Figure 8.12 Project
handbook content.

- **Financial information**; including
  contracts of authorization, project
  expenditure, billing, budget and cash-flow
  records
- **Planning and control information**;
  including top-level project plan, master
  programme, schedules and quality control
  review records
- **Standards**; including specific project
  standards and authorization for changes
  and deviations from agreed standards
- **Project personnel information**;
  including details of project personnel with
  key dates, experience, contact
  information
- **Logs and records**; including project
  diary and log recording position
  statements, key decisions, key events,
  review reports and project statistics
- **Project documents**; including the client's
  requirements definition (CRD) and
  project's requirements definition (PRD),
  design reports, technical specifications,
  test specifications and correspondence
- **Other documentation**; including
  documentation relevant to specific issues
  not allowed in the above sections. For
  example, leases of office equipment,
  portakabins and communication
  connections.

PROJECT IMPLEMENTATION STAGE

The key to successful project management is to actually follow the project plan and keep track of how the project is progressing. This is achieved through leadership, team commitment and by making the achievement of required progress and success highly visible. To assist the implementation of the project, it is worthwhile to look at the various forces that will, or could, affect implementation. These can be split into the 'driving forces'

which are likely to support key events leading to project completion, and the 'restraining forces' or those aspects which could restrict or hamper progress towards set milestones. When this analysis is completed, actions can be identified to reduce the influence of the restraining forces and increase the influence of the driving forces (see Figure 8.13).

Projects rarely go exactly as planned and an important part of project control is keeping the project plan up-to-date. The project plan is updated so that the effects on the critical path of changes and delays can be assessed. Projects can suffer changes resulting from a variety of reasons. Some of the more common ones are: inaccurate initial estimating; unforeseen price rises of material, labour or services; changes to the original plans/specifications; overruns of time and cost.

In order to make certain that the project is proceeding as scheduled, it is necessary to monitor and evaluate project progress to ensure the completion of the work as planned. There are two levels of monitoring and evaluation that need to be considered, namely 'progress review' and 'product review'.

The aim of the 'progress review' is to measure project progress and compare it with the plan. Variations from the plan should be evaluated and corrective action considered. Actions resulting from the progress review should aim to correct any variations rather than attempting to manage the consequences. After identifying a problem in the progress review it is good practice to obtain general agreement on the nature of the problem and appoint a member of the team with the specific task of solving the problem within an agreed timescale and with a specific mechanism for reporting back.

'Product reviews' can involve a number of people from a variety of professions. A review of a specialized design, for instance, may involve the project manager, the designer, an external expert. The timing of the product review is dependent on the project schedule. A product is available for reviewing when the activity involved in producing that product, or part of the product, is completed.

Figure 8.13 Driving and restraining force table.

Driving Force	Proposed Action
1 Political support	1 Lobby politicians
2 Project suppliers	2 Agree common strategy for promoting project
3 Community which benefits	3 Create community consultative panel
Restraining Force	**Proposed Action**
1 Pressure groups	1 Improve information to other stakeholders and clarify misconceptions
2 Cashflow limitations	2 Review payment profile
3 Team members' apathy	3 Undertake team building exercise

Product review can be tied to the payment profile as assurances are required that the work has been completed to specific requirements before it is accepted. Product review allows early identification of risks, weakness and errors, as well as major product deficiencies. Projects in the field of urban design are usually structured in a number of phases linked to the termination of specific tasks, such as analysis, drawings, models. Major progress reviews occur at the end of each phase so that deficiencies in project design and management can be amended in the light of experience.

The project manager, acting for a client or for the designer, is responsible for ensuring that the final product meets the technical specifications and for determining whether the work is completed satisfactorily so that the next phase may proceed. In some instances, changes would need to take place to allow the project to progress. Changes, however, have to be managed rigorously to ensure that the project progresses to plan. If left uncontrolled, the rate of change will exceed the rate of progress, with further effect on budgets and funding. Uncontrolled change often results in loss of project confidence and a loss of morale amongst the project team members.

A strict and formal procedure is required to enforce identification and definition of changes, justification for changes and evaluation of change requests. Formal authorization or rejection of change needs to be well documented and fully authorized by the client. It is the responsibility of the project manger to ensure that change control procedures are in place and that the implementation of change is closely monitored. Once a change has been accepted the project requirement definition document and the project plan need to be updated.

Change control documentation should include a change request form (Figure 8.14), a change appraisal form and a change register document. Change control is crucial to project success and should be properly catalogued and filed to avoid unfunded disputes and litigations at later phases of project implementation.

To aid control of the project implementation stage, project progress meetings take place at relevant intervals to review achievements against targets on all aspects of the project and to initiate action by appropriate parties to ensure adherence to the project plan. It is good practice to produce proper agendas and effective minutes to ensure follow-up action by those concerned.

PROJECT CLOSURE STAGE

As stated earlier in this chapter, the ultimate aim of project management is to achieve a co-ordinated and satisfactory completion of all work phases within time, cost and quality requirements. The project closure stage includes activities such as the termination of contracts with external suppliers and contractors, the production of a final financial state-