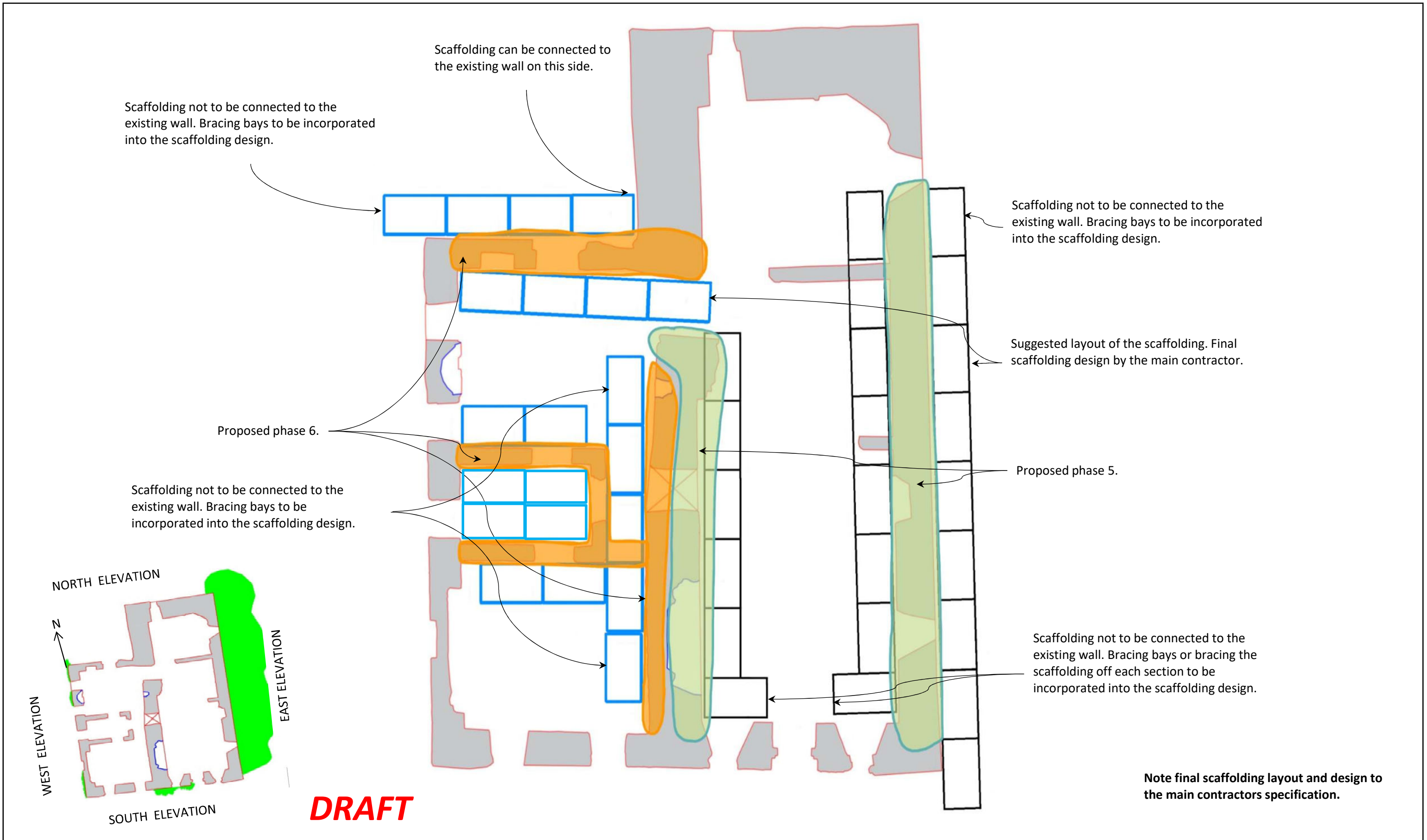




Note final scaffolding layout and design to the main contractors specification.

Drawing Stage: Information						Drawn By: RK	Checked By: LE	Approved By: LE	Date: 16/05/2025	 Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie CONSULTING ENGINEERS							
Project Details: Menlough Castle						Project Name: Menlough			Scale:	Project Number:							
Site Address:	Menlough Castle, Galway					Castle Galway Phases 5 & 6			NTS	20612							
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title:			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY	Proposed Phasing				CORA					SK5001		I1

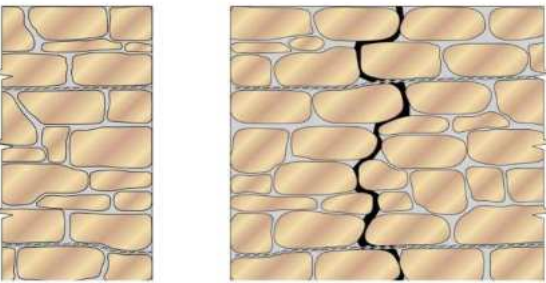
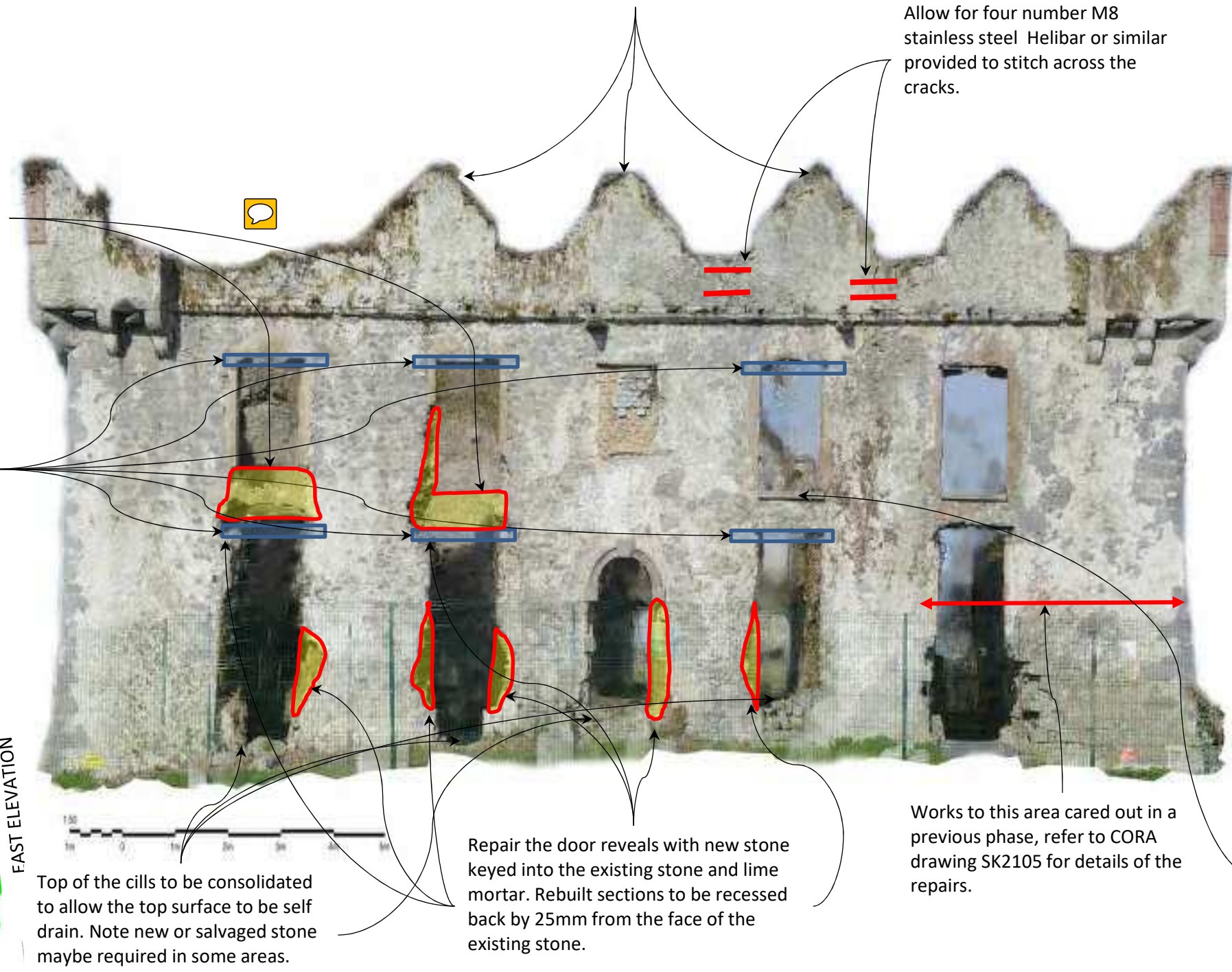
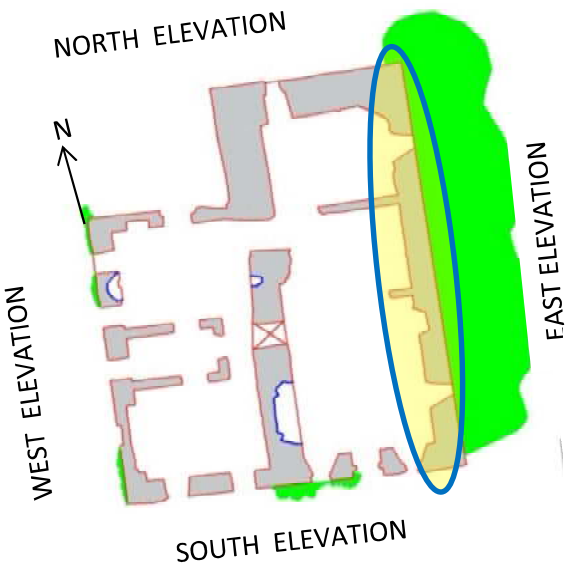
Allow for the door and window reveals to be repointed and some new stone to match the existing maybe required to consolidate and support any overhanging stones.

Spray all of the vegetation growing from the wall. Fully record all the stones in the top 200-300mm of the wall. Carefully rake out any loose mortar. Arrange for inspection. Allow for careful dismantling and rebuilding of the top 200-300mm of the wall top exactly as is now but with adjustments to give a top surface that is self draining. Repoint the wall, refer to specifications.

- Method for Repair of Cracks.**
- i) Provide access to the work area.
 - ii) Remove all loose, powdery or decayed mortar on the surface of the exposed wall.
 - iii) Rake out all loose, powdery or decayed mortar along the length of the horizontal mortar joint that traverse the crack until sound mortar is reached, but in any case to a depth of at least 50mm. The raked out joint should extend approximately 500mm past the cack.
 - iv) Use hand tools for raking out, preferably scarping rather than chiselling.
 - v) Brush or blow loose material out of the joint.
 - vi) Repeat the process at every 350mm centres.
 - vii) Before filling the raked out joint, prime the surface with 'Heli Primer WB'.
 - viii) Partially fill the joint with a bead of 'Heli Bond' grout by firmly pressing the grout into the joint - use a pointing iron or similar tool. Leave to set for minimum curing time as recommended by the material manufacturer.
 - ix) Conceal the repair with lime mortar.

Rebuild the section between the ground and 1st floor windows with new or salvaged stone to match the existing. Stone to be keyed into the existing stone on either side. Top of the cills to be gentle sloping to allow the surface to be self draining. Rebuilt sections to be recessed back by 25mm from the face of the existing stone.

Existing lintel to be inspected on site. Allow for five number 215mm x 65mm precast lintels with one number 100mm x 100mm limestone lintel on either side, number of lintels per opening. Dry pack between the new lintels and the existing stone. Wall over to be temporary propped during the works. Repair the wall over once the temporary works have been removed.



Crack stitch Repair.

Top of the cills to be consolidated to allow the top surface to be self draining.

EAST ELEVATION EXTERNAL

DRAFT

Drawing Stage:						Drawn By:	Checked By:	Approved By:	Date:	CORA CONSULTING ENGINEERS Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie					
Information						RK	LE	LE	16/05/2025						
Project Details: Menlough Castle						Project Name: Menlough			Scale:	Project Number:					
Site Address: Menlough Castle, Galway						Castle Galway Additional Phases			NTS	20612					
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title: Proposed Works To			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY	The External East Elevation				CORA					SK5010
															Stage: I1

DRAFT

Spray all of the vegetation growing from the wall.
Fully record all stones in the top 200-300mm of the wall.
Carefully rake out any loose mortar.
Arrange for inspection.
Allow for careful dismantling and rebuilding of the top 200-300mm of the wall top exactly as is now but with adjustments to give a top surface that is self draining. Repoint the wall, refer to specifications.

Refer to CORA drawing SK5012 for the proposed works to the wall top.

Refer to CORA drawing SK5010 for the number of lintels.

Denotes sections of wall to be rebuilt with new or salvaged stone to match the existing. Rebuilt section to be keyed into the existing masonry and bedded in lime mortar. Rebuilt sections to be recessed back by 25mm from the face of the existing stone.

Refer to CORA drawing SK2105 for details of the repairs to this section of the East elevation

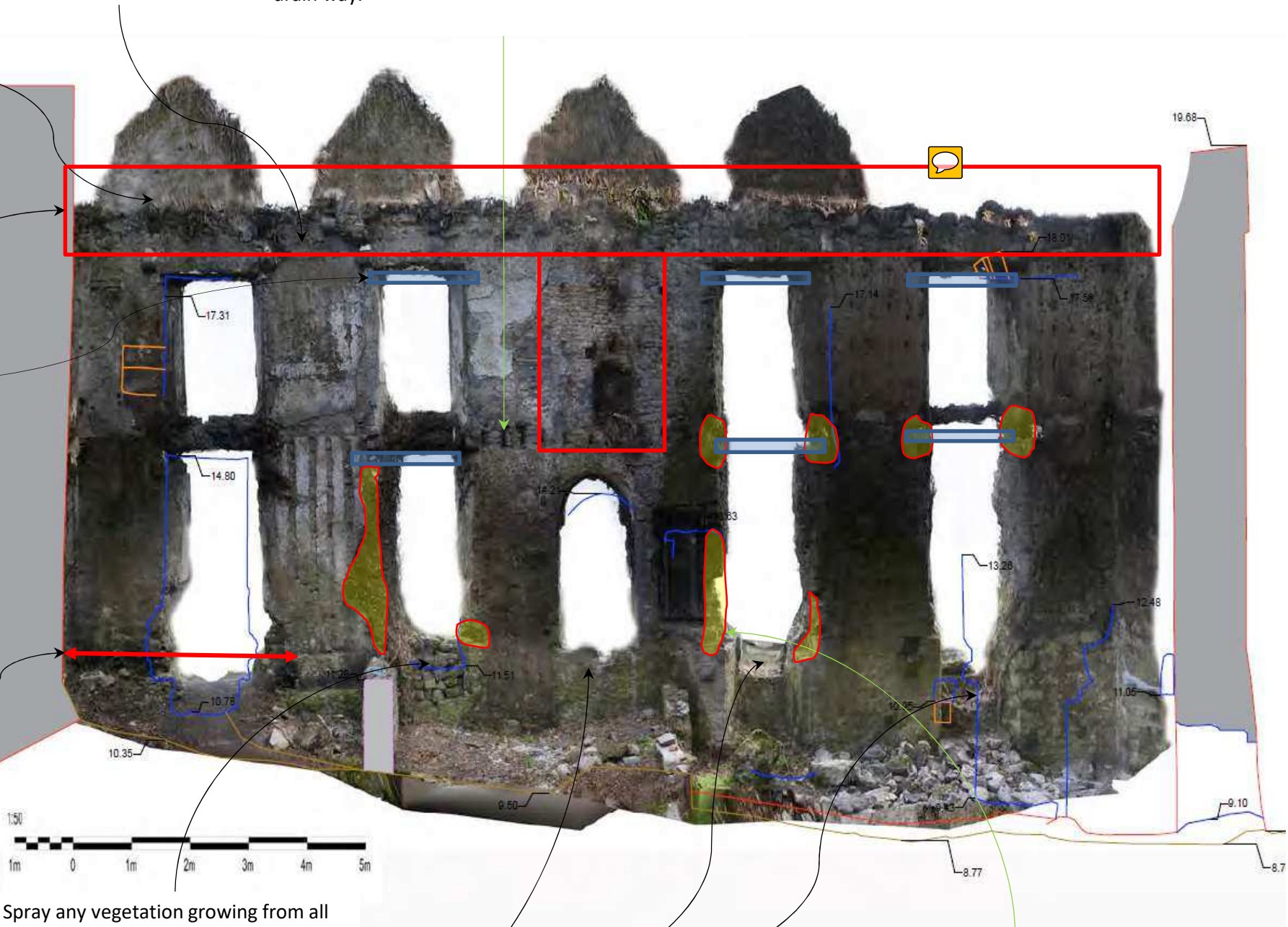
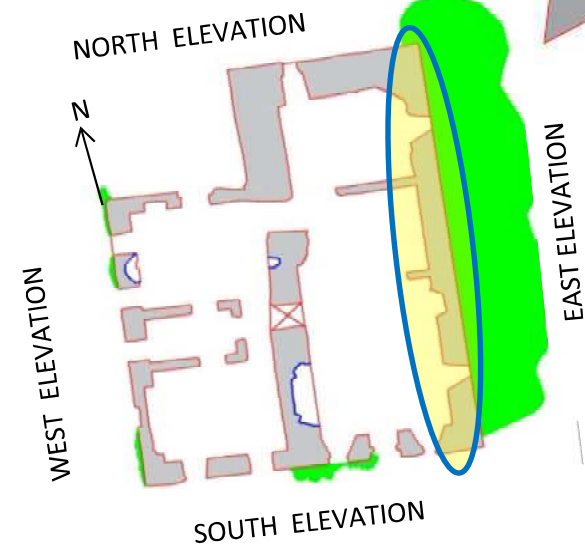
Spray all of the vegetation growing from the wall.

Notches from the timber floor joints to be repointed on the internal elevations and flaunched with a slight slope to the outer face to allow any rainwater to drain way.

Spray any vegetation growing from all the door thresholds and window sills. Allow for fully recording the top 200 - 300mm and carefully removing any loose stone. Rake out any loose mortar. Reseat any loose stone in lime mortar with adjustments to give a top surface that is self draining. This applies to all the windows, doors and fireplaces openings on the East elevation.

Rebuild the section of wall with stone to match the existing in lime mortar. Stone to be keyed into the existing stone work.
Allow for two number galvanised 100 x 100 x 6.3 SHS columns on either side recessed into the opening or 440mm 7.5N/mm2 blockwork wall built along the back of the recess. New block work or SHS to be tied into the existing stonework with stainless steel wall ties.

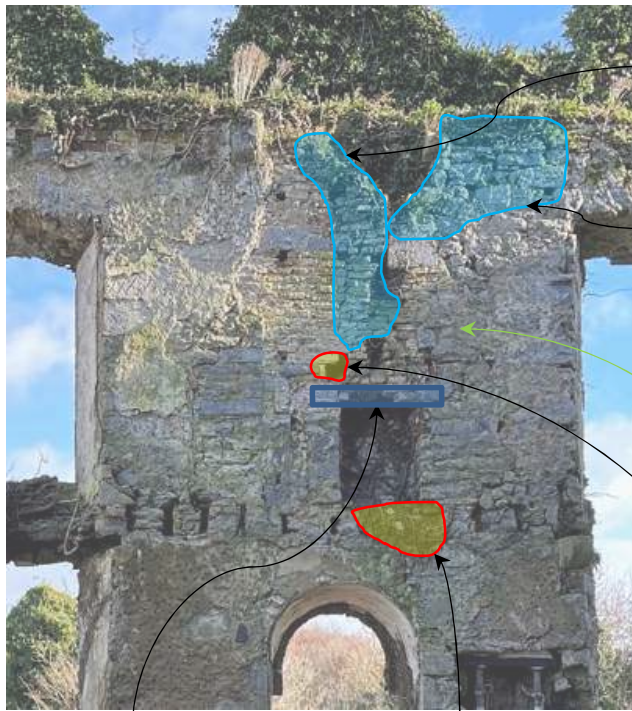
Existing lintel to be inspected on site.
Allow for five number 215mm x 65mm precast lintels with one number 100mm x 100mm limestone lintel to the outer face and temporary propping the wall over. Dry pack between the new lintels and the existing stone.
Carefully remove the temporary props after the lintels are installed and repair the area.



EAST ELEVATION INTERNAL



Drawing Stage:						Drawn By:	Checked By:	Approved By:	Date:	CORA CONSULTING ENGINEERS Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie					
Information						RK	LE	LE	16/05/2025						
Project Details: Menlough Castle						Project Name: Menlough			Scale:	Project Number:					
Site Address: Menlough Castle, Galway						Castle Galway Phases 5 & 6			NTS	20612					
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title: Proposed Works to the			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY	Internal East Elevation - Sheet 1				CORA					SK5011
															Stage:
															Revision:
															I1



Allow for fully recording and carefully removal of any loose stones and bricks along the flue. Rake out any loose mortar. Reseat any loose stone and brick in lime mortar. Allow for M6 stainless steel Helibar to be installed across the crack at every 4th course.

Allow for fully recording and carefully removal of any loose stones. Rake out any loose mortar. Reseat any loose stone in lime mortar.

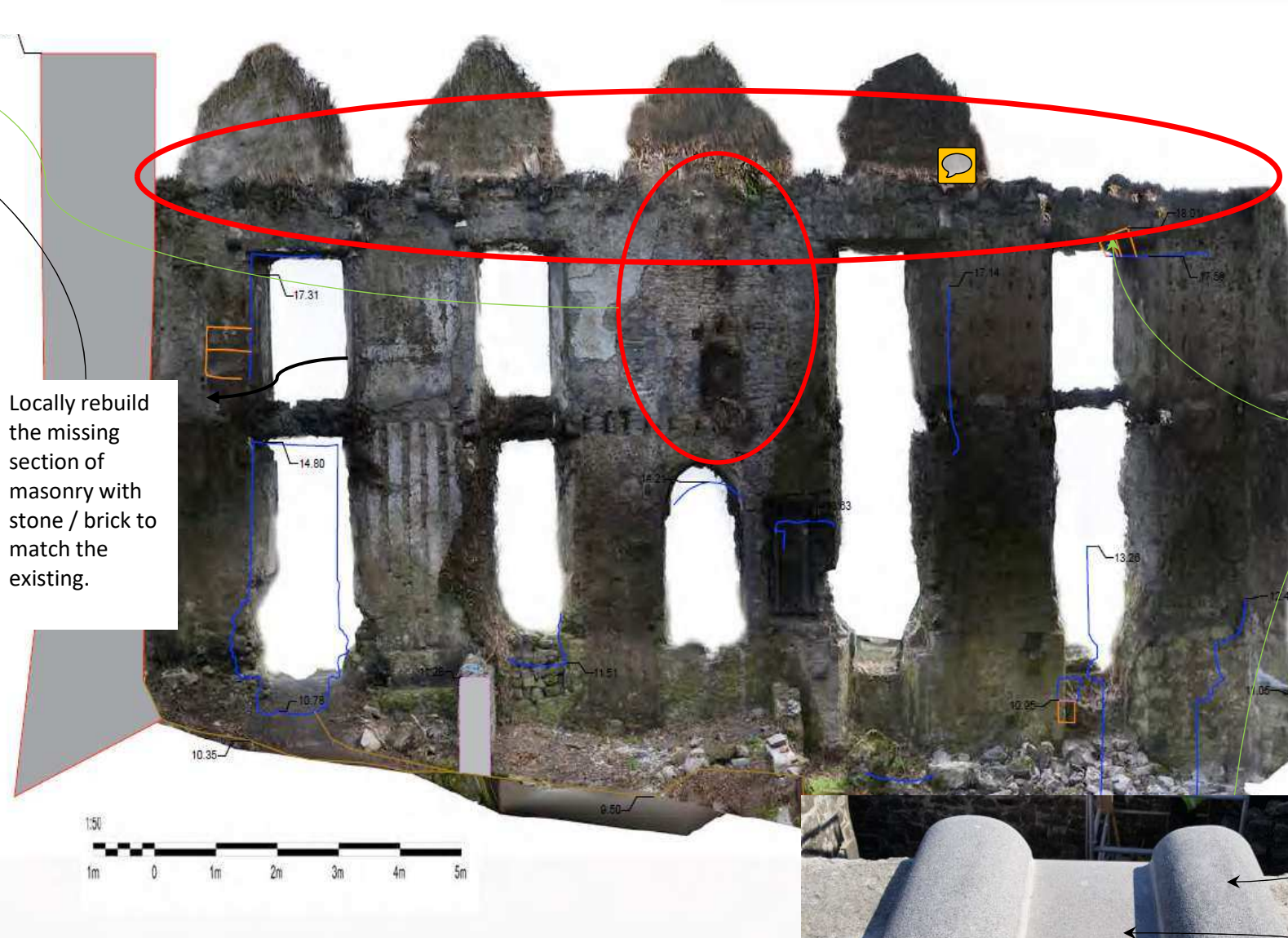
Existing drainage outlets to be cleaned out and flaunching to allow rainwater to self drain. Allow for 2 number lintels over the drainage outlets to be stitched across with 2 No. M8 stainless steel chemical anchors.



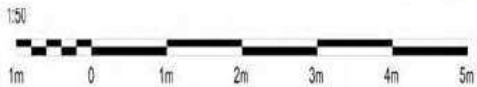
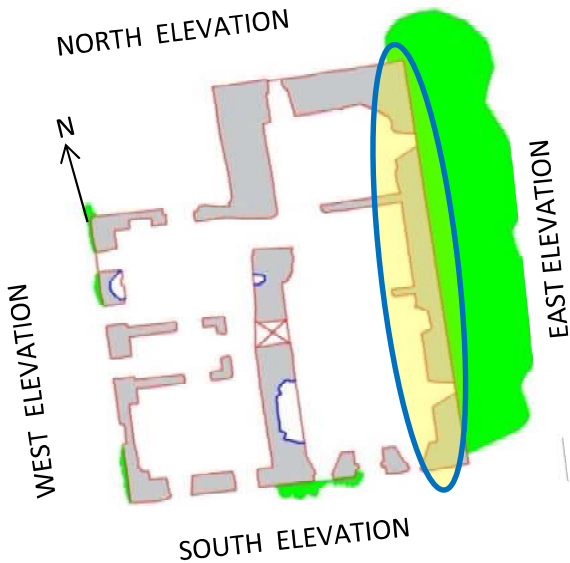
Allow for three number 215mm x 65mm precast lintels with one number 100mm x 100mm limestone lintel to the external face over the fire place.

Allow for fully recording and carefully removing any loose stone at the base of the fire place. Rake out any loose mortar. Reseat any loose stone in lime mortar with adjustments to give a top surface that is self draining.

Locally rebuild the missing section of masonry with stone / brick to match the existing.



Spray all of the vegetation growing from the wall top / wall walk. Carefully rake out any loose mortar. Allow for deep repoint of the saddle stones assuming the wall walk detail is similar to north-east tower. Ensuring the water is directed towards one of the outlets. Allow for replacement of seven number saddle stones to match the exist. Allow for the replacement of 5 number drainage stones. Assume the existing saddle stones are imbedded in the wall and local pockets will have to be formed to remove and install the saddle stones.



Crack in the existing drainage stone to be stitched across with 2 No. M10 stainless steel bars and the crack to be filled with lime mortar. Allow for two number repairs.



Saddle stones to match the exist.
Drainage stone match the exist.

EAST ELEVATION INTERNAL

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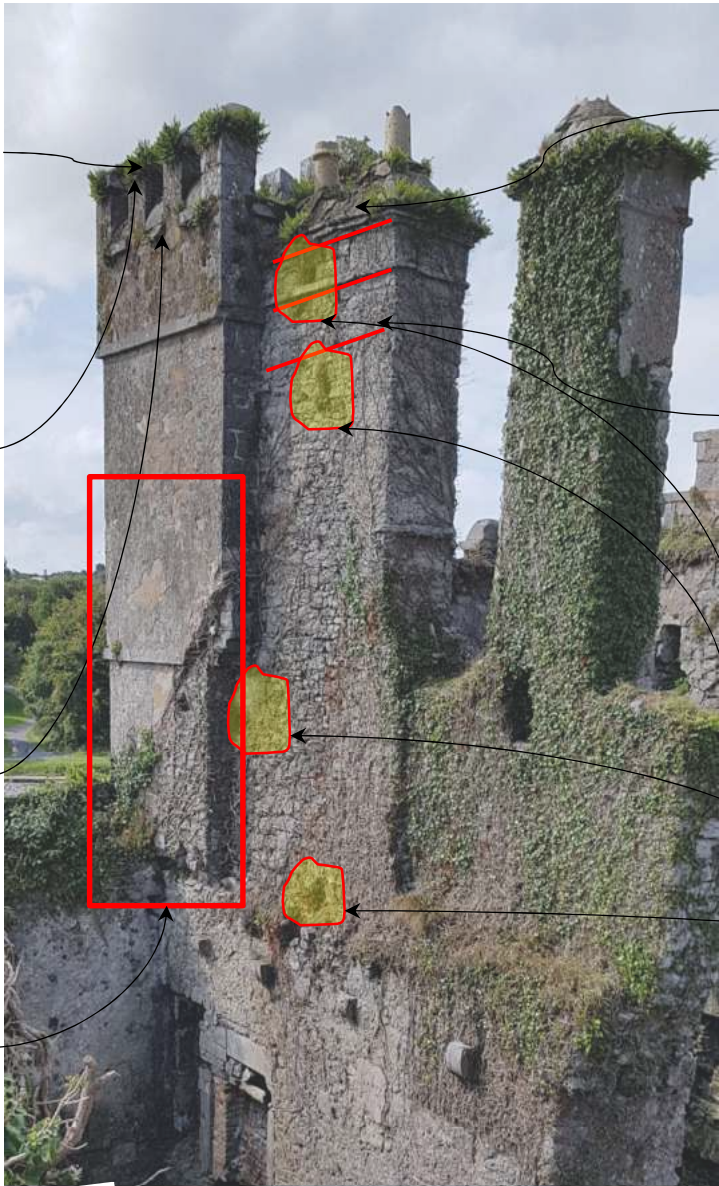
Drawing Stage: Information						Drawn By: RK	Checked By: LE	Approved By: LE	Date: 16/05/2025	 Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie								
Project Details: Menlough Castle						Project Name: Menlough			Scale:	Project Number:								
Site Address:	Menlough Castle, Galway					Castle Galway Phases 5 & 6			NTS	20612								
Client:	Galway City Council	I1	ISSUED FOR INFORMATION		16/05/2025	RK	Drawing Title: Proposed Works to the Internal East Elevation - Sheet 2			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION		DATE	ISSUED BY					CORA					SK5012		

Spray all of the vegetation growing from the wall top. Carefully rake out any loose mortar. Allow for recording and reseating the merlons stones exactly as they are.

Note some of the merlon stone may be cracked. Allow for a mortar repair to some stones and stitching across the crack with M6 stainless steel dowels. Allow for 4 number repairs.

Allow for 3 new stone indent where the merlon stone have cracked. Stone indents to be dowelled to the existing stone with 2 No. M8 grade 316L stainless steel dowels in chemical resin compatible with the stone.

Refer to CORA drawings SK5021 for the proposed repairs in this area.



Spray all of the vegetation growing from the chimney top. Carefully rake out loose mortar. Arrange for inspection. Reseat any loose stone in lime mortar with adjustments to give a top surface that is self draining.

Allow for stitching across the crack in the chimney breast with M10 Heli bars approximately 2000mm long. Allow for 3 number Heli bars to be bent into a U-shape with 200mm return into the stone. Note location of Heli bar to be agreed on site.

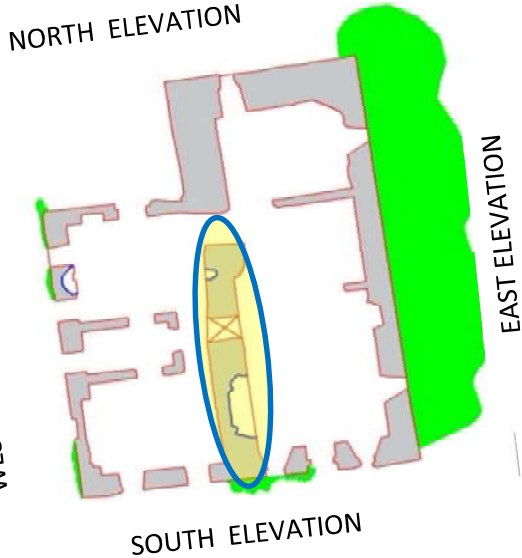
Allow for stitching across the crack in the chimney breast with M10 Heli bars approximately 2000mm long. Allow for 6 number Heli bars to be bent into a U-shape with 200mm return into the stone. Note location of Heli bar to be agreed on site.

Spray all of the vegetation growing from the chimney.

Void to be infilled with salvaged stone to match the existing, bedded in lime mortar to match the existing. Infill to be slightly recessed.



Spray all of the vegetation growing from the wall top and ledge. Fully record all stones in the top 200-300mm of the wall. Carefully rake out loose mortar. Arrange for inspection. Allow for careful dismantling and rebuilding of the top 200-300mm of the wall top exactly as is now but with adjustments to give a top surface that is self draining. Repoint the wall, refer to specifications.



Void to be infilled with salvaged stone to match the existing, bedded in lime mortar to match the existing. Infill to be recessed by 100mm at the location of the existing timber floor beams. Base of the pocket to be launched to allow rainwater run off.

Note the some of the chimneys are being used as a summer roost for bats. For the timing and mitigation measures to be considered during the construction works, refer to Ecologist.



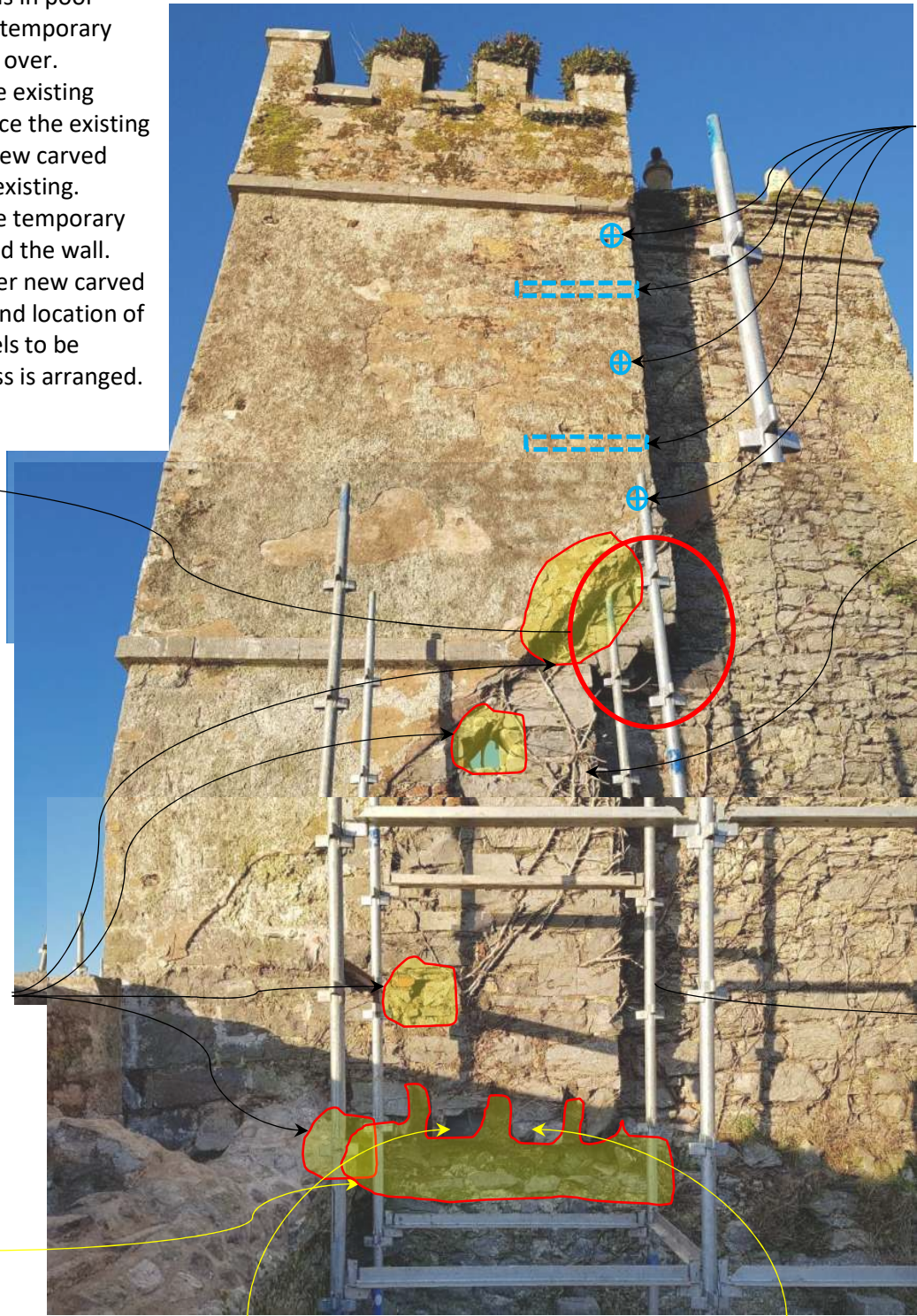
INTERNAL WALL LOOKING WEST

DRAFT

Drawing Stage: Information						Drawn By: RK	Checked By: LE	Approved By: LE	Date: 16/05/2025	 Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie								
Project Details: Menlough Castle						Project Name: Menlough			Scale:	Project Number:								
Site Address:	Menlough Castle, Galway					Castle Galway Phases 5 & 6			NTS	20612								
Client:	Galway City Council	I1	ISSUED FOR INFORMATION		16/05/2025	RK	Drawing Title: Proposed Works To The			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION		DATE	ISSUED BY	Internal Wall - Sheet 1				CORA					SK5020		I1



Existing stone corbels in poor condition. Allow for temporary propping of the wall over. Carefully remove the existing stone corbels. Replace the existing stone corbels with new carved stone to match the existing. Carefully remove the temporary props and make good the wall. Allow for two number new carved corbel stones. Size and location of the new stone corbels to be reviewed once access is arranged.



M8 sock fix anchors installed at an angle to support the corner of the tower. Allow for 5 number sock anchors to be installed. Sock fix anchors approximately 600mm long. Location and size of the sock fix anchors to be reviewed when access is arranged.

Spray and remove the vegetation growing from the wall.

Note the some of the chimneys are being used as a summer roost for bats. For the timing and mitigation measures to be considered during the construction works, refer to Ecologist.

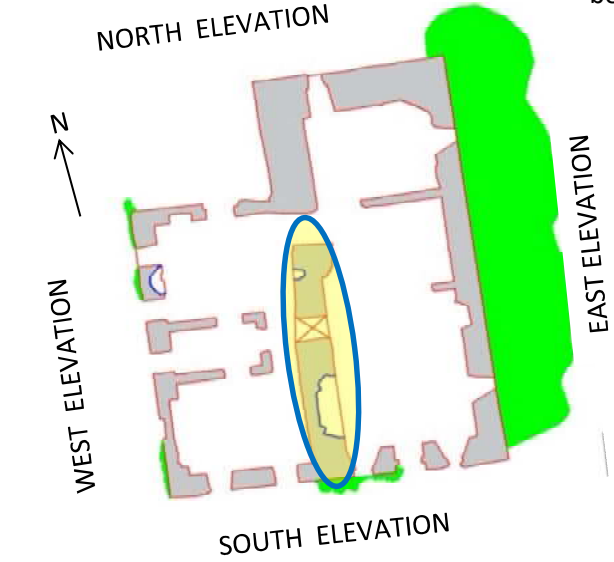
Void to be infilled with salvaged stone to match the existing, bedded in lime mortar to match the existing. Infill to be slightly recessed.

Allow for 2 new stone indent where the existing stone corbels have cracked and are missing stone sections. Stone indents to be dowelled to the existing stone with 2 No. M8 grade 316L stainless steel dowels in chemical resin compatible with the stone.

Allow for 2 number cracks in the existing stone corbels to be stitched across with 2 No. M8 grade 316L stainless steel dowels in chemical resin compatible with the stone.

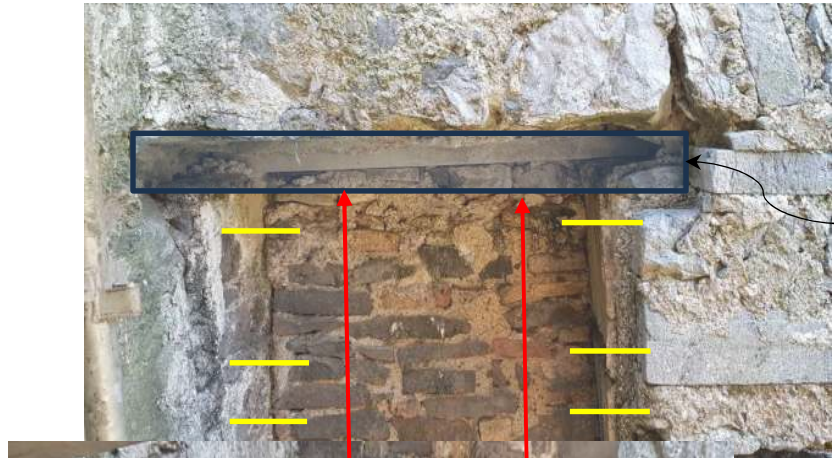


INTERNAL WALL LOOKING WEST



Existing stone corbels in poor condition. Allow for building of new masonry with salvaged stone to match the existing in lime mortar to support the corbel stones and the wall over. New masonry section to be keyed into the existing wall.

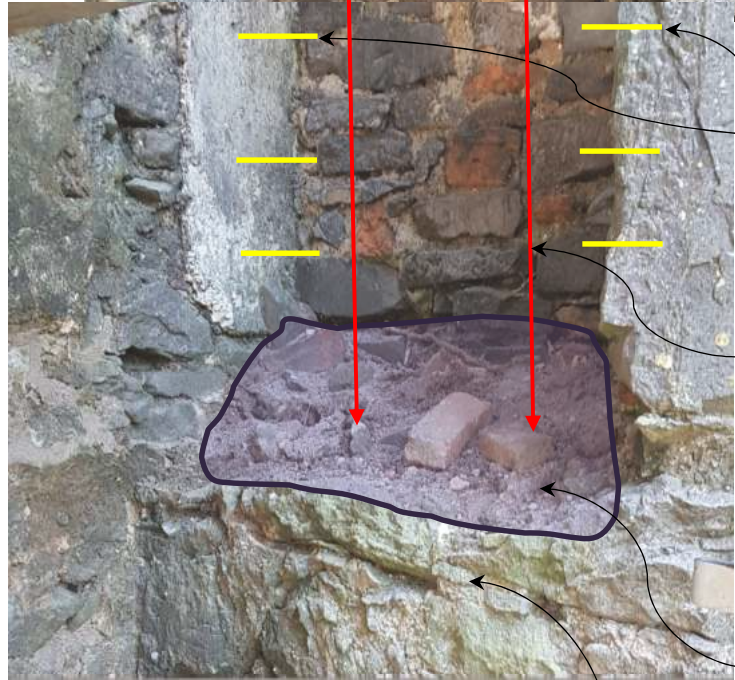
Drawing Stage: Information						Drawn By: RK	Checked By: LE	Approved By: LE	Date: 16/05/2025	 Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie							
Project Details: Menlough Castle						Project Name: Menlough			Scale:	Project Number:		 Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie					
Site Address:	Menlough Castle, Galway					Castle Galway Phases 5 & 6			NTS	20612							
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title: Proposed Works To The			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY	Internal Wall - Sheet 2				CORA					SK5021		I1



Allow for 4 number 215mm x 65mm precast lintels with one number 100mm x 100mm limestone lintel on the external face. Dry pack between the new lintels and the existing stone. Wall over to be temporary propped during the works. Repair the wall over once the temporary works have been removed.

2 no. M12 sock fix anchors installed at an angle to support the lintel over the fireplace.

Allow for careful removal of the the mortar and pieces of stone and install a new corbel stone to support the lintel over the fireplace.



Stone works infill to be tied to the wall on either side with M8 stainless steel Helibar. Bars approximately 1000mm long. Bars to be installed in accordance with the manufactures specification.

Assumed location of the temporary Acrow props for the works to the fire place. Temporary props to the contractors design.

Area to be flaunched to allow the top surface to be self draining. Note stone pinning's maybe required.

Any damaged bricks to be replaced with new / salvaged brick to match the existing.

Consolidate the brick pier.

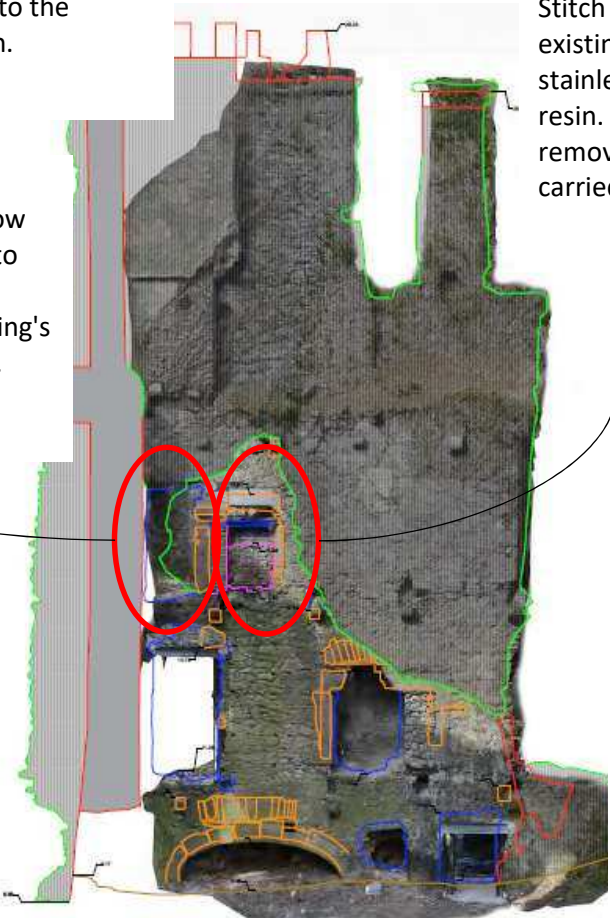
Stitch across the cracks in the existing stone M8 grade 316L stainless steel dowels in chemical resin. Allow for the stone to be removed for the works to be carried out.



Void to be infilled with salvaged stone or brick to match the existing, bedded in lime mortar to match the existing. New infill to be slightly recessed back 25mm from the face of the surrounding stone

Area to be flaunched to allow the top surface to be self draining. Note stone pinning's maybe required.

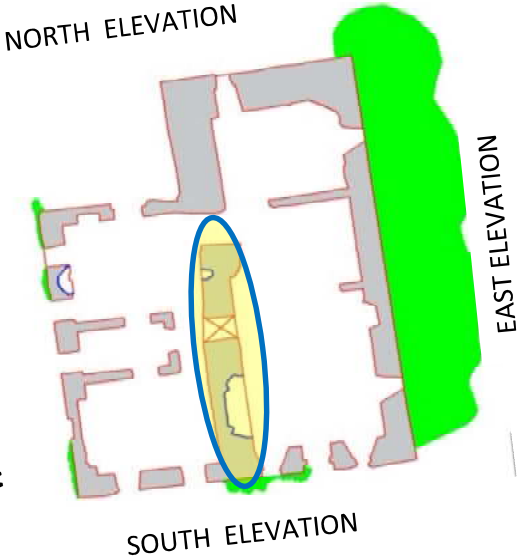
Assumed location of the temporary Acrow props for the works to the fire place. Temporary props to the contractors design.



INTERNAL WALL LOOKING WEST

Proposed sequence of works:

- Arrange for an inspection with the Engineer and Stone masonry when access is arranged. Allow for:
- Install temporary Acrow props to support the stone lintel over the fireplace.
- Install temporary Acrow props to support the lintel over the door opening.
- Install temporary Strongboy props to support the stone to the left hand side of the fireplace.
- Rebuilt the lower left hand side of the fire place.
- Consolidate the brick pier.
- Consolidate the stone to the left hand side of the fire place. Note allow for the stone to be removed to be repaired.
- Stitch across the lintel stone over the fire place.
- Install a new corbel stone to support the lintel over the fire place.
- Install a new carved stone indent on the right hand side of the fire place.
- Carefully remove the temporary props and make good the area.
- Consolidate the base of the fireplace and flaunch to allow rainwater runoff.



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Drawing Stage:						Drawn By:	Checked By:	Approved By:	Date:	CORA CONSULTING ENGINEERS Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie							
Information						RK	LE	LE	16/05/2025								
Project Details: Menlough Castle						Project Name: Menlough		Scale:	Project Number:								
Site Address:	Menlough Castle, Galway					Castle Galway Phases 5 & 6		NTS	20612								
Client:	Galway City Council	I1	ISSUED FOR INFORMATION		16/05/2025	RK	Drawing Title: Proposed Works To The		Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION		DATE	ISSUED BY	Internal Wall - Sheet 3			CORA					SK5022		I1

Stone works infill to be tied to the wall on either side with M8 stainless steel Helibar. Bars approximately 1000mm long. Bars to be installed in accordance with the manufactures specification.

Stone infill to be repointed were required. Repointed to be slightly recessed to allow the window opening to be read.

Ledge for the existing floor to be infilled with engineered brick. Brick to be recessed back from the edge by 25mm to 50mm. Refer to Architect's specification for the finishes to the brick.

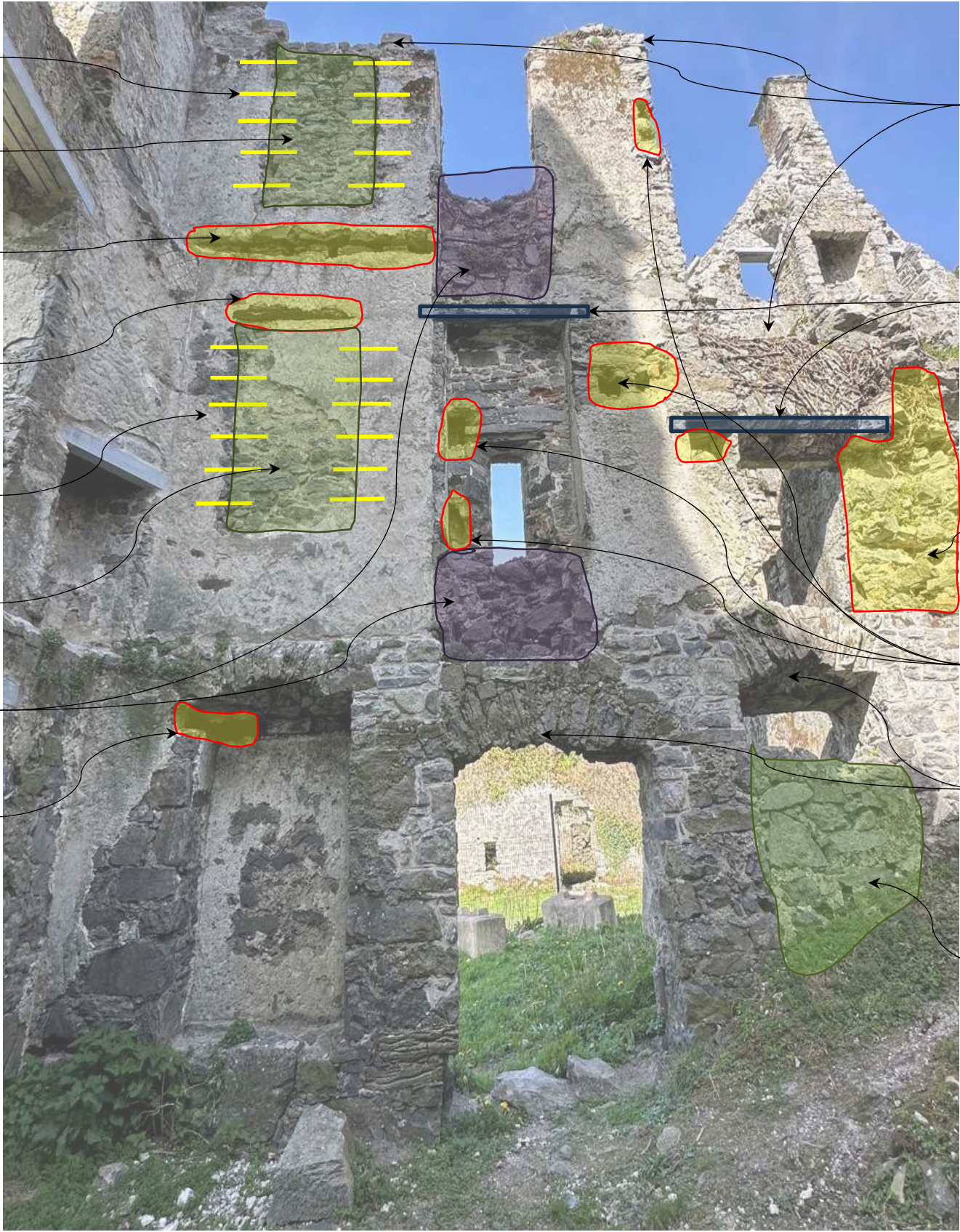
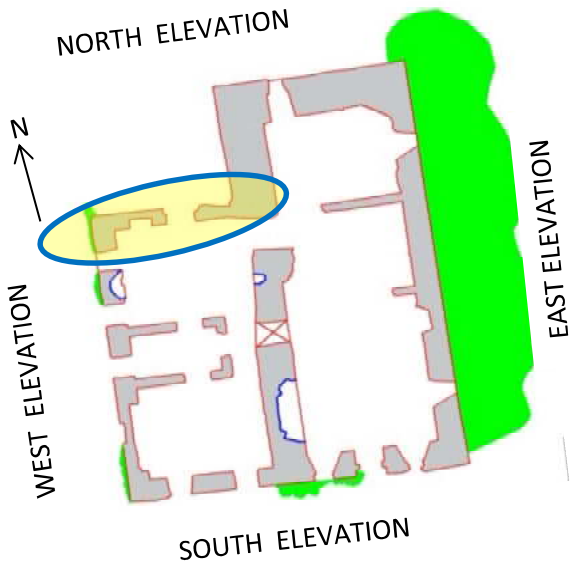
Existing window head to be infilled with engineered brick. Brick to be recessed back from the edge by 25mm to 50mm. Architect's specification for the finishes to the brick.

Stone works infill to be tied to the wall on either side with M8 stainless steel Helibar. Bars approximately 1000mm long. Bars to be installed in accordance with the manufactures specification.

Stone infill to be repointed were required. Repointed to be slightly recessed to allow the window opening to be read.

Area to be flaunched to allow the top surface to be self draining. Note stone pinning's maybe required.

Void to be infilled with engineered brick or salvaged stone, bedded in lime mortar to match the existing. Infill to be slightly recessed.



Spray all of the vegetation growing from the wall tops. Fully record all stones in the top 200-300mm of the wall. Carefully rake out loose mortar. Arrange for inspection. Allow for careful dismantling and rebuilding of the top 200-300mm of the wall top exactly as is now but with adjustments to give a top surface that is self draining. Repoint the wall, refer to specifications.

Allow for three number 215mm x 65mm precast lintels with one number 100mm x 100mm limestone lintel on each external face, number of lintels per opening. Dry pack between the new lintels and the existing stone. Wall over to be temporary propped during the works. Repair the wall over once the temporary works have been removed.

Section of the wall to be built to proved support for the lintels over the opening. Section of the wall to be built with salvaged or new stone to match the existing and keyed into the existing wall.

Void to be infilled with engineered brick or salvaged stone, bedded in lime mortar to match the existing. Infill to be slightly recessed.

Allow for repointing of the stone arch. Note deep repointing with stone / slate pinning's maybe required.

Stone infill to be repointed were required. Repointed to be slightly recessed to allow the window opening to be read.

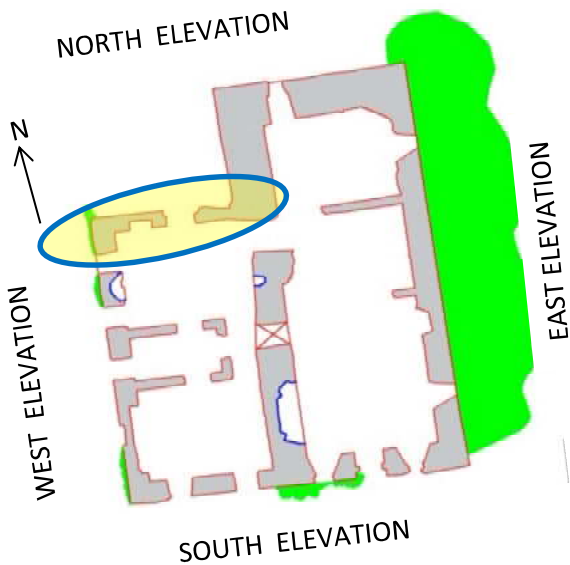
NORTH ELEVATION INTERNAL

DRAFT

Drawing Stage: Information						Drawn By: RK	Checked By: LE	Approved By: LE	Date: 16/05/2025	 Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie							
Project Details: Menlough Castle						Project Name: Menlough			Scale:	Project Number:							
Site Address:	Menlough Castle, Galway					Castle Galway Phases 5 & 6			NTS	20612							
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title: Proposed Works			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY	To The North Internal Elevation				CORA					SK5030		I1



Rebuild the door reveals and stone arch over the door with new stone keyed into the existing stone and lime mortar. The face of the new stone to be recessed by 25mm from the face of the existing stone.



Spray all of the vegetation growing from the wall tops.
Fully record all stones in the top 200-300mm of the wall.
Carefully rake out loose mortar.
Arrange for inspection.
Allow for careful dismantling and rebuilding of the top 200-300mm of the wall top exactly as is now but with adjustments to give a top surface that is self draining. Repoint the wall, refer to specifications.

Cill to be flanchued to allow rainwater to self

NORTH ELEVATION EXTERNAL

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Project Details: Menlough Castle						Project Name: Menlough			Scale:	Project Number:							
Site Address:	Menlough Castle, Galway					Castle Galway Phases 5 & 6			NTS	20612							
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title: Proposed Works			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY	To The North External Elevation				CORA					SK5031		I1

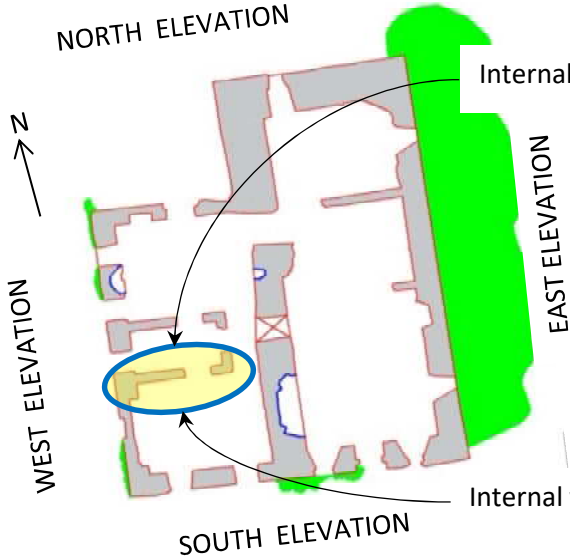


Stitch across the cracks in the voussoir stones with 2 No. M8 stainless steel dowel installed diagonally across the crack. Stainless steel dowels to be chemically resined in place with a resin compatible with stone. Conceal the repair. Allow for 6 number repairs. Allow for 2 number voussoirs to be replaced with new stone voussoirs to match the existing.

Allow for two number 100mm x 100mm limestone lintel, number of lintels per opening. Dry pack between the new lintels and the existing stone. Wall over to be temporary propped during the works. Repair the wall over once the temporary works have been removed.

Allow for consolidation of the underside of the stone arch. Note deep repointing may be required with pieces of slate.

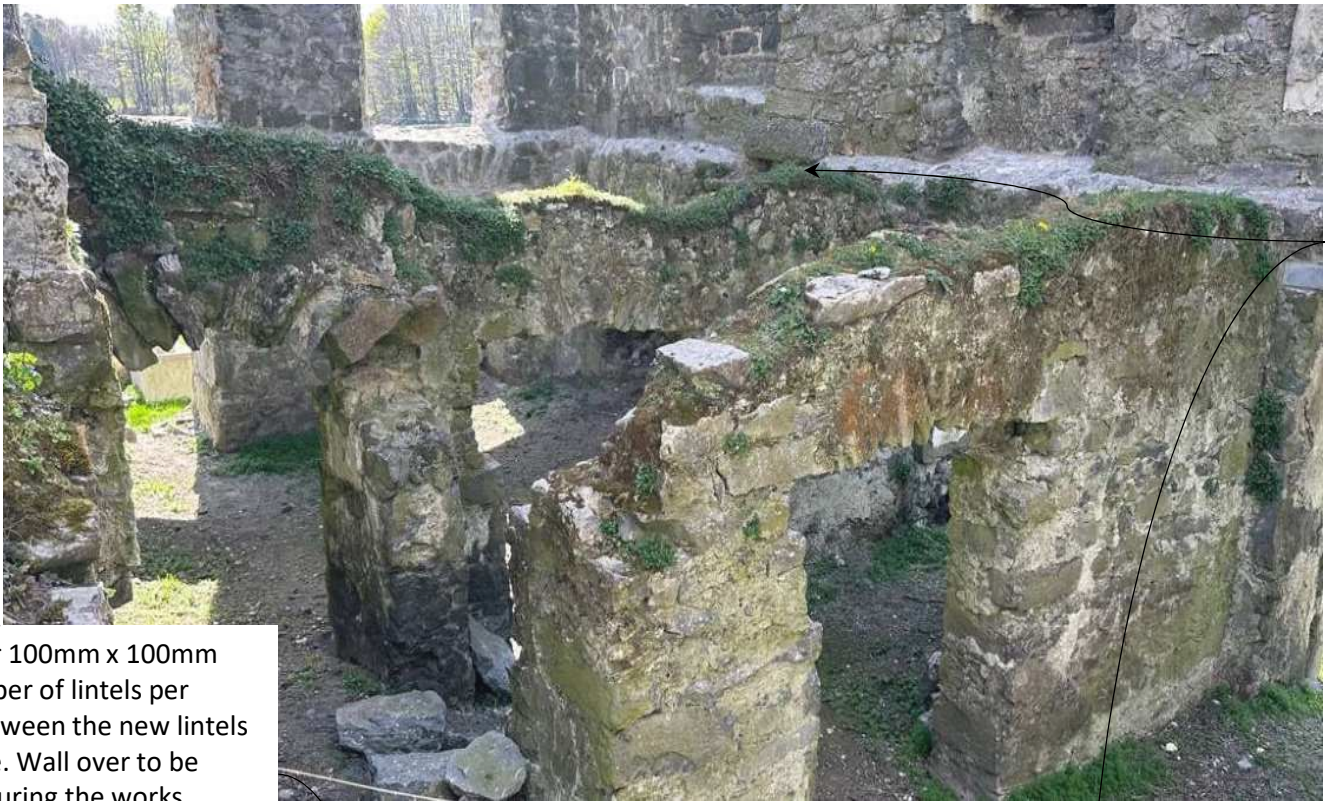
Rebuild the door reveals with new stone keyed into the existing stone in lime mortar. Stone to support the existing stone arch and lintel. The face of the new stone to be recessed by 25mm from the face of the existing stone.



Internal wall 1 - Looking South

Internal wall 1 - Looking North

M12 sock fix anchors installed at an angle across the crack in the internal and external wall. Sock fix anchors approximately 600mm long. Allow for an inspection with the Engineer and Stone masonry before the Sock fix anchors are order.



INTERNAL WALL 1 - LOOKING SOUTH



INTERNAL WALL 1 - LOOKING NORTH

Spray all of the vegetation growing from the wall tops. Fully record all stones in the top 200-300mm of the wall. Carefully rake out loose mortar. Arrange for inspection. Allow for careful dismantling and rebuilding of the top 200-300mm of the wall top exactly as is now but with adjustments to give a top surface that is self draining. Repoint the wall, refer to specifications.

DRAFT

Drawing Stage: Information						Drawn By: RK	Checked By: LE	Approved By: LE	Date: 16/05/2025	 Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie								
Project Details: Menlough Castle						Project Name: Menlough			Scale:	Project Number:								
Site Address:	Menlough Castle, Galway					Castle Galway Phases 5 & 6			NTS	20612								
Client:	Galway City Council	I1	ISSUED FOR INFORMATION		16/05/2025	RK	Drawing Title: Proposed Works To The			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION		DATE	ISSUED BY	Internal West Wall - Sheet 1				CORA					SK5040		I1

Stitch across the cracks in the voussoir stones with 2 No. M8 stainless steel dowel installed diagonally across the crack. Stainless steel dowels to be chemically resined in place with a resin compatible with stone. Conceal the repair. Allow for 2 number repairs. Allow for 2 number voussoirs to be replaced with new stone voussoirs to match the existing.

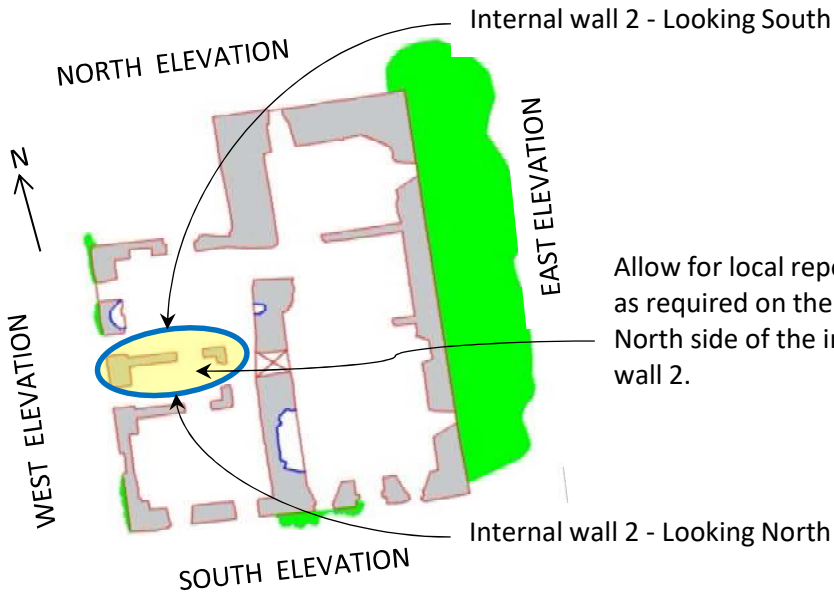
Allow for two number 100mm x 100mm limestone lintel, number of lintels per opening. Dry pack between the new lintels and the existing stone. Wall over to be temporary propped during the works. Repair the wall over once the temporary works have been removed.



Spray all of the vegetation growing from the wall tops. Fully record all stones in the top 200-300mm of the wall. Carefully rake out loose mortar. Arrange for inspection. Allow for careful dismantling and rebuilding of the top 200-300mm of the wall top exactly as is now but with adjustments to give a top surface that is self draining. Repoint the wall, refer to specifications.

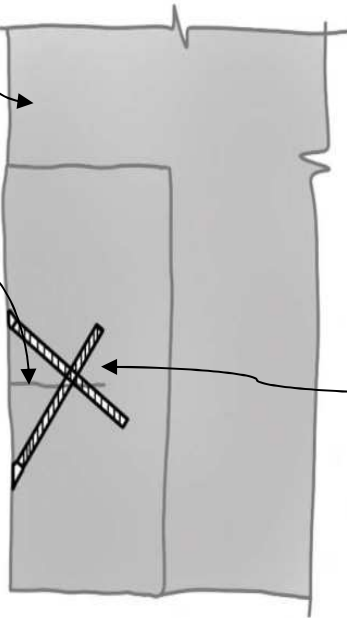
Allow for consolidation of the underside of the stone arch. Note deep repointing may be required with pieces of slate.

INTERNAL WALL 2 - LOOKING SOUTH



Existing stone.

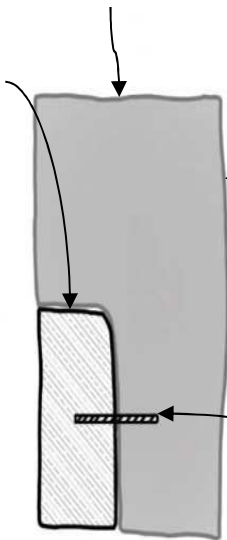
Crack in the voussoir stone.



Missing sections of the voussoirs to be replaced with new stone to match the existing.

Stitch across the cracks in the voussoir stones with 2 No. M8 stainless steel dowel installed diagonally across the crack. Stainless steel (grade 316L) dowels to be chemically resined in place with a resin compatible with stone. Conceal the repair.

Existing stone.



Missing sections of the voussoirs to be replaced with new stone to match the existing. New section of the voussoirs to be dowelled into the existing stone with M8 stainless steel dowels.

New section of the voussoirs to be dowelled into the existing stone with M8 grade 316L stainless steel grade dowels. Dowels 150mm long with 75mm embedment depth. Stainless steel dowels to be chemical resined with resin compatible with stone.

REPAIR TO CRACKED VOUSSOIR

REPAIR TO MISSING SECTION OF A VOUSSOIR

DRAFT

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Project Details: Menlough Castle						Project Name: Menlough			Scale:	Project Number:							
Site Address:	Menlough Castle, Galway					Castle Galway Phases 5 & 6			NTS	20612							
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title: Proposed Works To The Internal West Wall - Sheet 2			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY				CORA						SK5041		I1

Specification for containment of plant growth where Masonry works are being carried out
Treatment of vegetation growing on and in the walls

General – before starting

Vegetation treatment / cutting / removal should ideally occur within the period 1st September to 28th February (dates inclusive) to comply with the Wildlife Act 1976 (Amendment) 2000. www.npws.ie/legislation
Although the removal of structure endangering plant growth outside of this period is not illegal, consultation with the National Parks and Wildlife Service is advised where substantial removal of vegetation is envisaged. It is possible that bats are roosting in dense plant growth and cutting of the plant foliage should only occur after inspection by a qualified bat ecologist, who will recommend appropriate mitigation measures. All bat species are protected under the Wildlife Act and it is prohibited to interfere with their roosts.
Only very specific use of herbicides or biocides as mentioned below is to be deployed at any stage as the general policy is to reduce the plant growth immediately at the wall but not to the surrounding areas.

Access for works

Extreme care must be taken when removing plant growth from walls and at high levels to reduce the risk of injury from falls and from falling masonry.
The operatives removing the plant growth should work in pairs.
All work above 1.8 metres must be carried out from a safe access platform such as a mobile tower, scaffold or MEWP such as a small articulating boom lift hoist.
Machinery must be operated by personnel qualified to do such.
NB: IF IN DOUBT STOP WORK

Disposal of waste

All vegetation waste should be chipped on site and a place for disposal preferably in the nearby vicinity agreed with the client.
Note waste must be disposed of correctly and in accordance with the Waste Management Acts 1996 to 2011.under which parties disposing of the waste must be licensed.
<https://www.epa.ie/our-services/licensing/waste/waste-licensing/waste-legislation/>



Ecoplugs typically supplied in boxes of 100

Localised pruning of the near by tree branches back to a distance 2m from tower should be carried out from scaffold

Prior and during repair works to masonry

Leave all growth in place and carefully weed wipe or very topically spray only those plants growing from foundations or walls with Glyphosate such as Round-up Pro Bioactive or ICADE Herbicide or similar approved. Apply according to manufacturer’s instructions.
The herbicide should be applied as long as possible, at least 2 weeks, before any removal of growth.
This will serve to kill embedded root systems deep in the fabric of the masonry.

Removal of vegetation

After a minimum of two weeks all the plant growth growing from the foundations; walls up to vault level and top of vault should be clipped back hard. Do not trim or cut back vegetation to upper part of the tower at this stage.
The vegetation may be mechanically trimmed initially but then carefully cut close to the building by hand. Hedge trimmers and croppers are likely to be the appropriate tools for this job.
It is extremely important not to pull any plants away from the masonry walls as this will dislodge stones & mortar.
Any large or deep-seated roots are to be left in place during trimming operation so that they can be further treated – see below.
Under no circumstances should ivy that is growing up the walls be cut at the base as this only encourages development of any aerial roots and potential for much greater damage to the building in future years. Once the aerial roots have been removed during masonry works the stem will then be removed by the masons as they re-point down the wall.
Apply according to manufacturer’s instructions Roundup Pro Bioactive or similar approved, to the cut faces of large stumps within 48 hours of felling. A soluble die will help in identifying which stumps have been treated.

Proceed with masonry repairs and drill and plug any remaining roots

Dig out as much of root as is practicable as masonry works proceed, without dismantling large sections of currently stable masonry. If in doubt consult Engineer. Where roots remain drill all roots over 30mm diameter root with 13mm diameter drill and insert EcoPlug by Monsanto. Treatment to be carried out in accordance with manufacturers instructions.
Typically:- Treat within 2 days of cutting for optimum performance.
Using the prescribed drill bit make the appropriate number of holes in the living part of the stump just inside the bark. Each hole should be 25-30mm deep, 13mm wide. If only dead wood comes out of the drill hole, choose another location where wood green rather than wasting a plug.
Place an EcoPlug Max in each hole with the narrow end first. The top of the plug will protrude by about 10mm. Tap each EcoPlug Max until the head is flush with the stump. This will force out the sides of the plug and release the glyphosate. If the holes are overdrilled or if the capsules are not properly hit, then it is unlikely that the capsule will release the weedkiller.

After completion of 2022 Masonry works trim back and eco plug top part of tower

Only after lower part of the tower repaired should upper section be trimmed back hard and all remaining stems greater than 30mm drilled and plugged - details as above

Useful References:-

“Ruins – The conservation and repair of masonry ruins” ISBN 978 1 4064 2445 4
Department of Culture Heritage and the Gaeltacht Architectural Advice series
“ Bats, Birds, Buildings and You! The heritage Council
“Bats in Buildings” Guidance notes for planners, engineers, architects and developers
<https://www.batconservationireland.org/>
<http://invasivespeciesireland.com/>
“The Herbicide Handbook: Guidance on the use of herbicides on nature conservation sites”
Published by English Nature 2003 in association with FACT. ISBN 1 85716 746 5

Drawing Stage: Information						Drawn By: RK	Checked By: LE	Approved By: LE	Date: 16/05/2025	 Behan House, 10 Lower Mount Street, Dublin 2. D02 HT71 Tel: +353 (0)1 661 1100 e-mail: info@cora.ie web: www.cora.ie							
Project Details: Menlough Castle						Project Name: Menlough Castle			Scale:	Project Number:							
Site Address:	Menlough Castle, Galway					Galway Phase 5 & 6			NTS	20612							
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title: Vegetation Control			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY	Where masonry works are being carried out				CORA					SK5051		I1

Specification for containment of plant growth - Where NO masonry works are envisaged

For maintenance / control of growth and / or survey and assessment purposes where no immediate repair works are planned. This will allow more effective survey and also reduce windage on walls.

General – before starting

Vegetation treatment / cutting / removal should ideally occur within the period 1st September to 28th February (dates inclusive) to comply with the Wildlife Act 1976 (Amendment) 2000. www.npws.ie/legislation
Although the removal of structure endangering plant growth outside of this period is not illegal, consultation with the National Parks and Wildlife Service is advised where substantial removal of vegetation is envisaged.
It is possible that bats are roosting in dense plant growth and cutting of the plant foliage should only occur after inspection by a qualified bat ecologist, who will recommend appropriate mitigation measures. All bat species are protected under the Wildlife Act and it is prohibited to interfere with their roosts.
Only very specific use of herbicides or biocides as mentioned below is to be deployed at any stage as the general policy is to reduce the plant growth immediately at the wall but not to the surrounding areas.

Access for works

Extreme care must be taken when removing plant growth from walls and at high levels to reduce the risk of injury from falls and from falling masonry.
The operatives removing the plant growth should work in pairs.
All work above 1.8 metres must be carried out from a safe access platform such as a mobile tower, scaffold or MEWP such as a small articulating boom lift hoist.
Machinery must be operated by personnel qualified to do such.
NB: IF IN DOUBT STOP WORK

Disposal of waste

All vegetation waste should be chipped on site and a place for disposal preferably in the nearby vicinity agreed with the client. Note waste must be disposed of correctly and in accordance with the Waste Management Acts 1996 to 2011.under which parties disposing of the waste must be licensed.
<https://www.epa.ie/our-services/licensing/waste/waste-licensing/waste-legislation/>



Cutting of plant growth on/in walls and at base of walls

All the plant growth growing from the sides or top of the walls and within 2m of any wall should be clipped back to reduce the canopy without interfering with the root system of the plants. This will reduce the demand of the root system and also reduce the risk of wind damage to the structure. Reduction of the vegetation also allows for better inspection of the wall for surveying and assessment of the structures.
The vegetation may be mechanically trimmed initially but then carefully cut close to the building by hand.
Hedge trimmers and croppers are likely to be the appropriate tools for this job.
It is extremely important not to pull any plants or roots away from the masonry walls as this will dislodge stones and mortar.
Removal of roots and vines attached to the walls should only happen alongside masonry repair works to the building at a later date. Under no circumstances should ivy that is growing up the walls be cut at the base as this only encourages development of the aerial roots and potential for much greater damage to the building in future years
There is to be no general herbicide treatment at this stage excepting that as below to woody stems.

Woody stems growing out of sides; tops and bases of walls and within 1m of wall bases

Where woody stemmed plants / trees are found growing out of walls or within 1m of base of walls cut back root close to face of wall / ground and paint suitable root killer on cut stem within one hour of cutting.
All roots / stems over 30mm diameter to be treated with EcoPlug by Monsanto or similar approved, treatment to be carried out in accordance with manufacturers instructions. Typically:- Treat within 2 days for optimum performance.
Using the prescribed drill bit make the appropriate number of holes in the living part of the stump just inside the bark. Each hole should be 25-30mm deep, 13mm wide.
Place an EcoPlug Max in each hole with the narrow end first.
The top of the plug will protrude by about 10mm.
Tap each EcoPlug Max until the head is flush with the stump.
This will force out the sides of the plug and release the glyphosate



Useful References:-

“Ruins – The conservation and repair of masonry ruins” ISBN 978 1 4064 2445 4
Department of Culture Heritage and the Gaeltacht Architectural Advice series /
“ Bats, Birds, Buildings and You! The heritage Council
“Bats in Buildings” Guidance notes for planners, engineers, architects and developers
<https://www.batconservationireland.org/>
<http://invasivespeciesireland.com/>
“The Herbicide Handbook: Guidance on the use of herbicides on nature conservation sites”
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Project Details: Menlough Castle						Project Name: Menlough Castle		Scale:	Project Number:							
Site Address: Menlough Castle, Galway						Galway Phase 5 & 6		NTS	20612							
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title: Vegetation Control		Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY	Where No masonry works are being carried out			CORA					SK5052		I1

Note final mix designs to be a result of consultation with Lime suppliers; CORA Engineers; Architect and appointed Contractor and will be based on exemplars and a more thorough understanding of the previous construction obtained during masonry works preparation.

If these conditions prevail the working areas must be kept moist by spraying and protection using polythene or hessian sheets sprayed with water at regular intervals. Spray hoses can be used for large areas or for damping down hessian sheets but should be used with caution to avoid jet action of water washing out mortar or over saturating a wall. Thus a bottle spray, sprayer back pack or similar is an essential part of the equipment.

Full discussions regarding mortar mixes and methodologies to be undertaken with Engineer prior to commencing works. Exemplars will be required for each pointing / rebuilding type and are to be agreed with the design team before undertaking any work.

Traditional Lime Co., Carlow www.traditionallime.com

Use mixed mortar within a few hours and do not moisten to extend the working life. Mortar when mixed must be used within the time scale recommended by the manufacturer.



- i) Mortar / detail for the wall top,
- ii) Mortar for repointing wall faces
- iii) Sample of rough raked to the end of the internal wall.

The new mortar joints of the rebuilt stone and brickwork are to match exactly the existing joint depth and are to be struck flush, brushed off diagonally across joint in both directions and sponged off carefully to match exactly the re-pointing works to the remainder of the masonry. Care must be taken to ensure that mortar or grout splashes do not stain the existing masonry faces. See also note below re: beating back of mortar once stiff.

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						RK	LE	LE	16/05/2025							
Project Details: Menlough Castle						Project Name: Menlough Castle		Scale:	Project Number:							
Site Address:	Menlough Castle, Galway					Galway Phase 5 & 6		NTS	20612							
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title: Mortar Specification Sheet 1 of 2		Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY				CORA					SK5053		

Specification for repair mortars continued

Preparation for Re-pointing and initial build-out

Prepare areas for re-pointing using small hand-held tools and by removing all the very friable mortar saving any small stones (“gallets” or “pinning’s”) that come loose for re-use.

Good preparation is essential for all lime works and a brush is an essential piece of equipment for cleaning out joints, wall surfaces and for brushing pointed joints.

Do not use large blobs of mortar to fill in voids or loose areas; build up with pieces of stone. If the voids are large, bed in the small filler stones in the normal way. If smaller then fill void with mortar and then drive in a stone wedging it in tightly to tighten up loose masonry.

Re-Pointing

Carefully rake out joints to depth of twice the joint width. Face of raked out mortar to be cut back square and not sloped or V-shaped. Brush out joints to clear of all debris.

Wet down joints and adjoining masonry to be pointed thoroughly, on dry or windy days spraying may be needed several times and also occasionally during the pointing process and after the work is completed. The wetting is to stop the bed joints from drawing water out of the pointing mortar that would make it dehydrate and fail to set. Lay the pointing mortar on a hawk to a depth equal to the depth of the joint and square off the front edge. Using a pointing iron of similar depth to the joint, cut off thin strips of mortar and offering the hawk up to the joint press well in with the pointing iron.

Make sure the joint is well filled and the front face brushed off lightly once the mortar has become stiffer. Beating back the mortar with a churn brush (as supplied by lime supply companies above) once stiff also assists with compaction of the mortar into the joint and reduction in shrinkage cracks.

Protection & Follow up Work

All finished work must be protected by plastic sheeting or damp hessian sheeting to prevent the joints or coatings from drying out too quickly or conversely becoming saturated

Some slight cracking may occur to the joints and this should be pressed back by hand/churn brush. Brushing up of finished pointing is essential to roughen the finish and clean up drips and splashes from adjoining areas.

All masonry works should be carefully planned such that proper protection can be included or scheduled for the warmer months of the year.

Precautions of suspending operations until the temperature reaches 6° C on a rising thermometer or 8°C on a falling thermometer shall be strictly observed. Also frost protection and protection from saturation by rain is essential.

The horizontal surfaces of masonry are particularly vulnerable to saturation and thus frost damage in the weeks immediately following rebuilding/ pointing and should therefore be protected from excesses of water. The vertical elevations can be protected by draping with hessian

Consideration should be given to insulating and /or applying heat to wall faces if cold weather is forecast in the two months during or after masonry works are completed.

Care must also be taken to protect applied work from rapid drying conditions i.e. exposure to direct sunlight or drying winds. In these conditions it should be kept evenly damp for up to 30 days, depending on ambient conditions and the rate of set, by lightly spraying periodically with clean water. In areas exposed to direct sunlight, the possibility of a "greenhouse" effect must be avoided, either by shading the polythene or by substituting woven cloth materials.

Polythene, hessian or other approved sheeting that is used during curing should be arranged to hang clear of the face of the wall in such a way that it does not form a tunnel through which the wind could increase the evaporation of water. The polythene or hessian sheeting must not have intermittent contact with the pointing / render as this may cause a patchy appearance.

Recommended Reading / useful references:-

“Lime Works - using lime in traditional and new building” Patrick McAfee 2010

Commissioned by the Building Limes Forum Ireland

Published by Associated Editions ISBN: 978-1-978-1-906429-08-9

Hot Lime Mortars - HLM Project

Technology Transfer & Applied Research Scotland & Ireland May 2015

available on Building Limes Forum Website www.buildinglimesforumireland.com



Exemplar provided of flush pointing in stonework beaten back to expose aggregate



Example of appropriate protection to allow wall to dry out yet not become saturated by rain on upper surfaces

Stone Identification process - numbering and recording

Any part of a wall that is to be dismantled or stones that need to be removed must follow strict protocol.

All stones to be numbered using removable chalk / paint; photographed and layout mapped using clear mona flex or similar before dismantling.

After dismantling apply same number in indelible ink / paint to hidden face and store stones in reverse order on scaffold or pallets etc ready for reassembly.



Sample of wall top finish

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Project Details: Menlough Castle						Project Name: Menlough Castle			Scale:	Project Number:							
Site Address:	Menlough Castle, Galway					Galway Phase 5 & 6			NTS	20612							
Client:	Galway City Council	I1	ISSUED FOR INFORMATION	16/05/2025	RK	Drawing Title: Mortar Specification			Project:	Originator:	Zone:	Level:	Type:	Discipline:	Drawing No.:	Stage:	Revision:
Architect:	7L Architects	REV. No.	REVISION DESCRIPTION	DATE	ISSUED BY	Sheet 2 of 2				CORA					SK5054		I1