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Archaeological monitoring of a machine-dug trench to locate a culvert at Canons Ashby, Northamptonshire.

(Scheduled Monument 13643; National Heritage List for England 1015534)

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Summary

A machine-dug trench was opened to establish the presence of a culvert in order to confirm its location, depth, construction and condition on land belonging to the National Trust, east of the church of St Mary's, formerly the priory church of Augustinian canons. The culvert, comprising ironstone side walls and shallowly-arched brick vault, was located at c1.5m below the current ground surface. Within the trench the culvert was complete. Its brick arch suggests a nineteenth century date. Overlying soils displayed evidence of tip lines suggestive of ground raising indicating the culvert was constructed within a larger depression and then covered, rather than being trench-built. The culvert interior was explored with an endoscopic camera and then the vault made good before backfilling.

Background

Intermittent water ingress within the cellar of a property on land adjacent to, but not owned by, the National Trust at Canons Ashby, Banbury Road, Northamptonshire, prompted a small-scale trenching exercise to establish whether a suspected culvert was located within that part of the National Trust property close by (NGR: SP 5787 5051; Fig 1).

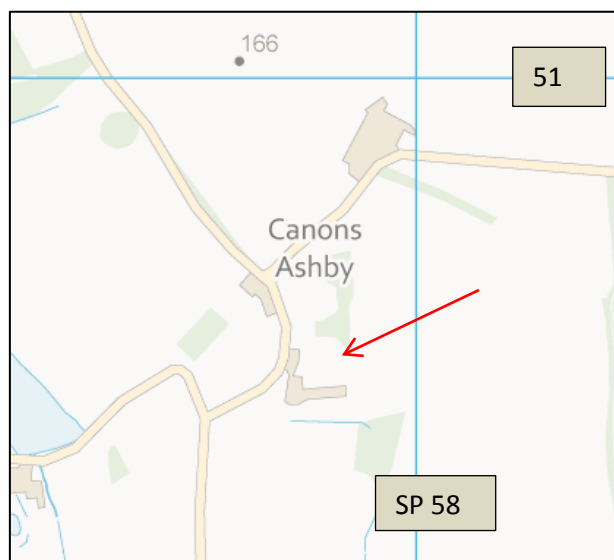


Fig 1: Site location (arrowed). Contains Ordnance Survey data © Crown Copyright and database right 2018

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The land currently comprises rough pasture which is located within the Scheduled Monument of Canons Ashby [*The remains of a medieval monastery, castle, settlement and fields, post-medieval houses, gardens and park, and a series of five dams, Northamptonshire, (SM 13643; NHLE 1015534)*]. It is also the far south-eastern corner of the existing St Mary's churchyard.

Prior to any excavation in order to investigate the suspected culvert, a detailed Written Scheme of Investigation (WSI) was prepared to set out the proposals for that investigation (Soden 2017). That WSI proposed, following consultation with the National Trust Regional Archaeologist during an on-site meeting, a single trench of up to 5m in length and up to 3m in width close to a 4m-high ironstone boundary wall between the Trust land and adjacent property (Fig 2). It was to the south of a linear earthwork feature which had the appearance of a ditch. Although not displaying evidence of consistent water flow, the ditch is seasonally wet.

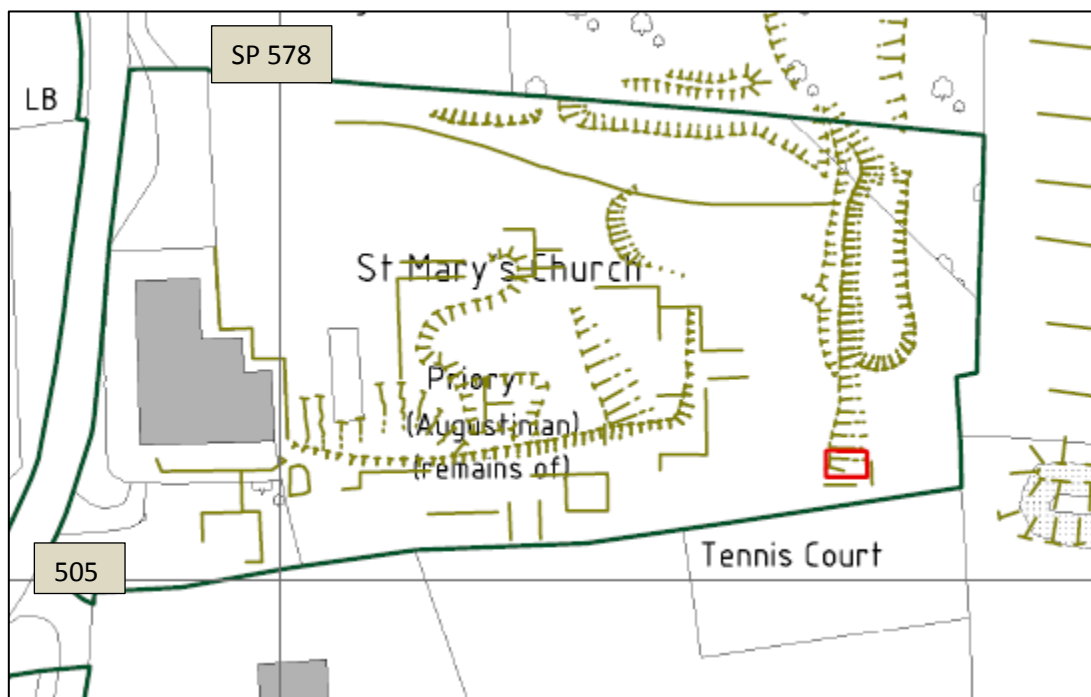


Fig 2: Trench location. Extract from map provided by The National Trust HBSMR with earthworks surveyed by RCHME. Contains Ordnance Survey data © Crown Copyright and database right 2014

On approval of the WSI by Historic England a timetable was agreed with the National Trust for the excavation (Consent Reference S00152243).

Interestingly, neither the ditch nor the wall to the south of the trench is depicted on the Ordnance Survey Preparatory map c. 1810, nor is there any indication of the rows of cottages or any other buildings located to the south (Fig 3). The only section of boundary, perhaps a wall, is a short length located immediately to the south of the present church, but it does not extend further east than that building.

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Fig 3: c. 1810 Ordnance Survey Preparatory map. Approximate location of trench indicated. North to top.

By the time of the First Edition Ordnance Survey map (25-inch series, sheet LV.2, surveyed 1883, published 1884, Fig 5) the boundary wall to the south is depicted, as are the rows of cottages. Between the two is an area identified as 'Vineyard Garden'. While earthworks are indicated to the south-east, identified as 'Canons Walk' and an L-shaped moat to the south of the cottages, there is no indication of the ditch visible today to the north of the trench location. It appears that the eastern side of the plot in which the former priory is located was bordered by a belt of mixed woodland and bounded on the west and south sides by fences, with the east side in the same location as the present field boundary. It is possible that the present ditch was located in that area of woodland and therefore not identified during the survey of that date.

It appears, from map evidence, that the cottages and the stone wall were constructed between c.1810 and 1884.

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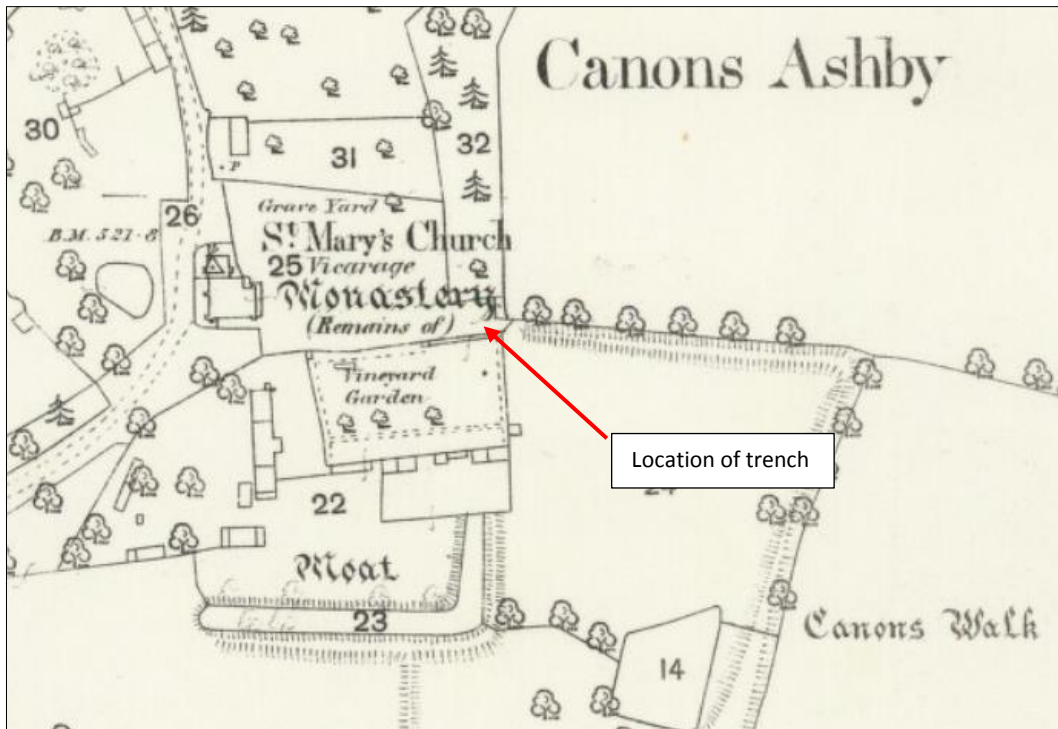


Fig 4: First Edition Ordnance Survey map, 25-inch series, sheet LV.2, published 1884. North to top.

Fieldwork

Fieldwork took place on 8-9 February 2018.

A 3-ton mechanical excavator, fitted with rubber-tracks and a 1.2m-wide toothless ditching bucket, was employed to open the trench under archaeological scrutiny. The machine was operated by Scott's landscapes who have previously been employed to undertake trial-trenching at another National Trust properties within the county, thus ensuring optimum care during this phase of the work.

Following the removal of a ragged turf, the topsoil was revealed to comprise a thin layer of dark brown, humus rich soil, with few inclusions (Fig 4, [1]).

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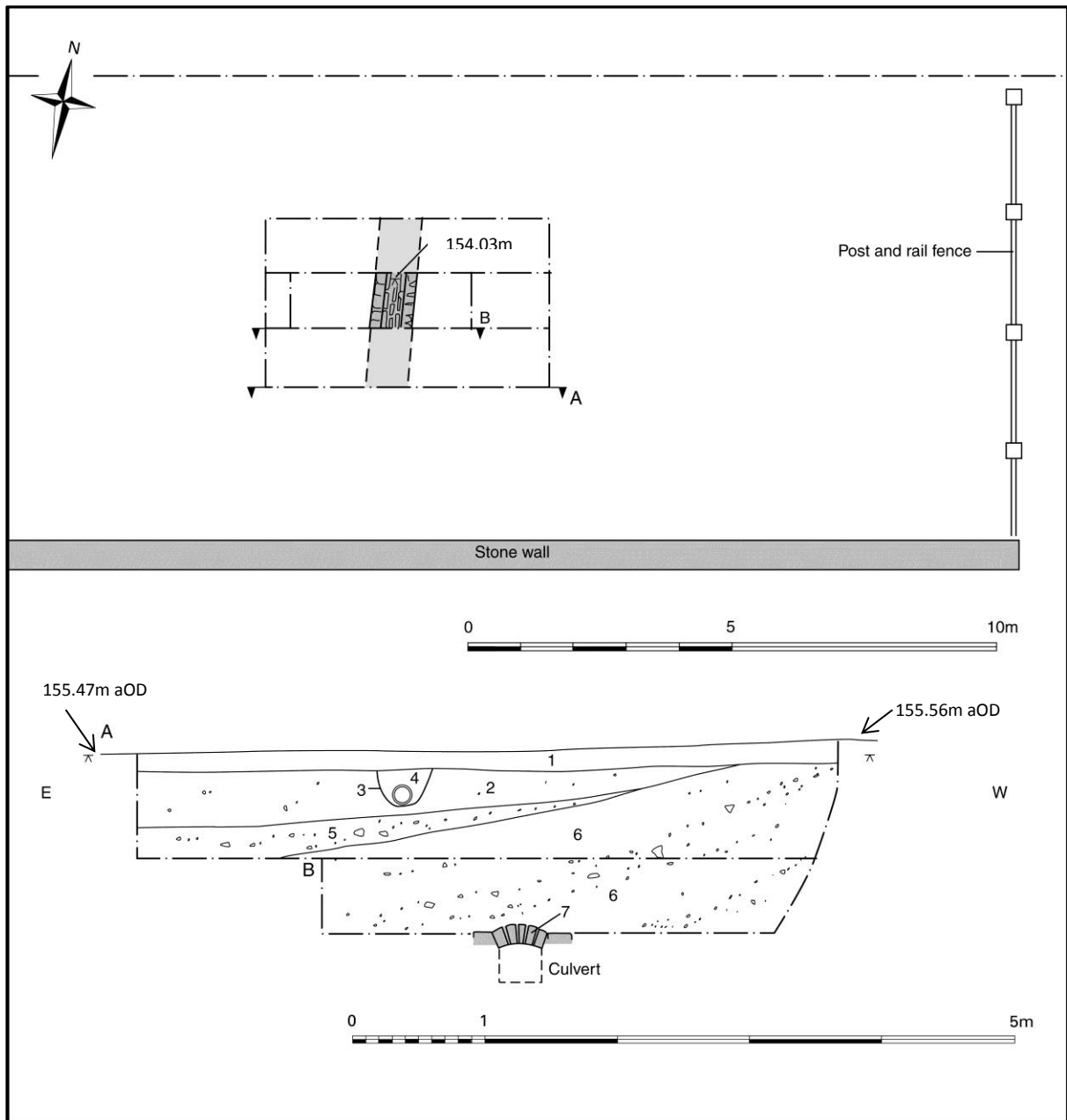




Fig 5: Plan and section of the trial trench. Note that the southern (north-facing) section was slightly more instructive for drawing. (Andy Isham)

Beneath this was a layer containing fragments of ironstone (Northampton Sand with Ironstone) and occasional smears of lime mortar within a mid-orange/brown slightly clay loam [2]. Cutting this was a shallow U-shaped feature [3], filled with what was most likely topsoil which surrounded a terracotta field drain aligned north-south [4]. This field drain appears to have formerly served a boiler-house which is thought to have heated a range of glasshouses which stood on the other (south) side of the nearby wall. The field drain was most probably used to channel the rainwater from the roof of that boiler-house into the ditch nearby to the north since it fell in that direction. The pipe sections had a 13cm (5 inch) external diameter and were of machine-made extruded variety indicating a late nineteenth- or early twentieth-century date.

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Beneath layer [2] was a further layer which displayed a more distinctive tip-line characteristic of material deposited from higher ground to the west [5]. This tip comprised a lighter orange, slightly sandy clay loam with small fragments of ironstone and occasional mortar flecks indicative of degraded building debris.

Beneath was a thicker layer, which contained larger stone fragments (both ironstone and occasional, but fewer, limestone pieces), mortar smears and charcoal flecks, all within a mid-brown clay loam matrix [6]. It was almost certainly also deposited downslope from the west. It contained a variety of finds including fragments of clay roof tile, brick, floor tile, pottery and glass. Roof tile, unless glazed was not retained, nor were small fragments of brick or stone unless they retained worked or moulded surfaces. The retained finds from context [6] were as follows:

Object	Material	Maximum Dimensions	Description
Floor tile 	Glazed ceramic	114mm x 81mm x 11mm	Decorated encaustic floor tile with floral and geometric pattern based around a central fleur-de-lys. Probably originally c120mm (5 inches) square. 14 th -15 th century, from the Priory. Examples from Kenilworth (Chatwin 1936, fig 41:13) and (7 worn examples) from Coventry Charterhouse (Soden 1995, fig 25:38). Not in Eames (1986). Probably a Coventry (Stoke kilns) product
Floor tile 	Glazed ceramic	58mm x 58mm x 20mm	Deliberately-quartered decorated encaustic floor tile bearing Lombardic letter N. Probably from an inscription around a monastic grave. 14 th -15 th century, from the Priory. Letter not specifically in Eames (1986), Chatwin (1936) or Whitcomb (1956), but the alphabet tile is common in all three. Probably a Coventry (Stoke kilns) product
Floor tile 	Glazed ceramic	57mm x 57mm x 22mm	Deliberately-quartered decorated encaustic floor tile bearing Lombardic worn letter R. Probably from an inscription around a monastic grave. 14 th -15 th century, from the Priory. Parallels as 'N', above. Probably a Coventry (Stoke kilns) product.
Floor tile	Glazed ceramic	115mm x 54mm x 26mm	Mottled green plain floor tile, worn and fragmentary. 14 th -15 th century
Floor tile	Glazed ceramic	47mm x 24mm x 13mm	Fragment of very worn and fragmentary decorated floor tile. Retains part of quatrefoil in white slip and part of other motifs, too small to identify. 14 th -15 th century.
Roof tile	Glazed ceramic	91mm x 75mm x 15mm	Fragment of roof, probably ridge tile. Retains pale sage-green glaze to external surface.
Architectural fragment	Ironstone-coarse grained, containing fossil inclusions	95mm x 95mm x 68mm	A fragment retaining remains of two dressed surfaces; one a flat, pitched surface indicative of a mortar joint (though with no mortar adhering), the other a convex curve with conjoined concave profile. Probably from the priory

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Architectural fragment	Ironstone-coarse grained, containing fossil inclusions	86mm x 85mm x 45mm	A fragment retaining remains of two dressed surfaces; one a flat, pitched surface indicative of a mortar joint (though with no mortar adhering), the other an ogee profile. Probably from the priory
Architectural fragment	Ironstone-fine grained, no fossil inclusions	118mm x 81mm x 30mm	A fragment of an ovolo-moulded mullion or transom retaining part of the curved ovolo surface and adjoining flat area adjacent, either for the glazing groove or linear raised moulding of a king mullion detail. Post c1570-75.
Pottery			Salt-glazed jar fragment including part of base. Estimated complete diam c.130-135mm. Speckled buff exterior, grey interior with throwing rings. 18 th century.
Pottery			Rim fragment of large bowl, Midlands Black wear. Interior glazed, exterior unglazed. . Original dia. c. 350mm. 18 th century.
Pottery			Fragment of rim of steep-sided Mocha-type bowl. Yellow/buff fabric (oxidised?) with external white and blue slip decoration in bands. Mid-19 th century.
Bottle fragment	Glass		Fragment of bottle glass, deep olive green, no oxidisation to surface. Probably part of the neck of the bottle. Too small to estimate original dia. 19 th century.

Set within layer [6], and showing no clear indications of a construction trench, was an ironstone and red brick culvert aligned north-south [7]. It lay c1.5m below the modern ground surface.



Fig 6: The brick and ironstone culvert, looking west; scale 1m.

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Fig 7: The brick and ironstone culvert, relative to the works, looking north-west; scale 1m

The two sides of the culvert were constructed from irregular pieces of ironstone with flat surfaces being used to create the side walls. It did not appear that dressed stone was utilised. Only the upper surface was exposed but all of the stonework appeared to be mortared with a pale-yellow lime mortar. The top of the culvert was capped by a shallow segmental arch composed of five voussoir-bricks laid on edge, mortared together with the same yellow mortar used on the side walls. The brick size was 230mm x 110mm x 65mm indicating a probably early nineteenth-century date as was also apparent from the fabric, a hard, highly-fired iron-rich matrix with few inclusions and well oxidised throughout.

A single brick was removed from the apex of the arch to allow inspection with an endoscopic camera. It could be seen that there was a layer of silt with mortar and brick fragments accumulated on the base of the culvert. Though the removed brick allowed a space too small to allow removal of this material a probe indicated a probable depth of the culvert to be c260mm from the underside of the arch to the apparently solid base of the channel.

A consistent flow of water could be observed flowing from the north to the south within the base of the culvert.

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Fig 8: camera-probing the culvert interior.

When sufficient data had been gained from the camera-work, the keyhole left by the brick removal was made good the next day with a new, purposely-cut brick, which was mortared into position. The orientation and centre-line of the culvert was marked with a yellow spray-marker dot on the adjacent wall, and a small wooden peg driven in, its top flush with the ground (so as not to snag mowers); this too was sprayed yellow on top. *Spray-marker is a construction-site paint and will dissolve with time, so the marks should be renewed occasionally.* Then the trench was backfilled with its own up-cast, lightly tamped down to restore the ground level.



Fig 9: The inspection hole in the vault made-good

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Fig 10: The trench backfilled, looking west

Conclusions

The single trench confirmed the presence of an ironstone and brick culvert which, from the size and fabric of the bricks used to create its vaulted top and related finds above, dates no earlier than the mid- nineteenth century. It is thought to have been constructed to drain water in a southerly direction from the broad ditch situated immediately to the north and which is located to the east of the former priory church.

No indications of the probable northern inlet can now be observed at the south end of that ditch, nor is the final outlet of the culvert, or its intermediate route, currently known.

On the other side of the wall located 4m to the south of the trench is the probable site of a former house, known as the Cope House (Heward and Taylor 1996, 114, fig 143). That house was built by Sir John Cope following the dissolution of the priory (which was suppressed in 1536) and apparently created from the south and east ranges of the cloister. It is thought to have been demolished c. 1665. To the east of that former building is an area thought to have been the location of associated gardens.

The area of the former Cope House is now partly occupied by modern tennis courts; that area is identified as being a 'Vineyard Garden' in 1884. The cottages to the south of that area do not appear on a map of c.1810, neither does the stone wall, beneath which it appears the culvert passes.

Both the site of the former house and its gardens lie at a lower level than the area occupied by the present ditch and culvert. Therefore, it has to be assumed that the outlet of the culvert identified here is located somewhere in that area since it appears to rely simply on gravity to disperse the groundwater.

The apex of the culvert lies c1.5m down, beneath a series of soil layers which appear to be essentially contemporary with it and were most likely deposited immediately following its construction. The layer which first covered the culvert contained artefacts dating from the fourteenth to the nineteenth centuries.

The culvert was made good and is marked on the ground for future relocation.

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Appendix

OASIS data

Project Name	Canons Ashby Culvert
OASIS ID	Iainsode1-310333
Project Type	Evaluation
Originator	Iain Soden Heritage Services Ltd
Project Manager	Iain Soden
Previous/future work	No / Not known
Current land use	Recreational /churchyard
Development type	n/a
Reason for investigation	Estate management / Research
National grid reference	SP 5787 5051
Start/end dates of fieldwork	08-02-2018 to 09-02-2018
Archive recipient	Northamptonshire Archive
Study area	15 sq m



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