

# Building from Buchanan & Manual for Streets

## Evolving Street Planning and Design

CNU Transportation Summit  
Prince's Foundation, London  
13th November 2007

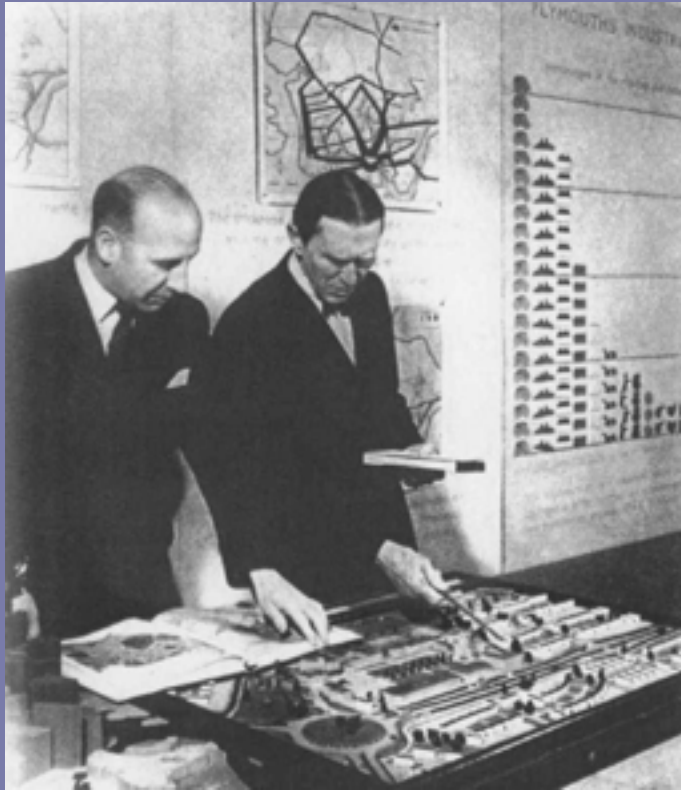
**STEPHEN MARSHALL**  
Bartlett School of Planning  
University College London

# The new approaches



- Building on current good practice – possibly including ‘unauthorised’ innovations

# The new approaches



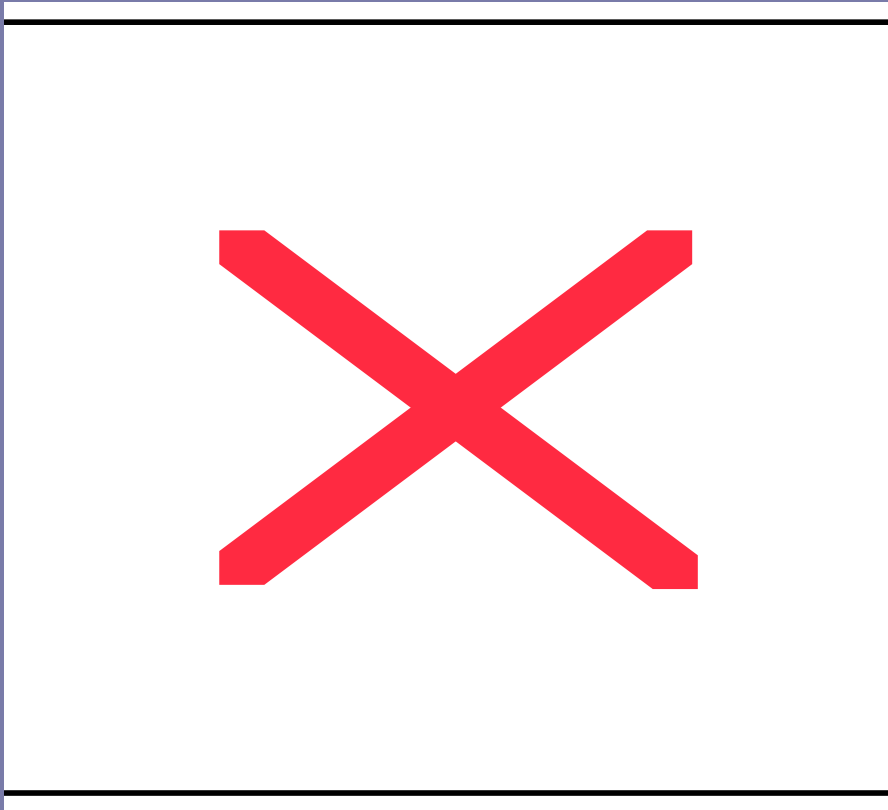
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- Building from previous theory, but updated for today’s needs

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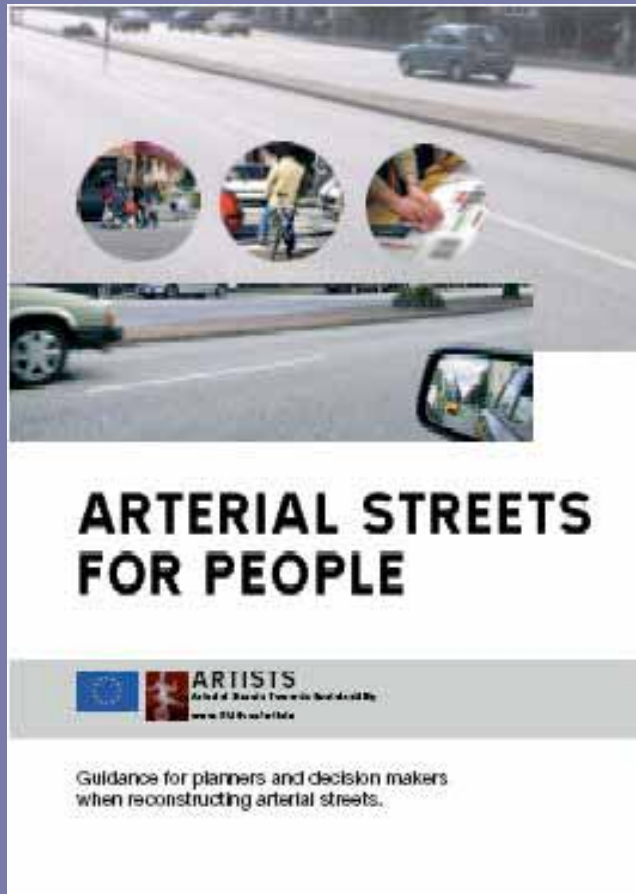
- Building on current good practice – possibly including ‘unauthorised’ innovations
- Building from previous theory, but updated for today’s needs
- Retrofitting theory to support current good practice

# Background



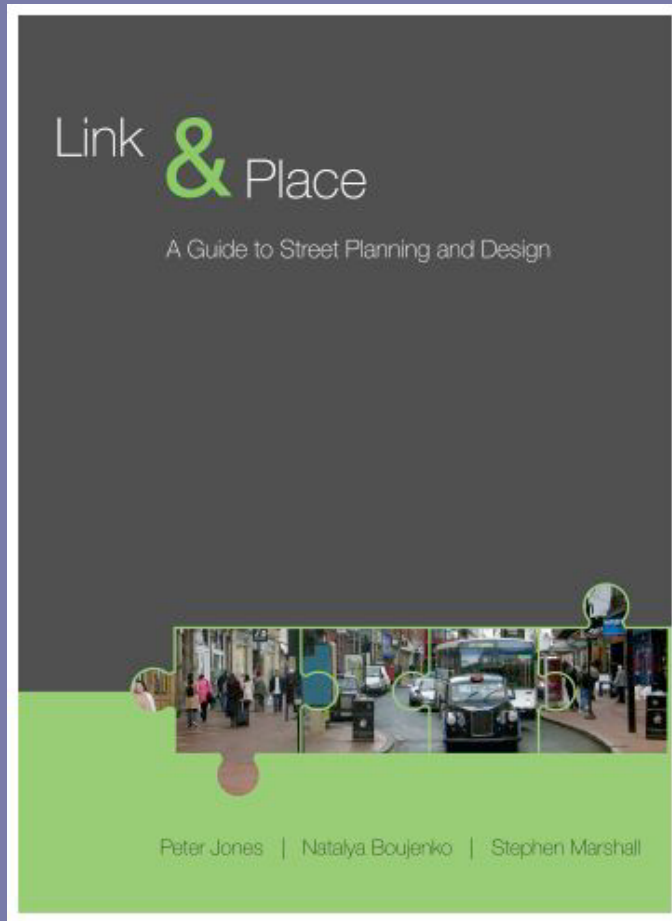
- Research into street type, road hierarchy and network structure

# Background



- Research into street type, road hierarchy and network structure
- Research into arterial streets, street function and classification (ARTISTS project)

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- Research into street type, road hierarchy and network structure
- Research into arterial streets, street function and classification
- Further development for application to UK practice (with Peter Jones and Natalya Boujenko)

# The problem

- How to resolve conflicts?





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- How to allocate space to different users?
- How to decide the function of a street?
- How to decide which design criteria to use?...
- Which manual to use?

# The Schism

```
graph TD; A[The Schism] --- B[ ]; B --- C[ ]; B --- D[ ]
```

Guidance for  
'highways' /  
strategic roads  
(Design Manual  
for Roads and  
Bridges)

Guidance for local  
residential streets  
(Manual for  
Streets)

# The Schism

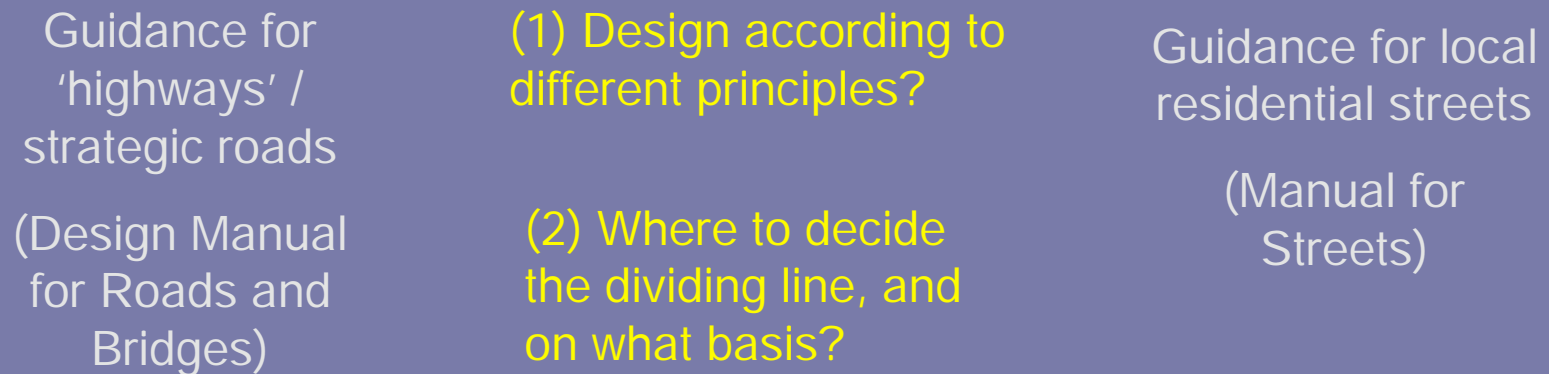
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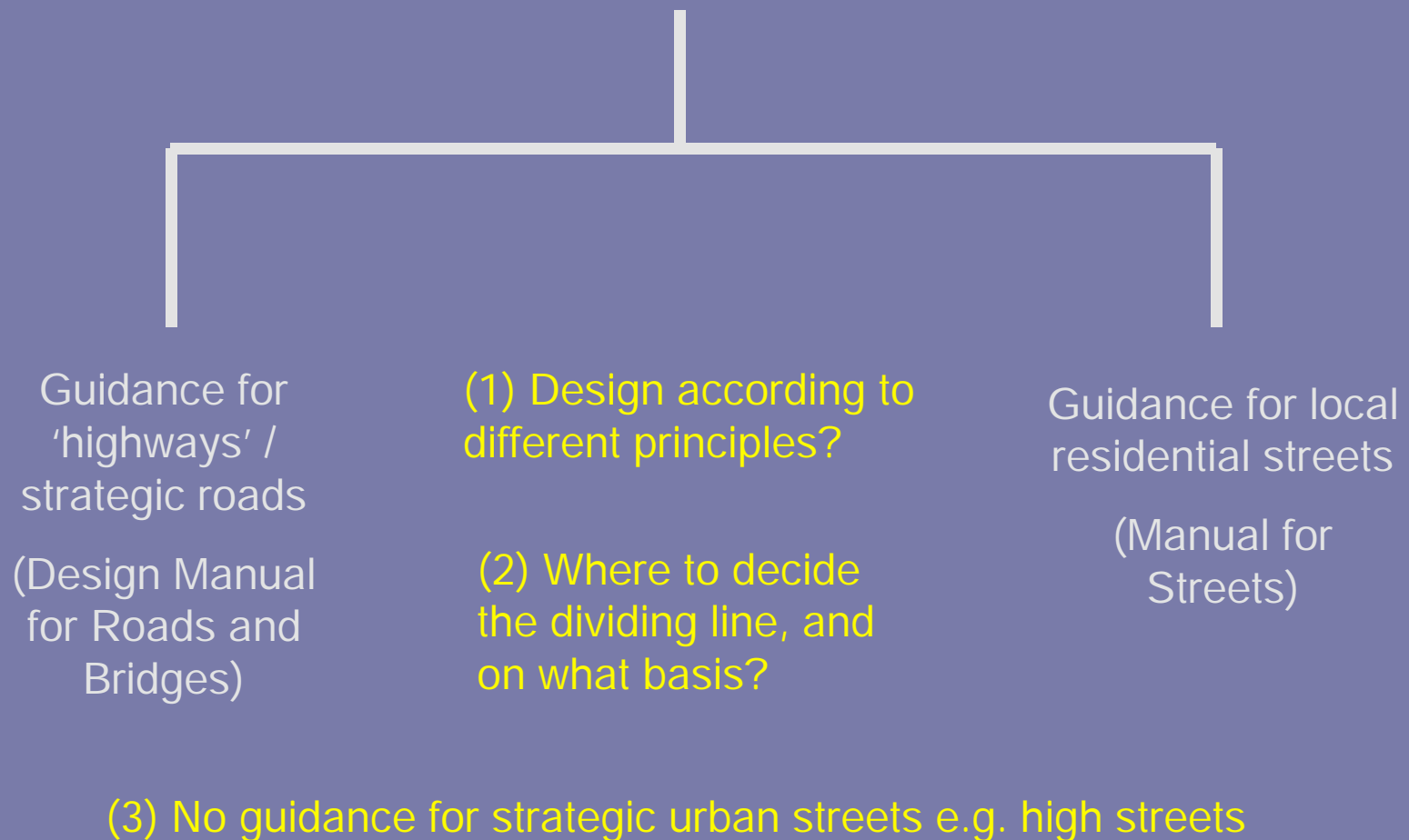
(1) Design according to  
different principles?

Guidance for local  
residential streets  
  
(Manual for  
Streets)

# The Schism



# The Schism





# Street Function & Hierarchy

- Primary Distributor
- District Distributor
- Local Distributor
- Access Road

BUT:

Where do these come from?

Who decides?

# Street Function & Hierarchy

- Who decides?
  - The engineer

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  - The Buchanan Report

# The Buchanan Report

- Buchanan envisaged pedestrian-friendly streets and precincts within 'Environmental Areas'



Primary distributors      **—**  
District distributors      **—**  
Local distributors      **—**  
Environmental area boundaries      **—**

59 The principle of the hierarchy of distributors.  
Access roads are not shown.

# The Buchanan Report



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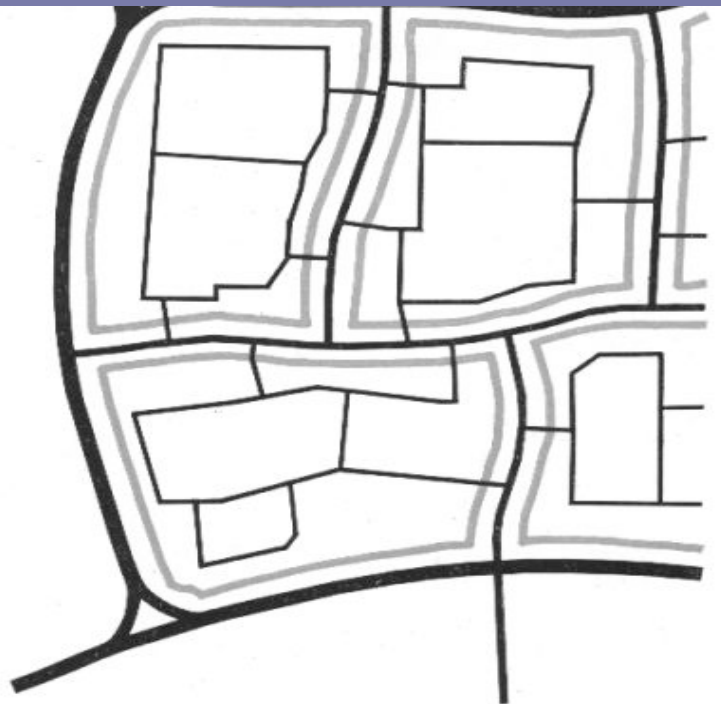
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BUT

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HENCE question remains

- How to decide which streets become which?



# Street Function & Hierarchy



Primary distributors   
District distributors   
Local distributors   
Environmental area boundaries 




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NOT based directly on

- Traffic capacity
- Traffic volume
- Traffic speed
- Traffic composition (mode)
- Trip length
- Road standard

# Street Function & Hierarchy



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- Structural role in network...

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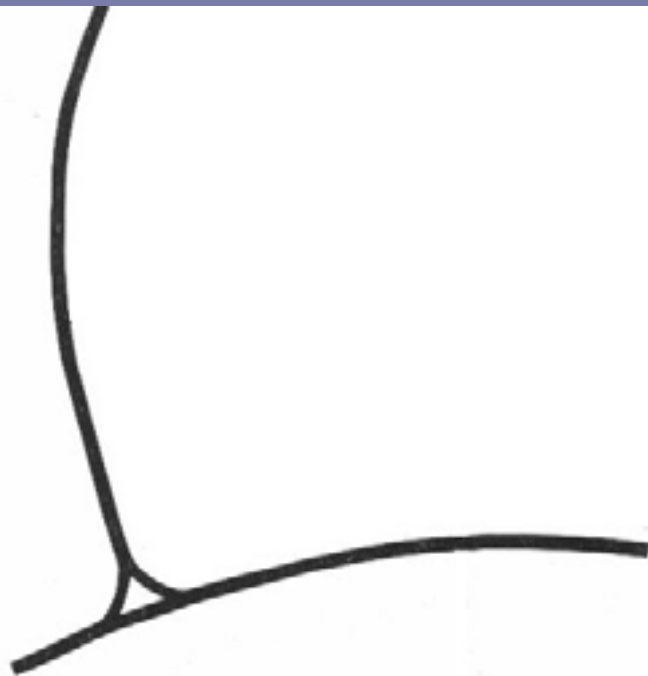
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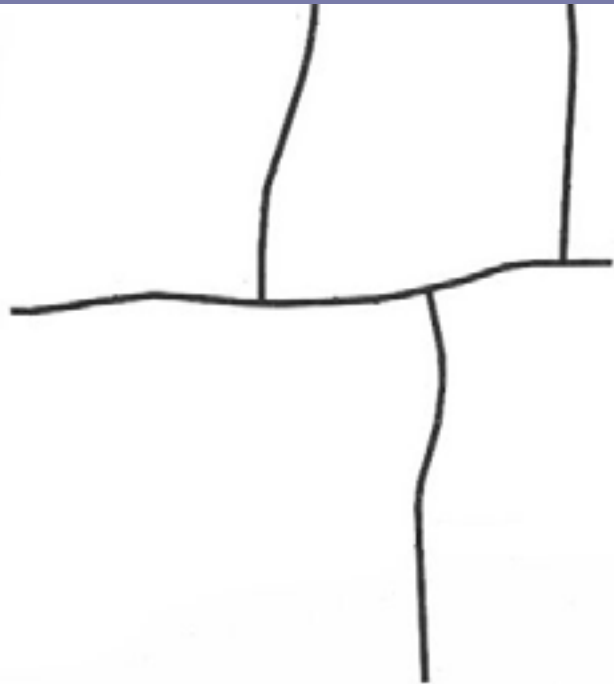
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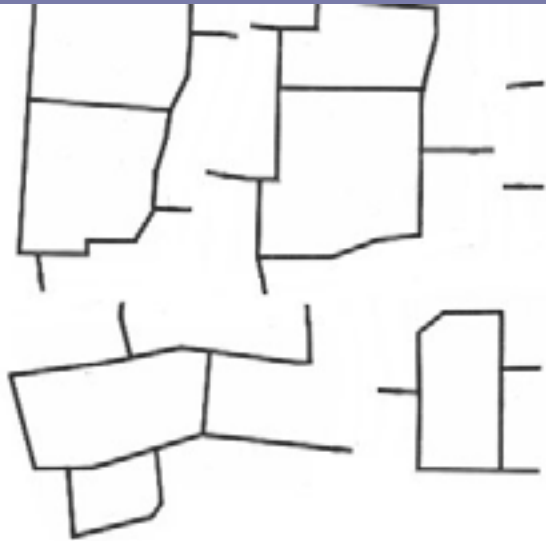
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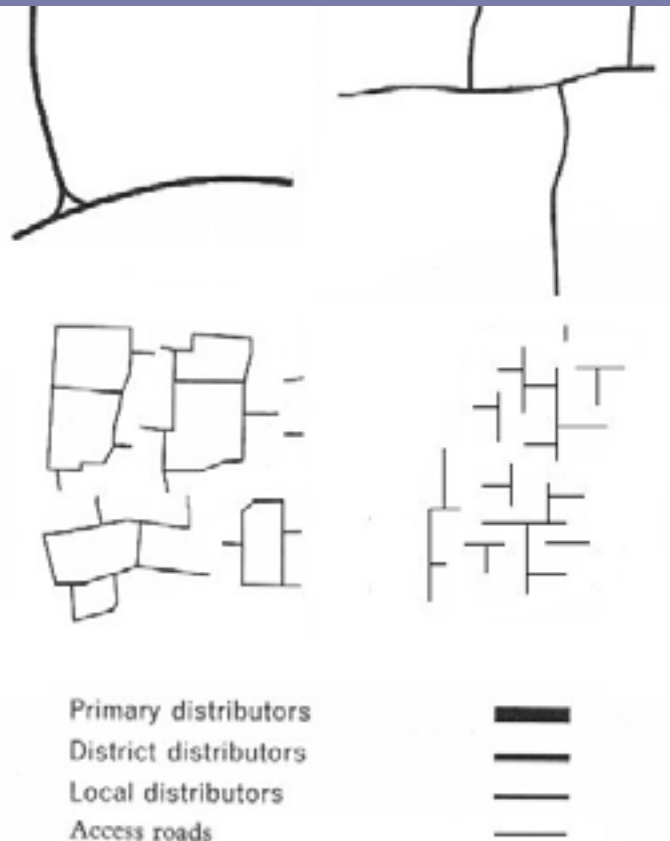
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# Street Function & Hierarchy

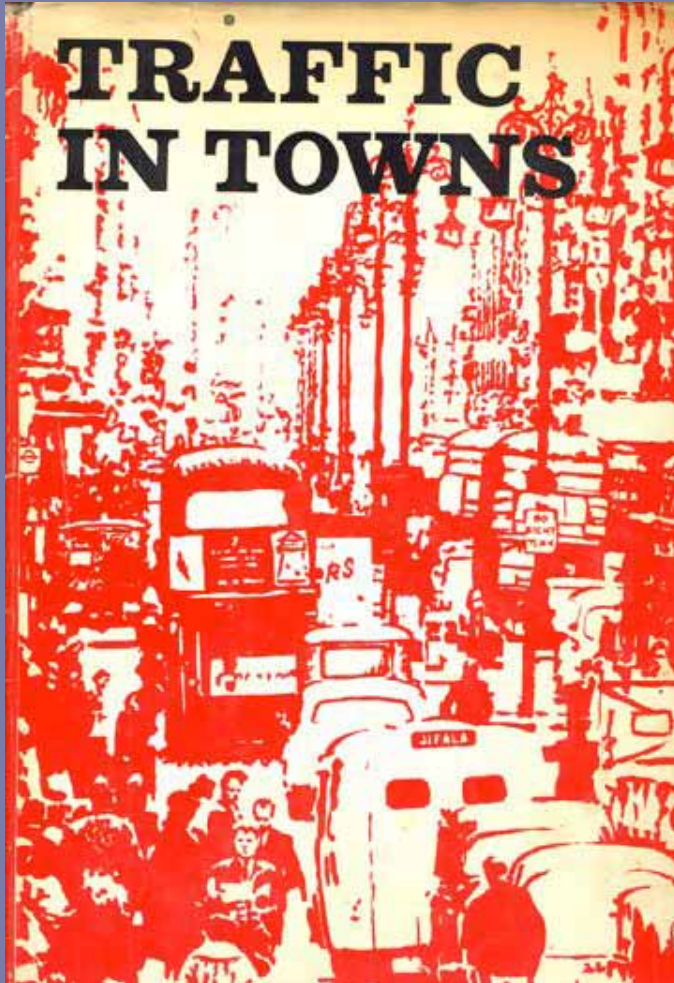


IS based on

- Structural role in network...
- Geographical scale of significance (strategic → local)...
- Topological property of 'arteriality' – all top tier roads connect up contiguously

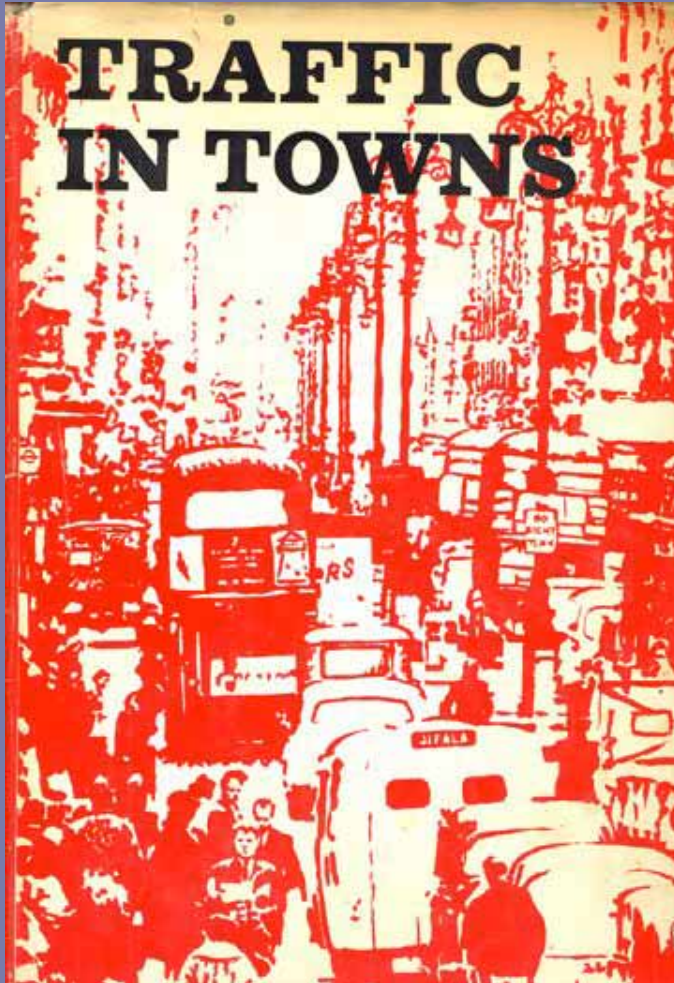
*(Streets & Patterns)*

# The Buchanan Report



- Clear, coherent and concise
- Robust and flexible in practice
- Served needs of its day

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- Clear, coherent and concise
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But

- Now perceived as too transport oriented

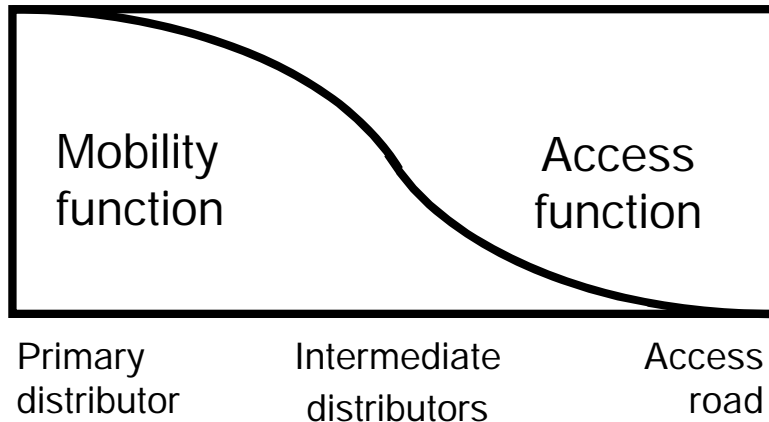


# Conventional practice

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- Geared to movement of private motor traffic
- 'Access function' assumed to be inversely related to the 'movement function'
- Street function primarily determined by transport planners/engineers...



# The need for reform

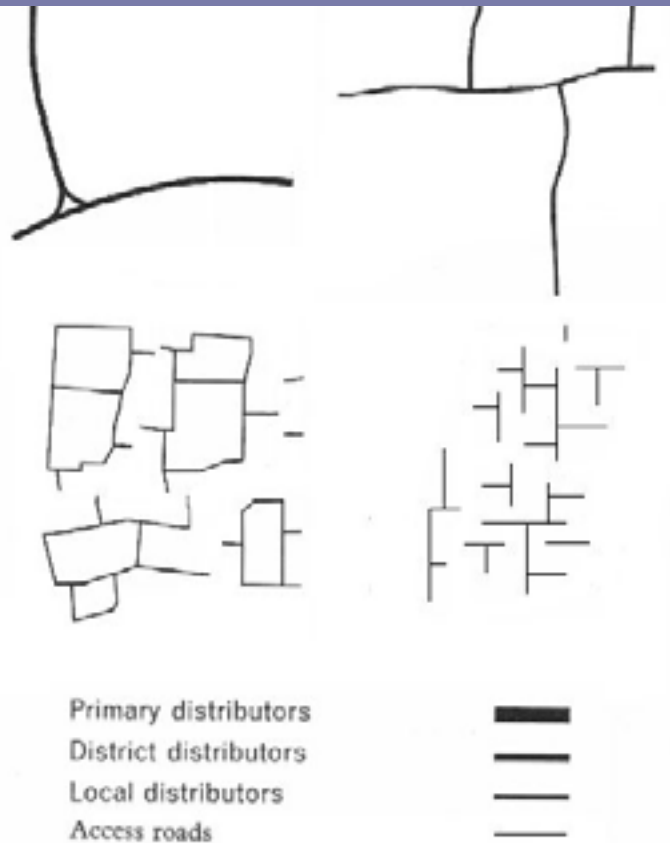
- To address streets as well as 'roads in urban areas'
- To explicitly recognise the 'place' role of streets
- To recognise a wider range of actual street types, including strategic urban streets

# The challenge

- Should address the 'reform' agenda
- Should be robust and flexible in practice (like the Buchanan approach)
- Should be accepted by transport professionals *and* urban professionals

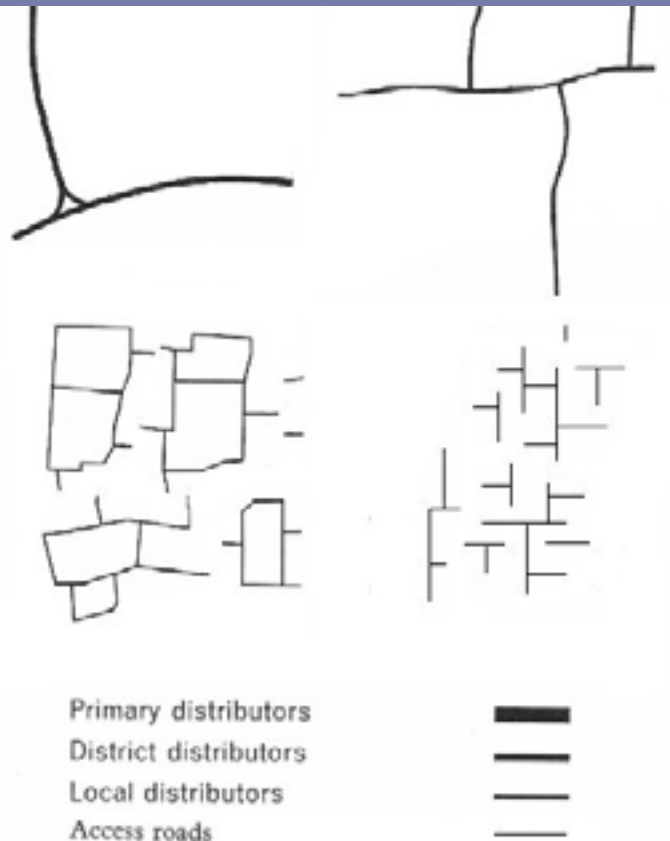
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- Street 'function' is not based on 'unassailable' traffic engineering criteria

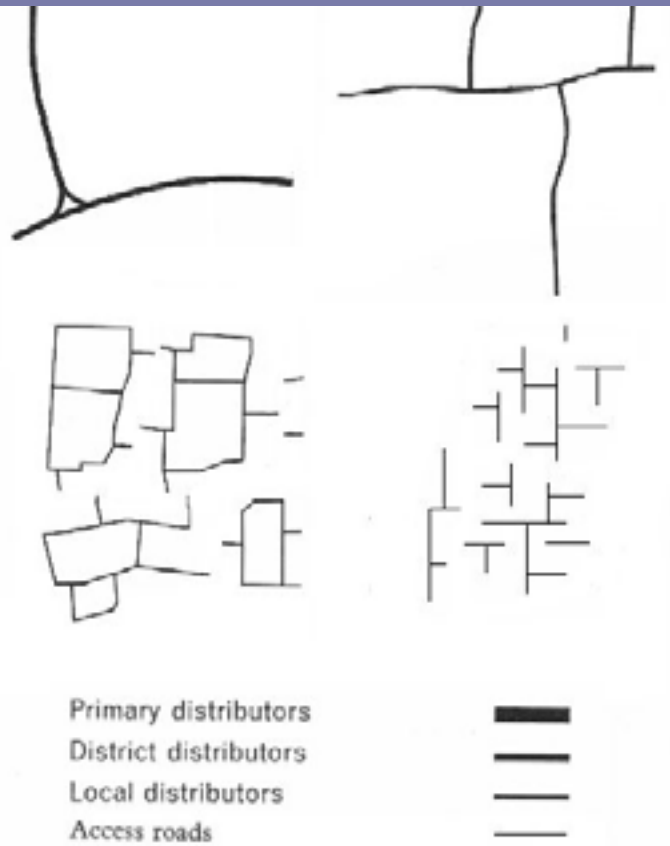


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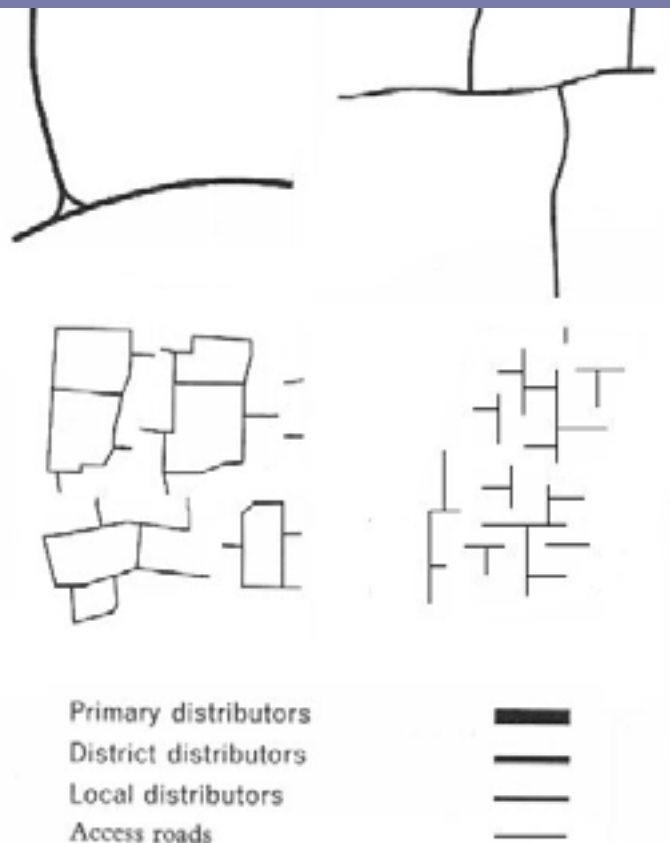
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- Street 'function' is not based on 'unassailable' traffic engineering criteria
- It is geographical / topological
- It can be related to urban planning criteria for geographical status

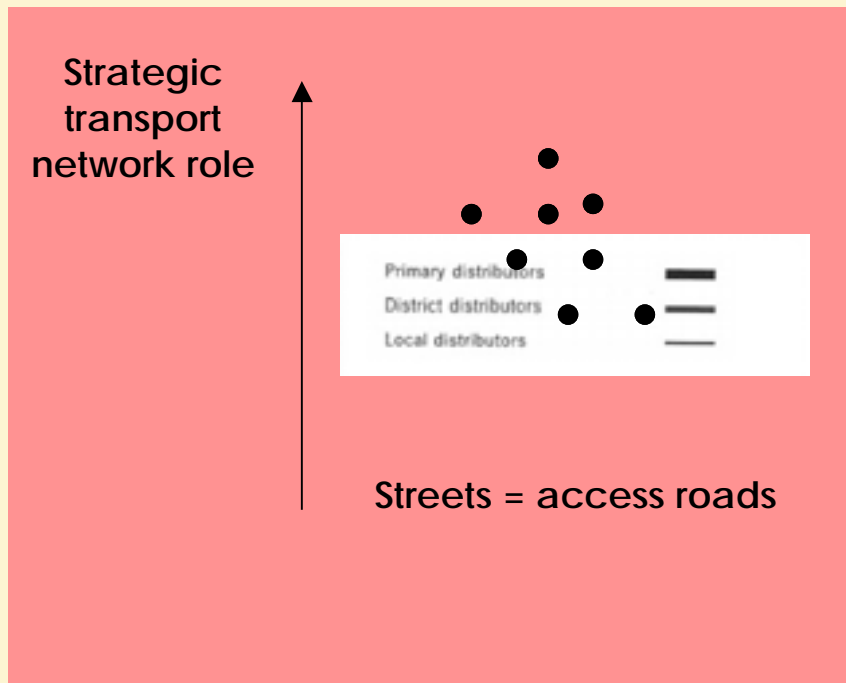


# The key



- Street 'function' is not based on 'unassailable' traffic engineering criteria
- It is geographical / topological
- It can be related to urban planning criteria for geographical status
- It is no more or less subjective or 'political' than urban planning criteria

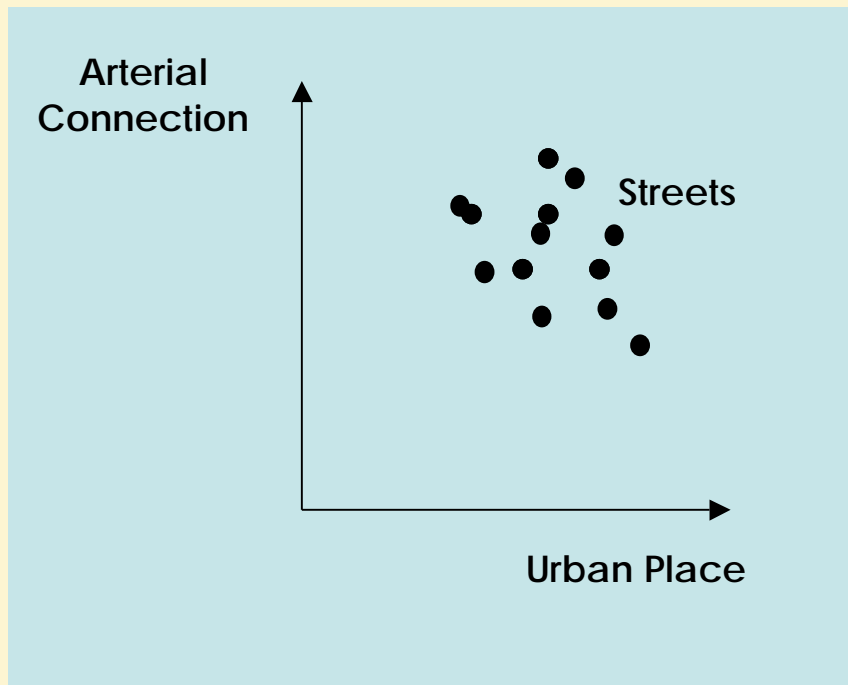
# An evolving formulation



## *Traffic in Towns*

- Explicitly roads-oriented (transport professionals)
- Ranking based on geography / topology
- Urban function inverse of traffic function (streets = access roads)

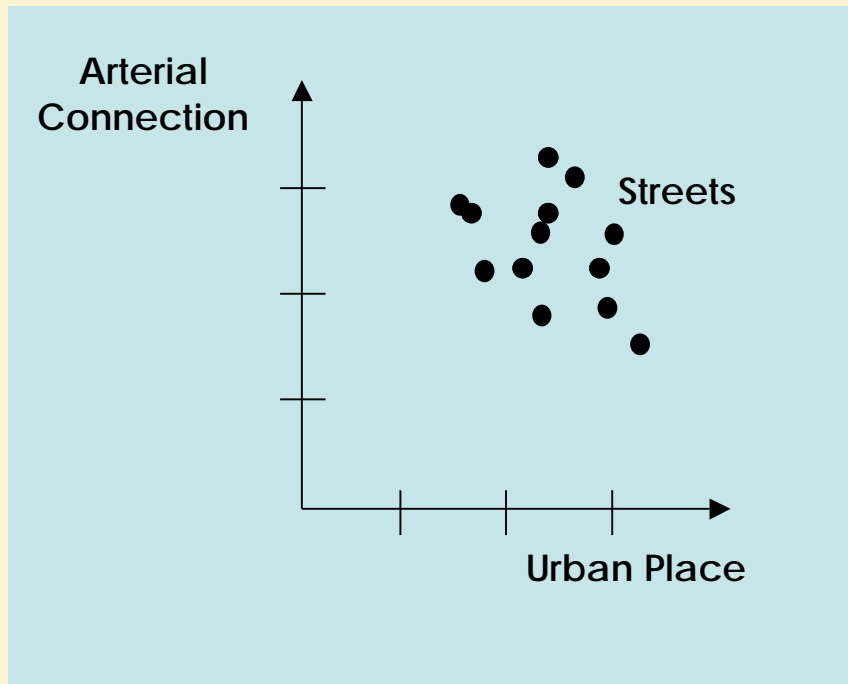
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## *Streets & Patterns*

- Transport and urban roles are **independent** – not inversely related

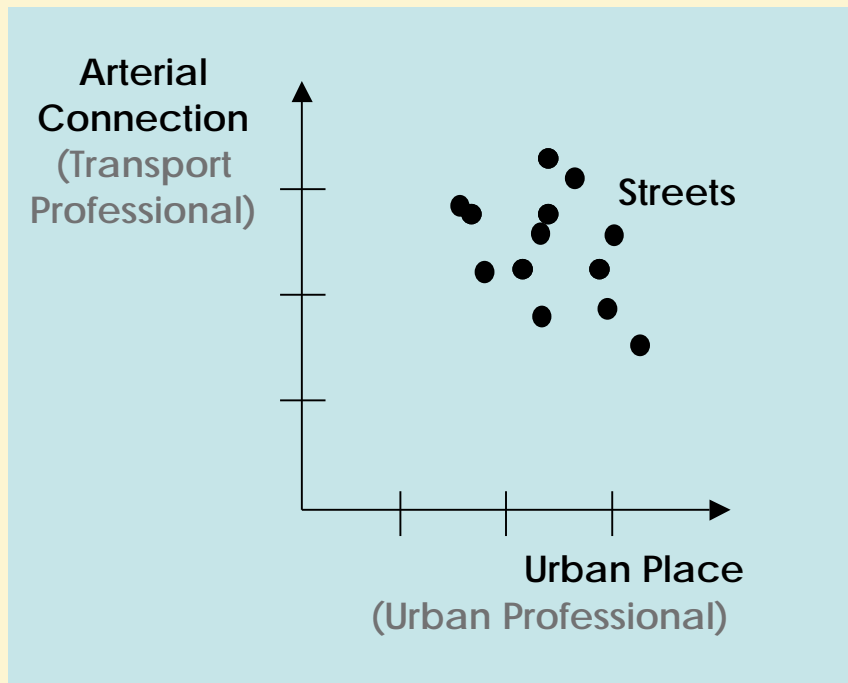
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## *Streets & Patterns*

- Transport and urban roles are **independent** – not inversely related
- Same units – ranked from strategic to local
- Transport Professionals + Urban Professionals

# An evolving formulation

**ARTISTS Classification Table**

<b>LINK STATUS</b>	National	Ie	Id	Ic	Ib	Ia
	City	Ile	Ild	Ilc	Ilb	Ila
	District	IIle	IIld	IIlc	IIlb	IIla
	Neighbour hood	IVe	IVd	IVc	IVb	IVa
	Local	Ve	Vd	Vc	Vb	Va
		Local	Neighbour hood	District	City	National
		<b>PLACE STATUS</b>				

## *Arterial Streets for People*

- Discrete Categories
- Simpler Labelling
- More explicit treatment of
  - Status categorisation
  - Classification process
  - Professional roles
  - Link to streetspace allocation / design



IE



IC



IA



IIIE

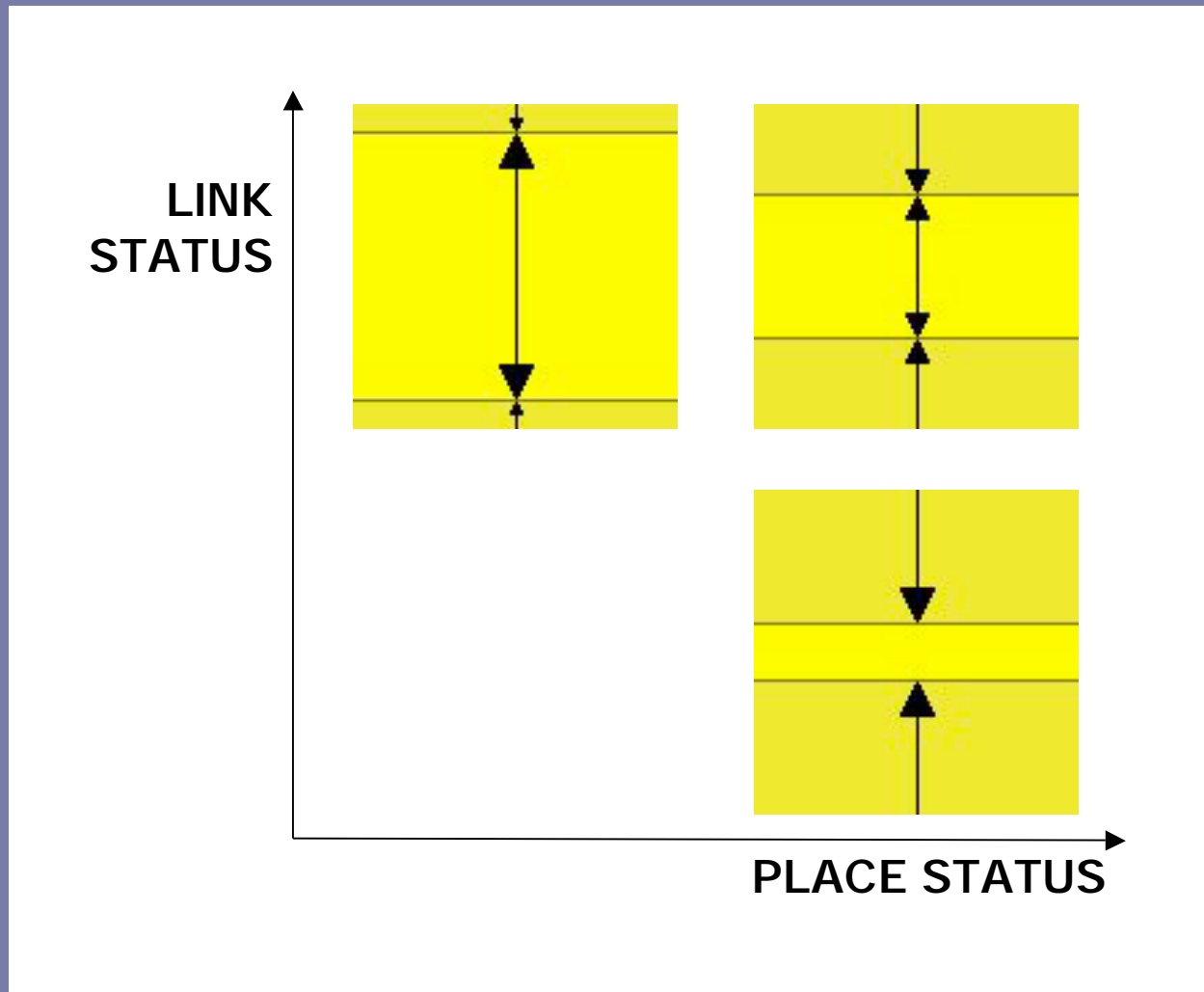


IIIC



IIIA

# Trade-off of street-space

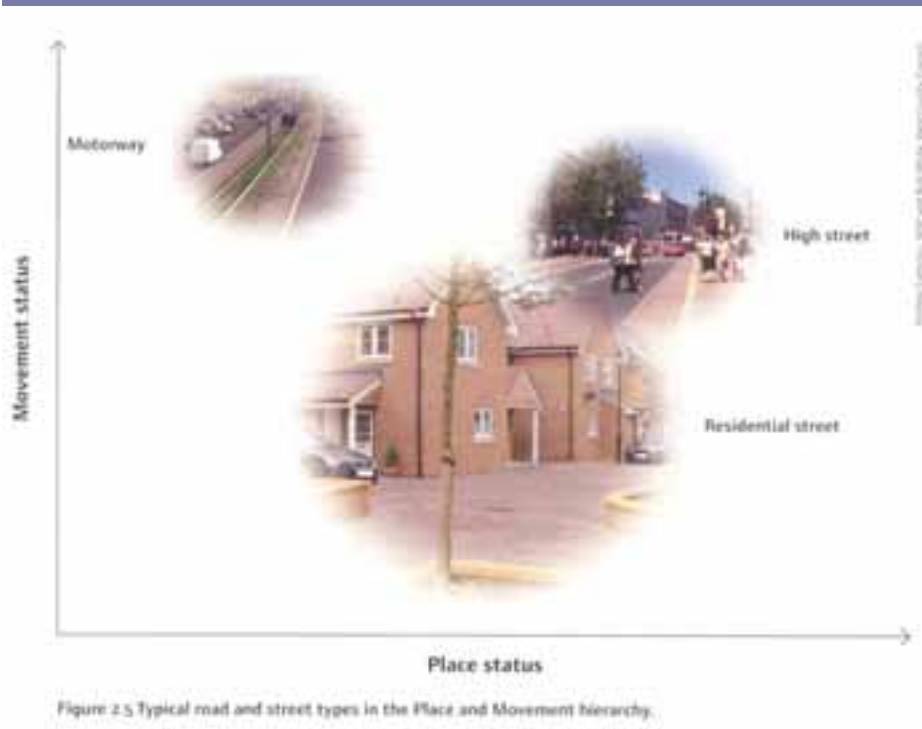




# Trade-off of street-space



# An evolving formulation



## *Manual for Streets*

- Movement v Place
- To assist setting objectives
- Relation to 'street character types'

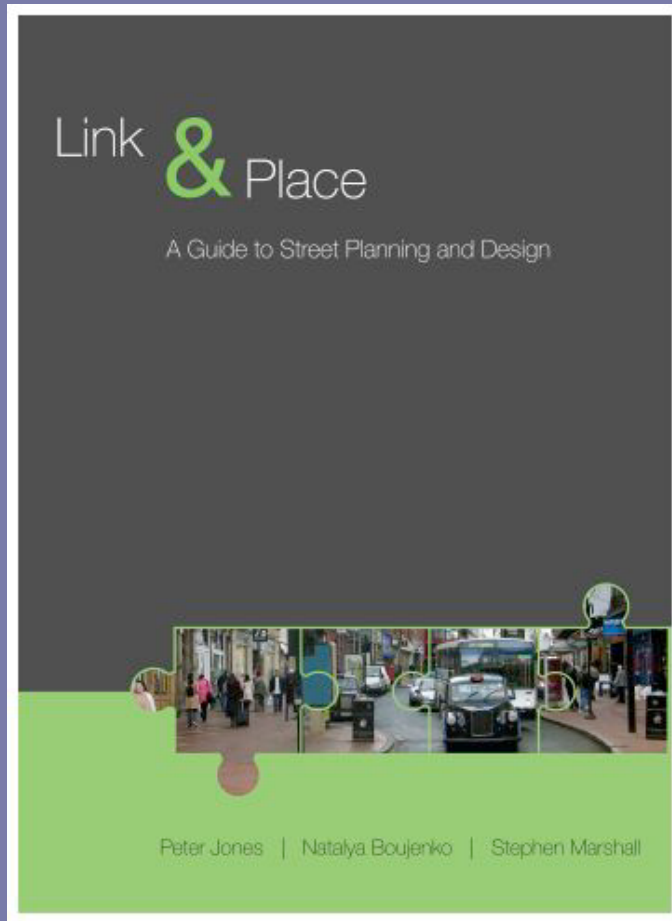
# An evolving formulation

	National	City	District	Neighb'd	Local
	Place status levels				
National	I-A	I-B	I-C	I-D	I-E
City	II-A	II-B	II-C	II-D	II-E
District	III-A	III-B	III-C	III-D	III-E
Neighb'd	IV-A	IV-B	IV-C	IV-D	IV-E
Local	V-A	V-B	V-C	V-D	V-E

## *Link & Place*

- Core of integrated system of street planning and design
- Further more explicit handling of streetspace allocation / design
- Relation to network assessment / design appraisal

# Link & Place



## Street Planning

- Link / Place Street Classification
- Street Plan
- Strategic Network Assessment

## Street Design

- Design Brief
- Area Assessment Techniques
- Design Development
- Link / Place Design Techniques
- Design Appraisal

# Three dimensions of integration

	Link	Place
Planning		
Design		

- Link role & Place role

# Three dimensions of integration

	Link	Place
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- Network planning → individual street design

# Three dimensions of integration

	Link	Place
Planning	<b>Transport planners</b>	<b>Urban planners</b>
Design	<b>Traffic engineers</b>	<b>Urban designers</b>

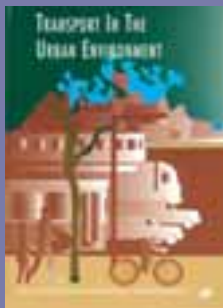
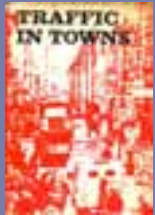
- Link role & Place role
- Network planning → individual street design
- Transport and urban professions

# Implications

- New 'hierarchy' based on Link and Place
- Guide decisions on allocation of space to different uses/ users
- Link status – by transport professionals
- Place status – by urban planners/designers
- Allocation of status is not merely a technical decision but a 'political' decision
- Role for input from the public / stakeholders



# “Beyond Manual for Streets”?



- Arterial streets (DfT)
- A basis for treatment of all streets and roads (MfS and/or DMRB)
- Integration with principles of ‘Link and Place’
  - Link status (network role)
  - Explicit treatment of place status
  - Explicit role for urban planners / designers in deciding street function
- Public transport

# New integrated guidance?



- Learning from latest evidence & best practice (UK and beyond)
- United by a coherent set of theories & concepts
- Inter-professional / multi-disciplinary scope