An archaeological evaluation at Colchester Garrison Church, Military Road, Colchester, Essex April 2007

report prepared by
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on behalf of
the MoD

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CAT Report 419
May 2007

Introduction
This is the report on an archaeological evaluation carried out at Colchester Garrison Church on the 17th April 2007 by the Colchester Archaeological Trust (CAT) in association with RPS Planning, and on behalf of the MoD.

Historical background
In 1804, land in Military Road was bought for a military burial ground. This was to serve Colchester's Napoleonic garrison whose barracks stood some distance to the east (near modern Artillery Street and Barrack Street).

Five hundred and sixty-four people were buried on the site between 1807 and 1812 (ERO D/P 203/1/4)[1]. There are four gravestones around the perimeter of the site, and the only legible one is dated to 1809. These were presumably cleared away from their original positions when the graveyard was 'tidied up'. Burial may have continued here until as late as 1815, when the Napoleonic Wars ended, and possibly beyond that date.

The garrison built for the Crimean War was opened in 1856. Its church was erected over the site of the burial ground (*VCH* 9, 253). The latter is still shown as 'Grave Yard' as late as the 1876 Ordnance Survey, but it is unclear if anybody had been buried here after the Napoleonic Wars.

The MoD holds a 'Register of Burials' dated 1856-1858 which lists 63 burials under the heading of 'Burials of those belonging to the Camp at Colchester', thus post-dating the construction of the church. However, it is uncertain whether these relate to the main Colchester cemetery churchyard or to the Garrison Church specifically. The former is more likely, given the lack of surviving gravestones of that period at the Garrison Church.

The project and its aims
Given the certainty of finding late 18th- and 19th-century burials next to the Garrison Church, the aim of the archaeological evaluation described here was to investigate their position and depth below modern ground-level. There was never any intention to lift or otherwise disturb the burials. (A licence to cover the accidental disturbance of human remains was applied for from the Department of Constitutional Affairs, and was granted on the 2nd April 2007. This was applied for in case loose bones were revealed in the upper soil layers, but none were.)

Methods
All work was done in accordance with a WSI written by R Masefield of RPS Planning (Masefield 2007). The first stage was to carry out a geophysical survey to see if individual graves were visible 'remotely' on the site without the need for excavation or evaluation. A survey was carried out by Dr Tim Dennis of the University of Essex on 22nd March 2007. His comprehensive report is appended here. Of particular importance is Figure 11 of Dr Dennis' report, which shows that the major anomaly or feature revealed by the geophysical survey was the footpath visible on the Ordnance Survey map of 1876. Other anomalies on the geophysical plot coincide so precisely with the positions of trees shown on the 1876 map that there is no doubt that they mark the positions of trees which have since been removed.

Following the geophysical survey, a trial-trenching evaluation was carried out on the 17th April 2007 to confirm the geophysical survey results and to explore the potential position of graves. Four trenches (T1-T4), each 7.5m long, were cut in the positions shown on Figure 1. One trench, T4, was placed to overlie the line of the footpath detected as a result of the geophysical survey.

Results (Figs 1-3)
Trench 1
A modern topsoil L1 was removed by JCB under archaeological supervision, using a flat-edged bucket to avoid damage to burials. L1 was 0.40m deep. No features were visible at

[1] we are obliged to Mr David Hammersley for bringing this record to our attention, via Mr Rob Masefield of RPS Planning

this depth, so the trench was lowered to 0.7m below ground-level by the careful removal of underlying silty layer L2.

It was expected that a number of grave cuts would be visible in contrast to the natural ground in the trench bottom. Instead, there were small 'islands' of natural ground L3 surrounded by large areas of darker soil, clearly the fill of features. The question is what kind of features they are. It is useful to refer here to the excavation of the Roman cemetery at Butt Road in the 1970s and 1980s (*CAR* **9**). Precisely the same pattern of 'islands' of lighter soil surrounded by areas of darker fill was seen there. When excavation reduced the level of that site, individual grave cuts could be seen in the larger dark areas. There seems to be no reason to doubt that the same would happen here given further excavation.

Limited excavation showed that the features were straight-sided, which would be appropriate for grave cuts. No human bone was exposed in any of the features.

If it is contended here that T1 has exposed an area of intercutting graves, then it is relevant to ask whether the known number of burials should produce this kind of density of burials. There are at least 564 burials (the recorded number) here. The plot is calculated by CAD software at 3,298m^2. This equates to 1 burial per 5.8 square metres. T1 was 13.5 m^2 in size, and so should have contained on average 2.3 burials. In fact, it is possible to see six burials here, as follows; F5 is two, side by side; F4 is one with a small one in between F3 and F4; F3 is one; and F2 is one. So the number of burials is higher than expected, but this could be accounted for by the fact that some parts of the site had no burials, as is shown by T2 (below).

Trench 2

Topsoil L1 was removed to a depth of 0.35m below ground-level. At this point, the top of a grave cut (F6) was visible. This was the only feature in this trench, and it was dated by peg-tile (not recovered). Machine excavation continued to 0.9m below ground-level, but no further features were encountered. No human bone was visible in the grave.

Trench 3

At the south end of this trench, a modern service trench was left unexcavated. Otherwise, details were similar to T1 (above). Careful machine removal of L1 to 0.9m below ground-level revealed a number of areas of dark soil (F7-F10) similar to those in T1. It was possible to see a number of grave cuts here, perhaps eight. No human remains were visible, but the features are interpreted as graves, as in T1.

Trench 4

Removal of topsoil L1 to 0.55m below ground-level revealed three areas of dark soil (F11-F13). The difference in this trench was that the patch of dark soil at the south end of the trench (F13) was much larger than the others. Working on the principle that the dark areas are grave cuts, often intercutting, it can be postulated that there are at least six graves as far south as the northern edge of F13. Based on the record that a large number of burials were placed under the font [2], there may be large burial pits on this site. It is possible that F13 was one such large burial pit, rather than a number of intercutting graves.

Finds

There were no stratified finds. Cleaning over the base of T4 produced a group of finds including residual Roman pottery (1 sherd) and tile (1 piece), four fragments of medieval or post-medieval peg-tile, one fragment of post-medieval brick, two sherds of post-medieval red earthenware (Fabric 40: *CAR* **7**), one clay tobacco-pipe stem fragment, five sherds of modern glass, three iron nails and an animal bone.

The presence of modern glass, some of which looks very freshly broken, shows that the ground has been turned over here in modern times.

Conclusions

No human bones were exposed in this limited evaluation. Despite this, there seems to be little doubt that the trenches have exposed a large number of intercutting graves, ie at least

[2] information from Mr Hammersley

25, plus a potential burial pit. Deeper excavation would be needed to confirm the presence of human remains.

There is no evidence to contradict the expectation that the earliest burials date to the Napoleonic Wars. It is much more difficult, without further research, to be certain of the date of the last burial. For example, it is not known if burials were still made here after the building of the Garrison Church in the 1850s, but there is no evidence that burial ceased here in the 1850s (the 1876 OS map shows the ground east of the church as 'Grave Yard'). In fact, the MoD records leave open the possibility that there are burials here of the period 1856-58.

There are records relating to burials here during the Napoleonic Wars in the Essex Record Office (ERO D/P 203/1/4). These would undoubtedly shed light on the regiments whose troops were buried here, and on the individuals concerned, and would repay further study.

References

CAR **7**	2000	*Colchester Archaeological Report* **7**: *Post-Roman pottery from excavations in Colchester, 1971-1985*, by J P Cotter
CAR **9**		*Colchester Archaeological Report* **9**: *Excavations of Roman and later cemeteries, churches and monastic sites in Colchester, 1971-88*, by N Crummy, P Crummy and C Crossan
Masefield, R	2007	*Written scheme of investigation (WSI) for archaeological evaluation at the Garrison Church, Colchester Garrison*
VCH **9**	1994	*Victoria County History of Essex*, **9**, The Borough of Colchester, ed by J Cooper

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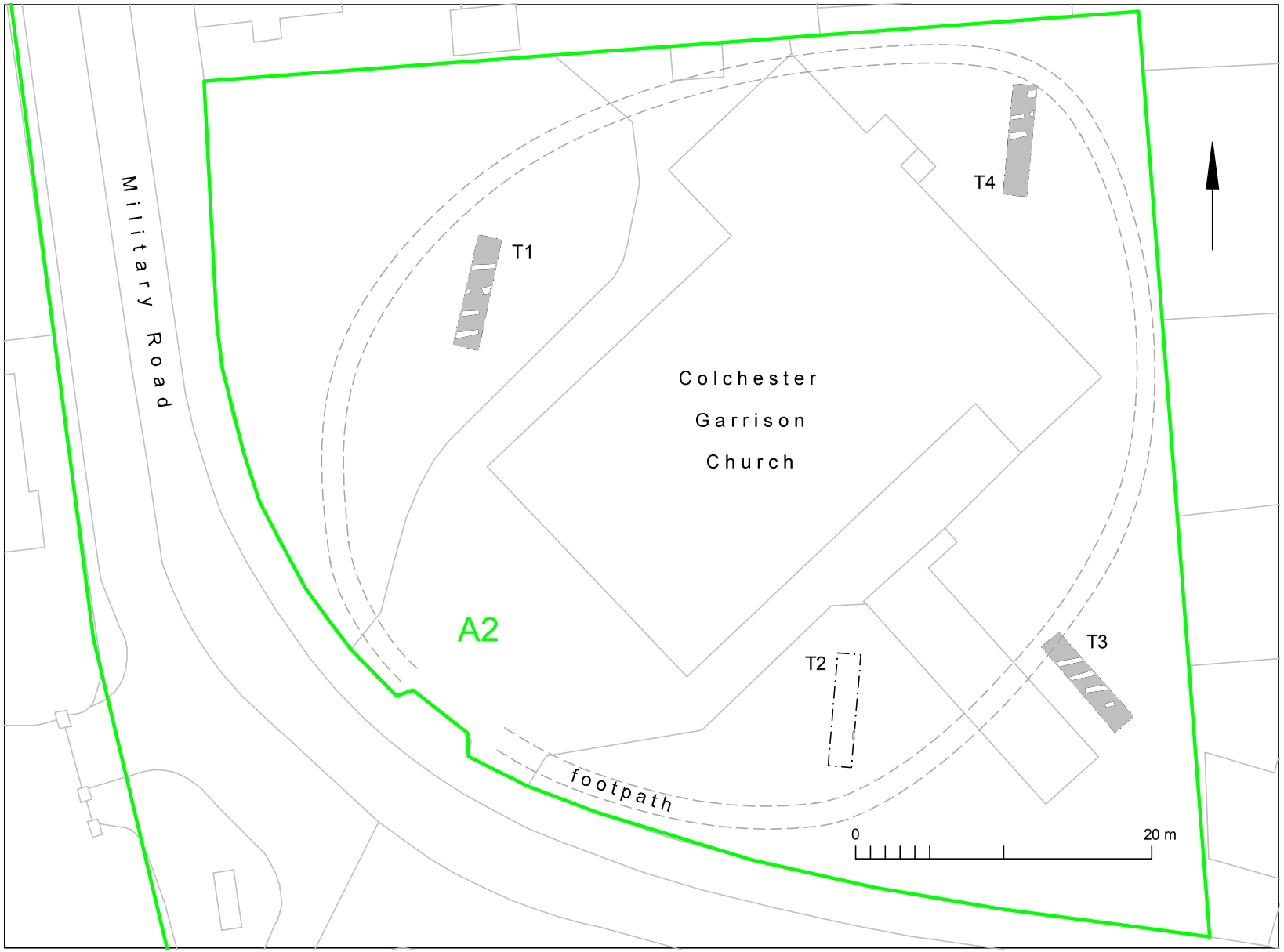

Fig 1 Area A2 with Garrison Church and location of Trenches 1-4 (T1-T4).

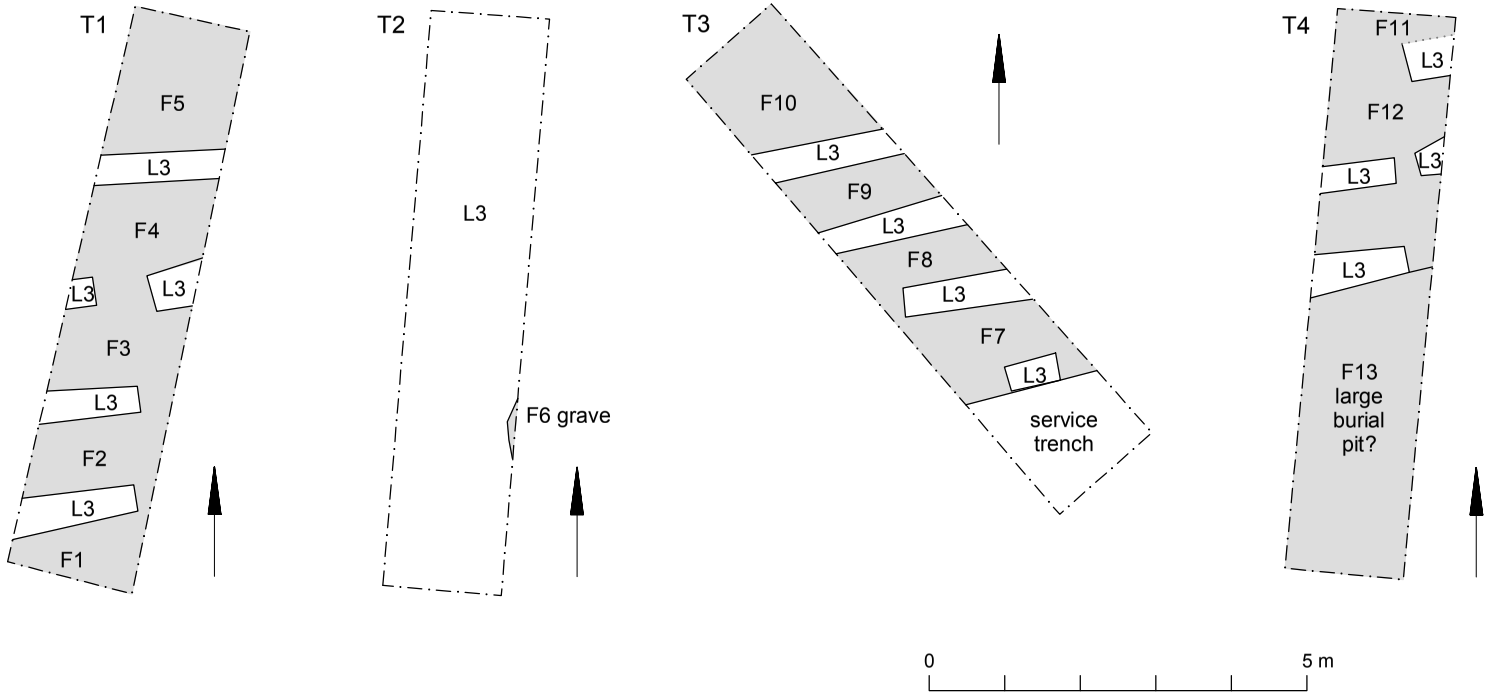

Fig 2 T1-T4: plans.

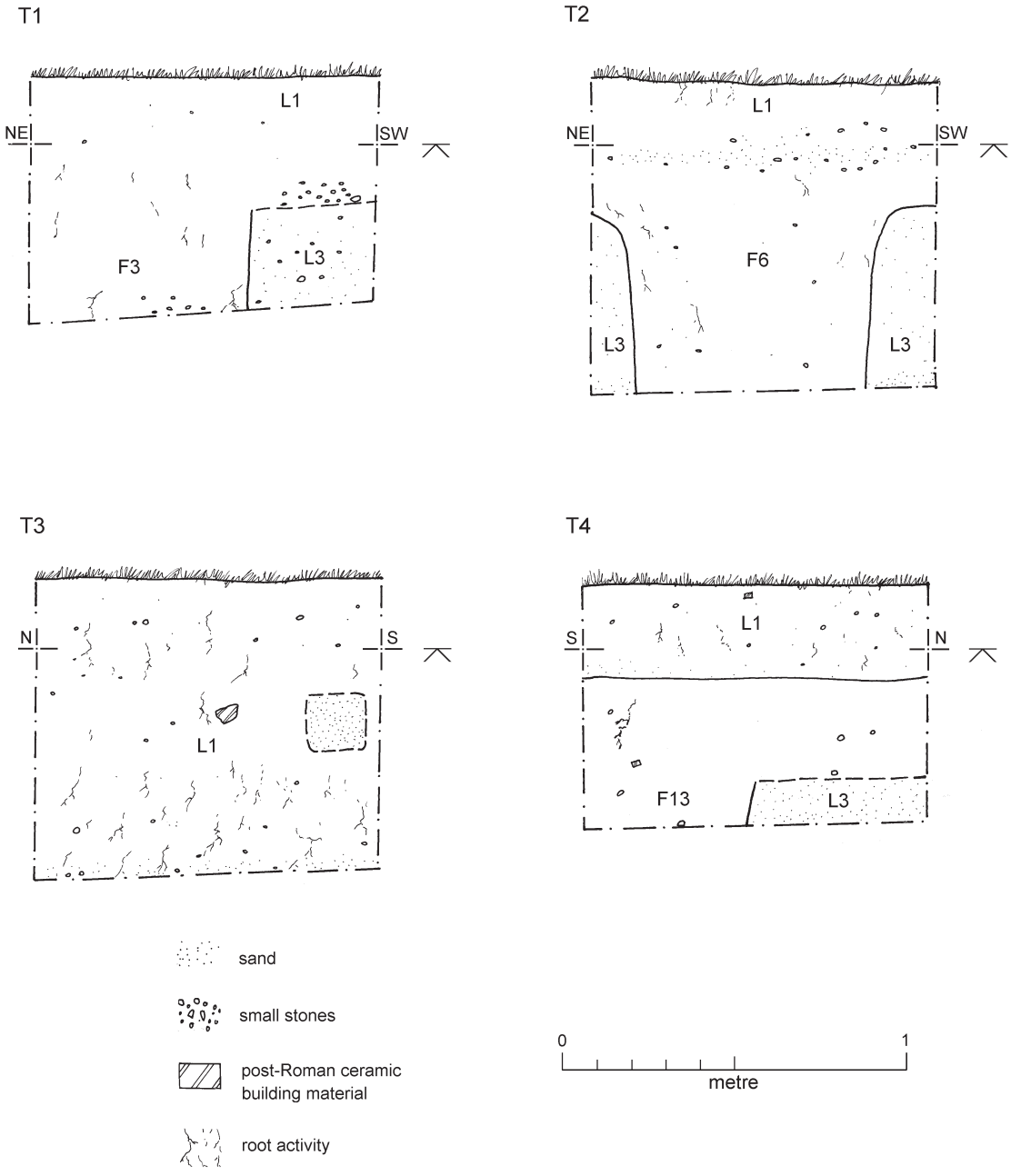

Fig 3 T1-T4: sections.

Appendix

Geophysical survey

by Dr T Dennis (University of Essex)

A Geophysical Survey at the Garrison Chapel, Colchester

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The Site

Fig. 1 shows the modern plan of the site (highlighted), which approximates a quadrant of a circle of radius 63 metres. It lies within and to the northeast of a curve in Military Road, on level ground 1.125 km southeast of Colchester Town Hall. The chapel itself (Fig. 2) is at OS Grid location (600376, 224352).

The new military camp in Colchester was opened in January 1856, as a consequence of the Crimean War. It was constructed on land bordered by Military Road and Mersea Road, with the 'Camp Church', a large aisled wooden structure of a type used in the Crimea, erected on a burial ground that served the earlier Napoleonic garrison of the late 18th and early 19th centuries [1, 2]. The chapel site is identified as a Military Burial Ground on maps of 1848, where Fig. 3 shows an extract from that of Gilbert. The Napoleonic garrison occupied an extensive area to the northeast of Military Road and south of Magdalen Street; it was cleared and the buildings rapidly sold-off by auction in 1816 [2, 3]. One gravestone (Fig. 4a) dated 1809 is now set upright against the inside of the western wall of the chapel site. A cluster of three upstanding gravestones (Fig. 4b) at the eastern extremity of the site are unreadable.

The history of the site prior to 1800 is unknown, but the distinctive curve in the roadway it occupies, actually a diversion from a mainly straight course, is present in the Chapman and André map of 1777 (Fig. 5a), and also an earlier but less accurate map in Morant's *History and Antiquities of Colchester* of 1748 (Fig. 5b.) [4].

The 1:500 scale Ordnance Survey map of 1876 (Fig. 6a) shows the chapel in place. A pathway in the grounds surrounds the building, which has its long axis aligned approximately southwest to northeast. A number of trees are indicated. Fig. 6b is an engraving reproduced from reference 2 showing the frontage of the building as seen from the camp on the west side of Military Road; contrary to the caption on this picture in [2], which gives a date of 1890, it must actually relate to the early phase of the site, before replacement of the wooden huts by permanent brick buildings prior to 1876.

The Survey

Although multiple survey techniques, ideally magnetic gradiometry and ground resistance would have been desirable, only the latter was practical because of the urban location and the proximity of a fence of iron railings and other nearby ferrous objects, including utility feeds.

The survey used a TR Systems instrument, working in twin probe configuration with fixed reference electrodes and mobile recording electrodes. It operates by passing a small alternating current between one of the mobile and one of the fixed electrodes. A voltage is measured across the other two electrodes, the magnitude of which depends on soil conductivity at both mobile and reference locations. Since the reference location is fixed, the system records information on varying soil conditions covered by the mobile electrodes; the 'resistance' values recorded are the ratio of voltage to electrode current, but only their spatial *variation* is of interest, not the absolute value. Hence the simplest form of post-processing is to subtract the mean or median levels of each dataset and display

the results as a greyscale image.

The ability of the system to detect buried features or objects depends on the effect they have, if any, on soil conductivity, which disrupts the otherwise uniform current flow. A highly conductive anomaly, such as an area of increased water content, gives lower resistance values, with the converse for a less-conducting material, like a buried stone wall. Sensitivity decreases with depth of the anomaly, and penetration can be taken nominally as 1.5 times the electrode spacing [ref. 5, p. 32]. Provided the two sets or electrodes are separated by more than 15 times the electrode spacing, then it can be shown that the reading is independent of orientation (because in this situation, current flow is essentially radially symmetric.) [6].

Electrode separation on the TR Systems instrument is 0.5 m, and hence depth penetration is approximately 0.75 m. Because of the relatively small area of the site, the individual survey blocks were covered at a sample spacing of 0.5 m throughout.

The site was covered in parts of four areas, A to C, indicated in Fig. 1. These are largely surfaced by mown grass, with bare earth flowerbeds close to the site boundaries. Figs. 7a-d show photographs. In Areas A and D, coverage of larger flower beds close to the building was not practical because of difficulty of access. Areas A to C were surveyed in similar dry weather conditions with air temperatures 10-13 C. Area D was surveyed immediately following a snow/hail shower at a temperature around 5 C. The topography of Areas A, C and D is slightly undulating; Area B is flat.

The Results

Fig. 8a shows the results interpolated up to a resolution of 8 picture elements (pixels) per metre. The coordinate system is in metres with its Y axis parallel to the long axis of the chapel. The coordinate origin places location (100, 100) at the western corner of the building, the ground plan of which is derived from exterior perimeter measurements at foundation level: the residual closure error from this process is indicated by the pair of centred symbols at upper left corner.

Resistance data are displayed as greyscale images, relative to the median value of the separate contiguous areas; zero offset is rendered as mid grey. The video dynamic range (black to white) is ±75 ohms, black indicating lower resistance than the median, white higher. There is no other spatial processing.

The most noticeable feature is the ovoid band of low resistance 2.6 to 3 m wide that shows clearly in areas A, C and D, but only weakly in Area B. The anomaly is significantly stronger in Area D than the rest, which is most probably a function of the cold/wet weather conditions when that was surveyed. The band has a thin relatively higher resistance central strip clearly visible in Area A, less so in C and D, and not detectable in B.

Where there is black (low resistance) on the edge of a region, it is due to the narrow strips of flower bed inside the boundary wall in Areas A and C. The left side of Area B is bare soil, while the irregular right edge of Area D is due to a line of leylandii conifers close to the boundary wall. Anomalies marked '+' in Areas A and D are respectively a tree and manhole cover. In Area B, '+' represents a patch of concrete of unknown origin protruding through the grass cover. The low resistance 'hockey stick' anomaly in area C is probably a service pipe feed to the more recent building that divides areas C and D. Other utility feeds radiate from the main building, in particular from its lower right corner where pipes are visible on the exterior foundation wall. Roof drainage is from a series of downpipes on the long sides of the building; it is possible those on the right side are connected with the manhole in area D, from which a high resistance anomaly can be seen heading in a southeasterly direction.

Figs. 8b and c are representative graphical plots of the resistance variation relative to the block mean level with position from the left side of respectively Area D, 2 m from its lower edge and Area A, 20.5 m. The data have been smoothed by bicubic interpolation up to 8 samples per metre (from 2), but are otherwise unmodified. The plots demonstrate the large magnitude of the variation caused by the ovoid

feature, especially in Area D, where it is of the order of 100 ohms relative to the overall mean level in Area D of 264 ohms. Also of interest in these curves is the slope of the transitions in and out of the feature, which extends over three or four original samples (spaced at 0.5 m). While an exact estimate of depth cannot be made, if the feature were, for example, *at* the ground surface, the transition would occur within one or two original sample spacings (0.5 to 1 m).

Fig. 9 is a version of the data which enhances fine detail by subtraction of a blurred version from the original (the blurring uses a Gaussian spatial lowpass filter of radius 1.25 samples = 0.625 m). The dynamic range is reduced to ±15 ohms (to restore contrast) and a Gaussian lowpass filter of radius 0.25 m is applied to smooth residual random variations (noise). In addition to the main ovoid, coherent low-contrast features are enhanced. In Area A, three small high resistance spots correspond to locations of trees plotted on the 1876 map (see Fig. 11). The origin of the other high resistance point is unknown. In Area A also there are a number of very faint linear high resistance anomalies aligned appoximately to geographic east-west - hence these may be connected with lines of interments, but no individual graves can be detected. It is possible one of these alignments also appears towards the right side of Area B. They do not appear in Areas C or D. Area B has a number of faint parallel features aligned north-south: the pattern of grass cutting is a possible explanation, and such is visible on Fig. 7b.

Area C contains three low-contrast elliptical or rectangular features with their long axes aligned east-west. The most distinct is approximately 3.6 m by 2.7 m, and appears to overlie the ovoid feature. Their origin is unknown, but former tomb platforms are a possibility, as is a natural cause in the form of 'fairy rings' caused by fungal growths.

Fig. 10 shows the unprocessed survey image data (apart from median subtraction) overlaid on the modern OS site plan, rotated, scaled and aligned with the site reference point. Fig. 11 is the same with the 1876 map; it is obvious from this plot that the ovoid feature corresponds closely to the footpath or trackway, and that the high resistance anomalies in Area A are due to trees that formerly occupied those locations. Two other trees from 1876 in area A survive today, on the left side and on the modern boundary at lower edge. The modern boundary along the border with Military Road has encroached onto the site, compared with 1876, by a maximum of 6.5 m.

Conclusions

The ground resistance survey has produced satisfactory results in that a number of features can be identified, the principal one being the path shown on the 1876 map. It is not known what actually causes the high conductivity/low resistance in the path: this could be determined by augering or more extensive excavation. That the feature shows as a low resistance anomaly is surprising, as the stones or coarse gravel commonly used in this situation would be expected to produce a high resistance anomaly [ref. 5, p. 26]. The explanation could be simple, if the material is such as ironworking clinker or slag. More speculative is a suggestion that the 'path' is connected to a feature that predates the use of the site as a graveyard, and is due to a former ditch in a gravel undersoil that has been backfilled with topsoil, a material that tends to be more conductive. That the site occupies a deviation, already present in 1748, in the otherwise straight route of Military Road (then called Hog Lane) leading to Old Heath Road has already been mentioned.

Acknowledgement

Thanks to Dr P. Spencer for assistance with the surveys of Areas A and B.

References

1. 'The story of Colchester from Roman times to the present day', Geoffrey Martin, (Benham Newspapers Ltd., 1959) p. 96.

2. 'Colchester, a military centre', Chloe Cockerill and Daphne Woodward, (Essex County Library, 1978)

3. 'History of the Ancient Town and Borough of Colchester in Essex', Thomas Cromwell, (Taylor and Dennis, 1824) p. 232.

4. 'The History and Antiquities of the most ancient Town and Borough of Colchester', Philip Morant, 1748. (Facsimile edition, ed. J. S. Appleby. S. R. Publishers Ltd. and Phillimore & Co. Ltd., 1970)

5. 'Revealing the buried past, Geophysics for Archaeologists', C. Gaffney and J. Gater, (Tempus Publishing Ltd., Stroud, 2003).

6. 'Seeing Beneath the Soil, prospecting methods in archaeology', A. Clark, (Routledge, London, 1996) p. 44.

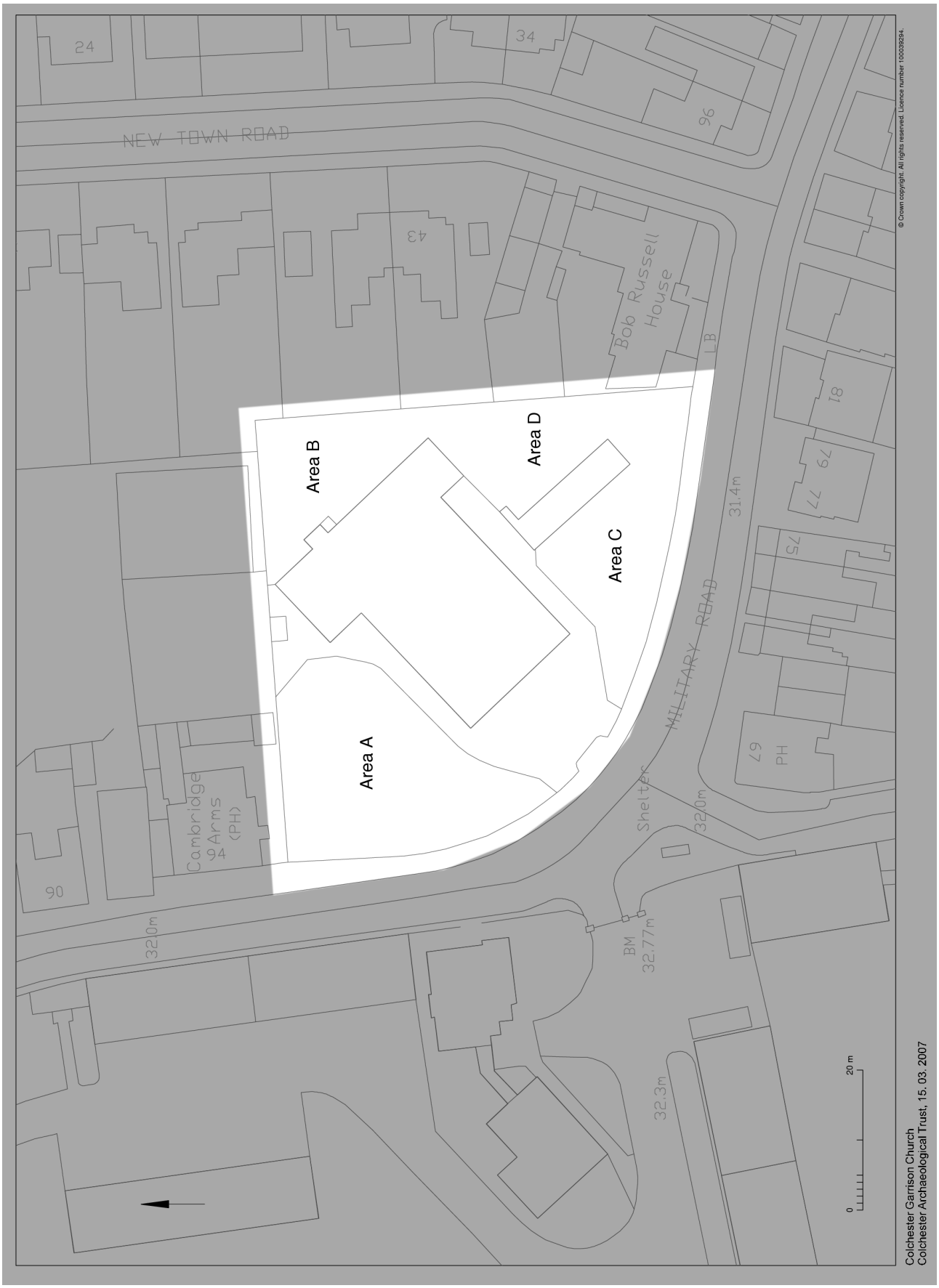

Figure 1. Modern OS site plan, Garrison Chapel area highlighted.

Figure 2. The Garrison Chapel, Colchester, from southwest, March 2007.

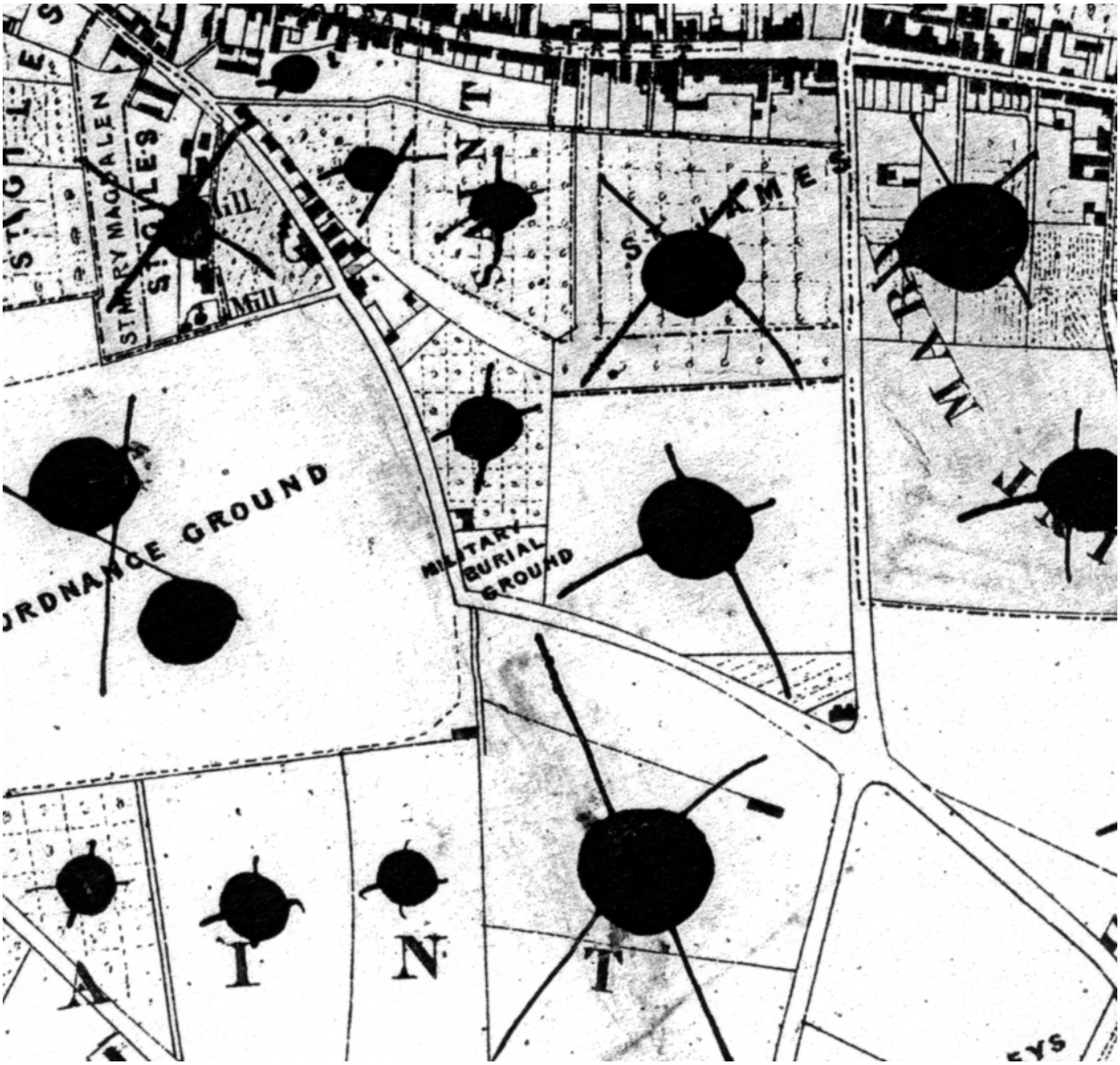

Figure 3. From Gilbert's map of 1848, showing burial ground.

Figure 4a. 1809 gravestone against wall, Area A.

Figure 4b. Gravestones in Area C.

Figure 5a. Chapman and André map, 1777. Site of Garrison Chapel highlighted.

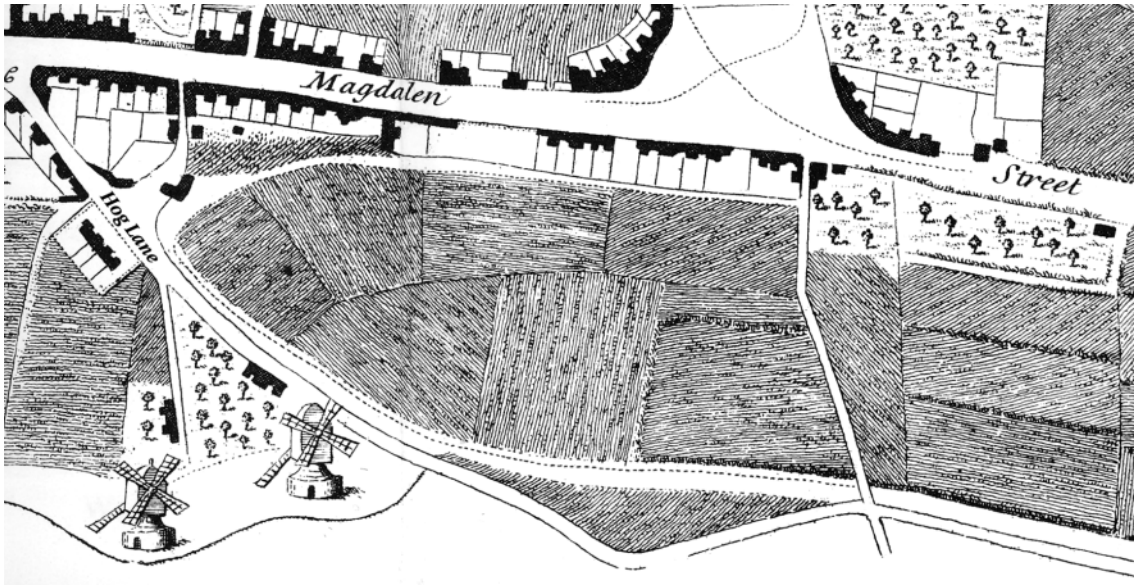

Figure 5b. Part of map from Morant's *History and Antiquities of Colchester*, 1748 [4].

Figure 6a. 1876 Ordnance Survey map, same scale as Fig. 1.

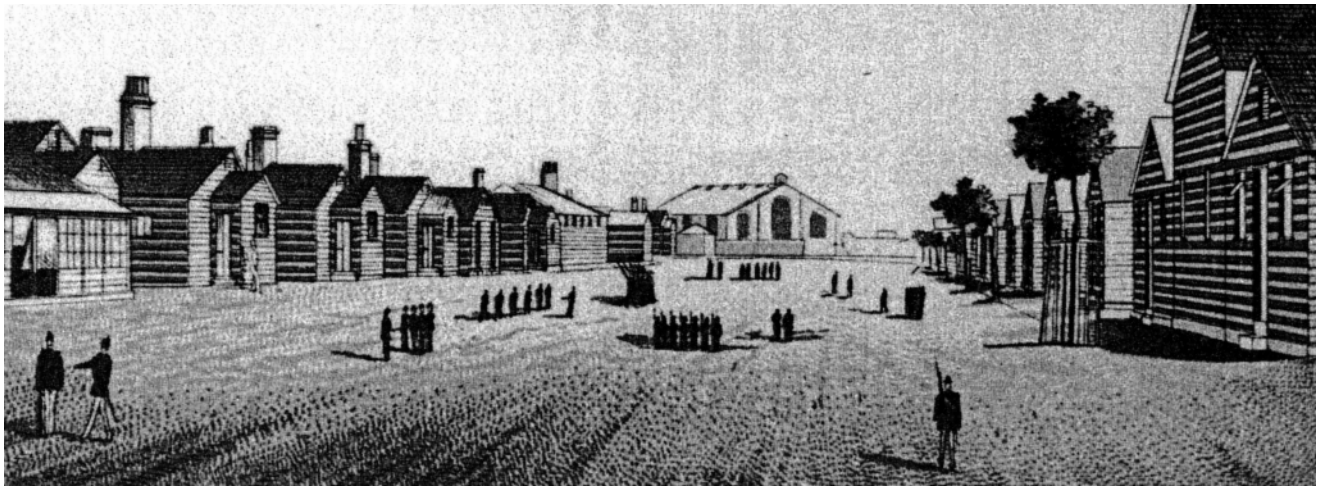

Figure 6b. View of the chapel from the re-established military camp, ca. 1860 [2].

Figure 7a. Area A.

Figure 7b. Area B.

Figure 7c. Area C.

Figure 7d. Area D.

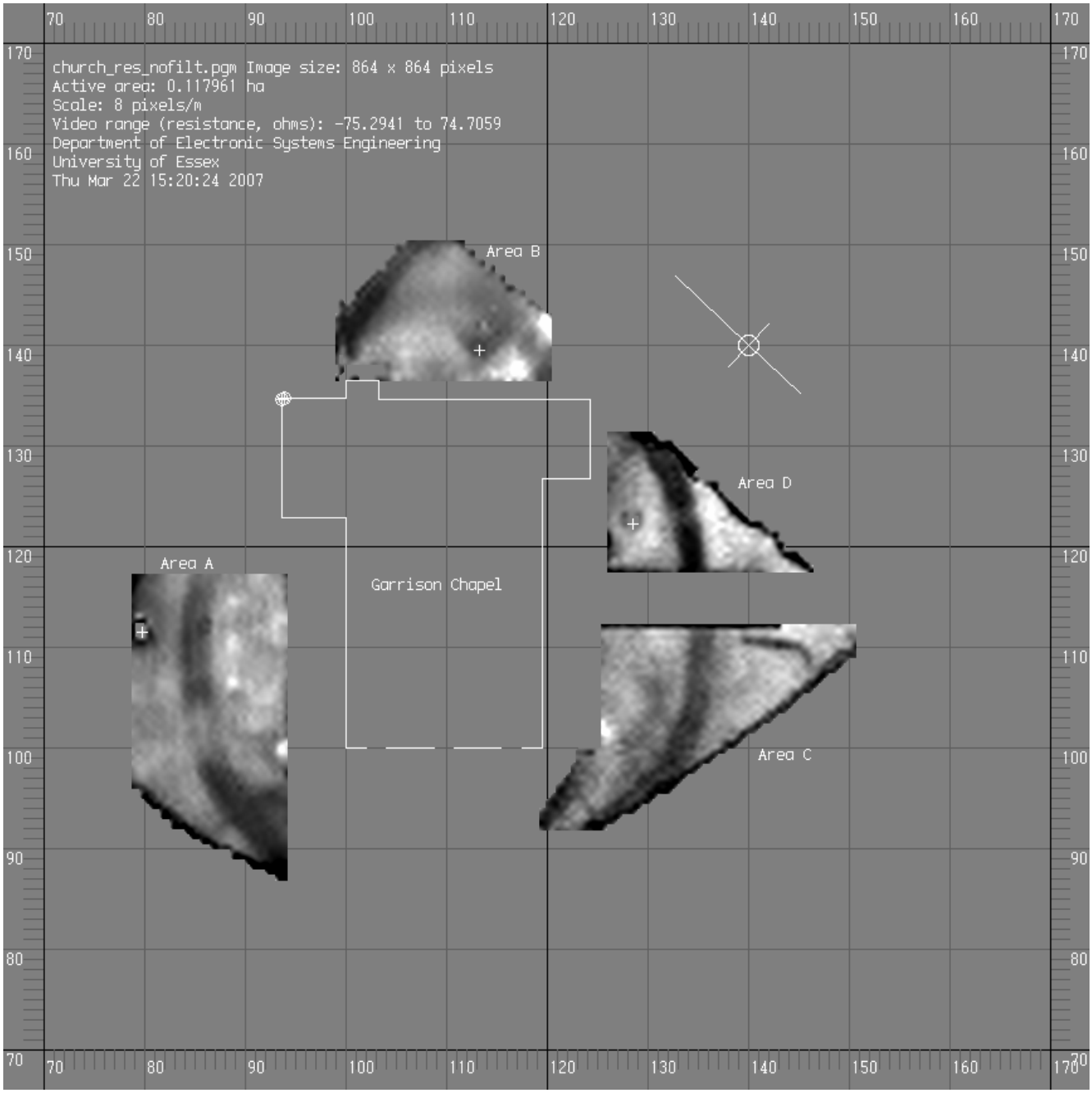

Figure 8a. Resistance image, no filtering.

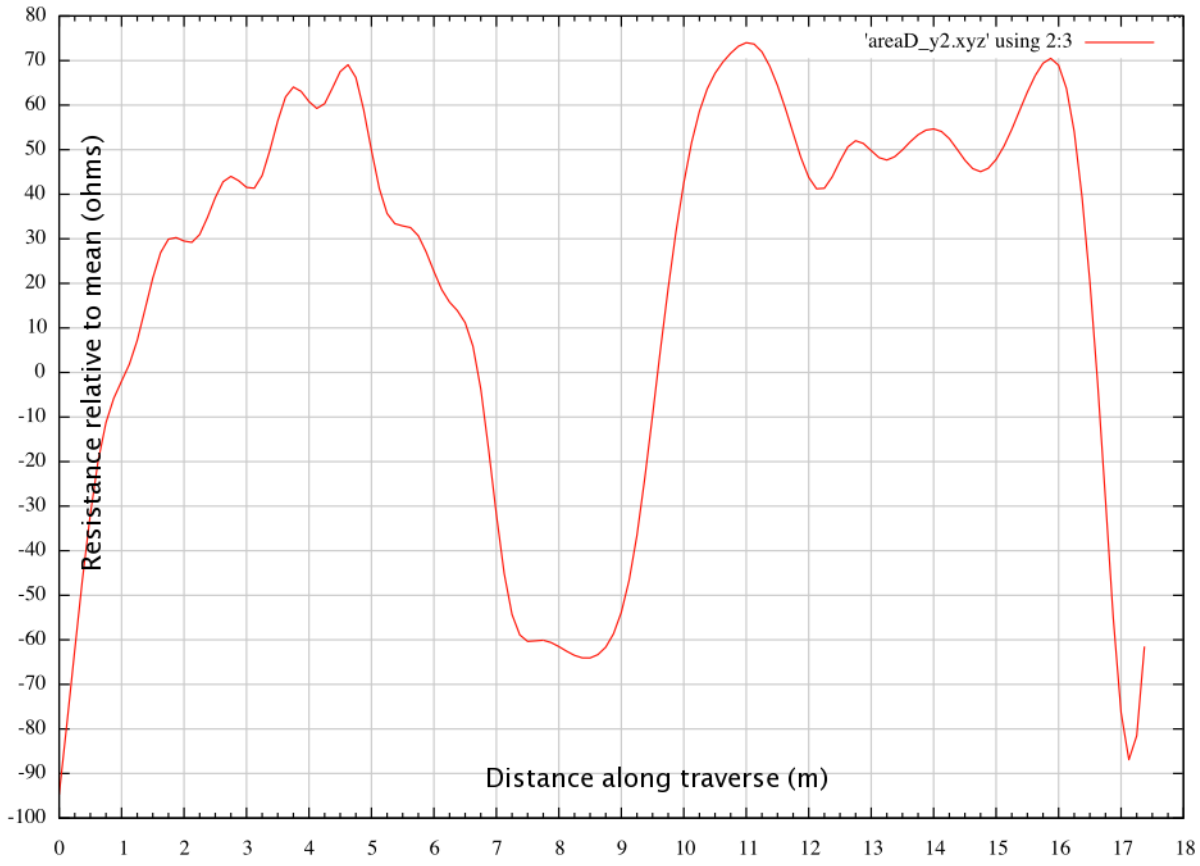

Figure 8b. Graphical plot, Area D, 2m from lower edge.

Fig. 8c. Graphical plot, Area A, 20.5 m from lower edge

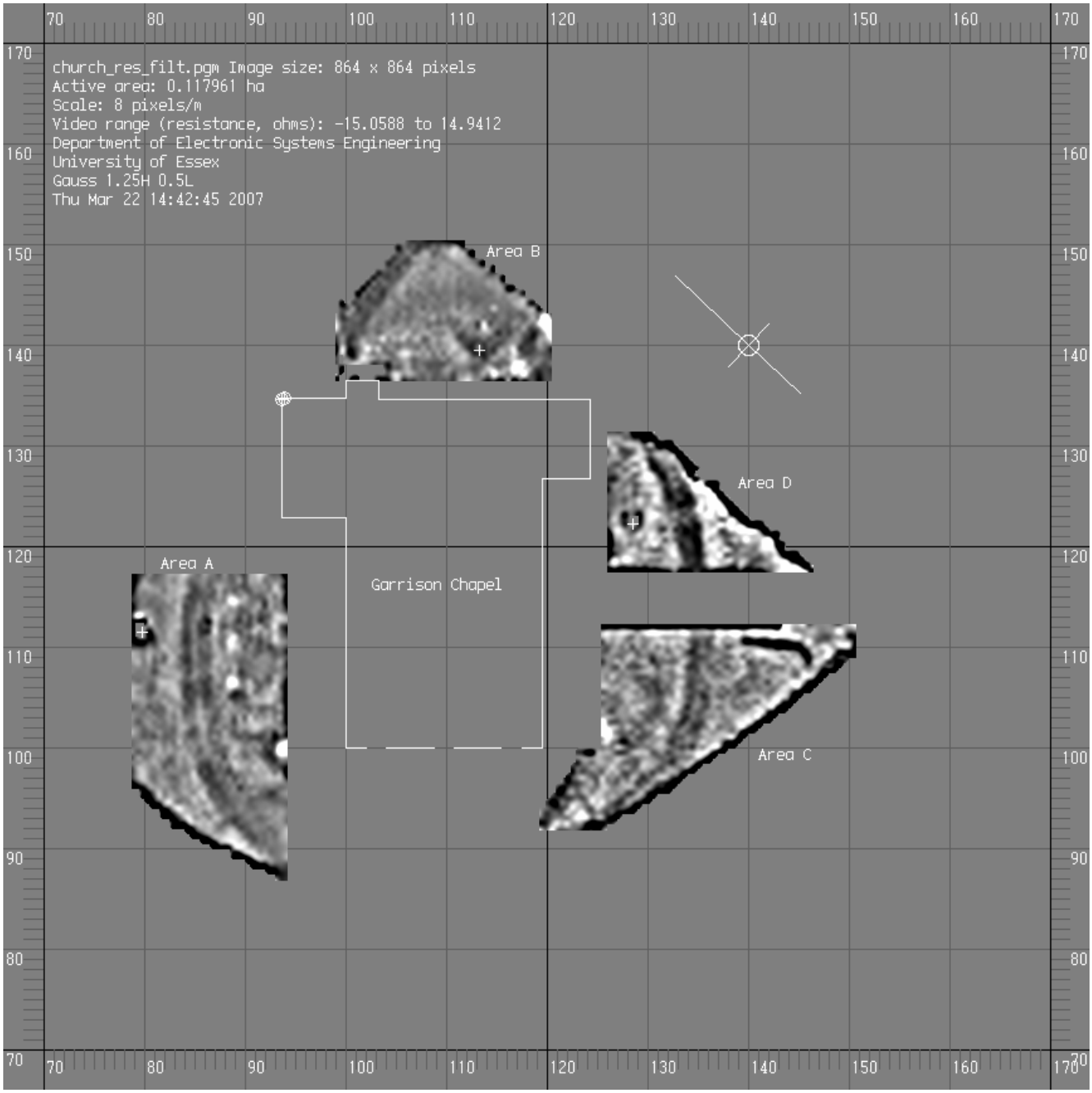

Figure 9. Highpass filtering, for detail enhancement.

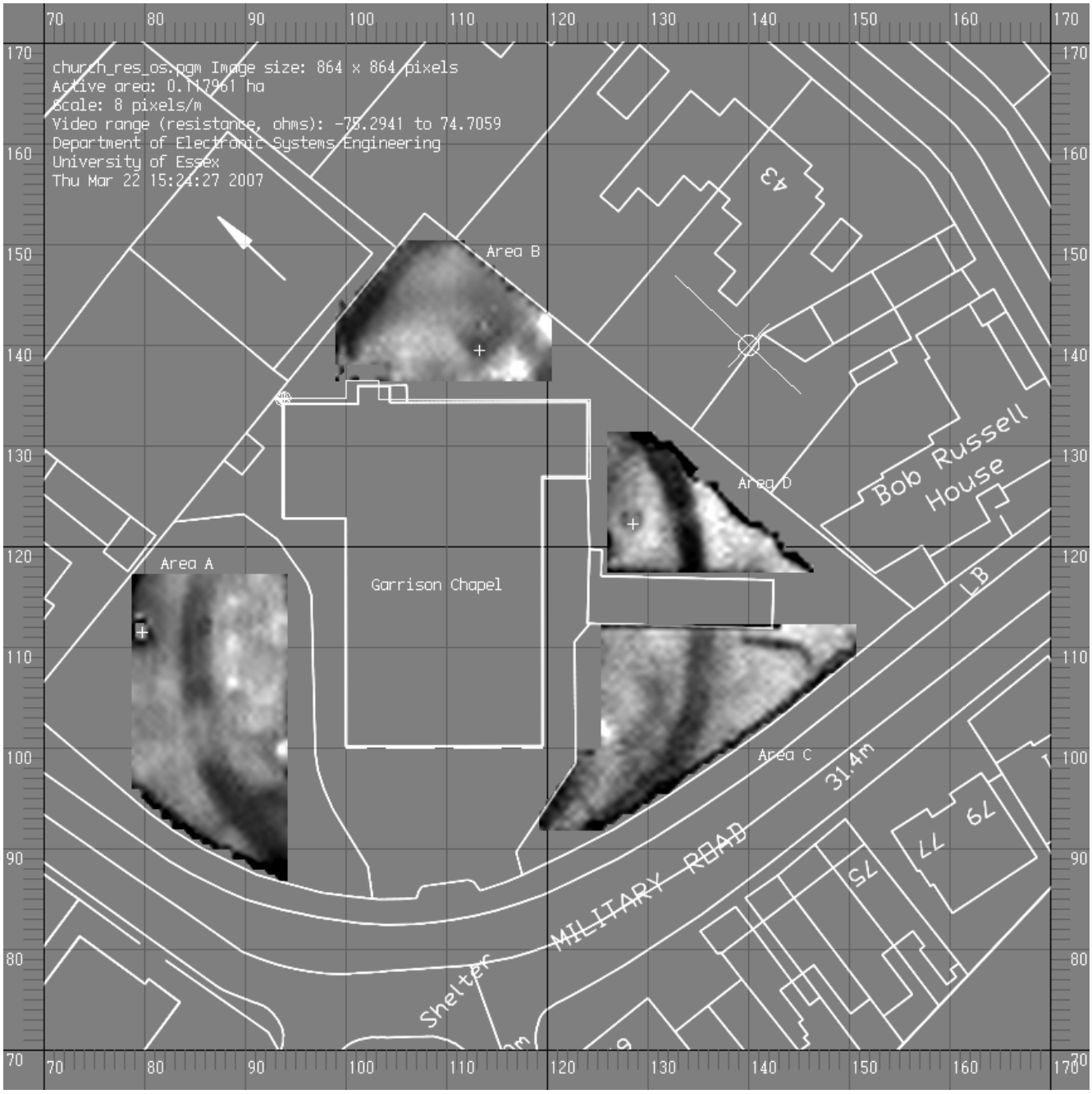

Figure 10. Unfiltered resistance on modern OS plan.

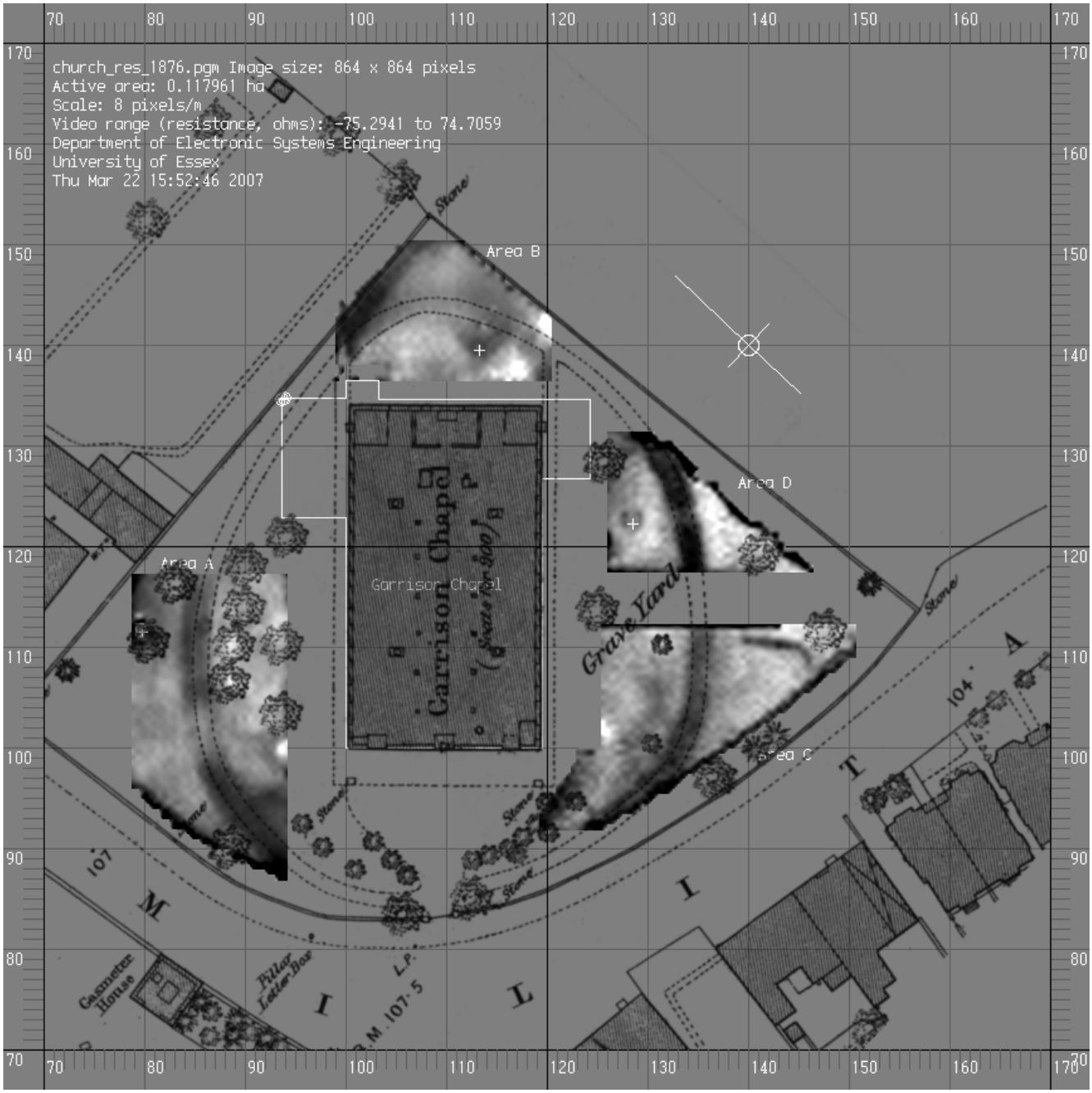

Figure 11. Unfiltered resistance on 1876 OS plan.

Essex Historic Environment Record/
Essex Archaeology and History

Summary sheet

Site address: Colchester Garrison Church, Military Road, Colchester, Essex	
Parish: Colchester	***District:*** Colchester
NGR: TM 00376 24352 (c)	***Site code:*** COLEM 2007.42
Type of work: Evaluation	***Site director/group:*** Colchester Archaeological Trust
Date of work: March-April 2007	***Size of area investigated:*** Four 7.5m-long trenches in a site of approximately 3,298m^2
Location of finds/curating museum: Colchester Museums	***Funding source:*** MoD
Further seasons anticipated? No	***Related EHER nos:***
Final report: CAT Report 419 and summary in *EAH*	
Periods represented: post-medieval	
Summary of fieldwork results: *This plot is a known burial ground for the Napoleonic garrison at Colchester. An evaluation by four trenches revealed twelve linear features, which are interpreted as graves and intercutting graves. No human bone was exposed. Further excavation would be needed to confirm that these features were graves. There is scope for informative documentary research into burial records held by the Essex Record Office. This would shed light on the regiments whose soldiers were buried here, and would add to our knowledge of this interesting era in Colchester's history.*	
Previous summaries/reports: None	
Author of summary: Howard Brooks and Ben Holloway	***Date of summary:*** May 2007