

# **City Form:**

## **The Sustainable Urban Form Consortium**

**Seminar Presentation**

**11 December 2006**

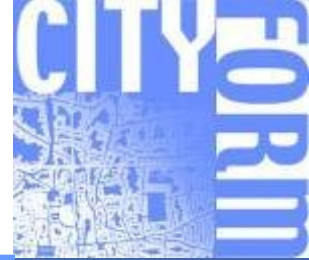
**Plus Project “Urbanising Suburbia”**

**Co-Investigator: Dr Hildebrand Frey**

**Researcher: Dr Samer Bagaeen (withdrawn)**

**New Researcher: Linda Shields**

# The framework for CITY FORM



## **Funder**

- EPSRC (Engineering & Physical Science Research Council)

## **Research Framework**

- SUE (Sustainable Urban Environments Programme)

## **Consortium**

- CITY FORM - The Sustainable Urban Form Consortium

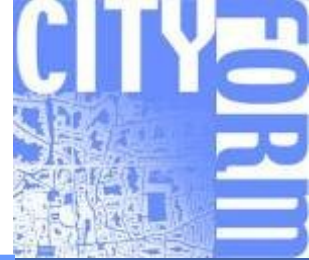
## **Key task**

- To investigate to what extent and in what way urban forms impact social, environmental, ecological and transport sustainability

## **Time framework**

- 4 years for Core Programme, 3-4 years for plus projects; start: October 2003

# CITY FORM: Core Programme Research Teams

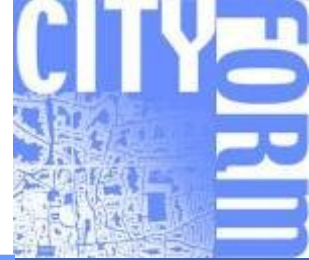


- **De Montfort University**
  - IESD (Institute for Energy & Sustainable Development)
- **Heriot-Watt University**
  - BES (Building Engineering & Surveying)
  - SBE (School of the Built Environment)
- **Oxford Brookes University**
  - OCSD (Oxford Centre for Sustainable Development)
- **Sheffield University**
  - APS (Animal & Plant Science)
- **Strathclyde University**
  - CE (Civil Engineering)

- **The Core programme investigation**

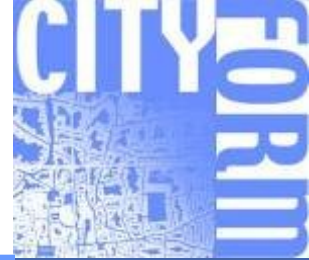
- The following issues require qualification which are the task of the Core Programme to which all five partners contribute:
  - Spatial sustainability: the effect and social impact of urban form on the quality of life of users, on the provision of open space (Oxford Brookes)
  - Environmental sustainability: the impact of urban form on pollution, energy consumption; on open open space and biodiversity (De Montford + Sheffield)
  - Sustainable urban transport: the impact of urban form on travel behaviour; the connection or disconnection of urban form to/from broader transport networks (Civil Engineering at Strathclyde)
  - Social sustainability: the impact of urban form on acceptability by users, on social inclusion or exclusion, on lifestyles (Oxford Brookes + Heriot-Watt)
  - Economic sustainability: the impact of urban form on the degree of economic viability

# Core programme: investigation approach



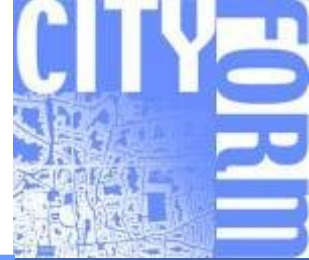
- The 5 research teams selected in their cities 3 urban areas of limited size (around 2000 dwelling units) in centre, intermediary and edge locations
- With the help of a common list of parameters, the 15 case study areas have undergone a rigorous survey (spatial and formal characteristics, population density, land use patterns, types of housing, social benefits or disbenefits, environmental qualities or deficiencies in terms of biodiversity and energy demand, of people's travel behaviour, economic viability of areas)
- A household survey was carried out in all case study areas using the postal method
- The sets of data for each of the parameters and case study areas are now mapped and correlated using a GIS based approach
- The data correlation will allow insights into the impact of different urban forms onto their performance quality and sustainability

# Core Programme: investigation approach



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# CITY FORM: Plus Projects



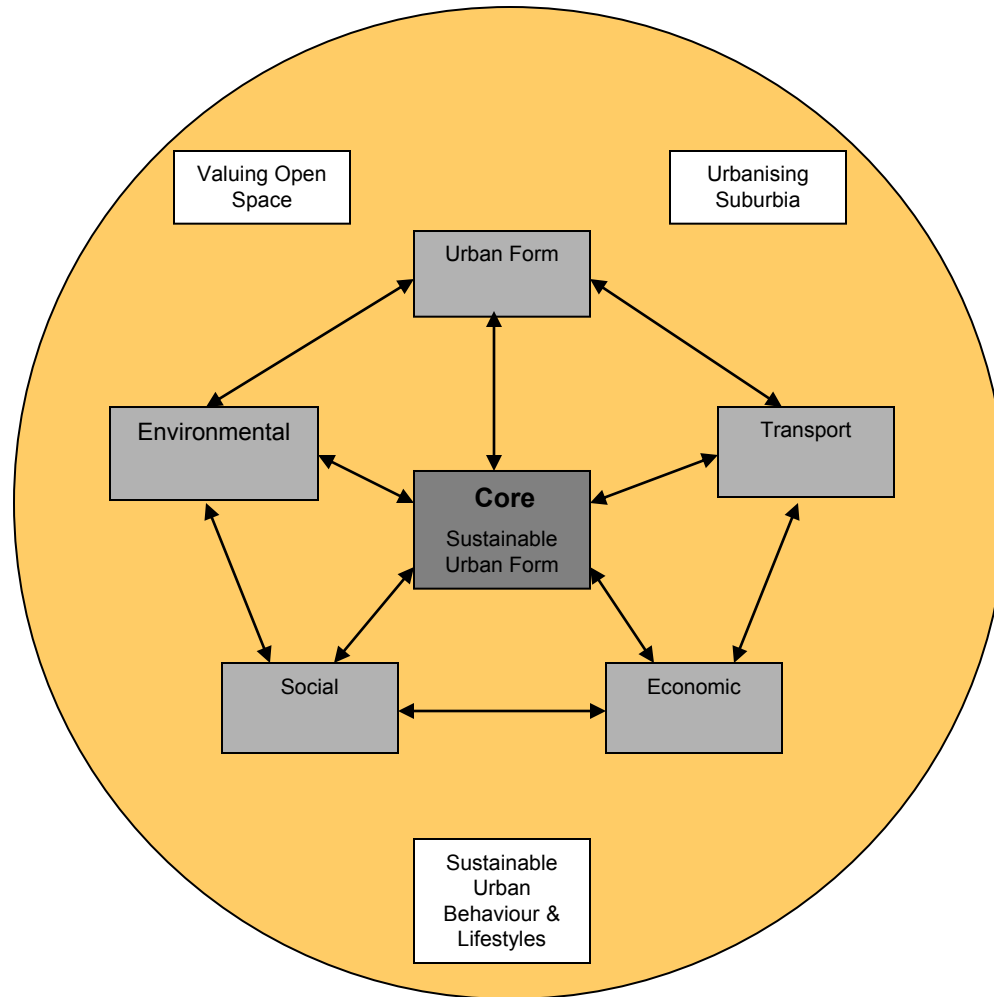
- The responsibility of the CITY FORM Plus Projects is an investigation in depth of specific issues related to the core programme:
  - **Project C - Urbanising Suburbia** (Strathclyde, Architecture, UDSU)

Investigating ways in which (sub)urban areas can be transformed into more sustainable (more compact, mixed use and social inclusion) areas and what impact these modifications can be expected to have on peoples' quality of life, travel behaviour, the provision of viable local services and facilities and public transport
  - **Project E - The Contributions of 'Sustainable' New Developments to Sustainable Lifestyles** (Oxford Brookes, OCSD)

Investigating whether or not, and if, in which way and to what degree, 'sustainable new developments and settlements' (e.g. the Millennium Village Greenwich) have influenced their inhabitants to live more sustainable lifestyles
  - **Project F - Valuating Space** (Sheffield, APS)

Investigating the entire city area of Sheffield and the impact of open green spaces and their configuration, size and connectivity on biodiversity

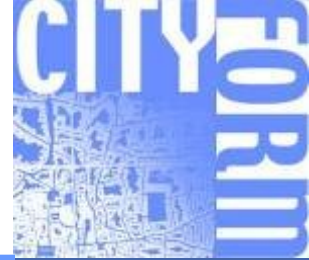
# City Form - Scope





# The Plus C Project: Urbanising Suburbia

## Content of Presentation



1. Types of suburbs
2. Main reasons for this project to be carried out
3. Approaches to intensification
4. Developing a controlled approach to intensification
5. Investigation of urban areas in Glasgow
6. Remaining work

# 1. Types of Suburbs

- A search through literature shows that very little has been published about suburbs
- The general understanding of suburbs is that they are pure housing areas at the city fringes characterised by low population and dwelling densities that do not support local services and facilities and public transport
- There are, however, a much larger number of different types of 'suburbs' with diverse built form, social and economic characteristics that merit an investigation

# 1.1 Historical inner suburbs

- In England: established terraced or semi-detached family housing development; in Scotland terraced and tenemental housing development (mainly 4 floors of height)
- This development is now integrated into the town/city and identified as peri-central
- These suburbs are the result of
  - a ‘suburban’ middle class demand for space
  - Segregation of uses
  - More hygienic conditions, less pollution, more green space
- Characteristics of historic inner suburbs:
  - Mix of uses
  - Walkability
  - Good public transport
- Examples: end 19th and early 20th C. West End in Glasgow

West End of Glasgow (historical suburbs)



City Form: *Urbanising Suburbia*

## 1.2 Planned suburbs

- The collective name of a series of experiments aimed at creating better types of suburban settlements with
  - higher housing quality
  - higher standards of green spaces and landscaping
  - higher standards of public spaces
  - higher standards of community facilities
- These planned suburbs are frequently garden suburb inspired, and many of them are still successful today
- Examples: interwar housing in Glasgow

Glasgow, cottages and tenements in Hamiltonhill (inter-war housing)



## 1.3 Social housing suburbs

- Either low-rise or high-rise development, purely social housing
- These areas have today often problems of
  - maintenance
  - safety
  - vandalism
  - lack of social mix
  - lack of non-residential use
- Examples: 1960's peripheral estates

Glasgow, Peripheral Estate Castlemilk (post-war housing)

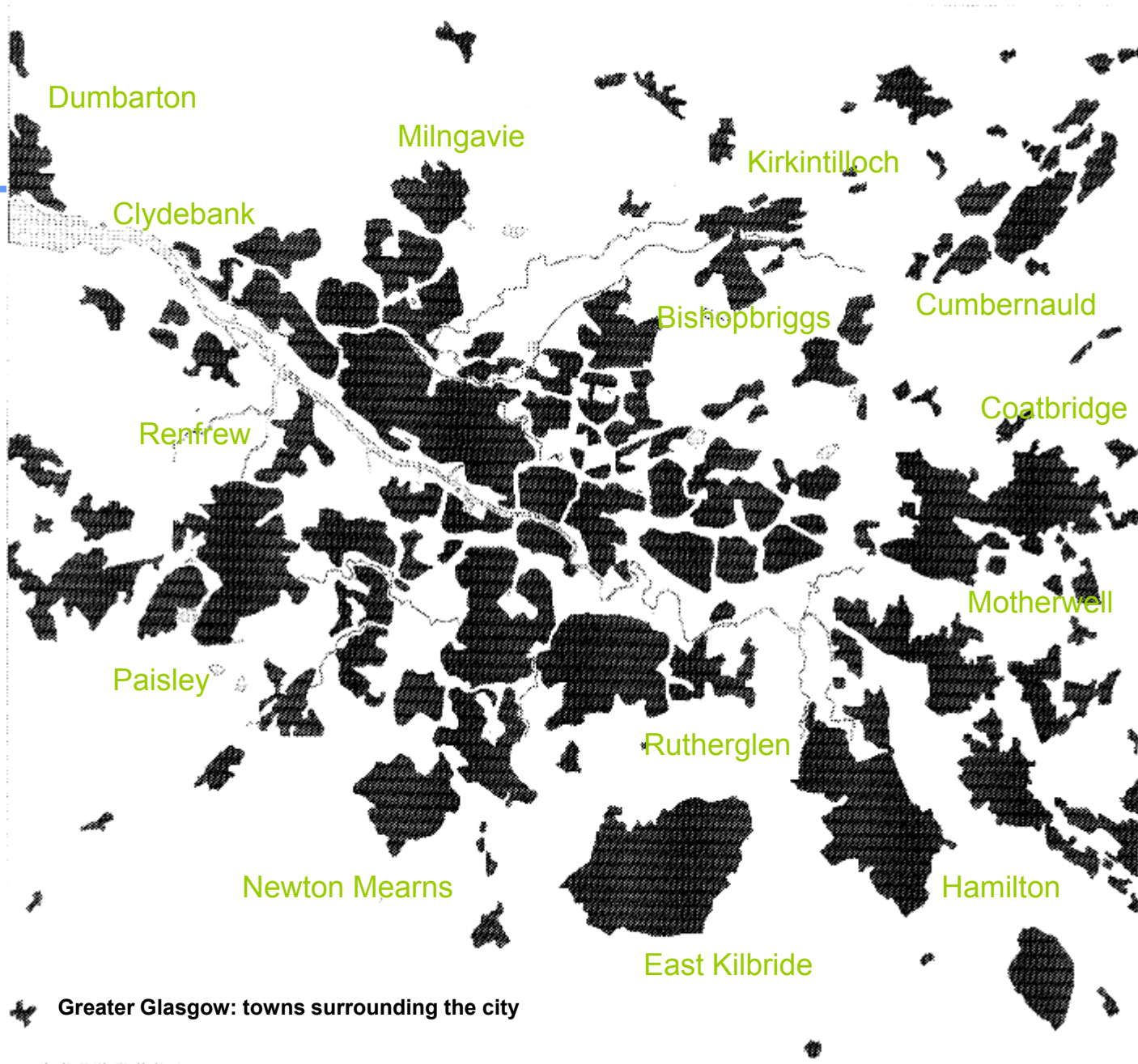


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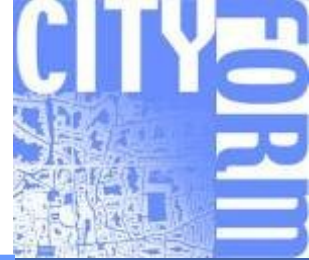
## 1.4 Suburban towns

- With a level of subordination to a major city, often a commuter suburb in a satellite locality within a major conurbation
- With some level of self-containment
- Examples: suburban towns around Glasgow



Greater Glasgow: towns surrounding the city

# 1.5 Public transport suburbs



- Medium (to high) density
- homogeneous speculative suburbs
- Usually in a closely structured urban fabric
- Examples: Freiburg, Rieselfeld and Vauban

Freiburg Vauban, Germany



City Form: *Urbanising Suburbia*

## 1.6 Car suburbs

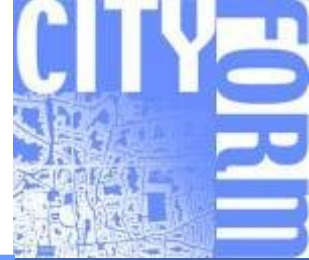
- With low density
- Detached and semi-detached housing
- Homogeneous speculative places, often in an open townscape fringe area
- Examples: Merkland north-east of Glasgow

Merkland, Kirkintilloch



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# 1.7 Summary of (sub)urban areas



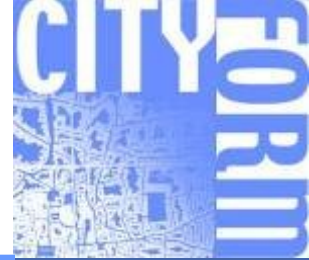
- This Plus project does not focus on ‘car-suburbs’ only but investigates generally urban areas in any location of the city or city region in need of regeneration

## 2. Main reasons for this project to be carried out

- Problems with suburbs in terms of sustainability
  - Medium to low density
  - Predominantly if not exclusively residential
  - With homes and gardens of a similar size and type
  - Adjacent to the city but dependent on it for employment, services and trade
- The huge demand for new housing
  - Population growth specifically in the south-east of England and at the fringes of many cities and towns (population diffusion)
  - Growth of the number of smaller households
  - The 2004 Barker Investigation estimates that for England alone between 100,000 and 200,000 additional housing units are required per annum
- The call for urban containment
  - If the required additional homes were built at the density of a typical suburbs (say 20 units per hectare) the loss of open land would be enormous
  - In PPG3 on Housing (DoT 1992, DETR 2003) the UK government stresses the need to bring about a maximum amount of the additionally required housing (guideline is 60%) within existing urban areas
  - This to achieve requires the intensification of existing urban areas and not just suburbs; the questions are:
    - how is intensification best generated?
    - is intensification socially acceptable and economically viable?
    - what will be the impact of intensification on the quality of life, urban form and the environment?
- These are the questions this project is dealing with



# 3. Approaches to Intensification

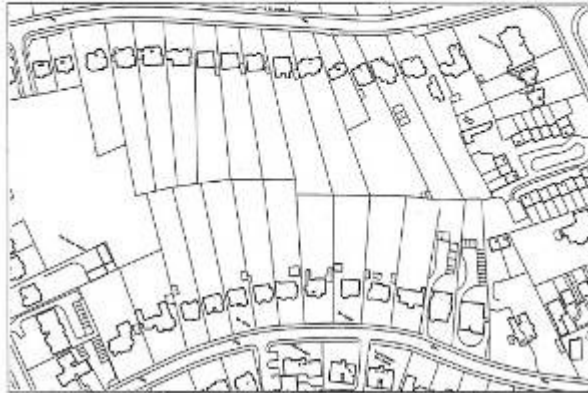


- Intensifying urban areas, i.e. increasing their development density, is an ongoing process that can be observed in all cities
- It usually takes the form of house extensions, loft developments and the like to generate more space for a family but does not achieve an increase in an area's population
- Intensification as investigated here has the intention to increase the number of people and households in urban areas with the main objective to render local services and facilities and public transport viable, to allow access to central facilities and public transport by foot, to reduce car dependent travel, and to avoid the further erosion of open countryside by urban sprawl

# 3.1 Traditional approaches to intensification

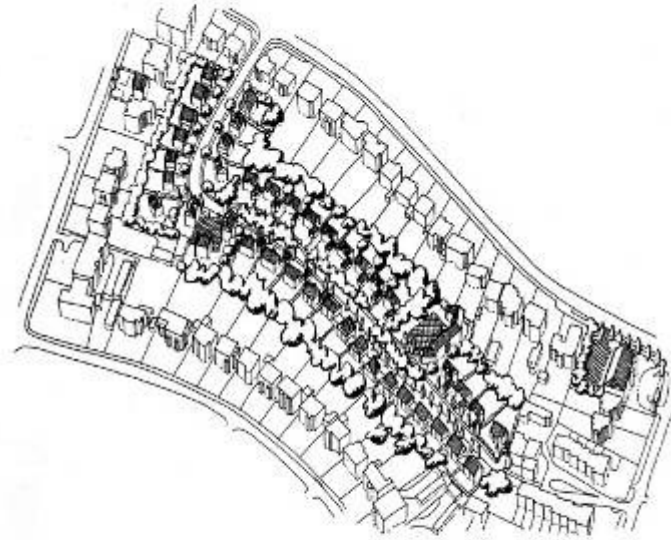
**Housing Layout Type H1C**  
Terraces, semis and detached dwellings with deeper plots

This rectangular layout type contains substantial dwellings on large plots. Distances between buildings allows for access to the rear of the plots permitting some permeability within the layout. Backgardens could allow for garden development or development off a new road, if still also possible. The level of backgarden development shown depends on the position of an access road.



Llewelyn-Davies

**Housing Layout Type H1C**  
Terraces, semis and detached dwellings with deeper plots



TYPE	No.	sqm	People
Studio Flat	0	0	0
1 Bed Fla	12	600	24
2 Bed Fla	28	1820	84
2 Bed House	0	0	2

Cars (total)	38
Area	11.78

TYPE	No.	sqm	People
1 Bed House	20	1600	80
+ Bed House	28	2800	168
Total	88	4820	156
Per Hectare	7.52	583	36

Infill	1.56
Backgardens	5.98

Llewelyn-Davies

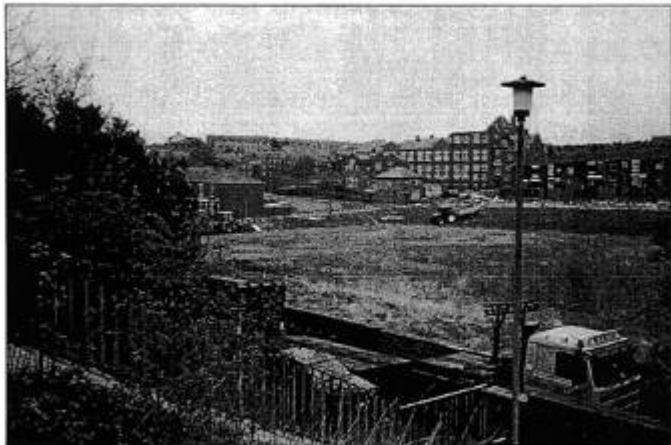
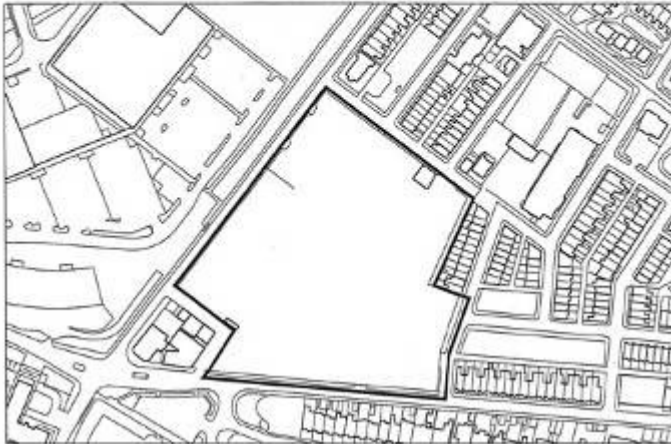
Developing gap sites, disused areas, subdividing deep plots of land: examples Llewelyn-Davies

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# Traditional intensification approaches (example Llewelyn-Davis)

Design Exercise 40  
Large Scale Redevelopment

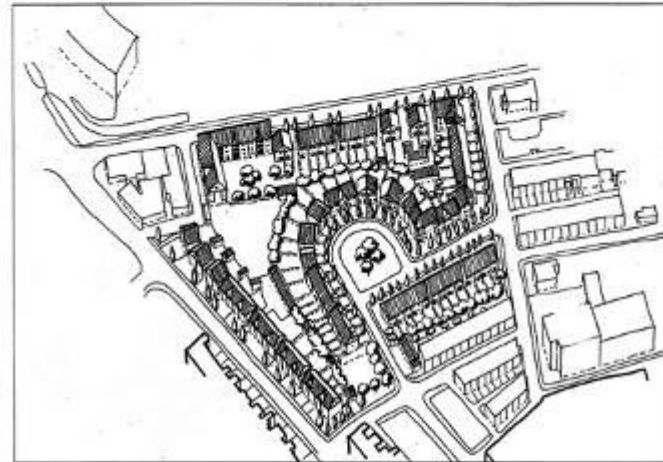
Vacant site adjoining residential area and opposite employment uses. Street pattern carried through into new development with a mixture of flats and houses provided. This exercise cross references with exercise number 43.



Llewelyn-Davis

## Developing disused plots of land

Design Exercise 40  
Large Scale Redevelopment



TYPE	No.	m <sup>2</sup>	People
Studio Flat	0	0	0
1 Bed Flat	12	603	24
2 Bed Flat	33	2145	69
2 Bed House	0	0	0

Cars (total)	189
Site Area	2.30

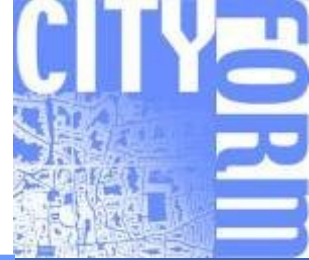
TYPE	No.	m <sup>2</sup>	People
3 Bed House	38	3040	152
4 Bed House	34	3400	204
Total	117	9185	479
Per Hectare	50.67	3993	208

Other uses (m <sup>2</sup> )	
Conversions*	

\* included in capacity figures above

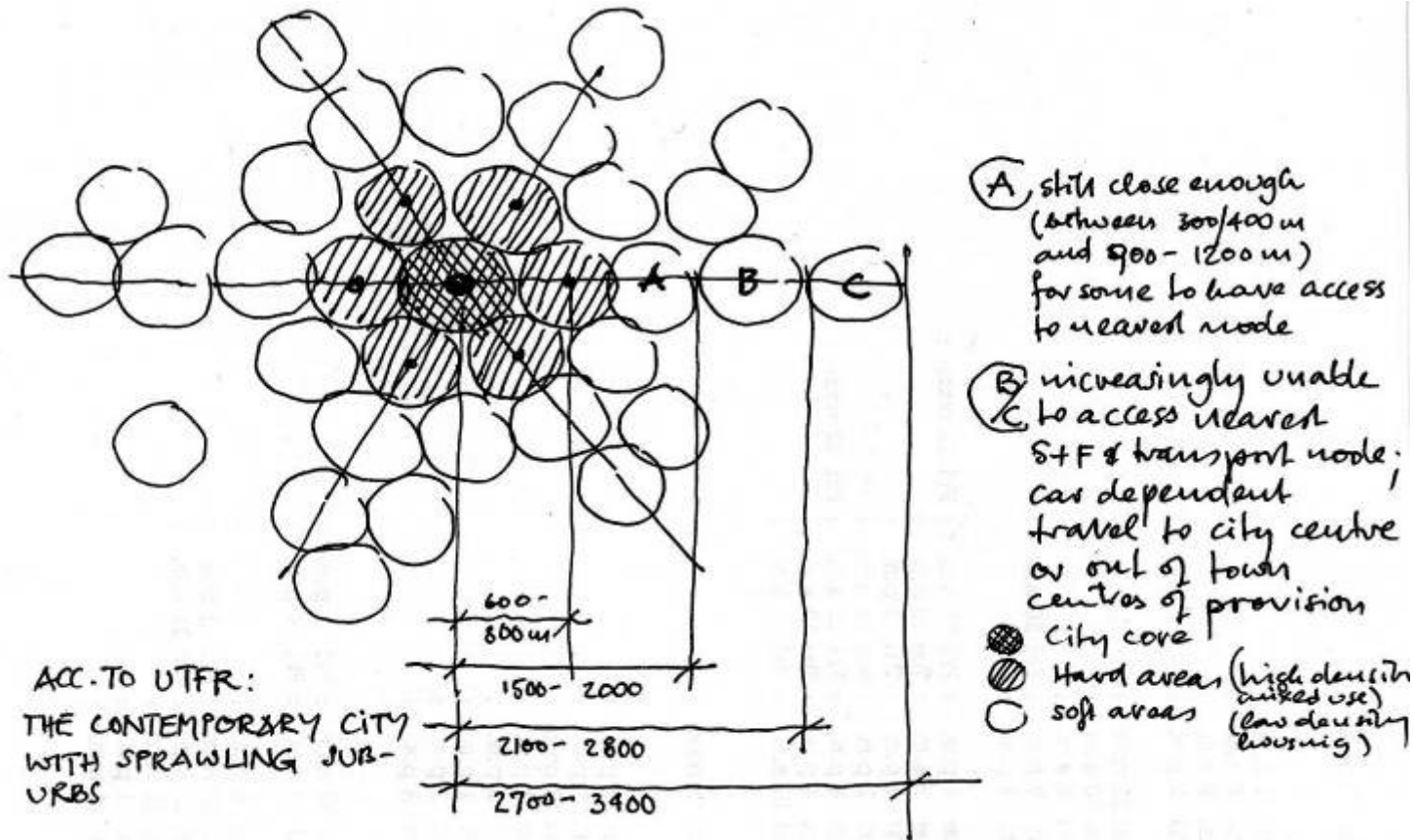
Llewelyn-Davis

## 4.2 Research project approach to the selection of (sub)urban areas



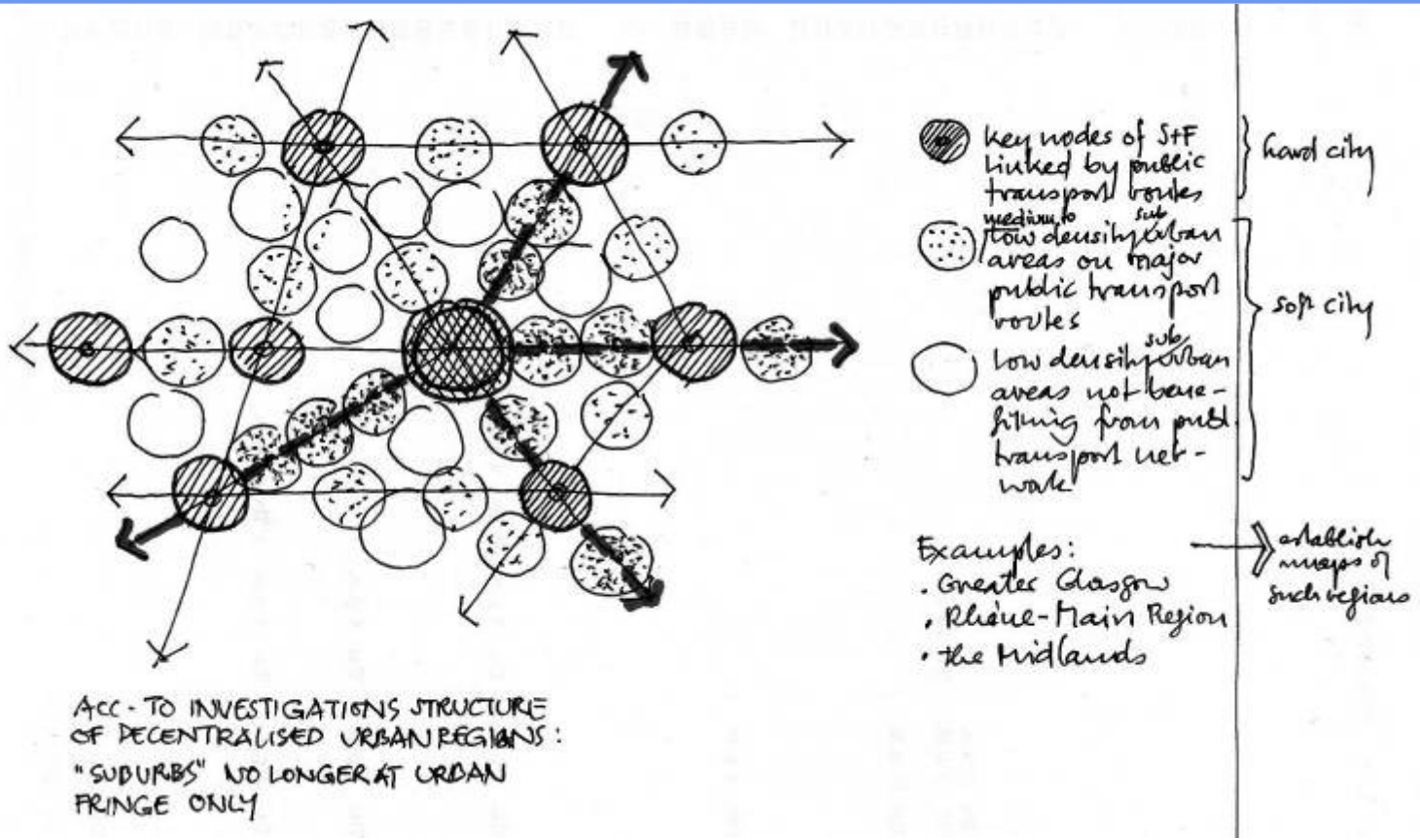
- The standard approach is likely to achieve little more than a larger or smaller number of additional dwellings regardless of other sustainability parameters
- This research project therefore investigates (sub)urban areas located along an existing or planned transit corridor in order to help reduce car dependent travel

# The need to ensure the viability of intensification

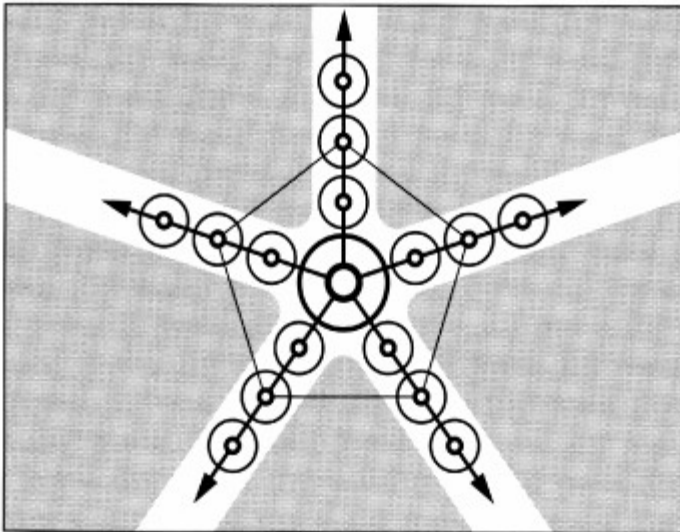


Poorly connected (sub)urban areas without local services and facilities are less suitable for intensification as this would increase car dependent travel

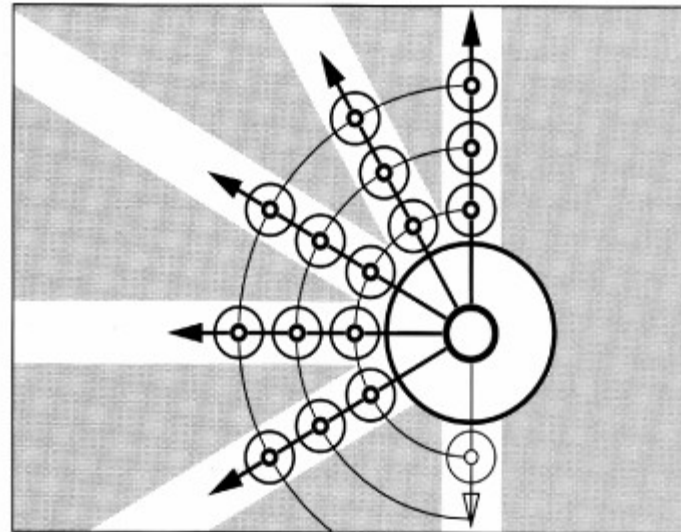
## Chosen approach: intensification of areas along transport corridors



Precedents of city structures based on transit corridors



3-14. The star city



3-15. Diagrammatic representation of Copenhagen's 'finger plan' (based on original publication, 1947 from Hartoft-Nielson, 1993)

## Intensification of urban areas in transit corridors: example Copenhagen

Precedents:  
Copenhagen's  
transit 'fingers'  
(transit corridors)  
1947





Example of A, B & C location: Principles of public transport planning, from: Barton, H., Grant, M. & Guise, R. ([2003], 2005, London & New York: SPON press, p.123.

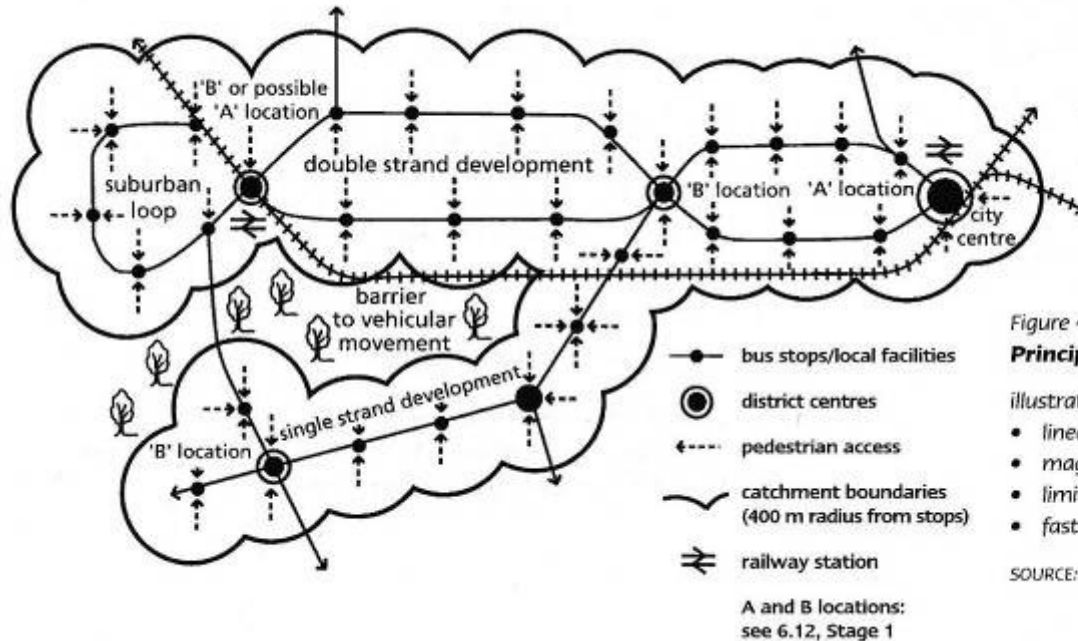


Figure 4.28  
**Principles of public transport planning**

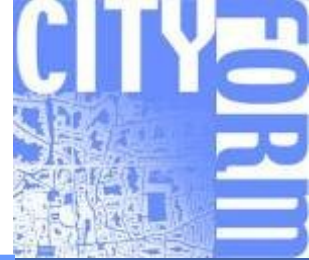
- illustrating
- linear catchment zones
  - magnets and nodes
  - limited lateral movements
  - fast and stopping services

SOURCE: BARTON ET AL. 1995

Glasgow's existing or potential nodal structure along major transport routes  
from: Frey, H. (1999) *Designing the City*. London & New York. SPON press, p.115.



## 3.3 The choice of urban corridors in Glasgow



- A Centre - South Corridor
- A Centre - West Corridor

- **The city centre - south corridor**

- The project shares with the Core Programme Team investigating 'The Impact of City Form and Travel Behaviour' – Dr Ferguson and Mr Woods at Civil Engineering – a centre - south corridor including parts of the City Centre, Pollokshields and Darnley
- Whereas the central area and Pollokshields either do not need or do not allow any intensification (the villa area in Pollokshields), Darnley is a typical new edge-of-the-city suburb that merits some general investigation

# City centre - south corridor

Centre (Merchant City/Calton) - Pollokshields - Darnley

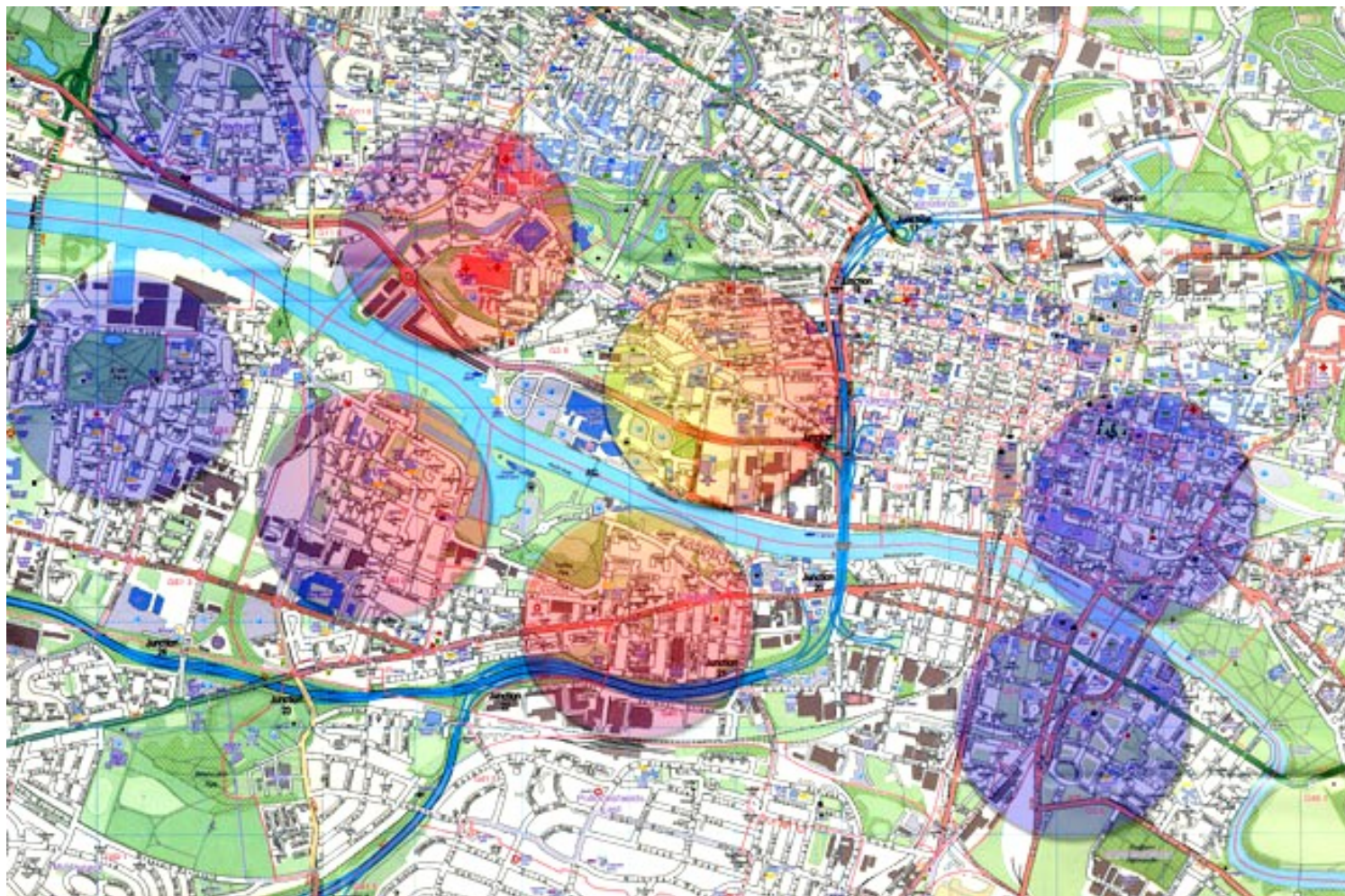


- **The city centre - west corridor along the River Clyde**

- A second centre - west axis along the River Clyde was selected after the Glasgow City Council Department of Regeneration Services (DRS) had appointed an official contact person for the project at DRS
- DRS has asked the research team to investigate how the areas immediately north and south of the River Clyde can be connected with the new high-profile development at the river
- This collaboration makes the research project not only more focused but also potentially beneficial for the review of the city plan

# City centre - west corridor

## Communities north and south of the Clyde

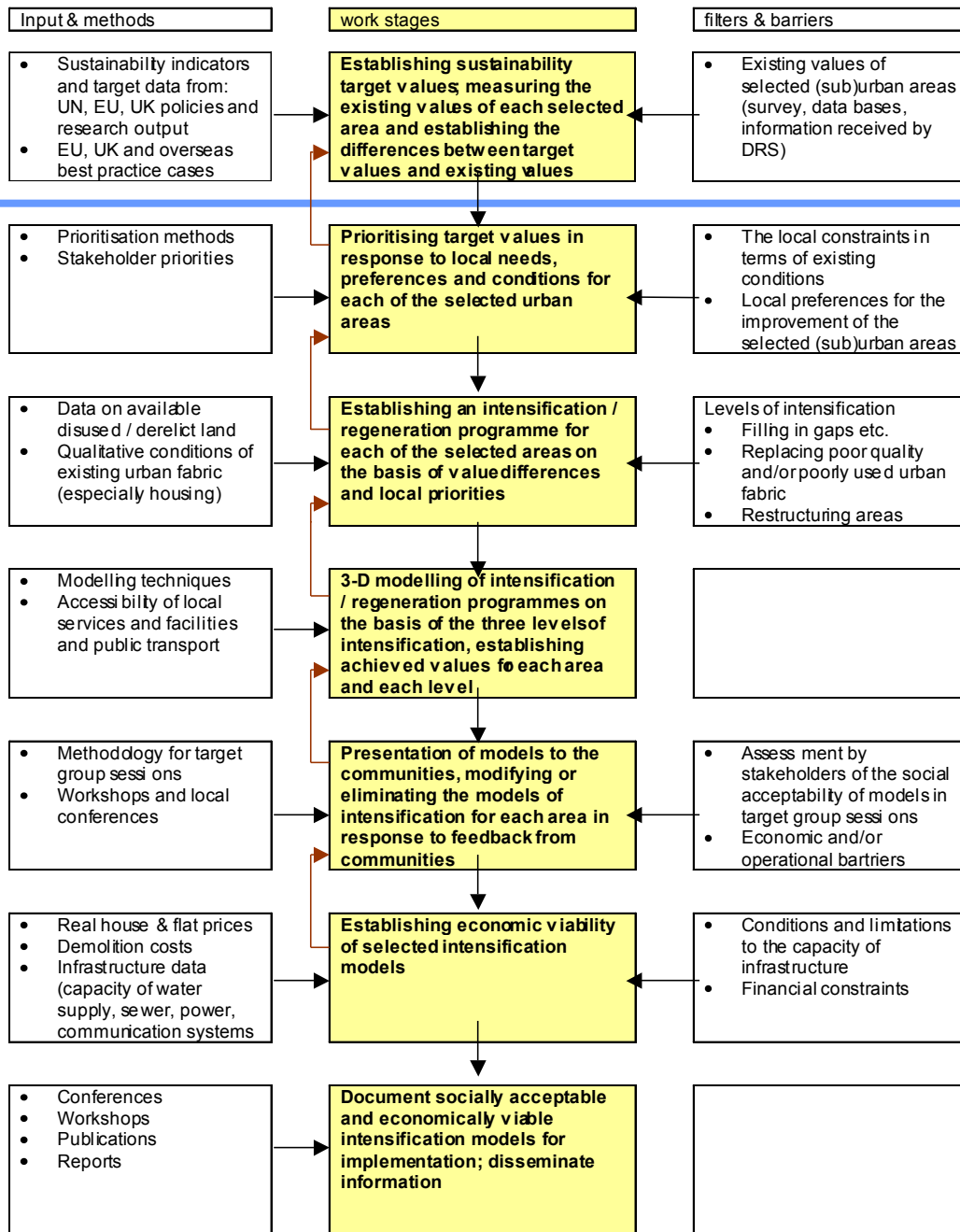


Special interest of the GCC Department of Regeneration Services: Govan south of the river

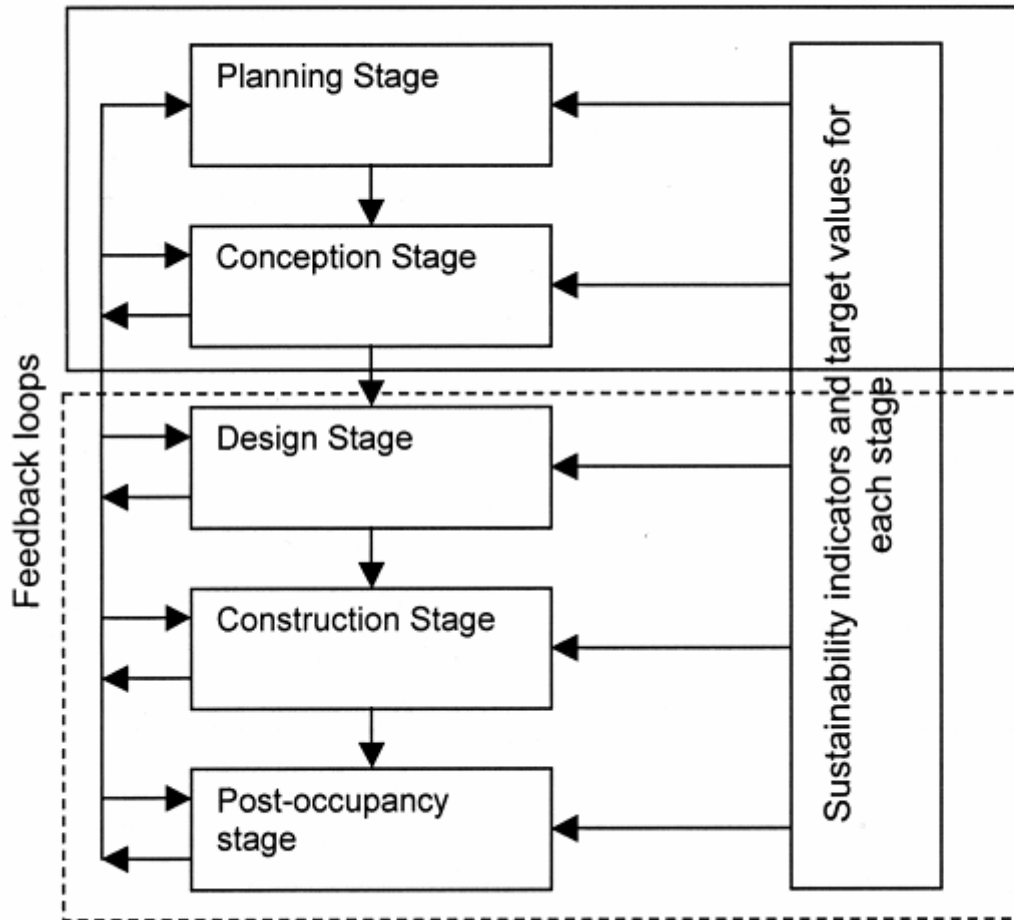
## 4. Developing a controlled approach to intensification

- Normally approaches to urban regeneration use checklists of sustainability indicators, rarely any threshold of target values; this allows an insight into the areas in which improvements are required but there are no guidelines as to which improvements ought to be made; decisions are therefore made on the basis of personal beliefs and estimates rather than knowledge
- This project establishes a working tool that allows the systematic assessment of the strengths and weaknesses of urban areas and the methodical formulation of improvement programmes that will render these areas more sustainable. The process of investigation has the following working stages:
  - Establishing threshold and target values that are likely to lead towards a more sustainable urban form and more sustainable socio-economic profiles; these values are derived from current UN, EU and UK recommendations and policies, research outputs, relevant publications and best practice case studies; threshold and target values can be updated, or even replaced, when new and more reliable research outputs become available
  - Establishing the existing characteristics, quantitative and qualitative values of (sub)urban areas
  - The difference between existing and required values leads to an insight where the areas under investigation meet, or fail to meet, threshold and target values and allows the formulation of a regeneration brief
  - The regeneration brief is then used to establish the potential for remodelling urban areas and to measure the level to which the areas can be rendered more sustainable





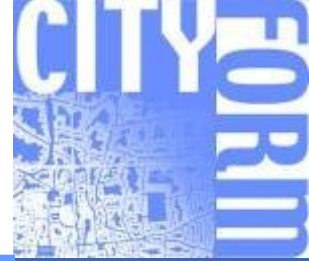
# The scope of research



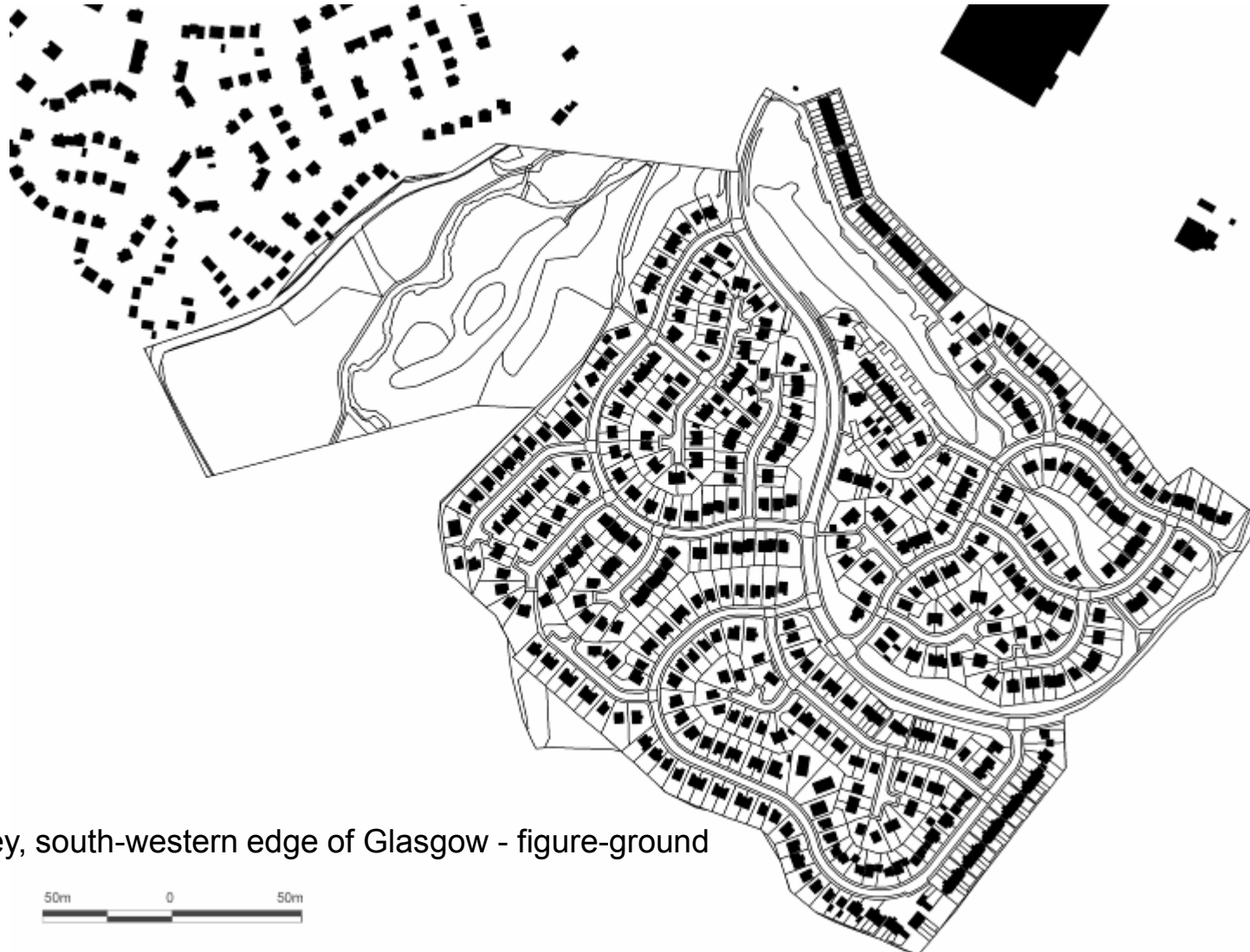
Stages covered by sustainability tool

The development of these stages requires further research

# 5. Investigation of urban areas in Glasgow



# 5.1 Investigation of car suburbs



Darnley, south-western edge of Glasgow - figure-ground

Darnley, Glasgow - predominantly family houses

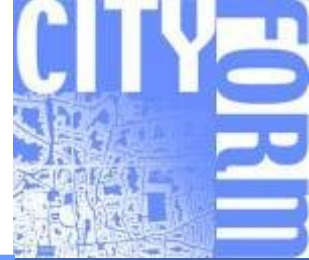


## Area characteristics Glasgow Š Darnley

(selected output areas: 60QS003444-3446, 3930-3932, 5149-5151)

Indicator		Number	Measure	Scale	Explanation
area <sup>(1)</sup>		27.6	100.0	ha	
population <sup>(2)</sup>	total	1625		%	
	aged 0-15		29.73	%	10.5% above Glasgow average
	aged 16-64		65.88	%	3.7% above Glasgow average
	aged 65+		4.39	%	14.2% below Glasgow average
house holds <sup>(2)</sup>	total	558	100.0	%	
housing types <sup>(2)</sup>	total dwellings	558	100.0	%	overwhelmingly 2 storey detached, terraced & semi-detached family housing; large impermeable frag-mented urban blocks with some cul-de-sac configuration but houses fronting the streets
	detached		40.41	%	
	semi-detached		46.44	%	
	terraced		11.43	%	
	purp.built flat		1.72	%	
	in commercial b.		0.0	%	
tenure <sup>(2)</sup>	owned	538	96.4	%	overwhelmingly owner occupied
	social rented	4	0.7	%	
	private rented	16	2.9	%	
	other	0	0.0	%	
car/van ownership of households <sup>(2)</sup>	total households	558	100.0	%	92% of households own 1 or more cars
	no car		7.93	%	
	1 car		49.54	%	
	2 cars		39.33	%	
	3+ cars		3.19	%	
net density <sup>(2)</sup>	population density	58.9		ppha	low population density
	dwelling density	20.2		dpha	low dwelling density
	house hold density	2.9		pphh	young familieswith children
SIMD <sup>(3)</sup>	ranking 0-6505	3990 - 4660		rank	high ranking
	ranking 0-100%		61.3Š71.6	%	high socio-economic profile, 11-22% above Scottish average
property prices <sup>(4)</sup>	G53 7 average	145,000 to 175,500		£	1.4 to 16 times average Glasgow price
	G53 7 highest	193,000		£	1.8 times average Glasgow price

# Summary of Darnley survey



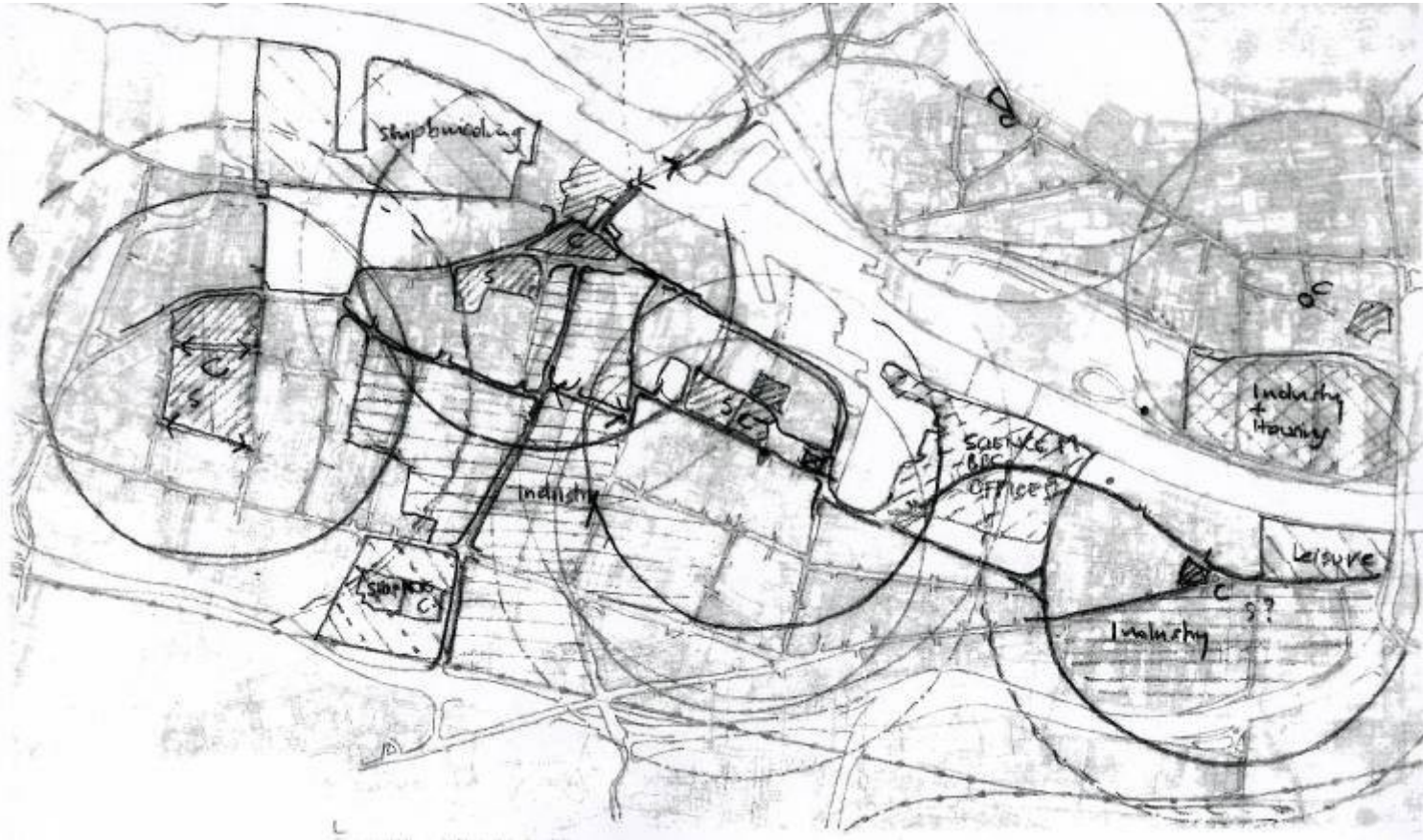
- The neighbourhood is developed on relatively small plots of land
- Development form is single-use, housing types are detached, semi-detached and some terraces, almost all privately owned
- There are no local services and facilities in the neighbourhood and provisions outside are not accessible by foot; there is no public transport in the area either which makes it entirely dependent on the car; hence the high percentage of car ownership
- Density and population figures are very low
- Due to the small plots of land any form of intensification inside the neighbourhood is made impossible. Development of more housing and local services outside the area is not viable as access distances would be beyond walking; such development would only increase car dependent travel
- There is accordingly no chance of improving the level of sustainability of this area

## 5.2 Investigation of areas of Govan, Glasgow



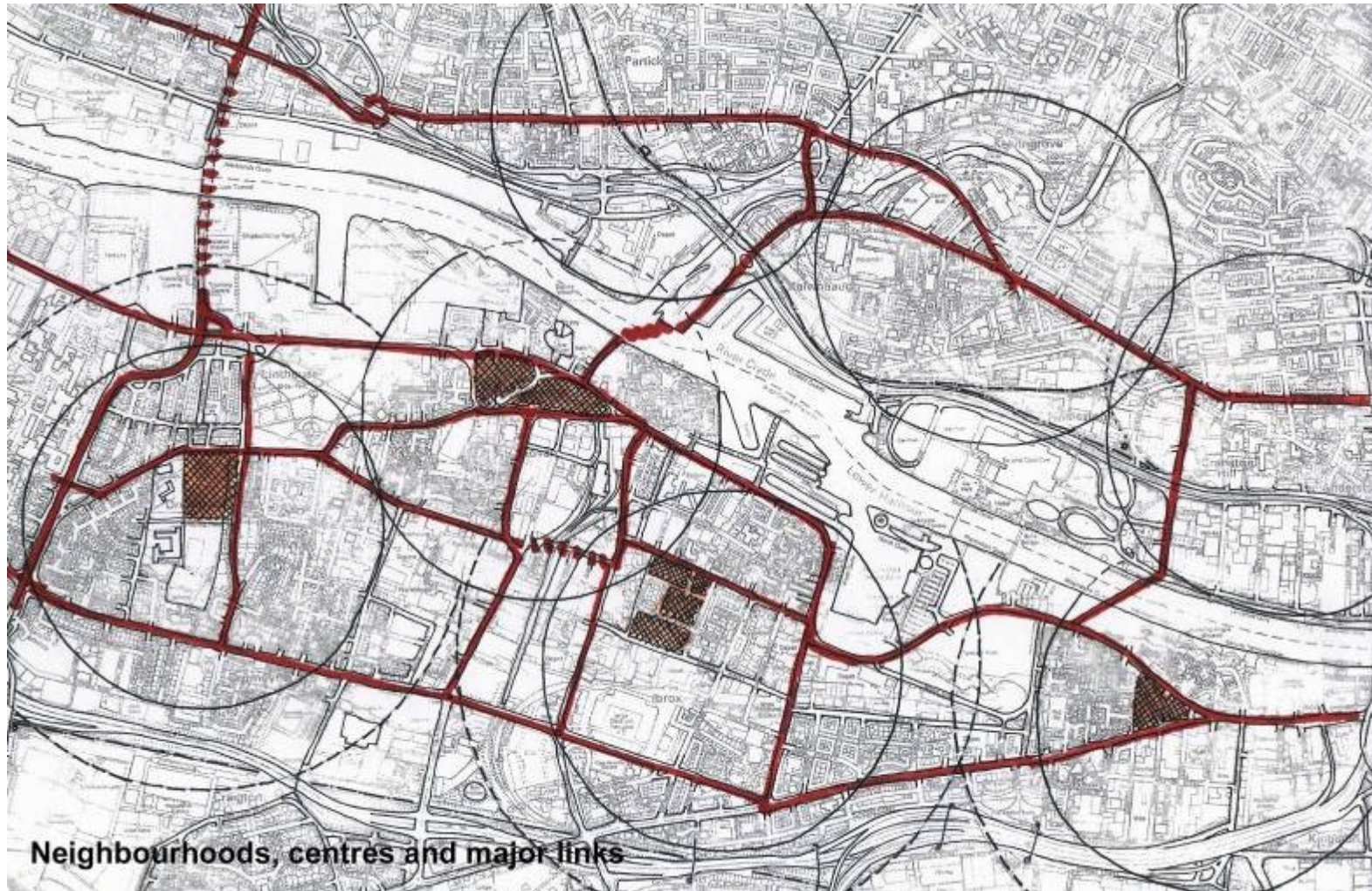
The figure-ground shows some degree of fragmentation of the area which is made up of three neighbourhoods and the central Govan area which operates as district centre





**Initial investigation of neighbourhoods in Govan and north of the Clyde, their centres and transport links**

The potential structure of neighbourhoods, their centres and major routes accommodating public transport

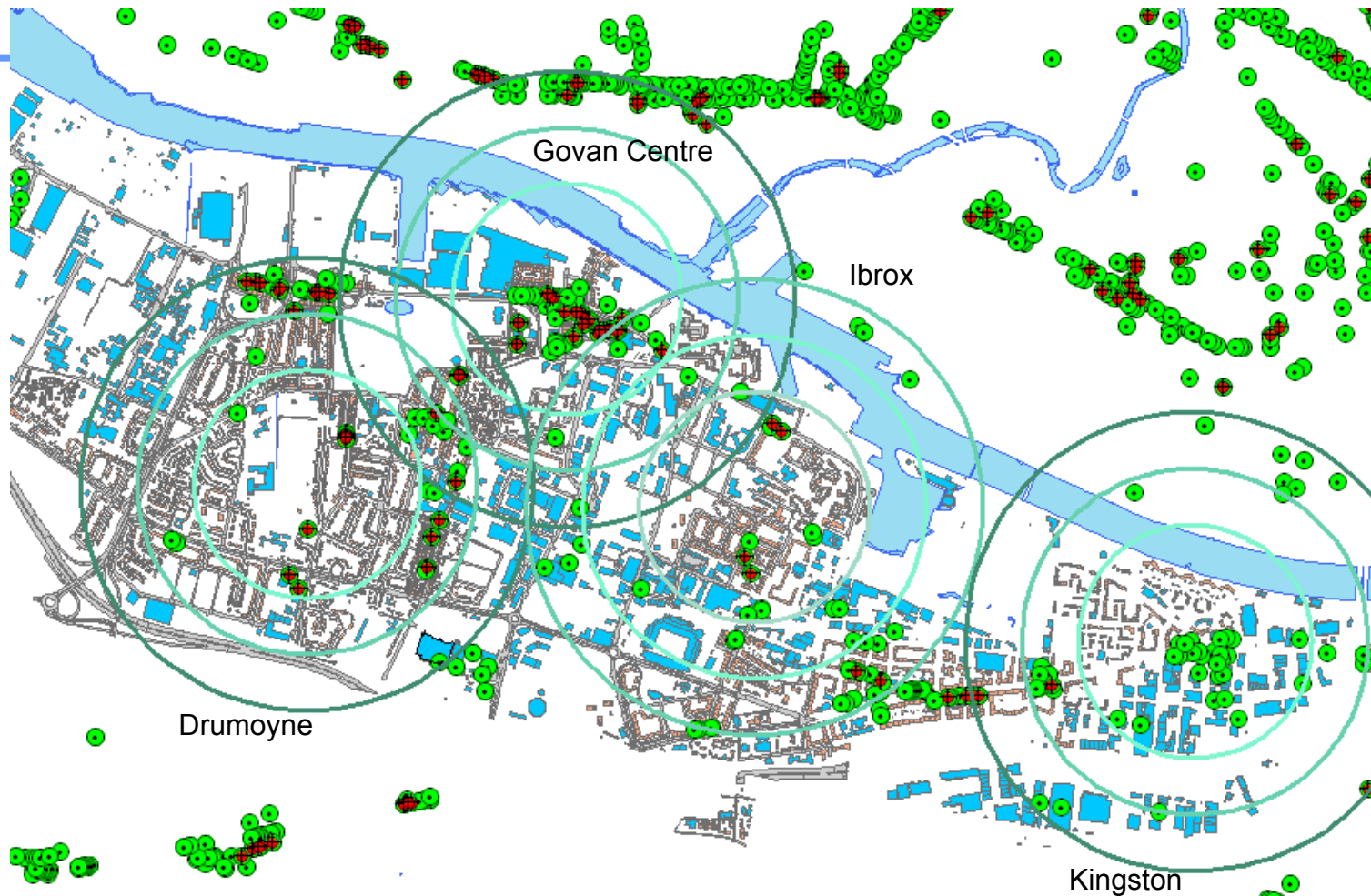


Neighbourhoods, centres and major links

## Govan land / building uses



The map shows a considerable degree of fragmentation of housing areas by non-housing uses which can be expected to have a serious impact on the viability of the smaller housing fragments



**Govan neighbourhood structure and location of existing services and facilities: mismatch in Drumoyne and Ibrox where services and facilities are located at the edge or are dispersed**



**Drumoyne land uses: services & facilities are dispersed and at the outer edges of the neighbourhood; access can therefore be expected to be rather uneven**

*City Form: Urbanising Suburbia*

## Walking time from data zones to local services and facilities confirm poor accessibility of services and facilities in Drumoyne

### DRUMOYNE

scottish data zone	walk. time to GP in minutes	score	walk. time to Post Office in minutes	score	walk. time to Primary School in minutes	score	walk. time to Super-market in minutes	score
S01003346	18.83	v.poor	13.13	poor	10.58	good	9.60	good
S01003349	22.05	v.poor	10.50	good	8.33	good	9.98	good
S01003364	16.13	v.poor	5.78	v.good	8.63	good	16.50	v.poor
S01003375	23.25	v.poor	15.75	poor	14.70	poor	17.03	v.poor
S01003384	12.08	poor	12.30	poor	7.35	good	14.10	poor
S01003386	25.20	v.poor	15.08	poor	12.23	poor	15.53	poor
S01003396	11.33	good	9.75	good	9.00	good	21.00	v.poor
S01003411	14.40	poor	14.70	poor	8.48	good	23.10	v.poor
S01003424	13.88	poor	11.48	good	8.78	good	24.15	v.poor
S01003436	28.50	v.poor	23.48	v.poor	22.88	v.poor	26.1	v.poor
<b>TOTAL</b>	<b>18.57</b>	<b>v.poor</b>	<b>13.20</b>	<b>poor</b>	<b>11.10</b>	<b>poor</b>	<b>17.71</b>	<b>v.poor</b>

### GOVAN CENTRE

scottish data zone	walk. time to GP in minutes	score	walk. time to Post Office in minutes	score	walk. time to Primary School in minutes	score	walk. time to Super-market in minutes	score
S01003367	11.55	good	10.13	good				
S01003412	12.60	poor	12.00	poor	9.08	good	15.15	poor
S01003418	15.23	poor	13.20	poor	15.98	poor	16.20	v.poor
S01003441	11.25	poor	9.90	good	9.00	good	16.35	v.poor
<b>TOTAL</b>	<b>12.66</b>	<b>poor</b>	<b>11.31</b>	<b>good</b>	<b>11.35</b>	<b>good</b>	<b>15.90</b>	<b>v.poor</b>

# Drumoyne North: land / building uses



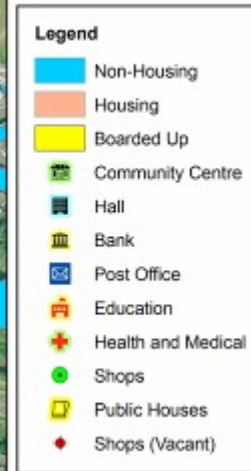
Housing varies from early 20<sup>th</sup> Century tenements to interwar tenements (mostly boarded up), 'four in a block' semi-detached cottages and terraces

# Mixture of house types in Drumoyne





**Drumoyne Centre and South: the open space at the centre offers an opportunity to develop a new neighbourhood centre**



The investigation of the built form characteristics of Drumoyne shows a dwelling density that is below the threshold value of 50 dwellings per hectare and a need for a minimum of 900 additional units; the high percentage of non-housing uses is the result of the inclusion of the hospital area west of and adjacent to the neighbourhood; the neighbourhood itself is, however, fairly compact.

**GOVAN - DRUMOYNE [S0100 3346, 3349, 3364, 3375, 3384, 3386, 3396, 3411, 3436]**  
**built form characteristics**

Indicator	Exist.Value	Scale	%	Target Value	Explanation	
total area <sup>(1)</sup>	420.77	ha			Including data zone S01003436, the major part of the Southern General Hospital and the areas to the west of it	
total population <sup>(2)</sup>	8,240	no			hospital inclusion distorts gross population density calculation, so net density is calculated	
total households <sup>(2)</sup>	4,076	no				
total dwellings <sup>(2)</sup>	total number	4,307	no	100.00%	existing values are very close to the target values	
	total occupied	4,076	no	94.43%		95.00% <sup>(5)</sup>
	total unoccupied	231	no	5.57%		5.00% <sup>(5)</sup>
dwelling types	detached			1.92%	2.00% <sup>(5)</sup>	existing mix of dwelling types close to the target values
	semi-detached			13.89%	8.00% <sup>(5)</sup>	
	terraced			18.99%	30.00% <sup>(5)</sup>	
	flats			64.88%	60.00% <sup>(5)</sup>	
	other			0.95%		
net density <sup>(2)</sup>	population density	79.14	nppha		threshold: 105 ppha <sup>(5,4)</sup>	with housing land (incl. gardens+ local roads) 104.12 ha & total number of dwellings 4,307, a minimum of 899 additional dwellings is required to achieve a threshold population density of 97.27 nppha
	dwelling density	41.37	ndpha		threshold: 50 dpha <sup>(3)</sup>	
	dwelling deficit	-8.63	ndpha		+899 dwellings	
household density <sup>(2)</sup>	1.89	pphh			threshold: 2.1 pphh <sup>(4)</sup>	10% below threshold value
land use <sup>(1,2)</sup>	total area	420.77	ha	100%		housing land: housing footprint (16.55 ha) + housing gardens (58.57 ha) + local roads (29.00 ha) non-housing land: non-housing footprint (48.45 ha) + non-housing yards (181.40 ha) + local roads (68.10 ha) there is an imbalance between housing, non-housing land and green space which should be addressed; however, regarding open green space, the school areas included in the non-housing land also include larger open green spaces
	housing land	104.12	ha	24.75%	45.00% <sup>(3)</sup>	
	housing footprint	16.55	ha			
	housing floor area	40.57	ha			
	non-housing land	297.95	ha	70.81%	35.00% <sup>(3)</sup>	
	non-hous. footprint	48.45	ha			
	non-hous. floor area	93.40	ha			
	green space	10.40	ha	2.47%	25.00% <sup>(3)</sup>	
	(roads)	97.10	ha			
other land	8.30	ha	1.97%	0.00% <sup>(3)</sup>		

Scales      ha      hectare  
               no      number  
               %      percentage  
               gppha    gross persons per ha  
               nppha    net persons per ha  
               ndpha    net dwelling per ha

Sources (1) GIS  
 (2) Census 2001  
 (3) Urban Task Force 1999 + 2005, Barton et al. 2003, ODPM 2000, Frey 1999 + 2006  
 (4) based on average Glasgow household density of 2.1 persons  
 (5) based on Glasgow average required for flexibility

The economic characteristics of Drumoyne show a slightly low percentage of economically active people and a high percentage of permanently sick or disabled persons. Car ownership is low.

**GOVAN - DRUMOYNE**  
**Economic characteristics**

Indicator		Exist. Value	Scale	Target Value	Explanation
economically active persons <sup>(2)</sup>	all aged 16-74	6,006	no	100.00%	Drumoyne has a slightly low % of economically active, underachieving by about 8%
	p/t employed		no	9.86%	
	f/t employed		no	31.58%	
	self-employed		no	2.50%	
	unemployed		no	5.87%	
	f/t students		no	2.31%	
	tot. econ. active		no	52.05%	
economically inactive persons <sup>(2)</sup>	retired		no	13.98%	almost two thirds of all households have no car
	students		no	2.98%	
	look. after family		no	7.19%	
	perm.sick/disabled		no	15.90%	
	other		no	7.83%	
	tot. econ. inactive		no	47.88%	
car/van ownership per households <sup>(2)</sup>	total households	4,307	no	100.00%	
	no car		no	65.30%	
	1 car		no	29.20%	
	2 cars		no	4.82%	
	3+ cars		no	0.68%	

Scales      no                  number  
                  %                    percentage

Sources (2)      Census 2001  
 (3)                  Urban Task Force 1999 + 2005, Barton et al. 2003, )DPM 2000, Frey 1999 + 2006  
 (6)                  based on the need for the economically active to exceed that of the economically inactive by at least 10% and an age profile of 60% in the employment age 16 – 64<sup>(3)</sup>

The social characteristics of Drumoyne show a reasonable mix of tenure types. However, in terms of qualifications, almost three quarters of those aged 16-75 have no or only O/Standard Grade qualifications. Almost one third of the population suffers from long-term illness, almost 40% of the population is income deprived, and there are high levels of deprivation.

**GOVAN – DRUMOYNE [S0100 3346, 3349, 3364, 3375, 3384, 3386, 3396, 3411, 3424, 3436]**  
**Social characteristics**

Indicators		Exist.Value	Scale	Target Values	Explanation
population age profile <sup>(2)</sup>	total	8,240	100.00%		Drumoyne's age profile is close to the target value and Glasgow's average
	aged 0-15		19.39%	20.00% <sup>(b)</sup>	
	aged 16-64		59.85%	60.00% <sup>(b)</sup>	
	aged 65+		20.76%	20.00% <sup>(2)</sup>	
% of people per tenure <sup>(2)</sup>	total population	8,240	100.00%		there is a balance between social rented, only slightly above 50%, and other forms of tenure, and Drumoyne has about 5% less social rented people in comparison to the slightly modified Glasgow average (actual average for social rented is around 60%)
	owned	3,521	42.73%	40.00% <sup>(b)</sup>	
	social rented	4,159	50.47%	55.00% <sup>(b)</sup>	
	private rented	204	2.48%	5.00% <sup>(b)</sup>	
	other	356	4.32%		
qualifications <sup>(2)</sup>	total aged 16-74	6,006	100.00%		more than 50% of Drummoyne's population aged 16-74 have no qualifications, almost 75% have no or only O/Standard Grade qualification
	no qualifications	3,006	50.05%	40.10% <sup>(5)</sup>	
	O/Standard Grade	1,484	24.71%	20.80% <sup>(5)</sup>	
	Higher Grade	640	10.66%	15.20% <sup>(5)</sup>	
	HND, HNC, RSA	59	1%	6.06% <sup>(5)</sup>	
	First/Higher Degree	313	13.58%	17.84% <sup>(5)</sup>	
health <sup>(2)</sup>	With long-term illness	2,610	31.67%	26.02% <sup>(b)</sup>	almost one third of population has limiting long-term health problems
	without limit./t illness	5,630	68.33%	73.98% <sup>(b)</sup>	
SIMD <sup>(4)</sup>	ranking 0-6505	average 634	rank	1,615 <sup>(b)</sup>	high levels of deprivation ranging from 39 to 2,396
deprivation indicators 2001 <sup>(2)</sup>	tot. population (GCC)	8,369	100.00%		almost two fifth of total population and almost two thirds of the working age population are income deprived (59.61% of total population) almost two thirds of the working population are income deprived, almost two fifth are claiming benefits
	no/% of tot. population income deprived	3,178	38.77%		
	work.age population	4,989	100.00%		
	no/% of work.age pop. income deprived	3,245	65.04%		
	no/% of total population claiming benefits	3,245	38.77%		
Deprivation indicators 2004 <sup>(6)</sup>	no/% of total population claiming benefits <sup>(6)</sup>	1,920			

Source no number  
 % percentage  
 rank Scottish Index of Multiple Deprivation: average

Sources (2) Census 2001  
 (3) Urban Task Force 1999 + 2005, Barton et al. 2003, ODPM 2000, Frey 1999 + 2006  
 (4) Scottish Executive 2004  
 (5) based on Glasgow average, for tenure slightly modified  
 (6) Glasgow City Council 2004 updates

Drumoyne required an increase of its population by at least 1,600 people (at least 900 dwelling units) to sustain local services and facilities and public transport. The open central area allows this target to be achieved and a neighbourhood centre to be developed. The local services and facilities, now dispersed and poorly accessible by the majority of people, are suggested to be relocated to the neighbourhood centre.

### Built form programme for Govan neighbourhoods

neighbourhood	programme	numbers	specifications
Drumoyne	population	<ul style="list-style-type: none"> <li>total: <math>\geq 9,400</math></li> <li>plus 1,600</li> </ul>	<ul style="list-style-type: none"> <li>a threshold total of 9,400 is required to sustain local services &amp; facilities and public transport</li> </ul>
	dwellings	<ul style="list-style-type: none"> <li>total: <math>\geq 4,960</math></li> <li>at least 850 new units</li> </ul>	<ul style="list-style-type: none"> <li>at current household sizes, a threshold total of 4,960 dwelling units is required</li> <li>all new housing for owner occupation</li> <li>average dwelling density at least 50 dpha</li> <li>dwelling type: a mixture of family units (high density family houses) and flats</li> </ul>
	services & facilities		<ul style="list-style-type: none"> <li>a new neighbourhood centre at Pirie Park, at the heart of the neighbourhood</li> <li>centre to accommodate 2 smaller primary schools or 1 larger primary school, a shopping hub (replacing old street shops), a post office, pub, sports hall and community centre (linked to schools), crèche, surgery (GPs), a neighbourhood park</li> <li>facilities currently dispersed should as far as possible be relocated at the neighbourhood centre</li> </ul>
Govan Centre	population	<ul style="list-style-type: none"> <li>total: <math>\geq 5,500</math></li> <li>plus 1,500</li> </ul>	<ul style="list-style-type: none"> <li>as suggested by the Central Govan Action Plan</li> </ul>
	dwellings	<ul style="list-style-type: none"> <li>total: <math>\geq</math></li> <li>at least 600 new units</li> </ul>	<ul style="list-style-type: none"> <li>as suggested by the Central Govan Action Plan</li> <li>total number of dwelling units to be around 3,000 (with average household size 1.83)</li> <li>all new housing for owner occupation</li> <li>average dwelling density at least 50 dpha</li> <li>dwelling type: a mixture of family units and flats (similar to Crown St)</li> </ul>
	services & facilities		<ul style="list-style-type: none"> <li>consolidate Govan Centre as district centre</li> <li>consolidate historical urban fabric and spatial structure</li> <li>consolidate the shopping centre as suggested by the Central Govan Action Plan</li> <li>reinforce all existing and add new services and facilities (secondary school, health centre, leisure centre, sports centre, library)</li> <li>develop link across the Clyde (ferry or foot bridge)</li> </ul>

The Govan Centre area also requires an increase of population and housing to make it more viable. In addition to developing disused sites, the industry immediately south of it should be relocated to allow for further housing. This will be investigated as one of the regeneration options.

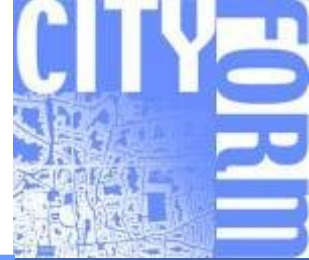
# 5.3 Summary of neighbourhood surveys

exemplified predominantly in the Drumoyne and Govan Centre areas



- The survey has established the built form, economic and social characteristics of the neighbourhoods in Govan; Drumoyne and Govan Centre is taken as example
- these characteristics are compared with threshold and target values and this leads to a regeneration programme for the neighbourhoods; for instance:
  - The housing tenure mix in Drumoyne is reasonably good, but a minimum of 900 additional affordable housing is required, predominantly owner-occupied to achieve a better socio-economic profile; the housing tenure mix in Govan Centre is poor as 70% of all dwellings are social-rented and more private housing is needed as outlined below
  - Housing land in Drumoyne (as defined in this survey) is only about 25% (should be around 45%) of the total area against non-housing land of about 70%; but this imbalance is caused by the inclusion of the Southern General Hospital area which lies outside the neighbourhood and no action is required; however housing land in Govan Centre is only 17% of the total area and there are less than 4,000 inhabitants; this imbalance must be addressed by relocation of industry to the south of the area to allow expansion and development of a full neighbourhood with a minimum population of 6,000 (additionally 2,000 people in 1,000 dwellings, predominantly owner-occupied)
  - Relocation of existing local services and facilities from edge locations to the centre is required to improve access in the neighbourhoods Drumoyne and Ibrox
  - Additional spatial connections are required to increase accessibility in the areas and from them to other city areas, specifically between Drumoyne and Ibrox and between Govan Centre and Partick north of the river
  - Training and educational programmes for those unemployed is vital; the percentage of economically active has to be increased to at least 60%
  - Etc.

## 5.4 Modelling intensification of the areas



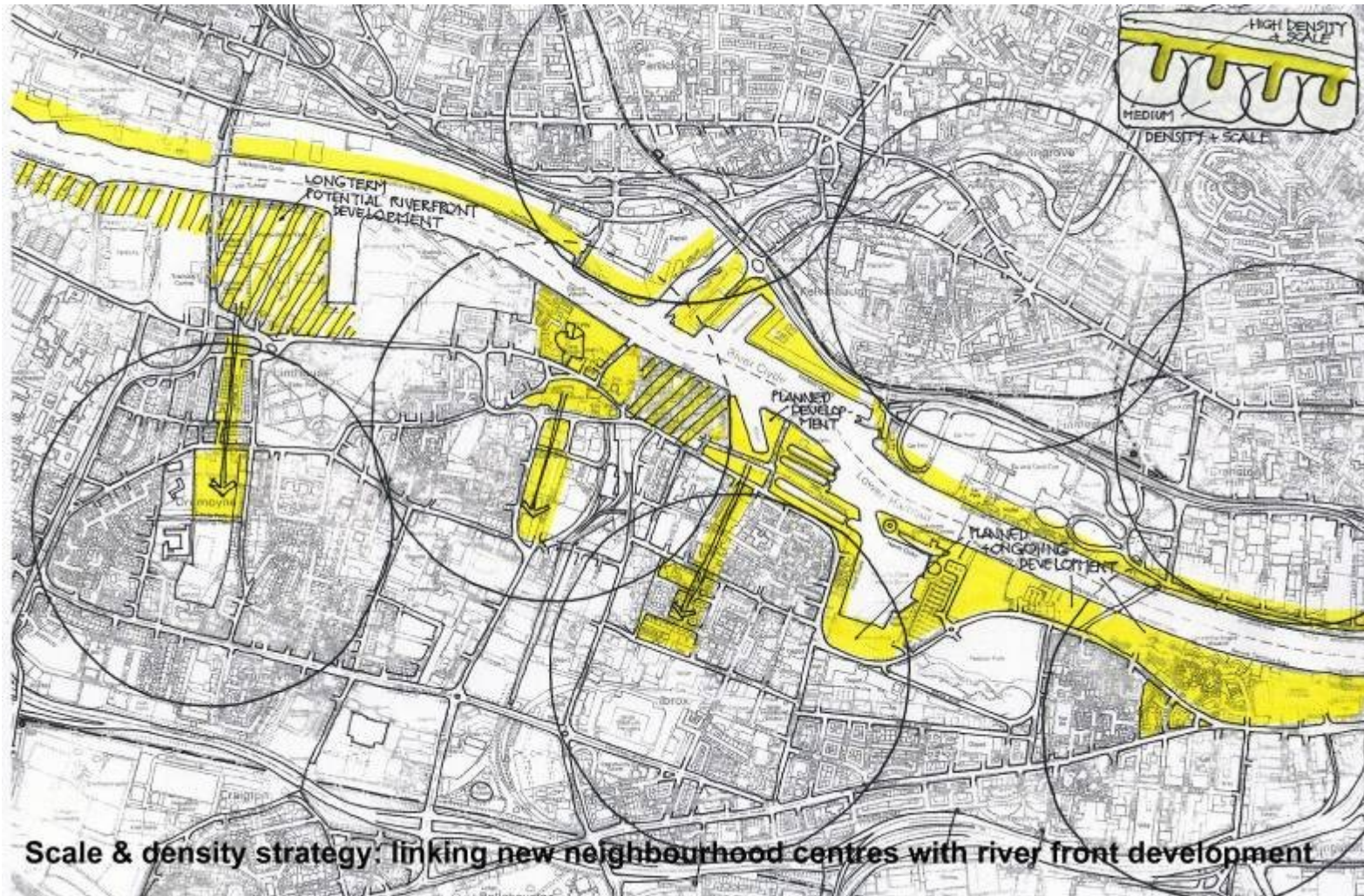
- The regeneration programmes are then used to remodel the neighbourhoods that require intensification
- The degree of intensification will be staged in three alternatives
  - Minimum impact scenario: development of gap sites and disused areas; as only few plots of that kind are available, this scenario is not likely to achieve the threshold and target values of sustainability
  - Medium impact scenario: demolition of low quality housing and new build housing at higher densities to get closer to threshold and target values
  - High impact scenario: reshaping poorly structured areas to achieve all essential threshold and target values
- The scenarios will then be modelled and evaluated to establish what each of them is likely to achieve; this assessment is the basis for a decision which scenario, if any, is the best possible one and should be pursued



**Base model of Govan under development (Charalampos Giachnis)**



One of the most important issues is the integration of the Govan neighbourhoods with the high-quality development north and south of the river. The suggested way to achieve this is to physically link the new neighbourhood centres to new, planned or potential high quality development at the Clyde and adopt the scale and density of the central neighbourhood areas to that of the river front



## 6. Remaining work

- Finishing investigation of area profiles and data mapping
- Finishing alternative regeneration programmes based on difference between target and existing values / characteristics and on local conditions
- Modelling regeneration (now on going)
  - Developing gap sites (modest impact scenario)
  - Redeveloping poor housing areas (medium impact scenario)
  - Redeveloping areas to achieve targets (radical impact scenario)
- Discussing models for these scenarios with local stakeholder / target groups to establish barriers and an agreed scenario (now abandoned on request of Glasgow Housing Association); social viability of proposals cannot, therefore, be established
- Documenting and disseminating research outcomes (over summer 2007)