

Architectural Infrastructure: Addressing Stockholm's Growth

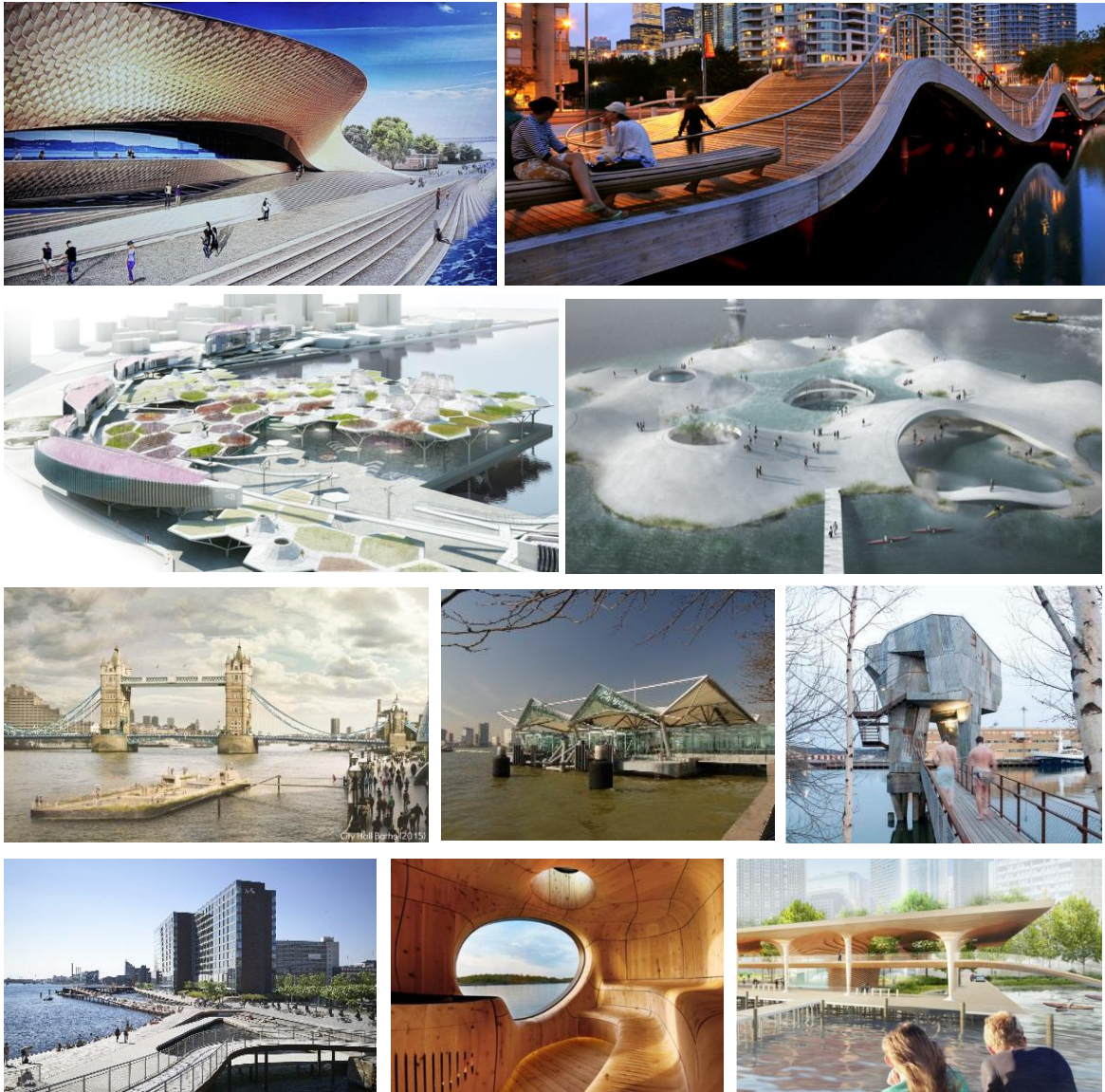
After our investigations of the role of upcoming infrastructural projects on potential new housing typologies in the fall, studio 9 will now turn to alternate modes of infrastructure, and the need for new and additional public cultural programs. This spring we are also initiating a new collaboration, with the organization Smart Kreativ Stad run by Filmregion Stockholm-Mälardalen, a project that for five years will investigate the role of moving image in the city. This collaboration will influence the cultural programs we address.

Compared to the fall, we will work in smaller scales, focus more on refined design and the application of computational techniques, and address design refinement more than maximum efficiency. The investigation of structure as a design element will be further developed, and we will get closer to the architectural details.

Project 3 Into the Wide Open



For project 3, we will turn to the water. Stockholm is a city in the archipelago, and the different islands of the inner city has until now been regarded as a cultural identity, but also as a problematic issue in terms of infrastructure. Today, less than 0.7% of the public transport in Sweden is water-bound. With 50% of the world population living in cities (75% expected in 2040), and with many major cities being located near water, space effective transportation systems become globally relevant. And as Stockholm grows, existing modes of public transportation may not be enough even after the currently planned expansion. There are currently no concluding plans for how water-bound public transport – or urban waterways, should be developed, but a recent report presents its urgency, and critical questions.*



References: EDP Foundation Cultural Center, Lisbon, Amanda Lewete Architects | Simcoe Wavedeck, Toronto, West 8 | Maritime Cultural & Pop Music Center, Taiwan, MADE IN | House of Water, Copenhagen, Tredje Naturtaxi | Thames Baths, London, Studio Octopi | Battery Park City Ferry terminal, New York, Port Authority | Bathing Culture Göteborg, Gothenburg, Raumlabor Berlin | Kalvebod Waves, JDS Architects | Grotto Sauna, Toronto, Partisans | Jack Layton Ferry Terminal and Harbour Square Park, Toronto, Diller Scofidio + Renfro

During project 3, students will work in teams of two, in the development of a series of “waterway stations” that also includes small scale public cultural programs. Students will need find their own sites, following given criteria. As a studio, the final outcome will be a number of urban waterway stations around the city, and in this sense the collective outcome will present a potential scenario of a completely new urban infrastructure on water.

There are currently just three main lines in the urban waterway infrastructure of the city (not including traffic to the archipelago: Djurgårdsfärjan, Line 80 and Line 50, with the addition of other alternatives such as Sjöstadstrafiken (Hammarby sjöstad – Södermalm) and Sjövägen (from Nybroviken to Nacka and Värmdö). The urban waterways are currently missing developed access-points, and effective exchange points with other modes of public transport. The nearness of public water bound transport to other modes of public transport is crucial – and the weakest link since public transportation on water easily matches the speed of other systems, and has a much better reliability

(no traffic jams). In addition, water transportation does not need execution of new infrastructure, inasmuch as waterways are already and naturally existing. Another challenge is the diminishing amount of quays and jetties, with many being replaced with recreational areas etc. For this reason, a combined programs approach would benefit both the waterway transport and urban development.

**Main source on urban waterways in Stockholm: Slutrapport Koll på vatten – ett Fol-projekt om vattenvägarnas roll i ett hållbart samhälle, Trafikverket, 2015:055.*



Site

- Located by the team, on the waterfront, selected as preferred in the inner city or the outskirts of the city.
- Preferably nearby at least one existing, or planned, public transportation station.
- Suitable as location for the associated public program.
- The first week will be spent on identifying sites, and presenting initial analysis on first tutorial

Program and brief

- The station itself should facilitate the passage of crowds onto water shuttles.
- The design should have a strong identity, announcing the alternate mode of travel as well as associated programs. The associated program may share spaces.
- It should provide direct access for bikes, both to the station and on the fleet, and transportation of small goods.
- It should provide shelter for at least 40 people indoors, and the same amount rain protected outdoors.
- Depending on site conditions, a majority of the program may be placed on water. The quay itself should be part of the addition – rather than using existing quays.
- The associated program could be either a public bath, or a music venue. Care must be taken to find a good and appropriate interface between the programs – such as between water shuttles and swimmers. Both the bath and the music venue should also be transformable into an open air film venue.
- The quay (or equivalent structure) for docking should provide space for at least two simultaneously docking shuttles (docking by the ships bow or stern), and parking for one additional shuttle (docking alongside).

Program specifics

Waterway station with small shop/café

- Ticket sales office ca 30 m²
- Indoor waiting hall ca 60 m²
- Outdoor semi-protected waiting area ca 100 m²
- Shop/Café ca 30 m²
- Size of water shuttles ca 27 x 7 m.

Bathroom option 1

- Tickets and entrance ca 40 m²
- 1 indoor pool 25 x 10 m (plus required side-spaces)
- 1 outdoor pool (may require separation from sea depending on site) 50 x 20 m with associated recreational area usable for film screenings.
- Double set of changing rooms, each ca 150 m²
- Staff quarters and Technical services ca 30 + 30 m²
- Restrooms and showers ca 40 m²
- Sauna ca 30 m²

Venue space option 2

- Tickets and entrance ca 40 m²
- 1 indoor music / film venue ca 250 m² (plus required side-spaces)
- 1 outdoor seasonal music / film venue ca 500 m²
- Staff quarters and Technical services ca 30 + 30 m²
- Restrooms ca 20 m²

General Schedule

Week 5: Introduction / Site investigation and presentation/ Computational design session

Week 6: Tutorials / Computational design sessions

Week 7: Tutorials / Concepts pinup

Week 8: Project development / Tutorials / Computational design sessions

Week 9: Tutorials

Week 10: Final Review

Week 11: London Study Trip

Deliverables

Project 3 puts the emphasis on refined design, and the documentation of process. Care should be taken to continuously build your design portfolios, and to move the development further. The design process will be supported through computational design sessions with a strong focus on design aspects as well as digital fabrication and structural evaluation. Students are strongly encouraged to find their own individual approaches here, and will be coached by tutors in doing so.

In order to pass each project, all deliveries needs to be handed in at appropriate quality. There is also a compulsory 80 % attendance on all scheduled events. The study trip is not compulsory, but we strongly advise you to take part. All resources, briefs and schedules are available on our studio blog, on KTH Social. We will use the Group Wiki on the studio blog to announce news and schedule tutorials, and you will find links to resources as well as our server space:

<https://www.kth.se/social/group/studio-9-bridging-te/> (or google kth studio9 social)

The following deliverables must be presented at the final review:

- A project name
- Siteplan 1:500
- Plans, Sections, Elevations 1:100/1:200
- Axonometric at appropriate scale
- At least one physical model at appropriate scale
- Exterior and interior illustrations and renders, appropriate diagrams
- Design portfolio



References: Stairway Cinema, Auckland, OH.NO.SUMO | Cineroleum, London, Assemble | Museum of Image and Sound, Rio de Janeiro, Diller Scofidio + Renfro

Project 4

In the final project of the year, students will be asked to choose the development and construction of a full-scale project, or the development of a cultural centre for music and moving image – both in collaboration with the *Smart Kreativ Stad project (SKS)*. We also address the need for concert venues in Stockholm, most recently made obvious by the planned closing of Debaser at Medborgarplatsen.

The collaboration with SKS will be initiated during project 3, and will also inform the projects developed then. Students will be asked to consider which of the two trajectories they prefer for project 4 at this time.

Cultural Centre

The cultural centre will feature a combination of music venues and moving image venues, and should be located in a residual area in relation to infrastructure. Sites will be investigated in collaboration with SKS, who will explore different alternatives with a number of municipalities around Stockholm. The details will depend on this, but the following aspects are predefined:

- The programmatic area for the cultural centre should be 3000 to 6000m²
- It should primarily use sites deemed unusable for other activities.
- The centre should establish relationships with an Infrastructural element (bridge, station, road interchange, piers, tunnel/underground station...), and should engage with public space and urban flows in order to become part of public space.

Full Scale

The full-scale assignment this year entails a pop-up cinema that will be used already in June by SKS. The specific details for this project will be worked out in collaboration with SKS, but the following aspects are predefined.

- It should be modular and possible to assemble multiple times by unskilled labour.
- It should be possible to enclose for a smaller audience, and open up for a bigger one.
- It may be placed indoors or outdoors (summer, with basic weather protection).
- It should house technical equipment such as projectors and screens as specified by SKS.
- Technical screening equipment will be facilitated by SKS.
- Structural supervision will be given by Tyréns.
- Materials will be sponsored, but specific material has not yet been decided.
- It should be designed and executed with all relevant safety and accessibility criteria.