

## Zacs, Oxford:

### The Restoration of 26, 27 Cornmarket Street and 26 Ship Street

by

F.W.B. CHARLES

*This is an account by the architect of the restoration of what remained in 1984 of the timber-framed structures of the fourteenth-century New Inn, later the Crown, Blue Anchor or, simply, Anchor Inn of Oxford, and of two buildings fronting the Cornmarket, occupied since the late nineteenth century by the Zacharias firm, well known as 'Zacs for Macs'. Jesus College, the owners, appointed the Oxford firm of Architects Design Partnership for the rehabilitation of the shop and provision of students' accommodation on the top floors. When, on the recommendation of Oxford City council, our appointment as Consultant Architects for the medieval timberwork followed, we were able to prepare a joint scheme that went considerably beyond the limits of archaeological conservation—that is, to consider the building as primarily a historic document in which all its contents are more or less of equal value and whose timbers are better left as found than subjected to repair or replacement, even regardless of structural requirement if that can be fulfilled by other means. Instead we were able to restore the structural integrity of every frame and re-expose the timbers, old and new, as the building's architecture.*

*The co-operation of English Heritage, Oxford City Council and other bodies considerably helped to make sure that conservation in other respects, especially of plaster and wall-paper that could not be retained or reinstated in the building, was not overlooked. Similarly we were well served in documentary research. As a whole, this venture might be a model for other restorations, but only of course for buildings of the so-called timber-frame tradition and only if evidence for its faithful reconstruction is available. Masonry buildings are a completely different story.*

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F.W.B. Charles is a practising architect, well-known both for his professional work on historic, especially timber-framed, buildings, and for his writings on the subject. He was consultant architect for the restoration work here described.

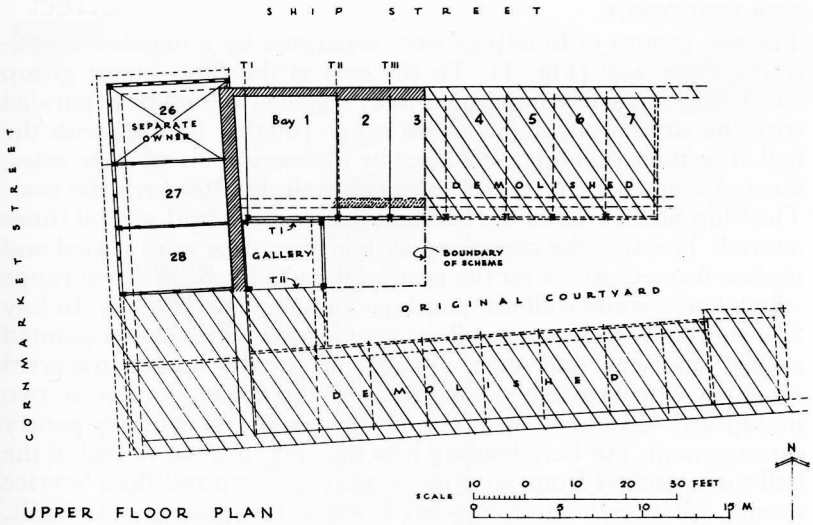


Fig. 1  
Diagrammatic plans showing original and surviving buildings

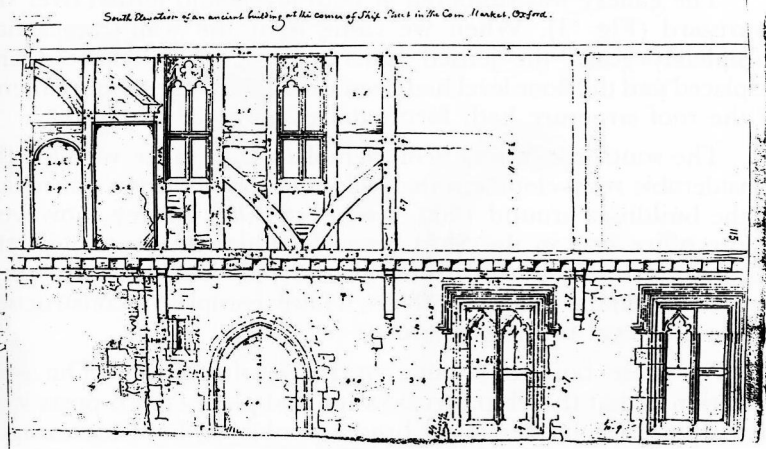


Fig. 2  
Buckler's drawing showing the courtyard elevation of bays 1-4 of the Ship Street Range  
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## THE BUILDINGS

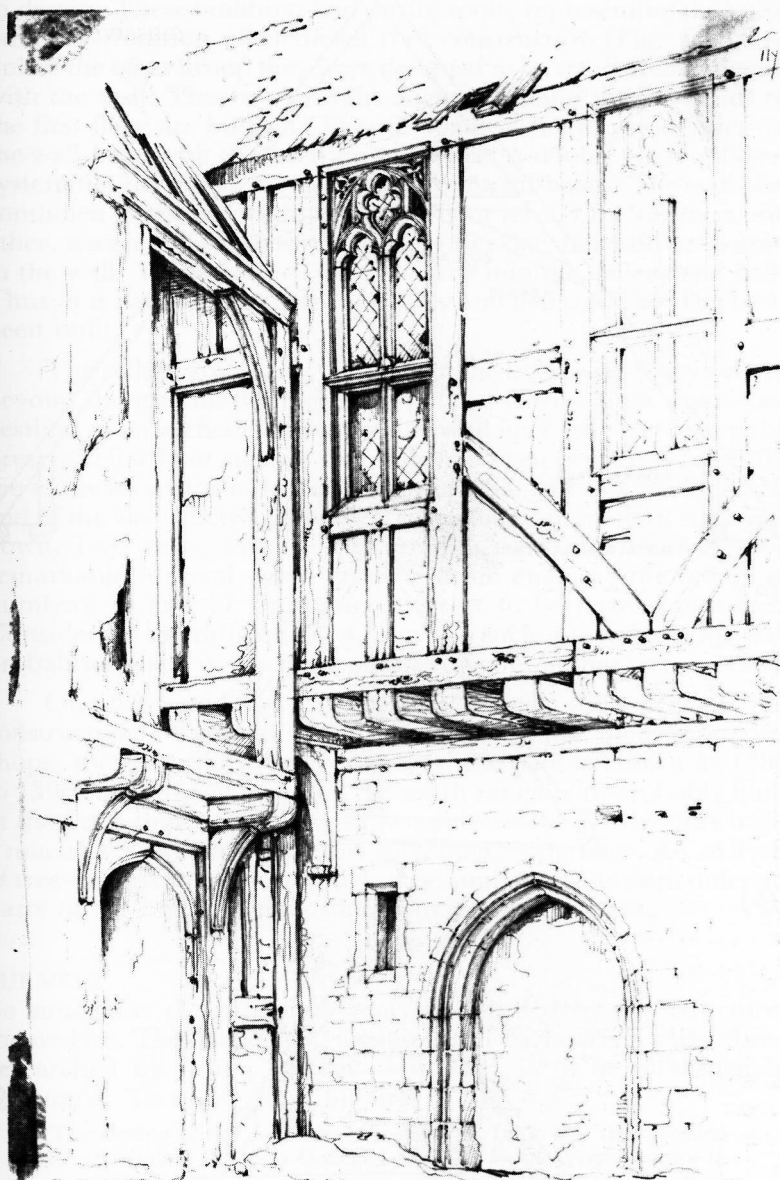
The two groups of buildings were separated by a massive north-south stone wall (Fig. 1). To the east is the Ship Street group consisting of a seven-bay upper hall, a gallery of two bays parallel with the stone wall, and a south range roughly parallel with the hall. The three buildings, enclosed by masonry walls on three sides, formed a narrow courtyard converging slightly towards the east. The Ship Street wall of the hall had been rebuilt and several times altered. Towards the courtyard all the structures were jettied and timber-framed except for the ground floor of the Ship Street range which had a stone wall also on the courtyard side (Fig. 2). In bay 2, from the west, was a small square-headed window and pointed arched doorway and then a series of square-headed traceried windows with heavy hood-moulds. At the upper floor were two juxtaposed doorways resembling the medieval buttery-pantry arrangement, but here leading into the side, instead of end of the hall and reached from an outside stair and ground floor service rooms, all of which disappeared when the gallery was built. Alternatively, the door with arched head may have been for the guests and the other for service. It is significant that bay 2 which the doorways enter is considerably longer than any of the other bays. This therefore was probably the hall proper separated from the guest accommodation in bays 2 to 7 by a partition, of which vestiges had survived. There was a timber square-headed traceried window in each of the bays.

The gallery was timbered at both levels and jettied over the courtyard (Fig. 3). When we came to it the wall-frames had completely gone, the jettied joists were severely depleted and displaced and the floor level had been raised; only the main elements of the roof structure had, fortunately, survived.

The south range had been demolished to make way for the considerable redevelopment that followed Jesus College's purchase of the buildings around 1900. Architect E.W. Allfrey, however, whose office was in the Ship Street building at the turn of the century, recorded it, and from his and J.C. Buckler's drawings made between the 1820s and 1860s, a fairly complete reconstruction of the medieval inn is possible.

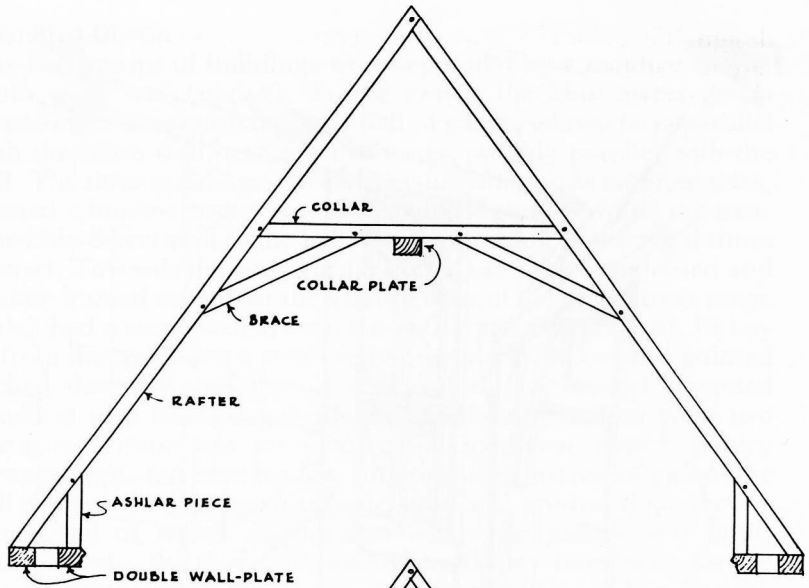
All these buildings have, or had, rafter roofs. The only variation is that the Ship Street range had plain crown-posts with ashlar pieces and rafter-collar braces (soulaces), forming a wagon vault (Fig. 4a), while the gallery and south range had capped octagonal crown-posts and swept braces to the collars and collar-plates (Fig. 4b).

The Cornmarket shops, on the west side of the wall, though close in date to the eastern group, present a remarkable contrast

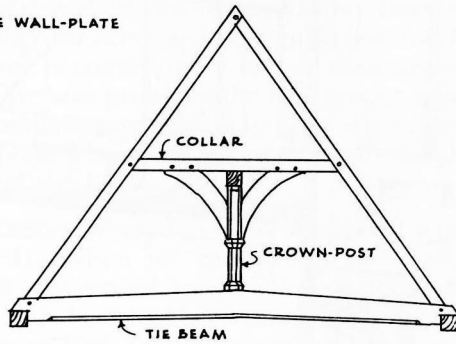


South view of the remains of an ancient mansion at the corner of Ship Street in the Corn Market, Oxford.

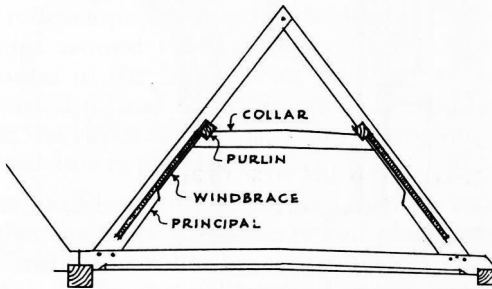
Fig. 3  
Buckler's drawing of the corner between the gallery and the Ship Street Range  
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(a)



(b)



(c)

Fig. 4  
Roof trusses—all to same scale  
(a) Ship Street; (b) Gallery and former south range; (c) Cornmarket Street

in design. These buildings had purlin roofs, representing the quite different tradition of medieval roof construction (Fig. 4c). Also unlike the other group they were designed to be structurally integral with the wall. They are at right angles to it and the joist-ends of the first floor are built in. The sill-beam of the top storey lies on the wall-head with timber-framing above. A double girding-beam system ties the feet of the posts back to the sill-beam. The wall also contained two small windows at first floor level. One survives, the other, a traceried window recorded by Buckler, may still be located in the wall. These looked out eastwards into the gallery and hall. Thus, it is hardly likely that the gallery and hall could by then have been built.

The cellars are earlier than any of the buildings. They extend beyond the ground-floor sill-beam of the Cornmarket shops and vestiges of an arched doorway in the wall only four feet above the present cellar floor suggest that they had been deeper. So also did the excavations for new foundations on the hall side at the north end of the wall where its stonework was found more than eight feet down. Two wells, completely covered in, were also discovered. A remarkable survival was a gigantic beam enabling the cellars of numbers 26 and 27 Cornmarket Street to be thrown into one. Considering the difficulties of inserting such a member, this was probably already in place when the present buildings were erected.

On this evidence, the chronological sequence of the construction of the buildings must have been, first, the Cornmarket shops, then the Ship Street range, whose date is known as 1386 to 1396; next, the gallery and the south range both probably built at the same time, and lastly, shown only on the Allfrey drawings, a much later building at the east end of the south range. An analysis of tree-ring growth now in progress on timber offcuts from different parts of the building may soon provide firmer dates.

#### SURVEYS

So much for the historical analysis afforded by the structures themselves. The documents, together with the buildings, have been researched by Julian Munby. His work is to be published in *Oxoniensia*. To quote from his first draft:

The closing of the Zacharias's business in 1983, and the intended refurbishment by Jesus College, provided an ideal opportunity to investigate one of Oxford's few remaining medieval domestic buildings, and to discover what remained of the original structure. A survey of the empty premises was made by David Sturdy and the author, and on the basis of this and the Buckler drawings, a report was submitted to Jesus College in 1984, suggesting that much more of the original structure remained to be found than was visible at that time.

Mr Munby's research has been invaluable to us. Not only may I refer to it in this article; it was still more important that it was available before our appointment as consultant architects to the project, for we merely had to analyse the structure as it stood.

Lastly, it was Julian Munby's report that generated the support and enthusiasm that led to its restoration. Figs 5a and b show how radical was the reconstruction of the Cornmarket elevation. It was no less radical throughout, revealing everything that remained of the original, but always within the evidence of the surviving timbers. Where the evidence was lacking, as in the attic windows, there was no conjectural restoration of what they might have been. And it is astonishing within our experience of other similar projects approached in exactly the same way, that all our proposals went through without resistance even from the Historic Buildings and Monuments Commission. Perhaps also the restoration of the corner building, by Thomas Rayson in 1951, with rather more historical conviction than we would attempt, also helped.

The only conditions were that the scheme should satisfy the owners, Jesus College, who required a single commercial unit on

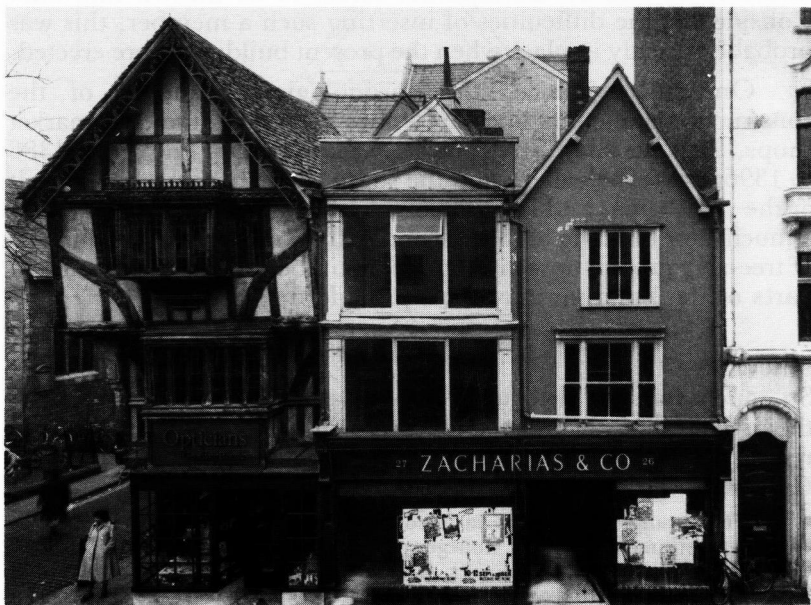


Fig. 5(a)  
Cornmarket Street frontage  
(a) As before; (b) As restored  
*Photos: B. J. Harris Photographers, Oxford*



Fig. 5(b)

the ground and first floors of both groups of buildings, obstructed by the stone wall and the different floor levels on either side of it, and student accommodation on the top floors. This unfortunately prevented our re-opening the fine roof of the hall to the first floor. It could however still be done in the future. The roofs of the Cornmarket buildings, ceiled at collar level, were re-opened.

The Architects Design Partnership of Oxford and Henley, under John Fryman, as college architects, had made an application for Listed Building Consent for a conversion scheme to the City of Oxford as local Planning Authority in March 1984. The Council's Planning Committee, already concerned for the future of this important town building, made a request that a consultant, experienced in the repair and restoration of oak framed buildings, be appointed to advise the College. This led to our appointment in August 1984, and it says much for Mr Fryman and Jesus College that they agreed that we should be brought in.

The arrangement finally arrived at was that we were responsible for the whole of the timber structure and details for windows, infill panels, and insulated floor and roof construction,



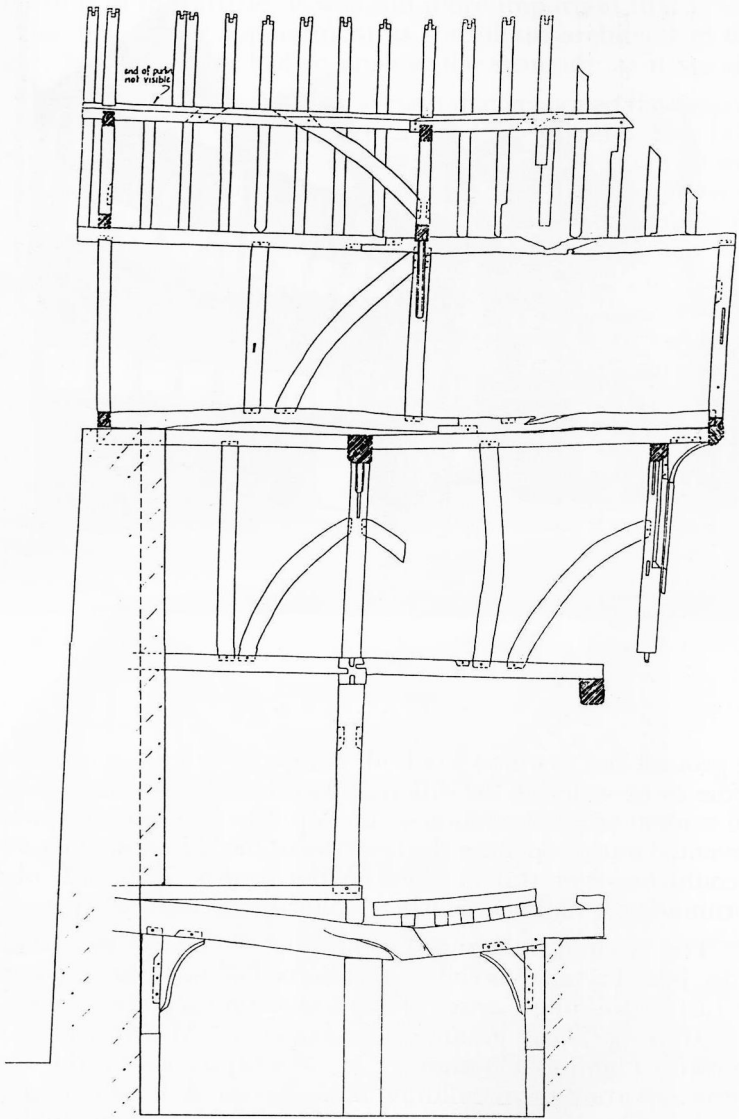


Fig. 6(a)

Long section of number 26 Cornmarket Street

(a) 'S' drawing showing surviving framework; (b) The same frame as reconstructed

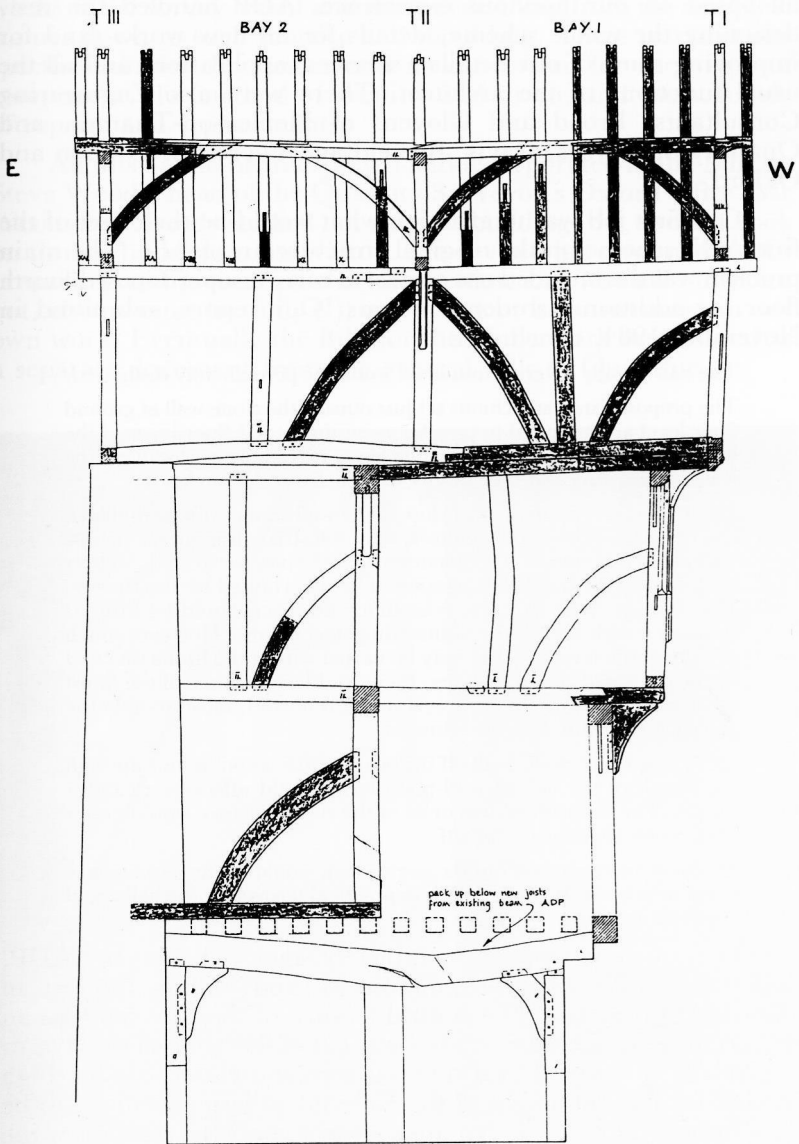


Fig. 6(b)

all based on our previous experience. ADP handled the rest, designing the whole scheme, details for all new works (and for improving some of our details), services, applications and all the usual functions of the architect. There were also Engineering Consultants, Broad and Gloyens of Henley-on-Thames, and Quantity Surveyors, Davis, Belfield and Everest of London and Oxford.

Our first job was to examine what would be the effect of the first ADP scheme on the original structure and fabric. The main problem was the intended use of steel to carry a superimposed fourth floor for additional students' rooms. Our report, submitted in November 1984, concluded:

The hall already severely mutilated would be permanently disfigured.

The proposed steel stanchions set just outside the stone wall at ground floor level are intended to pass between the jettied floor joists of the hall floor. Whether this is possible looks extremely doubtful on the Buckler drawing but will be discovered from the survey.

Having passed within the hall close to the wall-frame with its moulded and carved doorway and windows, they will strike through the double wall-plates and rafters. The intention again to pass between the rafters is extremely doubtful, but again will be ascertained by the survey. The damage done by these stanchions however would be little as compared with the results of inserting steel beams. However much or little of the level of these may be varied within the limits dictated by the proposed concrete floors, they would cause some of the finest of the medieval timbers to be severed or removed, most notably the jowled post-heads and knee-braces.

Lastly, the cavity wall, built off the beam which is continuous through the length of the hall at wall-plate level would affect every rafter couple. The lower three feet or so of the roof structure would either have to be encased or cut off.

All this is unacceptable, but the worst result would be the permanence of the new work. It would mean in practical terms that the hall could never be restored.

The outcome was a completely new scheme by ADP, undertaken with enviable equanimity and willing interest in following our advice. The central feature of their design was an architectural reclamation of what was left of the original courtyard, but now to be covered by a concrete roof and glazed cupola, high enough for the full height of the hall and gallery elevations to be seen from ground level. No attempt was made to reproduce the original gallery wall; only the jetty was reconstructed. Rightly, there was no concession to medieval style in ADP's design, so permitting the timber structure to express itself without ambiguity.

We had produced half-inch scale details of every frame as it stood, our 'S' or Survey drawings, and the corresponding 'R' or Repair drawings (Figs 6a and b). These were done by Nick Joyce of our office, who by practically living on the job for the first few

weeks of the survey learnt and drew everything from the complete frames down to each mortice and moulding. There was also our specification for the timber and its conversion for each type of component, the method of jointing and so on, and the schedule of repairs and replacements.

All this had to be interpreted and incorporated in the Bills by Steve Woods, head of the Quantity Surveyor's Oxford office. Mr Woods had already studied not only the building, but also our book on timber building conservation. He devised his own method for preparing and presenting the information and was able to point out, always most tactfully (!), any errors or inconsistencies in our own work. Eventually the Bills for the timberwork were issued as a separate document from the general Bills of Quantities.



Fig. 7

Wall-papered panels

*Photo: B.J. Harris Photographers, Oxford*

The panels and finishes in ancient buildings may be hardly less important than its structure. In this respect the Cornmarket shops were exceptionally rich. Some of their inserted attic ceilings were painted uniformly in characteristic orange-red (ruddle), an earth ochre often found externally as well as internally over timbers and panels alike; wall-papers were innumerable (Fig. 7), differing from room to room and in successive layers. A rare stencilled pattern and even rarer panel of sixteenth-century mural painting were found beneath the wall-paper.

None of this could have survived the building's reconstruction. Fortunately, members of the Oxford Archaeological Unit, the Oxfordshire Museum Service and of H.B.M.C. were able either to preserve or record photographically everything of note. Complete plaster panels and wall-paper samples were preserved and have already been publicly exhibited.

#### THE CONTRACT

Official approvals were through on 16 July 1985. Engineering details and the general Bills of Quantities had been worked on concurrently and completed in July and August respectively. Our last encounter, as invariably, had been with the Building Control Department, convincing them that an oak-framed structure is, in general, safer from structural failure by fire than a steel or concrete frame. Only escape routes must of course be adequate in accordance with the Fire Officer's requirements; and this was seen to by ADP. But floors and infill panels also had to conform with the Regulations in terms of flame-spread and insulation. With the aid of the Building Research Establishment, our details and specification were at last accepted, and the devastating effect of intumescent paint on natural oak was avoided.

The only other question was whether the oak should be chemically treated. This we have also consistently opposed except for selectively localized applications or injections where the need is obvious, preferring the evidence of impartial experts to that of commercial firms. But at a later stage in the contract, the College decided on treatment if only for the sake of having a guarantee to assure future tenants, in this case Laura Ashley. Peter Cox, already employed for damp-proofing, did the work. Later still, much time and labour was spent in trying to remove the after-effects on the surface of the treated timbers.

Tenders were invited in September 1985. Meanwhile, we had interviewed those contractors who had answered the advertisement as willing to tender. This is always necessary, for the contractor who claims to have had the most experience with ancient buildings is not necessarily the most suitable. Everything depends on the

attitude of the boss and more especially of the foreman carpenter. Traditional skills are seldom wanting amongst trained carpenters; it is rather lack of opportunity to bring them out in today's building methods and materials that causes the general impression that craftsmanship is dead. The other qualities we seek are mutual interests with our own, willingness to learn (also a two-way process), organizational ability on the site and the ability to get on with all the variegated personnel of a modern building contract. Alfred Groves Ltd of Milton-under-Wychwood both had the craftsmen and submitted the lowest tender. In the event, two carpenters were in charge. Terry Souch in the yard, where owing to the acute restrictions of the site practically all the repairs would have to be done, and Paul Symms on the site. The General Foreman was Stan Nicks and Andrew Hackling looked after the organization.



Fig. 8  
Pre-contract scaffolding in 27 Cornmarket Street  
*Photo: B.J. Harris Photographers, Oxford*

Work started on 15 November 1985. The state of the structure meant complete dismantling of the wall-frames, floors and roofs of the Cornmarket shops and every part of the gallery, and radical *in situ* repairs of the Ship Street building.

For a time it seemed that two separate contracts would be preferable, as our preparatory work had to be done ahead of ADP's, and the timber structure practically completed before the other trades could start. In the event, it was the foundations, exceptionally deep because of earlier building not even suspected until the excavations began, and work in the cellars that had to come first. Nor was it possible to dismantle any of the framing until the pre-contract scaffolding could be re-organized (Fig. 8). A sheeted scaffold roof over the whole site also had to be erected for the duration before the roofs could be stripped. And lastly, the stone wall, altered through the ages to incorporate doorways, fireplaces and flues, had to be made safe (Fig. 9).

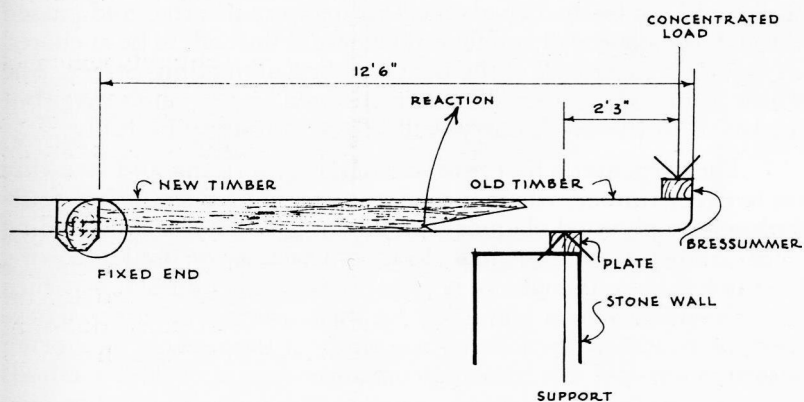
All of this was for Broad and Gloyens who were also able to tie back the leaning front wall of the Cornmarket shops. This typical



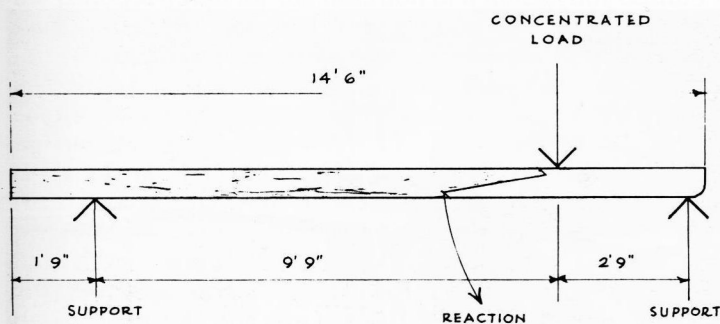
Fig. 9

Inserted sixteenth-century fireplace in number 27 Cornmarket Street

*Photo: B.J. Harris Photographers, Oxford*



(a)



(b)

Fig. 10  
Diagram of scarf joint  
(a) Condition of repaired joist in building; (b) The joist as set up for testing



sign of old age in jettied structures could not be corrected if only because the party wall with number 28, the corner building, contained the shared front post at each storey height, and the party wall could not be disturbed. Steel straps were inserted and passed through the stone wall and floor thickness of the hall, to be anchored in the brick party wall of the next building along Ship Street. The south frame of number 26 was restrained in the same way, but anchored to the brick party wall of the adjoining building.

The carpenter's first task was making, scribing and screwing on to every timber, whether or not it was to be dismantled, four-inch square plywood plaques each having a number corresponding to its number on our drawings. Roman numerals are used, following the same system, though not necessarily the same number, by which the timbers had been identified for their original erection. These were of course scribed on to the timbers themselves. Victorian restorers also did this, causing confusion typical of their methods generally. At least numbering by means of plaques is unambiguous, even if some are overlooked during their final removal.

By 8 January 1986, new timbers for the repair of the hall joists had been delivered to Groves' yard by the timber merchants, Henry Venables of Stafford, the main suppliers throughout the contract. These joists, in bay 2, had all been severed at the inner face of

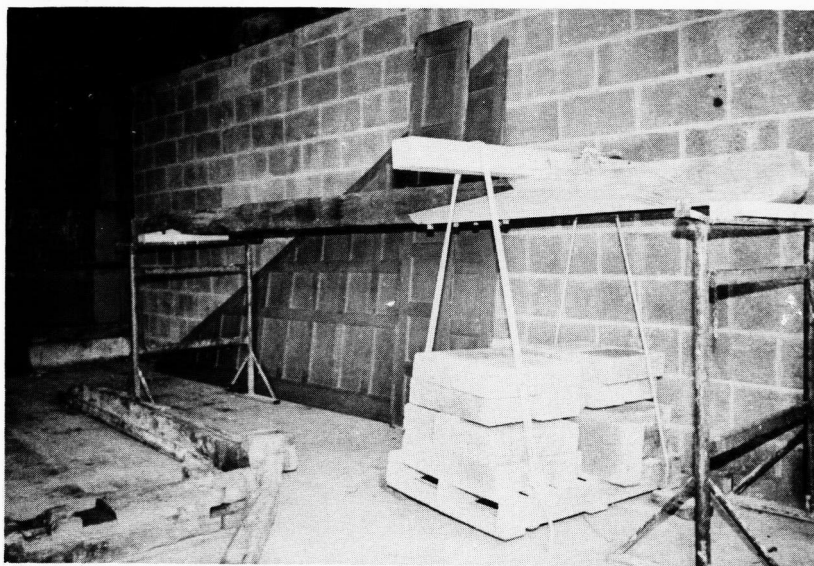


Fig. 11(a)

Testing of joist required to take load of 350 lbs per square foot  
(a) The joist loaded to 840 lbs per square foot; (b) The same loaded to 1232 lbs per square foot

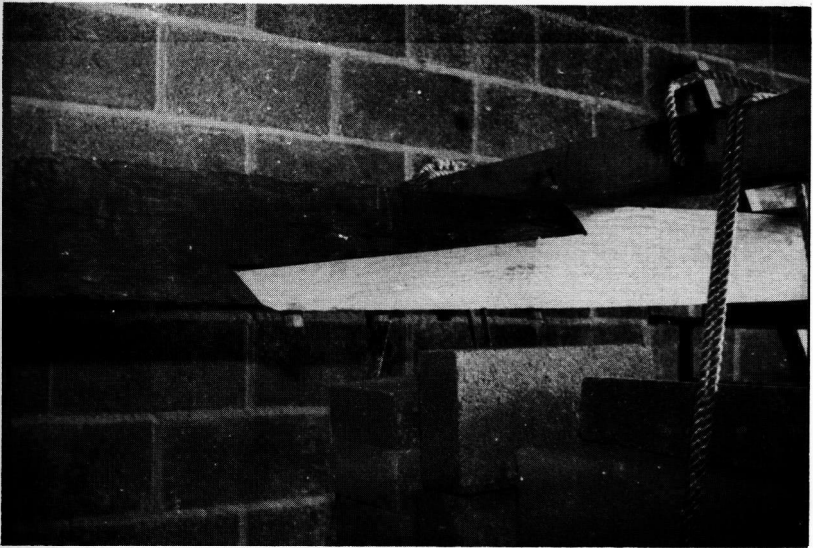


Fig. 11(b)

the courtyard wall for the insertion of a nineteenth-century fireplace and stair. Our normal repair joint for this not uncommon improvement is a long splayed scarf with under-squinted ends. The weight of the timber-framing on the outer edge of the jetty counteracts the floor load so that the tendency of the joint is to spring upwards (Figs 10a and 10b). The joist was tested in Groves' yard (Figs 11a and 11b). It will be seen that the actual loading and resistance points were reversed, so that the scarf was deprived of the reinforcement in the form of 2" x 2" battens and floorboards nailed to its top surface which it would have in the building, and also the anticipated 80 lbs per square foot of live load, also resisting upward spring, was eliminated. Nevertheless, the joist was found to be capable of taking three times the engineer's estimated load on each joist, with a maximum deflection throughout its length of barely three-quarters of an inch. The engineers remained sceptical, but only those very few joists that would not be exposed when the building had been completed were additionally strapped. The rest may still be strapped if they should look like failing at any time in the next few centuries.

The most hazardous operation was the underpinning and raising by hydraulic jacks of the whole of the south wall framing of the Ship Street range some twelve inches, the roof going up with it. This had to be done because the repaired joists could not otherwise be tenoned at their inner end into the longitudinal beam.

Other less dramatic but no less exacting repairs, such as replacing heavy beams in a confined space and engaging their joints with scarcely any tolerance, were continuing in the Ship Street building almost throughout the contract.

By the end of February the gallery had been dismantled and its few original timbers taken to the yard. By the end of March the new timbers for the Cornmarket shops had been delivered. As always, the long swept braces, the most characteristic feature of fourteenth and fifteenth century timber-framing, presented problems. What had literally come naturally to the medieval carpenter simply by felling a bent tree of about eighty years' growth, or a branch from an older tree, and halving it with the frame-saw, has by today's methods become a time-consuming process of trial and error. First comes the search for the right log, probably one excluded from the stock-pile awaiting conversion because of its awkward shape; next, it must be transported to, and set up in, the bandsaw, and finally sawn along the heart. Unfortunately, in bent logs the line of the heart is almost impossible to discover so that what comes out is almost anybody's guess. But unless the heart is visible throughout the length of the halved face of the intended

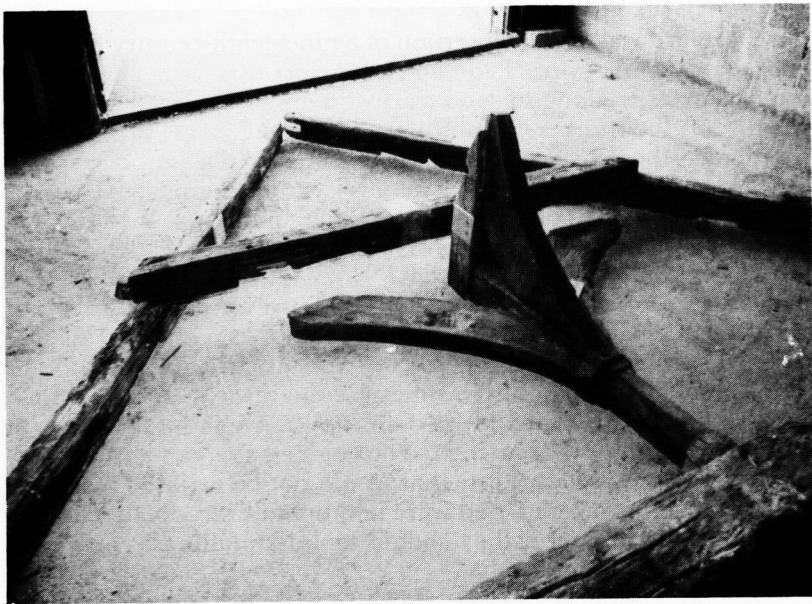


Fig. 12(a)

The timber

(a) Gallery—TII laid out for repair;

(b) Ship Street Range, new corner-post and existing knee-brace



Fig. 12(b)

brace and the final shape exactly follows the natural grain it is rejected.

Venables gave up after several deliveries had been sent back, and Mallinsons of Rugby were tried. Our job diary recording each of our weekly visits to the yard reads: '23rd July 1986: Braces as supplied by Mallinsons for attic floor are unacceptable'. There were meetings at their yard as well as Groves' until at last the job book reads: '26th August 1986: Braces for attic floor front elevation approved'. The frustration had lasted six months.

By this time the only signs of the Cornmarket elevation on the site, though its absence could not be guessed from outside the sheeted scaffolding and hoarding, were the south corner posts of the first floor and the party wall-framing with number 28. All the frames were laid out in the yard, exactly as they must have been six hundred years ago, with the difference that old was combined with new, and the medieval carpenter would not of course have been concerned with repair joints (Figs 12a and 12b). All new timber has to be green, as it always was when such buildings were first framed and erected. Problems of shrinkage can at least be partially overcome by selection, for the position of the heart and widths of annual rings must match as nearly as possible in new and old. Shakes will appear and may widen considerably, but they will closely follow the behaviour of the old member if these rules are observed; nor is strength impaired as long as the scarf is properly pegged.

There was no attempt to soften the contrast between old and new in a repaired timber, though in the final stages both ADP and the client were in favour of applying stain and beeswax. This was not done, nor even were the saw marks removed. For even if the mechanically regular lines of the bandsaw are less engaging than the curved and varied strokes of the rip saw, they still tell the story.

There was a hitch in May 1986 when H.B.M.C. had doubts about the authenticity of the tracery of the second window of the hall. According to their officer there was insufficient evidence in the surviving timbers to be sure that it was of the same design as the one that was still complete. Moreover, Buckler, though he had drawn the latter, had only indicated the one in question, so that his evidence was also lacking. Against that, Buckler was an architectural draughtsman and recorder *par excellence* and had the windows differed in any detail he would surely have drawn both of them. The other objection was the old one of 'don't restore anything'. Eventually the architectural *lacuna* that would have resulted from its omission was realized and agreement given for its restoration (Fig. 13).

It can be demoralizing that the time needed for repairs and framing in the yard seems interminable before there is any sign



Fig. 13  
Restored tracery for the second hall window

of progress on the site. It must always have been so and there are historical references to the client's impatience, if not the carpenters'. But once the pre-framed timbers begin to arrive assembling and jointing them to exact fit is something in the nature of a revelation. The Cornmarket site had been vacant for nearly nine months. At the beginning of September 1986, the floor joists were ready for the erection of the front wall. By the end of the month the roof-trusses were on and the purlins, wind-braces and rafters followed. Thus the framing of the Cornmarket shops was complete (Figs 14 a, b and c). At the same time the *in situ* repairs of the hall were being finished (Fig. 15).



Fig. 14(a)

(a) Cornmarket Street shops first floor re-framed; (b) Details of windows;  
(c) Attic floor and roof

Photos (a) & (b): B.J. Harris Photographers, Oxford



Fig. 14(b)

Some awkward details, both in getting the frames up and marrying them to adjoining structures had had to be settled on site. One of these was the relationship of our plain bargeboards to the carved bargeboards and generous verge overhang of number 28. No doubt they had originally been uniform throughout the five shops. But for us to have adopted Rayson's design would have visually contradicted the rest of our more conservative (or cautious) approach. Neither can be said to be more authentic than the other.

By the middle of October, the gallery was being set out. Here more complicated problems had arisen. First, it had been discovered that the support of the collar-plate at the hall end had not been an ornamental crown-post with swept braces, as the surviving middle one (Fig. 12a). The mortices were found to be in the wrong place to receive such braces, and the late discovery of a photograph

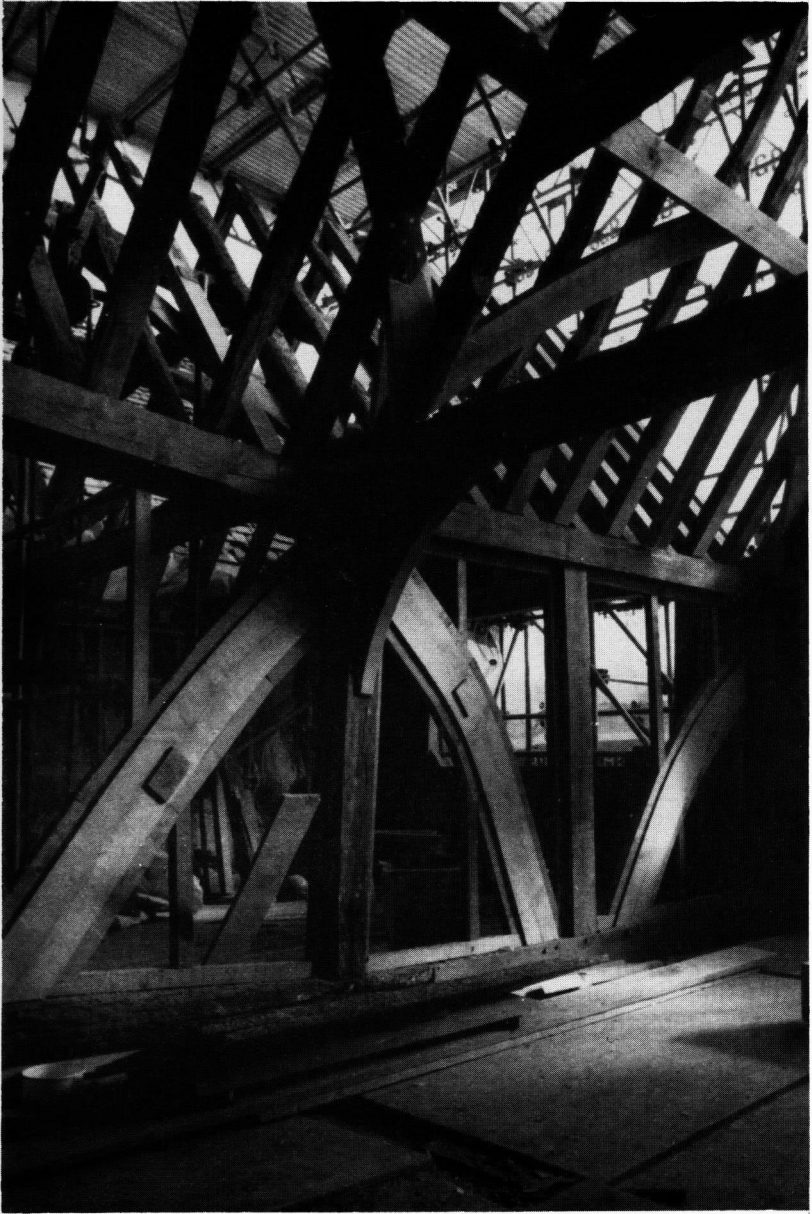


Fig. 14(c)



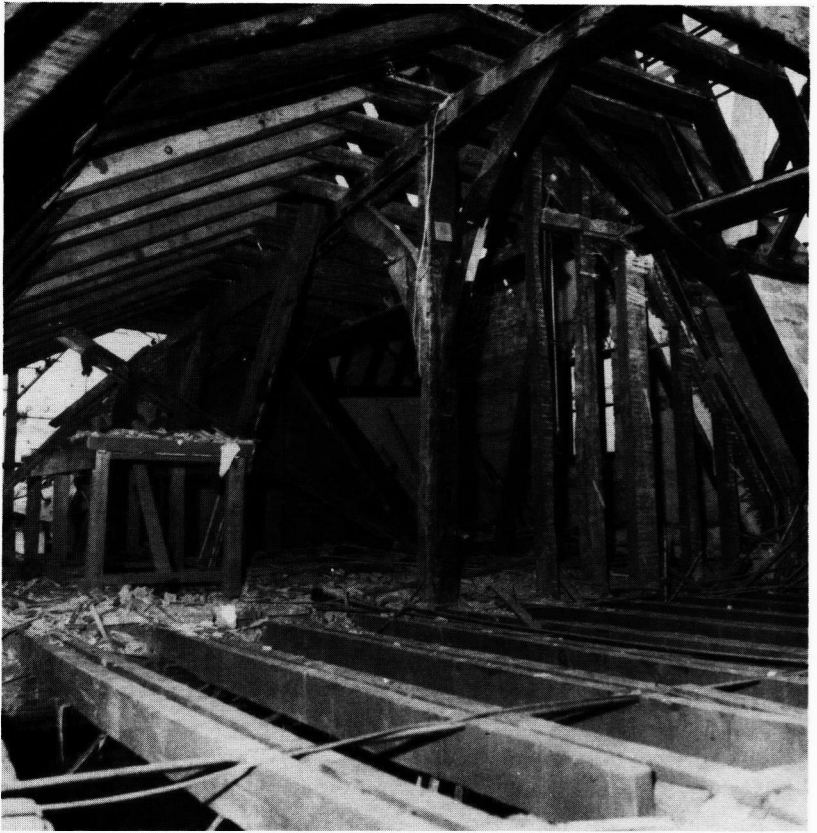


Fig. 15  
Hall roof repaired *in situ*  
*Photo: B.J. Harris Photographers, Oxford*

in the Bodleian Library proved that the original had been a closed truss of quite different design (Fig. 16). The correct truss had to be made after Groves had already carved the new crownpost. Secondly, the length of the collar-plate had to be reduced as the re-facing of the party wall terminating its south end prevented the surviving crown-post and tie-beam from being placed exactly in their original position. And thirdly, the stanchion to support the concrete roof over the yard had obliged us to move the north-east corner-post of the gallery a matter of six inches away from the hall wall-frame. Altogether the collar-plate is now about a foot too short.

Some anomalies were also unavoidable having regard to change of use. The new staircase from ground to first floor



Fig. 16  
Restored Truss I of the gallery

occupying the rear bay of number 27 has not only resulted in the removal of joists and the former stair, which, if not original, was at least in the original stair position. Thus the sixteenth-century fireplace in the stone wall is now isolated from the floor, and the effect of meeting it half-way up the stair is inevitably incongruous.

The projecting shop-front of number 26 can also be criticized. By restoring the first-floor jetty and ground-floor sill-beam (incidentally in greenheart, as greenheart will stand much heavier wear even than oak), floor space, hence commercial rent, would have been considerably reduced had the shop-front been set back to the original line. The compromise was to accept its projection beyond the first floor jetty, to the former (Zacs) building-line, some four feet beyond the sill-beam, while retaining the original building-line for the shop entrance in number 27.

Laura Ashley's designers' first scheme for their projecting shop window was timber-framed. Having assiduously avoided inauthenticity we had to persuade them that the standard Laura Ashley design would be far more appropriate. Their second design, to their credit, was precisely that. It was constructed by Groves as the final item in the contract and completed for the celebration of the new Zacs on 27 May 1987. The contract had lasted exactly two-and-half years. Laura Ashley opened their shop for trading on 27 July.

## SUMMARY

A brief account of a major restoration project such as this must inevitably leave out more than it includes. The design work, the mass of complex detailing and the overall administration of the job by Gordon Cousins of ADP has hardly been mentioned. Nor has the day-to-day organization of the job by the contractor on a site, not only restricted but which Oxford's traffic made practically inaccessible through most of the day. And only a few of the technical problems of restoration have been dealt with. One worth noting is that while the original assembly of a framed building was an ordered sequence from the so-called upper to lower end of the structure, with space at one's back or above for slipping the tenons into their mortices or the scarfs onto their awaiting members, in restoring a structure the timbers may have the same length and weight but there is no space for lifting and placing them. Joints may look simple on the drawing board, but it is the carpenter who must make them and get them in. Again, timbers surveyed within a structural frame may look quite different on the bench. A few large flight holes could be the only sign that the deathwatch beetle has long been at work in the interior leaving it practically a hollow husk. More often a timber apparently decayed beyond recall and peppered with woodworm may conceal oak as hard as rock a mere half-inch below the surface.

All this perhaps illustrates why contact between carpenter and architect must be constant. Handing down instructions, at the usual monthly site meeting, would result in work having to be undone and started again, leading directly to increased costs and ultimately recrimination and despair.

Fortunately, the writer's lasting impression of the entire contract is that of co-operation and friendship. The readiness to communicate was felt in every meeting and discussion, whether with the clients, Peter Clark and John Edwards, the Bursar and Estates Manager of Jesus College, respectively, with our professional associates, or with the men on the job. Christian name terms were perhaps one of the signs of everybody's sense of equal responsibility. The very fact that two firms of architects could work together is in itself pretty memorable, though it should be the rule. For conservation requires more than one kind of skill. The structure must not only be preserved; the building must also be designed for new use. What this project proved, both in execution and as completed, is that there need be no contradiction. On the contrary, past and future are to be seen in this building as complementary, the one enhancing the other. The medieval structure is repaired but not changed, and once again it is visible. ADP's design is no less present and positive. Change must continue but within the framework that, having survived (if only just) for six hundred years, may last as long into the future.