Figure 22.2 Integrated façade system with 14 kWp amorphous silicon modules made by Energy Photovoltaics (EPV) in New Jersey, USA on top of a skyscraper at Four Times Square, New York, USA. The PV modules are the dark regions on the facade near the top. Reproduced from Kiss G, *Proc. 2nd WC Photovoltaic Solar Energy Conversion*, 2452–2455 (1998) with permission by Gregory Kiss [7]

The way people deal with photovoltaics in architecture differs from country to country. This depends on the scale, culture and type of financing for building projects. In countries such as Denmark, the Netherlands and the United Kingdom, where public housing is very common, serial production is strongly emphasized in housing projects. Professionals such as project developers and architects implement the housing construction process, in which the main opportunities are for PV roof integration in single-family terraced houses and for façade and roof integration in apartment buildings.

In countries where the government has little influence on house building, the building process is a private initiative. Integration of PV systems in buildings can be carried out by professionals but, on the smaller scale of a single-family house, the motivation must come from the private owner. In these countries, most building-integrated PV systems are found in commercial and industrial buildings in which building professionals are involved. With these types of buildings, PV systems are integrated both into façades and roofs. There is a significant market for private homeowners who buy small-scale (less than 500 Wp) PV systems and mount them somewhere on their house.

The aim of integrating PV systems into buildings is to reduce the requirement for land and the costs [8]. This could be the cost of the support construction and the cost of building elements, such as tiles. It is more efficient to integrate a PV system when constructing the building, rather than mounting it afterwards.

A definition for Building Integration is hard to formulate, as it concerns the physical integration of a PV system into a building, but it also covers the overall image of the PV system in the building. For the architect, the aesthetic aspect, rather than the physical integration, is the main reason for talking about building integration. The optimal situation is a physically and aesthetically well-integrated BIPV system. In fact, many examples of physical integration show a lack of aesthetic integration. Visual analysis of PV systems in buildings shows that the look of a poorly designed building does not improve, simply