

Conservation works to the roof of the Roman Arch, Dodder Valley Road Lower, Rathfarnham.

Building Dossier for works done during October and November 2014

Date of this report, February 2015



A view of the roof of the building after the works were complete, November 2014.

This project was financially assisted by the Department of Arts, Heritage and the Gaeltacht under the Built Heritage Jobs Leverage Scheme, 2014

Introduction

The Environmental Services department, Parks and Landscape Services section of South Dublin County Council wished to carry out critical conservation works to the roof and rainwater goods of this building because of serious defects which were noticed in 2010. The Architectural Services Department of South Dublin County Council (a Grade 2 conservation accredited architectural practice) obtained competitive tenders for the conservation works from competent contractors in July 2014. South Dublin County Council is grateful for the financial assistance provided by the Department of Arts, Heritage and the Gaeltacht under the Built Heritage Jobs Leverage Scheme, 2014 in carrying out these works.

This report is a summary of the previous condition of the structure and the conservation works carried out during October and November 2014. The report is intended to be a record of the works for the client or building owner to assist them with the future maintenance and care of the building, to inform future conservators and contractors who will work on the building, and the wider public who may be interested in this building. The report has been issued to the client, to South Dublin County Council's Conservation Officer, the Irish Architectural Archive and to the Local Studies Section of South Dublin Libraries in the Tallaght branch. This report also fulfils an obligation under the Safety Health and Welfare (Construction) Regulations 2006 to give the client or Employer a Safety File which includes all information on the works done. The dossier includes all the relevant information.

A previous report or building dossier was issued for works carried out in 2010. This is freely available at the website of South Dublin Libraries' Local Studies website at:-

<http://hdl.handle.net/10599/8865>

or

<http://source.southdublinlibraries.ie/handle/10599/8865>

Within a year of completion of the 2010 conservation works, the roof was accessed by thieves who stripped about 70% of the protective lead which had been installed, and in the process caused damage to the roof - some slates were broken and a gutter was destroyed. Rainwater was again leaking through the roof to one of the gate lodge interiors and was causing localised saturation of the masonry.

As well as the consequential damage of increased organic colonisation, salt dissolution and rupture, this saturation of the masonry has another consequence: the prevention of further corrosion of the embedded wrought iron cramps and beam is dependant upon a passive cathodic protection system which was installed during the 2010 works. Its successful operation is partly dependant upon the masonry not being

excessively wet. Therefore these (2014) works were badly needed to stop further wetting of the masonry and deterioration of this landmark public building.

Since the vandalism and theft, South Dublin County Council had taken the following steps:-

1. The north-eastern and north-western facades, previously unlit after dark, are now illuminated by directional lighting powered from the public lighting system, to discourage further vandalism and theft. The south-western and south-eastern facades face Dodder Road Lower and Braemor Road respectively, and were already well illuminated by the existing public lighting columns.
2. The rain water down pipes where they emerge from the base of the short, north-eastern and south-western facades were vandalised, but have been repaired and reinstated by the council's own depot staff.
3. A new stronger locked gate has been fitted to prevent unauthorised vehicular access to the area in front of the Roman Arch by vehicles. Previously, vehicular access to the building may have been a factor in the theft of the lead.
4. Ivy, shrubs and a tree have been taken down from the around the building to prevent access to the upper parts of the structure and to allow a better view and better passive supervision by passers-by.

The Architectural Services Department of South Dublin County Council (a Grade 2 conservation accredited architectural practice) inspected the structure in April 2013 and has specified a limited schedule of conservation works to the roof, a gutter and the parapet to halt rain water ingress which are detailed in this report and on one of the attached drawings. The council investigated the history of the structure by a trawl of the relevant archives and this is included in the building dossier referred to previously. Its condition and occupancy over time was traced from old photographs and valuations records. A picture of general decline during the early 20th century emerged which accelerated after the gate lodges were no longer inhabited and were abandoned in 1977. This research was useful and informed the examination of the building itself.

Feargal Ó Suilleabháin
Architectural Services Department
South Dublin County Council

2nd February 2014

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Appendix 1. Architectural drawings



The Roman Arch viewed from the open space to the north-east (September 2009)

Credits

Main contractor:

Ace Building and Carpentry Ltd.
Rossinver Lodge, Richardstown,
Dublin Road, Clane, Co. Kildare
Tel: 087-2602898, 087-1339129
Email: acebuilding@yahoo.ie

Architects:

Architectural Services Department
South Dublin County Council
County Hall, Tallaght, Dublin 24
Tel: (01) 4149000 Fax: (01) 4149209
Web: www.sdcc.ie

Building owner & project sponsor:

Environmental Services Department
South Dublin County Council
County Hall, Tallaght, Dublin 24
Tel: (01) 4149000 Fax: (01) 4149209
Web: www.sdcc.ie

Funding: The project was funded by South Dublin County Council. The project was financially assisted by the Department of Arts, Heritage and the Gaeltacht under the Built Heritage Jobs Leverage Scheme, 2014

A description of the Roman Arch and its location

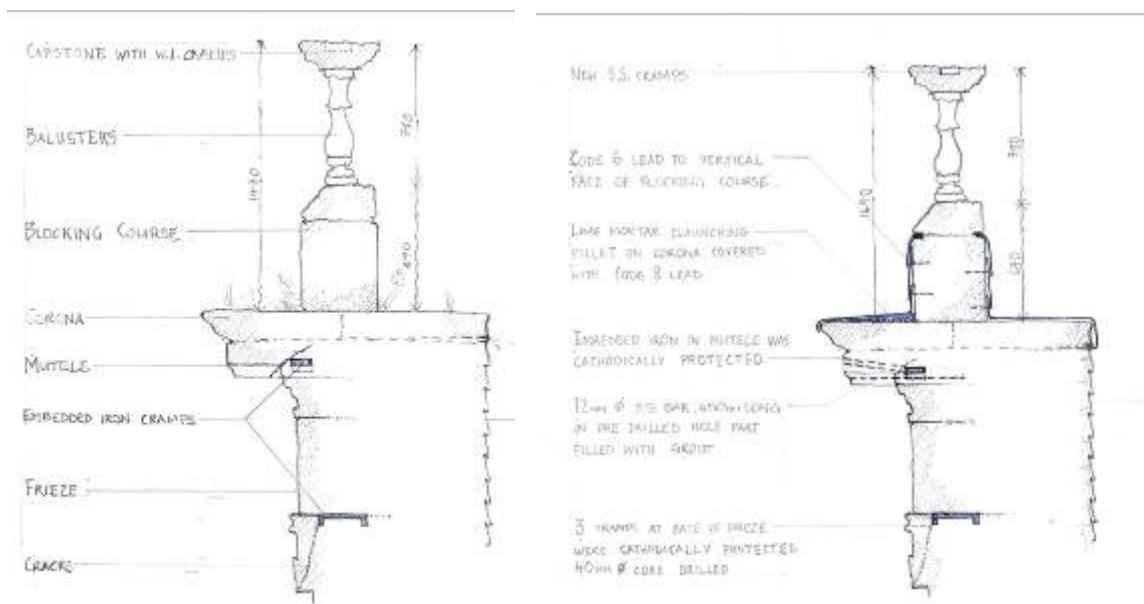
The Roman Arch, also known as Lord Ely's Gate, the Castle Lodge and by several other names, is one of the finest surviving classical gate lodges in the country and is part of one of the most important houses and demesnes in county Dublin. Historically the structure was part of a vast landscape which extended across the landed demesne at Rathfarnham. Although it has not yet been confirmed by historical documentary research to date, it is probable that the designer was Sir William Chambers, a well-known architect during the mid-to-late eighteenth century.

The Roman Arch is part of the village and town land of Rathfarnham and the former Barony of Rathdown. It is now part of the administrative area of South County Dublin and is right beside the border with Dun Laoghaire Rathdown County Council to the east, and Dublin City Council to the north across the Dodder River. The ordnance survey grid reference is 315321, 229509 and the sheet number is 3328-25. The Roman Arch is situated at a bend in the river Dodder, at the junction of Dodder Road Lower, Dodder Park Road and Braemor Road. It was built around 1771 - 1779 for Henry Loftus as a new ceremonial entrance to the Rathfarnham demesne, allowing visitors to approach the castle from the north-east through a carefully designed landscape of serpentine streams, fishponds, bridges, statues and architectural follies.

The Roman Arch is built from a rubble core faced with medium to coarse grained ashlar granite. It consists of a central block framed by curved flanking wings. The central block is approximately 10 metres high, 12 metres wide and 5 metres deep and is made up of three barrel vaults, the central one slightly larger than those on either side. The whole rests on foundations of stepped footings. The tendency of the base of the outer vaults to push outward is contained by the weight of the massive parapet walls, balustrades and finials above, which conceal a simple, coupled roof. Each of the two outer vaults once contained a simple, two-storey, two-roomed gate lodge, which probably housed a gatekeeper or gardener. The lodges were occupied up to 1977 and were only vacated after the new Braemor and Dodder Valley roads were built. These new roads physically separated the Roman Arch from what remained of the Rathfarnham demesne, and indirectly brought about its abandonment and subsequent rapid deterioration.



Left side: Part of the roof as photographed in February 2009, before the 2010 conservation works. Right side: The roof, viewed from the north-west in July 2010, after completion of the 2010 conservation works. Lead was dressed into the mortar joints of the blocking course, down the face of the blocking course and over the upper surface of the parapet wall to prevent water from wetting the masonry below



Left side: The south-western cornice as found in February 2009, before any works were carried out. There were cracks in the facing stone caused by rusting iron armatures and considerable organic colonisation of the upper horizontal surfaces of the cornice and parapet wall. Right side: The south-western cornice as repaired in 2010

Statement of Significance

The Roman Arch is one of the finest surviving classical gate lodges in the country and is associated with one of the most important houses in county Dublin by being part of the landscaped demesne which existed at Rathfarnham. Although it has not yet been confirmed by historical documentary research to date, it is probable that the designer of the Roman Arch was Sir William Chambers, a well known architect during the mid to late eighteenth century. Rathfarnham castle is still one of the finest houses in county Dublin and is a major tourist attraction.

The Roman Arch is built from high quality, locally sourced materials and is a rare surviving example of its building type, many of which have been previously demolished as part of road widening schemes or have been abandoned because of their peripheral location at the edge of demesnes and the sometimes awkward layouts of their interiors. The Roman Arch is significant by reason of its grand construction and architectural composition, its group value as a gate lodge, folly and garden ornamental structure, its association with one of the foremost houses in county Dublin, its technological early use of structural iron (the six metre long single wrought iron bar embedded behind the north-eastern entablature) and because of its historic interest, commemorative and associative significance.

The Roman Arch is a Protected Structure in the Record of Protected Structures in South Dublin County Council's development plan, Map Ref. No. 201. It is also listed under the National Inventory of Architectural Heritage as being of Regional Interest, Registry Number 11211012.

The defects in 2014, the interventions and the conservation philosophy

In the longer term the Roman Arch has been unoccupied and unused for over 30 years and in that time ownership and responsibility for its maintenance has changed several times. Consequently its importance has declined and this has negatively affected its physical condition. In the shorter term the following problems were identified during a recent inspection:-

1. The upper surface of the parapet walls, inside the blocking course are exposed to rainwater ingress after the protective lead covering was stripped by thieves. They were originally built flat, with no discernable fall to direct rainwater to the roof. During the 2010 works water ingress to the 6m long wrought iron bar below the parapet, in the north-eastern entablature was identified as a contributory cause of corrosion.
2. Subsequently the recently installed protective lead was completely stripped from the northern gutter in 2011 by thieves.
3. The slates on the northern pitch of the roof beside the gutter were damaged during the removal and stripping of lead from the adjacent gutter board.
4. A small strip of lead was removed from a hipped roof in the southern gutter.



Left side: The north-eastern corner photographed in April 2013: The lead has been stripped from the outer cornice by vandals, leaving the lining loosely adhered. However the upper surface of the cornice was also dressed with a launching fillet of lime mortar during the 2010 works which still protects the stone underneath and directs rainwater to the edge of the cornice where it falls away harmlessly. Right side: The northern gutter: The lead lining of the gutter has been completely stripped and the adjacent slates disturbed and broken



Southern gutter in April 2013: The lead has been stripped from the hip of the roof but fortunately, the thieves were interrupted by An Garda Síochána and the lead was not removed from the parapet wall roof junction or from this gutter.

Therefore the 2014 works were essential repair works to ensure that rainwater is drained properly from the damaged roof and from the exposed and vulnerable upper edges of the parapet wall of the Roman Arch. The following works were done in 2014:-

THE SOUTHERN VALLEY, GUTTER AND RAINWATER OUTLET

1. All debris, broken slates, and soil was cleaned out of the existing lead lined valley. (The valley is partly obstructed by wind-blown debris, soil and leaves and by broken slates, cut sections of underlay left by the vandalism).
2. A new lead dressing was secured onto the exposed hip of the small roof, approximately 600mm long. (The lead was stolen from this hip)
3. The loose cowl was re-fixed to the top of the rainwater outlet. (The cowl was probably dislodged by the thief during the removal and theft of the adjacent lead from the hipped roof)
4. Two missing vertical slates were replaced, just above the small roof.

THE NORTHERN VALLEY, GUTTER AND RAINWATER OUTLET

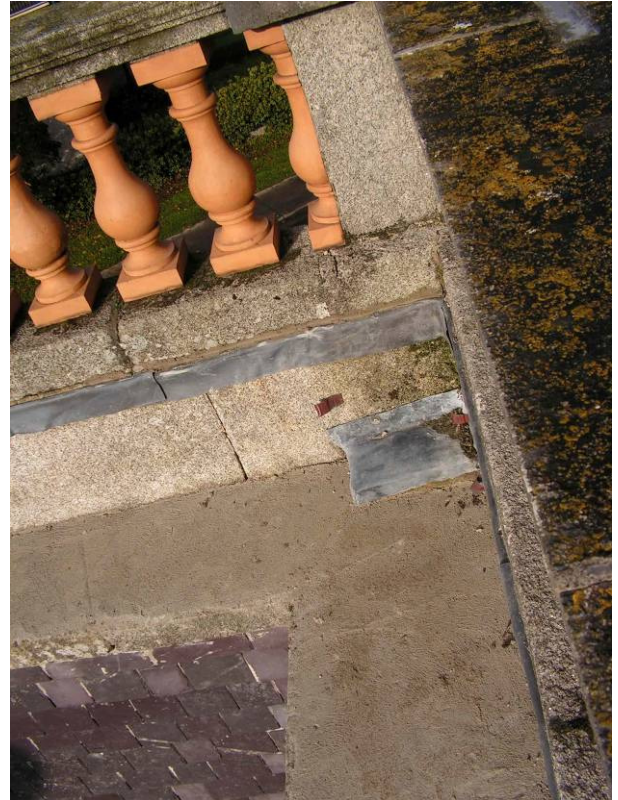
5. All debris, broken slates and soil was cleaned out of the valley. (The valley was partly obstructed by wind-blown debris, soil and leaves and by broken slates, cut sections of underlay left during the vandalism)
6. The entire existing plywood base of the valley (3.5m long, 0.3m wide) was removed. New lead lining (Code 4) was installed on breathing paper & felt (to allow for thermal movement of the lead and to prevent chemical corrosion of the lead by chemicals in the plywood). (The lead was completely stripped and removed from this valley during the vandalism and theft)
7. Thirty slates were replaced on the roof on either side of the gutter with new natural slate, Welsh Blue Bangor, sourced from the Penrhyn quarries. (Approximately 20 slates were broken during the stripping and removal of the lead from the valley by vandals)

THE PARAPET WALL AND INNER FACE OF THE BLOCKING COURSE

8. All loose and torn underlay was removed from the upper surface of the parapet wall and disposed of. The copper fixings which once secured the lead to the mortar joints in the granite were left. (The underlay was left exposed following the complete removal of the lead which once lined the parapet wall)
9. All the existing lead counter flashings which are still secured to the horizontal mortar joints of the blocking course were dressed down manually with a mallet. (The counter flashings were lifted up to make the removal of the larger flashings below easier and were left by the thieves, probably because they are relatively small strips of lead)
10. A new flaunching fillet of lime mortar was made on the upper surface of the parapet wall, so that rain water will be directed off the wall and onto the slate roof covering below. The flaunching fillet was laid in two separate courses (with three days between to allow the lime adequate curing) to a fall and was made from a NHL 3.5 hydraulic lime mortar.

THE CORNICE AND OUTER FACE OF THE BLOCKING COURSE

11. The loose pieces of lead were removed from the upper surface of the cornice, where they were disturbed but not removed by the thieves. There were two areas: the south-east corner and north-east corner.
12. All the exposed felt underlay was removed from the top of the cornice above all the eastern façade, and the eastern parts of the northern and southern facades (approximately 15 linear meters).
13. All the existing lifted and disturbed lead counter flashings which are still secured to the horizontal mortar joints of the outer face of the blocking course were dressed down with a wooden mallet, approximately 15 linear meters, principally along the eastern face, and the eastern parts of the northern and southern faces of the blocking courses.



Left side: The new lead lined gutter and repaired hipped roof along the northern side of the building and new lime mortar fillet flaunching on the parapet wall above, November 2014. Right side: The new flaunching in the north-eastern corner.

THE RAINWATER PIPES

The two plastic rainwater pipes and outlets installed during the 2010 works were subsequently damaged by vandals, kicked and broken. These had been fitted to the bottom of the existing cast iron rainwater down pipe that remained in the corner inside each of the two former gate lodges. Therefore the rain water collected in the two gutters at roof level above was directed to the ground on either side of the Roman Arch via these two internal downpipes. As part of the 2014 works, new cast iron rainwater pipes and outlets were connected to the existing pipes in the gate lodges and secured to the outer walls with brackets.



Left side: The new cast iron rainwater pipe and outlet on the north-western side of the building, November 2014. Right side: The new cast iron rainwater pipe and outlet on the south-eastern side of the building, November 2014



Left side: The existing cast iron rainwater pipe and outlet in the northern lodge, November 2014. Right side: The southern lodge

All the existing lead on the roof and cornices which was sound and undisturbed was left alone. Although desirable, the reinstatement of all the stripped lead was considered impractical as there remains a significant risk that it would be stripped and removed illegally again.

Assessment of the Damage

The abandonment of use of the building negatively affected its physical condition. Regular maintenance and repairs were seldom, if ever carried out and decay and defects went unnoticed for long periods.

Conservation philosophy and the interventions

The conservation philosophy was drawn mainly from the International Charter for the Conservation and Restoration of Monuments and Sites 1964, a.k.a. The Venice Charter. The primary consideration was effective and honest repair. The proposed interventions were guided by the principles of minimum intervention, to repair rather than replace, honesty of repairs, use of appropriate materials and methods and reversibility of alterations. The interventions will stop further water ingress, the primary source of damage to the building fabric. All interventions will be recorded and documented and issued to the Irish Architectural Archive and to the Local Studies Section of South Dublin Libraries.

Tests

In accordance with public procurement guidelines, competitive tenders were sought for the conservation works to the courthouse and received from four contractors with proven competence in work with historic buildings, as part of a restricted tender process. The most economic tender was received from "Ace Building and Carpentry Ltd." who were appointed contractor for the works.

Conservation Strategy and Method Statement

The building has been surveyed, recorded and the relevant historical documents have been researched. South Dublin County Council has ensured that the works described above were carried out by a contractor with proven competence in the repair of rainwater goods and masonry. All existing features such as the roof, the windows and the interiors were protected from mechanical damage and fire during the works. The works were carried out to the highest internationally accepted standards. The works were inspected by a conservation accredited architect.

Conservation Impact Assessment

The works were limited to the localised replacement of damaged slates and stripped lead on the roof and gutter, and installation of a new flaunching fillet of lime mortar on top of the parapet wall and the replacement of the modern plastic rain water down pipes and outlets. All these works have a minimal impact on the historic fabric of the building and on its significance. All these works are fully reversible. They are of critical importance to the health of the building and are essential to ensure its continued existence.

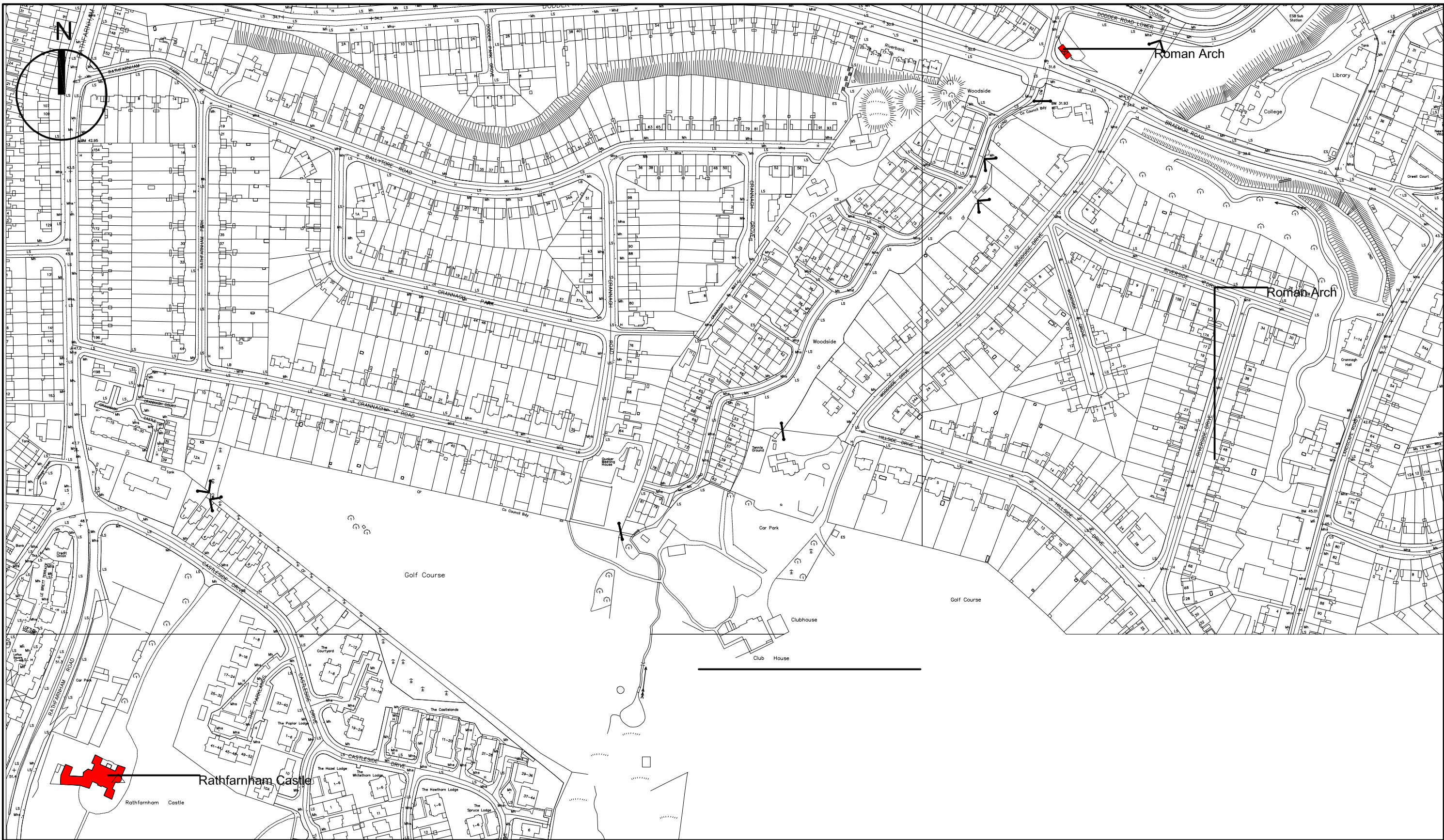
Statutory Protections

South Dublin County Council's Architectural Services department has consulted with the council's Conservation Officer on all aspects of the proposed works. It is considered that the works proposed do not materially affect the character of the Protected Structure and are therefore exempted development.

Conclusions

South Dublin County Council values its existing built heritage and has invested heavily in them during recently years despite the closure of several of the grant schemes which were formerly available. Grant assistance funding has been allocated previously under the 2009 and 2010 Civic Structures Grant Scheme,

for which South Dublin County Council is grateful. The structure is a popular local landmark and enjoyed and valued by local residents. As stated previously those who caused the damage in 2011 have been apprehended by An Garda Síochána. The current proposal seeks to halt further deterioration of the building's condition that was caused by rainwater ingress following illegal removal of the protective lead. The works will help to conserve this building for the future. South Dublin County Council is grateful for the assistance provided under the Built Heritage Jobs Leverage Scheme, 2014.



SITE PLAN (current situation)

SCALE Not to Scale



ARCHITECTS' DEPARTMENT,
COUNTY HALL, TALLAGHT, DUBLIN 24
TEL: 01-414 9000, FAX: 01-414 9209

COUNTY ARCHITECT
EDDIE CONROY, B.Arch., M.Sc.Arch., FRIBA

No.	DATE

SCALE:- NTS

DATE:- July 2014

DRAWN:- FÓS

PROJECT TITLE: REPAIR OF THE ROOF OF THE ROMAN ARCH, DODDER PARK ROAD, RATHFARNHAM, DUBLIN

DRAWING TITLE: SITE LOCATION PLAN (SOURCE: 3391-04 & 05, 3328-24 & 25)

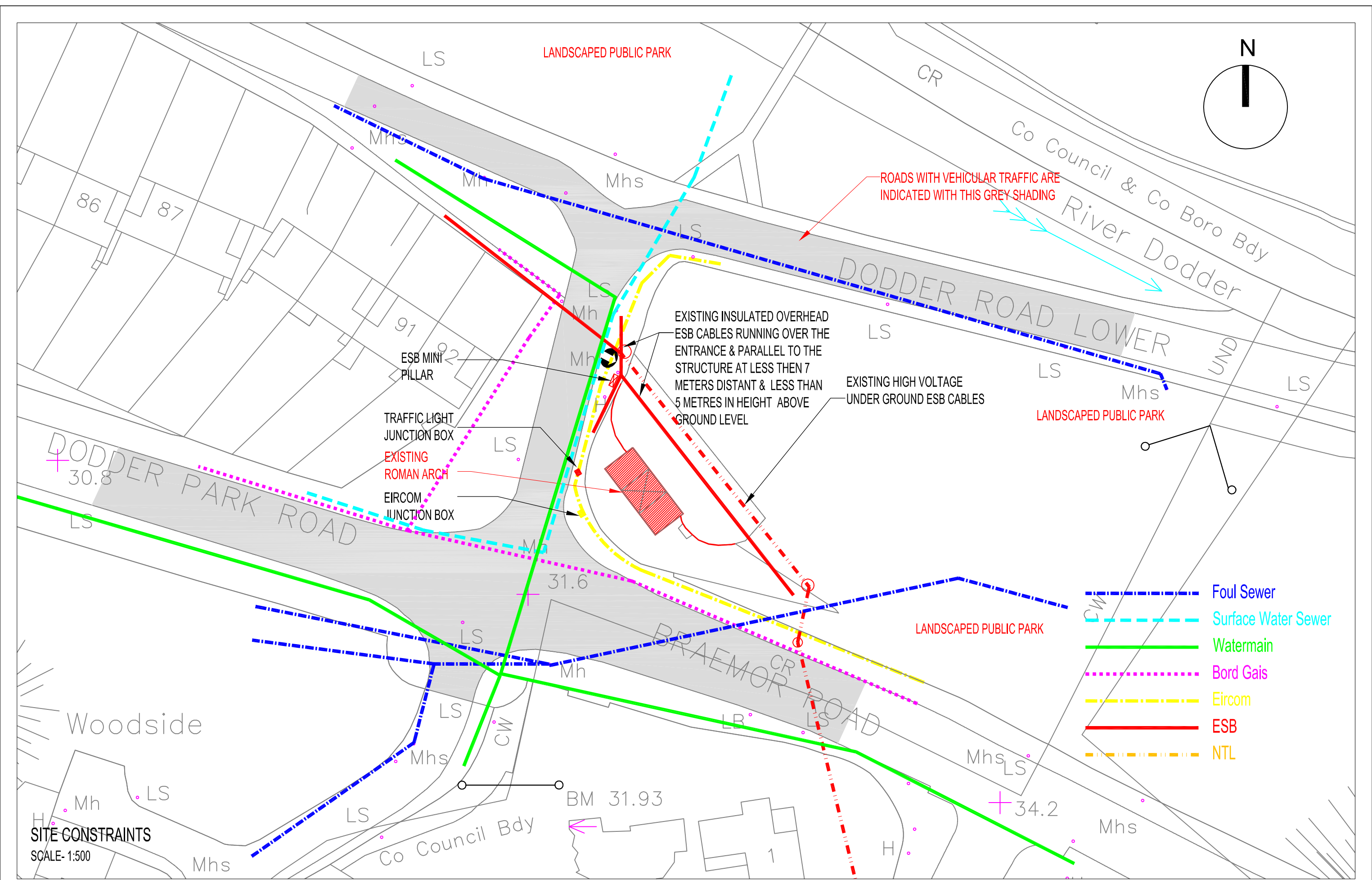
SENIOR ARCHITECT: PATRICK DE ROE

PROJECT ARCHITECT: FEARGAL Ó SÚILLEABHÁIN

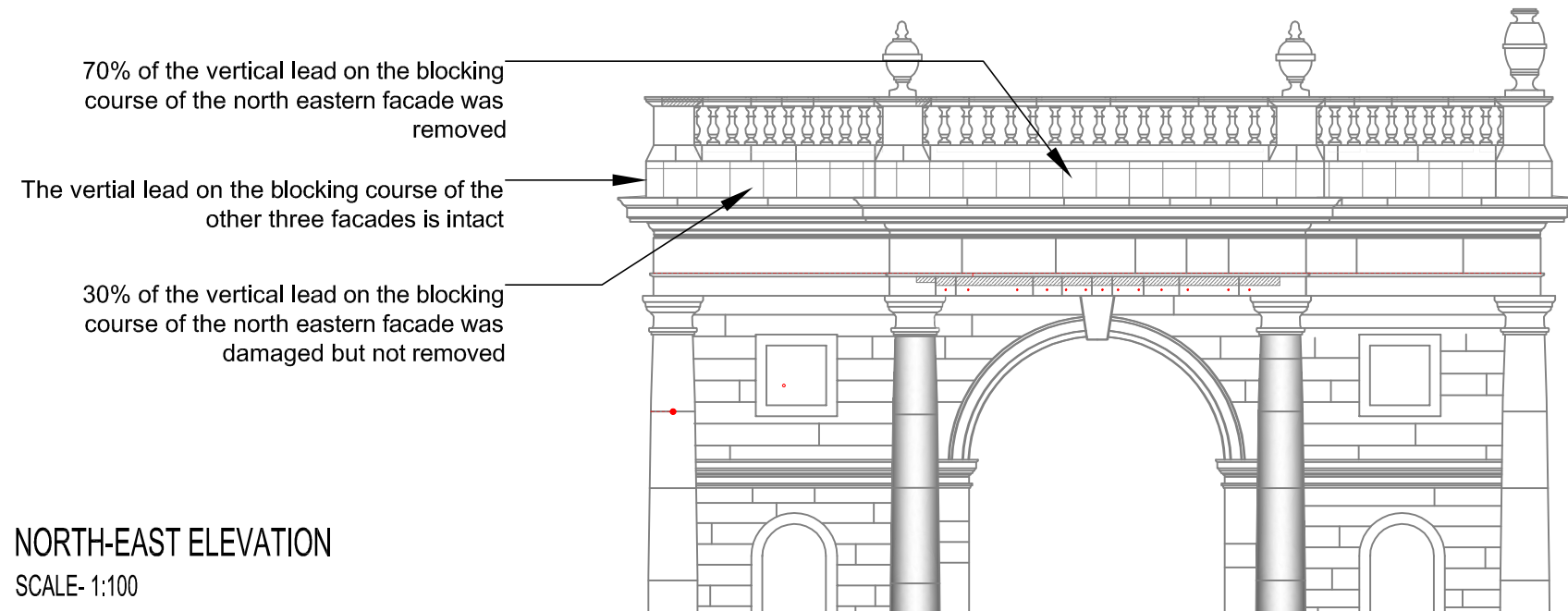
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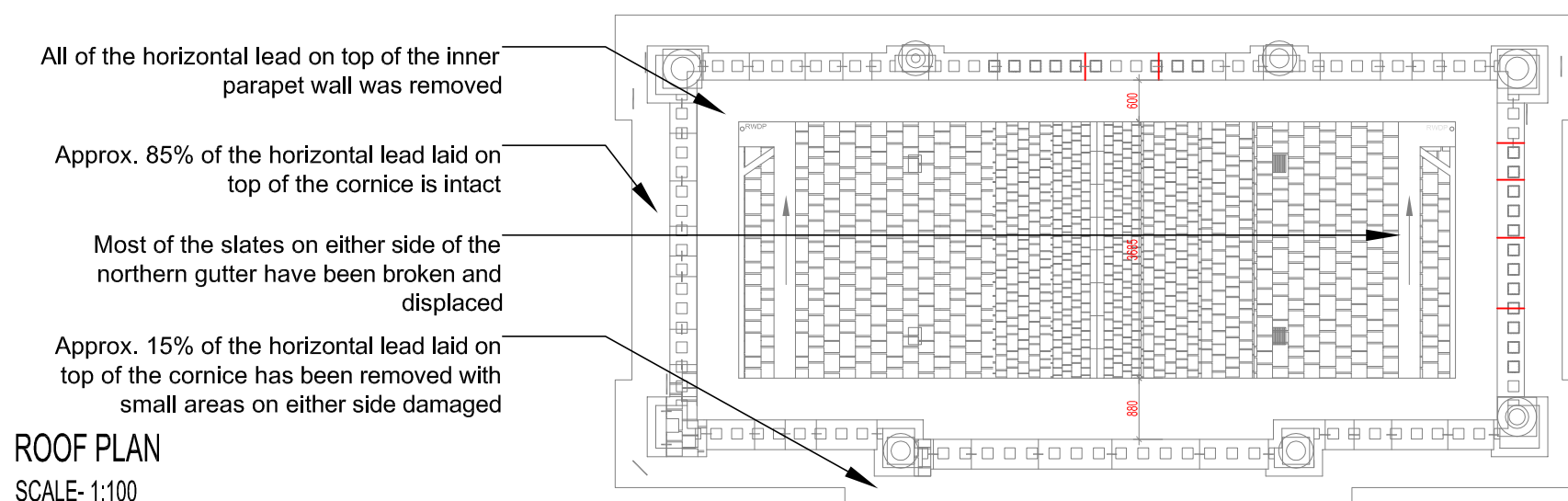


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				DATE:- JULY 2009	DRAWING TITLE: SITE CONSTRAINTS DRAWING				
				DRAWN:- SUDHIR & FÓS	SENIOR ARCHITECT: PATRICK DE ROE	PROJECT ARCHITECT: FEARGAL Ó SÚILLEABHÁIN			
	No.	DATE							



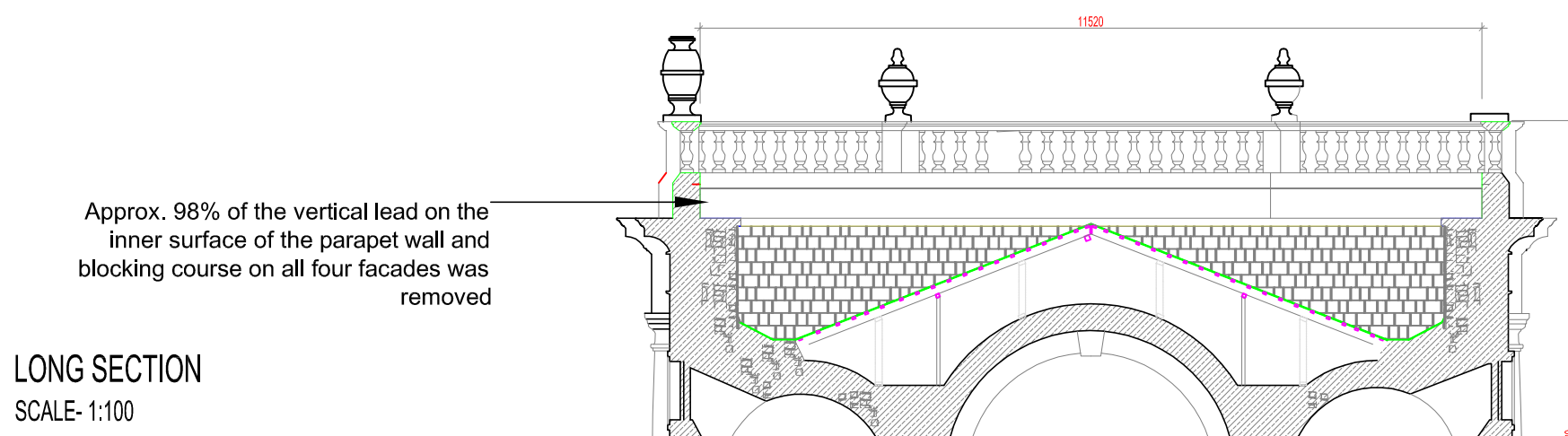
NORTH-EAST ELEVATION

SCALE- 1:100




ROOF PLAN

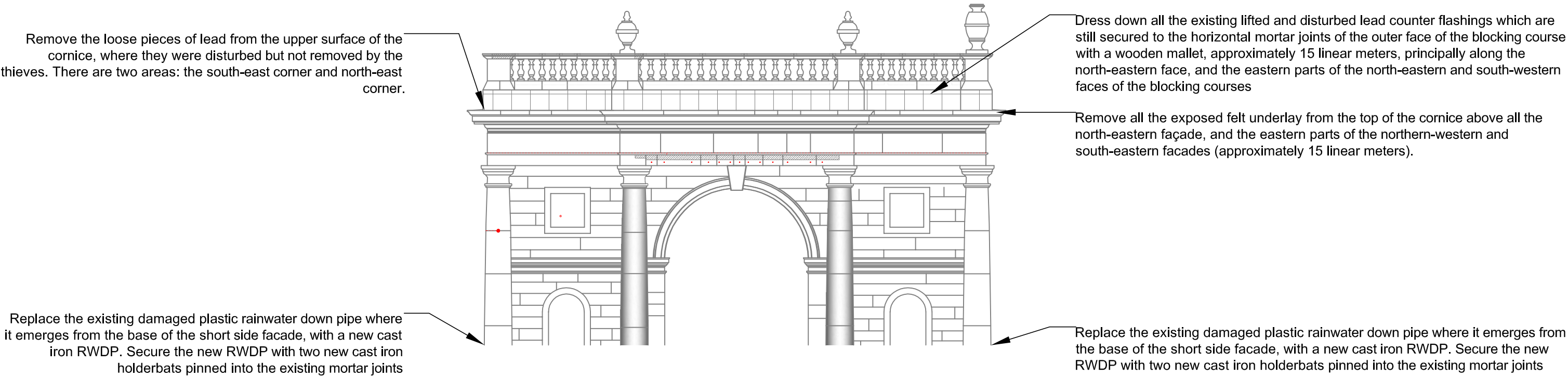
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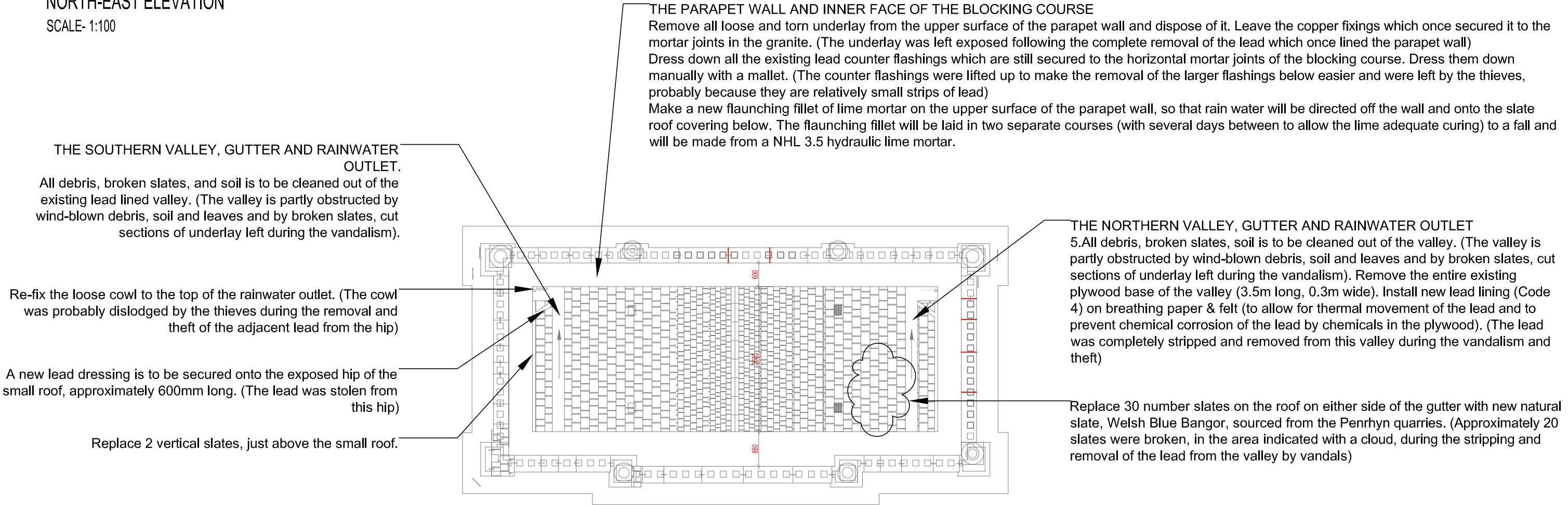
LONG SECTION

SCALE- 1:100


 <p>ARCHITECTS' DEPARTMENT, COUNTY HALL, TALLAGHT, DUBLIN 24 TEL: 01-414 9000, FAX: 01-414 9209</p> <p>COUNTY ARCHITECT EDDIE CONROY, B.Arch., M.Sc.Arch, FRBA</p>				SCALE:- 1:100	PROJECT TITLE: REPAIR OF THE ROOF OF THE ROMAN ARCH, DODDER PARK ROAD, RATHFARNHAM, DUBLIN			DRAWING. NO: 14021_T3	REV.
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				DRAWN:- FÓS	SENIOR ARCHITECT: PATRICK DE ROE	PROJECT ARCHITECT: FEARGAL Ó SÚILLEABHÁIN	ASSISTANT ARCHITECT:		
	No.	DATE							

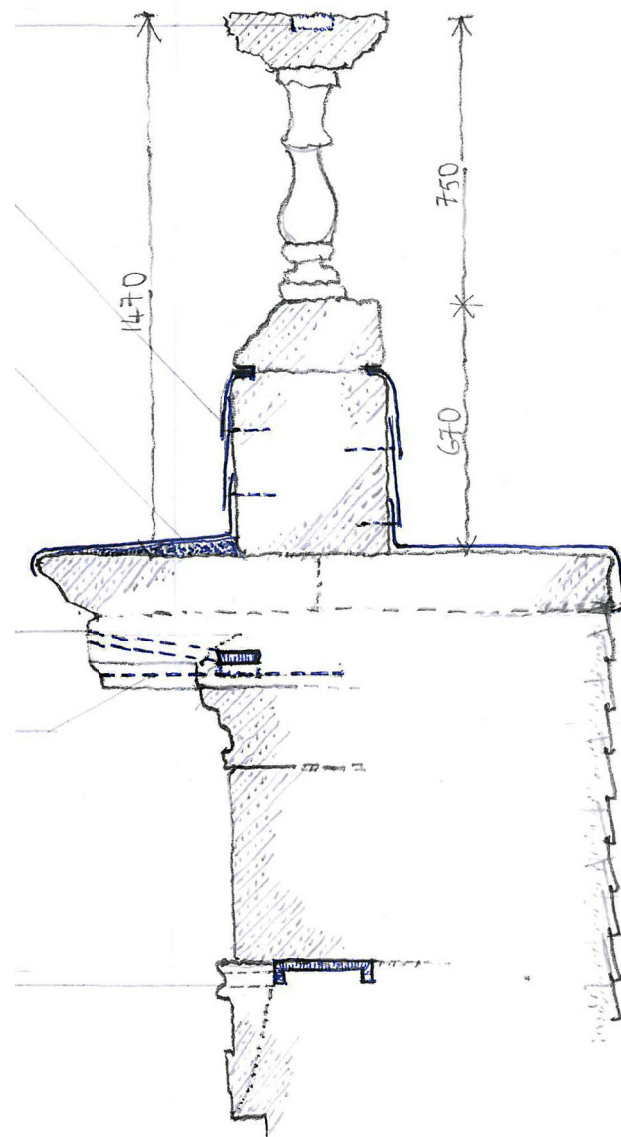


NORTH-EAST ELEVATION
SCALE- 1:100



ROOF PLAN
SCALE- 1:100

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				DRAWN:- FÓS	SENIOR ARCHITECT: PATRICK DE ROE	PROJECT ARCHITECT: FEARGAL Ó SÚILLEABHÁIN	ASSISTANT ARCHITECT:		
	No.	DATE							

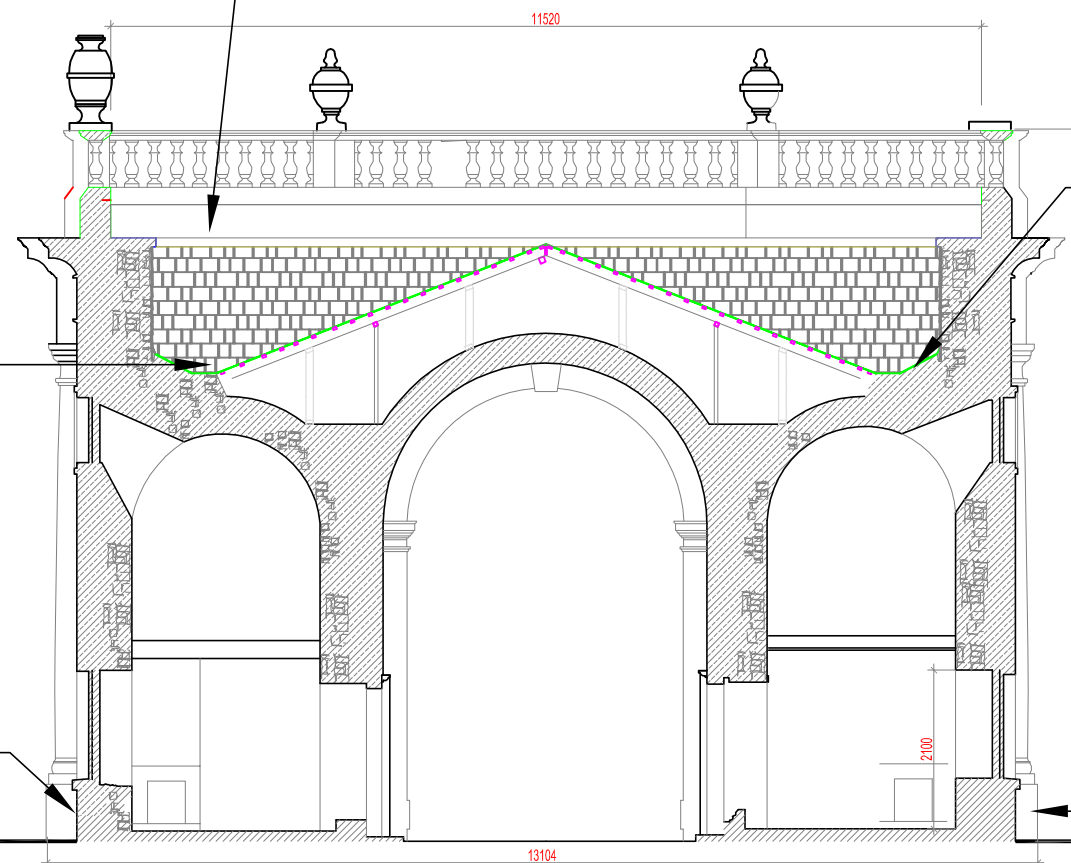


TYPICAL CORNICE DETAIL
SCALE: 1:20

THE SOUTHERN VALLEY, GUTTER AND RAINWATER OUTLET.
All debris, broken slates, and soil is to be cleaned out of the existing lead lined valley. (The valley is partly obstructed by wind-blown debris, soil and leaves and by broken slates, cut sections of underlay left during the vandalism).

MISSING SLATES RE
SLATES REBEDDEN
Replace the existing damaged plastic rainwater down pipe where it emerges from the base of the short side facade, with a new cast iron RWDP. Secure the new RWDP with two new cast iron holderbats pinned into the existing mortar joints


THE PARAPET WALL AND INNER FACE OF THE BLOCKING COURSE
Remove all loose and torn underlay from the upper surface of the parapet wall and dispose of it. Leave the copper fixings which once secured it to the mortar joints in the granite. (The underlay was left exposed following the complete removal of the lead which once lined the parapet wall)
Dress down all the existing lead counter flashings which are still secured to the horizontal mortar joints of the blocking course. Dress them down manually with a mallet. (The counter flashings were lifted up to make the removal of the larger flashings below easier and were left by the thieves, probably because they are relatively small strips of lead)
Make a new flaunching fillet of lime mortar on the upper surface of the parapet wall, so that rain water will be directed off the wall and onto the slate roof covering below. The flaunching fillet will be laid in two separate courses (with several days between to allow the lime adequate curing) to a fall and will be made from a NHL 3.5 hydraulic lime mortar.



THE NORTHERN VALLEY, GUTTER AND RAINWATER OUTLET
5. All debris, broken slates, soil is to be cleaned out of the valley. (The valley is partly obstructed by wind-blown debris, soil and leaves and by broken slates, cut sections of underlay left during the vandalism). Remove the entire existing plywood base of the valley (3.5m long, 0.3m wide). Install new lead lining (Code 4) on breathing paper & felt (to allow for thermal movement of the lead and to prevent chemical corrosion of the lead by chemicals in the plywood). (The lead was completely stripped and removed from this valley during the vandalism and theft)

Replace the existing damaged plastic rainwater down pipe where it emerges from the base of the short side facade, with a new cast iron RWDP. Secure the new RWDP with two new cast iron holderbats pinned into the existing mortar joints

CROSS SECTION
SCALE- 1:100

 <p>ARCHITECTS' DEPARTMENT, COUNTY HALL, TALLAGHT, DUBLIN 24 TEL: 01-414 9000, FAX: 01-414 9209</p> <p>COUNTY ARCHITECT EDDIE CONROY, B.Arch., M.Sc.Arch. FRM</p>			SCALE:- 1:100	PROJECT TITLE: REPAIR OF THE ROOF OF THE ROMAN ARCH, DODDER PARK ROAD, RATHFARNHAM, DUBLIN			DRAWING. NO: 14021_T5	REV.
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