

Rochester Cathedral Crypt
Medieval Paintings and Plasters - Conservation Project

Condition Review Following Water Ingress

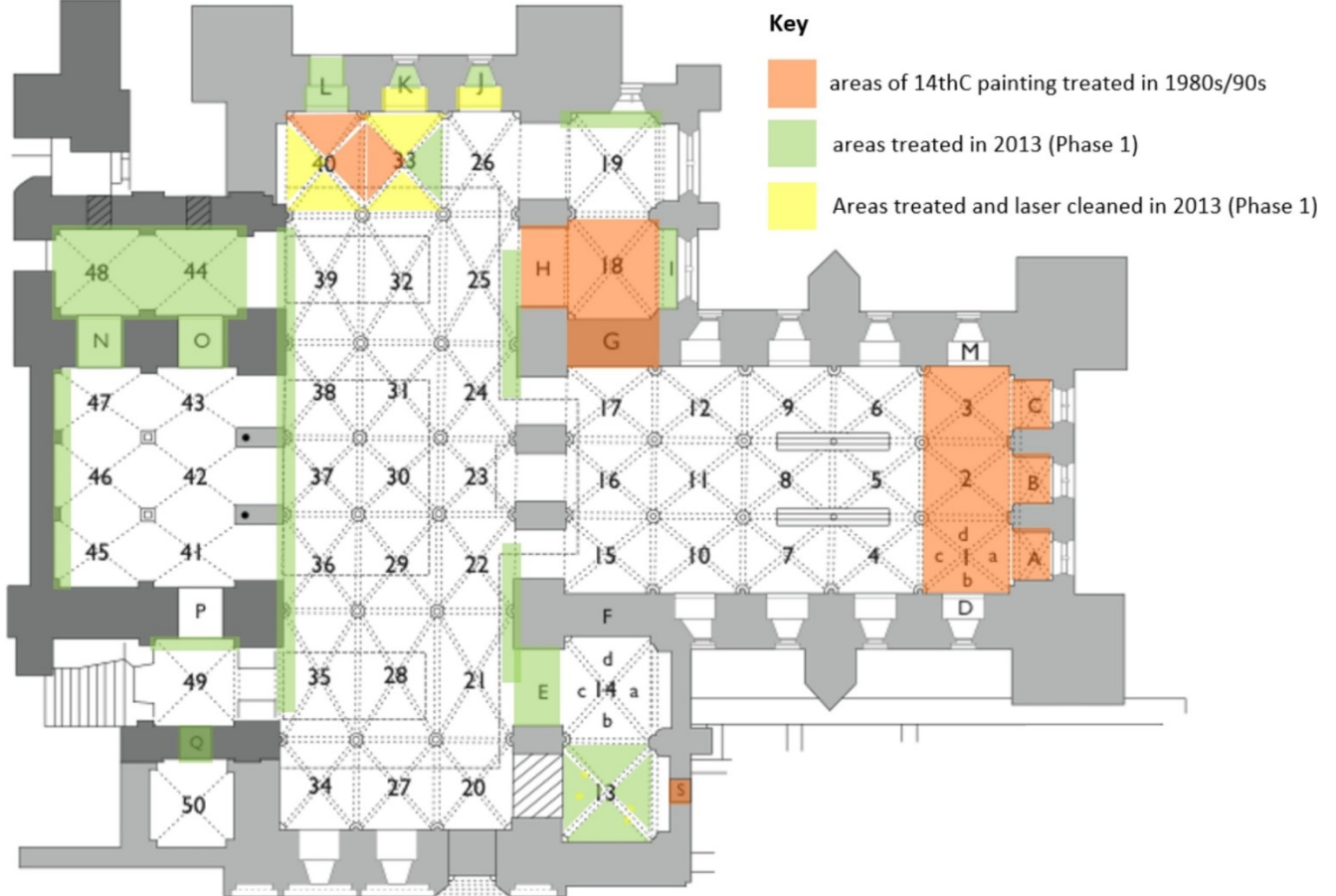


Fig. 1: Plan of Rochester Cathedral crypt showing areas of medieval painting and plaster treated in the 1980s/90s and in 2013 (Phase 1).

Richard Lithgow
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1. INTRODUCTION

As part of a wider project of Crypt and Library development, funded in part by the Heritage Lottery Fund, the Perry Lithgow Partnership carried out Phase 1 of the conservation works to the medieval wall paintings in the Crypt from September - November 2013.¹ The main renovation works to the fabric of the crypt by building contractors have been completed recently. The relatively minor Phase 2 wall painting conservation works are planned for the first week in August 2016.

Unfortunately, the Crypt suffered a significant flood on the 17th June 2016 resulting in standing water over much of the floor. The Cathedral Architect, John Bailey, instructed the Perry Lithgow Partnership to undertake an outline condition assessment of the Crypt wall paintings to serve as a baseline when monitoring for deterioration over the next few months as the building fabric dries out. Richard Lithgow and Mark Perry visited the cathedral on 24 June to undertake the condition assessment which involved inspecting and photographing all areas of painting and plaster treated during Phase 1 as well as the areas treated previously (during interventions in the 1980s and 1990s).

2. EXTENT OF FLOODING / ENVIRONMENTAL CONDITIONS

Colin Tolhurst (Head Verger) explained that the flood was a consequence of a sudden torrential rainstorm on 17th June, during which rainwater entered the crypt via the south door to the cloisters which had been left open during maintenance work. The result was a puddle of water, extending overall the south half of the crypt and seeping through the gaps around the numerous stone covers and floor vents which give access to wells housing the recently installed underfloor cables, electric fittings and ducting for the underfloor heating/ventilation system. Fortunately enough people were on hand to mop up the superficial floodwater relatively promptly and lift the well covers to promote evaporation of water the voids below. Colin Tolhurst also mentioned that dehumidifiers were installed and kept running for approximately two days after the flood but then turned off following advice that force drying may lead to damaging salt activity.

At the time of our visit, one week after the flood, the electrical supply to the crypt was still turned off. Colin Tolhurst said that when possible the external doors to the crypt were left open to promote ventilation, but this was constrained by security issues. Tobit Curteis, the Cathedral's consultant on environmental monitoring and control, will be advising on a suitable strategy for trying out the crypt. In the meantime, during our visit Colin Tolhurst switched the new Crypt heating/ventilation system (set to cold) to promote gentle air circulation. We agreed this would promote moisture evaporation from the underfloor wells/voids but were not aware if the system was drawing in air from outside the building or from the main body of the Cathedral: the latter being less subject to variation in temperature and humidity. Earlier in the day, before the external doors were opened, spot relative humidity (RH) readings taken in various areas of the Crypt varied from 76-80%.

One finding of particular note was that recently discovered Norman Steps - an opening within the west wall of vault Bay 50 - were moisture laden and covered by a film of salt efflorescence: as was the face of the south wall within the opening. It is uncertain whether this is a consequence of the recent flood or a chronic moisture issue so recommend this be investigated.



Fig 2. (right) The Norman Steps.

¹ Rochester Cathedral Crypt: Medieval Paintings and Plasters - Conservation Project Phase 1: Interim Treatment Record the Perry Lithgow Partnership, October 2014

3. CONDITION OF THE MEDIEVAL PAINTED PLASTER

No deterioration was envisaged in the condition of the painted plaster as a consequence of the flood at this early stage. The concern is that as the moisture evaporates high humidity and RH levels will mobilise salts already present in the plaster and ground layers and thus lead to damaging cycles of crystallization/dissolution and exacerbate the formation of sulphate crusts. The purpose of this initial inspection was to note any damage and deterioration that may have occurred since the Phase 1 remedial treatment works in 2013 and to photograph the vault and wall paintings for use as a baseline record for comparison over the coming months. Some 230 digital photographs were taken during the inspection visit. The photographs have been collated according to area into folders and sub-folders for use during subsequent inspections.

A significant number of scuffs, scrapes and indents were noted on the vault and wall areas treated during the Phase 1 works and also on the further areas to be cleaned during the planned Phase 2 works. These damages were photographed and noted (see table below). In addition, we inspected the recently revealed soffit of the arch between vault Bays 49 and 35. This archway had been reduced in size by brick infill, probably in the 19th century. The brick infill was removed during recent renovation works, revealing the same arrangement of early plaster, limewash and traces of masonry line decoration as exist elsewhere in the crypt. In fact, this area marks the transition between the late 11th century groin vaulting (i.e. Bay 49) and the late-12th / early-13th century ribbed vaulting (i.e. Bay 35) so the arch soffit includes plaster from both periods. Traces only remain of painted decoration on the limewash ground which itself has suffered considerable damage and loss: as has the surface plaster skim and the substrate plaster which in places is cracked, displaced and unstable. The remedial treatment necessary to stabilise and repair this area in line with the other decorated art soffits in the Crypt is set out in the table below. All remedial treatment to the damages listed in this table would be additional to the planned Phase 2 works.

Bay/Area	Qtr	Side	Damage
40	b	2	Chip on edge of PLP repair near apex
40	c	2	Bash on original plaster
33	d	1	Possible loss or sample site
J			Bashes to both sides and large loss to East side
13	a	1	Bashes adjacent to rib
E			Bashes to both sides of soffit (especially south) which has a long scrape and associated bashes
18	b	2	Inappropriate large recent repair by building contractors (remove and replace)
1	c	1	3 small losses by rib
2	a	2	Numerous losses and long scrape and one large loss
2	a	2	Numerous small losses
2	c	2	1 small loss by apex
2	d	1	Numerous small losses, including one large in lower area
3	a	2	Several losses in lower area
3	b	1	Possible losses a long rib
3	b	2	3 small plaster losses
3	c	2	Several losses by West rib
3	d	2	1 small loss near apex
Treatment required to damages listed above			Stabilise edges of damage, plaster repairs, limewash grounds (allow 3 man days). N.B. Additional access scaffolding required for this period.
Area revealed since 2013 (not included in previous treatment proposals)			
49/35	Arch soffit		This area of original plaster, limewash ground and traces of painted decoration was revealed when the brickwork infill was removed from this archway. Condition: numerous areas of plaster loss, unstable plaster and limewash ground. Treatment: plaster stabilisation (1 man day); surface clean, paint and ground fixing (4 man days); plaster repairs (3 man days); limewash grounds (2 man days) = Total 10 man days. N.B. Additional access scaffolding required for this period.



Fig 3. (above) An inappropriate plaster repair to Bay18b² inserted during the recent Crypt renovation works should be replaced and toned in to match other repair plaster in this vault.



Fig 4. (above) Instances of recent indents, loss and scrapes to the plaster and ground of Area J and Bay 2a¹.



Fig 5. (above) . Area E arch soffit. Raking light details showing scrapes and indents: accidental impact damage which has occurred since the 2013 Phase 1 treatment works.



Fig 6. (right and below) Soffit of the arch between vault Bays 49 and 35. This area of original plaster, limewash ground and traces of painted decoration was revealed when the brickwork infill was removed from this archway. Traces only remain of painted decoration on the limewash ground which itself has suffered considerable damage and loss: as has the surface plaster skim and the substrate plaster which in places is cracked, displaced and unstable.



4. FUTURE MONITORING VISITS AND TREATMENT WORKS

At present Bays 44 and 48 of the Gundulf crypt area - where further work needs to be done by the building contractors - are enclosed by plywood partitions and used for storing building equipment and materials. The groined vault plaster and walls of these two bays were treated during the Phase 1 conservation works, but it was not possible to properly inspect or photograph them during our visit on the 24th June. There may be an increased risk of salt activity and mold growth as a result of stagnant, damp area if the space remains sealed off from the remainder of the Crypt. The door in the partition should be left open whenever possible during the coming months to promote air circulation. We would also ask that the builder's equipment and materials even removed from these days so that the walls and vaulting may be inspected and photographed during the next survey visit or during the Phase 2 treatment works (whichever is sooner).

The Phase 2 conservation treatment works (involving 2 conservators and two mobile access towers on-site for five days) were scheduled for the first week in August 2016 but have had to be postponed as a result of the flood. Electrical sockets in the underfloor channels are to be replaced during that time and other delayed fitting out works in the crypt are booked-in thereafter. Treating the recent damage listed in item 3 above will add 3 man days to Phase 2; treating the arch soffit between Bays 49 and 35 will add another 10 man days. Consequently, if all the additional work listed in item 3 above is authorised, phase 2 will require a team of 2 conservators and two mobile access towers on-site for 2 ½ weeks. It is important to note that the archway between Bays 49 and 35 would be effectively blocked throughout that period. So access to the crypt from the main body of the Cathedral would involve a turning left at the bottom of the stairs into the Gundulf crypt area.

5. REMEDIAL TREATMENT COSTS

Treatment costs for repairing recent damages and Bay 49/35 arch soffit are based on the work being carried out simultaneously with Phase 2 in August/September 2016.

Rochester Cathedral Crypt Medieval Paintings and Plaster - Remedial Treatment Project	Man Days	Cost (£) (ex VAT)	Item Totals (£ ex VAT)
Phase 2 Treatment works:			
Gundulf Crypt (areas listed in item 3.1.2) (light surface clean)	2.5	867.50	
Walls associated with Gundulf Strong Room remodelling	2	694.00	
Areas 19, 21-22, 24-25, 35-39 (light surface clean)	0.5	173.50	
Bays 1, 2, 3, 18; Areas D, G, H, M (previously conserved)	3	1,041.00	
All areas conserved in Phase 1 (light surface clean)	2	694.00	
Conservation materials		100.00	
Scaffolding (2 x mobile access towers)		250.00	
Documentation (outstanding amount for Phases 1 and 2)	7.5	2,400.00	
Documentation materials and postage		100.00	
Sub-total (all Phase 2 works)	17.5	6,320.00	6,320.00
Proposed repairs to recent damage:			
Repairs to recent damages to crypt vaults and arch soffits	3	1,050.00	
Access scaffolding, conservation materials, documentation		100.00	
Sub-total (repairs to recent damage)	3	1,150.00	1,150.00
Proposed treatment of Bay 49/35 arch soffit:			
Plaster stabilisation; surface clean, paint and ground fixing ; plaster repairs; limewash grounds	10	3,470.00	
Access scaffolding, conservation materials, documentation		500.00	
Sub-total (treatment of Bay 49/35 arch soffit)	10	3,970.00	3,970.00
TOTAL ALL WORKS			11,440.00