

ROTTERDAM ON THE RISE

P5 PRESENTATION

JIK MOSCH

# CONTENT

Problem statement  
Methodology  
Research question

Analysis results

Design study  
    Design brief  
    Context  
    Concepts  
    Design explanation

Conclusions


# PROBLEM STATEMENT



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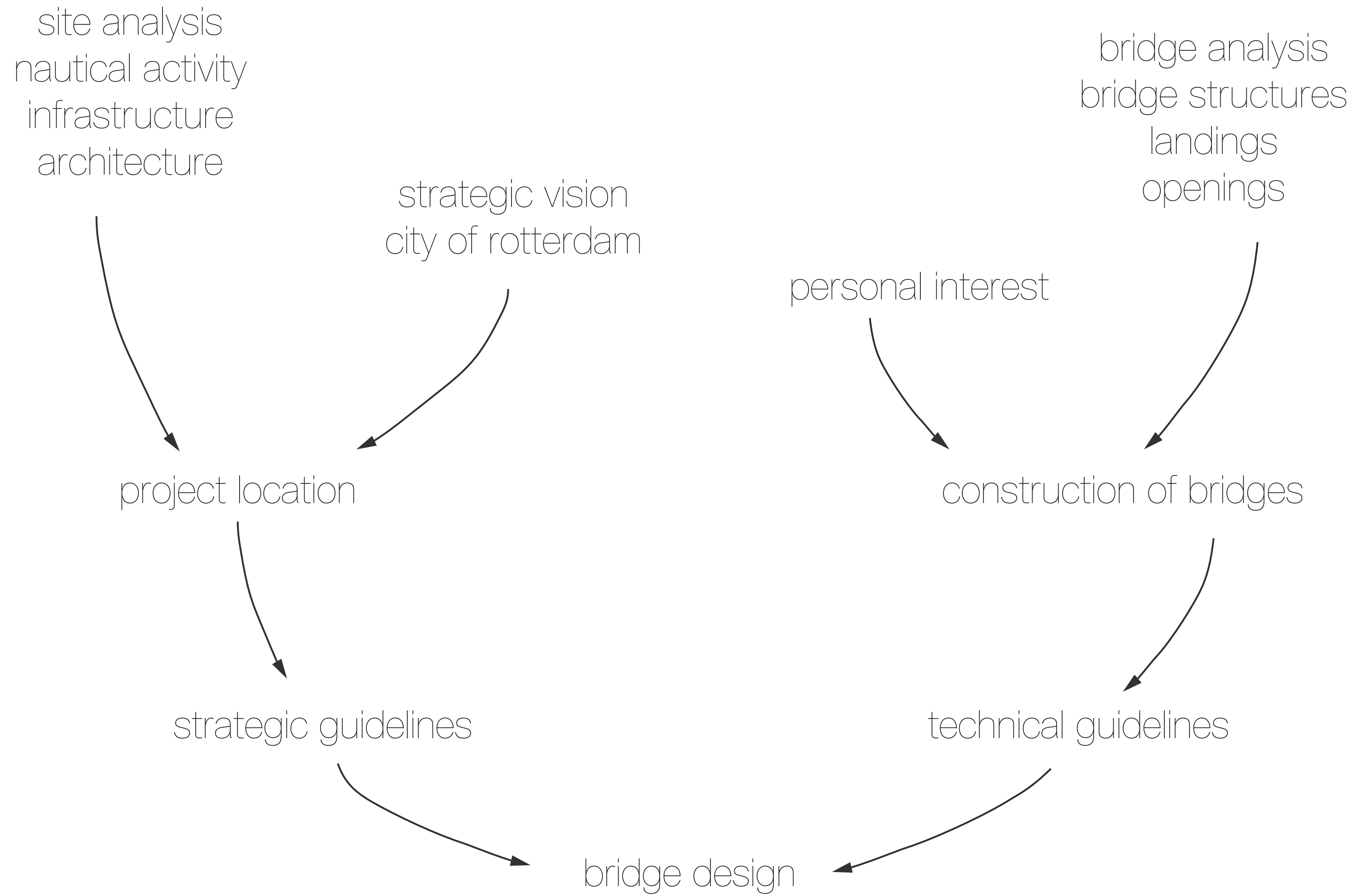


# RESEARCH QUESTION

A photograph of a cable-stayed bridge under construction over a wide river. The bridge's tall, white pylon and its radiating stay cables are prominent. The scene is set at sunset, with a golden glow over the water and the city skyline in the background. A semi-transparent white box is overlaid on the center of the image, containing the research question.

Can a feasible design for a bridge crossing the Nieuwe Maas be found, with due consideration of the preconditions and requirements on site?

# METHODOLOGY



# ROTTERDAM

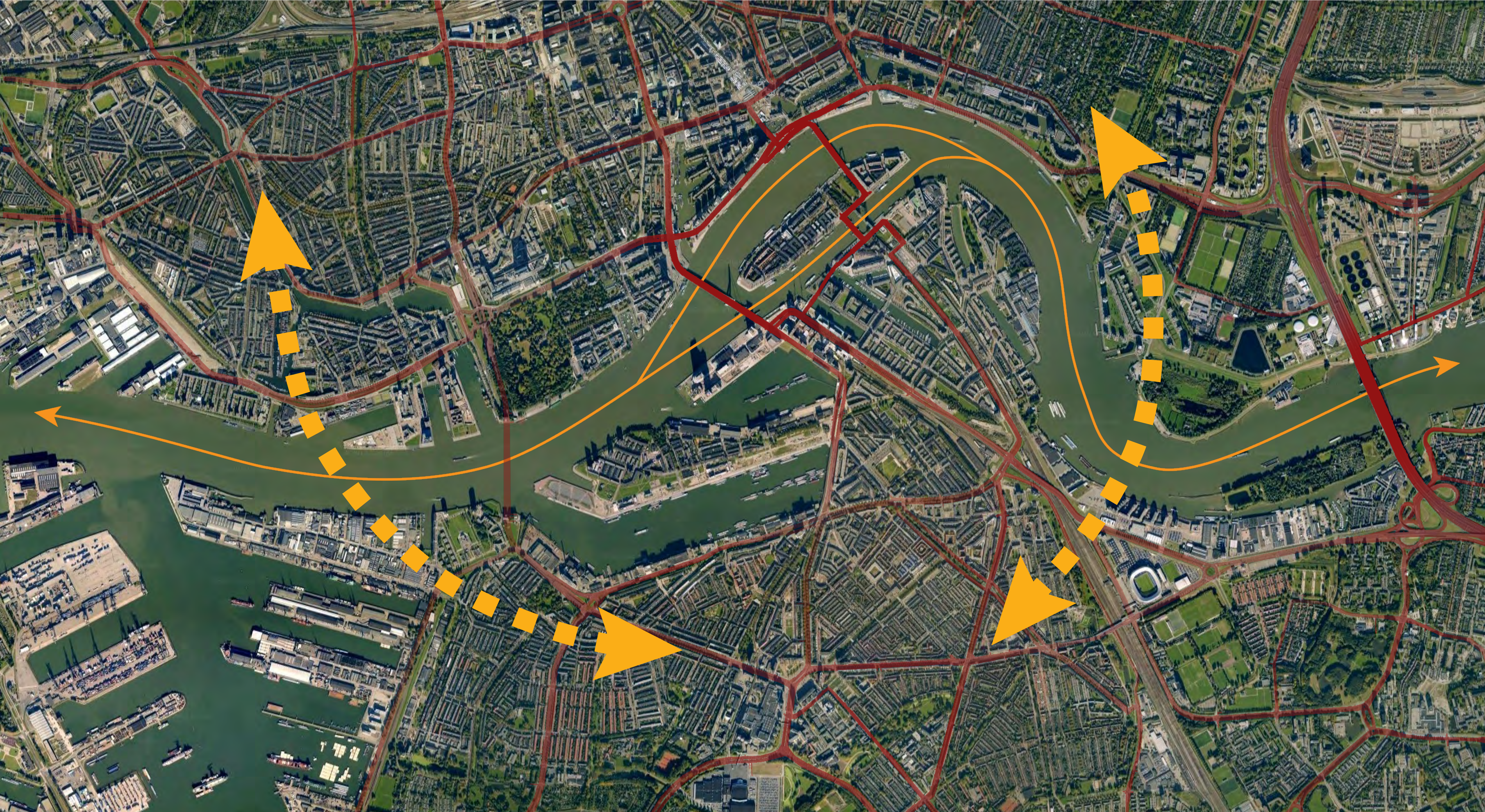


# ROTTERDAM





# ROTTERDAM



# SITE ANALYSIS



# SITE ANALYSIS



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# SITE ANALYSIS



## Design

Sustainable transport

Focus on public spaces

Connection with existing bridges

Complement current and future ensemble

Connection with the water



# SITE ANALYSIS



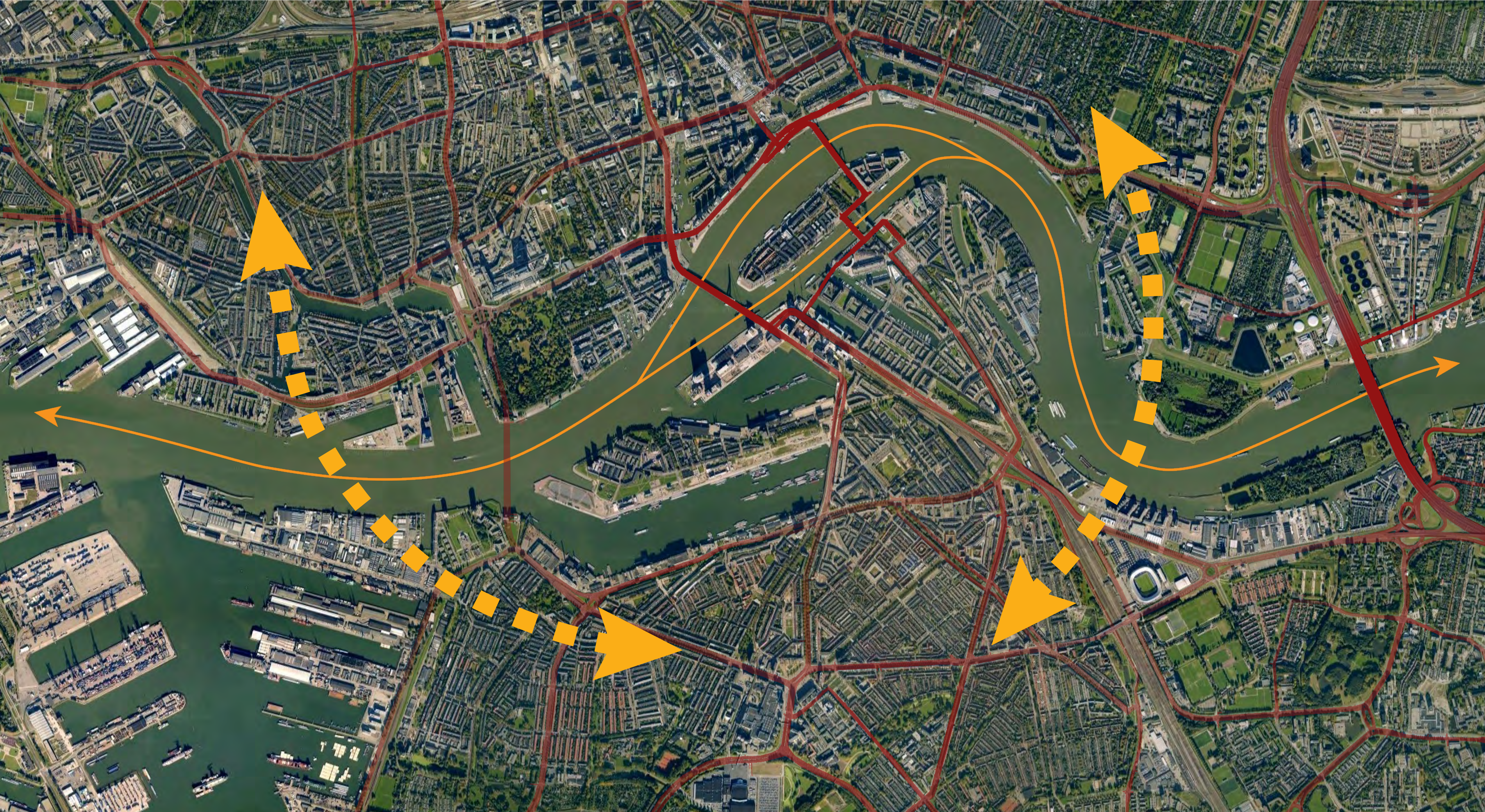
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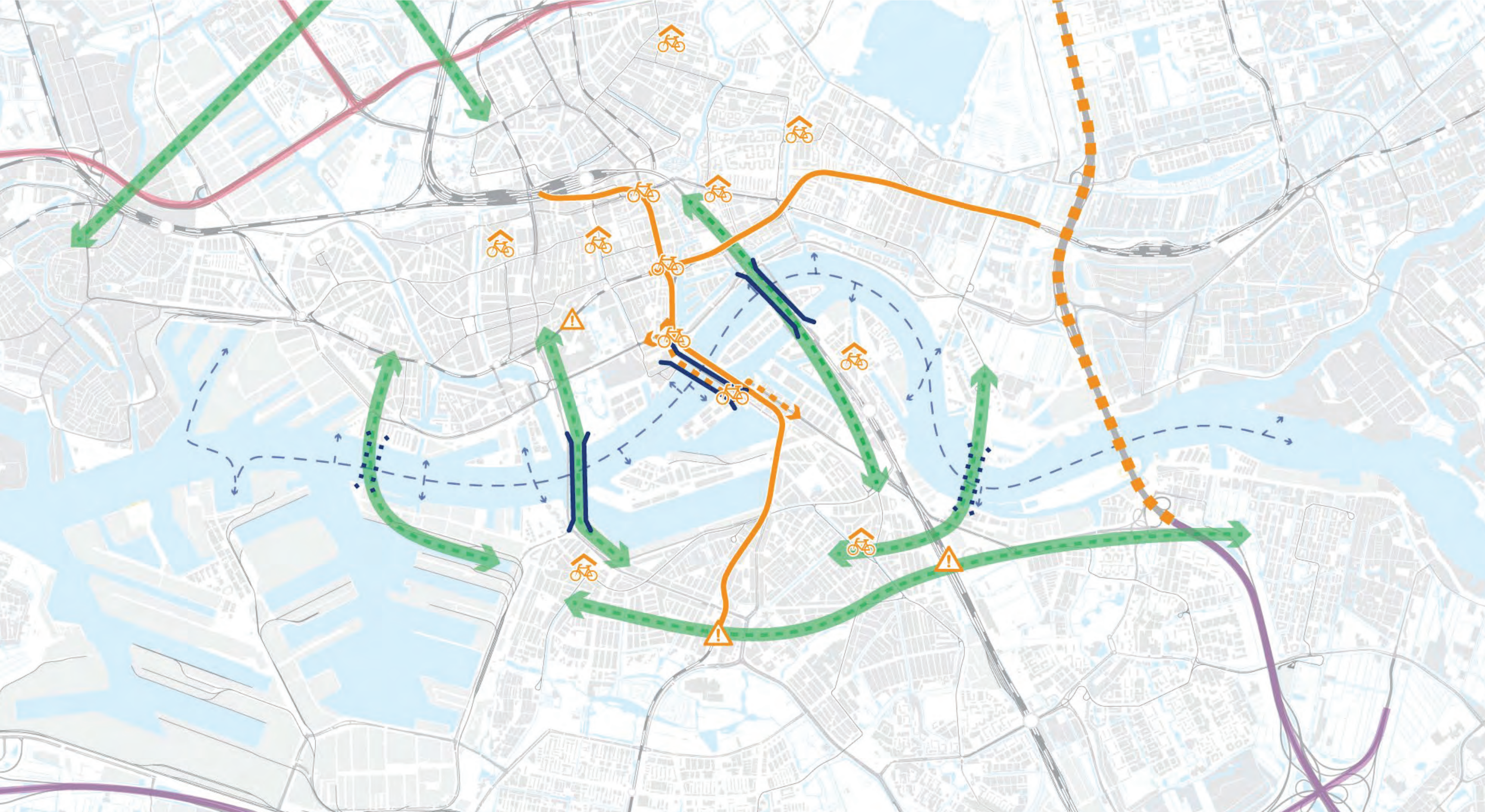
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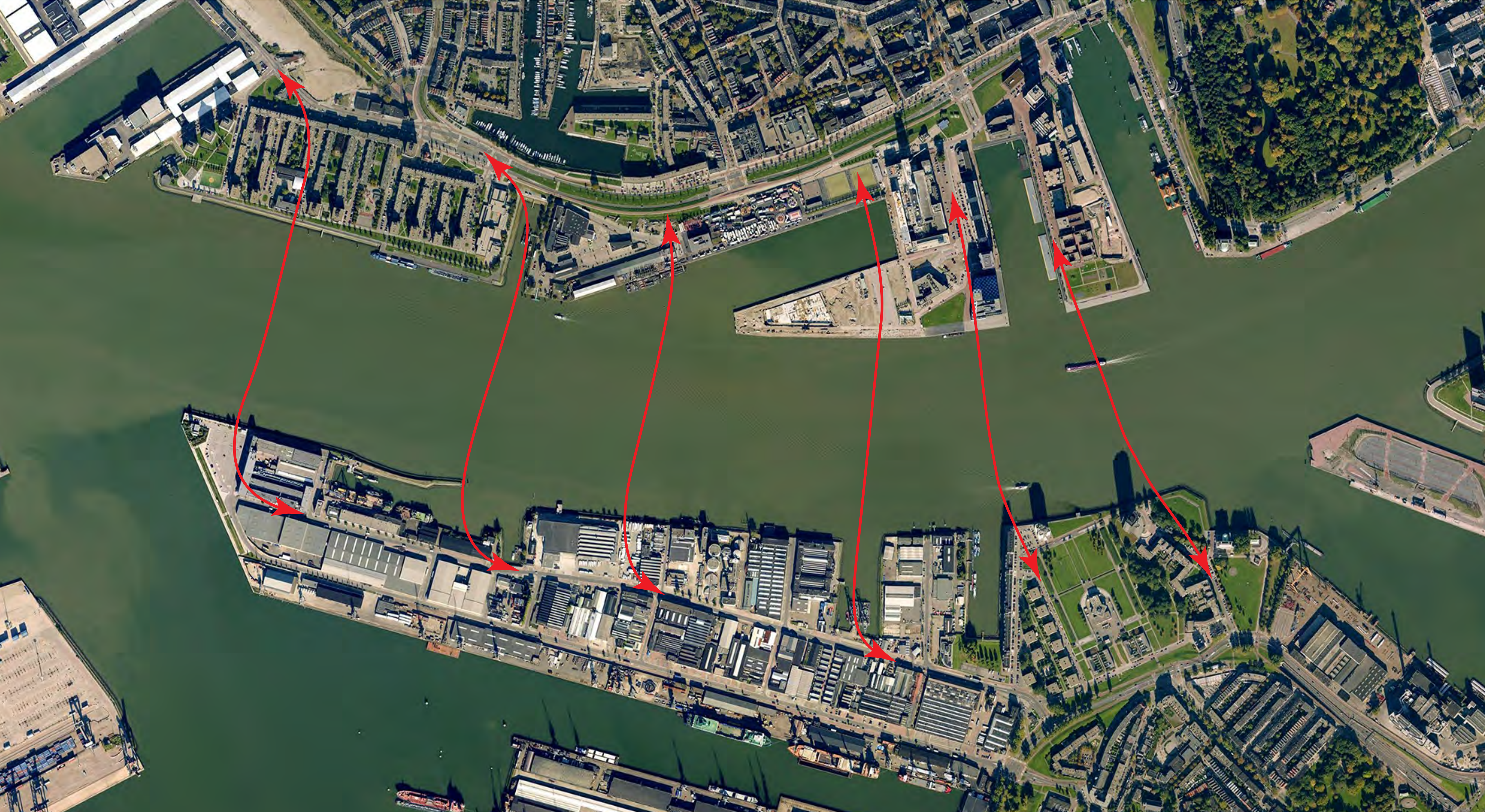
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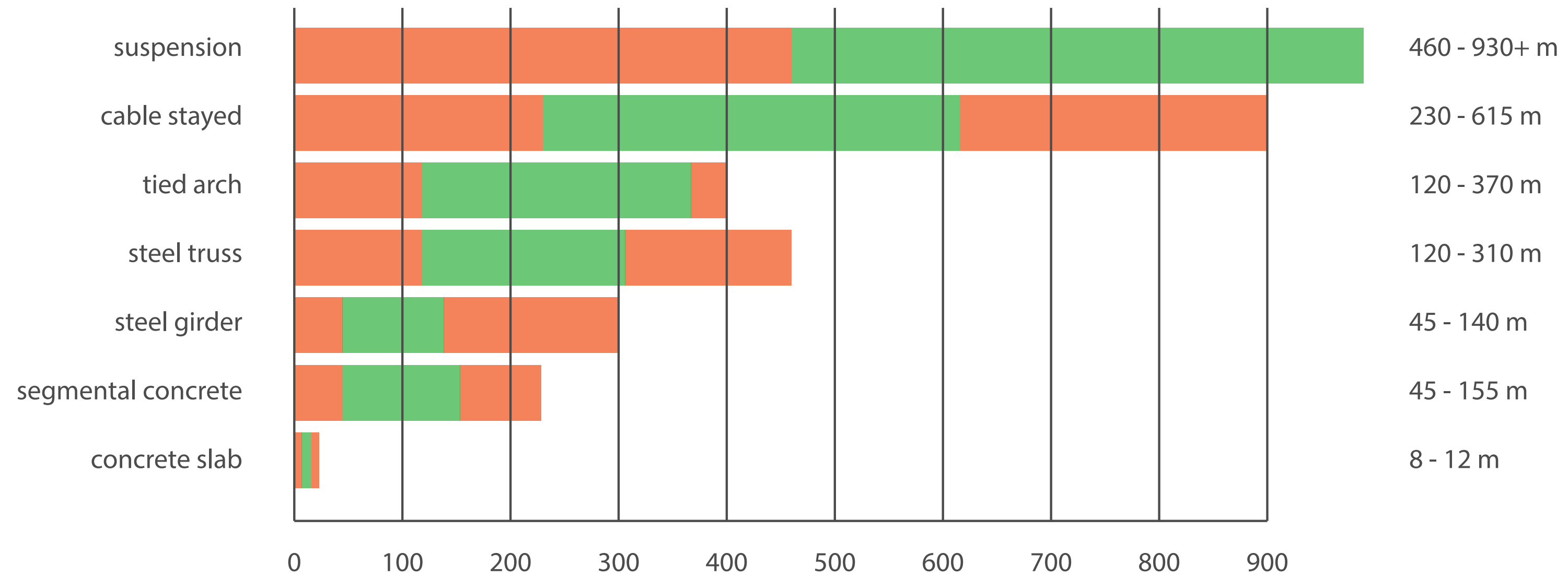
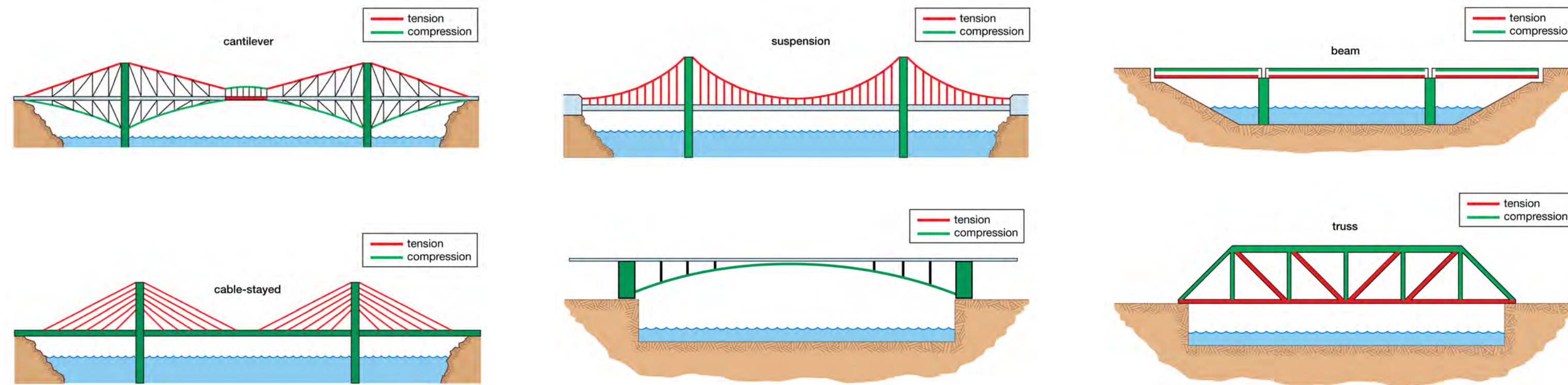
Technical demands

Vertical clearance  
Nautical traffic

Openable part  
Cruise ships

Maximum slope  
Different traffic flows

# BRIDGE ANALYSIS

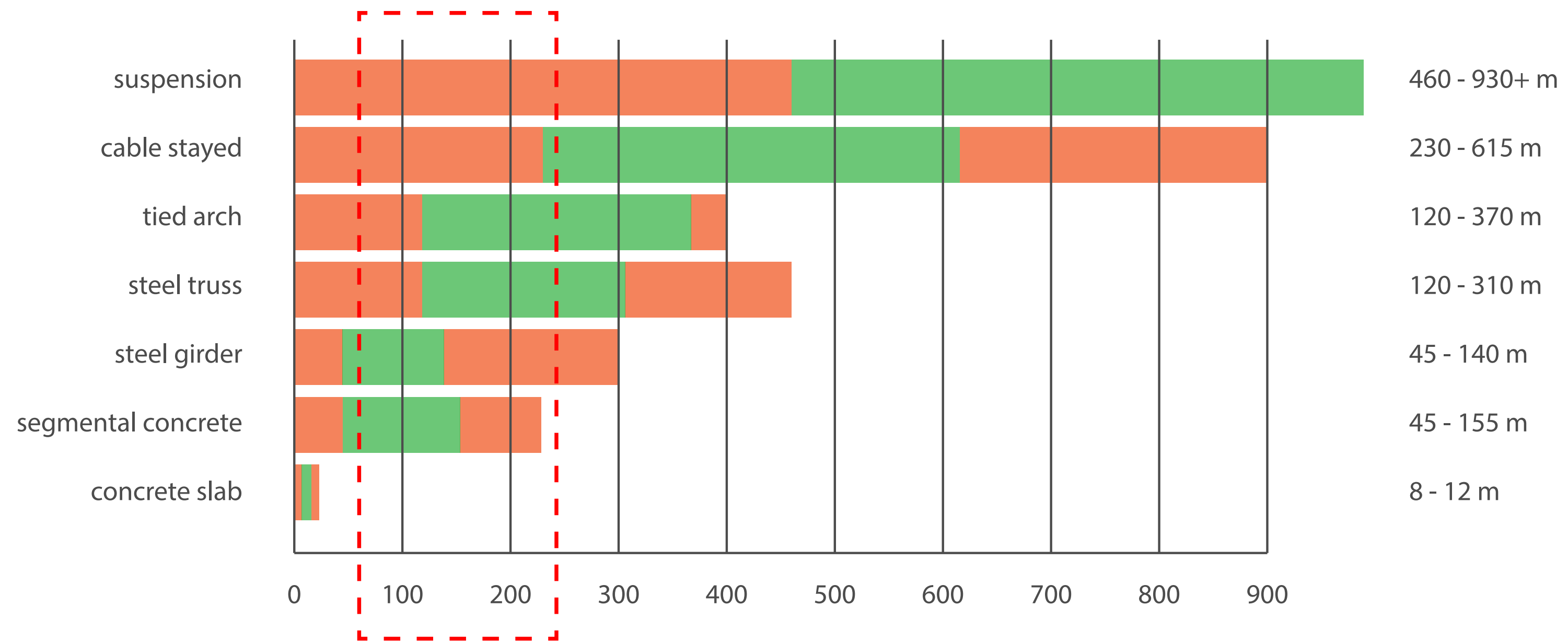
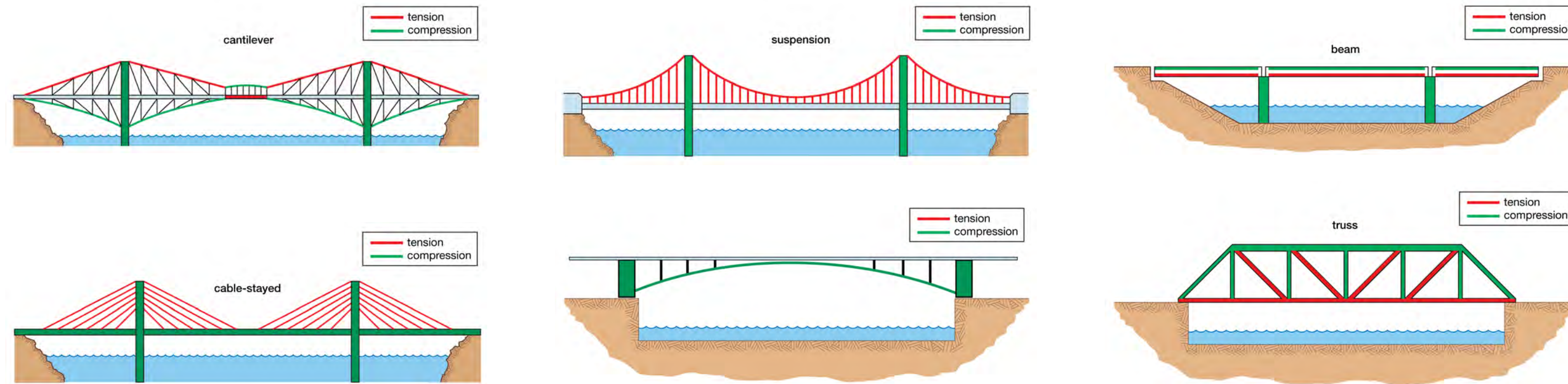


optimal span length



possible span length

# BRIDGE ANALYSIS

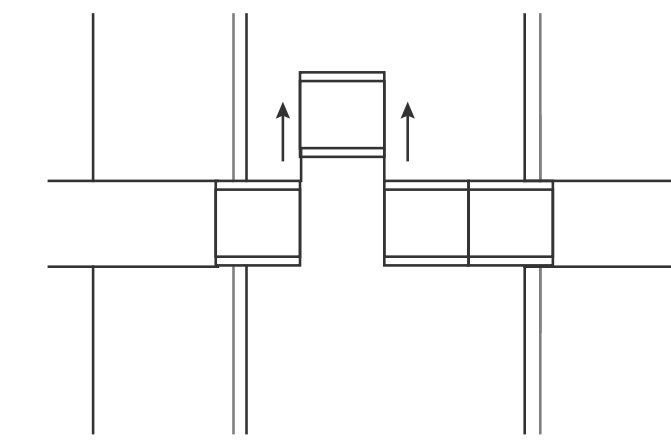
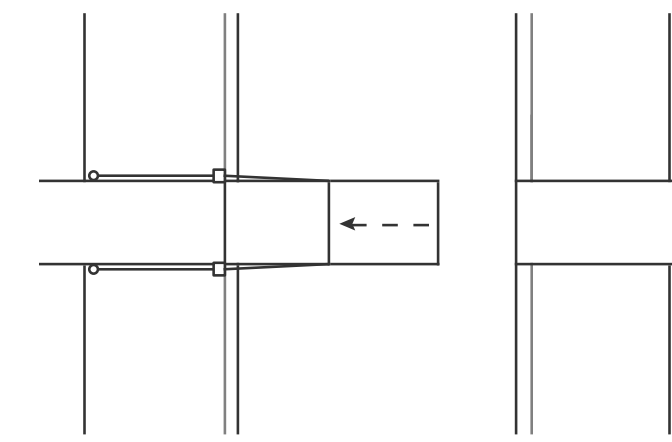
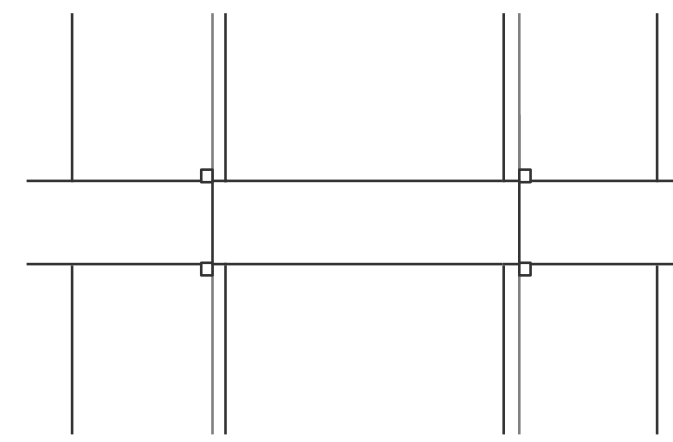
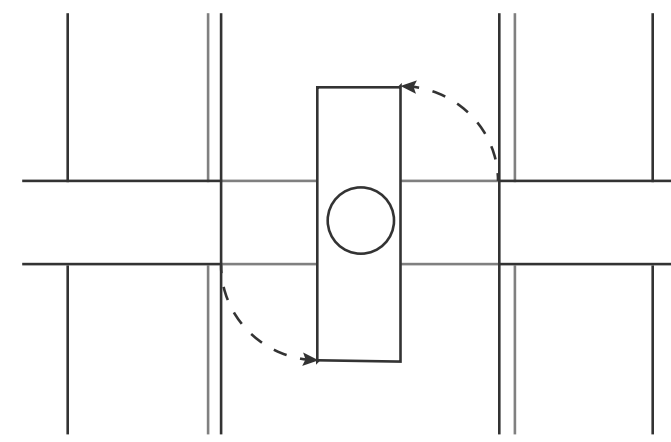
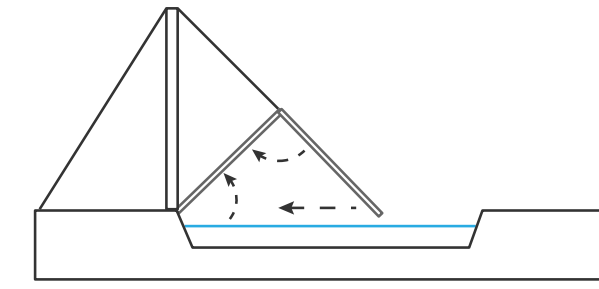
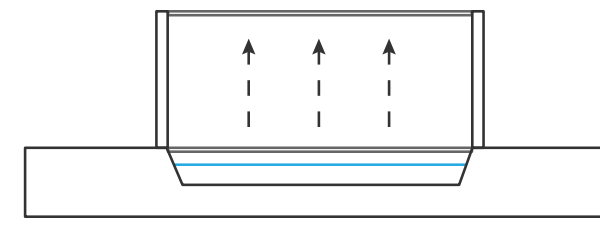
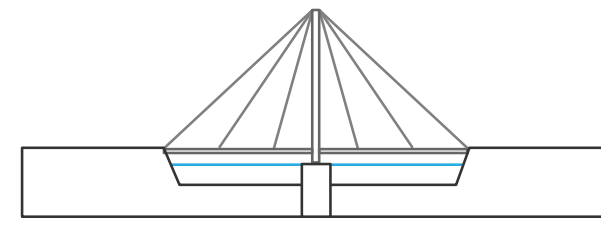


optimal span length



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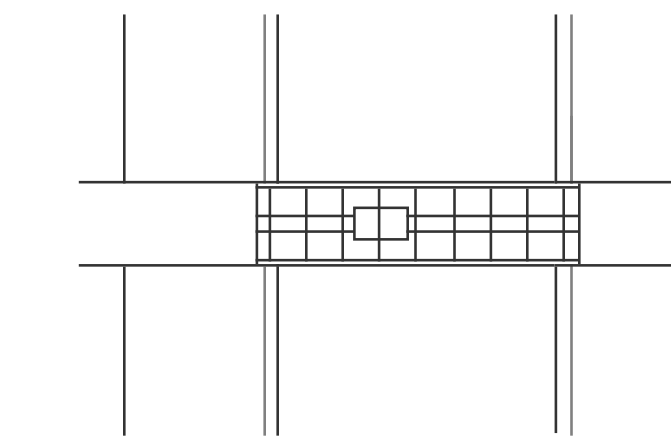
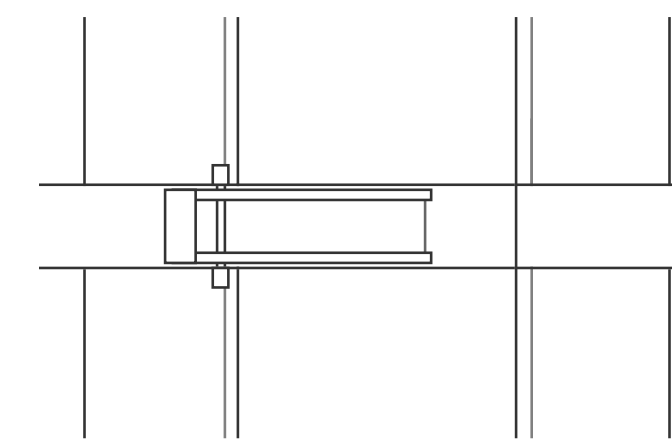
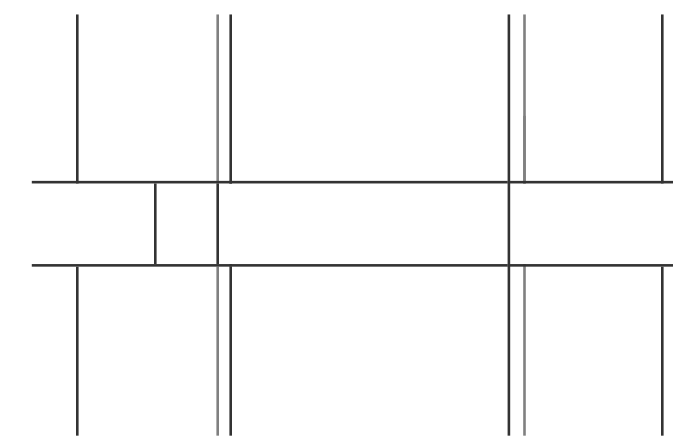
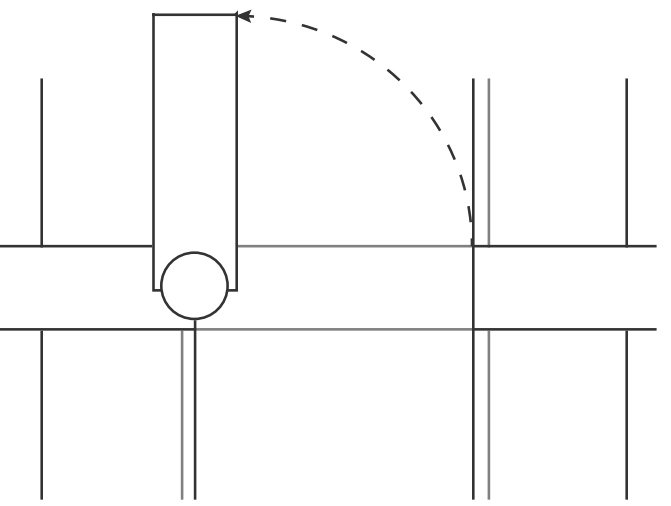
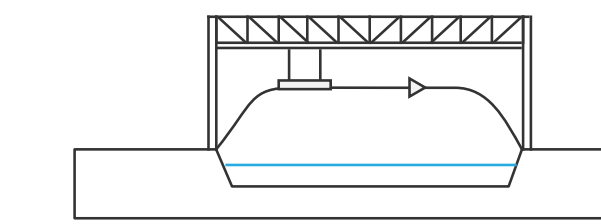
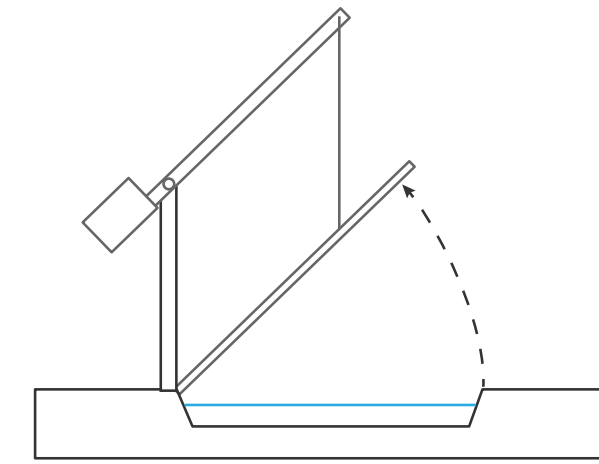
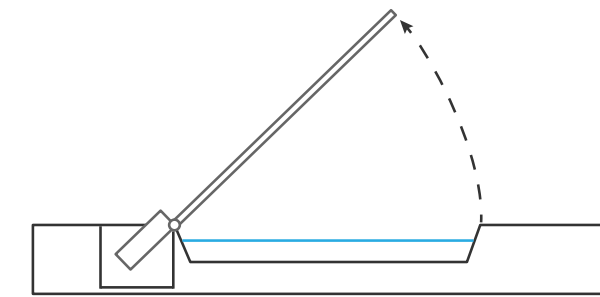


swing bridge

vertical lift bridge

retractable bridge

pontoon bridge



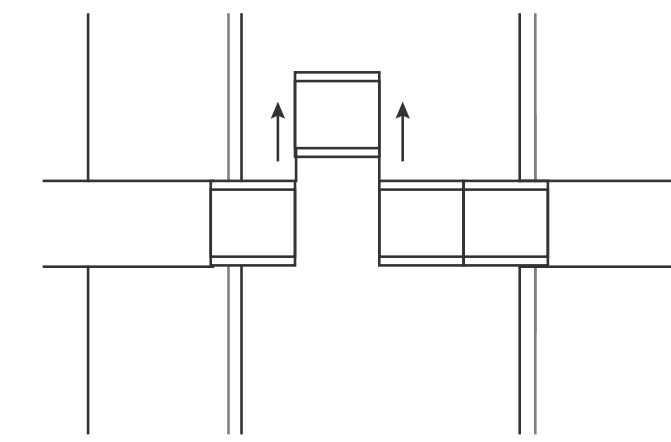
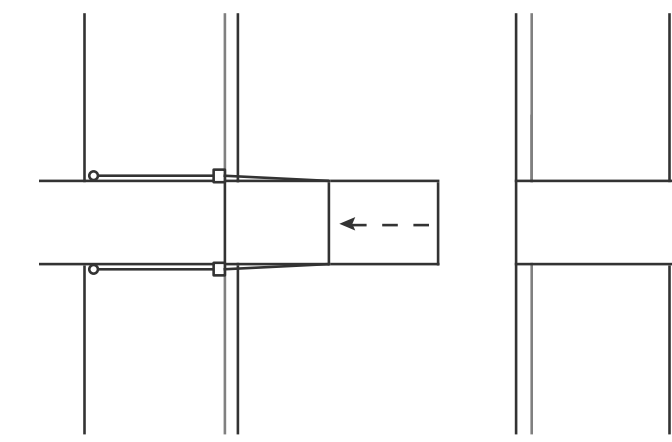
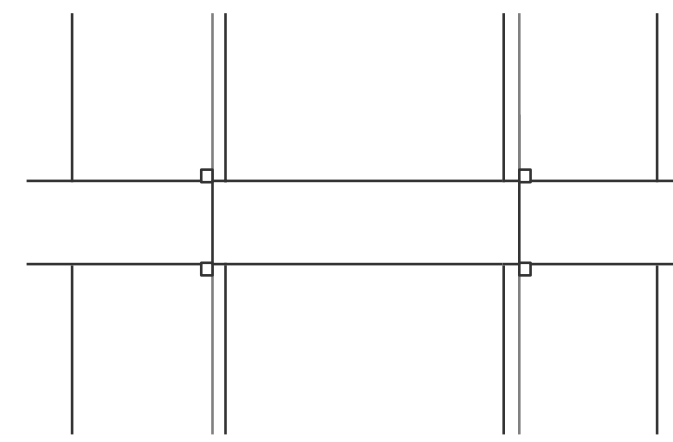
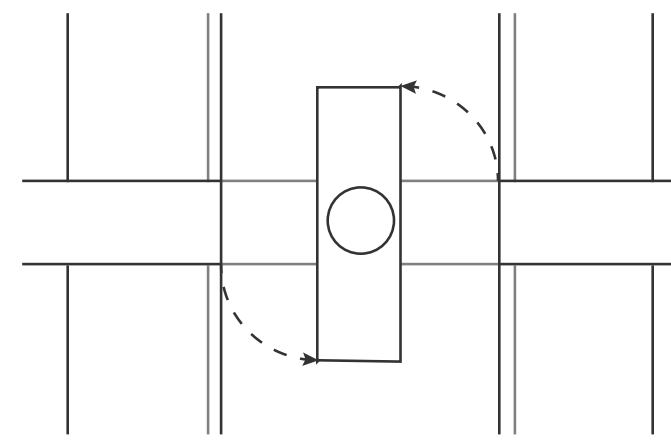
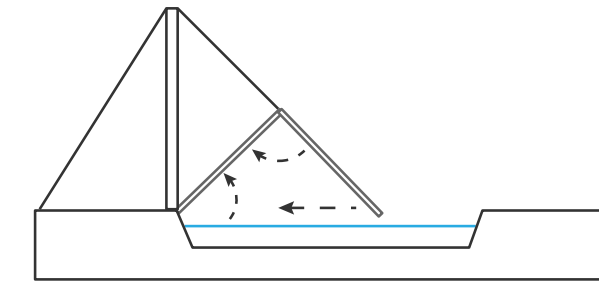
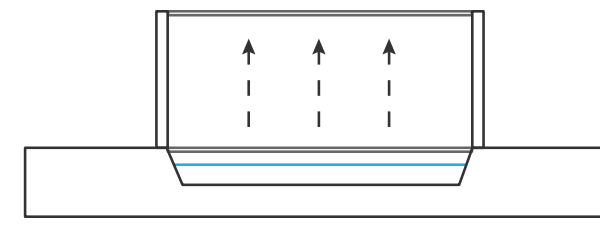
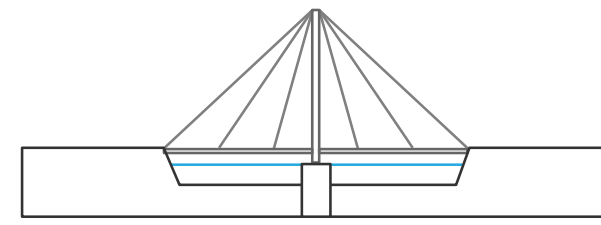
swing bridge

bascule bridge

draw bridge

transporter bridge

# BRIDGE ANALYSIS

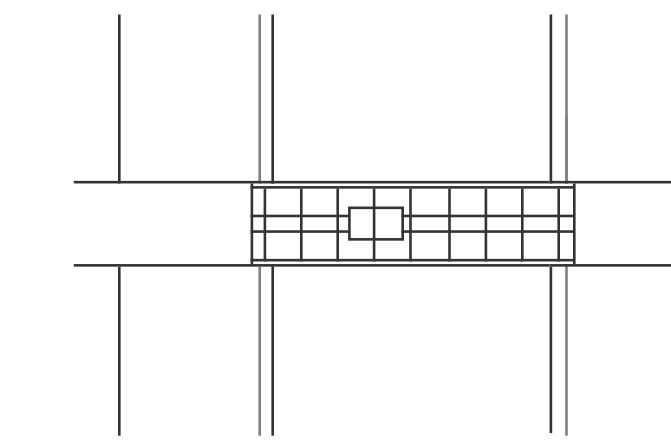
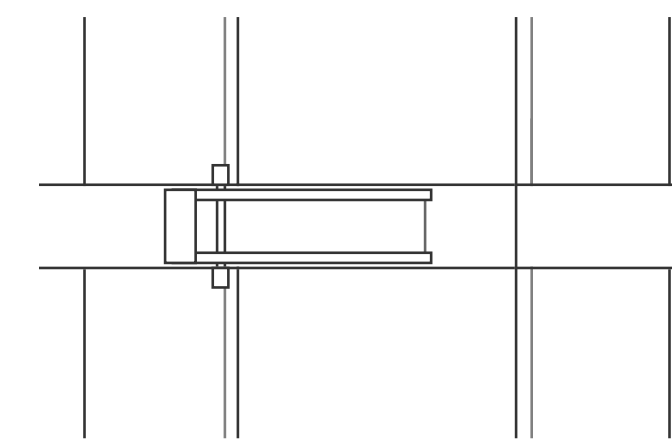
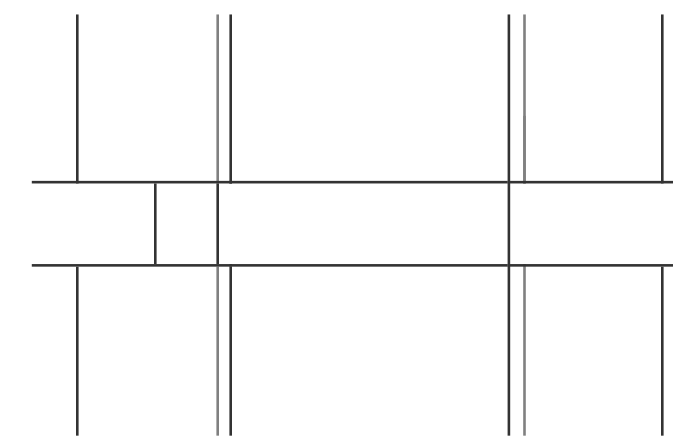
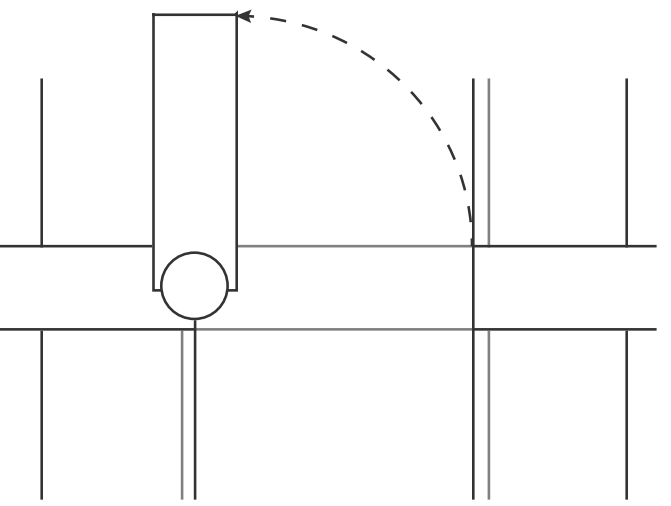
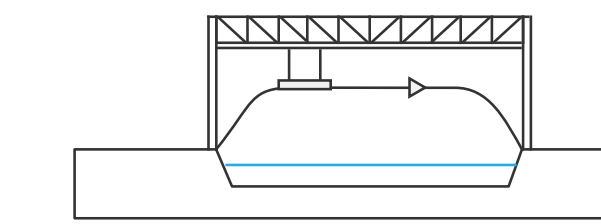
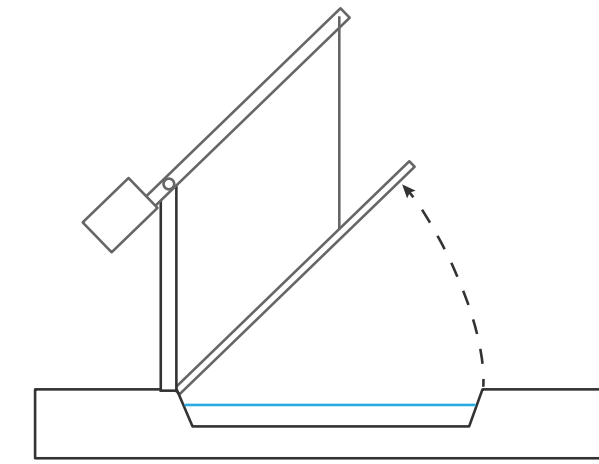
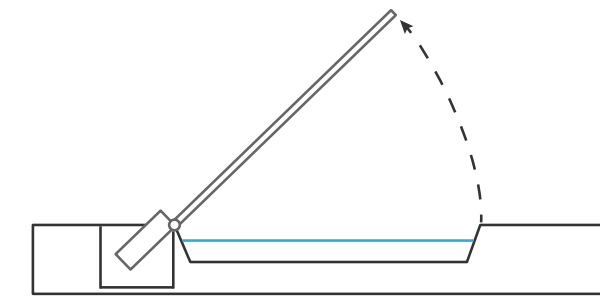


swing bridge

vertical lift bridge

retractable bridge

pontoon bridge



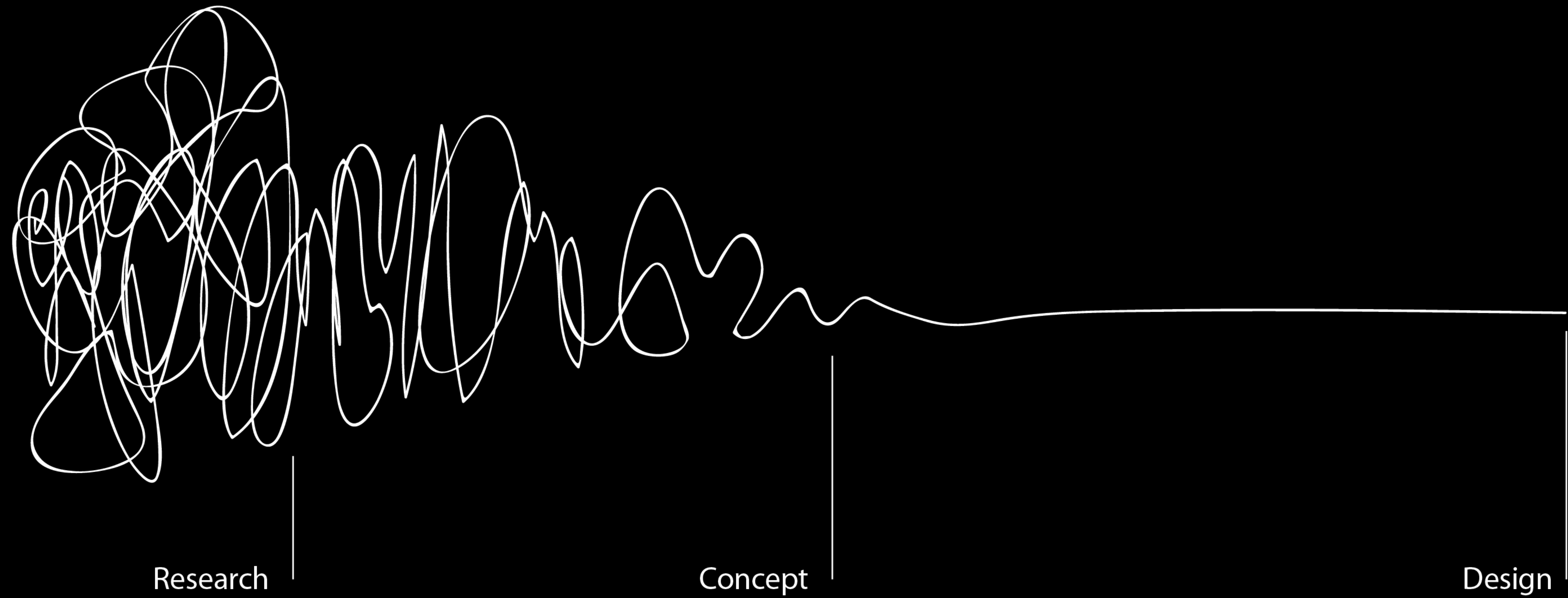
swing bridge

bascule bridge

draw bridge

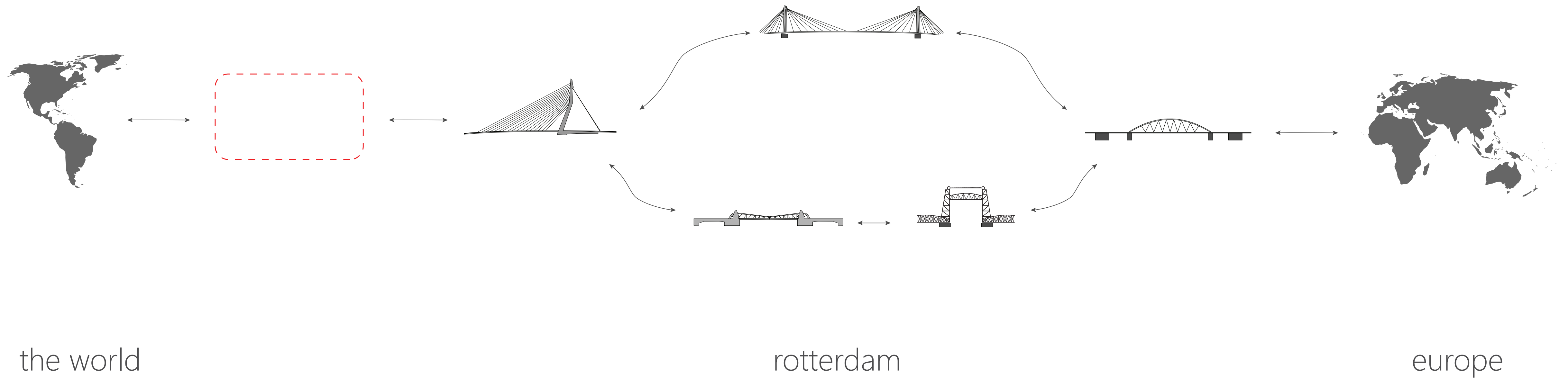
transporter bridge

# CONCEPT





# CONCEPT



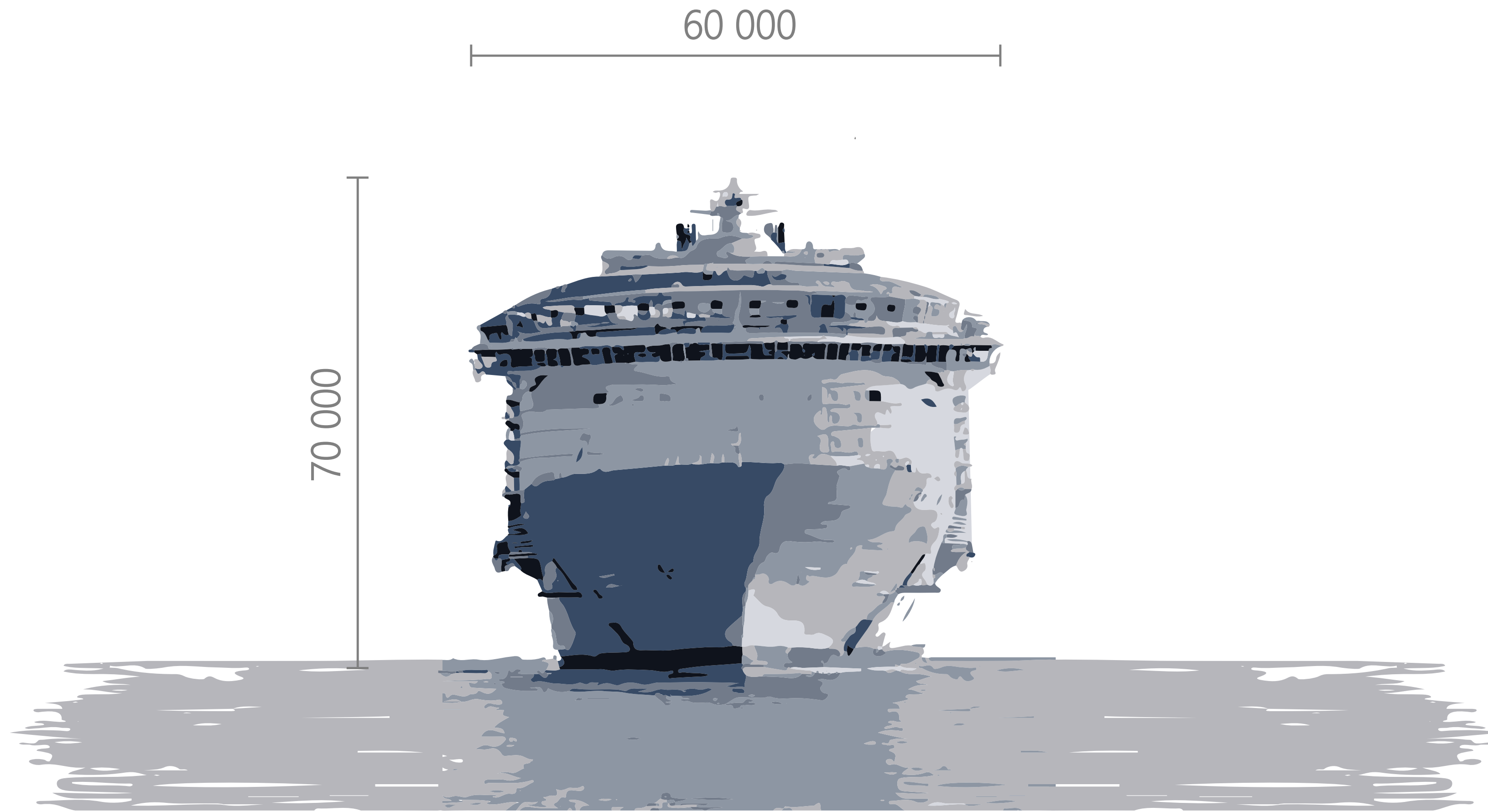
New entrance to the city of Rotterdam

# CONCEPT



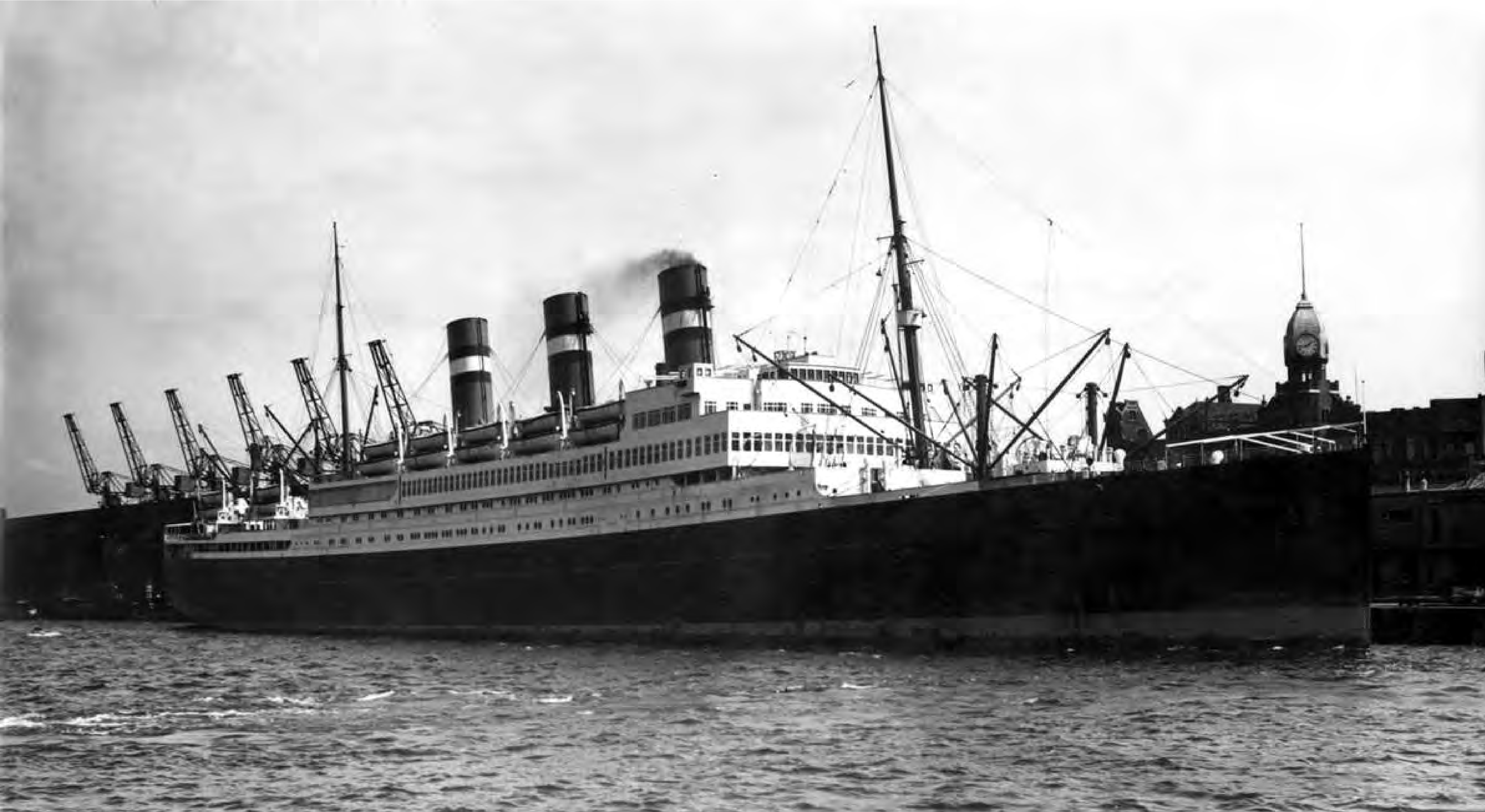
New entrance to the city of Rotterdam

# CONCEPT



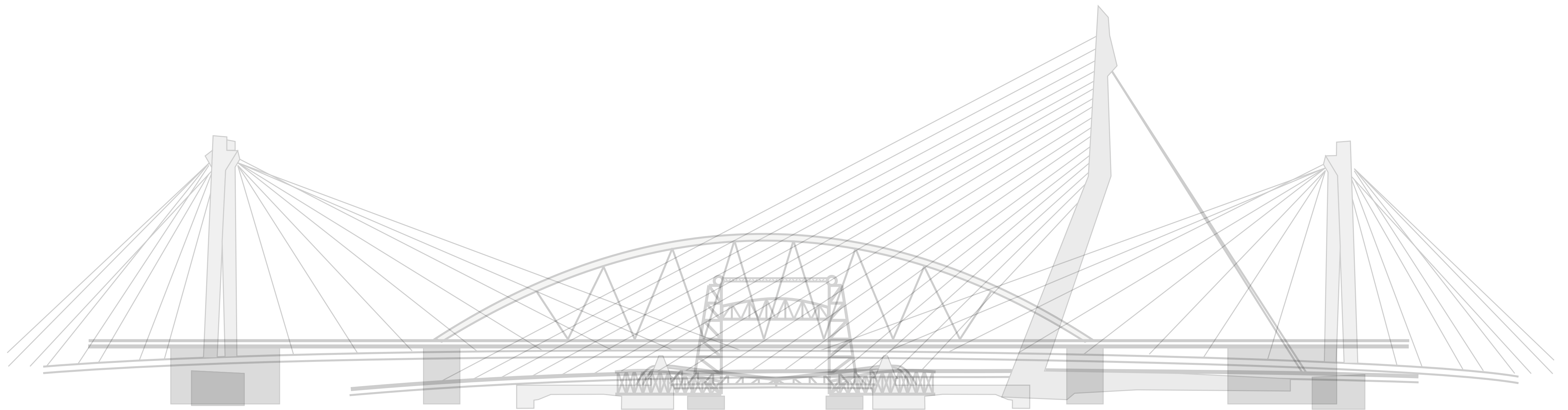
Allow cruise ships to enter the city center

# CONCEPT



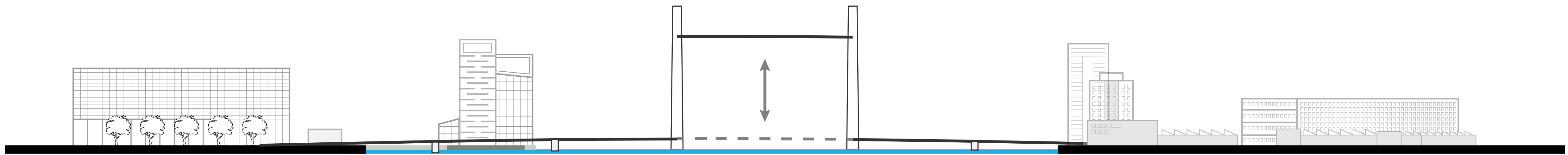


# CONCEPT



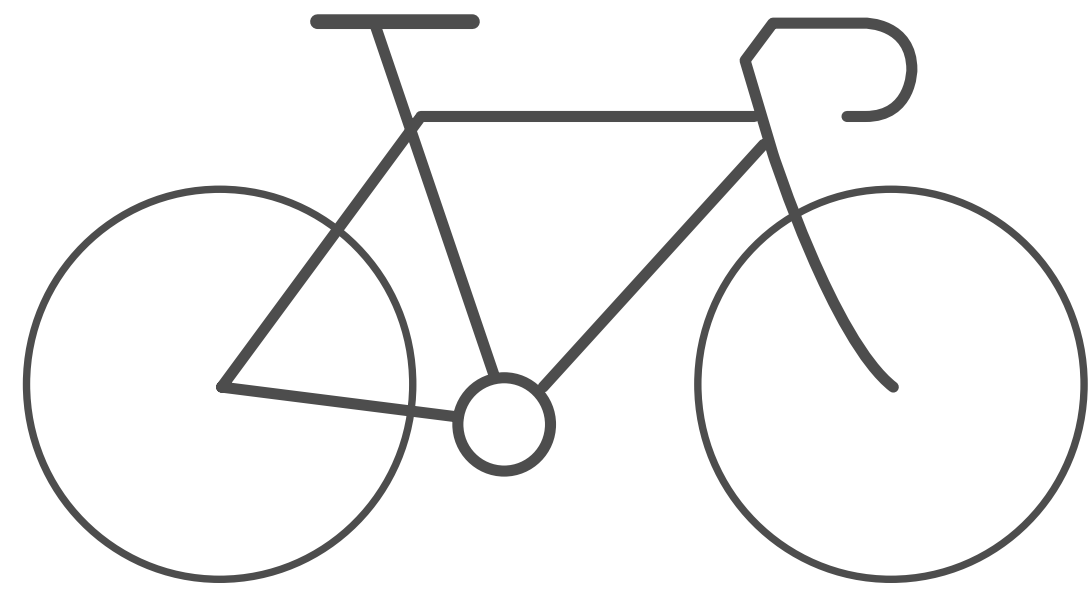
Connection with current bridges

# CONCEPT



Design of a vertical lift bridge

# CONCEPT



Interesting routes for different traffic flows

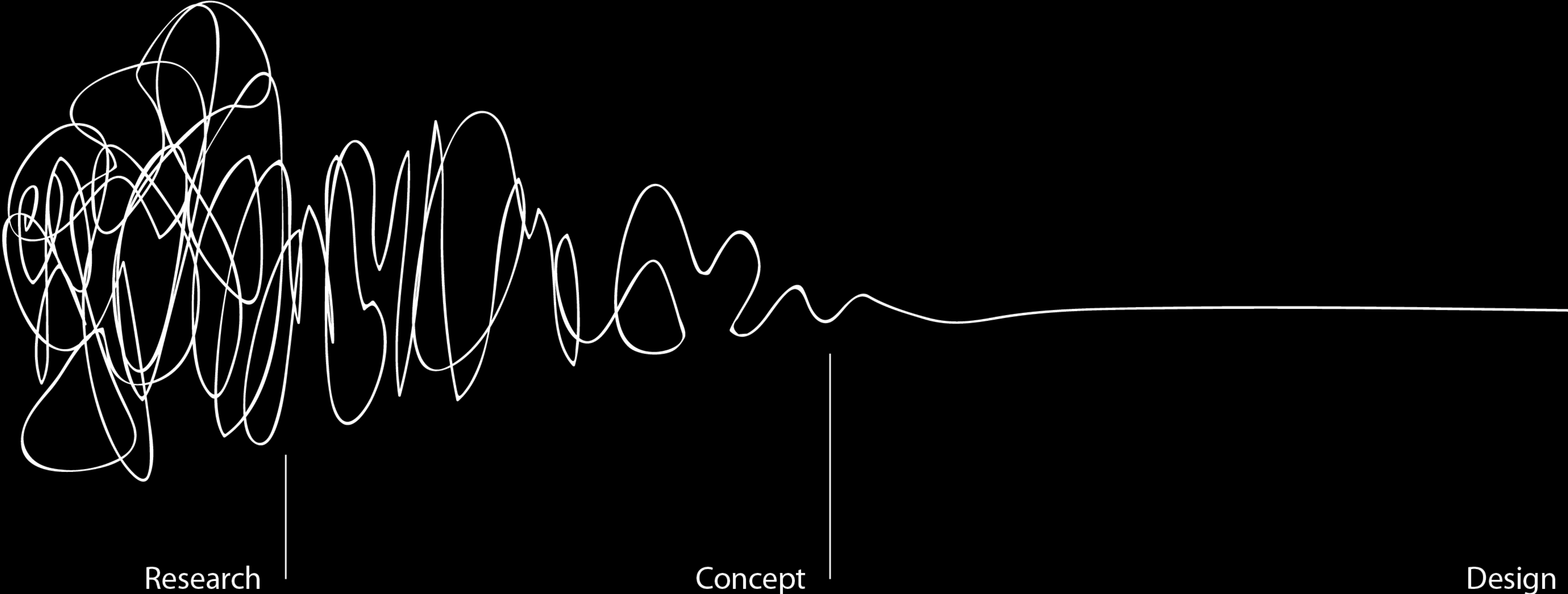


# CONCEPT



Interesting space on public quays

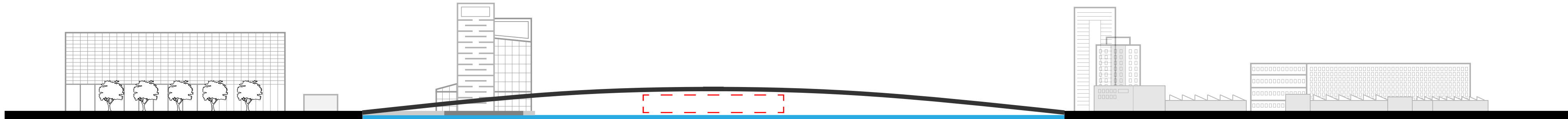
# DESIGN EXPLANATION



# DESIGN EXPLANATION



# DESIGN EXPLANATION



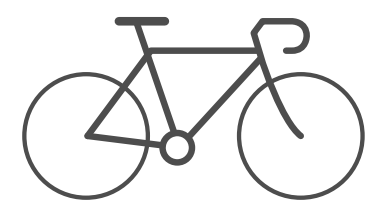
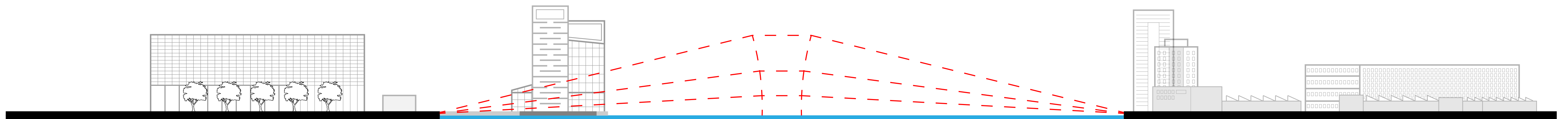
Crossing the Nieuwe Maas

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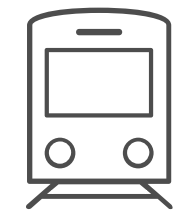


Crossing the Nieuwe Maas

# DESIGN EXPLANATION



2,5 %



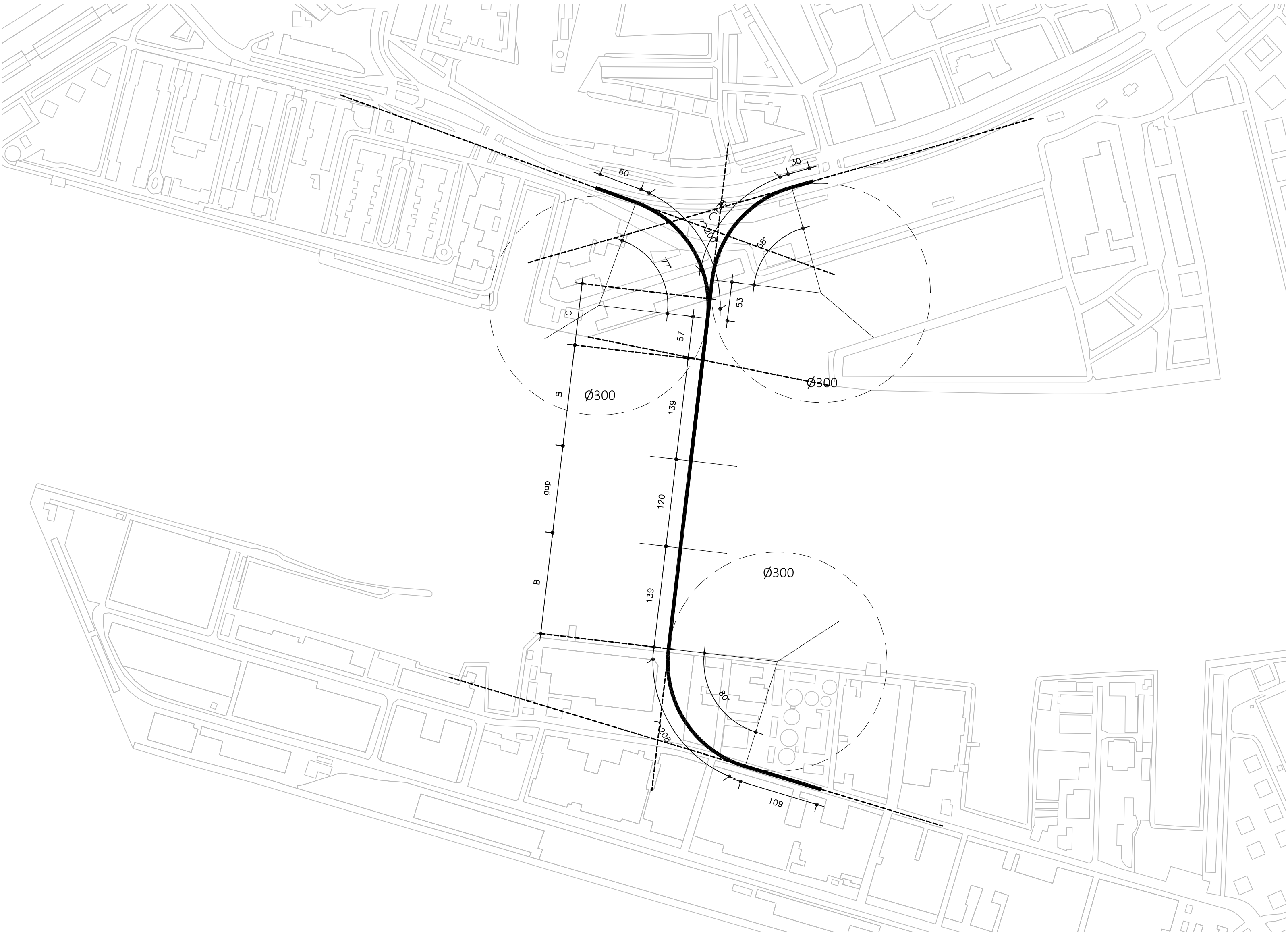
3,5 %



~ %

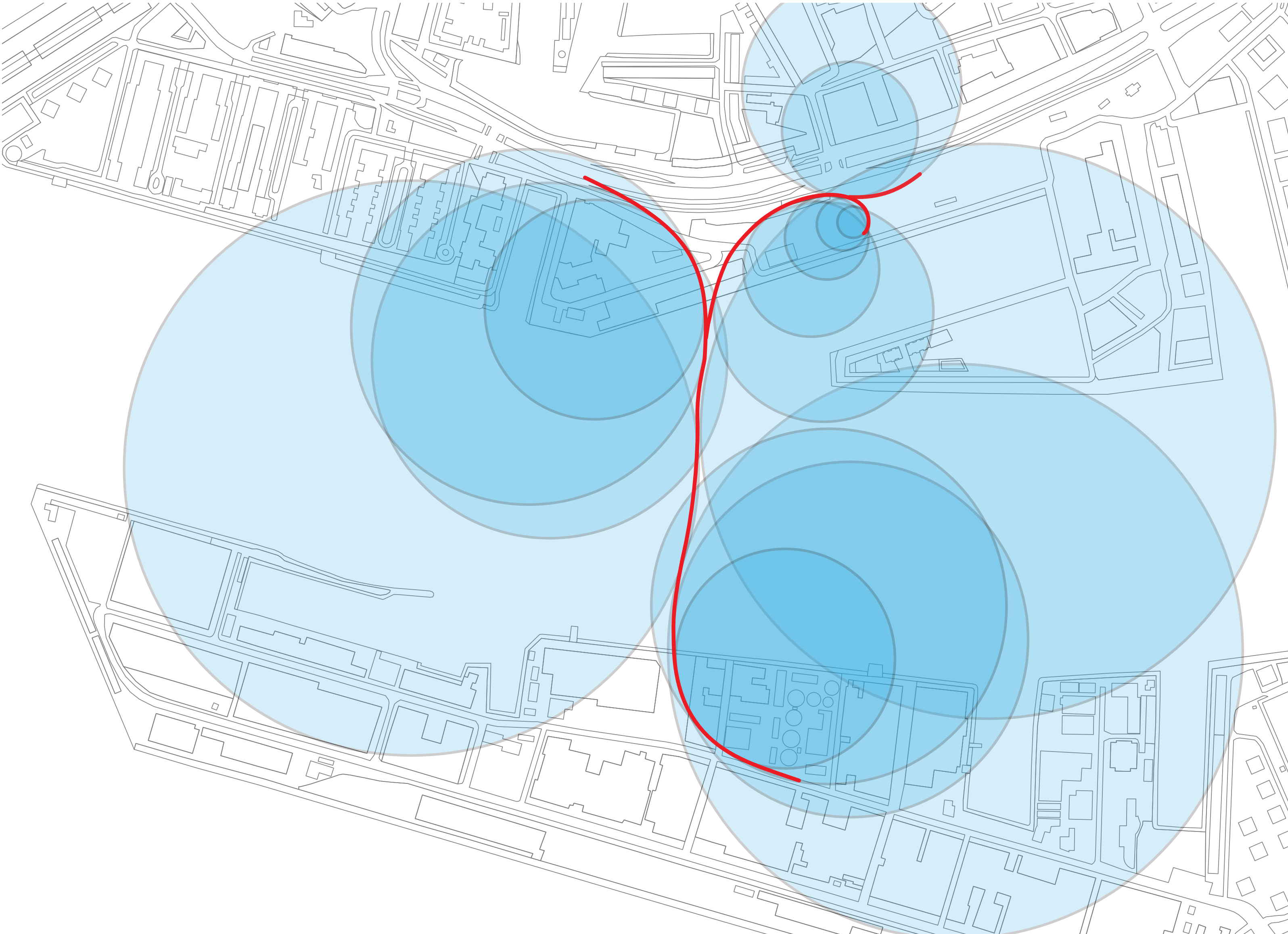
Designing the route

# DESIGN EXPLANATION



Designing the route

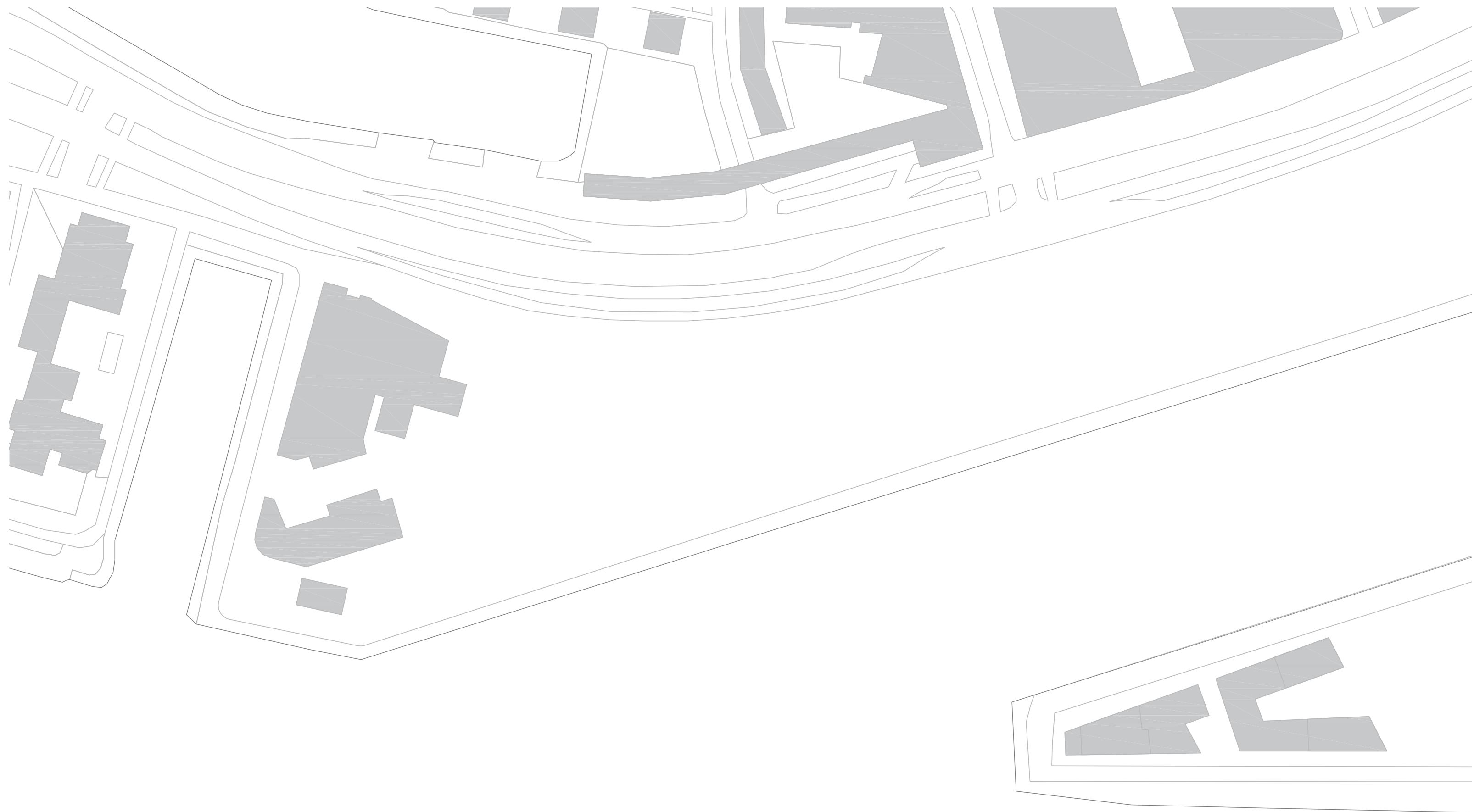
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Designing the route

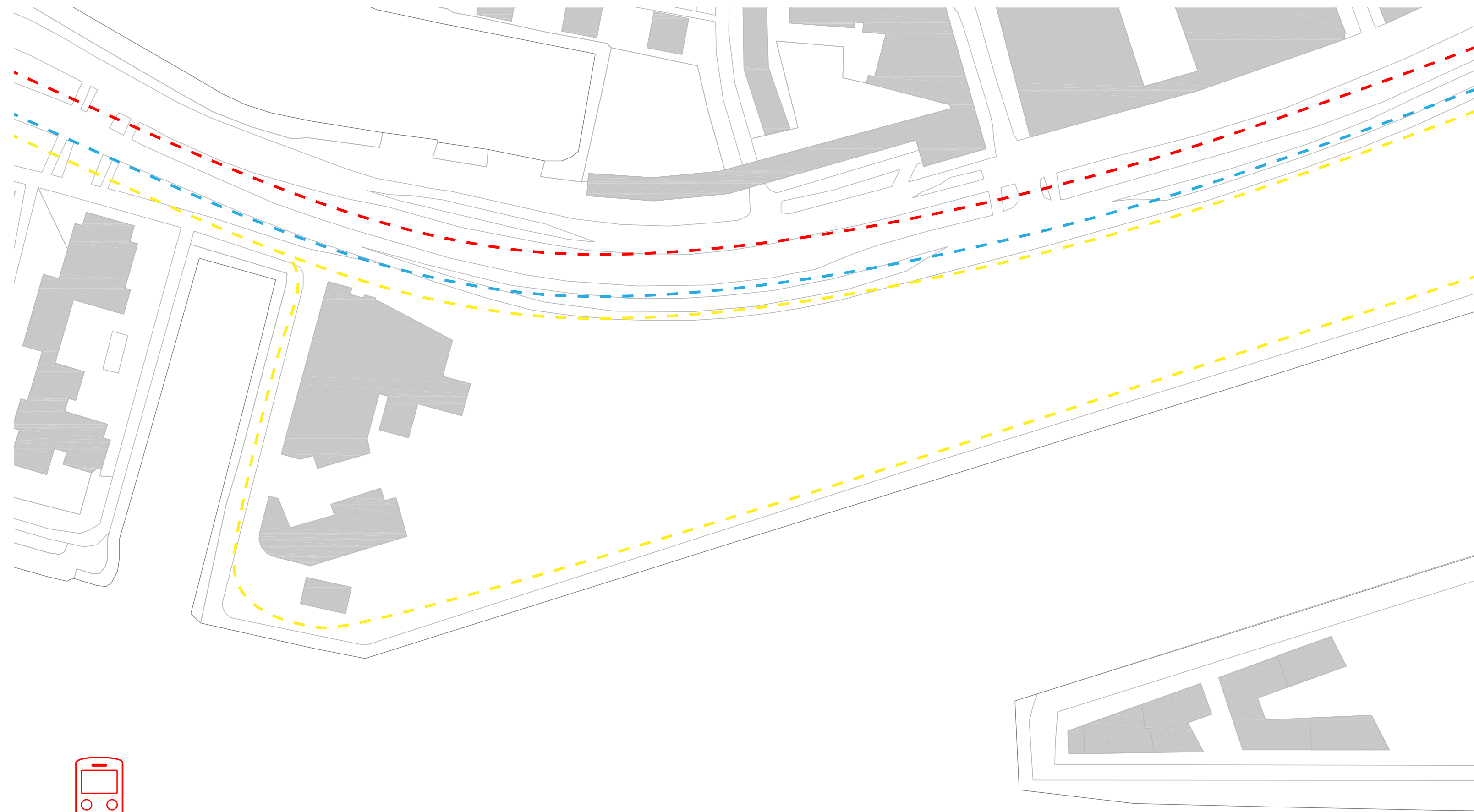


# DESIGN EXPLANATION



Designing the route

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Designing the route

# DESIGN EXPLANATION



Designing the route

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Designing the route



Designing the route

# DESIGN EXPLANATION



Designing the route

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Designing the route

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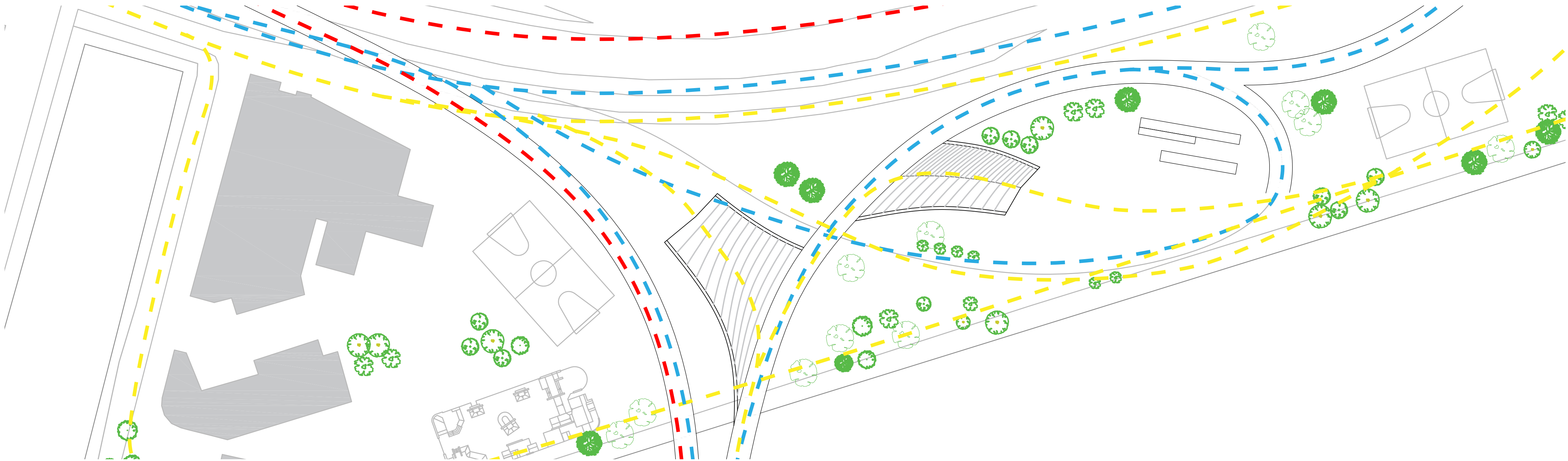
Designing the route



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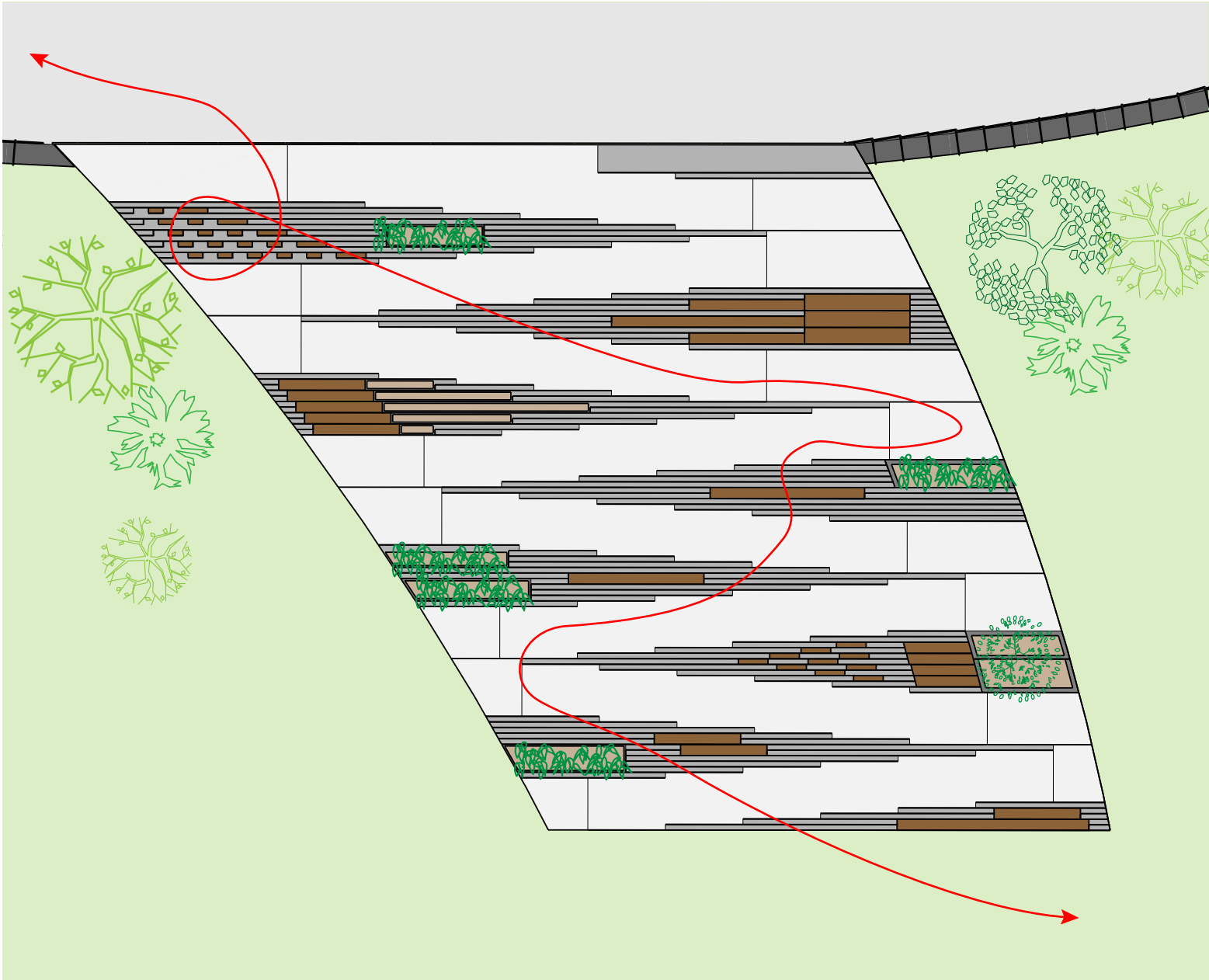
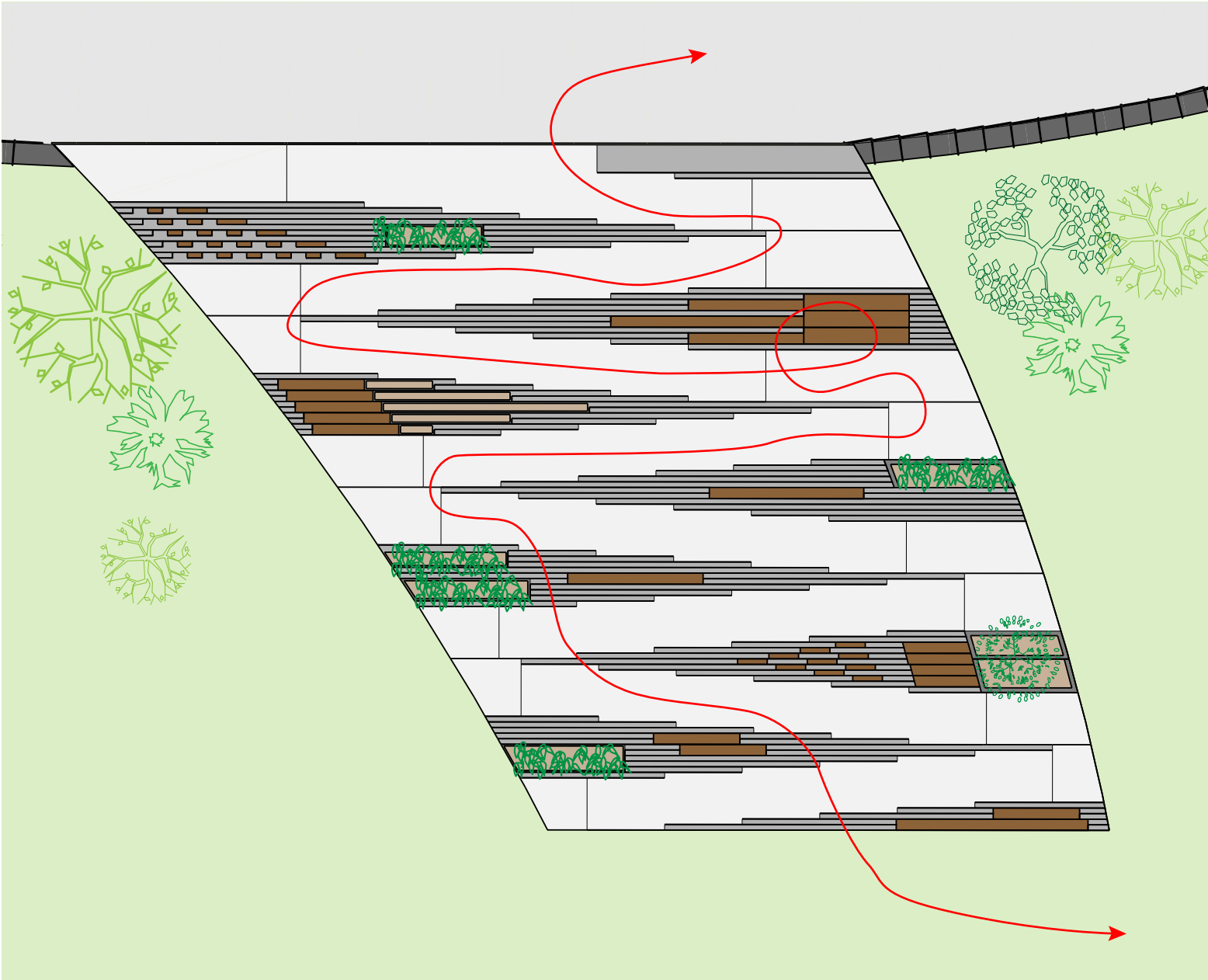
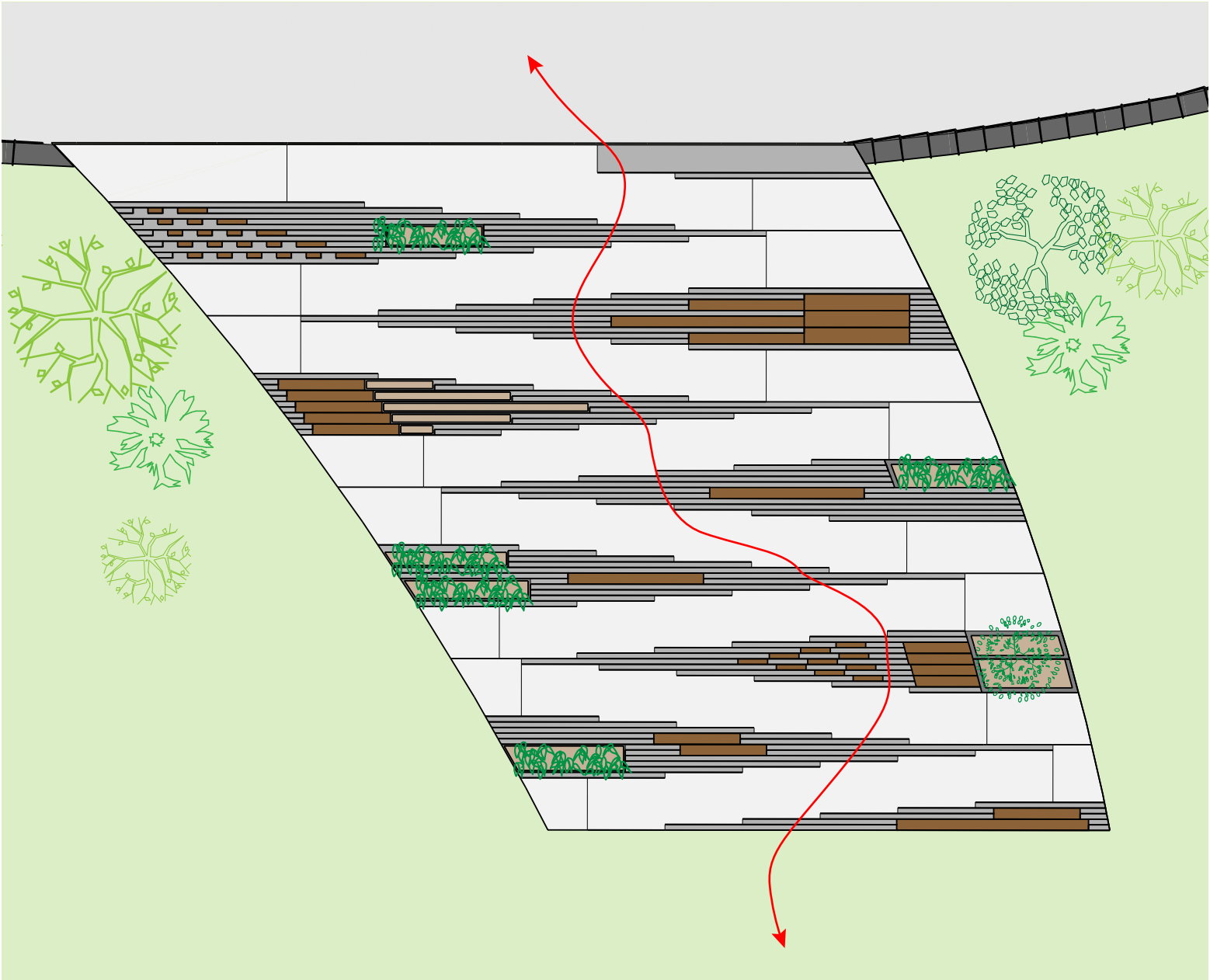


Designing the route



Designing the stairs

# DESIGN EXPLANATION

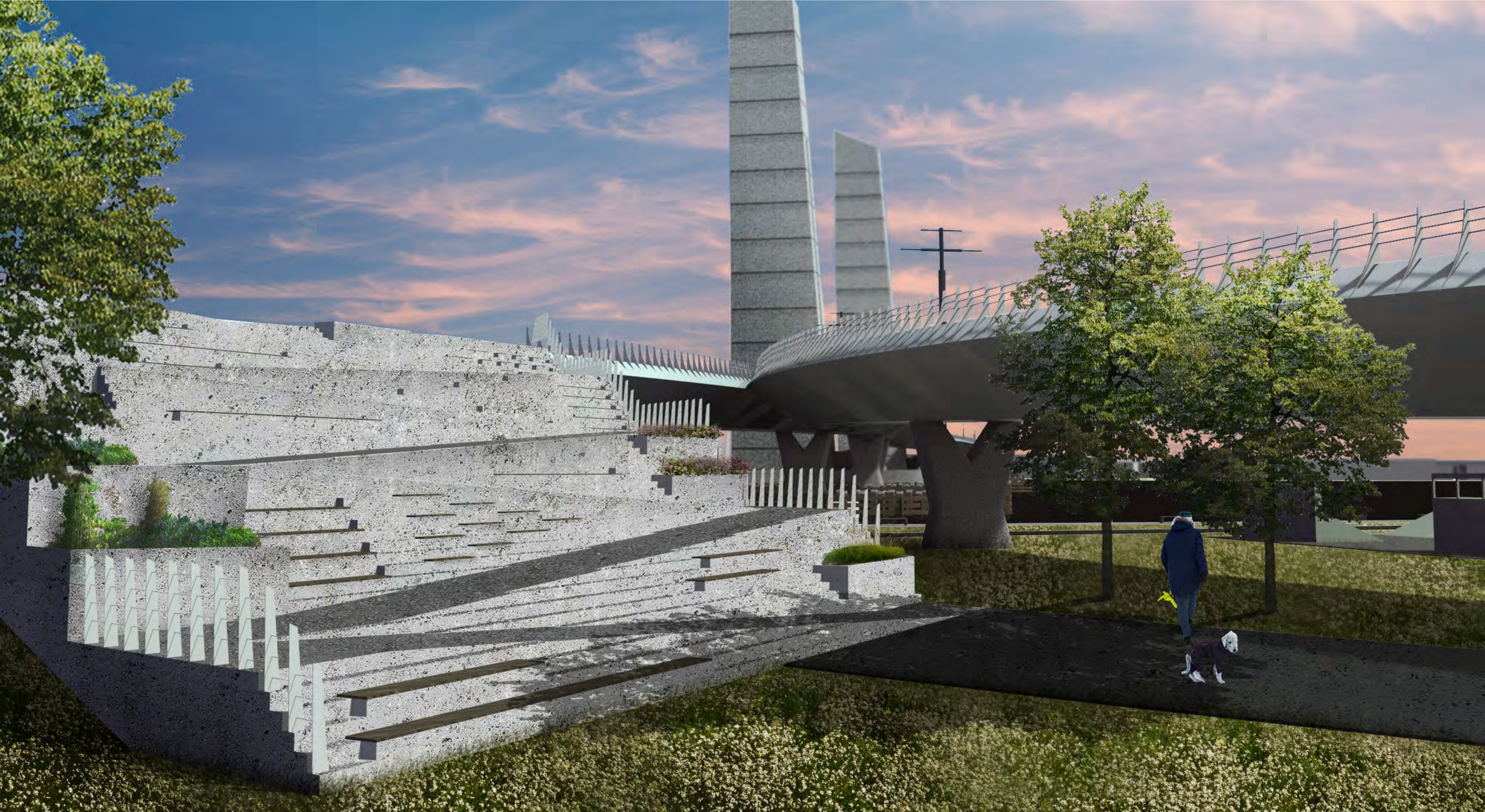


Designing the stairs

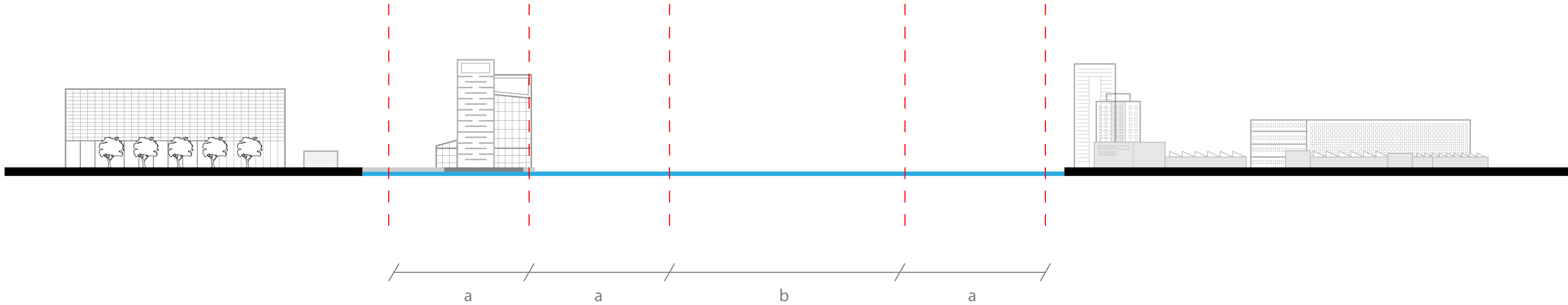
# DESIGN EXPLANATION



# FINAL DESIGN

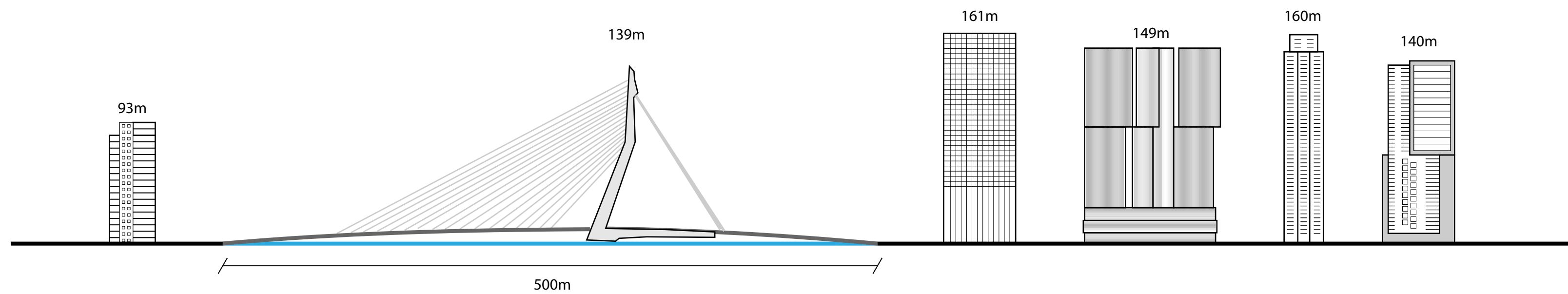


# DESIGN EXPLANATION



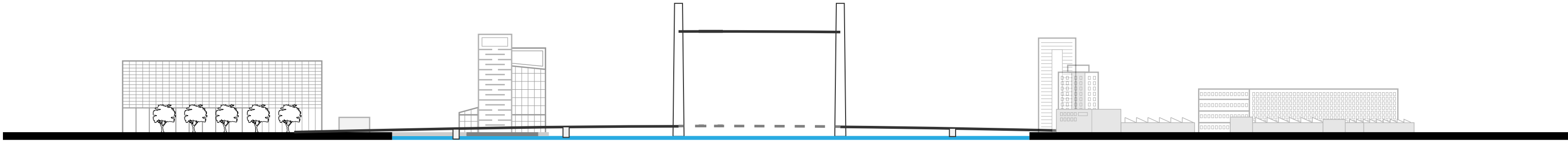
Designing the towers

# DESIGN EXPLANATION



Designing the towers

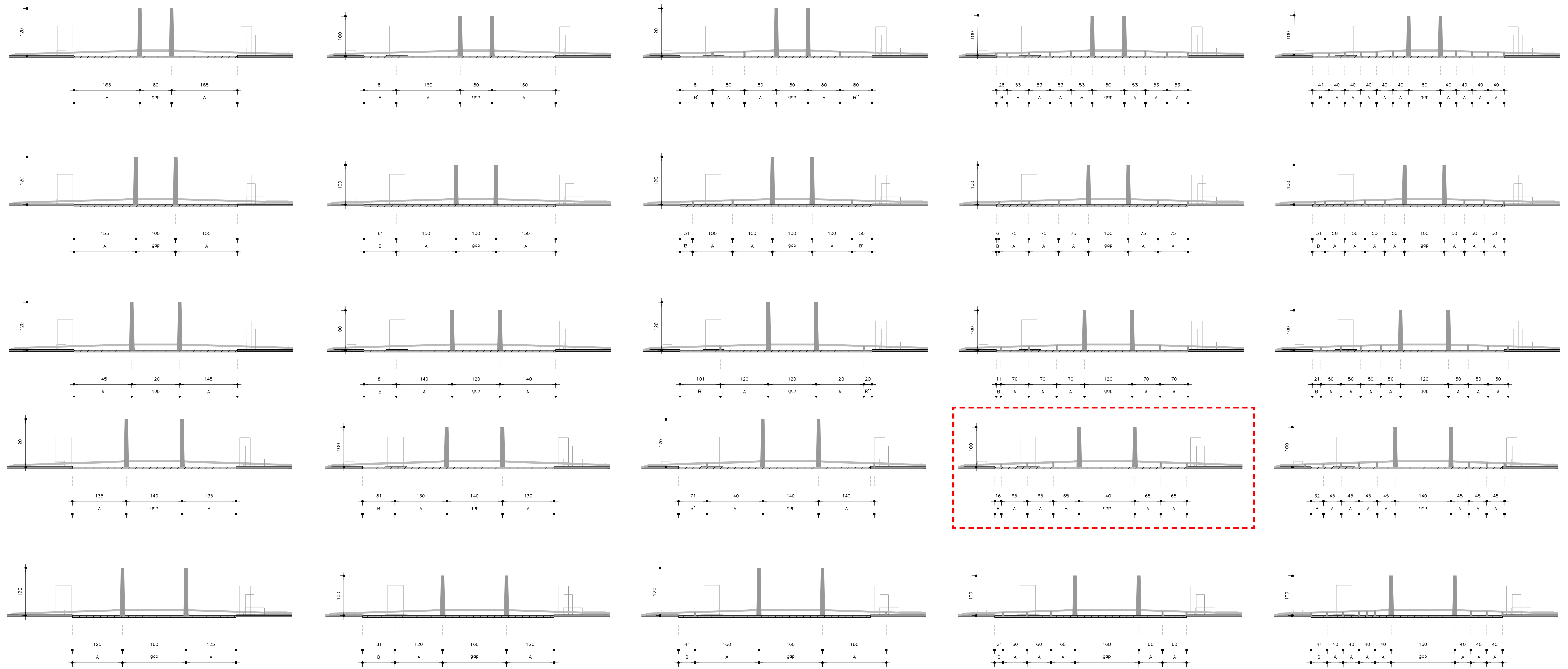
# DESIGN EXPLANATION



Designing the towers

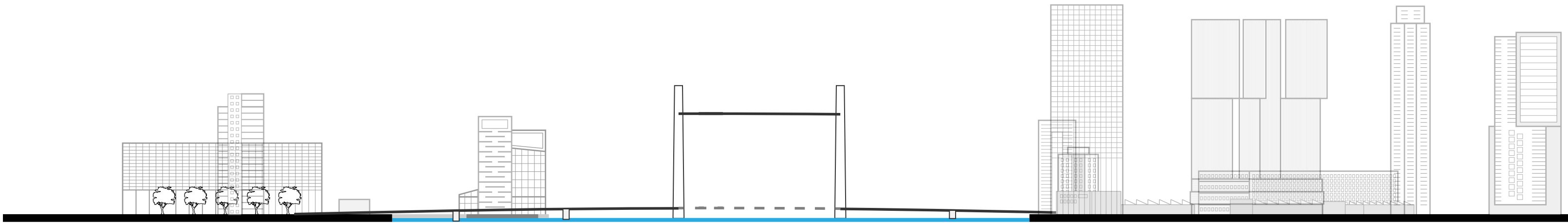


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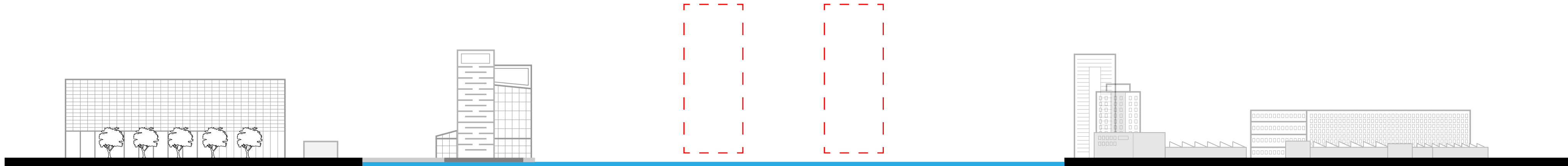
Designing the towers

# DESIGN EXPLANATION



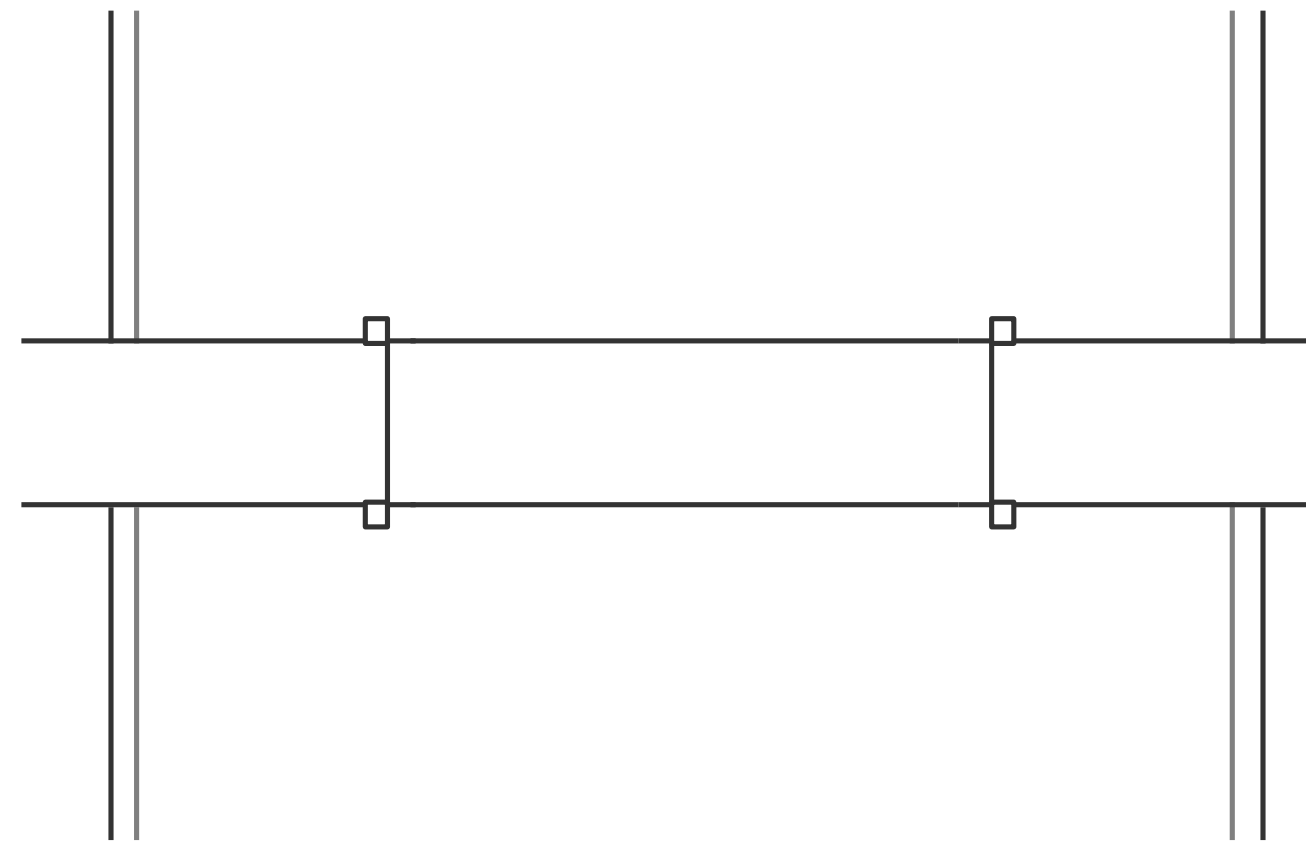
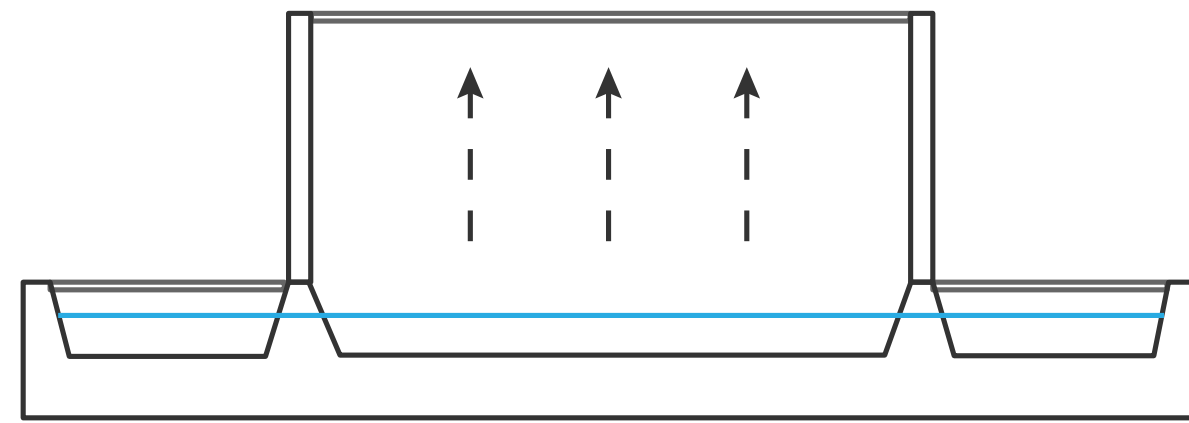
Designing the towers

# DESIGN EXPLANATION



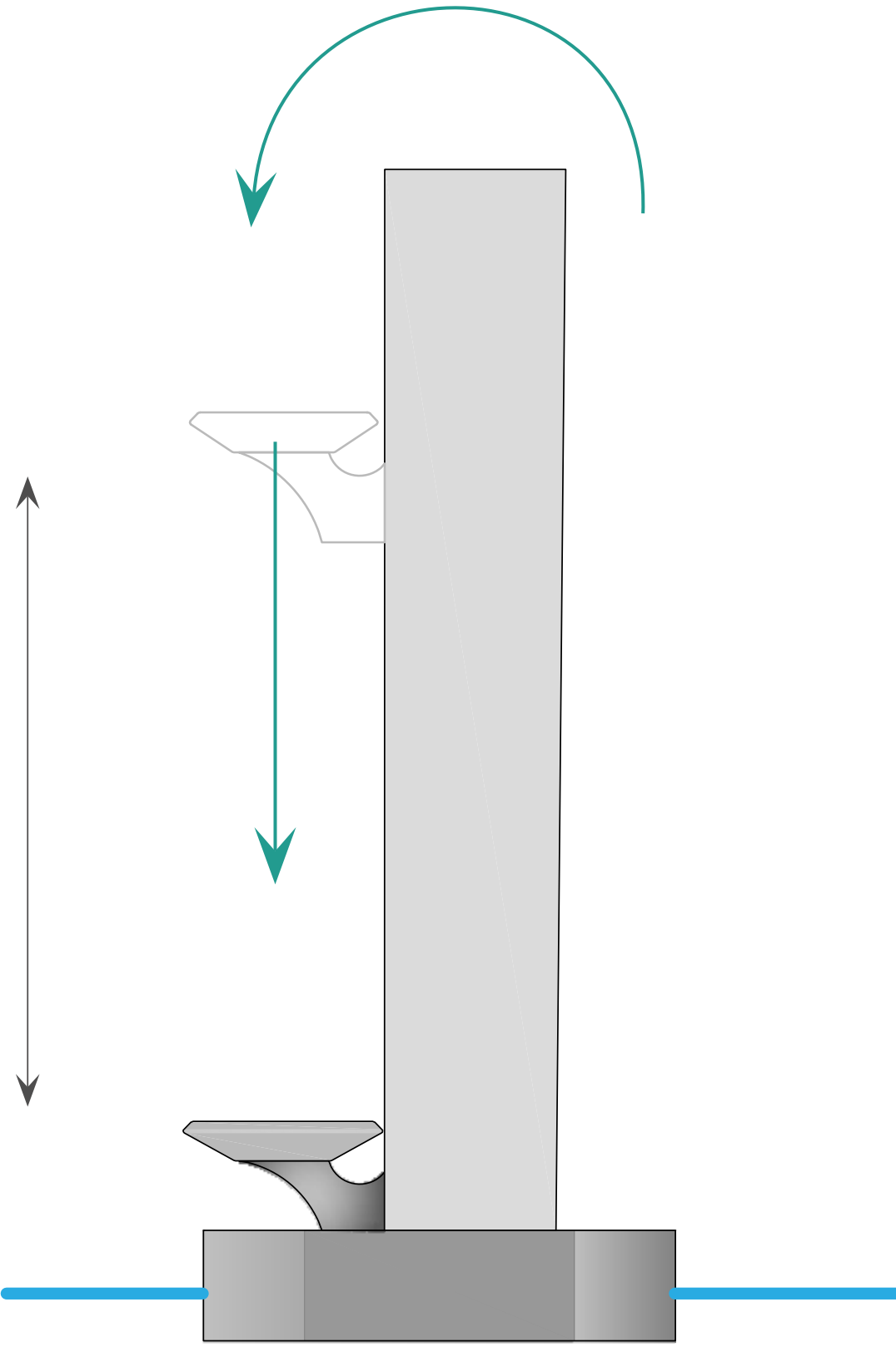
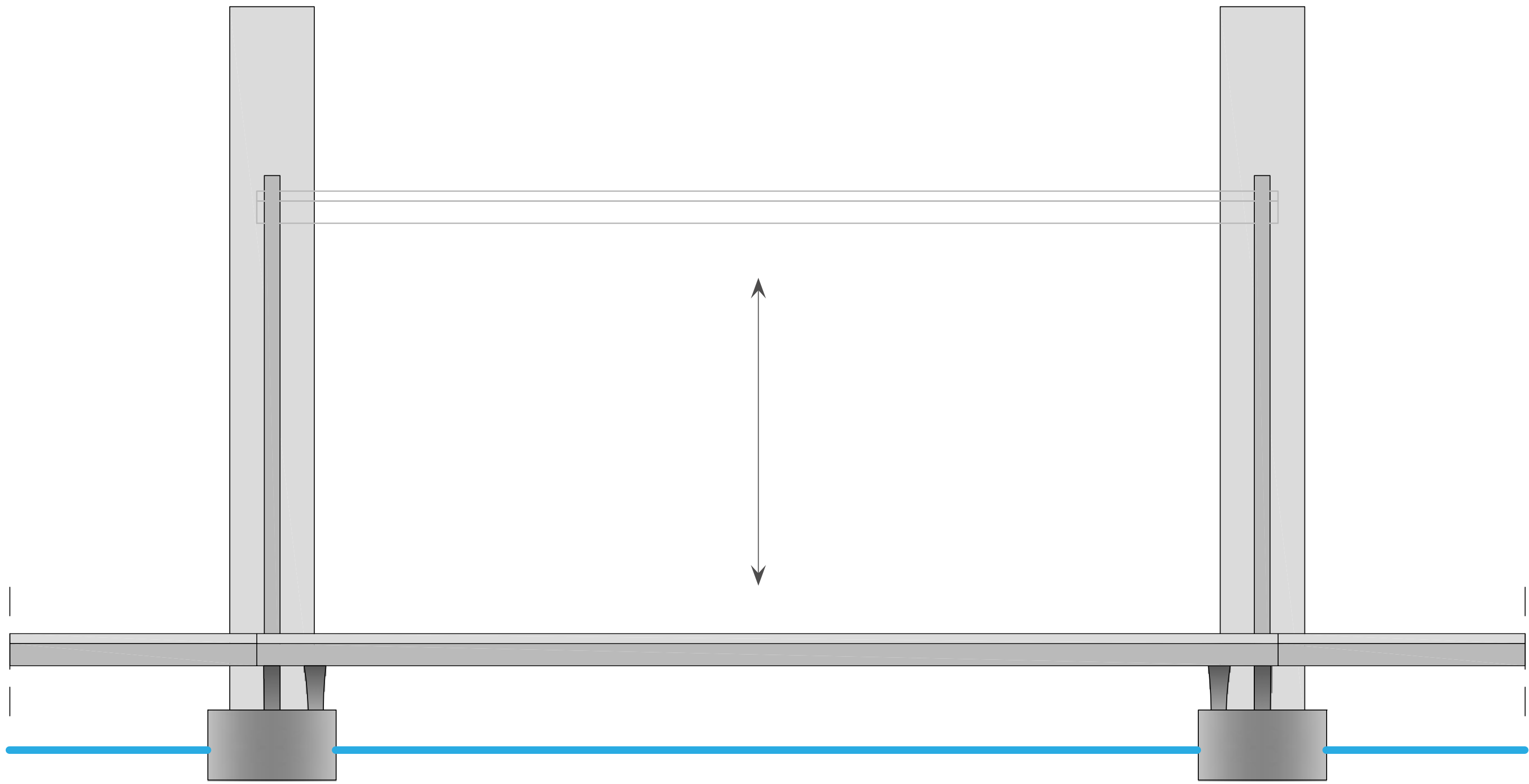
Designing the towers

# DESIGN EXPLANATION



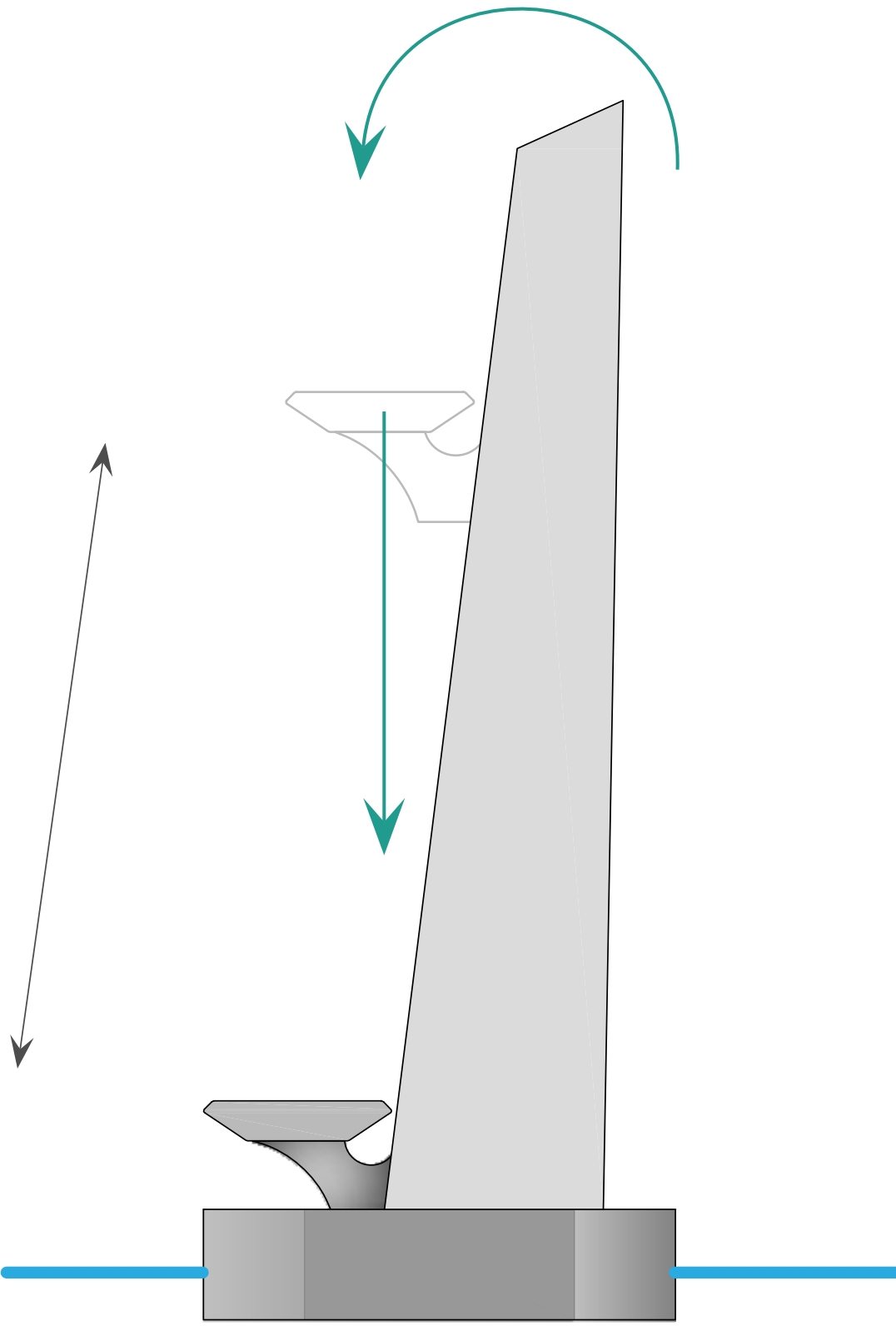
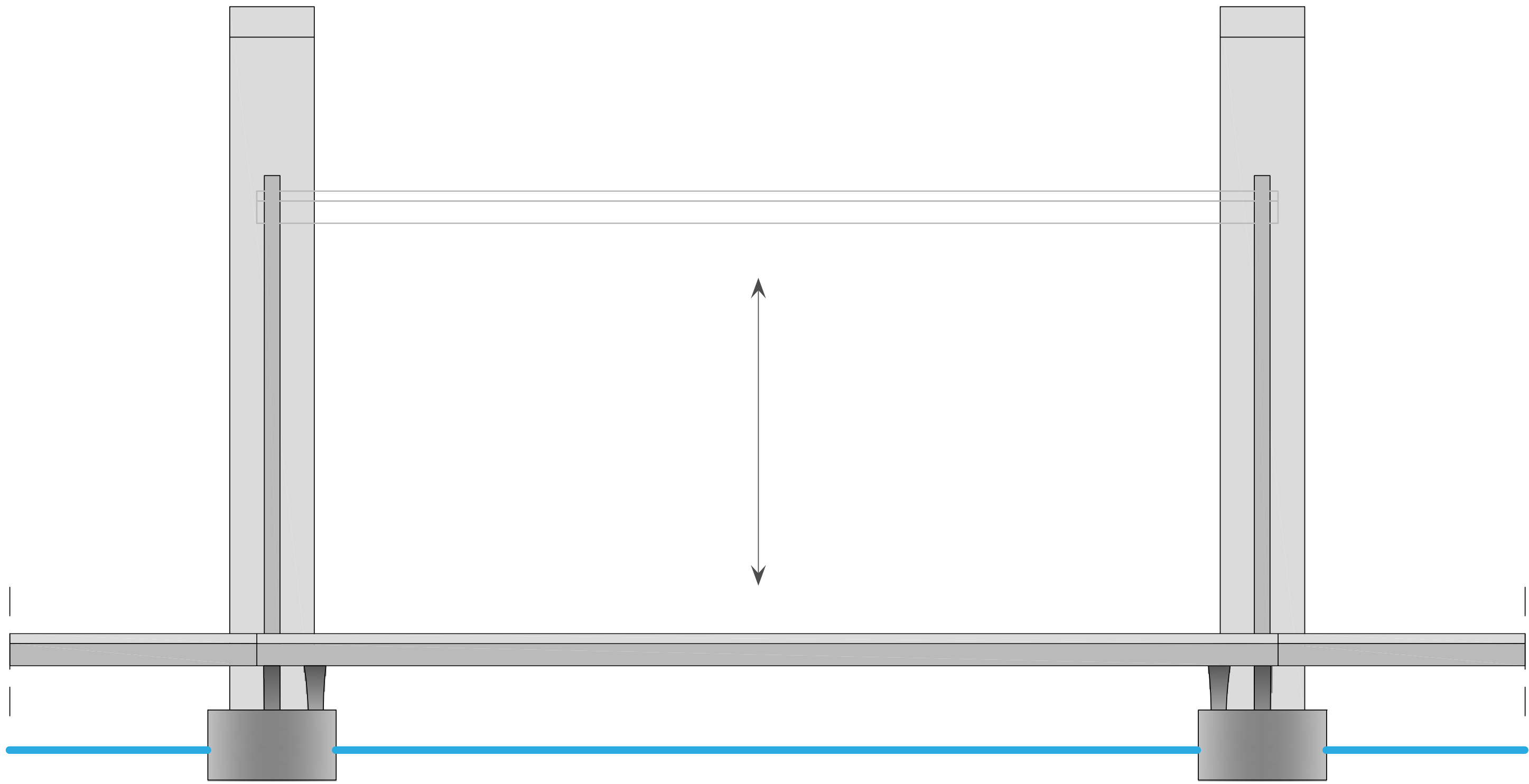
Designing the towers

# DESIGN EXPLANATION



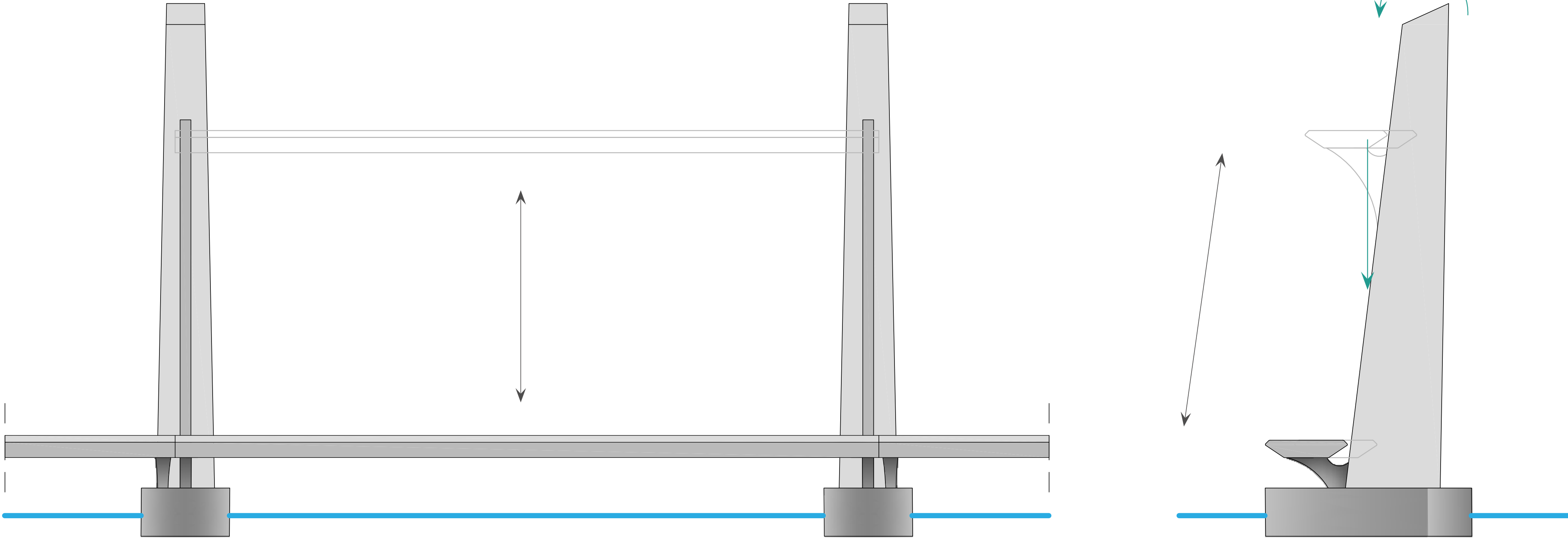
Designing the towers

# DESIGN EXPLANATION



Designing the towers

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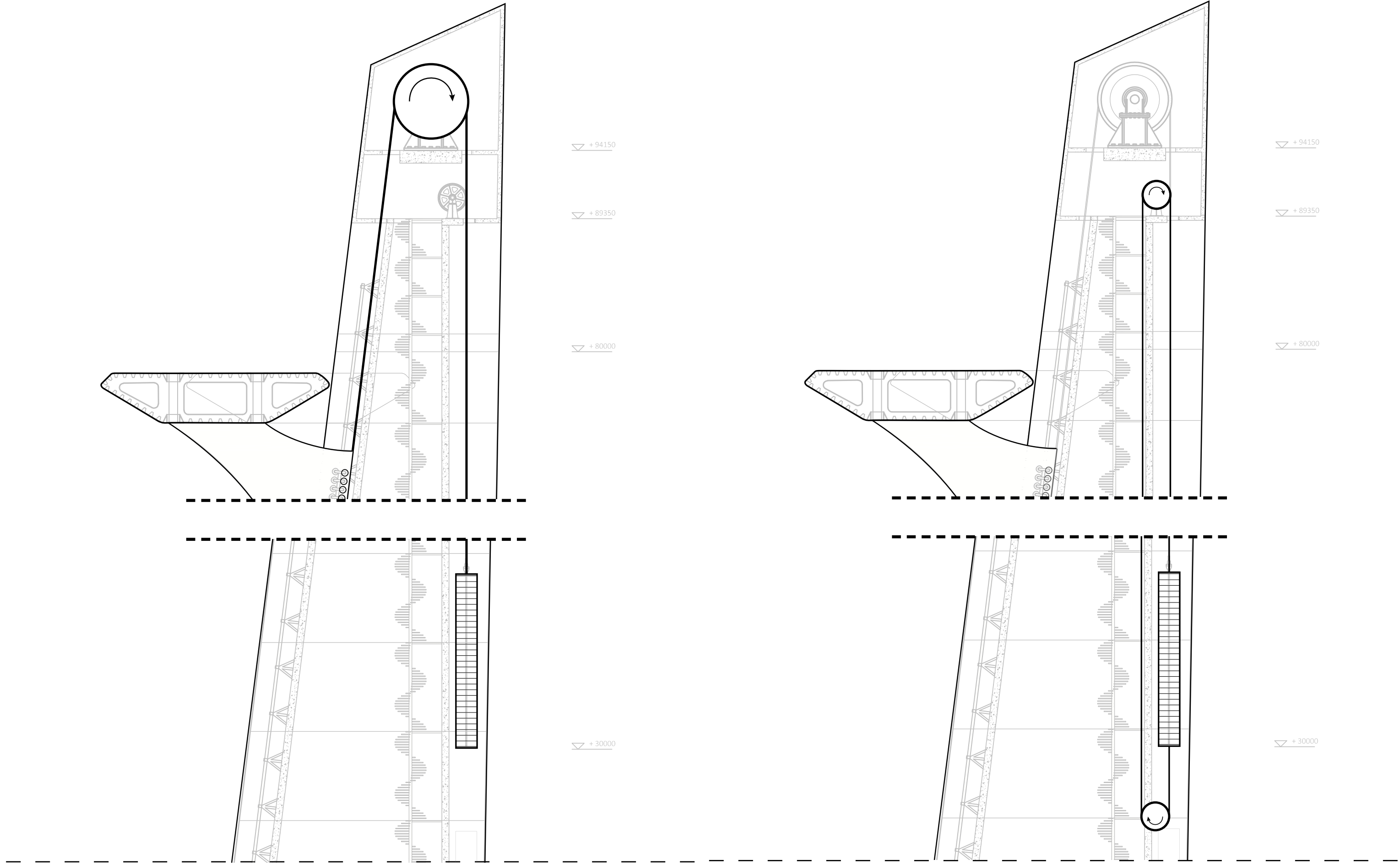
Designing the towers

# DESIGN EXPLANATION



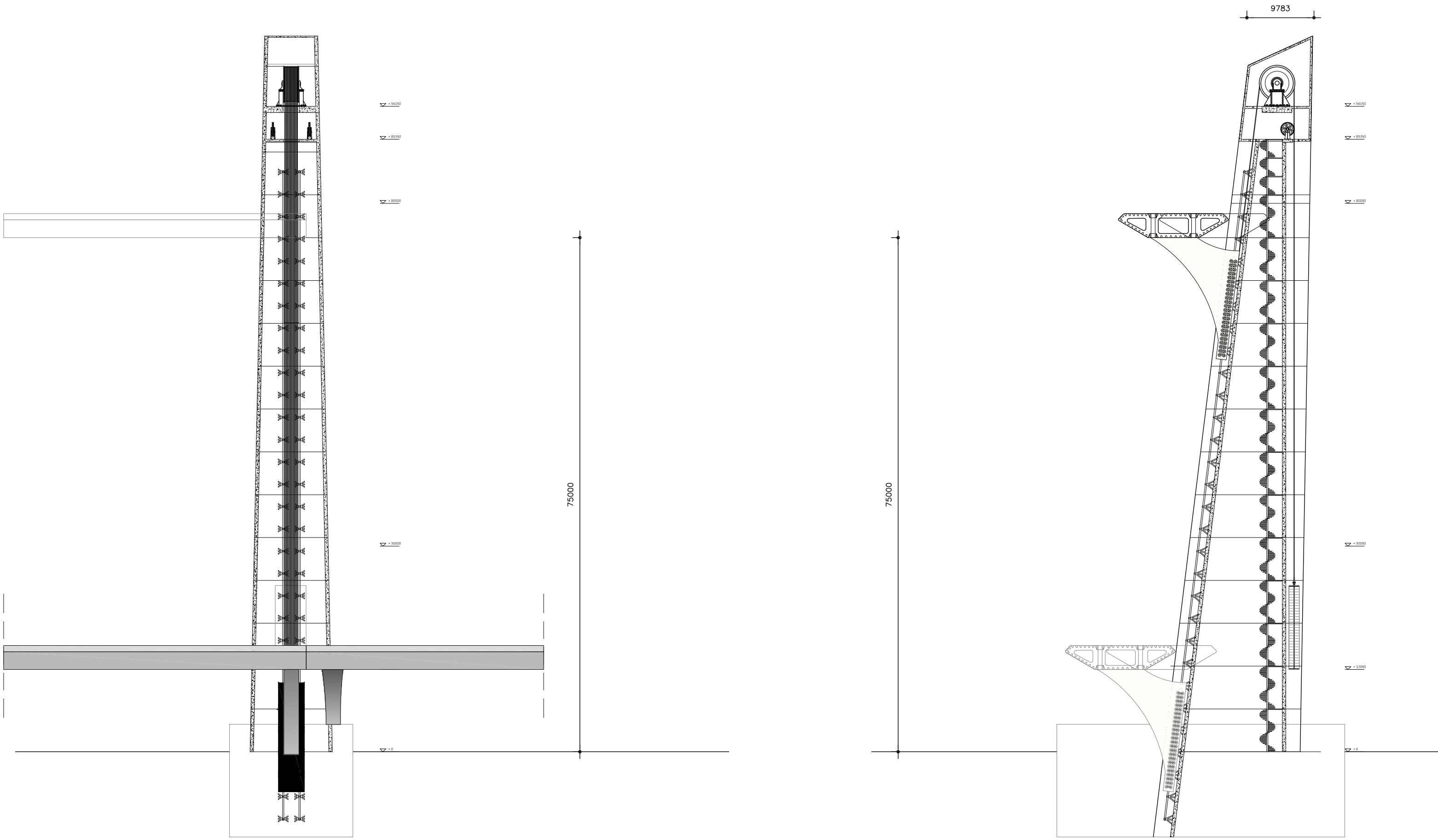


# DESIGN EXPLANATION



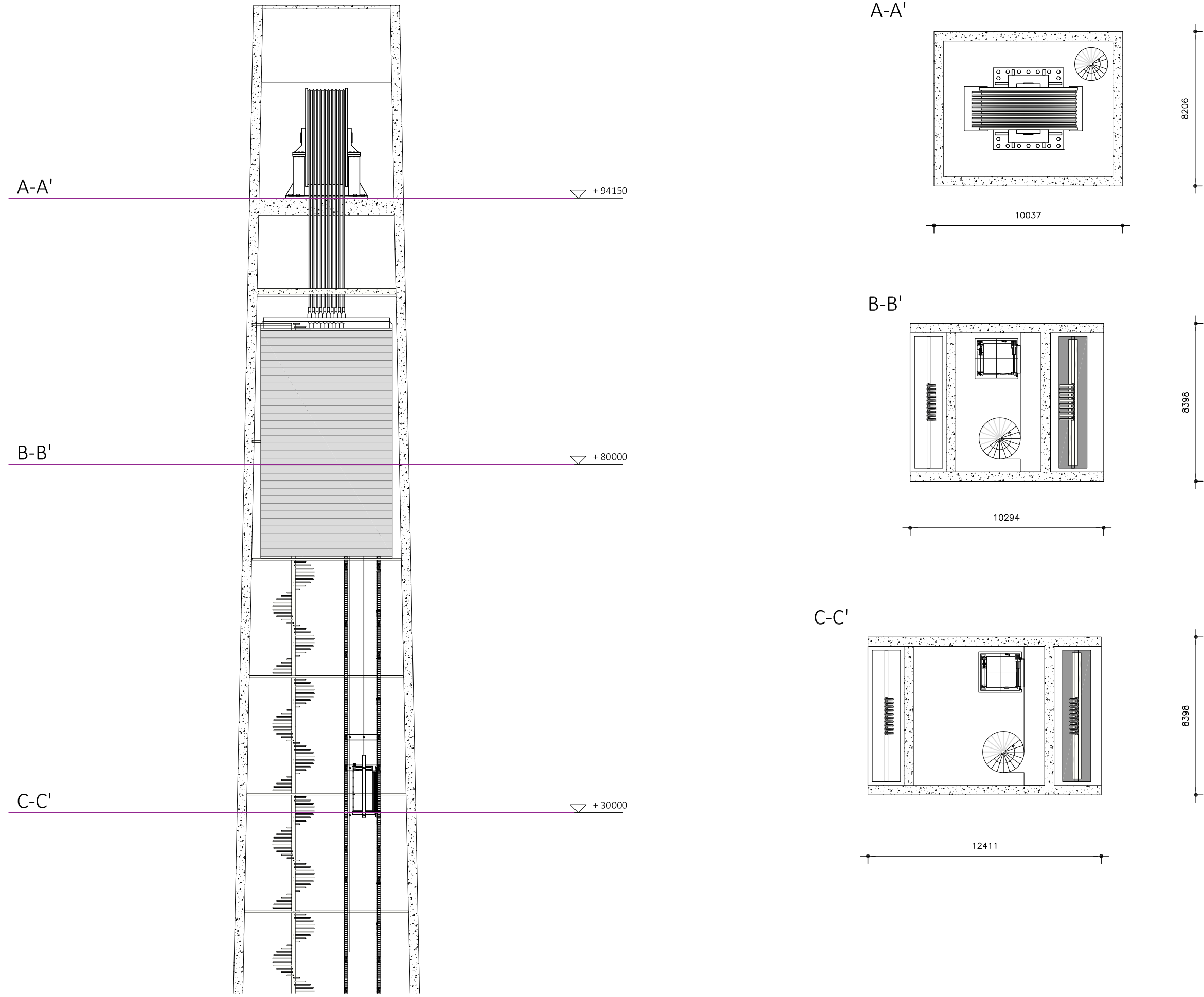
Lift mechanism

# DESIGN EXPLANATION



Designing the towers

# DESIGN EXPLANATION



Designing the towers

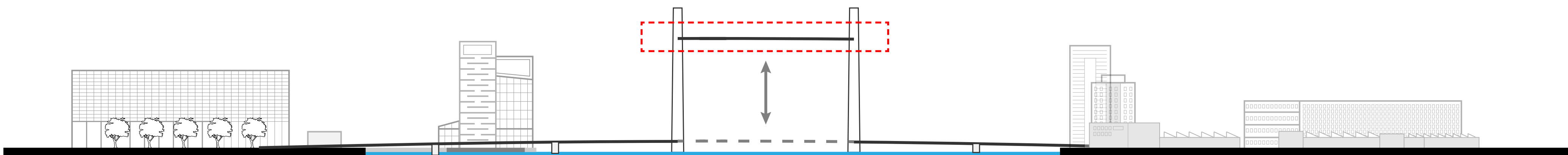
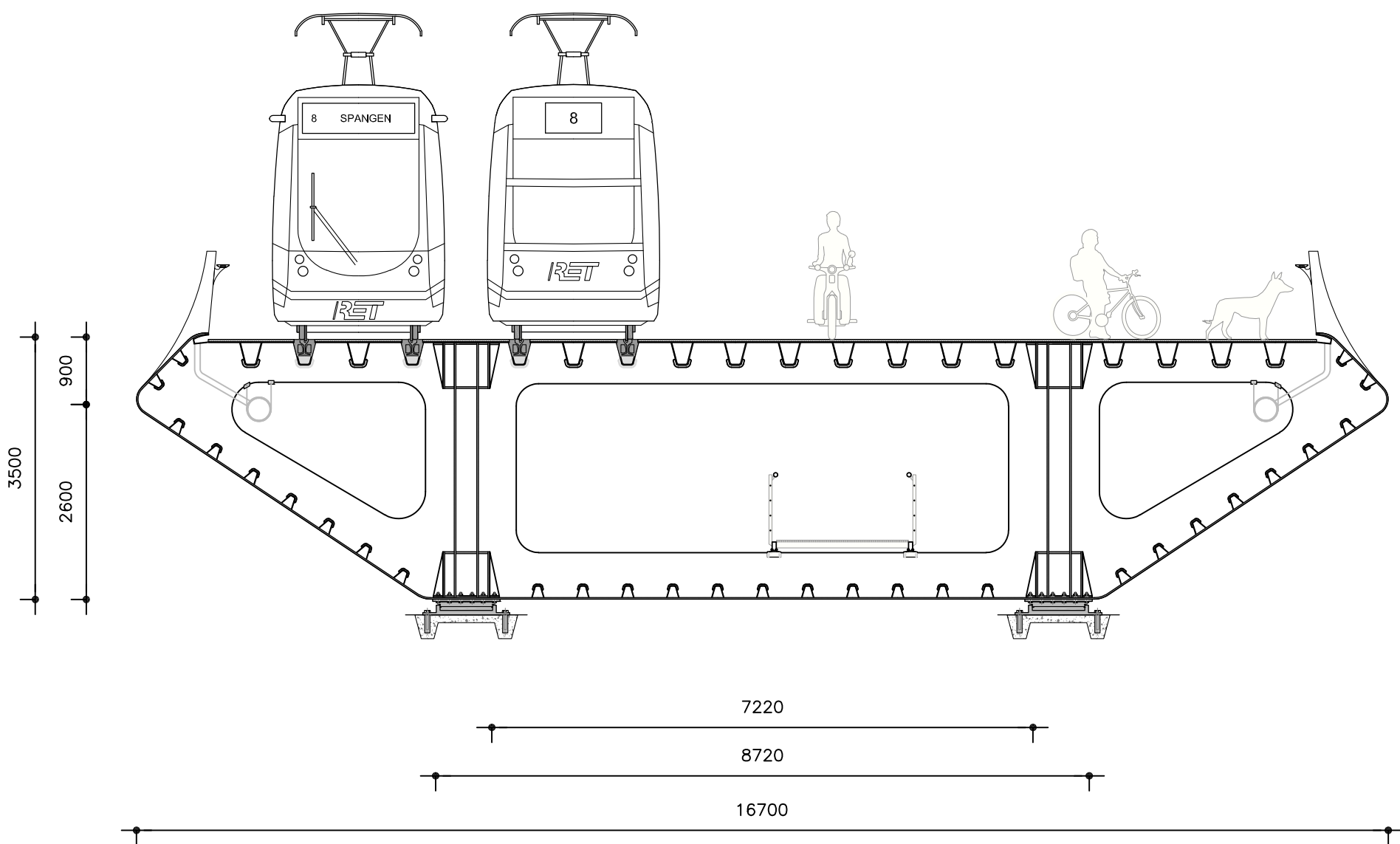
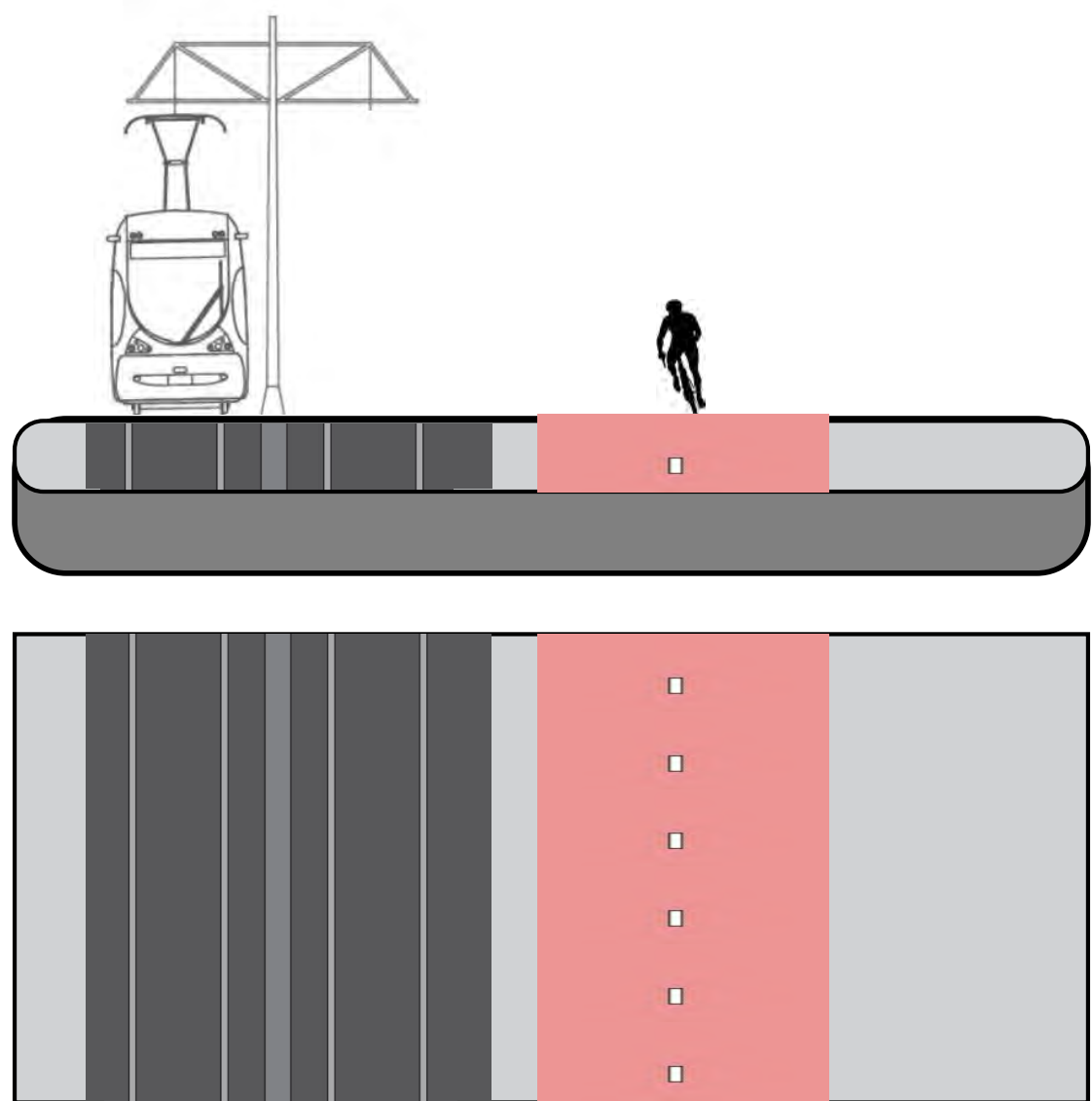
# DESIGN EXPLANATION



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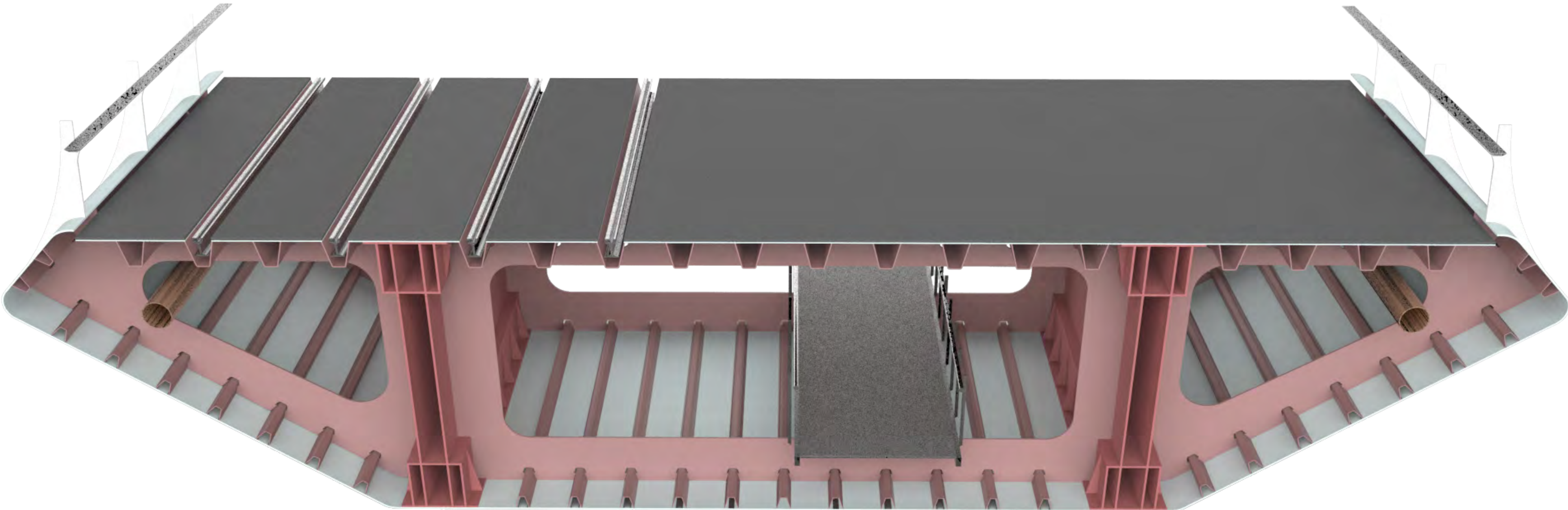


# DESIGN EXPLANATION



Bridge deck

# DESIGN EXPLANATION



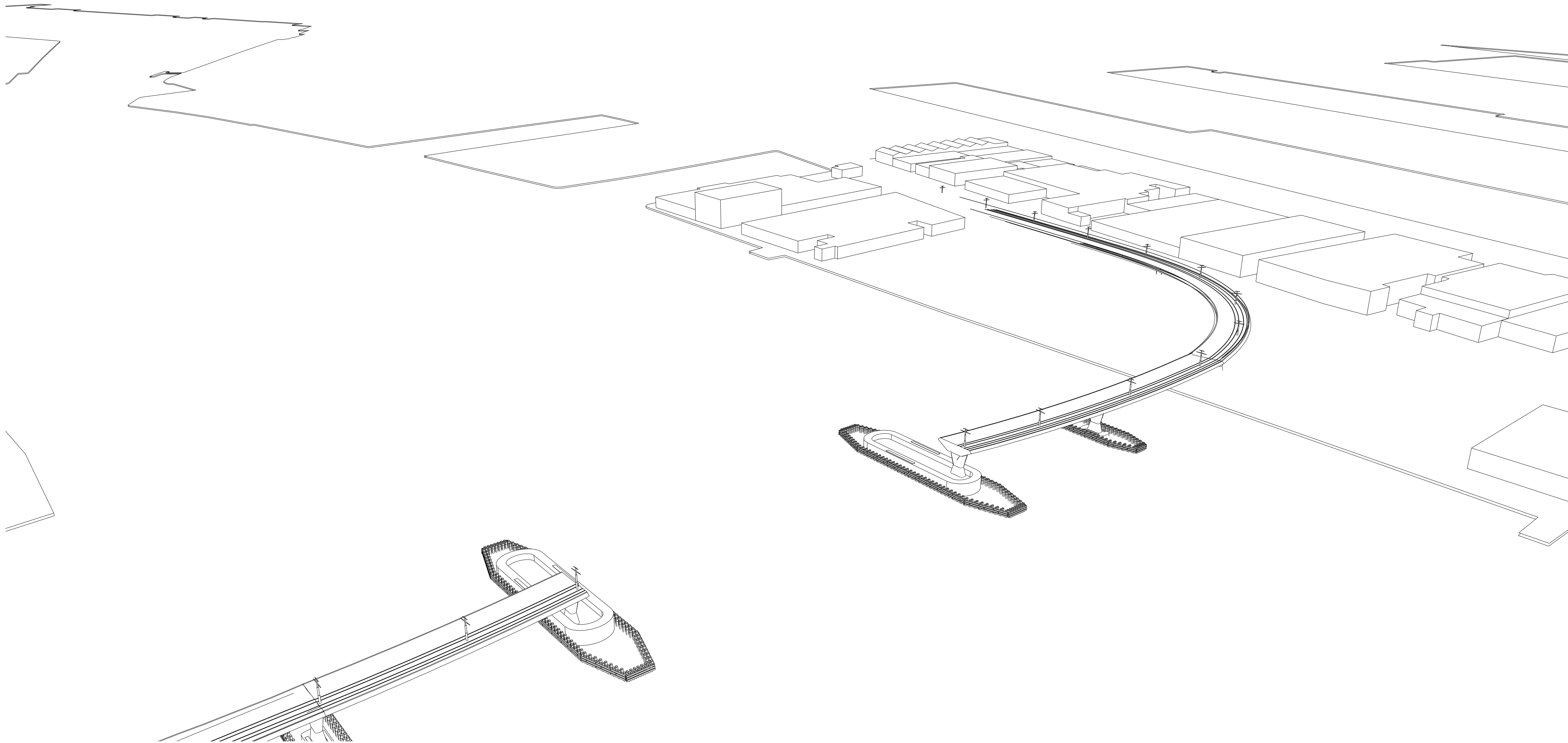
Bridge deck

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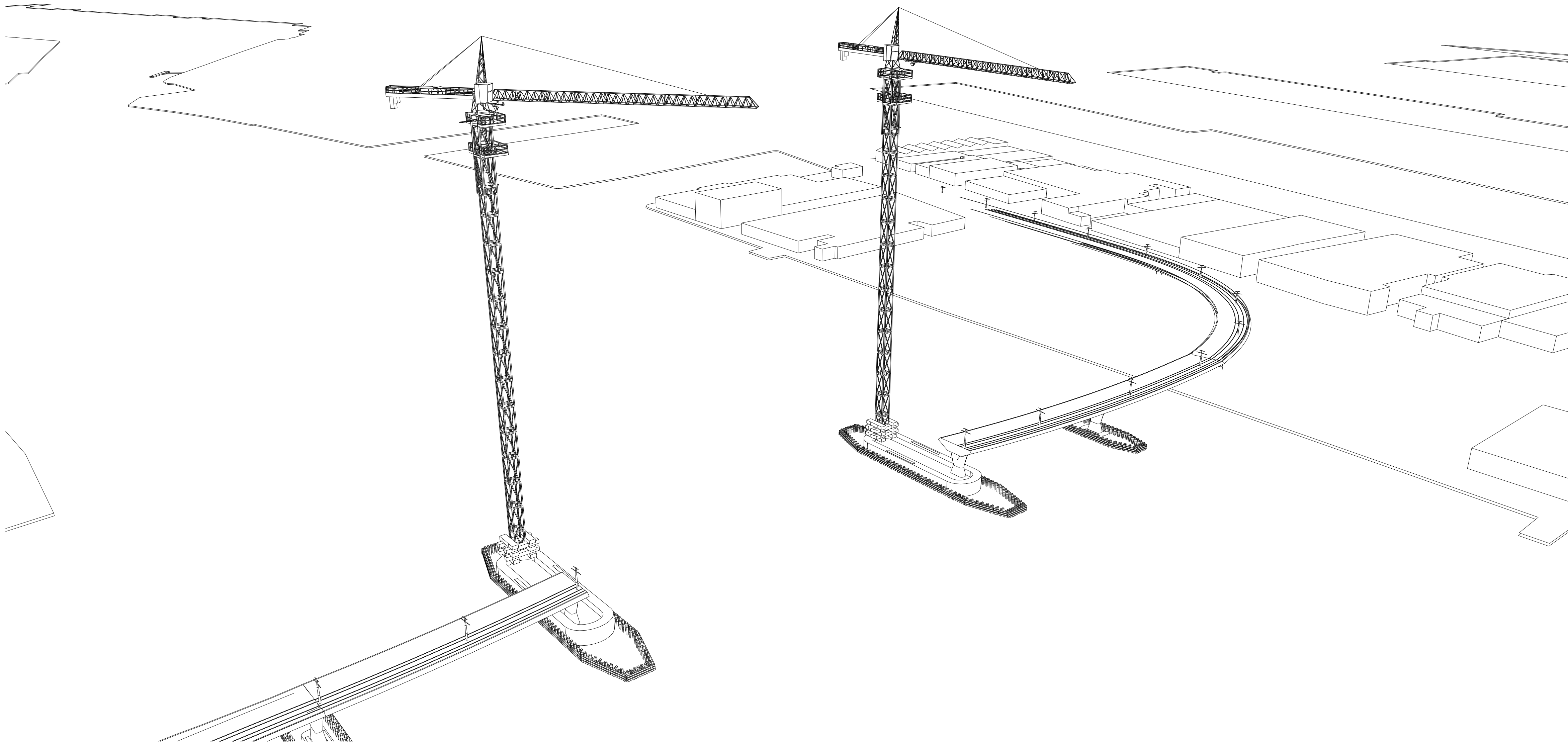


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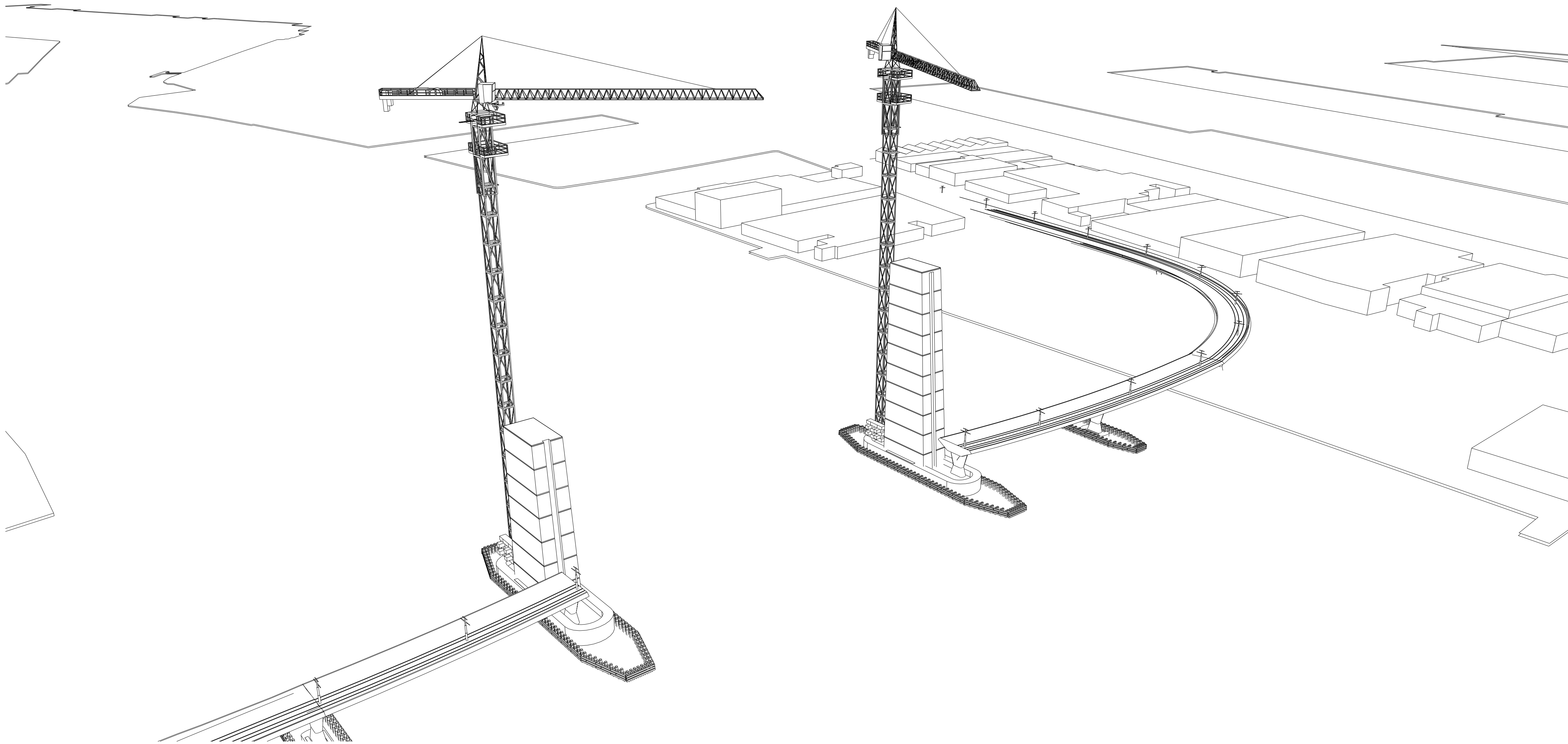
Building sequence

# DESIGN EXPLANATION



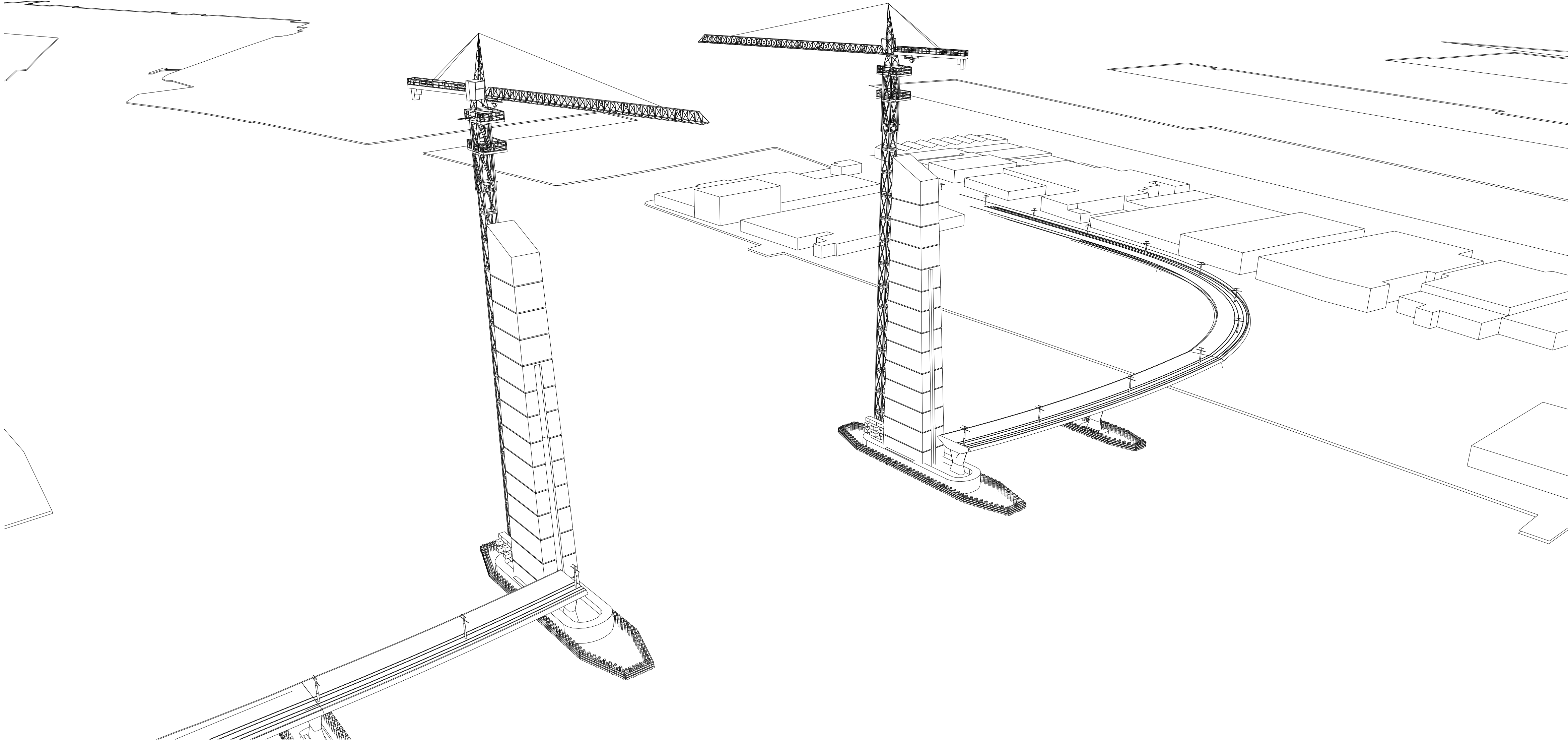
Building sequence

# DESIGN EXPLANATION



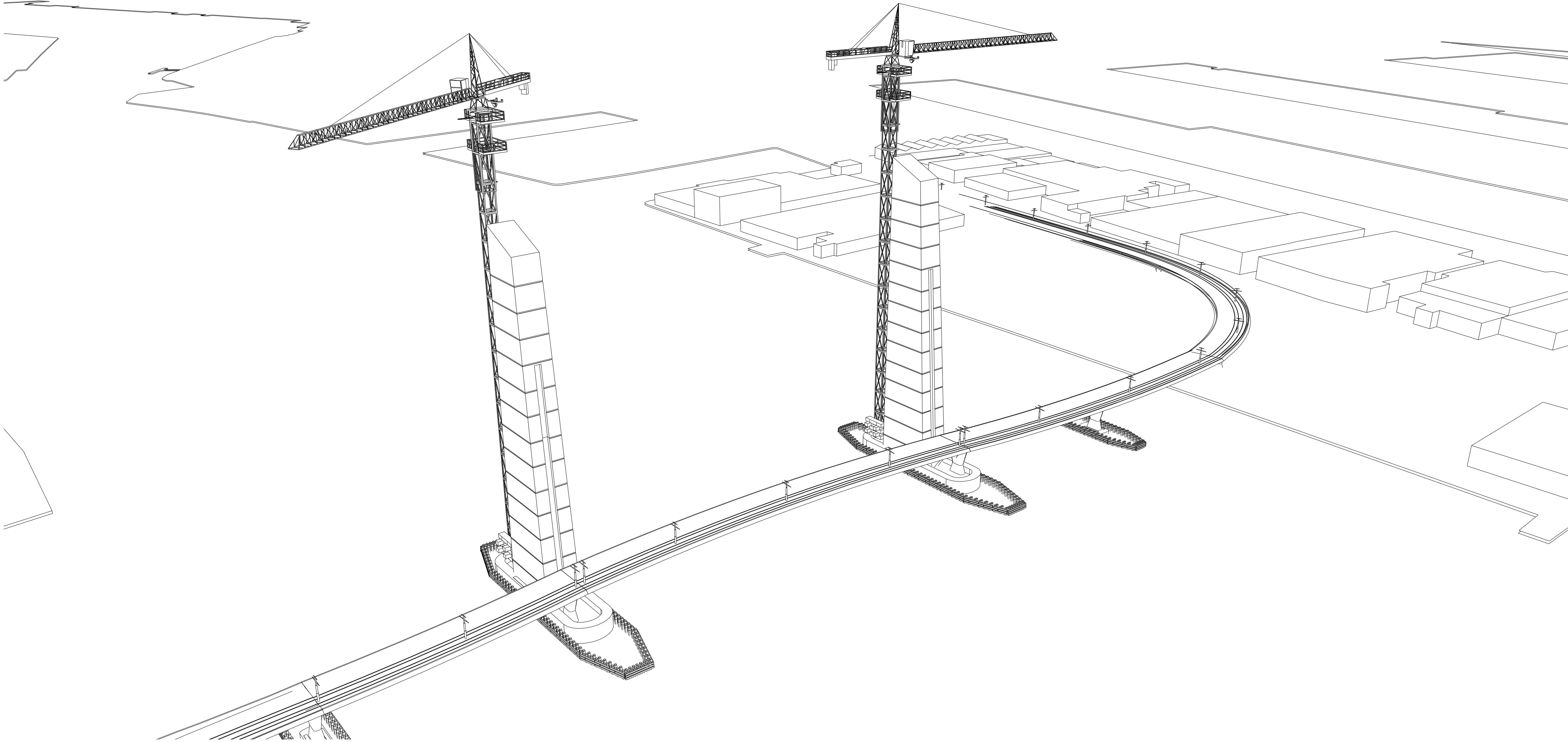
Building sequence

# DESIGN EXPLANATION



Building sequence

# DESIGN EXPLANATION



Building sequence

# FINAL DESIGN



# CONCLUSIONS

Both the Delfshaven and Waalhaven area, as well as the surrounding areas can benefit from the crossing

The chosen location is very suitable for executing the aimed mobility plans

Integration and use of the quays boosts the value of the design

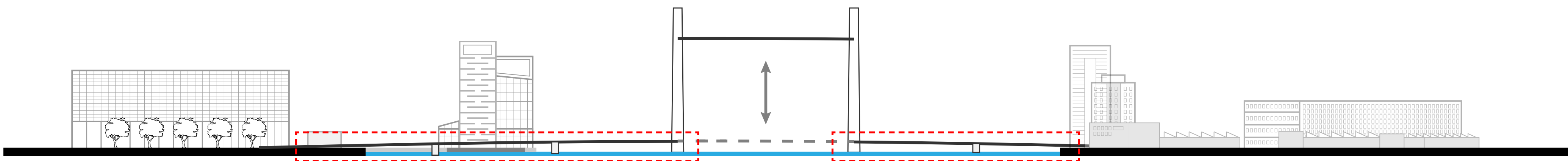
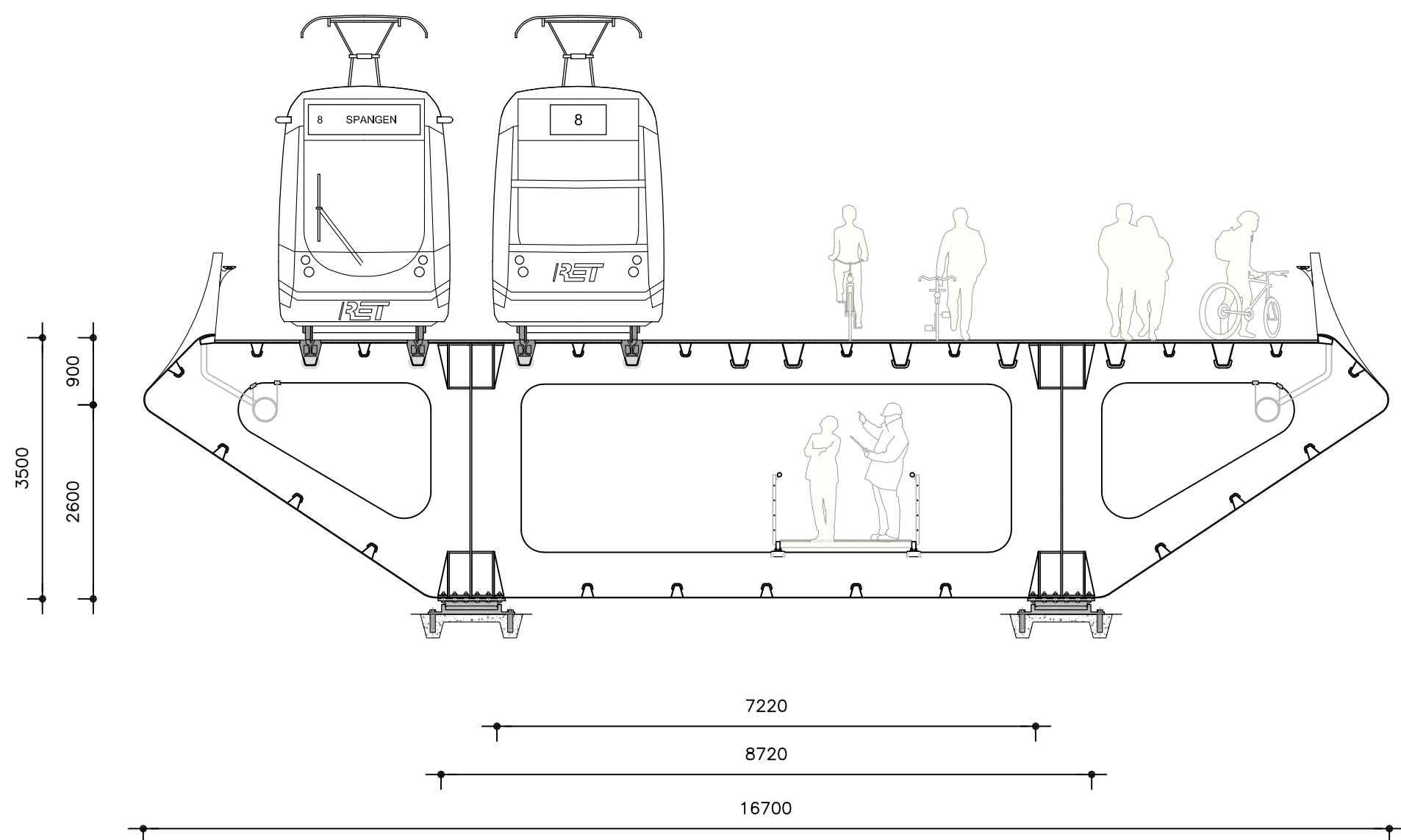
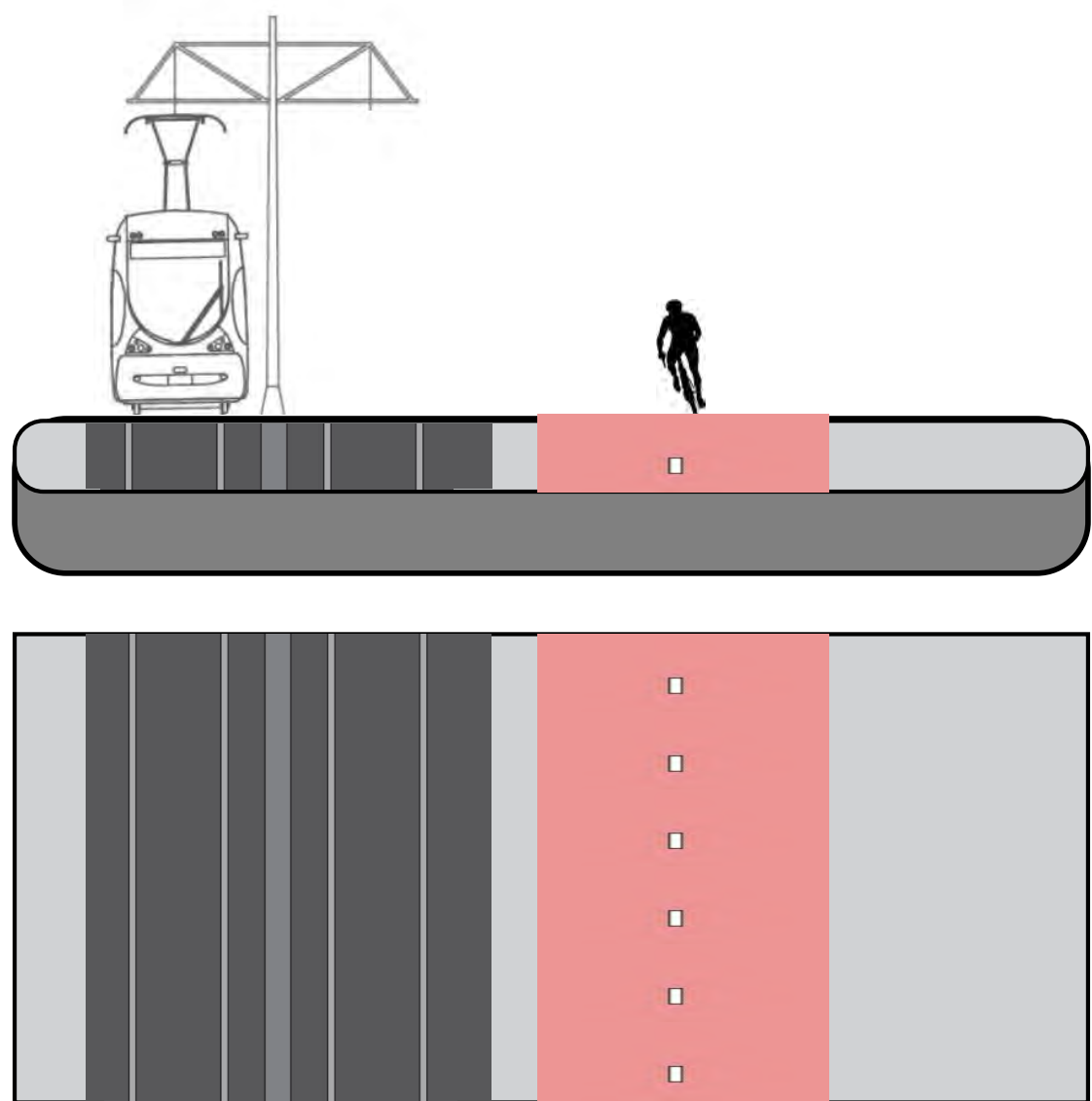
# QUESTIONS?





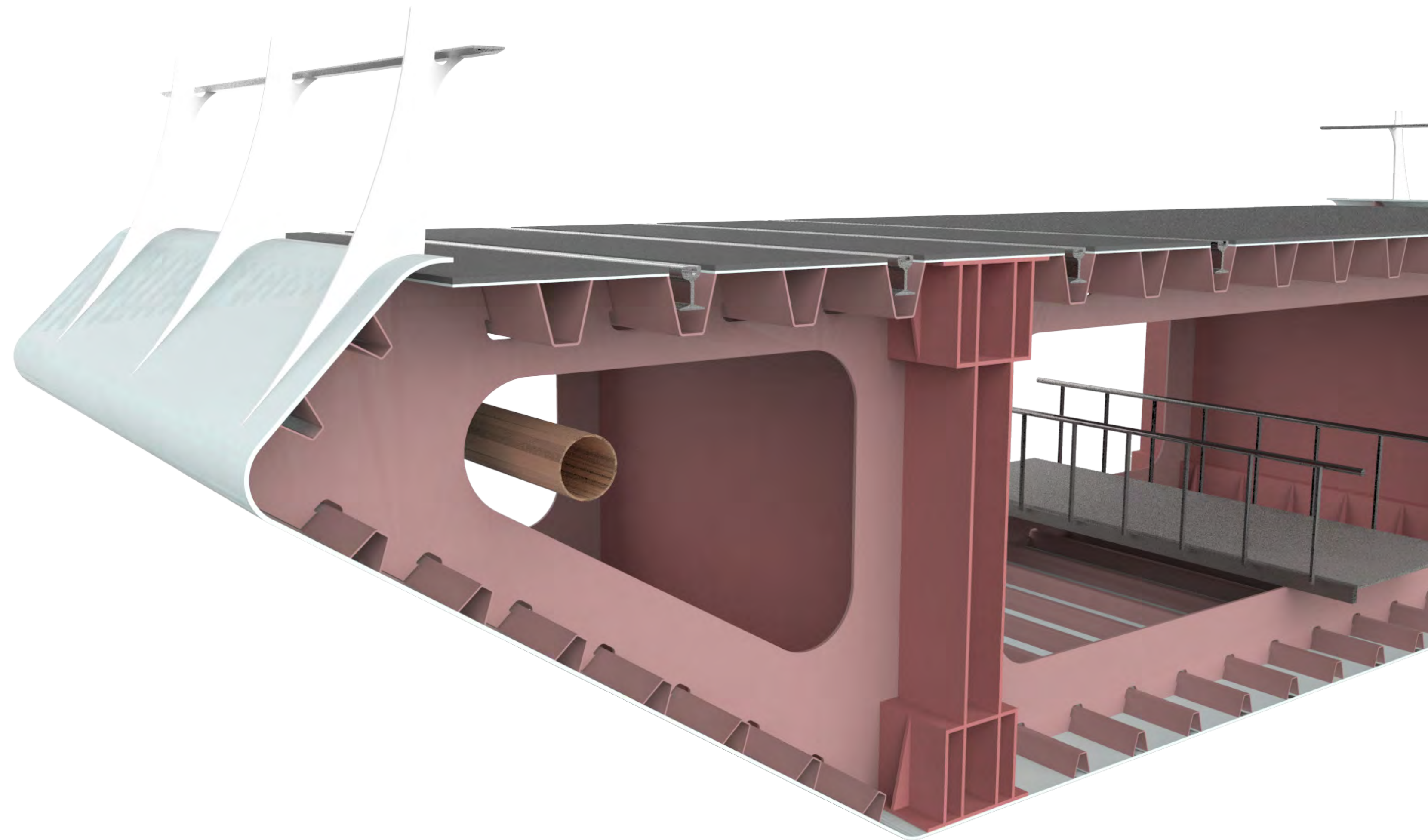


# DESIGN EXPLANATION



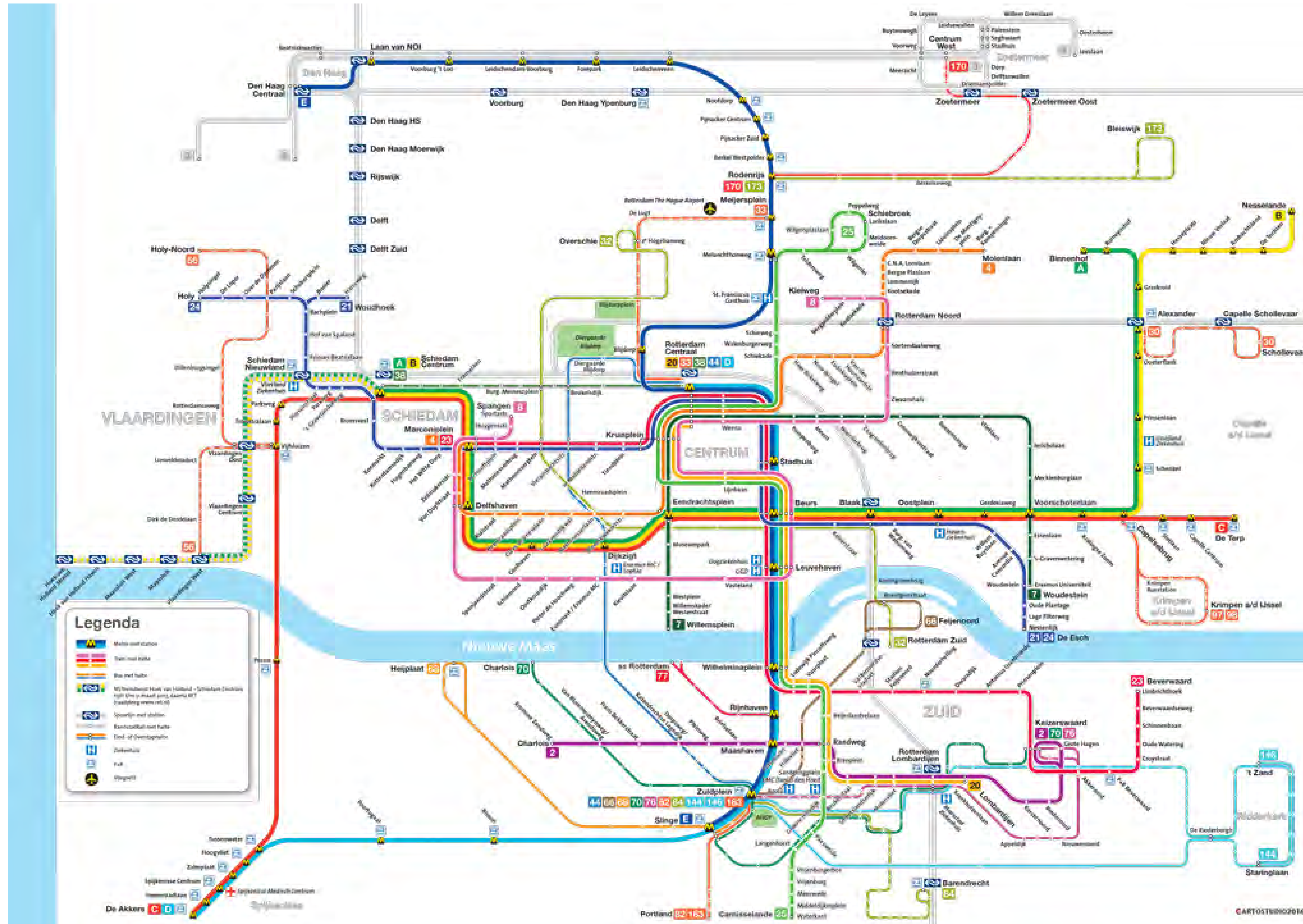
Bridge deck

# DESIGN EXPLANATION



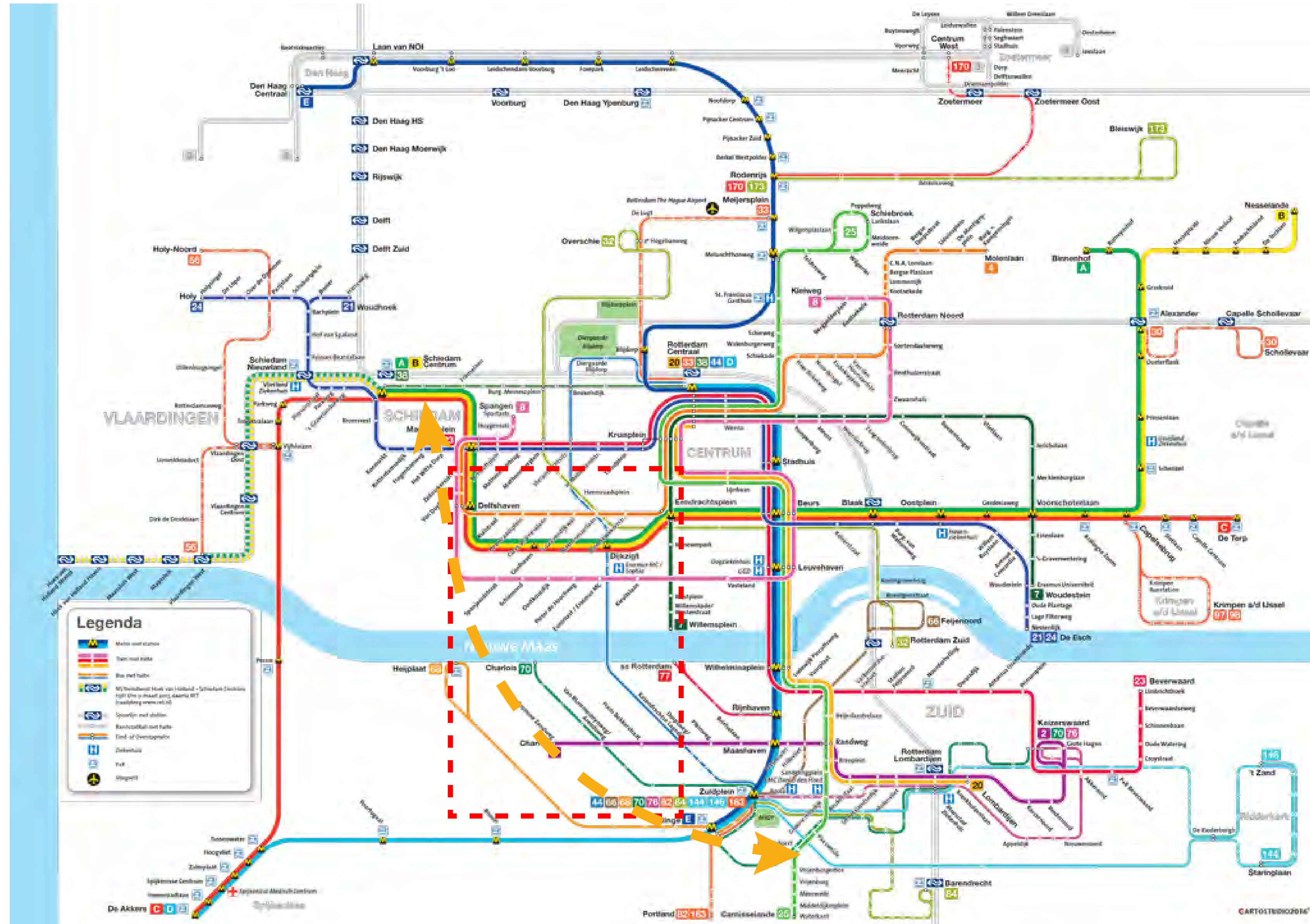
Bridge deck

# DESIGN EXPLANATION



Designing the route

# DESIGN EXPLANATION



Designing the route

# DESIGN EXPLANATION

