

16 A FRAMEWORK FOR SITE REGENERATION

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16 A FRAMEWORK FOR SITE REGENERATION

16.1 The concept of framework

This book is concerned with producing guidance on the methods that are available to the practitioner for the successful reclamation of derelict and despoiled land. Whilst the book focuses on the coal and steel industries in Europe, many of these techniques are applicable to a variety of former industrial sites. The methods highlight the increasing requirement for a multidisciplinary approach to reclamation, in order to satisfy local expectations and future users of a given site. However, none of these methods can be practised without the enabling facilities of:

- aim: a well defined requirement level for the work to be undertaken;
- investment: funds with which to undertake reclamation;
- planning: detailed plans for proposed schemes;
- approval: agreement, at local level, on a chosen scheme.

These four key elements form the route towards implementation, and should be seen as the essential elements, or foundation, of a reclamation framework. After satisfying these elements, a reclamation scheme may then proceed through the processes of:

- implementation;
- control;
- validation;
- aftercare.

These essential features of a reclamation scheme are incorporated into the flow chart shown in Figure 16.1, which illustrates the framework for reclamation, around which the precise methods used will fit.

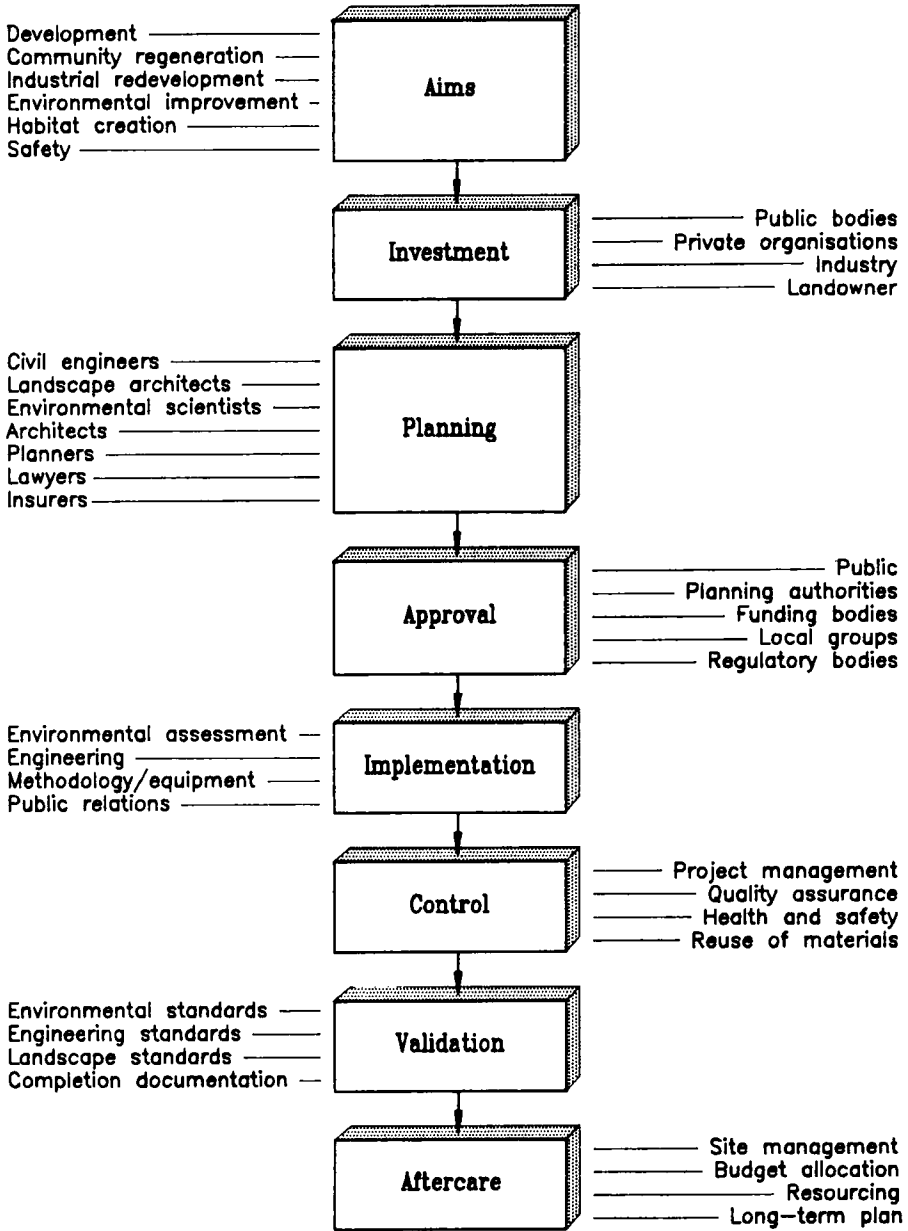


Figure 16.1: Critical path flow chart and principal considerations for a typical reclamation scheme

16.2 Planning for regeneration

16.2.1 Introduction

In general terms there are four situations in which dereliction and despoilation may be met by a reclamation team. These are:

- pre-closure;
- post-closure, but prior to demolition;
- post-closure and demolition;
- post-closure and reclamation, but where reclamation has been inadequate for current requirements, or is incomplete.

The stage at which the need for reclamation is identified is crucial to the planning of restoration, and will dictate the approach which is taken in the first instance. Experience gained by industry with the implementation of Integrated Pollution Prevention Control within the European Community and similar national systems, and by the use of environmental auditing as a management tool, has demonstrated the latent benefits of good environmental practice. These benefits are felt by both operating industrial concerns, and by potential purchasers of land.

Often however the luxury of detailed information is not available at a given site, whether operational or closed, and initial steps towards regeneration involve detailed archival searches and site investigations (see Chapter 2). The careful planning and execution of these investigations at an early stage in the redevelopment of industrial and potentially contaminated land, can clarify the requirements for site treatment prior to and during clearance and redevelopment. The expense involved in these investigations, whether or not they are undertaken by a third party (often a consultant), may be viewed sceptically by developers, but their importance, and the potential for cost savings during on-site works, should not be underestimated.

16.2.2 Pre-closure scenarios

It is likely that the developments made by industry towards greater environmental accountability during their operation of processes, will have a positive effect upon the amount of relevant site information available after the cessation of operations. For facilities in the throes of closure there is now every opportunity to assess:

- the environmental effects of closure;
- the need for precautions during site decommissioning and site clearance;
- the liabilities presented by the site, and therefore the true value of the site to a buyer or developer.

In the future it is quite likely that those sites with more detailed information available, accrued through diligent record keeping and environmental management during operation, will tend to attract buyers and developers more readily than those sites where little information exists.

16.2.3 Post-closure scenarios

Much reclamation work has been undertaken on former steel and coal sites that have been vacated for some time. The avoidance of risk from ground conditions remaining after vacation by industry is increasingly important in terms of legislative compliance in Europe. The legal principle described in Europe as the 'polluter pays' (Council Directive 75/442/EEC on Waste), emphasises the increasing liability vested with industry in terms of chemical disturbance of the environment (soil, water and air). Where there is potential for contamination to be present as a result of previous industrial activity, but where the polluter is either no longer liable or no longer exists, the principle of *caveat emptor* (or 'buyer beware') applies to the purchaser. In this case, lack of information concerning a site prior to acquisition can lead to the purchase of

significant environmental liabilities, which may sometimes outweigh the asset or development value of a site.

Thorough site investigation is therefore important for the following reasons:

- for assessment of environmental, health and safety liabilities;
- as a basis for the assessment of legal liabilities;
- for the production of physical and chemical information on which to guide subsequent reclamation;
- to aid definition of the quantities of material that may require special treatment during site reclamation;
- to provide information on the opportunities the site presents for regeneration.

Where sites have been reclaimed in the past, records of the reclamation activities may also be lacking. Should these sites be required for development it would be prudent to undertake investigations to ascertain the degree of success and longevity of the reclamation works which have been carried out.

16.2.4 Investigation and reclamation

Whilst information on ground conditions will affect the future reclamation and development of coal and steel sites, the focus for reclamation is often largely shaped by financial considerations, local socio-economic pressures, and the views of the design team. Investigations may therefore be carried out on site primarily in order to fulfil a legal obligation or to accord to a particular standard rather than properly address the constraints a site may impose in the context of its intended end-use. The result is that the investigation may not provide the information the designers of a reclamation scheme need, and the reclamation scheme will not fully address the constraints imposed by the site.

In some instances site investigation has been undertaken during or after the development of a site. This wholly unsatisfactory scenario highlights a lack of understanding and/or flagrant disregard for the intended purpose of site investigation, and may lead to severe legislative and financial penalties if problems are subsequently encountered.

Innovative approaches to reclamation, involving the reuse, retention and/or treatment of materials on site offer schemes new possibilities, and the opportunity for designers and contractors to create valuable selling points for completed sites. Increasingly the market for land and buildings will be manipulated by environmental factors such as the embodied energy of building materials and the environmental approach taken towards development. A more environmentally aware approach towards development may include not only considerations of the success of the finished scheme itself, but also the measures taken towards treating or controlling contamination on site, and the minimisation of local environmental disturbances during the reclamation.

16.3 Site clean-up

16.3.1 Pressures for decontamination

Chapters 2, 11 and 12 in particular have highlighted the importance of ensuring the chemical stability and quality of the ground during reclamation and after development. The need to set higher environmental standards has been largely brought about by legislation following health, safety and environmental issues, both at a national and a European level. In turn this pressure has led to investment in the development of new technologies for dealing with contaminated land and waste materials, and this trend is likely to continue, with country by country demonstration of new technologies and the gradual acceptance of a wider range of choice in this field. This choice in itself is making the decision processes behind reclamation design more complex, and a broader understanding of decontamination technology more essential.

16.3.2 Publicly-funded reclamation

Whilst there is a justifiable reluctance for financial assistance from national governments and the European Commission for the decontamination of contaminated sites in Europe on an *ad hoc* basis, there are circumstances under which public funding for site clean-up will continue to occur. These circumstances are likely to be confined to those sites which:

- were publicly-operated industrial concerns;
- were operated by industrial parties who are now bankrupt, extinct or otherwise untraceable;
- are sites of national importance, where the polluter is not in a position to pay for remedial action;
- are sites that have been purchased by public bodies, often regional councils, for future development.

Often public funds for the reclamation of derelict and contaminated land are facilitated through governmental departments or agencies. In the United Kingdom, for example, funds may be made available through regional councils via the Department of the Environment in England and Northern Ireland, the Welsh Development Agency, or Scottish Enterprise. Similarly, in the eastern part of Germany the federal government has operated a scheme whereby certain organisations are exempt from the costs of clean-up of sites which they have occupied. These costs are then covered by the Treuhandanstalt and the region involved. France too administers public funding for reclamation through its regional Etablissements Publics, and in Denmark sites contaminated prior to 1972 are eligible for remedial action funded by the government's Environmental Protection Agency.¹¹⁷

Increasingly, publicly-funded schemes in Europe reflect interest in the use of new technologies to overcome difficult ground conditions, and many states have funding schemes that specifically recognise and fund these new technologies.

Publicly-funded schemes often demand a proportion of the funding to be supplied from local government budgets in the areas concerned, which thus provides impetus to projects through local incentives.

16.3.3 Insurance

The issue of insurance has not been dealt with in specific chapters of the book, as it permeates almost every aspect of reclamation, from client-contractor liability during on-site works to long-term liabilities after reclamation has been completed.

Increasingly, insurance advice is likely to be taken by landowners and industrial operators in order to safeguard environmental liabilities on reclaimed land, and it is pressure such as this that is likely to require permanent, failsafe options for reclaiming despoiled land in the future.

16.4 The product of reclamation

Any reclamation is geared towards the creation of an improved environment, usually linked to a specific end-use of the site. Such end-uses range from low impact, vegetated open space to high impact building developments, such as for housing or industry. These end-uses are in themselves the ultimate test of the success or failure of a reclamation scheme, and so success becomes a function of site use.

Poorly designed schemes have failed. These failures teach hard lessons regarding the consequences of low standards of reclamation. Conversely, successful schemes are often overlooked because they have achieved their aim of creating a new environment that bears little resemblance to its former condition. The results of past reclamation practices serve as monuments to successes and failures in this respect, and this should not be forgotten.

In order to illustrate some of the approaches to reclamation on land used by the coal and steel industries, Chapter 17 of this book illustrates some specific case studies from member states of the European Community.