SHREWSBURY HERITAGE PROJECT

The English Bridge Gyratory System: Research Design

Birmingham University Field Archaeology Unit

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PREFACE

In November 1985 the Shrewsbury Heritage Project began excavation in the south-west corner of the precinct of Shrewsbury Abbey, in advance of the proposed re-development involving much of the surrounding area. A research design (hereafter referred to as SHP 1), produced in January 1986 outlined the known archaeology of the Abbey and its surroundings, and summarised the known extent and preservation of archaeological deposits. These were assessed in terms of the Project's general research goals: to investigate the form and development of the Abbey and its role in the growth of the medieval town. It was felt that these targets could best be achieved by excavation within and outside the monastery's outer court, and by sampling of the adjoining suburb.

Development plans for the superstore, hotel and flats are not yet detailed enough to permit a detailed assessment of excavation required within the precinct. However proposals for the ENGLISH BRIDGE GYRATORY SYSTEM, (a road system) have now reached an advanced stage allowing a more detailed strategy for archaeological goals and work to be formulated for the suburbs and monastic fringe.

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Figures:

1. INTRODUCTION

The monastic precinct was sited on the tip of a gravel spur, projecting into the alluvial zone around the junction of the Rea Brook and the River Severn, at a natural crossing point and focus of communications (fig 1). The monastery, founded between 1083 and 1087, took over a site that was already occupied: by a church with some parochial functions, including burial; by the 'homestead' of a late Saxon landowner, probably with watermills attached; and possibly by a domestic suburban settlement. Excavations currently in progress (the Queen Anne House site) have recovered late Saxon Stafford-type ware from a residual context on the southern edge of the gravel spur.

To the west of the precinct, the Rea Brook split into two streams around Coleham Island, which is known to have been settled by the early 13th century. The alluvial zone to the south of the precinct was exploited and adapted within the monastic period by the cutting of a mill-stream and fishponds; the precinct can now be shown to have been encroaching into this zone throughout the Middle Ages, with the construction of new buildings and terraces expanding the dry, habitable area southwards (see Appendix 1).

2. THE THREAT

The course of the road scheme, referred to as English Bridge Gyratory System III is shown in fig 2. The proposed road level will drop from the existing ground level at the junction with Coleham Head to the west, and Abbey Foregate on the north, to a maximum depth of 2.7m below existing ground level under the railway viaduct. Three types of foundations are to be used at differing points on the road system's line:

i) Pressurised jet grouting, under the archaeologically dead area of the railway viaduct

ii) 'Vibro-replacement' under the course of the road to the east of the viaduct, and up to 20m to the west of the viaduct. This technique will demand the sinking of stone columns, on a 2.5m grid, into natural ground. All non-natural deposits will thus be seriously damaged and rendered permanently inaccessible. Hard structures will be destroyed.

iii) Conventional cut and backfilled foundations will complete the western section of the road. These will demand the excavation and replacement of deposits to a depth of c. 1m below proposed road surface, ie. total destruction of deposits from 1m deep on the west (Coleham Head) to 2m deep to the east (United Reformed Church car-park). Drains will be installed on each side of the proposed road at a slightly lower level than the foundations. In addition the removal of any soft-pockets below these depths is expected.

3. ARCHAEOLOGICAL POTENTIAL

The area under threat by the Gyratory System is low-lying ground, within 150 metres of the Severn, dissected by natural and artificial water-courses; ground-water has been encountered at depths of 1.4m to 3.2m below the surface. The underlying 'natural' is a brown silty-clay, with some signs of superficial deposits of gravel. Information on the presence, extent, and condition of archaeological deposits in the area comes from three sources: the current excavations of the Queen Anne House area; boreholes undertaken for Shropshire County Council; and an archaeological record of a trial trench dug at the south-west corner of the 'Old Infirmary' bulding.

Current excavations in the Queen Anne House area have defined the edge of the gravel spur in the precinct area, with stratified archaeological deposits seen to date, to a depth of 3m below the present ground surface, giving way to lower ground in the south where deposits in excess of 4m have been encountered, with waterlogging and preservation of organic material from 2.5m below surface level. It is likely that such conditions will apply to sites excavated in the area of the mill.

Trial trenching (Watson 1985) and boreholes (fig 2) indicate that the bed of the northern channel of the Rea Brook is between 3m and 5m below present ground surface, largely backfilled with 19th century rubble for construction of the railway viaduct.

Ground conditions in the Coleham Island area are less well known. Soil descriptions in the borehole records are archaeologically ambiguous: a borehole in the forecourt of Severn Villa encountered a filled cellar with a thin deposit of uncertain origin overlying 'natural' at 2.17m; a test-hole beneath the cellar in Severn Villa produced green silt, possibly fill within a cut feature; a borehole in the United Reformed Church car-park close to the back garden of Severn Villa showed archaeological deposits from 1.5m to 3.2m below present ground level (silty clays and organic clays). Excavation has recently commenced in the back garden of Severn Villa, and early results indicate a deep, densely stratified sequence of yard deposits.

4. EXCAVATION POLICY

4.1 Introduction

Three areas have been selected for controlled excavation, on the basis of the predicted survival and character of archaeological deposits, and as presenting the best opportunity, within the framework of the current development proposals, for achieving the project's general research goals of understanding the Abbey as an element within the growing medieval town. These areas are:

i) The western elevation of the 'Infirmary' block (previously Messrs. Goode and Davis).

ii) The mill area (currently within the A. Bertram Edwards timber yard).

iii) Severn Villa

It is proposed that excavation should take place in these areas, to be preceded where necessary by trial trenching of deposits. Sequences and profiles in these locations will be linked by watching briefs and some trial trenching, during and before road construction.

4.2 The Infirmary area - (Goode and Davis)

18th and 19th century illustrations and plans show that the building known as 'The Old Infirmary' is merely the southern part of a complex of buildings defining the western side of the precinct's outer court. A building similar in appearance to the infirmary lay to the north, on the street frontage, with a three story buttressed building in between. The western elevation of this complex was pierced by an arcade of six arches at external ground level, leading to a hard-standing on the edge of the northern arm of the Rea Brook (fig 1, 3). It is likely that the hard-standing fuctioned as a waterfront, with the arcade giving access to storage facilities at undercroft level within the buildings of the outer court. A recent interpretation of the 'Old Infirmary' as a gatehouse (see below) adds to the picture of the western complex of buildings in the Outer Court as a channel of communications between the precinct and the outside world, and has implications for the arrangement of the mill area to the south.

Research Aims and Excavation Strategy

It is proposed that excavation takes place in this area to investigate waterfront structures along the infirmary elevation and to sample the northern channel of the Rea Brook. A more precise strategy will be designed on the basis of two machined test trenches, following demolition of standing 20th century buildings.

4.3 The Mill Area - (A. Bertram Edwards)

The Abbey Mill, the lowest of the water-mills along the 2km long artificial Mill Stream, probably stood at the south-west corner of the monastic precinct, on or near the site occupied by a timber-framed mill of 16th-17th century character (known from 18th century illustrations), and a brick-built replacement which burnt down in 1906.

The mill was originally driven directly by the mill-stream flowing along the southern edge of the precinct; later the two Abbey fishponds to the south were joined together (between 1746 and 1825) and the resulting Abbey Pool was used as a mill pond.

The waste water from the mill flowed into the northern channel of the Rea Brook. This was truncated in c. 1770 when English Bridge was built, the Monks Bridge demolished and the watercourse under it filled in. With the construction of a railway viaduct in the 1850's, the remaining section of the northern arm was infilled, and water from the mill directed into a new channel to the west of the viaduct, flowing south to the surviving Rea channel. (see fig 4).

Research Aims

Excavation on and around the site of the post-dissolution Abbey mill is likely to be able to test the hypothesis that the Abbey, which derived a substantial income from milling within three years of its foundation, took over existing, working, mills that formed a part, possibly an important part, of the pre-Conquest 'homestead' on the bank of the Meole. The Rea or Meole Brook was an intensively exploited milling stream throughout the medieval and post-medieval periods and ownership of its lower reaches must have been a considerable asset; it may be that the Abbey's acquisition of a feudal monopoly of milling in the area did little more than to ratify an economic and geographic status-quo.

It has recently been suggested (1) that the building known since Owen and Blakeway's writing as 'the Old Infirmary' was, in fact, a gatehouse (see fig 1) , with the broad arch in the south wall giving access to the mill and fishponds. If true, this attractive hypothesis would provide an extensively-paralleled context for the mill: situated on a causeway giving access from the 'gatehouse' to the area to the south, also acting as a barrier between the Rea Brook and the fishponds. One of the project's principal research aims is to determine the chronology of the Abbey's main capital investments, particularly its hydraulic engineering. Excavation on and to the south of the mill area, on the course of the Gyratory System, would be able to establish the existence, and date, of such a feature, and also offers the possibility of sealed waterlogged deposits incorporating both environmental material and timberwork.

The suggestion of the existence of a north-south causeway along the east bank of the Rea Brook, as described above, is not new. Earlier study of this area (2) sought an explanation for the abrupt right-angled westwards bend in the street of Old Coleham, to the south (see fig 6), in the possible truncation of a pre-Conquest causewayed road across the Rea floodplain. The most likely context for this would be the replacement of existing fords by the Stone, Monk's and Coleham bridges, probably before 1121, by the Abbey. This construction programme would have enabled the Abbey to control and receive tolls from traffic travelling to or through Shrewsbury from the Midlands and the

Severn Valley route, via Abbey Foregate, and from the Hereford-Ludlow-Stretton Gap route, via Old Coleham. It may also have encouraged the expansion of the pre-Conquest riverine suburban settlement zone 100 metres westwards to include Coleham Island.

Excavation Strategy

The precise extent and nature of the surviving structures and deposits in the mill area cannot be predicted on the available information with precision or certainty. It is proposed therefore that the excavation broadly concentrates on the site of the post-dissolution mills and the area immediately to the south, and that a more precise formulation of excavation strategy depend upon the results of initial machine stripping and trenching of the site.

4.4 Coleham Island - (Severn Villa and U.R.C. car-park)

Coleham is first recorded in the 12th century, though the place-name itself is likely to be of early Anglo-Saxon origin, and denotes a settlement surrounded by water. The archaeology of this early riverine settlement is completely unexplored. Settlement on Coleham Island is first recorded in c. 1232-50, and the Burghley map of c.1575 clearly shows built-up tenements of medieval character along the east side of Coleham Head (fig. 5).

Occupational surnames and some specific references to trades allow, subject to the usual constraints of fixed surnames and actual place of residence, some idea of the social/occupational structure of Coleham in the 13th and early 14th centuries.

Early 13th century: Millers (2), Baker, Tiler, Mason, Carpenters (2), Smiths (2), Lorimer, Dyer, Parmenter, Clerks (3), Priest, Carter, Coiner (probably non resident).

Later 13th century: Carpenters (2), Turner, Chaplain.

Early 14th century: Potters (2)

The evidence suggests a suburb of low-to-middling social status, substantially non-agricultural, with a limited industrial component. Trades specifically associated with Coleham Island are the dyer and the turner (3).

Research Aims and Excavation Strategy

Excavation commenced in the back garden of Severn Villa in July 1986, and has two principal aims. The first is to explore the date, character and intensity of medieval occupation on the site and, in particular, to identify industrial activity. The extent of settlement of this area by the cloth-finishing trades is uncertain: the list of occupations cited above includes two cloth

workers, one on the island, and there was certainly a demand in the 13th century and later, from these trades for tenements with access to water.

The Abbey Foregate - Coleham area, and the island in particular, are notoriously liable to flooding and serious inundations have been regularly recorded since the 16th century. It is highly probable that settlement and communications on the island have always been accompanied by reclamation, and by dumping to raise ground-levels, and the current excavations are designed to test this. Excavation in the back garden will be followed by a trial area in the front-forecourt on the Coleham Head frontage, by trial trenches on the line of the Gyratory System to the east (subject to agreement with the United Reformed Church), and by a watching brief on the road construction. These four projects will allow the completion of an east-west profile across the island.

References

1. P.J. Drury
2. D.J. Pannett, pers. comm.
3. List of surnames compiled from the Cartulary of Shrewsbury Abbey, and the Cartulary of Haughmond Abbey, both edited by M.U. Rees. Reference to 14th century potters quoted by P.A. Barker (1970) in The Medieval Pottery of Shropshire, 16-17, from Shrewsbury Borough records.

5. Acknowledgements

Shrewsbury Heritage Project are grateful to the County Surveyor, Shropshire County Council, for providing the information on the English Bridge Gyratory System III.

Appendix 1.

Excavations at the Queen Anne House site - summary.

Excavation commenced in the back garden of Queen Anne House in late November 1985 and is continuing at the present time. The site is situated in the south west corner of the monastic precinct. The water-table was encountered at 2-2.6m below present ground surface and the deepest deposits so far uncovered are c. 3.2m below ground surface. Preliminary results are as follows:

Phase 1: The earliest feature recovered is that of a short stretch of sandstone wall (c. 4m in length and standing to a height of 1.75m) running east to west. This is interpreted as an early precinct wall of the monastery, marking the boundary between the high ground of the precinct and the lower area around fishponds to the south. Dating of the wall is uncertain although deposits yet to be excavated are expected to provide firm evidence.

Phase 2: At some stage in the 14-15th centuries, the precinct wall was demolished and replaced by a sandstone building (c. 11.8m by 9.5m, and surviving to a height of c. 2.1m). Preparation for the building included the cutting of a terrace into the sloping ground at the edge of the precinct. The lower level of the building was immediately backfilled, both to give stability, and also, as the building was close to the water-table, to avoid flooding. The building thus projected from the high ground of the precinct out into the lower damper area to the south. The function of the building is unclear, although its location in the western area would suggest a likely 'public' function; it was certainly of more than one storey and was probably heated.

The building has a series of associated yard deposits to the north, and a low wall running from the north west corner of the building is likely to have been a second phase of precinct wall and if its present line is projected it could been seen as filling the gap between this building and the mill or 'Infirmary' building. This wall is associated with the base of a garderobe, discharging into the lower area to the west of the building. Futher excavation to the south of the building suggests the presence of a large infilled water-channel.

The building survived until the dissolution (1540), some time after which it was comprehensively demolished to the contemporary ground level.

Phase 3: In the period between the demolition of the building and the building of Queen Anne House in the 1700's, the area was used for a tanning industry, indicated by a series of clay and sandstone lined pits.

Phase 4: The construction of Queen Anne House is combined with futher modification of the ground levels. The low wet area towards the west of the site was backfilled, and the site levelled to prepare it for a formally laid out garden.

Finds

Due to the waterlogging of a high percentage of the archaeological deposits, there has been a large quantity of organic material to complement the more usual pottery and bone. Leatherwork survives in the form of some two dozen shoes, a scabbard,a pouch, and other objects. Two small wooden bowls, together with discarded and in situ structural wood have also been recovered in quantity. Within the interior of the backfilled building brushwood, seeds, and grain.

The pottery includes a large quantity of post medieval and medieval sherds, and notably a small quantity of Stafford-type ware has been recovered in residual contexts.

Appendix 3.

Gyratory timings

Although results from trial-trenches may lead to some modification,the timings for the three areas earmarked for full excavation are as follows:

Site	Duration	Start	Finish
Severn Villa	4 months	July 1986	November 1986
Goode and Davis	6 months	Nov. 1986	April 1987
Bertram Edwards	6 months	Jan. 1987	July 1987

It should be noted that at present archaeological deposits on both the mill and the Infirmary areas have not been fully defined and that this may have an effect on the duration of excavation. In addition start dates for the latter sites are dependent upon the re-siting of the present tenants, and the removal of buildings. Delays to these will push back start dates and the overall program.

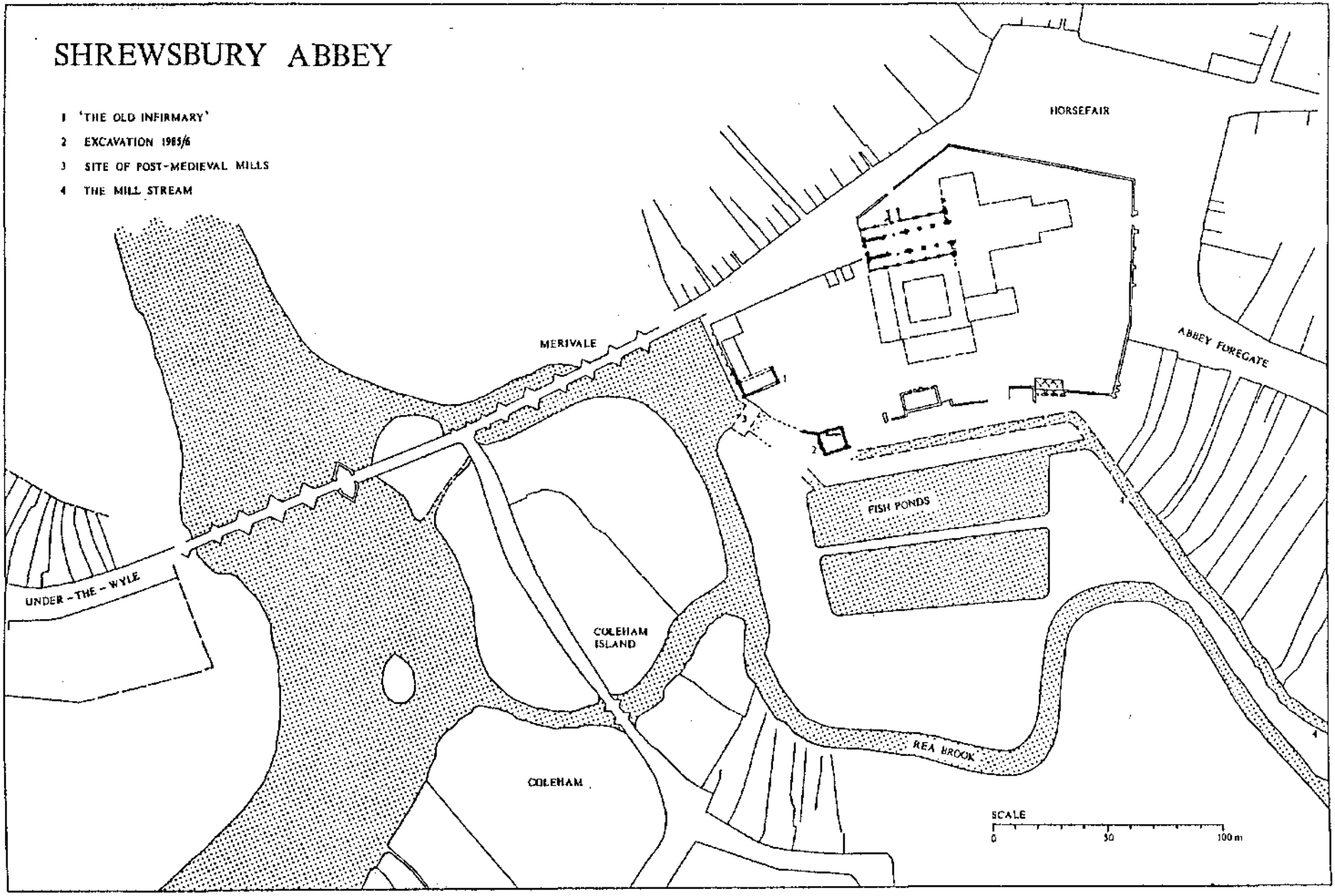
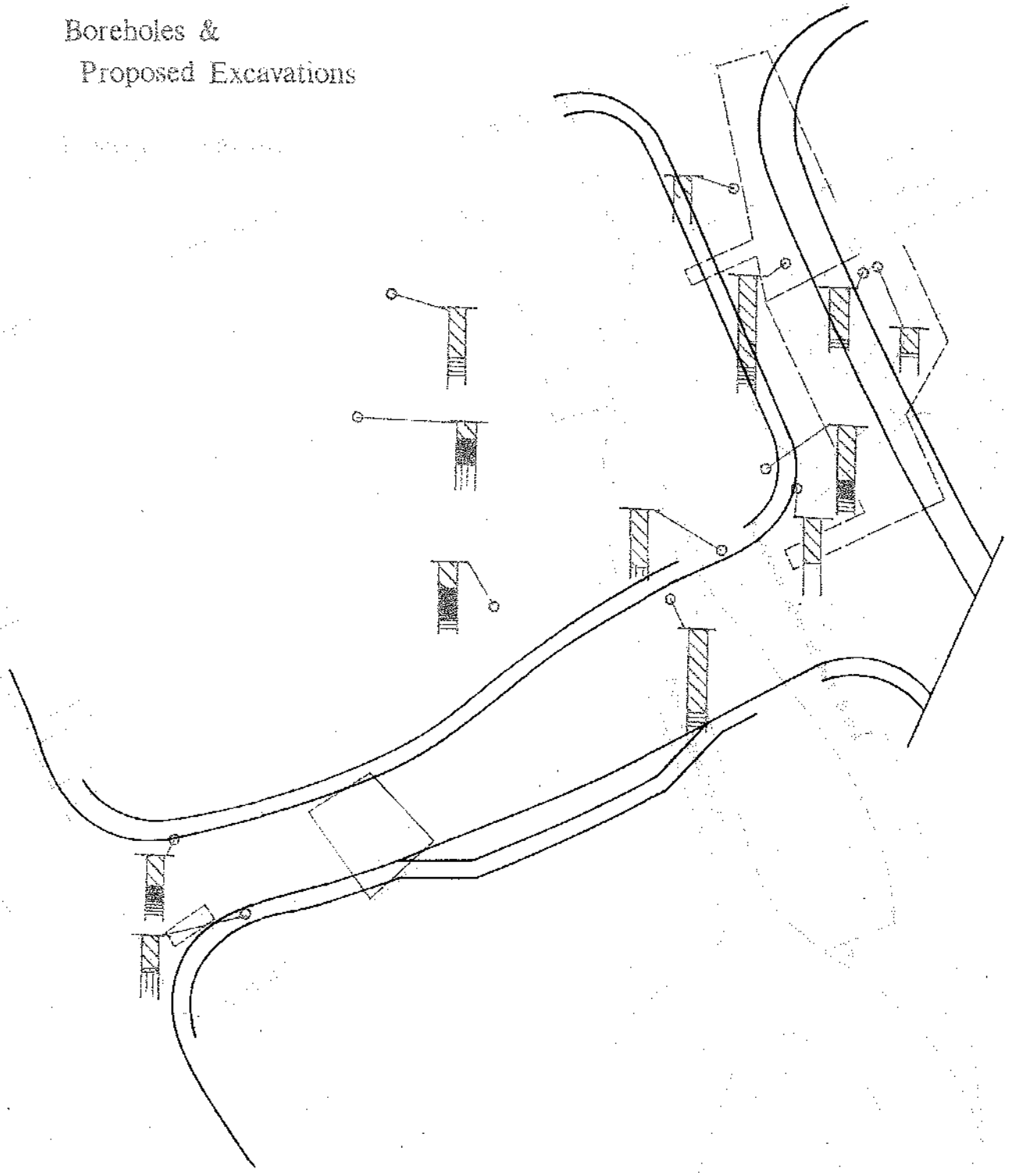


FIG 1: The Abbey and its Surroundings

The Gyratory System : Proposals (EBGS 3)

Boreholes & Proposed Excavations



BOREHOLES : KEY

Vertical Scale

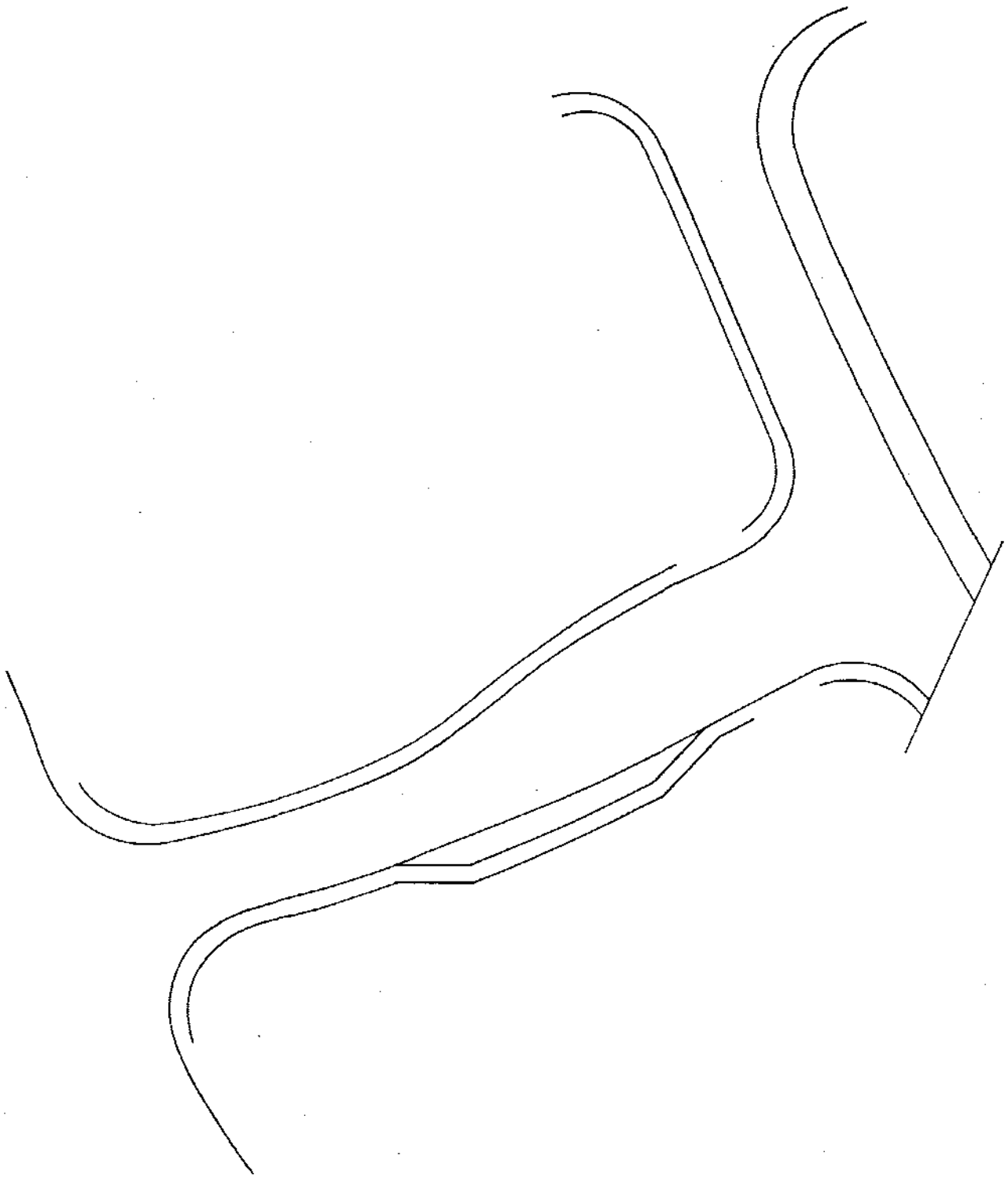
5 m

Rubble
Dark Soil
Silts
Natural Brown Clay

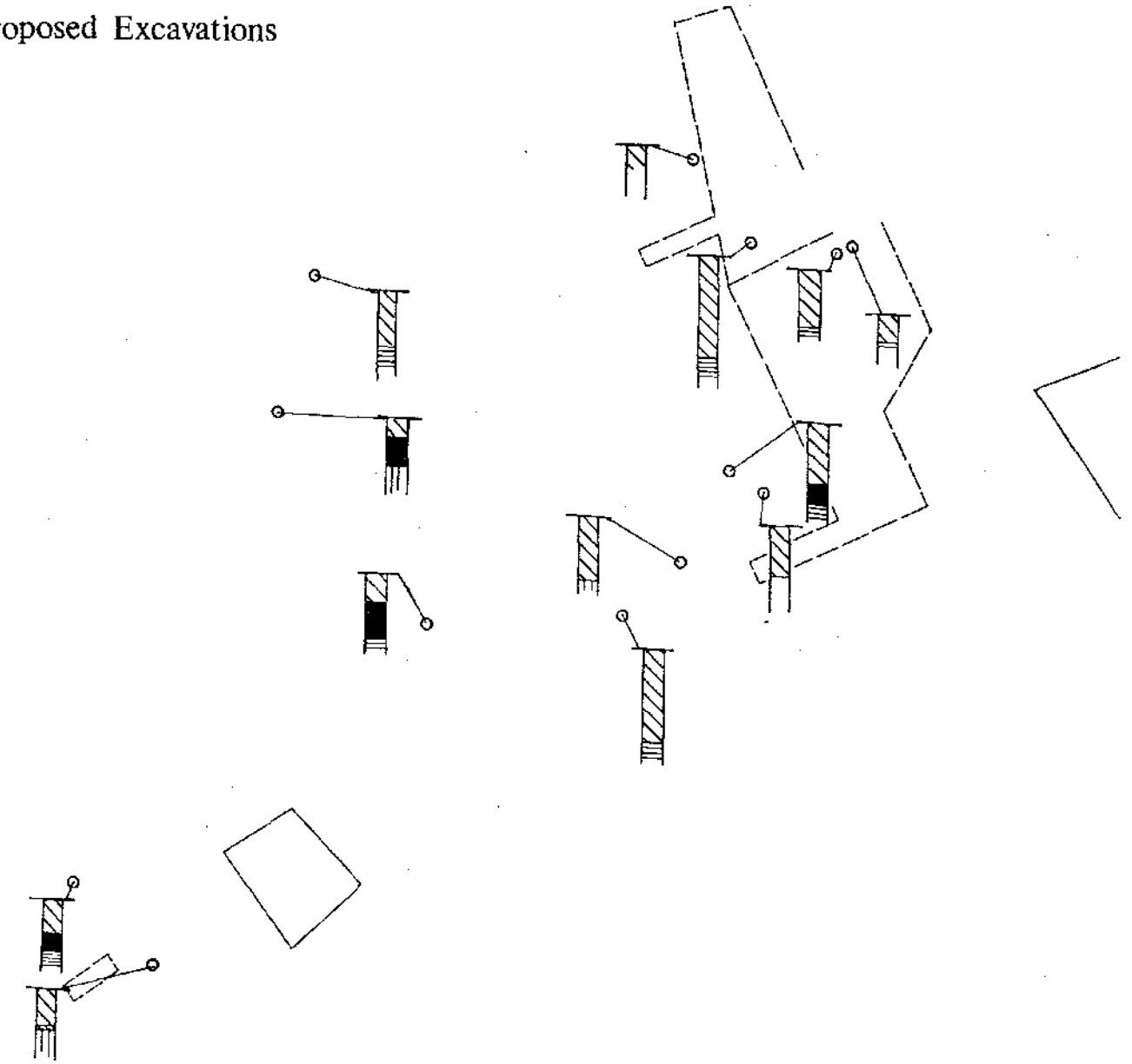
Current Excavation

General Area For Proposed Excavation

The Gyratory System:
Proposals (EBGS 3)



Boreholes & Proposed Excavations



BOREHOLES : KEY

Vertical Scale

5 m

Rubble

Dark Soil

Silts

Natural Brown Clay

Current Excavation

General Area For Proposed Excavation

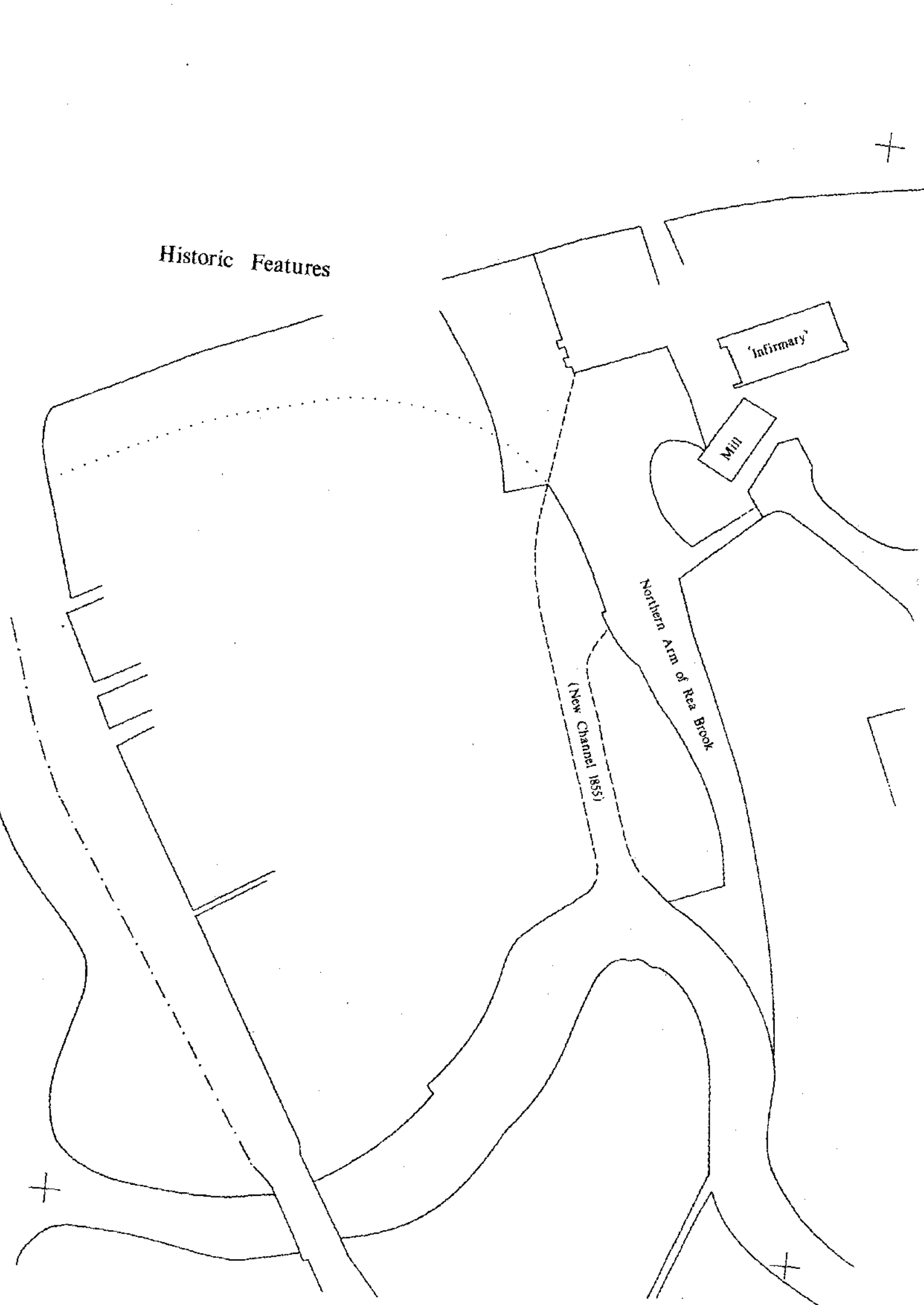
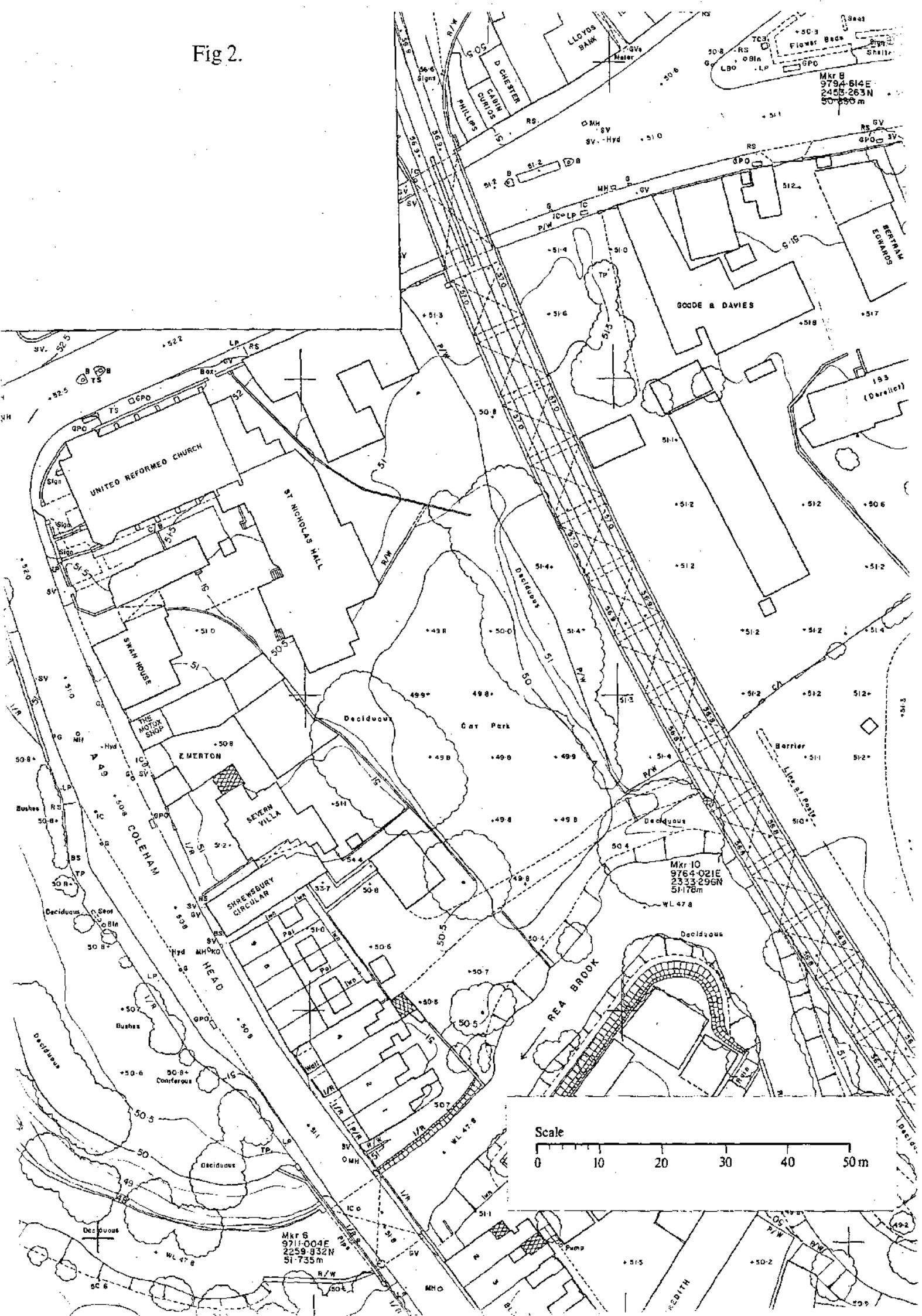
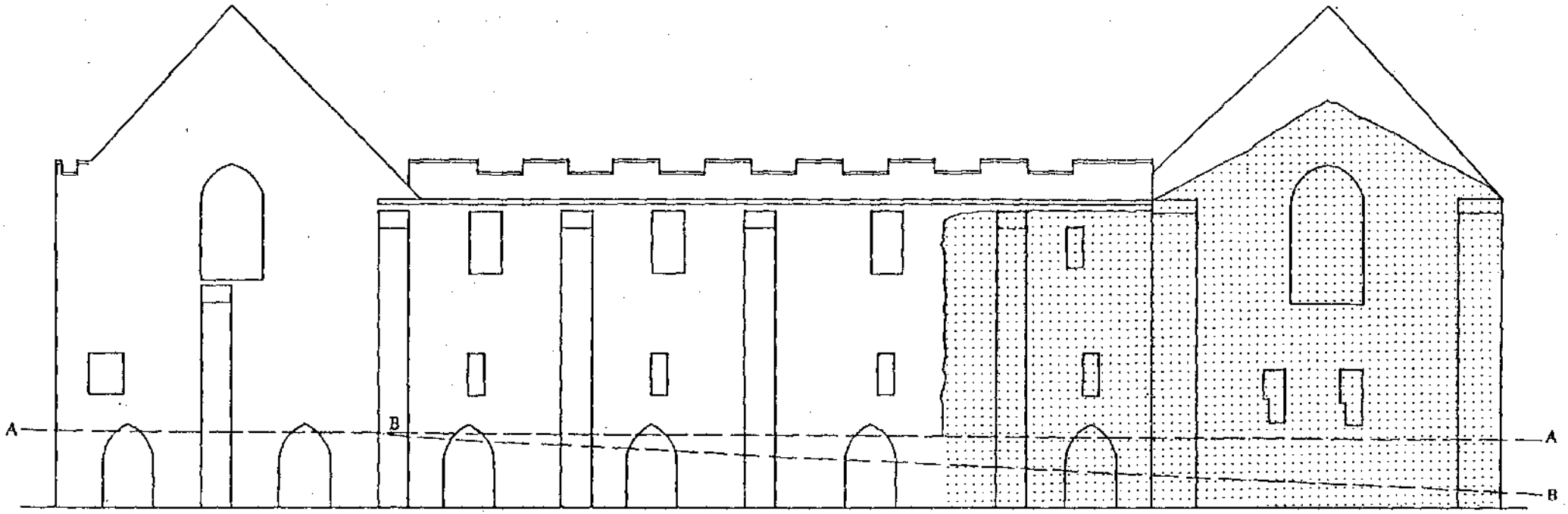

Historic Features
'Infirmary'
Mill
Northern Arm of Rea Brook
(New Channel 1855)

Fig 2.


Mkr 8
9794·614E
2455·263N
50·880m
LLOYDS BANK
PHILLIPS
CABIN CURIOS
D CHESTER
GOODE & DAVIES
BERTRAM EDWARDS
UNITED REFORMED CHURCH
ST NICHOLAS HALL
SWAN HOUSE
THE MOTOR SHOP
EMERTON
SEVERN VILLA
SHREWSBURY CIRCULAR
A49
COLEHAM HEAD
REA BROOK
Deciduous
Car Park
Barrier
Mkr 10
9764·021E
2333·296N
51·178m
Mkr 6
9711·004E
2259·832N
51·735m
Scale
0 10 20 30 40 50 m



SHREWSBURY ABBEY

'OLD INFIRMARY' OUTLINE RECONSTRUCTION
OF WESTERN ELEVATION.

A-A Ground Level 1986
B-B Proposed Level For Gyratory Road
Surviving Masonry

Approx Scale
0 1 2 3 4 5m

FIG 3: The 'Infirmary' Block: West Elevation

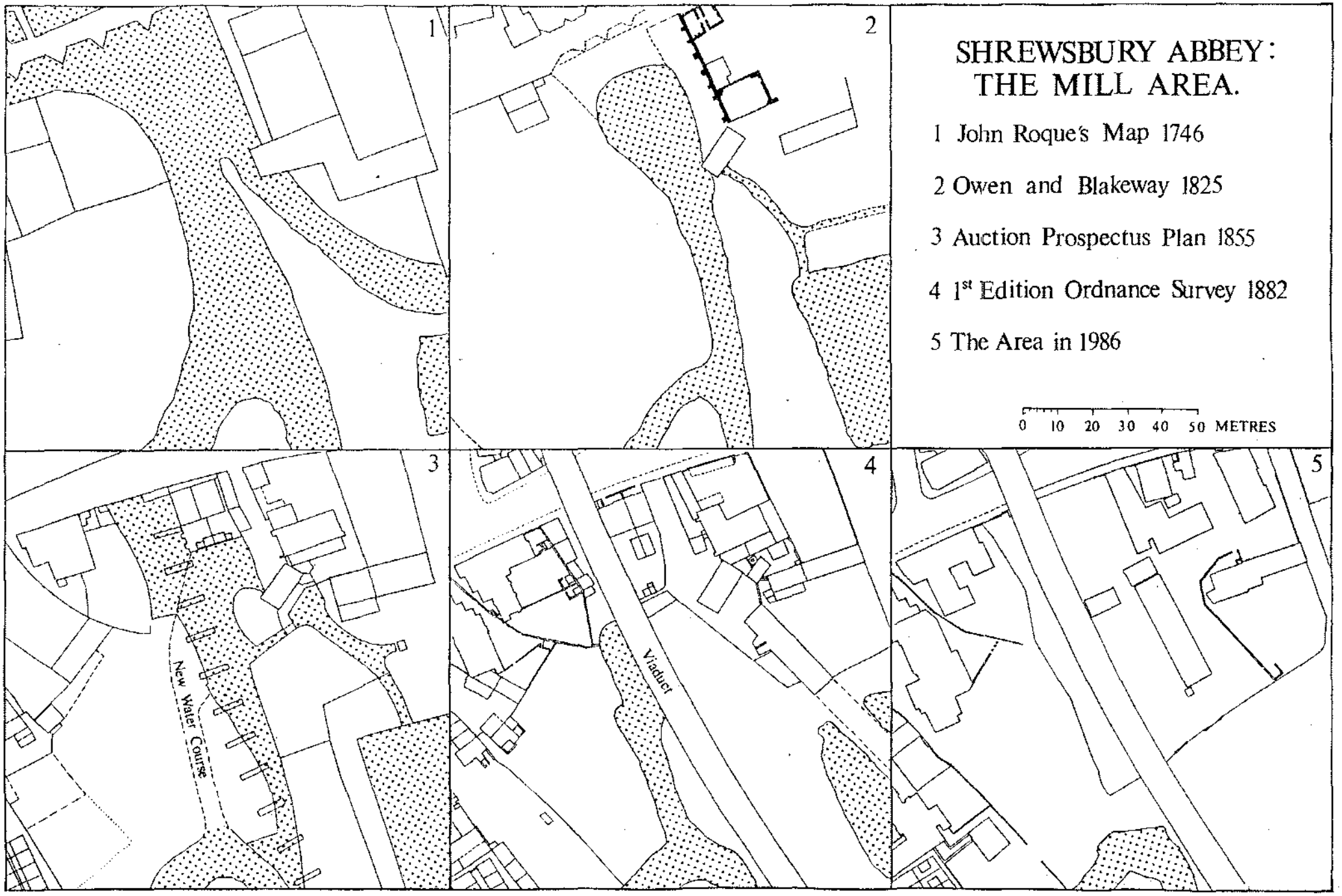


FIG 4: The Mill Area: Historical Sequence Map

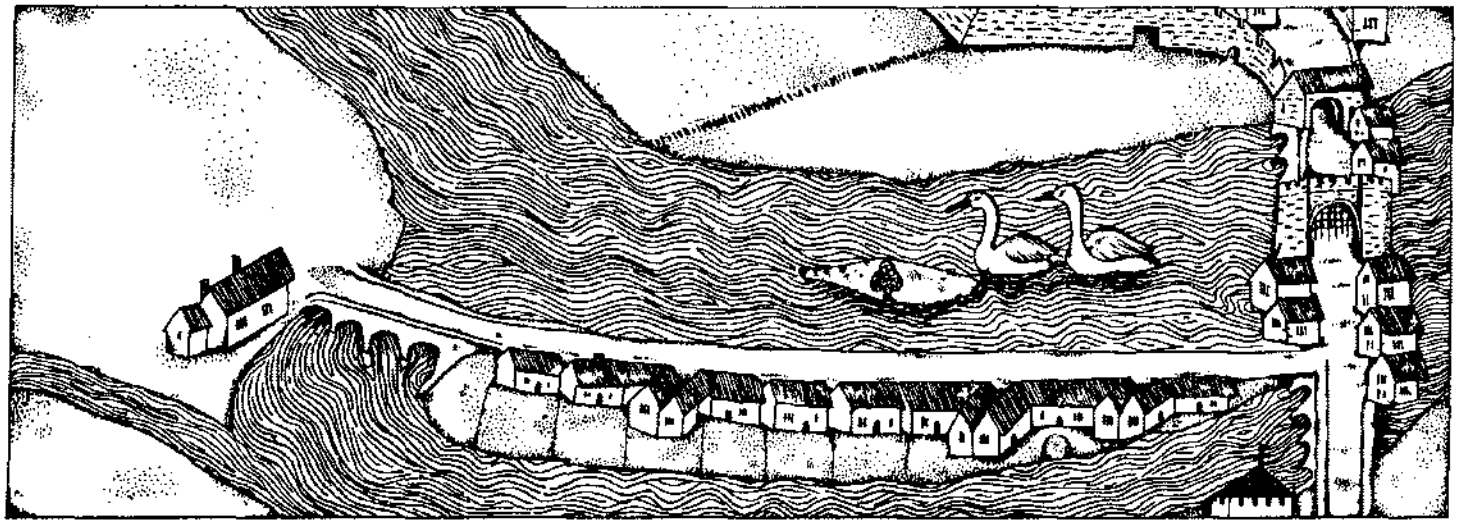
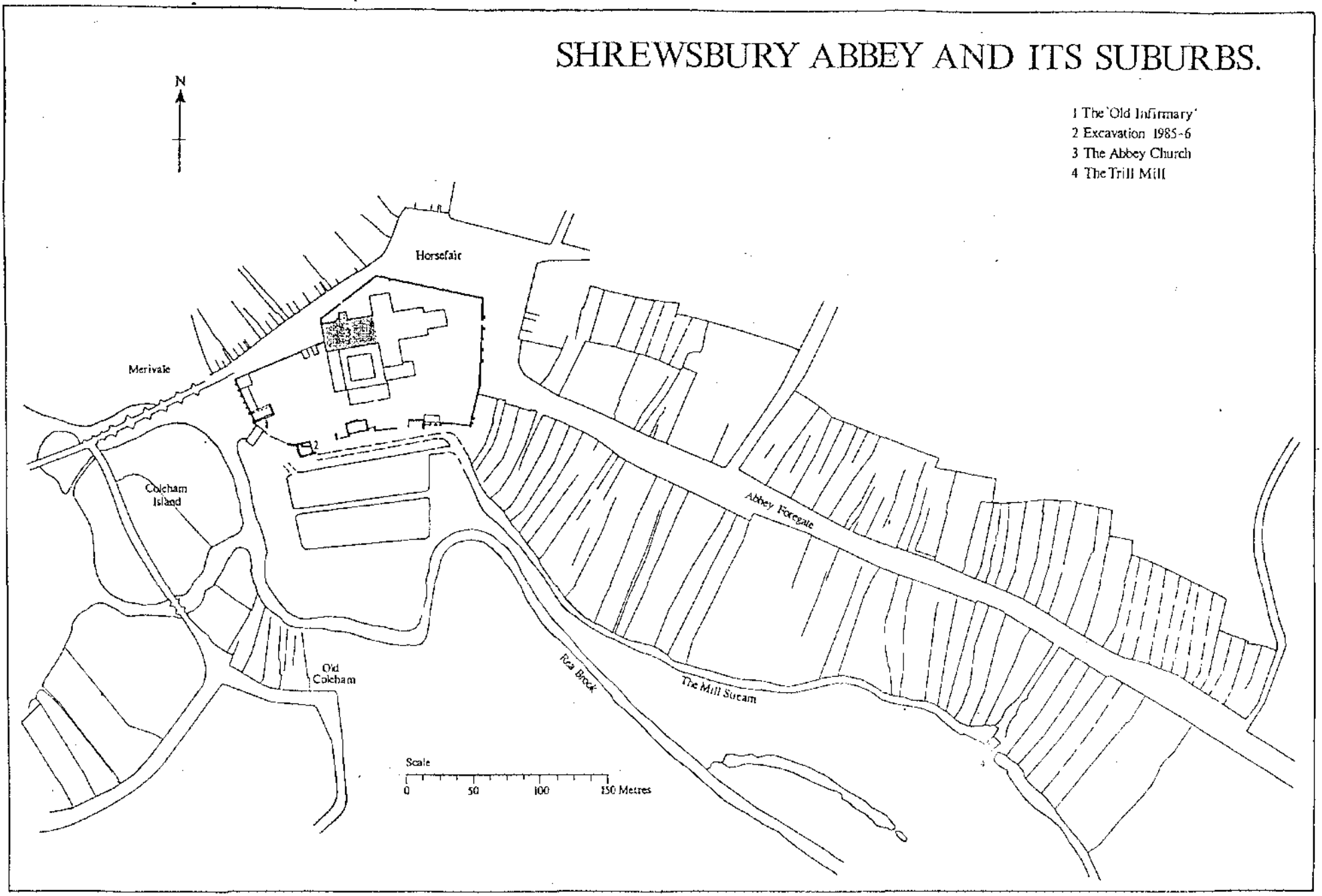


FIG 5: Coleham Island: Detail from the Burghley Map c. 1575



6. Shrewsbury Abbey and its Suburbs