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SITE-SPECIFIC *DEN HELDER*
BENCH CATALOGUE

E



Cover image: sketches of different types of benches.
Source: <https://www.mythuatms.com/>

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Place & Memory Lab

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INTRODUCTION

The Site-Specific Bench Catalogue of Den Helder comprises a collection of ordinary benches with their own unique story and purpose found throughout Den Helder.

The research behind this catalogue draws inspiration from the concepts of benchscape and the distinctions between perceived benchscape and conceived benchscape. Through the implementation of a bench typology analysis model, ten representative ordinary benches have been selected to delve into their specific benchscapes. The findings from this research culminate in the creation of a bench design toolbox, which reflects the various interactions of bench users, diverse bench forms, and the spatial qualities of benchscapes.

During your exploration, take a moment to appreciate the simple pleasure of sitting on a bench and immersing yourself in the captivating surroundings that frame Den Helder's distinct character.

01 TWO PERSPECTIVES OF BENCHSCAPE

Fig 1-1. Three main components of benchscape perceived by users in reality, including "FRAMED, FRAME AND FRAMING".

Fig 1-2. Three dimensions of benchscape conceived by designers, including "URBAN PUBLIC SPACE, PHYSICAL QUALITY AND EXPERIENTIAL QUALITY".

PERCEIVED BENCHSCAPE

The benchscape perceived by users can be integrated into the perception of the three dimensions of "FRAMED, FRAME, FRAMING", which help users gain a deeper understanding and appreciation for the role of benchscape play in our lives and the cultural landscape around us.

1. FRAMED:

One or multiple benches with its or their external surrounding landscapes (landscape and human interaction) framed by people's cameras or eyes;

2. FRAME:

A bench as a frame to frame a viewed outward landscape, including visual, auditory and olfactory landscapes;

3. FRAMING:

A bench itself framing the internal micro-landscapes, e.g. gravings, inscriptions, graffiti and other traces of human and non-human.

CONCEIVED BENCHSCAPE

Different from a perceived benchscape, a conceived benchscape is highly related to its location - an urban public space, where the designer supposes to place the benches. Besides, its physical and experiential qualities also need to be considered.

1. URBAN PUBLIC SPACE:

The location and space surface of a bench

or benches and the surroundings, which related to user groups, and the social and spatial quality of the space;

2. PHYSICAL QUALITY:

The configuration, arrangement and orientation of a bench or benches;

3. EXPERIENTIAL QUALITY:

The number of people who can sit on the bench at one time as well as the potential body postures and interactions between users and benches, which contribute to the provided view and personal thoughts.

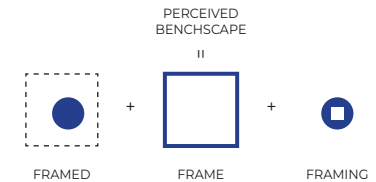


Fig.1-1

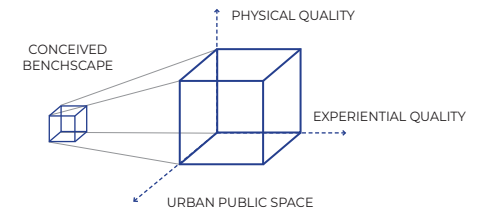
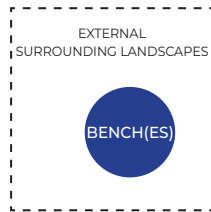


Fig. 1-2

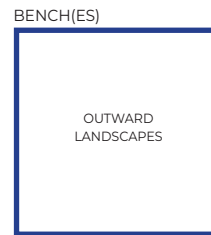
PERCEIVED BENCHSCAPE 1.1

FRAMED



+

FRAME



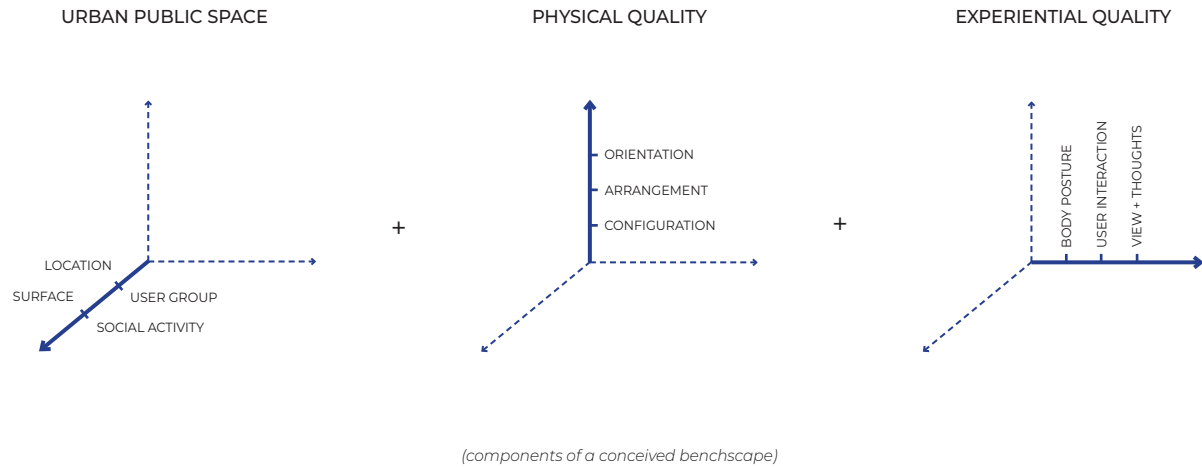
+

FRAMING

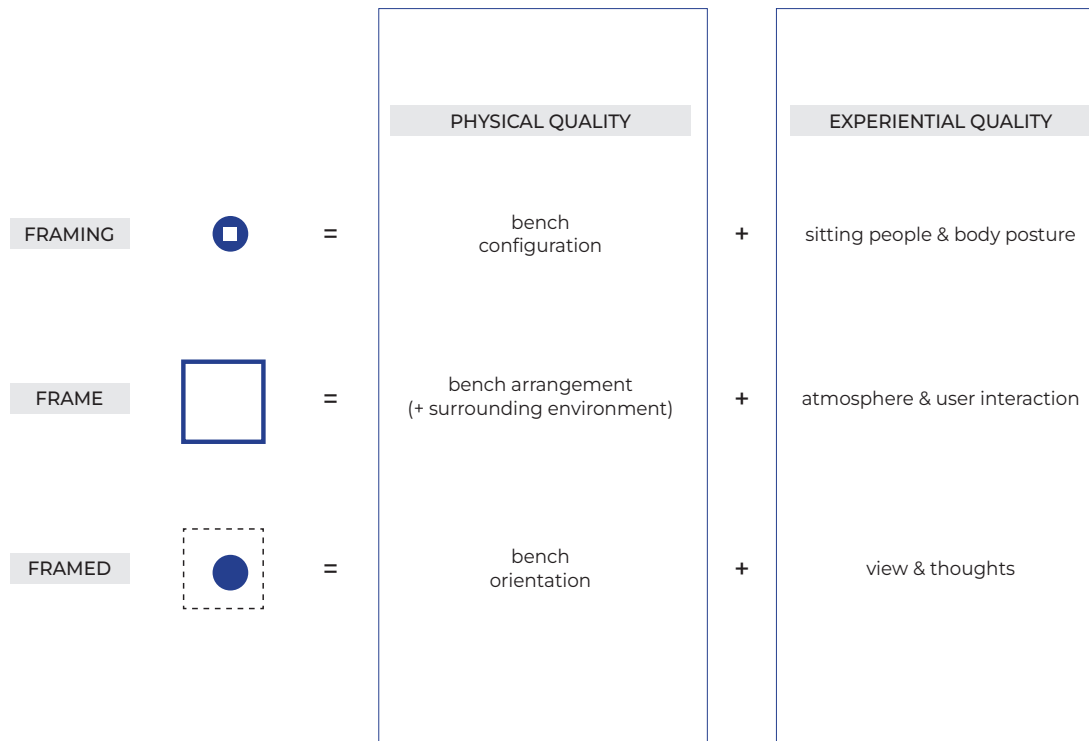


(components of a perceived benchscape)

1.2 CONCEIVED BENCHSCAPE



THE RELATION BETWEEN 1.3 TWO PERSPECTIVES OF BENCHSCAPE



02 BENCH TYPOLOGY ANALYSIS MODEL

Fig 2-1. The three-dimensional research model of bench typology analysis.

These two perspectives of benchscape, perceived and conceived benchscape, can be combined to create a three-dimensional bench typology analysis model. This model allows designers and planners to gain a comprehensive understanding of the physical, functional and experiential characteristics of benches and benchscapes in different urban public spaces.

URBAN PUBLIC SPACE

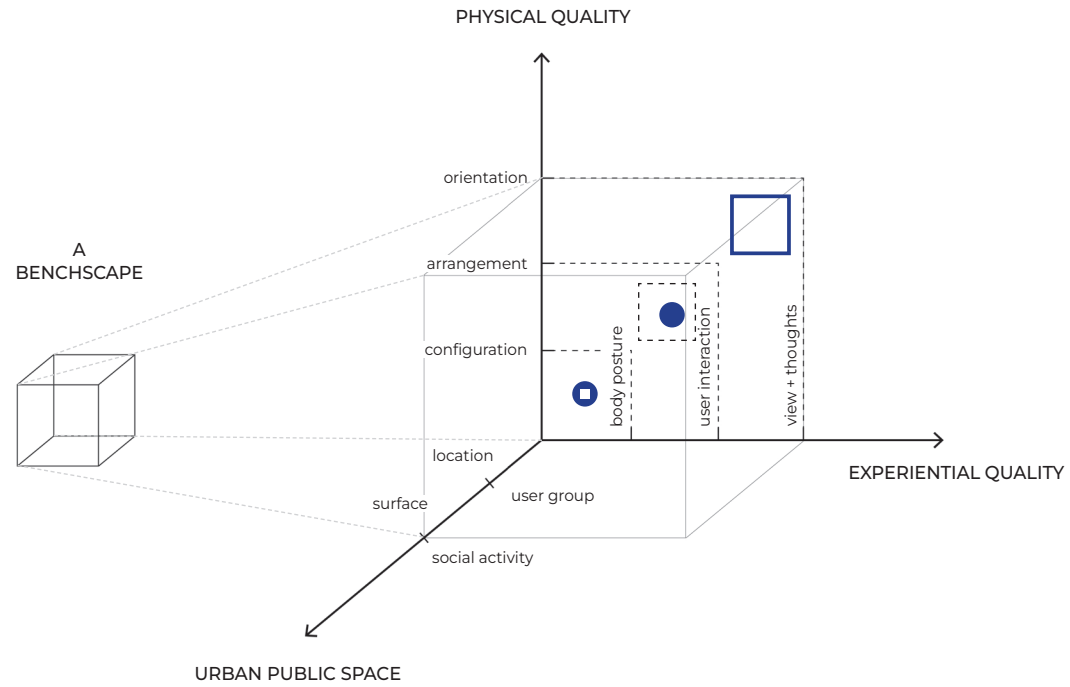
The urban public space dimension considers the location and space surface of a bench or benches, as well as the surrounding environment. This dimension takes into account user groups and the social and spatial quality of the space. It is important to consider the location and surroundings of the bench when designing it, as this will affect its use and functionality.

PHYSICAL & EXPERIENTIAL QUALITY

The three aspects of "FRAMED, FRAME, FRAMING" can be integrated into the three dimensions of "URBAN PUBLIC SPACE, PHYSICAL QUALITY AND EXPERIENTIAL QUALITY". "FRAMING" can refer to the configuration of the bench, as well as the potential sitting numbers, body postures and interactions between users and the bench. The "FRAME" aspect can refer to the

arrangement of the bench, the atmosphere and user interaction within the urban public space where the bench is located, as well as the social and spatial quality of the space. Finally, "FRAMED" can refer to the orientation of the bench in relation to the surrounding landscape and how it affects the experiential quality, like the view and personal thoughts of the users.

In general, by combining the three dimensions of the conceived benchscape with the three aspects of the perceived benchscape, the 3D bench catalogue analysis model provides a holistic approach to analyzing and designing benches and benchscapes in urban public spaces. This model can be used by designers and planners to create benches that are better tailored to the needs and preferences of users, sharing and providing a more enjoyable and comfortable experience for individuals.



03 TEN SITE-SPECIFIC BENCHES IN DEN HELDER

Fig 3-1. Site-specific bench catalogue map of Den Helder, the locations of ten typical site-specific benches in different urban public spaces.

LEGEND

Semi-Private Place

- A allotment garden
- B cemetery

Semi-Public Place

- C plaza
- D community park
- E city park
- F city road
- G fort area

Public Place

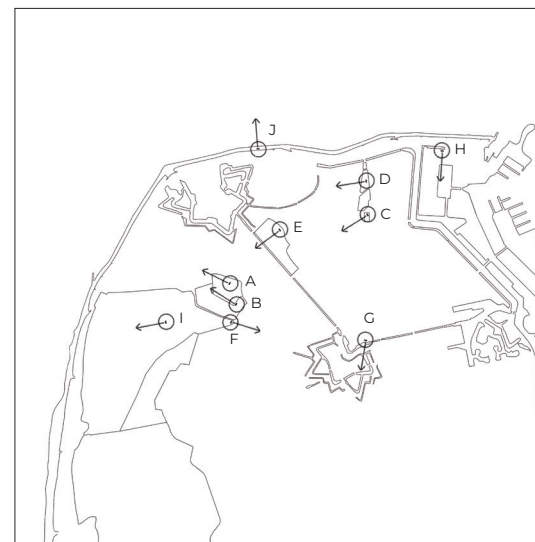
- H port area
- I dune
- J dike

The primary objective of the site-specific bench catalogue is to systematize the physical and experiential characteristics of benches and benchscapes in diverse urban public spaces. These three dimensions are closely linked to the user, people, and the interactions among people, places, and benches.

The first crucial step in this process is to comprehend the audience for whom the benches are designed because different urban public spaces cater to specific user groups. Thus, understanding the diverse levels of public engagement in different locations is fundamental when considering benches in these areas.

The different levels of public engagement can be categorized as follows:

1. Semi-Private Place:
These locations are exclusive to specific users. Examples include allotment gardens and cemeteries.
2. Semi-Public Place:
These locations are open to many residents of various ages. Examples include plazas, parks, and city roads.
3. Public Place:
These locations are open to both residents and tourists. Examples include coastlines and port areas.



TYPOLOGY OF 3.1 SITTING NUMBER & BODY POSTURE

Fig 3-2. A series diagrams show the different types of sitting number and body posture, which also reflect the environmental psychology.

The number of people seated is closely related to the psychology of human behaviour and the different social distances in different interpersonal relationships, which also affects the utility of the benches. At the same time, depending on the configuration of the bench and the public space in which it is located, people's body posture varies, which directly affects their activity, their view and even their thinking.

the most normal posture
 "SUPINE"
 a long bench in a relatively private space
 "LYING ON EITHER SIDE"
 a long bench maybe for homeless people
 "CROSS-LEGGED"
 bench with a wide seat in a leisure space
 "SLOUCHING TO ONE SIDE"
 bench with a comfortable backrest

SITTING NUMBER
 " 1 "

One person sitting in the middle (Other strangers may not come.)
 " 1+1 "

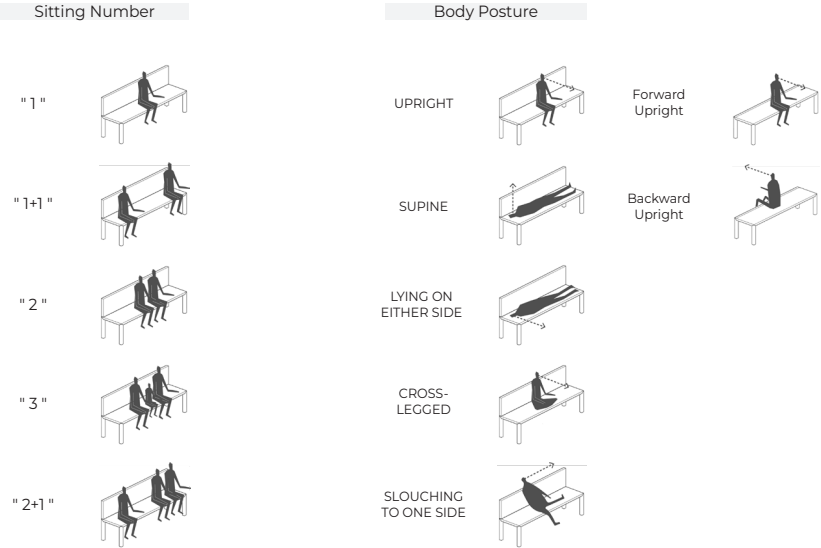
Two people sitting at either end (Two strangers have a social distance.)
 " 2 "

Two people sitting together in the middle (They are friends or family.)
 " 3 "

Three people sitting together in the middle (They are friends or family.)
 " 2+1 "

Two people sitting on one side and one on the other (Two people are friends or family, and they have a social distance with another stranger. The reason might be no more seats available.)

BODY POSTURE
 "UPRIGHT"



3.2 BENCH(A) IN AN ALLOTMENT GARDEN

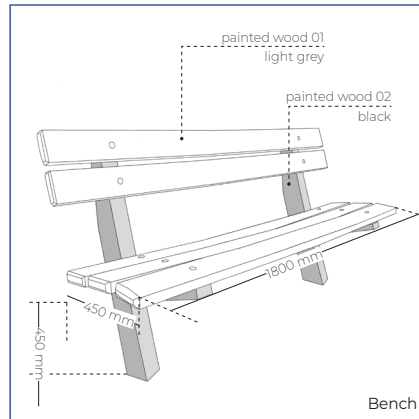
Fig 3-3. Series of sketches and images show the urban public space of bench(A) in an allotment garden, and the physical & experiential quality of the bench and its surroundings.

LEGEND

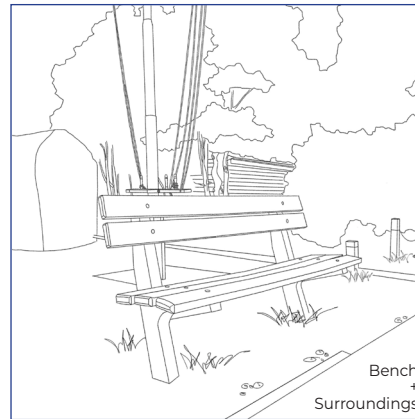
- the bench
- other bench
- building
- ▬ road
- ▨ shurb
- tree



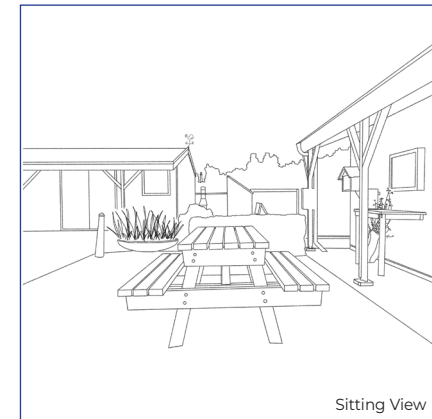
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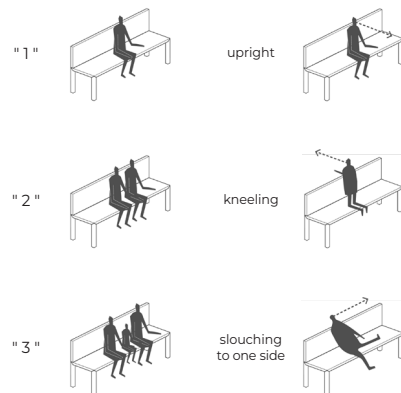
ARRANGEMENT



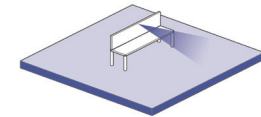
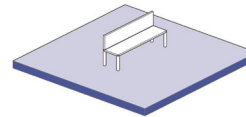
ORIENTATION



SITTING NUMBER + BODY POSTURE



solitary



ATMOSPHERE + USER INTERACTION



VIEW + THOUGHTS

3.3 BENCH(B) IN A CEMETERY

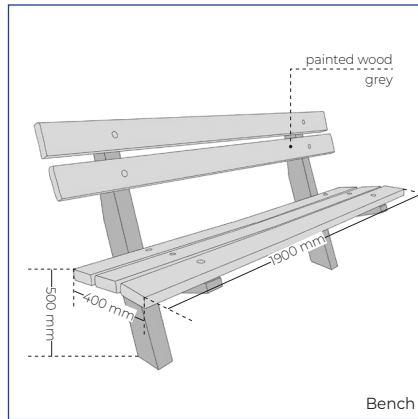
Fig 3-4. Series of sketches and images show the urban public space of bench(B) in a cemetery, and the physical & experiential quality of the bench and its surroundings.

LEGEND

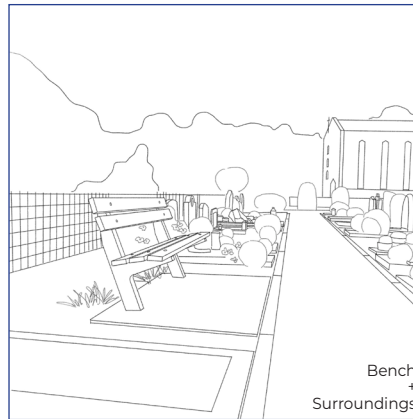
- the bench
- other bench
- building
- ▨ road
- ▨ shurb
- tree



CONFIGURATION



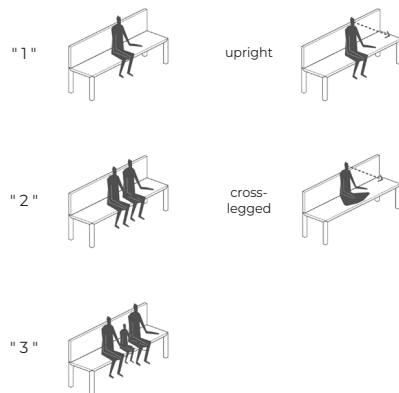
ARRANGEMENT



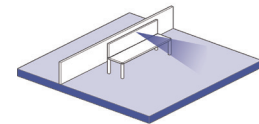
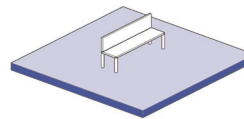
ORIENTATION



SITTING NUMBER + BODY POSTURE



solitary



ATMOSPHERE + USER INTERACTION



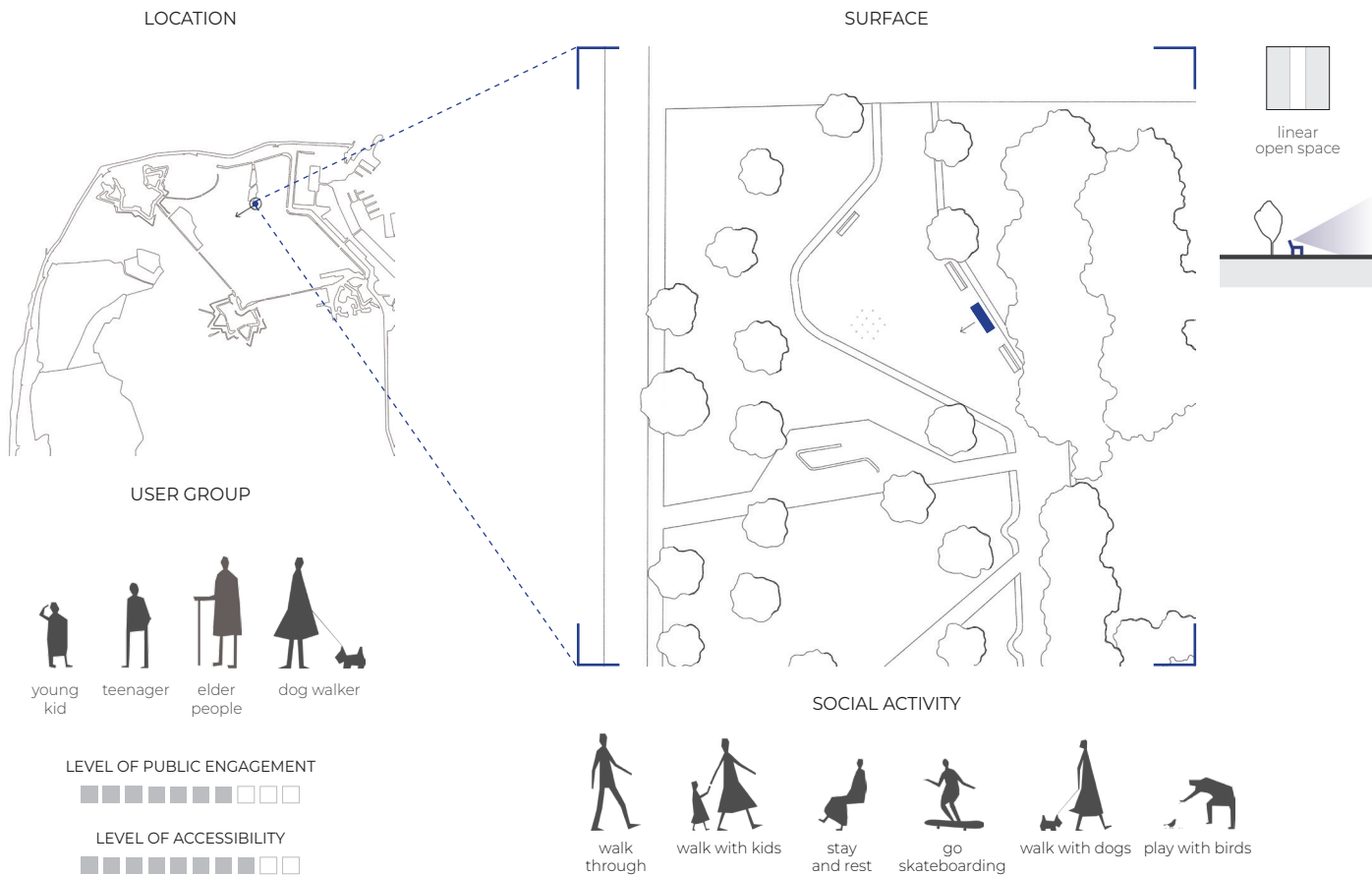
VIEW + THOUGHTS

3.4 BENCH(C) IN A CITY PLAZA

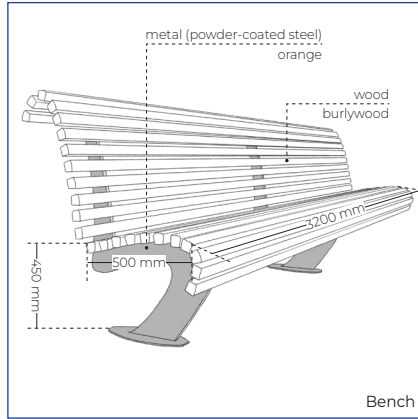
Fig 3-5. Series of sketches and images show the urban public space of bench(C) in a city plaza, and the physical & experiential quality of the bench and its surroundings.

LEGEND

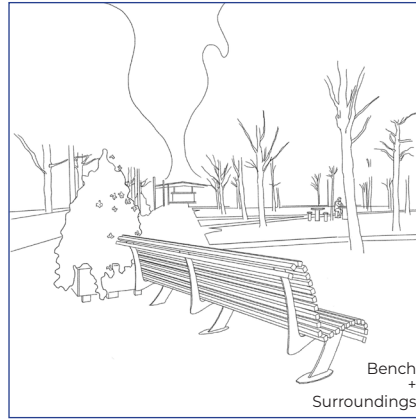
- the bench
- other bench
- building
- ▬ road
- tree



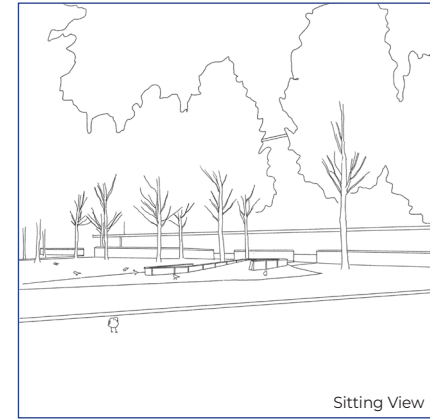
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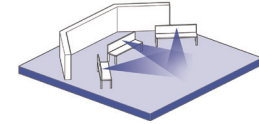
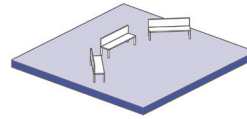
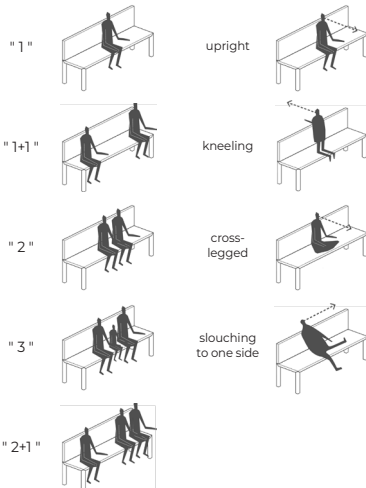
ARRANGEMENT



ORIENTATION



SITTING NUMBER + BODY POSTURE



ATMOSPHERE + USER INTERACTION



VIEW + THOUGHTS

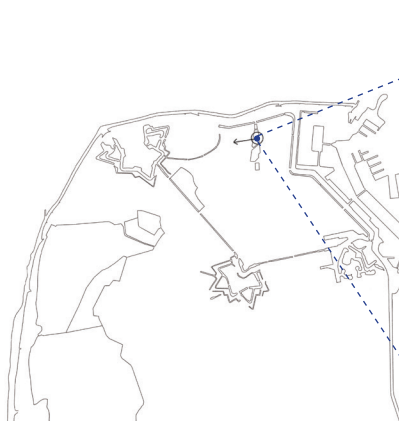
3.5 BENCH(D) IN A COMMUNITY PARK

Fig 3-6. Series of sketches and images show the urban public space of bench(D) in a community park, and the physical & experiential quality of the bench and its surroundings.

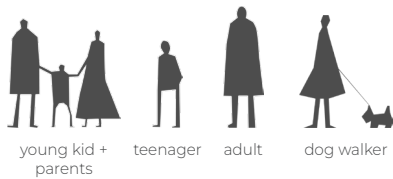
LEGEND

- the bench
- other bench
- building
- road
- tree

LOCATION



USER GROUP



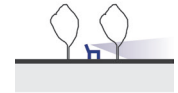
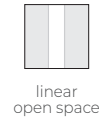
LEVEL OF PUBLIC ENGAGEMENT



LEVEL OF ACCESSIBILITY



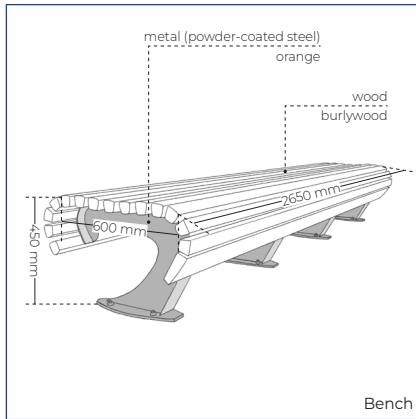
SURFACE



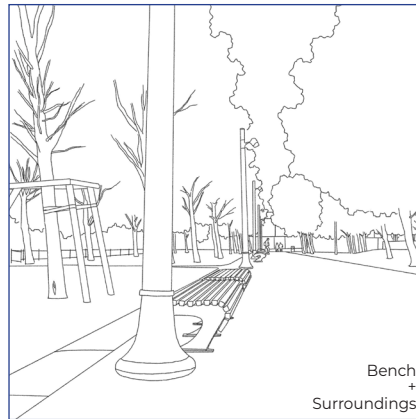
SOCIAL ACTIVITY



CONFIGURATION



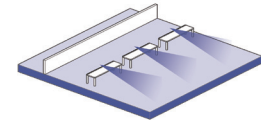
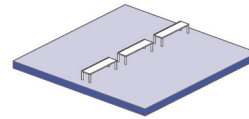
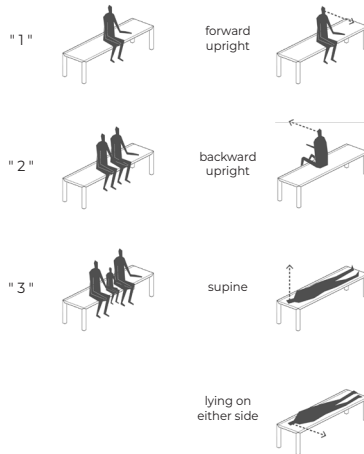
ARRANGEMENT



ORIENTATION



SITTING NUMBER + BODY POSTURE



ATMOSPHERE + USER INTERACTION

VIEW + THOUGHTS

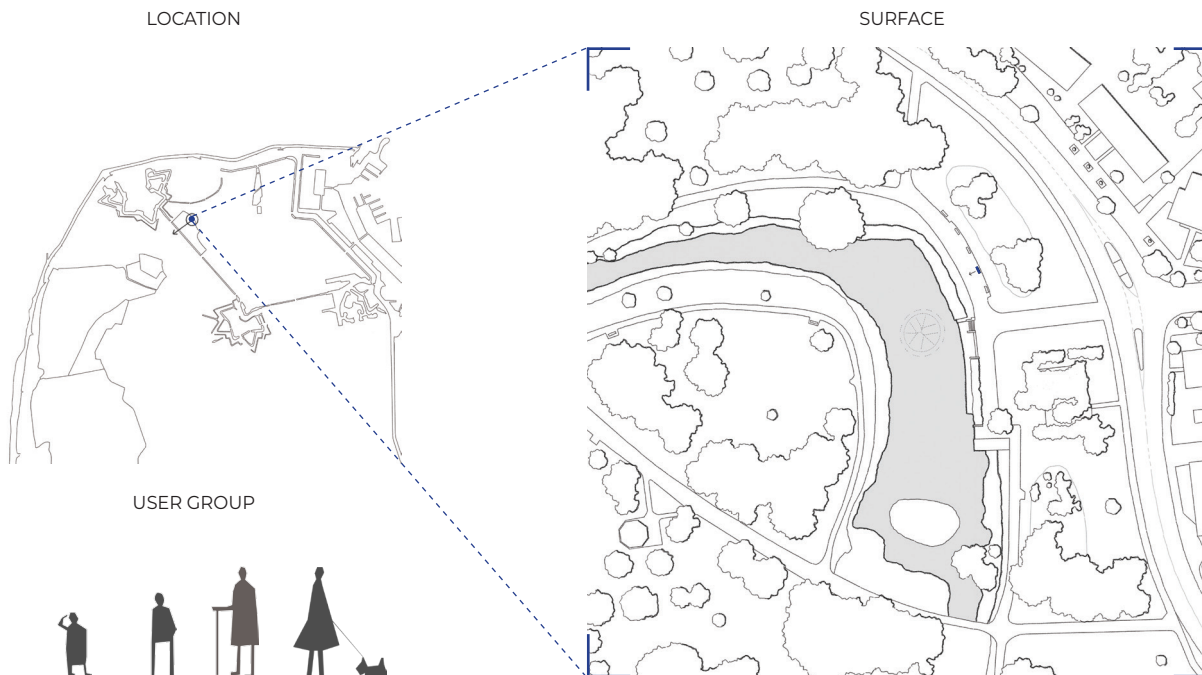


3.6 BENCH(E) IN A CITY PARK

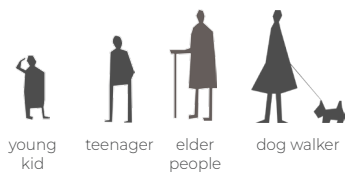
Fig 3-7. Series of sketches and images show the urban public space of bench(E) in a city park, and the physical & experiential quality of the bench and its surroundings.

LEGEND

-  the bench
-  other bench
-  building
-  road
-  shrub
-  tree
-  water



USER GROUP



LEVEL OF PUBLIC ENGAGEMENT



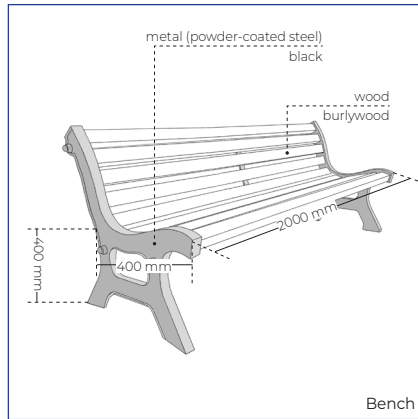
LEVEL OF ACCESSIBILITY



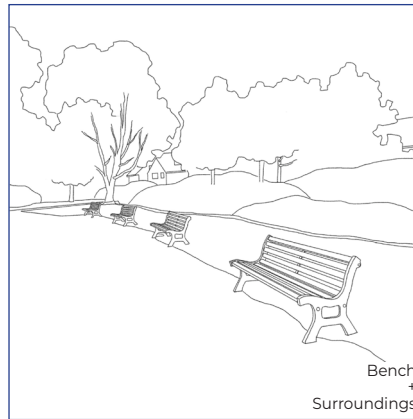
SOCIAL ACTIVITY



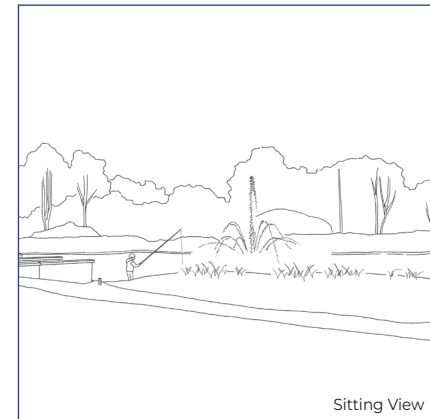
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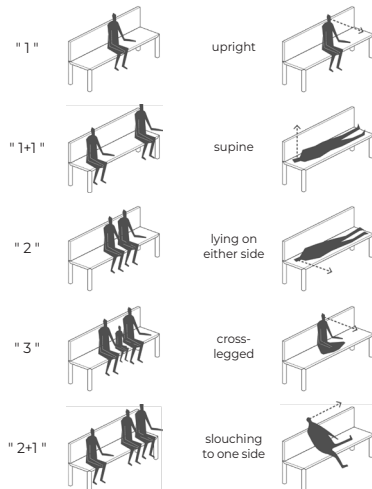
ARRANGEMENT



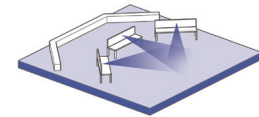
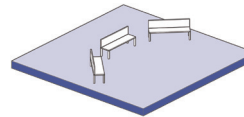
ORIENTATION



SITTING NUMBER + BODY POSTURE



curved line



ATMOSPHERE + USER INTERACTION



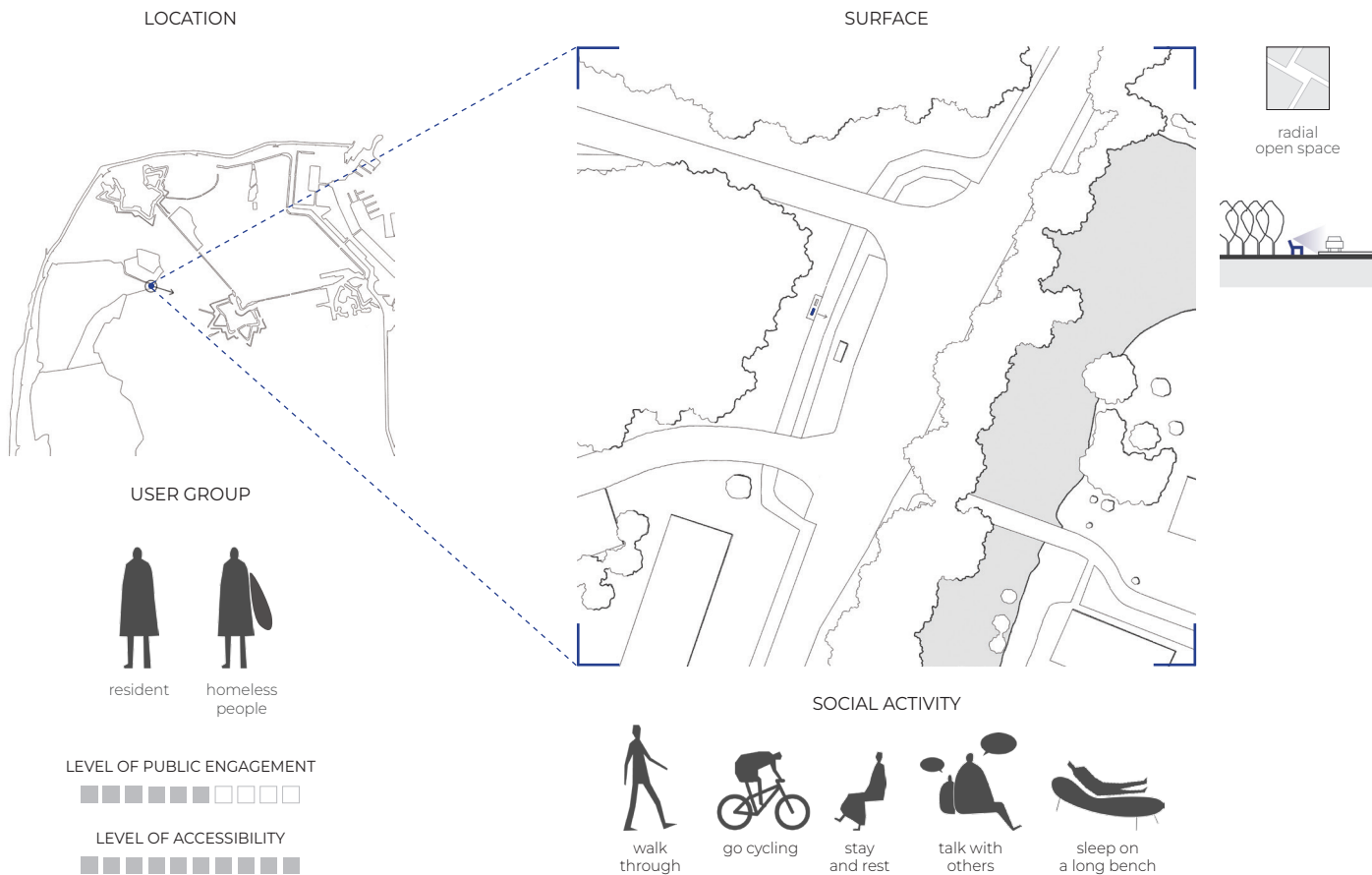
VIEW + THOUGHTS

3.7 BENCH(F) NEXT TO CITY ROADS

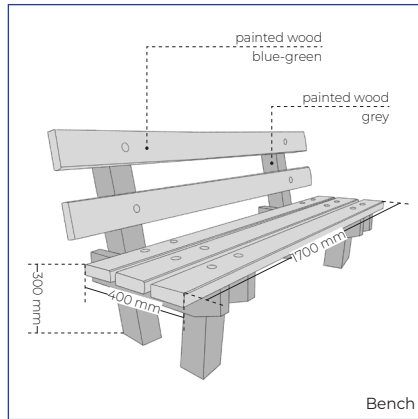
Fig 3-8. Series of sketches and images show the urban public space of bench(F) next to city roads, and the physical & experiential quality of the bench and its surroundings.

LEGEND

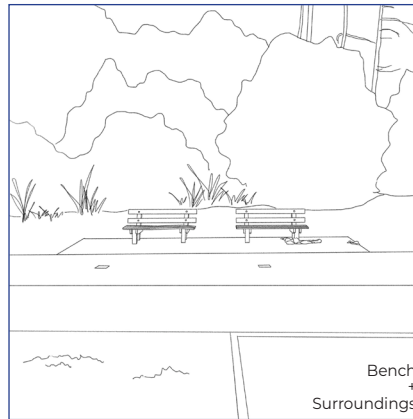
- the bench
- other bench
- building
- ▨ road
- water
- tree



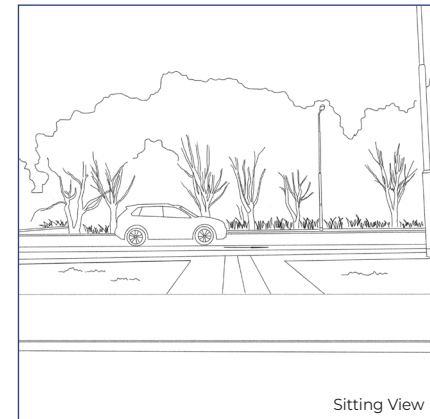
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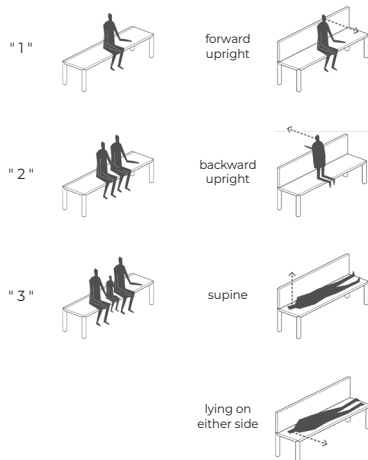
ARRANGEMENT



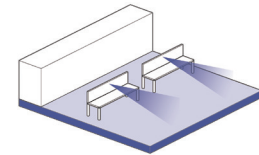
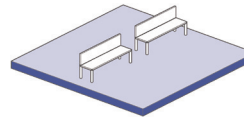
ORIENTATION



SITTING NUMBER + BODY POSTURE



double



ATMOSPHERE + USER INTERACTION



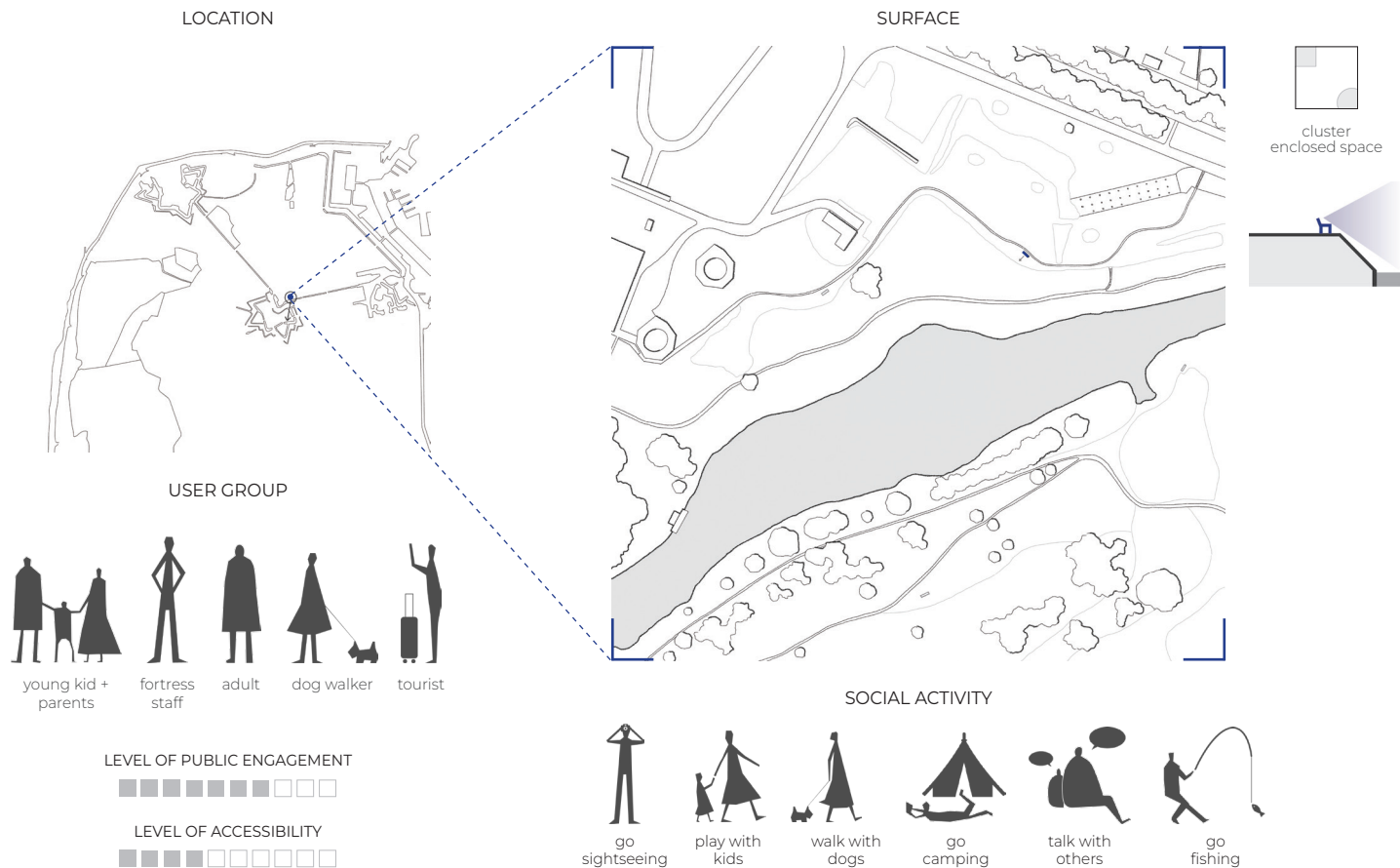
VIEW + THOUGHTS

3.8 BENCH(G) IN A FORT AREA

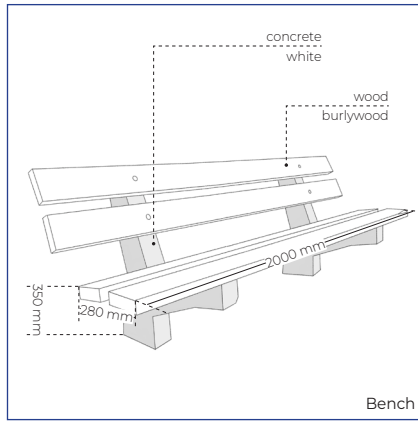
Fig 3-8. Series of sketches and images show the urban public space of bench(G) in a fort area, and the physical & experiential quality of the bench and its surroundings.

LEGEND

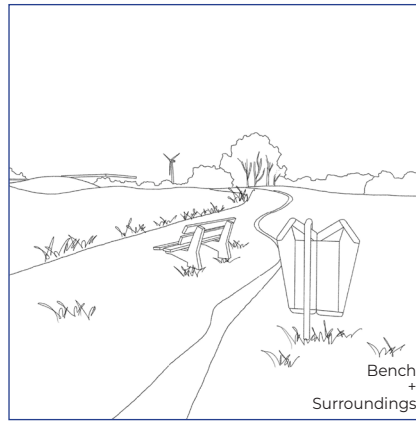
- the bench
- other bench
- building
- ▬ road
- ▨ shrub
- tree
- water



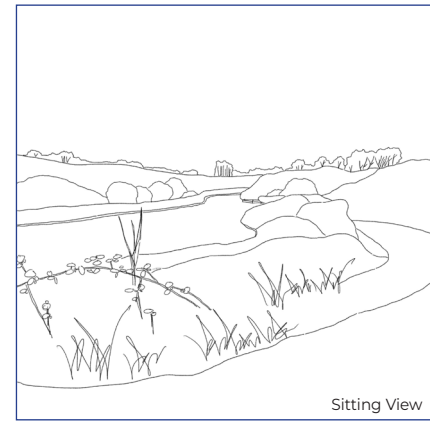
CONFIGURATION



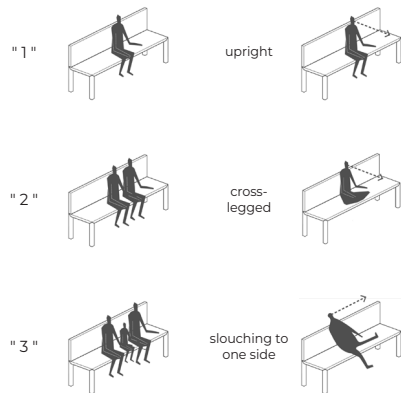
ARRANGEMENT



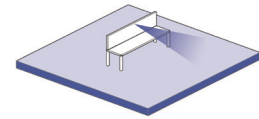
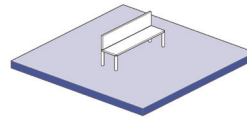
ORIENTATION



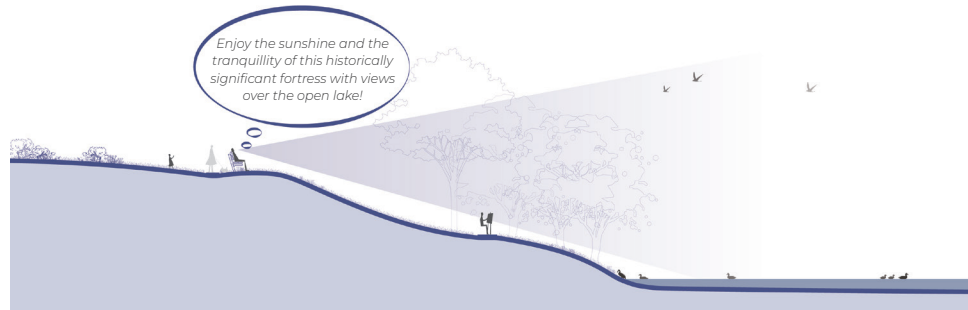
SITTING NUMBER + BODY POSTURE



solitary



ATMOSPHERE + USER INTERACTION



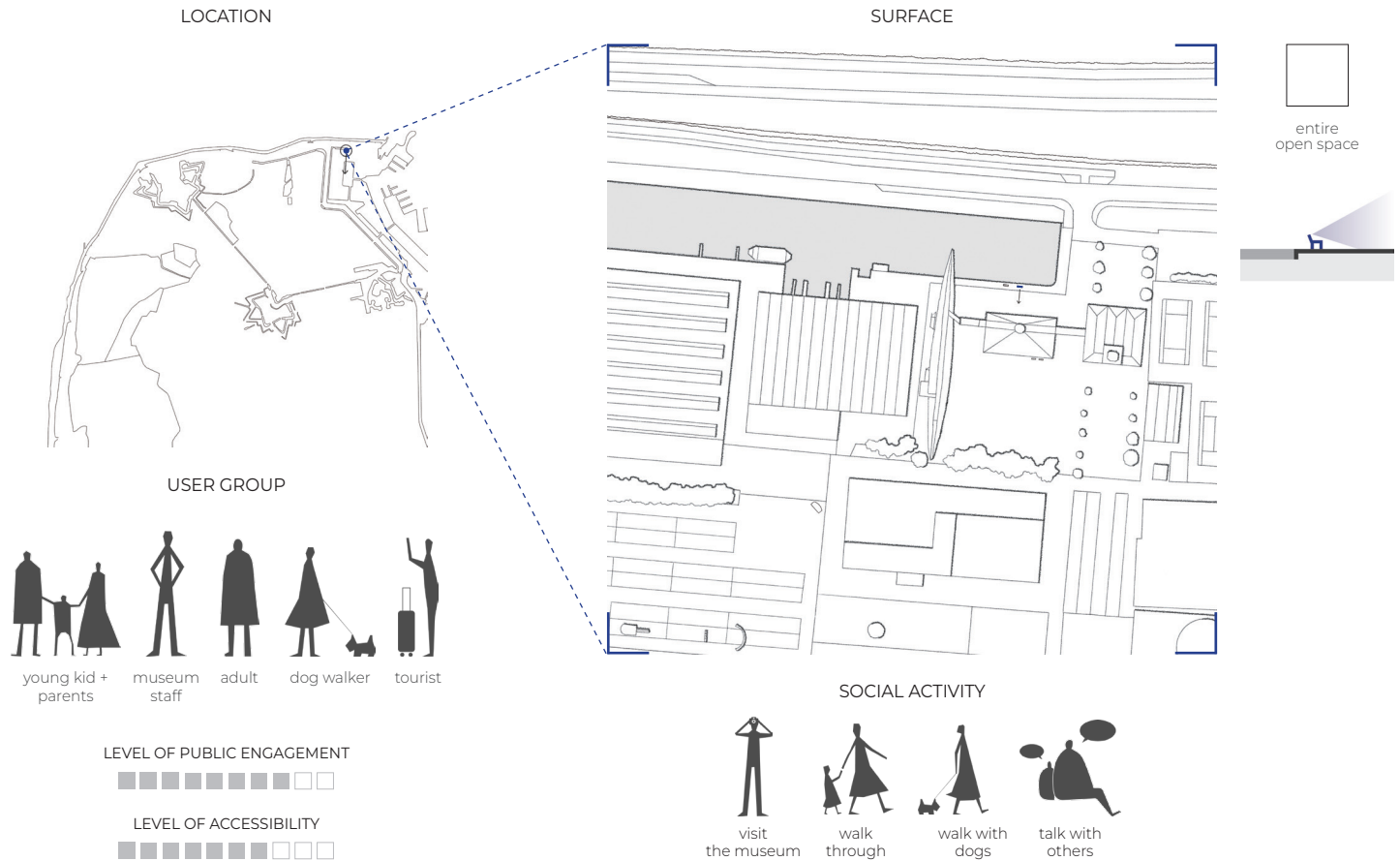
VIEW + THOUGHTS

3.9 BENCH(H) IN A PORT AREA

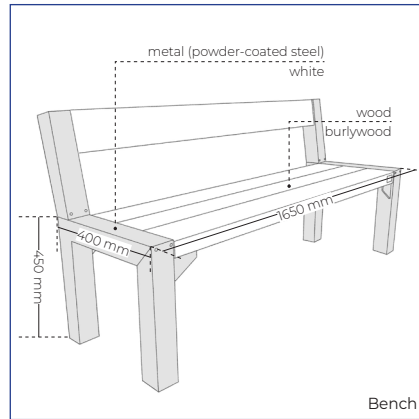
Fig 3-8. Series of sketches and images show the urban public space of bench(H) in a port area, and the physical & experiential quality of the bench and its surroundings.

LEGEND

- the bench
- other bench
- building
- road
- shrub
- tree
- water

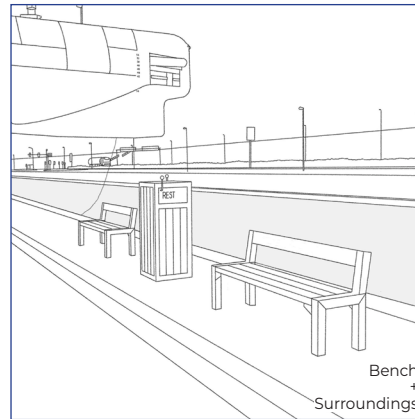


CONFIGURATION



Bench

ARRANGEMENT



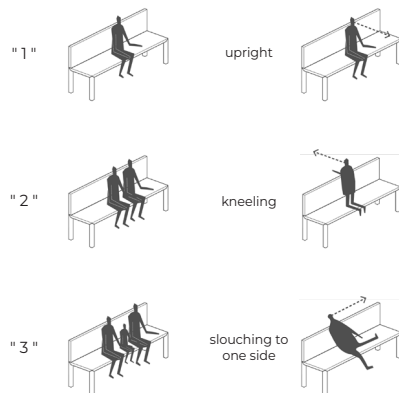
Bench + Surroundings

ORIENTATION

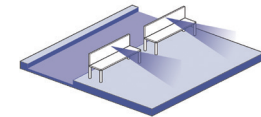
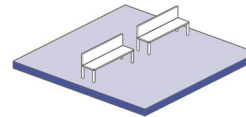


Sitting View

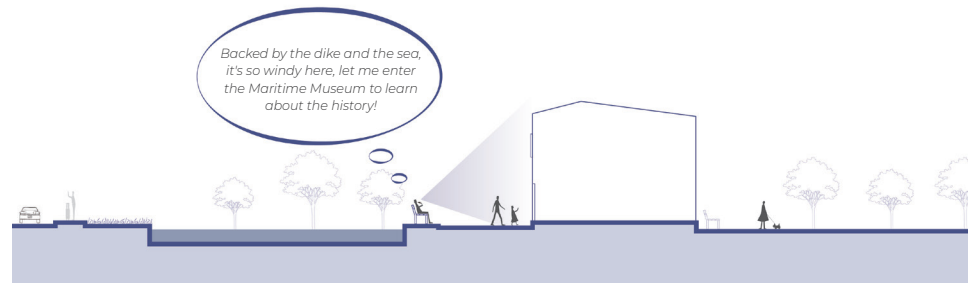
SITTING NUMBER + BODY POSTURE



double



ATMOSPHERE + USER INTERACTION



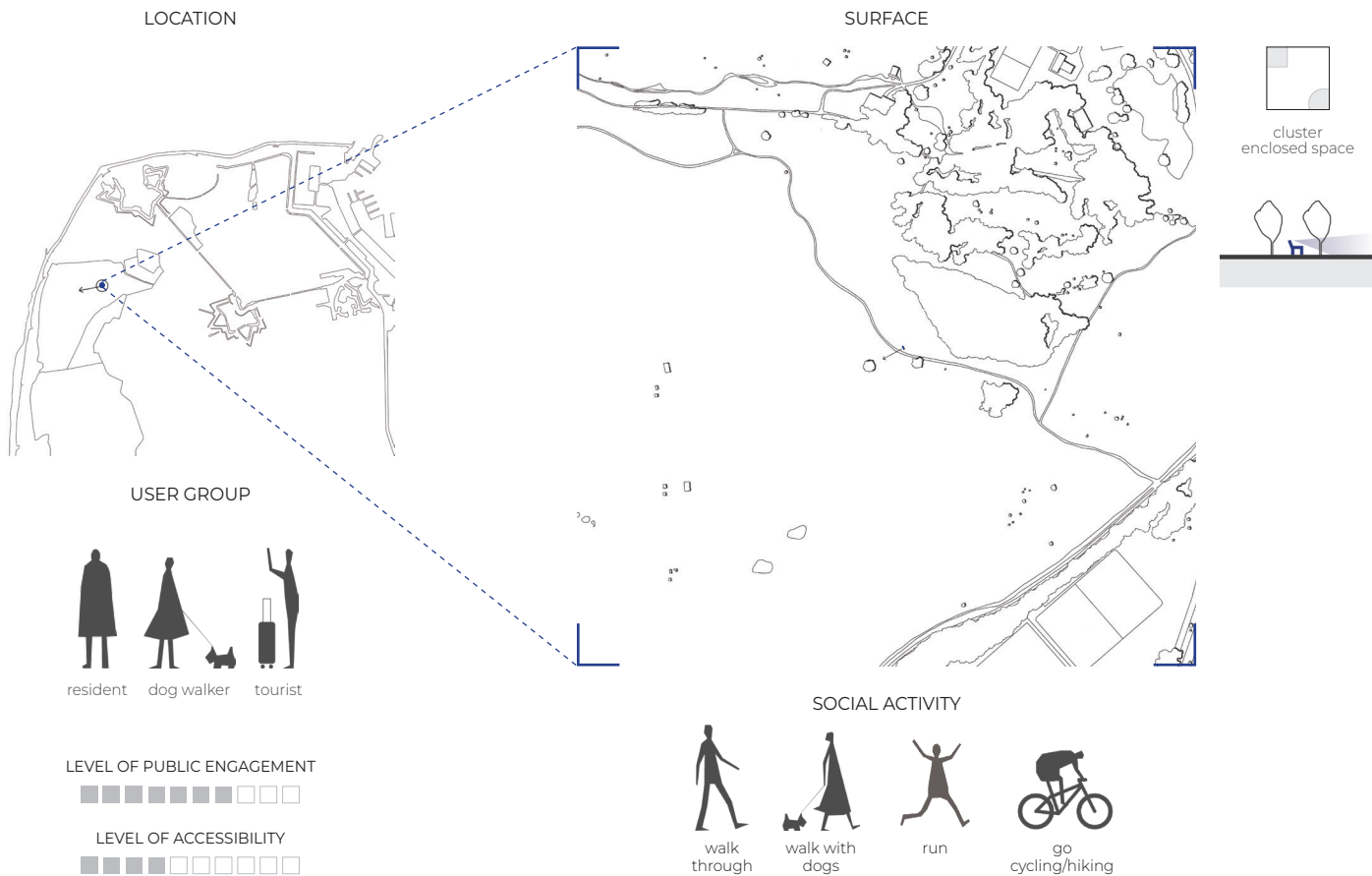
VIEW + THOUGHTS

3.10 BENCH(I) IN A DUNE AREA

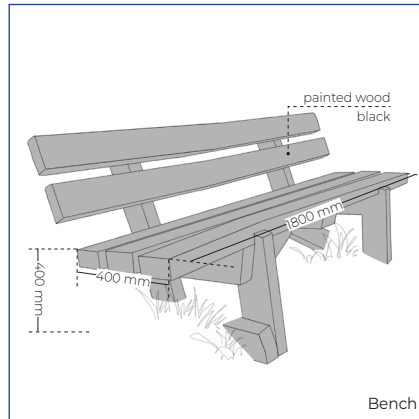
Fig 3-8. Series of sketches and images show the urban public space of bench(G) in a fort area, and the physical & experiential quality of the bench and its surroundings.

LEGEND

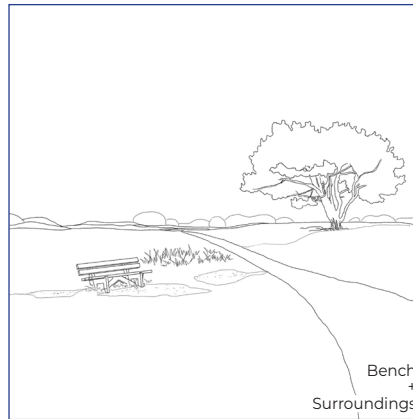
- the bench
- other bench
- building
- ▬ road
- tree



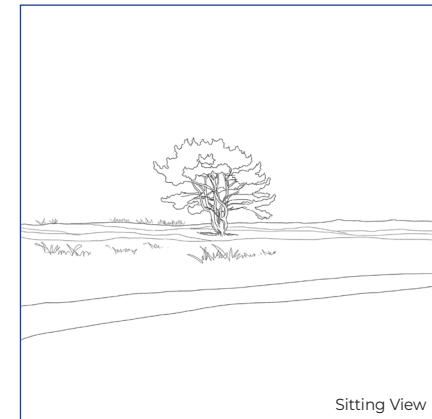
CONFIGURATION



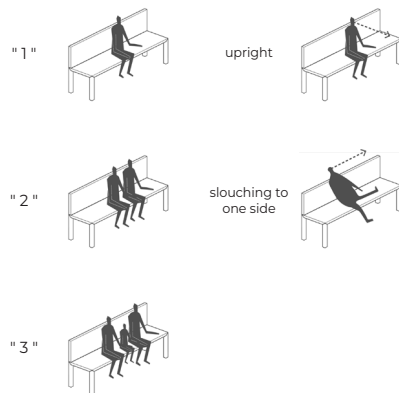
ARRANGEMENT



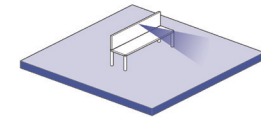
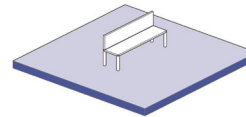
ORIENTATION



SITTING NUMBER + BODY POSTURE



solitary



ATMOSPHERE + USER INTERACTION



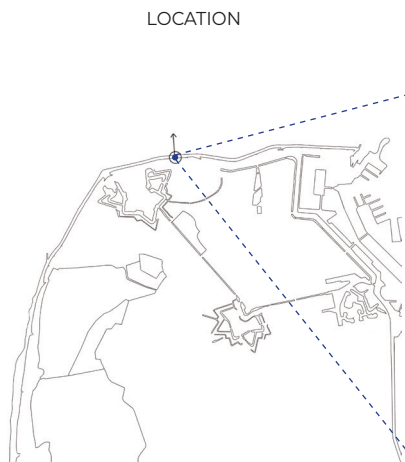
VIEW + THOUGHTS

3.11 BENCH(J) ON THE DIKE

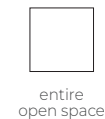
Fig 3-8. Series of sketches and images show the urban public space of bench(G) in a fort area, and the physical & experiential quality of the bench and its surroundings.

LEGEND

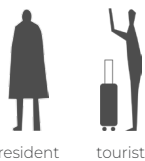
- the bench
- other bench
- ▬ road
- water



SURFACE



USER GROUP



SOCIAL ACTIVITY



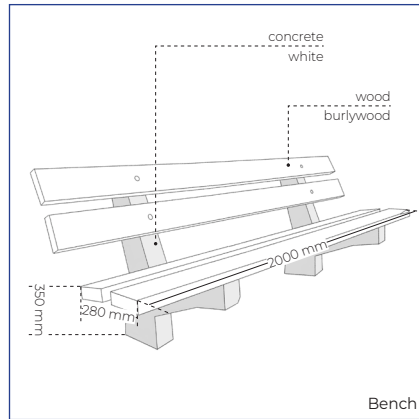
LEVEL OF PUBLIC ENGAGEMENT



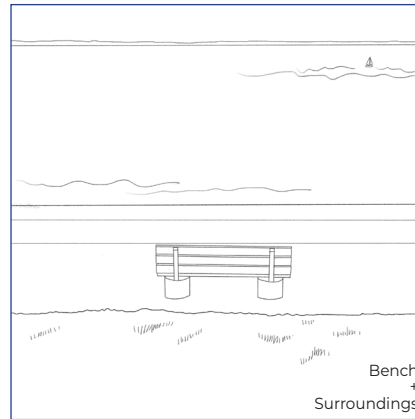
LEVEL OF ACCESSIBILITY



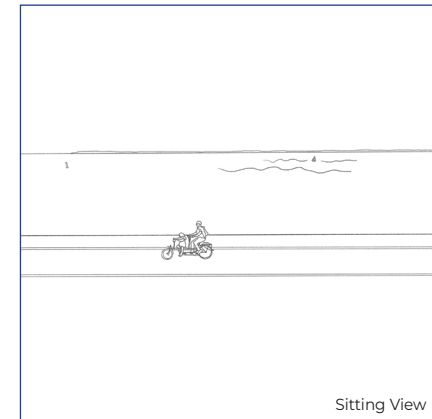
CONFIGURATION



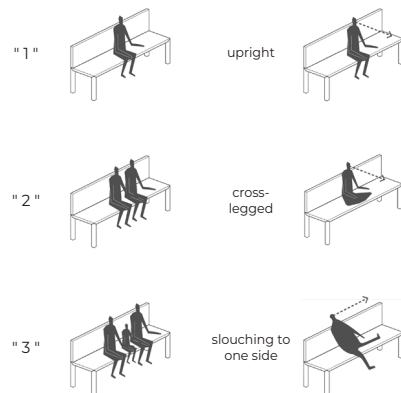
ARRANGEMENT



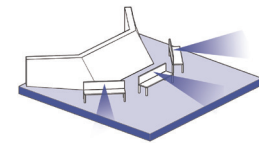
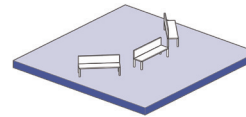
ORIENTATION



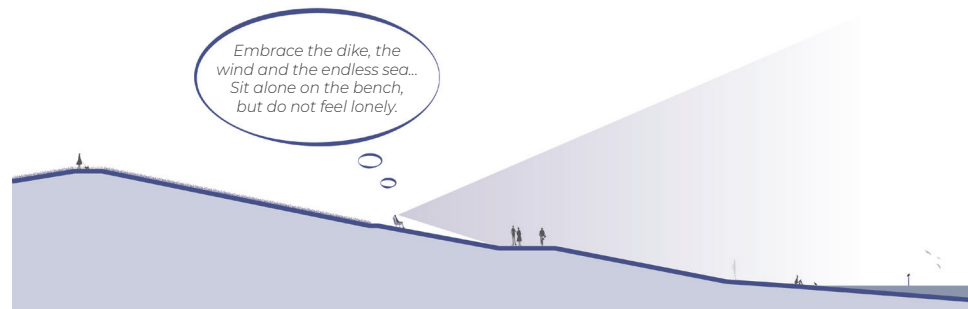
SITTING NUMBER + BODY POSTURE



curved line



ATMOSPHERE + USER INTERACTION



VIEW + THOUGHTS

04 BENCH DESIGN TOOLBOX

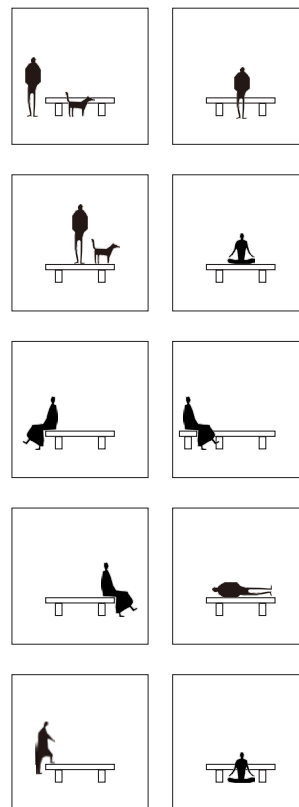
4.1 TYPOLOGY OF BODY POSTURES ON A BENCH

Fig 4-1. A series of sections show the design toolboxes of various typologies of body postures on a bench (a bench without backrest, or with backrest).

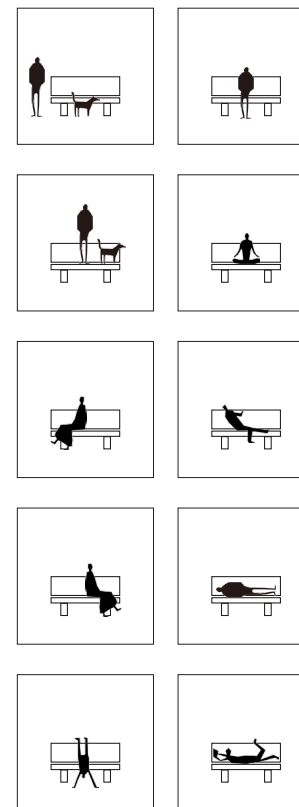
On a bench, people can be seen adopting various body postures, each reflecting their comfort and preferences.

Some individuals sit upright, maintaining a straight back and relaxed shoulders, while others lean back, seeking a more laid-back and comfortable position. Cross-legged postures are also common, with individuals folding one leg over the other, often accompanied by their dogs lying at their feet or nestled on their lap. Some prefer a perched posture, sitting at the edge of the bench with their feet firmly planted on the ground, showing readiness and attentiveness. Occasionally, people may adopt a slouched posture, with a curved back and relaxed shoulders, while their canine companion sits or lies down nearby. On longer benches, individuals might recline, stretching their legs out or crossing them, offering a leisurely position for relaxation or contemplation. In these instances, dogs may lie beside their owners, sharing the peaceful moment together.

01 WITHOUT BACKREST



02 WITH BACKREST



FORM TYPOLOGY OF ORDINARY BENCHES 4.2

Fig 4-2. Several axons of benches show different form types of benches and different sizes of the ordinary benches.

The form of a bench includes its size, color, material and shape. For example, in the center of Den Helder, the benches made of wooden pieces and orange-painted metal pieces are in a curved shape and look different from other benches.

Benches can range from compact and intimate to long and spacious. Small-sized benches are ideal for cozy corners or intimate spaces, providing a comfortable seating option for individuals or small groups. Larger benches, on the other hand, can accommodate more people, making them suitable for parks, public areas, or outdoor gatherings where multiple individuals can sit together.

Wooden bench is a popular choice in Den Helder, offering a natural and timeless look. It can be treated to withstand outdoor elements or left untreated to develop a weathered patina over time. Metal benches provide a modern and sleek appearance while offering durability and resistance to weather conditions. Concrete benches are sturdy and low maintenance, making them suitable for public spaces and high-traffic areas. Other materials such as plastic, composite materials, or even recycled materials can also be used, offering versatility and eco-friendly options.

Two Basic Bench Types

**Bench without backrest**

1. can sit on both sides (depends on surroundings)
2. less comfortable (a short-time stay)

**Bench with backrest**

1. can only sit on one side (specific sitting view)
2. more comfortable (a long-time stay)
3. more body postures (depends on the backrest inclination)

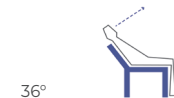
Three Main Backrest Inclination



9°

almost vertical;
only for short-time stay

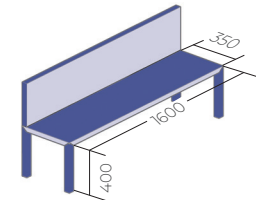
18°

best for rest outside;
good for long-time stay

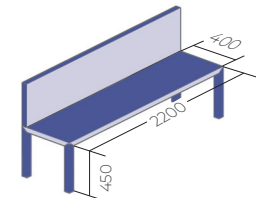
36°

most leisurely;
relatively private space

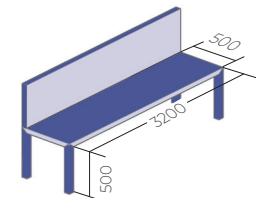
Three Typical Sizes



Small - for 2 people



Medium - for 3 people



Large - for 4 to 5 people

4.3 SITE-SPECIFIC BENCH ARRANGEMENT TYPOLOGY

NB: The relations between bench arrangement + orientation and atmosphere in the typology table only apply to the ten typical ordinary benches in Den Helder, which may change in different contexts.

Based on the research of the ten typical ordinary benches and their surroundings in Den Helder, there are five basic types of bench arrangement, including solitary, double, straight line, and two different curved lines. In addition, benches with or without a backrest and their different surroundings always make a difference in bench orientation, like a wall as a barrier beside a bench or a fence at the back of a bench. Therefore, the atmosphere of the benchscape is highly related to the physical and perceptual condition of the bench and its surroundings and also the larger context of the location.

Bench Arrangement

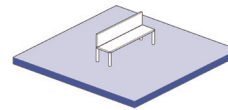
Bench Orientation

Atmosphere

BT 1



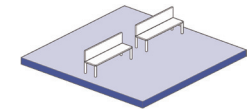
solitary



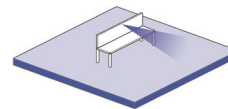
BT 2



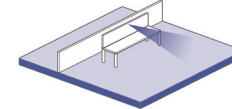
double



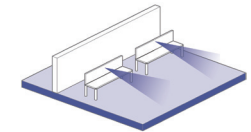
BT 1.1



BT 1.2



BT 2.1



1. iconic landmark
2. lonely, alone
3. respectful, powerful
4. peaceful
5. historical, ancient

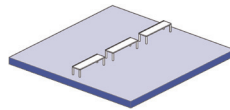
1. peaceful
2. lonely, alone
3. respectful
4. mournful
5. memorable

1. isolated
2. unsafe
(short-time stay)
3. a bit noisy
4. memorable

BT 3



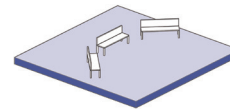
straight line



BT 4



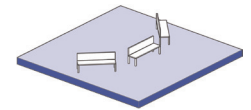
curved line 1



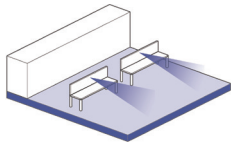
BT 5



curved line 2

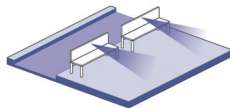


BT 2.2



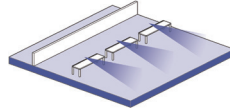
1. gathering
2. unsafe
3. a bit noisy

BT 2.3



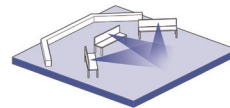
1. open, windy
2. a bit noisy
3. unsafe
(short-time stay)

BT 3.1



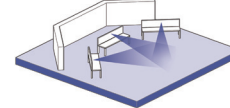
1. open
2. energetic
3. linear

BT 4.1



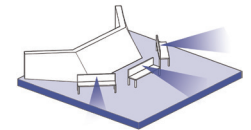
1. open, clear
2. gathering
3. safe
4. leisurely

BT 4.2



1. lively, vibrant
2. gathering
3. isolated
4. a bit noisy
(small area)
5. quite, peaceful
(large area)

BT 5.1

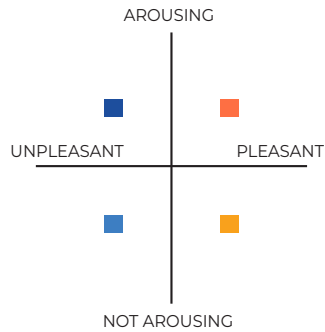


1. alone, lonely, tiny
2. open, windy
3. calm
4. stressless

4.4 TYPOLOGY OF A BENCH AND ITS SURROUNDINGS

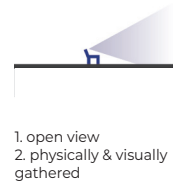
Bench + Surroundings

Based on an environmental psychology model with X-axis (pleasure) and Y-axis (arousal) to evaluate bench in different environments.



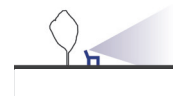
Five Basic Terrains

Terrain A Flat ground

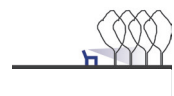


1. open view
2. physically & visually gathered

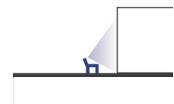
Bench in Different Environments



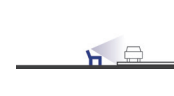
- A-1** ■
1. restful
 2. stimulating



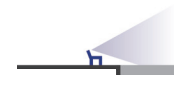
- A-4** ■
1. interesting
 2. exciting



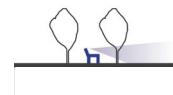
- A-7** ■
1. forceful
 2. uncomfortable



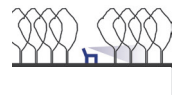
- A-10** ■
1. uncomfortable
 2. dissatisfying



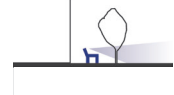
- A-13** ■
1. beautiful
 2. restful



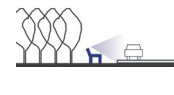
- A-2** ■ ■
1. inactive
 2. restful



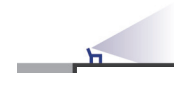
- A-5** ■
1. peaceful
 2. tranquil



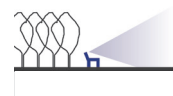
- A-8** ■
1. inactive
 2. dissatisfying



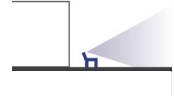
- A-11** ■
1. boring
 2. unstimulating



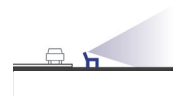
- A-14** ■
1. peaceful
 2. calm



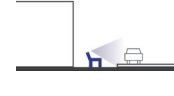
- A-3** ■
1. peaceful
 2. drowsy



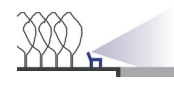
- A-6** ■ ■
1. restful
 2. inactive



- A-9** ■
1. uncomfortable
 2. tense

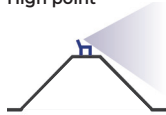


- A-12** ■
1. uncomfortable
 2. inactive

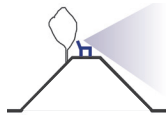


- A-15** ■
1. pleasant
 2. peaceful

Terrain B
High point

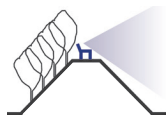


- 1. panoramic view
- 2. landmark
- 3. physically isolated



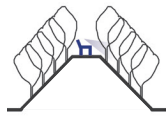
B-1 ■

- 1. stimulating
- 2. exciting



B-2 ■

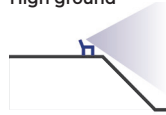
- 1. exhilarating
- 2. pleasing



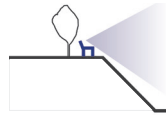
B-3 ■

- 1. peaceful
- 2. tranquil

Terrain C
High ground

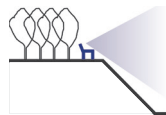


- 1. panoramic view
- 2. partly physically isolated



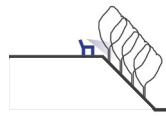
C-1 ■

- 1. restful
- 2. peaceful



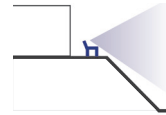
C-2 ■

- 1. pleasant
- 2. serene



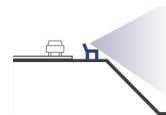
C-3 ■

- 1. stimulating
- 2. active



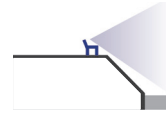
C-4 ■

- 1. unpleasant
- 2. repulsive



C-5 ■

- 1. uncomfortable
- 2. forceful



C-6 ■

- 1. beautiful
- 2. restful

Terrain D
Low point

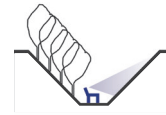


- 1. limited view
- 2. physically & visually isolated



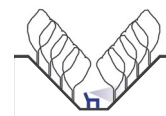
D-1 ■

- 1. inactive
- 2. monotonous



D-2 ■

- 1. restful
- 2. unstimulating



D-3 ■

- 1. peaceful
- 2. tranquil

Terrain E
Low ground

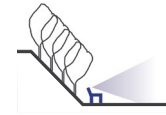


- 1. open view
- 2. partly physically isolated



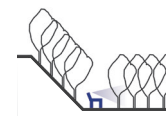
E-1 ■

- 1. restful
- 2. inactive



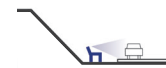
E-2 ■

- 1. pleasing
- 2. beautiful



E-3 ■

- 1. restful
- 2. calm



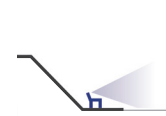
E-4 ■

- 1. uncomfortable
- 2. monotonous



E-5 ■

- 1. boring
- 2. inactive



E-6 ■

- 1. pleasing
- 2. serene

B ENCH CATALOGUE

DEN HELDE R