

Information paper – 14

Land use efficiency – city centre versus rural

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WHAT COLOUR is YOUR BUILDING?

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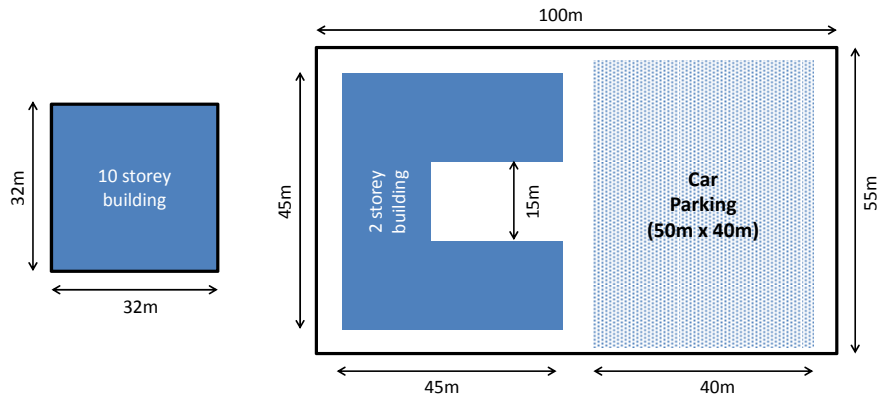
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This information paper is one of a series of papers written during the preparation of the book **What Colour is Your Building?** (www.whatcolourisyourbuilding.com). The papers do not form part of the book and have not been peer reviewed. They provide further technical detail, analysis and information to support statements made in the book. All of the papers can be downloaded from www.wholecarbonfootprint.com.

Land use efficiency – city centre versus rural

This information paper provides a comparison of the land use efficiency between a typical urban high rise (Building X from Appendix A) and an edge-of-town / rural low energy office building.

Table 1 shows a summary of the comparison and Table 2 shows the assumptions made for the two buildings.



	City centre	Low energy rural
No. of storeys	10	2
Gross internal area	10,000 m ²	3,150 m ²
Building ground floor area	1,000 m ²	1,575 m ²
Area of car parking	0 m ²	1,970 m ²
Landscaping area	0 m ²	1,950 m ²
Total land area	1,000 m ²	5,500 m ²
Occupancy density	1 person per 15 m ²	1 person per 15 m ²
No. of people	667	210
Land area per person	1 person per 1.5 m ²	1 person per 26 m ²
Built area per person (building + car park)	1 person per 1.5 m ²	1 person per 18 m ²

Table 1 Efficiency of land use between rural and city centre buildings

If we all worked in 2 storey low energy out-of-town buildings then the area of urban land required would increase significantly, increasing the distance between buildings, thereby increasing the reliance on cars and further increasing transport emissions. The loss of habitat and open spaces, are separate issues that requires consideration.

This is not to say that we should all be working in city centres either – it’s just showing that there are pros and cons with both building locations.

	City centre	Low energy rural
Total site length	32 m	100 m
Total site width	32 m	55 m
Total site area	1,000 m²	5,500 m²
Ground floor area	1,000 m ²	1,575 m ²
No. of storeys	10	2
Total GIA	10,000 m²	3,150 m²
Occupancy density per net lettable area	1 person per 12 m ²	1 person per 12 m ²
Net to gross efficiency	80%	75%
Occupancy density	1 person per 15 m ²	1 person per 16 m ²
No. of people	667	197
Car parking provision	none	1 car space per 2 people
No. of car parking spaces	0	98
Area per car park	20 m ²	20 m ²
Car parking area	0 m²	2,000 m²
Landscaped area	0 m²	1,956 m²
% of landscaping on site	0%	36%

Table 2 Assumptions made for land use efficiency calculation

The inevitable legal bit

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