Sustainable Suburbia - A Walkable Garden Suburb

Homes & Communities Agency

Preface

This study addresses the issue of increasing the density of family housing. It considers two distinct contexts; existing suburbs and new settlements. The study argues that raised density, reduced car dependancy and suburban viability can be achieved while retaining key qualities of the suburban environment, the family house and garden in a green setting.

The medium of the study is spatial and, in a fundamental sense architectural, setting out to explore the interdependence of house design at the smaller scale and land use planning at the larger scale. It proposes a methodology for assessing residential land capacity and challenges the distinction between net and gross densities.

Private and communal benefits

A key objective of the study is to demonstrate that higher densities can reconcile private aspirations with the communal benefits that higher densities yield

Suburban characteristics form a spectrum from those pertaining to the design and layout of individual houses and their immediate environment to those that pertain to relationships with the wider context.

Twentieth century suburbs have tended towards the private characteristics of suburbia rather than the communal and the study will argue for a balance which is likely to be achieved in layouts more characteristic of the 18th and 19th centuries in the relationships between dwellings, streets and open space. (For the developer seeking to evoke the past, traditional spatial arrangements might be the key to a sense of history, not the superficial 'style').

Private

- Sense of identity
- Front door
- Private garden
- Off-street parking
- Not overlooked
- Good view and greenery
- Quiet and privacy
- Secure perimeter

Communal

- Sense of identity and place
- Well maintained public realm
- Natural surroundings, greenery and trees
- Good access to public transport
- Pedestrian access to schools, public services and shops
- Sense of community
- Low traffic levels and speeds
- Demographic diversity

Greenleys, Milton Keynes

Density: 25 dph net (125 bph)

Greenleys, Milton Keynes

- Cul-de-sacs impede pedestrian movement – green buffers along roads reduce perceived safety of pedestrian environment, and contribute to social discontinuity and isolation
- 'Arterial' road layout leads to bottlenecks on feeder roads

Greenleys, Milton Keynes

% Roads : 20
% 'SLOAP' : 40
FAR : 0.4
Off-street parking: 100%

- Very inefficient in terms of land in private use
- Road systems and open space patterns across the whole settlement reduce gross density to perhaps 7du/ha

Wolverton, Milton Keynes

Density: 52 dph net (260 bph)

Wolverton, Milton Keynes

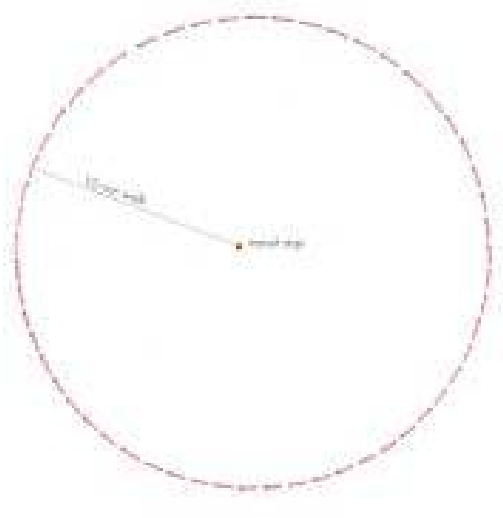
- Density sufficient for walkable community
- Urban design mitigates impact of density: grid of streets reduces congestion, cars and parking in back alleys permits well-defined street frontage with 'eyes on the street'
- Street system allows density to be sustained across the settlement

Wolverton, Milton Keynes

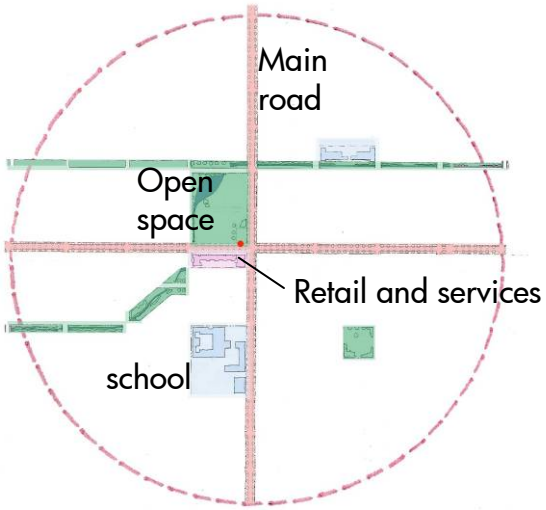
% Roads : 20
% 'SLOAP' : 0
FAR : 0.4
Off-street parking: 100%

- Higher property value than Greenley MK 'car' suburb, even though density is double

Walkable Suburbia – A Hypothetical Model



Area of 600m radius
(10 minute walk) = 113ha



Infrastructure for 5,000 = no. of homes
needed to make local transit viable

100 ha housing @ 50 du/ha = 5,000 homes

Walkable Suburbia – A Hypothetical Model

Shared facilities in a local centre of 5,000 dwellings		
	Number	Land Take (ha)
Health centre	1	0.33
Primary school	2.5	1.65
Secondary school	0.5	1.76
Nursery school	2.5	0.11
Library	0.5	0.03
Leisure centre	0.5	0.2
Playing field	1	1.95
Local store	1	0.05
Main access roads	n/a	4.0
Open space	n/a	4.0
TOTAL		13.0ha

Green Infrastructure

Recreation

Rainwater Management

Squares, greens and commons of different scale and character could be created

Biodiversity

Density and location matrix

Location		Predominant housing type / Setting	Detached and linked houses	Terraced houses & flats	Mostly flats
Sites within 10 mins walking distance of a Town Centre	Accessibility Index 6 → 4	Central			650 - 100 hrph 240 - 435 dph Ave. 2.7hrpd
		Urban		200 - 450 hrph 55 - 175 dph Ave. 3.1 hrpd	450 - 700 hrph 165 - 275 dph Ave. 3.0 hrpd
		Suburban		200 - 300 hrph 50 - 110 dph Ave. 3.7 hrpd	250 - 350 hrph 80 - 120 dph Ave. 3.0 hrpd
Sites along Transport Corridors & Sites close to a Town Centre	3 → 2	Urban		200 - 300 hrph 50 - 110 dph Ave. 3.7 hrpd	300 - 450 hrph 100 - 150 dph Ave. 3.0 hrpd
		Suburban	150 - 200 hrph 30 - 65 dph Ave. 4.4 hrpd	200 - 250 hrph 50 - 80 dph Ave. 3.8 hrpd	
Currently Remote Sites	2 ↔ 1	Suburban	150 - 200 hrph 30 - 50 dph Ave. 4.6 hrpd		

Density Location and Parking Matrix from part of the Sustainable Residential Quality: Exploring the housing potential of large sites research (LPAC, DETR, GOL, LT and HC, 2000) - table 3.3 from the Urban Design Compendium

Density range addressed by the study

Detached houses around a shared garden at 35dph

Town houses: semi detached and short terraces at 50dph.

L-shaped houses at 50dph

Terrace houses at 60dph

Mews houses at 72dph

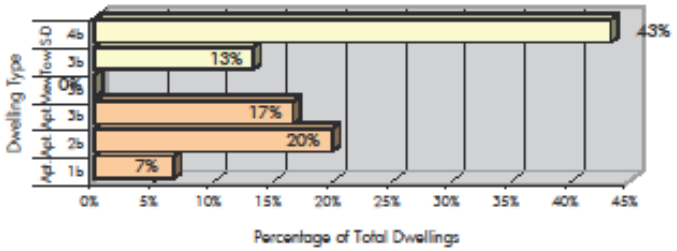
Mix of Flats and Houses 130-150dph


SPENCER ROAD
KINGS ROAD
WORCESTER CLOSE
ENUE

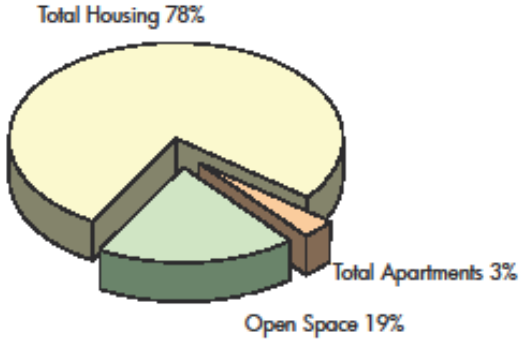
Proposal 1 – suburban development

Proposal
Site Area - 3ha
Open Space - 0.58ha
Car Parking - 1 space/unit
Total Built Area - 2.42ha
Total No. of units - 150
Density - 50dph

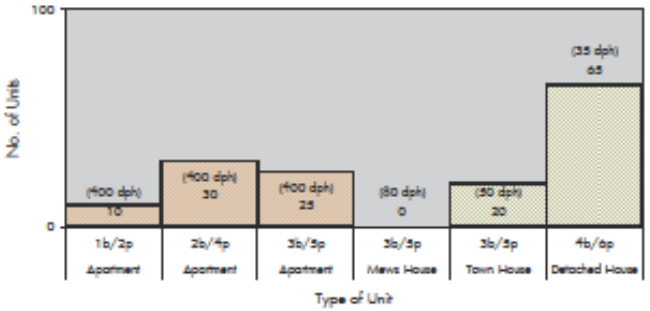
Mix of house and apartment types



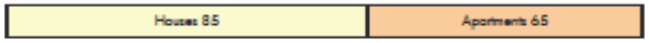
Land use



Number of dwellings by type



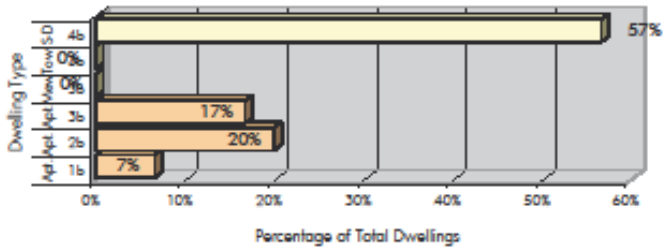
Total number of houses and apartments



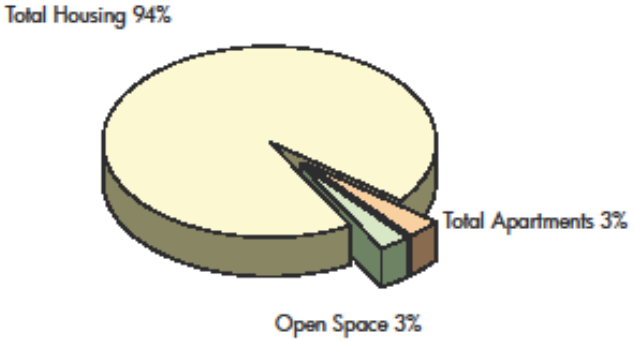
Proposal 2 – suburban development

Proposal
Site Area - 3ha
Open Space - 0.1ha
Car Parking - 1 space/unit
Total Built Area - 2.9ha
Total No. of units - 150
Density - 50dph

Mix of house and apartment types



Land use



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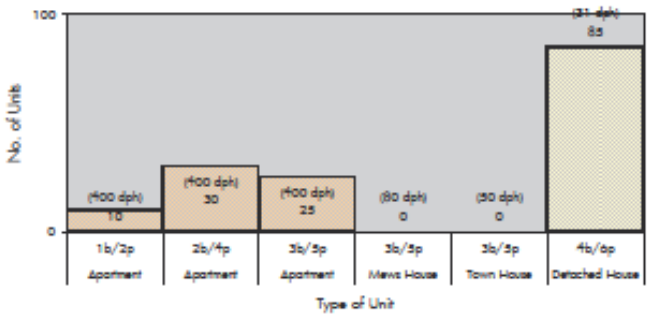
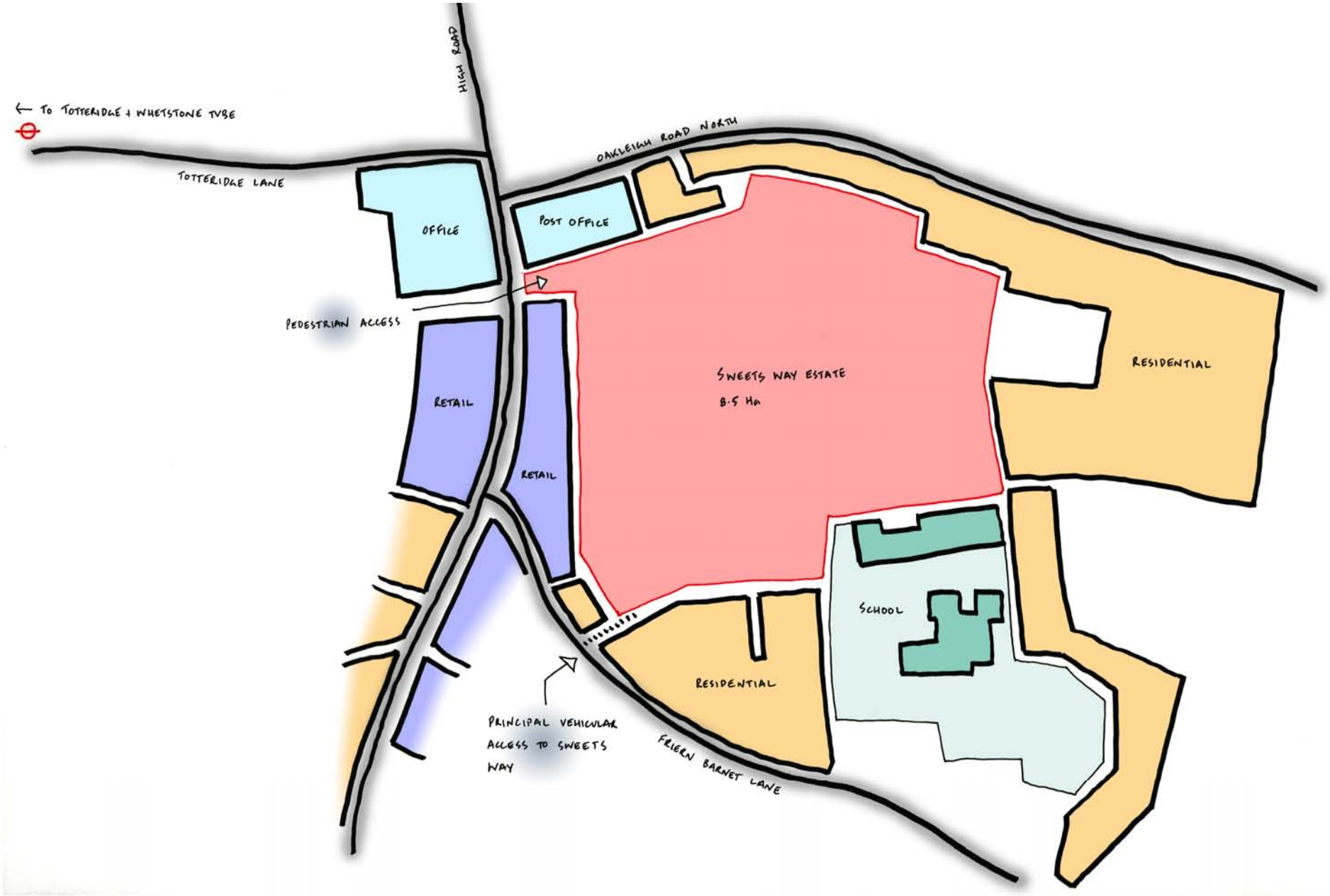
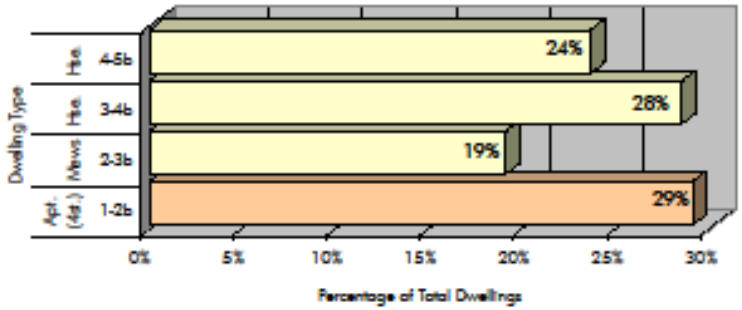


Total number of houses and apartments

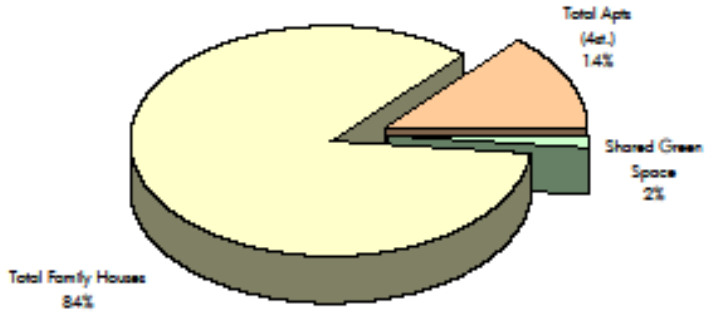
CASE STUDY: Sweets Way, London Borough of Barnet



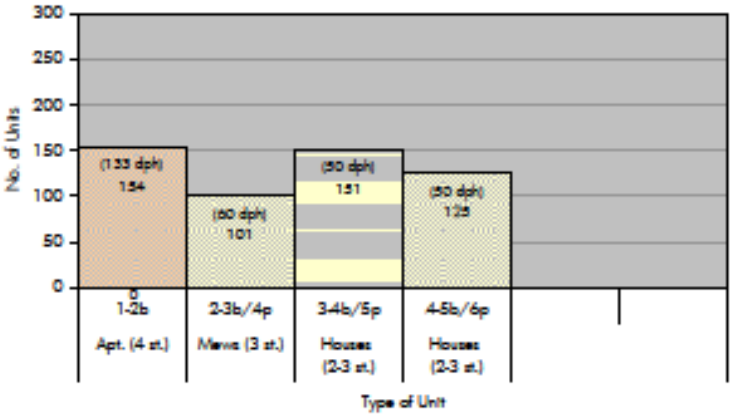
Mix of House and Apartment Types



Land Use



Number of Dwellings by Type



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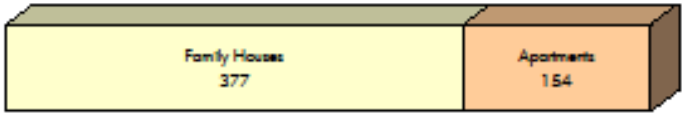

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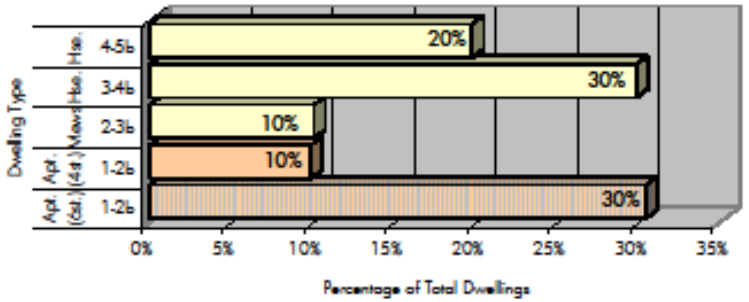

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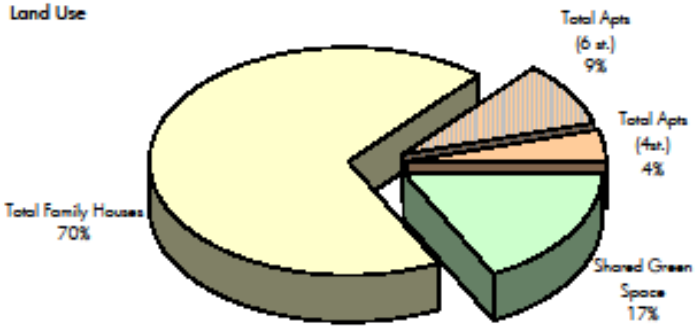

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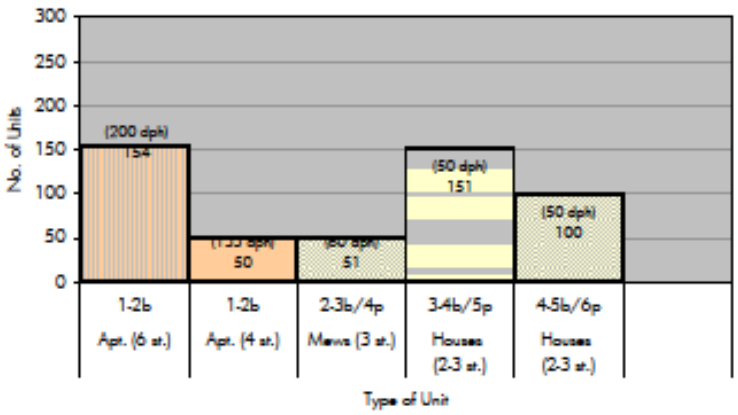

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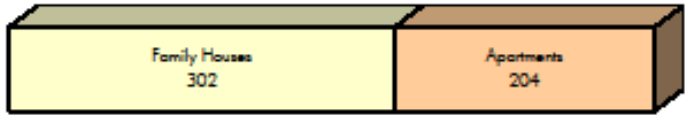
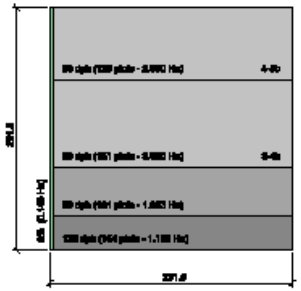
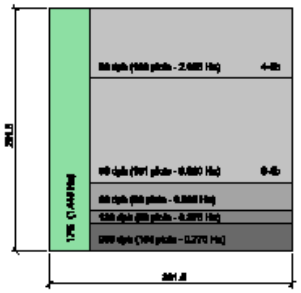
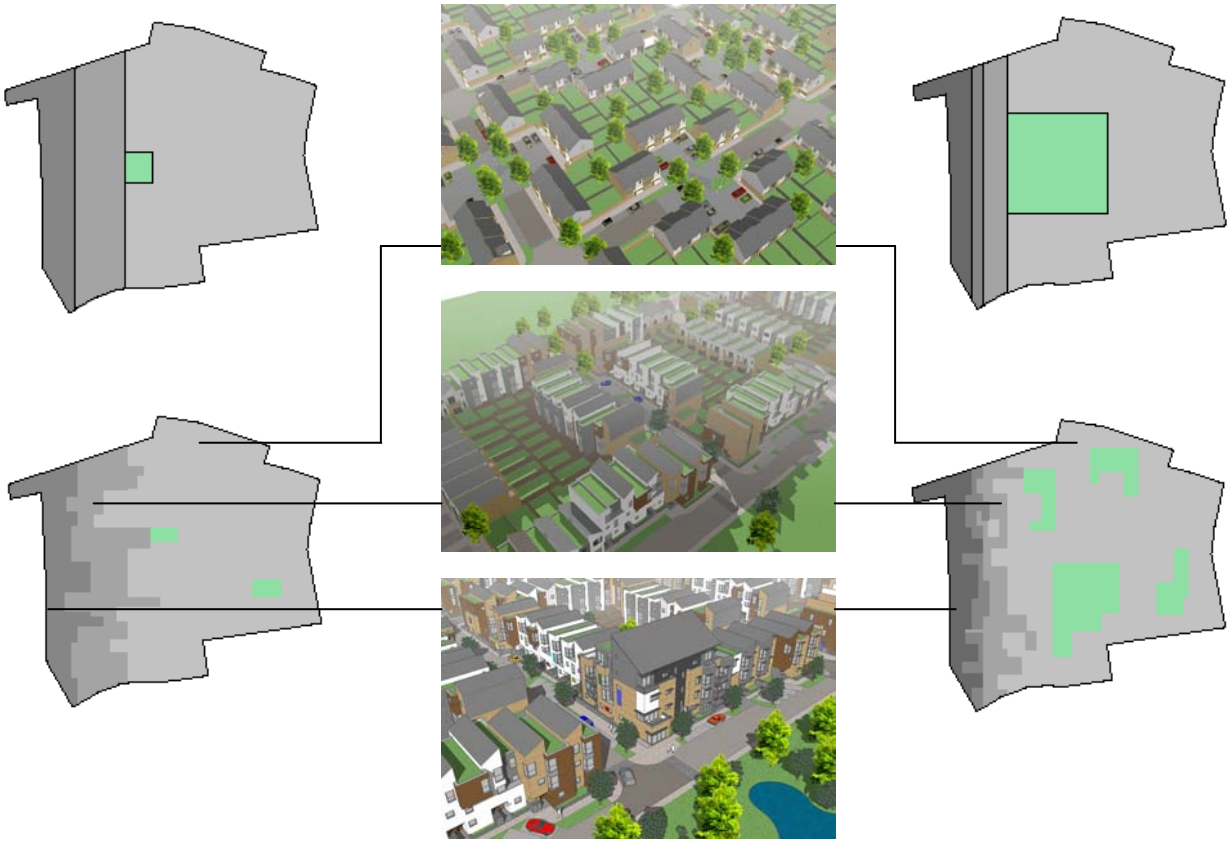


Option 1: 60dph



Option 2: 60dph





A walkable settlement of 10,000 dwellings

Quantum of Development

Central Spine including:

Town centre and local centres (including bus way)	24ha
Employment	13ha
One, ten form entry secondary school	1.5ha
(8ha playing fields outside perimeter)	

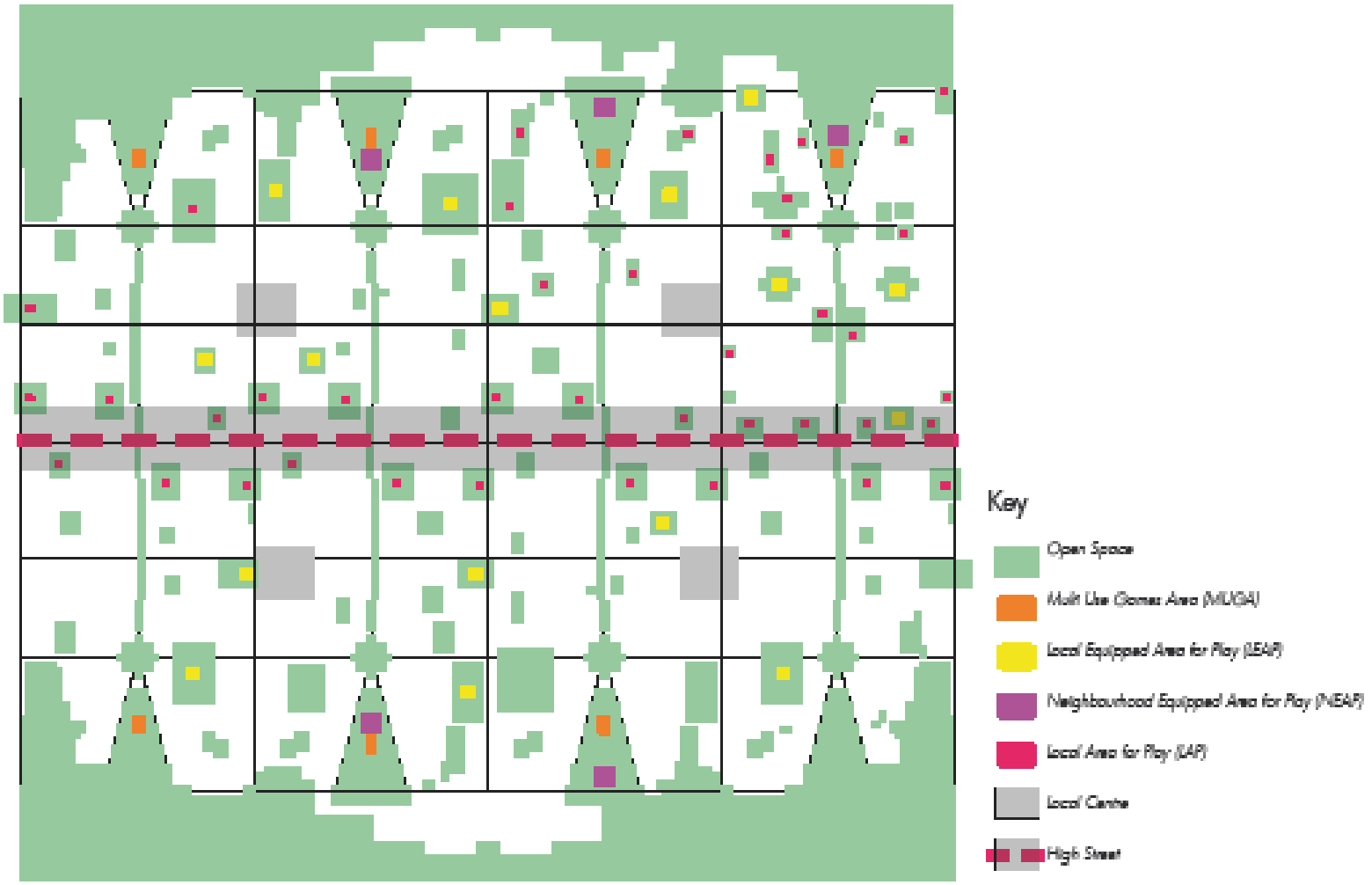
Gross Residential Area 220ha, including:

Five, two form entry primary schools	1.5ha x 5 = 7.5ha
Green Infrastructure, childrens play, etc	40ha

Land Uses Outside the Perimeter, including:

Secondary school playing fields	8ha
Outdoor Sport	35ha
Household waste and recycling, sewage treatment say	2ha

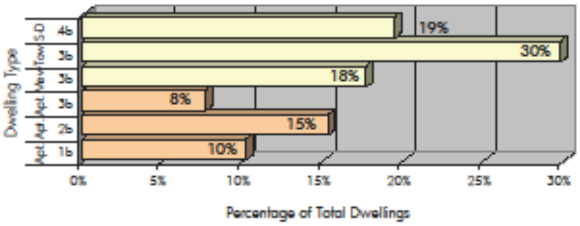
A walkable settlement of 10,000 dwellings

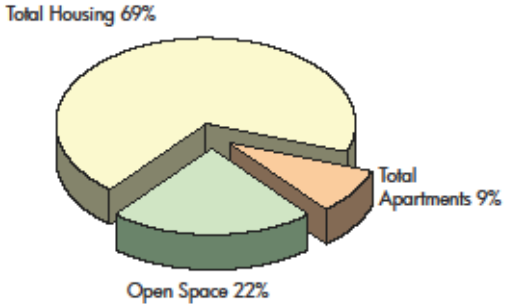


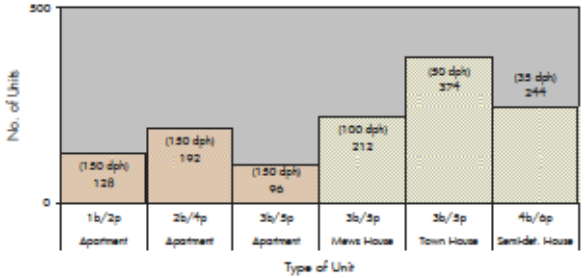
Hypothetical Layout of 224ha / 10,000 dwelling settlement

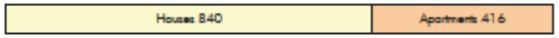
Toolkit - 25ha segment

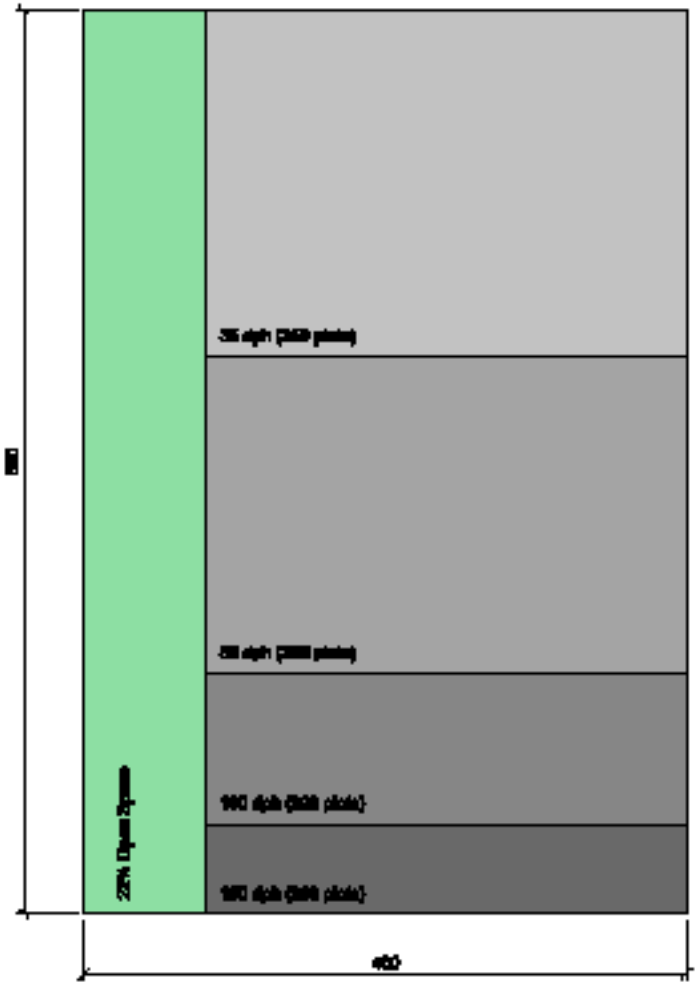
Proposal
Site Area - 25ha
Open Space - 5.56ha
Car Parking - 1 space/unit
Total Built Area - 19.44ha
Total No. of units - 1256
Net Density - 50dph



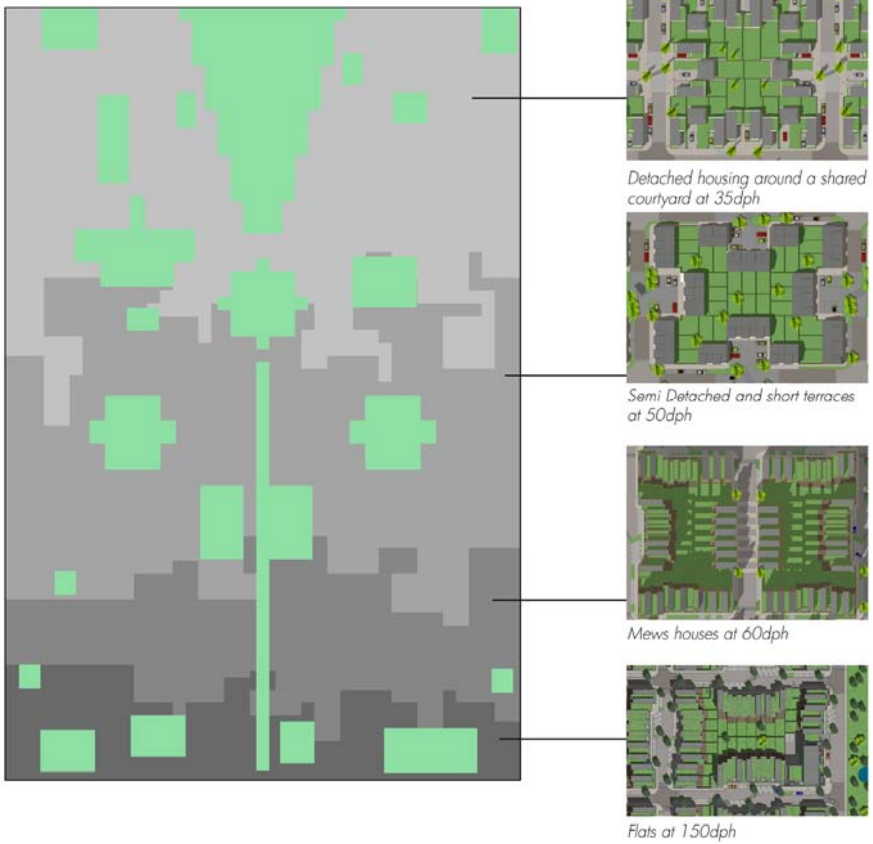








Density, residential typology and land use



Detached housing around a shared courtyard at 35dph

Semi Detached and short terraces at 50dph

Mews houses at 60dph

Flats at 150dph

Detached housing around a shared courtyard at 35dph

Semi Detached and short terraces at 50dph

Mews houses at 60dph

Flats at 150dph

Density varies across the segment

MJP
ARCHITECTS