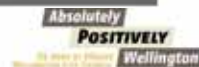


# Urban Form and Land Use Planning: Compact or Car Based?

Jan McCredie  
Wellington City Council  
2010 TRAFINZ CONFERENCE  
7 September 2010



The automobile has not merely taken over the street, it has dissolved the living tissue of the city. Its appetite for space is absolutely insatiable; moving and parked, it devours urban land, leaving the buildings as mere islands of habitable space in a sea of dangerous and ugly traffic. -James Marston Fitch, historic preservationist (1909-2000)



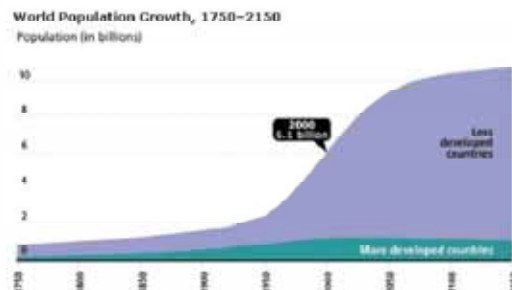
## Contents

- Issues
- How people see
- History of the city
- Urban Form:
  - Compact
  - Car Based:
    - Integrated
    - Segregated
- Components of the city
- How to integrate built form / land use and street systems
  - NZ Planning Methodology
  - Preferred methodology: Wellington 2040

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## Issues

- Population growth
- Housing affordability, overcrowding and social impacts
- Employment growth and change
- Climate change
- Resource shortage
- Transport
- Feasibility
- Culture
- Real pricing / costs

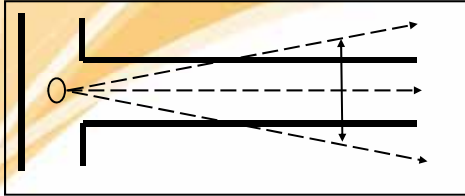


Source: United Nations, World Population Prospects, The 1998 Revision; and estimates by the Population Reference Bureau.

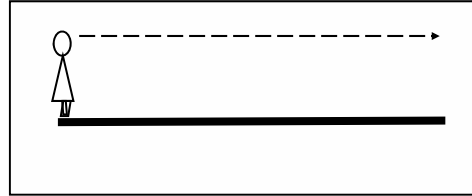
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# How people see...

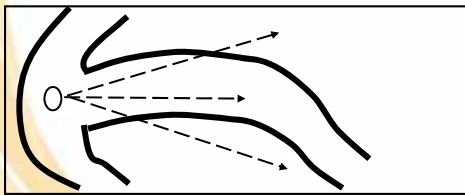
People and cars are different species



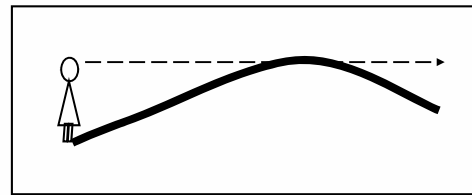
Plan



Section



Plan



Section

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# The history of the city

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## The traditional city: Based on human characteristics

### Holistic 3- dimensional approach



ROME



Figure 4-3. Giambattista Nolli, *Map of Rome*, 1748.  
Nolli's map graphically illustrates the figure-ground relationship of a traditional city where public civic space is carved out of the private tissue. (See also fig. 3-2.) The predominant field is a dense continuous mass, allowing open space to become a figural void.

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## What happened in the 20th Century?

### 1932 Charter of Athens

- The theory: Corbusien Modern City
- Concept of Individual Buildings in the Landscape did three things:
  - 1) It negated the value of spatial system of the traditional city and hence the value of public realm.
  - 2) It reduced the city to its smallest quantifiable unit: **the individual building**.
  - 3) It raised every building to the status of "a work of Art"
- Planning controlled *only* the individual Building

### Paris Plan



### Corbusien Plan for Paris



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## What happened in the 20th Century?

**Traditional City**



**Modern City**



"First of all, space is reduced to a pure abstraction, reduced to its three dimensions. It is homogeneous, isotropic and fragmentary, devoid of orientation, possessing no cultural, symbolic or historical value. It is not the object of any political or economic strategy. It is space reduced to a mere quantity, the ideal place for deployment of industrial repetition of isolated identical parts, equally the place of fragmentation, of functional separation and segregation, exactly laid out by the zoning technique."

*Bernard Huet*

**The City Deconstructed**

## The 20th Century

**The Traditional City**



**The Invaded City**



**The Abandoned City**



**The Reconquered City**



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## The 20th Century: The city reconquered

### 9 Reconquered Cities:

- Barcelona
- Lyon
- Strasbourg
- Freiburg
- Copenhagen
- Portland
- Curitiba
- Cordoba
- Melbourne



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## The 20th Century: The city reconsidered

### City Reconsidered:

- Rediscovered “buildings”: the city as a collection of architecture
- False Hypothesis: “that if you have enough good buildings you will have a good city”
- Embodied in Planning System
- Removed/calmed cars
- City as a series of destinations - The characteristics of cars attributed to people e.g. “destination” design and a failure to understand the city as fabric
- Failure to understand city as a spatial and holistic system



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## Urban Form: Compact

## Compact urban form

### Advantages

- Less land take
- Can support public transport
- Walkability / sight lines / perception of scale
- Accessibility
- Don't have to "plan" life

### Disadvantage

- Poor quality housing
- Solar access / noise / cross ventilation
- Inadequate open space
- Insufficient size of precincts to support services and facilities

## Example of a compact urban form: Barcelona

Most Walkable City – Combination Density & Street Pattern



## Example of a compact urban form: Barcelona



Street and block pattern

- Built form related to street / block / uses
- Multiple use of space
- Variety
- Legibility / Identity
- Walkability
- Accessibility
- Public transport

Buildings

- Long Life Loose Fit
- Floor to ceiling height
- Cross ventilation
- Privacy
- Noise attenuation
- Sun / light

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## Urban Form: Car based

## Car based urban form

### Advantages

- Ease and cost of development (subdivision is separate from house)
- Private open space
- Noise /privacy less of an issue
- Cross ventilation / solar access

### Disadvantage

- Extensive land take (e.g. won't work for large cities e.g. 45% road in LA)
- More expensive per person infrastructure / car ownership
- Can't serve with public transport
- Often less "walkable"
- Have to "plan" life

## Car based urban forms

### Integrated

- Grid / connected street pattern / laid out pre car
- Generous rear set backs / vegetation zones
- Good privacy / open space
- Can be retrofitted
- Legibility
- Walkable

&

### Segregated

- Hierarchical street pattern: arterial / collector / local / cul-de-sac
- Designed for car
- Poor open space / privacy
- Can't be retrofitted
- Poor legibility / identity
- Non walkable / poor health

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## Comparison of car based urban forms

### Integrated



### Segregated



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## Comparison of car based urban forms

Integrated



Segregated

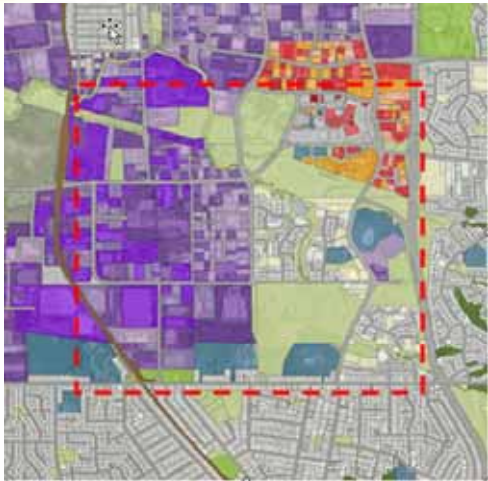
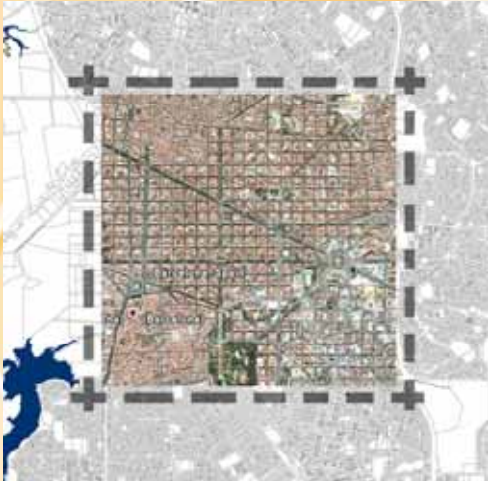


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## Comparison of: compact and car based urban forms

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# Comparison of: compact and car based urban forms



- Land use
- Density

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# Comparison of: compact and car based urban forms



# Comparison of: compact and car based urban forms



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# Comparison of: compact and car based urban forms

Integrates

Separates



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## What are the key components of a city?

## Components of a city

The 3 key components of cities are:

- Spatial system
- Landform
- Built Form

A city is the sum of its parts.

Space is the primary organising element of urban morphology.

## Spatial System: What is it?

- 3 dimensional web of space over topography.
- It is created by the tension between the buildings relative to the land form.
- It determines and is determined by:
  - The placement; organisation and level of definition of the built form
  - Streets 80% of spatial structure
  - Open space system – 20% of spatial structure

**The street and block pattern is the single most important structuring element of an urban area.**

## Streets: Why are they important?

Space is a key determinant of:

- Identity
  - Legibility
  - Accessibility
  - Variety
- An understanding of topography and heritage
  - A framework for architecture and vegetation
  - A setting for the public life of the city
  - A range of economic opportunities

The spatial system of the city is a long timeframe

The architecture of the city is a short timeframe

## How to integrate built form, land use and street systems

## How to integrate built form, land use and street systems

The Planning Approach should be:

- Outcome focused
- Design led
- Three dimensional; holistic and integrated
- Drawings / models

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## How to integrate built form, land use and street systems

NZ Planning Methodology

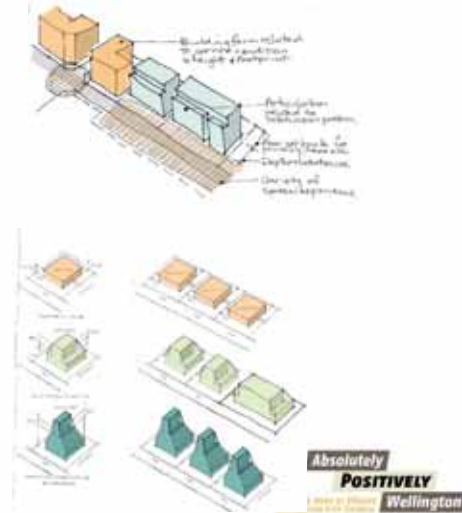
Protect this **and** involve as many people as possible



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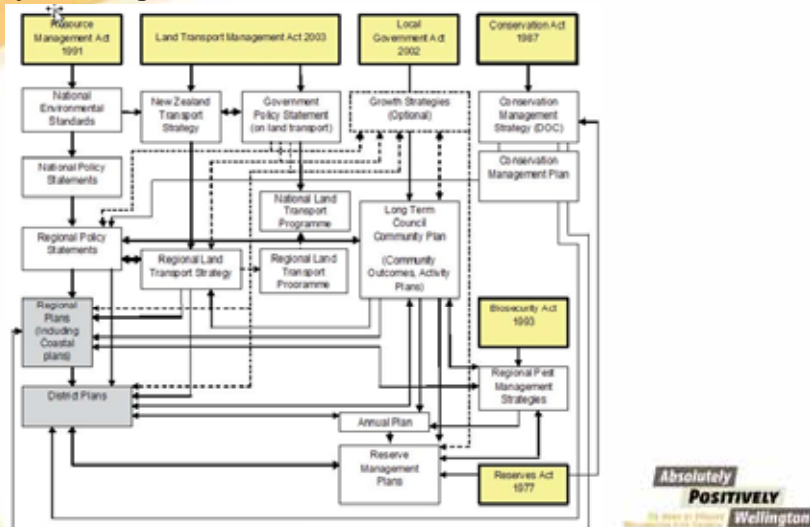
## How to integrate built form, land use and street systems

- New Zealand Planning Methodology is process based, not outcome based. It:
  - Has no spatial dimension
  - Is not based on physical realities
  - Is not three dimensional
  - Does not address relationships
- It stipulates a zoning and generic site controls
- Is inequitable



## How to integrate built form, land use and street systems

### NZ Statutory Planning Process



# How to integrate built form, land use and street systems

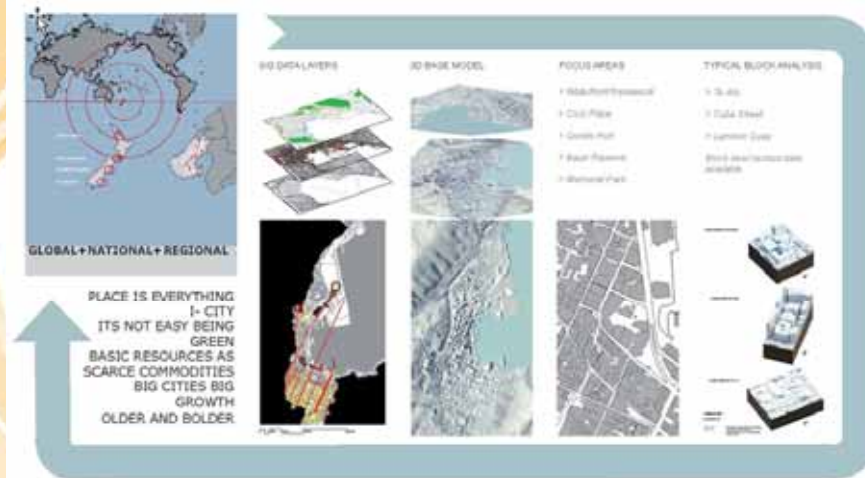
## Strategic and design led: the essential intervention for changing cities

Where is it different?

1. Interventions into the city are design projects.
2. Scale: Regional, City, Precinct, Street and Blocks.
3. Desired three dimensional outcomes inform planning controls / standards.
3. Not all sites in same zone will have same controls and / or capacity.
4. Must be drawn and must be accurate.
6. Revise RMA / limit lawyers / consider the future generations.

# Case Study : W2040

## Context – Shift in scale an iterative process



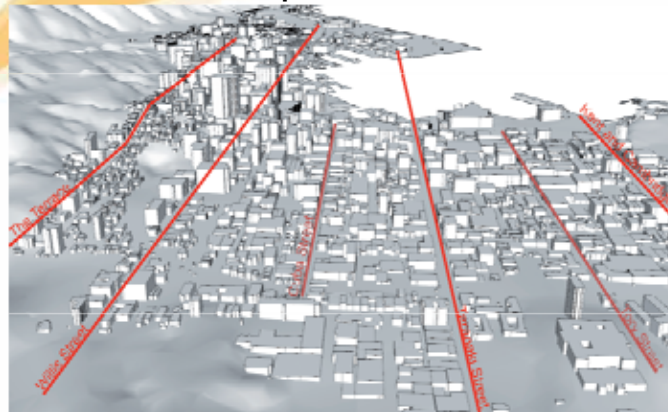
## Case Study : W2040

### Analysis Information



## Case Study : W2040

### Urban Structure: North South Spines



- The urban structure of a city is primarily defined by the street system
- Wellington has a strong urban structure derived originally from Mein Smith Plan

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## Case Study : W2040



### Te Aro Grid

- regular north south streets
- discontinuous east west streets
- large grid
- Taranaki Street axis
- relationship to Universities
- urban structure has immense potential



COURTNEY PLACE - RANDOMNESS + ORDER



EDISON STREET - PROPORTION + VIEWS TO VICTORIA UNIVERSITY



TORY STREET - TO WATERFRONT



TORY STREET TO LANDSCAPE

## Case Study : W2040



### Te Aro Grid - Constraints + Opportunities

- There is a range of built form throughout the wider Te Aro area.
- Relationship of Te Aro to Buckle Street area needs addressing.
- Wide N-S streets could be redefined as boulevards with built form and public domain interventions.
- Links through private development do create smaller blocks, communal open space + amenity.
- Victoria street differs from Te Aro grid; enables development of stormwater capability & urban forest.

#### KEY

- (1) DEVELOPMENT SITES PROVIDE SPATIAL STRUCTURE POTENTIAL + LINKING STRATEGIES - SHOWN RED
- (2) HYBRID SITES THAT PROVIDE THROUGH LINKS, SPECIFIC USES + OPEN SPACE
- (3) AN EXAMPLE OF A RESIDENTIAL BUILDING ADJACENT TO HYBRID SPACE, USING ITS BUILT FORM TO CREATE A LARGE PRIVATE COURTYARD
- (4) VARIOUS LARGE SITES
- (5) EXISTING PUBLIC PARK + OPEN SPACES

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## Case Study : W2040

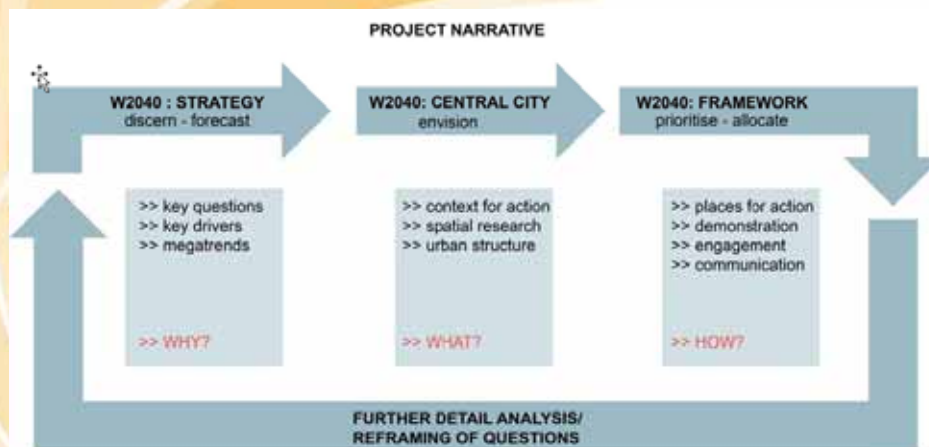
Case study city: Helsinki



- The vision for Helsinki is from city to city region
- The main vehicle for delivering on the vision is the strategic spatial plan
- The strategic spatial plan is a platform for a more spatially cohesive city and the coordination of development programmes
- The four key themes are: successful business + city living + dynamic city scape
- Current population is approximately 490,000; estimated to grow in excess of 600,000 by 2030

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By Peter D. Brown | Wellington  
Wellington Urban Strategy

## Case Study : W2040



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## The Future?



"I believe in the city of the future....It is a place where the fragments of something once broken are recomposed."

Aldo Rossi

