

PIERRE BORTOLUSSI & ASSOCIÉS

Chief Architect for Historic Monuments

FINISTÈRE
USHANT

CRÉAC'H LIGHTHOUSE

SUPPORT FOR PUBLICATION
OF A CALL FOR EXPRESSIONS OF INTEREST

Historical Appendix



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CONTENTS

SUMMARY AND DOCUMENTATION	3
HISTORICAL SUMMARY	4
PREAMBLE	4
TIMELINE	4
IMAGES	9

SUMMARY AND DOCUMENTATION

Department	Finistère
Commune	Ushant
Owner	The State
Current use of the building	Lighthouse
Main construction periods	19 th and 20 th centuries
Nature, scope and date of protection	Créac'h Lighthouse, i.e. the lighthouse itself in its entirety, the façades and roofs of its ancillary buildings, the walls, railings and grounds of its enclosure, as shown on the local land register, plot no. 1428, section A: listed by Order of 23 May 2011.
Contracting authority for the study	Regional Directorate of Cultural Affairs (DRAC)
Agency of the Chief Architect	Charles Poujade-Baltazard Chief Architect for Historic Monuments
	Pierre Bortolussi Chief Architect for Historic Monuments
Brief description	Créac'h Lighthouse was built in 1863 and converted to electricity 20 years later. In 1887, a new lens was installed, using the principles of Augustin Fresnel. After being exhibited at the 1937 World's Fair, a new lantern was installed between 1938 and 1939. The lighthouse was listed as a Historic Monument on 23 May 2011.

HISTORICAL SUMMARY

PREAMBLE

In the late 17th century, the first lighthouse was built on the island of Ushant by Sébastien Le Prestre, Marquis of Vauban. It is located on Stiff Cliff, the highest point on the island.

A century and a half later, in 1856, the island's municipal council wanted to build a second lighthouse, with greater reach. Construction was completed in 1863. The lighthouse was converted to electricity in 1884. Three years later, a new lens was installed, following the principles of Augustin Fresnel. In 1901, the optic was modified, operating on a mercury bath.

After being exhibited at the 1937 World's Fair, a new lantern was installed between 1938 and 1939. At the time, Créac'h Lighthouse was the most powerful in the world. The optic system was made by Barbier, Bénard & Turenne Company and rotates using a mercury tank mechanism.

Nowadays, Créac'h Lighthouse is the most powerful in Europe, but the use of mercury in the operation of its optic system raises problems, as this substance is highly polluting and toxic.

TIMELINE

Lighthouse construction - 1st optic system

1856 - 1857: The Stiff Lighthouse was initially the only one on the island of Ushant, built in the late 17th century. As early as 1856, the municipal council wanted to build a second lighthouse to extend the range of the first¹.

¹ Finistère, Ouessant, Phare du Créac'h, Étude préalable à la restauration et à la mise en valeur, December 2013, Marie-Suzanne de Ponthaud, ACMH, page 7,

² Idem, page 7,

³ Phare du Créac'h, Étude historique, Martin Couëtoux du Tertre - Heritage historian, December 2013, pages 4, 5, 6,

1860 - 1865: The new lighthouse and keepers' housing are built on the Créac'h plateau, to the west of the island².

The land was taken by the State from owners with limited literacy. The work is carried out by the firm of Victor Tritschler, an architect in Brest. Mr Delachienne, a civil engineering engineer, is responsible for day-to-day site supervision. The base of the lighthouse is built from ashlar and the tower from rubble stone masonry³.

12 May 1860: An imperial decree provides for the construction of a lighthouse on Ushant⁴.

1862: Thirty masons and thirty stonemasons work on the site⁵.

16 July 1862: The titular engineer writes: "The masonry of the tower of Créac'h Lighthouse is now so high that it is difficult and dangerous to work on it in bad weather. [...] [This] will necessarily force workers into frequent lay-offs"⁶.

20 August 1862: To make up for time lost due to weather conditions, the Prefect of Finistère issues a decree authorising work on Sundays⁷.

21 October 1862: The lighthouse tower is completed⁸.

18 May 1863: The titular engineer describes the project's progress: "The upper platform [has been] fully installed and the parapet [is] being built. All that remains to be done [...] is the small wall for the lantern room and the two vaults of the tower, which we left

⁴ Idem, pages 4, 5, 6,

⁵ Phare du Créac'h, Étude historique, Martin Couëtoux du Tertre - Heritage historian, December 2013, page 5,

⁶ Idem, page 5,

⁷ Idem, page 5,

⁸ Idem, page 5,

open to allow materials to be lifted. [...] The installation of the platform has made it much easier for us to carry out the remaining masonry, and the work is now much safer, even in bad weather"⁹.

5 June 1863: "The cornice on the small wall and the platform balustrade are finished. Work on the upper vault is underway and due to be completed within ten days, which will allow the lighting system to be installed. [...] Major progress has also been made on the ancillary buildings, the staircases have been installed and construction of the partitioning should be completed within ten days"¹⁰.

11 July 1863: The floor of the lantern room was to be paved with marble. The titular engineer proposes replacing it with paint. Neither proposal is accepted by the Inspector General¹¹.

20 November 1863: The date for lighting the lighthouse is announced for 20 December 1863¹².

30 November 1863: The chief engineer receives information about the lantern to be mounted at the top of the tower¹³.

20 December 1863: The lighthouse is lit by a first-rate optic system with a long range. It is equipped with a lamp of total eclipses of 20 seconds in 20 seconds, with one red flash following two white flashes. Oil is used to fuel the lamp¹⁴.

24 February 1864: Construction of Créac'h Lighthouse is complete. The interior and

exterior facings of the tower were not built using hammer-dressed rubble stone, but rather small pieces of granite¹⁵.

18 August 1864: The titular engineer proposes that the tower shaft be painted in two alternating colours, white and black, using oil-based paint¹⁶.

30 June 1865: Final acceptance certificate for the construction of the lighthouse¹⁷.

Electrification of the lighthouse - 2nd optic system

11 March 1882: The titular engineer presents the project for converting the lighthouse to electricity. This includes the construction of a building for steam-powered generators with underground freshwater reserves and two additional buildings to house the lighthouse keepers¹⁸.

12 June 1882: The project to convert the lighthouse to electricity is approved¹⁹.

1883 - 1884: Works to convert the lighthouse to electricity²⁰.

July - December 1887: For a new optic designed to emit a light with two white flashes, a new lens is installed using the principles of Augustin Fresnel. Supply and installation are carried out by Barbier, Bénard & Turenne Company²¹. The lighthouse is equipped with a lamp producing two flashes every 10 seconds. The light is powered by electricity²².

⁹ Idem, page 6,

¹⁰ Idem, page 6,

¹¹ Idem, page 6,

¹² Idem, December 2013, page 6,

¹³ Idem, page 6,

¹⁴ Optiques du phare du Créac'h, François Géraud, @Gardien2phare.

¹⁵ Phare du Créac'h, Étude historique, Martin Couëtoux du Tertre - Heritage historian, December 2013, page 6,

¹⁶ Idem, page 6,

¹⁷ Finistère, Ouessant, Phare du Créac'h, Étude préalable à la restauration et à la mise en valeur, December 2013, Marie-Suzanne de Ponthaud, ACMH, page 7,

¹⁸ Phare du Créac'h, Étude historique, Martin Couëtoux du Tertre - Heritage historian, December 2013, page 7,

¹⁹ Idem, page 7,

²⁰ Finistère, Ouessant, Phare du Créac'h, Étude préalable à la restauration et à la mise en valeur, December 2013, Marie-Suzanne de Ponthaud, ACMH, page 7,

²¹ Phare du Créac'h, Étude historique, Martin Couëtoux du Tertre - Heritage historian, December 2013, page 7,

²² Optiques du phare du Créac'h, François Géraud, @Gardien2phare.

16 July 1888: The new optic system is installed and operational²³.

1896: Replacing the lamp mechanism with a flashing light²⁴.

24 July 1897: The Director of Lighthouses and Beacons proposes the construction of new housing for the lighthouse keepers, ancillary buildings and walls to separate the yards. This work seems to have been completed by the end of 1897²⁵.

1898: Replacement of the magneto-electric machines²⁶.

1899: Electrical controllers are installed²⁷.

3rd optic system

1901: Installation of a new steam-powered generator. The optic and general transmission are modified²⁸. The optic operates on a mercury tank. It was built by Sautter - Harlé & Co. and powered by electricity²⁹.

1930 - 1936: Construction of a temporary machinery building³⁰.

New lantern - 4th optic system

1937: The new lantern for Créac'h Lighthouse is exhibited on the roof of the

Palace of Light and Electricity, at the World's Fair in Paris³¹.

1938 - 1939: Works to replace the lantern. During this project, a temporary lamp is installed on a pylon. The upper part of the lighthouse is refurbished. The crown is widened from 9 m to 9.32 m and the upper vault is replaced by a 1 m-thick reinforced concrete slab. A new lantern is installed, powered by a temporary power station³². The woodwork in the watch room is also installed during these works³³.

26 September 1938: Installation of the new lantern begins, supplied by Barbier, Bénard & Turenne Company. It has an internal diameter of 5.50 m, with the lighting system and optic distributed over two levels³⁴.

25 November 1938: The structure of the lantern is installed, except for the glass. Most large parts of the lamp are in place and the upper parts of the optic are about to be fitted³⁵.

March 1939: Installation of the electrical systems required for the lighthouse's operation³⁶.

Late April - early May 1939: The new lamp is in operation³⁷. The optic system consists of a double lens at each tier of the lantern, floating on a bath of mercury, built by Barbier, Bénard & Turenne Company³⁸.

1940 - 1942: A new power station is built from reinforced concrete and the structural

²³ Phare du Créac'h, Étude historique, Martin Couëtoux du Tertre - Heritage historian, December 2013, page 7,

²⁴ Idem, page 8,

²⁵ Idem, page 8,

²⁶ Idem, page 8,

²⁷ Idem, page 8,

²⁸ Idem, page 8,

²⁹ Optiques du phare du Créac'h, François Géraud, @Gardien2phare.

³⁰ Phare du Créac'h, Étude historique, Martin Couëtoux du Tertre - Heritage historian, December 2013, page 9,

³¹ Optiques du phare du Créac'h, François Géraud, @Gardien2phare.

³² Finistère, Ouessant, Phare du Créac'h, Étude préalable à la restauration et à la mise en valeur,

December 2013, Marie-Suzanne de Ponthaud, ACMH, pages 7, 32,

Phare du Créac'h, Étude historique, Martin Couëtoux du Tertre - Heritage historian, December 2013, page 9,

³³ Finistère, Ouessant, Phare du Créac'h, Étude préalable à la restauration et à la mise en valeur, December 2013, Marie-Suzanne de Ponthaud, ACMH, page 32,

³⁴ Phare du Créac'h, Étude historique, Martin Couëtoux du Tertre - Heritage historian, December 2013, page 9,

³⁵ Idem, page 9,

³⁶ Idem, page 9,

³⁷ Idem, page 9,

³⁸ Optiques du phare du Créac'h, François Géraud, @Gardien2phare.

works for the east wing of housing are completed. The works are interrupted by the German Occupation³⁹.

1946 - 1947: Construction of the east wing resumes after World War II. It is completed in April 1947⁴⁰.

1948 - 1953: The west wing of the housing building is built⁴¹.

1950: The main courtyard is landscaped with paved paths, edging and gutters⁴².

1953: The island's grid is linked to the power station⁴³.

1955 - 1958: Central heating is installed in the housing buildings⁴⁴.

1965 - 1966: Work is carried out on the housing buildings. The partitioning is modified, some of the joinery replaced and the exterior coating restored⁴⁵.

1967: Works to service the generator sets. The waterproofing of the lantern is refurbished and the paintwork on the lighthouse and housing redone⁴⁶.

1971: The temporary machinery building is demolished⁴⁷.

1972: Waterproofing works are carried out on the west wing, the exterior of the housing buildings is repainted and the head keeper's accommodation is refurbished⁴⁸.

1988: The power station is decommissioned and converted into the Museum of Lighthouses and Beacons. To the north of the lighthouse, offices are built for the museum⁴⁹.

³⁹ Finistère, Ouessant, Phare du Créac'h, Étude préalable à la restauration et à la mise en valeur, December 2013, Marie-Suzanne de Ponthaud, ACMH, page 7,

⁴⁰ Idem, page 7,

⁴¹ Idem, page 7,

⁴² Idem, page 7,

⁴³ Idem, page 7,

⁴⁴ Idem, page 7,

⁴⁵ Idem, page 7,

⁴⁶ Idem, page 7,

⁴⁷ Idem, page 7,

⁴⁸ Idem, page 7,

Late 1980s: An antenna is installed on a scaffolding structure, set up at the level of the lantern⁵⁰.

2005: A study to determine the programme for restoring the entire building complex was carried out:

- waterproofing of the terraces,
- restoration of façades,
- replacement of external joinery,
- anti-merula treatment,
- refurbishment of interior spaces,
- demolition of the chimneys and water tanks, no longer needed in the museum,
- compliance upgrade of the sewage network⁵¹.

26 September 2005: Créac'h Lighthouse is listed as a Historic Monument by decree⁵².

2008: Inspection report for the gallery walkway and metal structure of the lantern⁵³.

2011: Restoration of the lantern⁵⁴.

23 May 2011: Créac'h Lighthouse is classified as a Historic Monument by decree. "The lighthouse itself in its entirety, the façades and roofs of its ancillary buildings, the walls, railings and grounds of its enclosure, all of which are shown on the local land register, plot no. 1428, section A"⁵⁵.

2025: The antenna and its scaffolding structure around the lantern are removed.

⁴⁹ Idem, page 7,

⁵⁰ Idem, page 7,

⁵¹ Idem, page 7,

⁵² Reference: PA29000048, Base Mérimée, Médiathèque du Patrimoine et de la Photographie.

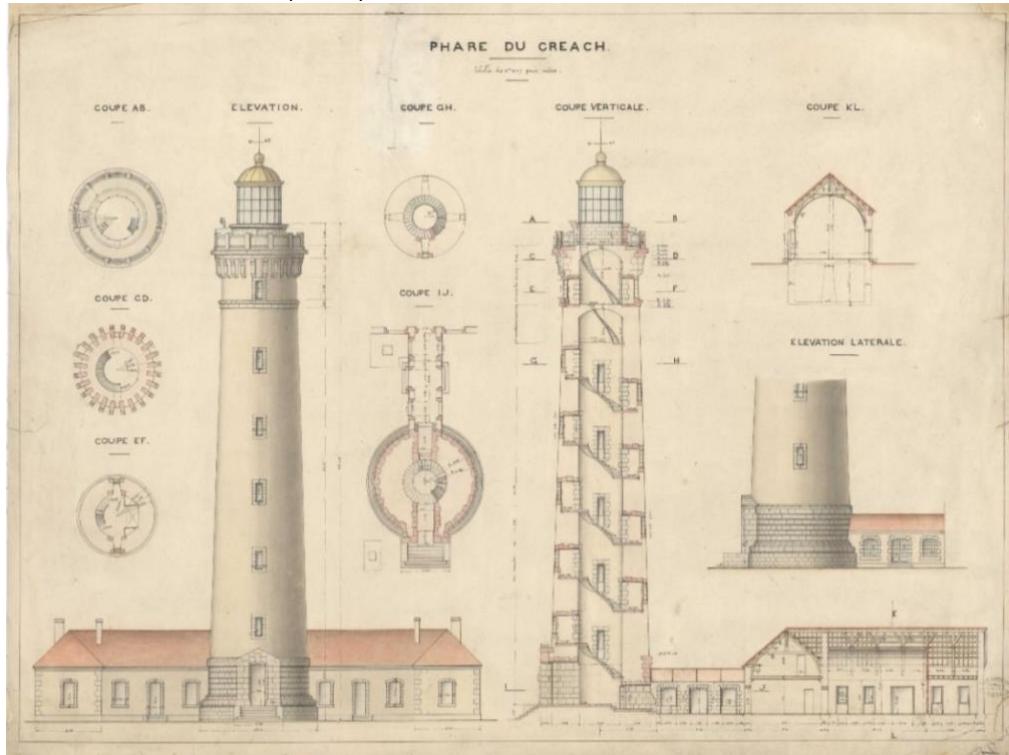
⁵³ Finistère, Ouessant, Phare du Créac'h, Étude préalable à la restauration et à la mise en valeur, December 2013, Marie-Suzanne de Ponthaud, ACMH, page 7,

⁵⁴ Idem, page 7,

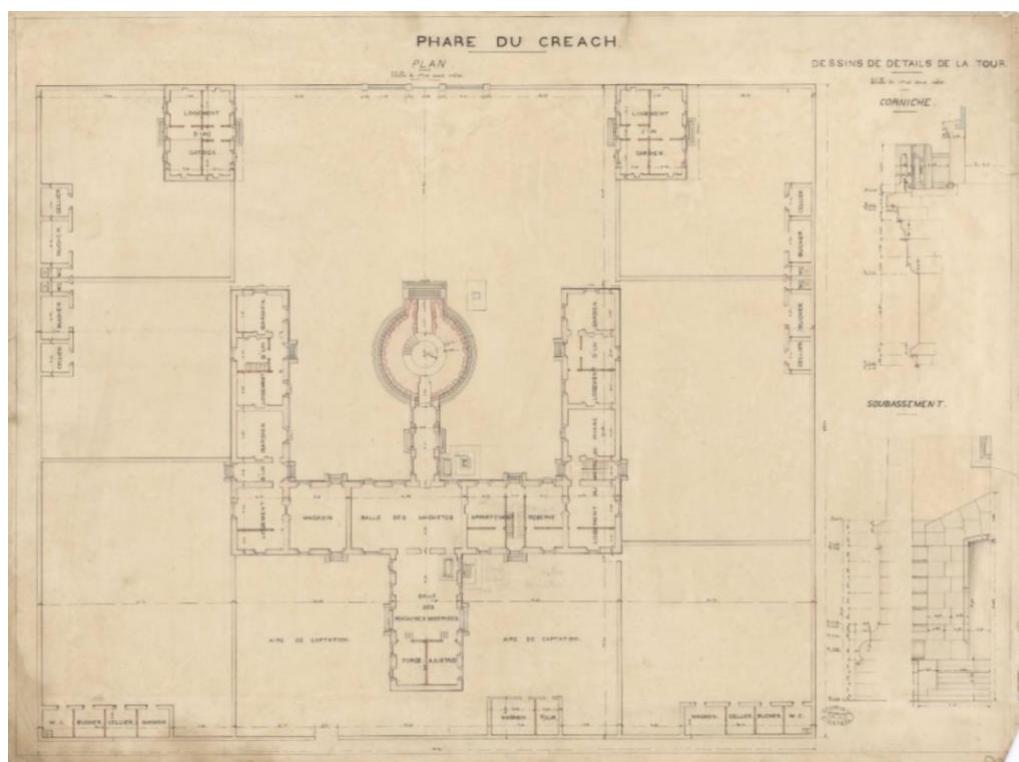
⁵⁵ Reference: PA29000048, Base Mérimée, Médiathèque du Patrimoine et de la Photographie.

IMAGES

Lighthouse construction - 1st optic system



Phare du Créac'h (Créac'h Lighthouse), 1859-1863,
Reference: 25 S 326 19, Archives Départementales du Finistère,



Phare du Créac'h (Créac'h Lighthouse), no date,
Reference: 25 S 326 20, Archives Départementales du Finistère,



Photograph of the lighthouse just after its construction, 1863 - 1864,
Reference: D/1/29/19-2, Archiv'MH, Médiathèque du Patrimoine et de la Photographie,

Electrification of the lighthouse - 2nd optic system



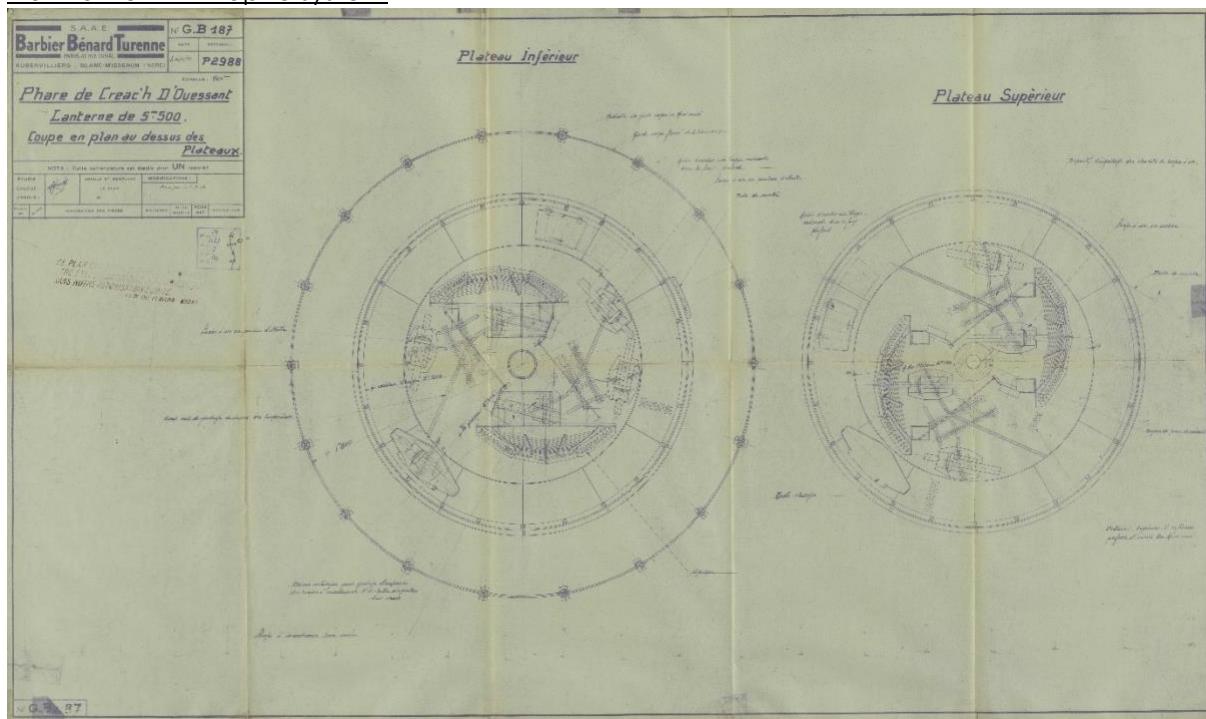
Photograph of the lighthouse during electrification work, 1888,
Reference: D/1/29/19-2, Archiv'MH, Médiathèque du Patrimoine et de la Photographie,

3rd optic system

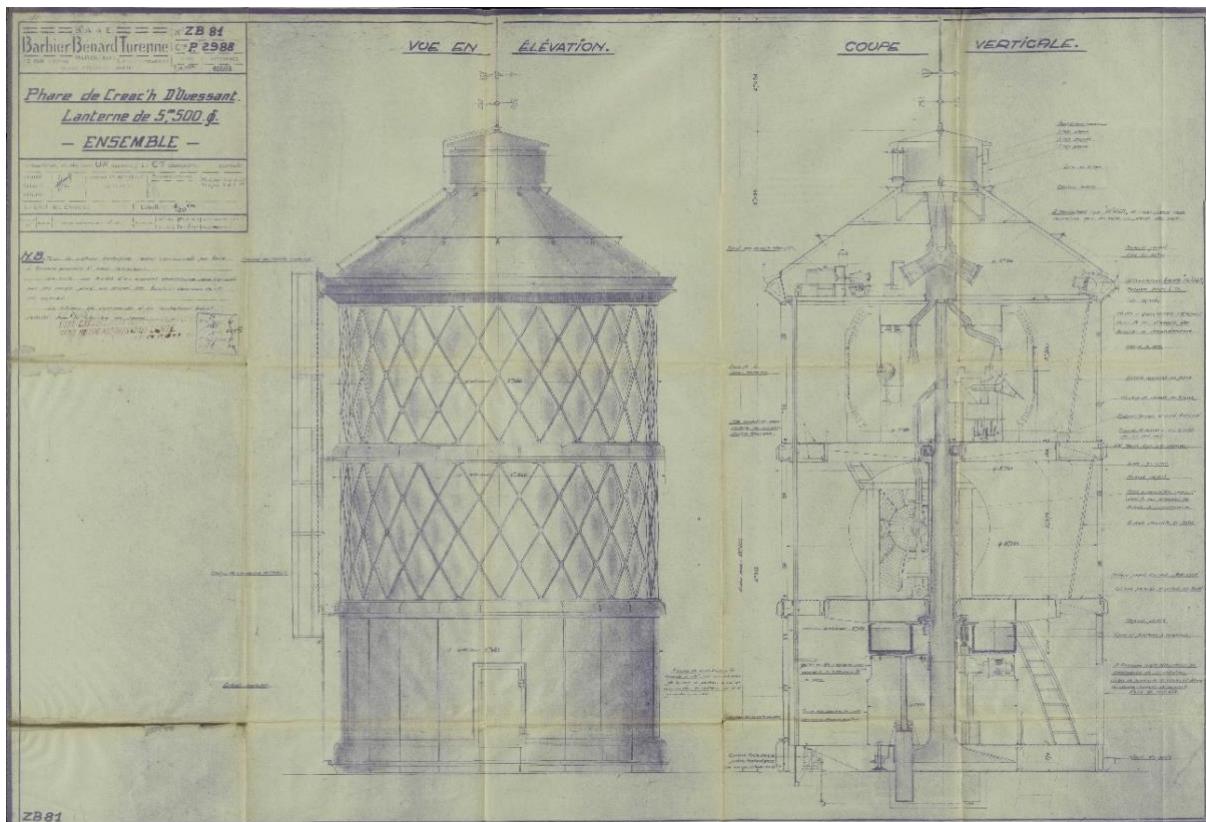


Île d'Ouessant, Phare du Crêac'h, Point le plus occidental de la Côte Française (Ushant Island, Crêac'h Lighthouse, Westernmost Point of the French Coast), early 20th century,
Reference: 2FI155 036, Archives Départementales du Finistère.

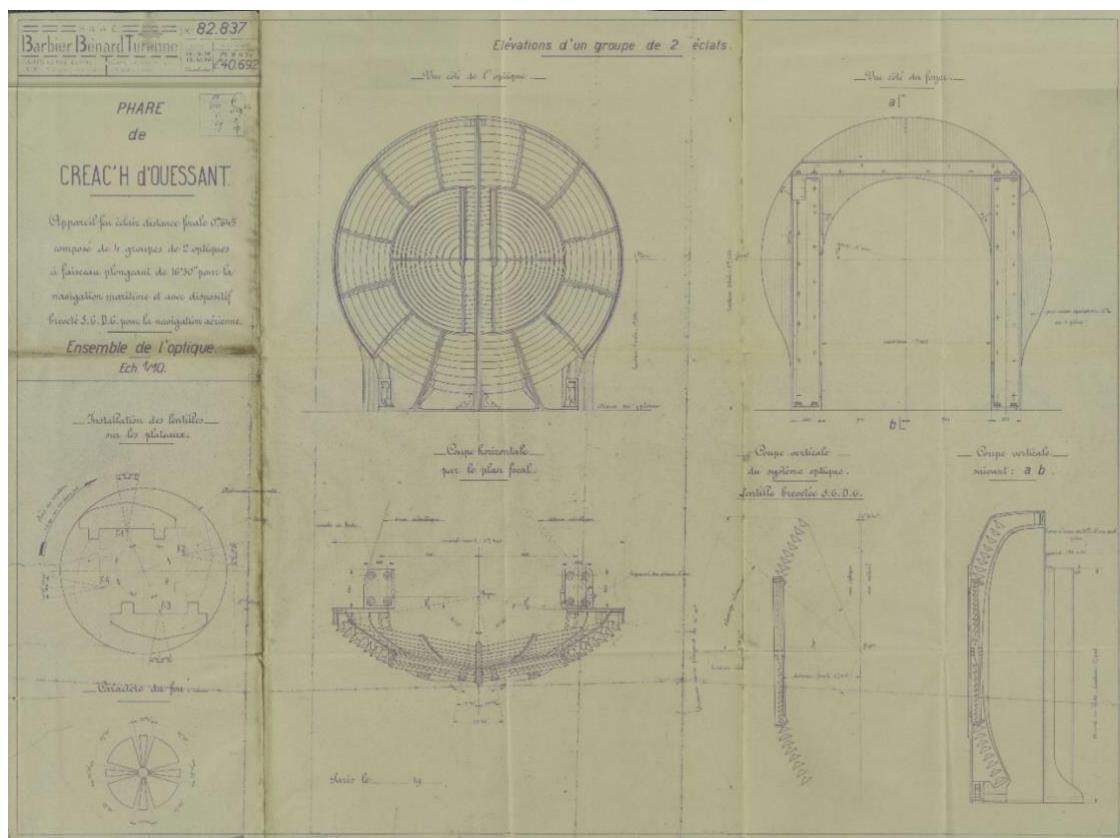
New lantern - 4th optic system



Plans of the two tiers of the lantern, Barbier, Bénard & Turenne Company, 1936 - 1939,
 Reference: 25S 0366 14 01, Archives Départementales du Finistère,



Phare du Créac'h d'Ouessant, Lanterne (Créac'h Lighthouse on Ushant), Barbier, Bénard & Turenne
 Company, 1938 - 1939,
 Reference: 25S 0365 28 01, Archives Départementales du Finistère,

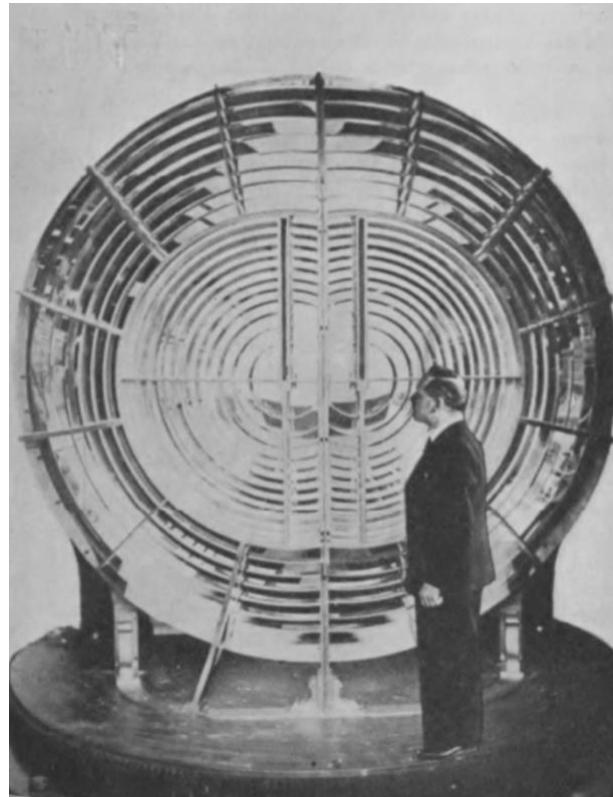


Phare du Créac'h d'Ouessant (Créac'h Lighthouse on Ushant), Barbier, Bénard & Turenne Company, 1938 - 1939,

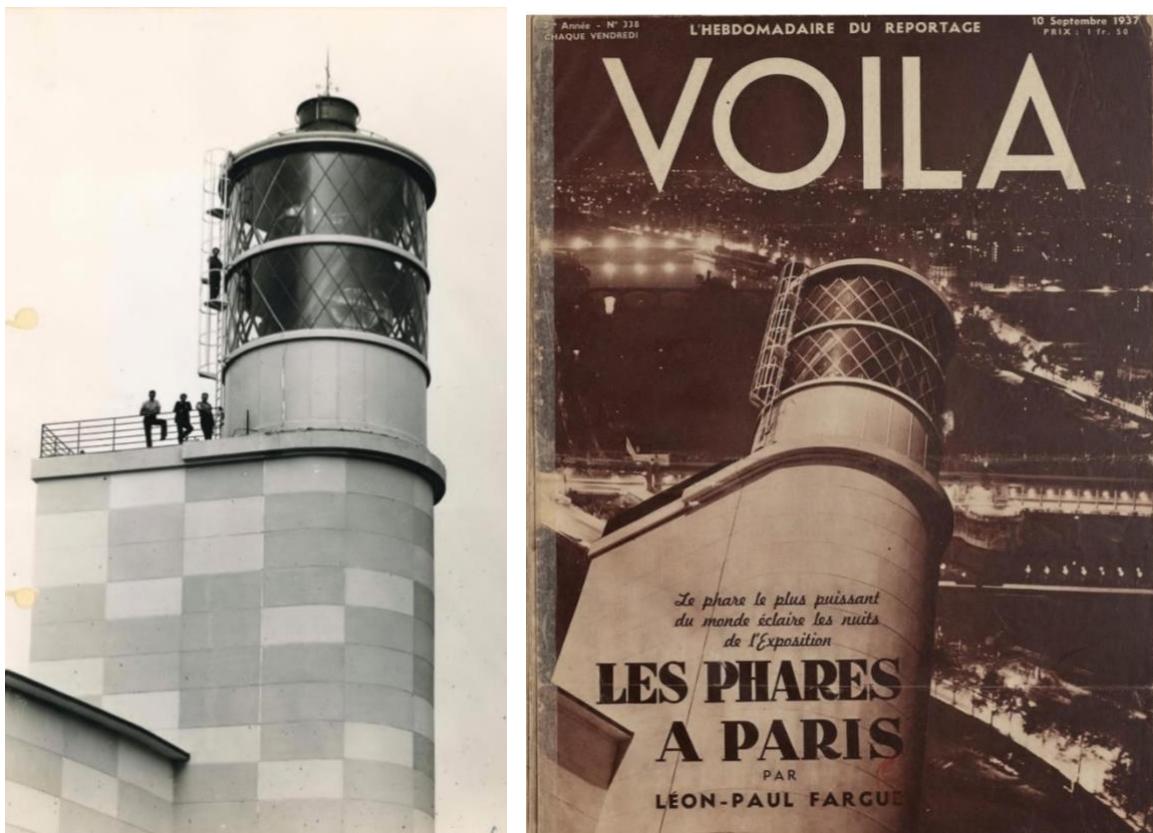
Reference: 25S 0366 29 01, Archives Départementales du Finistère,



Photographs of the construction of the new lantern, 1936,
 Submission, Call for Expressions of Interest, Créac'h, project team,



The lens of Créac'h Lighthouse, 1937,
Le Génie Civil, 1937



The lantern of Crac'h Lighthouse on the Palace of Light and Electricity at the 1937 World's Fair,
Optiques du phare du Crac'h, François Géraud, @Gardien2phare,



Construction of the new lantern, June 1938,
Reference: 25S367, Archives Départementales du Finistère,

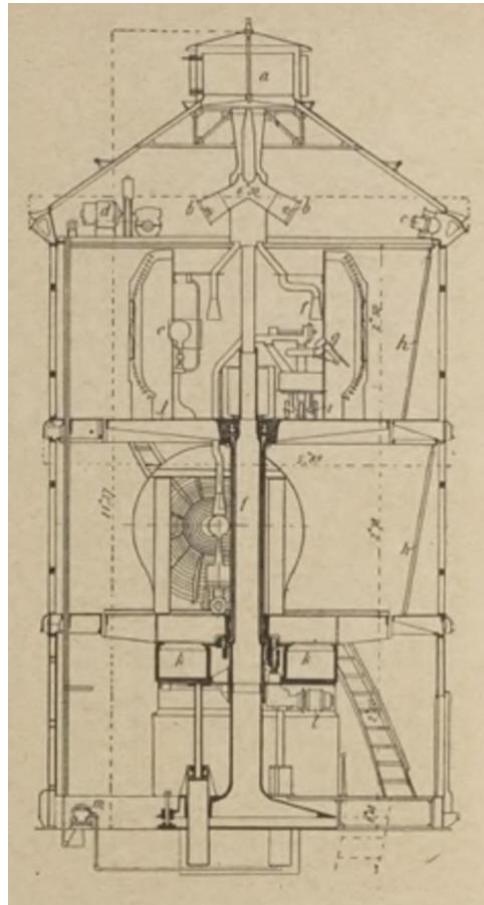


Préparatifs pour le transport de la colonne centrale (Preparation for transporting the central column), 30 September 1938,
Reference: 25S 0367 011, Archives Départementales du Finistère,



Transport de la colonne centrale au Crac'h (Transporting the central column to Crac'h), 1 October 1938,

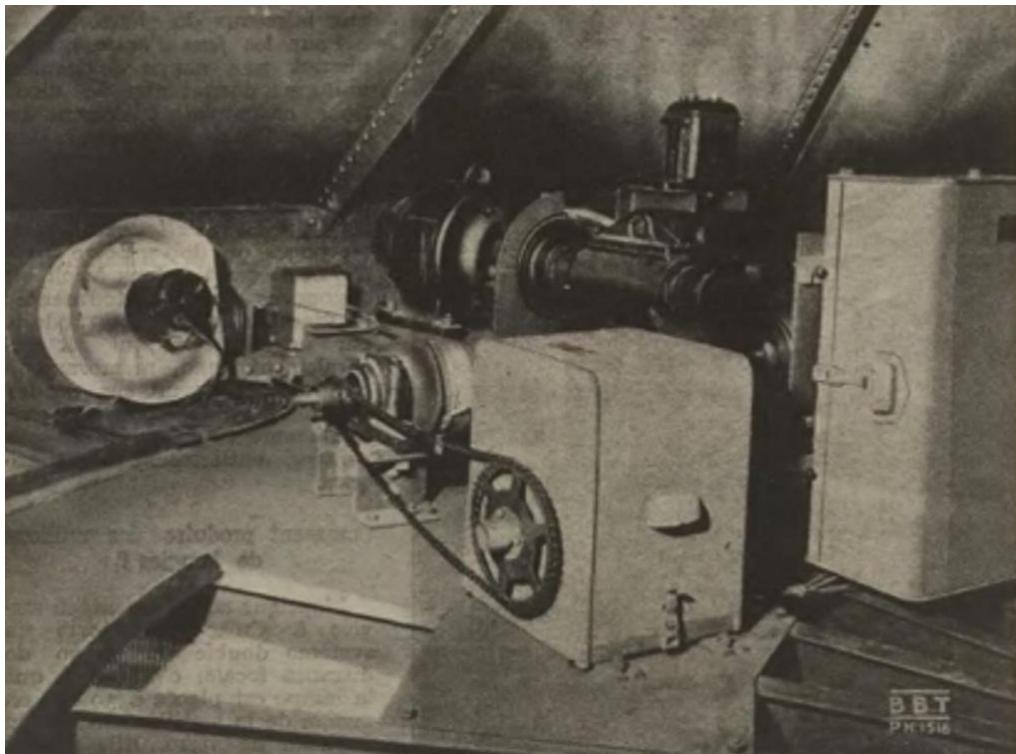
Reference: 25S 0367 012, Archives Départementales du Finistère,



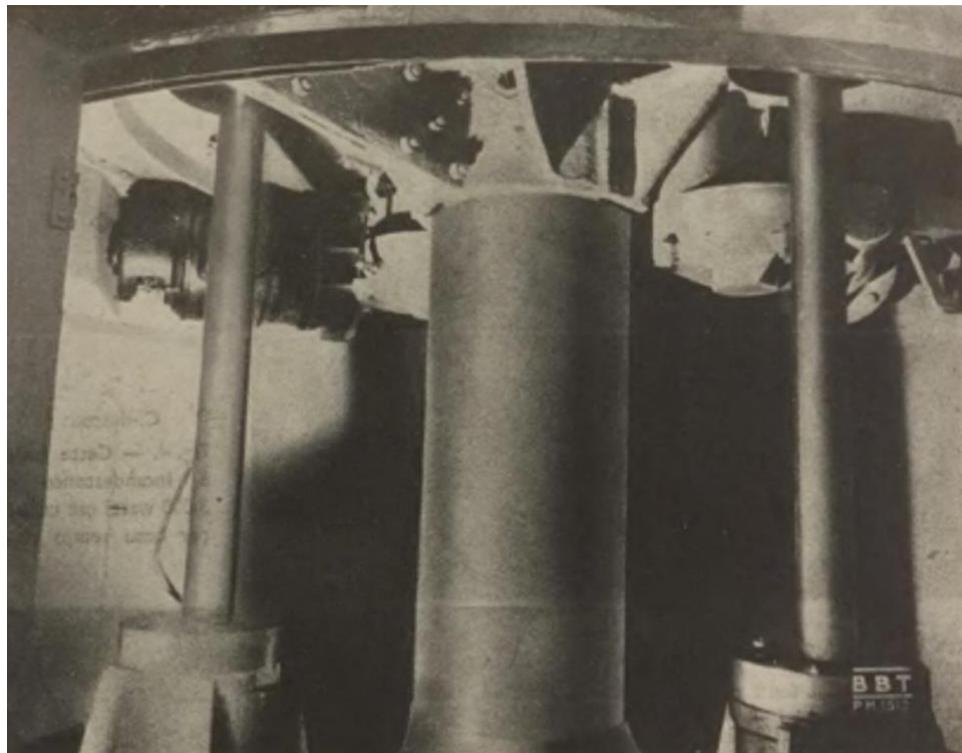
Coupe de la lanterne du nouveau phare (Cross-section of the new lighthouse's lantern), Barbier, Bénard & Turenne Company, 1938,
Sciences et voyages, 1 September 1938, page 129,



L'un des quatre « panneaux optiques » du nouveau phare, au premier plan, la lampe à arc, (One of the new lighthouse's four "optical panels", with the arc lamp in the foreground) 1938, Sciences et voyages, 1 September 1938, page 129,



New lantern: Ventilateur d'évacuation de l'air chaud et treuil du monte-chARGE pour le remplacement des lampes (Hot air ventilation system and winch for the goods lift to replace the lamps), Barbier, Bénard & Turenne Company, 1938, Sciences et voyages, 1 September 1938, page 130,



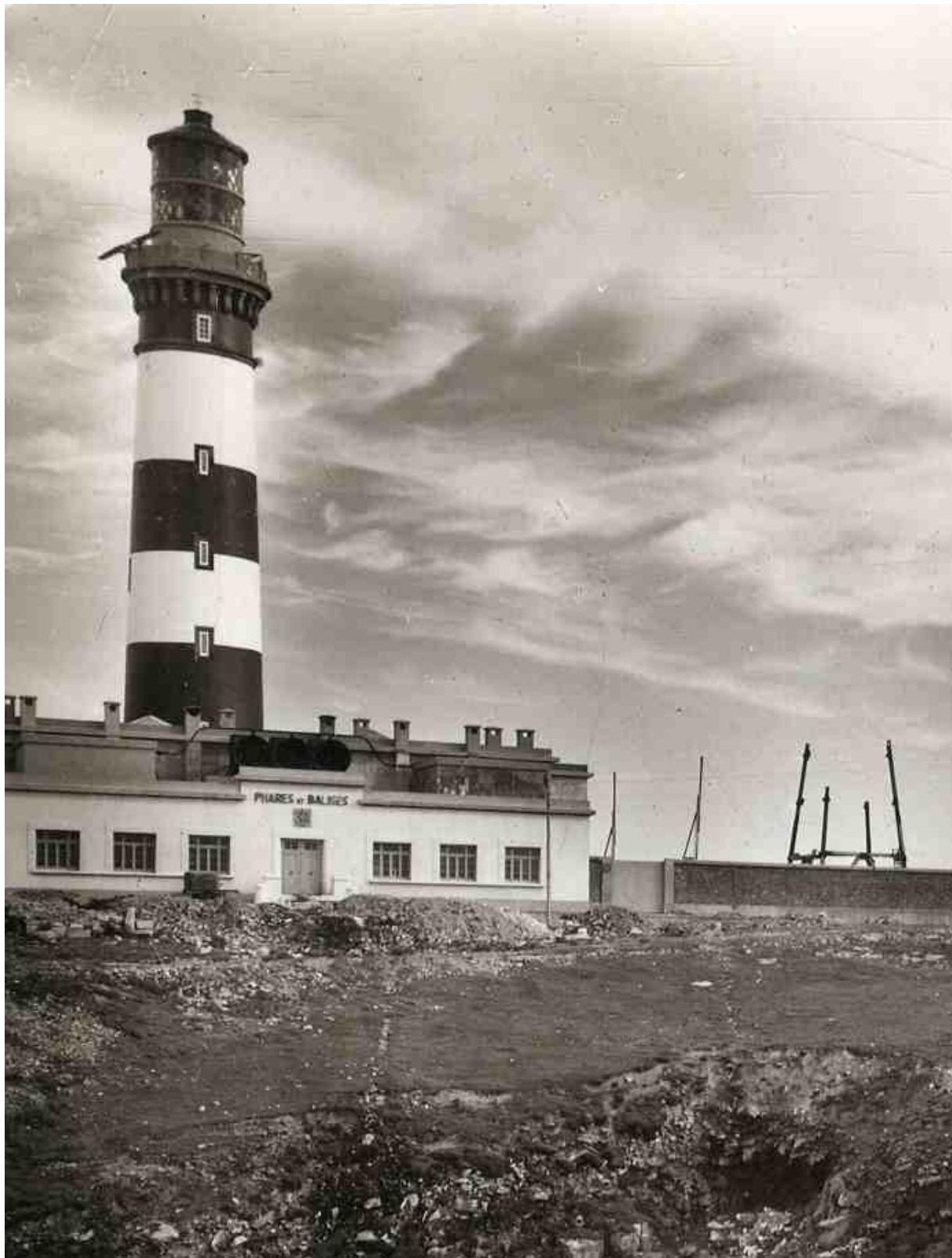
La « cave » de la lanterne du phare. Au centre, l'énorme colonne-guide, fixe ; en haut, l'un des moteurs produisant la rotation ; à droite et à gauche, les vérins soulevant la cuve (The "cellar" of the lighthouse lantern. In the centre, the enormous guide column, fixed in place; at the top, one of the rotation motors; on the left and right, the jacks that lifted the tank).
Barbier, Bénard & Turenne Company, Sciences et voyages, 1 September 1938, page 130,



Pose des glaces de la nouvelle lanterne (Installing the windows for the new lantern), 15 November 1938,
Reference: 25S 0367 014, Archives Départementales du Finistère,



Vue du phare et de sa nouvelle lanterne (View of the lighthouse and its new lantern), 15 November
1938,
Reference: 25S 0367 014, Archives Départementales du Finistère,



Phare du Créac'h (Créac'h Lighthouse), no date, [after the installation of the new lantern in 1939],
Reference: 2FI155 145, Archives Départementales du Finistère,



Photograph of Créac'h Lighthouse after the installation of the new lantern in 1939,
Optiques du phare du Créac'h, François Géraud, @Gardien2phare,