

Historic Building Survey
Of
ROOF STRUCTURES
AT
KILLERTON HOUSE, BROADCLYST, DEVON,

**With an Account of a Watching Brief
on Trenching in the Forecourt of the Mansion**

By R. W. Parker

For the National Trust



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Established 2010

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Fig 1 Location of the site (marked with a star) .

1. INTRODUCTION

This report describes the results of archaeological works undertaken by Richard Parker Historic Building Recording and Interpretation at Killerton House (SS97350015), a Grade II* Listed Building in the parish of Broadclyst, Devon.

The archaeological work was commissioned by Dr Martin Papworth, Regional Archaeologist to The National Trust (NT), at the instigation of the Devon County Historic Environment Service (DCHEs), as part of a repair project to renew the roof coverings and roof structure over the main block of the mansion and the service wing to the east. The roof structures have been problematic since the construction of the present house in the late 18th century and all attempts to repair them since that time have proved unsatisfactory.

The historic roofs of the northern part of the house and much of its first floor were destroyed by a fire in 1924 (Western Times, 24.10.1924). These roofs were subsequently replaced with a modern structure, but the roofs of the main southern part of the mansion and that of the service wing to the east have retained historic fabric thought to date from the 1770s. Following 20th-century repairs, the remains of the 18th-century roof and ceiling structures were concealed beneath a flat roof structure at a slightly higher level than the original, creating an almost inaccessible void between the two structures (Sampson 2007, 3). By 2000 the roof structures were in poor condition and allowing water ingress, presenting a significant risk to the structure and decorations of the house and to its collections of textiles and furniture.

During the summer and winter of 2017 a temporary roof was constructed over the southern part of the house allowing the whole of the modern roof covering and boarding to be removed, exposing the earlier roof timbers below. A new roof structure has now been constructed over the remains of the historic roofs, ceilings and skylights have been repaired and renewed, and several chimney stacks, which had been demolished during the 20th-century alterations, have been rebuilt.

The works provided an opportunity to observe parts of the roof structures that had not previously been visible and to revisit the conclusions of earlier phases of archaeological recording at Killerton (see section 3), which had aimed to establish the extent of survival of fabric relating to the Elizabethan or Jacobean house and clarify the structural development of the main range of the mansion. Some trenching for electrical services was also undertaken in the forecourt and driveway of the house, in an area which it is believed might contain the buried remains of the earlier house and its ancillary buildings.

1.1 Method

The archaeological works commenced with a site visit in March 2017 and continued during the stripping and reconstruction of the roof structures. A photographic record was made of the roof structures together with drawn records of the roof timbers and detailed drawings of the jointing and carpentry details. No further documentary research was undertaken, but manuscript notes were made describing the visible evidence for the historic development of the roof structures exposed during the building works.

The recording of the trenching took place on two consecutive days in November 2017. The excavation of the trench by hand, by the contractors, was observed, and plans and sections of the trench were drawn. All the works were undertaken in accordance with specifications provided by The National Trust Regional Archaeologist for Devon.

2 . BACKGROUND

Killerton House lies in the ecclesiastical parish of Broadclyst, Devon, to the north east of the village (Fig. 1). The mansion stands on the south side of Dolbury Hill and is terraced deeply into the hillside, within a rich setting of parkland and ornamental gardens. The grounds are listed in the Register of Historic Parks and Gardens for their special historic interest. The present house is a late 18th- and early 19th-century building which was formerly one of the principal residences of the Acland family. The estate was granted to the National Trust in 1944 and is now partially occupied by the Trust as regional offices as well as being run as a visitor attraction.

Early gentry mansions in Broadclyst

Broadclyst is a large parish which seems to have been a popular residence for gentry families during the medieval and post-medieval periods, perhaps because of its proximity to Exeter. Unfortunately, few of early mansions of the parish have left substantial remains. The Killerton Estate is first documented in 1242 (Bampton 2019, 5), but it was not the manorial centre and it is not known whether there was a mansion on the estate before the 16th century.

The manor of Broadclyst was held until the early 14th century by the de Nonant family, who possessed a large manor house close to the church called ‘Clist House’ (Harding 1858, 164). This house afterwards passed to the Chudleigh family and survives as only a small fragment of a vaulted undercroft in a field to the north of the church (Harding 1858, 164; Parker 2002, 2).

Columbjohn, a pre-Conquest manor lying only a mile to the west of Killerton on the banks of the Culm, was held by the Earls of Devon from the late Middle Ages until their disgrace in 1539 (Hoskins 1954, 352), and was acquired by Sir John Acland of Landkey in north Devon in c.1591. Sir John Acland’s monument in Broadclyst church, dated 1613-14, utilises an extraordinary array of classical ornaments and has been characterised as one of the most ostentatious early 17th-century monuments in the county (Cherry & Pevsner 1989, 215). The house at Columbjohn may well have been rebuilt on a magnificent scale after its acquisition by Sir John. Sadly, it was abandoned in the later 17th century, when the family moved to Killerton, and only part of the gatehouse and the chapel now survive.

Killerton under the Drewe family

If there was a medieval house at Killerton, its site is unknown. A new mansion was probably constructed there in the late 16th century after the estate was acquired by a noted Elizabethan lawyer, Edward Drewe. Drewe served as MP for Exeter on two occasions in the 1580s and was also Recorder of the City of London- he is likely to have been acquainted with the latest fashions in architectural design, planning and ornament. His monument in Broadclyst Church, erected after the death of his wife Bridget in 1622, is canopied, supported by Corinthian columns and decorated with elaborate strapwork.

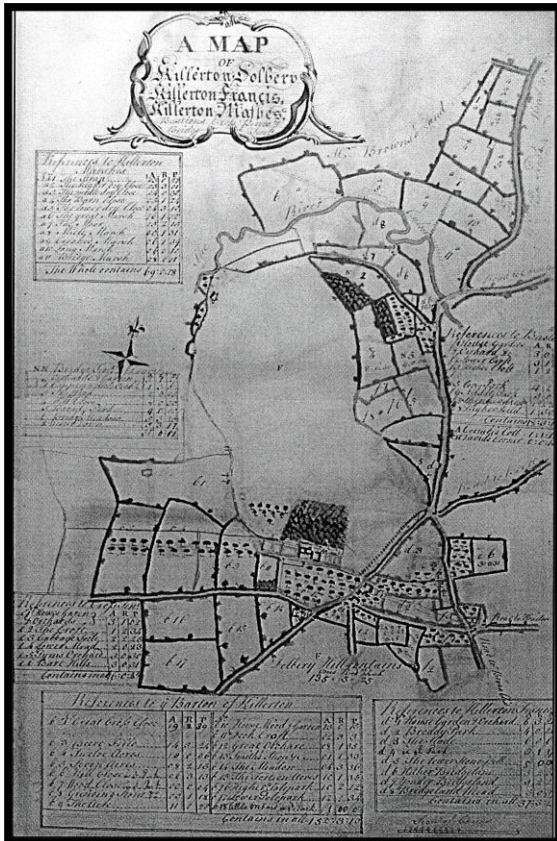


Fig. 2 Detail of the estate map of c.1756 showing the house and grounds below Dolbury Hill before the 18th century alterations. A tree-lined walk extends towards Columbjohn. (DHC 1148m/ add 23 E1 Map 2).

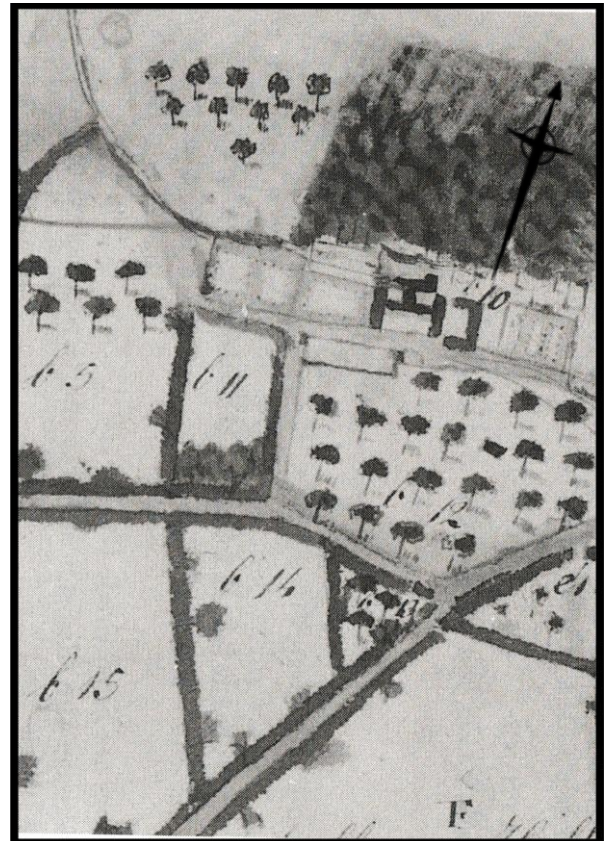


Fig. 3 Detail of the map showing the footprint of the house forming an 'H'-shaped structure with two rear courtyards, an 'L'-shaped north range, and a further 'U'-shaped range enclosing a yard to the east.

An inventory of 'Kellyton House' made in *c.* 1646 survives, describing a substantial house with over 20 habitable rooms plus outbuildings (DRO 1148M add/6/4). Although the house was probably newly built at the time of Edward's death in 1598, the Drewe family did not retain it for long. In the early 17th century Edward Drewe's son sold Killerton to the Aclands of Columbjohn and withdrew to his estate at Grange in Broadhembury (Bampton 2019, 5).

Killerton under the Aclands

The Acland family are thought to have utilised the Drewe mansion at Killerton as a dower house until the later 17th century (Bampton 2019, 5) when they abandoned the old house at Columbjohn for Killerton in around 1672 (Cherry & Pevsner 1989 518). It is likely, therefore, that any remains of 16th or early 17th century structures now standing at Killerton relate to Edward Drewe's occupation rather than that of the Acland family. The Acland family are almost certain to have remodelled the house at the time of their removal to Killerton, and these improvements are perhaps recorded by a datestone, preserved *ex situ* at Killerton, bearing the date '1680'.

Unfortunately, no topographical illustrations of the Elizabethan or Jacobean building at Killerton are known. The layout of the house is recorded on an early estate map (Figs 2, 3) bound in a book with other maps, some of which bear the date 1756 (SWHC 1148m/ add 23 E1 Map 2). The style of the draughtsmanship and cartouche suggest that this map dates from the first part of the 18th century and the map must therefore record the house as it stood after about half a century of Acland occupation of Killerton as their principal residence in the area.

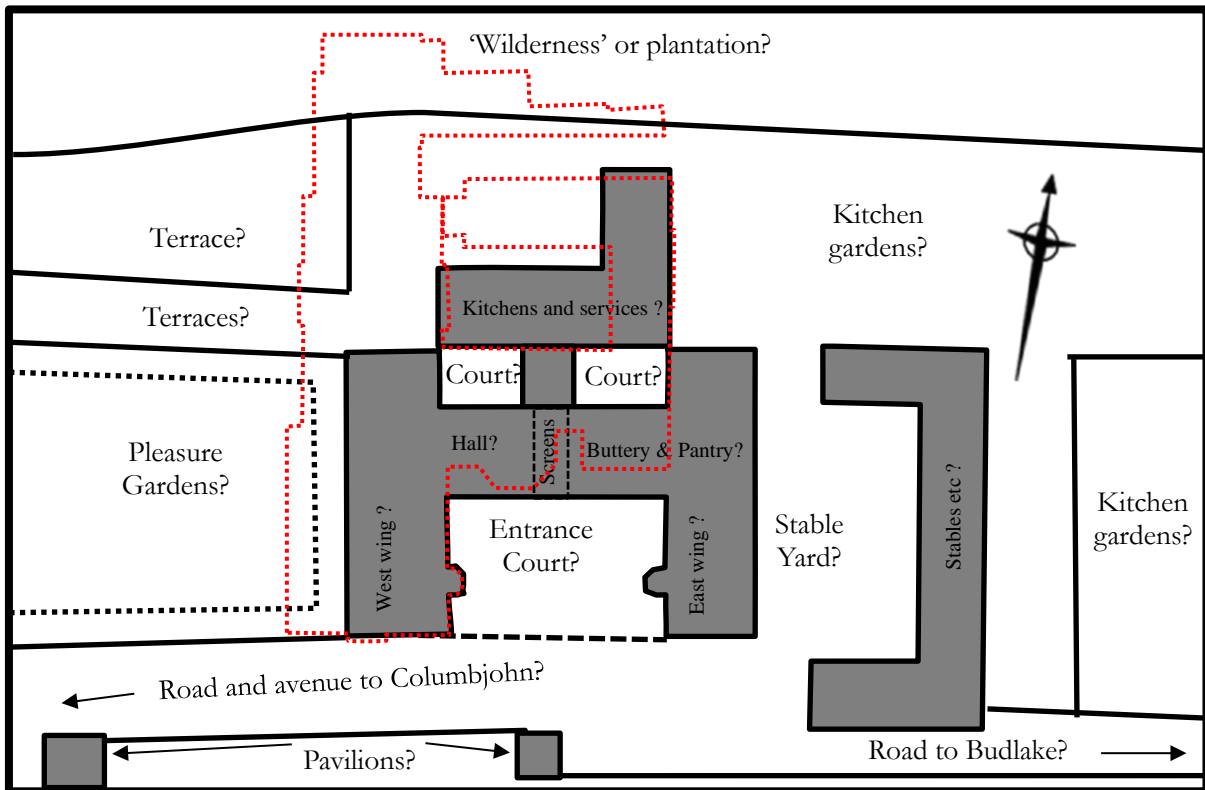


Fig. 4 Author's attempt to reconstruct the layout of the Elizabethan or Jacobean house at Killerton as it stood in the early 18th century, based upon the information in the above map, with the approximate outline of the present building indicated in red.

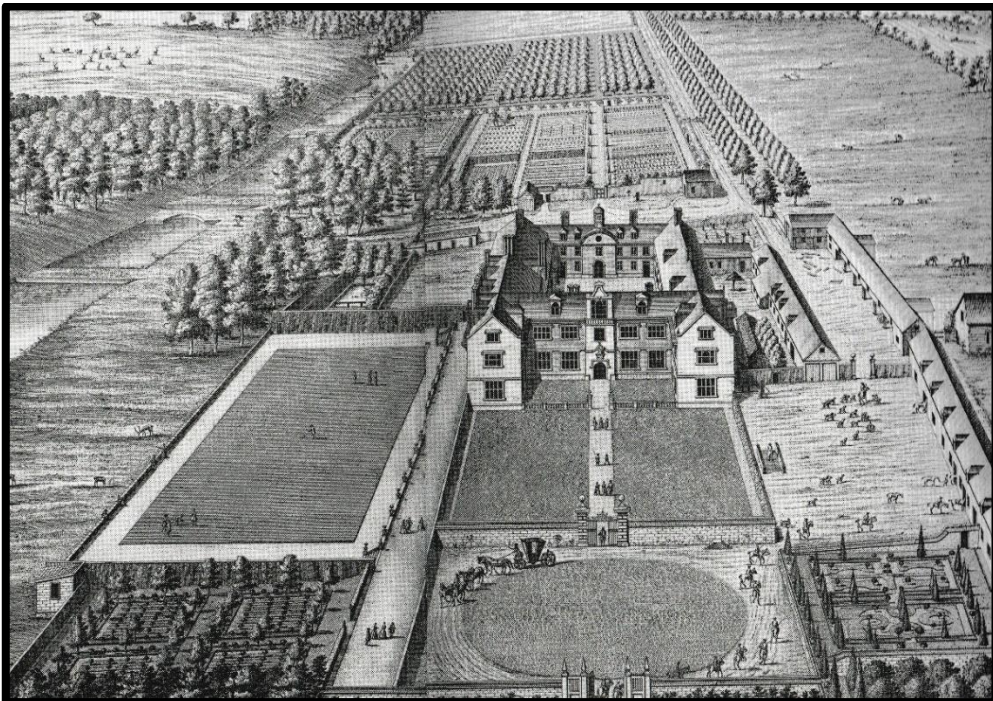


Fig. 5 Heanton Satchville; the house and park in 1739, engraved by W. H. Toms for *Vitruvius Britannicus* Vol.4, plates 73/4, showing a large house laid out on a plan perhaps similar to that of Killerton, the stable ranges lying to the right of the main building and the pleasure grounds in front and to the left, the main façade, with axial symmetry, being approached through a succession of ornamental gateways and courts.

The map evidence may be interpreted (Fig. 4) as showing a mansion typical of the late 16th or early 17th century, with a central range flanked by two deeply projecting wings forming a possible entrance court on the south side of the house. This may have been originally built as an 'E'-plan house, though there is no indication on the map of a central entrance porch. Alternatively, the house may formerly have been a courtyard house with a fully-enclosed entrance court (like that at Great Fulford, in Dunsford, or Pridhamsleigh in Staverton), but later truncated by the demolition of the entrance range. A porch or entrance range might conceivably have been removed at some period to modernise the façade, as occurred at Fursdon in Cadbury (Keystone 2013, 29; Parker 2019, 26).

The flanking wings also extend to the rear of the main east/west range. On the central axis of the building a third projection to the north of the main range divided the area between the projecting wings into two smaller courtyards. This short central range is likely to have been the continuation of the screens or service passage from the main entrance at the centre of the south façade to a further wing, which is shown as an 'L'-shaped range parallel with the main range and enclosing the north side of both small courtyards. This range is not directly continuous with the two flanking wings and may have contained kitchens, lodgings and other service rooms.

To the east of the main building a large yard is shown, enclosed on three sides by ranges of buildings, and with entrances to north and south. This is very likely to represent a stable yard. This may be an indication that the 'high' end of the house, including the hall and other principal rooms, lay to the west and that the 'low', or service rooms such as the buttery and pantry lay to the east.

The gardens are shown in some detail: to the north of the house is a very densely planted area which might represent a 'wilderness' or shrubbery; to the west of the house two rectangular enclosures are shown, with indications of walks defined by posts or planting, which may represent parterres and pleasure gardens. These might have been overlooked by one of the principal façades of the house- a 'garden front' containing the important state rooms.

The house thus seems originally to have been designed to face directly south and to form an impressive landscape feature when viewed from the roads to Columbjohn and Poltimore at the foot of the hill. By the 18th century the main approach to the house seems to have been not on its southern axis, but by a long drive or avenue of trees from the older Acland residence at Columbjohn. This may represent a re-orientation of the house to face west, reflecting its status as a subsidiary house to Columbjohn.

To the east of the house a single rectangular enclosure, divided into irregular plots may represent kitchen gardens and, south of this, a road seems to have extended eastwards towards Budlake, Killerton Francis and Broadclyst. Further south of the house regular plantations of trees are shown, perhaps representing orchards, and also a smaller enclosure, apparently with two pavilions, which may have been an additional pleasure ground. One of these pavilions seems to lie on the main axis of the south façade; this may have been an ornamental garden feature, similar to the banqueting houses on the terrace at Montacute in Somerset. Alternatively, it might represent a former detached gatehouse on the main axis of the house, like those at Lanhydrock (Cornwall) and Bradstone in Devon, perhaps surviving from an earlier arrangement of the grounds predating the creation of the avenue from Columbjohn.

Although much of the above interpretation remains conjecture, the map evidence allows us to be certain that the early house was an ambitious structure arranged around four courtyards and set within a planned ornamental landscape no less magnificent than the present park and gardens. Its appearance may have been similar in character and layout to the large house at Heanton Satchville in Petrockstowe, Devon, since, unfortunately, destroyed by fire, but recorded in an engraving by W. H. Toms, dated 1739. This magnificent house, like Killerton, featured a large stable yard to the right hand of the façade, and bowling greens and parterres to the left, and was approached on the central axis of the main façade through a series of walled entrance courtyards with ornamental gateways (Fig. 5).

Late 17th- or Early 18th-century alterations

After the Acland family moved their seat from Columbjohn to Killerton in c.1680 the older house may well have been remodelled. An inscribed stone bearing that date, and now set low down in a polygonal turret attached to the east wall of the present building, possibly commemorates these alterations. This plaque is situated at ground level and cannot be *in situ* in its present position. The appearance of the turret also seems unsuited to a building of c.1680, but resembles a newel stair turret of 16th or 17th-century date. This fabric seems certain to survive from the Elizabethan or Jacobean house, perhaps from its western wing (Fig. 4).

The survival of the turret suggests that the basic layout of the early mansion house was not much altered by the Aclands in the 17th century but it is probable that cosmetic alterations to the façades were carried out, modernising the appearance of the building if not its plan. Alterations to the grounds and approaches may also have been made, for example, the tree-lined avenue to Columbjohn might have been established early in the 17th century, when the house was still a satellite of Columbjohn. The avenue might indicate that, for a period, the house was reoriented to face west and was approached from Columbjohn. The importance of this approach probably diminished after the abandonment of Columbjohn but the avenue remained intact until the late 18th century and may have served as the main access to the house until the landscaping of the park in its present form. Since the late 18th century the principal approach to the house has been from the east, but it is important to consider that neither the eastern or the western approach may have been intended by the original builders of the house.

The western wing of the house, which may have contained the principal staterooms, may have been remodelled or rebuilt in the late 17th or early 18th century to provide a range of grander, rooms, as occurred at both Dunslad House in Bradford (north Devon), Youlston Park at Shirwell, near Barnstaple, and, locally, at Poltimore House in the neighbouring parish. At Poltimore the original house, probably arranged like Killerton on an E-shaped plan, was enlarged by the addition of a new south entrance range enclosing the entrance courtyard and one of the principal staterooms was remodelled with particularly lavish Rococo plasterwork. It is not unlikely that Killerton was similarly treated, though little evidence for this now remains. This interpretation would, however, go a long way to explaining some of the more peculiar anomalies in the present building. A possible context for alterations to the house would be the marriage of Thomas Acland to Elizabeth Dyke, heiress to the Somerset estates of Holnicote, Pixton and Tetton in 1745, by which marriage the wealth and influence of the family was massively increased. The production of estate maps at around this time, in the early 18th century, and their binding together in a volume in 1756 certainly suggest activity at Killerton early in the 18th century, and this might well have involved an undocumented remodelling of the older house.

Rebuilding the house in the later 18th century

During the later 18th century Sir Thomas Acland, the 7th baronet, decided to rebuild the house. It is possible that the original project may have involved altering and modernising the old house by rebuilding the main western wing of the original Elizabethan or Jacobean house and utilising its central and eastern parts as a service range, since the present building contains no realistic provision for kitchens or other service rooms. This plan seems soon afterwards have been superseded by a much grander project for an entirely new house on a different site (see below and Figs 6-9).

Although much documentary evidence for these changes remains, the events that followed and their sequence remain unclear, and there may have been many false starts, changes of plan and other complications which prevented the realisation of the project for the new house. Ultimately, the greater part of the existing mansion was demolished and the remains were patched up and extended to form the present building. This has resulted in a most untypical mansion for the period and one that, even today, seems to but poorly reflect the wealth, status, and influence of the Acland family.

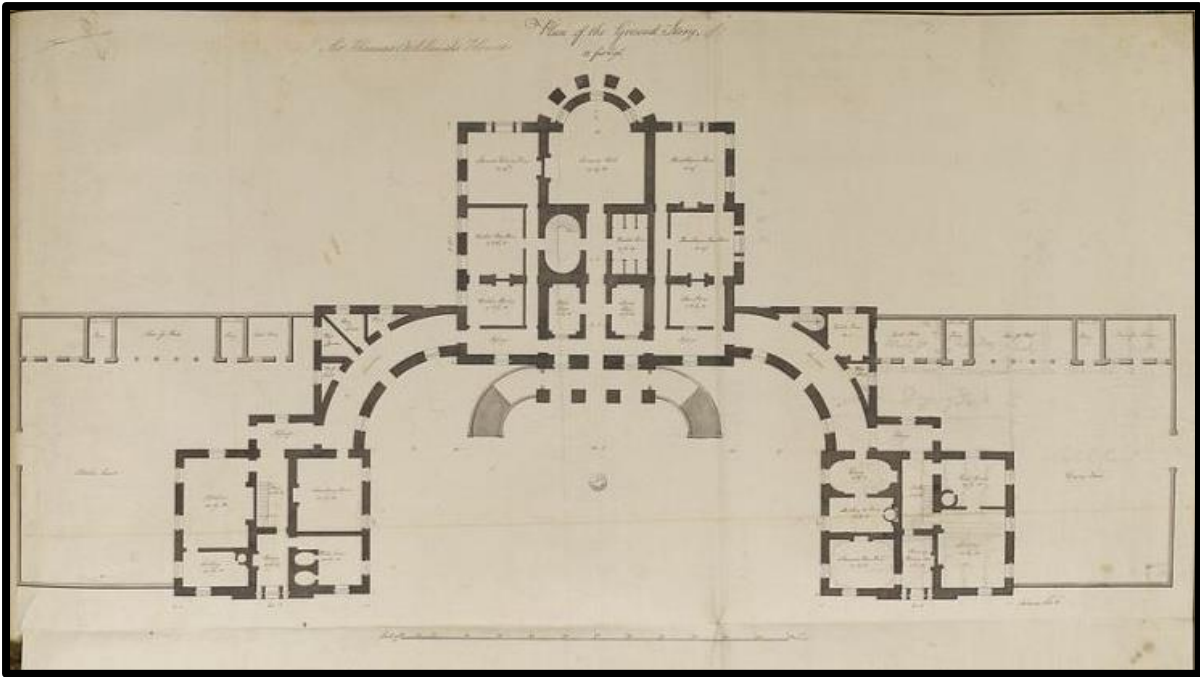


Fig. 6. Plan of the ground (basement) storey of the proposed Adam mansion at Killerton showing the Palladian layout with flanking wings (SJSM Adam Vol. 43, Nos 48-54. Adam office drawing dated 1768 © Sir John Soane's Museum).

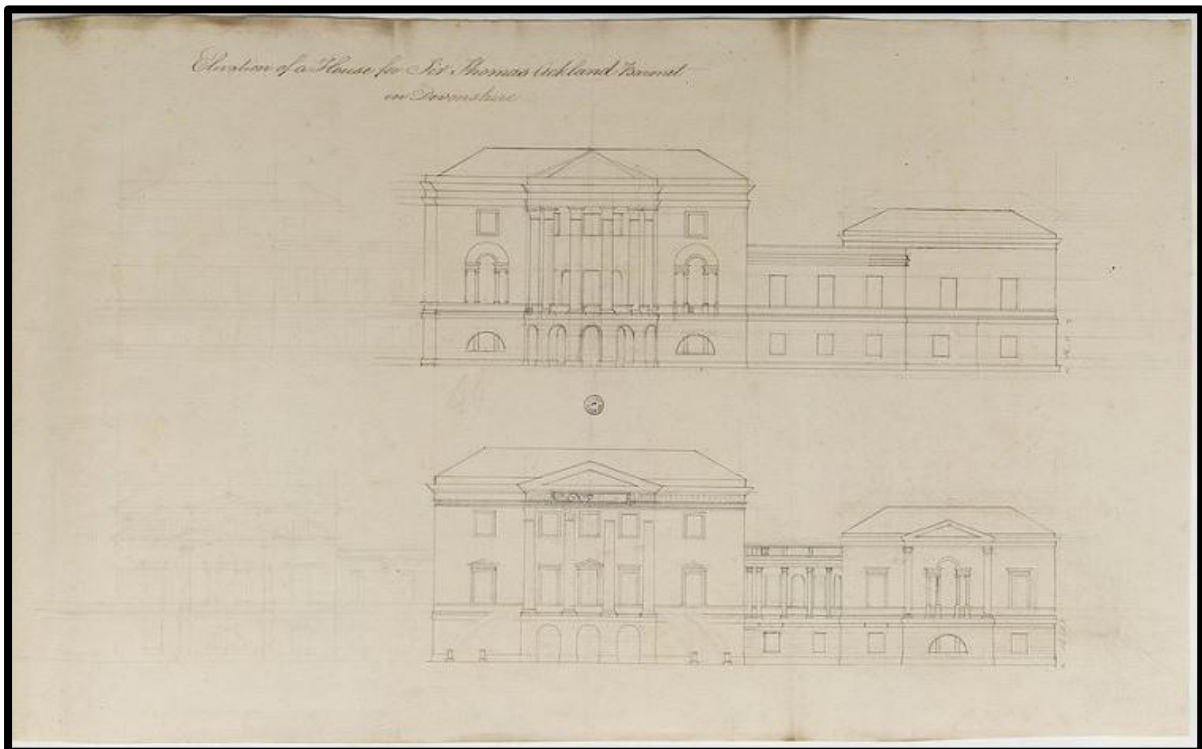


Fig. 7. North and south elevations of the proposed Adam mansion at Killerton showing the Palladian layout with flanking wings, one wing being omitted as a duplicate (SJSM Adam Vol. 43, Nos 48-54. Adam office drawing associated with other drawings of 1768 © Sir John Soane's Museum).

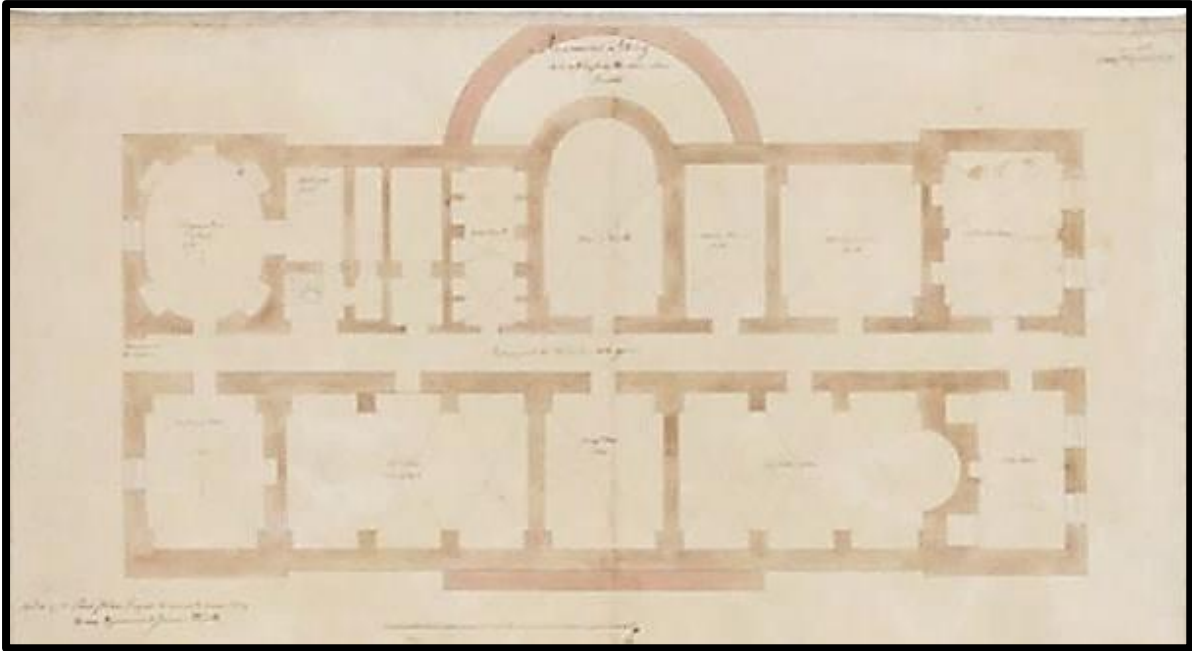


Fig. 8. Basement plan of the proposed Wyatt mansion at Killerton, dated 1775 (RIBA library ref. SA44/WyJas[9](1). Wyatt office drawing © RIBA Library).



Fig. 9. South elevation of the proposed Wyatt mansion at Killerton, dated 1775 (RIBA Library ref. SA44/WyJas[9](1). Wyatt office drawing © RIBA Library).

By the late 1760s Sir Thomas seems to have been intent on replacing the original house with an entirely new building. He approached the leading architectural practices of the time to provide designs, resulting in some very fine architectural drawings. The first proposal survives in the form of seven drawings provided by Robert Adam's drawing office in 1768, now at the Soane museum in Lincolns Inn Fields (Figs 6, 7). This was to have been a Palladian 'villa' composition with a central block flanked by pavilions, to which it was connected by curving corridors, and with large service yards on either side. This design had two enormous colonnaded *risalitos* on its principal elevations, one of which was bowed outward to form an apse at the rear. Like many houses of the period this design featured a pitched roof, rising from behind a low parapet and containing an attic storey, the roof being visible above the parapets (Soane Museum: SM Adam volume 43/48-54). The drawings show no attic windows, neither do they show any chimneys. These drawing seem to have been an office design intended to tempt the client, but which took no account whatever of the topography and the setting of the house in the landscape. Whether the design did not appeal to the 7th baronet, or was too expensive, is unknown, but no further action seems to have been taken and the Adam designs were never built.

In 1775, James Wyatt, another first-class and fashionable architect, was employed to design a new mansion at Killerton (Berry 2007, 2). The drawings for this project survive, in the RIBA library (RIBA SA44/WyJas[9](1); image refs 97087-97093). This is a more modest design than the Adam brothers' drawings, though extending to a width of nine bays (Figs 8, 9). The elevation was of two storeys over a basement, with a bowed element to the rear covered with a depressed dome. The façade had an engaged temple front framing the central entrance. As with the Adam designs, the roof of the house (excepting the dome) was a conventional pitched roof rising over low parapets. No chimneys are shown and the relationship of the house with the wider landscape is not explored. Work on the construction of this house was begun in 1775-6, under the direction of Wyatt's assistant, John Johnson, on a hill-top site some distance to the west of the old house, but it was never completed. The footings of the partly-built Wyatt house have recently been discovered during archaeological survey work undertaken by South West Archaeology (Bampton 2019), but there is no evidence to show that the building ever rose higher than ground level.

The works on the Wyatt house were suspended in February 1777 when Thomas Acland persuaded Wyatt to waive the contract (DRO 1148M/add/Correspondence/ 29/8-9; Berry 2007, 3). In 1778 the Wyatt house project was completely abandoned, possibly because of rising costs, or because of the death of the 7th baronet's son.¹ The site was subsequently cleared, leaving only the building platform and footings. Even after the suspension of the project, however, there are references to "Glazing ye new house" in August of 1777, and, in 1778, a letter from William Spring (Builder) describes the "house at Killerton" as "covered in"... "all the windows are in to the east front but not yet glazed" (DRO 1148M/Box 17/2; Berry 2007, 3). This might be taken to suggest that the Wyatt house was still being constructed, and that it was nearly completed, at least as a shell, being roofed in and partially fenestrated, if not yet fully glazed. It seems highly unlikely to the present author that a building which had been brought this near to completion, at very high cost, would have been completely demolished when less than a year old in the following year. It seems more probable that, after the work on the Wyatt house had been suspended in 1777, work had immediately begun (or recommenced) on the remodelling of the older house to provide a new mansion and that the scheme for an entirely new house elsewhere had been dropped.

It is conjectured therefore that references to building works dated after February 1777 are in fact to works on the old mansion, which was now so substantially rebuilt as to qualify as a 'new house'. If this conjecture is correct, the references to covering in and glazing the 'new house' may also refer to the existing house, rather than to Wyatt's ill-fated building, and may provide a date for building of the present roof structures over the south part of the existing south range. The references in 1778 to windows (not yet glazed) in the east front may thus refer to the re-fenestration of the present east façade of the south range following the demolition of the central range of the Elizabethan and Jacobean house, which had formerly butted against it.

Assuming the shell of the present south range to represent the 'new house' of 1778, the building was unusually modest for an 18th-century mansion (Figs 10, 11), no larger than many a modest 18th-century vicarage. The layout of the house was also unusual, with its main entrance opening in the short end of the building rather than in the long, side elevation facing the approach, as was usual at the time. The secondary elevation (at least in prominence from the approach) was irregular, because of the preservation of the earlier stair turret, which is very odd for a house of this period. The plan involved rooms on either side of a long corridor running from north to south, with a very narrow stair climbing at its northern end, now removed. There may have been a main staircase in another part of the building, but this cannot have occupied the position of the present main stair because it would have conflicted with the well of the small stair at the north end of the passage, which may have been a service stair only.

¹ The tradition of architectural drawings for a new house by Wyatt at Killerton, dated '14 April 1778' and seen by Anne Acland in the 1980s (Acland 1981, 23) but 'now lost', remains a puzzle. Were these the existing Wyatt drawings of 1775 which were so nearly executed (did Acland misread the date) - or a third and later set of drawings for yet another great unbuilt Palladian house?

The house was not cellared and had virtually no provision for services, unless these were to be accommodated in a separate service yard, which does not survive, or through the retention of the earlier house. At Dunsland, Ebford House and many other Devon mansions with large 17th- or 18th-century additions the older house survived, converted to service use, alongside the new building. Failing this (and at Killerton the older house certainly seems to have been completely demolished) the only possible place suitable for a kitchen within the present south range is the area now given over to the music room, perhaps with pantries and sculleries on the site of the present staircase. This conjecture is perhaps supported by the large size of the chimneys serving this area, but even this accommodation cannot have been adequate for a house of this status, and it is likely that the present north service wing was constructed to remedy this defect. References to “digging out the new cellars at Killerton House” in January 1779 (*Ibid.*), are also most unlikely to relate to the Wyatt house, which had clearly been abandoned by this date. The probable context for the digging of cellars after the abandonment of Wyatt’s ill-fated building is the creation of the large, cellared north wing of the present house, perhaps to provide a service wing to replace demolished parts of the ancient mansion. This new wing seems to have been a nearly a free-standing structure. To link it with the south range may have involved the removal of the northern service stair and, perhaps, many other alterations to the south range which are otherwise unrecorded.

The remodelling of the older house thus seems to have been nearing completion in 1779, when skylights were inserted in the roof of the upstairs corridor and work was being undertaken in the great drawing room (Berry 2007, 8), presumably alongside the construction of the new service wing. At this period the landscaping of the park also appears to have been finally agreed and was under way between the end of 1779 and 1785 (Heriz-Smith 1988, 42). The Veitch layout of the park was thus clearly designed to respect the existing house rather than either Adam’s or Wyatt’s unexecuted buildings (Figs 12, 13).

An undated map of this period (predating the erection of the existing stable block in 1779-80) shows the footprint of the rebuilt house as a rectangular oblong building aligned from north to south, with a north-eastern service yard (DRO 1148M/add 23 E1 Map 1; Fig. 2). The house was therefore already complete much as it now stands. It is interesting to note that not even the site of the Wyatt house is indicated on this map, suggesting that it had already completely disappeared.² Perhaps, the family wished to abolish all memory of their disastrous venture.

Unfortunately, further disasters were to follow. In 1779 Holnicote, the family’s principal house in Somerset, burned to the ground and in 1785 both the 7th Baronet and his grandson and heir, the 8th Baronet, died. During the period from 1785-1808 the 9th Baronet and his family preferred to live in the rebuilt house at Holnicote and Killerton was unoccupied (Berry 2007, 4). Work on the park and gardens also went into abeyance (Heriz-Smith 1988, 42).

During this period of disuse the structure seems to have suffered both from neglect and from its own inherent weaknesses (perhaps a consequence of its unhappy structural history). Correspondence survives between John Veitch and Hugh Hoare regarding the roofs, which seem to have been in a parlous state from as early as 1790, when they were barely more than ten years old. The correspondence describes the roof, which was “flat, and... divided into so many angles, that makes the lead very expensive indeed” and Veitch claims that he had had it “trussed up and secured in a temporary manner” to prevent its sinking in 1792. On June the 6th, 1794, in another letter, Veitch describes the roofs as being in two halves, one part, “over the breakfast room, staircase, billiard room and strong closet” (presumably in the east half of the south range) having been done “with a view to being permanent”, whereas that over the passage, the dining and the drawing rooms” in the other (western) half of the south range was “very feeble” as it had been

² Alternatively, the map may date from before the Wyatt house was ever conceived, and this might explain its absence, in which case the old house may have been remodelled in this form well before 1775. On balance, however, this seems unlikely and the scenario outlined above is preferred. It is a great shame that these maps are not dated.

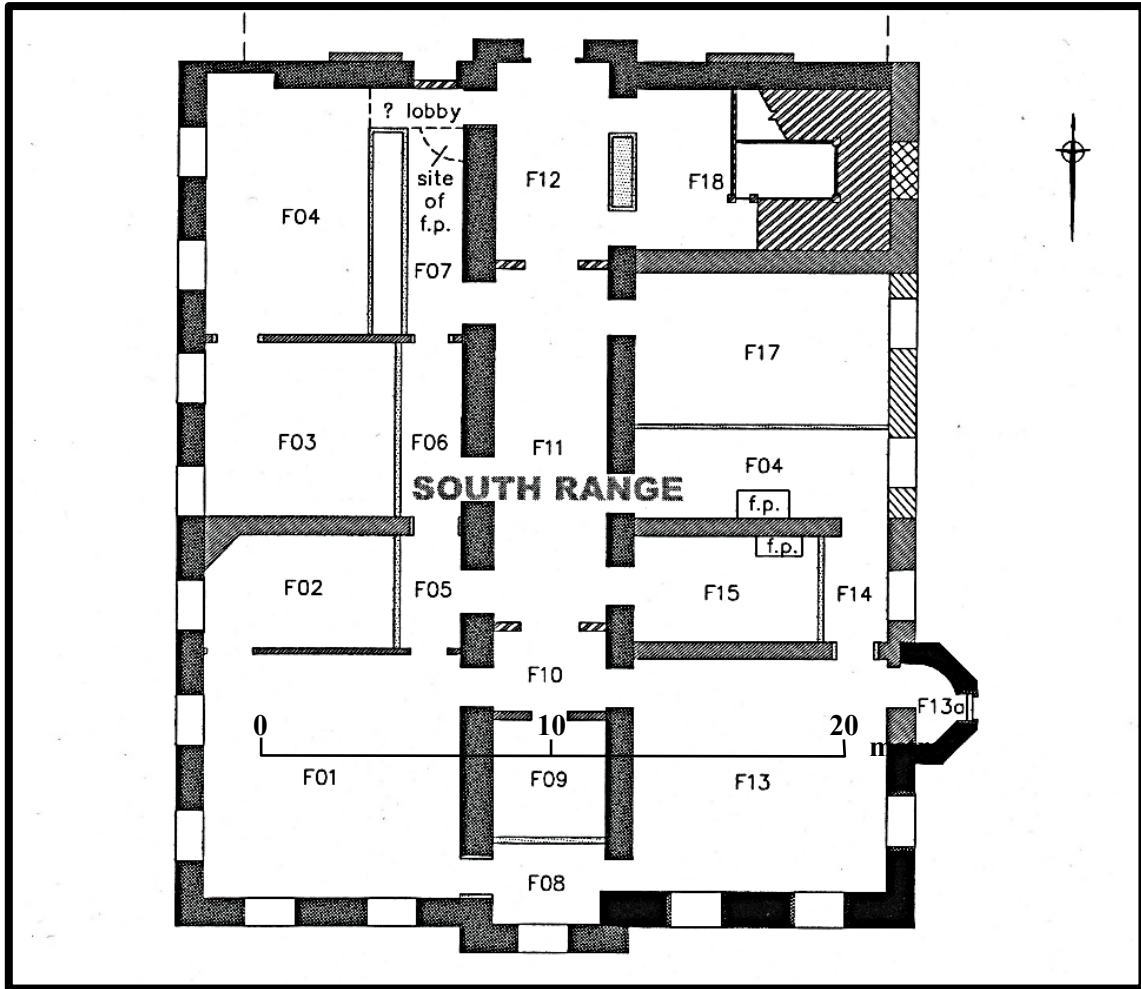


Fig. 10 Plan of the first floor of the south range of the existing house showing the modest scale of the accommodation, which had neither cellars or attics (Exeter Archaeology).

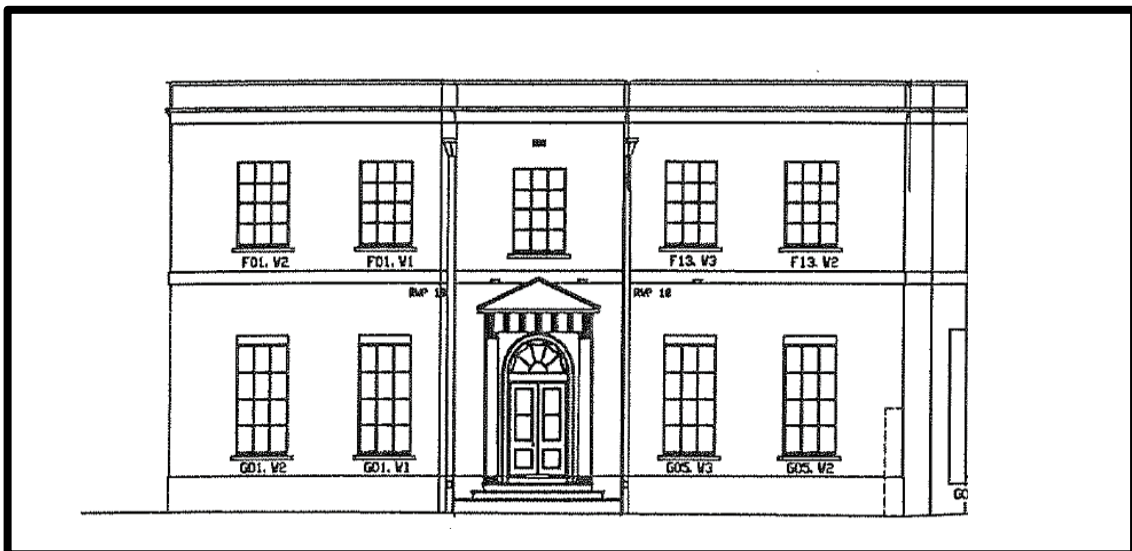


Fig. 11 Elevation of the principal façade of the south range of the existing house showing the modest and unambitious architecture of the new house. Based on an architectural drawing for the National Trust by Clayton Associates.



Fig. 12. , with the stair turret rising against the east façade and the polygonal bay for the new dining room. Neither roofs or chimneys are visible.



Fig. 13 The present house from the east today, showing the polygonal turret rising off-centre in the middle of the modern entrance façade and the later projections of the music room, entrance porch and billiard room, perhaps occupying the site of parts of the early house.

expected to stand “only for a few years” during the building of a “very large new house projected upon on the top of the hill”. Veitch’s solution was that all the ceilings of bedrooms must come down to allow the introduction of new timbers. It is therefore highly likely that some roofing works were carried out in 1794-5.

This last letter has given rise to the long-standing tradition that the present mansion was merely ‘a temporary house’ built for use while another house was being planned. Although expenditure on a temporary building (when a substantial existing dwelling already existed) seems highly unlikely, this letter does seem to confirm that the present house already existed (albeit perhaps half-finished and partially roofless) before the new house on the hill was conceived and supports the conjecture that the remodelling of the older house had already started before the new house was planned. The ‘temporary’ section of the roof may therefore date from as early as 1775-6 when the Wyatt house was first commissioned, and the ‘permanent’ part of the roof either from before this date, relating to the original scheme of remodelling, or perhaps from after the abandonment of the Wyatt house in 1777, when the older building was reinstated for use on a ‘permanent’ basis. That there were temporary buildings on the site certainly seems to be the case, as Veitch’s letter goes on to refer to a servant’s hall and a wood lincay which had been “roofed with the old scaffolding” (DRO 1148M/add/Correspondence 36/52). These buildings may have stood in the north-eastern service courtyard and were presumably replaced soon afterwards when a new service courtyard was constructed.

The early 19th century alterations

After 1808 the Acland family returned to Killerton once more. Alterations in anticipation of this move may have included the replacement of the temporary service ranges with a more permanent structure as well as the complete refurbishment of the building. The existing service courtyard is not contemporary with the main service wing of c. 1778-9, but lies at a higher level. The basement of the south range has ornamental features such as blind arches and windows which are now below ground level or covered up and rendered useless by adjacent vaulted passages. These must originally have been exposed and there can be little doubt that the ground levels to the east of the house were raised after the construction of this range, burying the lower parts of the building.

The raising of the ground levels and the construction of the service wing may well have been done in the 1790s to early 1800s, perhaps in the context of the landscaping of the park under John Veitch, which may have been resumed at around this period. The landscaping involved the replacement of the Elizabethan and Jacobean terraces north of the house, hinted at on earlier maps, with a continuous sweep of lawn. This provided a more ‘natural’ contour for the grounds, typical of the ‘picturesque’ style of the period. It is likely that, at the same time, the service range (which seems, bizarrely, to have been originally built as a freestanding structure linked to the south range only by a small corridor), was fully linked to the rest of the house by the construction of an infill block containing, among other things, a butler’s pantry and a small room adjoining the dining room, later converted into a private library.

In around 1820 a polygonal bay was added to the east front of the house converting a space which seems to have served in the 1790s as a billiard room into a new dining room (Figs. 12, 13). The main stair may also have been moved to its present position in this phase. The original dining room was now converted into a library and a smaller private library was created within the infill block between the south range and the service range. The area immediately to the north of the bay seems to have been enclosed by a trellised wall, to hide lavatories, and an ornamental garden was created to the east of the house (Fig. 12). The resulting façade, with its irregularities, is depicted in drawings made by John Gendall in the 1820s and included in the 1834 sketchbook *Fragments of Killerton*. Shortly afterwards, but before 1829, a conservatory was erected against the south wall of the service range. At around this time the entry to the service yard may have been moved to the north of the house where additional buildings appear to have been added creating a subsidiary service yard.

Later 19th-century alterations

During the 19th century more attention appears to have been devoted to the park and landscaping than to the house. A number of important garden buildings; the Bear's hut, the orangery (now lost) and a magnificent new chapel by C. R. Cockerell were added. The ancient chapel of Columbjohn was also substantially rebuilt in around 1850. There is no record of expenditure on the roofs of the house until the 1860s and 1870s, but this may not be taken to imply that no works were undertaken. In 1861 lead was purchased for a 'new roof' at the cost of £75.00 (Berry 2007, 5), a sum equivalent to just over £9000 today. This may well record the creation of a flat roof structure overlying the earlier structures. This roof does not appear to have been a success either, since payments are recorded in 1867 for 1018 gallons of tar, in 1870 for a further 87 gallons and in 1874 for cement for the roof (Ibid.), which suggest attempts to waterproof the structure.

20th-century alterations

In the early 20th century, the Cheltenham architects Prothero and Phillott were employed to remodel the house and improve it in a grander and more fashionable style (Parker 2002). At this time the main state rooms and stairs were extensively remodelled. The morning room was opened up as a new drawing room, to include the area of a former strong closet (associated with the use of the present music room as a dining room) and the library was moved to the former position of the drawing room at the south-western corner of the south range. The former library now reverted to its earlier use as a dining room and the early 19th-century dining room now became an entrance hall to replace the original, modest southern entrance, with a new door case fitted in one of the angled sides of the polygonal bay. The new entrance hall opened on the stairs by a wide arch; the stairs being turned around to rise in the other direction to allow direct communication between the two rooms. A billiard room or study was added in the angle between the main house and the eastern service range, linked to the older building by a narrow passage designed to reduce the possibility of smoking smells penetrating to the moan house. All the interiors were refitted in a delicate 18th-century style and the first-floor windows were enlarged (Acland 1981, 134, Parker 2002, 4) but there appear to have been no significant works to the roofs at this period.

In 1924 a new entrance porch was added to the east side of the house. Replacing the passage to the billiard and smoking room. After the property was gifted to the National Trust the house was used for a time as student residences (being architecturally undistinguished according to the prejudices of the day), during which period many of the chimneys were demolished.

3 . E A R L I E R R E C O R D I N G

The archaeological interventions most relevant to the recent works are summarised below:

3.1 Recording by Nick Marsland in 1987

In 1987 the rendering of part of the main south range of the house was removed for repairs, exposing an area of earlier masonry which clearly pre-dates the existing structure. The fabric was recorded at the time in an elevation drawing (Fig. 14) by N. Marsland (Marsland 1987, NT Drawing KI:06:PL:200–207). Marsland's drawing shows the southern part of the east wall of the south range with the polygonal turret rising against it. The turret and the area immediately south of it were recorded as being constructed of 'sawn ashlar', with intrusions of red brick forming irregular areas surrounding the present sash windows. Marsland depicted the stone-built areas with ashlar jointing. This convention probably represents blocks of Killerton or Silverton volcanic stone laid to irregular courses, some very deep and others shallower, including very narrow bands at approximately half the height of each storey. These might conceivably represent the remains of string courses, though whether these had been dressed off flush with the wall is not recorded.

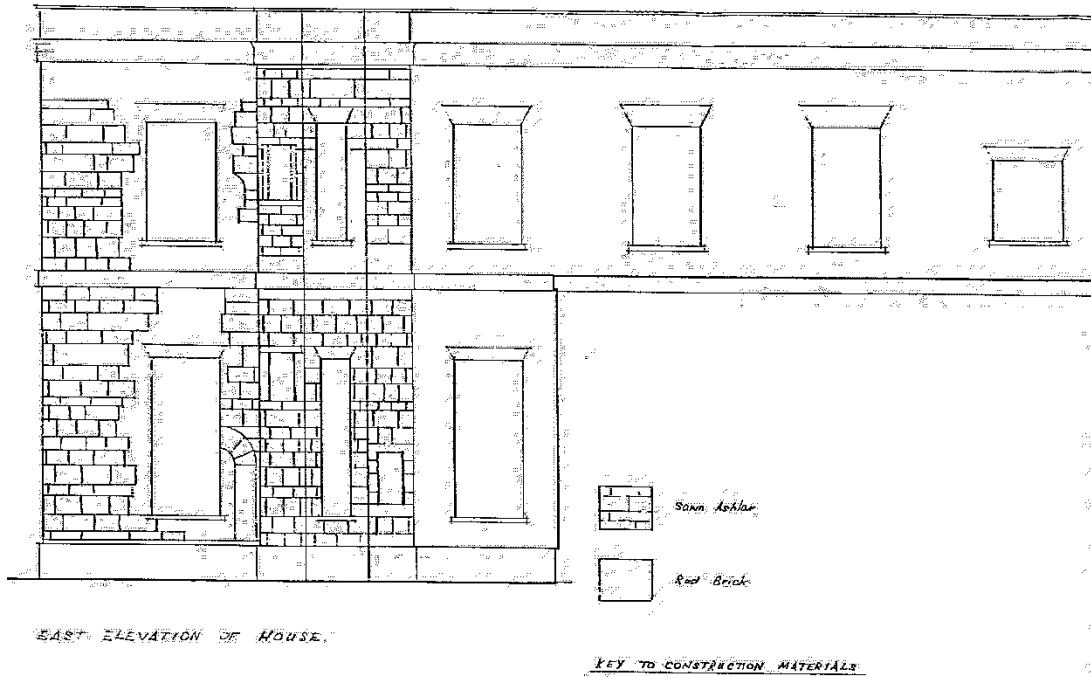


Fig. 14 Drawing by Nick Marsland made in 1987, showing the fabric of the east elevation as exposed during alterations at that time (NT Drawing KI: 06:PL:14)



Fig. 15 Possible interpretation of the above drawing, showing a reconstruction of the east face of the western wing of the Elizabethan house, based on 16th- and 17th-century houses elsewhere (including the stair turret and gabled roofline at Poltimore House) with narrow courses emphasised as evidence for string courses, transoms, sills and drip moulds.



Fig. 16 Montacute, Somerset, an Elizabethan E- plan house with elevations employing both round- topped shell-headed niches and hemispherical roundels as architectural features

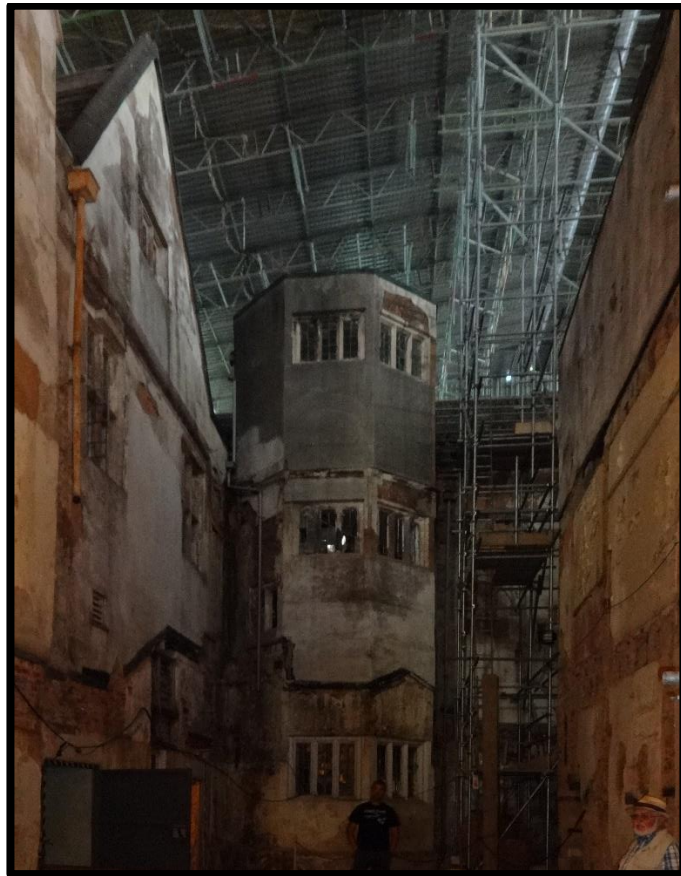


Fig. 17 Poltimore House. A substantial fragment of a large 'E'- plan house with a gabled roofline and polygonal turrets in the angles of the wings terminating in belvederes.

Among the features recorded within this masonry were traces of two small arched features, one on the ground floor, retaining two or possibly three voussoirs over the arch, and one at first-floor level from which the voussoirs had been lost. Marsland's drawing also recorded a series of small rectangular openings in the polygonal turret, at levels which lie between the supposed floor levels of the range and would seem to indicate that the turret served a newel stair. Those areas which had been compromised by later alterations, including areas cut out by the insertion of the present large, rectangular sash windows, were shown as blank, but annotated in the key as 'red brick'. These include the areas around the two southernmost windows and the whole of the walling to the north of the turret. The implication is that these red brick areas date either from the later 18th century (from John Johnson's reconstruction of the house) or from an undocumented earlier intervention, such as the remodelling of the house in the late 17th or early 18th century.

Interpreting Mr Marsland's drawing

Unfortunately, Mr Marsland's drawing raises a number of questions. To begin with, the extent of the stripping of the render is not clearly shown. No northern limit to the exposed masonry is given, which implies that the entire eastern wall of the south range was stripped, including the areas over the Music Room and Entrance Hall roofs, to the limit of the south range, though this is not indicated either. Marsland shows no features or phasing of any kind in the brick areas, and though we might assume from this that the entire façade north of the turret, was of a single phase, it seems more likely, given the insertion of the music room bay and the enlargement of the first-floor windows, that there were additional phases here which were not recognised or recorded. Marsland also gives no indication of the phasing of the plinth at the base of the wall, neither of the plat band at first-floor level, despite the fact that these are continuous through both the ashlar work and the red-brick work. If these features had been part of the earlier work one would expect to see them divided into individual blocks.

It is equally unfortunate that no record remains of the south elevation during these works and it is unclear whether or not this façade was also stripped, whether it had been completely refaced in the 18th century or whether it was simply not recorded (which seems unlikely, especially if significant fabric had been exposed). The possibility remains, therefore, that significantly more of the masonry of the earlier building is preserved than the drawing suggests.

The features recorded by Marsland are critical for reconstructing the appearance of the early house. As discussed above (Page 5, Figs 4 & 5), it is likely that the masonry surviving in the east wall of the south range represents part of the west range of a large symmetrical E-plan mansion of the Elizabethan or Jacobean period resembling the great house at Heanton Satchville (Fig 5). The position of some of the openings in the stair turret, well above first-floor level, provide an indication that this building may have risen to a third storey, perhaps partially within the roof structure. The removal of an attic storey in the 1770s may explain the 'temporary roof' recorded in the 18th-century correspondence, and also some of the anomalous features of the north part of the present roof, discussed below. The coursing of the masonry blocks, recorded by Marsland as having occasional narrow bands of stonework, may indicate the possible positions of transoms, window heads and string courses fixing the levels of the window sills, heads and other details of the elevations.

Other features recorded by Marsland may perhaps be paralleled in other west-country mansions, such as the use of tall, narrow arched features, perhaps shell-headed niches, which may be seen at Berry Pomeroy Castle, Devon; Waterston Manor, Lulworth Castle and Chantmarle House, in Dorset, and Montacute House (Fig. 16), Cothelstone Manor and Wayford Manor in Somerset. Domed or shell-headed niches and hemispherical recesses, either for seating in loggias or forecourts, or at higher levels of the façade for the display of statuary and busts, are found in important houses associated with the great Elizabethan designers, William Arnold (Orbach & Pevsner 2014, 464) and Robert Smythson (Girouard 1983).

The polygonal stair turret, rising above a gabled attic storey can be paralleled locally at Poltimore House, in the neighbouring parish, where a gabled roofline and very large mullioned windows also survive. The turret terminates in a small belvedere (Fig. 17); it is now within a small internal courtyard but at one time probably formed part of a handsome symmetrical entrance front facing south east. The turret at Poltimore lay in the angle of two ranges, possibly the main hall range and the north-east wing, and may have been matched by another turret between the hall range and the south-west wing, but that at Killerton seems to be located further forward along the side of the wing. It is possible that the turret (or turrets) at Killerton formed features against the centre of each wing, as is found in other important Elizabethan and Jacobean houses such as Aston Hall in Warwickshire, or Burton Constable Hall in Yorkshire. Alternatively the turrets may have risen in the angles of a lost gatehouse range enclosing the entrance court, as is still to be found at Castle Ashby in Northhamptonshire, where they terminate in Belvederes (as at Poltimore). It seems clear from these parallels and the extent of the building on the 18th-century map that the 16th- or early 17th-century Killerton House must have been an ambitious structure closely affiliated with some of the most prestigious architectural achievements of the Elizabethan and Jacobean age.

3.2 Recording of the roof structures in 1999-2000 by Henk Strik

In 1999-2000 a survey of the roof structures of the main south range was undertaken for the National Trust by Henk Strik of Carøe & Partners, Architects. Strik had limited access to the roof cavities over the southern and western parts of the south range. Even then, these could not be examined closely due to the constricted head room; however, his observations were of critical importance for the reinterpretation of the building.

Strik's observed that the existing, nearly flat, roofs of the house have had a complex history of repair and reinforcement and that the roof structures present at the time of his survey preserved evidence of at least four different phases of intervention. Strik interpreted the first of these as being a very low roof structure designed not to show above the parapets, divided into four shallow-pitched ridges formed by 'M'-shaped trusses supported by diminutive king-post trusses, each half of the house was roofed by two pitched elements, divided above the existing spine corridor by a central leaded flat.

Strik concluded that these roofs had been renewed and strengthened, on the same pattern, by replacing the principal rafters with new ones. These had then been reinforced, in a third phase of alteration, by new timbers bolted to the sides of the original tie beams. Rising from the former valleys Strik observed evidence of tall king posts which he interpreted as supporting a 'high' roof, with a massively greater pitch than the original (Strik 1999–2000, Figs 1, 2). Strik identified further evidence for this high roof in the form of 'gathering' in the existing chimney shafts (unfortunately, all but one of these surviving chimneys, together with this evidence, were later removed). This phase of roofing was interpreted as consisting of four steeply pitched roofs at right angles to each other, lying parallel to the north, south, east and west elevations of the south range, to form a hipped roof in the form of a truncated pyramid, with a central well. Strik interpreted this roof as having existed from the 1830s until about 1890s, after which it was removed and superseded by the present flat roof on aesthetic grounds (Ibid.). No drawn or photographic evidence for such a roof has ever been identified and, though the structural evidence for its existence identified by Strik seems compelling, it cannot reasonably have been assumed to have existed at Killerton at any time between the 1770s and the present day.

3.3 Archaeological assessment by Exeter Archaeology in 2001-2

The next phase of recording consisted of a Building Survey and Archaeological Assessment undertaken by the present author, then working for Exeter Archaeology. This phase was

undertaken in advance of a re-servicing project at Killerton which involved many small interventions within the historic fabric. The assessment aimed to provide a basic interpretive framework for the historic development of the building based upon observations of the fabric as well as the documentary sources, and thus to refine and improve the traditional interpretation of the building, especially its relationship with any earlier buildings on the site. A measured EDM survey of specified parts of the building, but mainly of the existing south range was prepared, and written notes and annotated phased plans were prepared to illustrate the interpretation and analysis of the existing fabric. The conclusions of this phase of work have informed the 'historic background given above in Section 2; arguing that the present south range represents part of the west range of an earlier 'E'-shaped mansion, the central and east ranges of which lie in the area of the present entrance hall, billiard room and forecourt of the existing house. The 18th-century rebuilding of the house, it was concluded, consisted of the doubling up of the Elizabethan west wing and a change in its axis so that it faced west, the present entrance façade, with the remains of the Elizabethan turret and other asymmetrical features thus appearing on the rear elevation of the house rather than its front or side. The research also identified openings, projections and other features in the north elevation of the south range which seemed to indicate that this had also formerly been one of the façades of the building and that the house had formerly had an attic storey. It was concluded that there had been a northern façade, that the existing north service wing was an addition and that at least part of the hall range of the earlier house had been expected to remain in use after the rebuilding as a service wing for the improved mansion.

Access to the roof voids of the house was not possible during these works, but Strik's demonstration that the house had formerly had high roofs seemed to point (then, as now) to the conclusion that the house had already been substantially remodelled before the 1770s and that the high roofs of the house pre-dated the alterations by John Johnson for the 7th Baronet. High roofs with attic storeys were a common feature of late 17th and early 18th-century mansions in Devon and elsewhere, and it was concluded that the shell, at least, of the present south range might represent the remains of a substantial remodelling of an earlier house to create a fashionable new 'double-pile' mansion in the period between 1680 and 1750 (Parker 2002, 23-4).

3.4 Archaeological recording by Exeter Archaeology in 2002-3

During the refurbishment and re-servicing works in the Autumn and Winter of 2002-3, an archaeological watching brief was undertaken at Killerton which aimed to examine the conclusions of the earlier work by further examination of the physical fabric of the building. The roof spaces, heating ducts, ceiling voids and under-floor voids and cellars were now examined, where they were affected by the reservicing project.

Unfortunately, this did not reveal any further substantial remains of the Elizabethan or Jacobean house, but it did clarify that some of the conclusions of the assessment were correct: the south range had formerly had a north-facing façade unencumbered by other buildings and also preserved some evidence of an attic storey lost since the late 1770s. This attic storey was approached by a small service stair rising from the north end of the central passage for which the scar was still visible. This stair would have conflicted with the present main stair at first-floor level, showing that this latter stair was almost certainly in another part of the building, before the small staircase was removed. The small staircase is likely to have been removed when the corridor was extended into the northern service wing after 1779 and presumably must have been in place for a considerable time before that.

It was evident that the house must either have been reliant on the older house for its service areas or that these were most unusually limited. Other features were observed which are clearly unrelated to the existing plan and functions of the late 18th- and early 19th-century house. The phasing of the earlier assessment was conservatively revised (Fig 18). None of the newly observed fabric could conclusively be dated to the late 17th- or early 18th century, but no stylistic features

or relationships precluded such a date either, and the only reasonable conclusion must be that Johnson was indeed adapting the remains of an earlier house rather than constructing anew. Much of the south range may therefore be substantially earlier than the 1770s.

The roof of the house was also inspected, though only in a very limited area over the western half of the building. Access to the eastern parts was very restricted, the existing flat lead roof lying at a height of only 0.5 m above the beams and joists of the earlier roofs. No evidence for 19th-century high-pitched roofs was visible and all the structural evidence seemed to point to the roofs having been flat or low-pitched since the 1770s. Without any surviving structural evidence in the chimneys, where Strick had observed 'gathering' related to steeply-pitched roofs (all but one of the chimney stacks appear to have been removed above first-floor ceiling level shortly after his survey) it was concluded that the evidence for a high roof must have been for an earlier, rather than a later roof, but the date and character of this roof could not be determined.

3.5 Recording by Jerry Sampson in 2007

In 2007 further examination of the roof structures was undertaken by Jerry Sampson of Caröe and Partners Architects at the request of Henk Strik ARIBA. This research aimed to further clarify the original form and repair history of the roof. All parts of the roof were examined, as far as was possible given the extremely restricted roof spaces.

Sampson noted that the modern roof overlying the original structure consisted of large tie beams let into the eastern and western parapet walls and sloping slightly downwards to wards the central flat over the main first-floor spine corridor. He interpreted this roof as dating from the early 20th-century on the basis of its machine-sawn timbers.

The earlier roof structures lay immediately below this and Sampson observed that the north-western part of the roof retained more historic timbers than the other, in fact he argued that the western half of the roof was the only part that retained any evidence of its original historic configuration.

The form of the original roof, with a central valley, and also the later date of the large service wing to the north was confirmed by the presence of a cut-out in one of the northern tie beams and water staining on the timbers, plus a blocked void in the former northern parapet which showed that there had formerly been an internal trough or gutter running from north to south within the roof space, draining a central well towards a spout or downpipe on the north elevation. Evidence for a parapet gutter along the north, south, east and west sides of the building showed that the roof had formerly been hipped on all four sides.

‘This arrangement suggests the former existence of a parapet gutter, probably running right around the roof, which was also fed at the centre from the south by a gutter which divided the roof into two equal north-south sections’

(Sampson 2007, 3).

Sampson went on to describe the evidence for double-pitched roofs over each half of the house, arguing that the original arrangement of two, low-pitched king-post structures over the east and west parts of the building had had to be renewed, due to the deflection of the original tie beams, even before any major alterations to the roof. The surviving elements of the king posts and rafters were a poor fit with the mortices, and were secured with wedges, which implies that these timbers had had to be re-positioned or renewed after construction. Needless to say (this is Killerton) this device for securing the roof from failure did not work either.

In a second phase of intervention, new ties were bolted to the sides of the original ones to strengthen them, the earlier (and the replacement) trusses and gutters were removed, and a new central king-post was fitted within a mortice in the former valley at the centre of each half of the roof. These are the features noted by Strik in 1999-2000, which suggested to him a high roof;

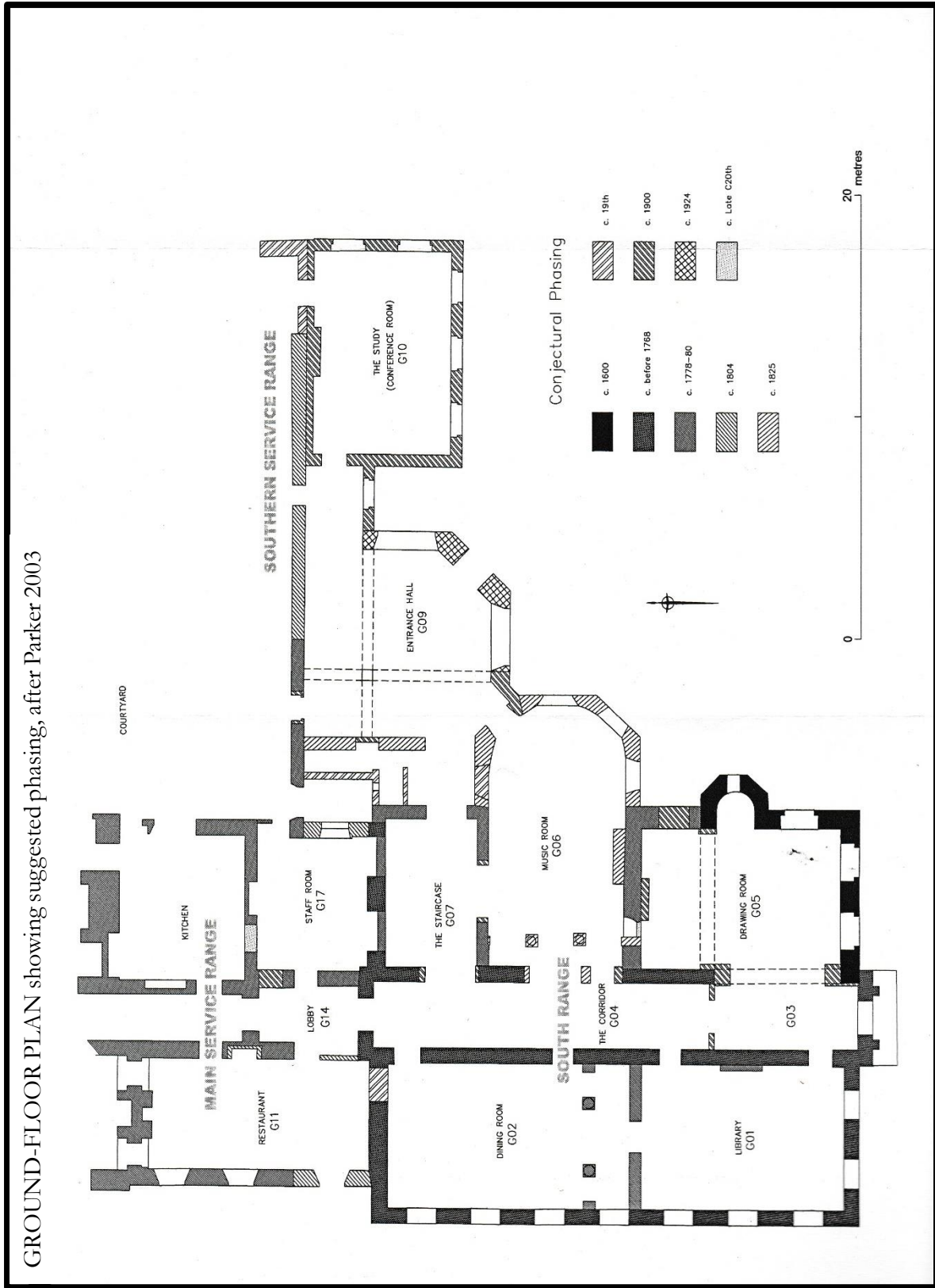


Fig. 18 Phased plan of the ground floor showing the conjectural phasing of the principal additions and alterations to the house, particularly its eastern side, after Parker 2003.



Fig. 19 Aerial view of the new roof structures at Killerton House in 2019 (possibly by Malcolm Jarvis for PCA Consulting engineers and the National Trust), showing the new lead flats, rebuilt chimneys and domes, and expressing the fond hope of Killerton staff and volunteers that this solution will endure for a little longer than its predecessors.



Fig. 20 The removal of the modern roof structure in April 2017, looking north, showing the remains of the modern roof represented by chases in the rendering, and beneath this an earlier structure, the joists remaining, which stepped down in three broad shallow inclines toward gutters flanking the central raised flat over the first-floor spine corridor.

however, Sampson argued that the roof may have been of ‘Mansard’ form, with two separate pitches to each side, one steeper and one shallower, the roof presumably changing angle at the ridge line of each of the former shallow pitches and so barely, if at all, visible over the parapets. The new king posts, Sampson argued, were of unusual form, divided into two halves and secured within the new mortices by ‘waisted’ tenons and wedges which served to hang the tie beams from the apex rather than to support the apex from the ties. This implied a steeper roof, without changes in pitch, in which the original pitches of the outer planes of the shallow, double roofs were maintained to the apex. This roof does not appear to have been a success either, and both the original and secondary ties were subsequently augmented by additional timbers, bolted against the sides of the tie beams.

In conclusion Sampson argued that the earliest phase of the roof dated from the John Johnson period of alterations in the 1770s. A second phase of alterations - defined by Sampson as ‘major repairs’ rather than a full second phase, and thus identified as ‘phase 1A’ - appears to have involved the replacement of earlier timbers with ill-fitting ones secured by wedges. This phase was not dated by Sampson, but might, on documentary evidence, be assigned to the ‘trussing’ of the roof ‘in a temporary manner’ by Veitch in the 1790s, Johnson’s roof having already failed utterly.

The second phase of re-roofing Sampson identified as coeval with the addition of the northern service range. This necessitated the abandonment of the south-to-north internal gutters draining the valleys and the northern spouts or downpipes. The valleys were now freed to accommodate the new king posts, or rather suspension ties, linking the new apexes of the new, single roof pitches over each half of the roof with the sagging tie beams beneath them.

Needless to say, this roof also failed, and Sampson’s third phase involved the removal of everything above ceiling level and the superimposition above the truncated roof structures of the roof structure which has been recently removed. This took the form of a flat roof overlying the structural embarrassments beneath it. Sampson concluded that this dated from the early 20th century. It too, has now succumbed to the genius of the place, and failed. Hopes are high for the survival of the new roof structure which has replaced this (Fig. 19).

4 . O B S E R V A T I O N S

The phase of building works described here involved the complete removal of the failing modern roof structures and their replacement with a new roof at the same level, the aim being to preserve all the evidence of the historic roofs beneath the new. After the erection of a very large scaffold supporting a temporary roof, the modern leads and boarding were removed in April 2017 (Fig. 20). This revealed several successive roof structures underlying the present ones and also a clear distinction between the development of the roofing of the eastern and western parts of the house.

4.1 The South Range

Modern flat roof structures over both sides of the house.

The modern roof structures removed in 2017, as described by Sampson, covered each half of the house with shallow inclines slowly sloping inward toward the centre of the house. The outline of the upper surface of this roof survived as a chase in the plaster render of the internal faces of the parapets, which increased in thickness below this to support trimmers for the roof joists and other timbers. On either side of the central roof over the first-floor spine corridor gutters ran from north to south, venting through the south elevation on either side of the central projection. The roof over the central corridor had a very shallow pitched profile which also drained into these gutters, which had clearly been retained from an earlier roof. There were no rainwater outlets on the east or west sides of the building, or on the north side, where the flat, asphalt roof of the service wing probably originates as a repair after the fire of 1924.

A flat roof structure underlying the modern roof

The structure of this modern roof was supported upon an earlier one, of similar form, lying almost immediately beneath it. This roof was not initially recognised as a separate structure possibly because in places the modern roof rested upon it and utilised its timbers. It had also been almost entirely removed by the time of the archaeological recording.

On the east side of the house this roof was arranged in three, broad, shallow almost flat inclines, stepping down gradually to the gutter flanking the central roof over the spine corridor, and, like the modern roof, venting through outlets in the south façade. At the time of the recording small groups of joists remained in position on the east side (Fig. 20). These were machine sawn and appeared to be of mid-to-late 19th-century date, but they seemed to replace an earlier roof of similar form, also flat.

This roof had rested upon long beams of narrow scantling aligned from north to south, which appeared to be earlier than the joists previously mentioned, as they were of a darker colour. Each of these beams had an applied timber of smaller scantling nailed to its upper surface and the later joists were notched over these to hold them in position. Boards and leadwork were presumably laid over these, but none survived. This roof may have dated from the late 19th-century, utilising earlier longitudinal beams relating to an earlier flat roof over this section of the building of which little else remained.

On the western side of the house this roof descended in four shallow inclines, suggesting that this side may have been of a different date than the other, although the two structures were very similar in character. The roof may conceivably have been renewed in several phases, as an when estate finances allowed, but both sections may perhaps be assumed to have dated from the 1860s, when the documentary evidence records payments for 'lead for the new roof'.

Below this roof the surviving historic timbers of each half of the roof had a very different character and presumably represented separate phases of intervention.

Underlying historic roof and ceiling structures on the east side of the roof

The longitudinal, north-south beams underlying and supporting the east half of the 19th-century roof were supported by packing off a crude but substantial underlying structure which also sustained the ceilings of the bedrooms and may perhaps be of 18th-century date. The area over the main stair was a separate and much later structure which will be described below.

The northern part of the eastern roof structure (Fig. 22), excepting the stair, now covers two rooms, both above the present music room, which are divided by a timber partition; however this must formerly have been a single large room heated by a fireplace in its south wall. The room is ceiled at its centre with a large beam with a scantling of 300 x 290 mm running from east to west (Fig. 21). A similar but smaller beam, measuring 140 x 270 mm lies immediately alongside it to the south and is central to the ceiling structure. The larger beam is thus presumably an insertion to strengthen the roof.

These timbers support six subsidiary beams running from north to south, with a scantling of 180 x 100 mm, dividing the ceiling into eight rectangular panels. These beams in turn support the joists. The subsidiary beams are presumably contemporary with the secondary beam. The joists are tenoned into one face of the subsidiary beams within individual mortices, but in the opposite face of each beam each pair of joists is set in a short groove, allowing the joists to be swung sideways into position before being secured. There is no evidence for a superstructure of any kind supporting a roof structure above this; however that there must have been at least two phases of earlier roofs is shown by a series of blocked sockets at a much higher level in the east wall (Fig 21) and by a number of shallow, angled housings in a beam lying at ceiling level against the east wall of the spine corridor (Fig. 22).

Both groups of features relate to earlier roof structures; however they may not be related. The small housings suggest a shallow-pitched roof structure of some kind, but the large sockets imply massive tie beams for a completely different form of roof.



Fig. 21 The northern part of the eastern roof showing blocked sockets in the parapet wall answering to the open sockets visible in the west wall (see below). These sockets are unrelated to the flat or double-pitched roof structures and must surely have housed tie beams for an earlier phase of roofing.



Fig. 22 Angled housings in the beams over the eastern spine wall of the first-floor corridor showing the position of the rafters of a shallow pitched roof over the east part of the house - probably a different phase from the large blocked sockets above.

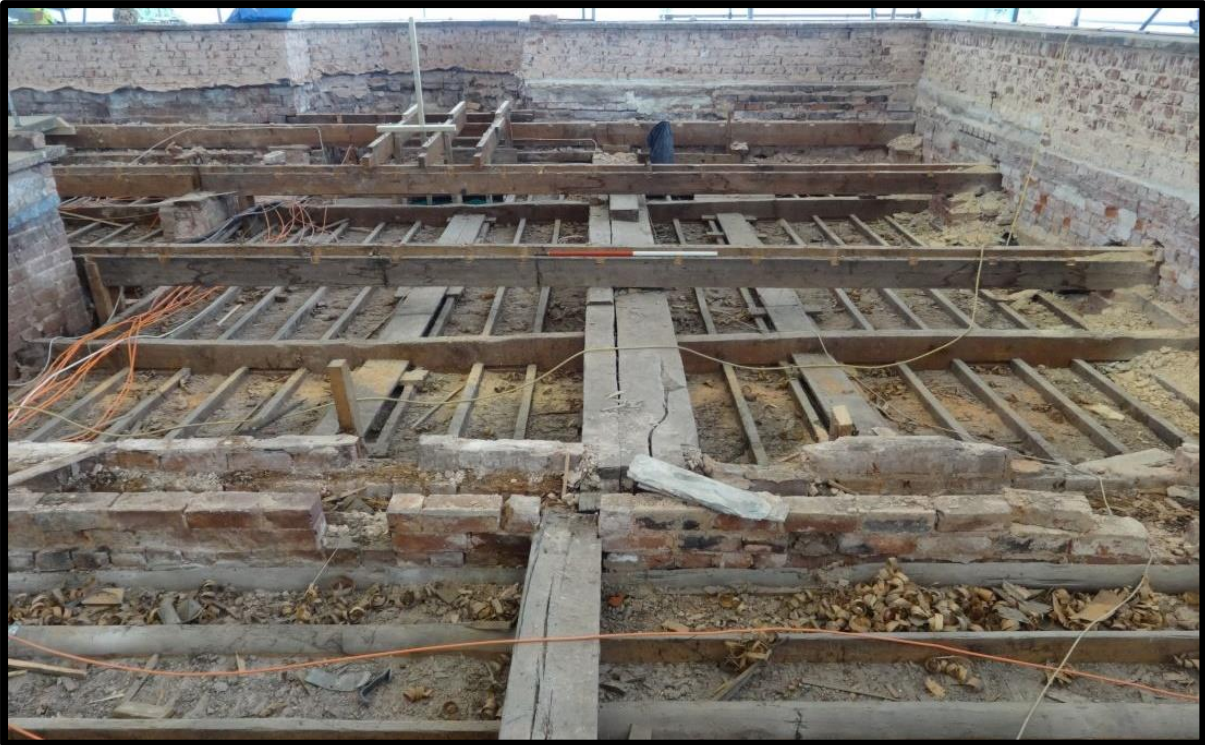


Fig. 23 The southern part of the eastern roof, looking east showing the original narrow central beam augmented by an enormous new beam alongside it, probably to strengthen the ceilings. The parapet has been much rebuilt.



Fig. 24 View of the eastern part of the roof looking north towards the dome over the staircase, showing the scar of the double roof on the drawing room chimney and the flashing for the flat roof structure which succeeded it (the approximate profile of the pitched roof is indicated in red).

The large scale of the sockets suggest that these may have supported heavy tie beams overlying the ceiling structure below. If so, these beams were removed and the sockets blocked before the 19th-century roof structure was installed, as they conflict with the longitudinal beams of that phase of roof. It is difficult to see why the beams were not retained to support the replacement roof structure, as they lie at a level which would have been consistent with its upper surface and running roof joists between these beams would have been an easy matter. It must therefore be assumed that these large tie beams had already been removed long before the flat roof was inserted over this area and that they were no longer in place to be utilised when it was conceived. The existence of the lower, pitched roof would also have been incompatible with the large ties and it seems probable that these timbers must have been removed either before the lower, pitched roof was conceived or, perhaps, in order to make way for it.

The southern section of the eastern part of the roofs of the south range is very similar in design to that just described (Fig. 23). This is also divided into two equal areas by a narrow beam aligned from east to west. As in the northern part of the roof this beam has been augmented by the addition of a very large additional beam, in this case laid against the south side of the original. The ceiling is divided into eight panels, as before, by subsidiary beams, with a further four panels to the north over a dressing room off the south-eastern bedroom. Again, there is no evidence for any supports for a superstructure over this area other than the packing supporting the 19th-century flat roof and it is clear that the roof structure preceding the 19th-century one must have been entirely independent of the ceilings.

Fortunately, the scar or staining of an earlier roofline remains against the side of the drawing room chimney stack (Fig. 24), showing that the roof was formerly a shallow pitched structure springing from approximately ceiling level. This, combined with the evidence from the northern part of the roof and the western part (discussed below) allows us to conclude that at some point after the large tie beams were removed, the roofs over the eastern and western parts of the house both consisted of narrow double-pitched roofs with an 'M'-shaped profile, running from north to south. Apart from a few sockets in the side of the east-west beam over the south-eastern room, which may be connected with the supports to the valley gutters or – equally plausibly – simply mistakes in the carpentry or evidence of the reuse of structural timbers during construction, the roof on the east side appears to have been structurally independent of the ceilings

The evidence for roof structures in this part of the roof may be summarised thus:

- A roof supported on massive ties built into square holes in the eastern parapets, at a level comparable with that of the modern roof, but unrelated to it.
- A roof at a lower level than this, apparently of double-pitched form which cannot have co-existed with the tie beams of the above and was also unrelated to the ceiling structures below it.
- A flat roof declining towards the centre in three or more shallow steps supported off the existing ceiling structures by longitudinal beams resting upon the augmented structures of these ceilings and unrelated to the earlier large ties.
- A roof of similar form utilising the longitudinal beams of the above but with replacement, machine sawn joists.
- A modern roof descending towards the centre in one shallow pitch.
- All except the first roof are presumed to have been leaden.

The dome of the staircase

The main staircase was sheltered by a fibreglass dome rising over a drum decorated with scrollwork and garlands in ornamental plaster. The ceiling structures to the west of the dome proved to be modern, incorporating rolled steel and pine joists with a hardboard ceiling (Fig. 25, 28) extending

across the northern end of the central corridor. To the south, east and north of the dome the roof timbers were earlier in character, but still probably of the 19th or 20th century rather than of 18th-century date. Redundant sockets in the walls and in some of the timbers defining this area seemed to show that the original beams of the ceilings had formerly continued over this area and that these had been removed to create the opening for the dome. The dome seems thus to be later than the late 18th-century ceilings.

An alternative possibility is that these sockets relate to trimmers defining a much larger oculus than the present one, and that the original dome may thus have been wider in diameter and perhaps also flatter in profile. Since the plaster decorations of the drum of the dome appear to be late-Georgian or Regency work, however, it is assumed that the oculus of the present dome though an addition, is an early one, perhaps of the very late 18th or early 19th century. The stairs may have been moved to this position in the 1820s, when the north-eastern corner of the house was extensively remodelled to create a new dining room (now the music room), and the dome may be contemporary with these alterations. The new dining room and staircase probably replaced a billiard room and strong room in this area which were referred to in the correspondence of June the 6th, 1794 (see page 10). During the works the fibreglass dome was replaced with a new, iron-framed segmental dome of great elegance (see Fig. 19).

The historic ceilings and other features of the central corridor

The ceiling structures of the central corridor remained largely unaltered, except at their northern end; however, the roof structure above this had been entirely lost. It must have had a low pitch, draining into the gutters on either side of the corridor, but none of the original trusses or rafters remained and even the scar of the roof on the parapet at the southern end was modern.

The ceiling of the corridor was divided at intervals by east-west beams of relatively small scantling, which supported joists running from north to south (Fig. 26). These were exceptionally crude, being not even squared – quarter round timbers being generally employed – and fixed into the beams within continuous grooves set low in their southern and northern faces. The extremely poor quality of these timbers may be an indication that these are part of the ‘temperey’ (sic.) house, dating from the 1770s.

At the centre of the corridor a large dodecagonal glass skylight rises over a wooden drum (Fig. 27). This skylight, and the ones formerly in the ceiling of the continuation of the corridor through the northern service wing, may have been inserted into the roofscape in 1779 (see page 10). The skylight resembles a large garden cloche with a low clerestory surmounted by a glass pyramidal roof and a smaller glass pyramidal cap over the summit. The structure is of cast iron and may be of late 18th-century date. It was carefully dismantled, conserved and reinstated during the present works.

The north end of the corridor had been particularly severely altered in the 20th-century, presumably during repairs to the ceiling of the main stairs. As much as two bays had been entirely replaced with modern timbers, supported by pine joists of small scantling running from east to west, abruptly interrupting the original ceiling joists in the penultimate northern bay. This modern intervention is a pity, because there was evidence in precisely this area of a most unexpected feature. The stump of one of the chimneys serving the main staterooms (the present dining room, but in the early 19th century the library) projected above the 18th-century ceiling structures to a height of about half a metre. Clearly marked upon the brickwork of the chimney shaft, facing the corridor, was the scar of a diagonal feature rising above the existing ceilings and then levelling out in a short curve to a horizontal (Fig. 28). The horizontal level lay directly above a partially blocked socket for a very substantial timber beam. This feature closely resembles the scar of the string of a staircase, which must have risen to a solid floor level at a higher level than the existing ceilings. The floor structure consisted of very substantial beams. This staircase, if such it was, seems likely to be a continuation of the small staircase closing the northern end of the corridor, which was first recorded during the watching brief on the reservicing project in 2002-3.



Fig. 25. It is probable that the dome was added when the staircase was removed here in the 1820s



Fig. 26 The ceilings over the central spine corridor, showing the south end, with the chimney of the present library to the right. The ridge timber shown over the corridor, centre right, appears to relate to the 19th-century roof.



Fig. 27 General view of the south-western part of the roof looking south west, showing the central skylight of the first-floor corridor (before dismantling) and the regularly-spaced sockets (unrelated to either the 18th-century or modern roof structures) in the west wall (arrowed).



Fig. 28 General view of the north part of the roof looking west, showing modern interventions in the area of the main staircase (right foreground), a curious angled scar resembling the string of a staircase on the chimney in the spine wall, rising to a higher level than the 18th-century roofs (red) and, beyond this, regularly-spaced sockets (unrelated to either the 18th-century or modern roof structures) in the west wall beneath the later parapet (arrowed).

This staircase was interpreted at the time as a service stair and it was speculated that it had once risen to a lost attic storey, or at least a small turret giving access to the leads (Parker 2003, 17,19). The discovery of this scar or shadow, relating to a floor level well above the late 18th-century roofline (and lying nearly two bays back from the north wall of the south range) would seem to confirm that the service stair did indeed continue beyond the first-floor level to a full attic storey rather than simply to a turret. An attic storey such as this one might have contained numerous servants' bedrooms and perhaps also nurseries and other rooms essential to the functioning of an 18th-century stately home. The rooms are likely to have been lit through dormers in the hipped sides of a large, timber roof structure.

Since there is no evidence whatsoever for a large inhabited roof structure at this level after the 1790s – the roof being known from correspondence to have been flat (and unsatisfactory) from this date – this roof must have existed much earlier, and indeed, possibly for some considerable number of decades, if not centuries before the late 18th century interventions. As such a roof is unlikely to have failed structurally – many still survive – it may perhaps be assumed that the roof was removed during the partial demolition of the house in preparation for an abandoned scheme for the complete rebuilding of the mansion. Alternatively, it may perhaps have been scavenged to provide materials for reuse in the construction of the Wyatt house on the hill. The very unsatisfactory roofs of the late 18th-century building were clearly an *ad hoc* replacement for something much more substantial. It is clear from this that the whole masonry structure of the south range must pre-date John Johnson's involvement at Killerton.

Underlying historic roof and ceiling structures on the west side of the roof

After the removal of the modern and 19th-century roof structures on the west side of the south range (Fig. 29) it was immediately apparent that the historic timbers in this area were better preserved and of a different character than those over the east half of the house. Both parts of the house had once been covered by a substantial floor structure supported on large beams, and on both sides this had been removed and double-pitched roof trusses substituted at a lower level; however, the double-pitched roofs on the western side of the house were designed according to a completely distinct system from those on the east.

The removal of the modern roof structures exposed the lower (and thicker) parts of the parapet beneath the leadwork of the modern and 19th-century roofs. This revealed seven very large sockets formed in the brickwork, appearing at regular intervals all along the western wall of the house (Figs 27, 28). These sockets correspond in size and height with the blocked features identified in the east wall of the south range (Fig. 21) and suggest that both parts of the house were once floored, and roofed, at this higher level.

These sockets were initially assumed to be outlets for rainwater, since they lay close to the presumed level of the gutters of the 18th-century roof and their sides appear to converge like a funnel. Although they might have performed this function, it was noted that they did not pass through the wall but have solid backs of the same construction as their sides. They do not appear to be blocked outlets. Seven rainwater outlets in the parapet would also be a most extravagant provision, requiring a downpipe adjoining or over every single window on the west front of the house; this seems an highly unlikely arrangement. It is more probable that these openings were in fact lodgements for large tie beams supporting the lost attic floor of the house, and perhaps also the principals of a lost 17th- or early 18th-century high roof. The tapering form of the sockets might possibly have allowed 'wobble room'; permitting the manoeuvring of the larger timbers in each bay during construction to securely lock the joists in place. There seems no other likely explanation for this feature.

These large timbers must have been removed at the partial demolition of the house. The roof which replaced them was of quite different and much more insubstantial character, and quickly failed. After the removal of the older roof structure, this part of the roof was divided into ten irregular bays by nine trusses, now composite structures of many separate phases, but each

originally an 'M'-shaped truss consisting of a single tie beam spanning the area between the west wall of the house and the western wall of the central spine corridor. The water drained into gutters against the west wall, against west side of the central spine corridor and also into a central gutter equidistant between these. All the gutters appear to have run from north to south and there appear to have been no outlets for downpipes at all in the west wall.

The tie beams each supported two short king posts to either side of the centre and four short principals, a pair rising from deep angled sockets in the ends of the ties and another pair rising from a long narrow socket at the centre of the tie to meet the tops of the king posts. (Figs 30, 54). The tie beams of the trusses also support the bedroom ceilings. On one side of each tie are cut small mortices to receive the tenons on the ends of the ceiling joists. On the other side a long groove is cut, allowing the joists to be swung sideways into position- a method of assembly common in the 18th century.

The two king posts in each truss were pegged and wedged rather than strapped at the base (showing that they were understood by the builders to be compression rather than suspension members, supporting the rafters and ridge of the trusses off the ties). The stumps of the king posts (Figs 30, 32) showed that these diminished to a smaller scantling and contained sockets for diagonal braces to support the principal rafters. This design was fundamentally faulty. The weight of both roofs, pivoting at the extremities of the tie beams to east and west and would naturally cause the centre of the roof to sink downwards, especially given the relatively feeble scantling of the timbers. In order to prevent this, desperate measures appear to have been necessary.

Each of the original tie beams was therefore augmented by the addition of extra timbers bolted against the originals to form, with them, a composite beam. Sampson noted that these additional timbers were secured to their predecessors by wrought rather than machined bolts, and we may therefore assume that they are an early intervention in the life of the house (Sampson 2007, 4). There is, however, a refinement hidden within the thickness of the composite beam. Sandwiched between the two tie beams is an additional timber or fillet, completely concealed between the ties and only discoverable by a close examination of the joint (Fig. 35). A long horizontal chase or housing was cut in the side of the original tie beams, and within this was inserted a square fillet, deeper than the chases, so that it projected beyond the face of the original tie beam. A second tie with an identical chase in its opposing face was then placed against the face of the older tie and securely bolted onto it so that the fillet entered the chase in the face of the secondary beam as well. These joints were extremely close fitting, and not only doubled up the ties but ensured that they could not slide up or down or deflect in relation to each other, but must act together, greatly increasing the strength and resistance to deflection of the ties. It is likely that the king posts and rafters of the original trusses of the roof were reset and secured with wedges in this phase of alterations.

In order to insert these additional tie beams all the original ceiling joists had to be removed and shortened. These were then reset in new mortices or grooves cut in the face of the additional tie, exactly resembling the originals (which were now sandwiched within the depth of the composite beam and therefore redundant). Sadly, although these additional timbers increased the strength of the tie beams, they did not solve the problem of the sagging roof and further amendments to the structure were necessary to prevent it from continuing to deform.

A deep mortice was then cut through both ties in the valley of the original 'M'-shaped trusses, overlapping them both. These mortices were either contemporary with the secondary ties or later than them. Examination of these mortices shows that they are double-dovetail-shaped, or 'waisted', i.e. narrower at the centre of the composite beam and expanding towards the top and bottom. Within these mortices the remains of similarly waisted timbers survived, resembling dovetailed tenons (Fig 34). These were inserted into the mortices and packed tightly with wedges forced between them so that they engaged with the 'waisted' sides of the mortice, preventing the timbers from being withdrawn. Presumably the double-dovetail elements formed suspension ties to a lost structural element at a higher level in the roof.



Fig. 29 General view of the south part of the western roof looking east, showing the trebled ties of successive attempts to reinforce the 18th-century roof (arrowed) and the remains of sawn-off king-posts and mortices relating to the original structure.



Fig. 30 General view of the western part of the roof looking south, showing the deflection of the original tie beams (A) and the weak construction at the centre due to original and later mortices; the remains of the 19th-century trapezoidal roof structures (B); the truncated king-post trusses of the 18th-century roof (C); the additional tie beams (D) and further additional ties reinforcing them (E).



Fig. 31 The end of one of the tie beams showing the socket for one of the original principal rafters. A later tie is shown bolted against this, marked 'VII'.



Fig. 32 Detail of one of the original king posts supporting the trusses, with sockets for diagonal braces. The later tie is shown behind the original.

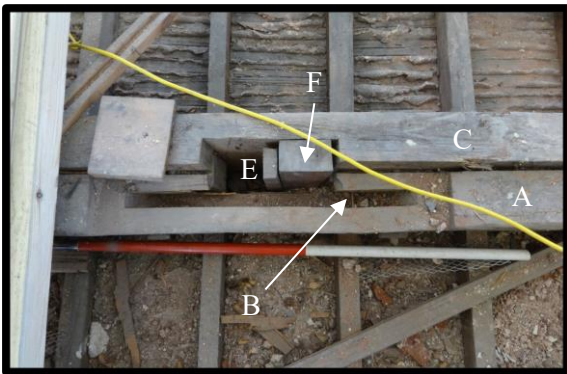


Fig. 33 One of the primary ties (A), sockets for principals (B); an additional tie laid against this (C) and the tertiary socket cut through both ties (E) and fitted with wedges (F)

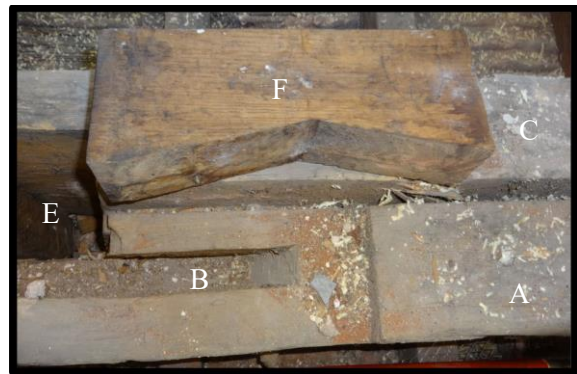


Fig. 34 One of the 'waisted' wedges (F) fitted within the tertiary sockets (E), forming vertical ties hanging the central part of the roof from a missing structural member.

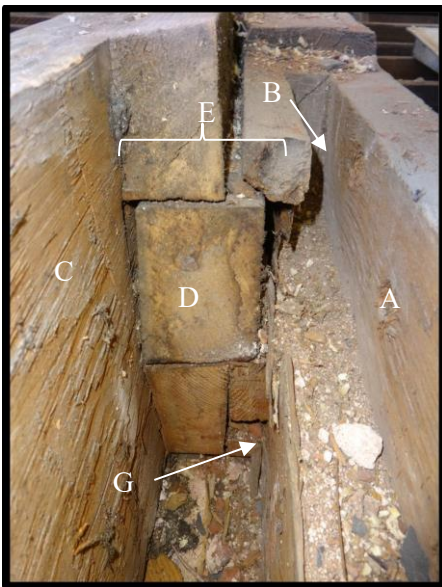


Fig. 35 View within one of the tertiary sockets (E) showing the hidden fillet (D) binding the two ties (A&B).

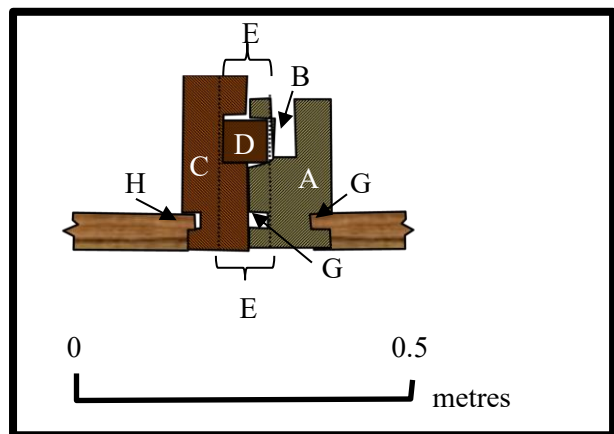


Fig. 36 Scale drawing of the assembly showing the original tie beams (A) with the mortices for the ceiling joists at the base (G) and for the principals at top (B), the secondary fillet cutting the face of this beam (D) and the additional tie encompassing the fillet (C) with the replacement ceiling joists in their mortices (H).

The waisted timbers thus appear to have been the lower ends of vertical ties designed to prevent the tie beams from sagging by securing them at a higher level, either from a continuation of the rafters on the east and west sides of the roof to a new, higher apex, or by introducing a ‘Mansard’ style structure with two distinct pitches (Sampson 2007, 4). Alternatively, a horizontal compression beam may have been added between the king posts near their apex, to prevent the ridges of the paired roofs from folding together, and the ties may have been hung from these, in which case the roof may have taken a trapezoidal form, with a flat apex between the former ridges.

This device of suspending the earlier roof was interpreted by Sampson as contemporary with the additional tie beams (Ibid.), but this does not appear to be the case. If they were indeed contemporary it is likely that the ‘dovetail’ tenons would be simply set into shaped housings in the face of the earlier ties, or in the faces of both ties, and then sandwiched between these timbers when they were bolted together. Instead, the deep, ‘waisted’ mortices were crudely cut through both ties and also through the concealed fillet between them in a way that was extremely clumsy and may have weakened the roof timbers at what was already their weakest point. The complex arrangement of wedges designed to pack the ties securely into the holes is only likely to have been necessary if the vertical ties were a later addition and a simpler and more rational arrangement was not possible. Needless to say, these measures also failed and the roofs were subsequently reinforced by yet another set of tie beams (Fig. 29) creating in some places sandwiches of beams three deep (excluding the hidden fillets).

Although no part of the upper roof remains and its form cannot be known, support for the idea that this was a trapezoidal structure with a central flat over the former valley survives in the form of a later timber structure which also takes a trapezoidal form (Fig. 30 “B”). This must have been installed at the time of the removal of the whole of the upper part of the disastrous 18th-century roof structure and its equally unfortunate amendments. This structure consists of canted principals rising to two longitudinal beams running from north to south, resting on the upper parts of the third phase of ties roughly at a third of the width of the original ties, and linked by a horizontal member between them. The roof covering was supported by joists laid across the flat apex, but the canted sides were not joisted or boarded, as they show no nail holes for such treatment, and it is likely that further joists simply extended horizontally above these to reach the side walls. This roof seems designed to relieve some of the pressure at the centre of the roof structure by spreading it more widely as well as by physical reinforcement. The structure supported a flat roof preceding the modern one, and may have dated from the 19th century.

The evidence for roof structures in the west part of the roof may be summarised thus:

- A roof supported on massive ties built into square holes in the western parapets, at a level comparable with that of the modern roof, but unrelated to it, and higher than and unrelated to the late 18th century roof structures.
- A roof at a lower level than this, of double-pitched form, which cannot have co-existed with the tie beams of the above and was integral with the ceiling structures below it.
- An attempt to repair this roof by bolting new ties alongside each of the original ties, by sandwiching a substantial hidden fillet between them, creating a composite beam, and possibly also by resetting and re-securing the rafters and king posts as well as the joists of the ceilings.
- An attempt to repair this roof by cutting deep mortices through both phases of ties and the concealed fillet and introducing vertical ties linking the failing ties below to a new superstructure either above or at the level of the original ridge timbers, either of ‘Mansard’ or trapezoidal form.
- Abandonment of all the previous failed attempts to roof the building. Removal of all the superstructures of the 18th-century roofs and the substitution of a flat roof in three stages over all. This was supported on a third phase of ties

bolted against the earlier paired ties, these supporting two longitudinal beams with canted principals descending to the 18th-century level of the eaves to east and west, the joists of the flat roof continuing horizontally to either side.

- A modern roof overlying this and supported upon it, descending towards the centre in one shallow pitch.
- All except the first roof are presumed to have been leaden.

4.2 The Eastern Service Range

the roof of the eastern service range immediately north of the 1920s entrance hall and billiard room was also repaired in this phase of works. This building is a two-storey structure which projects to the east of the main range of the house and forms the south range of a large quadrangle of service buildings which may have been constructed in the late 18th-century on the site of part of the original central range of the Elizabethan and Jacobean house and the two small square quadrangles which lay to the north of it (Fig. 4).

The south wall of this range, now partially masked by the 1920s entrance hall and by the earlier 20th century billiard room, is probably aligned on the rear wall of the central range of the Elizabethan or Jacobean house, and may indeed retain standing fabric from this range. It is thus an area of great archaeological potential.

The quadrangle of service buildings standing around a small cobbled yard to the north and east of the mansion may also be of late 18th-century date, replacing an earlier quadrangle of temporary buildings (so feeble as to have been roofed with scaffolding poles) which are recorded in correspondence of June 1794 (see above). The development of this range has not been studied in detail, to the author's knowledge, during any of the previous phases of archaeological intervention at Killerton.

The roof of the southern range of the service range was stripped of slates in March 2017 exposing the timber work. This part of the roof is asymmetrical in profile, with a steeper pitch to the north and a shallower pitch towards the south (Fig. 37); however, this appears to be an alteration, since the sawn-off ends of several timbers are visible rising from the south wall at eaves level, bird's-mouthed over a timber plate resting on the wall top (Fig. 38). Although the eaves detail may always have been different on this side, the timbers may represent the remains of truncated principal rafters, from an A-frame roof of more conventional type.

The original form of the roof consisted of pairs of large softwood principals with a scantling of 103 mm x 198 mm, joined at the level of the ceilings by large applied collars with a scantling of 208 mm x 52 mm, secured to the principals with large metal spikes (Fig 39). At the base of the roof the timbers simply sat upon large eaves plates with a scantling of 218 x 63 mm. The apex of the original roof seems to have been higher than the present one. The existing ridge tree is probably the original, since it is whitewashed like the other timbers of the original roof, but it has been repositioned to lower the pitch of the roof and prevent the ridge being seen above the parapets. Further evidence of this may be observed in the relationship between the ridge and the upper set of purlins, to which it is surprisingly close. The original ridge, therefore, seems to have been higher and further south than its present position.

There are two levels of purlins in each bay. The purlins run from truss to truss and are staggered in each bay (Fig. 40). They have a scantling of 115mm x 70 mm and are seated in shallow mortices measuring 82mm x 88 mm with a diminished haunch above the tenon, the tenon projecting through the principal rafter and secured on the other side by a small, wedge-shaped peg (Fig. 41). There appear to have been five common rafters in each bay, these being notched over the tops of the purlins and wedged with small wooden spacers. These joints have recently been reinforced with modern cross-headed screws. The whole area to the east of the axial chimney stack on the ridge – being about three bays of the roof – was exposed during the works.



Fig. 37 The shallow pitched section, forming the southern side of the service range roof, seen from above the roof of the Billiard room, looking west



Fig. 38 Evidence of earlier trusses, sawn-off short, from a roof with two equal pitches, surviving beneath the roofline, above the 19th-century ceilings.



Fig. 39 The end of one of the collars showing the method of securing with large metal spikes.



Fig. 40 The staggered purlins and plaster torching of the original roof on the northern side of the range.



Fig. 41 The whitewashed surfaces of the timbers of the northern side and also the tusk-tenoned and wedged peg of one of the purlins.



Fig. 42 The remains of wall plastering above the existing ceilings, showing that the rooms were formerly open to the roof.



Fig. 43 Secondary rafters and plastering underlying the roof timbers of the service range at the eastern extremity of the northern plane of the roof.



Fig 44 Straw bundles tightly packed between the joists of the flat roof at the extreme western end of the north plane of the service wing roof, presumably providing some form of insulation.

Originally, the timbers seem to have been exposed on the underside of the roof. Original wall plaster still survives above the level of the ceilings showing that the ceilings are inserted (Fig. 42). The cross wall containing the large, axial chimney stack bears traces of plastering up to the apex, which again shows that the roof was not ceiled but left open to the rafters. All the primary timbers retain a coating of limewash (Figs 39, 41), suggesting either that this was not an inhabited area or that it was for a period left unfinished. In a second stage of development the roof was torched with a plaster ceiling between the common rafters (Fig. 40), leaving the timbers exposed but improving the appearance and amenity of these rooms. In a later phase the upper part of the roof was enclosed within a plaster ceiling, greatly increasing the comfort of these rooms.

The present ceiling has been inserted below collar level and is supported on subsidiary rafters inserted below the originals (Fig. 43). The box gutter behind the southern parapet appears to have been constructed by laying horizontal timbers across the backs of the original principals and inserting short trimmers between these and the parapet wall. The new gutter being higher than the old one necessitated a change in the pitch of the roof in order to ensure a proper stepped fall to drain the water. The new, shallower roof rested on these horizontal timbers. Its beams and rafters are not whitewashed and it is probably contemporary with the existing inserted ceilings (Fig. 41).

It is probable that there was originally no parapet to the south elevation; when the existing parapet was added, the ridge of the roof was lowered and the ceilings within the range were inserted. Perhaps the original roof was causing problems, a parapet was preferred for aesthetic reasons, and the original open roof of the service range was considered unsuitable for inhabitation by servants. The insertion of plaster ceilings over these rooms and the creation of an air gap between the ceilings and the slate roofs would undoubtedly have increased the comfort and cleanliness of the rooms in this wing.

These alterations to the roof may have been made during a refurbishment of the whole service range in the very late 18th or early 19th century, perhaps in anticipation of the family returning to Killerton in 1808. Alternatively, the works may have been carried out during the alterations of around 1820, when the dining room was moved and the eastern side of the house made more picturesquely asymmetrical by the addition of the new polygonal bay.

At the extreme west end of the service range roof is a small area where the pitched roof of the service range steps downwards to accommodate one of the first-floor windows in the main range and also a skylight lighting the first-floor corridor in the service wing. The pitch of the roof in this area is necessarily flat and was presumably lead-covered, with no void, or only a very limited void between the internal ceilings and the roof coverings. In order to provide some insulation, the spaces between the joists are packed tightly with straw bundles directly overlying the lath and plaster ceilings beneath (Fig. 44). Each void has three bundles of straw, tied with straw bindings at intervals of 220 mm. These are packed very tightly into the recesses between the joists and must formerly have been covered with boarding, as no trace of laths or battens is visible. This is the only place in the entire roof where insulation of this sort was employed. The author has never observed this method employed elsewhere, even in other 18th-century flat roofed buildings.

4.3 Trenching to the east of the Mansion

In November 2017 trenching was carried out to the east of the mansion to provide new electricity cabling to some nearby lamp posts. This area of the forecourt of the mansion probably overlies the eastern wing of the main house and the presumed stable yard surrounded by an 'U' shaped range of buildings lying to north south and east of it, as shown on the early 18th-century estate maps (Figs 3, 4).

A small trench 400 to 450 mm deep and only 200-250 mm wide was dug northwards from the lamppost near the cattle grid at the entrance to the main staff carpark and the forecourt of the mansion for a distance of 1 metre. The trench was then extended to the north west alongside the low garden walls surrounding two oval gardens for a distance of 15 metres. It then curved

across the yard to the east of the laundries to meet the north-eastern corner of the ranges of buildings surrounding the service yard.

The trench was hand dug by the contractors through a deep red-brown loamy material which was interpreted as a garden soil. The soil was very clean and rich, with no large inclusions; it appeared to be a mixture of ordinary garden earth and local red clay.

The observations within the trench described here are measured from the easternmost extremity of the curving wall of the southern flowerbed, from the first change of angle 1 metre north of the lamp post near the forecourt gate. At 1.90 m and 2.30 m the trench cut the sides of a narrow modern trench for electrical cables, aligned roughly on the centre of the southern flower bed. At about 5 m and 5.30 m, the trench cut a second cable trench which appeared to be in alignment on the narrow path separating the two flower beds.

In the base of the first of the electrical trenches at a depth of 0.34 m from the modern tarmac surface the trench cut through an area of more solid material consisting of rather large flinty gravels which was initially thought to represent the remains of a cobbled surface or some form of footing. On closer inspection this interpretation was revised, and it was thought that the material represented debris dumped in the modern trench as a bedding layer for the electric cables. With hindsight, this interpretation would now be revised, and it is assumed that archaeological deposits, though disturbed by the modern cable trenching, were encountered in this area. No archaeological features were identified in the base of the northern of the two electrical trenches.

Further north, at about 8.7 to 9 m, the excavations exposed a feature which resembled a narrow wall or footing 0.4 m wide and 0.23 m below the existing ground surface (Figs 51 and 49). Part of this feature was constructed of small volcanic blocks bonded with a bright red clay mortar. Alongside this was a narrow drain 0.2 m wide and, north of this, an area of volcanic rubble resembling well-worn cobbling or footings. This part of the feature was about 1.4m wide, but just over 0.2 m of its northern edge was overlaid by another narrow wall or footing identical with that described above, flanking a narrow drain of approximately the same width (Figs 47, 49). Above this surface, beneath the garden soil, was a thin layer of demolition materials including slate, mortar and oyster shells.

At 10.2 to 10.5 m a narrow raised masonry feature overlies the cobbles, which continue further, to 10.8 m, and then give way to a much softer material without trace of another wall or edge, as though the surface, or footing has been truncated. North of this a narrow band of darker, silty material suggested the presence of another drain.

Beyond this the sides of the trench were much disturbed by tree roots as though the driveway had been cut through a former flowerbed or shrubbery. At this point the land begins to rise very steeply and below the garden soils the trench began to cut through a very thick layer of clean, red sand, which was interpreted as either a natural deposit, or possibly clean material introduced to raise the ground levels at the rear of the house.

At about 17 m to 18.2 m the red sand was cut by a brick and stone feature which appears to have been trench- built within the red sand (Figs 48, 50, 52). No distinction was seen between the garden soil or make up material overlying this sand and the fill of the trench surrounding the feature. The nature of this feature is uncertain as it was not disturbed, the new electrical cable being simply laid over it. The feature seems to have masonry side walls surrounding an area of rougher masonry (Fig. 52) which might be interpreted as the top surface of a crude vault, or rubble infilling of some form of walled channel. The feature might be a culvert, conduit or drainage channel, perhaps bringing water from a well or a spring higher up the hillside to supply water to the service wing of the house.

As the trench was very narrow and none of the features were dug out, it was difficult to be certain of the alignment of any of the features. Superimposing the plan of the Elizabethan house from the early estate maps on a modern survey plan of the building (as far as was possible) did, however, reveal a remarkable coincidence between the position of the masonry features and the

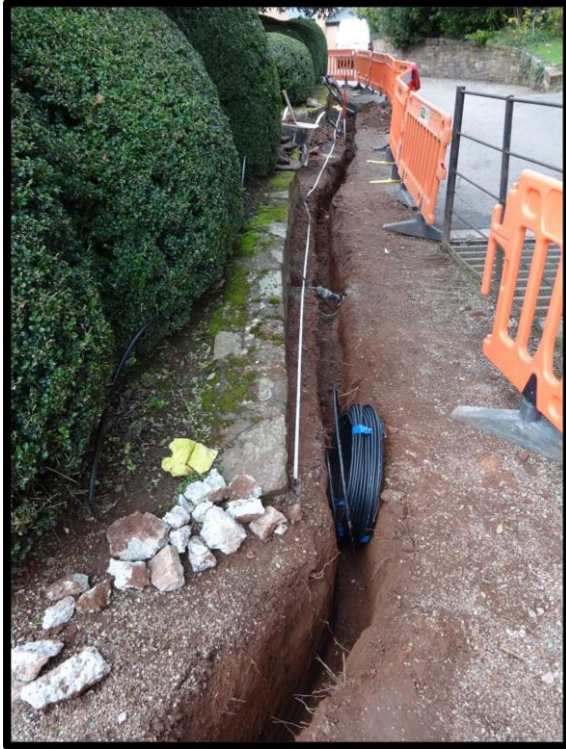


Fig. 45 The south part of the trench extending from the gate of the forecourt towards the service yard (looking north).



Fig. 46 the northern part of the trench curving towards the angle of the service range and the rear service court.



Fig. 47 A mixed cobbled and masonry feature, perhaps representing the footings of a cob wall with stone lined drains.



Fig. 48 A brick and stone feature lying to the north, seen looking south, interpreted as a possible culvert.



Fig 49 The stone feature observed in the electrical trenching.



Fig. 50 The possible culvert with masonry sides and a central channel, observed in the electrical trenching.

presumed footprint of the ‘U’-shaped building defining the putative stable yard to the east of the house (Fig. 53). This coincidence raised the possibility that both masonry features were in fact the footings of demolished walls, perhaps cob walls on stone footings, with drains at their bases. Given the ‘keyhole’ nature of the trenches and the impossibility of determining the alignment of these features this must remain speculation, but the trenching has at least demonstrated that there are archaeological features lying to the east of the present mansion and that there is a strong chance that these do relate to the demolished Elizabethan or Jacobean mansion.

5 . C O N C L U S I O N S

The removal and replacement of the modern roof structures at Killerton House in 2017 exposed both the masonry and timber structures of the house to examination in a way that was not formerly possible given the extremely constricted space within the former roofs. All of the 18th-century timbers and many of the 19th-century timbers were revealed for the first time and have been preserved in situ under the new roofs. This has provided an opportunity to revisit the understanding of the development of the mansion outlined in previous reports by the present author and others.

The early mansion

The early mansion seems to have been a large E- plan house facing south, with substantial rear courtyards and a possible stable yard to the east of the house surrounded by an ‘U’- shaped range of buildings (Fig. 56). Although the works in 2017 did not reveal substantially more fabric of the early mansion in the south range than was originally recorded by Marsland in 1987, the trenching to the east of the house has shown that structural features, possibly footings, cobbled surfaces and culverts do survive to the east of the present mansion, and that these may be compatible with the footprint of the buildings recorded on early 18th-century estate maps. This would seem to confirm that the masonry which survives in the present mansion, including the stair turret, are the remains of the west wing of the early house, as postulated by the present author in 2002. The south wall of the service range may have been constructed, or retain elements of the rear wall of the original central or hall range of the early house. The east wing of the early mansion would therefore appear to lie in the area of the present billiard room and the forecourt to the south of it. Features such as arched niches and the turret recorded by Marsland in the east wall of the present house may have been mirrored in its eastern range. These features may be linked to other high-quality houses dating from the late 16th and early 17th centuries across the west country and midlands. The fragmentary remains of the mansion at Killerton, and that of another large Elizabethan or Jacobean house standing nearby in the neighbouring parish at Poltimore, are of great interest as they both appear to represent entirely new builds of the late 16th or early 17th century. They may thus reflect the introduction of new forms of domestic planning to the county at this period, replacing the older agglomerative plan of the typical medieval house with new, formal compositions based upon symmetrical façades, oriented to command the landscape and decorated internally and externally with interpretations of classical detail.

The development of the present mansion in the 18th century

The south range of the present mansion has previously been interpreted as a ‘temporary house’ built to provide accommodation during the construction of a much larger house on another site. This interpretation can no longer be sustained. The south range appears to be an enlargement of the house by doubling the depth of the 16th-century west wing of the early mansion, and was probably complete in this form while the older house still stood alongside it. The recent recording has hopefully shown persuasive evidence that the flat or many pitched roofs installed over this range in the late 18th century replaced a full attic storey supported on a massive second-floor structure of beams at a higher level than the 18th century roofs and approached by a staircase at

the north end of the central spine corridor. These rooms, within both the eastern and western parts of the present south range must have been sheltered by an enormous, steeply-pitched roof structure with a central well. The roof structures may conceivably have retained elements of the earlier roof of the Elizabethan house, shorn of its turrets, gables and chickets, and this might explain why the structures of the later roofs were to develop in two distinct sections, perpetuating a structural feature of the earlier house.

The character of a high hipped roof of the kind envisaged here suggests a building of late 17th or early 18th-century date. The existing brickwork of the south range with its earth and lime mortars and hand-made bricks, where it is visible, would be compatible with building practices of this date and the 'doubling' of an earlier range associated with the earlier house would explain the unusual planning of the house, not least the absence of cellars and of any kind of service areas. This sort of enlargement and remodelling was a common practice in 17th and 18th-century Devon, as has been discussed above.

The most likely contexts for the enlargement of the house would be the removal of the Aclands to Killerton in the 1680s, or the marriage of the 7th baronet to Elizabeth Dyke in the early 18th century. Both periods would be likely to have led to remodelling. The early 18th-century estate plan, however, records the footprint of the house with a narrow west range. This implies that, though the house may well have been remodelled in the late 17th century (as testified by the datestone of 1680) the doubling of the west wing is most likely to have been an early 18th-century alteration, perhaps in the 1740s, made after the map was produced.

Remodelling of the house at this time of resurgent classicism, and the disguising or suppression of much of its Elizabethan splendour as a result, might also explain why no pictorial record or description of the house in its original form by local antiquarians has come down to us: it had already begun its sad career of being so drastically altered that its remarkable features were all but utterly lost (Figs 57, 58).

The baleful influence of the 'New House'

The project for a new house in the years around 1770 seems to have involved the partial demolition of the older house, possibly in order to reclaim building materials for use in the new building. At this time it is likely that the south range was unroofed or reduced to a shell. Whether the intention was to reroof and preserve it as a smaller separate dwelling, perhaps a dower house, or whether its complete demolition was envisaged if the new house had been completed is unclear.

The house was eventually re-roofed with two separate roof structures, entirely different from one another, though superficially of the same form (Fig. 59). This cannot easily be explained unless the present south range had indeed developed in two parts, and that the roofs continued to reflect this idiosyncrasy.

Over the western part of the building the present ceilings formed part of a late 18th-century roof structure divided into a ridge and furrow pattern of two pitched roofs running from north to south, supported on king-post trusses aligned from east to west. This was very feeble and poorly designed, the double-pitched trusses supporting the entire weight of the roofs, roof coverings and ceilings and strongly inclined to fold together in the middle and sink into the bedrooms.

The eastern roof structure was also divided into a ridge and furrow pattern of two pitched roofs running from north to south but had an entirely separate ceiling structure below the trusses, and was presumably more substantial, since Veitch, in his correspondence, described it as being done 'with a view to being permanent' (see page 10). Veitch's description of this part of the roof in 1794 as covering the 'breakfast room, staircase, billiard room and strong closet' suggest that the main staircase lay between the breakfast room and billiard room, in the area of the present drawing room, with the strong closet in the north-east corner of the house, convenient for the dining room to its immediate west. The staircase may have been lit through a large stair window in the east wall, which was later removed as a result of later modifications.

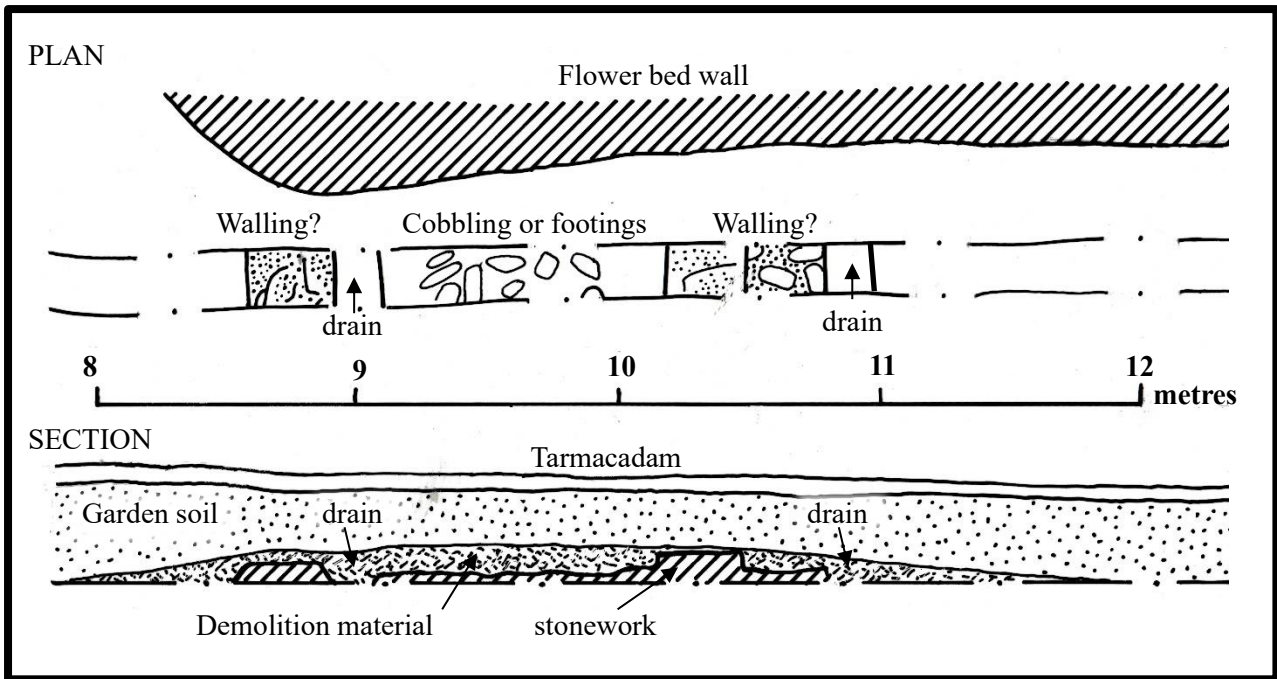


Fig. 51 Plan and section of the stone feature observed in the southern part of the electrical trench east of the house.

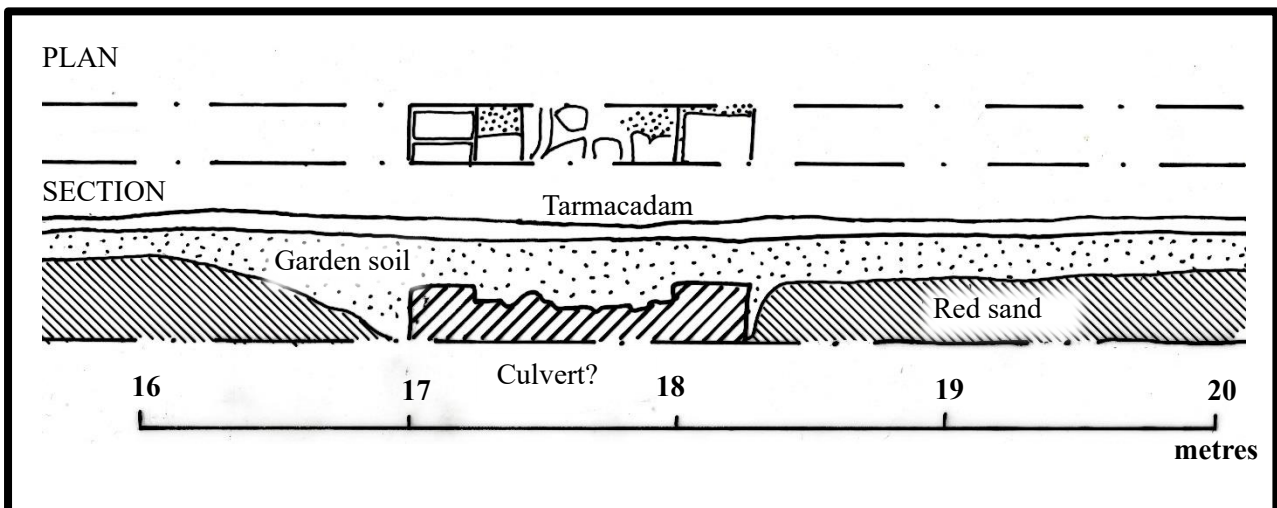


Fig. 52 Plan and section of the possible culvert observed in the northern part of the electrical trench east of the house.

Reinstatement, repair and enlargement of the mansion

After the abandonment of the new house the decision seems to have been made to adapt the mutilated remains of the old house for reuse. The inadequacy of the service facilities necessitated the addition of an entirely new service range to the north, over deep, vaulted cellars, and the service stair in the northern part of the central corridor appears to have been removed at this date. The new service range appears to have been conceived of as an independent or semi-detached block, for reasons which are unclear - it may be that the demolition of the south range and its replacement with a new block was still being considered as a future possibility. The south range does appear to have been refaced and re-fenestrated at this period. The roofs appear to have already been giving trouble at this stage and there appear to have been other temporary buildings, including a servant's hall and wood store, whose location and appearance are not known. These may have lain in a service yard to the east of the new north range, but nothing of this now remains.

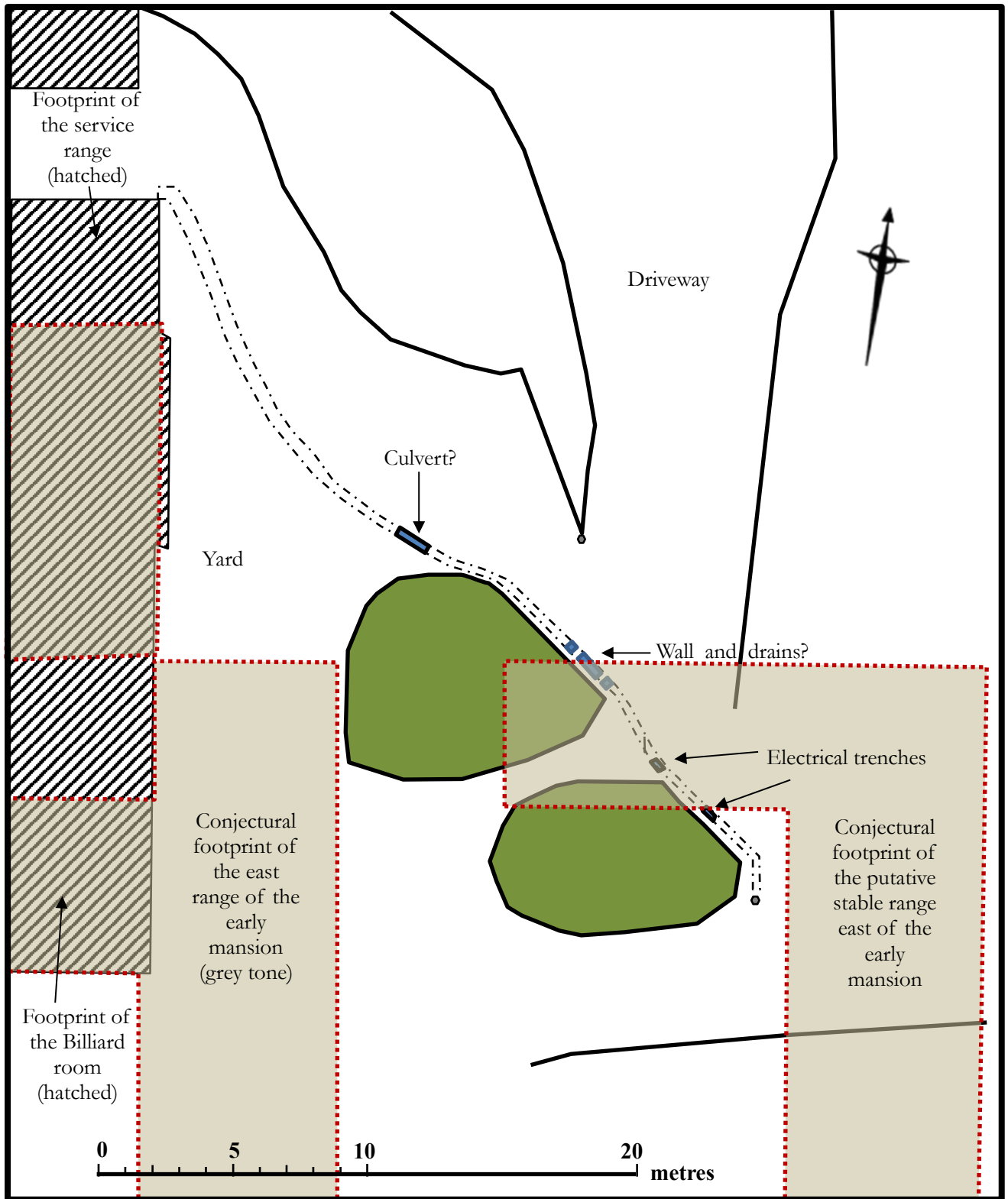


Fig. 53 Plan of the area to the east of the house based on existing surveys, overlaid with the line of the electrical trench and the presumed footprint of the Elizabethan or Jacobean buildings shown on the early 18th-century estate map. The masonry features observed in the southernmost electrical trench and the supposed cobbles lying north of this appear to coincide more-or-less exactly with the position of the north and south walls of the presumed stable range.

During the period of disuse that followed the death of the 7th and 8th baronets, while the 9th baronet preferred to live elsewhere, maintenance of the abandoned mansion seems to have fallen to John Veitch, acting as estate steward. Veitch carried out repairs to the roofs in 1792 when he had the roofs ‘trussed in a temeperary manner’, This phase might have involved the re-setting and wedging of the king posts and rafters in the hope of securing them. In 1794, however, he anticipated having to undertake further strengthening, and argued that ‘the ceilings of the bedrooms must come down for the introduction of stronger beams. This phase probably involved the doubling up of the ceiling beams on the east side of the house, and the addition of the first set of additional ties aimed at strengthening the tie beams of the western roof. Veitch’s repairs, to the western roofs especially, were not a success; he may have excelled as a garden designer and horticulturalist but he was clearly no engineer.

Work on the improvements to the park and the necessity for the replacement of the decaying ‘temporary’ service buildings might at this stage have involved the raising of the ground levels around the northern service wing and the replacement of the temporary buildings with a new service yard to the north east of the house. Evidence from the roof of the service wing suggests that these buildings, though no doubt better than what went before, were not brought to a very high standard of finish, with rooms left unceiled and the exposed rafters lime-washed, perhaps to discourage beetle attacks

The 10th baronet returns to Killerton

Preparations for the return of the family to Killerton in 1808 probably involved improvements to the interior of the buildings rather than major additions. In this case the rooms in the service wing may finally have been ceiled and prepared for occupation. Ongoing problems with the roofs of the main house may have been resolved by the reconstruction of the western roofs in a trapezoidal or ‘Mansard’ form, linking the failing trusses by suspension ties to a new flat roof at the apex of the earlier trusses. Few other changes were made, though it is likely that the house was redecorated and refurbished from top to bottom. In this phase the areas between the south range and the northern service wing were probably infilled, linking the main ranges of the building into one large rectangular block (Fig. 61).

The alterations of c.1820

With the house now reoccupied by the family, further alterations appear to have been made before c. 1820. These included the creation of a large and grand new apsidal dining room in the place of the former billiard room and the conversion of an area alongside it, probably at one time the main staircase, into a new strong room for the storage of the silver and plate. The whole north eastern part of the south range may have been altered in this phase and it is highly likely that the main staircase was moved into its present position at this time and the ground-floor corridor ceiled with its present sequence of pendentive domes.

The new stair rose against the south wall of the room and might have been lit by windows in the north wall had the earlier service range still stood at a slight distance, with a light well between the two buildings. This was no longer the case, and it is probable that the desire for a new, much grander, top-lit stair with a handsome dome, together with the parlous state of the 18th-century roofs, led to the removal of the double-pitched roofs over the east side of the house and their replacement with new flat roofs. (Fig. 62). At the same time it is likely that the service range was remodelled, with a new parapet and an altered roofline, and that further improvements were made to the interiors. The library, now in the position of the former dining room, was extended into the service range and a new justice room was created. In about 1829 a new conservatory was added against the south wall of the service wing.

Later 19th- century alterations

After the alterations made in the 1820s the house seems to have settled down for a period, serving as an adequate setting for the needs of the family, fashionably informal and picturesque in appearance and well linked to its extraordinary beautiful landscaped gardens. These were now adorned with an Egyptian style orangery, the Bear's Hut and by the provision of a new chapel based upon the lady chapel at Glastonbury Abbey. The rebuilding of the ancient chapel at Columbjohn was also undertaken at this period, but little attention appear to have been paid to the main house. The only major 19th-century alteration to the mansion, possibly in the 1860s, saw the complete abandonment of any attempt to reinforce or repair the poorly designed roofs of the western part of the house. All the superstructures of these roofs were now removed, lightening the load on the ceiling structures, yet more ties were introduced and a new flat roof was installed over the remaining ceilings, supported on low, trapezoidal trusses. These roofs appear to have survived until the modern roofs were installed above them in the 20th century

Alterations of 1900

The last significant alterations to the house were made in the late 19th and early 20th century when, in order to improve the grandeur and magnificence of the staterooms, the house was given a very substantial refurbishment in 18th-century style by the Cheltenham architects Prothero and Phillot. (Fig. 63) In this phase the Regency dining room was converted into an entrance hall, opening upon the staircase by a new archway, the stairs having been removed to the north wall of the staircase hall. The strong closet to the south of the Regency dining room was now thrown into the new drawing room, which was also extended to include part of the corridor. The library was removed to the south-western corner of the house and the original 18th-century dining room returned to this use, with more convenient access to the service range and kitchens. The billiard room was constructed against the southern range of the service yard, blocking several windows, and a corridor constructed in place of the former conservatory.

It is unlikely that these alterations required much change to the roof structures of the house, though the 19th-century flat roofs continued to give trouble. These were probably renewed during the repairs following the fire of the 1920s and since then have lasted for just under a century. One hopes that the new roofs of Killerton House, which replaced these in 2017, will perform better than their predecessors.

A C K N O W L E D G E M E N T S

This report was commissioned for The National Trust (NT) by the National Trust Regional Archaeologist for Devon, Martin Papworth, as a requirement of consent for the roofing works attached to the grant of planning permission and listed building consent (Application No. 16/2704/LBC) by the East Devon District Council and the Devon County Council Historic Environment Team. The recording works and reporting were carried out by R.W. Parker. The author is extremely grateful for the assistance of the staff at Killerton, especially D. Melhuish, Jamie Cain and the building contractors, especially Jerry Smart. Thanks are due to Martin Papworth, Jerry Sampson, Bryony Wilde and Jane Broom. Also to Richard Feltham and Lucy Browne for much needed encouragement, and to all others who have patiently waited for the completion of this report.



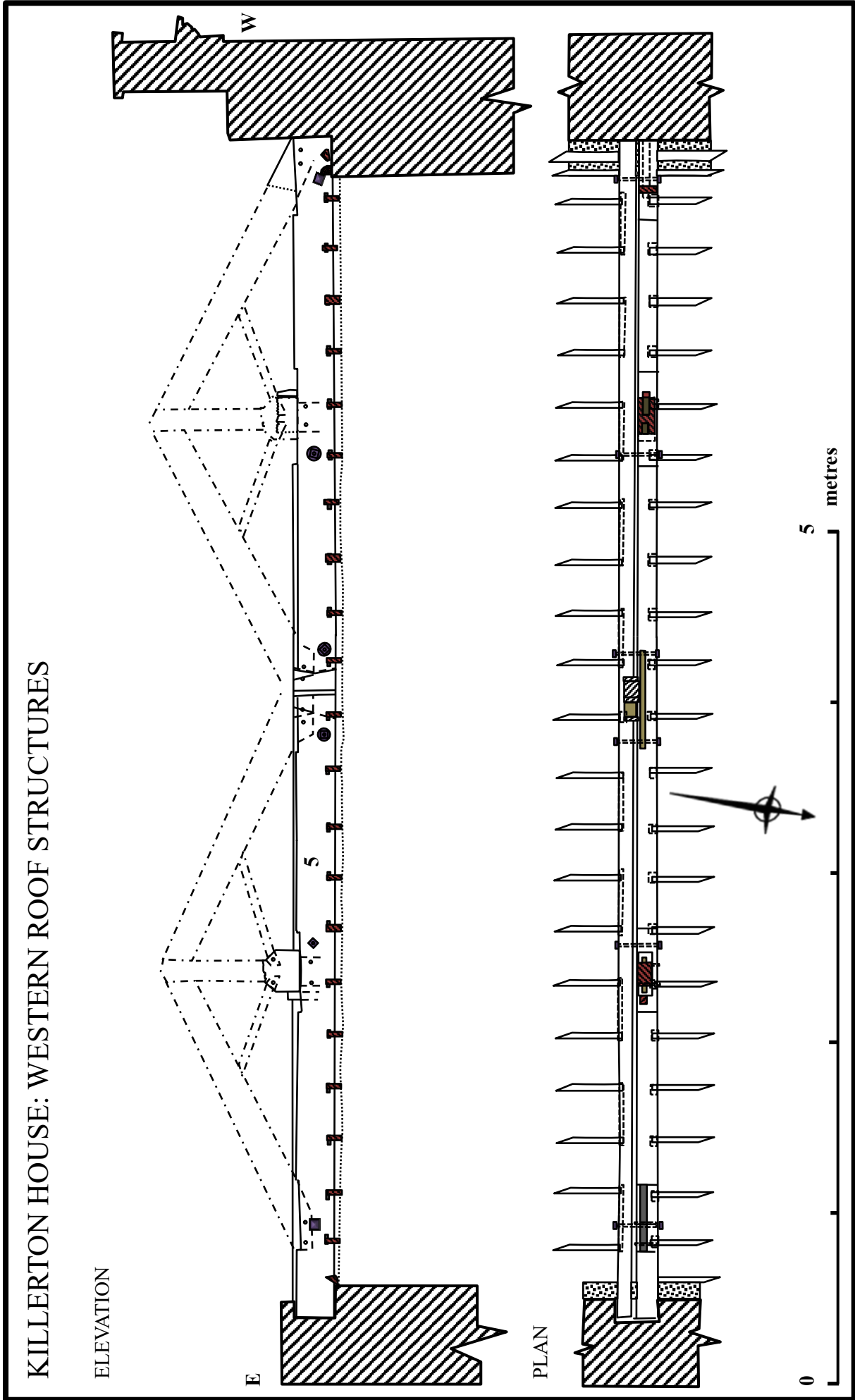
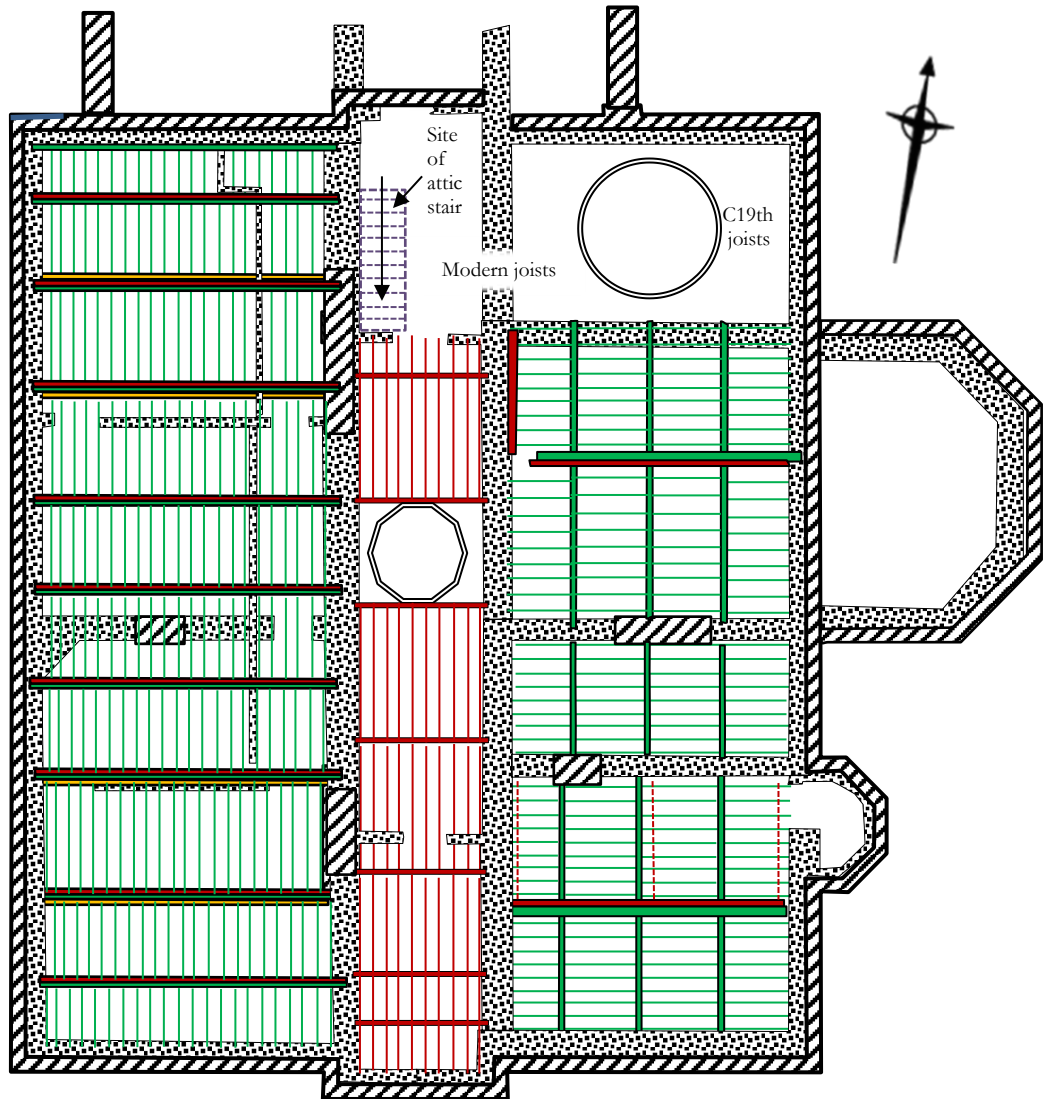



Fig. 54 Elevation and plan of one of the late 18th-century trusses over the western part of the house with the missing elements of the original design restored.

KILLERTON HOUSE: SOUTH RANGE ROOF STRUCTURES

PLAN



- | | | |
|--|--|--|
|  Early 18th century |  1790s strengthening and reset joists |  Upstanding walls |
|  1770s timbers |  Mid-19th-century ties |  Wall tops |
|  Conjectural 1770s fabric | | |

0 5 10 metres

Fig. 55 Plan of the south range at roof level showing the probable phasing of the roof timbers

KILLERTON HOUSE: PHASE I
Suggested Reconstruction c. 1600

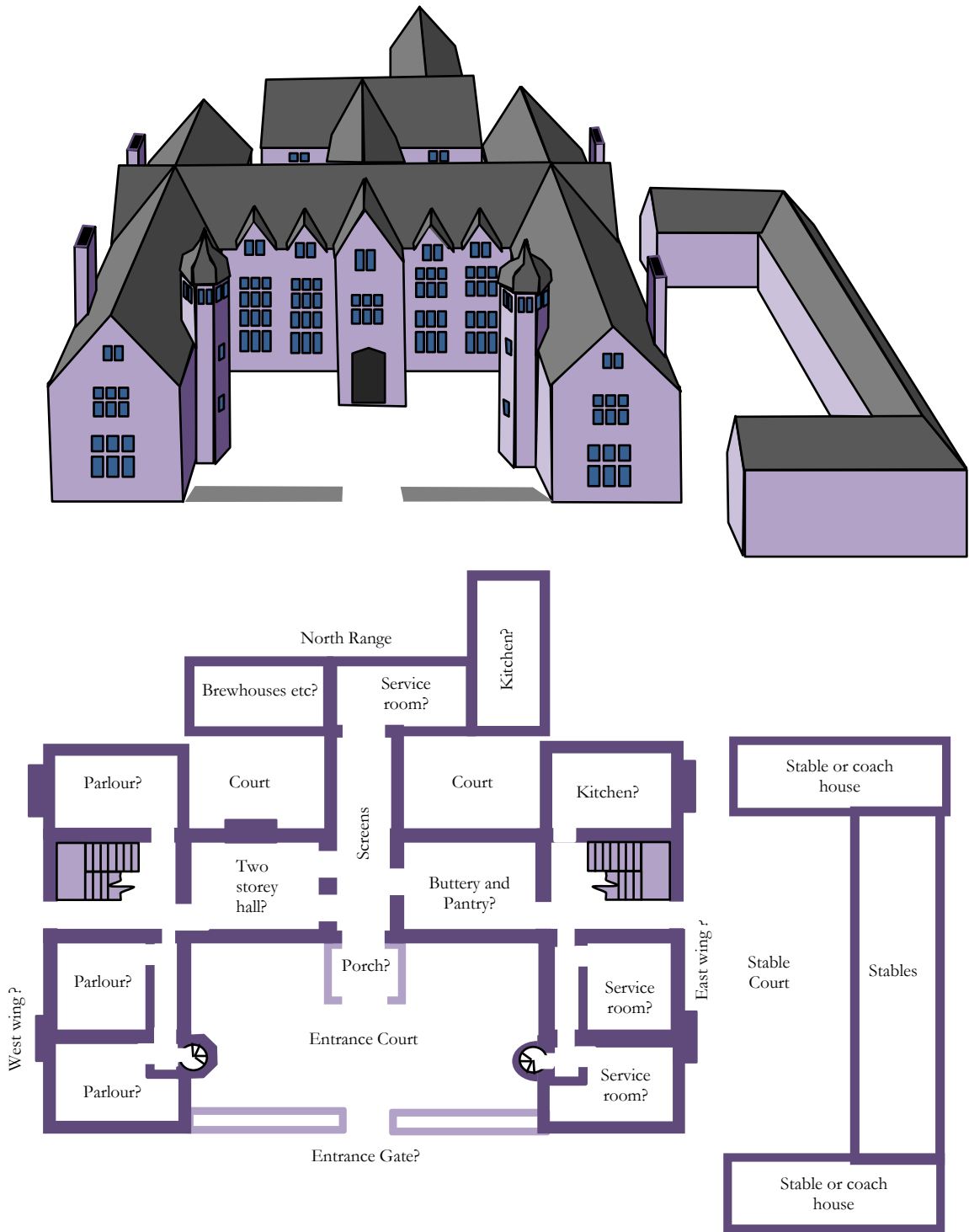


Fig 56 Conjectural reconstruction of the Elizabethan mansion at Killerton

KILLERTON HOUSE: PHASE II
Suggested Reconstruction after c. 1680

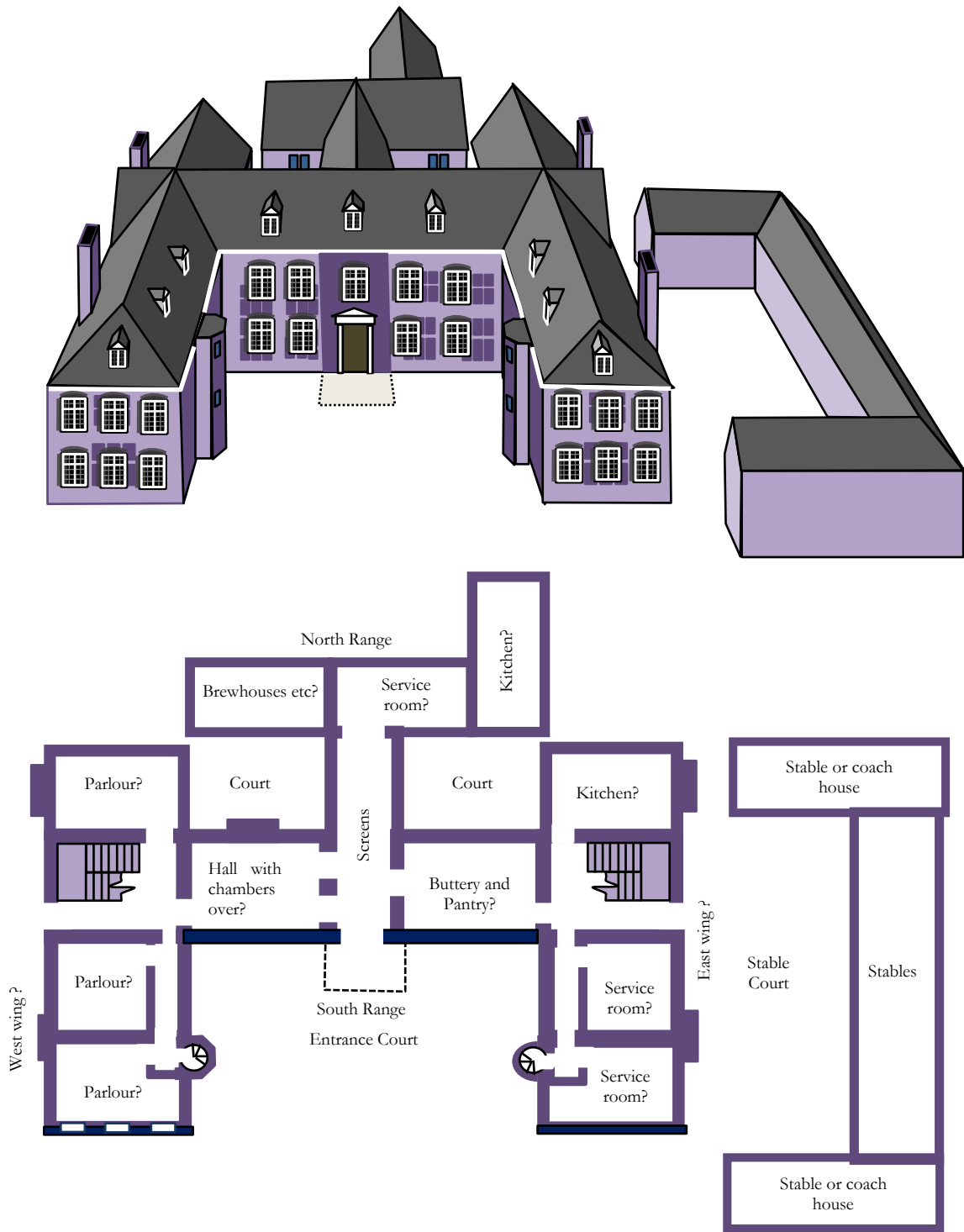


Fig 57 Conjectural reconstruction of the mansion at Killerton in the late 17th-century

KILLERTON HOUSE: PHASE III
 Suggested Reconstruction after c.1740 and before 1760

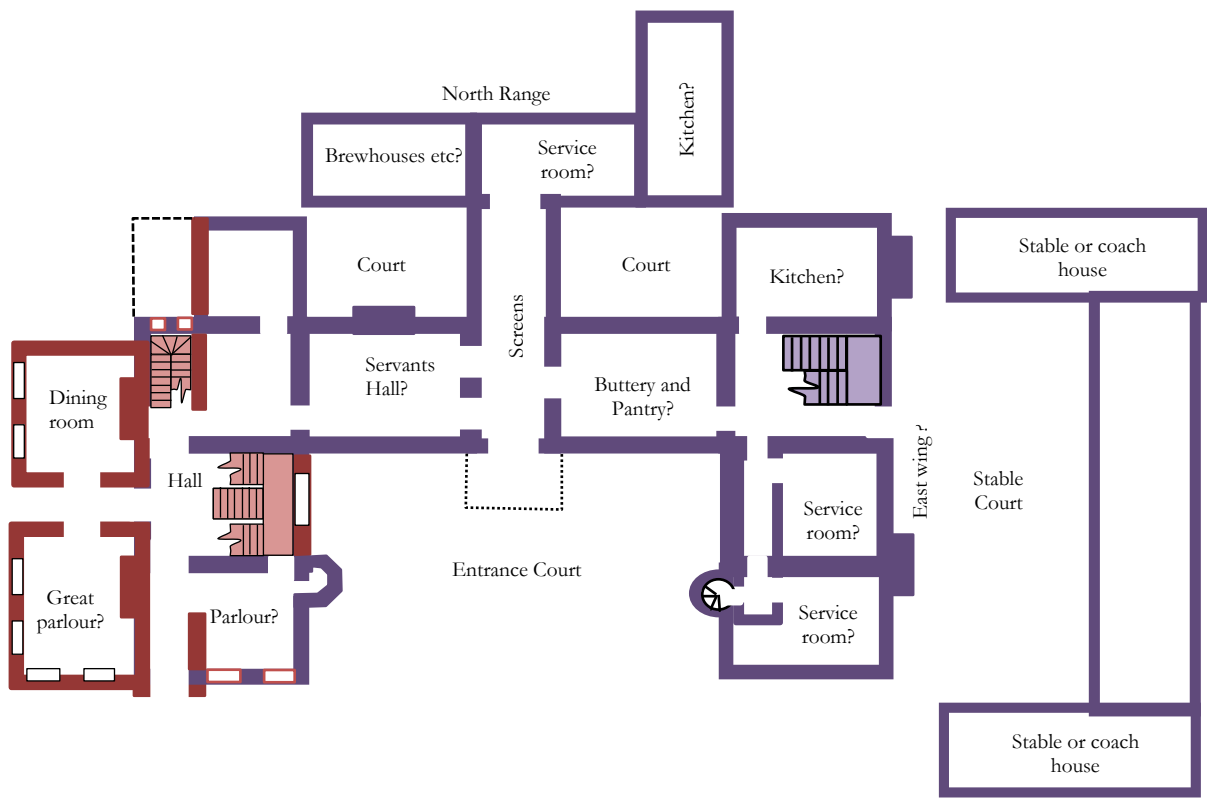
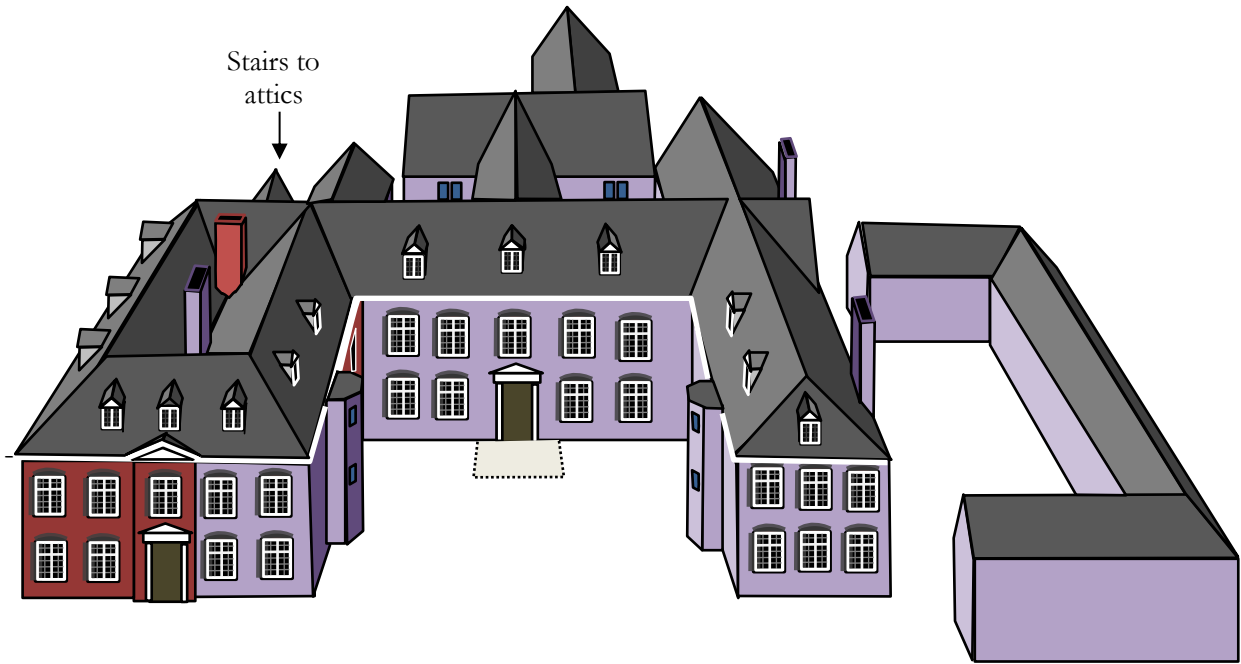


Fig 58 Conjectural reconstruction of the mansion at Killerton as it may have been remodelled in the early 18th-century.

KILLERTON HOUSE: PHASE IV

Suggested Reconstruction c.1778

The 'temporary house' reduced in size and re-roofed during the project for a new mansion

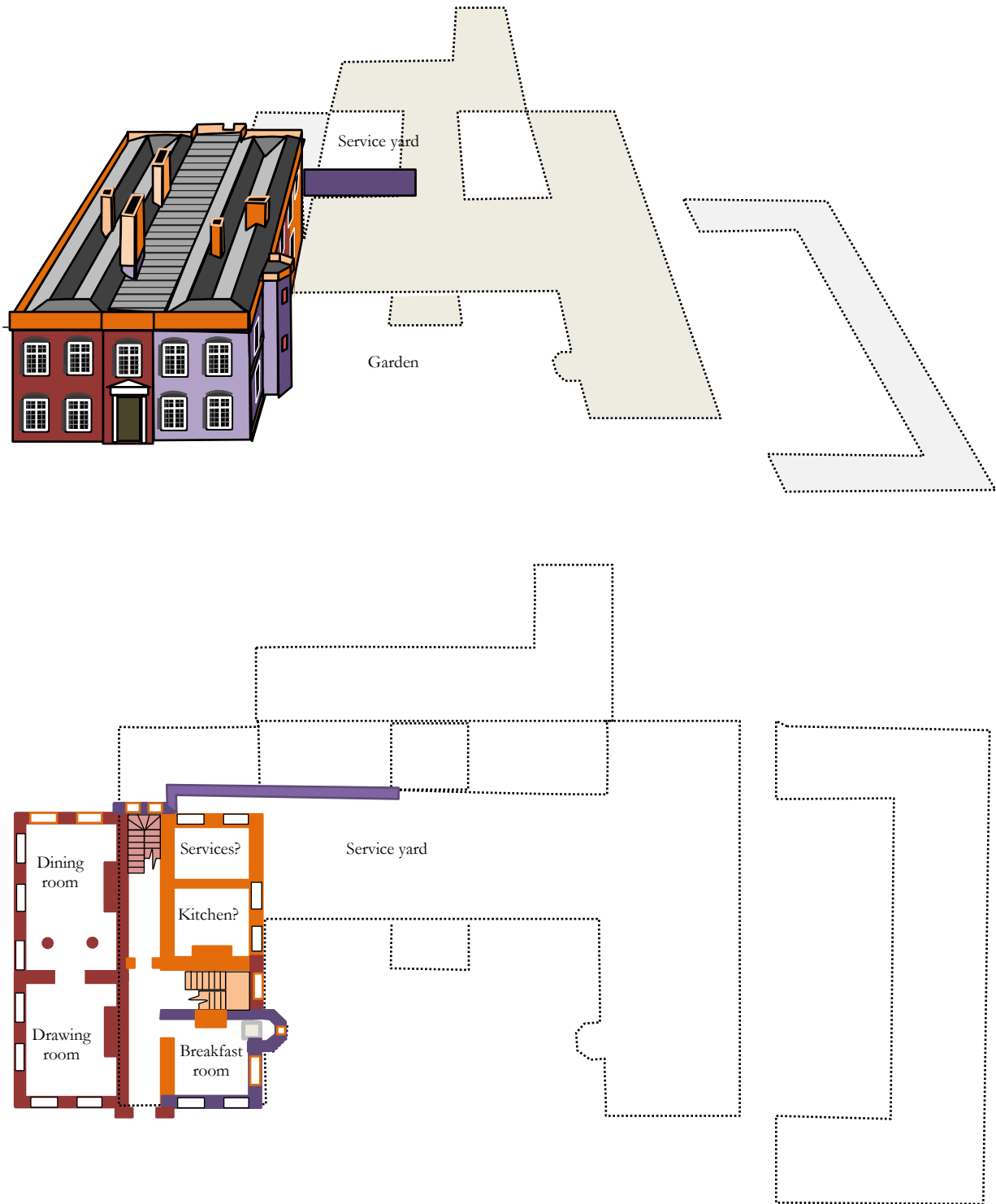


Fig 59 Conjectural reconstruction of the mansion at Killerton after its partial demolition for the Wyatt house project and its reinstatement as a 'temporary house'.

KILLERTON HOUSE: PHASE V

Suggested Reconstruction c.1780

The house recommissioned as permanent, re-fronted and a new cellared service wing built to the north

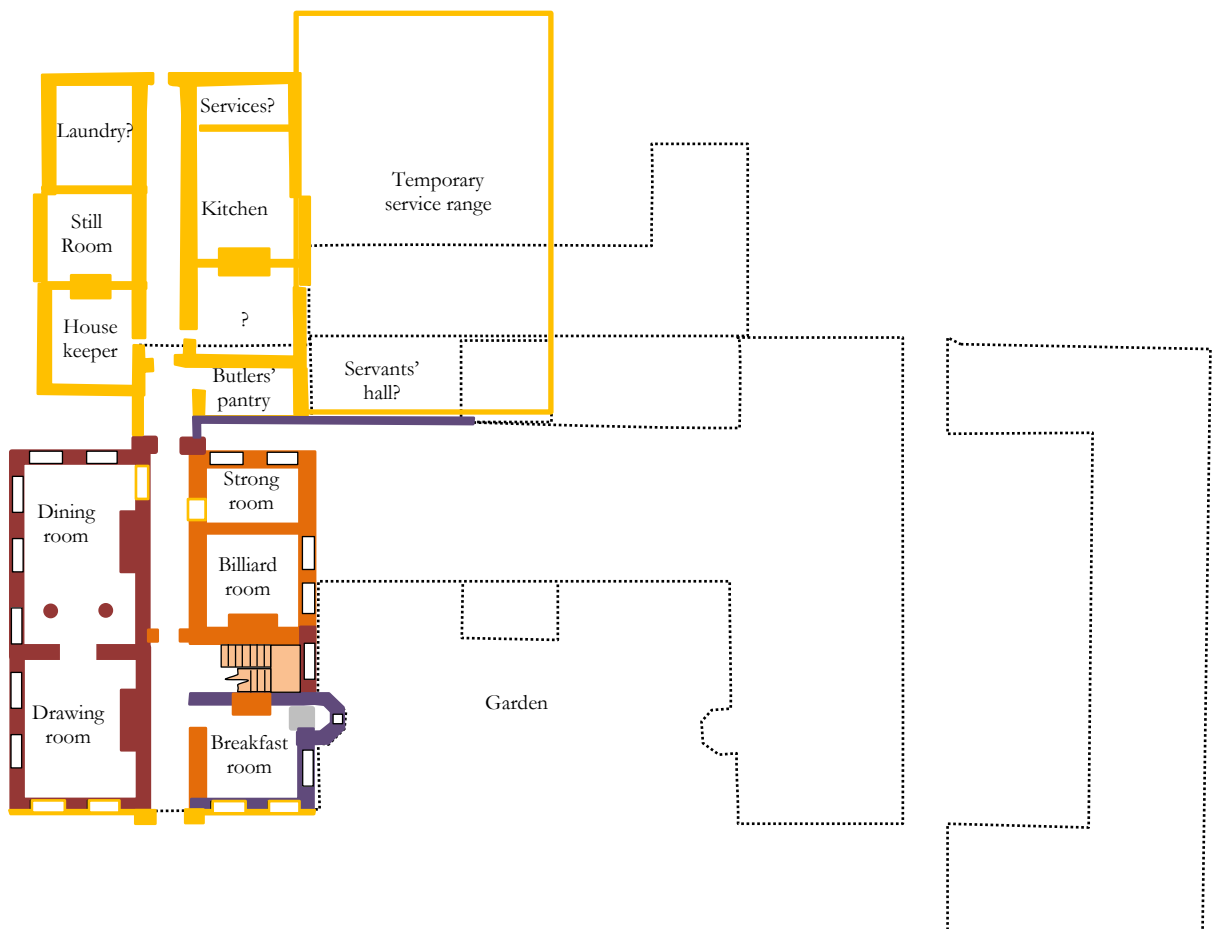
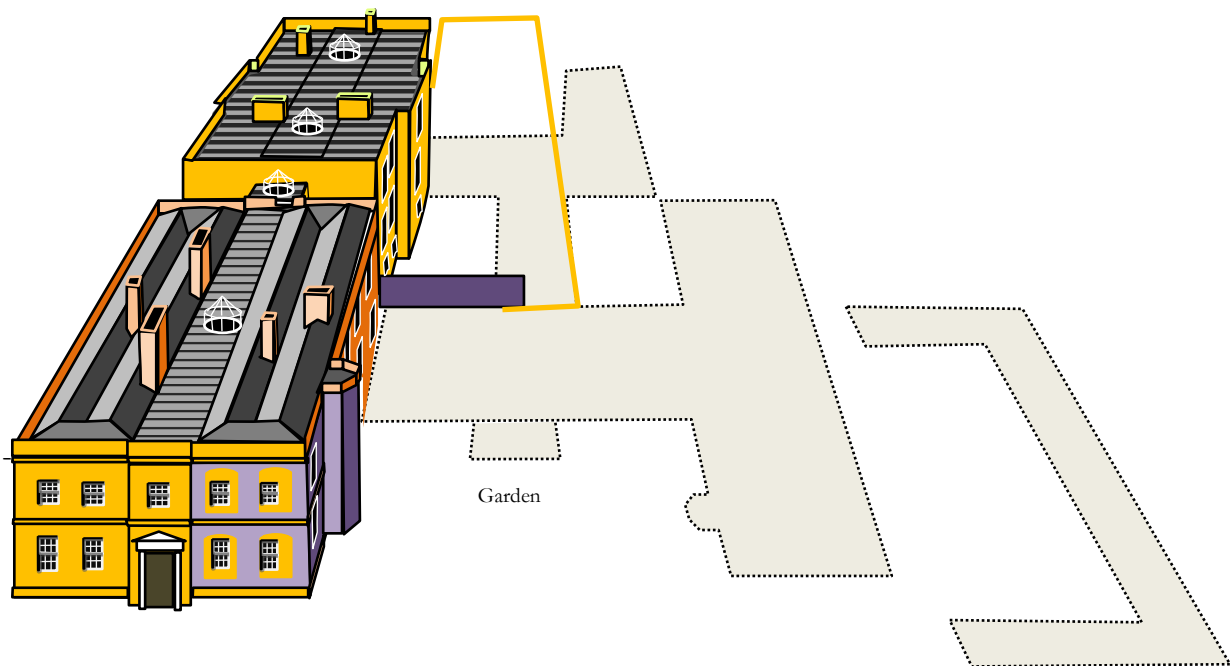


Fig 60 Conjectural reconstruction of the mansion at Killerton after the addition of the new northern service range in 1779-80

KILLERTON HOUSE: PHASE VI
Suggested Reconstruction c.1792-1810

Western roofs 'trussed in a temporary (sic) manner' and (possibly), the service wing extended to join south range.

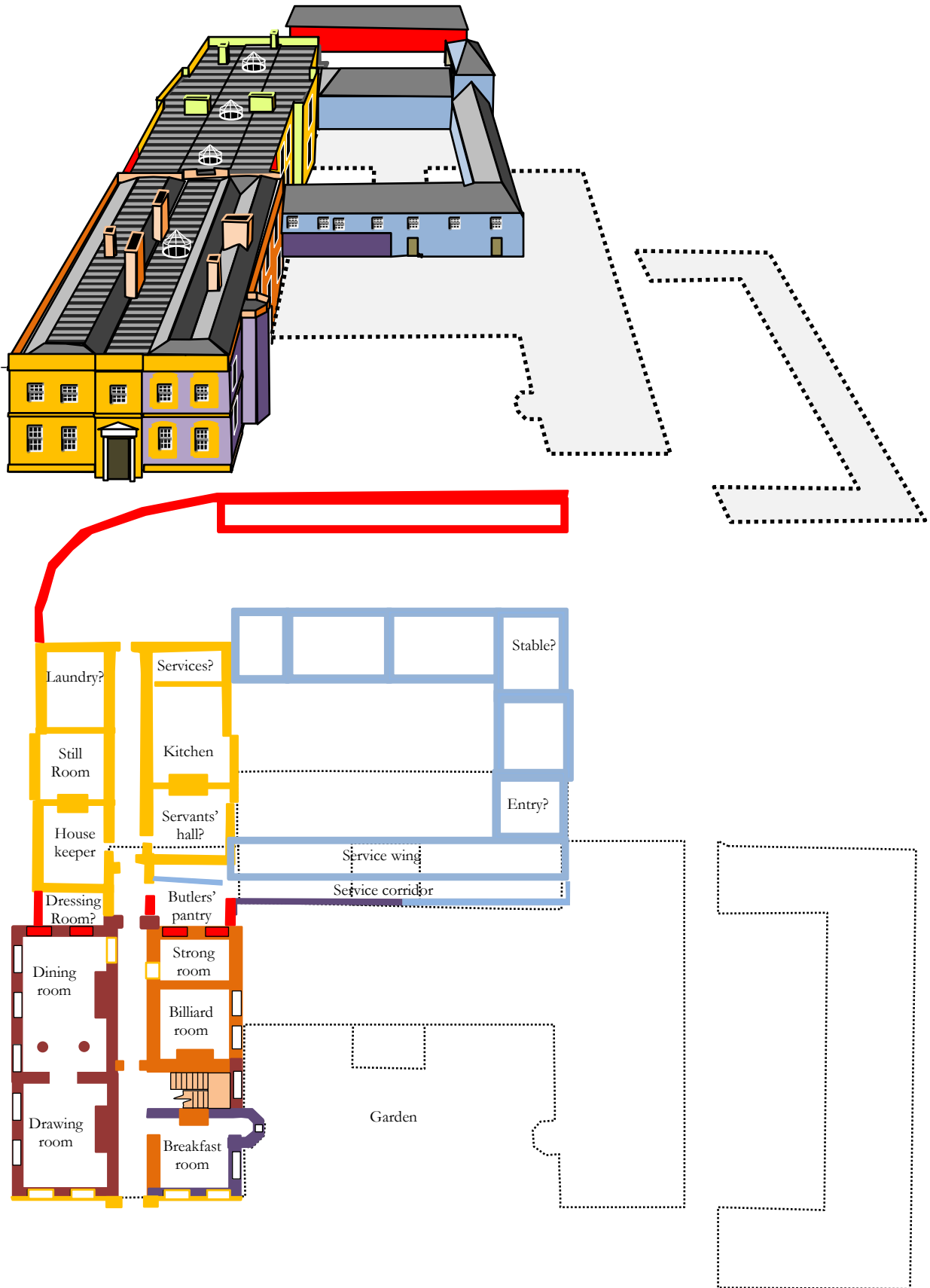


Fig. 61 Conjectural reconstruction of the mansion at Killerton after improvements to the service ranges

KILLERTON HOUSE Phase VII

Suggested Reconstruction c.1821-30 east part of roofs replaced to allow top lighting for new stair associated with alterations for new dining room. Service range roof remodelled.

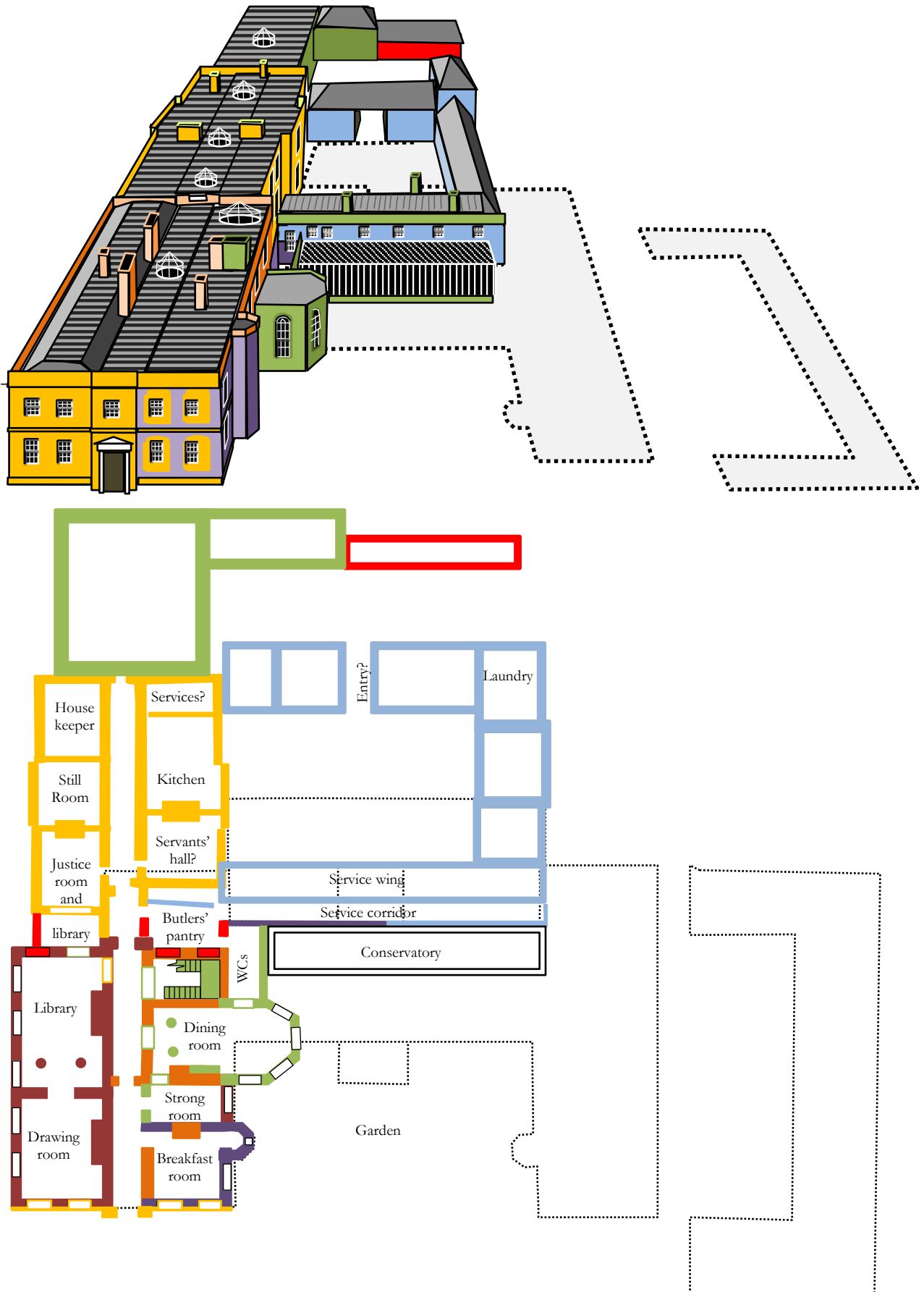


Fig 62 Conjectural reconstruction of the mansion at Killerton after the addition of the dining room bay and conservatory.

KILLERTON HOUSE Phase VIII

Suggested Reconstruction c.1900, addition of billiard room and enlargement of 1st-floor windows. New flat roofs over all.

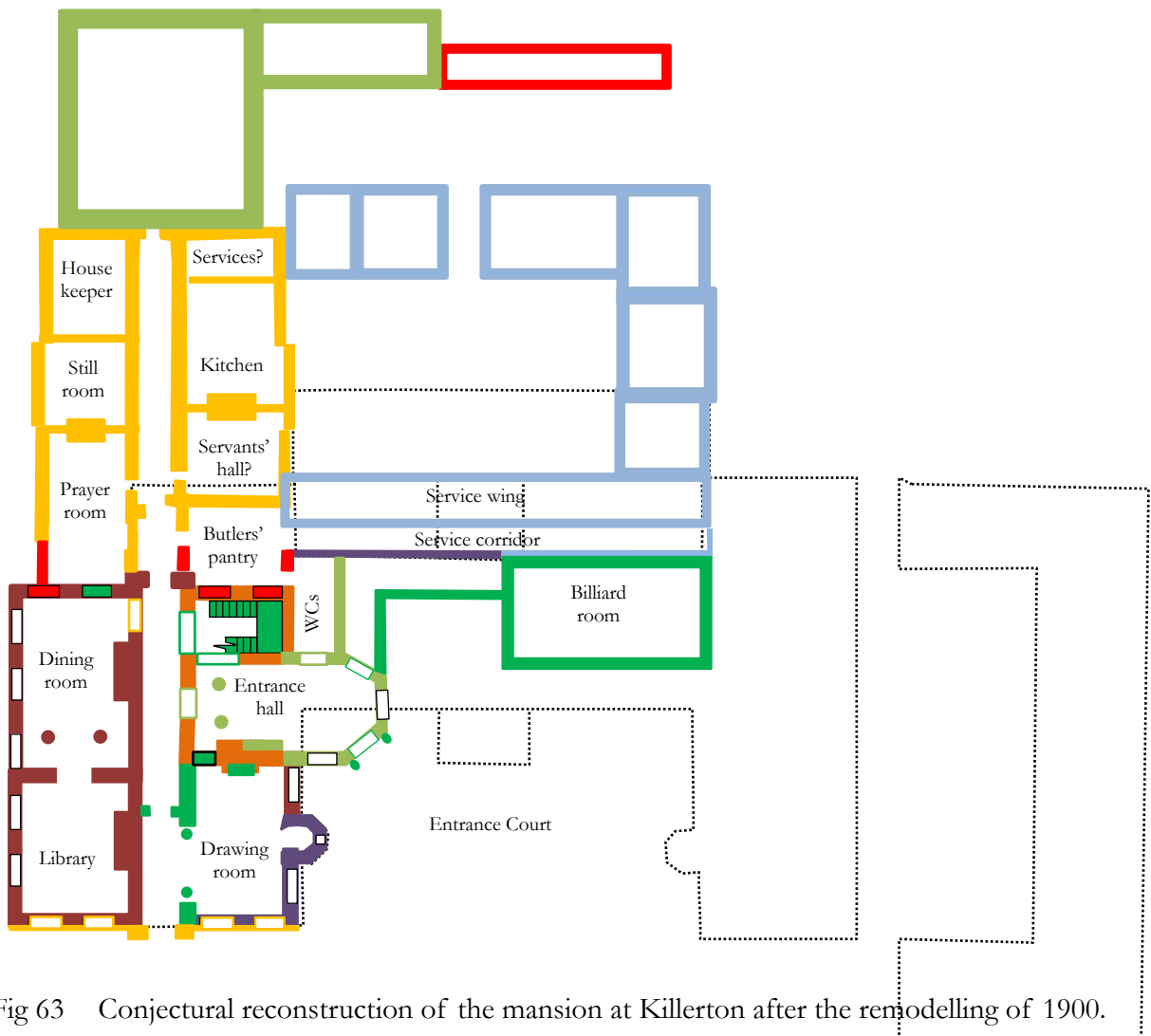
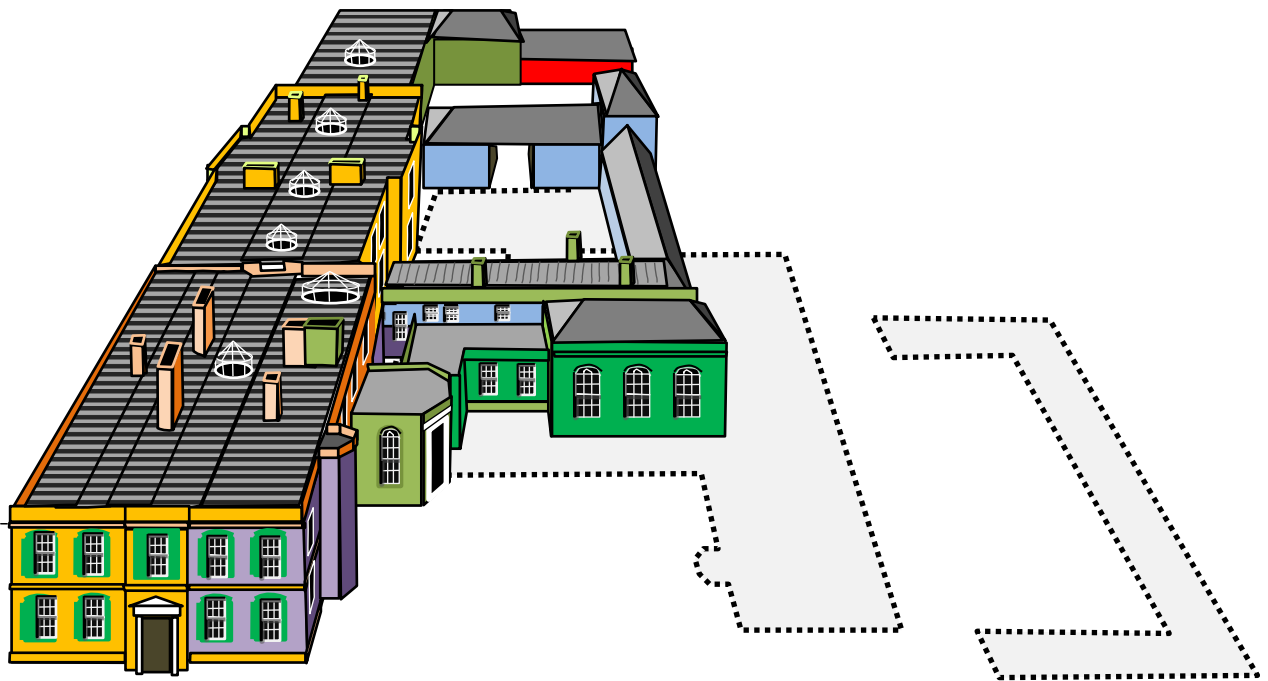


Fig 63 Conjectural reconstruction of the mansion at Killerton after the remodelling of 1900.

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1148M/Acland

- add 23 E1 Map book and rental of Acland Estates, c. 1756.
- add/General Accounts/Acland Household I, 1774–5; /Acland Household II, 1778–80
- add/Correspondence/29/8–9 Wyatt to Sir T. D. Acland 21, Aug 1775
 - /36/52 John Veitch to Hugh Hoare, 4 June 1794
 - /36/54 John Veitch to Hugh Hoare, 6 June 1794
- 21 (iv)/35 Sir Thomas Acland to Hugh Horrell, 1811
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GRO Gloucester Record Office

D2970/1/81 Prothero & Phillott Ledgers 1863-31

Three plans of Killerton House; two undated

- ‘Killerton House’ Dated 5 and 6 September 1898 (Tracing of earlier, undated ground-floor plan)
- ‘Killerton House’ undated; c. 1900 (Alternative proposals for New Billiard room, Drawing Room, strong room and Entrance Hall. Not executed)
- ‘Killerton House’ undated; c. 1900 (Proposals for New Billiard room, Drawing Room, corridor, strong room and porches. Only partly executed)

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C O N D I T I O N S

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