PASSAGES.

SPARSE NUMBER OF PLANTINGS ON THE OUTER QUAY ARE ASSOCIATED WITH AND ACCENTUATES THE CREATED PLAZAS. PROPOSED SPECIES ARE HIGH PERENNIAL GRASS THAT HAVE HIGH QUALITIES THROUGHOUT THE SEASONS, ESPECIALLY DURING WINTERTIME. MOREOVER, THE DELICATE EXPRESSION OF PERENNIAL GRASSES PICK UP AND REFLECT NATURE'S MOODS - LIKE WATER DOES.

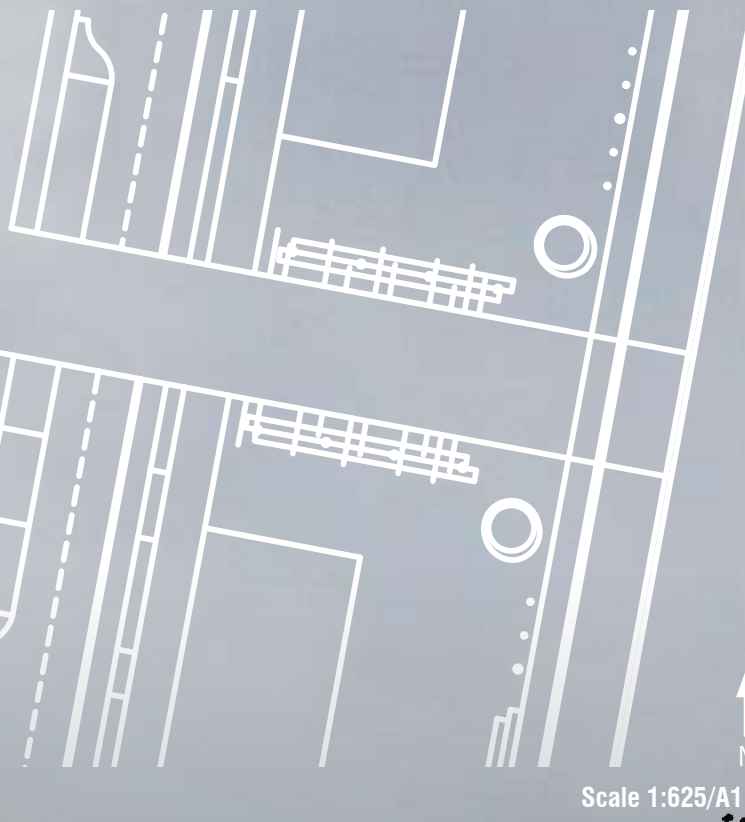
INDUSTRIAL PLAZA

SITE EDIT OF THE INDUSTRIAL PLAZA CONSIST OF ILLUMINATING THE RAILS THAT WITNESSES OF THE PREVIOUS FUNCTIONS OF THE QUAY.



COSMOPOLITAN WALK

THE COSMOPOLITAN WALK CONSTITUTE THE ENTRANCE TO THE CITY FOR INTERNATIONAL VISTORS ARRIVING BY CRUISERS.



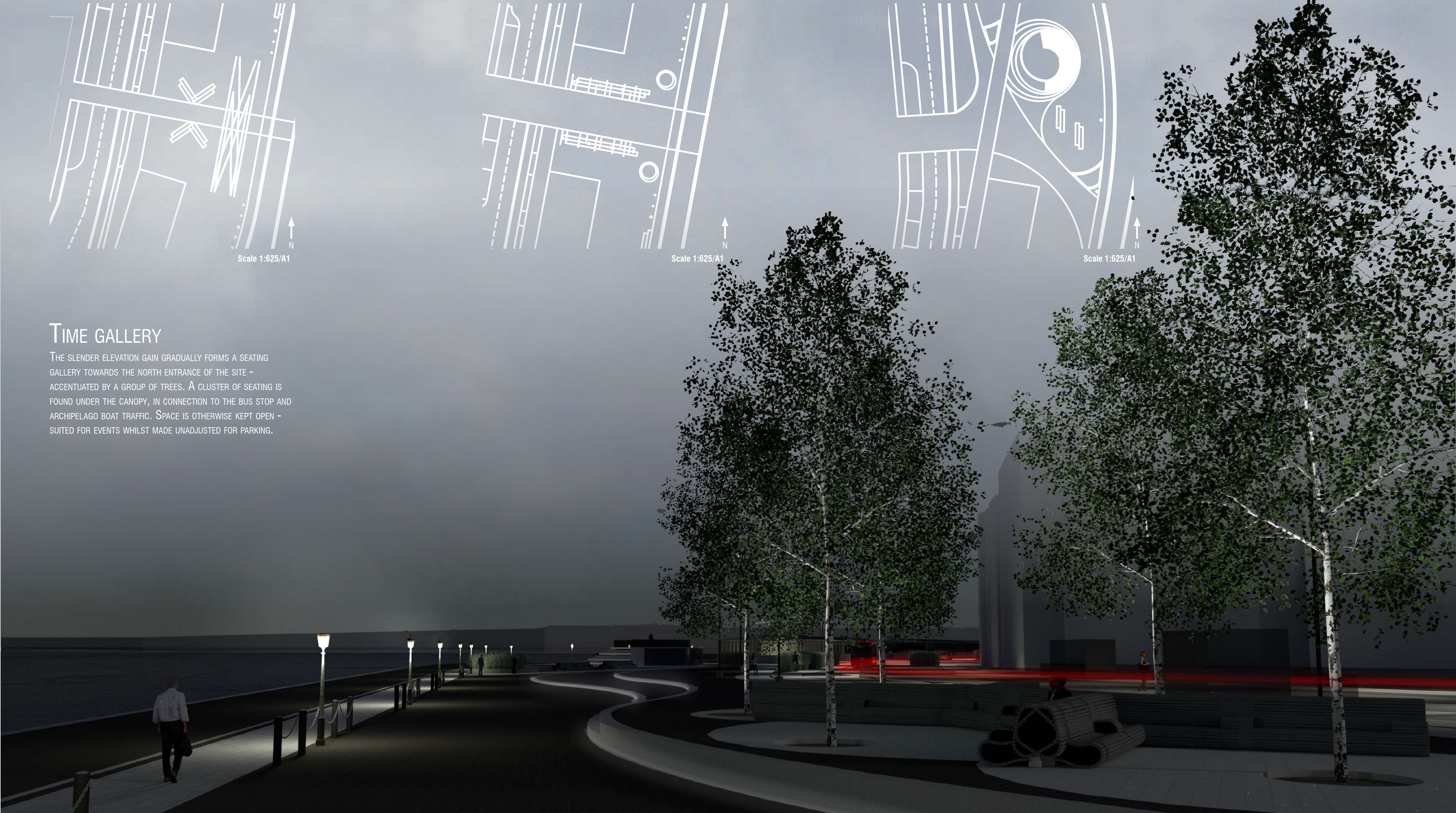
SHELL SQUARE

SHELL SQUARE IS LOCATED IN CONNECTION TO THE NEW CROSSING. THIS PART WRITTEN MORE THAN EDITED - REFERRING TO THE REMOVAL AND CONSTRUCTION OF A BUILDING AND EXPANSE OF ACCESSIBLE OUTDOOR FLOORS.



TIME GALLERY

THE SLENDER ELEVATION GAIN GRADUALLY FORMS A SEATING GALLERY TOWARDS THE NORTH ENTRANCE OF THE SITE - ACCENTUATED BY A GROUP OF TREES. A CLUSTER OF SEATING IS FOUND UNDER THE CANOPY, IN CONNECTION TO THE BUS STOP AND ARCHIPELAGO BOAT TRAFFIC. SPACE IS OTHERWISE KEPT OPEN - SUITED FOR EVENTS WHILST MADE UNADJUSTED FOR PARKING.





BUS STOP

GUSTAV III

STRÖMKAJEN

ROOF TERRACE

TICKET OFFICE/CAFÉ

GRASS PERENNIALS

SHELL SQUARE

THE SHELL SQUARE - WHERE VISTAS AND PATHS CONVERGE - CONSTITUTE THE CORE OF SKEPPSBRON. THE NEW BUILDING IN FOCUS. ITS SHAPE TWINKLE TO THE PEDESTAL OF GUSTAV III WHO'S STANDING JUST NORTH OF THE SITE. THE PUBLIC ROOFTOP TERRACE REFLECT OUR DEMOCRATIC SOCIETY - RATHER THAN THE AUTOCRACY OF ANY ANCIENT KINGS - WHOSE MEMORIALS RISE HIGHER THAN ANY MAN.

DISCUSSION

Following discussion addresses the aim of the thesis and my biases. Followed by a discussion of the proposal and methods. As a final point, reflection and further research questions are presented.

REACHING THE AIM

The purpose of the report is to inspire an alternative development of the Skeppsbron for decision makers and to demonstrate its applicability. The thesis presents a proposal that is substantiated on site-specific aspects that were identified according to the aim. The keyword of the purpose is applicability. Through the choice of methods the proposed strategy is presented viable. The research questions have thus been answered, the first reaching the aim and the second the thesis’s purpose. The latter research question is complex in the sense that it has an infinite number of answers. The proposal merely specifies an articulation of how the aim can be implemented and can thus be reworked into unrecognition – that would still align with the general aspects of the strategy.

CLARIFYING BIASES

Throughout the pragmatic approach, I was constrained to take a stance to drive the work process forward. Where biases, such as a resistance to private motoring in the inner city, are flagrant in the essay, and influenced me to proceed with rather extreme measures such as relieving the outer quay of parking spaces. Furthermore, my biases have affected me to search for information supporting my thesis and not presenting opinions that support the counterpart with enough detail. At the same time, the aim of the paper has been to produce a basis that is consistent with political guidelines, where reduced car traffic in the inner city is emphasized. In addition, there is a consensus within research internationally that increased road capacity creates new traffic. Which, in the perspective of the overview plan, justifies my stance.

My knowledge of traffic systems is basic. Hence, the proposal may induce negative consequences that are unbiased and not foreseen. However, I have been in contact with professional traffic planners who argue that a dead-end street is a viable solution. It is also logical as the street is currently a dead-end street for car traffic. Ultimately, it's all about priorities and stances, and I support the political guidelines. I find that the benefits of liberated space, transport efficiency, quality of outdoor environment regarding use, noise, aesthetics, and particles outweigh the possibility of using the car as the primary means of transport in the inner city.

AREA OF EFFECT - DISCUSSION OF PROPOSAL

TRAFFIC

It is apparent to question the capacity of Munkbroleden, where car traffic is diverted, as a direct result of the design. Which at first glance may catch a doubled traffic flow. For induced traffic, however, the reverse relationship also applies, i.e. when the road capacity decreases in different ways, the demand decreases. It is equally wrong to believe that the traffic volumes are the same when the capacity deteriorates as not to expect increased road capacity to increase the total amount. At the same time, there is a latent demand for mobility in the city. In urban regions, road investment result in many other less positive effects in the short, medium and long term: increased car use, longer travel distances through changed target points, fewer public transport users, pedestrians and cyclists, changed availability that gives longer travel distances through changed location of businesses and housing (Trivector 2009). In other words, it seems rather contradictory in relation to the general plan’s guidelines to open up Skeppsbron for induced car traffic.

The result of removing 400 parking spaces on the quay obviously affects local residents and motorists. At the same time, one can question the need for a private car when living in a medieval city center. With car pools as a growing trend, the need for objective car transport can be met. To use 5000 m2 of unique quay environment for vehicles that are parked 90% of the time is in my opinion reprehensible land use.

CROSSINGS

The proposal connects the quay with its history and surroundings. The granite paved path along the quay connects Skeppsbron with the inner city quays. The waterfront is made available as well as the connection to the Old town is enhanced by elevated passages, that contradicts SKL:s recommendations. However, I am critical to SKL's position on pedestrian crossings that advocates the traditional zebra crossing point. One observational study has been made of the classic crossing design. In order to draw conclusions, far more crossings should be studied before proceeding with strict recommendations of this sort. Anyway, the Stockholm municipality apply speed regulatory measures where bumps and elevated pedestrian crossings constitute the two physical implementations Stockholms stad (2018a). The advantage of bumps is that emergency vehicles can pass through wider axle. Elevated crossings, on the other hand, offer continuity in the pedestrian environment and contribute to a safer passage. Not the least when cyclists also avoid the speed bumps, and thus pose a danger to crossing pedestrians. The disadvantage, pointed out by Bäck, are the professional road users, such as bus chauffeurs. The raised passages have thus been designed with flatter ramps, with a five percent slope.

STORMWATER & DESIGN

The available soil depth is not confirmed but merely an estimate that has had a tremendous influence on the proposal. The uncertainty of these numbers affect the viability of the proposal and thus the very core of this thesis. Since information on pipeline outlines is security classed, it has been impossible for me to assess the matter further. Technical templates of storm water pods show that even 50 cm soil depth may be on the short hand side to be able to detain stormwater effectively. The stormwater beds can be constructed of larger texture materials so that water can infiltrate quickly. However, this delimit the plant selection to very dry-hardy species.

Suggested species are fairly contemporary. Generally, it is unfamiliar historically with grass species along streets, or anything other than pollarded lime trees really. On the other hand, perennials are not permanent or as long-lived as trees. The species selection according to the visualizations is merely a suggestion and can constitute a further question to whom is interested. From the maintenance perspective, the stormwater pods may be challenging. Depending in the species selection, they will need irrigation and grass species need to be cut down in early spring. Weeding can be minimized by planting the plants tightly. However, I think that it is justified with higher maintenance costs in a central and historic place where tourists horde.

Constructing the narrow stormwater pod along the eastern part of the road can be unreasonably expensive. It may even be difficult for plants to establish as a result of pollution from the road to this sparse volume. Reinforcing the bed to have vertical sides is a cost that just may not be justified. Relocating the width from the east side, adding it to the western so that the width becomes 5.60 meters is an alternative solution. The western side has more access to sun which is favorable for many species. At the same time, the road is cambered and wells are also located along the eastern side of the road. Without the pods, stormwater would be diverted directly and loaded onto the sewage network. Which, in turn, does not seem to have a significant negative effect – despite occurring overflows - on Saltsjön. On the other hand, the plantings form a border between cyclists and pedestrians and adds a balance to the streetscape.

The plant beds on the west side only catch water from the road because the existing wells are located at the curb along the cycle path. Constructing stormwater pods to the edge of the pavement would mean that cars would have to cross the cycle track. A consideration was made that ultimately favored the traffic. Which is motivated by the fact that the route is Sweden’s busiest cycle path and the safety of the cyclists.

The area of the plant beds is approximately 15% of the catchment area, which is in accordance with the design of Northern Djurgårdstaden – a cutting edge district regarding stormwater management. On the other hand, the pods in Norra Djurgårdstaden are most likely deeper than these along Skeppsbron. Probably one meter deep in accordance with Stockholm City’s type sections for stormwater pods in a hardscapes. However, there is not much space, below nor on surface to exploit on Skeppsbron.

The proposed building is an intervention that requires more accessible soil depth than available, not to mention that it needs to be connected to water and electricity systems. Which can be seen as an inconsistent intervention given that it was an argument against tree planting on the quay. At the same time, the height of the house is low enough that it does not conflict with the views towards Skeppsbroraden. I have reasoned that building is more justified than soil-depth-requiring vegetation, partly because of unobstructed views and its multifunctioning, but also for economic reasons. That is, the rental premises will finance the construction of the building over time. Vegetation provides soft values, such as aesthetic and ecosystem services that are more difficult to put an economic value to, and thus more difficult to argue for when weighed against a limited budget. Thus, proposing expensive plant beds on quay would be opposing the aim of producing a viable strategy and design.

DESIGN THINKING

The overall design proposal is in my opinion somewhere in between a site *edit* and *writing*. Design interventions are at some parts extensive and characterized by writing – proposed building, seating gallery and streetscape – at others by delicate editing such as accessible paths and sparse plantings on the quay, where most of the materials are conserved. Generally the design is based on function, bound to history and set for future timeframes.

Diedrich updated the views on site specificity to evolve a pragmatic approach that is based on the needs and functions of the site. Written sites, by this definition, can possibly be site specific - depending on how talented the designer is to construe the site. The proposal - *thinking about a site* – was preceded by *site reading*, thus affecting how I construed the site, driving it towards a contextual assessment in line with theories of Burns and Kahn. This raises the question of how a reversed process functions - to approach a site with immediate design interventions. Sketching and interpreting what you see in a heuristic manner – through trial and error. This approach does not necessarily imply that the design would become non-site specific, however it is likely that it is adapted to its surroundings to a lesser degree and perhaps even impractical. The advantage being that original thoughts would drive the process, however, it is more logical to research the preconditions and base the design on these.

PRAGMATIC APPROACH

Diedrich doctoral dissertation was used as a foundation of the pragmatic approach. It was developed to evaluate site-specific approaches of contemporary port development. The criticism that Diedrich puts forward against generic commerce / housing and office complexes is a pattern that I believe a development of the Skeppsbrokajen does not risk becoming part of because of its cultural-historical significance. Apart from historical essence other discrepancies between the projects assessed by Diedrich and this, lie in mainly scale and location in relation to the city centers, as well as functions to some extent. Regardless of this, I see the pragmatic framework as an applicable method in any landscape architectural project – that is - gaining a comprehensive basis upon which design interventions can be supported. Where the “areas of” and immaterial, dynamic and physical aspects are applied to fit the context of the given site and development aims accordingly.

The pragmatic method allowed a detailed study of the diversity of factors that affect the site. As Diedrich points out, the role of the landscape architect is to interweave the approaches of many professionals to a balanced proposal. I approached the project, with my own agenda, probably typical of landscape architects - to add vegetation to hardscape environments anywhere possible. I also had other boundless ideas that would put my touch to the site. All designs are subjective to varying degrees. What I discovered was that the more factors that were examined, the more my mind changed from a solution-based focus, to an approach focused on problems, thus less open-minded but perhaps more anchored in reality. The greater knowledge I acquired about the site, the more ideas I no longer saw as realistic. This has led to the final product of the strategy and design being feasible but not quite as spectacular.

On the other hand, this method widened my perspective and allowed me to probe into objectively relevant aspects. In this way, the method has made me extend a personal style. Shifting the predominantly subjective design process – resulting in somewhat non-site based design - to initiating design from an analytical framework and being more objective and thus site specific.

One disadvantage of the method was to systematically categorize information and subjects according to area of control or influence. The distinction is in some cases subtle and may cause the flow of the essay to become fragmented – as similar subjects are repeated. This has had little effect on the final result, as the actual process is not the same as presented in the linear stature of the report. However, for greater understanding and flow it may be better to categorize the report by subjects – irrespective of scales - and allow for distinction between areas of control and influence to be more fluid as done in hydrology chapter.

REFERENCE STUDY

The reference studies were useful to widen the scope. The selection of the sites was well defined to resemble the Skeppsbron, both in function and geography. The advantage is that the sites could be visited during several times.

The similarities between the reference objects’ location and functions and Skeppsbron, have affected the proposal to become more alike its surroundings, for better or worse. Reference objects with similar functions, as an active dock for example, but located in another locality and nation, would probably inspired more alternative solutions. However, one can speculate that these would be less conformed to the site and city.

A shortcoming of stone quays like Skeppsbron is the lack of contact with water. Like the reference objects, the quay is elevated to such an extent that physical contact with water is made impossible. This, in turn, leads to the experience of the site to differentiate considerably from waterfronts where the visitor has direct water contact. In the proposal, I have taken a stance to preserve the quay’s strict border between the city and the sea. Basically, there are two realistic features to make the water available, lower parts of the quay or construct piers – design edits that would conflict with the site’s properties and function.

WORKSHOP

The workshop was a method used as a design approach. The results turned out to be in line with my ideas for development and conform to the pragmatic approach. The workshop participants were well aware of my initial ideas for the development of the site. Therefore, it can not be ruled out that it affected the result.

On one hand, it is described in the workshop theory that the group should strive to be as heterogeneous as possible, descent, age, gender, education so that the intellectual baggage and thus perspectives and approaches are as diverse as possible. The absolute majority of workshop participants were landscape architects. The group’s homogeneous composition - in particular, profession - has plausibly affected the way the scenario was approached.

On the other hand, the workshop has balanced the essay. The analytical framework has dealt with subjects outside of the landscape architects’ direct expertise. One can speculate that stormwater experts would focus on drainage and cultural historians on preservation, if they participated. Thus, approaching the problem with a rather narrow focus. The workshop discussed planning and design / conceptualizing of outdoor environments. This way, professional landscape architect’s expertise was contributed to the thesis.

REFLECTION

All landscape architecture is site-bound, however, all is not site-specific. The architect's role differs from other designers, such as the furniture and industrial, whose works can be duplicated and fulfill the same function regardless of spatial location. The remnants of modernism witness that universal design is not suited of being the nirvana of architecture. Non-site specific design however must not be universal. A non-site specific design differs from universal in the sense that it has some limitations to a location, albeit only to its physical dimensions constituting the design restraints - where geolocation and pragmatic aspects take part in a latter realization stage of the process. The architect thus sets her own mark on the site, which requires a high understanding of problems and requirements to be appreciated. Looking at it which way you will, the pragmatic aspects need to be part of the construction process at some stage. I therefore argue to incorporate these in an early sketching and design phase in order to streamline the process.

It is relevant to ask yourself who you design for. Your legacy? To try something new? For local residents? For the better good of the public?

The conclusion is to recognize the site from a greater perspective and determine if site-specific design is *more* or *less* important. Some sites allow for a greater freedom for the architect to draw inspiration from her intuition - to see the site as a blank sheet – while others need to be processed more carefully. I believe that Skeppsbron is a particularly suitable example of a site that is better off with a site-specific approach.

FURTHER RESEARCH QUESTIONS

During the course of the thesis, I have realized that plant material is only *one* building element for landscape architects. Instead of approaching project with plants on top of mind, one might start off by reflect on whether vegetation is suitable on this site.

How can spatiality be created exclusively with hardscape materials?

DEVELOPMENT OF SURROUNDS

Stadsgårdsleden is a heavily trafficked waterfront that also connects to Slussen. Investigating a street overbuild of the traffic route would liberate space in the dense city and improve the accessibility and continuity of the waterfront walks of Stockholm.

How could Stadsgårdsleden be designed if the street was overbuilt?

How can waters along quays dedicated to shipping be made available to people?

DEVELOPMENT OF PROJECT

A further, well-defined, research question would be to produce optimal plant selection considering the microclimate, the habitat, the calculated precipitation and the history of the site.

Which species are suitable for stormwater pods along Skeppsbron?

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