responsible for the waterproofing of the roof – the roofing company or the PV installer? Who is responsible for electrical safety – the electrician or the PV installer? Who is responsible for safety on the site – the general contractor or the PV installer? All these aspects must be clearly defined and noted in advance.

Many PV suppliers offer turnkey contracts. This is easy for clients because they receive a complete working system for their money. However, the client is then responsible for the coordination between PV supplier and building contractor. Placing all responsibility with the building contractor means an extra surcharge of perhaps 10% on the cost of the PV system. A good solution is to make the building contractor (general contractor) responsible for the PV system and negotiate a special fee for coordination and use of equipment (scaffolds and crane) from the building contractor.

22.5 CONCLUSIONS

Building integration aims to reduce costs and minimize the requirement for land. To increase market acceptance it is important to show architecturally elegant, well-integrated systems. Moreover, building owners can show their environmental commitment with highly visible building-integrated PV systems.

This means that there is a large potential for BIPV in the built environment. The main factors for successful integration are suitable buildings [49], (i.e. suitable orientation and lack of shadow) and a reason for building integration. For newly constructed sustainable buildings, BIPV will be part of the energy strategy. However, for existing buildings there must be a valid reason for integrating PV systems. Building renovation, including the roof and façade, often provides an opportune time for selecting BIPV [50, 51].

The building or renovation process plays an important role in the success of BIPV. Can the building owner benefit from BIPV? If so, the owner will be willing to implement PV systems in the building plans. The architect or designer needs to have a good basic knowledge of BIPV and be able to integrate PV into the design. If architects do not understand the basics of PV, they will make mistakes that eventually have to be resolved during the installation process. The worst cases involve mistakes that cannot be resolved at the end of the building process and that result in a lower efficiency and quality of the PV system.

Is the utility company willing to cooperate? If not, the building owner will probably try to avoid difficulties in an already complex construction process.

The architect or designer should use all visible opportunities to integrate PV into the design in a highly aesthetic way. The important issues are the architectural function of a PV module (replacing other building elements) and the visible aspects of modules, such as the dimensions, mounting system, form and color of cells, back sheet and frames.

To recognize these aspects, criteria have been formulated for judging building integration of PV. These criteria are useful for manufacturers and technicians who are involved with building integration from the engineering and technical aspects of the building process.