



## **MOBILITÀ \_ CITTA' E TERRITORIO**

Trasporti e  
organizzazione  
urbana

## Declino del Trasporto Pubblico locale

Fra il 1960 e il 1998 la quota soddisfatta dal trasporto pubblico scende dal 50% al 17% mentre in ambito urbano scende dal 18% al 7%

Tabella 1.5 Traffico interno totale di passeggeri per i mezzi di trasporto collettivi.

Anni	Ferrovie	Trasporti extraurbani		Trasporti urbani collettivi	Percentuale sul totale
		Autolinee	Autobus a noleggio		
1960	25,06	12,30	1,08	11,69	50,13
1965	16,75	9,26	1,87	8,59	36,47
1970	11,33	4,80	2,33	4,49	22,95
1975	9,89	4,36	2,66	4,79	21,70
1980	9,31	4,37	4,69	4,46	22,83
1985	7,64	3,76	6,12	3,80	21,32
1990	6,63	2,40	7,53	2,22	18,78
1995	6,33	2,03	7,23	1,92	17,51
1998 <sup>1</sup>	5,82	1,88	7,25	1,73	16,68

<sup>1</sup> stima interna Ministero dei Trasporti e della Navigazione – Ufficio di Statistica

Tabella 1.6 Passeggeri trasportati dai servizi di trasporto pubblico locale (milioni/anno)

Anno	Trasporto extraurbano				Trasporto urbano			
	Ferrovie	Bus	Tram	Totale	Bus	Tram	Metro	Totale
1981	192	1.206	6	1.404	4.111	436	345	4.892
1998	152	839	4	995	2.448	292	563	3.303
DIFFERENZA %	-21%	-30%	-33%	-29%	-40%	-33%	63%	-32%

Fonte: Ministero dei Trasporti (1999 e precedenti), Conto Nazionale dei Trasporti, nostra elaborazione.

Mezzi di trasporto	2007 (val%)	2000 (val%)	Differenza 2007-2000
Auto	73,8	70,8	+3,0
Tram e bus	5,4	5,8	-0,4
Moto e ciclomotori	6,4	5,5	+0,9
A piedi	5,4	8,6	-3,2
Bicicletta	3,0	2,9	+0,1
Treno e metro	1,3	2,2	-0,9
Combinati pubblici/privati	6,1	2,7	+3,4

Fonte: Isfort, indagine Audimob

Figure 2.1: The urban structure of dispersed and compact cities

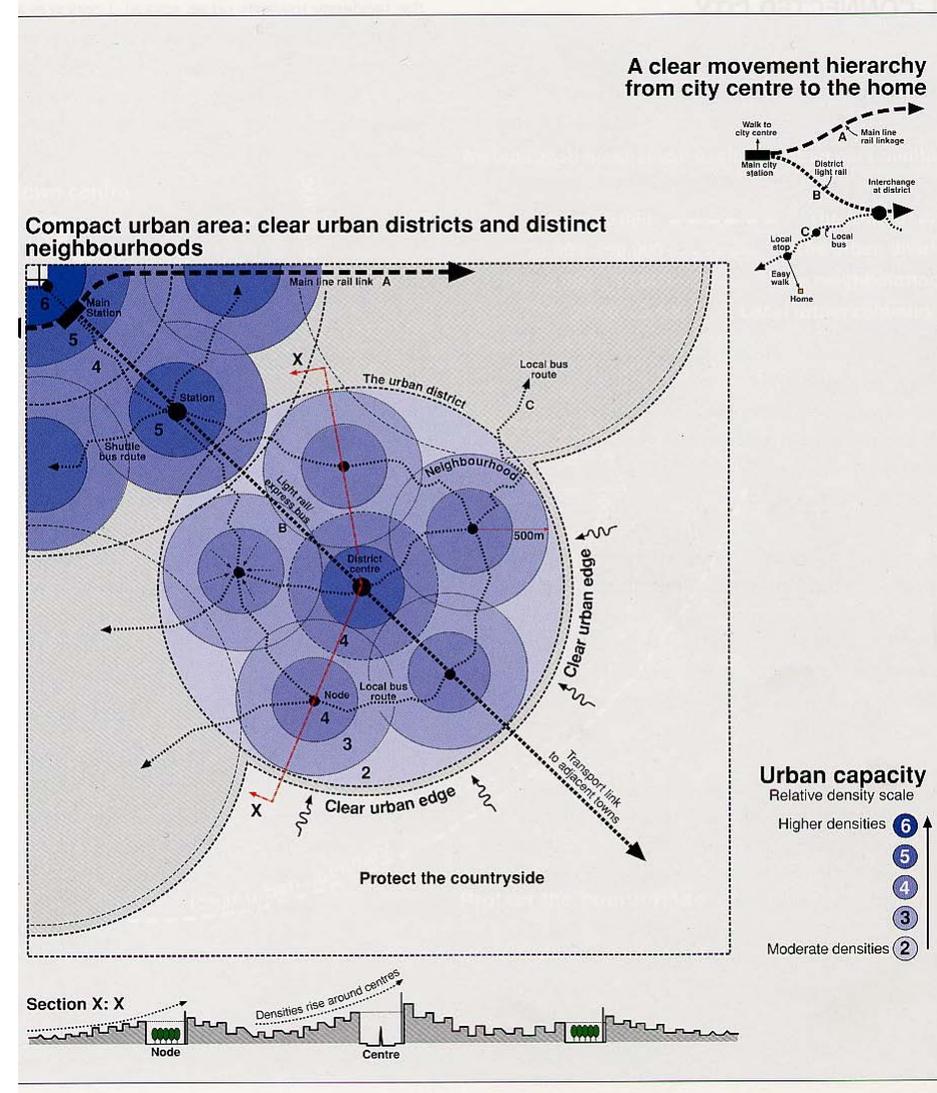
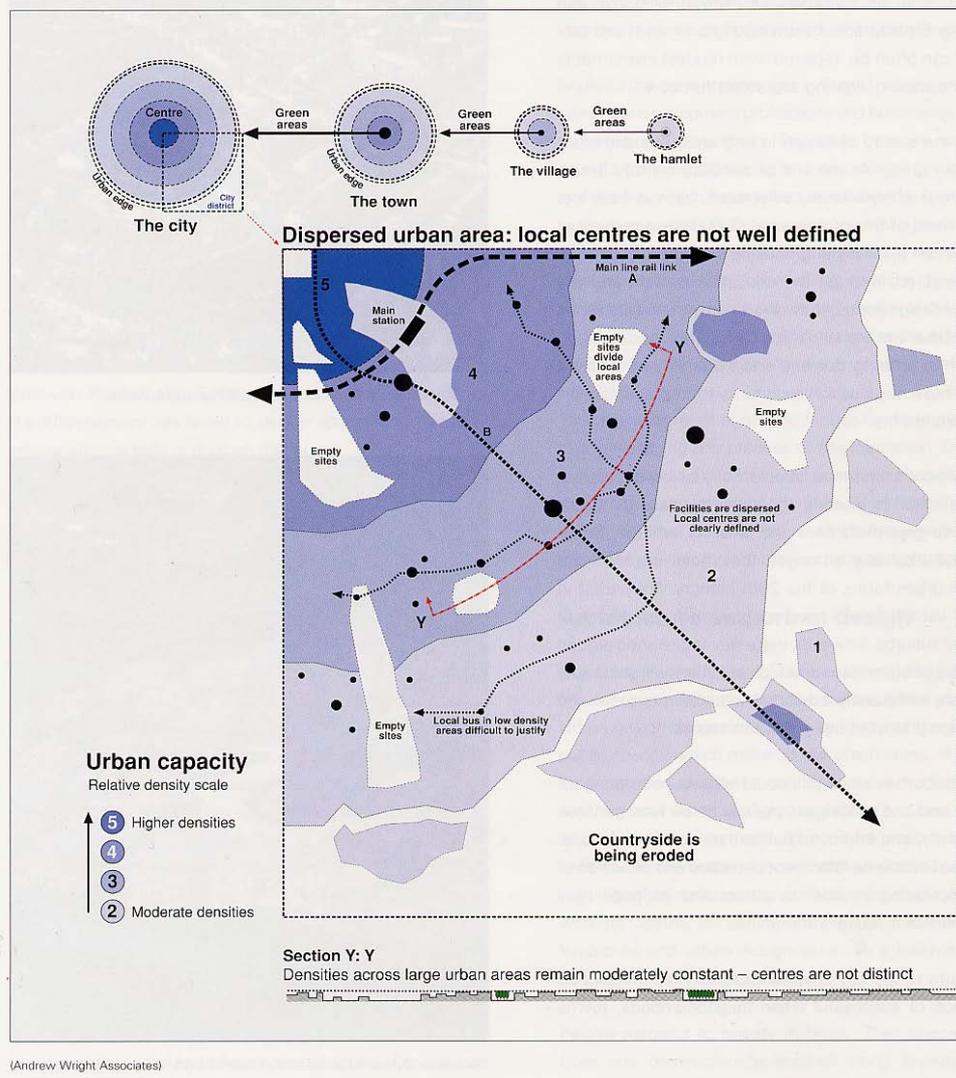
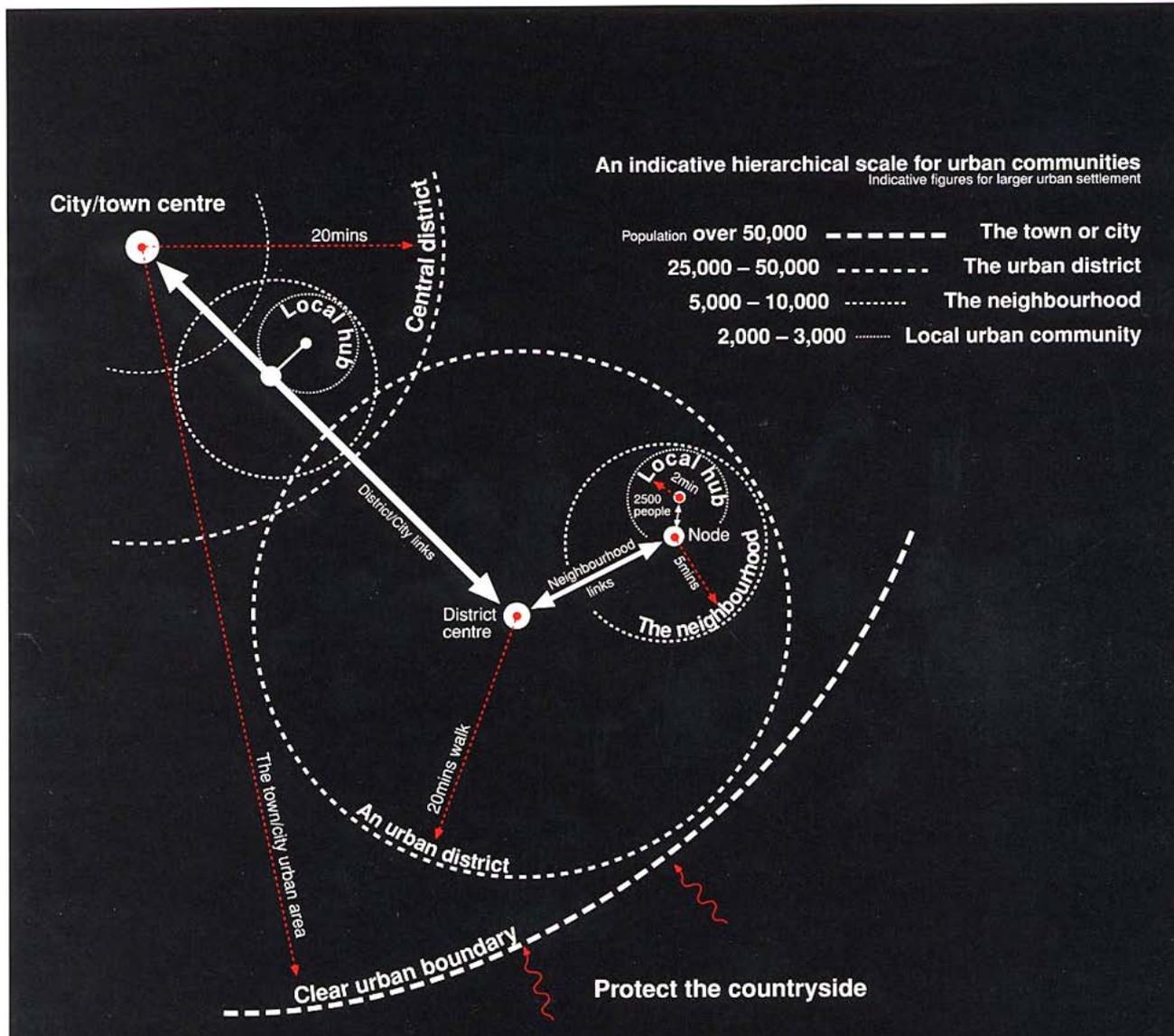


Figure 2.2: Linking urban neighbourhoods and communities



# Insedimento e infrastruttura di mobilità – Organizzazione territoriale

Transpot Oriented Development  
P. Calthorpe

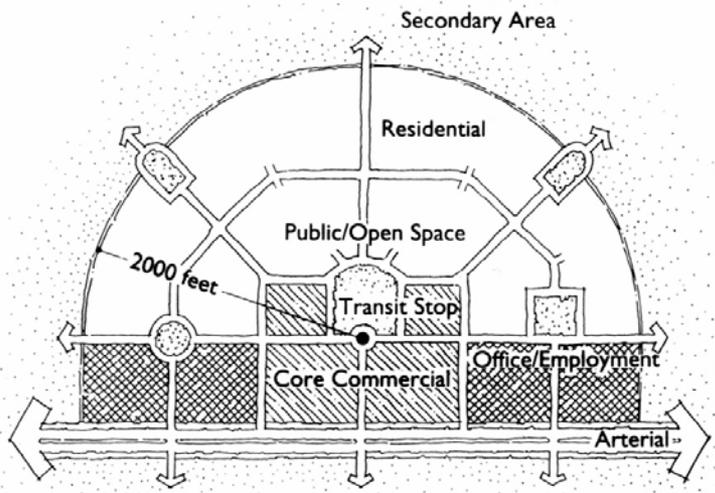
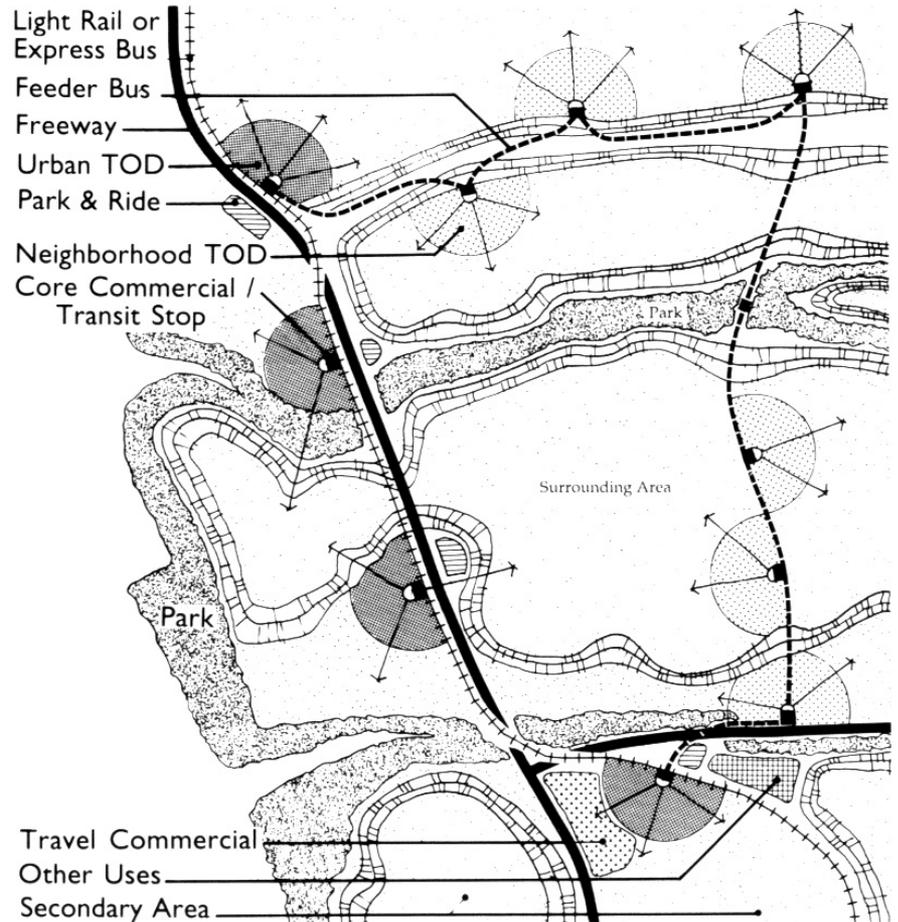
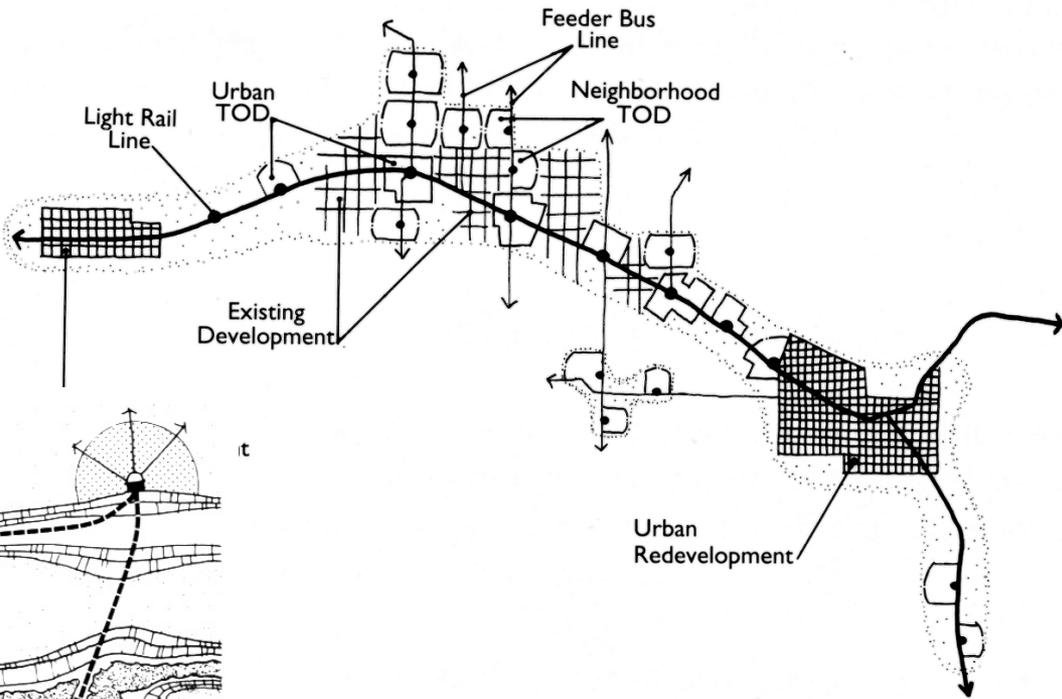
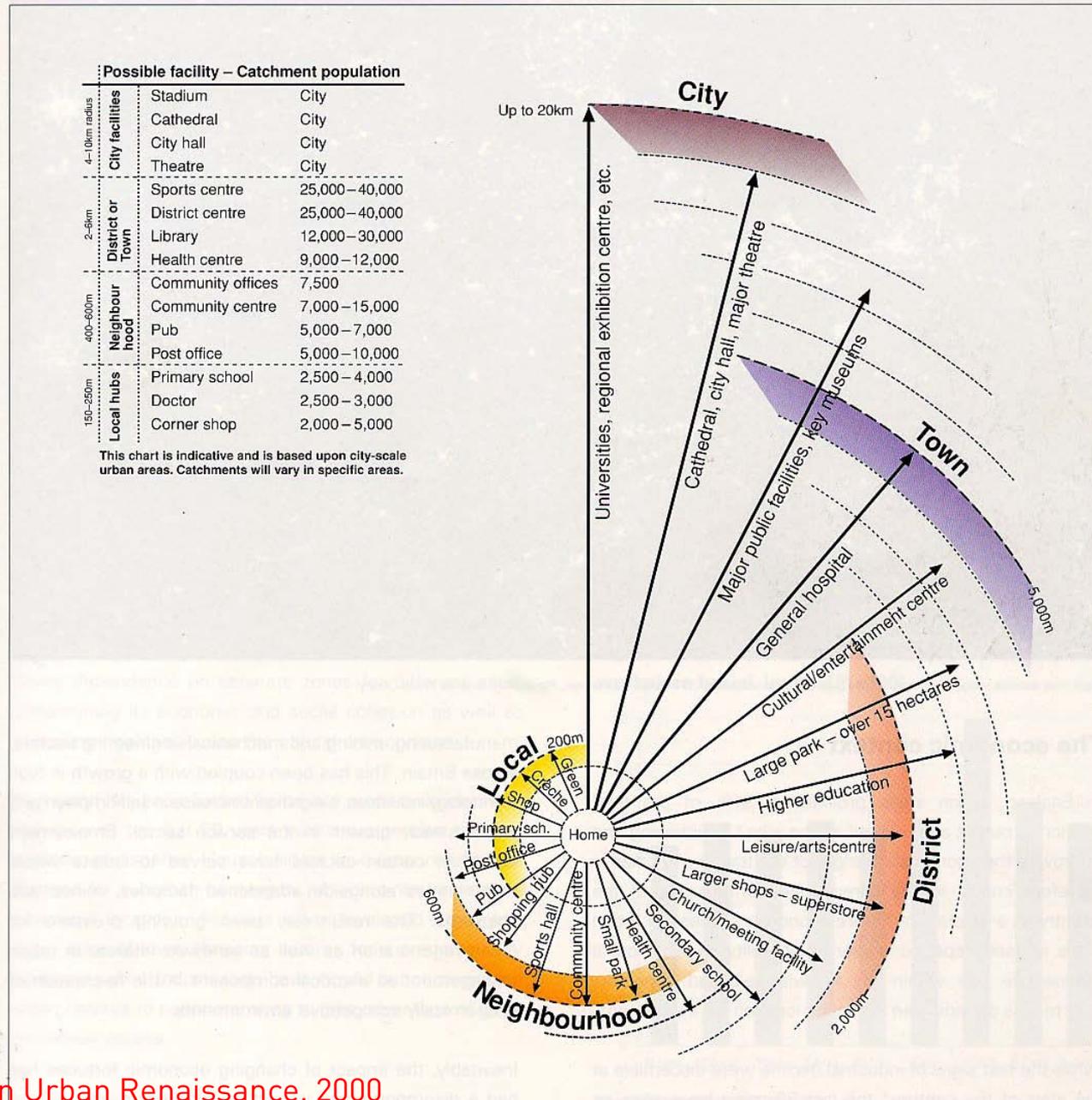


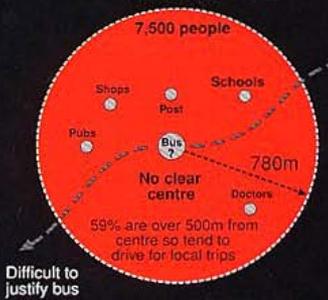
Figure 1.3: The city provides the framework for core institutions



# Usi misti e prossimità

Assumes 5ha of communal area/400 dwellings – DETR (LDW) land use study – at 2.2 persons per dwelling is 42ha of communal space/7,500 persons

Gross development density of 50 people per hectare



Large land take  
Dispersed facilities – no centre  
Bus may not be viable

Population to support good neighbourhood facilities

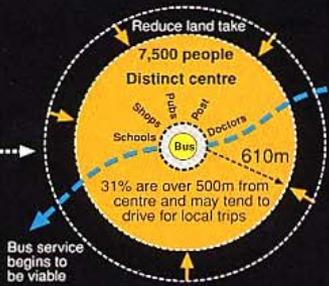
Important urban neighbourhood facilities and their reasonable support population

Primary school	2,500 – 4,000
Doctor	2,500 – 3,000
Corner shop	2,000 – 5,000
Public house	5,000 – 7,000
Group of shops	5,000 – 10,000
Post office	5,000 – 10,000

About 7,500 might people support a viable local hub of facilities

Source: LWG for the DETR – from Coombes, Farthing and Whiter, Director London Council and Milton Keynes Dev Corp  
7,500 reflects above figures and is supported by 'new deal for communities'

Gross development density of 100 people per hectare



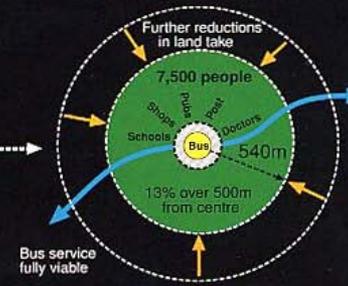
Reduced land take  
Clear central facilities  
Bus should be viable

Good public transport needs adequate density

A density of 100 p/ha is the density necessary to support a good bus service, given a socially mixed population

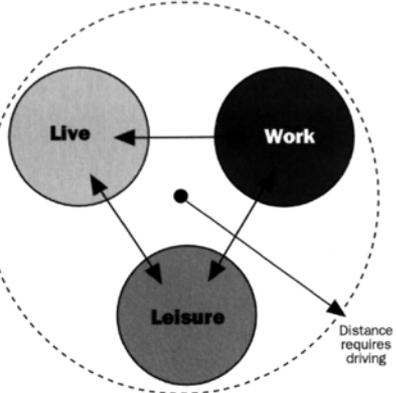
(White 1976, Adkins 1981 and URC 92)

Gross development density of 150 people per hectare

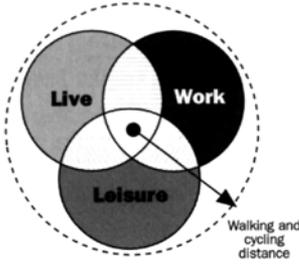


Everyone can walk  
Usage of local facilities increases  
Bus routes are more regular

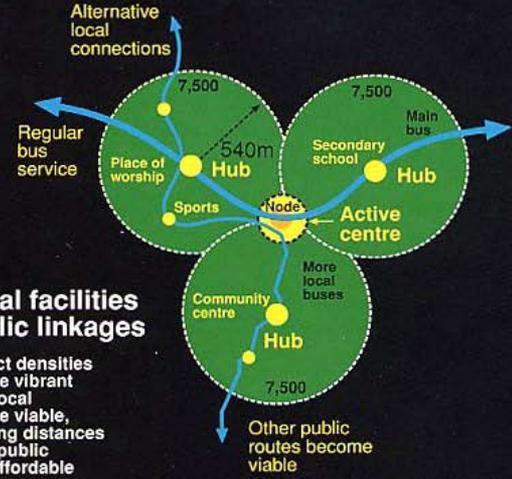
Everyone should be able to walk to their local centre



Zoning of activities leads to reliance on the private car.



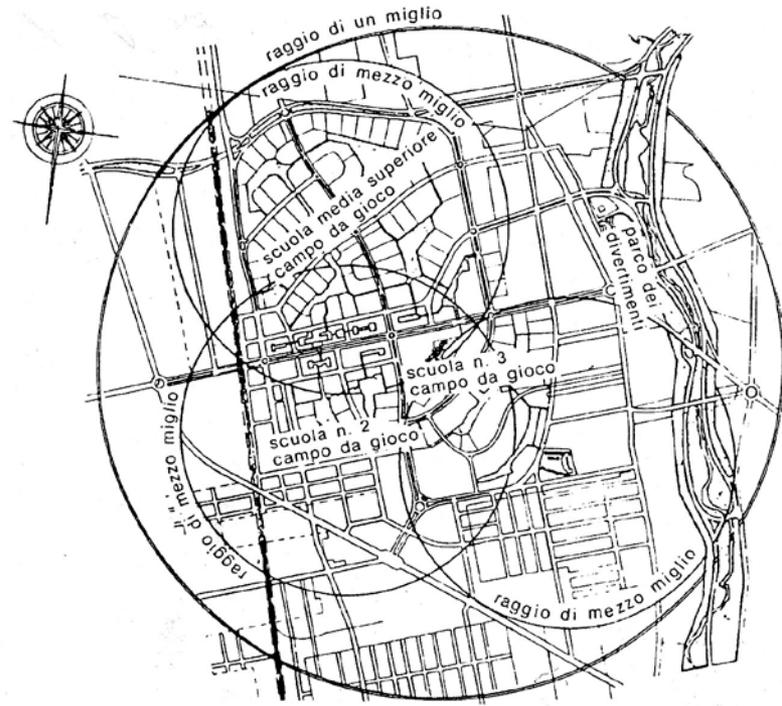
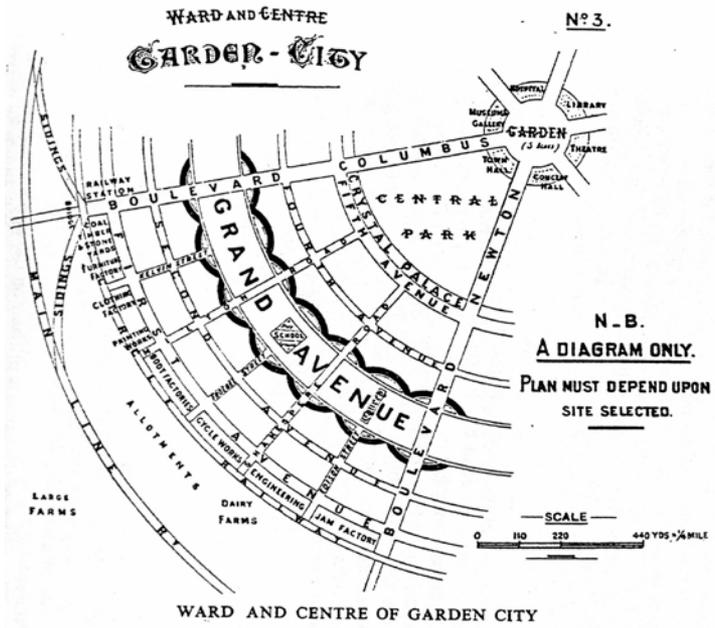
Compact nodes reduce travel and allow walking and cycling.



Local social facilities better public linkages

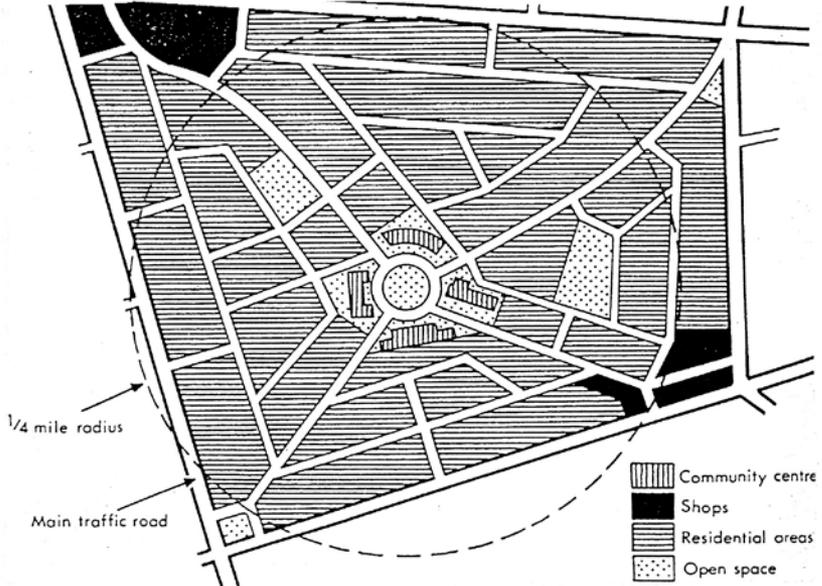
At more compact densities centres are more vibrant  
Key additional local facilities become viable, fall within walking distances and alternative public local links are affordable

Usi misti e prossimità

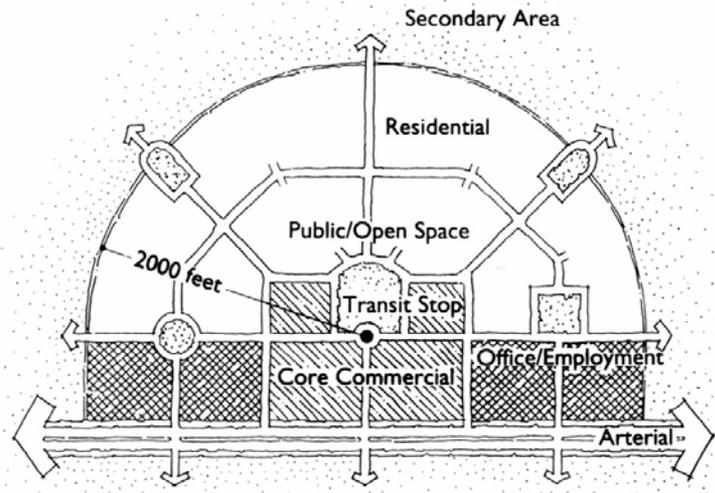


E. Howard , Garden Cities of Tomorrow (1898-1902)

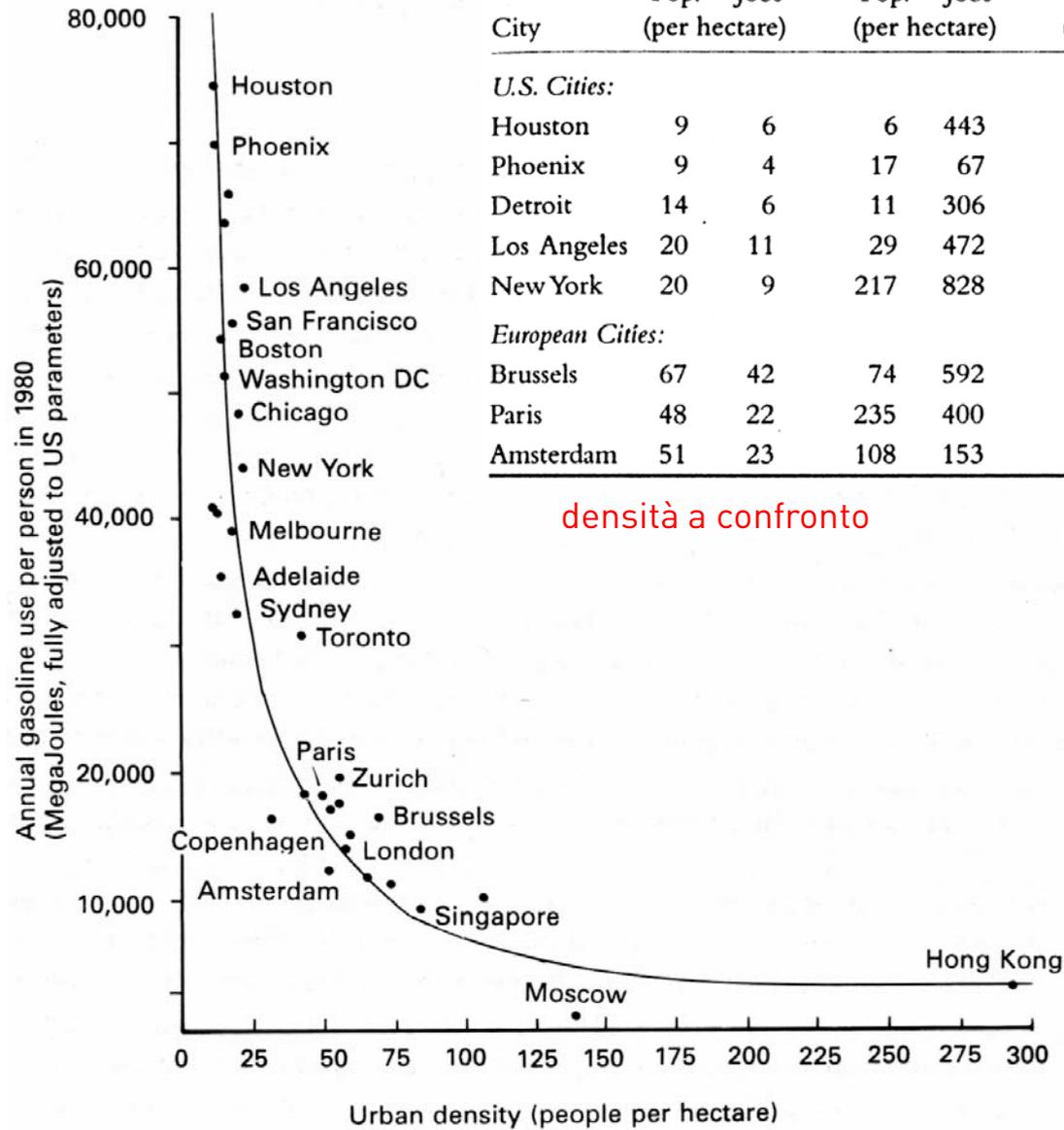
C. Stein, H. Wright, Radburn layout (1928)



C. Perry, Neighbourhood Unit (1929)

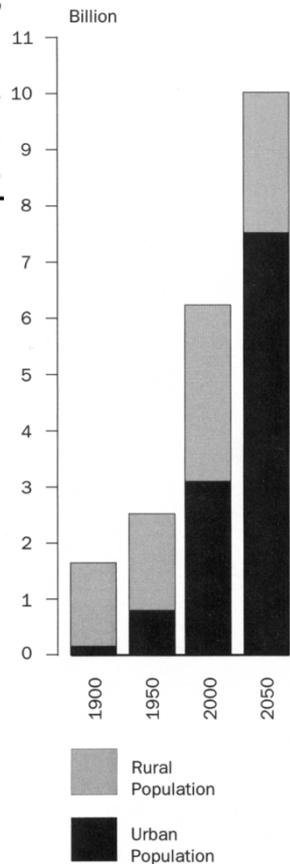


P. Calthorpe, T.O.D. '90



City	Whole-city Density		Central-city Density		Inner-area Density		Outer-area Density	
	Pop. (per hectare)	Jobs (per hectare)	Pop. (per hectare)	Jobs (per hectare)	Pop. (per hectare)	Jobs (per hectare)	Pop. (per hectare)	Jobs (per hectare)
<i>U.S. Cities:</i>								
Houston	9	6	6	443	21	26	8	4
Phoenix	9	4	17	67	19	24	8	4
Detroit	14	6	11	306	48	20	11	5
Los Angeles	20	11	29	472	30	14	18	9
New York	20	9	217	828	107	53	13	6
<i>European Cities:</i>								
Brussels	67	42	74	592	101	85	50	16
Paris	48	22	235	400	106	60	26	8
Amsterdam	51	23	108	153	83	46	32	20

densità a confronto



World population growth

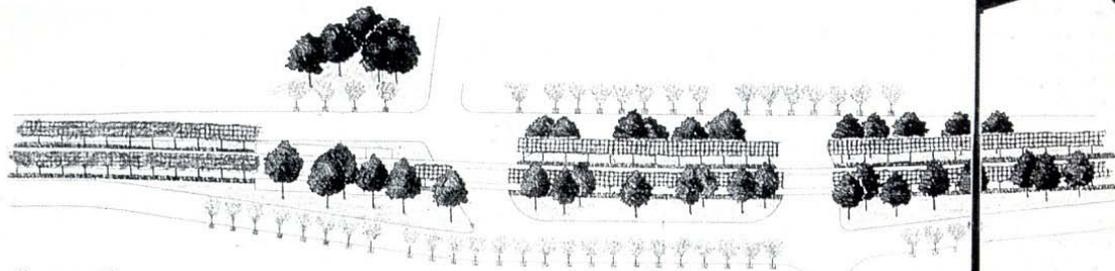
Consumo di carburante e densità abitativa



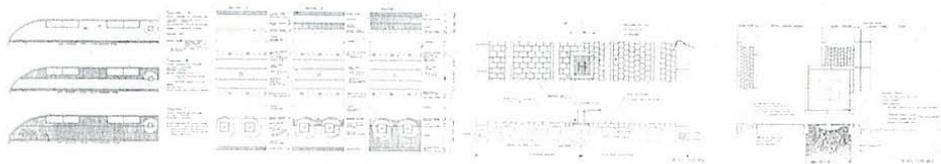
# TRAM TRENO KARLSRUHE



# TRANVIA DI SAINT DENIS



Le alberature/Trees



Le pavimentazioni/Pavings

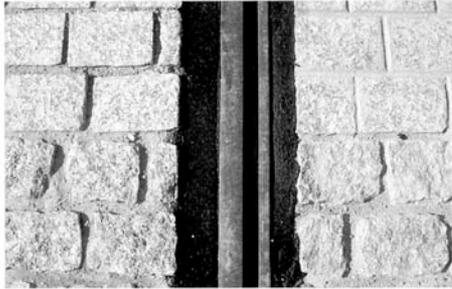


Gli elementi di arredo/Furnishings

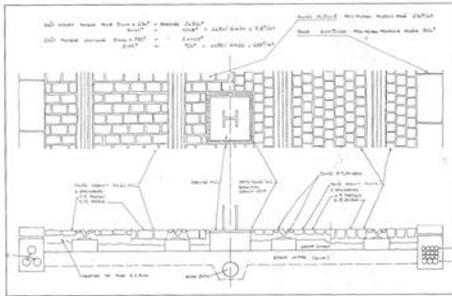


## Sede dei binari/Railbed

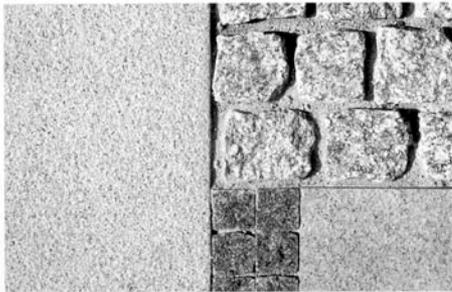
1. Dettaglio dei cubetti di granito/Detail of the small granite cubes
2. Pianta e sezione della sede tranviaria/Plan and section of the trackbed
3. Lastre e cubetti di granito e porfido/Plates and small cubes of granite and porphyry



1



2



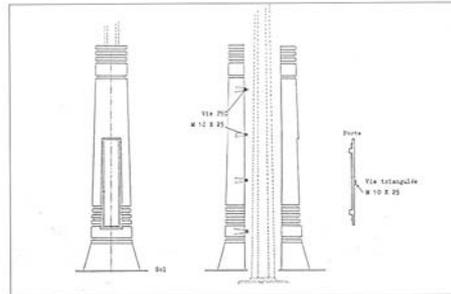
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## Lampioni/Streetlamps

1. Base in ghisa di alluminio/Base in cast aluminium
2. Dettagli della base/Base details



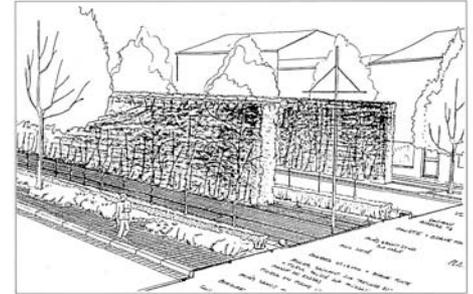
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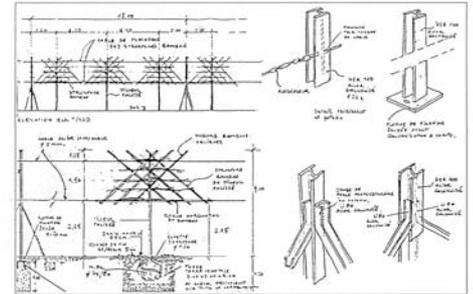
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## Il verde/Green areas

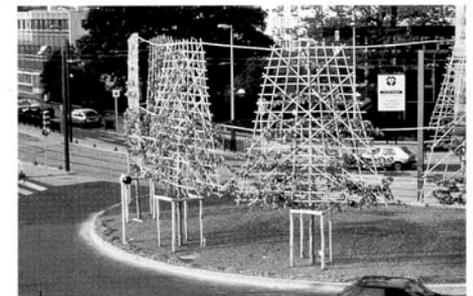
1. Spalliere dei tigli/Espalier of lime trees
2. Cavi e sostegni di bambù/Bamboo cables and supports
3. Telai di bambù/Bamboo grids



1



2



3

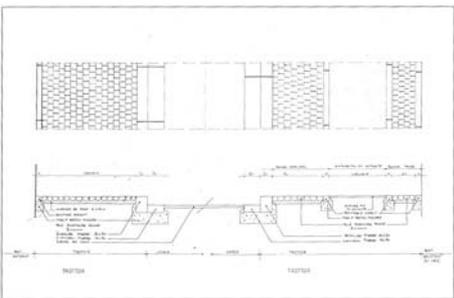


## Pavimentazioni/Pavings

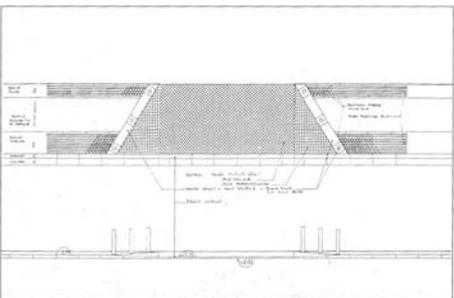
1. Pavimentazioni in porfido e granito/Porphyr and granite pavings
2. Pianta e sezione del marciapiede/Plan and section of the sidewalk
3. Dettaglio di un passaggio/Detail of a passage



1



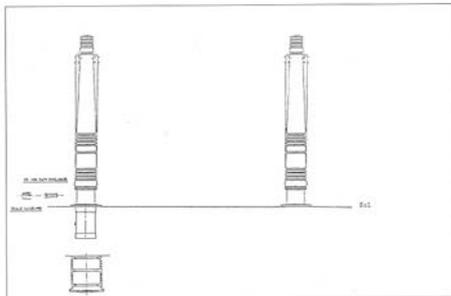
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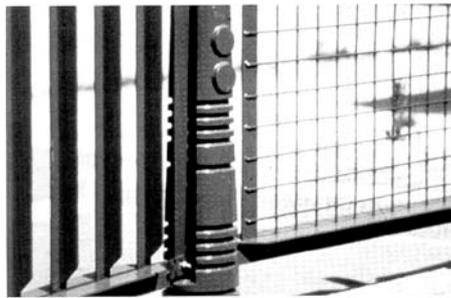
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## Ringhiere/Railings

1. Sezione dei montanti in ghisa/Sections of the cast-iron posts
2. Dettaglio/Detail
3. Tipi differenti di ringhiera/Different types of railings



1



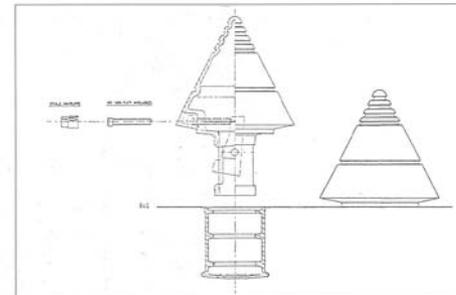
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3

## Paracarri/Buffers

1. Sezione del paracarro in ghisa/Section of a cast-iron buffer
2. Al margine della sede tranviaria/At the confines of the trackbed
3. Paracarri rimovibili sul cordolo di granito/Removable buffers on the granite border



1

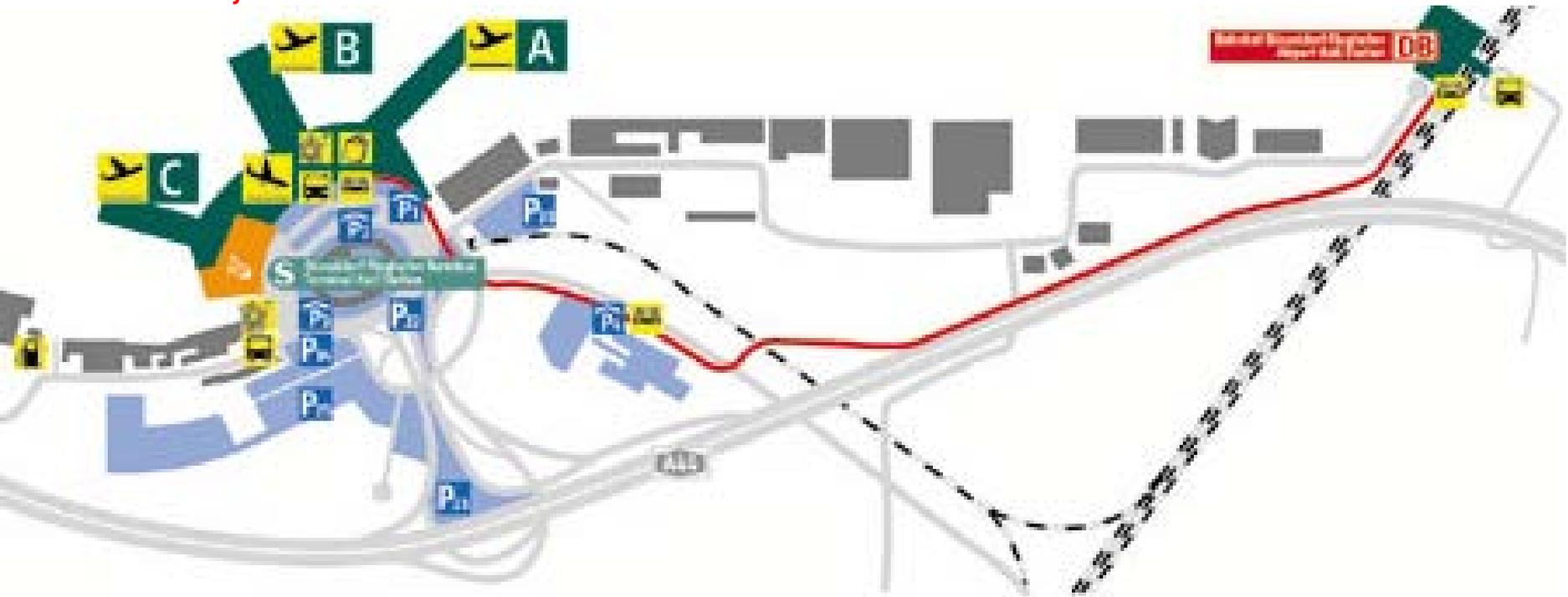


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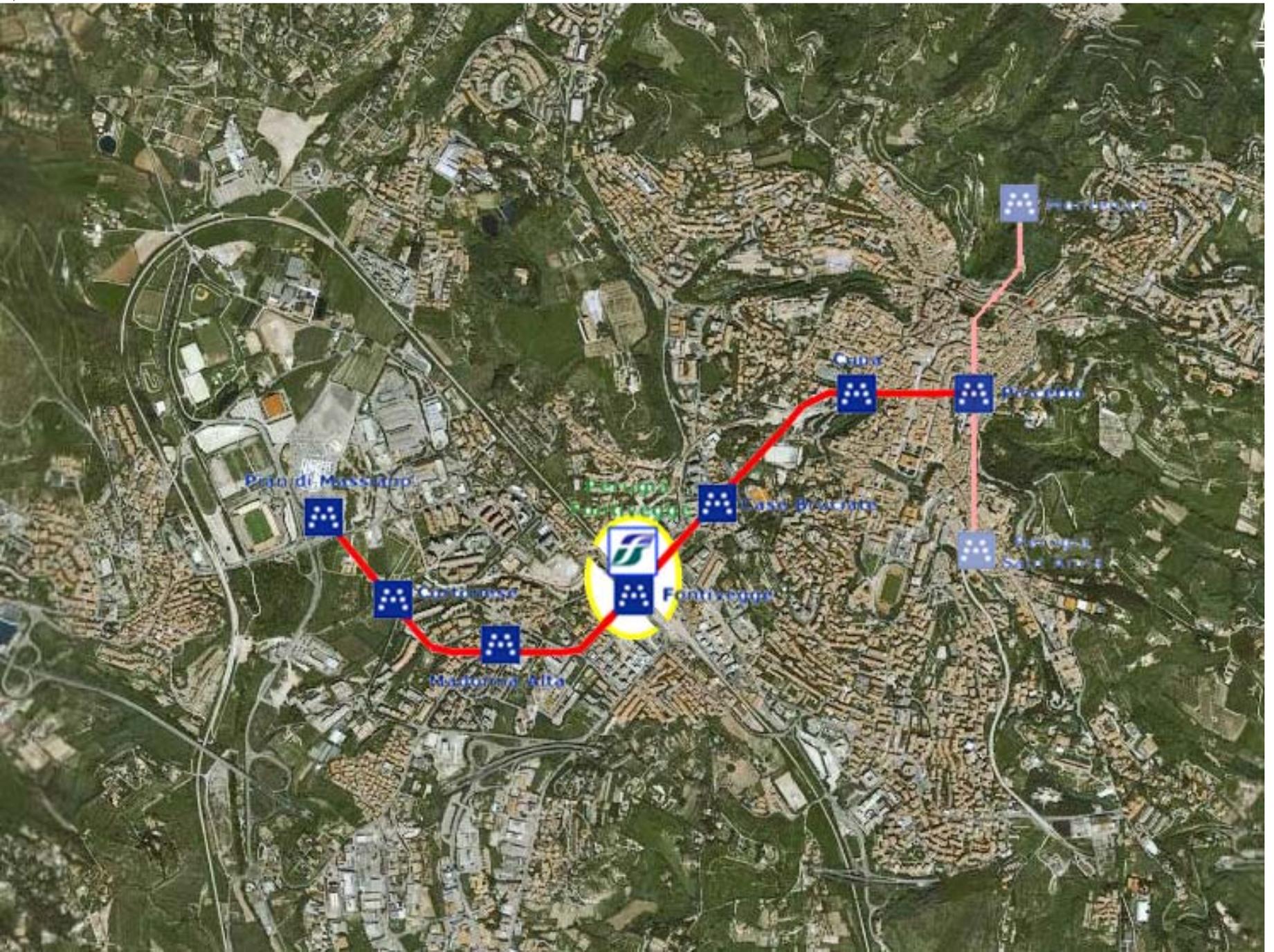
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Dusseldorf- Sky Train



# Wuppertal – Monorotaia sospesa costruita fra il 1898 e il 1901













## **Azioni per un possibile miglioramento della mobilità:**

- 1\_Potenziamento delle infrastrutture**
- 2\_Integrazione delle modalità (non concorrenzialità fra sistemi)**
- 3\_Nuova modalità organizzative**

## **Alcuni principi di efficacia del trasporto pubblico:**

- 1\_Integrazione fra politiche di sviluppo urbano e mobilità;**
- 2\_Compatibilità con il territorio (tracciato, fermate, tecnologia,...);**
- 3\_Intermodalità e interscambio (valorizzazione dei sistemi già esistenti);**
- 4\_Densità urbana e tipologia domanda;**
- 5\_Prossimità del trasporto pubblico all'origine e alla destinazione;**

**Non esistono modelli assoluti. Ogni realtà richiede una specifica ricerca della soluzione.**