

This note gives advice to appraisers of regeneration and economic development projects on employment densities associated with different types of property use. The note has been produced by Arup Economics & Planning for use by English Partnerships and the Regional Development Agencies and their project partners. It is supported by a more detailed report and best practice guidance available from English Partnerships or the National Best Practice web site.

What is Employment Density?

Employment density refers to the average floorspace (in sqm or sqft) per person in an occupied building. It is therefore a measure of how much space each person occupies within the workplace.

Table of Employment Densities

The employment densities in the table below can be used for two purposes:

- At ex-ante appraisal stage ie in appraising planned regeneration and economic development projects to calculate the forecast number of jobs a development will create. This can then be used to help calculate the value for money (cost per job) and impact of the number of jobs on the local economy.
- At ex-post stage. Normally, employment densities for completed projects are calculated from details on the actual completed amount of floorspace and actual job numbers. Where it is not possible to re-measure the floorspace or obtain actual job numbers (eg the occupiers are unable to give access to such information), then the figures in the table overleaf can be used.

It should be emphasised that the figures in the table should be used as 'rules of thumb' where no information specific to the development is available. If such information is available then this should always be used.

Sources of Employment Density Data

Average floorspace densities from surveys of large numbers of buildings provide density figures that can be relied upon to provide a reasonable degree of accuracy. Unfortunately there is very little survey work of a substantive nature conducted in the last few years. The figures provided in the matrix comprise the best available average for each use. Further details on sources of employment density information are provided in the main report.

Gross and Net, Internal and External

Figures for floorspace in regeneration and economic development projects should typically be gross internal (ie inside the external walls), or sometimes gross external figures (ie including the external walls and some external areas). Once a building is ready to be let or occupied net internal or net lettable figures will be available.

At ex-post stage, when monitoring the employment density within a building over time (and where information is not available directly from the end-users), it is important to ensure consistent measures of the floorspace or to consider converting gross measurements to net measurements. As a rule of thumb gross measurements are 15-20% higher than net measurements. If there is doubt over the figures to be used then consideration should be given to the re-measurement of the floorspace.

Full-time Equivalent Employment and Number of Workspaces

The number of occupied workspaces in a development should be used to represent the number of proposed (or actual) employees. In some instances a development may generate more Full-Time Equivalent employees than workspaces. Therefore, estimates based on workspaces provide 'conceptually sounder' forecasts. (As a reference, approximately 2 part-time staff should be used for the creation of 1 full time equivalent job).

Density Variances, Changing Working Practices

A number of factors affect employment densities. They include: nature of occupier and industrial sector, size of premises, location, region, economic cycles, building age and length of occupation and type of tenure.

Changing working practices are particularly manifest in the office sector. 24 hour working, teleworking and hot-desking are understood to be increasing densities though there is, as yet, a lack of evidence to clearly indicate this trend. Increasing automation in industrial and distribution sectors is reducing densities and providing the widest density variations. These reductions are commonly assumed to be very significant but again, to date, there is a lack of evidence to support this.

Employment Density (Per Workspace*)

All figures are gross internal floorspace unless otherwise indicated.

Use type	Sqm	Sqft	Major factors creating variations
Industry			
General	34	365	Nature/sector of occupier and the degree of automation Wide variations exist between industrial sectors Higher densities in areas of high land value eg London 27 sqm, South East 31 sqm
Small Business	32	340	
High tech / R&D (non-Science Park)	29	310	
Science Park	32	340	
Warehouse and distribution		Gross external figures	
General Warehousing	50	540	Wide variations exist between industrial sectors
Large Scale and High Bay	80	860	Technological developments are reducing densities. Long-term storage has much lower densities than short-term storage
Office			
General	19	205	Densities vary according to location. Non-town and non-city centre developments e.g. business park developments have higher densities. Town and city centre densities are often lower than might be expected given occupancy costs Changing working practices are affecting densities
Headquarters	22	240	
Serviced Business Centre	20	215	Densities within units may be high but common areas reduce the overall density
City of London	20	215	
Business Park	16	170	Suburban densities have similar figures (high density) However town/city fringe locations have lower densities
Call Centre	12.8	140	
Retail			
Town/City Centre (net internal figures)	20	215	Some variance with retail type Small shops (less than 50 sqm) may have much higher densities of around 10 sqm)
Food Superstores (net internal figures)	19	205	
Other Superstores/ retail warehousing - including wholesale but not storage (gross internal figures)	90	970	
Leisure and visitors attractions			
General Hotels (3 star)			1 employee per 2 bedrooms
Budget Hotels			1 employee per 3 bedrooms
4/5 star Hotels			0.8 employees per bedroom
General Restaurants	13	140	Densities may be lower in fast-food restaurants and higher in high standard restaurants
Cultural Attractions	36	390	
Cinemas (including multiplex)	90	970	
Amusement and Entertainment Centres	40	430	
Sports Centres	90	970	
Private Sports Clubs	55	590	

* the prospective or actual number of occupied workspaces should be used as for some developments there may be more Full-Time Equivalent employees than workspaces (eg in call centres)