

DUNDRUM CENTRAL MENTAL HOSPITAL

# Perimeter Wall Condition Report

Prepared for

Reddy Architecture & Urbanism



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**DUNDRUM CENTRAL SHD  
PERIMETER WALL  
Condition Report**

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by

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for

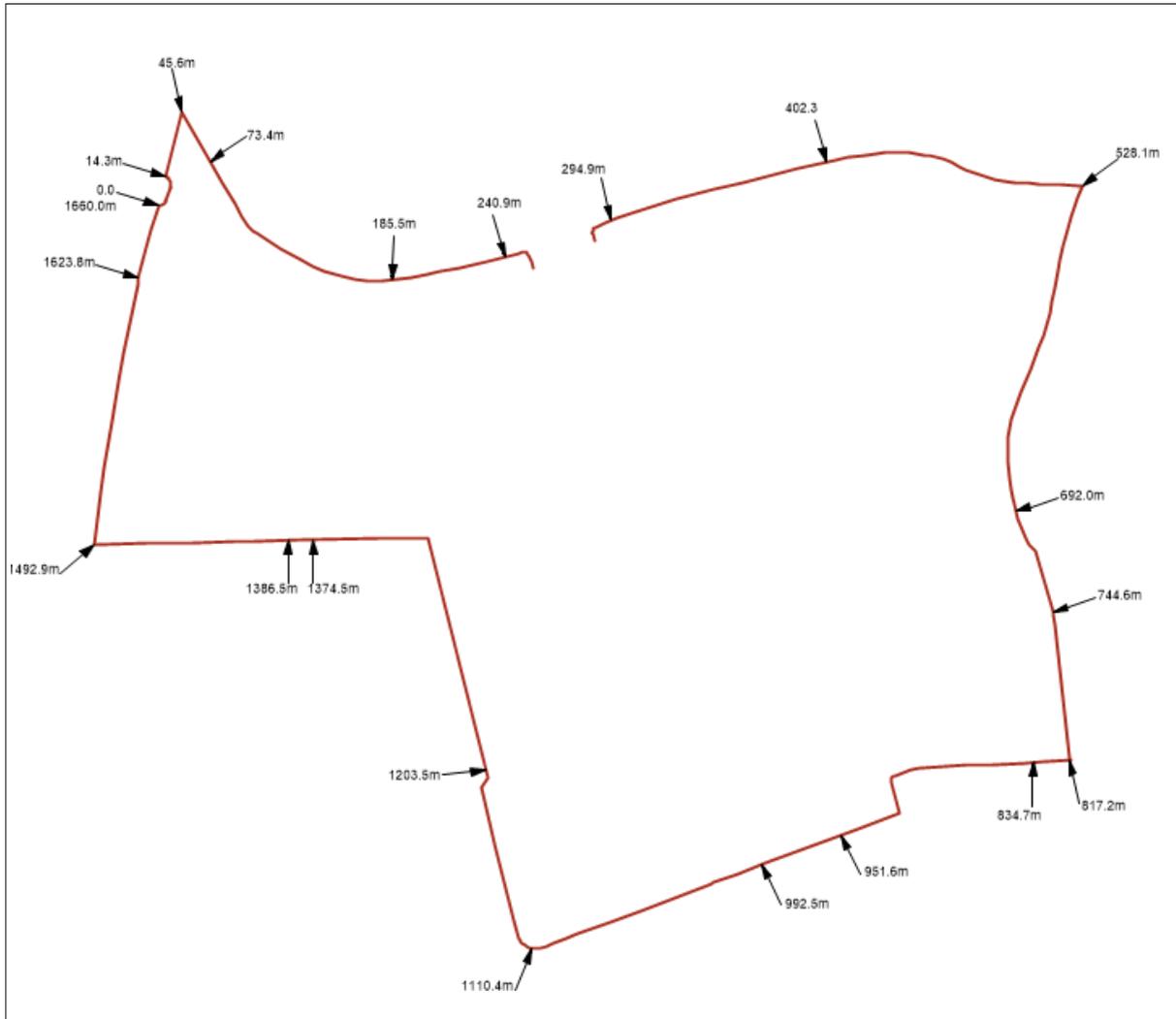
REDDY ARCHITECTURE + URBANISM

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**Executive Summary**

The perimeter wall at the Dundrum Central Mental Hospital was complete to its current extent by 1874. Built in granite and limestone rubble with concrete copings, and one short section in mass concrete, it is 1660m in length and encloses grounds of c.28 acres. The position of principal junctions/features are referenced as shown below in Figure 1. Running dimensions used in this report are measured from the south side of the entrance gateway on Dundrum Road, proceeding clockwise.



*Figure 1 – Extent of Wall*

The full internal elevation of the wall, and the accessible extent on Dundrum Road and Rosemount Green, were surveyed for composition and condition on the 12<sup>th</sup> to 14<sup>th</sup> April 2021. With minor areas of age-related weathering and deterioration, the wall was found to be in excellent overall condition. Constructed to a high standard, it has benefitted from continuous maintenance, particularly on the inner face.

### **Composition of Wall**

The wall is constructed in the main part from faced and roughly squared rubble granite blocks, with some sections being built in limestone blocks similarly sized and dressed. Stones are laid to courses, with each course being approximately 450mm. A typical section of walling is shown in Figure 2:



*Figure 2 – Typical Wall Section*

One contiguous section of walling is constructed from cast-in-situ mass-concrete, this being situated between 745m and 835m. A typical portion of this section is shown in Figure 3.



*Figure 3 – Section of Wall in in-situ mass concrete*

Copings to the wall are in the main part formed from pre-cast concrete units, with some sections having been formed from in-situ mass concrete with a smooth cement render applied.

**Existing Openings in Wall**

The wall is contiguous and un-broken save for the following openings:

Distance Marker/Opening	Image
<p>0m Main vehicular entrance</p> <p>Brick piers with concrete canopy over. Metal vehicular gates with metal pedestrian gate to north.</p>	
<p>170m Blocked pedestrian access</p> <p>Block and start granite jambs and granite voussoirs.</p>	
<p>259m Service yard vehicular access</p> <p>Jambs and voussoirs of four-pointed arch opening in ashlar granite blocks. Granite hood moulding. Painted timber gates.</p>	
<p>270-300m Service yard pedestrian access</p> <p>Four pedestrian openings with brick dressings to jambs and flat brick arches over. Painted timber sheeted doors.</p>	

<p>527m Blocked pedestrian access.</p>	
<p>830m Blocked pedestrian access.</p>	

**Other notable features**

Other notable features of the wall as observed on its inner face are noted below:

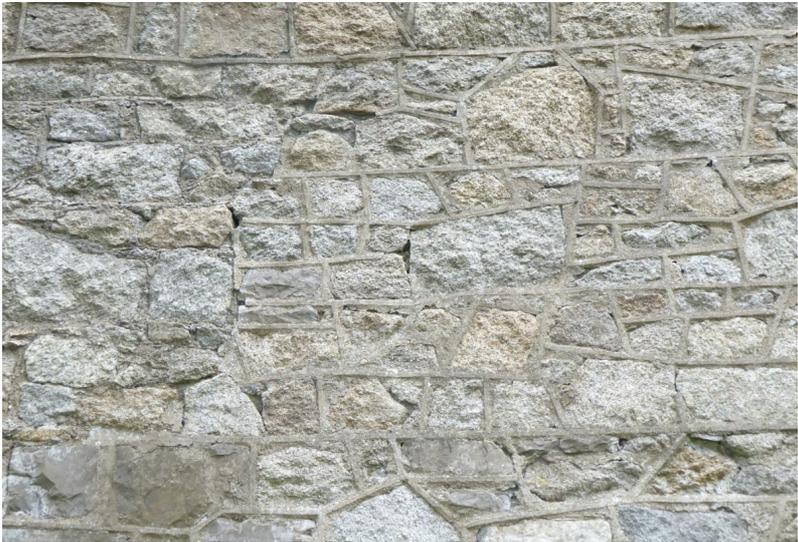
Feature	Image
<p><b>Buttresses</b></p> <p>In a number of extended sections (refer to drawings) the wall has internal buttresses at c. 7m intervals. These are composed of an in-situ concrete core containing large aggregate and rendered with a harled (wet-dash) finish.</p>	

<p><b>Height extensions</b></p> <p>Between 45m and 60m a section of wall has been extended upwards in concrete blocks by some 600mm.</p>	
<p><b>Concrete faced/rendered section</b></p> <p>Between 1300m and 1315m a section of wall has been built-out and rendered in a cement-based render. The outside face at this location is in coursed rubble stone and shows signs of there having been an opening present or formed at some point in the past.</p>	
<p><b>Concrete foundation</b></p> <p>Sections of the wall (externally) on Dundrum Road were observed to be built on a mass-concrete foundation.</p>	

**Condition**

The wall has been examined to determine the following attributes at each section:

Attribute	Assessment overview
Missing/loose masonry	Incidences of missing and/or loose masonry on the inner face of the wall are very few, and in those instances noted are limited to a small number of stones. At no point on the inner face of the wall are there any points where the integrity or stability of the facing is a cause for concern.

	 <p data-bbox="568 804 1174 837"><i>Typical example of the very minor masonry defects</i></p>
<p data-bbox="204 857 341 891">Plumbness</p>	<p data-bbox="568 857 1374 1070">The vast majority of the inner face of the wall measures as being plumb to within +2/-0 degrees off vertical, with + indicating an outward lean or batter. The maximum measured lean/batter noted was +5 degrees, and this over a limited section. In summary, the plumbness of the wall is overwhelmingly good and does not point to any concerns with its underlying stability.</p>
<p data-bbox="204 1160 517 1227">Condition of bedding and pointing mortar.</p>	<p data-bbox="568 1160 1374 1406">The inner face of the wall has been comprehensively re-pointed in cement-based ribbon pointing at some stage since construction, though the weathering indicates that this took place some significant time ago. Failure of the pointing has occurred in small sections, these being uniformly distributed. Failure and loss of this pointing will continue, exposing the bedding mortar and eventually leading to loosening of masonry.</p>  <p data-bbox="568 2007 1246 2040"><i>Representative section illustrating loss of ribbon-pointing</i></p>

	<p>The pointing on the external face of the wall has been similarly renewed at some time since construction, though not as consistently or latterly to the same high standard. Weathering and deterioration is slightly more pronounced than on the inside face, doubtless due to a more relaxed attitude to growth of vegetation on the outside face, but widespread/serious failure is not evident.</p>  <p><i>External pointing,</i></p>
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<p>Condition of copings</p>	<p>Coping condition is generally good, with failure being limited to those sections where the coping has been poured in-situ and rendered. Loss of the render has exposed the core and deterioration has accelerated. Repair to the deteriorated sections should be undertaken as soon as possible to preclude further decay of the wall heads.</p>  <p><i>Example of deteriorated coping</i></p>
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<p>Condition of render</p>	<p>Rendering to the wall is confined to the mass concrete buttresses. In a number of locations failure of this render has exposed the inner-core of the buttress. Render repairs should be carried out to protect the core of the buttresses from deterioration.</p>  <p><i>Example of deteriorated render</i></p>
<p>Invasive vegetation</p>	<p>Although there are areas of vegetative growth (mainly originating from the external face and progressing over the coping) there are no significant instances of invasive woody growth that might pose a risk to the structure of the wall.</p>  <p><i>Example of invasive vegetation encroaching from outside face of wall</i></p>

## **Conclusions**

The inside face of the wall has obviously benefitted from ongoing care and maintenance, and barring some minor deteriorations was observed to be in a good condition overall. Deteriorations to the copings where noted should be addressed, as the coping provides the needed protection to the wall-head at the most vulnerable point of the wall. Whilst the pointing is noted to be in good condition for a large majority of the wall, aging and failure of the cement-based pointing is evident. A program of renewing the pointing where failed would ensure the continued stability of the masonry, preventing erosion of the bedding mortar and loosening of stones, and also preventing the growth of invasive vegetation.

The outside face of the wall on Dundrum Road and at Rosemount Green has been observed to be in the same overall good condition as the corresponding inside face, with deterioration of the pointing and copings commensurate with the inside face though slightly worse at lower level.

In conclusion, the wall at Dundrum CMH has been found to be in overall good condition, with no issues noted other than the need for some elements of age-related deterioration to be addressed. Continued maintenance will be required to ensure this good condition persists.