Performance Observations of the Beijing area’s Great Wall “Rammed Earth and Rubble Core”, (unrestored sections)

David Dark

Study area Map
Figure 1. All stone, no brick, but Rubble Core. #13 and #14

Figure 2. All stone, no brick, but Rubble Core. #13 and #14
Figure 4. Sticky-Rice and Lime mortar. Typical brick. #5

Sticky-Rice and Lime mortar. Typical brick. #8
Sticky-Rice and Lime mortar. Disintegrating bricks. #4

Sticky-Rice and Lime mortar. Disintegrating bricks. #4
Sticky-Rice and Lime mortar. Disintegrating bricks. #4
Disintegrating Sticky-Rice and Lime mortar. #4

Sticky-Rice and Lime mortar & disintegrating bricks. #5
Sticky-Rice and Lime mortar & disintegrating bricks. #5

Figure 5. Sticky-Rice and Lime mortar between paving. #5
Sticky-Rice and Lime mortar between paving. #8

Drainage system. #4
Drainage system. #4

Water drainage spouts draining the top of a tower. #8
Drainage channel. #8

Figure 3. Typical brick on stone construction. Earth foundation. #5
Typical brick on stone construction. Bedrock foundation. #4

Figure 6. Rubble Foundation, erosion on very steep incline. #5
Quarried Stone. Single course foundation. #5

Mortared Rubble on bedrock. #4
The exception to the rule! #4

Another exception! #4
Quarried Stone. #4

Quarried Stone. #4
Quarried Stone at tower base. #4

Quarried Stone on earth foundation. Badly cracked walls. #8
Quarried Stone doorpost to left. Rough cut stone bottom. #8

Quarried Stone. Water drainage spout. #8
Figure 9. Low wall on high peak. #4

Figure 10. Foot traffic erosion. #4
Figure 11. Outward lean. Parapet on right fallen away. #4

Outward lean & buckle. #4
Figure 7. Rammed Earth and Rubble side by side. #5

Rammed Earth and Rubble side by side. #5
Figure 8. Rubble Core. Brick wall leaning in. #5

Wall intact but parapet missing. #5
Figure 12. Outer walls brick walls slipped away. #5

Slip section with Rammed Earth Core torn and exposed at an angle. #5
Repairs to a slipped section. #5

Vegetation in some areas is dense. #8
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Rubble Core of a superior nature. #4
Rubble Core. #4

Pavers with Rubble Core under. #5
Rubble Core & pavers. #4

Rubble Core & pavers. #4
Rubble Core. #5

Rubble Core with some foot traffic erosion. #5
Rubble Core & pavers. #4

The serpentine nature of the Wall aids longevity. #4
The serpentine nature of the Wall aids longevity. West of #14

Rubble Core constructed in courses with mortar between. West of #14
Rubble Core constructed in courses with mortar between. West of #14

Rubble Core constructed in courses with earth between. West of #14
Stone parapets fall far sooner than brick on steep sections. West of #14

Steeper still the Wall readily falls to pieces. West of #14
Only 1 course of (removed?) Pavers over inferior Rubble Core. #8

Inferior Rubble Core with little earth between. #8
Inferior Rubble Core with little earth between. #8

Drainage spouts on an inclined section. #4
Poor design. #8
Parapet walls fallen in. Note extreme angle of wall. #8

Chaotic, but a haven for small animals & plants. #8
Parapet walls fallen in. Outer wall collapsed. #8

Large rocks in Rubble Core. #8
Outer Wall and inner Core meld and bonded together with mortar. #8

The End!