

What is the 'Carbon Challenge'? - English lessons on integrated design and carbon neutral development.

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The *Third International Congress for European Urbanism Conference*, "Climate Change and Urban Design".
Oslo September 14th – 16th 2008



30 Jahre Europäische Stadt - Rückblick und Ausb

Internationaler Kongress d
Council for European Urba
8. bis 10. September 2005



30 Jahre Europäische Stadt
Rückblick und Ausblick
Internationaler Kongress der
Council for European Urban
8. bis 10. September 2005

“Close examination of recent housing quality standards ... indicates a tendency to adopt a piecemeal approach that relies on outdated data sources and references ... [a] process of cobbling together existing standards”.

p739 in; Milner, Jo and Madigan, Ruth [2004] Regulation and Innovation: Rethinking Inclusive Housing Design. Housing Studies 19[5] pp 727-744.

DELIVERING QUALITY PLACES URBAN DESIGN

COMPENDIUM

English Partnerships
The National Regeneration Agency

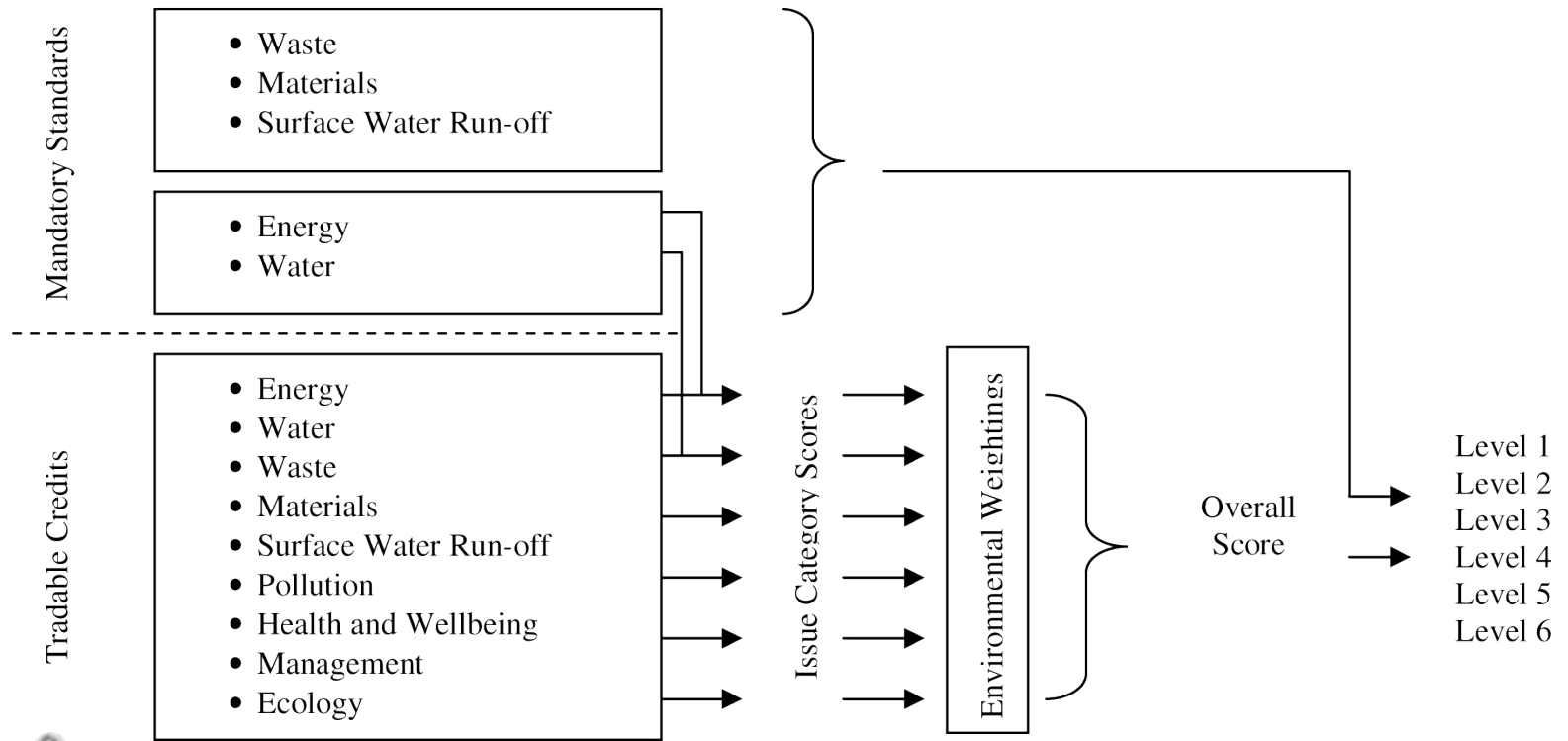


Code for Sustainable Homes

Technical Guide



www.communities.gov.uk
community, opportunity, prosperity



Planning Guidance

“... we are learning a lot, which is the whole purpose of the Challenge. The best work is being taken by developers who are taking an open approach, sharing mistakes and successes.”

The challenge to build quality sustainable homes

Lomas, Jane [September 2008] Carbon Challenge: Testing Level 6. Carbon Challenge Bulletin, English Partnerships.

English Partnerships, the regeneration agency, Government to accelerate the housebuilding industry's response to climate change by fast-tracking the creation of a number of zero and near zero carbon communities. The key objective is to raise the environmental performance of new communities while still delivering quality and high standards of design.

The Challenge aims to equip the development industry with the skills and technology needed to meet the 10-year environmental goals being set by Government for new housing development. In particular, it will act as a testing ground for the Government's Code for Sustainable Homes and the new Planning Policy Statement on climate change.

Run by national regeneration agency English Partnerships on behalf of Communities and Local Government, the Challenge will be a successor to the Design for Manufacture Competition, which successfully demonstrated how to build sustainable well-designed, affordable, quality homes.

What is a zero and near zero carbon development?

Zero carbon means no net carbon emissions from all energy uses in the home – so the amount of energy taken from the national grid is less than or equal to the amount put back through renewable technologies. This equates to Level 6 of the Code for Sustainable Homes and will qualify for Stamp Duty relief.

Near zero carbon means no net carbon emissions in relation to core Building Regulations energy performance specifications relating to heating, hot water, ventilation and lighting. This equates to Level 5 of the Code for Sustainable Homes.

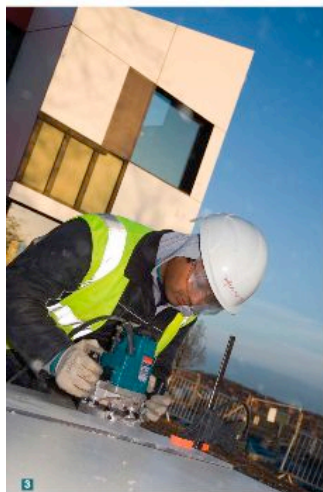
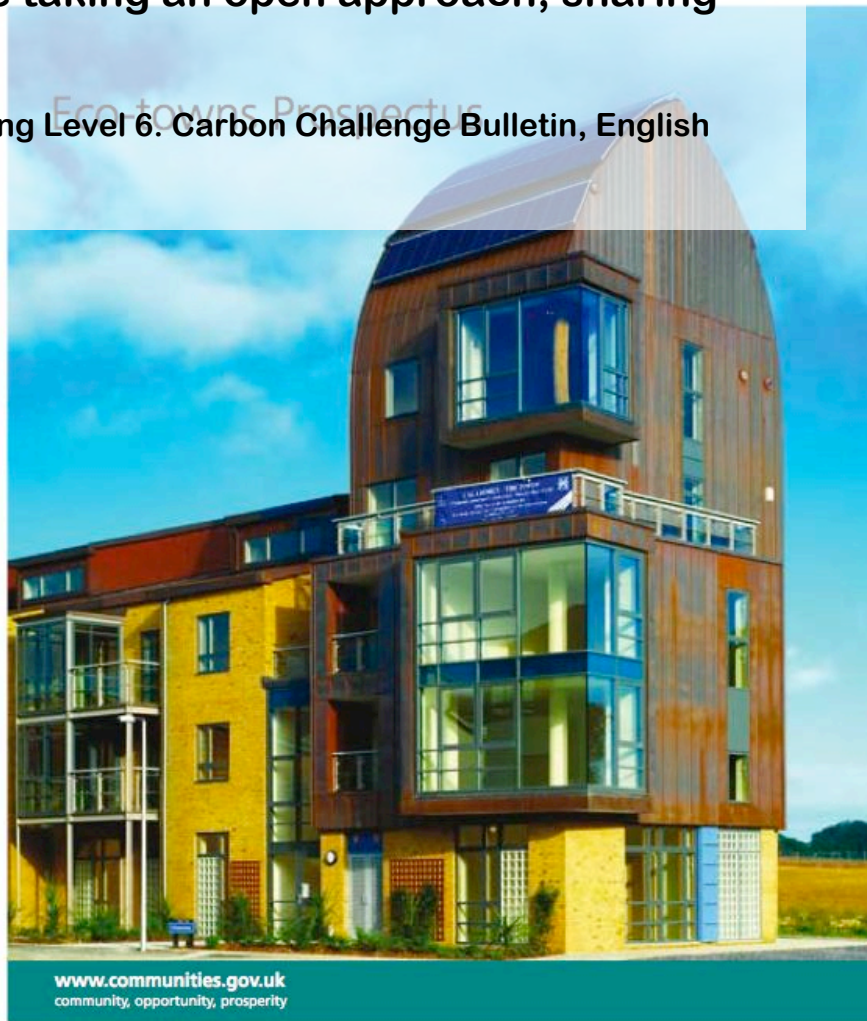
The choice of a zero or near zero carbon target for any development depends on location, site characteristics and size of the community.

How many homes are being created and where?

The Carbon Challenge will be an on-going initiative with development sites coming on stream throughout the programme. In addition to sites that English Partnerships will make available directly to developers, the Challenge will also call for local authorities, Regional Development Agencies (RDAs), other public-sector land owners and private-sector developers to identify sites that could contribute to the initiative. Those taking part in the Challenge will be right at the forefront of implementing and shaping the way that homes of the future are built.

In the first year of the Challenge, it is expected that a total of around five major public and private-sector sites will be identified. Each must be capable of supporting at least 200 homes to ensure a critical mass, allowing the installation of shared energy systems and other features that will contribute to a zero or near zero carbon footprint to each new settlement.

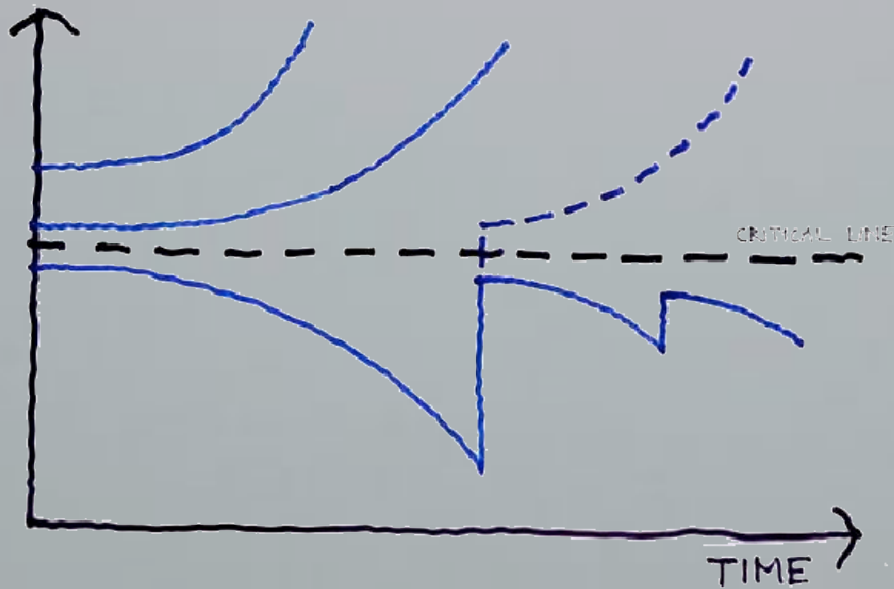
Eco-towns Prospectus



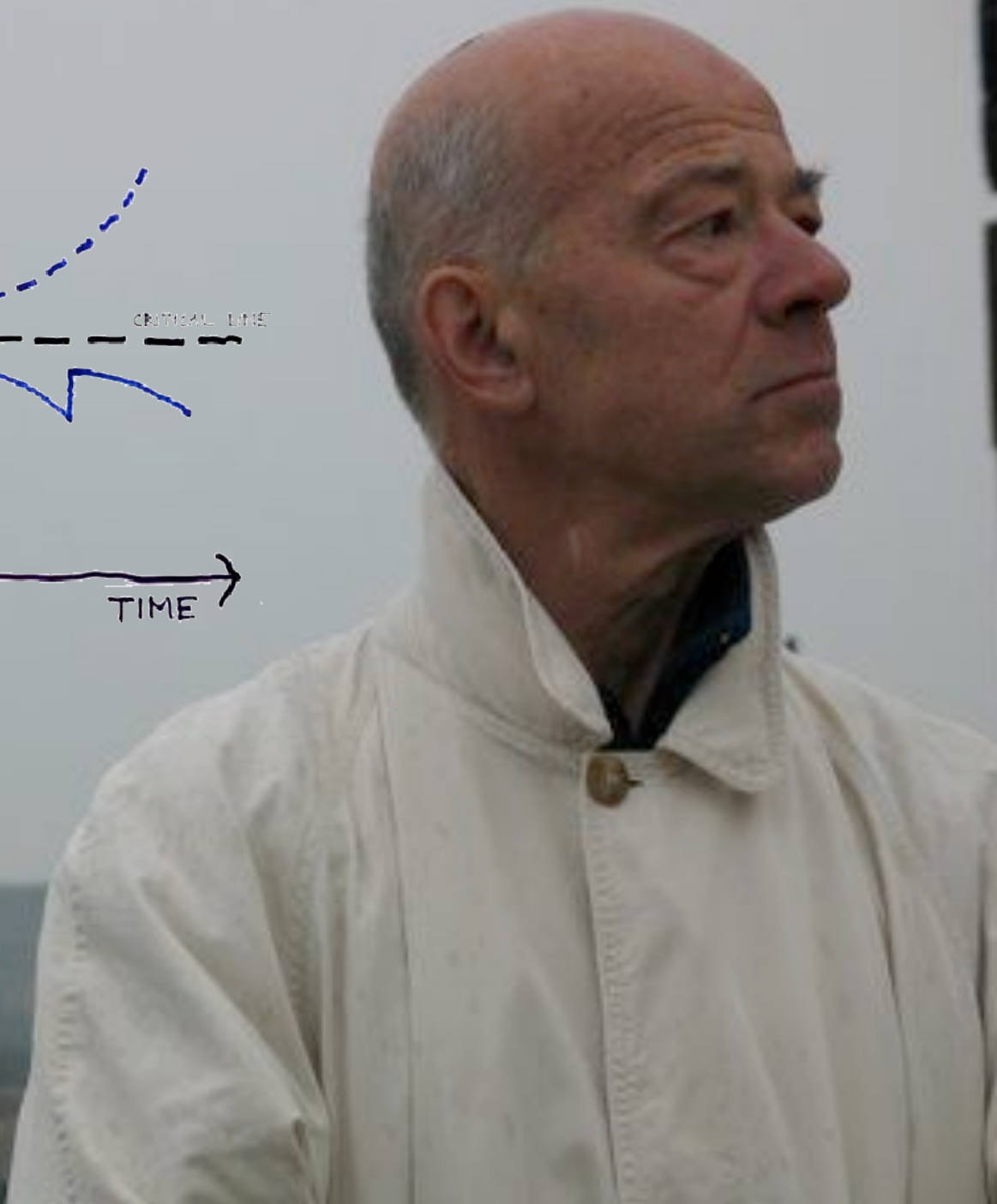
1. Greenwich Millennium Village, London and Thames Gateway
2. William Verry / WeberHaus and Make Architects' design for the Aylesbury Design for Manufacture site
3. Start on site at Odey Park Design for Manufacture site, Milton Keynes by George Wimpey

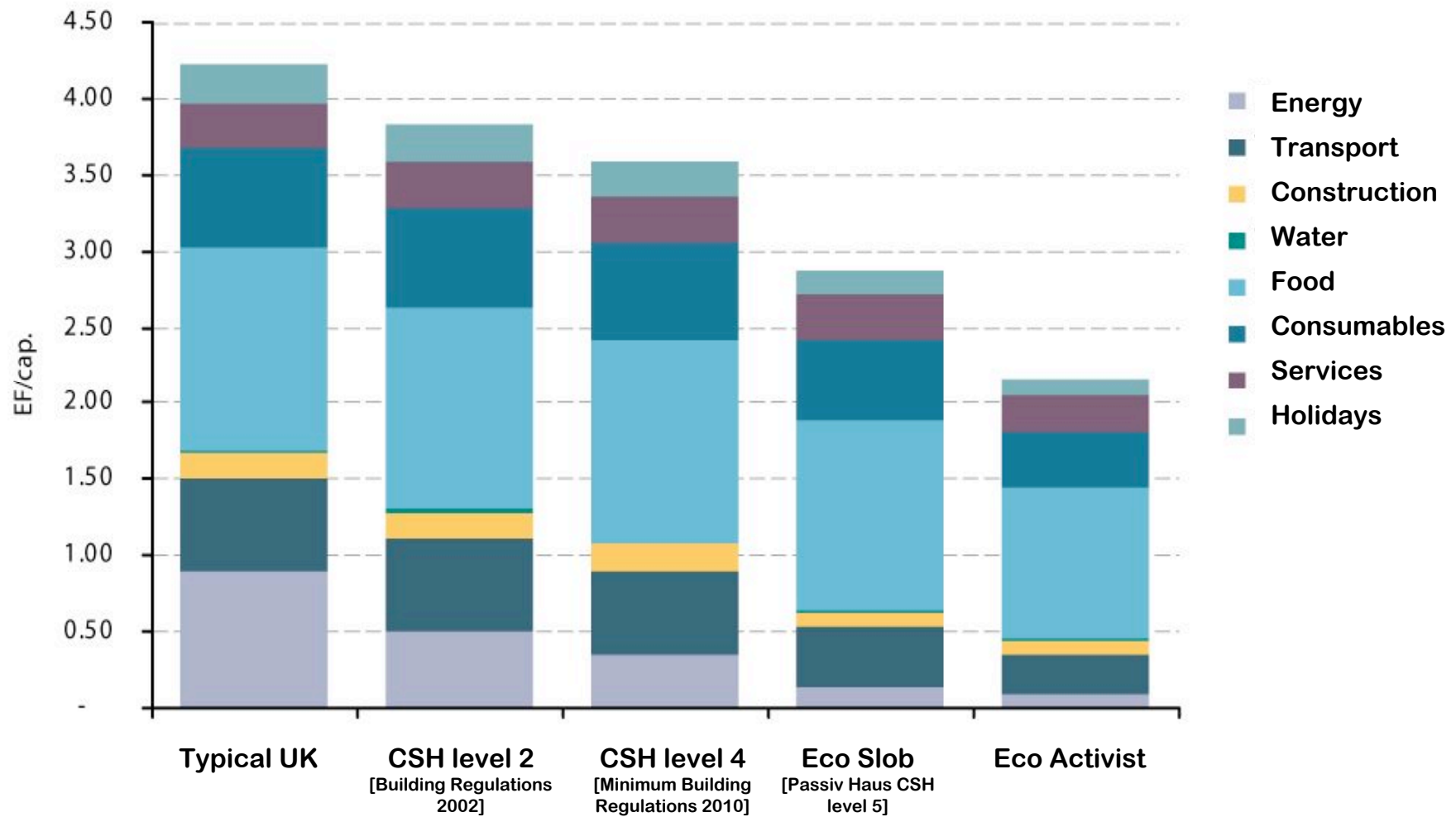


MARKET
VALUE



Prof. Klas Tham





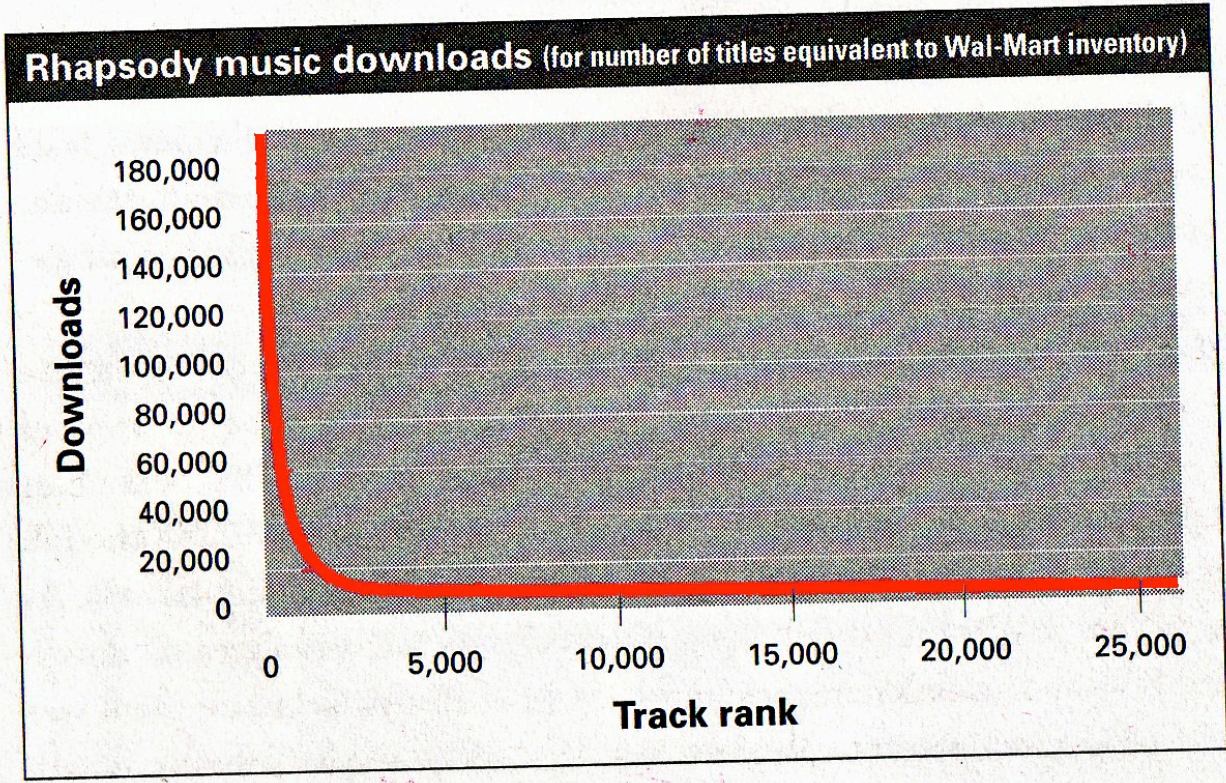
[An analysis of four different UK housing types and the associated Ecological Footprint of the residents, combining the indirect impacts of consumption, including the impact of construction – ARUP / SEI 2006]

music retailer Rhapsody. A subscription-based streaming service owned by RealNetworks, Rhapsody currently offers more than 1.5 million tracks.

"The mass market is turning into a mass of niches"

Anderson, Chris [2006] *The Long Tail: How endless choice is creating unlimited demand* [Random House, London].

Chart Rhapsody's monthly statistics and you get a demand curve that looks much like any record store's. Huge appeal for the top tracks, tailing off quickly for less popular ones. Below is a graph representing the top 25,000 tracks downloaded via Rhapsody in December 2005.



The first thing you might notice is that all the action appears to be concentrated on the left-hand side. No surprise there.

Peterborough Dolls

Sarah is a professional journalist who has worked in the city since her graduation, over ten years ago.

She has developed an interest in the housing offers for the single professional female following a successful series of articles she penned for *Woman and Home*. This highlighted the subtle gender imbalances in some locations where there is a higher number of service and creative jobs – an example being her own profession that is 57% female. She feels there should be recognition of the growth of single women entering the property market independently of husbands and partners. She thinks this is a trend that will raise the profile of sustainable design as her work unearthed research showing women are significantly more aware of environmental issues and the links with climate change. She even anticipates her employer publishing a carbon-free version of *heat* at some point in the future in response to this.

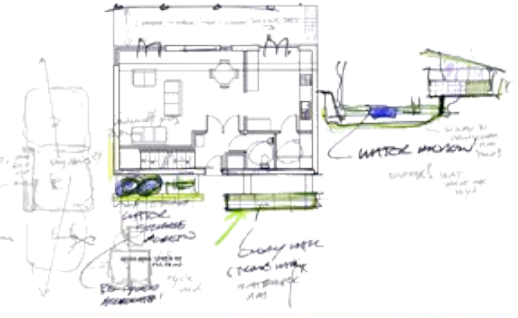
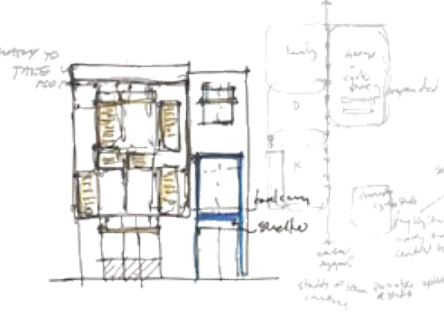
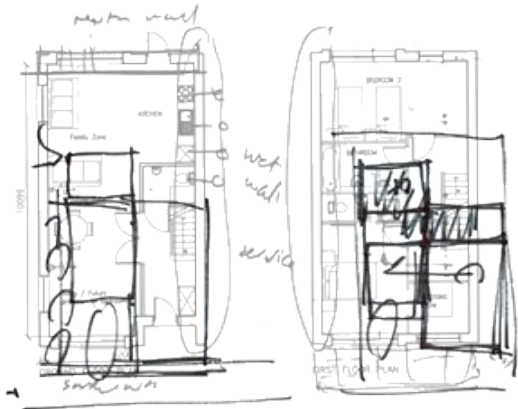
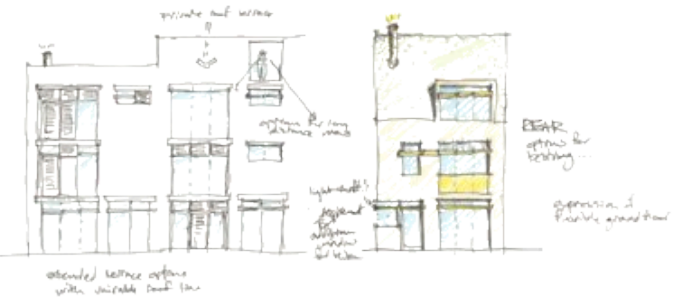
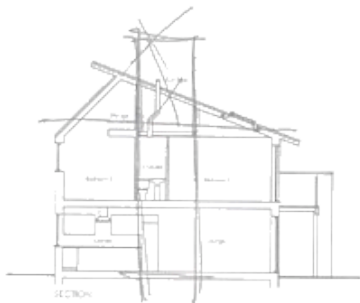
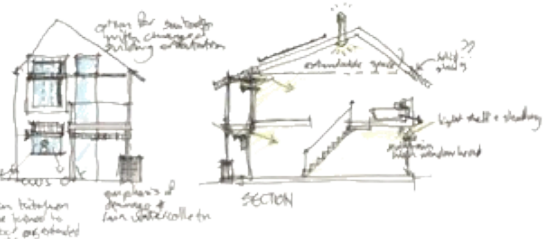
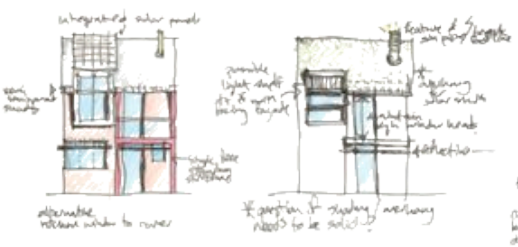
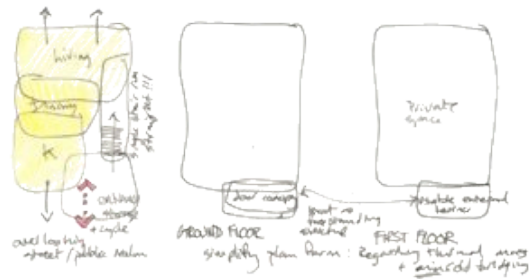
Her cultural references are 'loose women' mixed with 'Ali McBeal'.



Non-architects have berated the ... “failure for design processes to become consumer led and better informed by the emerging needs of the customer. It is often difficult to persuade companies in this sector to invest in the creation and application of social and consumer insights ... [t]he hope is that this type of sociologically-based thinking”.

Howard, Melanie [2007] The homes that the future built in the introductory essay to the 2007 Housing Design Awards





CO.FIX SUSTAINABLE HOUSING

patternbookforsustainablehomes.co.uk

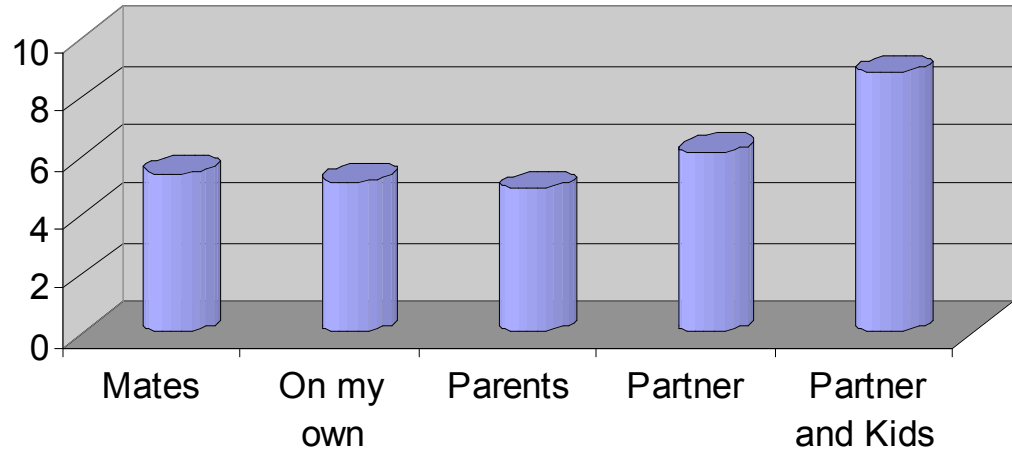


cool grey 1	615	warm grey 4	459	7510
4515	7471	7524	499	red 032
5415	5405	5767	371	





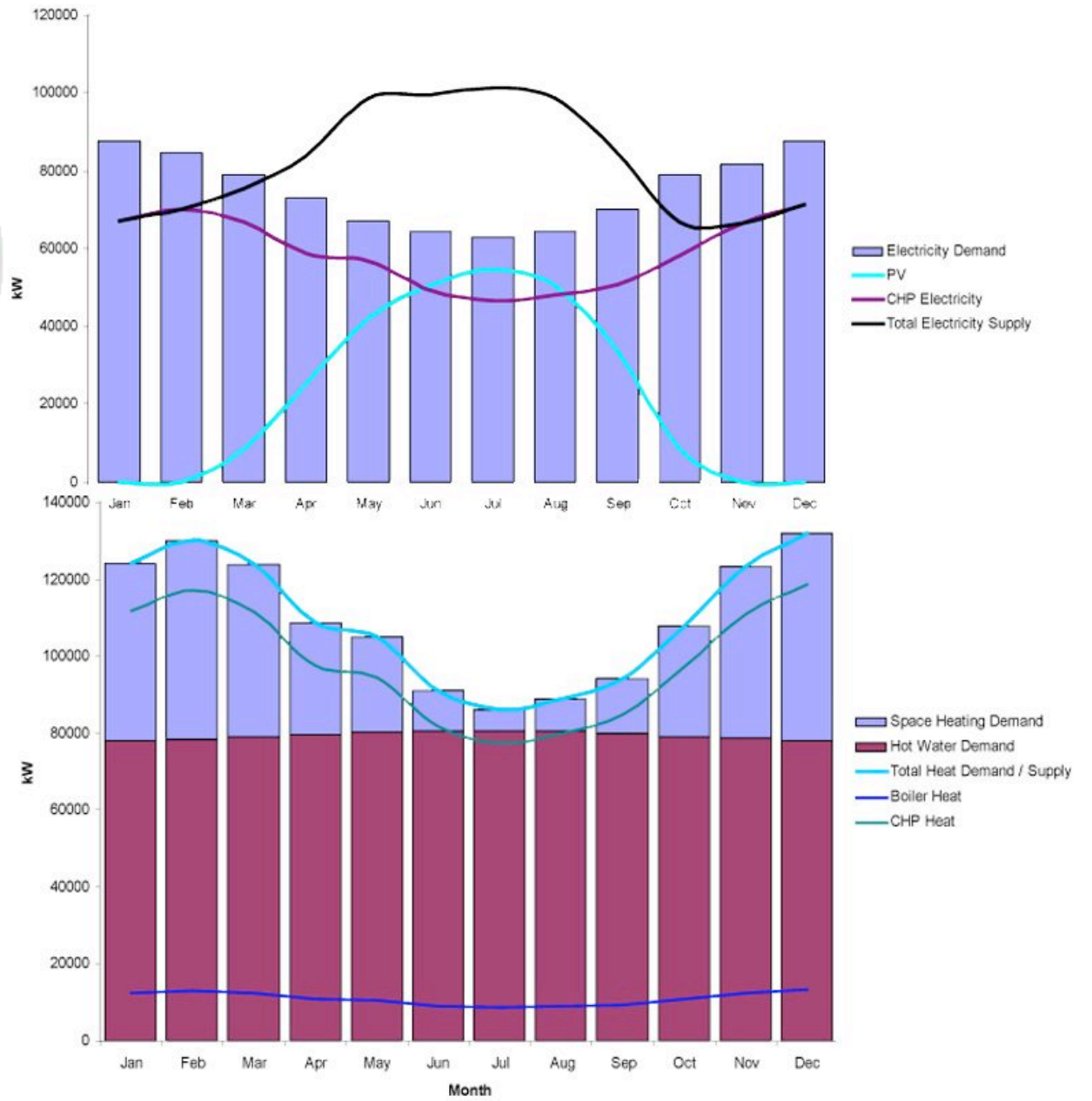
Average Carbon Footprint [Tonnes]



Microsoft Excel - final analysis

	AM	AN	AO	AP	AQ	AR	AS	BB
	How do you travel for journeys less than a mile?	How many short haul return flights do you take every year?	How many long haul return flights do you take every year?					
2	public transport	1 to 2	1 to 2	5.95				
3	walking/cycling	1 to 2	none	6.82				
4	walking/cycling	none	none	3.3		63	male	18%
5	walking/cycling	none	none	3	3			
6	walking/cycling	3 to 5	1 to 2	6.57			female	
7	walking/cycling	none	1 to 2	12.92		67	6.89	52%
8	walking/cycling	1 to 2	1 to 2	5.57		130		
9	walking/cycling	1 to 2	3 to 5	9.43				
10	walking/cycling	none	none	4.18				
11	walking/cycling	none	none	2.72				
12	walking/cycling	3 to 5	1 to 2	9.29				
13	walking/cycling	1 to 2	none	3.61		age	21-35	
14	walking/cycling	1 to 2	1 to 2	5.51		89	7.08	68%
15	walking/cycling	1 to 2	none	6.45				
16	walking/cycling	1 to 2	none	4.82		age	36-50	
17	walking/cycling	1 to 2	none	9.46		22	6.76	17%
18	walking/cycling	3 to 5	none	3.59				
19	walking/cycling	none	none	4.41		age	51+	

	B	C	D	E	F	G
	Commuting comments	Spare time activities	Weekend activities	Community comments	Housing preferences	Environmenta
1	No	Spends time with family. Gathering with friends for dinner parties etc.				
2	1		4	Wants a close community feel so she can feel safe about her child (babysitting etc.), also would like to be involved in community.	All live together. Money is the problem keeping them from moving into "proper" accommodation.	Aware of enviro issues
3	2			Children's future is very much important therefore close community required. Too much work, therefore cannot be involved in community, but would like to, although not much community feel in flats.		
4	3		2	Looking for a close community with values, safe but also offers privacy for family. Involvement within community minimal, would likely stay that way after move because of close knit family.	Wants large house for grandchildren. Probably will live with one of her kids.	Environmental i really play a part making, but if a available in hon would be a plus
5	4			Likes open spaces with gardens etc. doesn't like living in flat, but moving into house no an option at this age. Small community atmosphere in retirement complex, everyone quite close.		
6	5					
7	6	Takes part in retirement home activities (outings to parks, coast, crafts etc.)		Likes to go to clubs on weekends. Booze, drugs etc. (retour but likes to have fun).	Wants a community with young people professional, but still know how to have fun	Environmentally
8	7	Bus. Wants better access to public transport, in addition to an increase in quality of public transport		Very much involved within polish community helping with polish get together, charity etc., but not a much interaction with non-polish although he would like to.		
9	8		3	Worried about cultural influence on child. Want a close community ideally. Something where they could really get involved and get to know neighbours so they can feel safe about their child.		
10						





“Lack of green spaces. Does voluntary work on community projects.”

“Wants more playgrounds for children, and more leisure opportunities for young families. Also wants safer street for public, especially in the evenings. Afraid to be in the city at night. Wants more polices on the street”

“Wants more parks for children. Active in the muslim community”

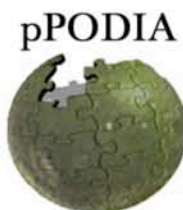
“Wants more walkable community. Wants to see more green spaces and waste bins”

“Wants more green spaces for families”

“Wants to see less cars and more green spaces in the city”

“Involved as a scout leader and in the local church. Believes there is a strong community locally based around the church. Would like to see more play areas for young children”





Peterboroughness¹ |'pētər| |'bərō| (abbr.: **bor.**) |nəs; nis|

adjective

1 the fact of quality (of a person) of being from Peterborough; resemblance of the city (of the place) : *Andy Bell's flamboyance and dress sense shows the characteristic of Peterboroughness* | *there is a real Peterboroughness on the South Bank and the proximity to the river Nene*. See notes on

Peterborough [proper noun] and **Peterborian**.

2 having a slightly confused regional identity – evident in the uncertainty over the use of 'East' in geographical descriptions resulting in misconceptions of where it is situated within a strategic context: *Peterboroughness is based in **East Anglia** (blamed on the University), or is it **East of England** or the South **East** or the **East Midlands**?*

3 noticeable for being flat | lying below sea level | having characteristic man-made drainage systems (Fens and Dykes): *this Fenland landscape suggests we are close to Peterborough*.

4 an exemplar for cultural diversity within the typical smaller English city (the cosmopolitan mix of communities contrasting with the city still being perceived as a 'market' or 'new' town): *the many generations of migrants have created a real positive Peterboroughness about the town*.

5 an exemplar for architectural diversity within the typical smaller English city (resulting from a large number of small scale local and speculative developments set within a distinctive and controlled Cartesian morphology): *the competition between local builders on this single street and the heterogeneity over the external appearance of buildings has given the place Peterboroughness*.

5 having a quiet spirituality (supposedly resulting from the tolerance for the above diversity).

6 reflecting the local geology (Barnack Stone | Anchester Limestone | Greensand) and reminiscent of (Blue Oxford) clay pipes and bricks, specifically within the Fletton area : *the home of the London Brick Company is evident through the Peterboroughness of the Phorpres bricks*.

7 punching above your weight (usually in context of football giant-killing).

8 related to food production and processing (adding value to apples, plum).

[predic.] (**Posh on**) having the visible appearance and characteristics of Peterborough (feeling down at heart or flat) : *Warren has a real Posh on today*.

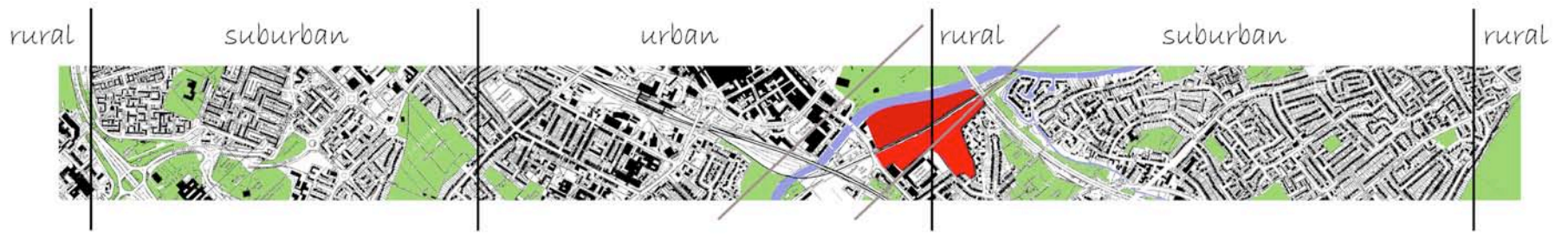
DERIVATIVES

Posh |pā sh| informal noun

ORIGIN Old English *burg, burh* [fortress, citadel,] later [fortified town,] of (Durobrivae) Roman and later Germanic origin; related to Dutch **burg** and German **Burg**. Compare with **burgh** but not Chris de (not as sometimes suggested the long lost brother of Peter).

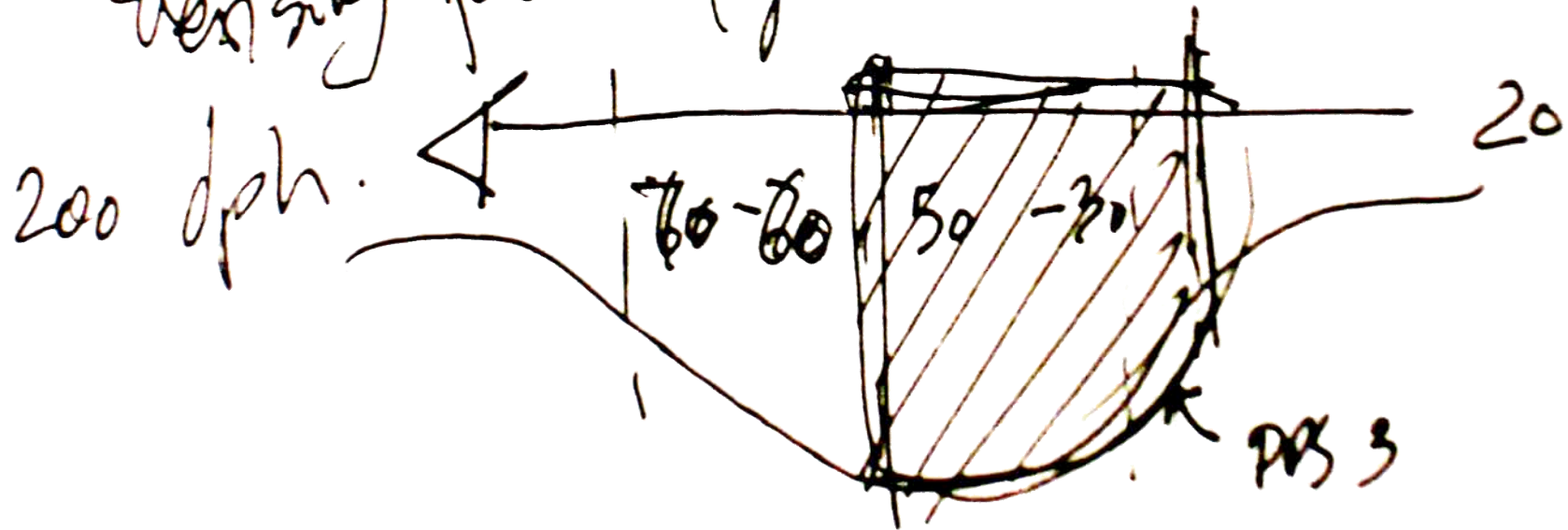
Peterborough |'pētər| |'bərō|

a city, town or borough and railway hub / river port in east-ish (subjective geography) of England, situated at the junction of the Nene River, the Great North Road (London Road) and the East Coast mainline railway (mostly London Railway); pop. 180,000. Also know as "Medeshamstede" (Saxon Settlement in the Meadow), 'Gildenburgh' (Golden Borough historical derivative of 'Posh') and 'Pizzaborough' (resulting from early 20th Century Italian immigration to the Fletton brickfields).



issues for new sustainable urbanisation

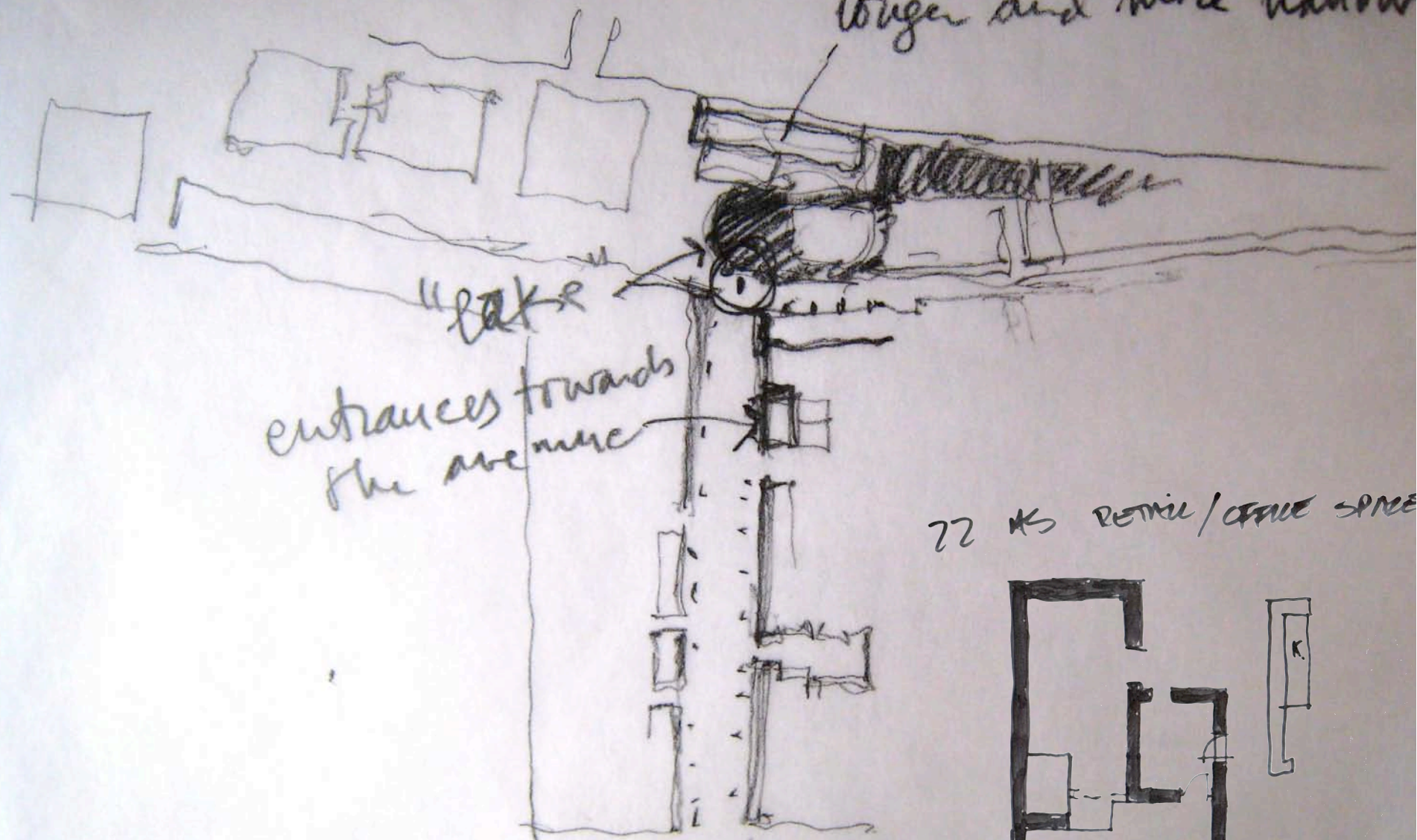
density profile (gradient transect)







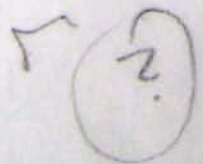
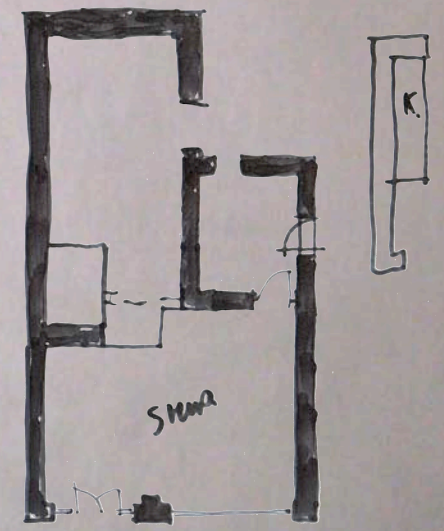
longer and more narrow



"gate"

entrances towards the avenue

72 sq RETAIL / OFFICE SPACE





An architectural rendering of an urban area, likely a riverfront development. The scene is viewed from an elevated perspective. A prominent blue river flows horizontally across the middle of the image. On the left bank, there are several buildings, including a large, multi-story structure with a prominent tower. The right bank features a mix of residential-style buildings, some with flat roofs and others with pitched roofs, interspersed with green trees and landscaped areas. The foreground shows a dense cluster of buildings, some with colorful facades. The overall style is a combination of line art and flat color fills, typical of modern architectural visualization.

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