NOTE
Clear architecture helps reduce duplication of functionality.

Growing the architecture

Some entirely new functional areas appeared in the "big picture" design—storage management and an external control facility, for example. In the Metropolis project, this was a crushing blow and incredibly hard to do. But in Design Town, things worked differently.

The system design, like the code, was considered malleable and refactorable. One of the development team's core principles was to stay nimble—that nothing should be set in stone—and so the architecture could be changed when necessary. This encouraged us to keep our designs simple and easy to change. Consequently, the code could grow rapidly and maintain a good internal structure. Accommodating new functional blocks was not a problem.

NOTE
Software architecture is not set in stone. Change it if you need to. To be changeable, the architecture must remain simple. Resist changes that compromise simplicity.

Deferring design decisions

One of the XP principles that really enhanced the quality of the Design Town architecture was YAGNI (don't do anything if *you aren't going to need it*). It encouraged us to design only the important stuff early on, and to defer all remaining decisions until later, when we had a clearer picture of the actual requirements and how best to fit them into the system. This is an immensely powerful design approach, and quite liberating.

- One of the worst things you can do is design something you don't yet understand. YAGNI forces you to wait until you know what the problem really is and how it should be accommodated by the design. It eliminates guesswork and ensures the design will be correct.

- It is dangerous to add everything you *might* need (including the kitchen sink) to a software design when you first create it. Most of your design work will be wasted effort, and produce extra baggage that you'll need to support over the entire changing life of the software. It costs more at first, and continues to cost over the life of the project.

NOTE
Defer design decisions until you *have* to make them. Don't make architectural decisions when you don't know the requirements yet. Don't guess.

Maintaining quality

From the outset, the Design Town project put a number of quality control processes in place:

- Pair programming