BRIDGE ARCHITECTURE

Architecture without architects does not exist

Architecture without architects does not exist

WHY?

Architecture without architects
does not exist
WHY?
Because,

Architecture without architects
does not exist
WHY?
Because,
if it is architecture

Architecture without architects
does not exist
WHY?
Because,
if it is architecture
architects were involved.

We may look at it the other way around.

We may look at it the other way around.
If it is not architecture there were no
architects involved.

Do we need architecture?

Do we need architecture?
The short version is –

Do we need architecture?
The short version is –
as you may have guessed

Do we need architecture?
The short version is –
as you may have guessed
YES

What then about bridge architecture?

What then about bridge architecture?
What should the bridge engineer do?

What then about bridge architecture?
What should the bridge engineer do?
Is there an end to all these questions?

What then about bridge architecture?

What should the bridge engineer do?

Is there an end to all these questions?

NOT REALLY

What then about bridge architecture?

What should the bridge engineer do?

Is there an end to all these questions?

NOT REALLY

But

But there is a beginning.

But there is a beginning.
You should, by now, know the answer.

But there is a beginning.
You should, by now, know the answer.
Team up with an architect.
A bridge architect.

But there is a beginning.

You should, by now, know the answer.

Team up with an architect.

A bridge architect.

WE ARE GETTING TO THE POINT

But there is a beginning.
You should, by now, know the answer.
Team up with an architect.
A bridge architect.
WE ARE GETTING TO THE POINT
The point of departure for great things to happen.

Collaboration

Collaboration
Engineer and architect

Collaboration
Engineer and architect
Synergy

Collaboration
Engineer and architect
Synergy
What follows is

Collaboration
Engineer and architect
Synergy
What follows is
with sincere gratitude

Collaboration
Engineer and architect
Synergy
What follows is
with sincere gratitude
from D+W

LOCATION

GREAT BELT LINK
Zealand-Funen, Denmark
1988-1998

BRYGGEBROEN (THE QUAY BRIDGE)
Copenhagen, Denmark
2004-2006

ÅBUEN
Copenhagen, Denmark
2005-2008

CYKELSLANGEN (THE BICYCLE SNAKE)
Copenhagen, Denmark
2010-2014

FOLEHAVEN
Valby, Copenhagen, Denmark
2015-

ODENSE PEDESTRIAN BRIDGE
Odense, Denmark
2012

STORSTRØMS BRIDGE
Zealand-Falster, Denmark
2012-

KØGE NORTH STATION
Køge, Denmark
2014-

UNIVERSITY BRIDGE
Malmö, Sweden
2001-2004

SOFIERO PEDESTRIAN BRIDGE
Sofiero Park, Helsingborg, Sweden
2016-

HISINGS BRIDGE
Gothenburg, Sweden
2013-

POOLE HARBOUR CROSSING
Poole, United Kingdom
1996-1997

DIE ZWEITE HINTERRHEINBRÜCKE
Reichenau, Switzerland
2015-

NEW BRIDGE FOR THE ST. LAWRENCE RIVER
Montreal, Canada
2014-

XIAMEN BICYCLE PATHS
Xiamen, China
2016-

SHENZEN-ZHONGSHAN LINK
Guandong, China
2016-

STONECUTTERS BRIDGE
Hong Kong
2000-2009

BRIDGE TYPE

PEDESTRIAN
SOFIERO PEDESTRIAN BRIDGE
Sofiero Park, Helsingborg, Sweden

KØGE NORTH STATION
Køge, Denmark

BICYCLE
CYKELSLANGEN (BICYCLE SNAKE)
Copenhagen, Denmark

XIAMEN BICYCLE PATHS
Xiamen, China

PEDESTRIAN- AND BICYCLE BRIDGES
BRYGGEBROEN (THE QUAY BRIDGE)
Copenhagen, Denmark

ÅBUEN
Copenhagen, Denmark

ODENSE PEDESTRIAN BRIDGE
Odense, Denmark

ROAD- AND RAILROAD BRIDGES
HISINGS BRIDGE
Gothenburg, Sweden

MOTORWAY BRIDGES
STONECUTTERS BRIDGE
Hong Kong

POOLE HARBOUR CROSSING
Poole, United Kingdom

RAILROAD BRIDGES
DIE ZWEITE HINTERRHEINBRÜCKE
Reichenau, Switzerland

FIXED LINK
SHENZEN-ZHONGSHAN LINK
Guandong, China

GREAT BELT LINK
Zealand-Funen, Denmark

STRUCTURAL SYSTEMS

ARCH BRIDGE
ÅBUEN
Copenhagen, Denmark

BEAM BRIDGE
KØGE NORTH STATION
Køge, Denmark

ODENSE PEDESTRIAN BRIDGE
Odense, Denmark

BOX GIRDER BRIDGE
SOFIERO PEDESTRIAN BRIDGE
Sofiero Park, Helsingborg, Sweden

CYKELSLANGEN (BICYCLE SNAKE)
Copenhagen, Denmark

BRYGGEBROEN (THE QUAY BRIDGE)
Copenhagen, Denmark

HISINGS BRIDGE
Gothenburg, Sweden

XIAMEN BICYCLE PATHS
Xiamen, China

CABLE-STAYED BRIDGE
STONECUTTERS BRIDGE
Hong Kong

POOLE HARBOUR CROSSING
Poole, United Kingdom

SUSPENSION BRIDGE
SHENZEN-ZHONGSHAN LINK
Guandong, China

GREAT BELT LINK
Zealand-Funen, Denmark

TROUGH BRIDGE
DIE ZWEITE HINTERRHEINBRÜCKE
Reichenau, Switzerland

YEAR

GREAT BELT LINK
Zealand-Funen, Denmark
1988-1998

POOLE HARBOUR CROSSING
Poole, United Kingdom
1996-1997

STONECUTTERS BRIDGE
Hong Kong
2000-2009

BRYGGEBROEN
Copenhagen, Denmark
2004-2006

ÅBUEN
Copenhagen, Denmark
2005-2008

CYKELSLANGEN
Copenhagen, Denmark
2010-2014

ODENSE PEDESTRIAN BRIDGE
Odense, Denmark
2012

HISINGS BRIDGE
Gothenburg, Sweden
2013-

KØGE NORTH STATION
Køge, Denmark
2014-

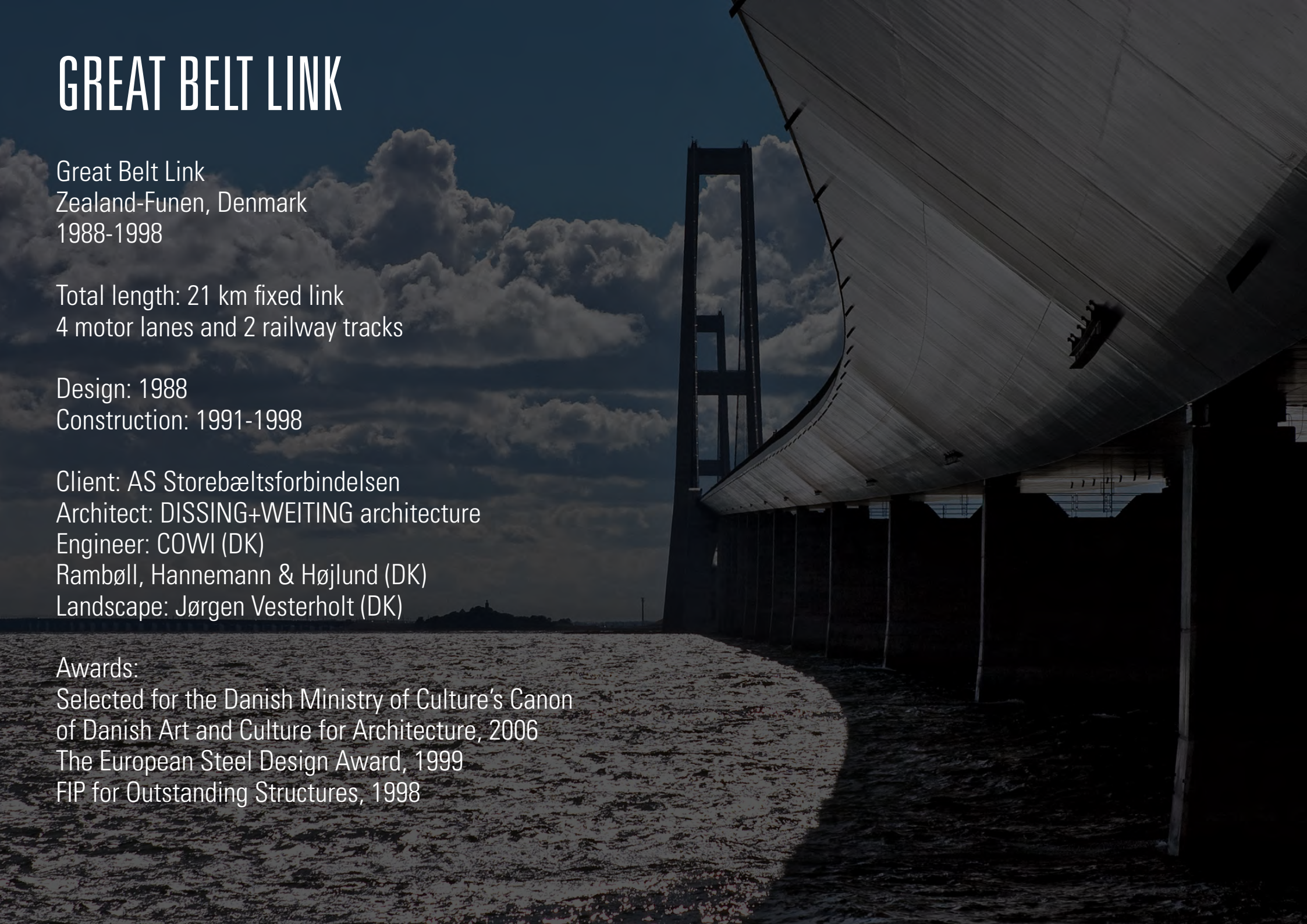
DIE ZEWITE HINTERRHEINBRÜCKE
Reichenau, Switzerland
2015-

SOFIERO PEDESTRIAN BRIDGE
Sofiero Park, Helsingborg, Sweden
2016-

XIAMEN BICYCLE PATHS
Xiamen, China
2016-

SHENZEN-ZHONGSHAN LINK
Guandong, China
2016-

GREAT BELT LINK



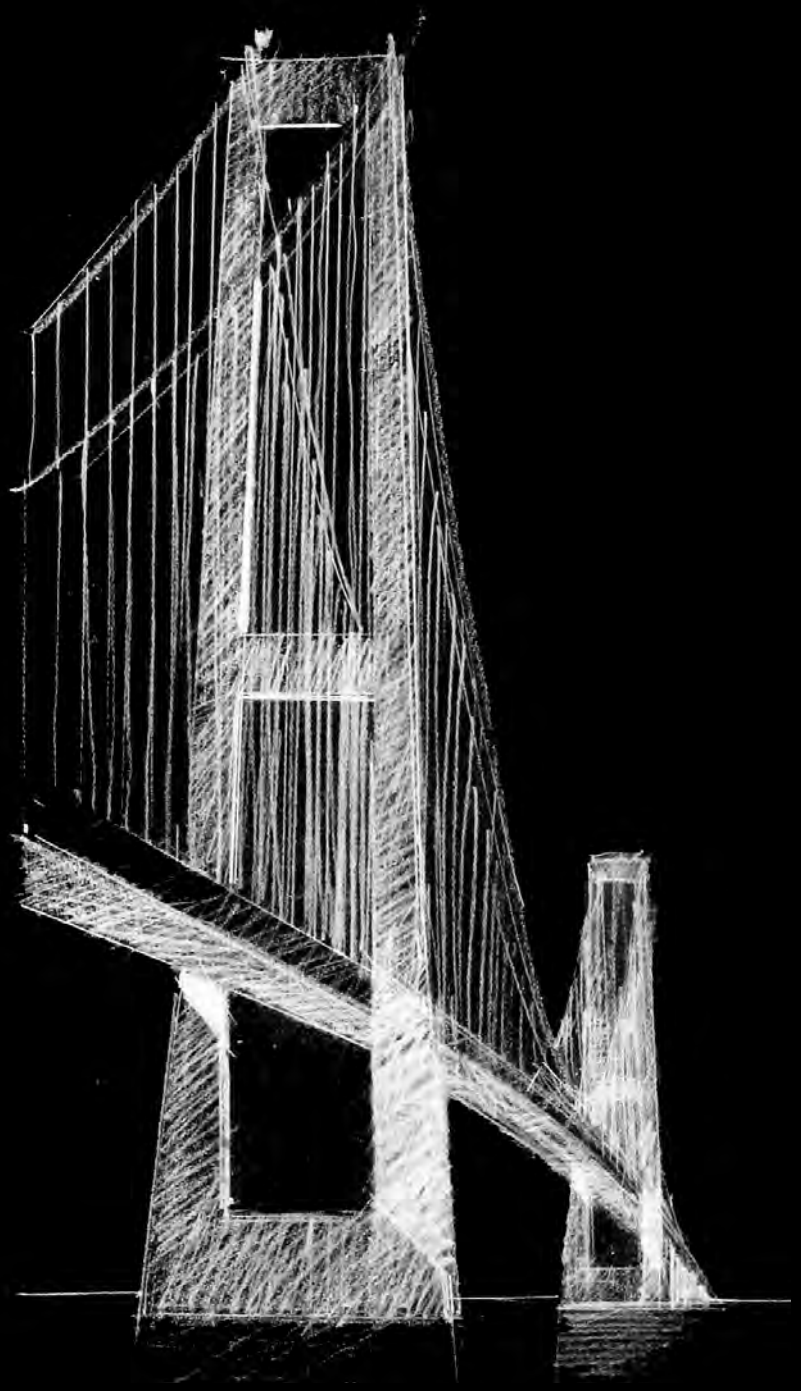
Great Belt Link
Zealand-Funen, Denmark
1988-1998

Total length: 21 km fixed link
4 motor lanes and 2 railway tracks

Design: 1988
Construction: 1991-1998

Client: AS Storebæltsforbindelsen
Architect: DISSING+WEITING architecture
Engineer: COWI (DK)
Rambøll, Hannemann & Højlund (DK)
Landscape: Jørgen Vesterholt (DK)

Awards:
Selected for the Danish Ministry of Culture's Canon
of Danish Art and Culture for Architecture, 2006
The European Steel Design Award, 1999
FIP for Outstanding Structures, 1998



POOLE HARBOUR CROSSING

Poole Harbour Crossing
Poole, United Kingdom
Competition 1996, 1st prize

Cable-stayed bridge
Length: 720m

Client: Ministry of Transport, England
Architect: DISSING+WEITLING architecture
Engineer: Flint & Neill (UK) & Rambøll (DK)


VALER

STONECUTTERS BRIDGE

Stonecutters Bridge
Hong Kong
Competition: 2000, 1st prize
Completed: 2009

Cable-stayed motorway bridge with dual 3 lanes

Total length: 1592m
Main span: 1016m
Height of pylons: 290m
Navigation clearance in main span: 73.5m

Client: Hong Kong Highways Department
Architect: DISSING+WEITLING architecture
Engineer:
Flint & Neill (UK), Halcrow (UK), SMEDI (China)

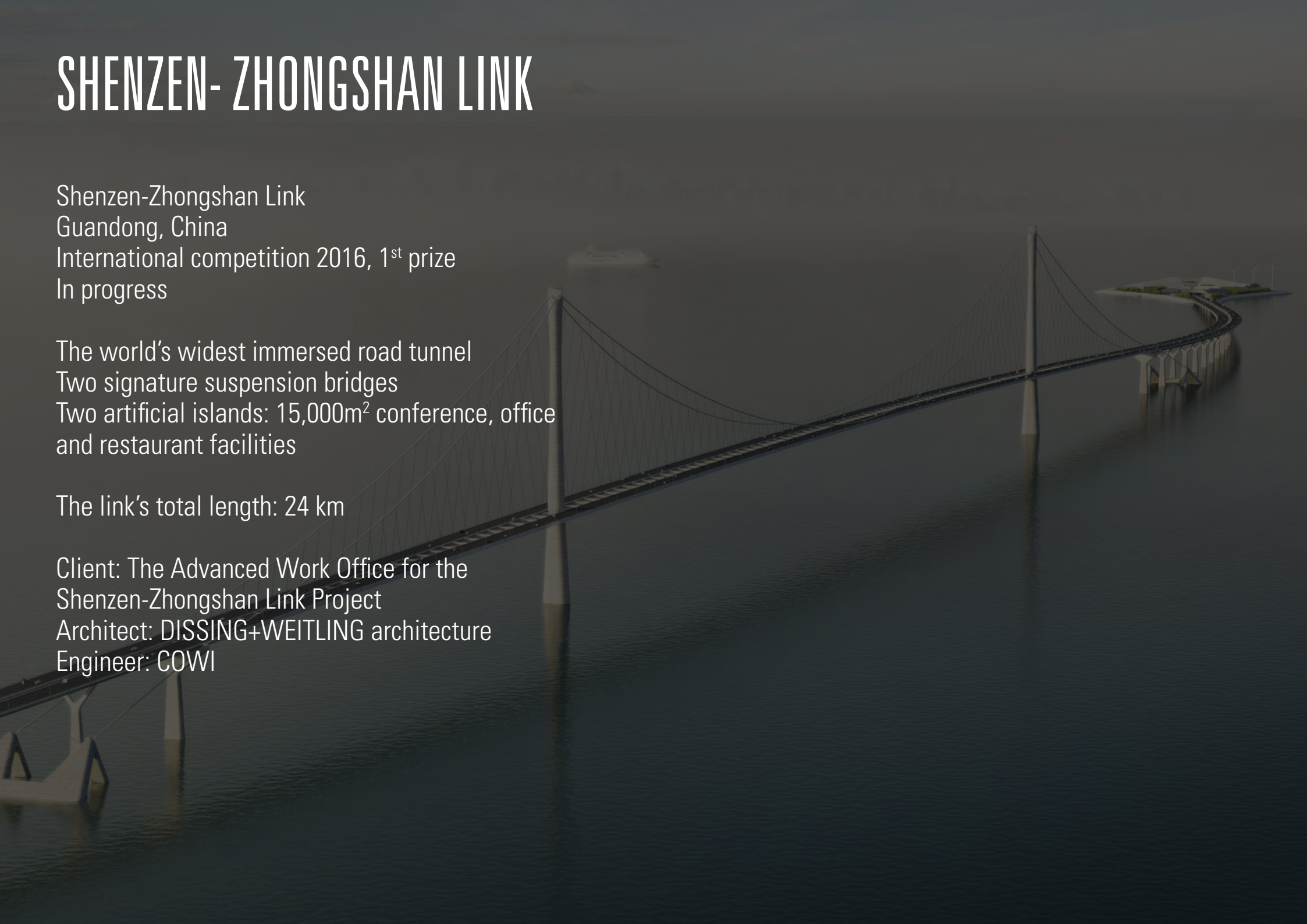
SHENZEN- ZHONGSHAN LINK

Shenzen-Zhongshan Link
Guandong, China
International competition 2016, 1st prize
In progress

The world's widest immersed road tunnel
Two signature suspension bridges
Two artificial islands: 15,000m^2 conference, office and restaurant facilities

The link's total length: 24 km

Client: The Advanced Work Office for the Shenzen-Zhongshan Link Project
Architect: DISSING+WEITLING architecture
Engineer: COWI



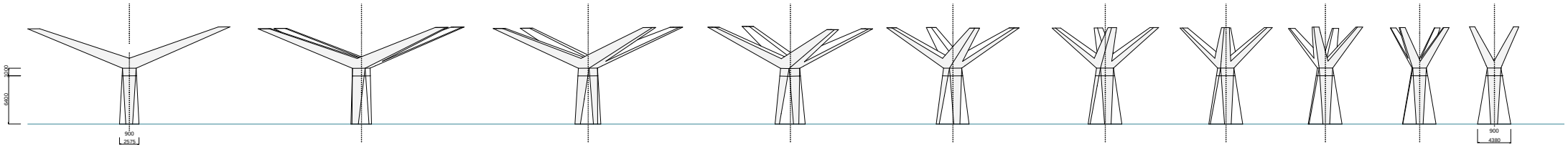
DIE ZWEITE HINTERRHEINBRÜCKE

Die Zweite Hinterrheinbrücke
Reichenau, Switzerland
Competition 2015, 1st prize
In progress

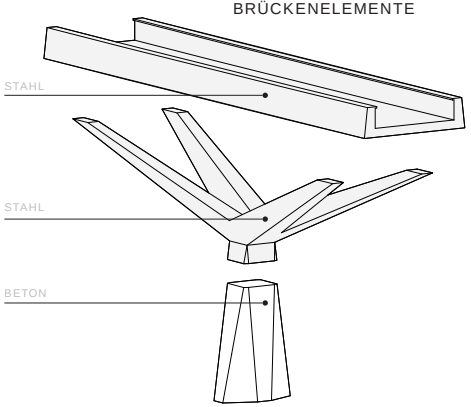
Railway Bridge
Length: 185m
Main span: 62m

Client: Rhätische Bahn AG (RhB)
Architect: DISSING+WEITLING architecture
Engineer:
Flint & Neill (UK)
Walt+Galmarini (CH)

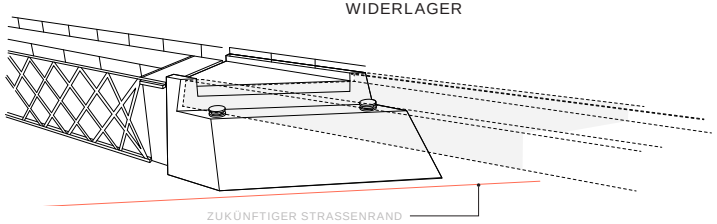
SCHNITT B - B



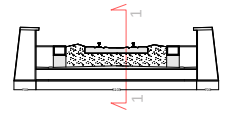
BRÜCKENELEMENTE



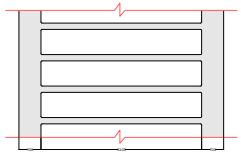
WIDERLAGER



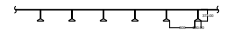
SCHNITT 1 - 1



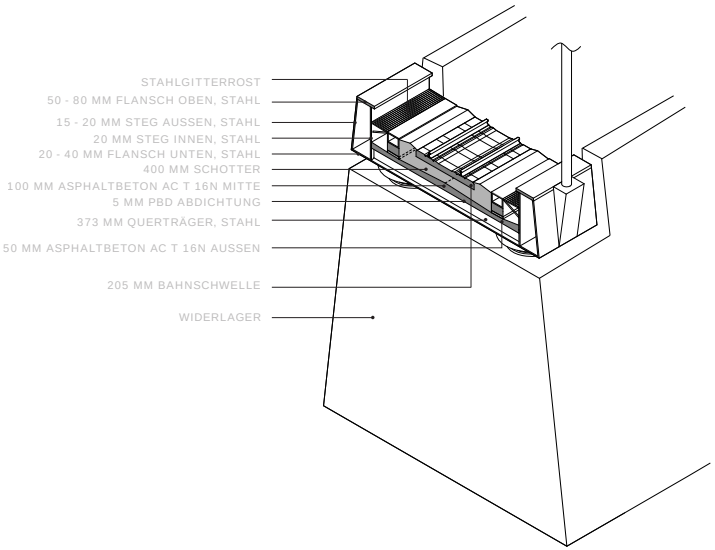
UNTERANSICHT



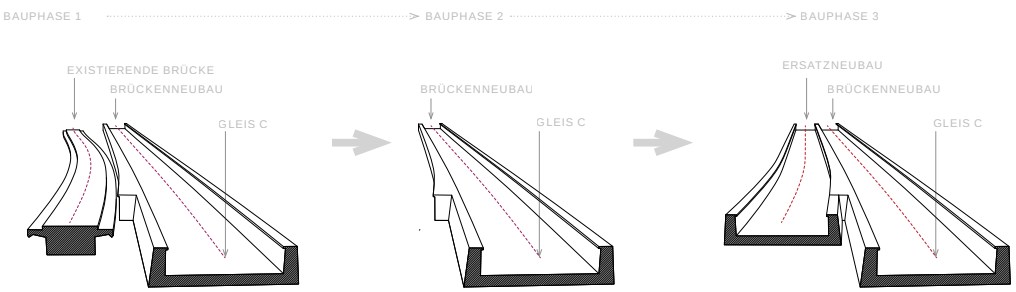
SCHNITT 1 - 1

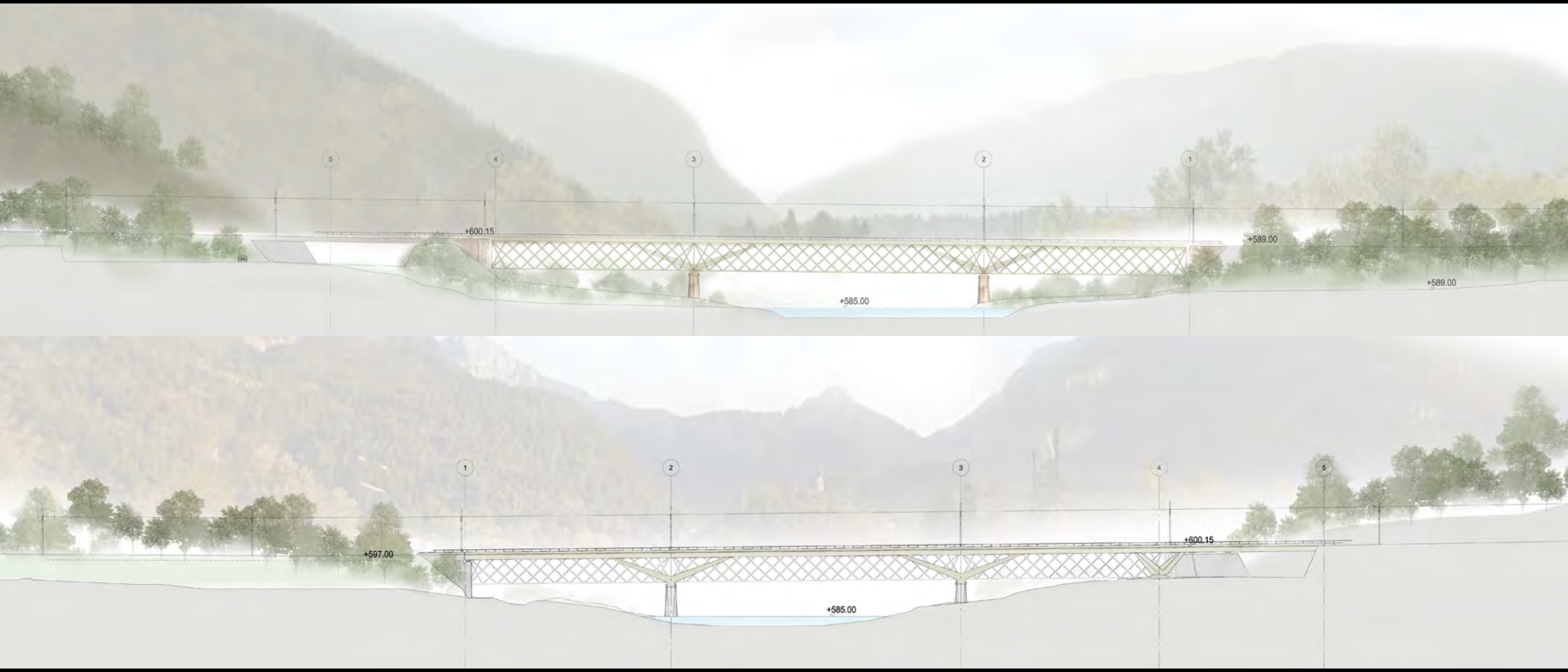


QUERSCHNITT DER NEUEN BRÜCKE AM WIDERLAGER



BRÜCKENABSCHNITT ÜBER DER STRASSE




5
4
3
2
1
+600.15
+589.00
+589.00
+585.00

1
2
3
4
5
+597.00
+600.15
+585.00


Querschnitt km 24.200
Querschnitt km 23.900

HISINGS BRIDGE

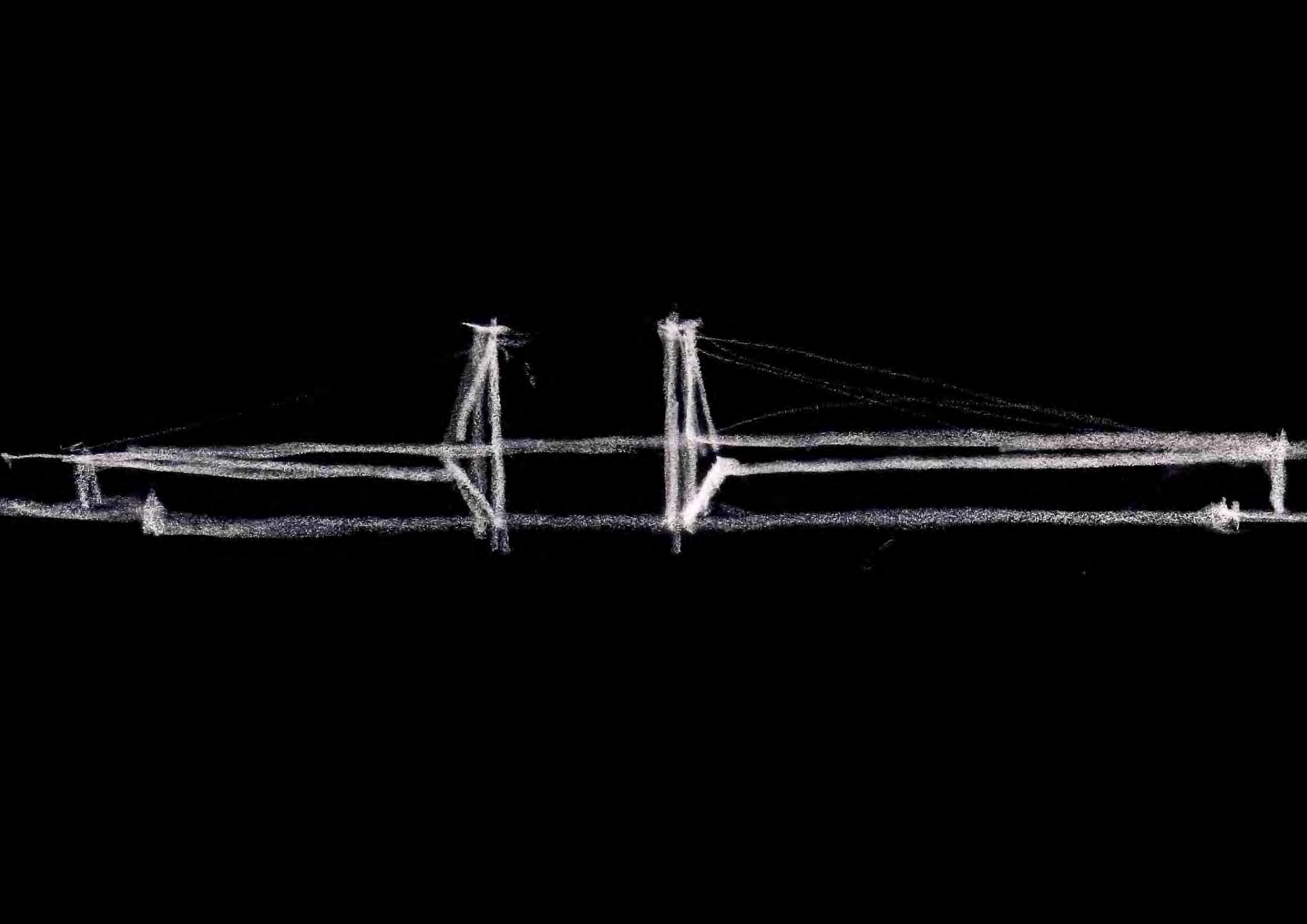
Hisings Bridge
Gothenburg, Sweden
Competition 2013, 1st prize
Completion: 2017

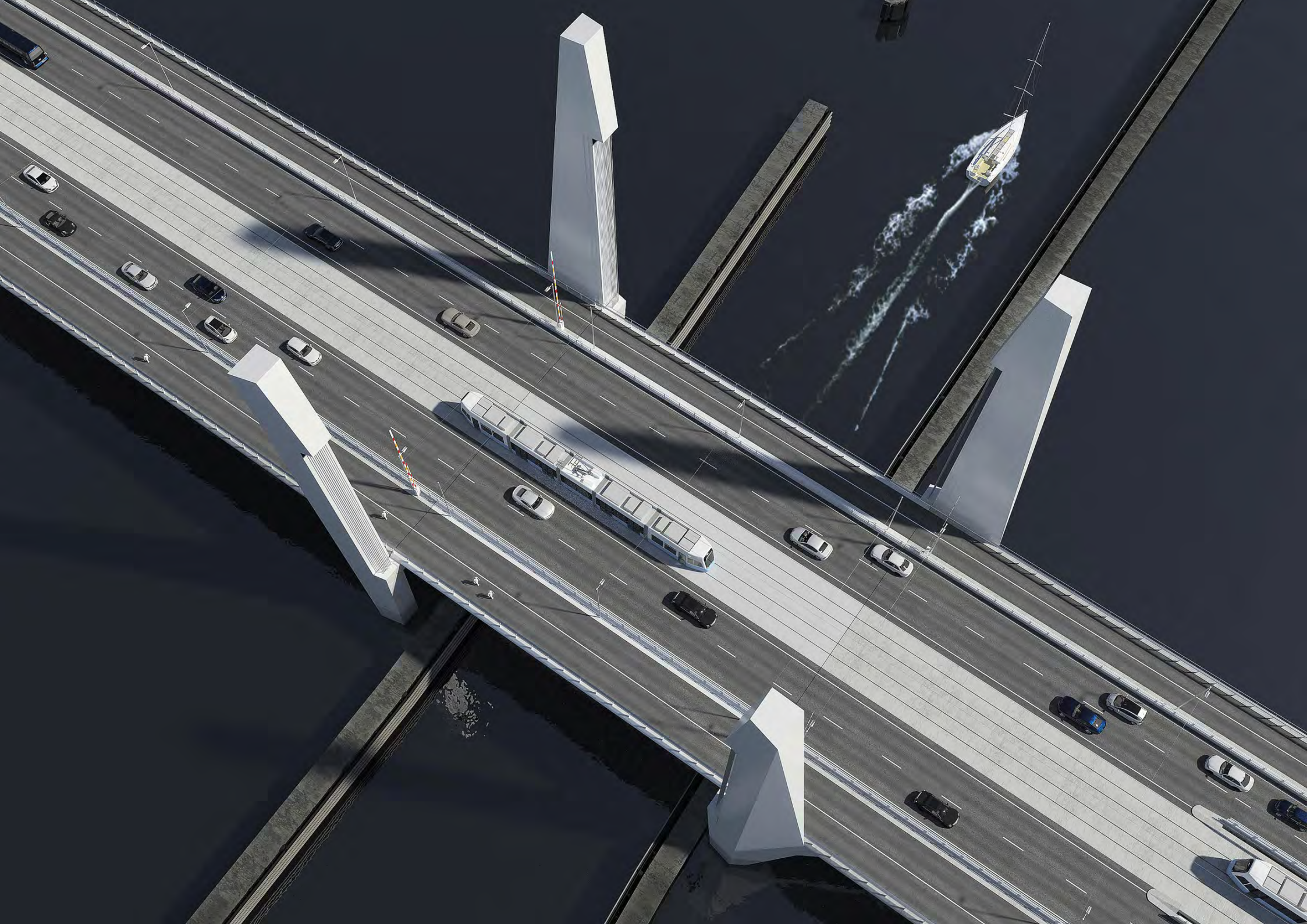
Vertical Lift Bridge

Length: 350m
The height of the lifted main span:
30m over water level

Client: City of Gothenburg
Architect: DISSING+WEITLING architecture
Engineer: ELU (SE) og Leonhardt, Andrä und Partner (DE)


SCHENUS V.S.V



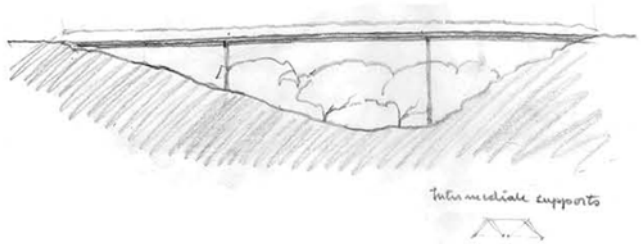


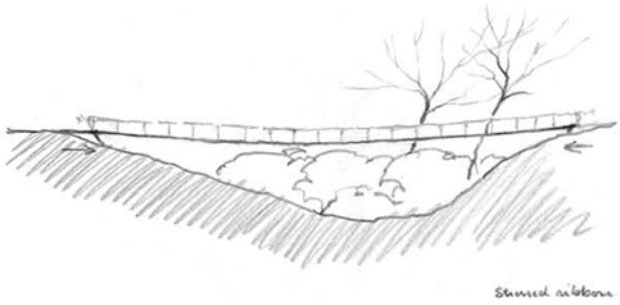
SOFIERO PEDESTRIAN BRIDGE

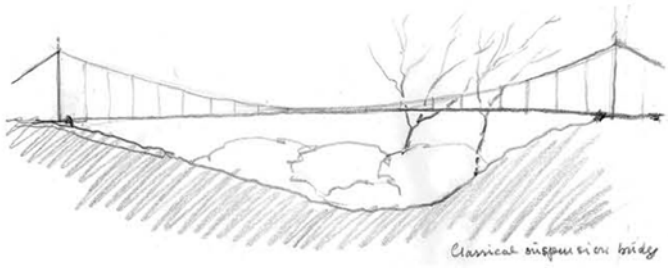
Sofiero Pedestrian Bridge
Sofiero park, Helsingborg, Sweden
Invited competition: 2016, 1st prize
In progress

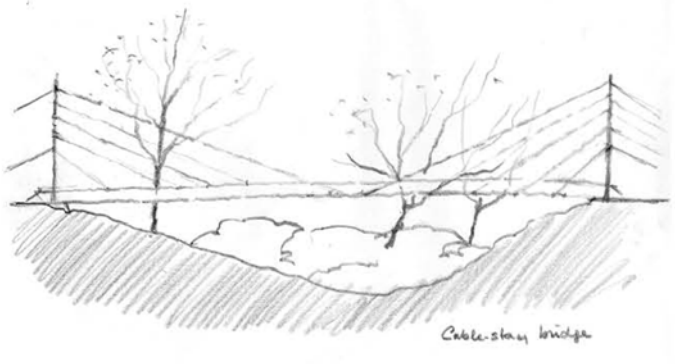
Pedestrian bridge
Length: 56,8m
Width: 2,6m

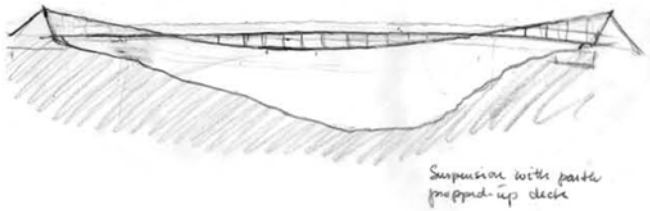
Client: City of Helsingborg
Architect: DISSING+WEITLING architecture
Ladscape: Becht aps
Engineer: schlaich bergermann und partner

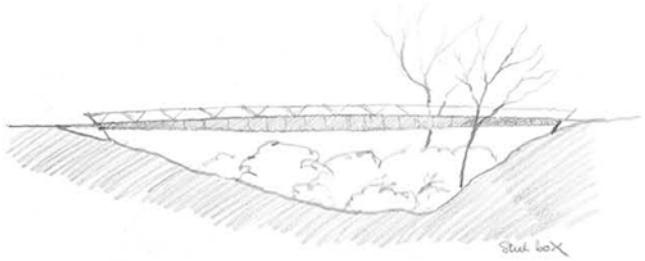

Intermediate supports

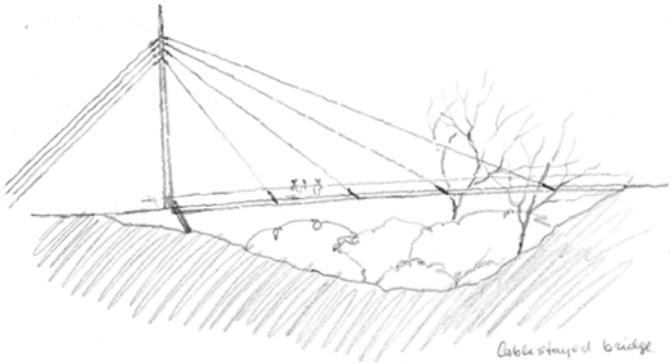

Stressed ribbons

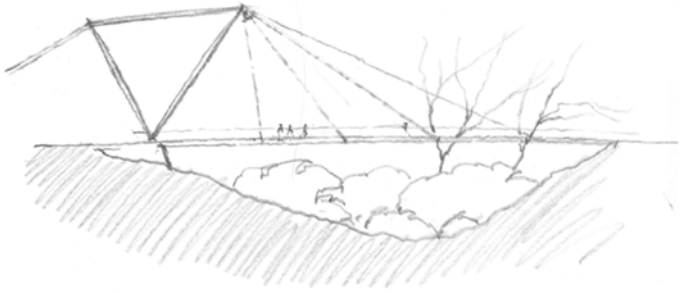

Classical suspension bridge

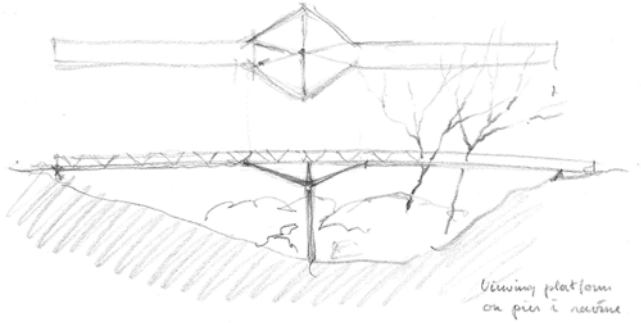

Cable-stay bridge

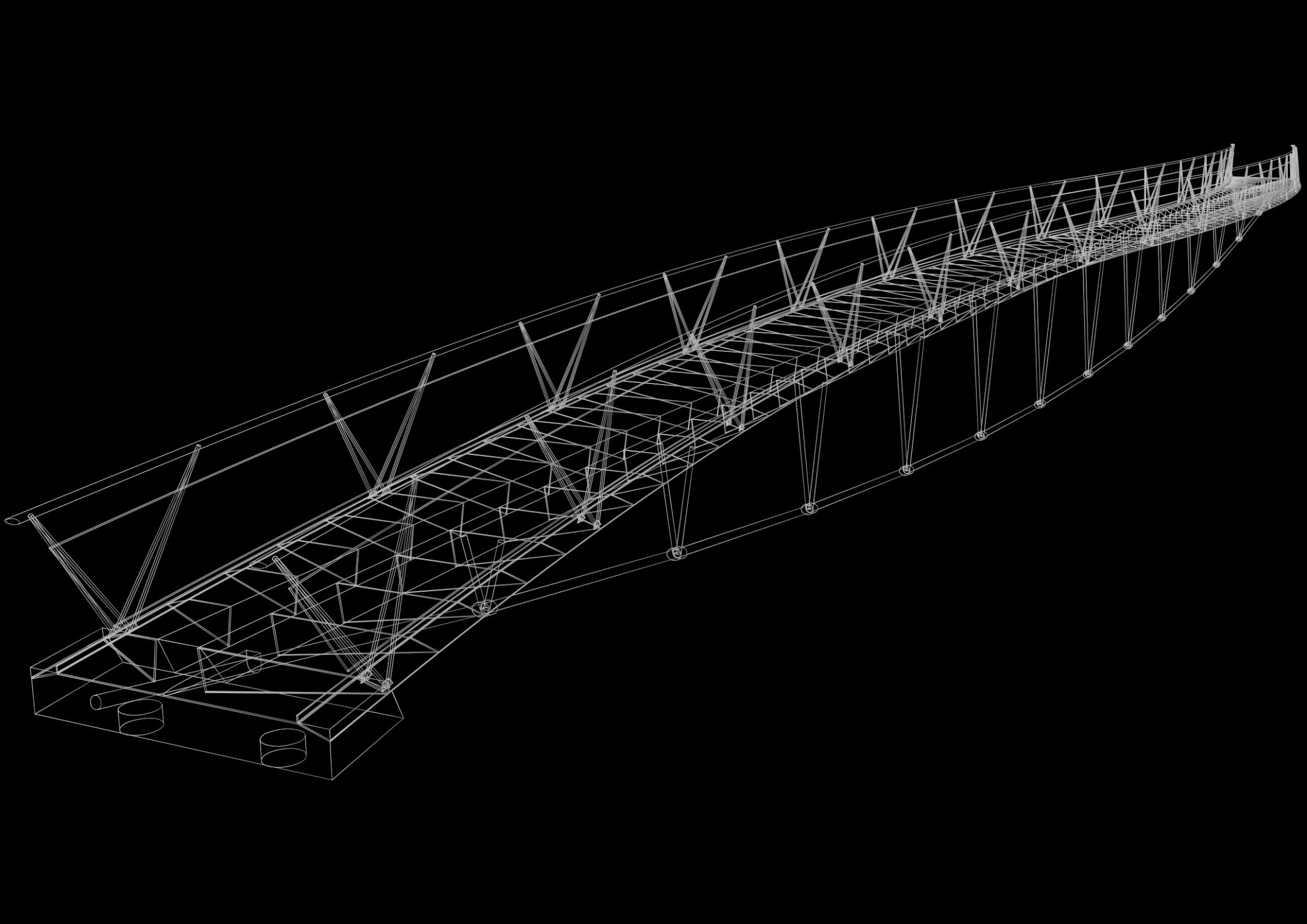

Suspension with partly
propped-up deck

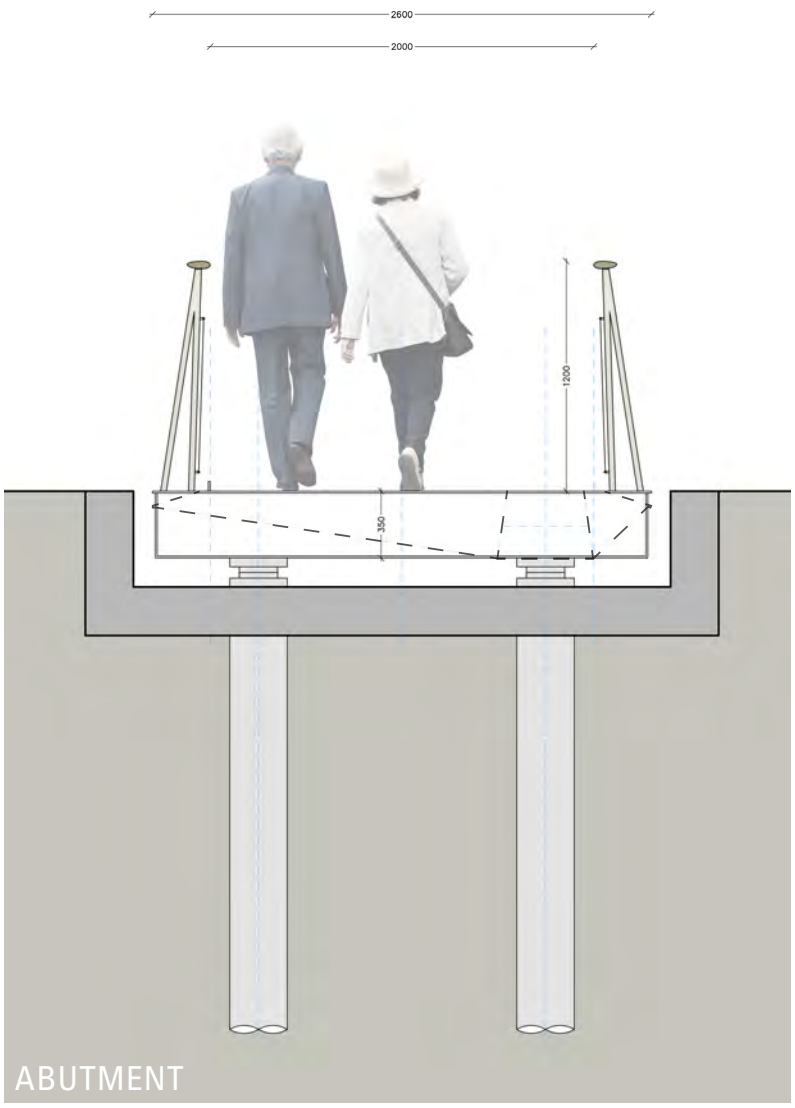

Stud box


Cable stayed bridge

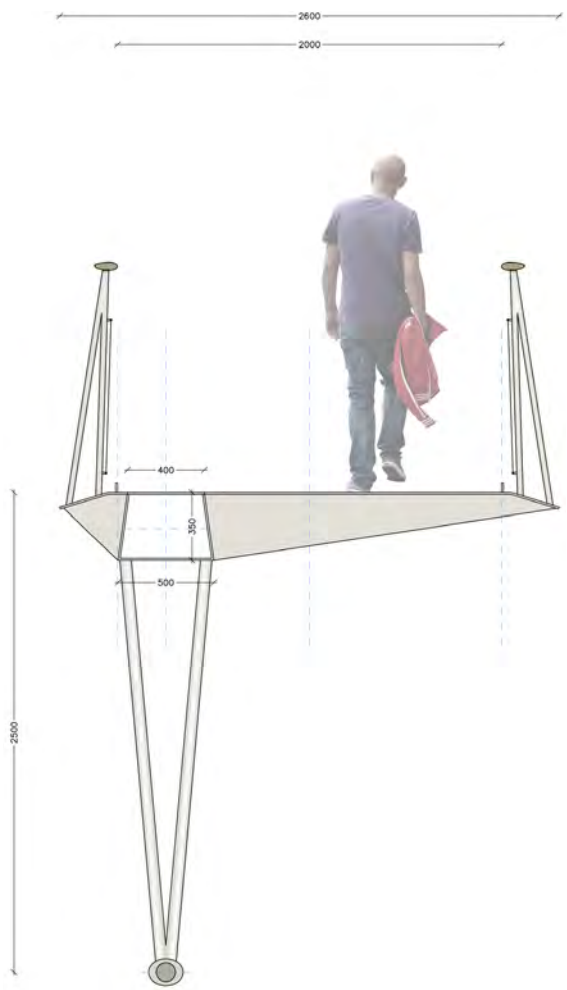



Viewing platform
on pier i narrow

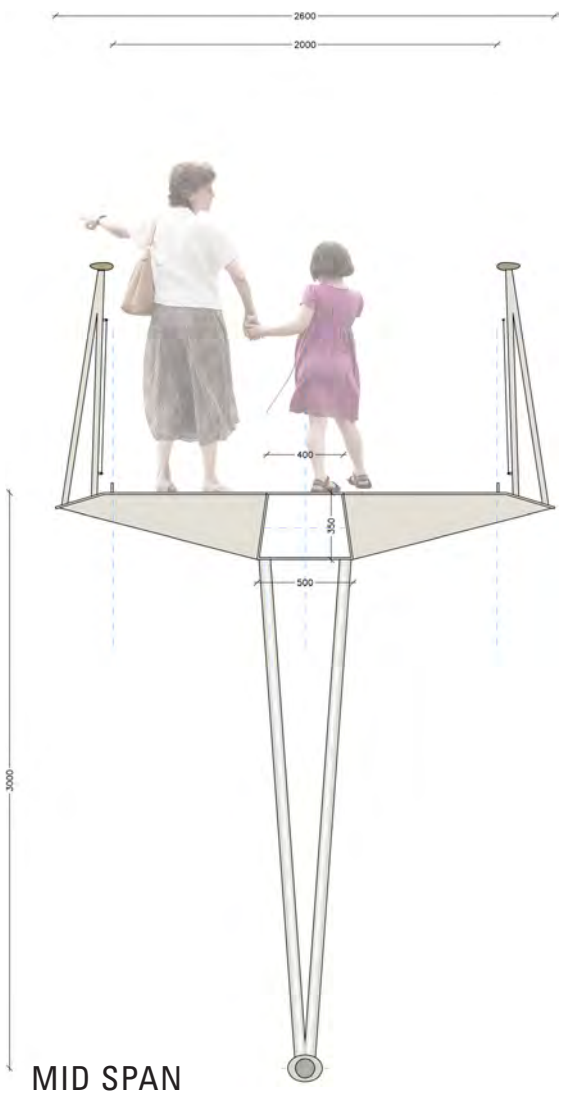




ABUTMENT



QUARTER SPAN



MID SPAN

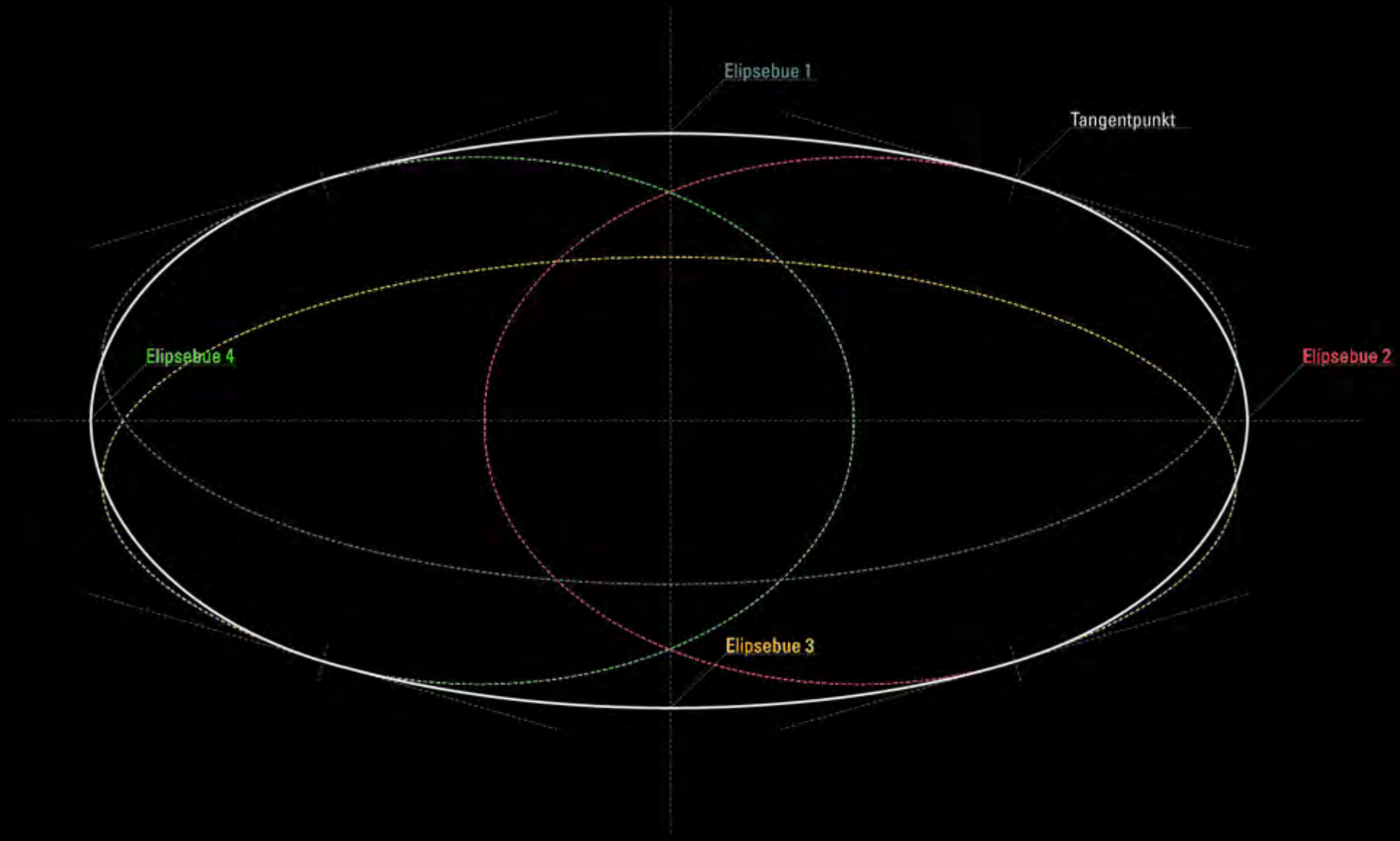
ODENSE PEDESTRIAN BRIDGE

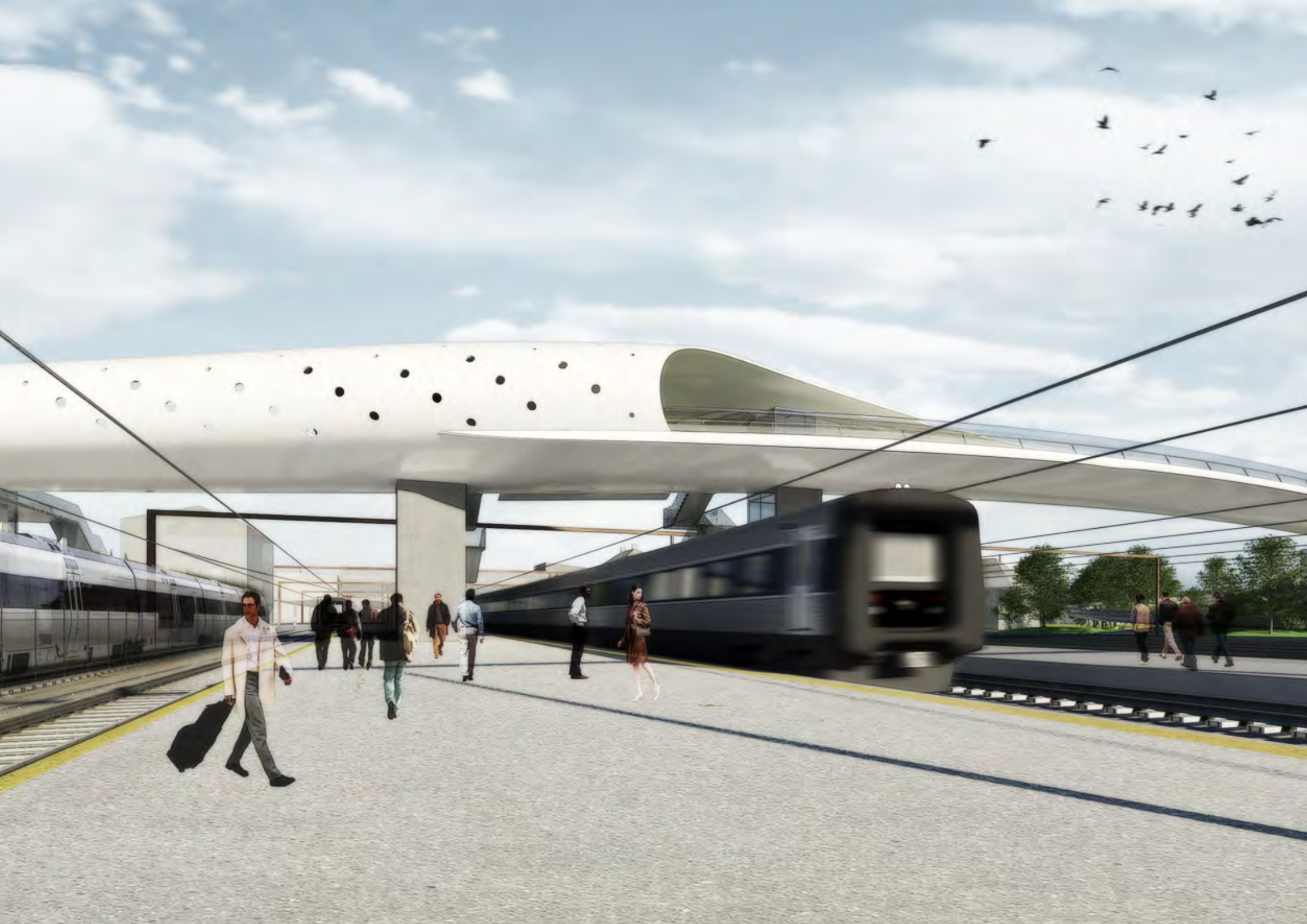
Odense Pedestrian Bridge
Odense, Denmark
2012

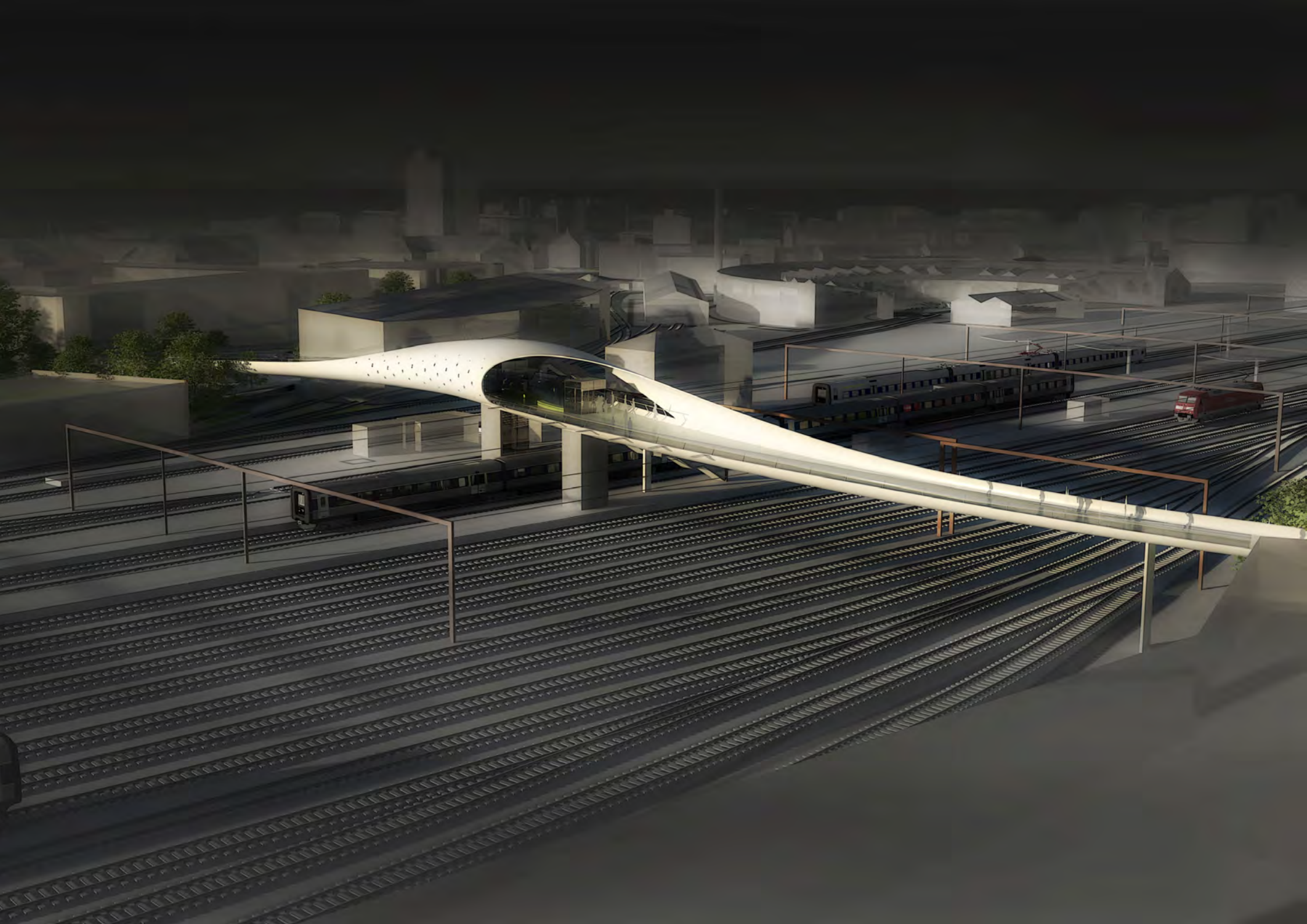
Pedestrian- and bicycle bridge

Lenght: 136m
Width: 4m - 8.2m

Client: Odense Municipality
Architect: DISSING+WEITLING architecture
Engineer: schlaich bergermann und partner


Elipsebue 1
Tangentpunkt
Elipsebue 4
Elipsebue 2
Elipsebue 3





METRÓ DU GRAND PARIS- LINE 18

Paris, France

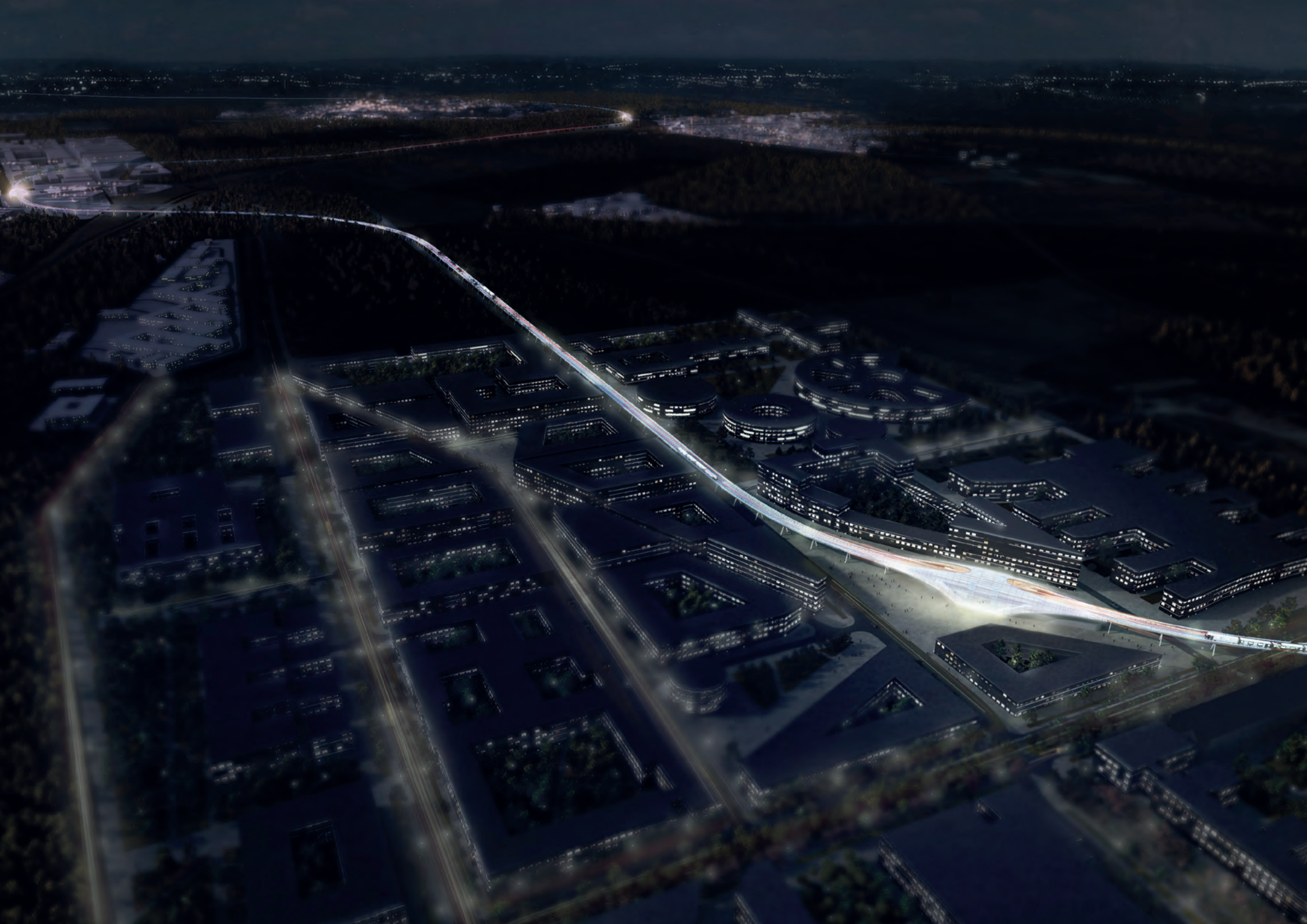
Competition 2015, 2nd prize

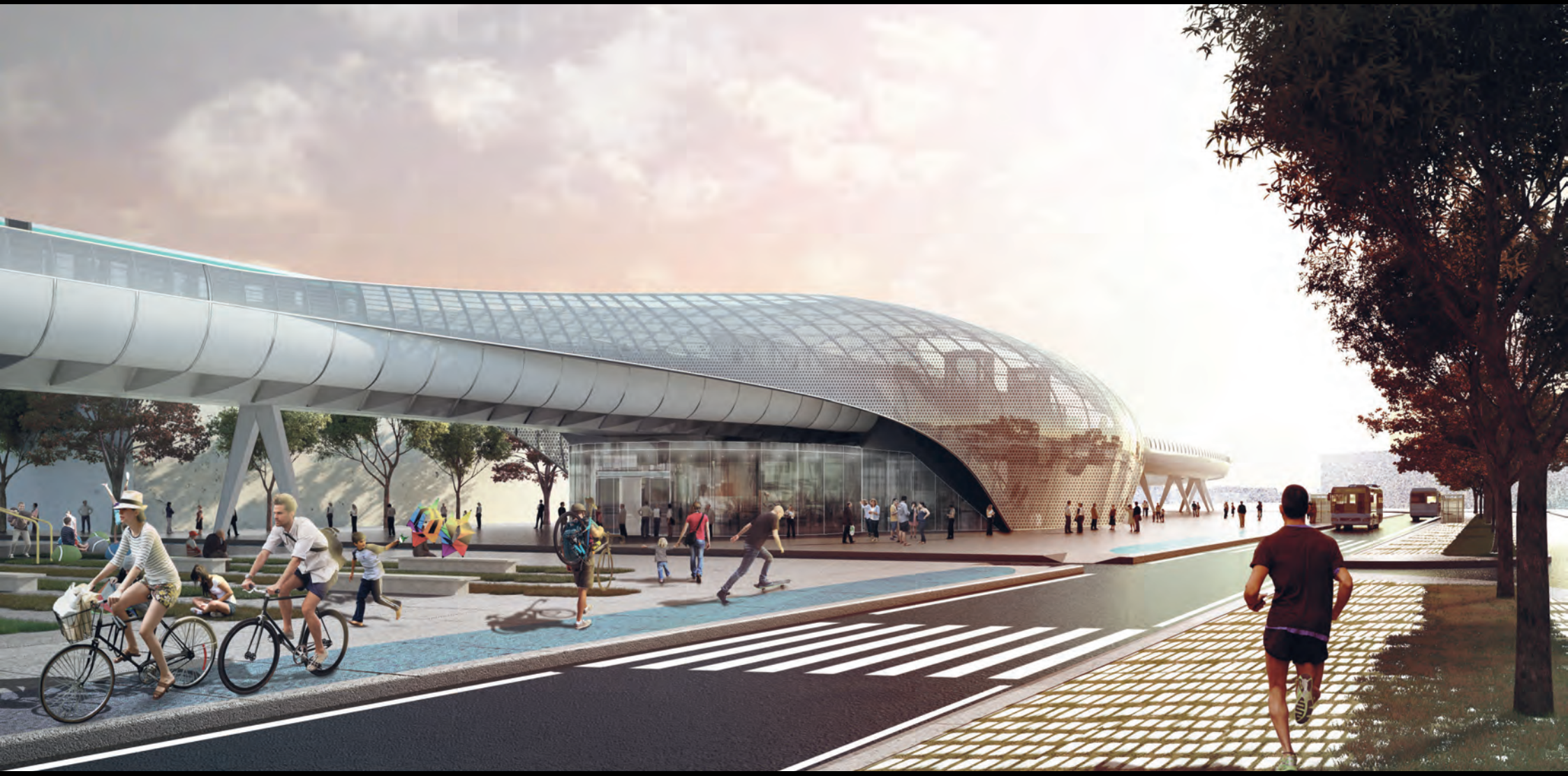
Metrostations (3 underground) and viaducts for La Ligne Verte du Réseau de Transport Public du Grand Paris

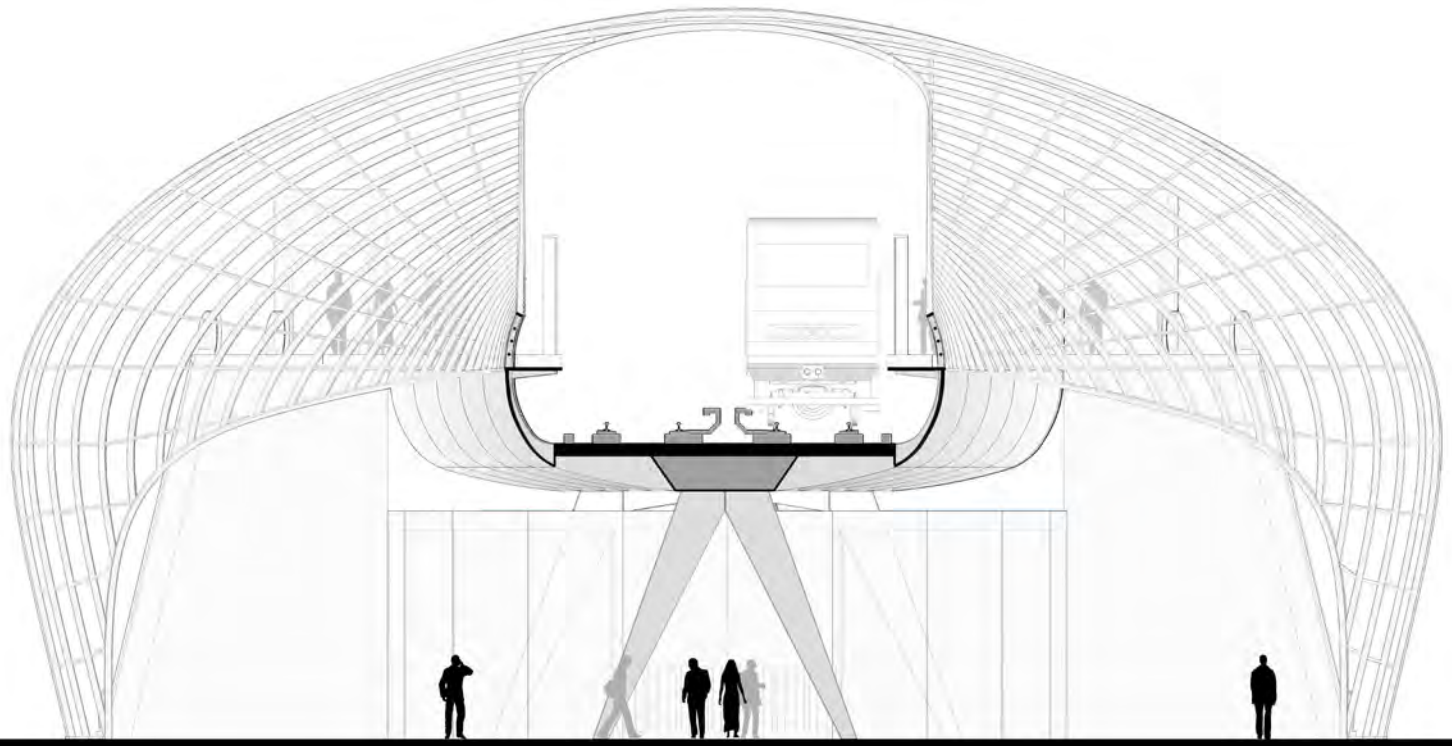
Lenght: 14 km

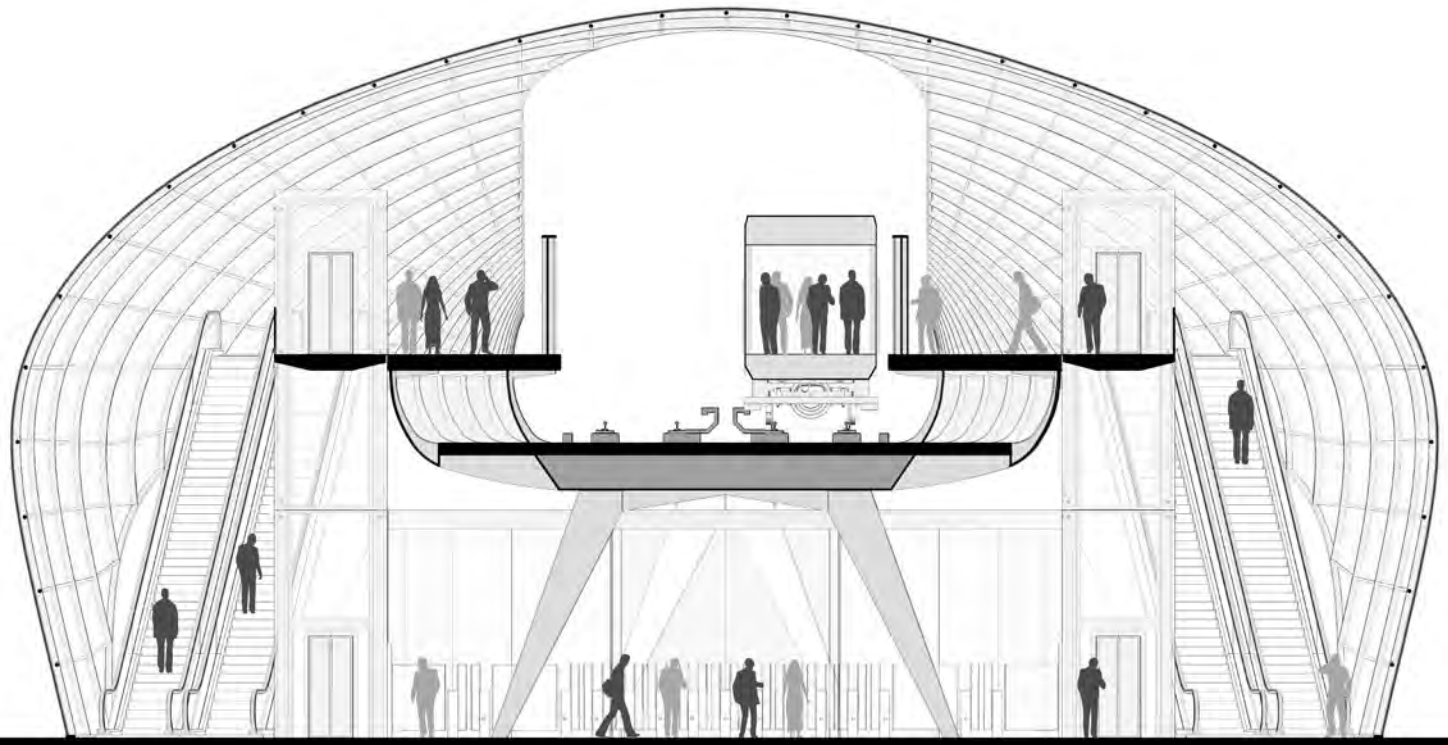
Client: Société du Grand Paris

Engineer: schlaich bergermann und partner

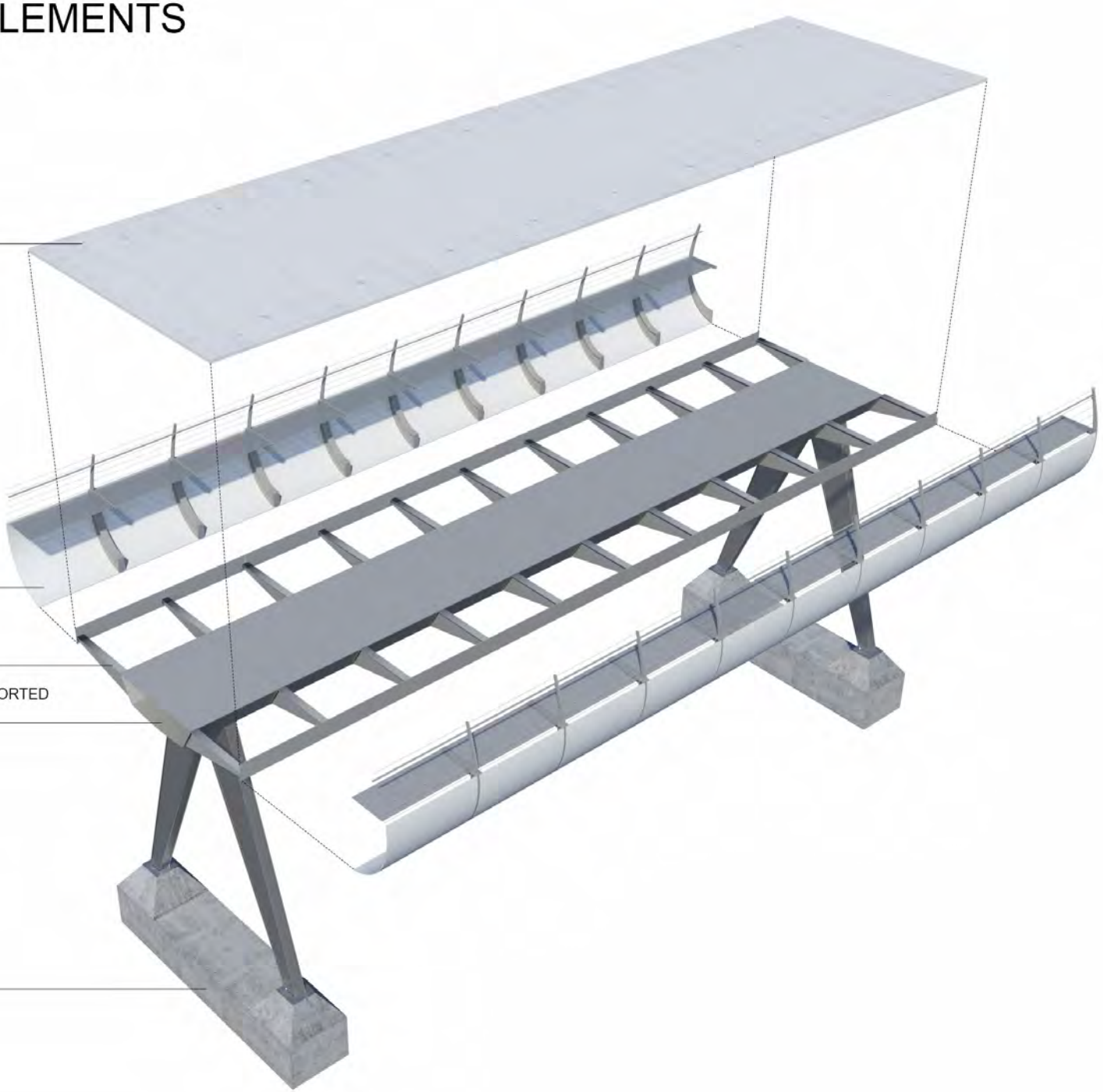








PREFAB VIADUCT ELEMENTS



KØGE NORTH STATION

Køge North Station
Køge, Denmark
International competition 2014, 1st prize
In progress

Length: 225m
Width: 9.5m

Clients:
Banedanmark
Municipality of Køge
Architects:
DISSING+WEITLING architecture
COBE
Engineer: COWI

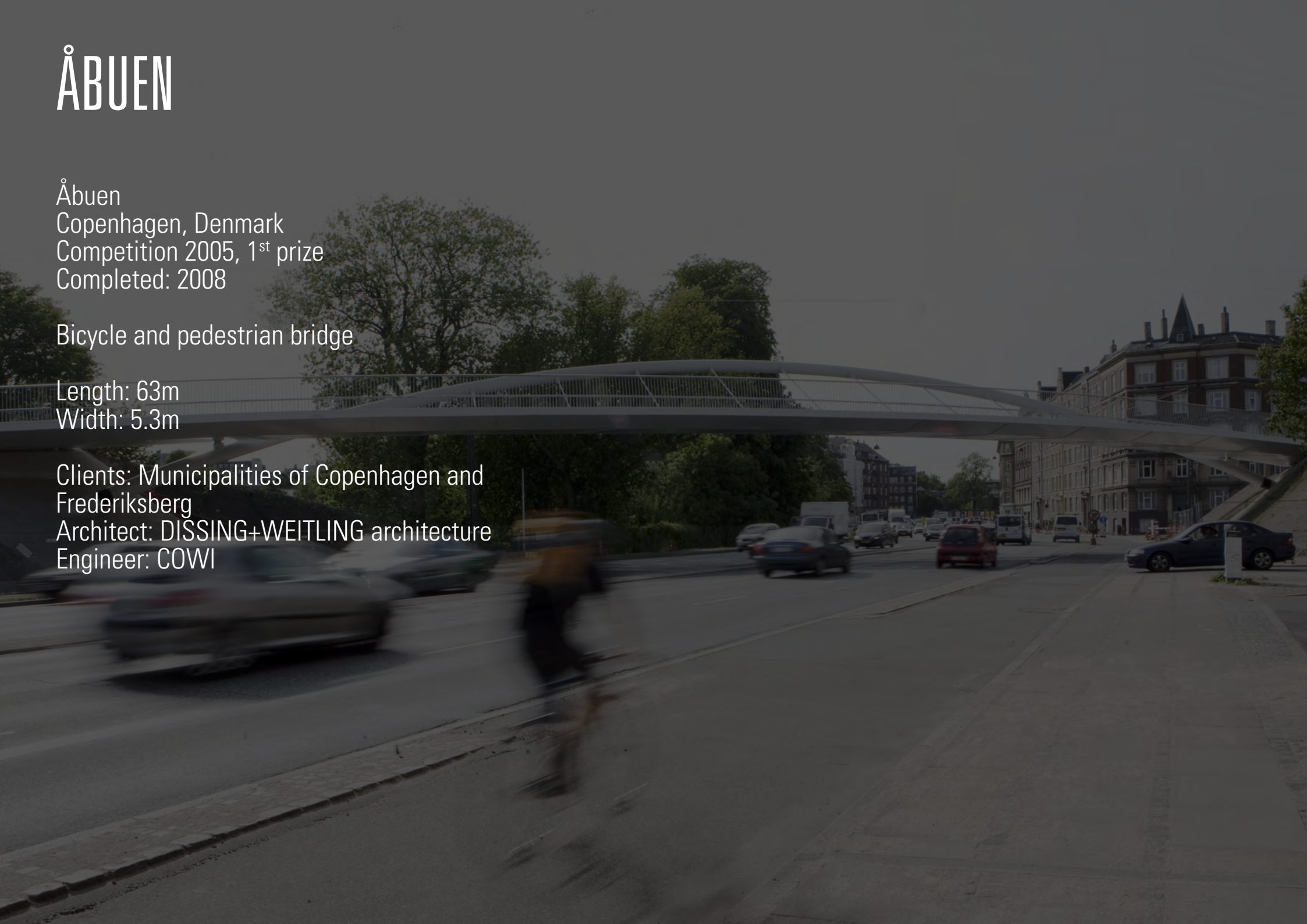
ÅBUEN

Åbuen
Copenhagen, Denmark
Competition 2005, 1st prize
Completed: 2008

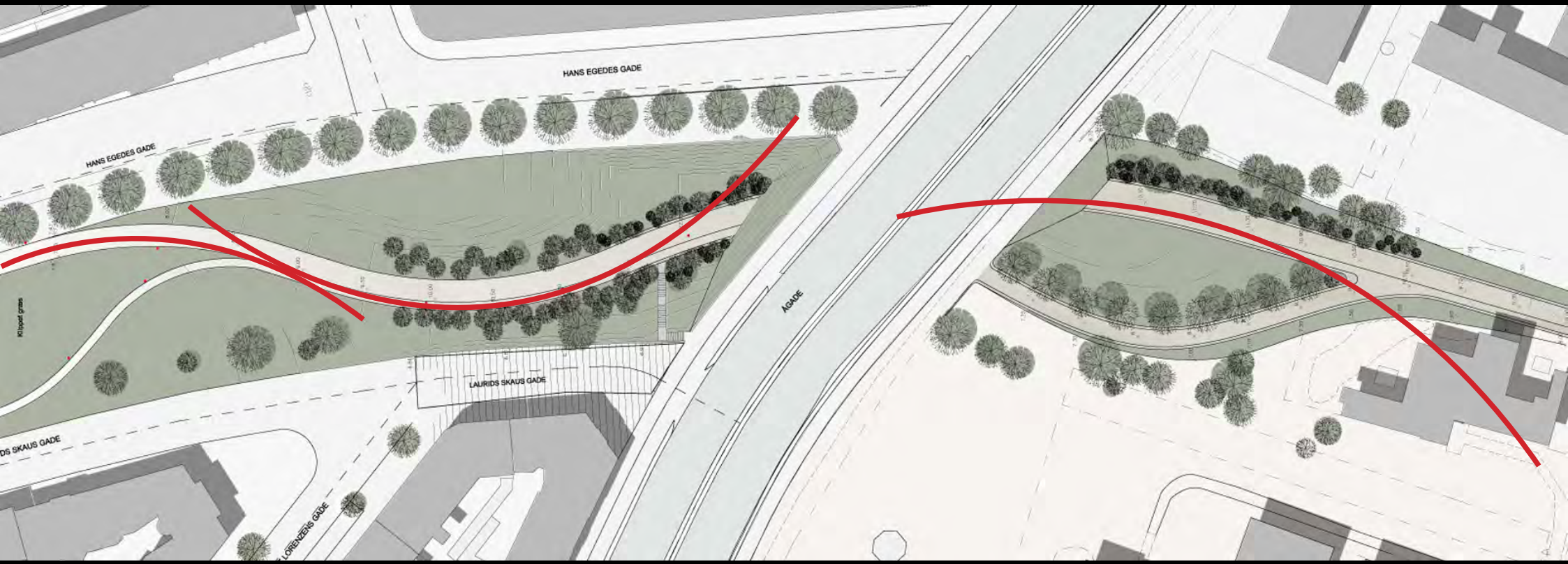
Bicycle and pedestrian bridge

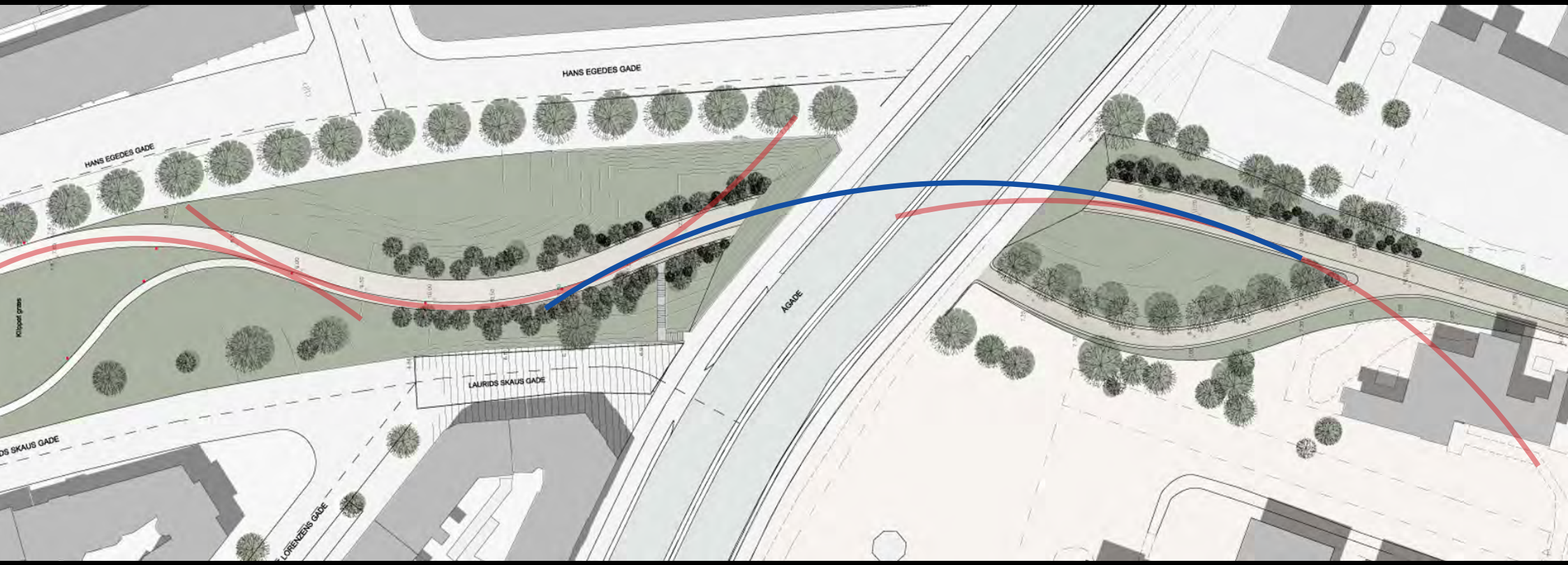
Length: 63m
Width: 5.3m

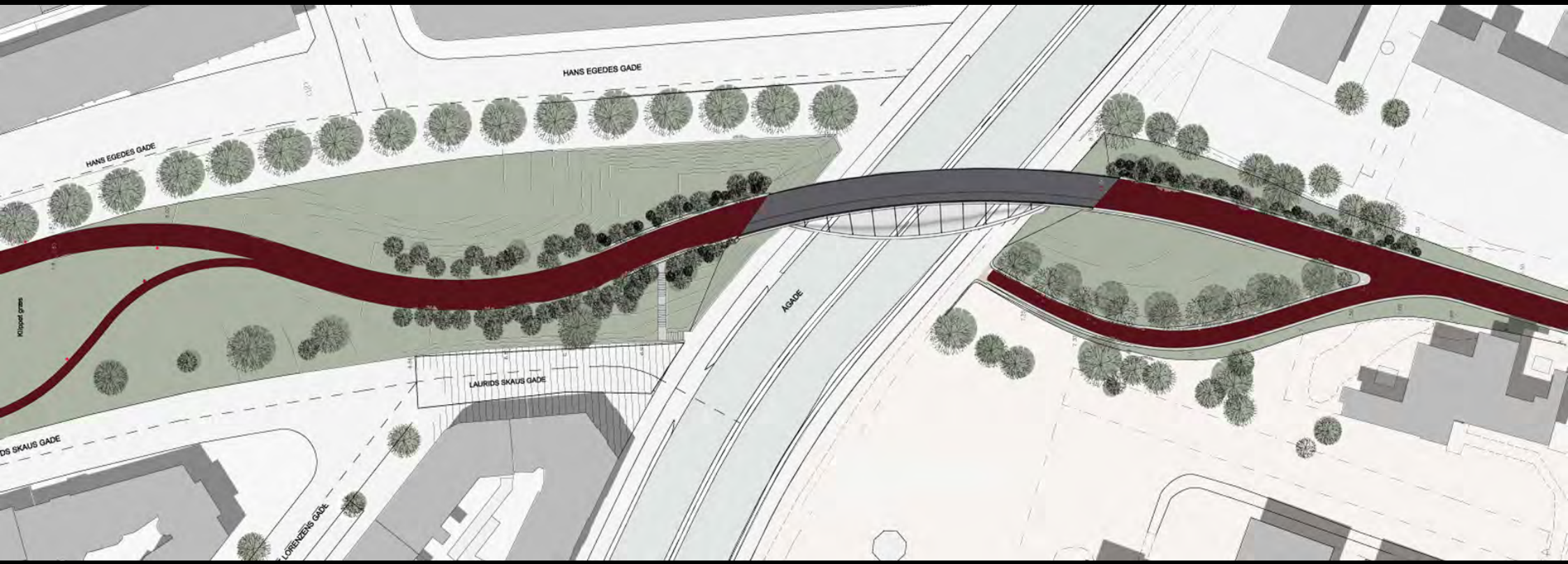
Clients: Municipalities of Copenhagen and Frederiksberg
Architect: DISSING+WEITLING architecture
Engineer: COWI

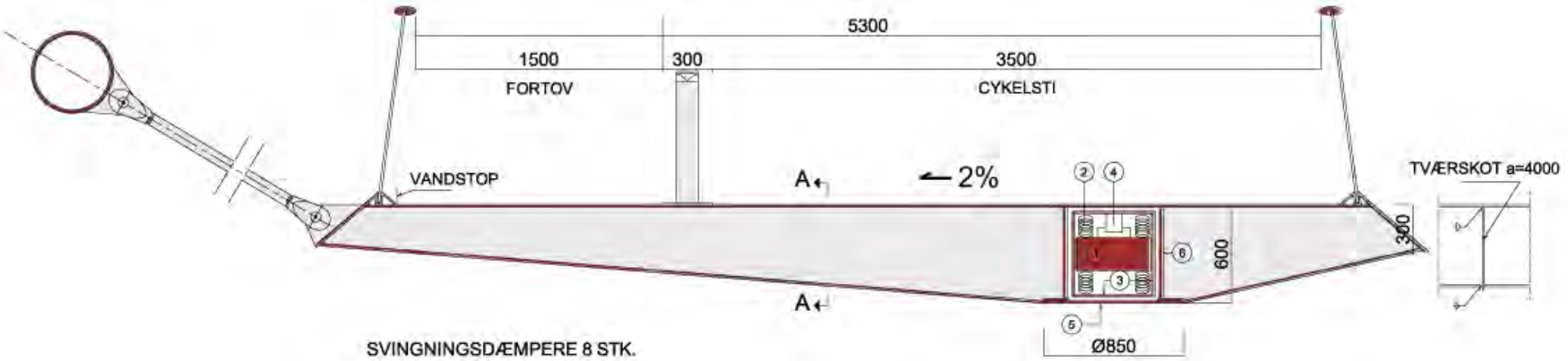



HANS EGEDES GADE
HANS EGEDES GADE
ÅGADE
LAURIDS SKAUS GADE
DS SKAUS GADE
LORENZENS GADE
Klippet græs


HANS EGEDES GADE
HANS EGEDES GADE
ÅGADE
LAURIDS SKAUS GADE
DS SKAUS GADE
LORENZENS GADE
Klippet græs


HANS EGEDES GADE
HANS EGEDES GADE
Klippet græs
LAURIDS SKAUS GADE
ÅGADE


HANS EGEDES GADE
HANS EGEDES GADE
ÅGADE
LAURIDS SKAUS GADE
DS SKAUS GADE
LORENZENS GADE

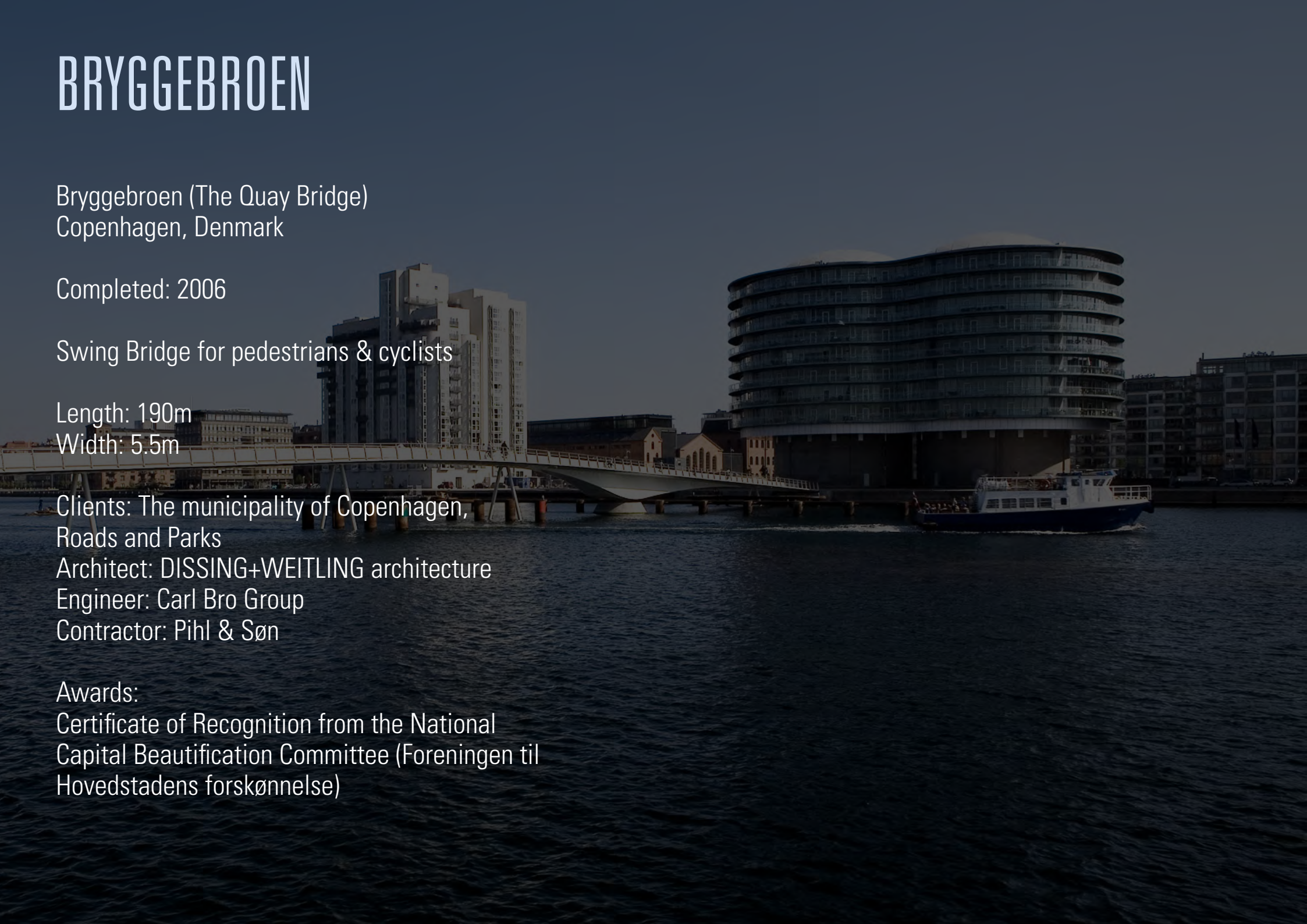


SVINGNINGSDÆMPERE 8 STK.

1. MASSE 200 KG
2. FJEDER
3. LUKKET SEPARAT CYLINDER
4. HYDRAULISK DÆMPER
5. BUND PÅBOLTET
6. KASSE I DRAGER MALET PÅ SIDE MOD DÆMPER

DÆMPERNE FORDELES I LANGSGÅENDE RETNING.

BRYGGEBROEN



Bryggebroen (The Quay Bridge)
Copenhagen, Denmark

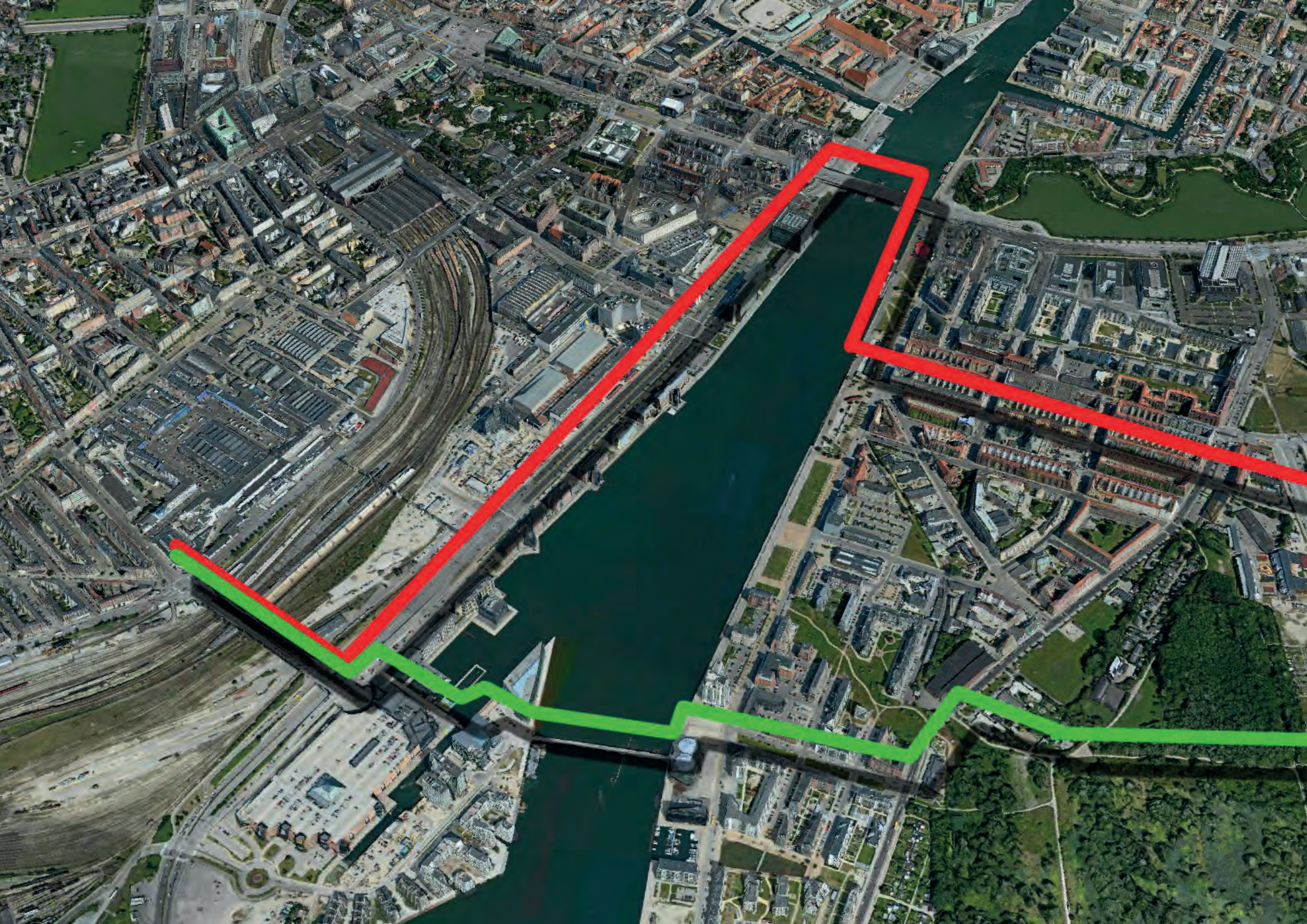
Completed: 2006

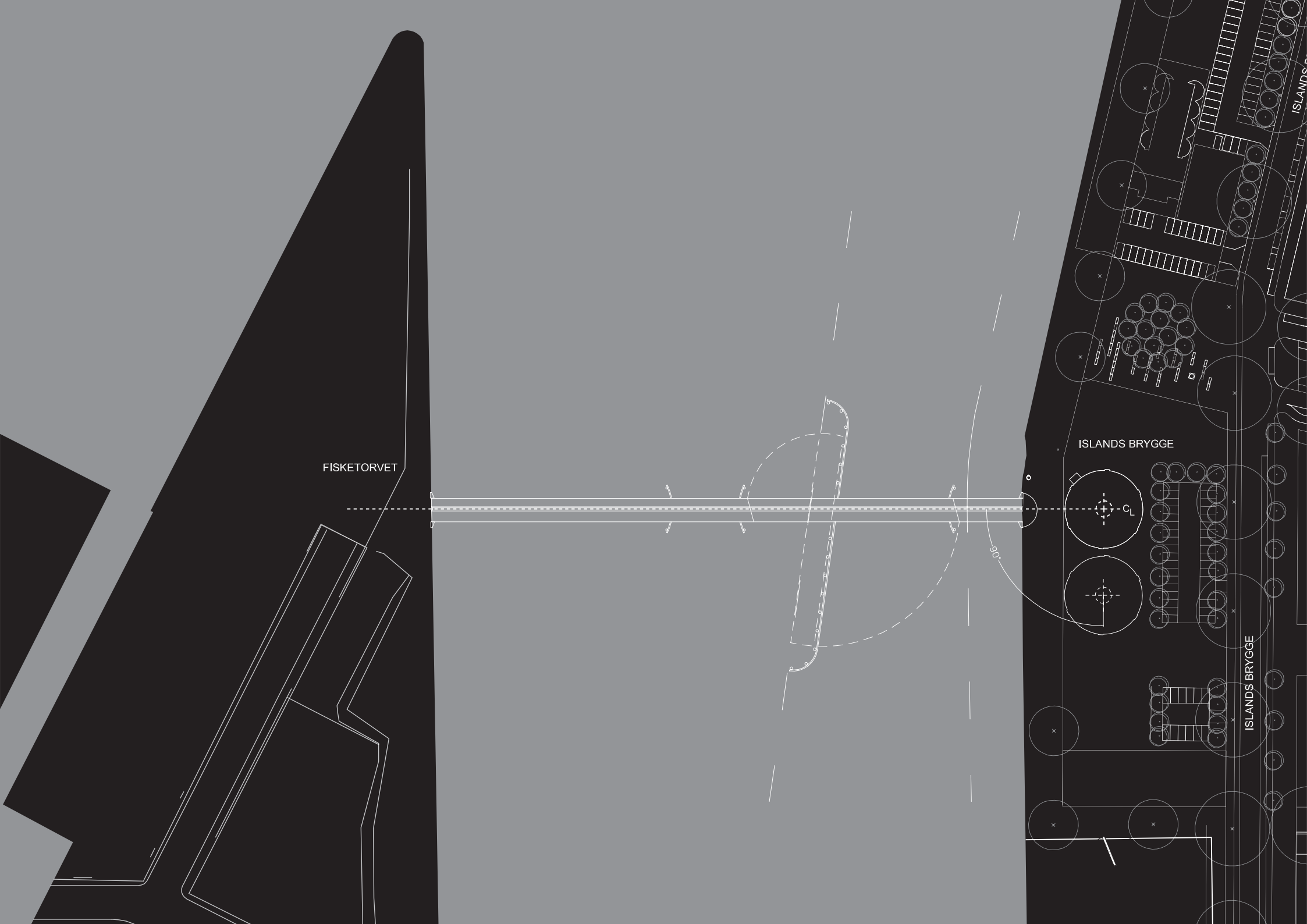
Swing Bridge for pedestrians & cyclists

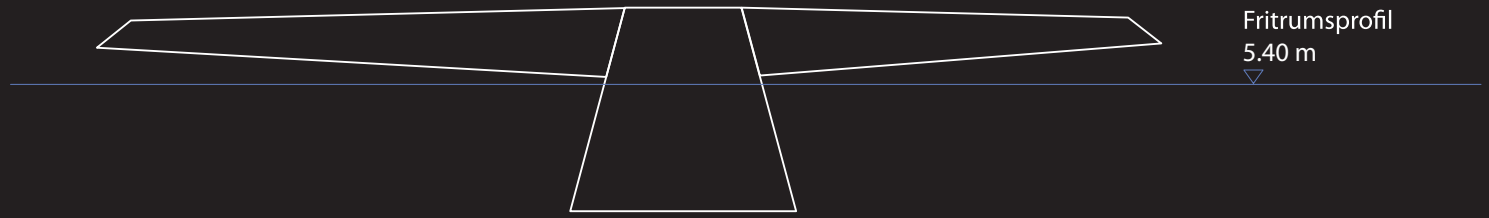
Length: 190m
Width: 5.5m

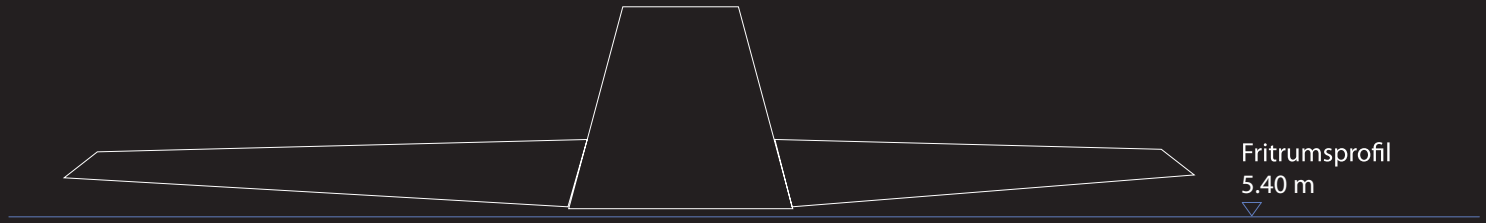
Clients: The municipality of Copenhagen,
Roads and Parks
Architect: DISSING+WEITLING architecture
Engineer: Carl Bro Group
Contractor: Pihl & Søn

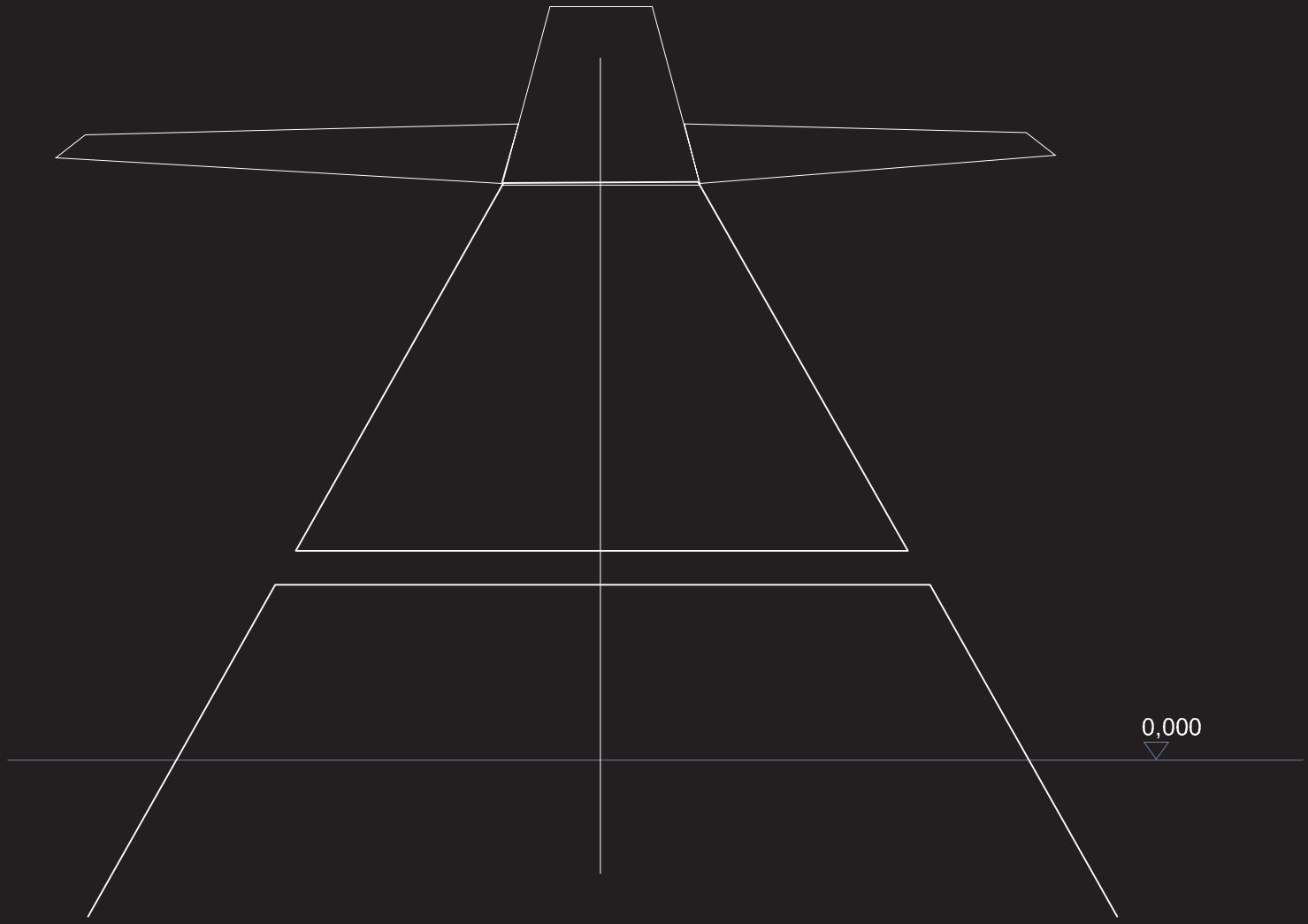
Awards:
Certificate of Recognition from the National
Capital Beautification Committee (Foreningen til
Hovedstadens forskønnelse)

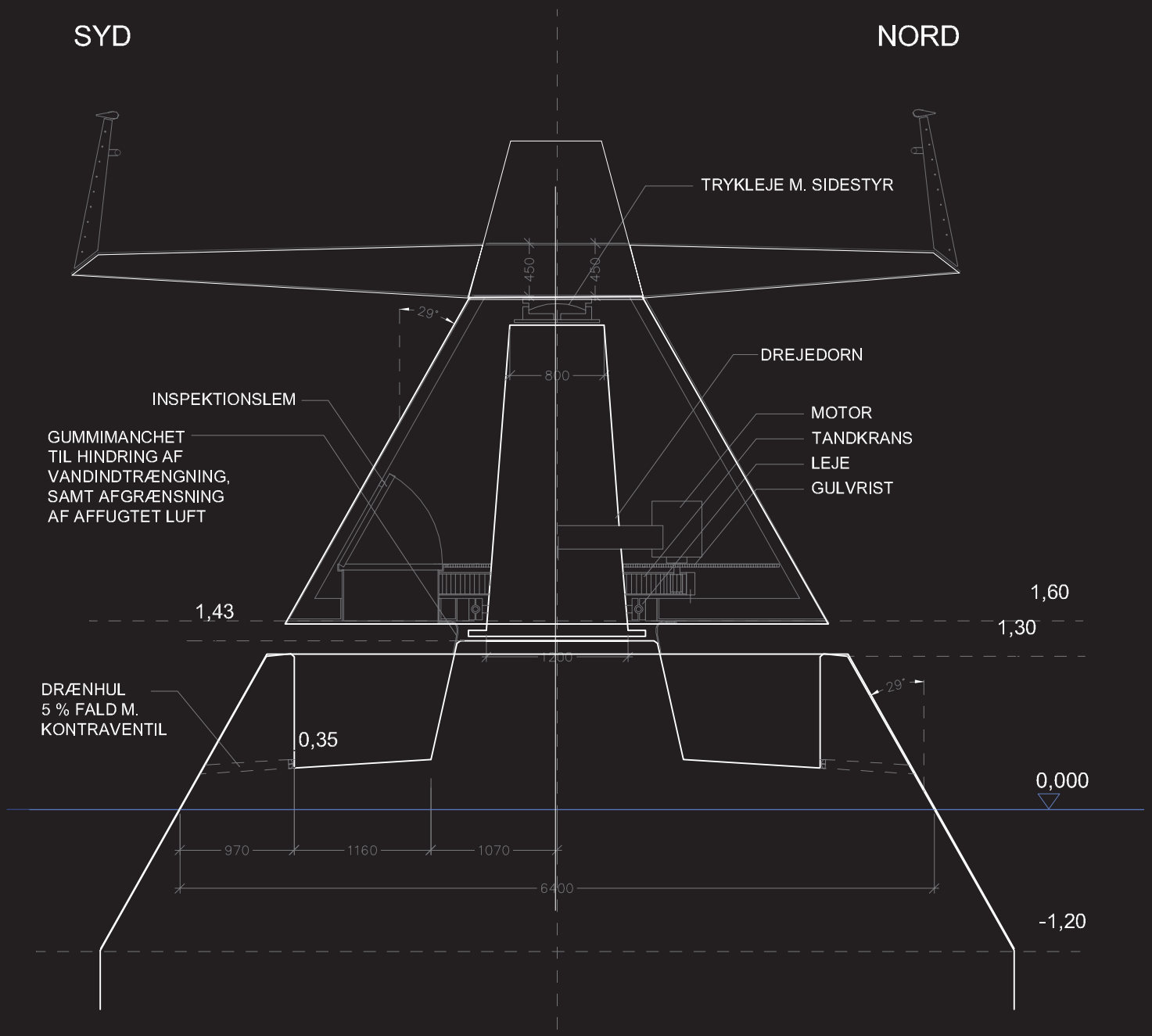



FISKETORVET
ISLANDS BRYGGE
ISLANDS BRYGGE
C_L
90°


Fritrumsprofil
5.40 m


Fritrumsprofil
5.40 m


0,000


SYD
NORD
TRYKLEJE M. SIDESTYR
450
450
29°
DREJEDORN
800
INSPEKTIONSLEM
GUMMIMANCHET
TIL HINDRING AF
VANDINDTRÆNGNING,
SAMT AFGRÆNSNING
AF AFFUGTET LUFT
MOTOR
TANDKRANS
LEJE
GULVRIST
1,60
1,43
1,30
1200
DRÆNHUL
5 % FALD M.
KONTRAVENTIL
29°
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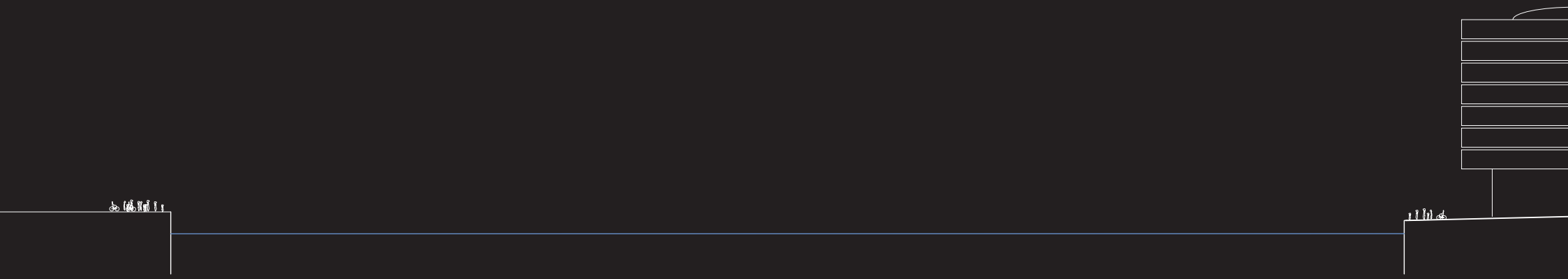
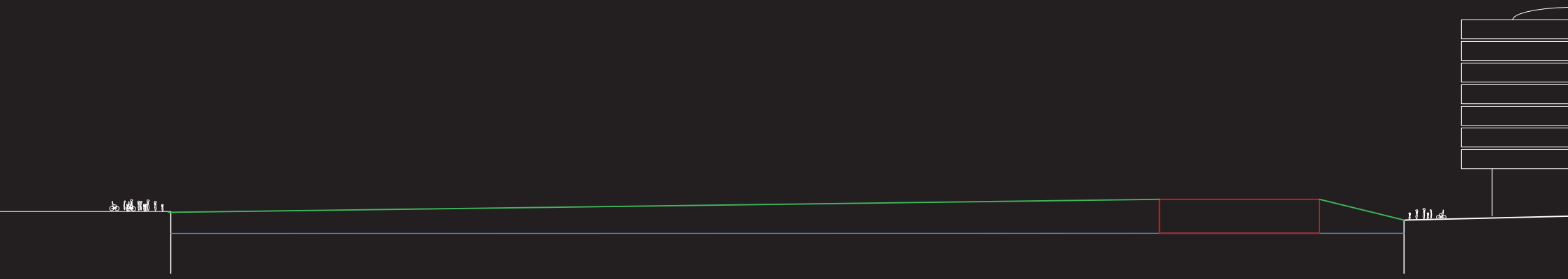
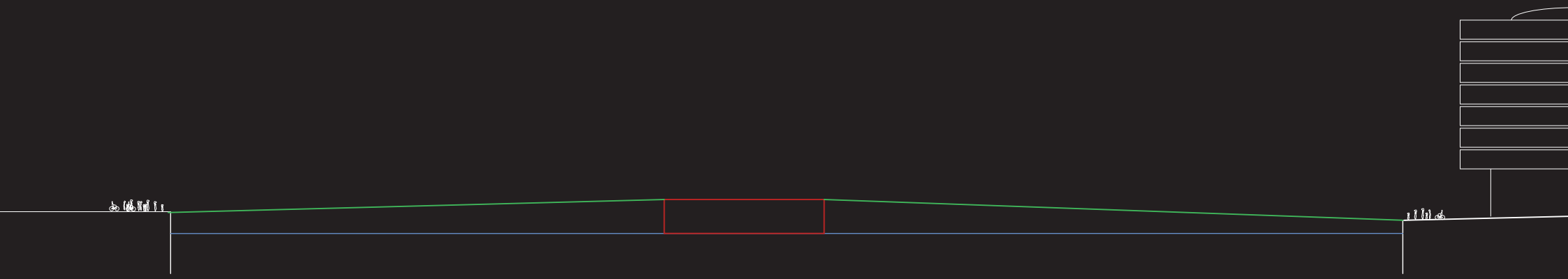
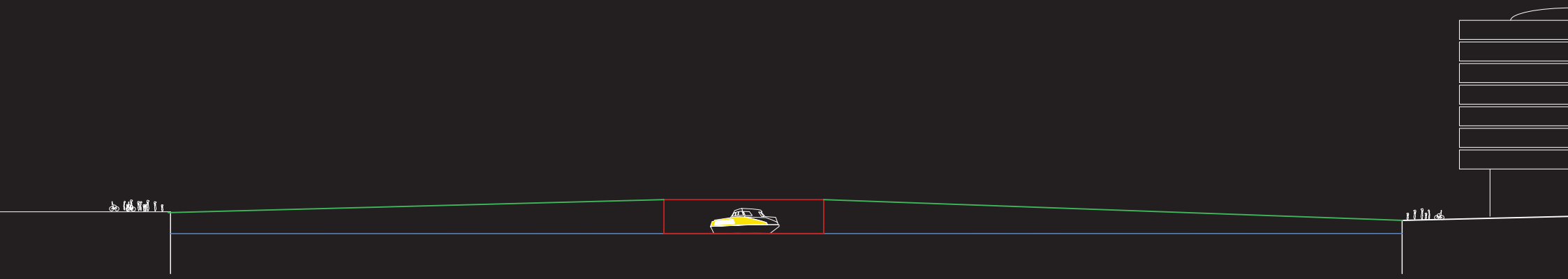
970
1160
1070
6400
-1,20

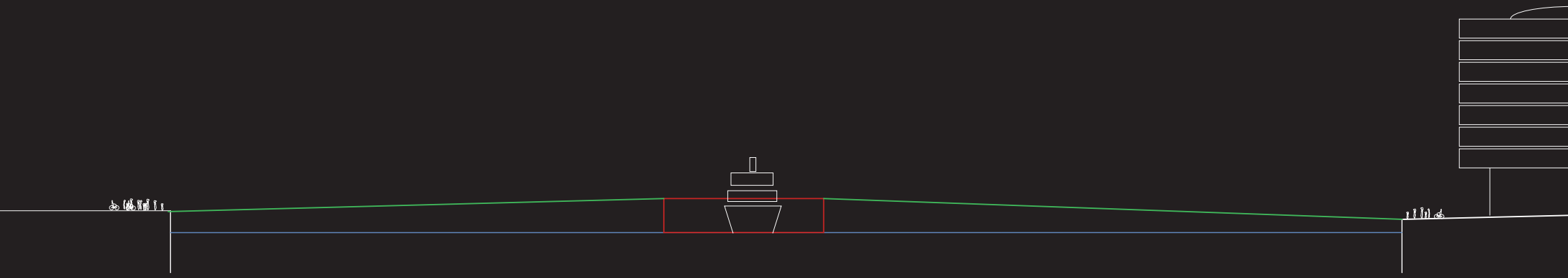


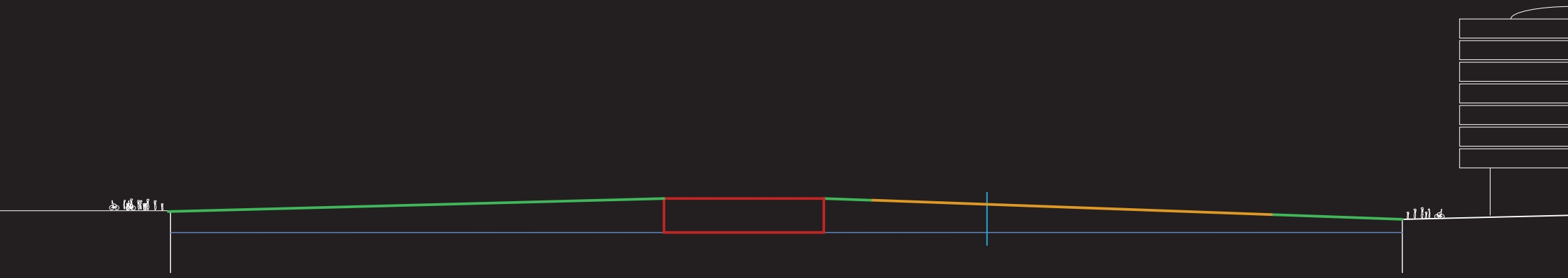


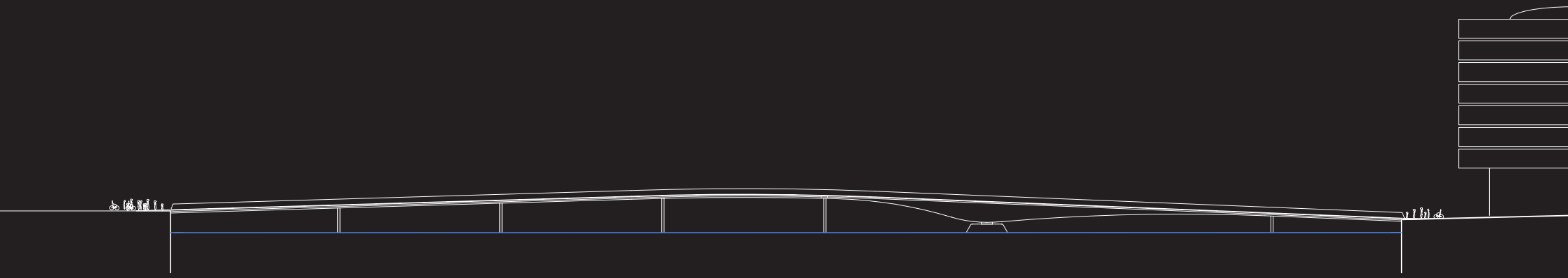

4 %












LUNCH
SAGA QUEEN

CYKELSLANGEN

Cykelslangen (The Bicycle Snake)
Copenhagen, Denmark
Bicycle bridge

Completed: 2014

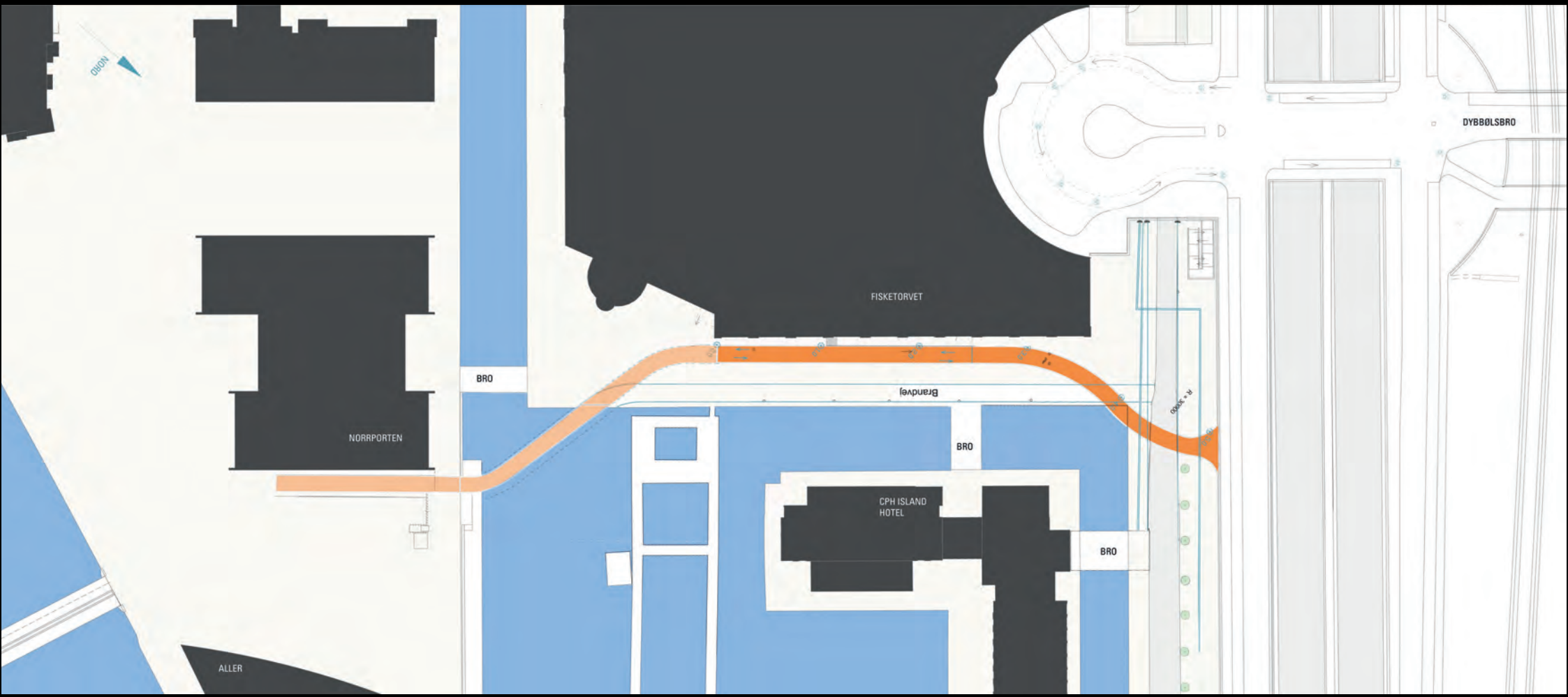
Total length: 230m
Total width: 4.6m
Column distance: 17m

Client: The municipality of Copenhagen
Architect: DISSING+WEITLING architecture
Landscape: Marrianne Levinsen Landskab
Engineer: Rambøll
Contractor: MT Højgaard
Light design: Lightconstructor CPH

Awards:
Certificate of Recognition from the Capital - 2016
D&AD Awards - 2015
A+ Awards - 2015
Big Arne Award - 2015
WAN Transport Awards - 2014
"RAISE THE BAR" AWARD - 2013


Handelsbanken


NORD
FISKETORVET
DYBBØLSBRO
BRO
NORRPORTEN
BRO
CPH ISLAND
HOTEL
BRO
ALLER


NORD
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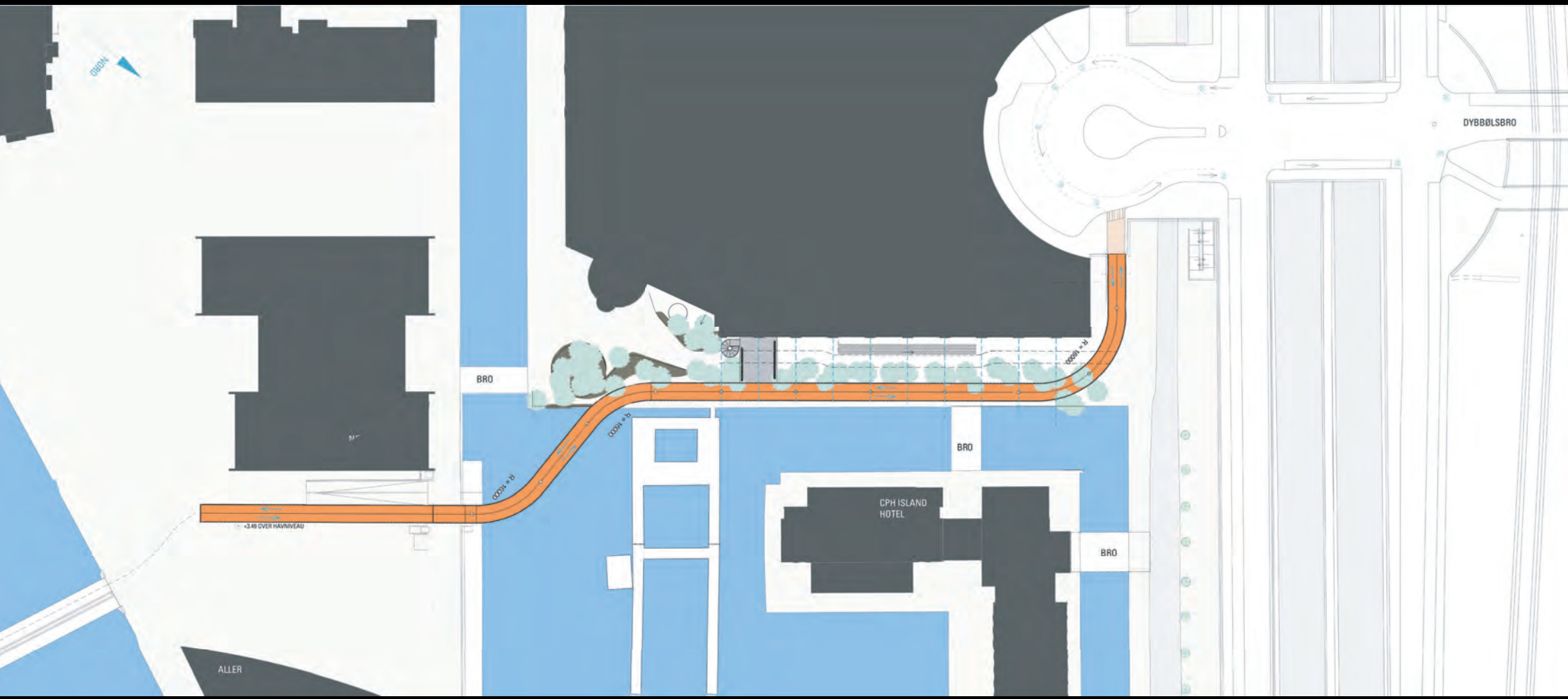
Brandvej
NORRPORTEN
BRO
CPH ISLAND
HOTEL
BRO
ALLER


NORD
DYBBØLSBRO
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ALLER
+3.48 OVER HAVNIVEAU
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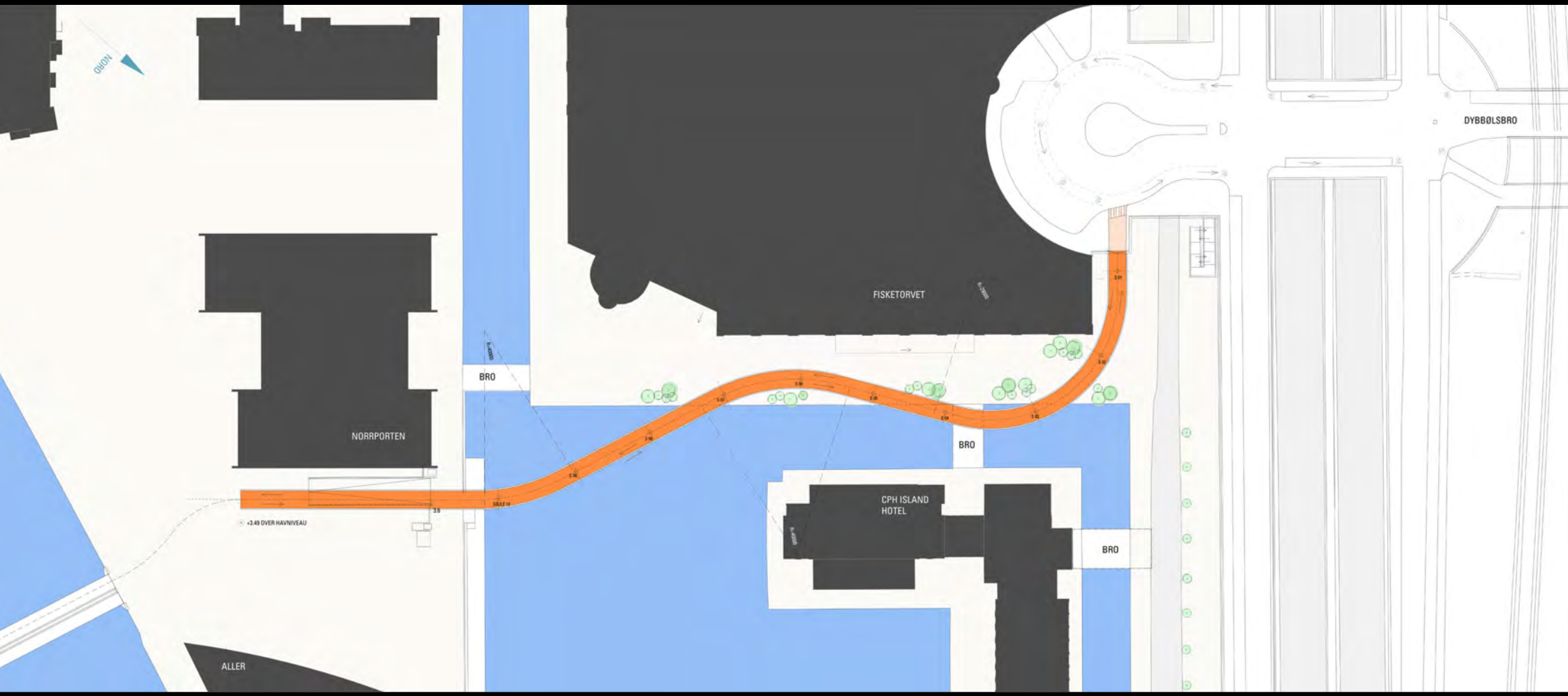
R = 15000
R = 15000


NORD
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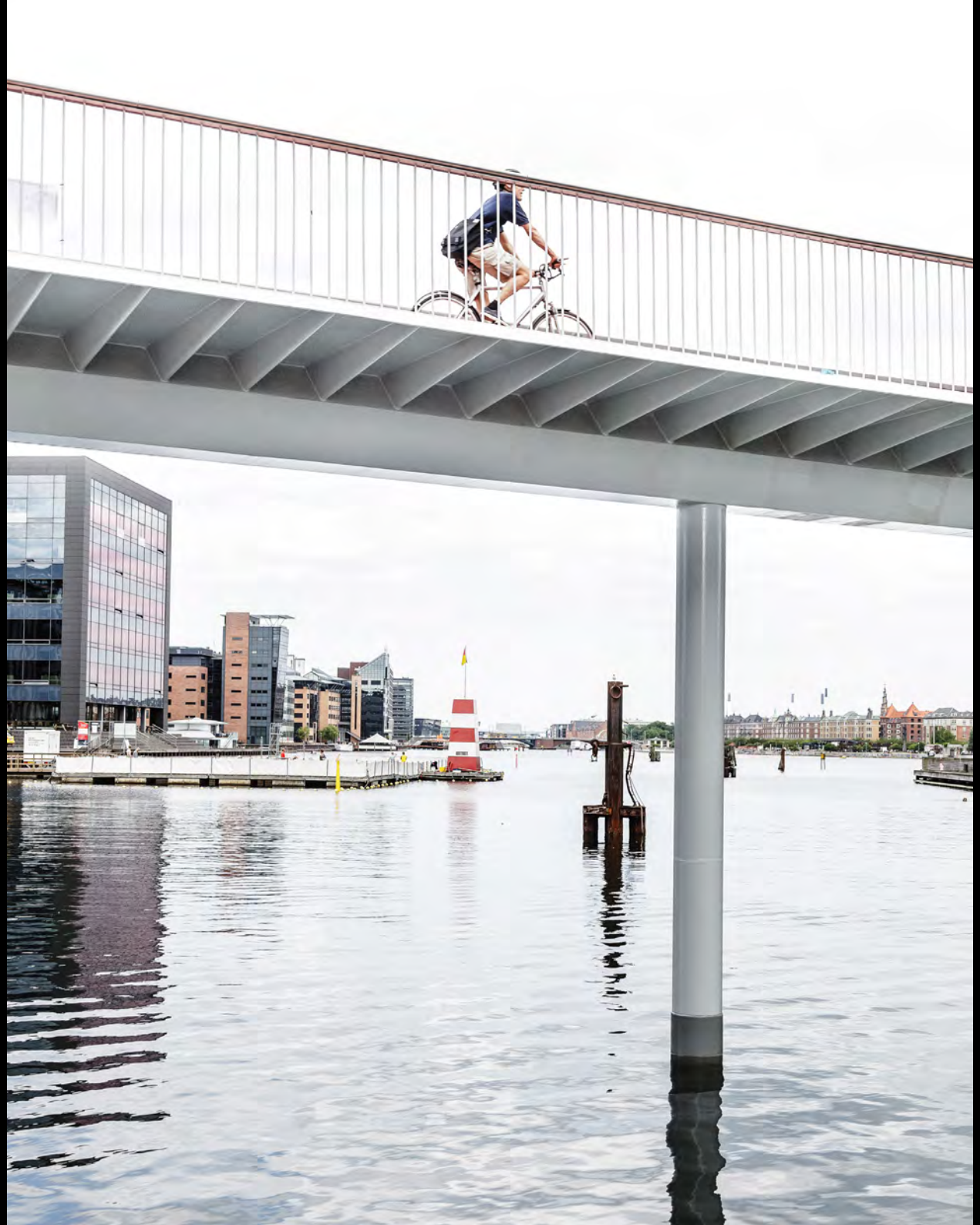
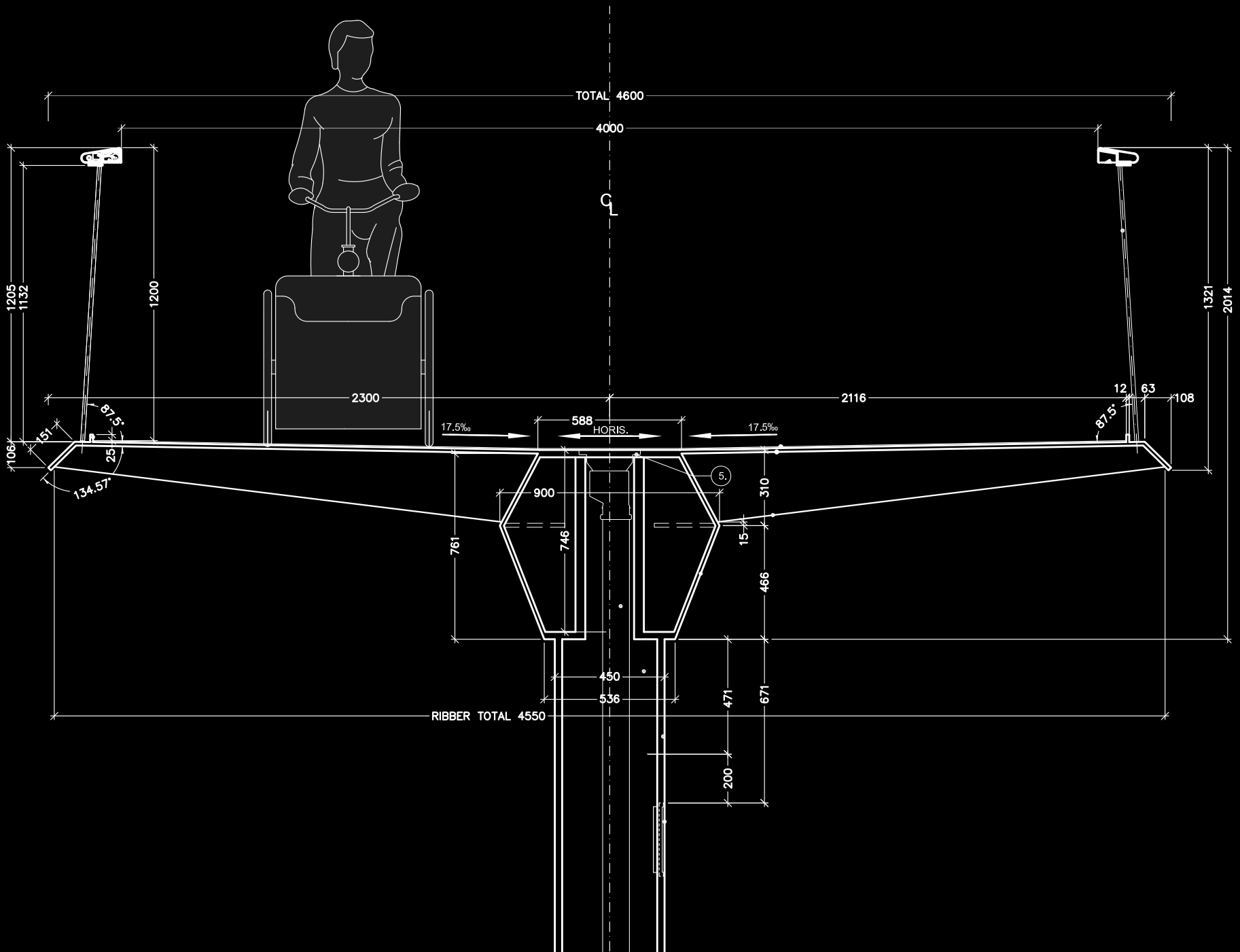
NORRPORTEN
BRO
CPH ISLAND
HOTEL
BRO
+3.49 OVER HAVNIVEAU
ALLER




BDO


CINEMAXX


TOTAL 4600
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L
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1132
1200
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12
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108
87.5°
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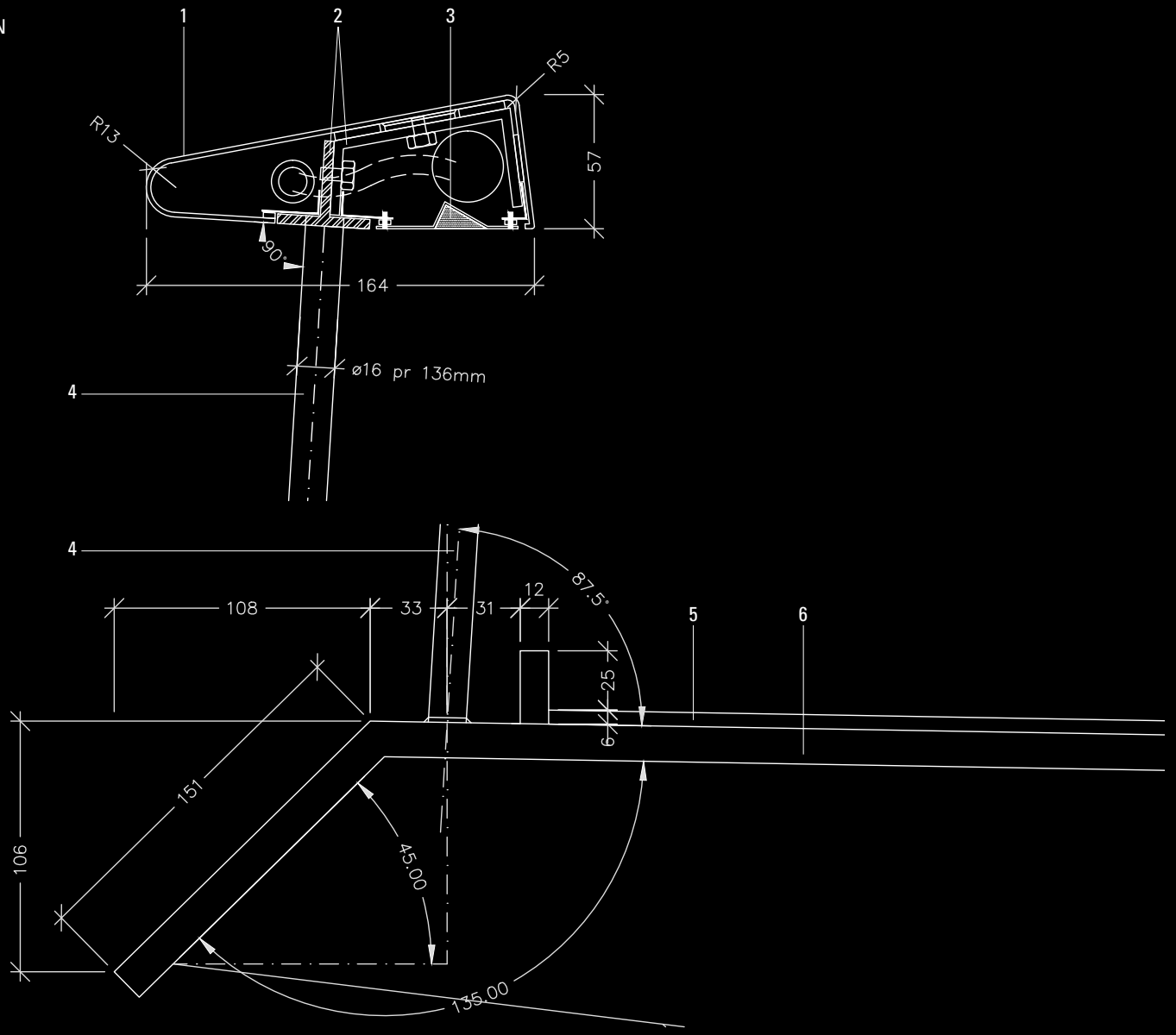
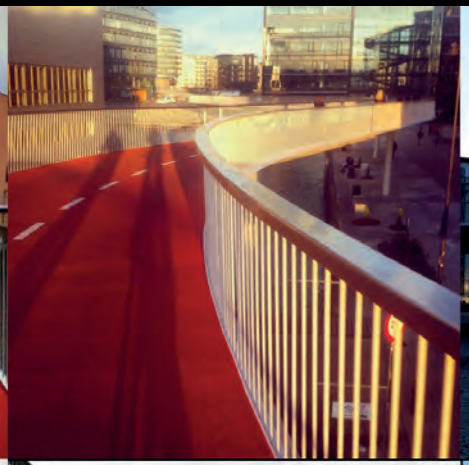
106
25°
134.57°
17.5‰
588
HORIS.
17.5‰
5.
900
310
761
746
15
466
450
536
471
671
RIBBER TOTAL 4550
200

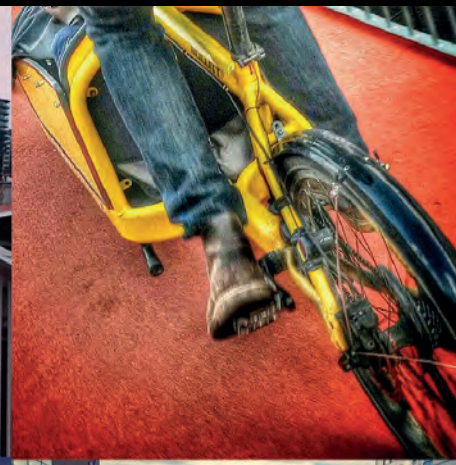
SECTION - HANDRAILING AND BRIDGE DECK

1 PROFILE OF HANDRAILING
2 SECTIONAL STEEL
3 LED LIGHTING FIXTURE
4 ROUND STEEL BAR
5 BRIDGE FLOORING
6 DECK CONSTRUCTION




fitnessdk
SKET
COPENHAGEN
B
TINSOLDATEN
KØBENHAVN

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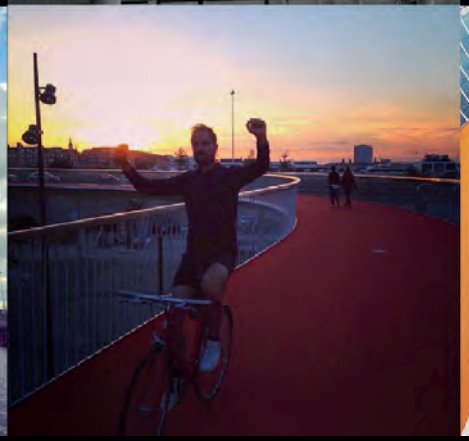
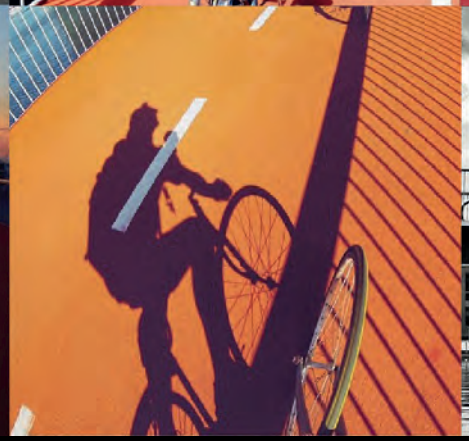
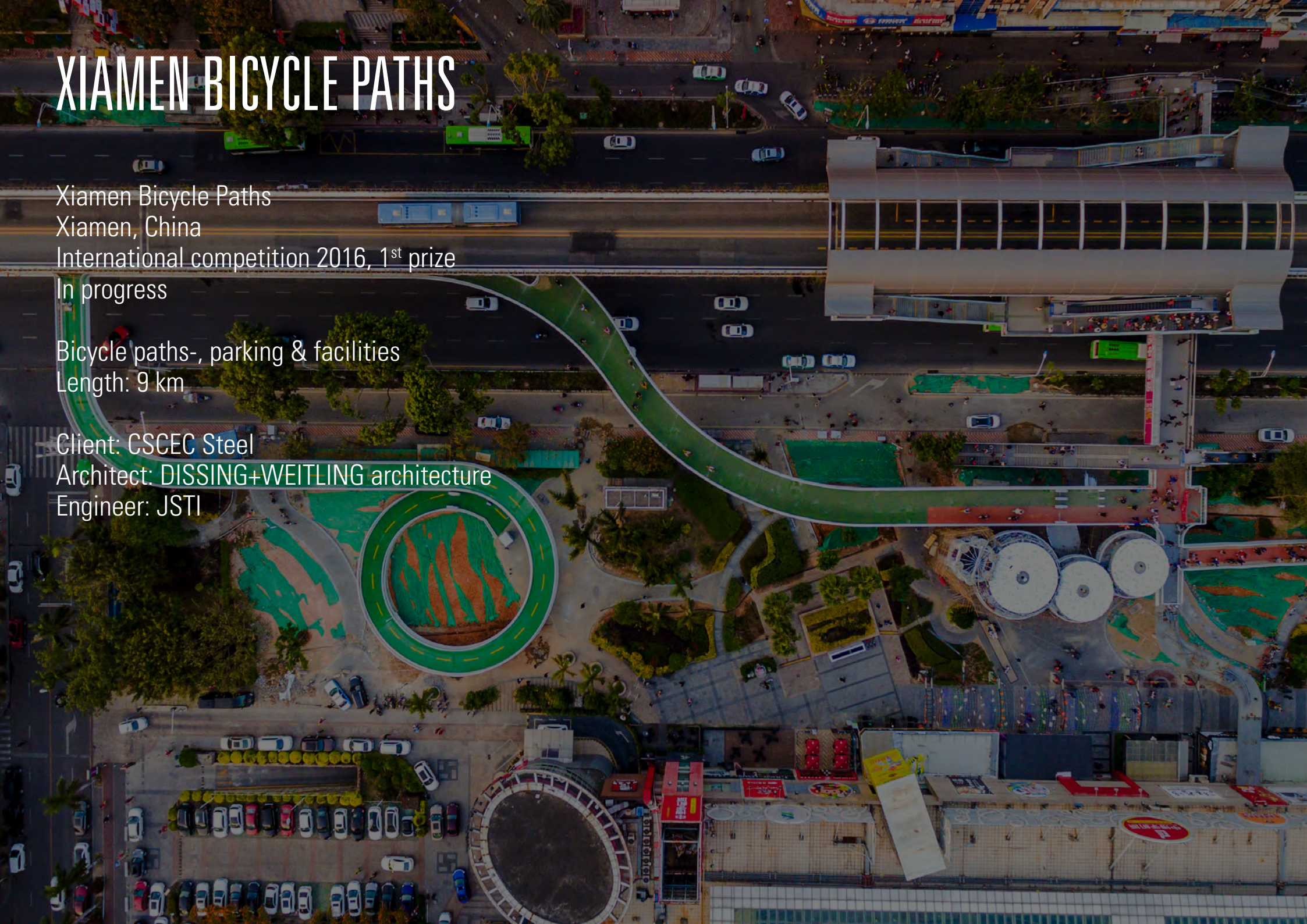



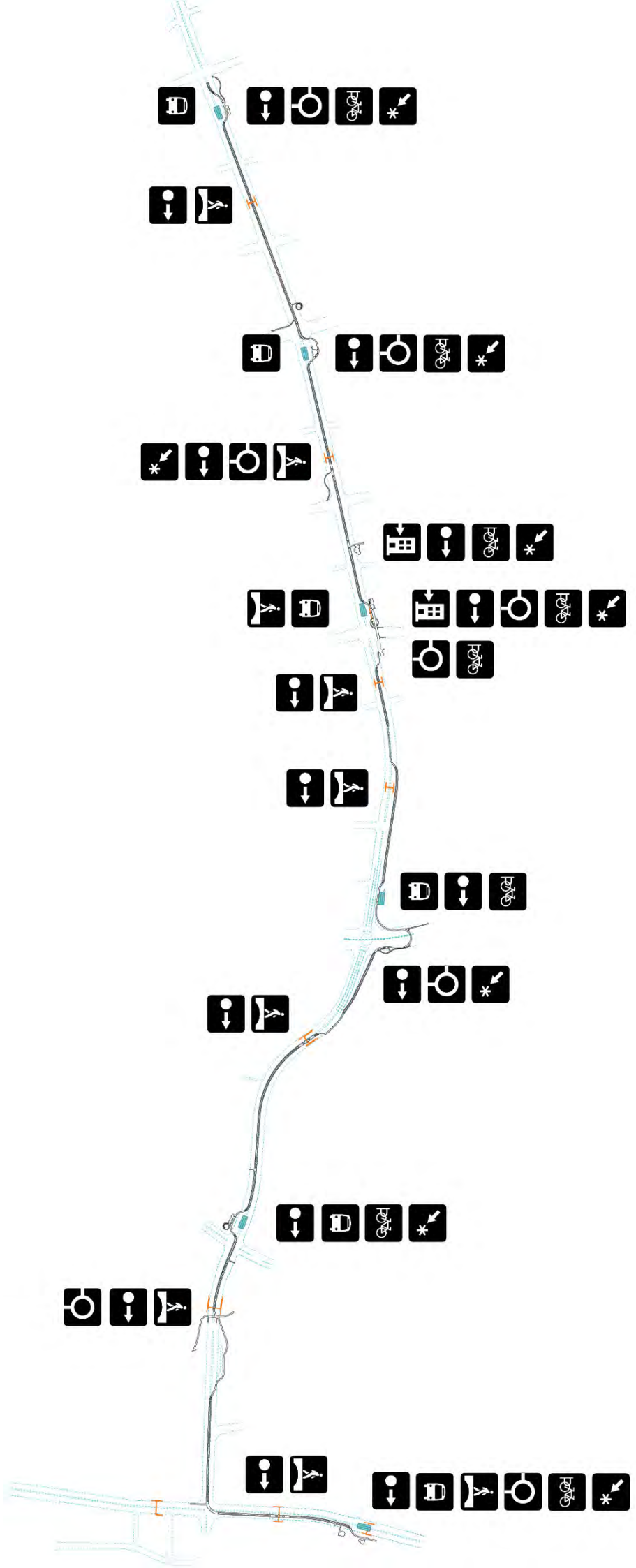
XIAMEN BICYCLE PATHS



Xiamen Bicycle Paths
Xiamen, China
International competition 2016, 1st prize
In progress

Bicycle paths-, parking & facilities
Length: 9 km

Client: CSCEC Steel
Architect: DISSING+WEITLING architecture
Engineer: JSTI




闽DZ6655

ARCHITECTURE

ARCHITECTURE
Architecture is not science

ARCHITECTURE

Architecture is not science

so

ARCHITECTURE

Architecture is not science

so

it may take a bit of convincing

ARCHITECTURE
Architecture is not science
so
it may take a bit of convincing
Hope it worked this time

ARCHITECTURE

Architecture is not science

so

it may take a bit of convincing

Hope it worked this time

THE END

PS

PS
sorry

ENGINEERING

ENGINEERING

The law of gravity applies to all structures

ENGINEERING

The law of gravity applies to all structures

Engineering is by nature exact,

we assume

ENGINEERING

The law of gravity applies to all structures

Engineering is by nature exact,

we assume

However,

the approach to bridge engineering differs

How can it be so?

How can it be so?

Nobel prize quote:

How can it be so?

Nobel prize quote:

“The answer my friend is blowin’ in the wind”

How can it be so?

Nobel prize quote:

“The answer my friend is blowin’ in the wind”

or, perhaps, just because

How can it be so?

Nobel prize quote:

“The answer my friend is blowin’ in the wind”

or, perhaps, just because

Dissing+Weitling quote:

How can it be so?

Nobel prize quote:

“The answer my friend is blowin’ in the wind”

or, perhaps, just because

Dissing+Weitling quote:

“That’s the beauty of it”

How can it be so?

Nobel prize quote:

“The answer is blowing in the wind”

or, perhaps, just because

Dissing+Weitling quote:

“That’s the beauty of it”

MANY THANKS