

**Skellig Michael**  
**World Heritage Site**  
**Works Season 2020**  
**UNESCO Report**

v. 2.0



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## 1. Introduction

This report aims to outline the repair works completed on the UNESCO World Heritage Site of Skellig Michael in the season of 2020. The work was overseen by the Office of Public Works (OPW). The report will outline the extent of the repair works carried out and will also briefly summarise works to be undertaken in 2021. The report will also list potential threats to the site and how these threats will be managed.

2020 was a challenging year globally due to COVID-19. Skellig Michael was closed to visitors for the entire season. The opening of the site to OPW workers, responsible for the maintenance of the site was delayed by six weeks due to government restrictions. This had an impact on the repair works programme set out by the organisation in 2019. The south-west of Ireland was also subjected to some unseasonable summer storms, due to climate change, which resulted in soil erosion and a significant rock-fall event on the island.

In spite of these challenges, the OPW undertook maintenance and repair works to ensure the continued preservation of the monastic settlement and steps. Measures were set in place to address the challenges mentioned previously: A COVID-19 Officer was appointed to ensure that government guidelines for COVID-19 prevention were implemented on site for the safety of workers and consultants. Temporary crash decks were installed to reduce the risk of injury from rock fall. The OPW also co-ordinated with other state bodies responsible for the site such as the Department of Housing, Local Government and Heritage (DHLGH) and the National Parks and Wildlife Service (NPWS) to ensure the protection of the island's archaeology and wildlife.

Other tasks and works undertaken in 2020 include:

- The drafting of a new 2020 – 2030 management plan for the site.
- Digital surveys were undertaken at key locations where future works are proposed.
- A puffin tagging exercise and survey was undertaken by the University College Cork.
- The Discovery Programme continued their digital monitoring programme for the inner enclosing monastic retaining wall below St. Michael's chapel.
- NPWS carried out surveys on bird species populations and nesting locations.
- OPW Conservation Architects carried out six site visits to assess and monitor the repair works.
- OPW continued with the conservation works to the Upper Lighthouse Road.
- OPW Chairman, Maurice Buckley, OPW Commissioner, John McMahon and Michael McDonagh, Chief Archaeologist DHLGH visited Skellig Michael.
- Crossing the Line productions continued with their ongoing filming of repair and survey works as a visual record of the works for OPW archives.
- OPW carried out the tender process for the appointment of a structural engineering consultant for the design and installation of three permanent crash decks on site.
- A specialist contractor emptied the oil tanks at the Lower Lighthouse and removed existing redundant pipework.
- ARUP Engineers issued OPW with an Energy and Water Strategy report for the proposed refurbishment and repair of the Lower Lighthouse.
- Carrig Conservation issued OPW with a Fabric Retrofit Strategy for Improved Efficiency for the proposed refurbishment of the Lower Lighthouse.

## 2. General Description

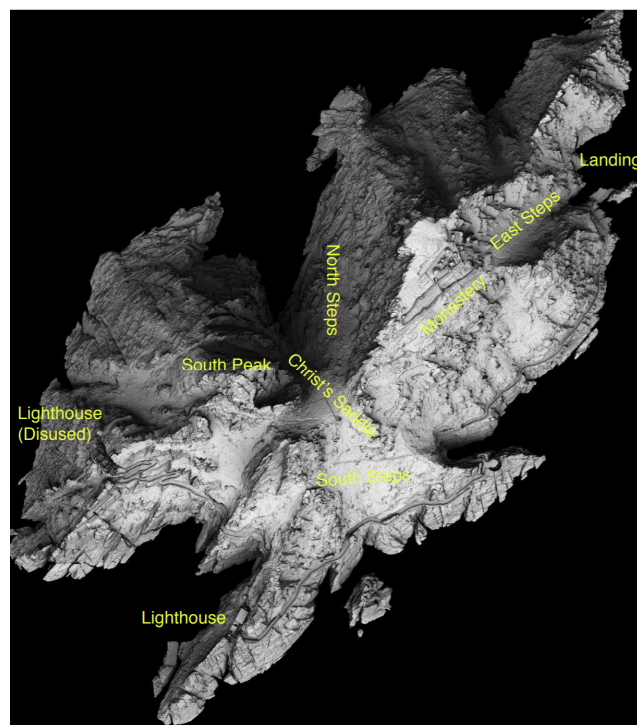
The island of Skellig Michael lies 11.6 km off the most westerly point of the Iveragh Peninsula, Co. Kerry (SMR: KE 104A-001; National Grid Reference 024812 060654). The island is approximately 21.6 ha in area. Most of the island is owned by the Department of Housing, Local Government and Heritage on behalf of the Irish State. The Lower Lighthouse and helipad are owned by the Commissioners of Irish Lights (CIL).

The island geological composition consists of Devonian Red Sandstone, formed in the Devonian Age approximately 400 million years ago. The rock formations were formed during the Caledonian orogeny circa 100 million years ago; forces folded the layers of sandstone into two anticlines (the two iconic peaks) and a syncline or trough now known as Christ's saddle. Skellig Michael was cut off from the mainland during the sea level rises resulting from the end of the last ice age approximately 10,000 years ago.

There are two major international sites of interest on the island. The monastery enclosure located on the eastern side of the island contains a series of terraces, dry stone enclosing walls, three cisterns, seven corbelled cells (six intact) and two oratories. There are also the remains of St. Michael's chapel. The monastic settlement was accessed via a series of three stairways, only one of which is accessible today.

The South Peak contains the remains of a hermitage, constructed ledges and altar remains.

The other features include a pier, a helipad and two lighthouses built in the 1820s and a lighthouse road.



*Fig. 1. LIDAR View of Skellig Michael (Bourke, Hayden, & Lynch, 2011)*



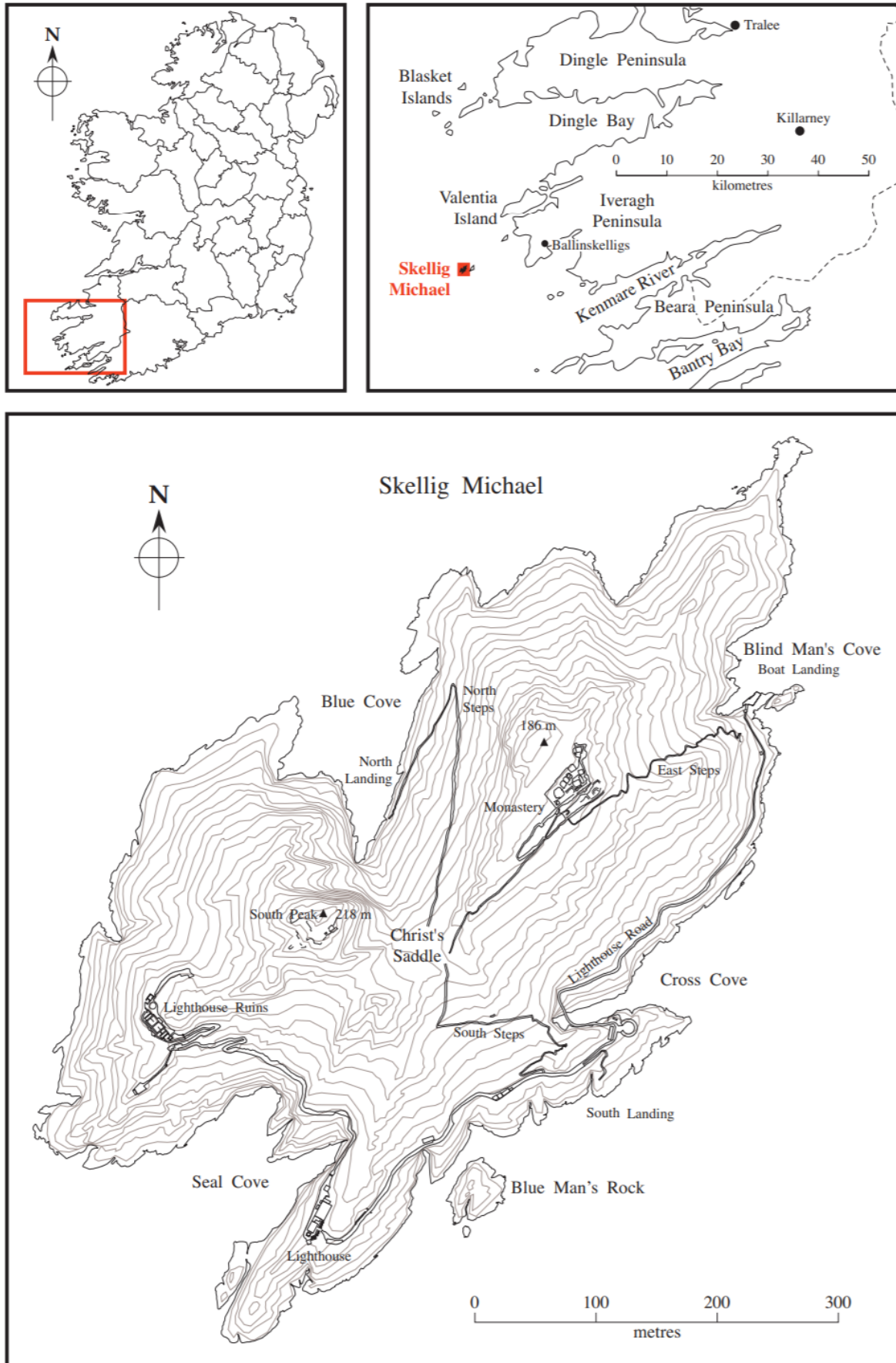


Fig. 2. – Location Map of Skellig Michael (Bourke, Hayden, & Lynch, 2011)

### 3. Brief Site History

The following description can be found in *Skellig Michael World Heritage Site Management Plan 2008 -2018* (Department of Environment, Heritage and Local Government; Office of Public Works; 2008, pp. 11-13):

The word *Scelllic* means a rock, particularly a steep rock. The first reference to Skellig occurs in legend, where it is given as the burial place of Ir, son of Milesius, who was drowned during the landing of the Milesians. Françoise Henry, a noted academic, mentions a text from the eighth or ninth century in which reference is made to an episode of strife between the Kings of West Munster and the Kings of Cashel. Duagh, King of West Munster, is said to have ‘fled to Scellecc’. This event is attributed to the fifth century, but we have no means of knowing if a monastic settlement already existed on the island at this time. Charles Smith, writing in 1756, refers to the monastery being founded by St Fionan, who lived in the sixth century.

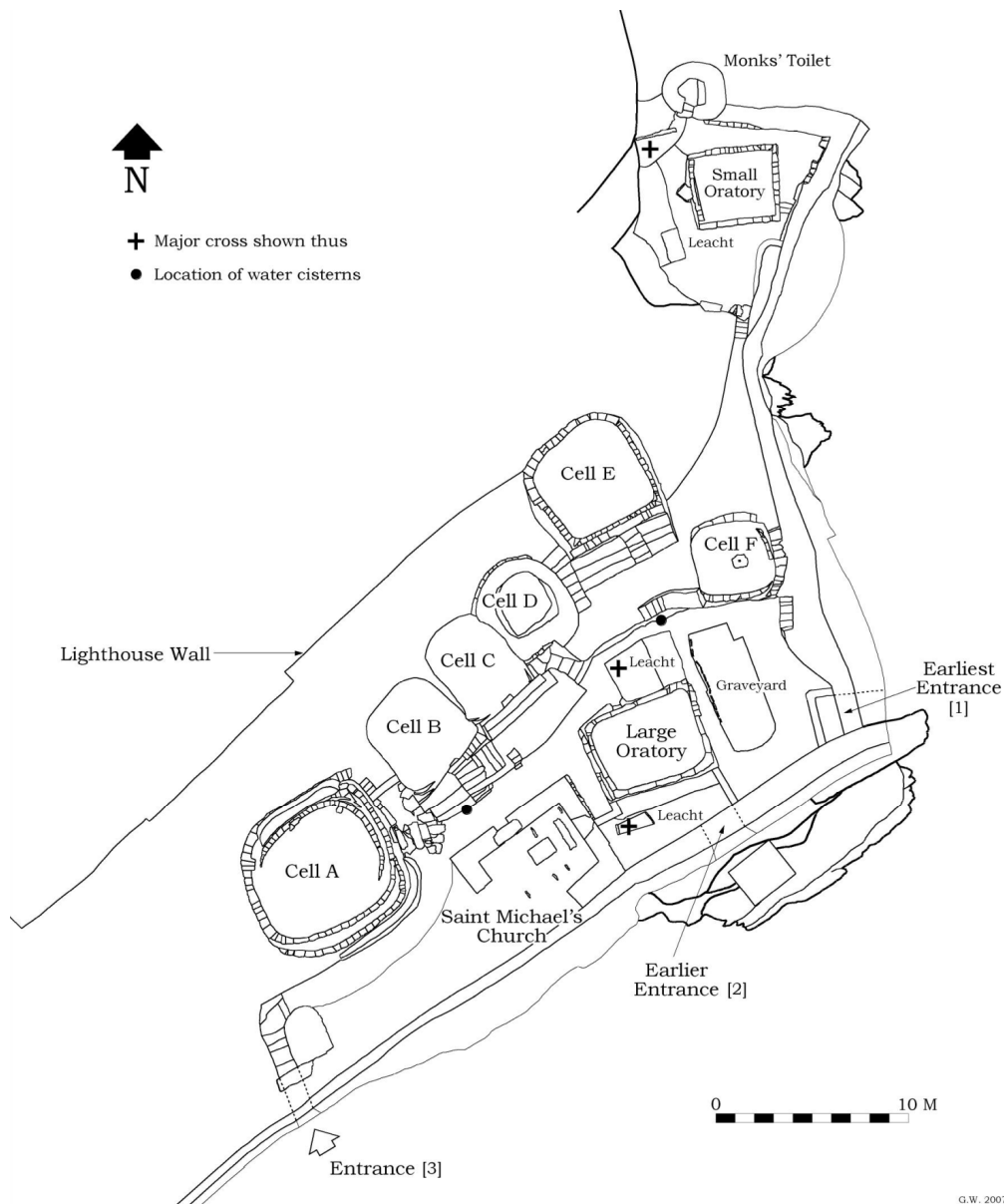


Fig. 3. – Plan of Monastic Settlement

The earliest documentary evidence is *The Martyrology of Tallaght*, written near the end of the eighth century by Mealruain. It commemorates the death of a monk from Skellig called Suibhni ('Suibhni of Scelig'). This reference to Skellig in the festology of one of the most celebrated monasteries of Ireland suggests that Skellig was already well established at this time. A monastery may, perhaps, have been founded here as early as the sixth century, but in the absence of evidence, precise dating is impossible.

Skellig is referred to in the *Annals of Inisfallen* under the year 824 and also in the *Annals of Ulster*, which give an account of the plunder of the Monastery by the Vikings. In 882 the *Annals of Inisfallen* refer to the death of 'Flann, son of Cellach, abbot of Scelec'. The Monastery was dedicated to St Michael at some time in the tenth century. This is suggested by two references to the Monastery in the *Annals of the Kingdom of Ireland* by the Four Masters. The first reads, 'Age of Christ, 950, Blathmhac of Sgeillic died'; the second reads, 'Age of Christ, 1044, Aedh of Scelic-Mhichil died'. Thus, one can assume that the dedication to St Michael occurred between the years 950 AD and 1044 AD. In monasteries, it was customary to build a new church to celebrate a dedication, and the oldest part of the church, known as St Michael's Church, fits architecturally into this period.

The church of St Michael was mentioned in *The History and Topography of Ireland* by Giraldus Cambrensis, who was in Ireland in the late twelfth century. His account of the miraculous supply of communal wine for daily Mass in St Michael's Church implies the constant occupancy of the Monastery at the time.

In the early thirteenth century, a general climatic deterioration resulted in colder weather and increased storms on the seas around Skellig. This, along with a shift in the Irish Church from a monastic to a diocesan structure, signalled the end of Irish eremitic island colonies, with the result that the community of Skellig Michael eventually moved to the mainland at Ballinskelligs. This was probably not a single event, but is likely to have happened over a period of time. The island probably continued to be used as a dependency of the Augustinian Abbey at Ballinskelligs, the island Monastery being occupied by some monks during the summer months. The prior of Ballinskelligs was still addressed in papal letters as 'Augustinian prior of St Michael's, Roche (de Rupe)'. The Augustinians must also have been actively involved in promoting and managing pilgrimages to the island and in maintaining the structures there.

Skellig Michael remained in the hands of the Augustinian monks until 1578 when, as a result of the Desmond rebellions, Queen Elizabeth I dissolved certain monasteries that were under the protection of the Earl of Desmond. The Skellig Islands thus passed into secular hands, to the Butler family. Although the monastery ceased to exist, the island continued to be used as a place of pilgrimage. In 1756, Charles Smith gives his first recorded description of the rock. He refers to the difficult and dangerous pilgrimages and says that 'many persons, about twenty years ago, came from the remotest parts of Ireland to perform these penances, but the zeal of such adventurous devotees has very much cooled of late'.

In the early 1820s, the Corporation for Preserving and Improving the Port of Dublin (the predecessor of the Commissioners of Irish Lights) purchased the island from John Butler of Waterville under a compulsory purchase order for the purpose of erecting two lighthouses on the Atlantic side. These were made accessible by an improved landing on the east side and a road that was blasted out on the precipitous southern and western sides of the island.



*Fig. 4. – Painting of Skellig Michael by Admiral R. B. Beechey, R.H.A., mid 1800s (CIL).*

In 1880, the OPW took the monastic remains into guardianship and commenced a project for the repair of collapsed structures. Since that time, the OPW has continued in its efforts to maintain and preserve the monastic remains. The State purchased the island in 1989 from the Commissioners of Irish Lights, with the exception of the lower (working) lighthouse and its curtilage and the helipad area with its adjacent store. The Commissioners also retained a right-of-way over the road.

#### 4. Site Access

The site is accessed by boats departing from Portmagee or Knight's Town on Valentia Island. The CIL conduct intermittent inspections on the Lower Lighthouse and access the island through the use of helicopter, landing on the helipad. The OPW currently issues 15 boat licenses annually to private operators, subject to review. Approximately 15,000 visitors land on Skellig Michael each year. Boats land at the pier and passengers disembark by climbing the steps. Visitors then ascend the Lower Lighthouse Road. A section of this route passes under a crash deck. The visitors reach the base of the eastern steps where an OPW guide gives an induction before directing them to the monastery steps. Additional guides are located at the monastery complex, completing the tour. On average, visitors currently spend three hours on the island. There are no toilets for visitors on the island.



## 5. Works Descriptions 2020

### 5.1. Upper Lighthouse Road Repairs & Archaeological Report

Repair works to the Lighthouse Road Road continued through the 2020 season, having commenced in the 2017 season. It is envisaged that repair works will be completed to the Upper Lighthouse Road over the course of the next two seasons. The repair of the Upper Lighthouse Road will provide safe access for workers and visitors to the fog signalling platform and Upper Lighthouse complex.

Repair works during the 2020 season to the Upper Lighthouse Road included the clearance of organic build up and debris under archaeological supervision, the cleaning of the original drainage system, the replacement of missing wall capstones with locally sourced Valentia slate and the retention and repair of existing sand stone capstones. Repair works were undertaken using lime mortar and traditional construction techniques.

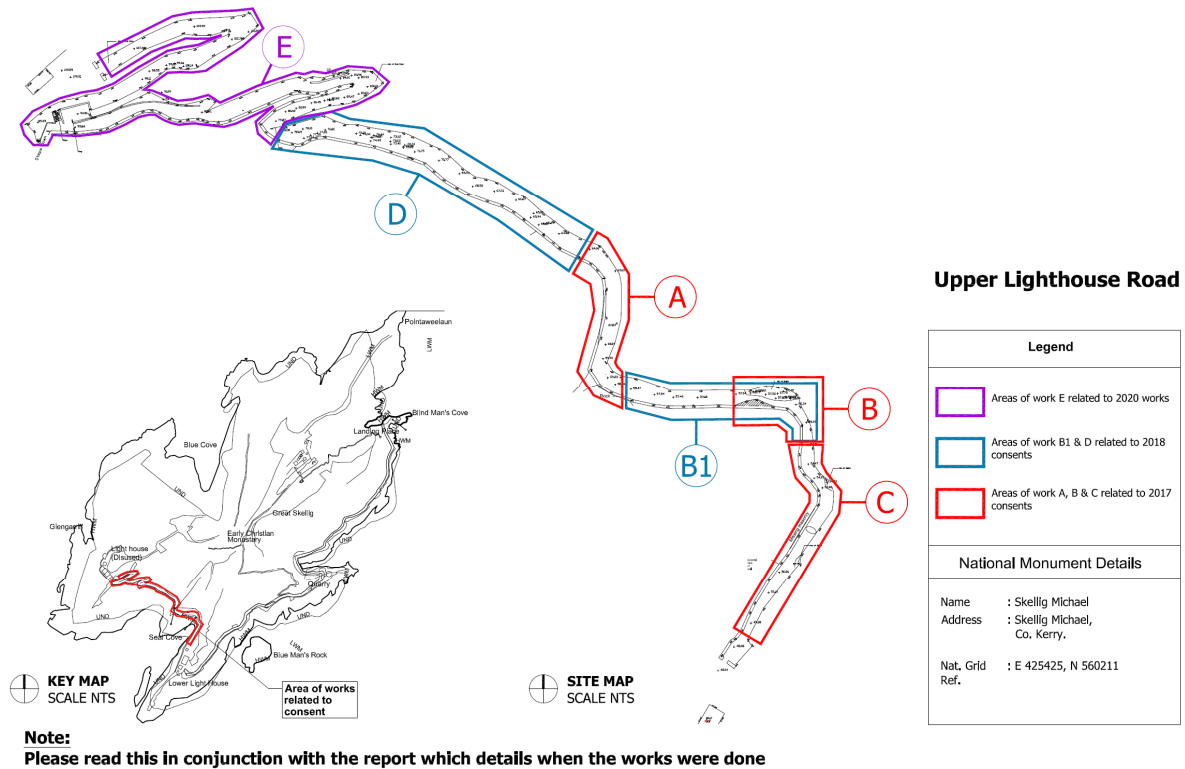


Fig. 5. – Works to Upper Lighthouse Road 2017 - 2020.

A consultant archaeologist, Alan Hayden was on site to monitor the works to the Upper Lighthouse Road Section E (Fig. 3.) in August and September 2020. The archaeologist recorded the drainage channels, diverters, road edging and road surface. The archaeologist also identified areas which are damaged and that require repair to prevent further erosion and collapse to the wall. A section of the road was not excavated due to a temporary ramp erected for site works. This section will be excavated at a later date. The 2020 archaeological report can be found in Appendix A.



*Fig. 6. – View of Upper Lighthouse Road from Upper Lighthouse Gate. Debris removed, wall tops repaired.*

## 5.2. Digital Surveys

The OPW awarded the contract for the digital survey of key locations on the island to Paul Corrigan Associates (PCA) following a tender process. The locations were identified as areas of strategic importance for the future of the long-term viability of the island. Seven locations were surveyed in mid-September 2020. The digital survey drawings will form the basis for consent applications, design decisions and tender packages for proposed future works.

|    | <b>LOCATION</b>                   | <b>PURPOSE</b>   |
|----|-----------------------------------|--|
| 1. | Landing Pier                      | Proposed works for protection against the effects of climate change.       |
| 2. | Helicopter Pad                    | Proposed location of public toilets.                                       |
| 3. | Crash Deck Location A             | Proposed location of permanent protective crash deck.                      |
| 4. | Crash Deck Location B             | Proposed location of permanent protective crash deck.                      |
| 5. | Crash Deck Location C             | Proposed location of permanent protective crash deck.                      |
| 6. | Fog Signalling Station            | Proposed location of future public viewing platform and public facilities. |
| 7. | Upper Lighthouse Outer Gate Piers | Gate to be restored. Consent required. Gate piers to be repaired.          |

*Table 1. – List of 2020 Survey Locations*

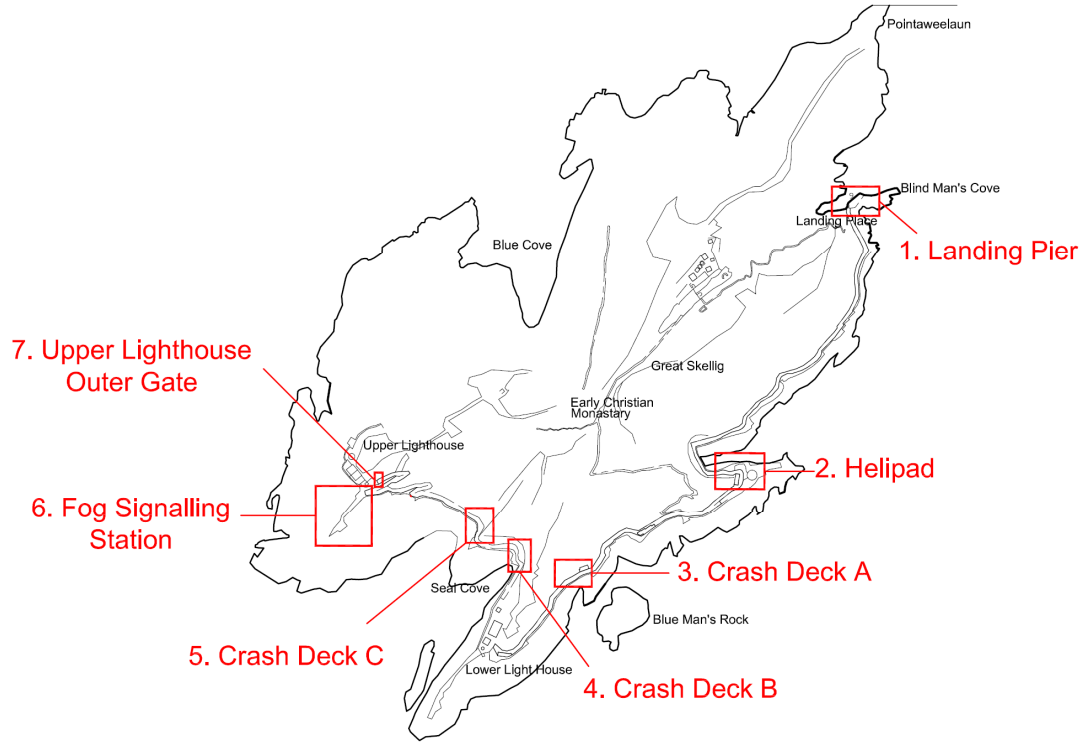


Fig. 7. - Key Plan of 2020 Digital Survey Locations



Fig. 8. - Landing Pier





*Fig. 9. – Proposed location of public toilets at Helipad.*



*Fig. 10. – Existing fog signalling station walkway.*



*Fig. 11. – View of Outer Gate to Upper Lighthouse. It is currently in a precarious condition and will require repair in 2021 to prevent further deterioration.*



*Fig. 12. – Survey works being conducted by PCA on Skellig Michael*



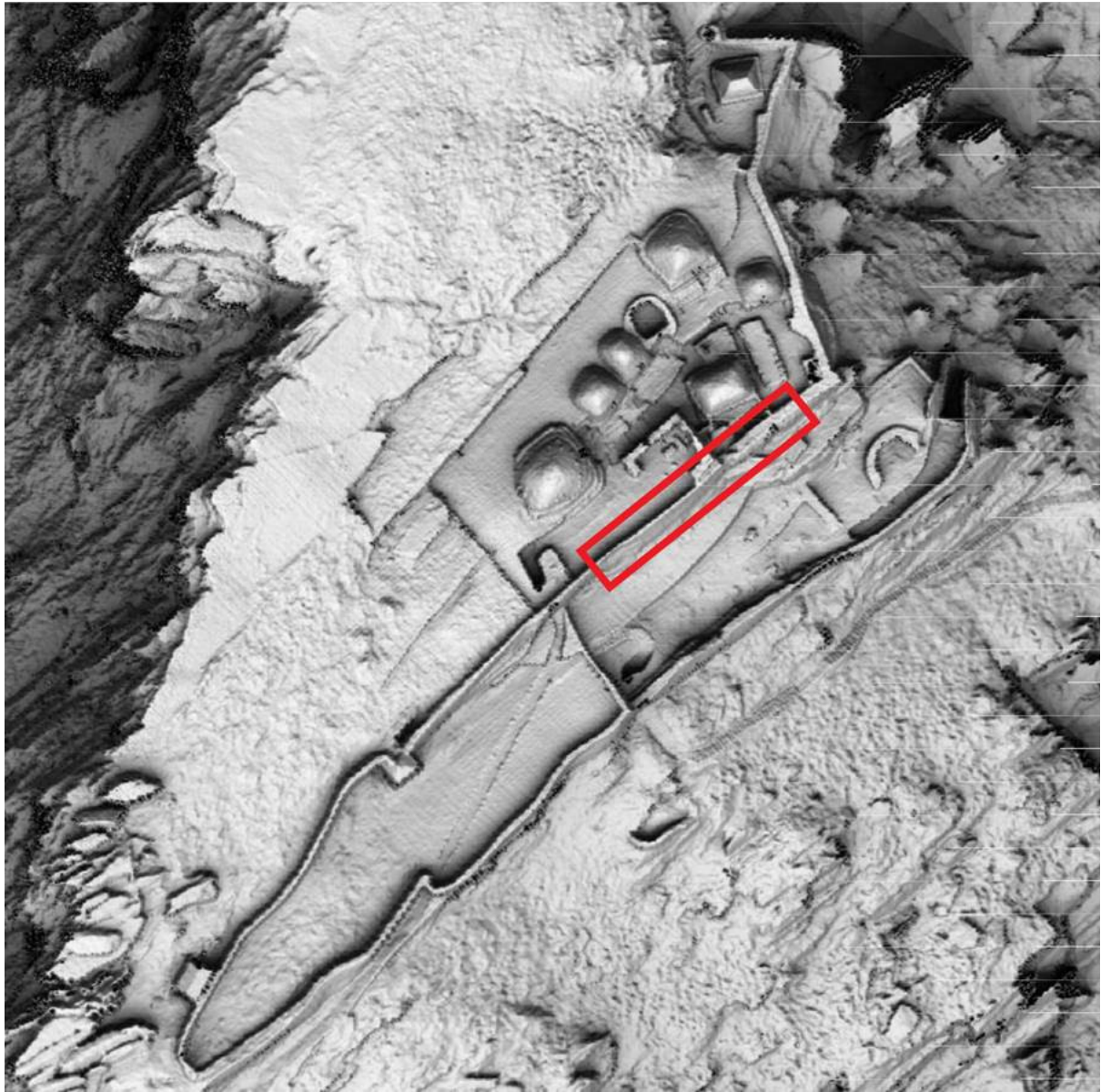
#### 5.4. Discovery Programme Survey - Monastery

Since 2015, the Discovery Programme have been monitoring the movement of the main retaining wall of the monastic settlement. Markings were added in 2017 to the South Peak to determine the stability of the structures at that location. The Discovery Programme issue an annual report to the OPW with their findings and recommendations. In August 2020, the Discovery Programme undertook a survey of the monastic settlement and published their findings in September 2020 (See Appendix B). The report concluded that a section of the retaining wall directly below St. Michael’s chapel is currently undergoing slight movement beyond acceptable tolerances. This section of the monastic wall has been historically susceptible to collapse, with major reconstruction having been undertaken during the 19<sup>th</sup> century.

Due to increased rainfall and pressure from runoff rainwater, the OPW will be undertaking repairs to this section of the enclosing wall over the coming years. All works will be subject to consent and best conservation practices will be implemented. All proposed repair works will be subject to archaeological supervision, recording and monitoring.



*Fig. 13. - Discovery Programmed marker point locations at monastery retaining wall.*



*Fig. 14. - Location of movement to retaining wall below St. Michael's Chapel.*



## 5.5. Works to Lower Lighthouse

### 5.5.1. Project Background

The Lower Lighthouse complex was completed in 1826 but has seen significant alterations in the intervening years. The Keepers' Houses originally had a pitched roof but this was removed in 1910 and a reinforced concrete flat roof was added. In 1968, the original lighthouse tower was demolished and a new tower constructed. The Keepers' Houses were inhabited until 1987, when the lighthouse was fully automated. The Lighthouse Keepers' Houses are currently leased by the OPW. CIL retain full ownership and control of the lighthouse tower and this will be inaccessible to building users. In 2019, the OPW commenced internal stripping out works, with the removal of the existing dry lining to expose the original building fabric beneath.

The Lower Lighthouse will be refurbished to accommodate OPW staff and external consultants that visit the island. The aim of these works is to provide safe accommodation with sleeping, washing, cooking, administrative and communication facilities for OPW site operatives and consultants.

Works were significantly impacted by COVID 19 and in the 2020 season. The building was ventilated and left to dry out. The OPW are currently working on plans for the Lower Lighthouse refurbishment.

### 5.5.2. Oil Removal and Tank Dismantling

Work commenced on the dismantling of the former fuel storage tanks of the Lower Lighthouse complex. A contractor safely removed the oil from the decommissioned storage tanks between July and August 2020. The physical dismantling of the tanks commenced in September and the tanks will be fully removed in 2021.



*Fig. 15.- Dismantling of fuel storage tanks at Lower Lighthouse, September 2020.*

*5.5.3. ARUP Energy and Water Strategy Report*

The ongoing refurbishment of the Lower Lighthouse has highlighted many of the challenges, which have faced human settlement on the island over the millennia. The main challenge is that of water supply. There is no natural source of fresh water on the island. Historically, the monks and the lighthouse keepers collected rainwater. This required an innate knowledge of bird nesting locations, nesting season, saline levels due to windborne salt and other factors, as collected fresh water was easily contaminated due to local environmental factors. The island also lacks a supply to the main electrical grid. The Lower Lighthouse will be entirely off grid and energy usage proposals require expert advice.

The OPW commissioned ARUP to undertake a report for an energy and water strategy for the Lower Lighthouse complex. ARUP undertook a site visit in 2020 and also liaised with former lighthouse keepers and the CIL. The report recommends the use of solar photovoltaic panels, the delivery of fresh potable water to the island by boat, the use of recycled water for other purposes, a natural ventilation solution and the use of composting toilets (Appendix C).



*Fig. 16. – View of Lower Lighthouse Complex from the Upper Lighthouse Road*

5.5.4. Carrig Conservation International Fabric Retrofit Strategy for Improved Energy Efficiency

The OPW commissioned Carrig Conservation International to produce a retrofit strategy for the Lower Lighthouse (Appendix D). The report was produced with the findings of the ARUP report taken into consideration. The Carrig report outlines materials to be used and interventions that would be appropriate based on *I.S. EN 16883:2017 Conservation of cultural heritage – Guidelines for improving the energy performance of historic buildings*. These findings will aid the refurbishment strategy for the Lower Lighthouse. A separate lab geological report was commissioned by OPW with testing carried out of mortar samples by the geological department of Trinity College Dublin on behalf of Carrig International (Appendix E).



Fabric Retrofit Strategy for the Skellig Michael Lower Lighthouse

| Assessment Scale |     |        |      |
|------------------|-----|--------|------|
| Benefit          | Low | Medium | High |
| Risk / Impact    | Low | Medium | High |

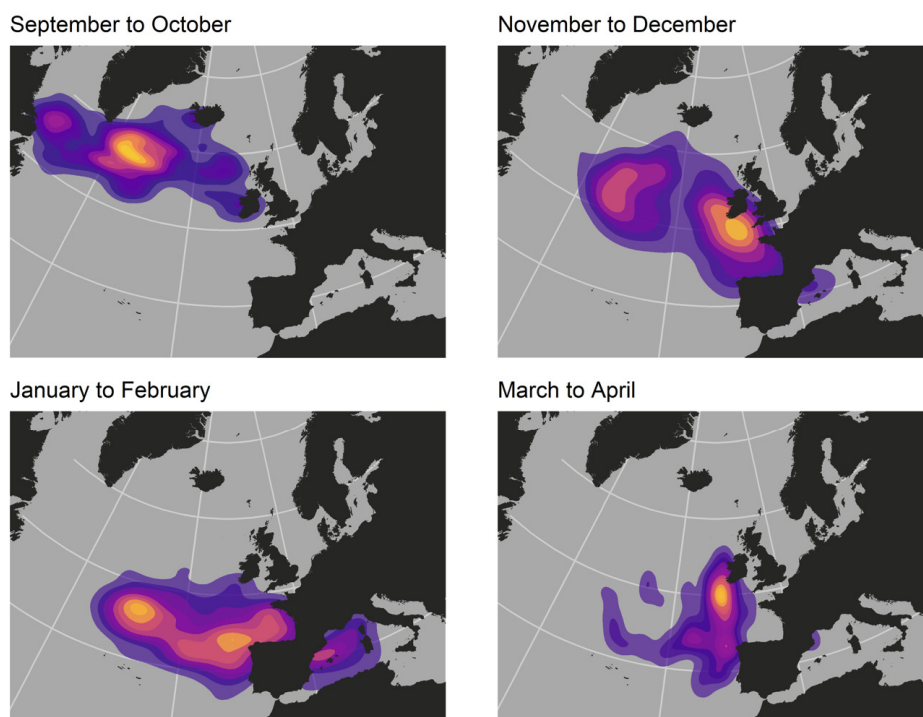
Table 4. Assessment of potential benefits and risks/Impacts posed by short-listed retrofit measures for the Skellig Michael Lower Lighthouse (Carrig, 2020).

| Concern               | Assessment Criterion                                    | Installation of internal shutters | Insulate internal shutters | Installation of thermal curtains | Draughtproof windows & doors | Install internal secondary glazing | Replace existing windows with timber double-glazed units | Replace concrete floor with insulated limecrete floor (GF) | Install underfloor heating with an insulated limecrete floor | Install underfloor heating with a new concrete floor | External insulating lime render | Internal lime plaster | Internal insulating lime plaster | External warm roof insulation (flat roof retained) | French drain around building perimeter |
|-----------------------|---|-----------------------------------|----------------------------|----------------------------------|------------------------------|------------------------------------|--|--|--|--|---------------------------------|-----------------------|----------------------------------|--|--|
| Technical / Material  | Risk (condensation, thermal bridging, etc.)             | Low                               | Low                        | Low                              | Low                          | Low                                | Low  | Low  | High   | High   | Low                             | Low                   | High                             | Low  | Low                                    |
| Heritage Significance | Impact (material, aesthetic, spatial, historical, etc.) | Low                               | Low                        | Low                              | Low                          | Low                                | High   | Low  | High   | High   | Low                             | Low                   | Low                              | Low  | Low                                    |
| Energy Efficiency     | Benefit (level of improvement)                          | High                              | High                       | High                             | High                         | High                               | High   | High   | High   | High   | High                            | High                  | High                             | High   | High                                   |

Fig. 17. - Conservation method strategy based (Carrig Fabric Retrofit Report, Appendix D).

## 5.6 Puffin Survey

The School of Biological, Earth & Environmental Sciences, University College Cork led by Mark Jessopp and Jamie Darby conducted a puffin survey in July 2020. The aim of the research is to track the movements of the breeding Skellig Michael puffin population outside the breeding season. Twenty devices were attached to the legs of puffins with the aim of retrieving them over the next two seasons. These tags will contain data on the puffins' geographic movements. The research aims to quantify puffin mortality rates outside the breeding season and to monitor puffin travel patterns. It is intended that the research will assess the impact of more intense Atlantic storm cycles on the puffin population. The findings of the 2020 season were published in December 2020 (Appendix F).



*Distribution of Skellig Michael puffins at four different intervals over the non-breeding period. The purple to yellow gradient represents low to high densities of geolocator positions in an area. The northeast to southwest movement phase over the course of the non-breeding season can be clearly seen.*

**Fig. 18.- Maps showing puffin locations outside breeding season. Ref. Appendix F.**



## 5.7 National Parks and Wildlife Services (NPWS) Surveys

The NPWS conducted surveys to monitor bird-breeding populations on the island. Two surveys were conducted in 2020, one in June and the other in July. The surveys were focused on the storm petrel and kittiwake species in particular, although all bird species were counted. The aim of the surveys was to collect empirical data on the population numbers and to compare these data sets to previous years. Storm petrel breeding pairs were noted as stable for 2020 (Appendix G). The NPWS also surveyed the Upper Lighthouse complex and identified the locations of nesting storm petrels. The NPWS liaised with the OPW and suggested disturbance mitigation measures for 2021. The OPW will endeavour to continue collaboration with the NPWS into the future for the monitoring of works.



*Fig. 19. - 2020 NPWS surveys focused on kittiwake and storm petrel breeding populations.*

## 5.8 2020 – 2030 Draft Management Plan

The 2010 – 2020 management Plan is to be superseded by the 2020 -2030 Management Plan. The Management Plan has been produced by DHLGH, in conjunction with the OPW, after being developed following consultation with local groups, non-governmental organisations and other interested parties. The plan provides information on the various aspects of the management policy for Skellig Michael, including conservation and preservation, visitor management, the legislative protections it enjoys and the development considerations necessary to protect the site into the future. Management challenges are also addressed, such as threats to the biodiversity and the impacts of climate change. It is envisaged that future works on the island will be closely monitored to assess their potential impact on wildlife. The final version of the management plan will be published in 2021.



*Fig. 20. - The Management Plan 2020-2030 sets out the protocols and goals for the future repair works on Skellig Michael.*

### 5.9. OPW Architects' & Design Team Site Visits

The OPW Conservation Architects undertook six site visits to Skellig Michael over the 2020 season, from June to September. The OPW Chairperson, Maurice Buckley, the OPW Commissioner, John McMahon and the DHLGH Chief Archaeologist Michael McDonagh also visited the Island. Repair Works in the 2020 Season included repair works to the Upper Lighthouse Road and the Lower Lighthouse, maintenance works to the monastery, the installation of temporary crash decks. A site visit report was drafted with a photographic record following each site visit. The site visit reports monitored and recorded progress with all repair works.



*Fig. 21. - Left to Right: OPW Chairperson Maurice Buckley, DHLGH Senior Archaeologist Edward Bourke, DHLGH Chief Archaeologist Michael McDonagh inspecting works on Skellig Michael, July 2020.*





*Fig. 22 – OPW Commissioner John McMahon visiting the Monastery in June 2020.*



*Fig. 23 - OPW Senior Conservation Architect Fergus McCormick inspecting repair works to the Lower Lighthouse.*



*Fig. 24 – Left to Right: Bláthmhac Ó Muirí OPW Architectural Graduate, Shane Murphy OPW, Pat O’Shea OPW Foreman*

| Site Visit No. | Date       |
|----------------|------------|
| 1              | 09/06/2020 |
| 2              | 17/06/2020 |
| 3              | 15/07/2020 |
| 4              | 12/08/2020 |
| 5              | 27/08/2020 |
| 6              | 16/09/2020 |

*Table 2. – List and Dates of OPW National Monuments Architects’ visits.*



### 5.10. Audio-visual Recording of 2020 Works by Crossing the Line Productions

OPW commissioned Crossing the Line Productions to film works on the island in 2020. The aim of this film footage is to provide a visual record of the works during the 2020 season. A fifteen- minute audio-visual synopsis of the 2020 works was produced, including shots of the rock fall, works to the Upper Lighthouse Road, maintenance works, the installed temporary crash decks and outlines for future works. The audio-visual files produced by Crossing the Line acts as a record of works in conjunction with site reports and photographic records.



*Fig. 25. - Crossing the Line Productions filming on the site at Skellig Michael.*

## 6. 2020 Challenges

### 6.1 COVID 19

Skellig Michael was impacted by the socioeconomic and human health effects of COVID-19 no less in 2020. The Island was closed to visitors for the entire 2020 season. The start of the OPW works season was delayed by six weeks. The seasonal OPW guides were not on site. The work force capacity of the island was reduced with social distancing measures introduced with one worker only allowed in each site hut. Some spare capacity was accommodated by housing OPW workers and consultants in the vacant guides' huts.

#### 6.1.2. Management Response

The OPW adhered to official government guidelines at all times. In June, once Government restrictions were lifted, the OPW conducted an inspection of the site to form the basis of an OPW COVID-19 Management Plan for Workers. The plan was published in the same month, issued to the Commissioner for review and implemented throughout the season. The plan required the appointment of a COVID-19 compliance officer, the induction of all staff in COVID-19 measures, the use of logbook and contact tracing system and the daily cleaning and disinfecting of contact surfaces. COVID-19 signs were installed at the site entrances and disinfection stations set in place at the landing pier, site entrance and toilet hut. All site visits observed social distancing and mask wearing procedures. The plan was revised and updated in July to include a risk assessment and Management Plan for External Visitors to the island. The OPW Management Board reviewed the external risk assessment and extended the closure of the island to external visitors to the entire season.



*Fig. 26. - Infrastructure installed based on recommendations of OPW COVID-19 Management Plan*



### 6.2.1. Rock Collapse & Climate Impact

Rock-falls have increased in frequency in the past five years, due to the effects of climate change. March and June were very dry months and were followed by unseasonably high levels of precipitation in July. This led to soil erosion and a substantial rock-fall occurred on the morning of July 27<sup>th</sup> 2020 on the lighthouse road. Luckily, OPW operatives were not on the island at the time although there was a film crew on site. The rock fall was in close proximity to the OPW site operative huts. A similar event had occurred at this exact location in 2017. The overhanging area was swept and loose rocks were fastened or removed. A temporary crash deck was installed at this location and at another two high risk locations on the Upper Lighthouse Road to protect OPW operatives from falling debris.



*Fig. 27. – Rock Fall on 27<sup>th</sup> July 2020.*

### 6.2.2. Management Response

In response to the threat to the health and safety of the workers, the OPW tendered for engineering services for the design of three permanent crash decks for the Lighthouse Road. Downes Associates were appointed as engineers for the design of permanent crash decks. All design proposals will be subject to consent approval from the DHLGH and will be designed in collaboration with the OPW Conservation Architects. The installation of permanent, well-designed and robust crash decks is critical for the safety and wellbeing of OPW workers on site and for the future access and use of the upper lighthouse road by visitors. The viability of the island as an accessible tourist location is dependent on safe access conditions on the Lighthouse roads.

OPW are considering repair and enhancement works to future proof the landing pier against the effects of climate change. A pier wall will be constructed to protect visitors from increased swells and higher tides. There is a more long-term strategy of increasing the height of the pier to accommodate predicted sea level rises due of climate change.

OPW are in discussion with Met Éireann, the Irish national meteorological organisation, to install a proposed weather station on the site to provide an accurate record of weather events and to monitor changing climatic patterns.



*Fig. 28. – Temporary crash deck location A near site huts and installed following rock-fall.*



*Fig.29. – Temporary crash deck location B & C on the Upper Lighthouse Road.*

### 6.3.1. Security

OPW guides typically have a full-time presence on the island throughout the tourist season. They are housed on the island and provide an informal security presence. Unauthorised landings outside the tourist season are undocumented and unquantified. OPW operatives work on the island from Monday to Friday. Due to the lack of a guide presence in 2020, the site was exposed to unauthorised landings and excursions during the weekends. No damage was reported. A number of attempted landings were discouraged by operatives during the working week. The OPW has a number of signs in place warning unauthorised trespassers of the dangers posed to them; however, this alone is not enough of a deterrent. An unauthorised drone was also noted on one of the site visits. This occurred during the peak of the nesting season and could have caused potential stress to nesting seabirds.

### 6.3.2. Management Response

The OPW will endeavour to provide greater security to the site. The option of installing CCTV with a live feed to the mainland to monitor activity out of season is being explored. The possibility of installing a gate to restrict access is also being considered. Such an installation would require the consent of DHLGH and would be designed to be as visually discrete as possible.



## 7. 2021 Objectives

The objectives for the 2021 season can be summarised as follows:

- Continuation of the repair works to the Lower Lighthouse. Works to include removal of decommissioned oil tanks.
- Continuation of the repair of the Upper Lighthouse road and seawall under archaeological supervision.
- Repair works to the Upper Lighthouse buildings and entrance gate piers.
- The installation of three permanent crash decks on site.
- The installation of public toilets at the Helicopter pad.
- The consent process for a visitors viewing platform at the fog signalling station.
- The continued monitoring of the movement at the monastery enclosure retaining wall.
- A new digital survey of the monastery.
- Ongoing wildlife surveys.
- Ongoing filming of the repair works.



*Fig. 30. – Proposed repairs to Upper Lighthouse sea wall and removal of debris from buildings in 2021 Season.*



## 8. Bibliography

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