BERNARD M. FEILDEN

Architectural and urban conservation
A review of the state of the art

The author reviews the current situation in architectural and urban conservation, identifying the causes of decay in buildings and historic town centres.

The computerised documentation of our historic buildings is essential in order to use scarce resources to the best effect. There is a need for scientific evaluation of traditional building techniques and recognition of the problems for the survival of building craftsmanship linked to the supply of suitable materials for conservation of historic buildings.

Conservation of our built heritage should be based on a multidisciplinary approach with a central body financed by Government to represent all aspects ranging from town planning with the preservation of historic buildings to prevention of damage to their contents by control of their internal environment. Historic centres of towns need this multidisciplinary approach by teams led by independent consultants employed by local authorities as in the case of Chester, Chesterfield and Wirksworth all of which were successful. In the future efforts must concentrate on revitalising the industrial cities of the north of Britain.

What has caused the destruction of our architectural heritage? Obsolescence, decay and neglect of buildings are normal and combine with man-made causes such as atmospheric pollution, vibrations, vandalism, arson and war. These have all played their part in the past but in our own time the requirements of the motor vehicle, and to a lesser extent of aircraft, have been major influences, together with commercial development, in the destruction of our historical centres. Large scale, inhuman building complexes and poor building technology have turned the public against these destructive influences and, through the conservation movement, citizens have tried to maintain a sense of place, identity and continuity by the preservation and rehabilitation of towns and buildings.

There is a danger in going too far and trying to turn historic town centres into museums by adopting a policy of preservation at any price. Decay of materials is inevitable and can only be slowed down. A true conservationist recognises that change is a law of life; that there comes a point beyond which a building cannot or should not be preserved, when it should make way for something new which, well designed, could enhance architectural values. The aim should be to leave for posterity a better town or city. Then the whole calculus of human effort that goes...
Fig. 1 (top) Rome has had a successful policy of town planning control with regard to heights and bulk. No tall buildings diminish St Peter’s, none break the skyline of the Piazza Navona.

Fig. 2 (above) In Glasgow Alexander (Greek) Thomson’s masterpiece of his Caledonian Road church 1956–7 has been virtually destroyed by transportation planning, leaving it derelict and unusable on an inaccessible traffic island.

Fig. 3 (right) Thomson’s Vincent Street Church has fared better, but the tall building behind lessens its architectural impact.
into making and maintaining it will add to its beauty. for the city can be man's
finest creation.

The public reaction against the destruction of our cultural heritage and its
struggle for higher environmental values is now evident on such a scale in
developed countries that we can justifiably feel optimistic. Citizens are trying to
save innumerable buildings, quarters of towns, historic centres, archaeological
ruins and areas of natural beauty from permanent destruction. The conservation
of cultural property is reaching a point where large numbers of people and the
majority of governments have begun to think the subject important enough to
warrant their serious consideration. International conventions and charters, such
as the Venice Charter of 1964, are designed to guide this activity.

Perhaps the most pressing field that needs development is the management of
historic centres, but this can only be effective if the basic town plan is well
conceived and takes due note of the individuality of the town and the
characteristics of its architecture. Following a review of the situation in Britain, the
Council for British Archaeology, has pointed out, in a discussion paper prepared for
the Historic Buildings and Monuments Commission for England, that the
essential need now is for a comprehensive, coordinated data system to make
possible the proper management and understanding of historic buildings and
conservation areas. Appendix I refers. With integrated and compatible data bases
it will be possible for town planners, architects, art historians, archaeologists and
administrators to use the relevant facets of the documentation, which could be
constantly updated. Establishing a system that is simple, flexible and not too
costly is not easy, but the International Centre for the Study of the Preservation
and Restoration of Cultural Property (ICCROM) has tested one such system
produced by the International Building Record and found it equally applicable to
the needs of developed and developing countries, with immediate benefit in each
case. This system is being used to record OS/RCHM entries and may also be used
by the Courtauld Institute.

Architectural conservation in developing countries

In developing countries work on historic centres and the implementation of
projects is severely handicapped by the shortage of trained town planners,
architects, art historians, archaeologists and administrators who understand and
relate to the indigenous culture and history. All too often a well trained
professional is seduced from his work in conservation by the higher salaries
obtainable in new industry or contracting. There is also often a lack of the basic
archaeological and art-history data that enables sound value judgements to be
formed. This cultural infrastructure is essential for both conservation and the
education of citizens.

It is frequently found that the citizen and politician have been indoctrinated
with the idea that everything industrial is to be equated with progress and rising
standards of living. Indeed, in some developing countries it is considered more
prestigious to have a hot corrugated iron or asbestos roof than one made from
cool tiles or thatch. Lack of appreciation of the sophisticated technology of
Fig. 4 (left) The centre of the historic city of Cairo teems with life but urgently needs a conservation programme to save its magnificent monuments.

Fig. 5 (bottom left) One problem is that the water table has risen due to insufficient drainage. This mosque is now flooded.

Fig. 6 (below) Following the rise of the water table came problems of rising damp and crystallisation of ground salts.
traditional buildings has had serious cultural and economic implications in these countries where valuable historic centres will soon be lost unless action is taken. There is a real need for an appropriate theory of conservation to guide the multi-disciplinary work of professionals and the actions of line management and craft workers.

In some places rapid partial industrialisation has resulted in the loss of traditional techniques of manufacture and craft skills. Nearly everywhere there is a lack of scientific analysis of these traditional techniques and a failure to understand how they function. For example, animal glues, natural resins, tree saps, sugar cane juice and cow dung are frequently added to lime mortar, but their chemical functions have not been analysed. On the other hand there may be failures or lack of durability in traditional materials which require a scientific investigation to identify the causes and suggest improvements.

Standards for the use of new building materials and of chemicals need to be established in each climatic zone. Algae, bacteria, fungi and other micro-organisms and lower and upper plant growths as well as insects and animals all cause decay of buildings: scientific studies are needed to discover how to counter their attacks and reduce their destructive effects. Caution is essential in using chemicals for this purpose as they themselves may be dangerous to both man and beast and have bad side effects on the environment. Man-made threats such as the siting of industrial complexes in the wrong place are common, and alterations to water levels by dams and irrigation will all affect conservation work, whether in developing or developed countries. Perhaps the most universal problems arise from shortage of funds, of suitable manpower and of traditional materials. Shortage of funds may be due to a lack of understanding of the advantages of conservation and resistance by entrenched property owners who are seeking redevelopment as a means of making unearned fortunes.

These difficulties in executing conservation schemes are not in fact peculiar to developing countries for many are relevant, to a greater or lesser degree, to developed countries where the long term effects of industrialisation have led to shortage of craft workers and traditional materials and together with the industrialised organisation of the building industry, have led it to fail in its maintenance tasks.

**Architectural conservation in industrial countries**

In developed countries many of the problems that are latent in developing countries have become more obvious. However, the UN terminology ‘developed’ and ‘developing’ is not really relevant as some ‘developing’ countries are more developed in the field of conservation as they retain more of their traditions intact.

Well-meaning administrators can throw more money at you for conservation than you can use properly or, possibly due to changes in government policy, sadly starve you of much needed money to finish a project; and government standing orders with regard to contract procedures, which may be admirable for a new building, can greatly increase the cost of conservation. But the worst cause of
increased cost is undoubtedly 'stop-go' financing on an annual rather than medium term basis.

Much of the difficulty that administrators face lies in financial control which requires accountability; but it should not be forgotten that in architectural conservation the historic building, not the administrator, is the real client to whom the architect reports. This is not a plea for architectural license, for the architectural conservator has to satisfy much more rigorous critics than do other architects, but it is rather to emphasise that with clear thinking the conservation problem can be defined, the objectives determined, the method of presentation agreed with values stated in order of priority and the project executed under the control of the architect, working within a budget previously agreed by the administration. For efficiency the cash flow must be steady and a team of the right size and qualifications found to execute the project. It takes a very skilled and experienced administrator to ensure that all this happens, with the danger that if he is that good he gets promoted and is lost forever.

At a political level there is often a conflict of objectives between central government and local interests. A mayor can view an historic building as an impediment to the development of his town centre, while the national interest recognises the building as the sole surviving example of the work of a very special architect. Landowners find ancient buildings a nuisance as they encourage trespassers and interference: certainly they are never educated to view a monument as an asset—an outlook which could have saved Sir Christopher Wren's Temple Bar long ago.

Fig. 7 The rehabilitation of Low Pavement in Chesterfield depended on providing a covered mall with retail shops either side. In this case the infrastructure could be comprehensively planned.
Fig. 8 The shops in the street together with the Market Hall were rehabilitated instead of being demolished because conservation studies by independent consultants showed that conservation saved money compared with a massive rebuilding which would have taken over half the market place. Limited access and restricted delivery times were part of the overall plan.

Fig. 9 Before the rehabilitation there was planning blight. Note the Market Hall had lost its cupola above the clock.
The illusion that conservation is costly needs contradicting. Sadly, this illusion often results from administrative failures to understand the problem. Introduced early enough into the planning or execution of projects, conservation can save large sums of money. For example, at Chesterfield, in Britain, it was shown that existing buildings could be rehabilitated at two-thirds of the cost of a new building of the same area, with the additional saving of expenditure on the infrastructure of roads, sewers and services.

Rising standards and ever more restrictive building regulations mitigate against rehabilitation of much of our urban fabric. Government gives grants to assist in the conservation of historic buildings, but often the rules are too complicated. Statutory inquiries too delayed, inspectors too slow and the terms, when they emerge, distasteful to the property owners. By charging Value Added Tax on repairs to historic buildings, as happens in Britain, government takes away with one hand what it gives with the other. The tax relief given to owners of historic buildings in the USA is, in my opinion, a far more effective way of stimulating conservation, especially as it is controlled by standards and guidelines which are exemplary.

In developed countries the historic buildings architect is faced with a shortage of people who possess craft skills in the use of traditional materials. Taking materials first, metrification has altered the sizes, by just a little, of all standard bricks in the United Kingdom. Traditionally, there were many sizes of bricks and they were usually made of local clays and fired in kilns close to the building site. Nowadays a hoped for match for old material has to be found and often transported many hundreds of miles and, being made of different clays, the new bricks will never weather in the same way but, being of a special 'historic' size, they are made at greatly enhanced price.

Local brick kilns and lime kilns have both disappeared and, as hydraulic limes are no longer produced and marketed in England, we have to look to France. Also, there has been a great failure to appreciate the merits of lime mortars, mainly because of the aggressive marketing of Portland cements, whose qualities may appeal to the local builder but certainly not to the lover of historic buildings. The use of Portland cement, which is irreversible, has probably done more damage to the historic building from the Acropolis onwards than any other identifiable cause. Builders like cement because it is quick to set and very strong, and of course if no architect is involved to explain the situation, the building owner is apt to believe in an honest and practical man. Yet, unless it is used properly, Portland cement is one of the worst enemies of historic buildings and its wrong use highlights one of the major problems which the conservationist has to face.

Lime mortars with a pozzualianc additive are quite different. They are durable and can become very hard in time, but when newly laid are flexible because of their slow setting properties. When set they have an admirable characteristic of sealing any hair cracks that may have occurred. A lot of scientific research will be necessary before we really understand the complex nature of lime mortars. The problem is considerable, for each different limestone produces a different burnt lime. The US National Materials Advisory Board's report of 1982 on Conservation of
Historic Stone Buildings\textsuperscript{3} is a valuable contribution to understanding this complex problem.

Due to industrialisation of building we are now short of many traditional materials with unique qualities including, for example, wrought iron, crown glass, and oil-based paints. The introduction of resin-based or latex paints has had disastrous effects on historic buildings. The pigments used are different from those in oil paints and are often based on dyes: their dispersion is much more regular so robbing paint of its interest. The change of the medium from oil to a more durable resin has made maintenance much more difficult as the paint does not reduce to a powdery surface but cracks and peels, making subsequent remedial work impossible unless one starts again. The aim of industry is to produce ‘maintenance free’ products, which means in fact that it is impossible to maintain them, whereas an essential aspect of historic buildings is that they were designed to be maintained. A well maintained object is a beautiful object. In the medium and long term maintenance is a vital consideration.

The building industry has not yet been able to organise maintenance properly, consequently giving untold inconvenience to the public. However, in Holland there is a scheme for annual inspections of historic buildings by qualified architects, partly subsidised by the Government. This has been successful in initiating a policy of preventative maintenance. The Church of England has also, over the last 25 years, run a quinquennial inspection scheme which has prevented many a mediaeval church building from collapse and greatly reduced the cost of caring for its rich heritage.

The tragedy of the modern building industry is that it has discarded so many traditional materials and practices without fully understanding their working, significance and compatibility in the totality of an historic building, which by its mere survival is a laboratory of experience, from which we may learn how buildings have been used and abused. It must be stated that any new material must be tested very carefully before it is used on a large scale in an historic building; in fact it is wise only to use traditional materials unless it can be shown that they have failed.

Industrialisation has brought many other problems to the historic building conservator. For instance, virgin forests have been consumed and no substitutes can be found for the timbers that are needed to restore some of our historic buildings. To quote an example, six oak trees each 17m in length and 46cm \times 54cm were needed to reconstruct the roof of the Central Tower of York Minster, but only one such beam could be found in Britain. It is essential that some forests of fine timber should be set aside for future conservation work.

Industrialisation has also almost priced the craftsman out of existence. That this raises a complex social problem I realise, but if one wants to keep craftsmen for conservation they should be paid a wage somewhat above the industrial average. This is done in Poland, where it was realised that a programme of architectural conservation was vital to the survival of the nation after the catastrophes of World War II. The PKZ\textsuperscript{4} organisation, which was set up to meet the post war challenges, had over 9000 artisans earning more than the industrial wage and some 2500 university-trained professionals engaged in a comprehensive
restoration programme. In the Polish case conservation was a vital element in the natural regeneration of the country; if relatively poor nations can do this, why cannot the richer nations do better?

It is evident that technical changes in the building industry have resulted in a decline in demand for skilled craftsmen. With construction of elements off the site the industry has wanted workmen who can assemble prefabricated units and has reduced a whole range of specialist trades to wet and dry operatives. Bonus schemes have tended to reward muscle instead of skill, producing low standards of workmanship, anything requiring time and skill tending to be considered prohibitively expensive. Ironically the skilled older men are given difficult finishing jobs and get paid less than the muscular operatives, yet as they get on in age and are not replaced, so we lose their expertise. The problem is how to replace what we have lost; how can we emulate the plasterwork and decorative arts of the Renaissance and Baroque or even the neo-classical and Victorian eras?

Apart from Japan, where since 1929 master craftsmen have been classified as 'living cultural heritage', no developed country has taken adequate measures to preserve the knowledge held by craftsmen. Much of this knowledge cannot be communicated by writing or even analysed by scientists: it can only be handed on from master to apprentice. Unfortunately developed countries have superseded this craft system by an inadequate academic approach. However, the wheel of
time continues to turn. In India a craftsman's three sons had become respectively an administrator, a doctor and a lawyer, whereas in Holland the fathers of conservators in training were lawyers, doctors and administrators. Developed countries are just beginning to value craftworkers, perhaps because of their scarcity.

One must emphasise that without craftsmen the historic buildings architect is nothing, but craftsmen will not survive unless properly paid, given due status and continuity of work. Without them we will have eaten the seed-corn of the future, a course of action resulting in cultural famine. The Council of Europe has recognised the problem of training by establishing a small centre on the island of San Servolo, near Venice, which gives short specialist courses to 40 or 50 craftsmen each year.

However, this is but a drop in the ocean for the shortage of suitable craftsmen and building firms for the maintenance of historic buildings is making the architect's task harder and harder. He has to know more about the craftsman's job and techniques in order to get good workmanship even at a quite ordinary level. In the pre-industrial period maintenance was normal building routine because the techniques of construction and repair were virtually the same. Nowadays there is no such similarity and maintenance must be studied scientifically. Unfortunately, architects in developed countries are today by and large unaware of the maintenance factor when making new designs, while maintenance is usually left to so-called 'practical men' who do not understand the nature of historic buildings and rashly use incompatible materials. Some institutions that ought to have higher standards employ untrained maintenance personnel at sub-standard wages or well-meaning volunteers who scarcely realise the implications of their interventions.

Except in fine art, conservators generally find that their skills are inadequately recognised and that there is in consequence a lack of desire to pay them at a proper rate. They are nevertheless convinced that their advice, if followed, will maintain the real, or cultural value of property, whereas to the owner who seeks such advice the professional fee is real but unfortunately the savings seem imaginary. Conservators suffer from this and gain little satisfaction from saying 'I told you so' when their recommendations are ignored and disaster predictably occurs.

Part of the trouble is that the conservator is so interested in his work that he is afraid to charge the same rates as a plumber; he also lacks continuity of work and security of employment. More fundamental, however, is the fact that he is neither scientist, nor artist, nor craftsman, but a hybrid who does not fit into well defined patterns. This problem affects government as most administrators are unhappy dealing with artistic matters and still tend to look on craft workers as of a lesser order than scholars. The scientist of course is respected, but conservators are only applied scientists and there is no great technological spin off from solving their unique problems. The American Advisory Council for Historic Preservation has been invaluable in studying the problems faced by conservators of cultural heritage and in proposing solutions to them. Conservation everywhere needs such a central caring body to represent its justified interests.
The need for a multi-disciplinary approach is not always appreciated even by conservators. However, when analysing what went wrong one often finds that, for example, a town planner forgot to consult an archaeologist and a landscape architect, or that an architect failed to get art-historical advice. Just as consultation and getting second and third opinions is accepted as normal practice in medicine, so we must persuade the public that this is also necessary in conservation. Architectural conservation is too serious a business to leave to the judgement of one man. There must be collaboration. In particular, architectural historians must be brought in to perform a responsible role through an understanding of the ethics and economics of conservation.

As I have outlined, in developed countries some of the challenges faced by architectural conservators can be considered under six main headings. The first five are:

1. Lack of an integrated approach by government;
2. Lack of recognition of skills needed for conservation;
3. Shortage of craftsmen and materials;
4. The organisation of the modern building industry is not related to maintenance;
5. Difficulty in quantifying benefits of conservation.

Each of these five presents challenges which must be overcome, but we should recognise the help that the Cultural Heritage Division of UNESCO has given in meeting them, through direct action and by the indirect support of ICCROM and non-governmental agencies such as ICOMOS, ICOM and IIC.

However, perhaps the sixth and most fundamental challenge relates to education. Children are taught to be ‘numerate’ and ‘literate’, to read poems and novels, but they are not taught to ‘see’ and understand what they see. When children can read an elevation of a building like a poem and follow a street, reading it like a novel, we will get true environmental consciousness. History should be taught to give perspective and judgement. If, when these children become citizens they can each leave their own town a little better place than they found it, they will have fulfilled their duty to posterity. The challenge is for us to do our duty and manage our cultural heritage beneficially.

Urban Conservation

Management must be based on a sound town plan giving due emphasis to conservation, for this is the means by which the plan is to be implemented. Existing laws and regulations must be used with intelligence and imagination in order to put what exists to the most advantageous use of the occupants of an historic urban centre. Often the inhabitants of the centre do not know what they value until they have lost it, so management must include the education of the public. Frequently, too, persons in powerful and locally influential positions see short-term gains as being more important than the long-term amenity of the inhabitants and the historic centre. Generally, however, central government, recognising the national interest, will support conservation.
The threats to conservation of historic cities come from many causes often acting in combination. These include demographic factors such as increases in population and the drift from rural areas to urban centres; the increasing use of private motor transport which penetrates areas never meant to be used by motor vehicles and consequently creates parking problems; individuals' profit from development at the public's expense, leading to high-rise buildings which
aggravate both the traffic and parking problems, change the micro-climate and produce atmospheric pollution and destructive vibrations.

The fundamental structural features of the urban fabric such as the layout of a town’s streets and spaces, its architecture and the integration of individual buildings into larger clusters, the coherence of the urban texture and the special character of the pedestrian network must be taken into account. The specific constraints of an old town in terms of scale and architectural typology will allow only a limited amount of activity directly related to vehicular traffic. The most urgent task is to define new development goals and new strategies in order to coordinate and harmonise the dynamic development of the town with the preservation and rehabilitation of the existing fabric.

It must not be thought that conservation restricts the living standards of the occupants of old buildings. In order to rehabilitate buildings successfully it is essential to study their typology. The first step is a visual inspection of each building to discover its structural condition, noting all its defects as well as its good points. Superficial blemishes and lack of maintenance often persuade people that buildings should be pulled down. However, if the foundations, walls and floors are in reasonable condition, rehabilitation is generally possible even if it means re-covering the roof and providing all modern services. The closer the new use of a rehabilitated building is to its previous one the less the conservation work will cost and the better for the urban plan as a whole.

However, there is a challenge implicit in meeting the rising standards of modern lifestyles. If the occupants of a residential area are to have cars, provision must be made for parking not too far away. The infrastructure must meet their needs for water, electricity and possibly gas, and deal with sewage and rain water disposal. Buildings and their layout must be noise resistant if acoustic privacy is to be respected. In fact, some regulations will be necessary to control noise and people should be encouraged to use headphones rather than pollute the environment with excessive noise, which certainly should be prohibited after 10 pm when some people want to sleep.

An historic centre is a living organism and has dynamic growth forces—as people must live, work and have their pleasure therein. The problem is to identify the life forces of trade, services, and production which give the centre its dynamism and to encourage these and direct them by minimum intervention at key points. These life forces are like a river which can be controlled by small alterations which cause the desired changes further downstream, the current of the river being the time factor in this metaphor.

For successful management, certain essential steps are necessary. The population, including school children, must be invited to participate and should be consulted through their established institutions. They must be listened to, for even if one cannot promise to do what they suggest, they will be more likely to support the plan if they have been consulted and their needs understood. This takes time, but it is time well spent if it ensures execution of positive proposals. There are always detailed obstacles to implementing plans, arising from land ownership, family inheritance and other legal agreements with regard to lease, rents and land values. Some areas will be found much easier to deal with than others, and so a start should be made here.
In some places obsolescence will assist implementation, in others over-occupation with consequent loss of amenity and privacy will precipitate action, although displaced persons will have to be rehoused. In principle, people should not be displaced and the danger of what is called ‘gentrification’ should be avoided. This means that small schemes which do not disrupt too large an area are to be preferred. Certainly, a long delay between initiating a local plan and its implementation must be avoided as this produces the most deadly of all urban diseases, ‘planning blight’. Conservation can often be made to pay and in this respect semi-private agencies such as housing associations should be encouraged as they work well on the small scale, and being run by public spirited citizens, they involve the population in what must be a combined effort with the local government if it is to succeed. The establishment of a ‘rolling fund’ for conservation of ‘islands’ of housing would be a useful measure, especially if there were two or three housing associations each with slightly different objectives as this would ensure variety and might even produce a healthy spirit of emulation. Management must therefore set up small scale enterprises in order to get the right scale of rehabilitation activity, relating it to that of the historic centre. Government can help with subsidies and tax reliefs which might well be the method of persuading private property owners of the advantages of rehabilitation as opposed to redevelopment or simple inaction. If tax reliefs are used as an
incentive. Very simple rules, concerning what should and should not be done, must be laid down in accordance with the principles of the Venice Charter. Incentives should also be given for the maintenance of existing property.

In many cities the building and health regulations appear to work against historic buildings. Codes of practice are designed to cater for possible failings in the construction of new buildings. An old building which has lasted 100 years has generally proved that it has met the spirit of the requirements of the code, if its use is not changed, and provided it has been well maintained and the ends of timber beams are not rotten. When uses are changed, nominal floor loadings are generally increased and structural problems begin to multiply. Where codes must be respected is in matters concerning fire and health, including proper provision for refuse collection. The whole ecology of refuse collection and disposal is a subject of special study as it can have some strange economic side effects. Planning regulations must limit the height and bulk of any new buildings inside the historic city because, if excessive, either will destroy the visual coherence of the centre and so reduce the well-being of the citizens.

An historic city has existed by constantly renewing itself, a small part at a time, so that no stress is imposed on the citizens who retain their sense of identity and continuity. If too much is done at any one time, psychological stress sets in and can lead to wanton destruction. The design of new buildings to fit into the environment of the historic centre is an art requiring respect for existing street lines, a sympathetic silhouette and suitable massing. Large masses must be broken down and local volumetric values respected. There must also be suitable elevational treatment with harmonious materials, a typical window to wall ratio and sufficient architectural interest given by relief ornament or plastic treatment. Logically, new buildings, where necessary for the urban texture, should be designed to meet the demands of any new uses that have been identified.

If the complete redevelopment of an area is necessary, it is generally wasteful to ask developers to prepare a design as too many modifications may have to be imposed on their proposals in the public interest, resulting in a bad compromise. It is suggested, instead, that the municipality should commission the designing architect who, if he is properly advised by economic experts, can produce an efficient commercial solution that is also in the public interest. The selected developers can be asked to tender for the execution of the redevelopment scheme. This procedure was followed successfully at Chesterfield, England, where the resulting scheme was awarded the Europa Nostra Silver Medal.

A traffic management scheme with different zones of penetration is generally an essential feature of the conservation of the historic centre. Changes in traffic habits can be encouraged by the improvement of public transport, a policy with many beneficial side effects. Control of public transport and of the siting of multi-storey garages are some of the ways in which the life forces of the city can be directed into channels favourable to conservation. Other ways which have already been mentioned are subsidies and tax relief. Pure profit motives may also be harnessed successfully provided the principles of conservation are observed.

The execution of urban conservation is multi-disciplinary work, involving among others town planners; architects; engineers for structures, roads and drainage;
Friar's Quay in Norwich is a successful infill of a previously run down area in the Coslany area of Norwich. Sensitive design ensures that these dwellings fit in happily to the texture of the city.

Fig. 15 (right) Friar's Quay
Figs. 16 and 17 On investigation the Peacock Inn was found to be a mediaeval hall and was restored and turned into a Heritage centre.
Fig. 18 London Street in Norwich was the first street in Britain to be closed to motor traffic: a major event for the inhabitants. The Norwich Society entertained the Lord Mayor and councillors to tea in the street to express their gratitude. The Lord Mayor said it was the first time citizens had ever thanked the Corporation!

cost consultants; economists; landscape architects; urban designers; property managers; public health experts; transport managers; and, not least, dedicated administrators.

Rehabilitation

The conservation of historic cities needs all the skills of management because so many people have to cooperate in an operation combining art, archaeology, architecture and economics. The United States Department of the Interior standards have universal relevance, and while the guidelines are only relevant to American architecture they show how specialists can help the man in the street with his conservation problems.
Rehabilitation is defined as the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values.

The United States 'Standards for Rehabilitation' state that:

1. Every reasonable effort shall be made to provide a compatible use for a property which requires minimal alteration of the building, structure, or site and its environment, or to use a property for its originally intended purpose.
2. The distinguishing original qualities or character of a building, structure, or site and its environment shall not be destroyed. The removal or alteration of any historic material or distinctive architectural features should be avoided when possible.
3. All buildings, structures, and sites shall be recognised as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance shall be discouraged.
4. Changes which may have taken place in the course of time are evidence of the history and development of a building, structure, or site and its environment. These changes may have acquired significance in their own right, and this significance shall be recognised and respected.
5. Distinctive stylistic features or examples of skilled craftsmanship which characterise a building, structure, or site shall be treated with sensitivity.
6. Deteriorated architectural features shall be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, colour, texture, and other visual qualities. Replacement of missing architectural features should be based on accurate duplications of features, substantiated by historic, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.
7. The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage the historic building materials shall not be undertaken.
8. Every reasonable effort shall be made to protect and preserve archaeological resources affected by, or adjacent to, any project.
9. Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historical, architectural or cultural material, and such design is compatible with the size, scale, colour, material, and character of the property, neighbourhood or environment.
10. Wherever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired.

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Another useful distillation of more than 10 years' experience in rehabilitating the
The historic centre of Chester is given by the architect Donald Insall who has set out ten principles as follows:

1. **Relate to region.** A conservation programme designed to tackle the problems of any declining historic area must form part of an overall planning policy. We should first understand the whole town, the way its parts are related to each other and its role in regional and national terms. Then we can begin to understand the special pressures upon it and to identify its strengths and weaknesses. If anything is to be achieved on the ground, this broader study must be a first step and not an end in itself...

2. **Allocate funds.** A special allocation of funds is needed to get things moving. But this can do much to attract private money, so that a significant impact can be made without causing local authorities to exceed their spending targets.

Chester's decision to levy a Conservation Rate has been fundamental to success. Many local authorities could usefully follow this pioneering move. By providing a fund 'at home', the City has attracted aid from central government and has prompted valuable private investment. The budget has been regularly increased to keep pace with inflation, and any unspent balance of the annual allocation is carried over into the next year.

3. **Organise a conservation team.** Results can only be achieved when specific people are allocated for the job. An 'inside' man, such as a Conservation Officer, can provide a link between the Town Hall and the people concerned. There are advantages in having an 'outside' view as well. A consultant architect can lend stature to the Conservation viewpoint and help create a spirit of trust, when the programme is in its most critical stages. This arrangement also provides flexibility and may reduce the need to take on new and permanent staff...

4. **Hold regular action area meetings.** Setting up a working party of those concerned will enable everyone to maintain contact. Regular meetings resulting in a clear allocation of tasks will then keep things moving...

5. **Gather facts and knowledge.** To revitalise a declining area calls for a special concentration of energy and effort. Facts and informed opinions must be collected not only about the use and condition of every building but also about the hopes and plans of every owner and occupant. Situations affecting individual properties can change suddenly and dramatically; vigilance is essential if one is to seize opportunities as they occur...

6. **Declare public commitment.** Uncertainty and fear can cause blight and discourage building care. To counter these, the Local Authority must declare and publicise a clear policy for the area. In this way they can instil a sense of security among residents and users and create the right atmosphere for action...

7. **Firm strategy—flexible tactics.** Within a firm strategy, flexible and responsive tactics will enable each opportunity for positive action to be taken as it arises. Flexibility may be needed in applying housing policy, land use zoning and the criteria for grant aid...

8. **Set an example and help others to follow.** Someone has to make the first move, this must almost invariably be the local authority. It is not enough simply to produce a plan and expect private owners to start implementing it immediately. An 'exemplar' scheme will help to inspire others by showing what can be done...
9. **Guide and encourage.** To achieve conservation a local authority can use its emergency powers. Among these are Compulsory Purchase Orders and Repair Notices. But the goodwill of the neighbourhood is so important that every effort should be made to achieve the desired ends without having to resort to statutory powers. Much more often the need is to guide those who are unsure as to how to proceed and perhaps apprehensive about committing themselves to restoring and letting their premises...

10. **Enlist public support and participation.** The love of one's home and town is a deep instinct, and the public expect to have a say in matters affecting the environment. This expectation is reflected in the multitude of civic and amenity societies and residents' groups found throughout the land. Public participation from an early stage, with constant liaison and response, will succeed in mobilising local feeling. Chester calls on the services of a Conservation Area Advisory Committee and enjoys good relations with the Chester Civic Trust and the Cheshire Society of Architects. The Heritage Centre has a frequently updated exhibition displaying conservation projects and has provided a centre for discussion on major planning issues. Close links are maintained with the local press and a Newsletter keeps everyone informed of progress.'

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Insall adds 'Chester is unique. but the problems of the Bridgegate Area are typical of those found in historic towns across the country and throughout the world. Ten years of experience now demonstrates some of the ways in which we can help those neglected areas back to life. and bring out their special qualities. But this can only be achieved when money and effort are harnessed to a concerted programme of conservation action. backed by a real concern.'

Another successful scheme of revitalising a dying historic centre was carried out by the Civic Trust under the direction of architect Gordon Michell at Wirksworth in Derbyshire. The *Architect's Journal* (8 June 1983) reported that:

Gordon Michell devoted a great deal of his time in the early months of the project to meeting local people, local organisations and anyone with influence in the locality. However, because amenity societies are enthusiasts in their own field and do not necessarily give a true picture of what the community are thinking, an independent research consultant, Alan Hedges, was commissioned to carry out a survey of the attitudes and needs of the townspeople. This was based on a series of discussion groups which took place between March and May 1980. His conclusions, in order of importance of what people thought about or wanted for their town, were as follows:

1. Clean up and improve the town centre.
2. Preserve the essential character of the town, its continuity and history.
3. Rehabilitate old buildings: don't demolish them and build new developments in the old town.
4. The town is shabby and neglected, even depressing.
5. Obstacles in the way of improvement were perceived as conservatism of some property owners, distrust of change, lack of knowledge of grants and lack of suitable builders.
6. Too much uncollected litter.
7. Lack of entertainment facilities, especially for teenagers.
8. Lack of good job opportunities.
9. Danger, noise and vibration from heavy traffic.
10. Not enough off-street parking.
11. Inadequate and expensive public transport.
12. Unpleasant and vandalised public lavatories.
13. Quarry dust blocking drains and making buildings dirty, inside and out.
14. Uncompetitive, expensive shops which have a limited range of goods and are not open when people need them.
15. Lack of a community information centre. There were also the usual complaints about public services.

The team were encouraged to find the townspeople’s priorities and preoccupations coincided with their own and that they had decided on them independently.

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The objective of management should be to provide a high standard of amenity which will make a historic town centre attractive to all classes and useful for a wide variety of small scale activities. The property manager has a key role to play

Fig. 19 Trastevere is a complex of Roman, Mediaeval and Rennaissance streets through which a late nineteenth-century Avenue, the Viale Trastevere, was cut. In terms of living it is very efficient as everything except opera can be found within five minutes walk. The mixed uses contradict theories of zoning.
in coordinating the many aspects of this work. In its execution he is helped by architects and other specialists working within the overall plan. In view of the complexity of this work it may be wise to divide the historic centre into several action zones with a team of professionals allocated to each.

In England certain urban conservation problems are acute. In view of the pressures put on historic centres by hypermarkets and warehouse sales areas there is urgent need for impartial shopping studies. The empty floors above shops, once used for residential purposes, are not healthy for town centres and present a problem that can only be solved by finding alternative uses and providing separate access. Rent control legislation and the protection of tenants rights of occupation has helped sterilise such properties and inhibit the beneficial use of empty accommodation in the past, but if the concept of flying freeholds held more general acceptance it might be possible to make these spaces attractive to use. There should be no presumption against mixed uses and such spaces could be utilised as single persons’ dwellings or small offices. Mixed use gives urban life a rich texture and is conducive to efficiency. To support this point one only has to compare and contrast life in Trastevere, Rome, with that of some new town. In historic towns there is generally a need for self disciplined gradual change with each period making its own valid contribution. Community spirit in the street or neighbourhood has to be encouraged so that even points outside normal development control are considered—such as painting schemes, where discordant colours can spoil the general amenity at least temporarily or where inappropriate dressing up of buildings can do more fundamental damage to local harmony. If change is required it should be coordinated.

The most important aspect of architectural and urban conservation is to have clear and well defined planning objectives, intervening only at key points, and to maintain good communications with the inhabitants so that they can develop a pride in their own city and each by his own actions can improve it to maintain and even enhance its beauty. I submit that in Britain we must concentrate on the rehabilitation of our northern industrial cities.

APPENDIX I
A Heritage Data-Base for England

1. Proper management and understanding of historic buildings and monuments is only possible if decision-making is based on documentation that is both comprehensive and reliable. Buildings and monuments must be evaluated in their historical, topographical, and administrative contexts, taking account inter alia, of relative frequency and distribution, the contribution to historic towns and landscapes, archaeological, historical, or artistic significance, and implications in terms of strategic, structural, or local planning.
2. At the present time there is a multiplicity of records, registers, and archives being compiled and maintained by a variety of organisations. The most important are:
   i. Management computer file on scheduled ancient monuments (DoE)
   ii. Lists of statutorily protected buildings (DoE)
   iii. County-based inventories (RCHM)
   iv. Ordnance Survey card index (now RCHM)
   v. County Sites and Monuments Records (County Councils)
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vi. Archaeological bibliography and abstracts (CBA)
More specialised records are maintained by bodies such as the Medieval Village Research Group, the Moated Sites Research Group, the Vernacular Architecture Group, Cambridge Committee for Air Photography.

3. The degree of coordination between the data bases is low. For example, County SMRs (v) incorporate data from most of the others, to varying extents. The results of field surveys undertaken at County level are incorporated into SMRs, but not necessarily into the OS/RCHM index, and are not correlated, where appropriate, with the DoE records.

4. There is a considerable amount of duplication, especially in relation to literature searching, which is currently carried out by the CBA, RCHM, and County SMRs.

5. A number of these data-bases are either computerised or in the process of being computerised: the DoE scheduled monuments file, the OS/RCHM index, and several County SMRs. However, little provision has been made for compatibility between these records.

6. It must be axiomatic that decisions relating to the conservation and management of historic buildings and monuments are taken on the basis of their historic significance, both individually and in groups. Academic research in universities and elsewhere is heavily dependent on the existence of sound data bases. Without continuing research of this kind it is difficult to establish and maintain criteria for preservation, conservation, and presentation.

7. A comprehensive and coordinated system of data-bases is an essential for those responsible for the management of buildings and monuments, at both national and County level, for planning decisions, and for the academic research that underpins administrative decision making. There is thus a strong case for an initiative to be taken by the Historic Buildings and Monuments Commission for England to bring together representatives of the principal bodies concerned, in order to formulate a general policy and in due course to establish effective working links, to allocate specific tasks, and to agree upon responsibilities for funding.

Council for British Archaeology
112 Kennington Road, London SE11 6RE.
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NOTES AND REFERENCES

1 The Venice Charter for the Conservation and Restoration of Monuments was approved by the II Congress of Architects and Technicians of Historic Monuments, Venice, 25–31 May 1964.

2 Ordnance Survey/Royal Commission on Historic Monuments.


5 United Nations Education, Scientific and Cultural Organisation (UNESCO); International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM); International Commission on Monuments and Sites (ICOMOS); International Council on Museums (ICOM); International Institute for Conservation (IIC).


9 Ibid., p. 90.

10 Architects Journal, 8 June 1983.