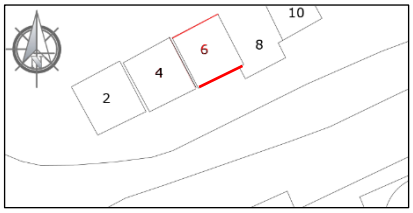
POMPEII SUSTAINABLE PRESERVATION PROJECT

State of Conservation — Tomb Nr. PN_EN_06

Date: 24/09/2018	**Persons in charge:** **Kire Stavrov, Marta Ebbreo**

Position:



PN_EN_06 south and north wall

Dangers and Risks for Visitors				
Cornice + fragments				
Masonry - cornice				
Static Problems		Possible subsidence of the ground		
	X	Large Cracks in Masonry (Reason?) bricks corner of the structure		
		Deformation of Wall		
		Other		
Damages		Unfunctional / defect Rain Tubes		
	X	Material loss	X	Loss structural Elements
			X	Missing Mortar (Cornice + wall + roof)
				Lacuna of Stone/Brick
	x	Cracks		
	X	Detachment (originals + overlapped layers of the cornice)		

State of Conservation

Tomb Nr. PN_EN_06

	X	Erosion		
	x	Powdering/Sanding	X	
			X	Stone/Brick (North wall + South wall bricks +roof)
	X	Scaling		
		Deposit (Dust + soil)		
Collapsing Areas	X	Loose Stone/Brick (roof)		
		Other		
Salts				
Biological Colonization	X	Biodeteroration		
	X	Plants/Roots (North wall mostly)		
Plaster/Stucco				
Structural Damages	X	Lacuna	X	Total Loss of Render / Masonry visible
			X	Loss of Intonaco / Preparatory Layer visible
			X	Partial Loss of Intonaco / Eroded Surface
	X	Cracks	X	Surface Cracks
			X	Deep Cracks
	X	Detachments	X	Intonaco
			X	Preparatory Layer
				Intonaco & missing Preparatory Layer
				Detachment from Structure
	X	Flaking	X	Intonaco
				Preparatory Layer
	X	Powdering/Sanding	X	Intonaco
			X	Preparatory Layer
	X	Deformation		

POMPEII SUSTAINABLE PRESERVATION PROJECT

State of Conservation

Tomb Nr. PN_EN_06

Salts		
Biological Colonization	X	Biodeterioration
	X	Plants/Roots

POMPEII SUSTAINABLE PRESERVATION PROJECT
SUMMER ACADEMY 2018

Sheet 1

Persons in charge: Giulia Russo, Ayman Yaghi
Digitalization: Lea Oetinger, Kire Stavrov
Date: Sept. 2018

Emergency mapping:
State of conservation

Tomb no. PN_EN_06 south

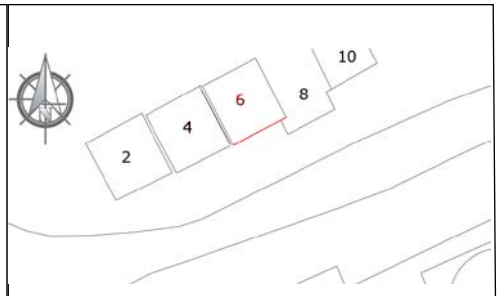
Titel: Priority damages

Collapsing elements (Structure)

Movable detachment

Non movable detachment

Cracks



POMPEII SUSTAINABLE PRESERVATION PROJECT
SUMMER ACADEMY 2018

Sheet 1.1

Persons in charge: Giulia Russo, Ayman Yaghi
Digitalization: Lea Oetinger, Kire Stavrov
Date: Sept. 2018

Emergency mapping:
State of conservation

Tomb no. PN_EN_06 south

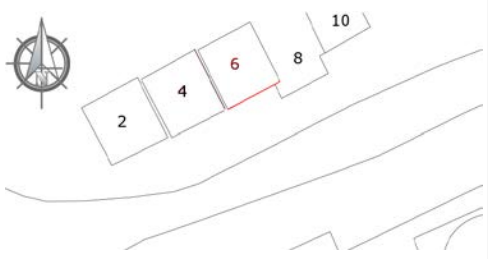
Titel: Superficial layer damages

Loss of cohesion

Erosion

Flaking

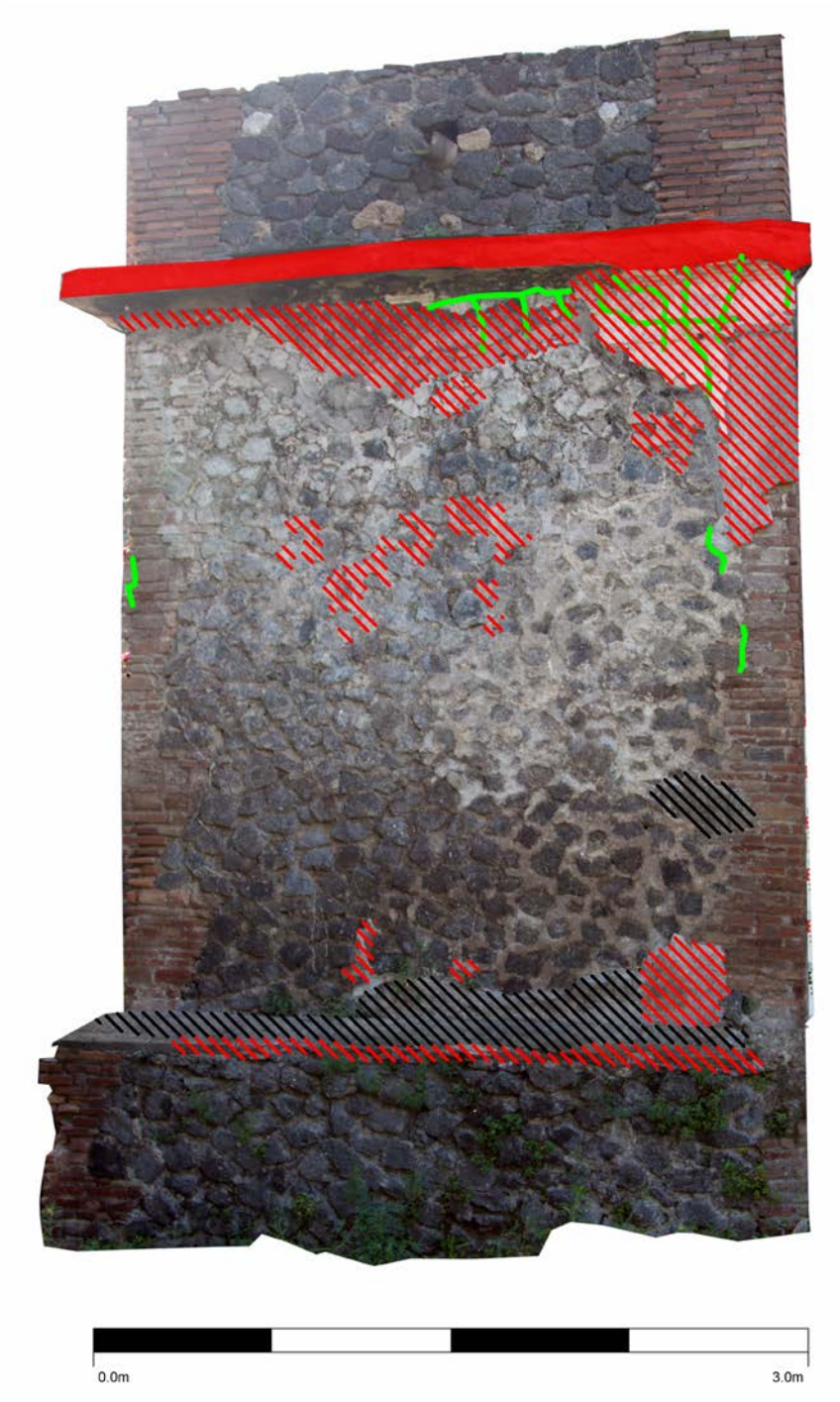
Scaling



POMPEII SUSTAINABLE PRESERVATION PROJECT
SUMMER ACADEMY 2018

Sheet 2

Person in charge: Kire Stavrov
Digitalization: Lea Oetinger, Kire Stavrov
Date: Sept. 2018



Emergency mapping:
State of conservation

Tomb no. PN_EN_06 north

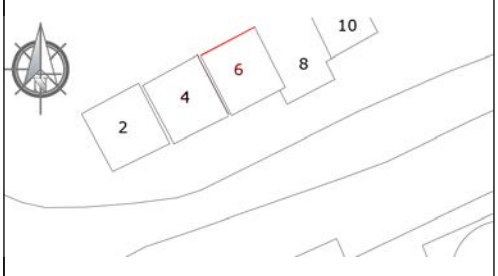
Titel: Priority damages

Collapsing elements (Structure)

Movable detachment

Non movable detachment

Cracks



POMPEII SUSTAINABLE PRESERVATION PROJECT
SUMMER ACADEMY 2018

Sheet 2.1

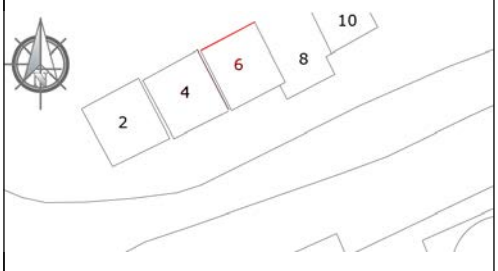
Person in charge: Kire Stavrov
Digitalization: Lea Oetinger, Kire Stavrov
Date: Sept. 2018

Emergency mapping:
State of conservation

Tomb no. PN_EN_06 north

Titel: Superficial layer damages

Loss of cohesion
Erosion
Flaking
Blistering
Scaling



POMPEII SUSTAINABLE PRESERVATION PROJECT
SUMMER ACADEMY 2018

Sheet 2.2

Person in charge: Kire Stavrov
Digitalization: Lea Oetinger, Kire Stavrov
Date: Sept. 2018

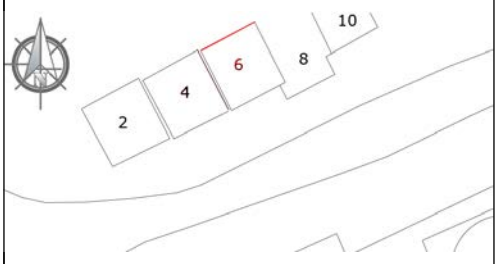
Emergency mapping:
State of conservation

Tomb no. PN_EN_06 north

Titel: Biological colonization

Plants/Roots

Biodeterioration



POMPEJI SUSTAINABLE PRESERVATION PROJECT	SHEET 2.3

Conservation Treatment

Tomb Nr. EN_06 North
P XXIV 2 6 N

Treatment Number: PN_EN_06 north (1/1)

Period of Treatment: 19.10.2018

Persons in charge: Evgeniia Nasledova, Marta Ebbreo

Type of Object: Collapsing arriccio and intonaco fragment (upper part) plaster layer (arriccio) on stone masonry (lower part)

Position: North wall, upper and lower part

Damage:

1. Collapsing detached intonaco fragments and arriccio layer
2. Detachment of preparatory layer from structure
3. Loose material and dust in the detachment gap
4. Lacunae

Kind of Treatment:

1. Temporary intervention to secure the fragments: application of dowels and wood support
2. Injection and filling to reattach the detached fragments
3. Cleaning
4. Foam mortar injection
5. Edging repair
6. Filling of lacunae

Used Materials

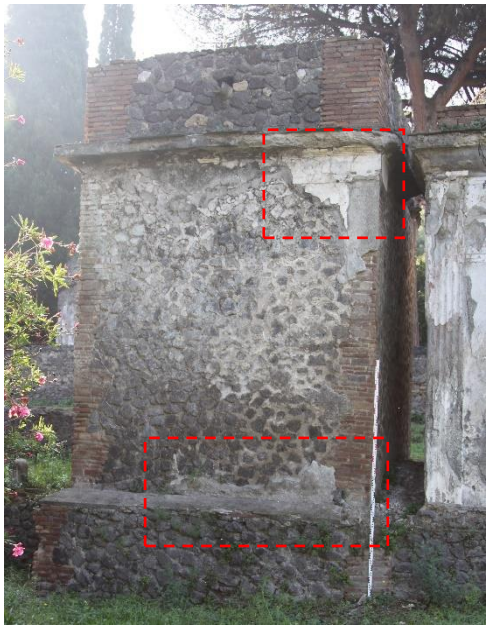


Figure 1 State of conservation north wall and working areas.

	Used Materials	Quantity
Temporary securing	dowels, wood supports	
Grouting	Foam mortar	ca. 600 ml
Edging repair and fillings	Different kind of lime mortar (see apendix)	

Sampling	☐ Yes	☒ No		Pre-Treatment Analysis	☐ Yes	☒ No
Sample-Number:				Analysis-Number:		

Photos:

PN_EN_06_Ge_IMG_9963, PN_EN_06_Ge_IMG_9964, PN_EN_06_Ge_IMG_9965, PN_EN_06_Ge_IMG_9966, PN_EN_06_Ge_IMG_9967, PN_EN_06_N_DSCN1577, PN_EN_06_N_IMG_4441, PN_EN_06_N_IMG_4487, PN_EN_06_N_IMG_4495, PN_EN_06_N_IMG_4744, PN_EN_06_N_IMG_4743

Conservation Treatment — Tomb Nr. EN_06 North

The plaster fragments on the upper part of the north wall, underneath the cornice shows a detachmend from the masonry (Figure 2-3). The other part of the intervention included the lower right part of the wall, there is also an detachment of arriccio layer from structure visible (Figure 7-8).

Upper collapsing fragment

Emergency securing

Application of dowels and wood bar to secure the detachmend from collapsing (Figure 2-3). Furthermore some mortar bridges with a rough mortar were created to block the fragments. This allows the cleaning of the back of the fragments.

Cleaning

The back of the fragments was cleaned from dust and other materials.

Filling and edging repair

A rough mortar was used to block the fragments and keep them in place. The mortar was pushed deeply inside the fragments to create a connection with the masonry. Mortar was applied on the edges to the masonry after the pre-wetting the surface with distilled water (spray) (Figure 4-6).

Lower detached plaster fragment

Cleaning

The loose material and dust has been removed from the detachment gap using a metal wire, perete and brush (Figure 8).

Foam mortar injection

The surface was pre-wetted with water-isopropanol solution (1:1). For the injection was used the plastic tube Ø 5 mm connected with a big syringe. The end of the tube was inserted from the upper part of the detachment and located on the bottom of the gap. The position of the tube was changed several times. Ca. 0,6 l of foam mortar was used to fill the gap to the top (Figure 9).

Edging repair

Mortar was applied after the pre-wetting of the surface with distilled water (spray). The edge was created with a slight slope. In order to visually integrate the new edging repair into the surrounding area, the surface of the mortar was sprayed with water after a couple of minutes. The water in excess was removed with a sponge (Figure 10).

Filling of lacunae

For the fillings the same mortar and way of application were used. Also small lacunae along the cracks were closed to prevent the penetration of humidity (Figure 11).

Upper part - State of conservation

Figure 2 State of conservation of the detached plaster (PN_EN_06_Ge_IMG_9963)

Figure 3 Gap of the detached plaster (PN_EN_06_Ge_IMG_9964)

Filling

Figure 4 Filling of the detached plaster (PN_EN_06_Ge_IMG_9965).

Figure 5 Detail of the filling (PN_EN_06_Ge_IMG_9966).

Edging repair

Figure 6 Final result of the intervention (PN_EN_06_Ge_IMG_9967).

Lower part - State of conservation

Figure 7 State of conservation of the detached arriccio (PN_EN_06_N_DSCN1577).

Cleaning and injection

Figure 8 Detail of the State of conservation **(**PN_EN_06_N_IMG_4441).

Figure 9 Injection of foam mortar (PN_EN_06_N_IMG_4495).

Edging repair

Figure 10 Edging repair and final result (PN_EN_06_N_IMG_4744).

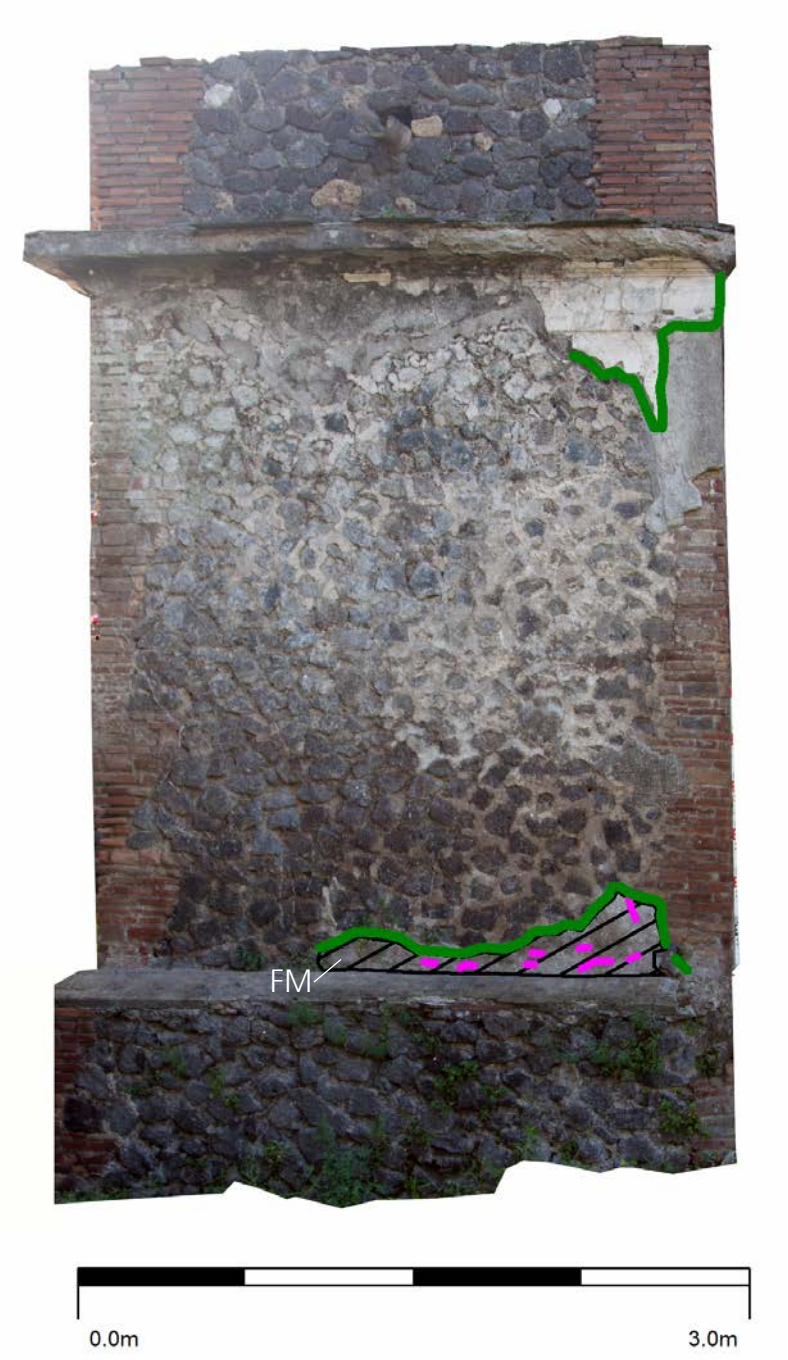
Figure 11 Detail of the edging repair (PN_EN_06_N_IMG_4743).

Material	
Upper part	
Reattaching of the arriccio layer	Not sieved, grey river sand + HL Marienstein (3:1)
Fillings of the intonaco layer	1 yellow river sand <0,5 1 yellow river sand <1 1 grey river sand < 0,1 0,75 slaked lime - 0,25 hydraulic lime (Lafarge) Intonaco 4
Micro-filling of the detached intonaco layer	1 lime (3/4 Slaked lime-1/4 Marienstein) 2 yellow river sand <0,5 1 yellow river sand <0,1
Edging repair	Not sieved, grey river sand + HL Marienstein (3:1)
Lower part	
Foam mortar	HL5 – 500 ml Distilled water - 300 ml Drahlon® fiber – 0,2 g Sika® Lightcrete 400 – 25 ml per 1 l of distilled water Foam in mortar – 500 ml Foam dencity – 29 g/l
Edging repair and fillings:	RS yellow < 1 mm – 2 parts RS grey < 0,5 mm – 3 parts RS yellow < 0,5 mm – 1 part Basalt NS6 < 0,25 – 1 part RS grey ≈ 3 mm – 1 part RS grey < 2 mm – 1 part RS yellow < 2 mm – 1 part Basalt < 1 mm – 2 parts Pozzolana S2 - 0,5 part Slaked lime – 4 parts

POMPEII SUSTAINABLE PRESERVATION PROJECT
SUMMER ACADEMY 2018

Sheet 2.4

Persons in charge: Marta Ebbreo, Evgeniia Nasledova
Digitalization: Lea Oetinger, Kire Stavrov
Date: Oct. 2018



Mapping: Treatment

Tomb no. PN_EN_06 north

Edging repair

Filling/ Filling cracks

Injection
FM: Foam mortar