

new housing estate projects have been carried out. They have had mixed results because the highly physically deteriorated world they replaced was often socially viable. The new products were unable to provide an environment for the re-creation of that social stability. Many of them have been demolished and rebuilt too. In some cases, such as the Paternoster Square precinct north of St Paul's cathedral in London, areas were rebuilt only to be later demolished and rebuilt anew (see Chapter 8).

A new type of urban renewal project began to appear during the last two decades of the twentieth century. As the demographic characteristics of suburban areas changed so the demand for new facilities in their shopping centres occurred. What have appeared are new suburban downtowns rather like the traditional cores of cities. Sometimes this process has been abetted by the building of a new rail link (e.g. Bethesda, Maryland; see Figure 2.8). At other times it has happened because the suburbs have strategic locations on major traffic routes between major cities (Garreau, 1991). What has generally occurred has been that two- or three-storey high precincts have been replaced by high-rise commercial and residential developments. This process has often taken place willy-nilly but there are many examples where the redevelopment has involved a concerted urban design effort (e.g. Glendale, see Chapter 8 and Bellevue, Washington, see Chapter 9).

Infrastructure Design

The nature of the infrastructure is what visually distinguishes one city from another as much as the nature of its architecture. There are various ways of considering the infrastructure of cities but the most inclusive manner covers everything that is part of the public domain whether privately or publicly owned. In this view the streets and other transport facilities, the schools and public institutions, such as libraries and museums, can all be part of the infrastructure of cities.

Many of the issues involved in the design of infrastructure fall outside the scope of urban design *per se*, falling into one or other of the realms of city planning and civil engineering. The consequences of such decisions for the design of precincts of cities are, however, substantial because of the multiplier and side effects they create. The public concern in designing infrastructure components is not only with the services they supply but also with their catalytic effect. Clearly the location and design of roads and streets had a major effect on the twentieth century city. It will in the twenty-first too. For instance, highway development has made edge cities possible and the building of rail links and new train stations has spurred major developments around them in many cities. Bethesda in Maryland has already been cited. In London the hope has been that the new Jubilee Line of the underground system will do the same thing (Wordsearch *et al.*, 2001). Sometimes land development and station location have followed a coordinated plan before construction begins, as in Singapore (see Chapter 10).