

where density standards are converted from one measure to another.

Government steps in

By the end of the First World War, it was acknowledged that much of the housing stock was in poor condition and that there was an estimated shortfall of 3–400,000 houses. A Parliamentary Select Committee was set up in 1918 under the chairmanship of Sir John Tudor Walters (of which Raymond Unwin was a member). The result was known as the Tudor Walters Report, and it provided the basis for a government housing manual setting out standards for housing development including those for density (Local Government Board, 1918; 1919). In parallel, an act called the Housing and Town Planning Act 1919 provided for subsidies for new housing for the first time, and by 1924 the Housing Act made the guidance on densities statutory (Jenks, 1983). The low-density standard of 12, or 8 houses per acre in rural areas (30, or 20 houses per hectare), became the norm for the inter-war period, and influenced the spread of a uniform suburbia.

The next landmark came towards the end of the Second World War with an influential report in 1944 under the chairmanship of Lord Dudley, the then Minister for Health (Central Housing Advisory Committee, 1944). There was a climate of criticism of the inter-war suburbs being aesthetically and socially monotonous, and the development of ideas that favoured mixed development and ‘neighbourhood units’ to promote ‘social integration’ (Burnett, 1978). The Dudley Report was backed up by guidance in Housing Manuals of 1944; 1949 (Ministry of Health, 1944; 1949) in which higher densities were encouraged in urban locations, and a variety of house types with supporting shops and facilities (Jenks, 1983). The density standards were expressed in persons per acre, ranging from 30 in rural areas to 120 in urban areas (approximately between 25 and 100 dwellings per hectare).

Central government continued to produce guidance, promoting standards for higher densities and varied housing forms. A handbook in 1952 (MoHLG, 1952) explored a range of density standards for different types of housing and housing forms, using the measure for habitable rooms per acre. The densities examined for 2-storey houses ranged from 65 to 105 habitable rooms per acre (15 to 30 dwellings per hectare); for

3-storey housing 85 to 135 (20 to 35 dwellings per hectare); and for flats 150 to 200 (40 to 70 dwellings per hectare). The recommendations on densities were complex, and became fairly impenetrable when advice was given about development comprising a mixture of flats and houses. Here a maximum of 90 habitable rooms per acre (25 dwellings per hectare) was suggested, but this could include flats at 180 and houses at 80 habitable rooms per acre, but with a seemingly infinite number of possible combinations. Equally complex guidance was given about gross densities across whole towns, and included standards for open space and provision of facilities.

Ten years later government, in a Planning Bulletin, was advocating even higher standards for urban areas with densities of between 60 and 140 persons per acre (50 and 115 dwellings per hectare) and between 12 and 20 dwellings per acre (30 and 50 dwellings per hectare) for new development elsewhere (MoHLG, 1962). The 1962 Bulletin noted that it was possible to have a good environment at all these densities, but also to have a 'poor environment at any density' (*op. cit.* p. 8). The critical stance against low-density suburbs was not restricted to government, for example, industry promoted studies inspired by Gordon Cullen in *A Town Called Alcan* suggesting densities of between 90 and 125 dwellings per hectare (Alcan, 1964), or polemics such as *Civilias: The End of Sub Urban Man* (de Wolfe, 1971) advocating a high-density city in place of the suburban New Towns of the time. Figure 15.5 shows conceptual ideas for the city centre and some residential areas.

Despite the advocacy and standards, most development occurred at the edge of towns and cities at relatively low densities. During the 1970s many county statutory development plans had density standards of a maximum of 15 dwellings per acre or much less (35 dwellings per hectare) (Jenks, 1983). The structure and local plans of the 1970s and 1980s gave little significance to density (DETR, 1998), and although almost all counties had design guides for housing layout, density appeared to have been dropped from their agenda. Breheny (1997, p. 84) noted that planners had 'not taken densities very seriously for many years'. His survey recorded that local authority plan-based standards averaged out at 28.8 dwellings per hectare, with 10 the lowest in Hartlepool and 68 the highest in Barking. This needs to be set against the average density of 25 dwellings per hectare achieved in the UK in around the year 2000 (DTLR, 2002). Yet again, government has responded, arguing for higher densities, with