Table 1. Data processing

			Objectives											Dimensions									Relevant design principles
			Problem-oriented (Macro-level)						User-based (Micro-level)					Spatial					Managerial+Spatial?				
																			Access		Event		
			Overcrowding?	(Potentially) Reduce overcrowding?	Emptiness?	(Potentially) Reduce emptiness?	Add city value?	Reduce use conflicts?	Safety	Speed	Ease	Comfort	Experience	Spatial Scale?	Layout - Element?	Path?	Flow?	Programming?	Access?	Spatial relevant?	Feasible to add events?	Spatial relevant?	
Cases	1	**Beijing West**	√	√-	√	√-								—	√	√	√	○	√	√	√-	√	
	2	Beijing South	√											—		√							
	3	**Shanghai**	○	√+	○	√+								—	√						√+	√	
	4	**Rotterdam**	○	√+	○	√+								—	√		○				√+	√	
	5	**Utrecht**	○	√+	○	√+								—	√						√+	√	
	6	**Bijlmer**	√	√+	√	√+								—	√						√+	√	
	7	Zandvoort												—	○						√+	○	
		Beijing West,Beijing South,Shanghai,Rotterdam,Utrecht,Bijlmer,Zandvoort	—	—	—	—	—	—	—	—	—	—	—	—	—	√	—	—	—	—	—	—	
	Other case(s)	Guangzhou station												—							√	○	
		Shanghai South																	√	√			
		Allianz arena	○	√+	√	√-			—	√-	—	√-	—	—	√	○	○	○	○	○	√+	√	
Case comparisons (Any differences or commons considering the different objectives / dimensions ?)	1	Beijing West vs Beijing South	—	—	—	—	—	—	—	—	—	—	—	—	—	√	—	—	—		—	—	
	2	**Beijing West vs Shanghai** [1]	√	√	√	√			√	√	√	√	√	—	√								
	3	**Beijing West vs Rotterdam**	√	√	√	√			√	√	√	√	√	—			√		/				
	4	Beijing West vs Utrecht												—									
	5	Beijing West vs Bijlmer												—									
	6	Beijing West vs Zandvoort												—									
	7	Beijing South vs Shanghai												—									
	8	Beijing South vs Rotterdam												—									
	9	Beijing South vs Utrecht												—									
	10	Beijing South vs Bijlmer												—									
	11	Beijing South vs Zandvoort												—									
	12	**Shanghai vs Rotterdam**	○	○	○	√			√	√	√	√	√	—		○	○	○	○		○	○	
	13	Shanghai vs Utrecht												—									
	14	Shanghai vs Bijlmer												—									
	15	Shanghai vs Zandvoort												—									
	16	Rotterdam vs Utrecht												—									
	17	Rotterdam vs Bijlmer												—									
	18	Rotterdam vs Zandvoort												—									
	19	Utrecht vs Bijlmer												—									
	20	Utrecht vs Zandvoort												—									
	21	Bijlmer vs Zandvoort												—									
		Utrecht new vs Utrecht old	√	√	○	○								—	√								
		Rotterdam new vs Rotterdam old	√	√	○	○		√	√	√	√	√	√	—	√								
		(Beijing West,Beijing South,Shanghai) vs (Rotterdam,Utrecht,Bijlmer,Zandvoort)	—	—	—	—	—	—	—	—	—	—	—	—	√	√	√	○	√	√	○	○	
		Rotterdam vs Bijlmer vs Zandvoort	—	—	—	—	—	—	—	—	—	—	—	√	—	—	—	—	—		—	—	
Literature	1	(Van Acker & Triggianese, 2021)	○	○	○	○			○	○	○	○	√	√	○	○	○	○	○	○		○	○	
	2	(Guangping & guanyu, 2019)	○	○	○	○			○	○	○	○	○	○	√	○	○	○	○	○		○	○	
	3	(Ardeshiri et al., 2016)	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○		○	○	
	4	(Geraedts, 2008)	○	○	○	○			○	○	○	○	○	○	√	○	○	○	○	○		○	○	
	5	(Hoppenbrouwer & Louw, 2005)	○	○	○	○			○	○	○	○	○	○	○	○	○	√	○	○		○	○	
	6	(Rabianski & Clements, 2007)	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○		○	○	
	7	(Kelpe, 2007)	○	○	○	√			○	○	○	○	○	○	√	○	○	○	○	○		○	○	
	8	(Lara-Hernandez et al., n.d.)	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○		○	○	
	9	(Smith, 2023)	○	○	○	√			○	○	○	○	○	○	√	○	○	○	○	○		○	○	
	10	(Wu et al., 2021)	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○		○	○	
	11	(Hoogendoorn & Daamen)	√	√	○	○			○	○	○	○	○	○	√	○	○	○	○	○		○	○	
	12	(Jin et al., 2020)	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○		○	○	
	13	(Arne, 2022)	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○		○	○	
	14	(Smith et al., 2021)	○	○	○	√			○	○	○	○	○	○	○	○	○	○	○	√		√	○	
	15	(Ivers, 2018)	○	○	○	√			○	○	○	○	○	○	√	○	○	○	○	○		○	○	
	16	(Wang, 2019)	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○		○	○	
	17	(Zhao & Siu, 2014)	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○		○	○	
		Relevant design principles					17																

Not examined — Not relevant ○ Examined, but no relevar

Legend: Primary examinations | Not examined | — Not relevant | ○ Examined, but no relevant findings | √ Has relevant findings | √+ Has relevant and positive findings | √- Has relevant and negative findings

Notes: Click the comment of each cell to see the detailed description.

Table 2. The evaluation of design principles

Index	Name	Objectives								
		Problem-oriented (Macro-level)				User (Passenger)-based (Micro-level)				
		Reduce Overcrowding?	Reduce Emptiness?	Add city value?	Reduce use conflicts?	Safety	Speed	Ease (Wayfinding)	Comfort	Experience
1	Align open spaces with main paths	○	√	○	○	○	○	○	○	√
2	Space for humans	○	√	○	○	○	○	○	○	√
3	Add installations and facilities	Depend on the context ↓	√	○	○	○	○	○	√	√
4	Reconfigurable elements	√	√	○	○	○	○	○	○	○
5	Stairs as stages or seats	○	√	○	○	○	○	○	○	√
6	Shortcuts or optimizing paths	√	√	○	√	○	√	√	○	○
7	Reduce level change by landscape design (District-level)	√	○	○	○	√	○	○	○	○
8	Changeable or moveable building	√	√	–	–	–	–	–	–	–
9	Reduce bottlenecks to ease flow (District-level)	○	√	√	○	○	√	○	√	○
10	Connect and share with neighborhoods	√	√	√	○	√	○	○	√	○
11	Redundant spaces	√	↓	○	○	↓	↓	○	○	↓
12	Redundant spaces + compact network + regulate path	√	√	○	√	√	√	○	○	○
13	City passage (Element)	○	√	√	√	–	–	–	–	–
14	Scattered mobility nodes to increase capacity	√	○	○	○	√	○	↓	○	○
15	Set apart bottlenecks	√	○	–	○	√	○	○	○	○
16	Set apart non-transport function	√	○	○	√	√	○	√	○	○
17	Scattered mobility nodes to vibrate city environment	√	○	√	○	○	↓	↓	√	√
18	Programming considering flexible uses in temporal dimension	√	√	√	○	○	○	○	○	○
19	Regulate path by temporary or reconfigurate elements	√	–	–	–	√	○	○	○	√
20	Suitable general layout of the station and city	Depend on the context	Depend on the context	Depend on the context	Depend on the context					
21	Reduce bottlenecks to ease flow (Building-level)									
22	Reduce level change by landscape design (Building-level)									
23	Positioning City passage (Layout)									