

**COMPLETION REPORT:**

**CONSERVATION WORKS 2019**

**TO**

**FETHARD TOWN WALL (EAST),**

**FETHARD, CO. TIPPERARY**



**FOR**

**TIPPERARY COUNTY COUNCIL**

Date: 18<sup>th</sup> November 2019

Ref.: 19-054

**BLUETT & O'DONOGHUE**

**PROJECT MANAGEMENT    ARCHITECTURE    PLANNING    CONSERVATION (GRADE 1)    FIRE ENGINEERING**

No.1 Chancery Street,  
Dublin 7 Ireland  
Eircode D07 DD56

No.2 John Street  
Kilkenny Ireland  
Eircode R95 EY22

**MICHAEL O'BOYLE** BArch MUBC MRAI Grade 1 Conservation Architect (RIAI)  
**PETER BLUETT** Dip.Arch B.(Arch)Sc MSc(Fire Eng') C Eng FRIAI MIFireE MIEI  
**JAMES O'DONOGHUE** Dip.Arch B(Arch)Sc Dip Proj Man DipArb DipICarb FRIAI RIBA FCIArb

**E** [mail@boda.ie](mailto:mail@boda.ie)

**W** [boda.ie](http://boda.ie)

**CORMAC O'SULLIVAN** BArch MPhil.(Urb' and Reg' Planning) MRAI MIPI IHBC.

**T** +353 (0) 1 8656265

**T** +353 (0) 56 7762907

Financial Controller **MARIE FLAHIVE** Dip M&R MIATI

Prodomo Ltd T/a Bluett & O'Donoghue Reg Address No. 1 Chancery Street, Dublin 7 Ireland No. 284657 Directors P. Bluett J. O'Donoghue. M. O'Boyle

### 1. INTRODUCTION

This completion report has been prepared as part of the grant draw-down for works to the Town Wall (east), Fethard, Co. Tipperary.

The Town Wall in Fethard survives as an almost complete circuit of the Town. Tipperary County Council has recently completed the development of a new public park lands (East Gate Park) that adjoin the eastern part of the Town Wall at Burke St., Fethard. This park is intended to highlight and interpret a significant section of the wall that has been hitherto concealed from public view. This new park extends along the (east) external face of the town wall and has been laid out as a landscaped amenity area with a combination of paving, gravel and raised beds.

The available budget for the park development was limited and did not include the necessary repairs to the Town Wall. Separate funding was obtained under the IWTN CONSERVATION/CAPITAL PROJECTS 2019 funding stream to undertake essential conservation repairs to this section of Fethard Town Wall.

This report records the works that were carried out to the east section of the town wall with IWTN 2019 funding. Appendix A contains photographs of the completed works. Appendix B of this report includes photographs of the wall prior to the works. Appendix C of this report contains a report by Dr. Jason Bolton on analysis of the historic mortars on this section of Fethard Town Wall, together with Dr. Bolton's specification for lime mortar that was used in the 2019 conservation works

### 2. SIGNIFICANCE OF THE SUBJECT WALL

Fethard Town Walls can be dated to c.1292 and are widely recognized as the best preserved medieval town walls in Ireland. The wall is a Recorded National Monument and is protected under the National Monuments Acts (1930-2004). The Fethard Town Walls Conservation and Management Plan (CMP) (Oxford Archaeology, 2008) describes this section of walls as an *'important survival of a substantial and continuous part of the eastern Town Wall'*. The approach followed, in line with all works to Fethard Town Walls over the past ten years, was to conserve the wall as a ruin by adopting a sound technical approach to the repair of the historic fabric based on best practice conservation principles as established by the Venice and Burra Charters. The work was out using traditional repair techniques where possible and using traditional materials.

Ministerial consent was previously obtained for the works to repairs to the Town Walls in Fethard under Ref C 368. Tipperary County Council obtained an extension to this consent to cover the subject works.

### 3. WORKS COVERED BY THE GRANT SCHEME

The works comprised the consolidation and repair of the east face of Fethard Town Wall, within the newly-developed Burke Street Park. The wall height is variable and ranges from 2.2 to 3 metres. Prior to the commencement of the work the town wall section (45 metres long) that adjoins the park was unstable with loose stones in its upper section that were at risk of falling. The wall was in need of repair and was visibly in poor condition. The photographs in Appendix B show the structural and visual condition of the wall prior to commencement.

- Removal and Treatment of Vegetation.
- Removal and raking-out of cementitious and loose mortar pointing
- Replacement of missing masonry
- Consolidation of loose or unstable masonry

- Repair and consolidation of the haunch along the top of wall
- Making good and finishing off

**4. REPORT ON COMPLETION OF THE GRANT-AIDED WORKS**

The works were carried out by Tallis & Co, Freshford, Co. Kilkenny, a contractor with considerable prior experience of conservation and heritage works. I confirm that the works completed in 2019 are noted below. The works were carried out under the direction of Michael O'Boyle, Grade 1 Conservation Architect of Bluett & O'Donoghue.

The specification for the completed works was in line with the method statement submitted with the grant application (as noted) and in accordance with best conservation practice.

Item	Specification followed in carrying-out the works
Erection of scaffolding to provide access to the wall	<p>Following analysis of the site, the contractor put in place a narrow scaffolding along the southern section of the wall. The contractor was responsible for the design and erection of scaffolding, which was put in place prior to the commencement of works. At the request of Tipperary County Council, protective plastic sheeting was fitted to the stainless steel handrails of the recently-completed park for the duration of the works. The existing planting in the beds along the base of the wall was protected during the works.</p> <p>By arrangement with the adjoining owner (to the west of the park), it was possible to gain access and erect a local scaffolding to the west side of the wall at its southern extent. This facilitated a more comprehensive repair of the haunch of the southern part of the wall, which is the section that was in poorest condition.</p>
Removal and Treatment of Vegetation:	<p>In all locations the contractor was required to ensure that the visible leaves and concealed root were fully removed; and that any resulting gaps in the masonry were filled with lime mortar. All plants growing on the wall were treated with a biocide prior to removal. Once the leaves had withered, the plant, including the root system, was carefully removed and the wall consolidated (see specification below). The contractor was required to take particular care to ensure that the biocide or contaminated run off was not allowed to enter the storm water drainage system.</p> <p>The heaviest concentration of vegetation was along the top of the wall at the southern part of the park, where a considerable quantity of ivy and some buddleia was identified and removed.</p> <p>The works were carried out at a time of year (Autumn), which is not ideal for the biocide treatment of plants and weeds. A follow-on inspection is recommended in Spring 2020 to identify and treat any vegetation growth that re-emerges from the wall. It is recommended that an annual programme of identification and treatment of weeds growing on the wall takes place thereafter (see Section 5 below).</p>
Raking-out:	<p>The pre-existing pointing comprised lime mortar. The removal of mortar was limited to areas where the existing mortar was loose or friable. This work was carried out by a skilled stone mason with previous experience</p>

	<p>of high quality conservation work (Mr. Eugene Butler of Tallis &amp; Co.), using hand tools. The existing mortar was raked out to 1.5 times the depth of the joint. Vegetation in the joints was treated with biocide prior to raking out.</p>
<p>Replacement of missing masonry</p>	<p>The introduction of infill stones was carried out using loose stones salvaged from the site, where possible – i.e. where a loose stone was lying at the base of the walls, this stone was salvaged for re-use. Stones were carefully selected to suit the size and shape of the gaps to be filled. Smaller pockets and open joints were packed-out with smaller stone gallets and pins (i.e. flat stones and long thin stones) so that the joints were tightly consolidated.</p>
<p>Re-pointing and consolidation of masonry</p>	<p>The mortar mix was informed by petrographic analysis of historic mortar from the Town Walls, carried out by a specialist stone and historic mortars consultant, Dr. Jason Bolton, prior to the commencement of the works. This analysis identified that the historic mortar was naturally hydraulic with some reactive aggregate. In line with the recommendations of Dr. Bolton’s report, a hot lime/NHL 3.5 hybrid mix was used for repointing.</p> <p>The over-arching objective of the works was to consolidate the existing stone in-situ, not to re-build or recreate missing sections of wall. All open mortar joints were re-pointed using a hot lime mix mortar to the specification noted above.</p> <p>The contractor undertook grouting and deep tamping of existing open and dry joints, and voids, revealed during removal of the flowering plants and failed stones. The grouting material was lime-based with a suspension aid. A cumulative total of 2 cubic metres of grout was introduced in various locations during the works.</p> <p>Particular care was taken in addressing an area of loosely-packed stonework, which was adjacent to an earlier dressed stone reveal with the remains of an arch above (see Appendix B, fig. 5). This loose stone was found to be unstable and not bonded to the surrounding masonry. The loose masonry was carefully dismantled and the area was reconstructed.</p>
<p>Works to the haunch along the top of wall</p>	<p>The specification called for the top of all walls to be finished with a limecrete haunch. Following detailed inspection of the wall, the existing haunch at the northern part of the public park was found to be generally in good condition – with very localised vegetation growth. The top of the wall at the southern extent of the park was found to be very uneven with the core of the wall exposed and a number of loose stones.</p> <p>The main focus of the work was to consolidate the uneven top of the southern wall (approximately 45 metres). Loose and poorly-bedded stones were lifted and re-bedded in a lime-mortar bedding. A limecrete haunch was then formed following the (uneven) contours of the wall to facilitate the easy run-off of water from the top of the wall. Because the profile of the wall is uneven at its southern extent – with sections of the inner (western) face of the wall visible above the east face of the wall – visitors to the park will now get a greater sense of the substantial thickness of this part of the town wall.</p>

	<p>Work to the more intact north section of the haunch was limited to vegetation removal and local re-pointing in limecrete.</p> <p>In consultation with Dr. Jason Bolton, the specification for the limecrete was based on a NHL 3.5 for the haunching. This was used due to the uncertain condition of parts of the west face of the wall – NHL3.5 is slightly more elastic and so can better accommodate any movement or failure in the wall cores the might happen in the future.</p>
Completion	<p>The Contractor was required to leave the whole of the works clean and free from all rubbish and construction debris at the end of the contract. In particular, the contractor was required to clean down mortar staining from the newly-installed handrails of the public park.</p>

**5. FUTURE MAINTENANCE**

The works were carried out at a time of year (Autumn), which is not ideal for the biocide treatment of plants and weeds. A follow-on inspection is recommended in Spring 2020 to identify and treat any vegetation growth that re-emerges from the wall.

There is a likelihood that some regrowth of ivy and other vegetation will occur over time on the conservaed section of wall. An annual programme of inspection, identification and treatment of weeds growing on the wall should be put in place, ideally to be linked to the general management of the new public park. Areas of weed and vegetation growth emerging from the wall should be treated with biocide and raked out once the leaves have grown back. Particular attention should be paid to any ground ivy or other creepers within the planting beds at the base of the (east face of the) wall. This should be regularly cut back so that it does not the plants do not take root within the fabric of the wall.

The 2019 works related to the east face of the town wall (facing into the new public park). The west face of the town wall, which faces into neighbouring properties in private ownership, did not form part of the works. In the short term (and for the foreseeable future) it will be necessary to monitor and control any vegetation that is growing over the wall from its west side. It is recommended that discussions take place with the neighbouring owners to facilitate essential re-pointing and consolidation of the west side of the subject wall as part of a future programme of work.

**6. CONCLUSION**

I confirm that the works were completed, using traditional repair techniques where possible and using traditional materials, to a high standard to the specification noted above in accordance with best practice conservation principles, as established by the Venice and Burra Charters, and the conditions of the grant. The works were carried out in accordance with the terms of the Ministerial Consent received, under the direction of the undersigned Grade 1 Conservation Architect. The works related to the above-ground wall and did not involve below-ground excavations.



**Signed by:** Michael O’Boyle, Grade 1 Conservation Architect  
Bluett & O’Donoghue Architects

**Date:** 18<sup>th</sup> November 2019

# **APPENDIX A**

## **PHOTOGRAPHS TAKEN DURING THE WORKS AND FOLLOWING COMPLETION OF THE PROJECT**



i. East face of Town Wall (facing into new public park), following completion of works – 7/11/19



ii. Southern part of wall, with consolidated masonry at top of wall and reinstated stone rubble infill within earlier opening – 7/11/19



iii. East face of Town Wall (facing into new public park), following completion of works – 7/11/19



iv. Southern part of wall, with consolidated masonry at top of wall and reinstated stone rubble infill within earlier opening – 7/11/19





v. Southern part of wall, with reinstated stone rubble infill within earlier opening – 7/11/19



vi. Re-pointed mortar joints at southern end of wall – 7/11/19



vii. Completed work to wall, with park landscaping in foreground – 7/11/19



viii. Detail of part of the top of the wall, where the existing stone rubble was consolidated and re-pointed with limecrete to ensure water run-off – 7/11/19



ix. Removal of vegetation from top of wall during works – progress photo October 2019



x. Significant levels of soil build-up were found once vegetation was removed from the top of the wall – progress photo October 2019



X1. View along top of wall (looking north) with vegetation removed – progress photo October 2019



xii. Work in progress, pointing top of wall with limecrete haunch – progress photo October 2019



xiii. Progress photograph showing scaffolding in place on southern part of wall, with re-pointing underway – October 2019



xiv. Progress photo showing reinstatement of stone rubble infill within earlier opening – October 2019

## **APPENDIX B**

# **RECORD PHOTOGRAPHS OF FETHARD TOWN WALL (EAST) PRIOR TO THE 2019 WORKS**

PHOTOGRAPHS



1. Southern part of wall, where the impact of ivy growth on the top of the wall was particularly bad, prior to work



2. This photograph (prior to the works) shows the southern part of the subject wall (northeast face), viewed from within the new park. There are areas of missing mortar, together with gaps and cavities associated with missing stones.



3. Detail of south part of subject wall (close to Burke Street) prior to works. The haunching at the top of the wall has broken down with colonisation by buddleia and ivy. There are loose and unstable stones along the top of the wall.



4. Significant ivy growth and vegetation on upper part of wall. This vegetation threatens the fabric of the wall and is to be removed in tandem with the re-pointing and consolidation of the wall.



5. Location of earlier opening within the wall. The infill rubble within the wall was presented as a rougher finish than the dressed rubble of the main wall, during previous works carried out in 2009. There has been a loss of mortar and colonisation of the open joints with ivy within this infill masonry. The dressed stone, around the perimeter of the opening required consolidation.



6. General view showing the presentation of the town wall within the new park. The upper part of the wall has been colonised by heavy ivy growth, which has broken down the haunch and threatens the stability of the wall.



7. General view showing the presentation of the town wall within the new park (opposite direction to Pic. 6).



8. Section of wall at entrance to new park from Burke St. The gable wall and upper portion of the town wall have been partly conserved. There is a blockwork infill panel at the base of this wall, which will be finished with a lime harling as part of the proposed works.





9. Section of wall at entrance to new park from Burke St., with blockwork infill panel to be finished with a lime harling.



10. Aerial view showing the subject section of Fethard Town Wall in July 2019, with the new park nearing completion



11. Aerial view showing the subject section of Fethard Town Wall in July 2019, with the new park nearing completion



12. Top of wall (looking north), showing extent of vegetation growth within the core of the wall prior to the commencement of work – October 2019



13. Earlier opening in wall, previously infilled with loose stone rubble. This photo was taken immediately prior to the works (in October 2019). Comparison with Photo 5 (above) shows how rapidly the ivy has grown in this location.

# **APPENDIX C**

## **REPORT BY DR. JASON BOLTON ON ANALYSIS OF THE HISTORIC MORTARS ON THIS SECTION OF FETHARD TOWN WALL AND SPECIFICATION FOR LIME MORTAR TO BE USED IN THE 2019 CONSERVATION WORKS**