

bicycles. The ground floor comprises offices rented by the district government, and four other municipal users. The floors above contain 28 loft apartments, each with a large terrace, the upper ones being on top of the roof (Figure 11.12). All the lower roofs are used for walkways and terraces, and the open area offers space for a clear division between the offices and apartments. Using the roofs in this project added 4500 m<sup>2</sup> to the development.

## **Upper City Foundation**

The Foundation originated from the survey of the space on top of roofs carried out as part of the 'Bamboo Summit City' project. The thinking behind the Foundation stems from the fact that the Netherlands is a compact country with a very high population density and there is an ongoing problem of open space becoming scarce. Dutch cities, even a large, vibrant city such as Amsterdam, are not as densely populated compared, for example, with Paris. The Foundation argues that the development of the 'air' space in the city, developing on top of existing buildings, can solve a part of the problem in a sustainable way. This, it is suggested, can add floor space and value, and generate funds for the upgrading of the existing housing stock.

The aim is to initiate development with an integrated approach that is committed to all parties involved, including users and owners. Thus, the Foundation has partners that represent a wide range of professions.<sup>3</sup> Building companies are called upon to

Figure 11.12 Looiershof showing the roof garden. (Source: Hulshof Architects.) Figure 11.13

Laurenskwartier, a typical example of a more traditional building in Pannakoekstraat, on top of which the addition of two storeys under a mansard roof is planned. (*Source*: Hulshof Architects.)



invent new ways of construction and the logistics needed when building on top of buildings, as well as being a source of research into the use of steel frames in lightweight construction. The social support for people and neighbourhoods during renewal and redevelopment processes is taken into account through the inclusion of two social housing corporations and a foundation. A research and strategy organization is assisting with the development of scenarios and modelling. Other Dutch architects are involved along with consultants and designers with a sustainable approach. Developers are showing interest in supporting the experiment. The Foundation intends to support pilot projects, to find funding, provide administrative assistance and to support research.

## **Pilot projects**

A number of pilot projects are being undertaken. *Rhijnvis Feith* is a renewal project in the poor area of Delfshaven comprising a housing complex of 18 apartments designed by the practice in 1984. A new building has been designed next to it and the practice is undertaking a pilot project to find out whether the roof can be developed. *Laurenskwartier* is a quarter in the city centre of Rotterdam with a lot of flat roofs. There are also many examples of more traditional architecture with pitched roofs, which is valued but is generally found to be in poor condition (Figure 11.13).