

World Heritage Scanned Nomination

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UNESCO Region: EUROPE AND NORTH AMERICA

SITE NAME: **Varberg Radio Station**

DATE OF INSCRIPTION: 7th July 2004

STATE PARTY: SWEDEN

CRITERIA: C (ii) (iv)

DECISION OF THE WORLD HERITAGE COMMITTEE:

Excerpt from the Report of the 28th Session of the World Heritage Committee

Criterion (ii): The Varberg radio station at Grimeton is an outstanding monument representing the process of development of communication technology in the period following the First World War.

Criterion (iv): The Varberg radio station is an exceptionally well preserved example of a type of telecommunication centre, representing the technological achievements by the early 1920s, as well as documenting the further development over some three decades.

BRIEF DESCRIPTIONS

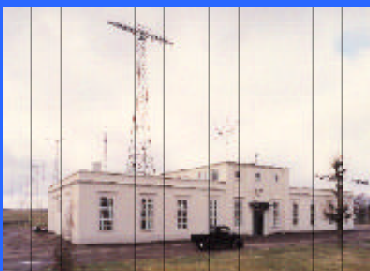
The Varberg Radio Station at Grimeton in southern Sweden (built in 1922-24) is an exceptionally well preserved monument to early wireless transatlantic communication. It consists of the transmitter equipment, including the aerial system of six 127-m high steel towers. Though no longer in regular use, the equipment has been maintained in operating condition. The 109.9-ha site comprises buildings housing the original Alexanderson transmitter, including the towers with their antennae, short-wave transmitters with their antennae, and a residential area with staff housing. The architect Carl Åkerblad designed the main buildings in the neoclassical style and the structural engineer Henrik Kreüger was responsible for the antenna towers, the tallest built structures in Sweden at that time. The site is an outstanding example of the development of telecommunications and is the only surviving example of a major transmitting station based on pre-electronic technology.

1.b State, Province or Region: County of Halland

1.d Exact location: N57 06 00.0 E12 23 00.0

VARBERG RADIO STATION –

the transatlantic radiotelegraph
station at Grimeton



Application for inclusion on the World Heritage List

VARBERG RADIO STATION –

the transatlantic radiotelegraph
station at Grimeton

Signed (on behalf of State Party)

.....

Full name

Full name

Title

Title

Date

Date

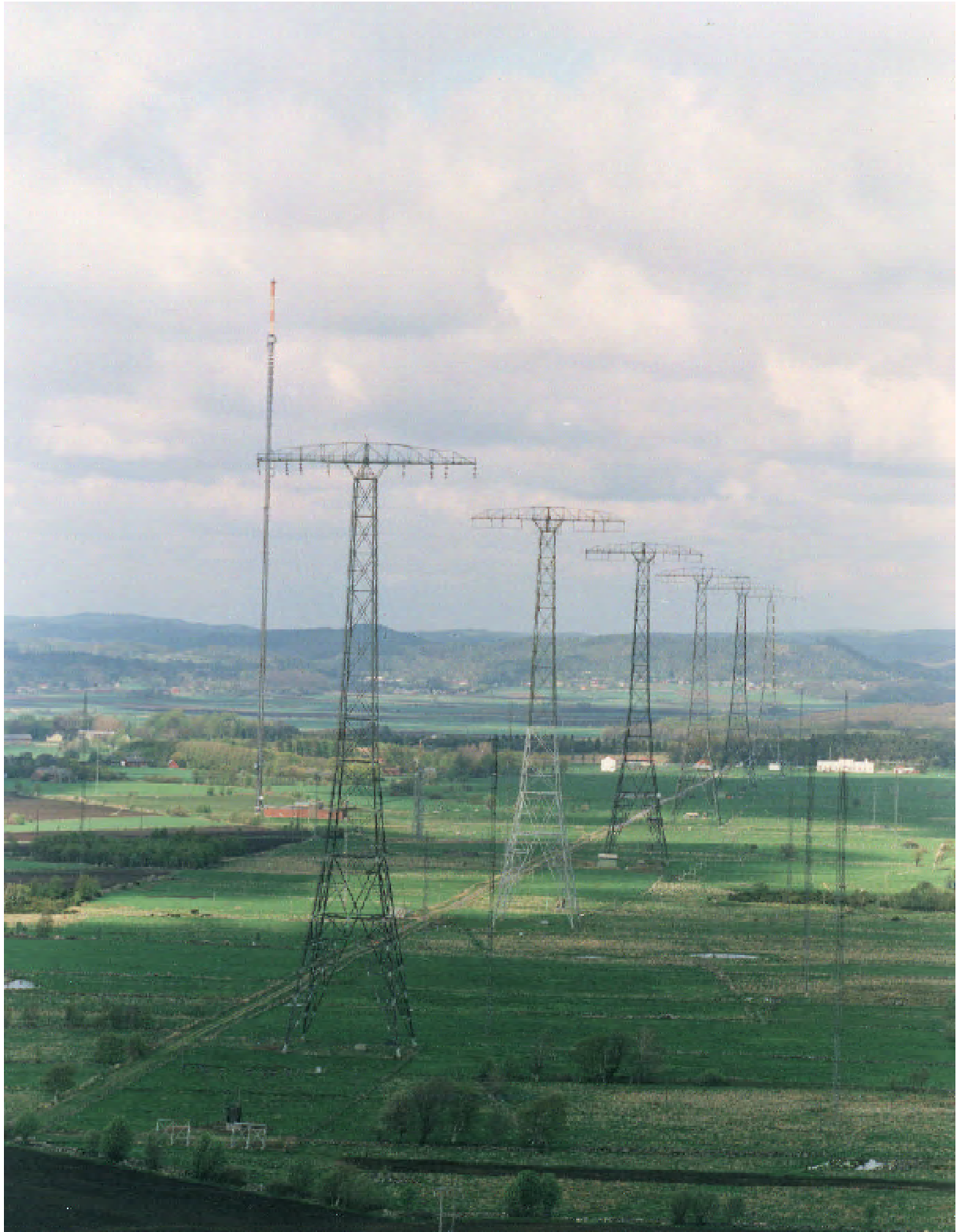


Photo: Telia Mobile AB, 1996



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COVER The radio station at Grimeton. Photo: County Museum in Varberg, Arne Persson

PRINTED BY The County Administrative Board of Halland, 2001

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APPLICATION FOR INCLUSION ON THE WORLD HERITAGE LIST

Varberg Radio Station – the transatlantic radiotelegraph station at Grimeton

1. IDENTIFICATION OF THE PROPERTY

Varberg Radio Station, the transatlantic transmitting station at Grimeton. The site comprises properties Grimeton 13:34 and Grimeton 13:37 through 13:45.

a. Country

Sweden.

b. County

County of Halland.

c. Name of Property

Varberg Radio Station.

d. Location

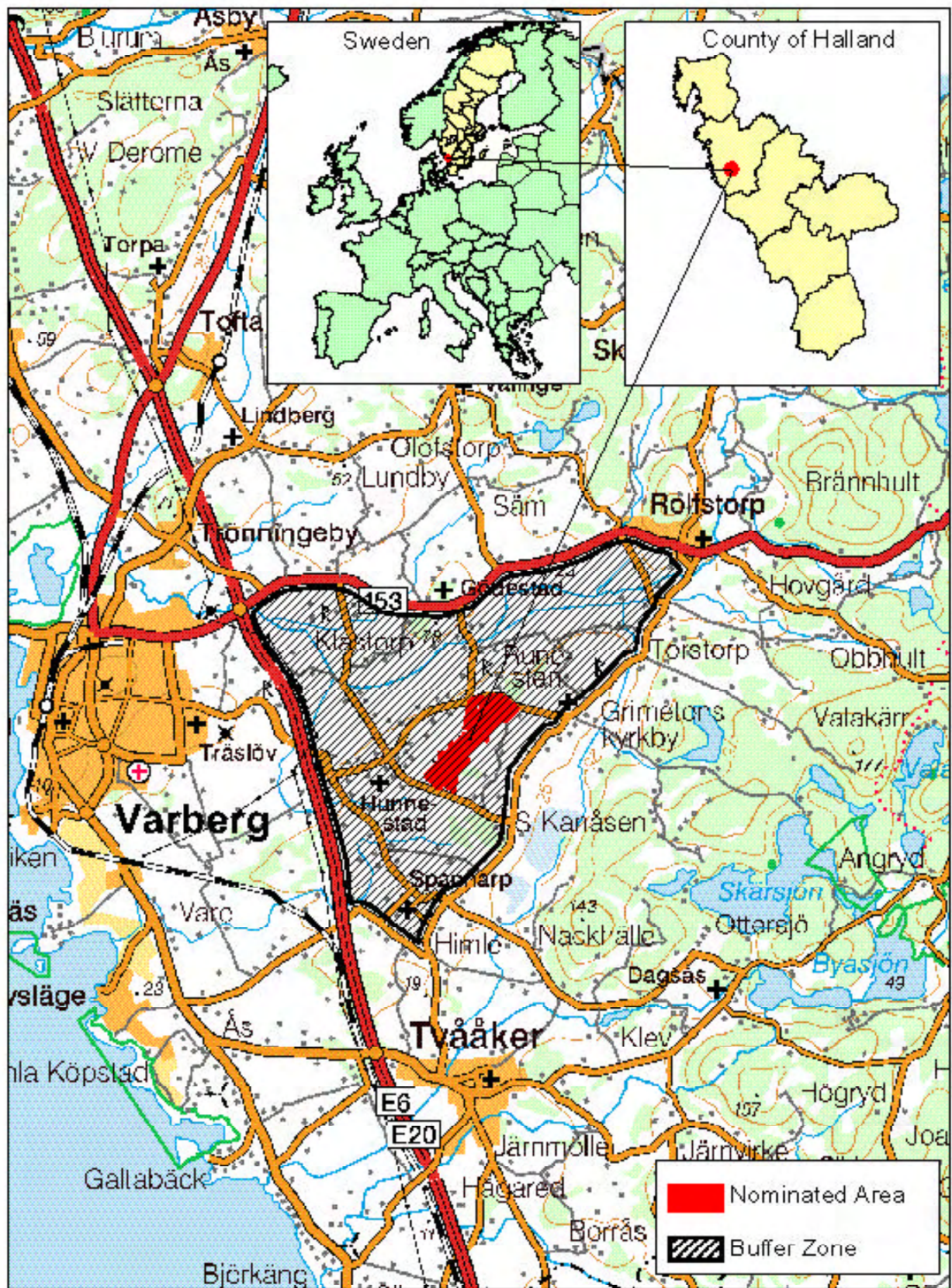
70 km south of Gothenburg and 7 kilometres east of Varberg, in the Parish of Grimeton, Municipality of Varberg. Latitude 57° 06' N, Longitude 12° 23' E

e. Maps



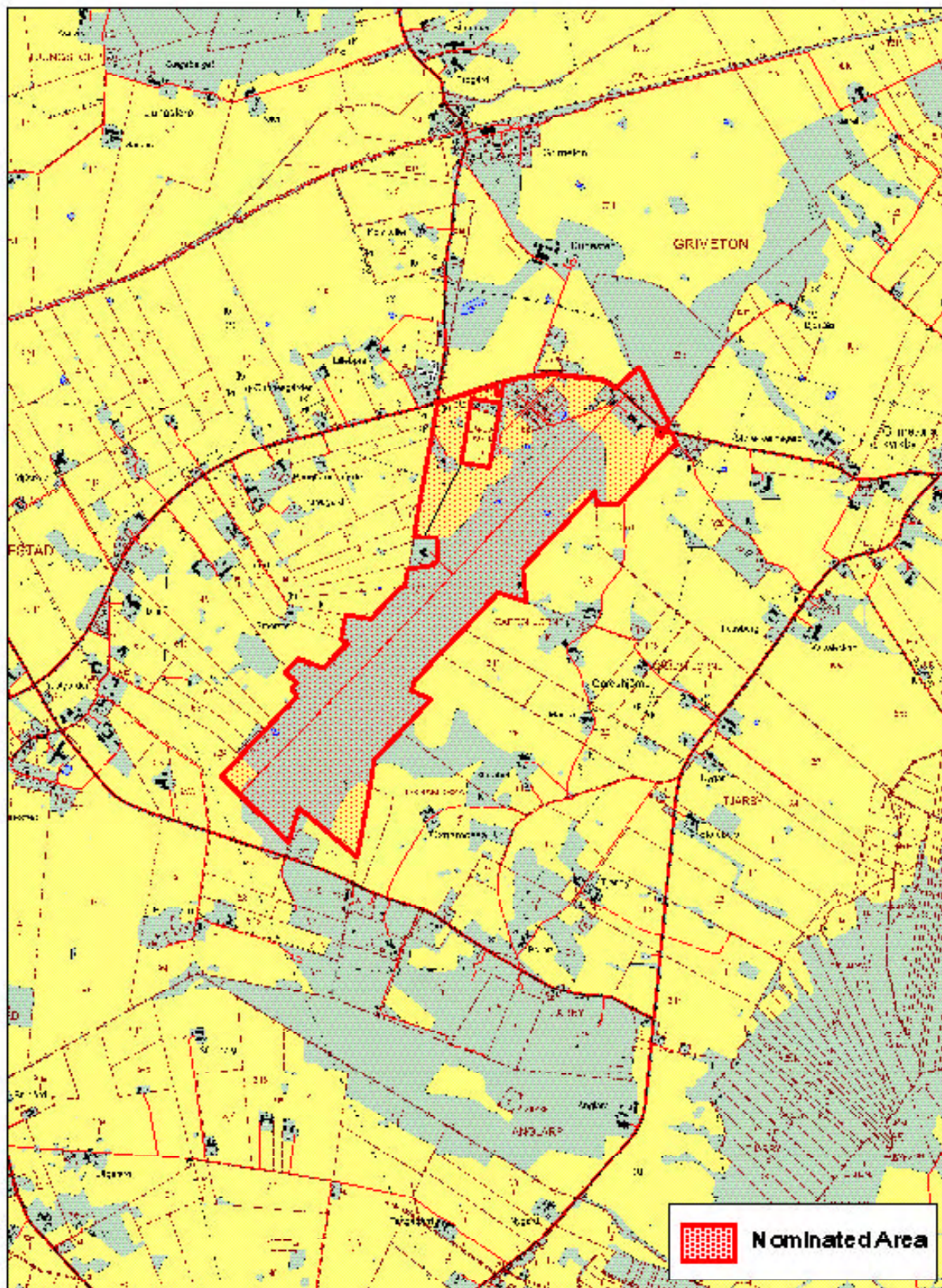
Location of Grimeton with the south west of Sweden and the east of Denmark

Map: Willy Lindström



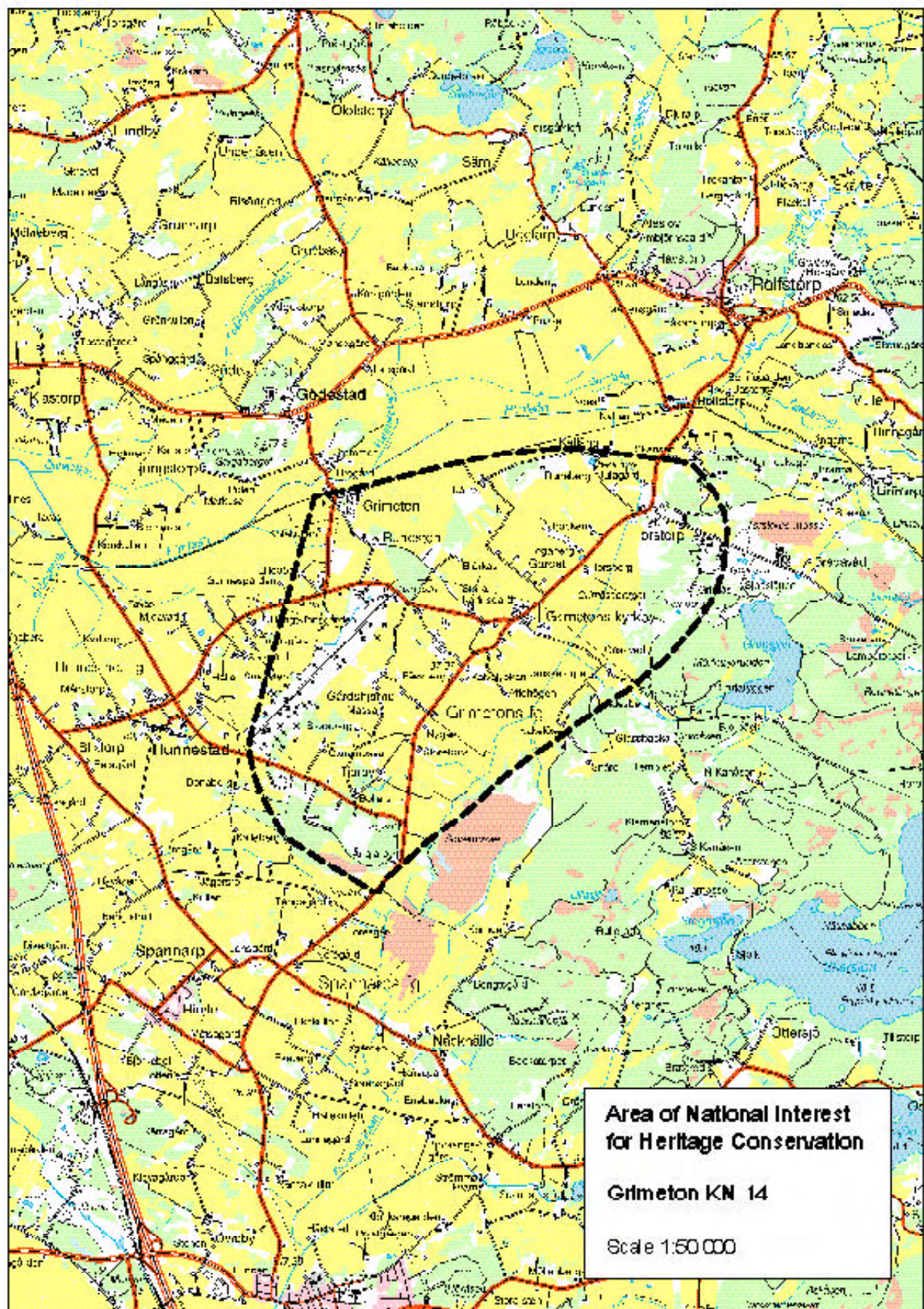
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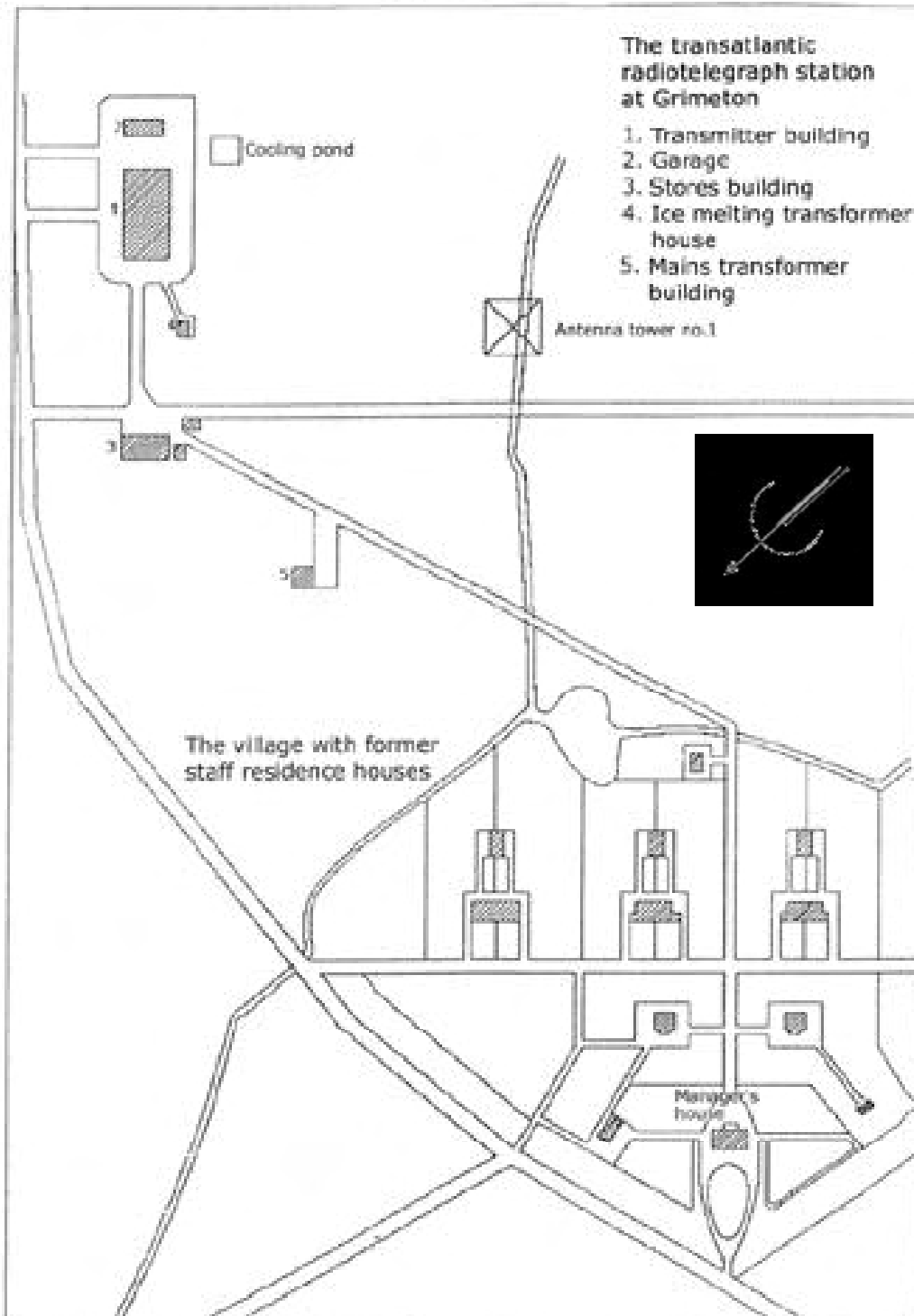
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Extract from "Areas of national interest for heritage conservation in the county of Halland" No KN 14, Grimeton, the Municipality of Varberg.

SITE PLAN



SITE PLAN

f. Area of the Property proposed

Site proposed for inscription 109,9 hectares, proposed buffer zone 3 854 hectares; total area 3 963,9 hectares.

2. JUSTIFICATION FOR INSCRIPTION

a. Statement of significance

Varberg Radio Station at Grimeton was erected after World War I in the spirit of returning to peaceful conditions and restoring human communication after the war. The site, being an outstanding example of the transoceanic wireless communication sites constructed in the early 20th century, is the only surviving example of a major wireless transmitting station based on pre-electronic techniques.

b. Comparative analysis

Following Marconi's successful attempt in 1901 to span the Atlantic by radio waves, major wireless transmitting stations for transoceanic communication were constructed and commissioned for service from 1905 onwards. Until about 1925, such stations were based on techniques adopted from conventional electric-power engineering, including spark transmitters, arc transmitters and rotary machinery (high-frequency alternators). With the advent of high-power vacuum valves these techniques grew obsolescent and were replaced by electronic techniques. Accordingly, the old transmitters were scrapped and replaced by vacuum-valve equipment.

Well-preserved telecommunication sites from the early twentieth century, in particular those representing pre-electronic techniques, are rare. Most installations were scrapped as obsolete, whereas some major wireless transmitting stations were destroyed by martial acts in World War II. Some very early wireless sites still remain in the United Kingdom. However, it appears that no intercontinental transmitting sites of the pre-electronic era have survived, but for Grimeton.

The Alexanderson installation at Varberg Radio Station at Grimeton is the only surviving of some ten wireless transmitting stations with 200-kilo-watt Alexanderson machines, operating in the 9 600–23 500 metre wavelength range that were established in the years 1918–1924 to form a



Overview of the station buildings, 1996

Photo: Telia Mobile AB

world-embracing communication network. The high-frequency machine at Grimeton is (with the exception of one originally installed at Radio Central, Long Island, moved in 1949 to the station at Marion, Massachusetts, dismantled in 1960 and finally brought in incomplete state to the Smithsonian Institution) the only remaining example of a large Alexanderson machine. The Grimeton installation, however, has not only been preserved: by still being in fully serviceable condition it is in a double sense unique.

As further developments of the Alexanderson technique, alternators were designed by Goldschmidt and by Arco in Germany as well as by Béthenod and Latour in France. It appears that no German alternator has survived, the 500-kilowatt Goldschmidt transmitter at Kootwijk (Netherlands) and the 400-kilowatt Telefunken (Arco) transmitter at Nauen (Germany) having been demolished in 1945, whereas a Béthenod–Latour 200-kilowatt alternator from the transmitting station at Lyon (constructed in 1919, demolished in 1944) has been partially rescued in the Musée Ampère at Poleymieux (France). Thus, the Alexanderson installation at Grimeton is the only surviving example of any kind of transmitting station employing a high-frequency rotary machine.

Some radio transmitting establishments from the 1920s or 1930s have been preserved as museum sites. Most of these are, however, broadcast radio stations which represent a quite different purpose and use different techniques. Moreover, a few old coastal radio stations, used for ship-to-

Installations employing the Alexanderson 200-kilowatt high-frequency alternator						
LOCATION	SIGNAL	WAVE-LENGTH	IN-STALLED	OUT OF OPERATION	DIS-MOUNTED	
New Brunswick, New Jersey, USA	WII	13761	1918	1948	1953	
New Brunswick, New Jersey, USA	WRT	13274	1920	1948	1953	
Marion, Massachusetts, USA	WQR	13423	1920	1932		
Marion, Massachusetts, USA	WSO	11628	1922	1932	1942	Moved to Haiku
Bolinas, California, USA	KET	13100	1920	1930	1946	
Bolinas, California, USA	KET	15600	1921	1930	1942	Moved to Haiku
Radio Central, Long Island, USA	WQK	16484	1921	1948	1951	
Radio Central, Long Island, USA	WSS	15957	1921	1948	1949	Moved to Marion
Kahuku, Hawaii, USA	KGI	16120	1920	1930	1938	
Kahuku, Hawaii, USA	KIE	16667	1921	1930	1938	
Tuckerton, New Jersey, USA	WCI	16304	1921	1948	1955	
Tuckerton, New Jersey, USA	WGG	13575	1922	1948	1955	
Caernarvon, Wales, Great Britain	MUU	14111	1921		1939	
Caernarvon, Wales, Great Britain	GLC	9592	1921		1939	
Warsaw, Poland	AXO	21127	1923	Destroyed by acts of war during Second World War.		
Warsaw, Poland	AXL	18293	1923			
Varberg, Grimeton, Sweden	SAQ	17442	1924			
Varberg, Grimeton, Sweden	SAQ	17442	1924	1960	1960	

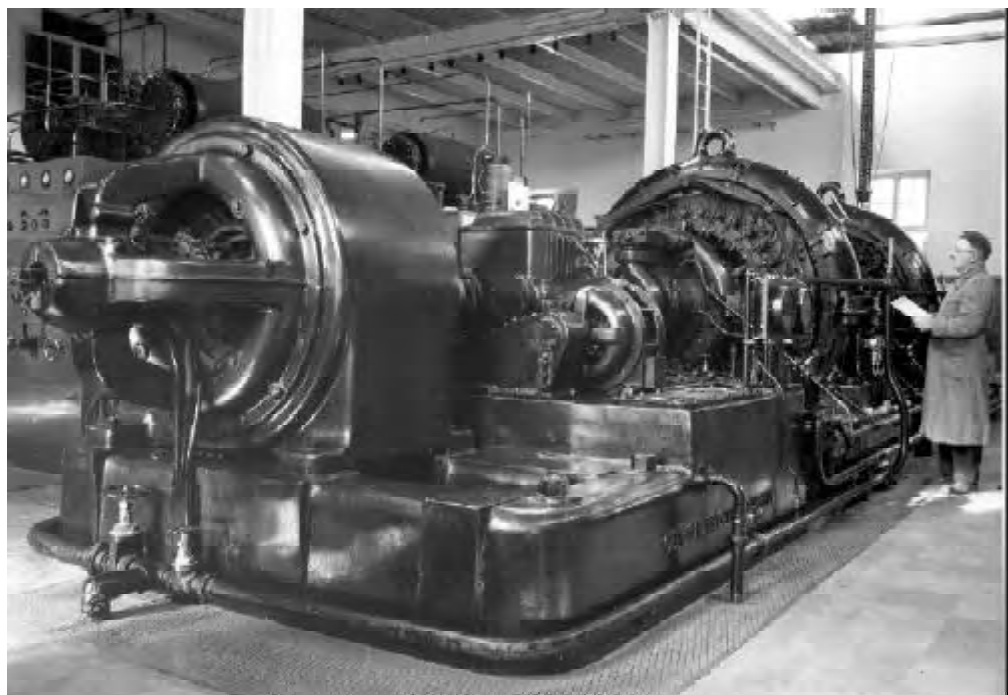
From "Ernst Fredrik Werner Alexanderson. En personcentrerad skildring av elektroteknikens utveckling under 1900-talets första hälft" by Bengt V Nilsson.

shore communication, have been preserved, e. g., at Hangö in Finland and at Askøy in Norway. These, too, used different techniques and were considerably less powerful than the large point-to-point communication stations. Among the museum sites, therefore, Grimeton stands out as unique, literally one of its kind, being a high-power transoceanic transmitting station based on pre-electronic techniques.

Varberg Radio Station at Grimeton has survived to the present day as an entirety which still demonstrates the plan applied for its construction in the 1920s. The original station building with the radio-technical installations and the antenna plant have been maintained in excellent working order. The residential area for the station staff, which formed part of the establishment, is still inhabited, and the planning of this area reflects the social structures that prevailed in the 1920s. Architect Carl Åkerblad, who designed the entire establishment, including the residential area, for a number of years provided the designs for all buildings of the Royal Telegraph Administration.

c. Authenticity

The Alexanderson installation at Grimeton is in all essence identical with the one constructed in the years 1922–1924. Any modifications undertaken reflect the fact that the installation was continually in operation until it was taken out of commercial service in 1960 and was occasionally operated for military purposes (transmission to submarines) even later. The installation originally comprised two Alexanderson alternators of 200 kilowatts each, arranged such that they could be operated together for twice that power, in conjunction with the appropriate control equipment and auxiliary machinery. One of the machines was dismantled and scrapped in 1960, when increased floor space was required for shortwave transmitters in the transmitter hall. The remaining machine is well preserved, fully maintained and in condition ready for use. It represents the state of the transmitting station in routine operation for commercial or military purposes.



**The two
Alexanderson
transmitters,
c 1950**

Photo: Landsarkivet i
Uppsala

The antenna plant with its six towers is likewise essentially the same as was constructed in 1923–1924. Any minor modifications carried out to details of the antenna system were motivated by operating experience during the forty years the installation was in commercial operation. The antenna towers at the present time are being gently overhauled, including repainting using the same procedures and same materials as were used when the construction was first erected.

The transmitter hall is in all essence in the same condition as at the inauguration in 1925 – with only minor modifications due to changing technical and administrative requirements. The same applies to the auxiliary buildings of the station.

The shortwave transmitters that were installed in the transmitter hall from the late 1930s and onwards in principle are found in the same condition as when they were taken out of service – with the exception of two transmitters which remain operative. These transmitters thus represent the development of shortwave engineering through sixty years.

The staff residence houses attached to the station are still inhabited. With the passage of time, the buildings have been refurbished according to improvements in housing standards, but the outline of the residential area remains intact.

In summary, the original transmitting station at Grimeton comprises a well-conserved entirety, which quite authentically and in a unique way illustrates an epoch in the history of human communication.

Within the station confinements, approximately one kilometer from the Alexanderson station building, the “new” transmitter building is located, with extensive radio-technical installations and associated aerial systems. Grimeton thus forms a highly vivid hub for both world-wide and local radio communications. However, even in this “new” station installations are growing obsolescent, which is illustrated by the fact that the Maritex transmitters, used for ship-to-shore teleprinter communication, were taken out of service on 31 December 2000.

d. Criteria

According to Article 1 of the Convention a monument, a group of buildings or a site of outstanding universal value may be considered by the World Heritage Committee for inclusion as cultural property on the World Heritage List, provided it fulfils certain criteria set forth by the Committee (Operational Guidelines, Paragraph 24). The Grimeton site should be discussed in view of criteria (a) (ii) and (a) (iv).

(a) (ii) “... exhibit an important interchange of human values over a span of time or within a cultural area of the world, on developments in architecture or technology”

Culture is born out of the encounter between humans and develops wherever humans can exchange thoughts. Communication paths and communication patterns thus are fundamental to the development of culture. In early phases of culture physical communication was necessary for human encounters, but with the invention of writing and the introduction of postal

services it became possible to exchange thoughts over distances. The telegraph, and in particular the electric telegraph, brought new conditions for cultural development with gradually more rapid interchange of thoughts. With the wireless telegraph, at the turn of the century 1900, all remaining limitations to instantaneous communication over the largest of distances disappeared; around the year 1920 in principle all places on the Earth were accessible by radio.

After World War I a grandiose plan was launched to join the various parts of the world by a network of radiotelegraphic links with its hub at Radio Central, Long Island, New York, using the Alexanderson ultra-longwave technique.

The Grimeton establishment was created as part of this world-encompassing radiotelegraphic system, which contributed to new patterns in the communication between countries and continents. In the 1940s, when many communication links were interrupted, Grimeton served the exchange of the free word between the old and the new world.

(a) (iv) “... be an outstanding example of a type of building or architectural or technological ensemble ... which illustrates (a) significant stage(s) in human history”

Varberg radio station at Grimeton represents a remarkable outflow of human creative genius.

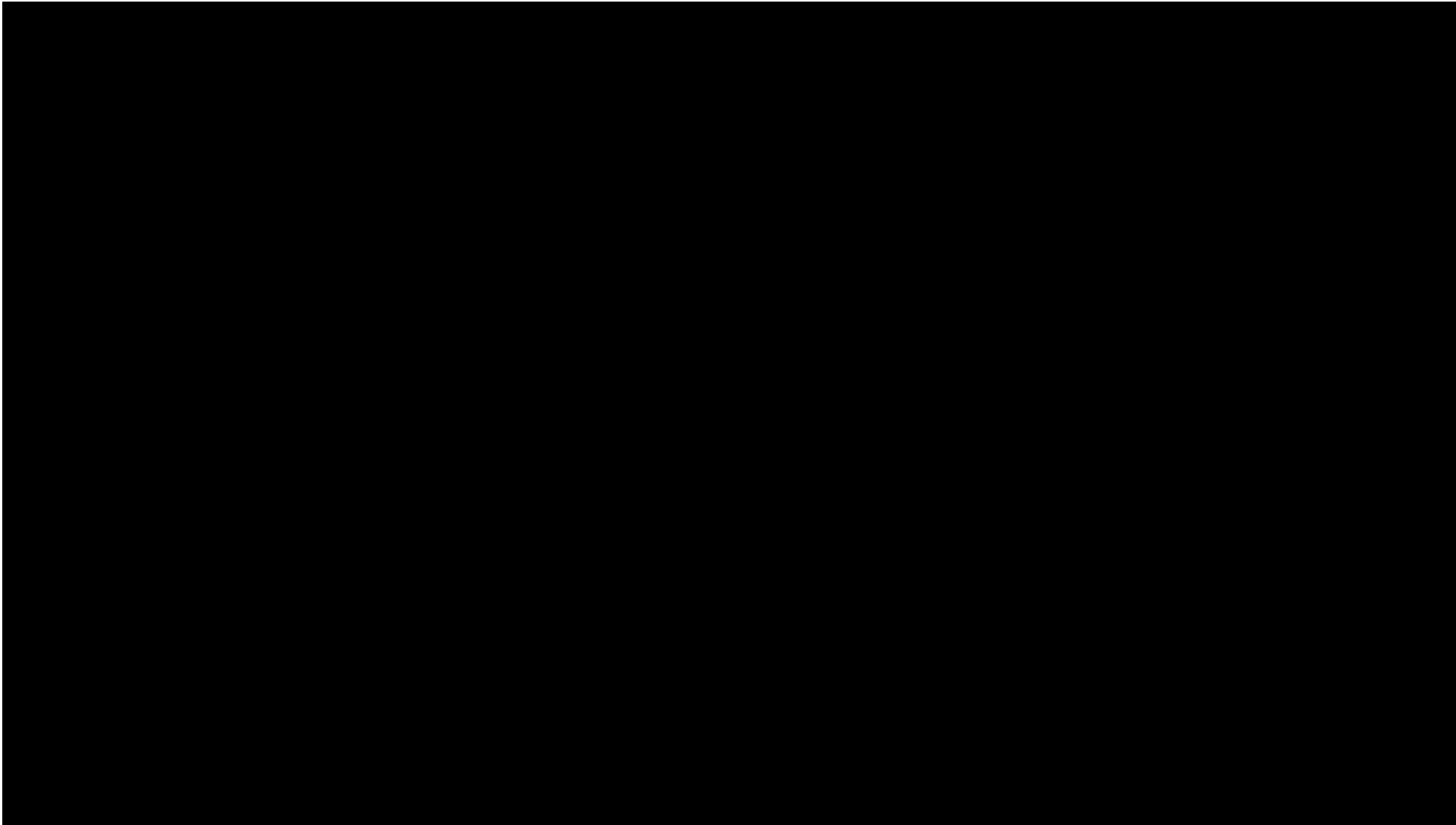
Indeed, the establishment, taking into account both the old and the new station, displays a cross section through the entire break-through period of wireless engineering, from pre-electronic techniques to present-day communication modalities, and it has grown organically with the changing technologies. The new station building houses transmitting equipment not only for long-distance shortwave communication with other continents and with ships and aircraft all over the world but also for ultra-shortwave sound and television broadcasts and cellular mobile telephony.

Most decommissioned long-distance radio communication establishments in the world have been demolished as longwave circuits were superseded by shortwave circuits and the latter were subsequently replaced by satellite links.

3. DESCRIPTION

a. Description of Property

Varberg Radio Station is located 7 kilometres east of Varberg in the Parish of Grimeton, County of Halland, Sweden. The site comprises 109,9 hectares of land with buildings housing the last remaining and fully operative Alexanderson 200-kilowatt ultra-longwave radiotelegraph transmitter constructed in 1922–1924, towers carrying the associated antenna installation, numerous shortwave transmitters with associated antennae reflecting the development of shortwave engineering from the late 1930s to present, and a residential area with housing for the station staff.



- A** ANTENNA VARIOMETER, OUTPUT TRANSFORMERS AND MAGNETIC AMPLIFIER
- B** ALEXANDERSON MACHINE (motor, gear box and alternator)
- C** SWITCHBOARD (for control and supervision of alternator, auxiliary machinery and antenna circuit)
- D** RELAY BOARD (keying relays, contactors, etc.)
- E** AIR BLOWER (for cooling and arc quenching of keying relays)
- F** LIQUID RHEOSTAT (adjustable rotor-circuit resistors for speed control)
- G** 500 V SATURATION GENERATOR (for primary speed control)
- H** 125/250 V POWER CONVERTER (for relays control motors, etc.)
- I** STARTING DEVICE FOR PUMPS AND COMPRESSORS
- K** WATER PUMP
- L** MAIN LINE SWITCHES, 2300 V
- M** AUXILIARY TRANSFORMERS, 2300/440 V
- N** SATURATION COILS (for primary speed control)



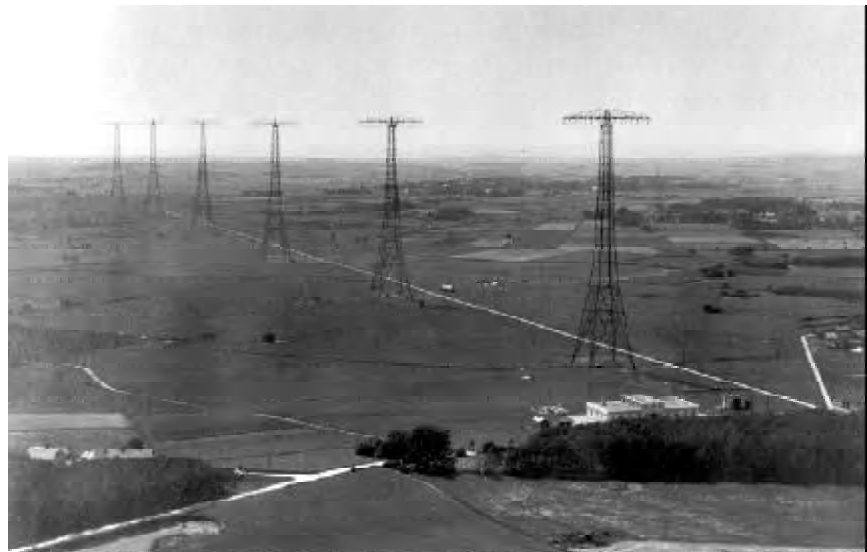
The main property is identified as Grimeton 13: 34, whereas the residential area consists of properties Grimeton 13:37 through 13:45. The main property consists of the original station site with the exception of an area containing the “new” transmitter building and the antenna mast of Teracom AB’s broadcasting station.

The several buildings on the main site date back to the original construction of the station. The main building, the transmitter hall, designed in neoclassicistic style by Architect Carl Åkerblad, is in the same condition as at the inauguration in 1925 – with only minor modifications due to changing technical and operational requirements. The same applies to the auxiliary buildings: storage house, garage, ice melting transformer house and mains transformer building.

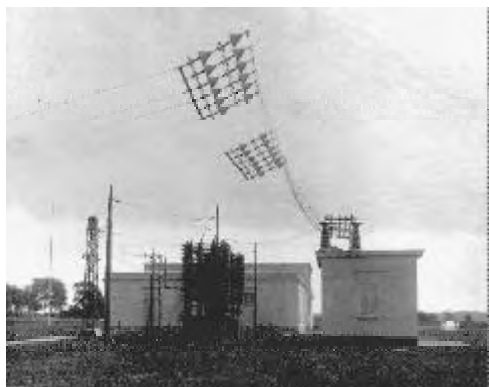
Inside the transmitter building, about half the area of the transmitter hall is occupied by the only surviving Alexanderson 200-kilowatt high-frequency alternator and its associated equipment: control racks, auxiliary machinery, high-frequency transformers and the Alexanderson magnetic modulator, all in fully operative condition. The other half of the hall contains shortwave transmitters installed from the late 1930s and onwards, in principle found in the same condition as when they were taken out of service – with the exception of two transmitters which are still occasionally used. These transmitters represent the development of shortwave engineering through sixty years.

- 1. Station buildings and antenna plant, c 1930
- 2. Feeding end of the antenna, showing tuning coils and ice-melting transformer house, c 1925
- 3. The transmitter building

Photo: 1. Telemuseum, 2-3. Landsarkivet i Uppsala.



1.



2.



3.

Most of the site is occupied by the antenna plant (the Alexanderson “multiple-tuned antenna”). The aerial system is supported by six steel towers, each of 127 metres height, arranged in a straight line at 380 metres separation. The towers were designed by and constructed under the supervision of Professor Henrik Kreüger in 1923–1924. Each tower is associated with a radiating antenna element stretching from the tower top to a huge inductance coil on the ground. Buried in the earth is a counterpoise network of copper wire, extending to the borders of the site and into the ground of adjacent properties. A system of overhead current distribution lines on wooden poles connects the inductance coils with the buried network. An ice-melting transformer house close to the transmitter hall provides electric current to heat the aerial system in order to free the aerial wires of ice in wintertime.

In addition to the Alexanderson antenna the site comprises a large number of shortwave antennae of various designs, some still in commercial use, and remnants of such antennae and associated feeder lines out of use. These represent the history of shortwave communication since the 1930s. The residential area attached to the station comprises 12 houses of various designs for the station manager and for staff members of various ranks. The area and the houses are representative of the planning and design of residences for countryside industrial staff in the early 1920s Sweden.

b. History and Development

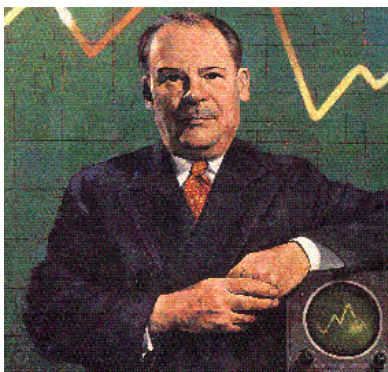
The Alexanderson technique for long-distance radio transmission, as implemented at the Grimeton establishment, comprises a number of innovations sprung out of Alexanderson’s genius. His high-frequency machine (alternator) for the generation of undamped (“continuous”) electric

Inside the transmitter building, 1930

Photo: Telemuseum



oscillations for radio communication was developed at a time when the established technique involved spark transmitters generating damped (intermittent) oscillations. The introduction of undamped waves not only made possible improved telegraphic wireless communication over large distances but also provided the basis for wireless telephony, which was later to be developed into radio broadcast and other techniques profoundly influencing human contacts. – His “multiple-tuned antenna”, a system of cooperating vertical antennae provided with energy from an overhead feed line, implied that the efficiency of transmitting stations for longwave radio communication was drastically improved. – His magnetic modulator made it possible to control a very large transmitter power by a tiny current from a telegraph line or a microphone.



Ernst Fredrik Werner Alexanderson, 1878 – 1975

From the book “Ernst Fredrik Werner Alexanderson.”

The chief engineer, Ernst Fredrik Werner Alexanderson (1878–1975) contributed pioneering efforts in several areas of electrical engineering. He combined profound theoretical knowledge with great technical and experimental skilfulness. At the time when the foundation was laid for the Alexanderson technique for wireless communication, the methods of calculating electrical machinery and high-frequency circuits were still in their infancy, and Alexanderson had to develop and elaborate his own methods of calculation.

Alexanderson, who realised the importance of telecommunications to re-establish the relations between peoples after World War I, was a promoting force behind the magnificent plan for establishing a global radiotelegraphical network after restoration of the peace.

Ernst Alexanderson exerted a profound influence on the development of wireless communications. A great industrial group, Radio Corporation of America, was formed to exploit and commercialise his achievements and for decades played a most important part at the frontier of electronic and radio engineering. Alexanderson took a very active part in early television experiments and in developing present-day television standards. Among the services provided by the “new” Grimeton station is television broadcast.

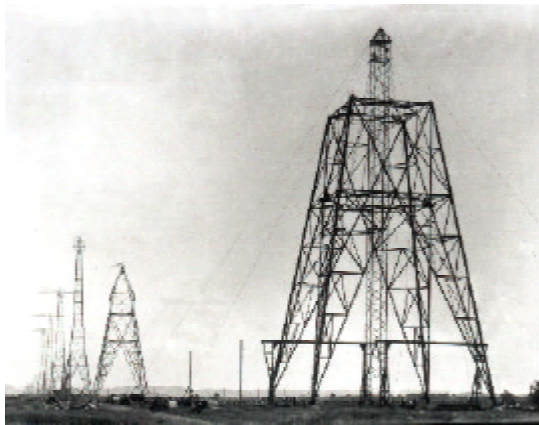
Henrik Kreüger (1882-1953) was a famous structural engineer. The six antenna towers on the Grimeton site, which at their erection were the tallest artificial structures in Sweden, bear testimony to his greatness in the art of steel constructions.

Altogether, Grimeton represents a remarkable outflow of human creative genius.

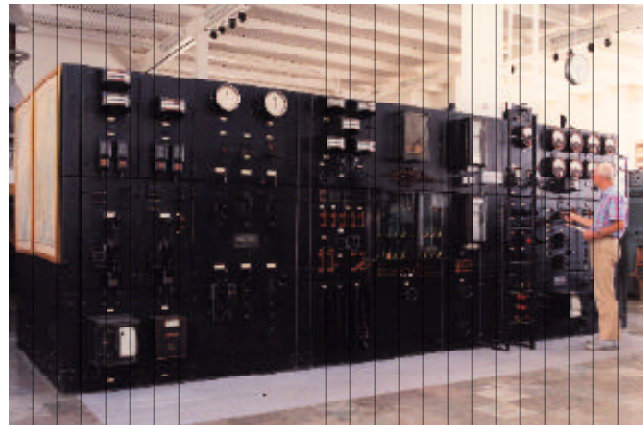
The development of engineering during the twentieth century took place immensely rapidly. Technical solutions superseded each other at an accelerating pace, and the physical evidence of many essential developmental steps was lost. From the end of World War I to the mid-1920s the global network of radiotelegraphic stations according to Alexanderson’s system was constructed of which Varberg Radio Station at Grimeton formed part. Already at this time the foundation had been laid for the later

radio technology, based on electronics, which encompassed the potential for all the communication modalities which we have seen come true during the following decades. It was, however, not until the end of the 1920s that it became possible to produce the electronic transmitters for long-distance wireless communication that were to make the Alexanderson technique obsolete. In particular during World War II electronic radio technology – and not the least shortwave technology – was developed in a virtually explosive way, and in the decade following the war those Alexanderson stations which had escaped martial destruction were promoted to the junkyards. At last, of the large Alexanderson stations only one remained: Varberg Radio Station at Grimeton.

The Alexanderson establishment at Grimeton, with its 200-kilowatt high-frequency rotary machine and its antenna system thus is all that remains of the grandiose global radio system of the 1920s. Although the installation was taken out of regular service in the 1960s, it has been kept in good condition, and it is as serviceable today as it was when it was commissioned seventy-five years ago – indeed a unique testimony to a technology now abandoned.



1.



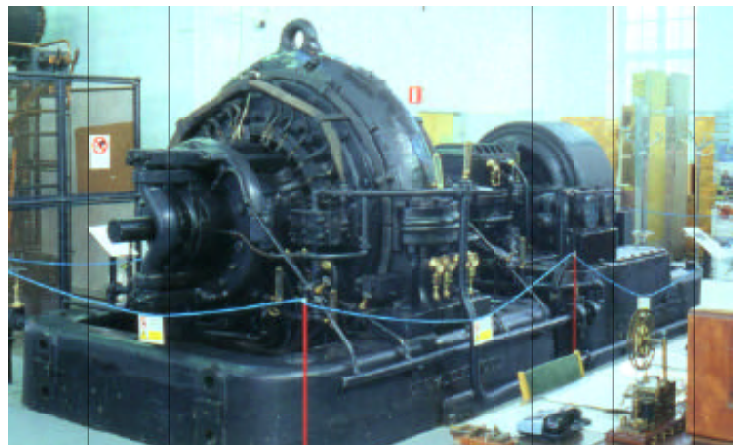
2.



3.

- 1. Erection of the towers, 1924
- 2. Switchboard
- 3. The antenna plant, 2000
- 4. The Alexanderson transmitter, 2001

Photo: 1. County Museum in Varberg, Gustaf Björkström, 2. Telia Mobile AB, 3. The Museum in Varberg, Arne Persson, 4. Bengt Spade



4.

In addition to the surviving Alexanderson transmitter, the transmitter hall at Grimeton houses numerous shortwave transmitters which represent the various stages of technique for transocean shortwave communication from the 1930s till today. Two of the shortwave transmitters are still serviceable for traffic to remote countries. Thus, Grimeton offers a unique possibility to study the historical development of shortwave engineering.

To house replacements for the obsolescent installations in the original station building, a new transmitter building was erected on the Grimeton site in the late 1960s. The installations in this building represent successive stages of state-of-the-art up to the present day. Grimeton thus represents an unbroken tradition of front-line wireless technology for more than seventy-five years.

c. Form and date of most recent records of site

- The buildings on the Grimeton site, including the Alexanderson long wave radio equipment and the six antenna towers bearing the Alexanderson antenna, have been described in a report by the County Administrative Board in 1995, prior to the decision to declare the radio station a listed building.
- Maintenance plans have been issued in 1999 following the listing of the site as a building heritage under the Cultural Monuments Act.
- Field work is in progress to document the antennae and remnants of antennae and associated feeder lines belonging to the shortwave transmitters.
- Interviews have been undertaken in 2000 with former and present employees and local inhabitants to cover ethnological aspects of the site.
- Photographs of the site and radio technical equipment are taken regularly, e.g. in 1996, 2000 and 2001.
- The Regional Museum of Halland, Cultural Heritage Unit, takes part and documents all restoration work carried out on the site according to the maintenance plans. The documentation is published by the museum as printed reports with photographs.



d. Present state of conservation

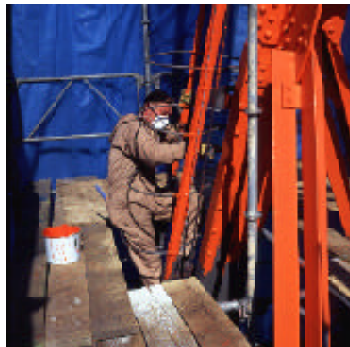
The Grimeton site has been continuously under a single administration. Originally built as a property of the Swedish Crown, the site is now owned by Telia Mobile AB, which is a joint-stock company with the Crown as majority shareholder, and the management and staff represent the technical competence accrued throughout more than 75 years.

The Alexanderson long wave transmitter is kept in excellent condition and still fully operable and ready for use. Four of the six antenna towers have until today been overhauled and maintenance work is being carried out on the station buildings. Both radio equipment and the buildings on the site are in good condition.

(see Appendices 7, 8 and 9 for Maintenance plans)

1. Painting an antenna tower
2. Detail of a tower
3. View of the transmitter building from tower no. 1
4. Towers are covered to prevent dispersion of lead pigment during painting

Photo: County Museum in Varberg, Arne Persson, Maya Ökland



1.



2.



3.



4.

e. Policies and programmes related to the presentation and promotion of the property

Telia Mobile AB and the Alexander Society have signed an agreement about opening hours and public activities on the site. Until project Iternia – Grimeton Radio Center, as will be discussed further on, has been realised only limited public access and public activities can be carried out. The Alexander Society and Telia Mobile AB agree that opening up the site for

the public is of essential value and must be carried out in as high a degree as practical circumstances allow. In this aspect the Alexander Society cooperates with the municipal Tourist Board.

The public activities this far have not led to any disturbances with neighbours and local inhabitants. On the contrary, many people in the municipality, living near the site as well as further away, have expressed their pride and gratitude that the radio station has not been demolished. The six antenna towers are considered by many in the County of Halland as one of the county's most important landmarks that must be preserved for the future.

4. MANAGEMENT

a. Ownership

After the disbanding of the Swedish Telecommunications Administration, the site is owned by Telia Mobile AB, which is a joint-stock company with the Swedish Crown as majority shareholder. The "new" station building, however, is owned by Teracom Svensk Rundradio AB having the Crown as sole shareholder. The houses in the residential area are located on separate lots which are owned by private citizens. Discussions are in progress with the individual owners to establish to what extent the area can be incorporated into the area legally protected by the Cultural Monuments Act.

b. Legal status

Varberg Radio station in 1996 was proclaimed a listed building and heritage site according to the Cultural Monuments Act (SFS 1988:950). The proclamation means that the radio station is protected under special provisions (see *Appendix 1*). The County Administrative Board of Halland, located in Halmstad, is the supervisory authority in this respect.

According to the Environmental Code and in the context of national physical planning, the National Heritage Board has resolved that the radio station, together with its immediate surroundings, is of national interest for heritage conservation. It is incumbent on the Municipality of Varberg to show in its planning how the site is to be protected.

A comprehensive plan according to the Planning and Building Act (SFS 1987:10) and adopted by the Municipality Board emphasizes the protection of the cultural values within the Grimeton area (see *Appendix 2*).

1. Staff residence house
2. The manager's house, 1995

Photo: 1. County Museum in Varberg, Arne Persson
2. County Administrative Board of Halland, Hans Bergfast



2.

c. Protective measures and means of implementing them

The County Administrative Board of Halland in the declaration according to the Cultural Monuments Act has issued special protective orders with regard to demolition, alteration and upkeep (*see Appendix 1*). The original station buildings and the multiple tuned antenna with the six antenna towers must not be demolished or moved. Inside the station building no changes must take place with regard to the Alexanderson radio equipment, doors, windows, stone floor, tiles and other interior decoration. The buildings and the antenna with towers must be maintained with traditional methods and materials. The County also has, in the above mentioned declaration according to the Cultural Monuments Act, stated that an area around the radio station is protected (*see Appendix 1*). No further buildings may be erected within the protected area and the area must not be changed in any way that is negative to the historical site.

The County Administrative Board also has at its disposal funds which can be applied to the care of protected historical buildings.

The Planning and Building Act (SFS 1987: 10) enables the municipalities to take measures for protection of cultural values in planning procedures and in screening of planning applications. The comprehensive plan is one such instrument.

The Environmental Code encompasses provisions for all kinds of activities that may effect the environment. Areas of importance owing to, among others, cultural values shall be protected against measures that may damage these values. Areas of national importance must be protected against threatening measures. Part of Grimeton has previously been declared to be an area of national interest for heritage conservation, as shown on page 9 and *Appendix 3*.

d. Agencies with management authority

Responsibility for the property being cared for and managed in accordance with the laws and regulations applying to environment deserving protection rests primarily with the owner. The County Administrative Board, in its official capacity, has the final word on matters relating to the treatment of the cultural values protected by the Cultural Monuments Act. The County Museum exerts a great deal of influence by virtue of its expert knowledge. The Municipality of Varberg has considerable responsibility for facilitating the positive development of the site and its surroundings according to the Building and Planning Act.

e. Level at which management is exercised and name and address of responsible person

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E-mail: entre@telemuseum.se.

f. Agreed plans related to property

- Within the buffer zone the area surrounding the radio station is classified, according to the Environmental Code, as an area of national interest for heritage conservation. These national interests are defined in a resolution adopted by the National Heritage Board on 5 November 1987 and 30 January 1989 (revised on 27 August 1996).
- According to the Planning and Building Act it is the duty of the municipality to give an account of any places of national interest in its municipal comprehensive plan and to indicate in that plan how the cultural values are to be safeguarded. The comprehensive plan for Grimeton was adopted in 2001.
- A municipal cultural environment programme was compiled in 1992, through the County Museum of Halland. The programme contains information about the cultural sites and buildings within the municipality and indicates how cultural environment values in the landscape are to be preserved.
- A long-term conservation plan was compiled in 1999, through the County Administrative Board and Telia Mobile AB in co-operation with the National Heritage Board. The conservation plan includes all the buildings protected by the Cultural Heritage Act as well as the unique technical equipment from the 1920s. Conservation and restoration work is annually being carried out according to the plan.

g. Sources and levels of finance

Telia Mobile AB, the owner of the property, is continuously maintaining the radio station in co-operation with the County Administrative Board. The annual cost for maintaining the radio station is estimated to SEK 2 500 000. Various measures of maintenance and preservation have been undertaken since 1924, including running maintenance of the antenna towers. The following major measures have been undertaken between 1996 and 2001:

- Maintenance and preservation measures on four of the six antenna towers
- Long term conservation plan
- Maintenance work on the station building
- Maintenance work on the concrete foundations supporting the antenna towers
- Building a new storehouse for surplus radio equipment etc.
- Restoration of insulator suspension girders and liquid rheostat vats

Expenditure on these and other measures between 1996 and 2001 has totalled approx. SEK 24 000 000.

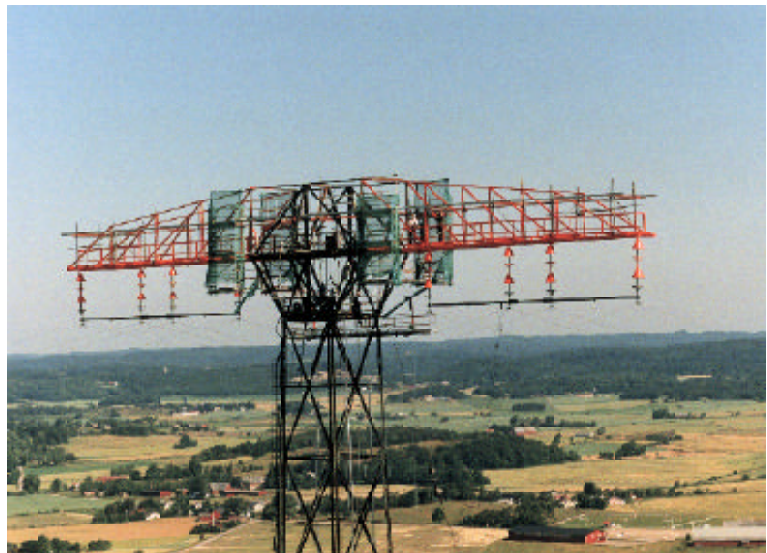
Telia Mobile AB has as its objective to keep the radio station in working order, primarily as a backup for the Royal Swedish Navy. The agreement with the Navy forms an economic base for the radio station. The present use of the site does not present a threat against the preservation of the historical site and the technological equipment.

Every year the Swedish Government makes special funding allocations for the care of buildings, archaeological remains and man-made landscapes. At county level, the County Administrative Board of Halland decides the apportionment of funding between different objects. World Heritage sites have top priority for funding support. At present special focus is given to industrial heritage sites.

The County Administrative Board between 1996 and 2001 has contributed to the above mentioned and other measures on the radio station with approx. SEK 14 000 000 (see *Appendix 5*).

h. Sources of expertise and training in conservation and management techniques

At local level the Alexander Society, constituted mainly of former employees of the radio station, plays an important role for maintaining the knowledge about the history of the station and teaching younger people how to run



Conservation of antenna towers, 1996

Photo: Telia Mobile AB

the Alexanderson long-wave transmitter. The members of the society also take responsibility for maintenance of the old radio equipment as well as filing documents and photographs relating to the site.

At regional level the County Administrative Board has three experts in heritage management. The Board is tasked with supervising compliance with current legislation and with contributing towards the development of the regional economy of the county of Halland, in which cultural values play an important role.

The County Museum of Halland has experts on building conservation, archaeology and the history of the agrarian landscape. The museum, by appointment of the County Administrative Board, takes part in restoration works as well as documenting works taking part on the site.

At central level the National Heritage Board and the Telemuseum possess expertise on conservation matters. The Board has, in co-operation with the Alexander Society, Telemuseum and Telia Mobile AB, formed a committee to study methods of how to conserve and still keep the transmitter in working order. An international symposium was held in 1997 aiming to form a network to discuss issues relating to the conservation of old electrical equipment.

The Board also has regular contact with independent academia and industry experts in various fields.

The Board also has, in co-operation with the Alexander Society and Telia Mobile AB, initiated a project for interviewing the staff at the radio station, retired as well as still active.

i. Visitor facilities and statistics

The Grimeton radio station is still in commercial use and therefore not generally open to the public. Until 1996 the site was closed to the public. At present the Grimeton radio station is open to the public on Mondays and Thursdays in June, July and August. Other times of the year the site is shown after special appointment. The Alexander Society takes responsibility for these public activities. Since 1996 approx. 3 000 visitors a year have visited the radio station.

Telia Mobile AB has expressed its wish to open up the site to the public. The commercial use of the site has gradually decreased but the Alexanderson antenna is still used by the Swedish Navy. The present commercial status of the site will therefore remain for the foreseeable future. In order to deal with the practical effects of opening the radio station to the public, visitor facilities will be established in a new building in connection to the old station building. Telia Mobile AB and the County Administrative Board therefore have initiated project Iternia – Grimeton Radio Center.

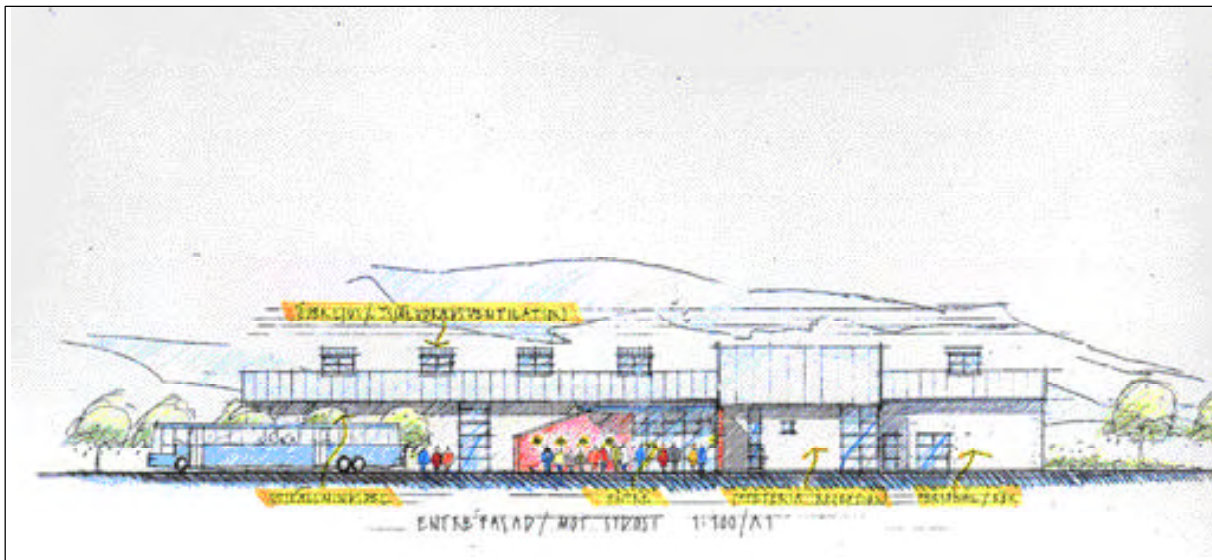
Iternia – Grimeton Radio Center is intended to be a science centre for education, research and development work. The main purpose of the intended centre is to offer broad and deeper knowledge about the historical development of radio engineering and its importance for communication

and modern society. Important target groups are school children and students with the aim to stimulate and increase young people's interest for studies within technology and natural sciences. Other target groups are industrial enterprises and tourists. In addition to the centre, work is also in progress to create a meeting-place devoted to develop methods and techniques for preservation and interpretation of the industrial heritage.

The inauguration of Iternia – Grimeton Radio Center will, according to the project plans, take place in 2003. The new building is estimated at SEK 32 000 000. Application for financing has been made to the Wallenberg Foundation. Trustee for Iternia – Grimeton Radio Center's future management will be a recently formed foundation with representatives from the Municipality Board as well as regional and national parties interested in Iternia – Grimeton Radio Center's activities.

The new building, estimated to 900 square metres, will provide a lecture theatre, exhibitions, experimental stations and education rooms. The centre will also accommodate services to visitors to the Grimeton cultural heritage such as café, restrooms, book and souvenir shop, parking lots etc. The location and design of the new building have been examined and sanctioned by the National Heritage Board and TICCIH.

The Iternia – Grimeton Radio Center building will also take the pressure of the old station buildings from the estimated 30 000 visitors a year. The old and unique long-wave transmitter will be shown on guided tours only.



Proposed building for Iternia – Grimeton Radio Center

Outline: Scandiaconsult/Johnels & Moberg Ark. Gothenburg 2000

j. Site management plan and statement of objectives

Varberg radio station at Grimeton has become an important symbol for the County of Halland and especially for the municipality of Varberg.

The cultural environment is an important basis for Varbergs development as an interesting municipality for residence, tourism and the establishment

of enterprises. The cultural heritage is considered to be a valuable resource in the daily life of the inhabitants of the municipality. Securing the long-term preservation of the cultural heritage and landscape is therefore an important task. Several steps in that direction have been taken (see *Appendix 12*).

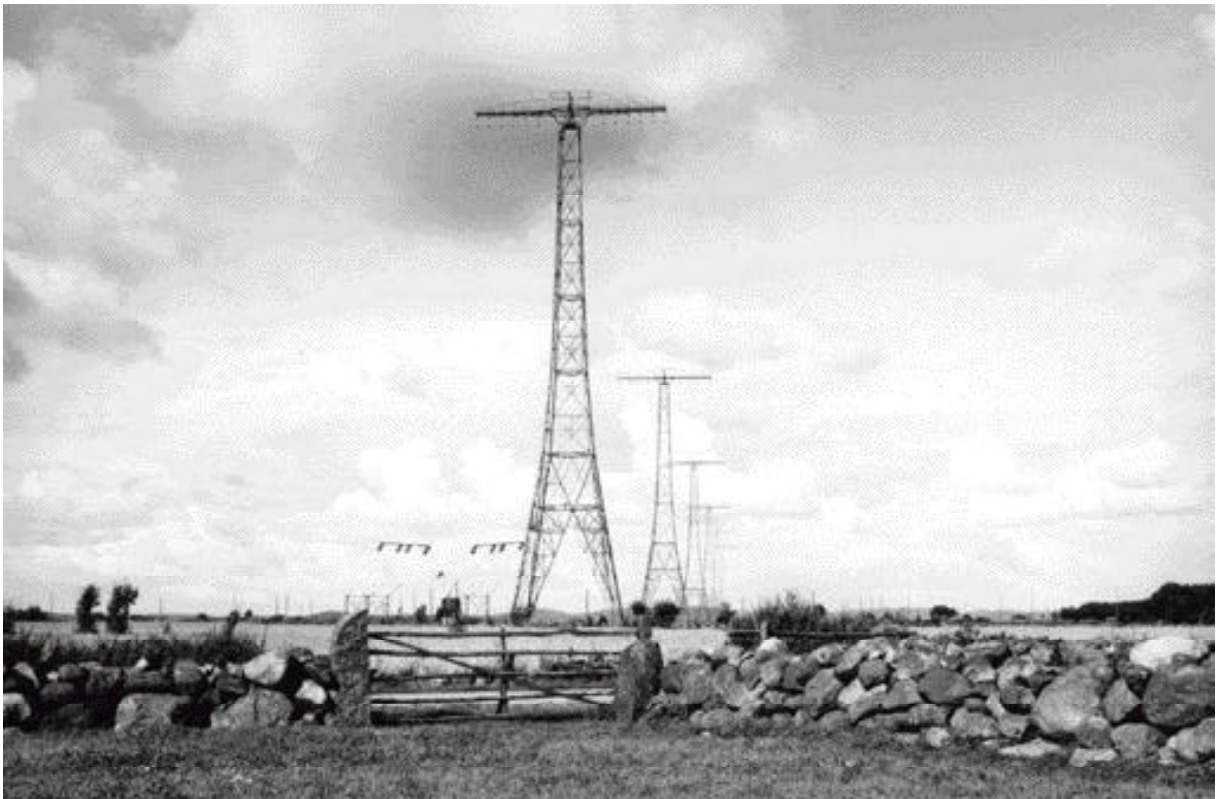
An Executive Management Committee for the radio station have been established, consisting of representatives for Telia Mobile AB, The County Administrative Board and the Alexander Society. The Committee makes decisions concerning the long-term management of the site with regard to the joint responsibility for the upkeep and conservation of the cultural heritage values.

A World Heritage Council will be established if a positive decision concerning inclusion on the World Heritage list is taken. The council will consist of representatives for Telia Mobile AB, the County Administrative Board, the Municipality of Varberg and the Alexander Society. The parties have already agreed on a management plan (see *Appendix 12*). The management plan is intended to be followed up continuously with addition of new projects and initiatives.

With a view to generally augmenting interest in and understanding for the World Heritage, various projects will be carried out, comprising e.g. information, educational activities and exhibitions. Law and statutory instruments protect the cultural heritage site and surrounding landscape. By authority of the Cultural Monuments Act, further protective listing will be carried out.

View of station area from southwest, c 1930

Photo: Märten Sjöbeck, Riksantikvarieämbetet, ATA



Buildings and radio historical equipment including the six gigantic antenna towers within the nominated area are consistently well maintained. Since 1996 several major restoration projects has been carried out with significant state funding support. The buildings in the residential area are privately owned. A written agreement concerning the upkeep of the village green will be concluded between the property owners and the County Administrative Board. State grants can be paid, under condition of decisions by Parliament in the state budget, when antiquarian requirements entail additional costs.

To develop the values inherent in industrial remains an inventory of the industrial heritage in the County will be carried out.

Project Iternia – Grimeton Radio Centre will, as described earlier, be of fundamental value for a sustainable development of the site as a major tourist attraction.

The site today is managed by Telia Mobile AB. The annual budget, as shown in *Appendix 5*, amounts to SEK 2 100 000

k. Staffing levels

The staff at the radio station today consists of the station manager.

As shown in *Appendix 6*, the establishment of Iternia – Grimeton Radio Center aims to care for the expected increase in visitor numbers. Iternia – Grimeton Radio Center will also employ the staff necessary for a major tourist attraction.

The Alexander Society today, by special agreement with Telia Mobile AB, is responsible for tourist activities at the radio station, e.g. guided tours, archives and photographic collections and a museum shop.

The National Heritage Board is responsible at national level for heritage conservation in Sweden. Its responsibilities include policy issues, development, education and expertise in this field.

The County Administrative Board of Halland is responsible at regional level for heritage conservation. Its Cultural Environment Division includes antiquarians and, within other units, experts on nature conservancy, the environment, surveying, planning, architecture etc.

The County Museum of Halland is responsible at regional level for collecting activities, documentation, care and preservation, recording and cataloguing and also research and information. The museum staff includes museum trained antiquarians and archivists, librarians and others.

The Municipality of Varberg, through its Cultural Affairs Authority, is responsible for its public libraries, the staff of which includes trained librarians. The Executive Administration is responsible for the public archives of the municipality.

5. FACTORS AFFECTING THE SITE

a. Development Pressures

The County of Halland is situated in one of the most attractive parts of Sweden with a fairly high rate of development pressure. Most of this pressure is located to the coastal towns and the immediate coastal region. From north to south two of Sweden's most important communication arteries run, the railway between Copenhagen/Malmö and Gothenburg/Oslo and the E 20 (E 6). The E 20 has recently been rebuilt to motorway standard and forms, with a 50 metres free zone, the west border of the proposed buffer zone. There are no plans to further expand this motorway in any foreseeable future. The railway is presently being rebuilt and partly relocated. None of this will affect the radio station or the proposed buffer zone.

The County of Halland is also of national interest as an area for development of wind energy. The location of wind power stations is regulated by the Building and Planning Act under supervision of the Municipality. According to the Comprehensive Plan decided by the Municipality Board in 2001 there are no plans for the establishment of wind power stations within the proposed buffer zone.

b. Environmental Pressures

There are no known environmental pressures within the area.

c. Natural disasters and preparedness

Earthquakes are not relevant in this part of Scandinavia. Due to the location of the site, flooding is not considered an issue.

d. Visitor/Tourism pressures

The County of Halland has a long tradition of tourism. The long beaches and spa facilities in Varberg have been well-known resorts for tourists since the 19 century. Tourism is today a major source of income for many permanent residents in Halland. The last decades tourism has also developed in the inland parts of the County, with hunting, lake fishing, farm B&Bs, hiking and cycling tours etc.

As a result of this, tourism in the County of Halland is generally looked upon as a positive asset for development, giving a large number of people their economical outcome.

Pressure from tourism and visitors at the radio station today is negligible due to the limited period in which the radio station is open to the public. The creation of Iternia – Grimeton Radio Center will take care of future increased visitor numbers by providing visitors centre, parking facilities, café and restrooms.



The antenna towers project above the fog, c 1925

Photo: Landsarkivet i Uppsala

e. Number of inhabitants within site and buffer zone

The number of permanent residents within the proposed buffer zone by 31 December 1999 was 1 428. The number of permanent residents within the nominated area by the same date was 22.

6. MONITORING

a. Key indicators for measuring state of conservation

VISITOR FIGURES Since 1996 approx. 3 000 visitors a year.

CARE EXPENDITURES For the period 1996–2000 about SEK 40 000 000. For the period 2001–2002 restoration and maintenance work for approx. SEK 5 500 000 is planned in accordance with the conservation programme. This is except the cost for restoring the last two antenna towers for approx. SEK 7 500 000 each.

All restoration and conservation work is thoroughly followed and documented by the County Museum of Halland. Photographs of the radio equipment and buildings exist from the 1920s and forward. The Alexander Society also regularly carries out photographic documentation.

b. Administrative arrangements for monitoring property

Telia Mobile AB and its predecessor Telegrafstyrelsen has, for more than 75 years, exercised daily supervision of the radio station. The original instructions, with only minor changes, are still followed. The company has actively taken part in all recent restoration works concerning the buildings and antenna towers.

As a result of the close co-operation between Telia Mobile AB and the County Administrative Board concerning restoration and conservation matters a joint committee for supervising of the radio station has been established. The committee also has a representative from the Alexander Society.

The Halland County Administrative Board supervises historic buildings and areas of national interest within the County.

The Municipality of Varberg is responsible for planning issues in the municipality and is the authority responsible for building permit procedure in matters of development and building.

The County Museum of Halland advises the Municipality and the County Administrative Board on matters relating to historic environments and settlements.

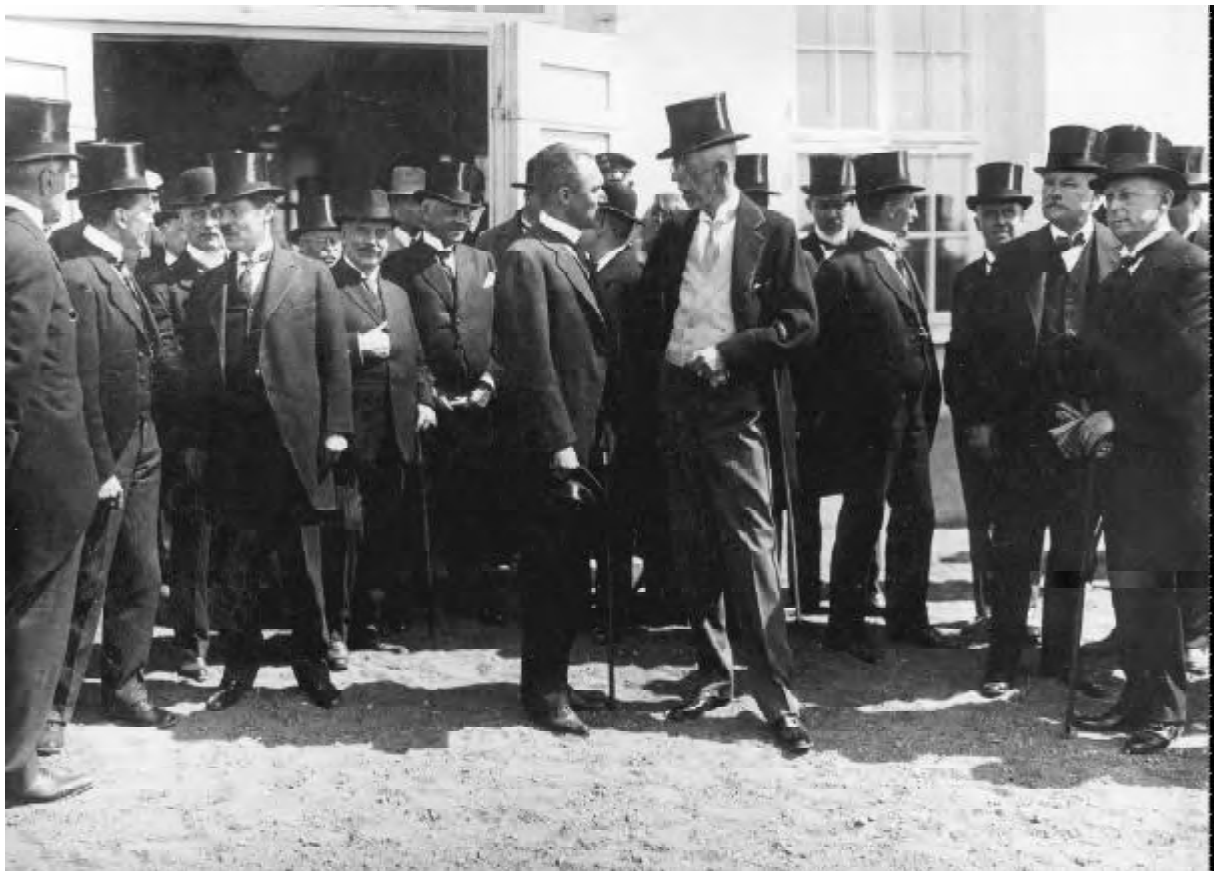
c. Results of previous reporting exercises

See account under 3 c. A maintenance plan has been issued concerning the buildings with brief descriptions of the present state of conservation. The plan also contains estimated restoration work on a 30 year basis. A

maintenance plan has also been carried out for the SAO equipment. The plan shows the present state of conservation for the various parts of the machinery and gives suggestions for restoration and regular maintenance. A third maintenance plan for the antenna plant has been issued by the County museum of Halland. See *Appendices 7 – 9*.

The radio station was inaugurated in 1925 by King Gustav V

Photo: Sveriges Television AB



7. DOCUMENTATION

a. Photographs, slides, video

- Appendix 13 Photos
- Appendix 14 "Som en blixtn över Atlanten" Stockholm: Telegrafverket, 1924. 13 min.
- Appendix 15 "Grimeton – en långvågssändare." "Grimeton – a long wave transmitter." Stockholm: Televerkets huvudkontor, 1982. 23 min. (A 871 0101.)
- Appendix 16 Hans Moberg: "Radion 100 år. En telegrafisk hälsning från Grimeton." 17 min 40 s, 1995.
- Appendix 17 "Välkommen till Grimetons radiostation." 3 min 59 s.
- Appendix 18 "Radiostationen i Grimeton. IT-pionjärer med framtidsmöjligheter." 1998.
- Appendix 19 CD-ROM disc. "Grimeton – a long wave transmitter", 1982.
- Appendix 20 Slides

b. Copies of site management plans and extracts of other plans relevant to the site

- Appendix 1 Resolution that Varberg radio station at Grimeton is a listed building according to the Cultural Monuments Act (SFS 1988:950).
- Appendix 2 Municipality of Varberg. Comprehensive plan. Extract concerning Grimeton church village.
- Appendix 3 Extract from "Areas of national interest for Heritage Conservation in the County of Halland", area No KN 14, Grimeton, Municipality of Varberg.
- Appendix 4 Municipality of Varberg. Comprehensive plan. Extract concerning tourism.
- Appendix 7 Maintenance plan, buildings.
- Appendix 8 Maintenance plan, technical equipment. National Heritage Board.
- Appendix 9 Maintenance plan, antenna plant. County Museum of Halland.
- Appendix 10a Description of the interaction between different legal instruments for Protection of the Cultural Heritage of Sweden.
- Appendix 10b The Environmental Code, a summary of the Government Bill. Planning and Building Ordinance, PBF. Cultural Monuments Act (1988:950) and Cultural Monuments Ordinance (1988:1188).
- Appendix 11 Survey plans.
- Appendix 12 Site management plan.

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Hamngatan 35, SE-302 43 Halmstad, tel: +46 35 19 26 00, fax: +46 35 19 26 26
E-mail: kansli@la.hallmus.org

LÄNSMUSEET VARBERG, COUNTY MUSEUM IN VARBERG

Fästningen, SE-432 44 Varberg, tel: +46 340 185 20, fax: +46 340 147 22,
E-mail: kansli@lansmuseet.varberg.se

VARBERG RADIO STATION, GRIMETON

Grimeton 72, SE-430 16 Rolfstorp, tel: +46 340 67 42 51, fax: +46 340 67 41 95

Denna upplaga innehåller endast ansökningstexten utan de omfattande bilagorna. För den fullständiga utredningen hänvisas till Länsstyrelsen i Hallands län, Länsantikvarien.

EDITING Hans Bergfast
~~Karl-Gustav Strid~~

LAYOUT Eva Gustafsson

TRANSLATION Hans Bergfast
Karl-Gustav Strid
Bengt Dagås

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COVER Grimeton Radiostation. County Museum in Varberg, Arne Persson

PRINTED BY The County Administrative Board of Halland, 2001



VARBERG RADIO STATION



Application
for inclusion
on the
World Heritage List



VARBERG RADIO STATION



Application
for inclusion
on the
World Heritage List



VARBERG RADIO STATION



Application
for inclusion
on the
World Heritage List

VARBERG RADIO STATION –

the Transatlantic radiotelegraph station at Grimeton



Supplement to World Heritage application



Photo: Telia Mobile AB, 1996



Länstyrelsen Halland



Riksantikvarieämbetet



Länstyrelsen i Hallands län

Kulturmiljöenheten

301 86 HALMSTAD

EDITING Hans Bergfast

LAYOUT Eva Gustafsson

TRANSLATION Roger Tanner

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COVER The radio station at Grimeton. Photo: County Museum in Varberg, Arne Persson

PRINTED BY The County Administrative Board of Halland, 2003

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SUPPLEMENT TO WORLD HERITAGE APPLICATION

Varberg Radio Station – the transatlantic radiotelegraph station at Grimeton

1. IDENTIFICATION OF THE PROPERTY

The nominated property now also includes the property designated Grimeton 13:49.

3. DESCRIPTION

a. Description of Property

The property Grimeton 13:49 was parcelled off from the main property Grimeton 13:34 in 2002, to facilitate the construction of a new Visitors Centre as described below. The parcelled-off property comes within the nominated site and forms part of the protected zone surrounding the listed building. This means a continuing statutory protection which will prevent any measures being taken within the new property which could harm the proposed World Heritage site. The County Administrative Board, as the supervisory authority for the listed building Varberg Radio Station in Grimeton, is in a position to intervene should any measures be taken at variance with the historical qualities of the site.

The nominated area has not been altered, added to or in any other way changed. As the property "Grimeton 13:49" is situated within the nominated area there is no change to the area proposed for inscription or to the site plan.

The position and extent of the parcelled-off property are shown in **App. 1.**

d. Present state of conservation

Restoration and painting of the masts was completed in 2003, and all six masts have thus now been maintained in accordance with the maintenance plan. A number of minor maintenance measures have also been carried out on the installation since 2001.

The conservation plan drawn up and accepted by the parties for the radio station in 1999 has been regularly updated, most recently in 2003; **App. 2.**

4. MANAGEMENT

a. Ownership

In 2003 Telia Mobile AB transferred the properties Grimeton 13:34 and Grimeton 13:49 to a newly formed foundation, the Grimeton World Heritage Site Foundation. The purpose of the transfer is to create long-term opportunities for preserving the radio station and making it accessible to both researchers and the general public. The purpose and aims of the Foundation are set forth in its Articles of Association, **App. 3.**

b. Legal status

The legal protection of the proposed World Heritage site operates on various levels, the strongest protection being that provided for the original installation and Alexanderson's broadcasting equipment.

The original Alexanderson equipment for long-wave radiotelegraphy, with all its components, the antenna with the six radio masts and the original 1920s buildings (transmitter building, garage, stores building, ice melting transformer house and mains transformer building) are protected under the Heritage Act. An area surrounding the buildings and coterminous with the properties Grimeton 13:34 and Grimeton 13:49 constitutes the protected zone of the listed building.

Other short-wave transmitters, antennas and broadcasting installations within the nominated property do not have this degree of statutory protection. The property owner and the County Administrative Board have therefore initiated an inventory and investigation of the heritage value of these parts of the installation. The property owner and the County Administrative Board will then decide, on the basis of consultations between them, which of these antennas etc. is of such historic interest as to merit preservation for posterity.

The short-wave transmitters with their peripheral equipment and antennas are not included in the actual nomination but are mentioned in the application, to describe the broadcasting history of the installation from the 1920s onwards.

e. Level at which management is exercised and name and address of responsible person

Telia Mobile is to be replaced with
STIFTELSEN VÄRLDSARVET GRIMETON
(the Grimeton World Heritage Site Foundation)
Radiostationen Grimeton 72, SE-430 16 ROLFSTORP, Sweden,
tel.: +46 705 34 00 00, E-mail: kjell.markstrom@teliasonera.com,
Kjell Markström, Chairman of the Grimeton World Heritage Site Foundation.

g. Sources and levels of finance

Simultaneously with the transfer by Telia Mobile AB to the Foundation of

the properties Grimeton 13:34 and Grimeton 13:49, the founder also transferred a capital of MSEK 25 to serve the Foundation's purposes.

The annual budget and financial status of the Grimeton World Heritage Site Foundation are shown in **App. 4**.

h. Sources of expertise and training in conservation and management techniques

During 2003-2004 the County Administrative Board received special funding from the National Heritage Board for work on a project concerning documentation and knowledge transfer relating to the operation of the original Alexanderson transmitter. Today there is only one person possessed of this knowledge, namely Bengt Dagås, the former head of the radio station. The first phase of the project involves translating old operating manuals and instructions from English into Swedish and video-recording and documenting starting and stopping procedures. In later phases of the project, the intention is for a number of younger persons to be instructed, with the aid of this material, in the operation of the transmitter. The project is also aimed at bringing about a discussion, in seminar form, of the preservation and conservation of historic electrical equipment and the problems involved in trying to keep such installations in working order.

i. Visitor facilities and statistics

Unfortunately the Iternia project, as described in the application, could not be realised. A funding application for implementation of the project was rejected by the Wallenberg Foundation in the spring of 2002.

As can be seen from the Management Plan and Statement of Objectives below, however, the parties concerned have agreed to build a new Visitors Centre adjoining the nominated radio station. The intended positioning of the new building is shown in **App. 5**.

The intention is for the new Visitors Centre to be operated by the Iternia Foundation; for the roles and responsibilities of the various parties at the radio station, see below. The centre will be built on the property Grimeton 13:49. The Management Plan and Statement of Objectives show that the Grimeton World Heritage Site Foundation will not be responsible for the Visitors Centre and public activities, thus guaranteeing that the funds intended for the care and maintenance of the World Heritage site will be unaffected by activities in the Visitors Centre.

j. Site management plan and statement of objectives

Pending the World Heritage Committee's decision, a temporary World Heritage Council has been set up, chaired by the County Governor. The World Heritage Council includes representatives of the Cultural Environment Unit of the County Administrative Board, the Varberg County Museum, the Halland County Museums, the County Custodian of Antiquities, the Municipality of Varberg, the Grimeton World Heritage Site Foundation, the Iternia Foundation and Region Halland. If necessary the World Heritage Council will co-opt representatives of the tourist sector and business enterprise. The World Heritage Council is to have a regional co-ordinating function and will handle business contacts and national and international relations.

The World Heritage Council has procured the compilation of a Management Plan, since adopted by the parties. The Management Plan also show the parties who in various ways are directly involved with the radio station, together with the allocation of responsibilities between them; see **App. 6**.

The Municipality of Varberg and the County Administrative Board have drafted a profiling programme for Varberg's tourist industry. The programme is based on the aim of uniting the initiatives taken for the preservation of Varberg's unique cultural environment with measures aimed at promoting its tourist industry; see **App. 7**.





COUNTY ADMINISTRATIVE BOARD
COUNTY OF HALLAND
Cultural Environment Unit
Hans Bergfast
Tel. 035 – 13 20 35

STATEMENT 1(1)

22nd January 2002 432-12090-01

County Cadastral Authority
Municipality of Varberg
SE-432 80 VARBERG

Subdivision from Grimeton 13:34, Grimeton Radio Station, in the Municipality of Varberg

The Cultural Environment Unit of the County Administrative Board is in receipt of documents concerning subdivision of the property Grimeton 13:34.

The Grimeton Radio Station has been a listed building, protected under the Heritage Act, since 1996. The proposed subdivision comes within the protective zone of the listed building.

The subdivision also comes within the area nominated for inscription on the UNESCO World Heritage list.

The existing heritage protection is unaffected by the subdivision. The protective provisions concerning the listed building will continue to apply to the new property.

Accordingly, the County Administrative Board has no objection to the proposed property formation. The National Heritage Board has been consulted.

This matter was decided by County Custodian of Antiquities Mats Folkesson with Custodian of Antiquities Hans Bergfast as rapporteur. Senior Legal Adviser Per Widell also participated in the processing of the matter.

Mats Folkesson

Hans Bergfast

Cc:

The National Heritage Board
The Halland County Museums, the County Custodian of Antiquities
Telia Mobile AB
BM

LANTMÄTERIMYNDIGHETEN

Varbergs kommun

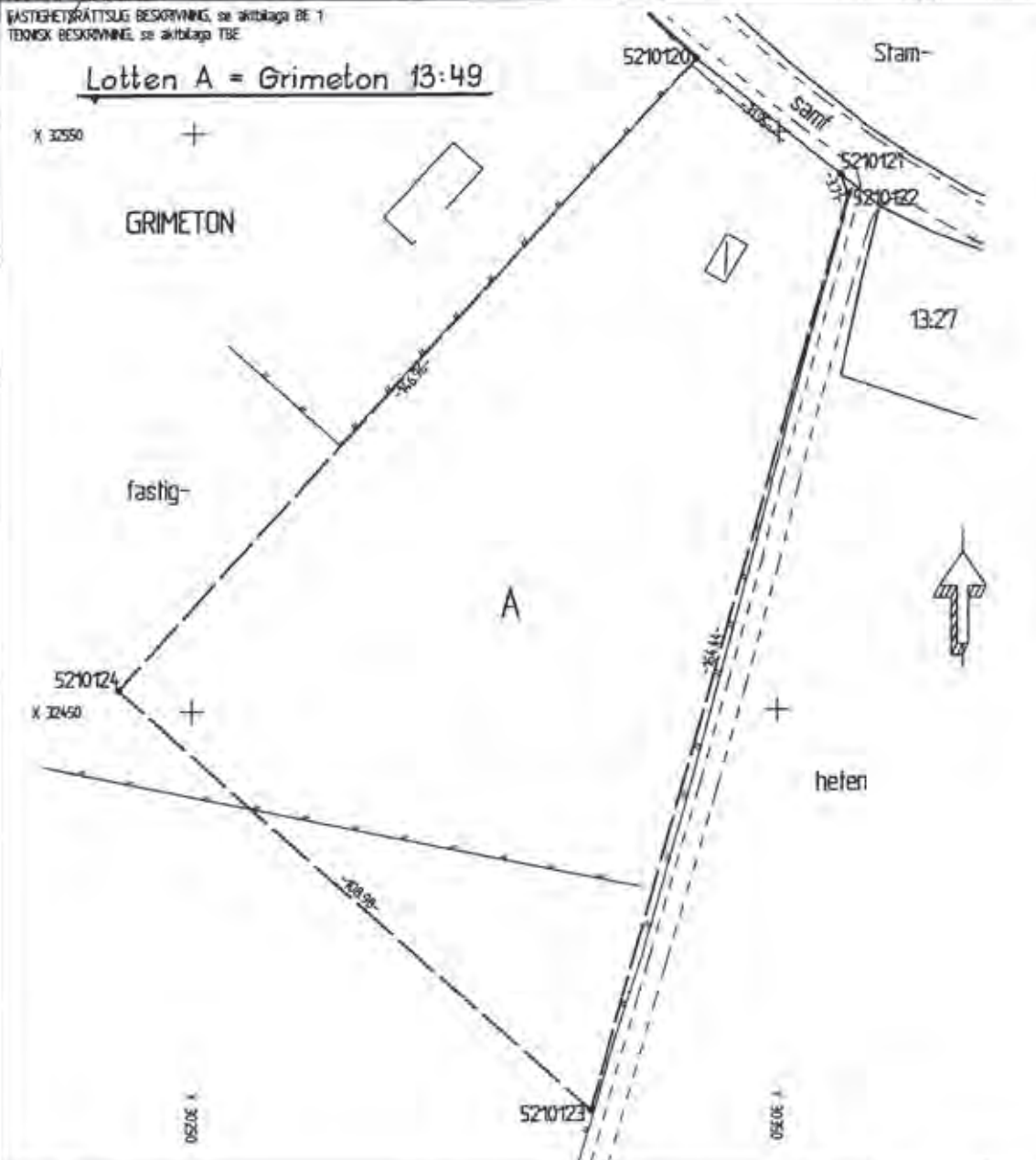
KARTA

Upprättad år
2002Dir.
02/43Aukilaga
KAÄrendet
AVSTYCKNING FRÅN GRIMETON 13:34Kommun
VARBERGLän
HALLANDRegisterområde
VARBERG

Registreringsdatum

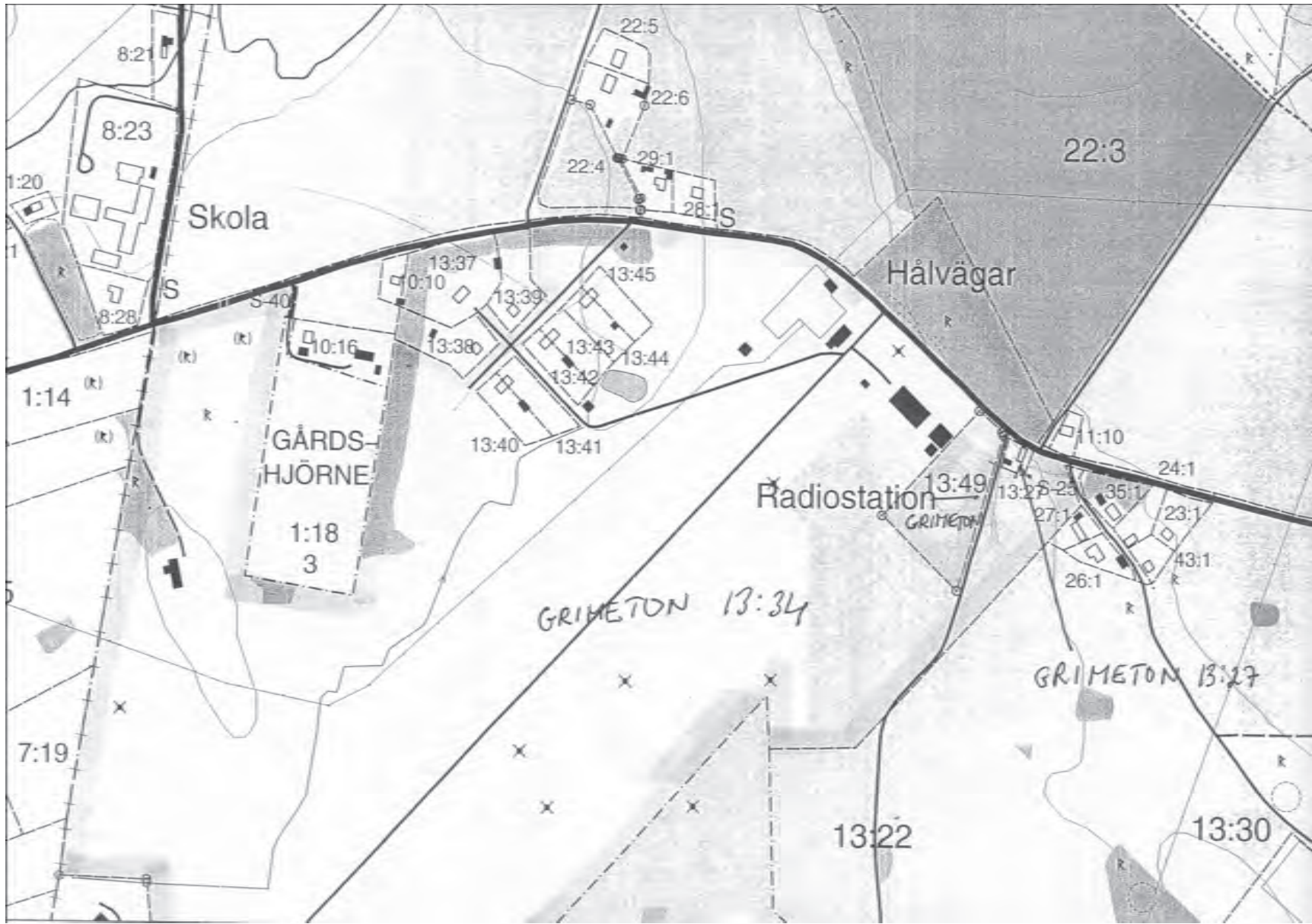
Förrättningen är registrerad 2002-05-15

Förrättningstjänstgörande

Anders Axelsson
Anders Axelsson*Inma Fronthage*FASTIGHETSRETTSLIG BESKRIVNING, se aukilaga BE 1
TEKNISK BESKRIVNING, se aukilaga TBEFramställt genom
NymätningSkala
1:1000Koordinatsystem
RT38 5 Gon V 63-1

Reg. karta, lägesangivning

S17B



STIFTELSEN VÄRLDSARVET GRIMETON – THE GRIMETON
WORLD HERITAGE SITE FOUNDATION

GRIMETON RADIO STATION

CONSERVATION PLAN / MAINTENANCE BUDGET

Halmstad 18th August 2003

CA consultadministration ab

GN/ags

GENERAL

The radio station has been a listed building, i.e. protected under the Heritage Act, since 1996, which means that protective provisions regulate what may be done to the property and buildings. The measures taken must be sanctioned by the County Administrative Board. The extent etc. of protection is shown in section 2 of the enclosure. Always consult the County Administrative Board, tel. 035-13 20 00, before taking any action.

This Conservation Plan/Maintenance Budget does not allow for the possibility of a future Broadcasting Technology Centre.

The care of fittings/transmitting equipment forms the subject of a separate file compiled by Bengt Spade and Mille Törnblom. The present plan, however, does include a budget for those measures.

Concerning mast maintenance, a separate conservation plan exists for inspection, supervision and maintenance painting. The present plan, however, does include a budget for those measures: see section on Masts.

This Conservation Plan/Maintenance Budget includes emergency measures for Year 1, i.e. 2003. Future emergency measures are not included.

Conservation Plan legend:

G	=	Floor
V	=	Wall
T	=	Roof/ceiling
Ö	=	Sundry
A	=	Measure requiring the participation of a heritage authority inspector, or alternatively measures requiring basic consultations with a heritage authority inspector. In the latter case, the A comes after the heading.

DEFINITIONS

Operation/maintenance	maintenance of a building's technical standard, with measures taken at intervals of less than 1 year.
Scheduled maintenance	maintenance of a building's technical standard, with measures taken at intervals exceeding 1 year.
Emergency maintenance	measures necessitated by damage, <i>shoes??</i> or defects of workman-ship, materials or equipment.

EXTENT, COSTING ESTIMATE

The costing estimate covers maintenance costs fro transmitter equipment, building, installations, site and masts.

The estimate does not include

- value added tax,
- rising costs,
- capital expenditure.

General planning and administrative overheads have been included at between 0-15%, depending on the type of measure concerned.

LEVEL OF COSTS

The estimate refers to the level of costs in 2003.

EMERGENCY MEASURES TO
SITE, BUILDINGS AND MASTS

Site

rendering/concrete crumbling in cooling pond
Edge trim protruding at cooling pond intake

Station building

Structure Outer wall by cellar steps damaged by damp
 Moisture damage to inside of outer wall, west front
 Renovation and painting of doors and windows
 New fire/intruder alarm

Services Drains condemned by Environment and Health Authority
 Stormwater not working
 Dirt in fresh water (particle separator?)
 Heating system control equipment out of order

Electricals Insulation measurement of distribution board and electrical
installation
 Compilation of wiring chart
 Compilation of group designations

Garage

Repair and painting of windows

Storage building

Repair and painting of doors

Snow-melting building

Ceiling girders corroding
Repair and painting of windows

Transformer building

Moisture damage to outer walls
Repair and painting of windows
Ceiling girders corroding
Telecommunications cable ruptured by excavator

Outdoor switchgear

Demolition/decontamination

Masts and antennas

Concrete base of elevators, repairs to concrete and wrought iron

New service cages for masts

Antenna coils, litz cables and insulators, replacement and renovation

Short-wave antenna R/S, repair and painting

Short-wave antenna Coel, LOG, 100 kW, repair

GRIMETON RADIOSTATION		PLANERAT/PROGNOSTISERAT UNDERHÅLL ÅR 2004 - 2033								Datum 2003-08-18
Pos	Specifikation	År 2004 (1 år)	År 2005 (1 år)	År 2006 (1 år)	År 2007 (1 år)	År 2008 (1 år)	År 2009-2013 (5 år)	År 2014-2023 (10år)	År 2024-2033 (10år)	Summa
	Sändarutrustning	100 000 kr	100 000 kr	80 000 kr	80 000 kr	80 000 kr	400 000 kr	800 000 kr	800 000 kr	2 440 000 kr
	Mark	582 000 kr	513 000 kr	57 000 kr	65 000 kr	19 000 kr	315 000 kr	547 000 kr	905 000 kr	3 003 000 kr
	Stationsbyggnad									
	Bygg	553 000 kr	23 000 kr	0 kr	785 000 kr	4 000 kr	217 000 kr	469 000 kr	350 000 kr	2 401 000 kr
	VVS	401 000 kr	41 000 kr	0 kr	10 000 kr	0 kr	161 000 kr	138 000 kr	196 000 kr	947 000 kr
	El	80 000 kr	0 kr	38 000 kr	105 000 kr	10 000 kr	64 000 kr	534 000 kr	258 000 kr	1 089 000 kr
	Travers	1 000 kr	1 000 kr	1 000 kr	11 000 kr	1 000 kr	5 000 kr	21 000 kr	10 000 kr	51 000 kr
	Garage	0 kr	15 000 kr	221 000 kr	99 000 kr	0 kr	84 000 kr	75 000 kr	69 000 kr	563 000 kr
	Förråd	38 000 kr	49 000 kr	0 kr	227 000 kr	0 kr	176 000 kr	163 000 kr	121 000 kr	774 000 kr
	Snösmältningshus	7 000 kr	0 kr	20 000 kr	16 000 kr	0 kr	40 000 kr	118 000 kr	44 000 kr	245 000 kr
	Transformatorhus	7 000 kr	89 000 kr	74 000 kr	2 000 kr	5 000 kr	133 000 kr	192 000 kr	119 000 kr	621 000 kr
	Utomhusställverk	100 000 kr	0 kr	0 kr	5 000 kr	60 000 kr	65 000 kr	130 000 kr	130 000 kr	490 000 kr
	Summa Byggnader o mark	1 869 000 kr	831 000 kr	491 000 kr	1 405 000 kr	179 000 kr	1 660 000 kr	3 187 000 kr	3 002 000 kr	12 624 000 kr
	Snittkostnad / år (exkl master)					år 1 - 5 955 000 kr	år 6 - 10 333 000 kr	år 11 - 20 319 000 kr	år 21 - 30 300 000 kr	
	Summa Master o antenner	4 709 000 kr	4 729 000 kr	1 546 000 kr	734 000 kr	254 000 kr	1 332 000 kr	12 602 000 kr	23 604 000 kr	49 510 000 kr

GRIMETON - VÅRDPLAN				MARKANLÄGGNING				
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	ASFALTYTOR, MASTVÄG							
	Omläggning, toppning		3 600	m ²	90	324 000	30 år	2028
	Lagningar 5%		180	m ²	180	32 400	10 år	2005
4	ASFALTYTOR, RUNT FÖRRÅD OCH VID STÄLLVERK							
	Omläggning toppning		1 000	m ²	90	90 000	30 år	2005
	Lagningar 5%		50	m ²	180	9 000	10 år	2015
5, 6	ASFALTYTOR, RUNT STATION OCH INFART							
	Omläggning		2 600	m ²	90	234 000	30 år	2005
	Lagningar 5%		130	m ²	180	23 400	10 år	2015
7	OLJEGRUS, VÄG MOT BOSTÄDER/ TRANSFORMATOR							
	Omläggning		500	m ²	65	32 500	30 år	2005
	Lagningar 5%		25	m ²	130	3 200	10 år	2015
	GRUSVÄG, ANTENNVÄG MAST 3-6							
	Uppgrusning		4 000	m ²		25 000	5 år	2007
8, 9	GRÄSYTOR							
	Gräs, kompletteringssådd/justeringar		2 800	m ²	6	16 800	5 år	2008
8	TRÄD							
	Alléträd, hamling		60	st		55 000	3 år	2006
	Ö Träden är drabbade av almsjukan, utreds vidare	A	50	st		40 000	3 år	2004
	STAKET							
	Staket mot väg, justering/lagning	A	300	m		10 000	6 år	2004
	Staket mot master, justering/lagning		150	m		5 000	6 år	2004
10	KYLDAMM							
	Fundament och väggar av betong m m, reparation.	A				100 000	-	2004
	Reparation av rörledning					100 000	-	2004
	Nätstaket runt kyldamm, justering/lagning		50	m		1 500	6 år	2008

GRIMETON - VÅRDPLAN				MARKANLÄGGNING				
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
11	INTAG FÖR KYLDAMM (södra fasaden Stationsbyggnad)							
	Betong, reparation	A				10 000	-	2004
	Durkplåt, målning	A	8	m ²		2 000	8 år	2004
	Kantskoning och durkplåt, reparation					30 000	-	2004
	Ventilrevision					5 000	10 år	2005
33	BENSINPUMP							
	Bensinpump av stål/plåt, målas	A	1	st	3000	5 000	8 år	2004
	Reparation		1	omg		10 000	-	2004
12	VINDSKYDD							
	Bänkar av trä, oljas		1	omg		2 000	5 år	2006
	Tak av papp, byte		50	m ²	135	6 000	20 år	2018
	Plattytta, justering		40	m ²	100	4 000	15 år	2013
	PLÅTHUS/FÖRRÅD							
	Smedjan, järnförråd, reparation		2	st	60000	120 000	-	2005
	AVVATTNING							
	Vägtrummor, diken etc		1	omg	-	40 000	-	2004
	DRÄNERINGSLEDNING							
	Dräneringsledningar inkl brunnar etc runt hus, nya		1	omg	-	230 000	-	2004

GRIMETON - VÅRDPLAN				STATIONSBYGGNAD BYGG				
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	Utvändigt bygg							
	Anm. Fasader ej målade i tidsenlig färg Plåtbeslag fönster rostar							
	Fönsterreparation, allmänt	A	1 omg			50 000	-	2 004
13	FASAD - SYDVÄST							
	Fönster och dörrar av trä, målas	A	43 m ²		460	19 800	8 år	2004
	Puts, målas	A	215 m ²		130	28 000	10 år	2017
	Puts, omputsning		215 m ²		830	178 400	> 30 år	2007
	Plåtgarneringar, målas		40 m		100	4 000	10 år	2013
	Port, montage m m	A	1 st		30 000	30 000	-	2004
	Ö Fönster är ej tidsenliga, byts till äldre typ	A	10 st		10 000	100 000	-	2007
14	FASAD - NORDVÄST							
	Fönster och dörrar av trä, målas	A	14 m ²		460	6 400	8 år	2004
	Puts, målas	A	152 m ²		130	19 800	10 år	2017
	Puts, omputsning	A	152 m ²		830	126 200	> 30 år	2007
	Plåtgarneringar, målas		20 m		100	2 000	10 år	2013
	Skärmtak av aluminium						-	-
	Dörr, renovering		1 st		10 000	10 000	-	2004
15	FASAD - NORDÖST							
	Fönster och dörrar av trä, målas	A	43 m ²		460	19 800	8 år	2010
	Puts, målas	A	215 m ²		130	28 000	10 år	2017
	Puts, omputsning	A	215 m ²		830	178 400	> 30 år	2007
	Plåtgarneringar målas		40 m		100	4 000	10 år	2012
16	FASAD - SYDÖST							
	Fönster och dörrar av trä, målas	A	14 m ²		460	6 400	8 år	2004
	Puts, målas	A	152 m ²		130	19 800	10 år	2017
	Puts, omputsning	A	152 m ²		830	126 200	> 30 år	2007
	Plåtgarneringar målas	A	20 m		100	2 000	10 år	2013
	Dörr, renovering	A	1 st			10 000	-	2004
17,18	YTTERTAK							
	Takpapp byte (derbigum)	A	800 m ²		130	104 000	20 år	2009
	Plåtgarneringar, målas	A	120 m		60	7 200	8 år	2013
	Skorsten plåt, målas	A	1 st		1 500	1 500	8 år	2013
	Fönster av plast						-	-

GRIMETON - VÅRDPLAN			STATIONSBYGGNAD BYGG					
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	Invändigt bygg							
	Källare							
19,20	PANNRUM							
	G Betong, omålad						-	-
	V Puts, målas 1 ggr		55	m ²	45	2 200	12 år	2008
	T Betong inkl balkar, målas		27	m ²	92	2 200	12 år	2008
	Bottenvåning							
21	FÖRRÅD 101							
	G Golvbrädor 50%, slipning/lackning	A	10	m ²	230	2 300	15 år	2004
	linoleum 50%, byte	A	10	m ²	350	3 500	20 år	2004
	V Puts/skivor, målas 1ggr	A	50	m ²	58	2 900	12 år	2004
	T Puts inkl balkar, målas	A	20	m ²	92	1 800	12 år	2004
	Ö Plåtskåp						-	-
	FÖRRÅD 102							
	G Golvbrädor, slipning/lackning	A	20	m ²	230	4 600	15 år	2004
	V Skivor/puts, målas 1ggr	A	48	m ²	580	27 800	12 år	2004
	T Puts inkl balkar, målas	A	20	m ²	92	1 800	12 år	2004
	Ö Hyllor av plåt						-	-
	KONTOR 103							
	G Parkett, slipning/lackning	A	12	m ²	230	2 800	15 år	2004
	V Skivor/puts, målas 2ggr	A	35	m ²	92	3 200	12 år	2004
	T Skivor, målas	A	12	m ²	75	900	12 år	2004
22	KONTOR 104							
	G Parkett, slipning/lackning	A	12	m ²	230	2 800	15 år	2004
	V Skivor/puts, målas 2ggr	A	35	m ²	92	3 200	12 år	2004
	T Skivor, målas	A	12	m ²	75	900	12 år	2004
	KORRIDOR 105							
	G Linoleum, byte	A	2	m ²	350	700	24 år	2004
	V Skivor/puts, målas 2ggr	A	10	m ²	92	900	12 år	2004
	T Skivor, målas	A	2	m ²	75	200	12 år	2004
	KORRIDOR 106							
	G Parkett, slipning/lackning	A	20	m ²	230	4 600	15 år	2004
	V Skivor/puts, målas 2ggr	A	55	m ²	92	5 000	12 år	2004
	T Skivor, målas	A	20	m ²	75	1 500	12 år	2004
23	OMKLÄDNING 107							
	G Parkett, slipning/lackning	A	3	m ²	230	700	15 år	2004
	V Tapet, omtapetsering	A						-
	T Skivor, målas	A	3	m ²	75	200	12 år	2004

GRIMETON - VÅRDPLAN				STATIONSBYGGNAD BYGG				
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	ARKIV 108 INGÅR I 106	A						
	STÄD 109							
	G Parkett, slipning/lackning	A	5	m ²	230	1 200	15 år	2004
	V Skivor/puts, målas 1ggr	A	23	m ²	58	1 300	12 år	2004
	T Puts inkl balkar, målas	A	5	m ²	92	500	12 år	2004
24	VERKSTAD 110							
	G Betong, målas	A	90	m ²	58	5 200	2 år	2004
	V Puts, målas	A	105	m ²	58	6 100	12 år	2004
	T Puts inkl balkar, målas	A	90	m ²	92	8 300	12 år	2004
	Ö Bänkinredning, verktygsskåp av trä	A					-	-
	FÖRRÅD 111 INGÅR I 110							
	WC 112							
	G Plastmatta inkl sockel	A	5	m ²	400	2 000	24 år	2015
	V Glasfiber, målas	A	20	m ²	92	1 800	12 år	2007
	T Skivor, målas	A	5	m ²	75	400	12 år	2007
25-31	MASKINSAL 113							
	G Kalksten	A					-	-
	Plåt, målad	A	100	m ²	120	12 000	10 år	2004
	V Klinker till 2,0 m	A					-	-
	Puts däröver, målas	A	315	m ²	58	18 300	16 år	2007
	T Plåt, profilerad, målas	A	500	m ²	92	46 000	16 år	2007
	Ö Travers, se sep flik						-	-
	Fuktskador yttervägg vid källartrappa					10 000	-	2004
	Fuktskador yttervägg vid traversbalkar					60 000	-	2004
	TRANSFORMATORRUM 114							
	G Betong, målas	A	27	m ²	58	1 600	8 år	2003
	V Puts, målas	A	55	m ²	58	3 200	16 år	2007
	T Plåt profilerad, målas	A	27	m ²	92	2 500	16 år	2007
	Ö Nät runt spolar, målat	A					-	-
	LIKRIKTARRUM 115							
	G Betong, målas	A	27	m ²	58	1 600	8 år	2003
	V Puts, målas	A	28	m ²	58	1 600	16 år	2007
	T Profilerad plåt, målas	A	27	m ²	92	2 500	16 år	2007
	Ö Plåthyllor och skåp						-	-

GRIMETON - VÅRDPLAN				STATIONSBYGGNAD BYGG				
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	Övre plan							
	HALL	A						
	G Golvplattor, byte		11	m ²	350	3 800	24 år	2015
	V Puts, målas		38	m ²	70	2 700	12 år	2005
	T Glasfiber, målas		11	m ²	92	1 000	12 år	2005
	TRAPPA - ÖSTER	A						
	G Plastmatta		7	m ²	450	3 200	24 år	2005
	V Puts, målas		35	m ²	70	2 400	12 år	2005
	T Profilerad plåt, målas		6	m ²	92	600	12 år	2005
	STÄD 200	A						
	G Plastmatta, byte		6	m ²	350	2 100	24 år	2015
	V Skivor/puts, målas		22	m ²	58	1 300	12 år	2005
	T Skivor, målas		6	m ²	75	400	12 år	2005
	KONTOR 201	A						
	G Golvplattor, byte		12	m ²	350	4 200	24 år	2015
	V Skivor/puts, målas		35	m ²	70	2 400	12 år	2015
	T Skivor, målas		12	m ²	75	900	12 år	2015
	WC 202	A						
	G Golvplattor, byte		3	m ²	350	1 000	24 år	2005
	V Skivor/puts, målas		18	m ²	70	1 300	12 år	2005
	T Skivor, målas		3	m ²	75	200	12 år	2005
	KONTOR 203	A						
	G Golvplattor, byte		12	m ²	350	4 200	24 år	2015
	V Skivor/puts, målas		35	m ²	70	2 400	12 år	2015
	T Skivor, målas		12	m ²	75	900	12 år	2015
	KONTOR 204	A						
	G Parkett, slipning/lackning		12	m ²	230	2 800	15 år	2013
	V Skivor/puts, målas		35	m ²	70	2 400	12 år	2015
	T Skivor, målas		12	m ²	75	900	12 år	2015
	KONFERENSNUM 205, 206	A						
	G Parkett, slipning/lackning		35	m ²	230	8 000	15 år	2013
	V Glasfiber, målas		88	m ²	70	6 200	12 år	2009
	T Glasfiber, målas		35	m ²	92	3 200	12 år	2009
	PERSONALNUM 207	A						
	G Plastmatta, byte		16	m ²	350	5 600	24 år	2015
	V Vävtapet, omtapetsering		38	m ²	120	4 600	12 år	2005
	T Skivor, målas		16	m ²	75	1 200	12 år	2005

GRIMETON - VÅRDPLAN				STATIONSBYGGNAD BYGG				
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	OMKLÄDNAD/SAMMANTRÄDE 208	A						
	G Plastmatta, byte		44	m ²	350	15 400	24 år	2014
	V Skivor/puts, målas		120	m ²	70	8 400	12 år	2015
	T Skivor, målas		44	m ²	75	3 300	12 år	2015
	Ö Omklädnadskåp av plåt						-	-
	Inredning vid kök/tvättställ						-	-
	DUSCH/OMKLÄDNAD 209	A						
	G Plastmatta, byte		5	m ²	350	1 800	16 år	2014
	V Vägplastmatta		22	m ²	320	7 000	16 år	2014
	T Skivor, målas		5	m ²	75	400	12 år	2005
	Ö Skärmväggar av aluminium och glas						-	-
	TRAPPA - VÄSTER	A						
	G Betong, målas		7	m ²	58	300	8 år	2005
	V Väggar, målas		35	m ²	70	2 100	12 år	2005
	T Skivor, målas		5	m ²	75	300	12 år	2005
	Ö Handledare av stål, målas		1		500	500	8 år	2005
	LUNCHRUM 210	A						
	G Plastmatta, byte		20	m ²	260	5 200	24 år	2013
	V Tapet, omtapetsering		63	m ²	120	7 600	12 år	2013
	T Tak, målas		20	m ²	75	1 500	12 år	2013
	Övrigt							
	Nytt brand/inbrottslarm		1	omg		170 000	-	2004
	Brandskyddsåtgärder		1	omg		70 000	-	2004

GRIMETON - VÅRDPLAN		STATIONSBYGGNAD VVS						
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	FÄRSKVATTENSYSYSTEM							
	Brunn, rensning		1	st		2 400	5 år	2004
	Pump, färskvatten byte		1	st		9 800	20 år	2010
	Pump avlopp källare byte		1	st		2 400	20 år	2010
	Hydrofor byte		1	st		18 300	> 30 år	2018
	Varmvattenberedare v=30L. Byte		1	st		6 200	15 år	2005
	Varmvattenberedare v=110L. Byte		1	st		7 900	15 år	2005
	Blandare packningsbyte m m					3 600	8 år	2005
	Bef kallvattenledningar, galvrör, Byte					36 600	> 30 år	2010
	WC-stolar, byte packning, flottör m m					3 600	8 år	2005
	AVLOPPSSYSTEM							
	Dagvattenledningar och brunnar, rensning					4 400	10 år	2007
	Avloppsledning, spolning					2 200	10 år	2007
	Ny infiltrationsanl - spillvatten					250 000	30 år	2004
	Bef inv. spill- o dagvattenledn., gjutjärn. Byte					88 800	> 30 år	2010
	TRYCKLUFTSSYSTEM							
	Kompressor + tank. Besiktning		1	st		1 400	6 år	2007
	Kompressor + tank. Besiktning + inv kontr		1	st		2 400	6 år	2004
	VÄRMESYSTEM							
19	Oljepanna, byte		1	st		85 500	25 år	2004
	Oljebrännare, byte		1	st		13 400	10 år	2004
	Oljetank, besiktning		1	st		2 400	5 år	2004
	Exp.kärl, Byte		1	st		3 100	15 år	2004
	Cirkulationspump, Byte	A	1	st		6 200	25 år	2004
30	Radiatorer, byte packbox etc		ca125	st	110	15 200	10 år	2005
	Skorsten, insatsrör-slang		1	st		24 400	> 30 år	2004
	VENTILATIONSSYSTEM							
	Fläktar WC, etc, byte		3	st	1 100	3 600	10 år	2005
	Fläktar, maskinhall, byte		2	st	5 600	12 300	25 år	2015
	OVK-besiktning, pers.utr. etc					4 800	6 år	2004
	OVK-åtgärder					6 200	24 år	2004
	STYR & ÖVERVAKNING							
	Reglerutr, värmesystem, byte		1	st		14 600	15 år	2018
	Relgerutr. värmesystem, service, kontr					1 900	3 år	2004

GRIMETON - VÅRDPLAN						GARAGE BYGG		
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	Utvändigt bygg							
	Anm. Fasader ej målade i tidsenlig färg							
32	FASAD - SYDVÄST							
	Fönster av trä, målas	A	1	st	350	400	8 år	2005
	Ytterdörr, aluminium		1	st			-	-
	Puts, målas	A	18	m ²	130	2 300	10 år	2017
	Puts, omputsning	A	18	m ²	830	14 900	> 30 år	2007
33	FASAD - NORDVÄST							
	Fönster av trä, målas	A	2	st	350	700	8 år	2005
	Portar, aluminium		3	st			-	-
	Puts, målas	A	45	m ²	130	5 800	10 år	2017
	Puts, omputsning	A	45	m ²	830	37 400	> 30 år	2007
	FASAD - NORDÖST							
	Portar av trä, målas	A	2	st	750	1 500	8 år	2011
	Puts, målas	A	8	m ²	130	1 000	10 år	2017
	Puts, omputsning	A	8	m ²	830	6 600	> 30 år	2007
34	FASAD - SYDÖST							
	Fönster av trä, målas	A	5	st	350	1 800	8 år	2005
	Puts, målas	A	48	m ²	130	6 200	15 år	2017
	Puts, ompustning	A	48	m ²	830	39 800	> 30 år	2007
32,33	YTTERTAK							
	Taktegel, omläggning	A	155	m ²	300	46 500	> 30 år	2010
	Taktegel, justering		155	m ²	45	7 000	5 år	2005
	Takhuvar, målas	A	2	st	610	1 200	10 år	2005
	Hängränna och stuprör, målas	A	65	m ²	58	3 800	10 år	2005

GRIMETON - VÅRDPLAN						GARAGE EL, TELE		
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	GARAGEBYGGNAD	A						
	ALLMÄNT							
	Ombyggnad av el/tele		1	omg		50 000	-	2006
	Upprättande av ritningar		1	omg		20 000	-	2006
	Centraler, byte		1	st	5 800	5 800	-	2015
	Armaturer, byte		10	st	2 300	23 000	-	2006
	Lysrör, byte		20	st	64	1 300	5 år	2006
	Brytare, byte		5	st	580	2 900	-	2010
	Uttag, byte		5	st	580	2 900	-	2010
	Ledningar, byte		200	m	35	7 000	-	2010
	Kraftuttag, byge		2	st	1 200	2 400	-	2006
	Radiatorer, byte		3	st	1 700	5 100	-	2006

GRIMETON - VÅRDPLAN		FÖRRÅDSBYGGNAD BYGG						
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	Utvändigt bygg							
	Anm. Fasader ej målade i tidsenlig färg Fönsterbeslag rostar							
	FASADER - SYDVÄST							
	Fönster av trä, målas	A	2	st	570	1 100	8 år	2011
	Puts, målas	A	37	m ²	130	4 800	10 år	2017
	Puts, omputsning	A	37	m ²	830	30 700	> 30 år	2007
	FASAD NORDVÄST							
	Fönster av trä, målas	A	8	st	570	4 600	8 år	2011
	Puts, målas	A	78	m ²	130	10 100	10 år	2017
	Puts, omputsning	A	78	m ²	830	64 700	> 30 år	2007
	FASAD NORDÖST							
	Fönster av trä, målas	A	2	st	570	1 100	8 år	2011
	Puts, målas	A	37	m ²	130	4 800	10 år	2017
	Puts, omputsning	A	37	m ²	830	30 700	> 30 år	2007
37	FASAD SYDÖST							
	Fönster av trä, målas	A	4	st	570	2 300	8 år	2011
	Portar av trä, målas	A	3	st	750	2 200	8 år	2004
	Puts, målas	A	73	m ²	130	9 500	10 år	2017
	Puts, omputsning	A	73	m ²	830	60 600	> 30 år	2007
	Portar reparation	A	3	st	10 000	30 000	-	2004
	YTTERTAK							
	Taktegel, omläggning	A	300	m ²	350	105 000	> 30 år	2010
	Taktegel, justering		300	m ²	46	13 800	5 år	2005
	Hängrännor och stuprör av plåt, målas	A	90	m	58	5 200	10 år	2004

GRIMETON - VÅRDPLAN				FÖRRÅDSBYGGNAD BYGG				
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	Invändigt bygg							
	F D RESERVKRAFTRUM	A						
	G Omålad betong						-	-
	V Puts, målas		85	m ²	70	3 400	16 år	2009
	T Skivor, målas		50	m ²	75	2 600	16 år	2009
	Ö Hyllinredning av stål						-	-
39	FÖRRÅD (MITTEN RUM)	A						
	G Omålad betong						-	-
	V Puts, målas		115	m ²	70	4 600	16 år	2009
	T Synliga bjälkar och undersida golvbrädor av trä, målas		75	m ²	75	4 900	16 år	2009
	Ö Trappor av trä, målas		2	st	2 000	4 000	16 år	2009
	FÖRRÅD (MILITÄR RUM)	A						
	G Betong, målas		20	m ²	70	1 400	16 år	2020
	V Puts, målas		54	m ²	70	1 700	16 år	2009
	T Skivor, målas		20	m ²	75	800	16 år	2009
40	VÄRMEFÖRRÅD	A						
	G Omålad betong						-	-
	V Puts, målas		85	m ²	70	3 400	16 år	2009
	T Skivor, målas		50	m ²	75	2 600	16 år	2009
	VIND	A						
	G Trä omålat						-	-
	V Trä omålat						-	-
	T Trä omålat						-	-
	Ö Förrådsväggen						-	-

GRIMETON - VÅRDPLAN		SNÖSMÄLTNINGSHUS BYGG						
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	Utvändigt bygg							
41	FASADER							
	Profilerad lackerad plåt, målas		80	m ²	100	8 000	10 år	2010
	Fönster, reparation	A	1	omg		5 000	-	2004
	Fönster av trä, målas	A	1	st	500	500	8 år	2004
	Ytterdörr, aluminium, målas		1	st	500	500	8 år	2011
	Sockel av betong, målas	A	24	m ²	75	1 800	10 år	2012
	Ö Önskemål från antikvarisk kontrollant om byte av plåtfasad till ursprunglig puts, utreds vidare	A					-	-
	YTTERTAK							
	Papp	A	36	m ²	170	6 100	20 år	2023
	Sarger av koppar						-	-

GRIMETON - VÅRDPLAN		TRANSFORMATORHUS BYGG						
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	Utvändigt bygg							
46,47	FASADER							
	Profilerad lackerad plåt, målas		300	m ²	100	30 000	10 år	2010
	Putsad sockel, målas	A	38	m	75	2 800	10 år	2013
48	Fönster av trä, målas	A	3	st	610	1 800	8 år	2004
	Fönster, reparation					5 000	-	2004
	Ytterdörr, stål målas		2	st	610	1 200	8 år	2011
	Järnbalk (utstickande)		1	st		1 100	8 år	2011
	Ö Önskemål från antikvarisk kontrollant om byte av plåtfasad till ursprunglig puts	A						
	YTTERTAK							
	Taktegel, omlagt 2003	A	110	m ²			-	-
	Taktegel, justering		110	m ²	46	5 100	5 år	2008
	Plåtsargar, målas	A	38	m	86	3 300	8 år	2018

GRIMETON - VÅRDPLAN				TRANSFORMATORHUS BYGG				
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	Invändigt bygg							
49	BOTTENVÅNING	A						
	G Betong, omålad						-	-
	V Puts, målas		160	m ²	76	12 200	16 år	2006
	T Välvt putsat tak med synliga balkar (rostar)		75	m ²	125	9 400	16 år	2006
	Ö Trappa av betong, målas		1	st	3 200	3 200	16 år	2006
50	Fuktgenomslag, ytterväggar. Utredds vidare		1	omg		10 000	-	2006
	ÖVERVÅNING	A						
	G Betong, målas		75	m ²	76	5 700	16 år	2006
	V Puts, målas		160	m ²	76	12 200	16 år	2006
	T Puts, målas (30%) Eternit, omålad (70%)		75	m ²	115	8 600	16 år	2006
	Ö Räcke av stål, målas		1	st	3 200	3 200	16 år	2006
	Fuktgenomslag ytterväggar. Utredds vidare		1	omg		10 000	-	2006

GRIMETON - VÅRDPLAN		MASTER OCH ANTENNER						
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	MASTER ALLMÄNT Betr besiktning och tillsyn samt underhållsmålning m m se separat upprättad vårdplan för master.							
51	SERVICEKORGAR Nya servicekorgar av stål	A	1	st	100 000	100 000	> 30 år	2004
			7	st	170 000	1 190 000	> 30 år	2005
52	ANTENNBALKAR Balkar för antennlinor, byte 2-5 Infästningar 1 och 6	A	1	omg		1 500 000	> 30 år	2005
	FUNDAMENT, HISSAR Betong, reparation	A	6	st	30 000	180 000	> 30 år	2005
	Smide, reparation	A	6	st	30 000	180 000	> 30 år	2005
	SPOLFUNDAMENT Spolfundament vid stationsbyggnad, omputsning.	A	1	st	-	70 000	-	2005
	BETONGFUNDAMENT, ALLMÄNT Betongfundament vid mastben, spolar, etc målning (offerskikt)	A	1	omg		50 000	10 år	2012
	STAKET VID STAGNINGSFUNDAMENT M M Trästaket, nytt m m Trästaket, justering/lagning	A	100	m		12 000	6 år	2006
	MAST NR 1 Helmålning	A	1	st		5 000 000	25 år	2025
	Besiktning master/målning		1	st	5 000	5 000	1 år	2004
	Besiktning hiss		1	st	2 000	2 000	1 år	2004
	Löpande underhåll inkl underhållsmålning		1	omg	30 000	30 000	1 år	2004
53,54	MAST NR 2 Helmålning	A	1	st		5 000 000	25 år	2026
	Besiktning master/målning		1	st	5 000	5 000	1 år	2004
	Besiktning hiss		1	st	2 000	2 000	1 år	2004
	Löpande underhåll inkl underhållsmålning	A	1	omg	30 000	30 000	1 år	2004

GRIMETON - VÅRDPLAN				MASTER OCH ANTENNER				
FOTO	MATERIAL - ÅTGÄRD	A	MÄNGD	ENH	Å-PRIS	SUMMA	INTERVALL	ÅTGÄRDSÅR
	MAST NR 3							
	Helmålning	A	1	st		5 000 000	25 år	2022
	Besiktning master/målning		1	st	5 000	5 000	1 år	2004
	Besiktning hiss		1	st	2 000	2 000	1 år	2004
	Löpande underhåll inkl underhållsmålning	A	1	omg	30 000	30 000	1 år	2004
	MAST NR 4							
	Helmålning	A	1	st		5 000 000	25 år	2023
	Besiktning master/målning		1	st	5 000	5 000	1 år	2004
	Besiktning hiss		1	st	2 000	2 000	1 år	2004
	Löpande underhåll inkl underhållsmålning	A	1	omg	30 000	30 000	1 år	2004
	MAST NR 5							
	Helmålning	A	1	st		5 000 000	25 år	2027
	Besiktning master/målning		1	st	5 000	5 000	1 år	2004
	Besiktning hiss		1	st	2 000	2 000	1 år	2004
	Löpande underhåll inkl underhållsmålning	A	1	omg	30 000	30 000	1 år	2004
	MAST NR 6							
	Helmålning	A	1	st		5 000 000	25 år	2028
	Besiktning master/målning		1	st	5 000	5 000	1 år	2004
	Besiktning hiss		1	st	2 000	2 000	1 år	2004
	Löpande underhåll inkl underhållsmålning	A	1	omg	30 000	30 000	1 år	2004
	MAST 1-6, SAKNADE STAG							
	Enligt utredning utförd av Projektteamet saknas det stag på höjd +33,64	A					-	-
	ANTENNSPOLAR							
	Litzkablar, isolatorer	A	2	st	400 000	800 000	> 30 år	2004
	byte/renovering		2	st	400 000	800 000	> 30 år	2005
			2	st	400 000	800 000	> 30 år	2006
	BALANSNÄT							
	Stolpar m m, byte		25	st	3 000	75 000	-	2004
			25	st	3 000	75 000	-	2005
	KORTVÅGSANTENNER							
	Renovering/byte		8	st	60 000	480 000	-	2004
			8	st	60 000	480 000	-	2005
			8	st	60 000	480 000	-	2006
			8	st	60 000	480 000	-	2007
	Löpande underhåll		32	st	1 000	32 000	1 år	2004
	KORTVÅGSANTENN VID STATION R/S							
	Reparation, målning		1	st		3 000 000	-	2004
	Målning m m		1	st		1 000 000	25 år	2028

ARTICLES OF INCORPORATION**§ 1 Founder**

Telia Mobile AB

§ 2 Name of foundation

Stiftelsen Världsarvet Grimeton (the Grimeton World Heritage Site Foundation)

§ 3 Purpose

The principal purpose of the Foundation is to preserve and to make available both for scientific research and to the general public the historic cultural and industrial environments consisting of the stock of buildings, the internal and external installations, equipment and technical objects indicated in Schedule 1. The Foundation shall mainly own, care for and preserve the installation listed as a historic building and make it accessible to researchers, students and the general public.

Finally the Foundation shall fulfil the agreement and contract which Telia Mobile has signed with reference to the installation.

§ 4 Transfer of assets

For the accomplishment of the said purposes, the Founder places MSEK 25 at the Foundation's disposal, together with the properties and other assets enumerated in Schedule 1.

The assets of the Foundation also comprise whatever may accrue to the Foundation by gift, testamentary disposition or otherwise.

§ 5 Administration

For the management of the Foundation's affairs there shall be a Board of Trustees as provided in the Articles of Incorporation. The Board of Trustees shall comprise representatives of the Founder and representatives of the Municipality of Varberg and the Halland County Administrative Board.

§ 6 Auditing

There shall be an auditor and an alternate for the same to supervise the accomplishment of the Foundation's purpose and the administration of its affairs generally. Initially, Chartered Public Accountant, of the firm of accountants shall be appointed, with as alternate. In addition to these presents, a Statute for the Grimeton World Heritage Site Foundation has been drawn up for the guidance of the Board of Trustees in its management of the Foundation's affairs. This Foundation shall be presented for registration with the Halland County Administrative Board as provided in the Foundations Act (1994:220).

Stockholm, 13th January 2003

For Telia AB:

Kenneth Karlberg

ESTIMATED COSTS GRIMETON 2003 - 2005 (Excl. VAT)			
The old radio station plant	2003	2004	2005
Painting of one antenna tower	13 Mkr *	—	—
Annual maintenance	2.5 Mkr	4.0 Mkr	4.0 Mkr
SUM Annual costs – the old radio station	15.5 Mkr	4.0 Mkr	4.0 Mkr

* All six towers are now maintained.

ESTIMATED COSTS GRIMETON 2003 - 2005 (Excl. VAT)			
Visitor Centre	2003	2004	2005
Erection of new building	0.5 Mkr	10 Mkr	5 Mkr
Exhibition	—	—	5-10 Mkr
Operative expenses	—	—	2 Mkr
SUM VISITOR CENTRE	0.5 Mkr	10.0 Mkr	12-17 Mkr

ANNUAL BUDGET	
Revenues (Mkr)	
Tenancies	0.04 Mkr
Transmitter-budget, GW	0.50 Mkr
Transmitter-budget, Royal Navy	2.10 Mkr
Transmitter-budget	0.20 Mkr
Other	—
TOTAL SUM	2.84 Mkr

ANNUAL BUDGET	
Costs (Mkr)	
Personnel and Entrepreneurs	1.20 Mkr
Electricity, oil	0.30 Mkr
Rent, Teracom	0.30 Mkr
Cleaning etc.	0.10 Mkr
Vehicles, telephones	0.10 Mkr
Other	0.84 Mkr
TOTAL SUM	2.84 Mkr

GRIMETON BUDGET	
Five year budget 2004 - 2008 for scheduled major works (excl. VAT)	
Property maintenance	3.0 Mkr (2005 and 2007)
Insulator beams 5 Mkr x 50% *	2.5 Mkr
Antennae poles	2.0 Mkr (2004 and onwards)
Tuning coils	2.5 Mkr (2004 and onwards)
Drainage etc.	1.5 Mkr (starting 2005)
Other, e.g. Road maintenance	1.0 Mkr (2004 and onwards)
TOTAL SUM	12.5 Mkr

* Half the sum is calculated as state grant from the County Administrative Board

SCHEME FOR NEW VISITORS CENTRE AT GRIMETON



Presentation of scheme for new Visitors Centre

Background

The Grimeton World Heritage Site Foundation has commissioned Scandiakonsult Sverige AB to prepare a proposal for a new Visitors Centre at the Grimeton station site. The installation has been nominated by the Swedish Government for inscription on the World Heritage list. UNESCO will decide this question in June 2004.

Preconditions

The proposal shall be aimed at channelling and receiving some 30,000 visitors annually, corresponding to an estimated visitor rate of about 500 persons daily. Furthermore, the facility is to be planned in such a way that future expansion will be possible without current activities having to be reduced. The new facility is to be interlinked with the existing station building and its peripheral functions.

Planning issues

All measures are planned within the properties Grimeton 13:34 and 13:49, located in the Municipality of Varberg, County of Halland. These properties are owned by Stiftelsen Världsarvet Grimeton (the Grimeton World Heritage Site Foundation). The property Grimeton 13:49 adjoins the property Grimeton 13:27, the exit from which at present debouches onto Highway 766. The proposal presupposes that access to this property will be provided by means of a new service road crossing the property 13:34, which, by rebuilding Private Road N 395 U, will join Highway 766 further east. See layout plan, Encl. 1.

The proposed rebuilding of the private road has already been prepared as a highway cadastral procedure.

Road system

The facility is located about 4 km east of the E20/E6 Highway and about 7 km east of Varberg. At present it is reached via Highway 153 (the Ullared road) from the north or Highway 760 (the Tvååker road) from the south.

Access from the north is obtained from intersection 54 via Highways 153, 770 and 766, which pass through the villages of Gödestad and Grimeton. The standard of these roads will permit future visitor traffic, but there are a number of points where they should be upgraded, among them a rather narrow bridge on Highway 770 and a reduced-speed (30 km/h) stretch past Grimeton School. Access from the south is gained from intersection 53 via Highways 760, 764 and 766.

Traffic on these roads being relatively light at present, the planned number of visitors to the Grimeton World Heritage site is not expected to entail any serious problems in relation to road capacity. Consultations with the Natio-

national Road Administration have shown the visiting frequency not to be on such a scale as to warrant a new road to the site or a new intersection for the E20/E6 Highway. On the other hand, alteration of Highway 153 is planned between Klastorp and Gödestad. This is included in the National Road Administration's investment plans and is expected to come up within a five-year period.

Water and sewerage

The water supply is based on a groundwater well located southwest of the existing station building and a pressure tank installation in the building itself. In addition to this facility, the properties Grimeton 13:27 and 27:1 are also connected. Earlier assessments in connection with a plumbing inspection (KM, dated 24th November 2000), indicate that the existing water supply will not be sufficient to supply a Visitor Centre as well.

Wastewater from the existing station building is led off to a sludge separator with an outfall in the stream southwest of the radio station. Other properties share a three-compartment septic tank in the northeastern part of the area.

Geotechnics

In connection with previous plans for a broadcasting technology centre, a geotechnical survey, dated 11th June 2000, was carried out by Vägverket Konsult. This indicates that the looser upper strata of the overburden, to a depth of about 0.5-1 m, should be excavated. Foundations should be laid with the water table lowered to at least 0.5 m below the lowest excavation level.

PROPOSAL

Building

This proposal is based on the idea of visitors being channelled, after arrival in a car and bus park, towards the Visitors Centre entrance. The entrance is surrounded by walls which are positioned to form an arrowhead pointing towards the entrance. Recesses in the walls will already give visitors a glimpse of the radio masts, which are aligned on a southwesterly axis.

Through the clearly articulated entrance the visitor is guided in towards the shop and reception. This position also affords vistas of the masts and the well-preserved station building. There are toilets and cloakrooms directly adjoining the entrance.

In addition to a shop and reception, the visitor hall also includes a cafeteria. This space can also be used for lectures, guided tours etc. A mezzanine roof structure for mobile or permanent exhibitions is proposed along the inner parts of the room. This mezzanine storey is reached by spacious stairs or a disabled elevator arrangement. Linked to the mezzanine storey is an outdoor balcony where visitors can cool down and look out over the site.

The visitors hall is surrounded by glazed walls to the west and south, for visual contact with the existing facility. Outside the visitors hall is a cafeteria zone extending along both the outer walls. This is sunshaded by

means of horizontal louvres, to eliminate much of the solar radiation otherwise entering the building, but designed so as not to obstruct the views from the visitors hall.

On the outside the visitors facility takes the form of simple volumes. In the event of enlargement, similar volumes can easily be built on subsequently without any disruption of ongoing activities. Façades are rendered, in keeping with the existing station building.

Site and landscape

Rebuilding of the private road will provide access to the Visitors Centre car park, which is designed for 5 buses and upwards of 50 parking spaces, some of them designed with disability access close to the entrance. The Visitors Centre is positioned in the northeastern part of the site. To close off the landscape space from Highway 766, it is proposed that the excavation spoil be deposited in two terrain-modelled areas enclosing the facility.

Walking areas connected with the existing station building are planned round the Visitors Centre. It is proposed that the existing cooling pond again be fitted with the fountain which formerly constituted an additional cooling function.

The areas surrounding the existing station building are refined and kept clear of motor traffic, with the exception of service vehicles. The function of the existing rotunda with information posted on screens will be transferred from the northeastern part of the site and positioned immediately southwest of the existing station building or next to the entrance to the new building.

In addition to the core content of the Grimeton World Heritage site, displayed in the station building, visitors can be taken on a tour of the first mast. At "stations" along this route, various functions can be described by means of small marker boards, with visitors picking up the information themselves or with the assistance of a guide.

Water and sewerage

A separate water and sewerage installation is proposed for the existing station building and the new Visitors Centre. This will be effected as per alternative 1a in the water and sewerage investigation report previously compiled by KM, providing capacity for receiving about 50,000 visitors annually. A new purification plant can consist of a sludge separator and a miniature wastewater processing plant for at least biological purification prior to discharge into a stream. The location for the wastewater processing plant will be studied at a later stage of programming.

Signposting

Cogently devised advertising and road signage are necessary in order for visitors to find their way to the planned World Heritage site without difficulty. Guidelines to this end have been laid down by the National Heritage Board in consultation with the National Road Administration. Provision of this signage on the public road network devolves on the National Road Adminis-

tration. The proposed signposting is subject to approval by Head Office in Borlänge.

Expenditure

Scandiakonsult Projektledning AB has prepared an overall costing estimate for the new facility, based on the level of costs in April 2003.

The total project cost is estimated at MSEK 17 exclusive of VAT. This includes the cost of land, water supply and sewerage, a new Visitors Centre and service road and developer's costs. The cost of any rebuild/renovation of the existing station building has not been included, however, due to these measures as yet being undecided. We propose that an inventory be carried out in order to clarify these matters.

Further processing

Following the introductory phase of conceptual proposals, it is proposed that programme and system documents be compiled as a basis for tendering documents and final building documents.

The intention is for building work to commence in June 2004, after the status of the nominated World Heritage site has been made known. Completion and opening of the facility are planned for June 2005.

Gothenburg, 5th September 2003
SCANDIAKONSULT SVERIGE AB
Western Region
Urban Planning

Lars Fredén

Management Plan and statement of objectives for the Varberg Radio Station at Grimeton

Date	Our ref.
4th September 2003	221-1567-00

The six tall radio masts of the Grimeton radio station have become an important landmark to many Halland residents. Clearly visible to everyone passing by on the motorway, they have come to symbolise the county.

The radio station is one of the county's many heritage sites. Cultural environments are vital resources to county residents and for regional growth and development. The preservation and care of the county's cultural environments is an essential task, responsibility for which is shared by many. In the case of Grimeton radio station, a number and variety of measures have been taken for the long-term preservation of this important monument of broadcasting history for the benefit of future generations.

The temporary World Heritage Council formed in 2002 has the task of co-ordinating regional initiatives relating to the prospective World Heritage site, and also of liaising with business enterprise and handling the national and international contacts relating to the World Heritage. The Council is headed by the County Governor and includes representatives of the Grimeton World Heritage Foundation, the Iternia Foundation, Region Halland, the Cultural Environment Unit of the County Administrative Board, the Municipality of Varberg, the Varberg County Museum, the Halland County Museums and the County Custodian of Antiquities.

The World Heritage Council has drawn up a long-term Management Plan laying down seven strategies of particular importance. Under each strategy a number of projects are presented which the parties represented on the World Heritage Council judge to be important and which they are endeavouring to successively implement.

The Management Plan also shows the parties actively participating in the plan's realisation and the allocation of roles between them.

We the undersigned hereby declare our support for the implementation of the strategies and projects set forth in the appended Management Plan.

Karin Starrin
County Governor
Chairman, the World Heritage Council

Kjell Markström
Chairman, the Grimeton World
Heritage Foundation

Kaj Berntsson
Chairman, the Iternia Foundation

Göran Karlsson
Chairman, Region Halland

Gösta Bergenheim
Municipal Executive Board Chairman
Municipality of Varberg

Bo Johansson
Chairman, the Alexander
Association

Enclosures:

1. Initiative areas, Actions and Projects
2. Index of projects and actions

Enclosure 1, Initiative areas, Actions and Projects

Initiative areas	Actions	Projects
A strategy for management and development work	<p>Decide on the concerted direction and content of World Heritage work and on the allocation of tasks and responsibilities.</p> <p>Ascertain the resource requirements and the man-power functions/competencies needed to enable the mandators to perform and develop the tasks devolving on them.</p> <p>Decide on a plan of activities and set aside resources for the measures needing to be taken prior to World Heritage list inscription in 2004.</p>	Plan of organisation and activities (1)
A strategy for knowledge production and transmission	<p>Documentation and knowledge transfer work, aimed at ensuring competence for managing and operating the advanced transmission equipment.</p> <p>Compilation of a maintenance manual for the station's technical equipment – inventorying and presenting the need for spare components.</p> <p>Compilation of an archive plan and establishment of a document and picture archive.</p> <p>Carrying out of the other measures proposed in the County Administrative Board's knowledge and competence supply programme.</p>	<p>Documentation and knowledge transfer project according to the knowledge and Competence supply programme (2)</p> <p>Digital photo archive and archive plan (3)</p>

A strategy for preservation and care

to complete the maintenance measures proposed in the 1999 maintenance plan concerning the aerial tower of the station etc., and to carry them out with funding solutions which can be based on shared responsibility,

to pursue the conservation measures indicated in the National Heritage Board maintenance programme for the radio station's technical equipment,

to carry out continuous maintenance and management of the World Heritage site's green spaces, both directly and through leasehold agreements,

exercising powers under the Heritage Act, to designate the settlement in the "workers' village" as listed historic buildings,

to take steps to ensure that the World Heritage Convention and the national environmental quality targets impact on the municipal comprehensive plan, and to support the Municipality with up-to-the-minute scientific and planning-related input data,

acting in consultation with the Municipality, to initiate work on a deeper master plan for the World Heritage site and the so-called buffer zone. The purpose of this plan will be to show how the aggregate environment can be preserved and developed sustainably.

Maintenance according to the maintenance plan (4)

Heritage listing of the workers village (5)

Master plan for the World Heritage site and buffer zone (6)

An information and public relations strategy

to devise a business and marketing plan for the entire body of activities,

to plan and accomplish the erection of a new visitor and

Business and marketing plan (7)

New Visitors Centre (8)

Development of interpretation and presentation techniques (9)

	<p>communications centre – a public entrance to the World Heritage site, offering services and information. The aim is for this centre to be commissioned in 2005;</p>	<p>Information and marketing projects (10)</p>
	<p>to develop, by 2004, the interpretation and presentation techniques of the old transmitting station and make this station interact with the new visitor centre – to pursue further the exhibition and communication concept developed in 2003,</p>	<p>New logotype for the World Heritage site (11)</p>
	<p>to develop co-operation with regional and local tourist agencies, and to strengthen our own competence for working with Grimeton as a visitor attraction,</p>	
	<p>to prepare various information and marketing measures preparatory to the World Heritage list nomination,</p>	
	<p>to devise a logotype for the World Heritage site.</p>	
<p>A strategy for education and participation</p>	<p>to intensify the process of winning hearts and minds – arranging briefings for politicians, local government officials and other influential persons in the enterprise sector and NGOs,</p>	<p>Information and marketing projects - public awareness (12)</p>
	<p>to invite the general public to public briefings,</p>	
	<p>to arrange an annual "World Heritage Day" and "Open House",</p>	
	<p>to safeguard and develop co-operation with the Alexander Association and other organisations,</p>	<p>Educational programmes and projects (13)</p>

to integrate World Heritage education with teaching activities in local compulsory schools and high schools and, together with the Municipality and the Varberg County Museum, to create a competent organisation for co-operating with schools,

to collaborate with the adult education associations, making Grimeton a resource for their purposes,

to co-operate with the Swedish National Commission for UNESCO and with the national schools network with reference to Swedish's World Heritage sites,

to offer companies and organisations an opportunity of development co-operation on the theme of "good citizenship".

A strategy for international co-operation

to systematically augment our knowledge of other countries' industrial World Heritage sites and to analyse the working methods employed there in pursuit of the World Heritage Convention's objectives,

to disseminate information about and stimulate interest in Grimeton among other industrial sites on the World Heritage list,

to collaborate with the Swedish National Commission for UNESCO, the Nordic World Heritage Foundation (NWHO) and the Swedish World Heritage Group and Nordic World Heritage Site networks,

to utilise our EU membership and obtain a share of its funds and programmes for international co-operation.

Programme for international work (14)

A follow-up and evaluation strategy

to make this management and development programme the basis for following up and evaluating our success, through the measures taken, in managing and developing Grimeton in the direction envisaged by the World Heritage Convention.

Project	Mandator	Expenditure	Funding agency	Implementation
1. Plan of organisation and activities	Grimeton World Heritage Site Foundation, Iternia Foundation County	Not estimated	Grimeton World Heritage Site Foundation, Iternia Foundation	2003-2004
2. Documentation and knowledge transfer project according to the Know-ledge and Competence supply programme	Administrative Board	SEK 532,000	National Heritage Board, County Administrative Board	In progress
3. Digital photo archive and archive plan	The Alexander Society	SEK 50,000	National Heritage Board	In progress
4. Maintenance according to the maintenance plan	County Administrative Board	2004-2007 approx. SEK 16,300,000	County Administrative Board, Grimeton World Heritage Site Foundation	2004 and onwards
5. Heritage listing of the workers village	County Administrative Board	Not estimated		In progress
6. Master plan for the World Heritage site and buffer zone	Municipality of Varberg	Not estimated	Municipality of Varberg	2005
7. Business and marketing plan	Grimeton World Heritage Site Foundation, Iternia Foundation	Not estimated	Grimeton World Heritage Site Foundation, Iternia Foundation	2004
8. New Visitors Centre	Grimeton World Heritage Site Foundation	SEK 17,000,000 + moms (Swedish VAT)	Being negotiated	In progress
9. Development of interpretation and presentation techniques	Iternia Foundation	Not estimated	Iternia Foundation	2004
10. Information and marketing projects	Iternia Foundation	Not estimated	Iternia Foundation	2004-2006
11. New logotype for the World Heritage site	Grimeton World Heritage Site Foundation	Not estimated	Grimeton World Heritage Site Foundation	2003
12. Information and marketing projects – public awareness	Iternia Foundation	Not estimated	Iternia Foundation	2004 onwards
13. Educational programmes and projects	Iternia Foundation, County Museum of Varberg	Not estimated	Iternia Foundation	2004-2006
14. Programme for international work	Iternia Foundation, County Museum of Varberg	Not estimated	Iternia Foundation	2005

Management Plan 2003 – 2007

**GRIMETON – AN INDUSTRIAL HERITAGE SITE WITH
A GLOBAL RANGE**

**The Halland World Heritage Council/
Cultivator Anders Hillgren**

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THE HALLAND WORLD HERITAGE COUNCIL

CULTIVATOR

ANDERS HILLGREN

2003

GRIMETON – AN INDUSTRIAL HERITAGE SITE WITH A GLOBAL RANGE

From vision to reality

In December 2002 the Swedish Government resolved to nominate the Grimeton radio station, near Varberg, for inclusion on the UNESCO World Heritage list. That decision is an honour but also a challenge, and is to be seen as a vindication of many years' work to preserve this unique installation. Here locally and further afield, Grimeton's candidature for inscription on the World Heritage list has aroused a great deal of attention, and it is no exaggeration to say that Grimeton today already ranks as one of the most exciting places in the international industrial heritage.

At the same time, the question of including Grimeton on the World Heritage map pinpoints the great challenges that lie ahead of us. Many questions need to be speedily addressed and resolved by 2004, when the UNESCO World Heritage Committee is expected to take a decision concerning Grimeton's inscription on the World Heritage list. Success cannot be taken for granted, and although there are great hopes of distributing information far and wide and making the installation accessible, this is both a task and a challenge, the magnitude of which can be expected to grow as time goes on.

Other tasks presuppose a pooling of efforts by many parties and have to be viewed in a more long-term perspective in order for things to move in the intended direction. Importantly they include developing forms of sustainable tourism development and strengthening national and international co-operation.

The years surrounding the turn of the millennium have been eventful ones for Grimeton. Extensive measures have been taken to safeguard, conserve and present the installation, and the work accomplished is both an inspiration and a pledge for the future. So now is the right time to address all the different measures which will be needed, in the short and long term, to provide for Grimeton's needs and possibilities.

Work to nominate Grimeton for inscription on the World Heritage list has been guided by the aim of preserving the installation as a living World Heritage site and as such using it, not just retrospectively but also for renewal in a historical context. This is an important point for us to remember when choosing our directions and deciding on various initiatives.

On these premises the Halland World Heritage Council* has agreed to draw up a management plan for Grimeton. In it we set forth the aims and policy strategies on which work to preserve and develop Grimeton as a sustainable and at the same time living cultural and industrial heritage site will be based.

* The Halland World Heritage Council is the informal joint council of the World Heritage interests, and comprises representatives of the Halland County Administrative Board, the Halland Regional Federation, the Municipality of Varberg, the Halland County Museums, the Iternia Foundation and the Grimeton World Heritage Foundation. The Council is chaired by the County Governor of Halland.

THE WORLD HERITAGE CONVENTION

- basically a project for peace

UNESCO – the United Nations Organisation for Education, Science and Culture – was founded in 1945, as the world was rising out of the ruins left by the saturation bombing of the Second World War. Its purpose is to promote co-operation, solidarity and the interchange of information between nations and to contribute towards, peace, security and education in human rights. This includes the important tasks of strengthening co-operation across national boundaries and increasing understanding for the cultural heritage of different countries.

Military conflicts and uncontrolled development are threatening our common natural and cultural heritage. To safeguard the most valuable parts of the global natural and cultural heritage against destruction and decay, UNESCO in 1972 adopted the Convention concerning the Protection of the World Cultural and Natural Heritage. This Convention is based on parts of the natural and cultural heritage being of universal value and their protection and preservation for future generations a matter of concern to all mankind.

Sweden, together with 172 other nations, has signed the treaty, thereby pledging itself, with them, to comply with the treaty's provisions and recommendations. In accordance with Article 5 of the Convention, Sweden has undertaken:

- a. to adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community and to integrate the protection of that heritage into comprehensive planning programmes (the operational guidelines for implementing the Convention recommend the adoption of management plans for World Heritage sites);
- b. to set up one or more services for the protection, conservation and presentation of the cultural and natural heritage with an appropriate staff and possessing the means to discharge their functions;
- c. to develop scientific and technical studies and to work out such operating methods as will make it possible to counteract the dangers that threaten the cultural or natural heritage;
- d. to take the appropriate legal, scientific, technical, administrative and financial measures necessary for the identification, protection, conservation, presentation and rehabilitation of this heritage; and
- e. to foster the establishment or development of national or regional centres for training in the protection, conservation and presentation of the cultural and natural heritage and to encourage scientific research in this field.

Sweden, as one of the States Parties to the World Heritage Convention, is also required, under Articles 27 and 29, to:

- endeavour by all appropriate means, and in particular by educational and information programmes, to strengthen people's appreciation and respect for the cultural and natural heritage and to keep the public broadly informed of the dangers threatening this heritage.
- report regularly to UNESCO on the measures taken for the protection, conservation and presentation of World Heritage sites and for their introduction in the education system.

The unique World Heritage list

Valuable natural and cultural sites are protected by inscription on the World Heritage list. In order for a site to be considered for inscription, heavy demands are made on the ability of the host nation and the owner to provide for the long-term management and protection of the site in question. To qualify for inscription, the site also has to meet the exacting selective criteria defined in the Convention. Nominations are decided by the Government. Each June the UNESCO World Heritage Committee, which is elected by the General Assembly and consists of delegates from 21 countries, decides which nominated sites are to be inscribed on the list.

In June 2003 the Committee resolved on the addition of 33 more sites to the World Heritage list, which today totals 754 sites in 125 countries. 582 of these are "cultural properties", 149 "natural properties" and 23 "mixed properties". Carthage, the Victoria Falls, Troy, the Grand Canyon, the Vatican State (including St Peter's) and the Statue of Liberty in New York are all World Heritage sites. Two-thirds of the sites are in Europe, 24 of them in the Nordic area. Sweden has 12 World Heritage sites.

The imbalance of the list is clear for all to see, and in 1999 the European countries agreed in future to nominate only one site per country annually, focusing on sites which hitherto have been under-represented on the list, e.g. industrial sites and buildings of the 20th century.

The Government's nomination of Grimeton for inscription on the World Heritage list is to be seen in the light of this strategy, which may come to mean Sweden in 2004 being able to record its thirteenth World Heritage site and, accordingly, its third contribution to the industrial heritage category. Other Nordic industrial sites on the World Heritage map are, in Sweden, the Engelsberg Ironworks, the Mining Area of the Great Copper Mountain in Falun, in Norway, the mining town of Røros, and in Finland, the Verla Groundwood and Board Mill.

The World Heritage list today includes a total of 34 industrial sites, most of them characteristic mining and textile-manufacturing sites. The specific qualities of the Grimeton radio station make it something of an odd man out in this company, though there are also other World Heritage sites – the Darjeeling Himalayan Railway in India, the waterways of the Pont du Gard in France and Belgium's Canal du Centre – which also tie in with the theme of communications history.

Management and development programme

A COMMON PLATFORM

This management and development programme outlines the measures needed in order to preserve and develop Grimeton as a living World Heritage site. It indicates targets and strategies for continuing initiatives and is an important tool for the sustainable management, care and development of Grimeton. Regardless of where and by whom this work is undertaken, the programme is intended to serve as a common point of reference and source of inspiration which can be endorsed by the agents concerned.

The starting point of ongoing development co-operation is the aim of

safeguarding and strengthening the values which have made this World Heritage list nomination possible and establishing Grimeton as an exemplary instance of sustainable development.

This aim is a challenge to us all, but at the same time an important benchmark for our professional fulfilment of the commitments made by Sweden through its accession to the World Heritage Convention. This aim also connects and interacts with current national aims of cultural and environmental policy and with the strategies on which development policy and the Halland growth programme are founded.

Two things are especially important when choosing the course we are to follow in future. One of them concerns the demands of the sustainable society and the basing of all management on respect for Grimeton's distinctive qualities with a view to their preservation and reinforcement. The other concerns the need for a holistic view and the utilisation of Grimeton as an asset in local and regional development work.

With these basic principles as its jumping-off point, the programme outlines a broad and integrated view of Grimeton's preservation and development. It is therefore deliberately reticent on points of detail and does not cover *all* possible angles of approach and desiderata.

Instead we have concentrated on providing, for the first time, a concerted picture of the measures which, in the context of foreseeable events, are most important for developing Grimeton in the desired direction. The emphasis is on throwing bridges between preservation and renewal and on presenting, in a single context, a concrete basis of balancing and decision-making which will interact with, not jeopardise, the foundations of the anticipated World Heritage designation.

A target to aim for

Our overriding aim – to make Grimeton an exemplary site concerning the care and use of the industrial heritage – is a target to aim for and is to be seen as a common goal in an important task for Halland and Varberg. Achievement of this target will require consensus and commitment from many parties in the form of time, money and competence. Partnership, does not mean everyone thinking alike, but without a shared image of the Grimeton we want to see tomorrow, the question of means and ends can never be properly resolved.

And so it is important that everyone with interests in Grimeton should be acquainted with the target and that we, using the knowledge and tools at our disposal, should work for its achievement. We have formulated the following overarching objective as a joint declaration of intent and a platform for the ongoing development process.

Overarching target

- ***The Grimeton Radio Station is to be managed, cared for and developed so as to preserve and strengthen the qualities prompting its nomination for inscription on the World Heritage list.***
- ***Grimeton is to be preserved and used as a living industrial heritage site and developed into a nationally and internationally exemplary instance of the protection, care and presentation of an industrial heritage site of global importance.***

Active Strategies

To establish Grimeton on the leading edge of Swedish and international World Heritage sites, we must prioritise and control the choice of measures to be taken. The present programme is the preparatory stage of that process, its purpose being to supply impulses for concrete initiatives and to help co-ordinate different activities, so that, with the limited resources at our disposal, we can manage and develop Grimeton in the best possible way. The measures to be taken therefore have to be viewed as parts of a larger, coherent process, and not as inchoate, isolated spot measures.

Some tasks are easy and others are difficult. It can take time for the effects of our initiatives to become visible, and it is essential for the actions we take to be long-term and sustainable. One important premise is that additional resources will be required, and accordingly greater co-operation between different players. We must therefore look for solutions which can be based on community of interest and shared responsibility.

Initiatives helping to disseminate knowledge concerning Grimeton, our aim and our qualified activity will help us to be seen as a serious and competent agency in the development of Varberg and Halland, which in turn will make Grimeton an interesting and desirable partner in various connections. Building and operating networks will be an important task. To "get to the finishing line", we shall concentrate our efforts on the following measures and initiative areas:

Active strategies in brief

- ***A strategy for management and development work*** – to make visible the focus of activities, roles and responsibilities, and to ensure continuity and competence in our World Heritage work.
- ***A strategy for knowledge production and transmission*** – Preservation and development of Grimeton as a living World Heritage site demands knowledge and a continuing connection between the maintenance, management and operation of its advanced technical equipment.
- ***A strategy for preservation and care*** – to guarantee sustainable management of Grimeton's qualities as a cultural site – to preserve land, buildings and technical equipment in their authentic state.

- **An information and public relations strategy** – to make the cultural qualities of Grimeton known, understood and accessible – to preserve the World Heritage site as an asset in local and regional social development.
- **A strategy for education and participation** – to encourage involvement in World Heritage work and to make Grimeton an educational resource for schools and popular education.
- **A strategy for international co-operation** – to develop World Heritage education and methods relating to the care of industrial heritage sites, in partnership with the outside world and other World Heritage sites.
- **A follow-up and evaluation strategy** – to follow up the compatibility of the measures we plan and undertake with the purpose of the World Heritage Convention.

A strategy for management and development work

The purpose of this strategy is to secure Grimeton's long-term management and to advance the work of development. Starting with the classical Swedish administrative model, it rests on the principle of broad-based, shared responsibility for work relating to the cultural site. The system presupposes effective interaction between public authorities and the community, which means that a special responsibility devolves on the National Heritage Board, the County Administrative Board, the Regional Federation, the Municipality and the museums, together with the new mandators, *viz* the Grimeton World Heritage Site Foundation* and the Iternia Foundation**. The Halland World Heritage Council is the informal liaison and co-operation agency of the World Heritage interest, tasked with co-ordinating and monitoring the initiatives which the parties have resolved on.

The nomination for the World Heritage list gave us a bigger and more demanding field of operations than previously, and so we need to rally our competence and resources for the tasks which in both the short and the long term will best provide for Grimeton's needs and possibilities. The substantial investments made during recent years in the maintenance of the installation, as well as the work done to create stable organisations for management and development work, have given us a solid foundation to build on.

The active participants in this World Heritage work are as follows:

- The Grimeton World Heritage Site Foundation, which became the owner of the radio station, complete with its land and buildings, at the New Year 2003, constitutes the installation's administrative backbone. As heir to the now incorporated parent authority (the former National Telecommunications Administration/Swedish Telecom etc.), the Foundation's main task is to assume overall responsibility for the operation, maintenance and preservation of Grimeton.

* The Grimeton World Heritage Site Foundation consists of representatives of the Halland County Administrative Board, the Municipality of Varberg and the founder, Telia AB.

** The Iternia Foundation comprises representatives of Telia AB, the Chalmers University of Technology, Halmstad University, the Municipality of Varberg, Region Halland, the Halland County Administrative Board and the founder, the Alexander Association – Friends of the Grimeton Veteran Radio Station.

- The Iternia Foundation was formed in 2002 to disseminate knowledge concerning the development of broadcasting technology, promote co-operation with the educational community and other knowledge-related activities and, as part of its aim of developing Grimeton as a tourist attraction, to realise a new communication and visitor centre adjoining the old transmitting station.
- The National Heritage Board is the national authority tasked by the Government with addressing issues relating to the World Heritage Convention and the management and care of Swedish World Heritage sites.
- The Halland Regional Federation, a joint body representing the municipalities in the county, has overall regional and political responsibility for hastening development with regard to tourism, culture, international co-operation etc.
- The County Administrative Board exercises day-to-day supervision of the cultural environment on behalf of the State and is responsible for ensuring that it is made a prominent consideration in matters of planning and development.
- The Municipality of Varberg is primarily responsible at local level for utilising and developing the cultural qualities of the environment in the context of urban planning, development policy, education and the tourist industry.
- The Halland County Museums Foundation and the Varberg County Museum are responsible, together with the County Administrative Board and the municipality, for important aspects of local and regional work relating to the cultural environment. The museums have a major responsibility for building up and disseminating knowledge of the cultural qualities of the environment and for making them an object of interest and positive attitudes on the part of the general public.
- The Alexander Association – Friends of the Grimeton Veteran Radio actively contributes, on a non-profit, voluntary basis, towards the maintenance and presentation of the intended World Heritage site.

In order for the mandators to be capable of honouring their commitments and acting for the long term – doing the right things the right way – the parties need to agree on a clear allocation of roles and responsibilities, appropriate to the tasks in hand. The management of Grimeton has a strong and natural connection with the development process that has already started, and one important task now is to organise and co-ordinate work under the new structure of mandatorship between the administrative activity to be carried on by the Grimeton World Heritage Site Foundation and the intermediary and developmental tasks for which the Iternia Foundation is formally and actually in charge.

No single player has a prerogative of the World Heritage issue, and in order for a good holistic solution to be achieved, the Grimeton World Heritage Site Foundation must be a "mental partner" in the aims and assignments

governing the tasks of the Iternia Foundation, and vice versa. The Grimeton World Heritage Site is to serve as a visitors' facility intended primarily for Swedish and foreign tourists, local residents, school parties and the business community, which in turn means heavy demands on a joint organisation capable of marketing and doing justice to the site's commercial potentialities.

To strengthen the administration and development co-operation within the site, we need to:

- Decide on the concerted direction and content of World Heritage work and on the allocation of tasks and responsibilities.
- Ascertain the resource requirements and the manpower functions/competencies needed to enable the mandators to perform and develop the tasks devolving on them.
- Decide on a plan of activities and set aside resources for the measures needing to be taken prior to World Heritage list inscription in 2004.

A strategy for knowledge production and transmission

The purpose of this strategy is to improve our knowledge of the Grimeton technical and cultural heritage, so that we can preserve and manage it in the best possible way. Building up knowledge and developing firm insights in the properties of the heritage site we are set to administer is the basis of our work. Grimeton today can be likened to a living museum of working life – parts of it are still in commercial use – and that which Grimeton is a "museum about" is an advanced, still operational technical system for radio communication, seen in its historical and societal context.

Work to preserve and develop Grimeton as a living industrial heritage site must therefore be based on the best possible current knowledge and on knowledge of the problems to be solved. Future management unaccompanied by knowledge of the workings of the transmission station's particular technology will miss vital points, and in a situation where knowledge of earlier technology, for generational reasons, is becoming depleted, measures are urgently needed to keep this competence alive.

Through the programme document devised by the County Administrative Board in 2002, we have made considerable headway in identifying and prioritising knowledge-building requirements. We are now moving ahead with these tasks and concentrating on the following measures for 2003 and 2004:

- Documentation and knowledge transfer work, aimed at ensuring competence for managing and operating the advanced transmission equipment.
- Compilation of a maintenance manual for the stations technical equipment – inventorying and presenting the need for spare components.
- Compilation of an archive plan and establishment of a document and picture archive.
- Carrying out of the other measures proposed in the County Administrative Board's knowledge and competence supply programme.

A strategy for preservation and care

This strategy is designed to ensure sustainable, good long-term management of the Grimeton site's cultural qualities. It also includes the aim of achieving continuously good maintenance of the landscape, buildings and technical equipment.

The tools at our disposal for preserving and caring for the installation are the national heritage conservation and environmental policy objectives which are to form the basis of implementation, for example, for the Planning and Building Act, the Heritage Act, the Environmental Code and other relevant legislation. Other instruments are of a financial and informative nature (grants and knowledge transmission respectively).

Extensive measures have been taken since the mid-1990s to preserve and care for the radio station. Since maintenance work began, the State, acting through the National Heritage Board and the County Administrative Board, together with the former owner, Telia Mobile AB, has devoted nearly MSEK 60 to the care of the installation, which both facilitates and inspires further efforts. Much work remains to be done, but we are now concentrating on the really big maintenance measures, and these investments are scheduled for completion in 2007.

The work remaining to be done is described in the 1999 conservation plan for buildings, aerial tower etc., and in the National Heritage Board's special maintenance programme, also published in 1999, for the station's technical equipment. The total capital outlay for the period up to and including 2007 is estimated at almost MSEK 22, most of which, MSEK 21.5, refers to further external maintenance measures planned.

Properties inscribed on the UNESCO World Heritage list represent cultural and natural environments of outstanding interest. They are all of such dignity as to make their protection and preservation a concern of all mankind. Grimeton was designated by the National Heritage Board in 1987 as one of the national interests of heritage conservation, which makes it one of Sweden's most outstandingly notable cultural sites. This means that the Municipality and the County Administrative Board, exercising powers conferred by various enactments and with the support of planning measures, must work to protect the site against measures capable of substantially impairing its cultural qualities.

The municipal comprehensive plan, and the possibility of amplifying it, are an important tool for presenting balances struck between preservation and renewal. In its comprehensive plan the Municipality of Varberg has presented Grimeton as a cultural site of national interest for heritage conservation. Yet the plan does not include concrete proposals as to how the national interest and presumed inscription on the World Heritage list are to be provided for. This is a serious obstacle to sustainable development, and much is still expected of the Municipality as regards deciding, in the comprehensive plan, how the aggregate cultural qualities of the site are to be preserved and utilised.

Unclear planning conditions are not only detrimental to the quality of the cultural environment, they also tend to create uncertainty and inflexibility

of land use, thereby obstructing amply justified development initiatives.

Our strategy for the preservation and care of Grimeton is:

- to complete the maintenance measures proposed in the 1999 maintenance plan concerning the aerial tower of the station etc., and to carry them out with funding solutions which can be based on shared responsibility,
- to pursue the conservation measures indicated in the National Heritage Board maintenance programme for the radio station's technical equipment,
- to carry out continuous maintenance and management of the World Heritage site's green spaces, both directly and through leasehold agreements,
- exercising powers under the Heritage Act, to designate the settlement in the "workers' village" as listed historic buildings,
- to take steps to ensure that the World Heritage Convention and the national environmental quality targets impact on the municipal comprehensive plan, and to support the Municipality with up-to-the-minute scientific and planning-related input data,
- acting in consultation with the Municipality, to initiate work on a deeper master plan for the World Heritage site and the so-called buffer zone. The purpose of this plan will be to show how the aggregate environment can be preserved and developed sustainably.

An information and public relations strategy

The purpose of this strategy is to make the cultural qualities of Grimeton known, understood and accessible and to utilise Grimeton as a resource for social development. The cultural heritage and cultural tourism have impacted heavily on various strategies for growth and employment, and Grimeton's inherent qualities make it a major asset for local and regional development.

We are living in a time of change, and the transition from industrial to knowledge society is also affecting developments in Halland and Varberg. The successful completion of the change greatly depends on the service sector expanding, and in the task of strengthening employment opportunities use must be made of the links existing between the cultural sector and development opportunities for tourism and cultural industry.

Halland has a growing tourist sector, and Varberg has the fastest-growing tourist trade of any municipality in the county. Tourism, with an annual take of nearly MSEK 30, is becoming one of the most important industries in West Sweden, and Varberg is admirably situated for increasing its economic share of West Swedish tourist expansion.

Developing services and the substance of activities which make people interested in the cultural heritage, therefore, is a matter of critical concern for Grimeton's future development. As a World Heritage site, Grimeton will be one of the Municipality's main windows on the outside world, and in order for the installation to become the asset which many people expect it to be, information, reception arrangements and services will have to be of a very high standard.

We must therefore devote more effort and resources to highlighting the uniqueness of Grimeton, and we must become more adept at describing the

site in such a way that even the unprepared non-specialist will understand the technology as such, what it has meant to society and how it changed society.

The host of exhibits in the old transmitting station makes it hard to perceive the main outlines, and using sympathetic methods we will have to develop the "exhibition language" and its presentation. We need to preserve and develop a connection between our reasons for the World Heritage list nomination and the communicative tasks which we will in future be sharing, at national and international levels, with the Telecommunications Museum/ National Museum of Technology.

The authentically preserved transmitting station is Grimeton's obvious nerve centre and main attraction, but the dissemination of knowledge and information demands a modern communications centre – a visitor centre and a gateway to the World Heritage – providing visitors with an introduction and generally giving them their bearings and putting them in the picture. Its common denominator must, in other words, be to make the visible visible, i.e. to open eyes and doors to what there is to see, to inform people of acts and to provide answers to the many questions prompted by this unusual facility. The aim is greater public-mindedness and making information readily accessible to visitors.

These activities will take place both indoors and out, they will affect and interpenetrate each other, which means heavy demands on the logistics of the place in terms of guided tours, information and signage. Grimeton is to be a visitor attraction operating on a commercial basis, and to generate revenue the new centre must be planned so as to make a visit to the old transmitter station a natural part of the overall experience.

During 2003 the Municipality of Varberg and the Halland County Administrative Board have worked out a profile and development programme for tourism in Varberg. Thematic initiative areas indicated in the programme and capable of being effectively developed into qualified attractions for those in search of knowledge and experience in the Science Center segment include the Grimeton radio station. Market Varberg AB, HallandsTurist and the museums are important interlocutors for marketing and for the distribution of tourist information.

People coming to Varberg do so partly in order to see Grimeton and learn more about it. To assure visitors of a rewarding encounter with this unique setting, we must be able to offer a facility:

- which focuses on the public and takes professional care of its visitors,
- which offers analogue and digital information in several languages,
- which provides dedicated guides and an introductory exhibition of high technical and artistic quality,
- which is staffed and accessible all the year round,
- which offers a meeting point for schools, popular education, corporate arrangements etc.,
- which includes refreshments, a shop, properly maintained toilets and good parking facilities,
- which is accessible to persons with disabilities.

Our strategy for disseminating information and developing public relations is:

- to devise a business and marketing plan for the entire body of activities,
- to plan and accomplish the erection of a new visitor and communications centre – a public entrance to the World Heritage site, offering services and information. The aim is for this centre to be commissioned in 2005;
- to develop, by 2004, the interpretation and presentation techniques of the old transmitting station and make this station interact with the new visitor centre – to pursue further the exhibition and communication concept developed in 2003,
- to develop co-operation with regional and local tourist agencies, and to strengthen our own competence for working with Grimeton as a visitor attraction,
- to prepare various information and marketing measures preparatory to the World Heritage list nomination,
- to devise a World Heritage logotype.

A strategy for education and participation

The purpose of this strategy is to make adult Varberg residents and the rising generation more aware of Grimeton's cultural qualities and of the importance of preserving and developing them. The cultural heritage is the only heritage which cannot be inherited – it must all the time be acquired and kept alive by its heirs – and to prevent the World Heritage list nomination fading from public awareness, the Grimeton concept must be firmly rooted in the minds of many people.

Grimeton offers unique working material for schools, and the construction of educational packages round the World Heritage site is an important stage in developing this property as an educational resource. The new curriculum gives pupils, teachers and politicians a free hand in shaping and allocating teaching time, which provides scope for co-operation with schools on a more permanent basis.

The Swedish National Commission for UNESCO has had many years' experience of co-operating with the educational community and this year has published a teacher's guide – *World Heritage in Young Hands* – to support school projects of various kinds. This makes it easier for young people, in the course of regular instruction, to learn more about World Heritage sites and the importance of World Heritage activities. The Commission has also built up a schools network with reference to the Swedish World Heritage sites and put it in touch with more than a thousand schools in 130 countries, which inspires co-operation and interchange across national boundaries.

Education and familiarity with the cultural heritage are equivalent to care and preservation in the long term, and we must therefore redouble our efforts to introduce World Heritage instruction in schools and among adult education associations. Co-operation with the educational community also means revenue for Grimeton. To do justice to the positive effects of the anticipated World Heritage list inscription, we must also work to make the people of Varberg and Halland more closely involved with World Heritage activities. This will involve maintaining co-operation with voluntary forces present in NGOs, as well as strengthening interaction with the business community and offering companies a chance of participating in development work.

Our strategy for strengthening participation in World Heritage work in the short and long term is:

- to intensify the process of winning hearts and minds – arranging briefings for politicians, local government officials and other influential persons in the enterprise sector and NGOs,
- to invite the general public to public briefings,
- to arrange an annual "World Heritage Day" and "Open House",
- to safeguard and develop co-operation with the Alexander Association and other organisations,
- to integrate World Heritage education with teaching activities in local compulsory schools and high schools and, together with the Municipality and the Varberg County Museum, to create a competent organisation for co-operating with schools,
- to collaborate with the adult education associations, making Grimeton a resource for their purposes,
- to co-operate with the Swedish National Commission for UNESCO and with the national schools network with reference to Swedish's World Heritage sites,
- to offer companies and organisations an opportunity of development co-operation on the theme of "good citizenship".

A strategy for international co-operation

The purpose of this strategy is to develop international co-operation and to contribute towards an interchange of experience and the development of competence. Europe and the outside world have come closer together in only a decade, and nomination for the World Heritage list has now made Grimeton a respected concept in a broader geographic context than before. EU membership and ratification of the World Heritage Convention demand adjustments to international conditions and codes of conduct, but they also present great opportunities for interchange and co-operation across national boundaries.

For these reasons, international contacts are destined to play an ever-increasing role, and Grimeton as a World Heritage site will be involved in still close interchange with other World Heritage sites and organisations. Contacts with other World Heritage sites will provide impulses for development work and help to build up our own competence in matters relating to preservation, care and presentation.

The step into Europe will offer Grimeton unique opportunities for putting new life into its historically international profile, and full utilisation of the financial support made possible by EU funds and programmes will be important for ongoing development. Interactive partnership is a key concept of the internationalisation process, and in order to develop co-operation at national and international levels it is important for Grimeton to be linked up with the various networks which in Sweden and the other Nordic countries are actively co-operating with other World Heritage sites on issues of methods and competence development.

Our strategy for developing international co-operation is:

- to systematically augment our knowledge of other countries' industrial World Heritage sites and to analyse the working methods employed there in pursuit of the World Heritage Convention's objectives,
- to disseminate information about and stimulate interest in Grimeton among other industrial sites on the World Heritage list,
- to collaborate with the Swedish National Commission for UNESCO, the Nordic World Heritage Foundation (NWHO) and the Swedish World Heritage Group and Nordic World Heritage Site networks,
- to utilise our EU membership and obtain a share of its funds and programmes for international co-operation.

A follow-up and evaluation strategy

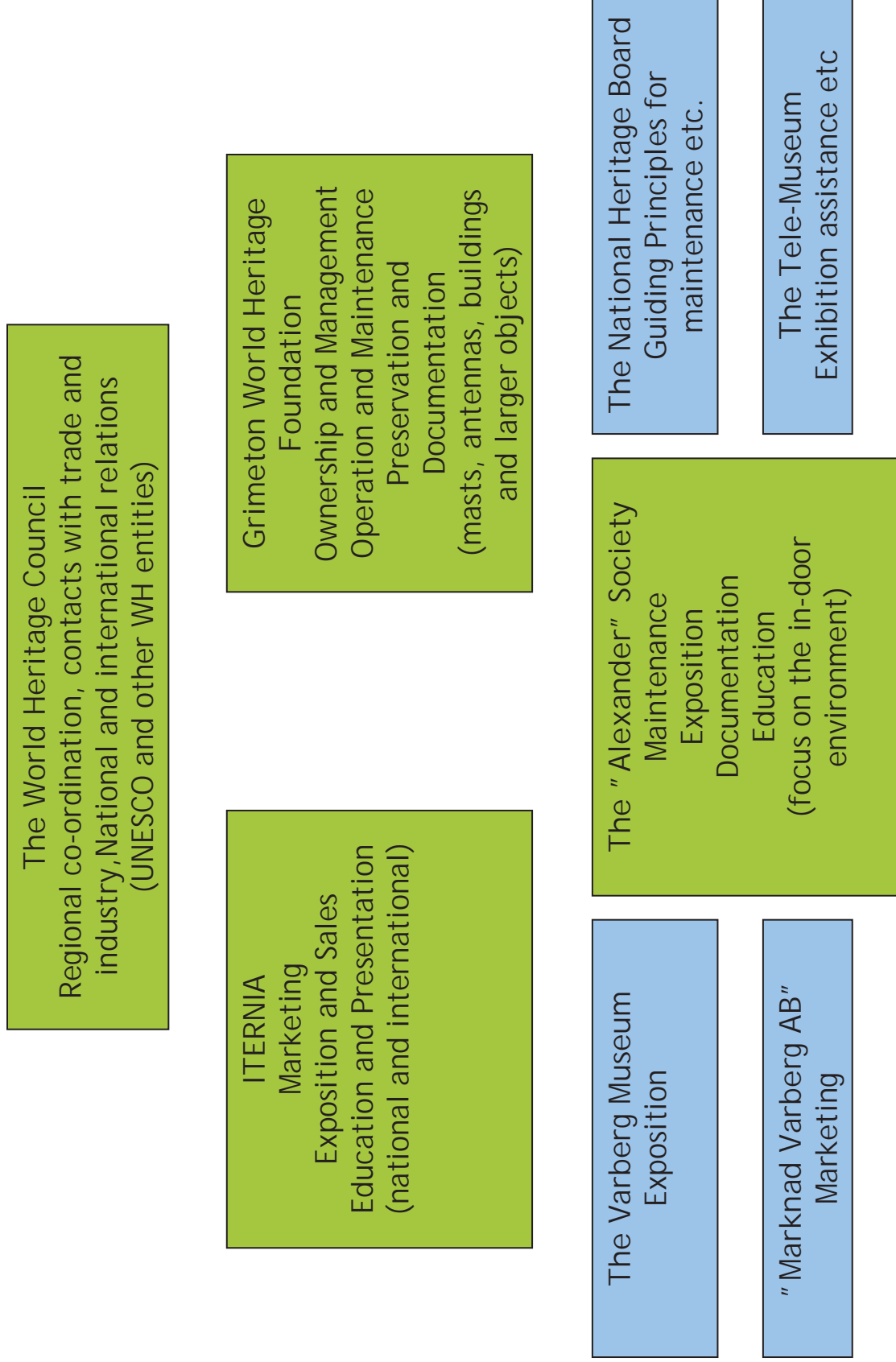
Sweden is to regularly follow up and report to UNESCO the development and state of conservation of our World Heritage properties. Feedback reporting to the World Heritage Committee is mandatory and is to take place every six years, beginning with 2005-2006. The follow-up initially refers to the sites inscribed on the World Heritage list up to and including 1997. The National Heritage Board, assisted by international expertise and the County Administrative Board, is responsible for this reporting, which conforms to a set format.

In connection with follow-up, it is among other things stipulated that every World Heritage property must have current management plans and follow-up systems. Reports must also include an account of the measures taken to preserve and protect the World Heritage property and steps taken to achieve collaboration and co-operation with local authorities and people, to disseminate knowledge concerning the properties and to make them accessible.

Our strategy for follow-up and evaluation is:

- to make this management and development programme the basis for following up and evaluating our success, through the measures taken, in managing and developing Grimeton in the direction envisaged by the World Heritage Convention.

Grimeton – the Participants, their Responsibilities and Duties



A PROFILING PROGRAMME FOR VARBERG

CULTURE & TOURISM

Introduction

During the spring of 2003, the Municipality of Varberg, acting through the Cultural Affairs and Recreation Committee, and the Halland County Administrative Board together drafted a profiling programme for Varberg's tourist industry. This co-operation, the first of its kind, is based on the aim of uniting the initiatives taken for the preservation of Varberg's unique cultural environment with measures aimed at promoting its tourist industry. The programme is not the work of just a few people but has resulted from the knowledge, experience and ideas contributed by the many.

Tourism is important to Varberg, and it is an economic activity with capacity for development. The programme presents a number of initiative areas which are of great importance for the attractiveness of Varberg tourism and which should be made a subject of further development co-operation and marketing. Representatives of the municipality, the tourist industry and heritage conservation are now to consider the priorities defined in the programme, and a number of important projects will then be defined and set in train.

Varberg in a time of change

The future isn't what it used to be. We are living in a time of change, and the transition from industrial to knowledge-based information society is also leaving its mark on developments in Halland and Varberg.

International and economic integration marches on. New sectors with large knowledge content are emerging simultaneously with the transformation or disappearance of traditional manufacturing industry. Administrative and geographic boundaries are being broken down, competition between regions, localities and undertakings is growing. The public sector and the classical welfare society face challenges from several different quarters.

The knowledge society is creating new forms of expression, *cultural* and *heritage* are today being used in new connections, and we are speaking as never before of cultural tourism, cultural industry and culture as a motive force of local and regional development.

As a new society takes shape before our eyes, we realise that something new and unusual is in the offing and that something old and familiar is on its way out. This time of change is both multidimensional and contradictory, and whether we like it or not, the dynamic of development consists in the fast beating the slow. In this situation, the starting point for Halland and Varberg is not self-evident.

No development – sequel

Time's changes come as a severe test of our ability to cope with readjustment and perceive opportunities. The new age means relaxing the fetters of

industrial society and the self-image that still characterises attitudes to innovation and pluralism.

We must therefore exert ourselves more to take less for granted, to think along new lines and above all to utilise the developmental force resting on Varberg's own potentialities and needs. This in turn will make us understand more clearly that it is in the distinctive – that which distinguishes Varberg from the crowd – that we are to look for what can help to strengthen Varberg's powers of attraction and development potential.

All this makes it natural to point to the powerful links of culture and tourism to Varberg's possibilities of developing its specific qualities and plus points. Varberg has entered a phase in which the tourist sector is expanding, and tourism is one of the municipality's most important "growth islands". The development of localities and regions will to a great extent be founded on their position as meeting point and visiting attraction, and Varberg's future ability to attract visitors, new residents and business enterprise will depend very much on the supply of attractions.

Varberg growing fastest

The Swedish tourist industry is growing fast. Today it grosses nearly MSEK 150,000 and employs more than 200,000 people. With an annual tourist influx of more than MSEK 25,000, tourism is becoming one of West Sweden's most important primary industries, and Varberg has a big potential for acquiring a larger economic share of tourism growth in West Sweden.

Tourism in Halland over the past ten years has raised its turnover by nearly 50 per cent, to MSEK 3,500. The total number of visitors per year – including those not staying overnight – exceeds 10 million, which in turn creates more than 2,700 whole-year-equivalent job opportunities in the county.

Varberg is the municipality in Halland whose tourism turnover has grown most in absolute figures. Over the past ten years, tourist consumption has risen from upwards of MSEK 500 to nearly MSEK 1,000, and in annual terms tourism provides the municipality with far more than 700 job opportunities. Tourism helps to market Varberg and provides the foundations of extensive services in relation to the size of the municipality and, consequently, a living city centre all the year round.

The figures speak for themselves. Tourism is destined to become a progressively more vital part of the Varberg economy, and it is an industry with capacity for further development. Now, therefore, is the time to frame a strategic view of the field common to tourism and heritage conservation: use of the heritage as a lever for the municipality's attractiveness and tourist sector.

Varberg – a unique treasure chest

Ever since the 19th century, Varberg has ranked among the classic tourist attractions of Sweden's west coast, and today it is numbered among the "Top Ten" of Swedish tourism. Varberg owes this eminent position to the sea and beaches – the municipality's principal natural resources – coupled with the distinctive historic environment and a generally well-developed tourist infrastructure.

But tourism in Varberg is not a *perpetuum mobile*. Tourism changes with changing times, and what used to be the rhetoric of National Romanticism and adulation of nature – a journey to historic places, invigorating bathing and leisurely social life at the seaside – is today an expansive, competitive industry.

This obliges Varberg's tourist interests to actively preserve Varberg's cachet of quality and to take steps to ensure that the associations it inspires tally with reality and are firmly rooted among Varberg's residents. Everyone working with tourism in Varberg must therefore still further improve their capacity for co-operation, their skill in creating attractive holistic experiences and their proficiency in constantly presenting them to the world at large.

There is nothing new about Varberg being a treasure chest full of unique assets, but in order to keep its place on the visitors' map and secure a bigger place still, the treasure chest needs to be opened and made visible to still greater numbers of people. For many regions and tourist attractions today, the situation is one of winner takes all, and in the travel market stakes it is the experiential content of destinations and the profile they are able to develop from a tourist viewpoint that will decide who wins and who loses.

Signs of times

This is an international trend, and there is much to suggest that we are moving towards a more meaningful and fulfilling consumption both in leisure hours and in connection with business travel, or combinations of both. People in the knowledge society will be working in more flexible environments, with more and more spreading out their holiday time over the year. We are getting more and more mobile and, both physically and mentally, are covering ever-wider areas. Work and recreation used to be clearly segregated. Today they are merging.

We can see experienced travellers with a good general education switching their behaviour towards more profiled, substantial travelling. More and more people are looking for destinations with something to offer both eye, heart and brain. The quality of tourist products, their experiential content and the stimulus they are able to offer are growing more and more important.

Developments in the travel market are moving towards increasingly narrow segments or niches. Experience travel is growing at the expense of the mass market offerings of tourism. These are travellers who know what kind of experience they are looking for and who seek information about their destination both before and during the journey. Health, physical welfare and quality of life are once again important incentives to travel. More and more people are looking for rewarding cultural experiences, but also for the possibility of combining amusements and activities with experiences in a clean, quiet natural environment.

We are going to see a growing group of travellers who want to be met with surprise when they tell others what they have done and experienced – and not primarily where they have been – during their holidays or a conference.

Quality the main trail

From its position as one of our country's most highly regarded tourist destinations, Varberg must utilise and accentuate these trends. The town has a unique history, a geographic location and a large fund of knowledge in the tourist sector which present many opportunities. Culture and the distinctive cultural environment are already contributing towards the experiential content and profitability of Varberg tourism, but a lot more can be done to utilise the values of existing assets and to explore new paths of commercial development.

Not everyone can do the same thing, and what Varberg needs is not pale imitations of fairly similar ventures elsewhere, but a tourism relying on the qualitative and intent on making the spearheads of Varberg tourism sharper than ever.

The level of what is needed to attract visitors is rising all the time, and whatever is done must be on a level with, preferably superior to, what is being done by our competitors. Few tourist destinations in West Sweden are of such dignity that they speak for themselves in the outside world, and destinations wishing to be included on the national and international visitors' map must be prepared to display their distinctive characteristics and qualities.

Revealing the unique

Varberg has a long and interesting past, and anyone setting out to describe its history has to bear in mind that the municipality includes far more than 1,000 archaeological remains of every kind, something like 400 buildings of historic interest and nearly 290 cultural environments, of varied content, deserving of protection.

There are places where time has stood stiller than elsewhere in the municipality but which in reality often lack what it takes to be marketable as qualified visitor attractions. Beautiful scenery, red timber cottages, churches and archaeological remains abound everywhere in the country but are not automatically potential tourist attractions.

In order to be best, we must have the courage to drop things. In other words, what Varberg needs is sustainable commitments to profile-creating heritage environments, as opposed to projects and heritage sites with less clear-cut development potential. The mere aggregation of more general potentialities of the municipality's natural and cultural environment is not enough to profile Varberg as a place worth visiting. To achieve real success, we must reveal the specific, that which is capable of creating added value.

A strategy on two feet

Creating attractive tourist experiences is a long-term venture aimed at achieving long-term effect. In order to achieve success – develop experiential content, increase visitor numbers, achieve economies of co-ordination and generate revenue – we need purposeful commitment to enterprise and co-operation.

Two things are especially important for the development prospects of tour-

ism. One of them is concerned with strengthening thematic product development and achieving mutual benefit, the other with carving out and strengthening the Varberg cachet of quality and communicating this to the outside world.

Everyone must pull in the same direction as regards their view of the type of tourist attraction Varberg represents, where we are heading and how we are going to get there. Partnership does not mean everyone thinking the same about everything, but without a clear image of the profile and possibilities of Varberg tourism, there can be no firm answer to the question of means and ends.

Under a common flag

Successful marketing requires delimitations and prioritisation. The big and at present most important task, therefore, is to strengthen the community of interest round a number of areas of initiative with the capacity to offer visitors qualified experiences round a theme or destination.

Clear themes will strengthen Varberg's tourism profile and enable the municipality and the individual places to market their attractions in a portfolio of thematically packaged offers. We must therefore improve our ability to package travel, accommodation, eating out, bathing and cultural experiences into common products which are interesting enough to be visible in national and international competition.

Spearhead products will in this perspective be more important than broad-based products, but in order to achieve greater profitability and more jobs in the industry, Varberg's unique advantages must be constantly made visible. Moreover, the contest in the experience market today is being waged in a crescendo of media background noise in which the individual attractions cannot be expected to assume sole responsibility for the Varberg cachet of quality. The not-so-well-funded attractions have to compete on different terms from the big players and thus stand to benefit from acting under a "common flag". This will strengthen the cohesion of the industry and create a common foundation for various marketing activities.

In places old and new

In Varberg we stand on historic ground when speaking of the future, and here we have not just one but several histories to relate. A town was already established here in the Middle Ages whose national identity extended in various directions but which today facilitates matters now that contacts round the Kattegatt and North Sea are to be revived and developed. At the same time a compact fortress was built here which, however, with the passage of time, also served as a way in for fruitful impulses from abroad.

People came here early on to take the waters, and it was only natural, both to visiting society and to permanent residents, that Varberg should be described as an ideal among spas and seaside resorts. Grimeton – the cradle of modern broadcasting technology – shows the passage of time. From a transmitting station on the periphery, scheduled for demolition, to a focal point of the cultural World Heritage.

In time a coastal sanatorium for scrofulous *misérables* was transformed

into a Roman-Turkish bath. A fortress erected to repel visitors becomes a welcoming museum and a spectacular arena for jesters and legendary rock artists. Varberg's history lives and develops. In old and new forms. In places old and new.

A basic consensus

This is the point of departure, and it is on these terms that Varberg tourism can grow still larger. Varberg is well to the fore as regards creating experience and employment on the basis of natural and cultural assets, and the achievements of recent years are both challenging and inspiring for the future.

It is a matter of vital interest for the tourist industry, and for Varberg with it, that there should be a consensus view of the areas of initiative to be made a subject of expansion, a consensus making it possible to pick and choose among aspirations. We must be able to co-operate from a common point of departure and we must be able to focus our attention deliberately on the issues most urgently in need of resolution over the next few years. The present programme operates in this direction, and in it everyone with an interest in the tourist sector should find a basic *strategic platform* for persistently continuing with the thematic development of Varberg as a visitor attraction.

By strategy we mean indicating a path, identifying factors of importance for the development prospects of Varberg tourism. This document, therefore, is deliberately reticent on points of detail and is primarily to be viewed as a working tool for initiating the ongoing development process.

The concrete initiatives needed will have to be thrashed out in the operative work of the activities where knowledge of details, funding and commitment to the thematic fields concerned are present. Many issues need to be discussed separately, and as regards the implementation of different projects we will have to identify and concretise them in a comprehensive plan of activities.

Varberg tourism – building from the inside

Good-quality co-operation demands consensus and commitment from many parties in the form of money, time and competence. On awareness of this, and understanding of the conditions and importance of the industry, will hinge our success in developing Varberg's assets.

It is only natural that the Municipality of Varberg, responsible as it is for strengthening the local business structure, should also be responsible for tourism developing in the right direction. But in order to achieve results that industry and heritage conservation must also shoulder their responsibilities and play an active part in various projects.

Varberg tourism is built from the inside, and Market Varberg AB is the natural platform for solving mutual problems and seizing opportunities. The company's tasks include acting as the municipality's unifying force in the development and marketing of Varberg. Through co-operation with the tourist enterprises and the different attractions through various networks,

the company can provide competence and energy to the individual players – and vice versa.

If we are to succeed in being articulate and presenting Varberg's unique capabilities, we must have an interlocutor and organisation which will assume overall responsibility. Marknad Varberg, therefore, so long as special resources can be set aside for the task, should be the hub of development co-operation, charged with flexibly co-ordinating and impelling the various activities decided on by the interested parties concerned.

Themes with powerful luminance

This programme can be compared to a signpost, to be consulted by all those wishing to participate in the ongoing development of Varberg as a visitor attraction. In it we point out a number of identity-supportive themes which we believe are capable of making the Varberg cachet of quality stronger than ever.

It is a debatable point what means most for the luminance and profile of Varberg tourism, but in the end the threads converge like those of a spider's web: in order to strengthen Varberg's powers of attraction in the long term, attention must be made to focus on themes and attractions with the biggest potential for making Varberg's comparative advantages visible.

One is immediately struck by all the classical *points d'appui* which have long been the prime movers in the development of Varberg tourism. We believe continued commitment to these established main tracks to be a precondition of all Varberg's long-term tourist development. As we have said already, in Varberg it is not the number of attractions that needs to be increased. What we need to do is safeguard and reinforce the quality of the assets we already have.

The distinctive natural scenery, the specific history, the spa traditions, the industrial legacy and the copious choice of events have inscribed themselves in public awareness as synonyms of Varberg. Continuing commitment to these principal themes, with their wealth of associations, will enable us to cash in on the value of investments already made and to continue building on the image and goodwill which those assets have conferred on the municipality with the passing of time.

The thematic areas we highlight should therefore make up the framework of a common strategy which the players concerned can support for the further development of tourism. Four main themes have a specially important bearing on future developments:

- Fortress Varberg
- Spa Varberg
- Technology and Varberg
- What's on in Varberg

Theme: Fortress Varberg

Varberg's unique natural and cultural qualities make the town's development a matter of great interest to residents, visitors, the tourist industry and

business enterprise generally. People living in or visiting Varberg do so not only for the sunshine and bathing but also in order to share in the *genius loci* and local atmosphere.

The town has evolved in the course of many centuries, and in order to secure Varberg's attractiveness it is important that the town's inner qualities should be safeguarded and not jeopardised. Safeguarding the old environment and at the same time developing the town for the future requires the best possible justice to be done to the town's inherent qualities.

Varberg is deeply rooted in Nordic history and for 200 years has been an important point of intersection between cultural and tourist interests. Its distinctive history is one of Varberg's strong points and cannot be duplicated. Profiling Varberg as Fortress Varberg will serve to assert the town's cultural qualities and is one of the main themes which can tellingly market the municipality, not only in Sweden but internationally too.

The abundant variability of the theme presents a host of opportunities. Varberg first enters history under Danish rule, and the absorbing presentation of the fluctuations of medieval politics round the North Sea is one of several versions of this theme with development potential. Finding new paths to experiences relating to Varberg's ambulatory existence – the perpetual relocations and destructive visitations by which the town was afflicted – is another.

The fortress is the historic heart of Varberg, and by virtue of its innate qualities is judged, together with the Varberg Museum, to be one of the visitor destinations with the biggest potential for developing and for attracting visitors. A visit to this stirring environment prompts many questions, and an upgraded exhibition summing up and reflecting the town's long and tortuous history is a general and long-familiar desideratum.

Important measures have been taken to restore this centuries-old landmark, but in order for it to remain a notable visitor attraction, the museum facilities – entrance, shop, café but also exhibition galleries – need to be redeployed and adapted to present-day requirements. The museum is perhaps the municipality's most important window on the outside world, but in order to provide the experiences which present-day visitors expect, the museum and its exhibition content will have to be renewed, as will the exhibition technology and design.

Points d'appui and settings on which to base the development of tourist activities include, not only the fortress but also the visible traces of Varberg's precursors: the urban settlements of Getakärr, Ny (New) Varberg and Varberg in Platsarna ("the Places").

Varberg has also preserved an interesting history beginning in the mid-17th century, with the town's definitive relocation to its present-day position in the lee of the fortress, between the "Rampart Streets". Even though the town has been swept by a succession of disastrous fires, numerous traces of this and later periods have survived and continue to set the tone of many parts of the town centre.

Using modern technology, guided tours, signage, walkways and printed matter linking together the network of sights with a newly produced town history exhibition at the museum, a vigorous and exciting activity can be constructed, addressing both Varberg residents and visitors. Suggestions concerning initiatives needed to realise this activity should be concretised and turned into a plan of activities.

Theme: Spa Varberg

Coast and sea have been of varying importance to Varberg through the ages, and it was not until the 19th century that the town gained a reputation as a spa and seaside resort. Recreational journeys to the continental spas were already an aristocratic practice in the "Age of Greatness" (c. 1632-1721), and it was in emulation of those places that the prestigious habit of "taking the waters" was introduced in Sweden during the 17th century.

It was in this context that balneology – the science of bathing and health – achieved its breakthrough, and Varberg was already promoting itself in the 1830s as a seaside resort and spa. Steamboats and the newly opened railway enabled visitors to get here. Royalty and the nobility took the lead, setting high standards of comfort in the process, and in their wake followed, not only the cultural élite of the period but also spa physicians, (women) bathing attendants, spa orchestras and a bemused local population.

Varberg's first heyday as a spa came in the mid-19th century, but people had begun taking the waters at Apelviken long before that, and the Varberg Pump House at Svartekällan ("Black Spring") was opened in 1817. The oldest thermal bath house was built in 1823, and the first cold bath house was built near it in 1866.

The town was provided with parks, promenades and plantings, complete with bowling alleys, shooting ranges, tennis courts, bandstands and, in the midst of it all, the richly articulated pump room and club house that opened in 1883. Varberg was the most fashionable of seaside health resorts, and during the closing years of the 19th century the town, with its kilometre-long beaches, also gained a reputation for nude bathing.

Varberg today is the only Swedish seaside resort created for taking the waters, sea bathing and recreation and still in pristine condition. The built environment is a conglomerate of various periods, but thanks to farsighted preservation measures Varberg has nonetheless succeeded in retaining the distinctive setting which puts a face to the bathing and recreational resorts of the 19th century.

All this presents a big potential, and profiling Varberg as Spa Varberg will accentuate the town's two-hundred-year tradition as a tourist spa. Bathing as a medical restorative and physical recreation is now experiencing a revival, and spa holidays are once again, both in Sweden and in other countries, a rapidly growing trend.

Self-realisation through experiences giving mental and physical stimulus have for many people developed into a life style, and there is growing

demand for activities combining bodily and intellectual sensations. Every home has its bath tub, and yet all the year round we are able to attract guests by the hundred to Varberg's spa and bathing facilities!

Natural conditions, with many hours of sunshine, salt bathing, sandy and rocky shores, seaside hotels and spa facilities, are Spa Varberg's prime resources. For visitors in search of sun, bathing and recreation, but also for spa guest and conference delegates, the cultural heritage of seaside resort tourism is obviously of great importance. Putting new life into the spa's history and traditions is one way of giving visitors a different and fuller content to their stay here.

These are wide-ranging tasks, and the initiatives needed in order to develop the experience content of the theme should be concretised in a plan of activities including everything from printed matter, conference packages and dramatised journeys through time to questions like reinstating the pump house at Svartekällan or establishing a welcome centre in the old harbour warehouse, so as to receive and guide our visitors more professionally.

What is needed in order to carve out the spa profile is an integrated "spa pedagogic", i.e. the use of new techniques and dramatists to create life-giving experiences relating to the material and intellectual heritage of the resort and spa. As an alternative to the spate of "Medieval Weeks" in Sweden, Varberg has good possibilities of also profiling itself, on a historical basis, round a variety of seaside and health resort activities.

Theme: Technology and Varberg

Industrial society in Sweden is recent history. The history books place the coming of industrialism at mid-19th century, and by the outbreak of the First World War Sweden was well and truly industrialised. Today the industrial society in the traditional sense has been superseded by the post-industrial service and knowledge society, and the various productive environments of the fading industrial society now rank among the components of our national heritage most deserving of protection.

The industrial heritage is also a great asset to tourism. Internationally and here at home, great efforts are being made to preserve and present industrial history. Thanks to initiatives operating in the force field between the history of technology and the conservation of industrial monuments, a large number of industrial settings have been developed into crowd-pulling tourist attractions. Many experience the industrial heritage as a contemporary heritage, and industrial environments highlighting and presenting technical systems and innovations have great capacity for developing into exciting scientific and experiential centres on modern international lines.

Industry came late to Halland and Varberg compared to many other regions, owing to such factors as lack of raw materials and capital, proximity to the industrial hub of Gothenburg (Göteborg) and close links with agriculture. The economic life of Varberg has been primarily shaped by trade, shipping and spa tourism, and it was not until the end of the 19th century that the textile, engineering and stone-working industries expanded, overshadowing the simultaneous growth of the fishing industry.

Water power is closely connected with the earliest infrastructure of agrarian and industrial society, and the many Viking-type watermills surviving in Kvarndalen ("Mill Dale") and Ulvatorpsbäcken admirably illustrate the use made of water power in earlier times.

As a technical community, though, Varberg has above all come to be profiled by the Grimeton radio station and, more recently, by the Ringhals nuclear power station. These hi-tech installations – both of such great technical interest as to be remarkable even by international standards – present great opportunities for carving out, in the long term, an image of Technology and Varberg.

The Grimeton radio station – commissioned in 1925 – has been nominated by the Swedish Government for inscription on the UNESCO World Heritage list. That list now includes more than 700 of the world's most exclusive natural and cultural sites, and the decision to nominate Grimeton for inclusion in this eminent circle is in itself confirmation of the important part played by the radio station in Sweden's development as an industrial nation. Inscription on the World Heritage list will provide Varberg and Halland with an important resource but at the same time will mean great expectations as regards making the installation accessible to visitors. In order for Grimeton quickly to come into its own and become the asset which many people expect, vigorous development measures are needed so as to meet high stands of reception, service and information.

Plans exist for erecting, next to the old radio station, an advanced new information and broadcasting technology centre, realisation of which could effectively contribute towards positioning Grimeton, not only as a "memory factory" but also as an advanced attraction for those looking for knowledge and experience in the expanding Science Centre segment.

The Ringhals nuclear power station, commissioned in 1975, is one of the world's largest. It is already open to the general public for guided tours, and the Kärnhuset building includes a modern visitor centre presenting the plant from a variety of angles. Together with Grimeton and the technology centre planned there, Ringhals has good prospects of profiling Varberg as a technology town, thus reinforcing the image of Technology and Varberg.

Theme: What's on in Varberg

Varberg has a long tradition and experience of events of many different kinds. With its evocative environment and established role as arena for arrangements both great and small, the town has great possibilities of strengthening its identity on the lines of What's on in Varberg. Event-based experiences are in keeping with the times, and association with widely known, high-quality arrangements will open up new paths for profiling and marketing.

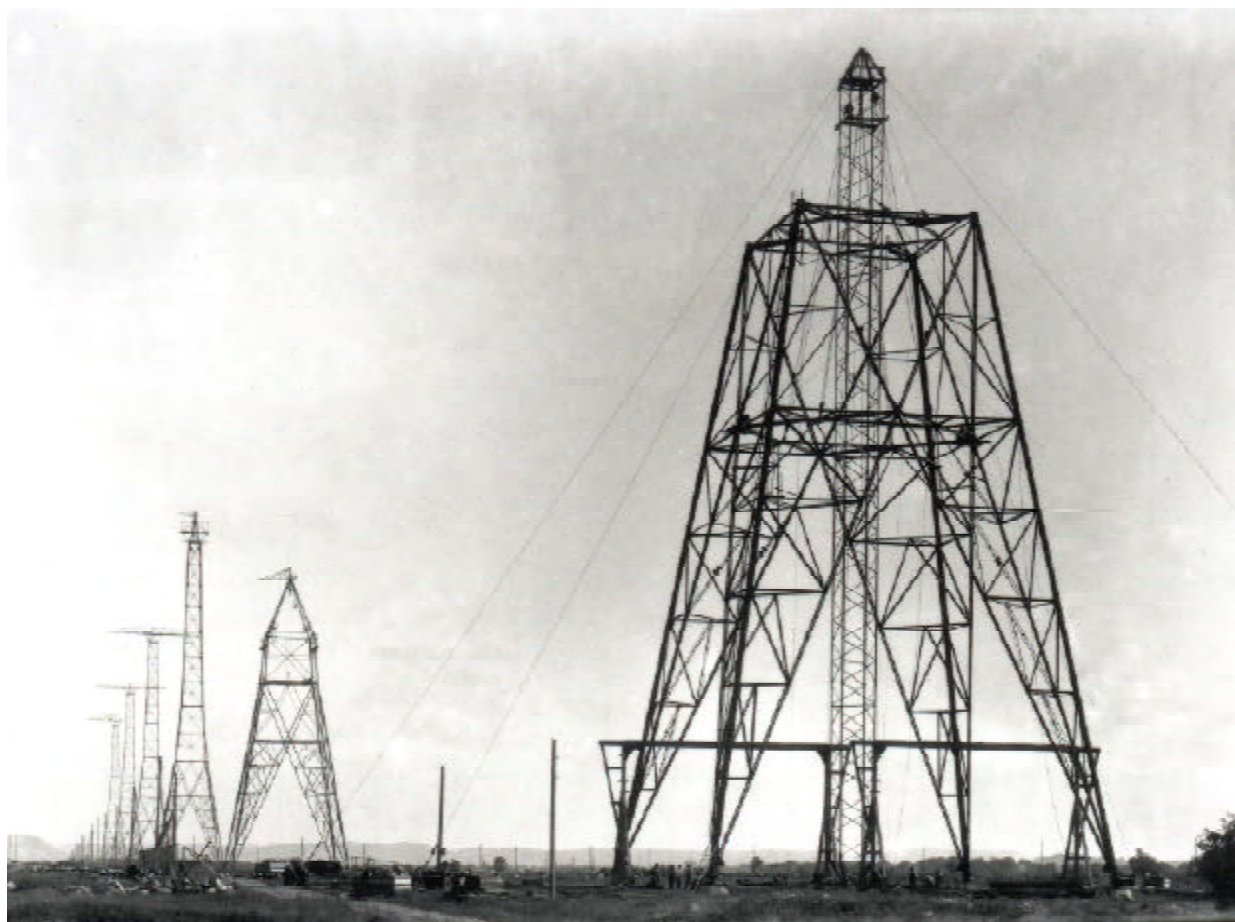
There are several high-class facilities here offering visitors a variety of alternatives for health, cultural experience and recreation. They include the characteristic settings of the health resort, as well as the fortress, which offers unique starting points for arrangements of different kinds.

Arrangers will find here the qualitative setting they require for congresses and meetings, and a new event and trade fair centre will be opening here in 2004. Given its geographic location and good communications, there is good reason for believing that Varberg can advance its position as meeting point and event venue.

The task of strengthening Varberg's attractiveness as a meeting point includes throwing bridges between the town's material and intellectual heritage qualities. There is more to an attractive cultural environment than individual preserved buildings and architectural curiosities. Heritage conservation is not just a matter of clean-up and preservation.

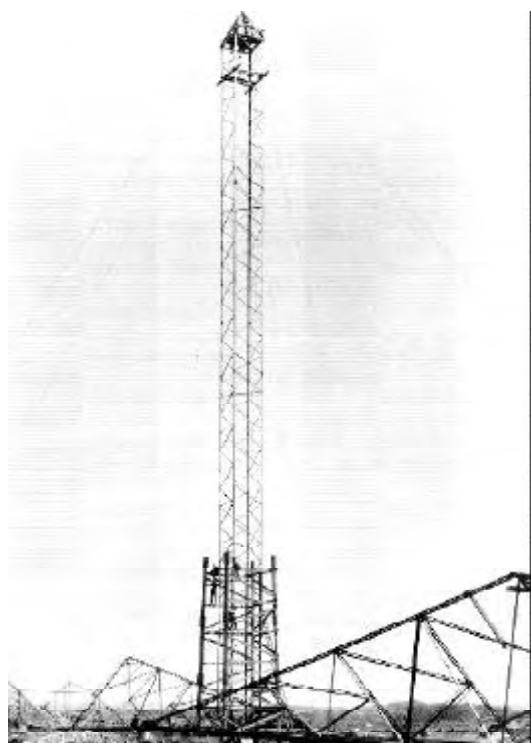
Initiatives are also needed to present the knowledge and experience content of history and the cultural environment. Cross-pollination of the cultural heritage with the forms of artistic expression of our own time offers great opportunities for deepening the historic experience but also of staging arrangements which break with our accustomed routines.

In order to put new life into the historical environment, we must relinquish our preoccupation with investments and instead devote more energy and resources to arrangements and activities concerned with interpreting, presenting and communicating history. Events which, creatively and professionally, aim to strengthen and reinvigorate Varberg's distinctive cultural environment profile should therefore be supported and encouraged.



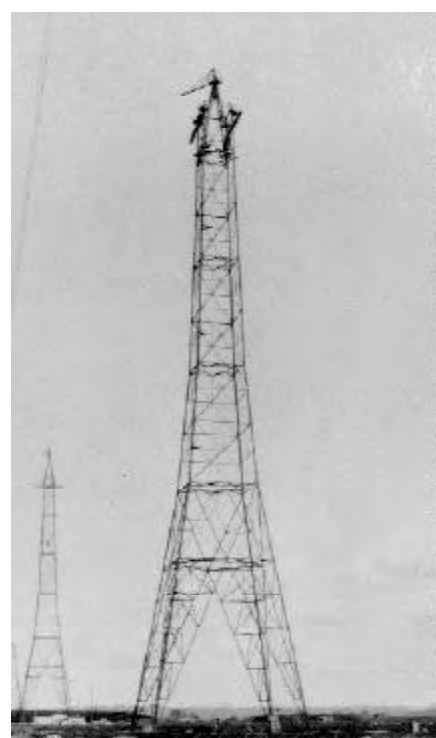
The antenna plant under construction, 1924

Photo: The Museum in Varberg, Gustav Björkström



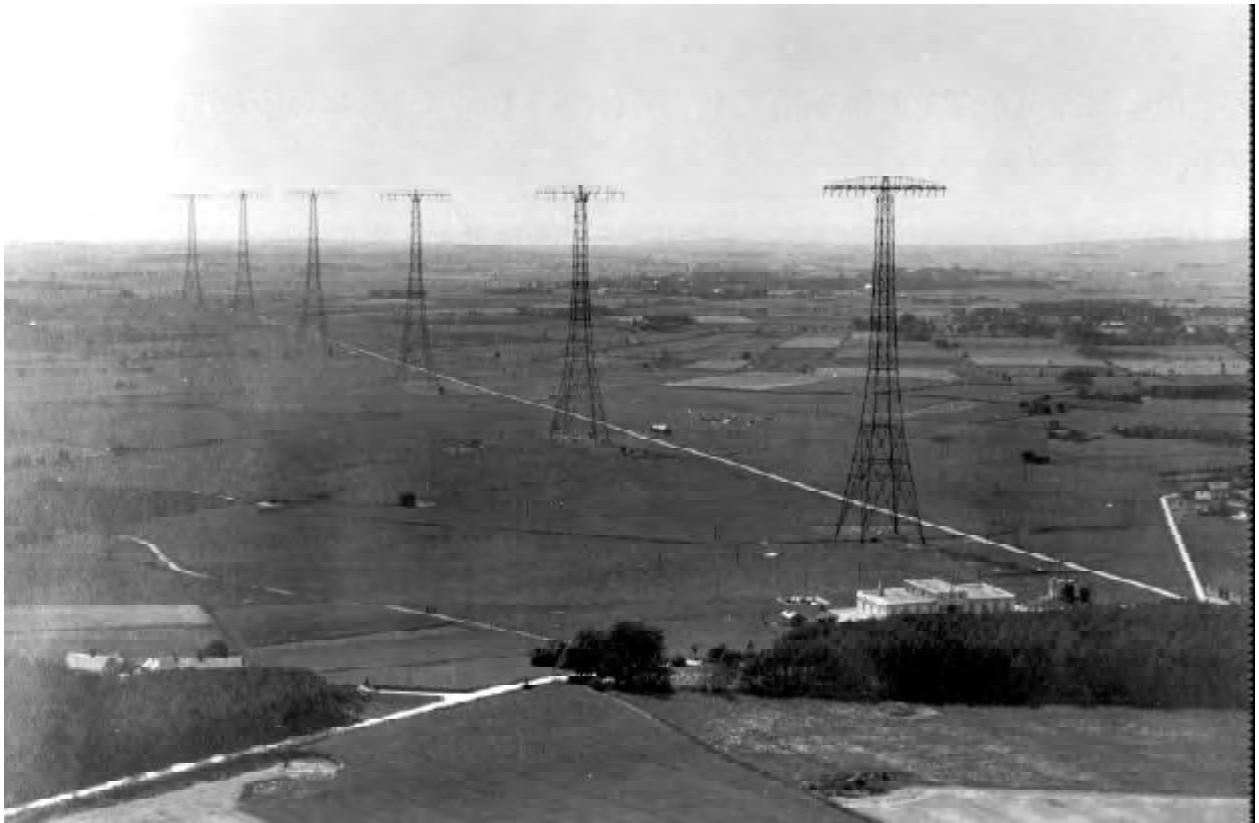
The antenna plant under construction

Photo: Landsarkivet i Uppsala



The antenna plant under construction

Photo: Landsarkivet i Uppsala



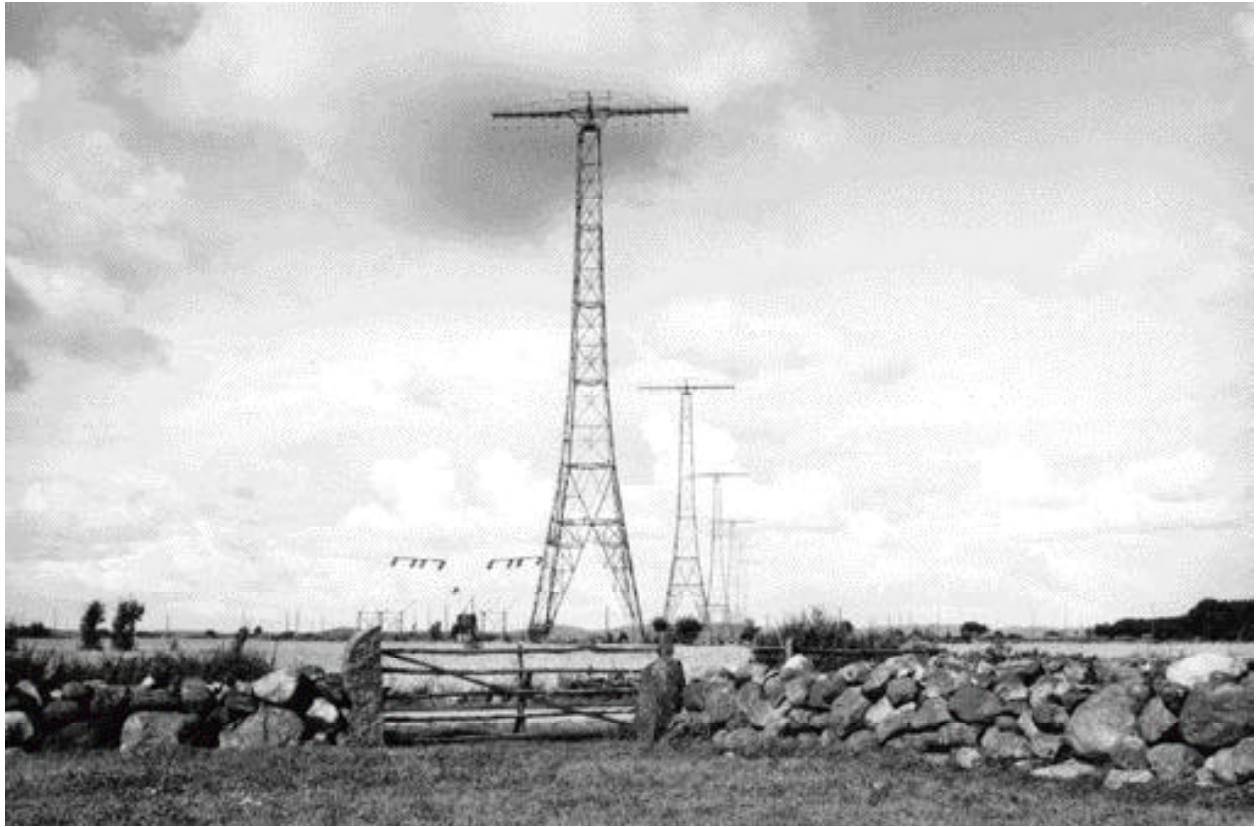
Station buildings and antenna plant, c 1930

Photo: Telemuseum



The antenna plant with its six towers

Photo: Telemuseum



The antenna plant from the southwest end, 1930

Photo: National Heritage Board, Märten Sjöbeck



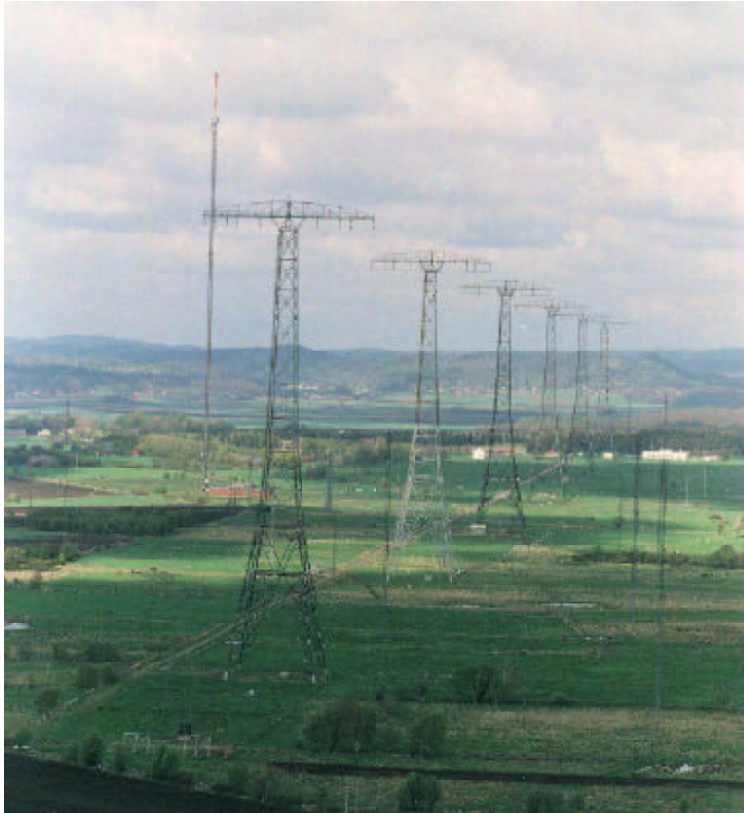
The antenna plant under conservation, 1996

Photo: Telia Mobile AB



The antenna plant, 2000. Note the numerous shortwave antennas in the southwest area of the site.

Photo: The Museum in Varberg, Arne Persson.



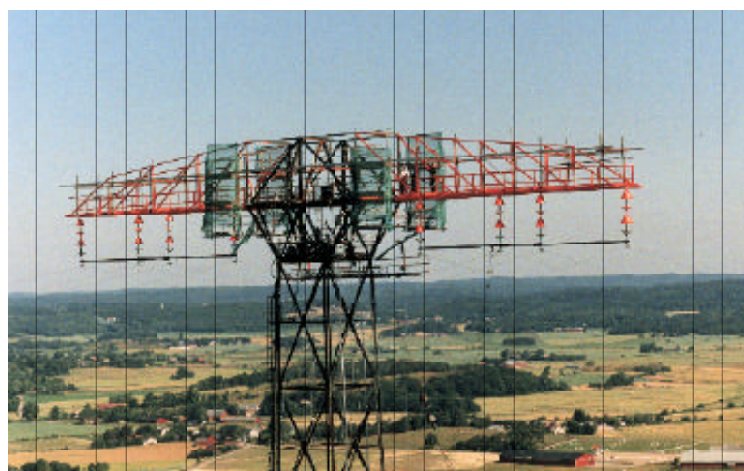
Aerial photograph of antenna plant, 1996

Photo: Telia Mobile AB



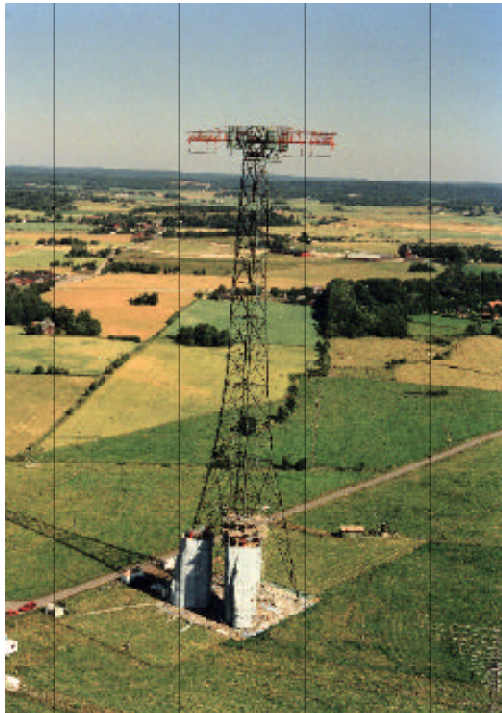
Partial view of the multitude of shortwave antennas, 2000

Photo: The Museum in Varberg, Arne Persson

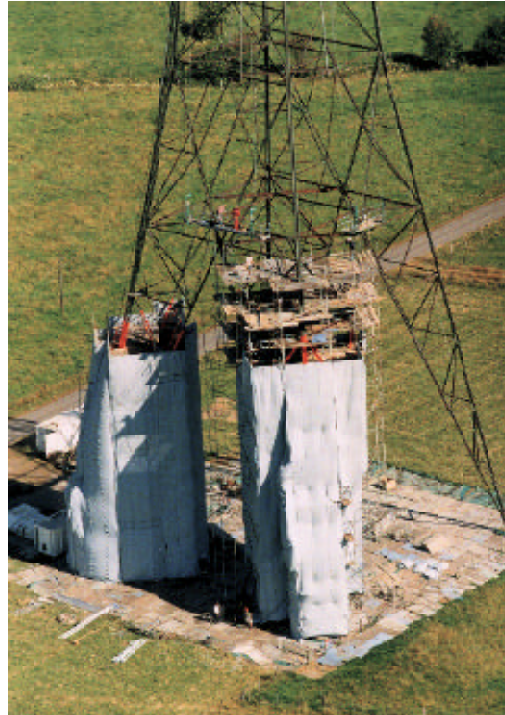


Transverse beam of tower no. 3 during repainting, 1996

Photo: Telia Mobile AB



Antenna tower no. 3 during repainting, 1996.
The construction is covered to prevent dispersion of lead pigment, 1996
Photo: Telia Mobile AB



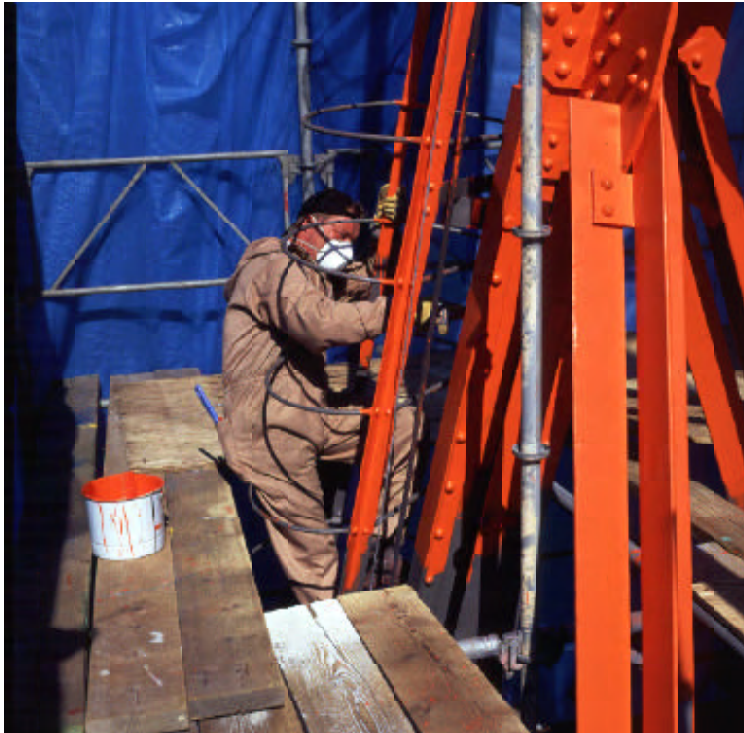
Detail of antenna tower, 1996
Photo: Telia Mobile AB



The antenna plant, 2000
Photo: The Museum in Varberg, Arne Persson



Repainting of antenna tower, 2000
Photo: The Museum in Varberg, Arne Persson



Tower painting, 2000

Photo: The Museum in Varberg, Arne Persson



Detail of a tower, 2000

Photo: The Museum in Varberg, Arne Persson



Hoist for lift basket of an antenna tower, 2000

Photo: The Museum in Varberg, Arne Persson



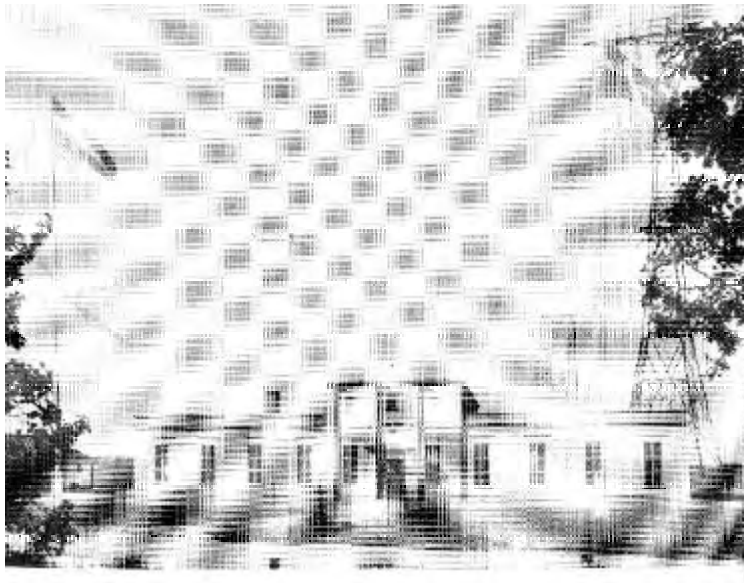
The antenna plant and ice-melting transformer house, 2001

Photo: Bengt Spade



Lift basket, 2001

Photo: Bengt Spade



Transmitter building, c 1925

Photo: Landsarkivet i Uppsala



Transmitter building, c 1925

Photo: Landsarkivet i Uppsala



Transmitter building, c 1925

Photo: Landsarkivet i Uppsala



Transmitter building, 1995

Photo: Telia Mobile AB



Transmitter building, 2000

Photo: The Museum in Varberg, Arne Persson



Transmitter building, 2000. The station garage is seen to the right.

Photo: The Museum in Varberg, Arne Persson



Transmitter building, 2001

Photo: Bengt Spade



Transmitter building, 2001

Photo: Bengt Spade



Transmitter building, 2001

Photo: Bengt Spade



Transmitter building, 2001

Photo: Bengt Spade



The station stores building, 2001

Photo: Bengt Spade



The station truck, a 1931 Chevrolet, 2001.

The vehicle, which was used for inspection and safety purposes, has been carefully conserved.

Photo: Bengt Spade



Tuning coil and insulators, 2001.

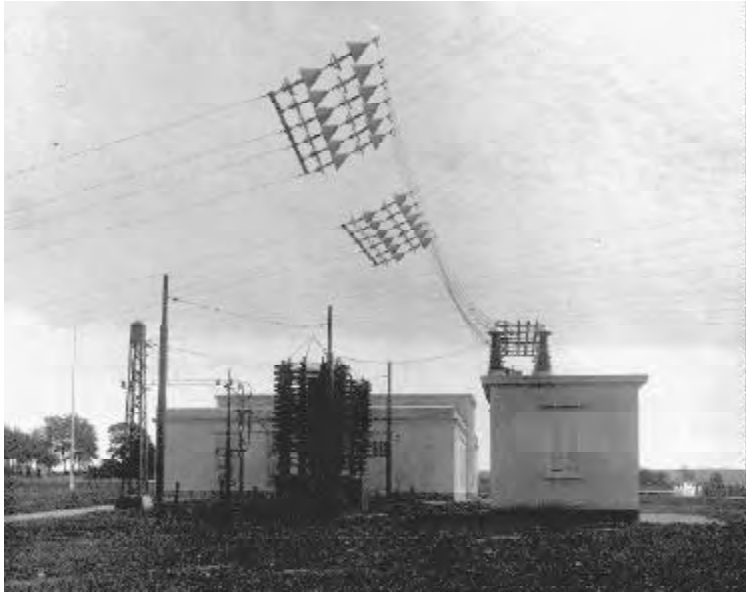
The stores building is seen in the background

Photo: Bengt Spade



Remnants of switching rack for shortwave rhombic antennas, 2000

Photo: The Museum in Varberg, Arne Persson



Feeding end of the antenna, showing tuning coils and ice-melting transformer house, c 1925

Photo: Landsarkivet i Uppsala



Feeding end of the antenna, showing tuning coil and ice-melting transformer house, 2000

Following a modification of the antenna, one tuning coil was dismantled in the 1980s

Photo: The Museum in Varberg, Arne Persson



Detail of insulators, 2000

Photo: The Museum in Varberg, Arne Persson



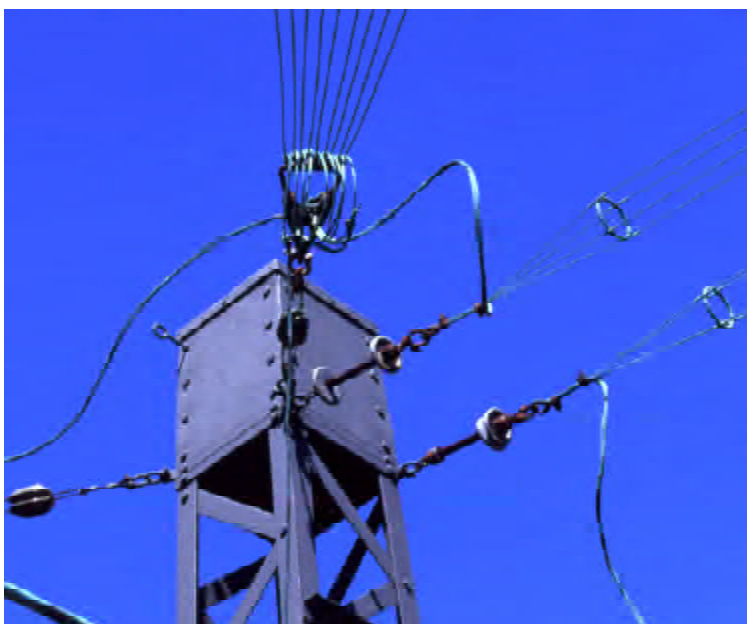
Tuning coil beyond tower no. 6, 2000

Photo: The Museum in Varberg, Arne Persson



Exit of feeder line from transmitter building, 2000

Photo: The Museum in Varberg, Arne Persson



Detail of feeder line at tuning coil, 2000

Photo: The Museum in Varberg, Arne Persson



Feeding end of the antenna, showing tuning coil and ice-melting transformer house, 2001

Photo: Bengt Spade



Tuning coil at feeder end, 2000

Photo: The Museum in Varberg, Arne Persson



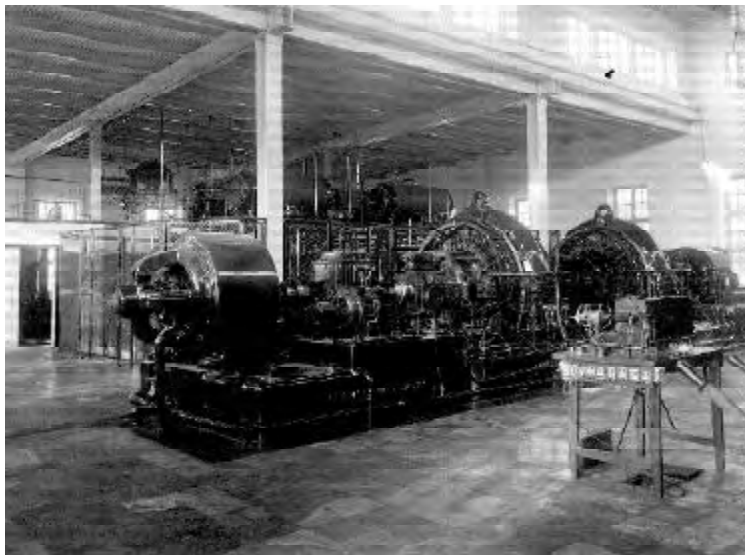
Mains transformer building, 2001

Photo: Bengt Spade



Inauguration of the Radio Station in 1925 with King Gustav V

Photo: Telemuseum



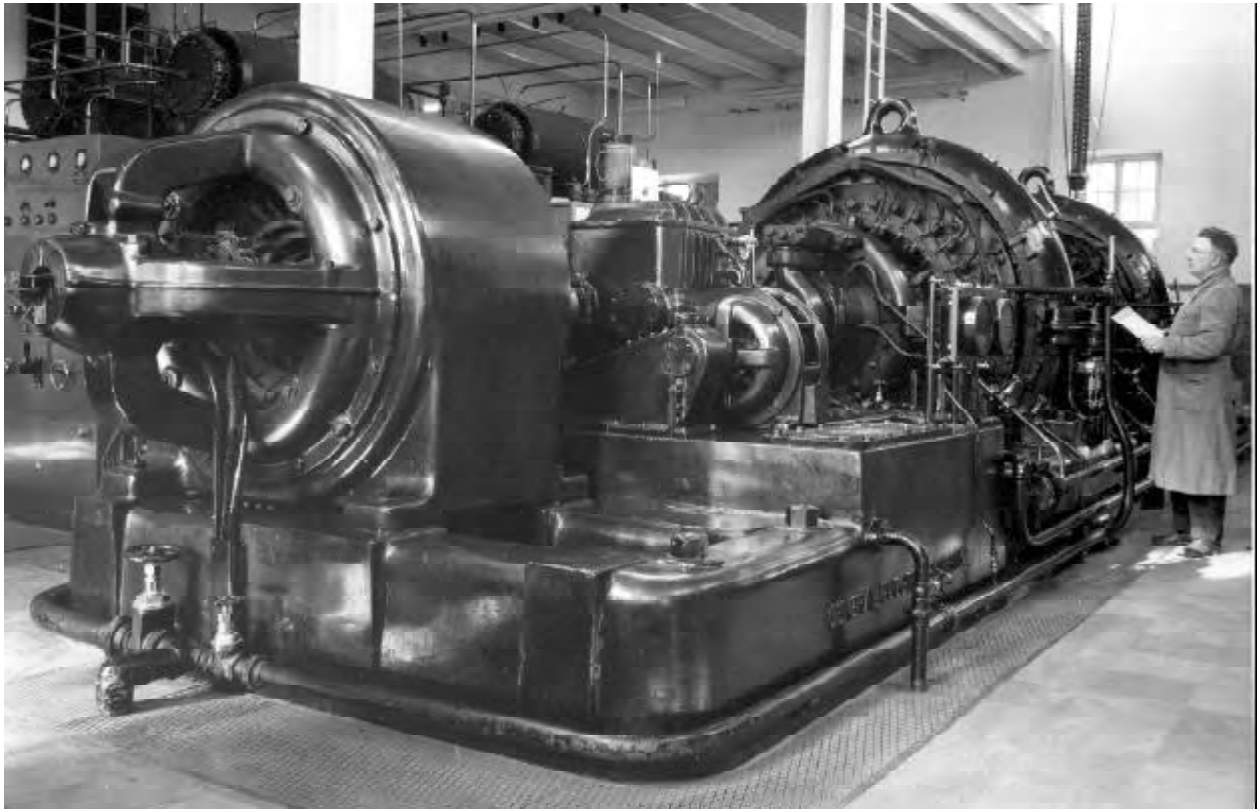
The two Alexanderson transmitters, c 1925

Photo: Landsarkivet i Uppsala



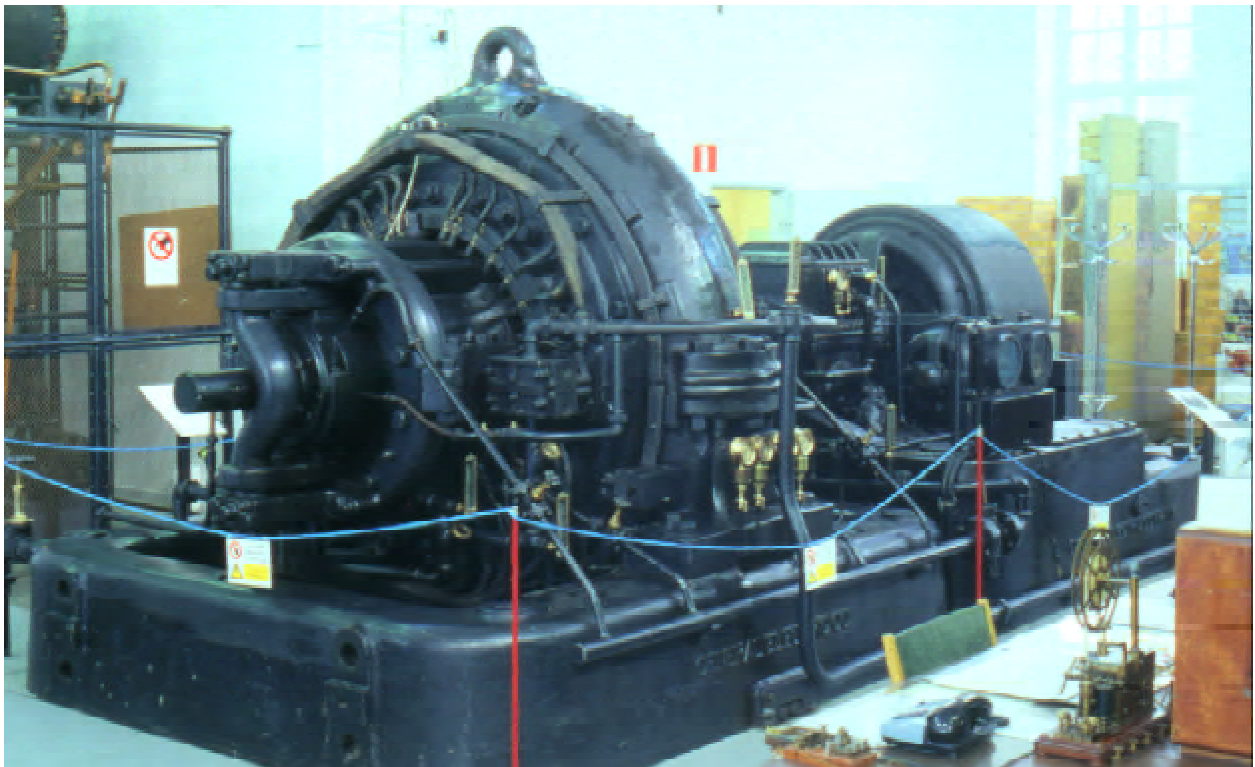
Inside the transmitter building, 1930

Photo: Telemuseum



The two Alexanderson transmitters, c 1950

Photo: Telemuseum

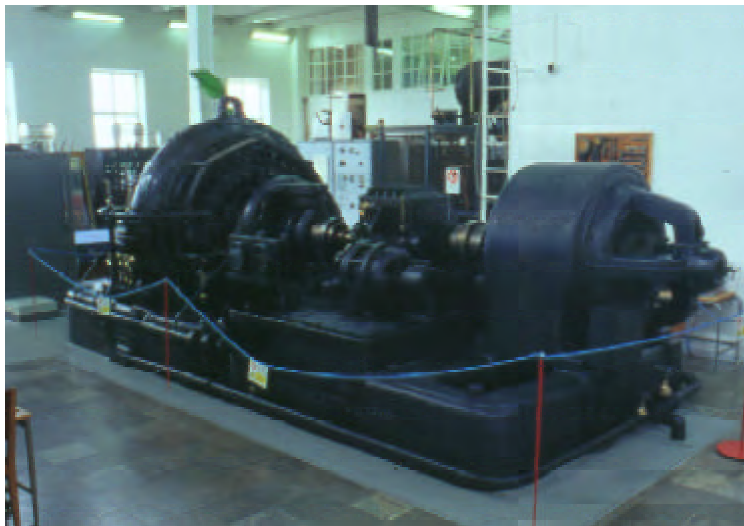


The Alexanderson transmitter, 2001

Photo: Bengt Spade



The Alexanderson transmitter, 2001
Photo: Bengt Spade



The Alexanderson transmitter, 2001
Photo: Bengt Spade



Oil-pressure gauges, 2001
Photo: Bengt Spade



The Alexanderson transmitter, main rotor bearing of alternator, 2001

Photo: Bengt Spade



The Alexanderson transmitter, gear box, 2001

Photo: Bengt Spade



The Alexanderson transmitter, main motor and auxiliary oil pump motor, 2001

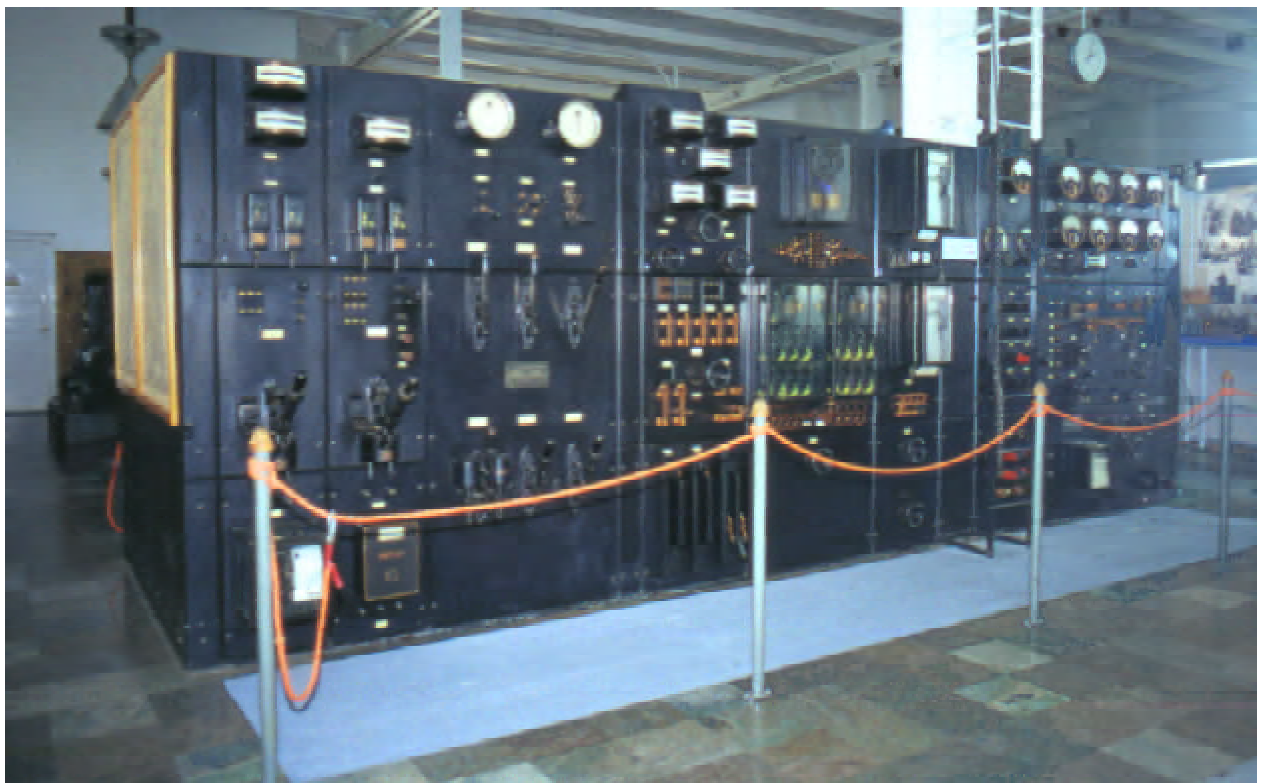
Photo: Bengt Spade



Switchboard, 2001
Photo: Bengt Spade



Relay panel of the keying system, showing high-power keying relays, 2001
Photo: Bengt Spade



Switchboard, 2001
Photo: Bengt Spade



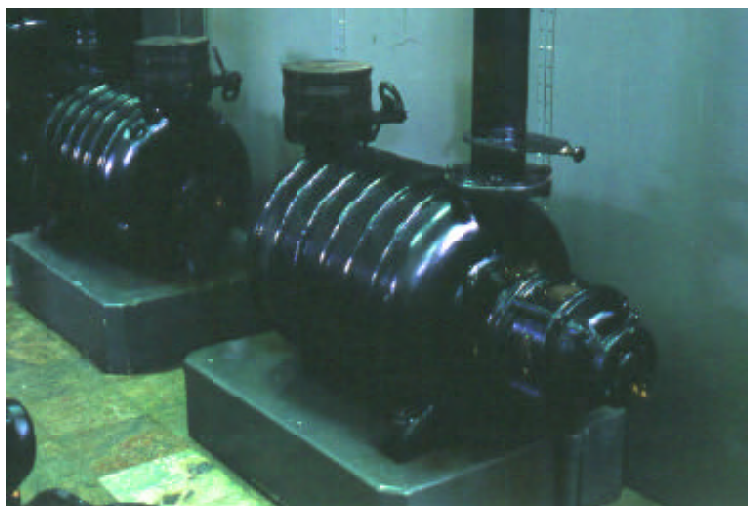
Motor generators, 500V, 2001

Photo: Bengt Spade



Motor generators, 500V, and 125/250V, 2001

Photo: Bengt Spade



Air compressors, 2001

Photo: Bengt Spade



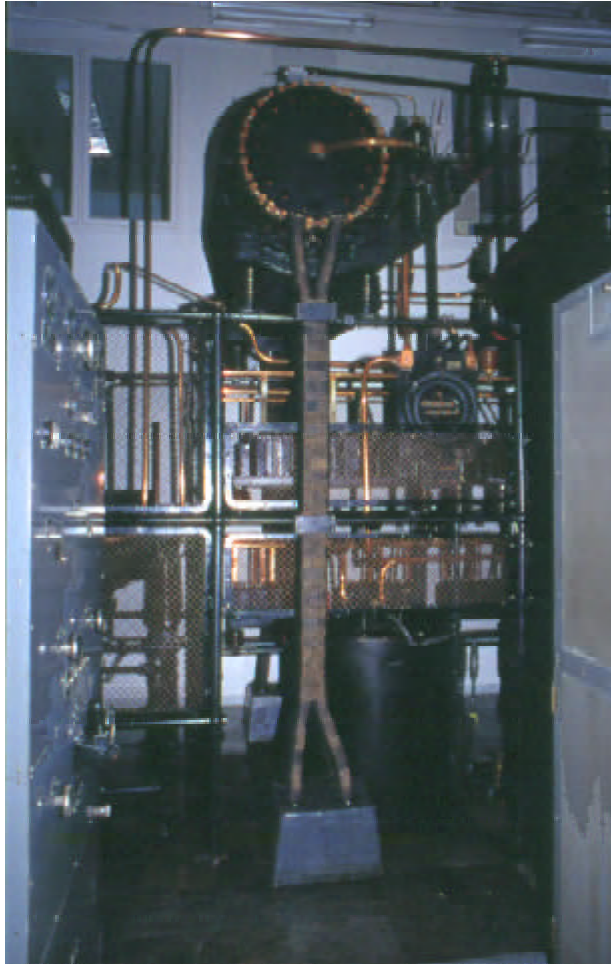
Cooling-water pumps, 2001

Photo: Bengt Spade



Liquid rheostat, 2001

Photo: Bengt Spade



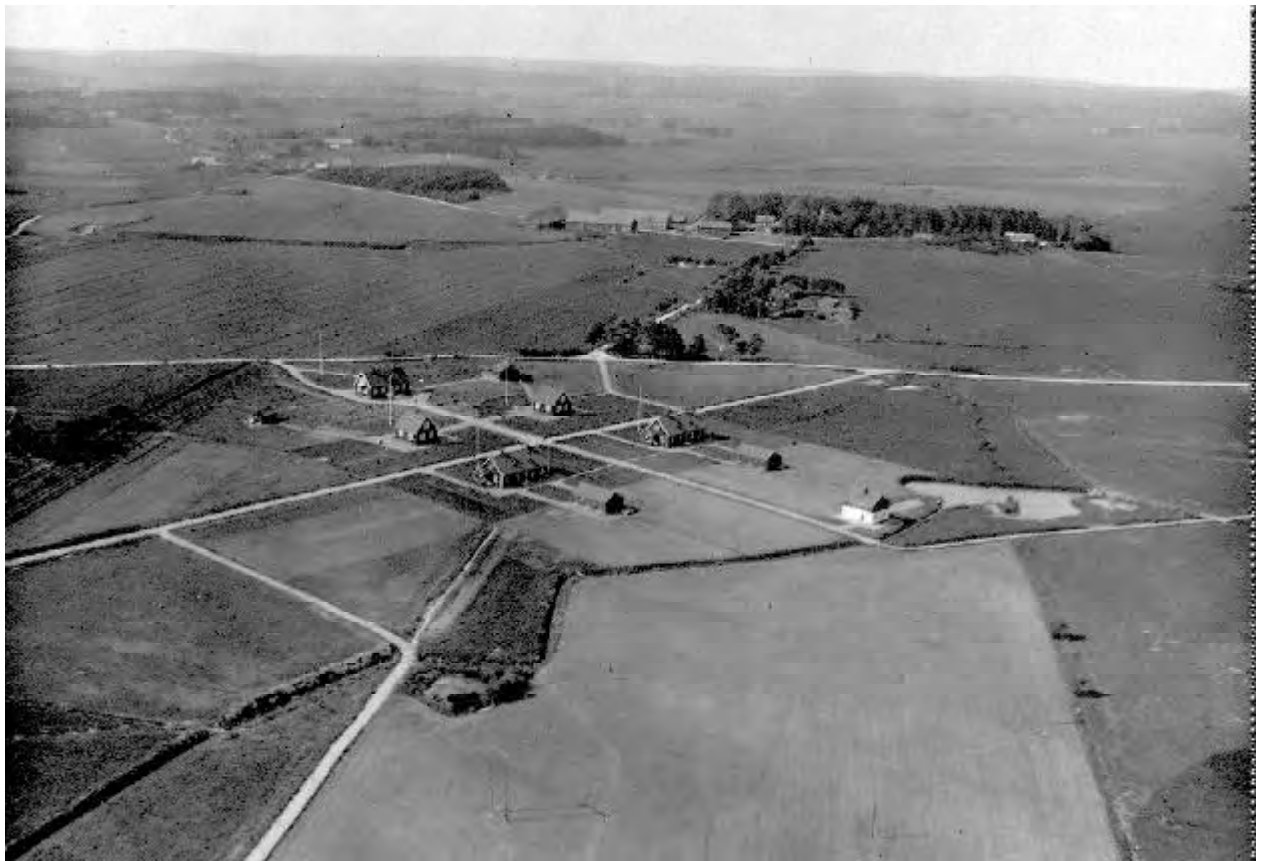
Radio-frequency rack 2001. Radio-frequency power transformers on top of the rack, magnetic amplifiers on the floor, capacitors to tune amplifiers on shelves.
Photo: Bengt Spade



Detail of radio-frequency rack, showing the magnetic amplifiers, 2001.
Photo: Bengt Spade



Detail of radio-frequency rack, showing the transformers and the antenna switch, 2001.
Photo: Bengt Spade



Residential area, c 1925

Photo: Landsarkivet i Uppsala



Residential area, 1996

Photo: Telia Mobile AB



Residential area and mains transformer building, c 1925

Photo: Landsarkivet i Uppsala



Residential area, 2000

Photo: The Museum in Varberg, Arne Persson



Manager's house, 1995

Photo: County Administrative Board of Halland, Hans Bergfast



Staff residence house, 2001

Photo: Bengt Spade



Staff residence house, 2001

Photo: Bengt Spade



Manager's house, 2001

Photo: Bengt Spade



Staff residence house, 2000

Photo: The Museum in Varberg, Arne Persson



Staff residence house, 2000

Photo: The Museum in Varberg, Arne Persson

Varberg Radio Station (Sweden)

No 1134

1. BASIC DATA

State Party: Sweden

Name of property: Varberg Radio Station

Location: County of Halland

Date received: 21 January 2003

Category of property:

In terms of the categories of cultural property set out in Article 1 of the 1972 World Heritage Convention, this is a *monument*.

Brief description:

The Varberg Radio Station at Grimeton in southern Sweden was built in 1922-24. It is an exceptionally well preserved monument to the early phase of wireless transatlantic communication system. The site consists of the transmitter equipment, including the aerial system with six steel towers, each 127 m high. Even though not in regular use any more, the equipment has been maintained in operative condition.

2. THE PROPERTY

Description

Varberg Radio Station is located 7 kilometres east of Varberg in the Parish of Grimeton, in south-western Sweden. The site comprises 109.9 hectares of land with buildings housing the Alexanderson ultra-longwave radiotelegraph transmitter constructed in 1922-1924. This includes the towers carrying the antenna installation, shortwave transmitters with their antennae, and a residential area with housing for the station staff. The main property consists of the original station site with the exception of an area containing the 'new' transmitter building and the antenna mast of Teracom AB's broadcasting station. The main buildings were designed by architect Carl Åkerblad in neoclassicist style.

Inside the transmitter building, about half the area of the transmitter hall is occupied by the Alexanderson 200-kilowatt high-frequency alternator and its associated equipment: control racks, auxiliary machinery, high-frequency transformers and the Alexanderson magnetic modulator. All are in operative condition. The other half of the hall contains shortwave transmitters installed from the late 1930s and onwards. Also these have remained in operational condition though now out of service, except for two transmitters which are still occasionally used.

Most of the site is occupied by the antenna plant. Its aerial system is supported by six steel towers, each 127 m high, arranged in a straight line 380 m from each other. The towers were designed by and constructed under the supervision of Pr. Henrik Kreüger. Each tower is associated with a radiating antenna element stretching

from the top to an inductance coil on the ground. Buried in the ground is a counterpoise network of copper wire, extending to the borders of the site and adjacent properties. A system of electricity wires on wooden poles connects the inductance coils with the buried network. An ice-melting transformer house close to the transmitter hall provides electricity to heat up and free the wires of ice in the winter. The site also comprises a large number of shortwave antennae of various designs, some still in commercial use, as well as some remains now out of use. The residential area has 12 houses for the station manager and staff.

History

In the 19th century, scientific and technical developments in telecommunication were based on inventions by people like Michael Faraday, J.C. Maxwell, H. Hertz, and Guglielmo Marconi. The use of telegraph started in the second half of the century. From here, telegraphic and radio transmissions developed further in the early 20th century. The first experiments to have wireless transmission of speech across the Atlantic were in 1915 and 1919.

In Sweden, the contribution of the chief engineer Ernst Fredrik Werner Alexanderson (1878-1975) was decisive for taking these techniques further into practice. He was responsible for a number of innovations, including the high-frequency alternator for continuous (undamped) electric oscillations, which led to the improvement of telegraphic wireless communication over large distances as well as providing the basis for wireless telephony, later leading into radio broadcast. He developed the 'multiple-tuned antenna', a system of cooperating vertical antennae, which resulted in an important improvement of long-wave radio communication.

Alexanderson promoted the plan for a global radio-telegraphic network after the First World War. The Radio Corporation of America was formed to exploit and commercialise these achievements. From the end of World War I to the mid-1920s the global network of radiotelegraphic stations was constructed according to Alexanderson's system of which Varberg Radio Station at Grimeton became a part, built in 1922-24. The structural engineer Henrik Kreüger (1882-1953) was responsible for the six antenna towers at Grimeton, the tallest built structures in Sweden at that time.

By the end of the 1920s, the rapid development in electronic transmitters for long-distance wireless communication made the Alexanderson technique obsolete. Of the large Alexanderson stations only Varberg Radio Station remains today; the others were either modified or demolished. The Varberg station was used in regular service until the 1960s, but it has been kept in working condition even later.

Management regime

Legal provision:

Formerly, the site has been owned by Telia Mobile AB and Teracom Svensk Rundradio AB with the State as sole shareholder. The residential houses have been on private

land. Now the entire site has been transferred to the ownership of the newly established Grimeton World Heritage Foundation.

The radio station was listed as cultural heritage in 1996 under the Cultural Monuments Act (SFS 1988:950). The County Administrative Board of Halland, located in Halmstad, is the supervisory authority in this respect.

According to the Environmental Code and in the context of national physical planning, the National Heritage Board has declared the radio station and its immediate surroundings of national interest for heritage conservation. The Municipality of Varberg has the responsibility to monitor the site and its protection. A comprehensive plan according to the Planning and Building Act (SFS 1987:10), adopted by the Municipality Board, includes the protection of the Grimeton area.

Management structure:

Responsibility for the maintenance and management of the property rests primarily with the owners. The County Administrative Board, in its official capacity, has the final decision on matters related to cultural significance of the site. The County Museum provides expert knowledge. The Municipality of Varberg has responsibility for facilitating the positive development of the site and its surroundings according to the Building and Planning Act.

An Executive Management Committee for the radio station have been established, consisting of representatives for Telia Mobile AB, the County Administrative Board and the Alexander Society. The property management plan of the Varberg Station for 2003-2007 has been revised by the Halland World Heritage Council in September 2003, taking into account the new ownership situation.

Resources:

Telia Mobile AB, the owner of the property, is maintains the radio station in co-operation with the County Administrative Board (2.5 million Swedish crowns/year). The works include a running maintenance programme of the antenna towers.

The Alexander Society, consisting mainly of former employees of the radio station, has an important role in keeping the knowledge of its history and teaching young people.

At the regional level, expertise is provided by the County Administrative Board and the County Museum of Halland for relevant tasks. The National Heritage Board and the Telemuseum provide expertise on conservation matters. The Board, together with the Alexander Society, Telemuseum and Telia Mobile AB, has formed a committee to study conservation methods. An international symposium in 1997 aimed at a network to discuss issues related to the conservation of old electrical equipment.

Being still in commercial use the site has been partially opened to the public only since 1996. There have since been some 4,500 visitors per year. There is a proposal to build a new building for the reception and instruction of visitors.

Justification by the State Party (summary)

Varberg Radio Station at Grimeton was erected after World War I in the spirit of returning to peaceful conditions and restoring human communication after the war. The site, being an outstanding example of the transoceanic wireless communication sites constructed in the early 20th century, is the only surviving example of a major wireless transmitting station based on pre-electronic techniques.

Criterion ii: With the wireless telegraph, at the turn of the century 1900, all remaining limitations to instantaneous communication over the largest of distances disappeared; around the year 1920 in principle all places on the Earth were accessible by radio. After World War I a grandiose plan was launched to join the various parts of the world by a network of radiotelegraphic links with its hub at Radio Central, Long Island, New York, using the Alexanderson ultra-longwave technique. The Grimeton establishment was created as part of this world-encompassing radiotelegraphic system, which contributed to new patterns in the communication between countries and continents. In the 1940s, when many communication links were interrupted, Grimeton served the exchange of the free word between the Old and the New World.

Criterion iv: Varberg radio station displays a cross section through the entire break-through period of wireless engineering, from pre-electronic techniques to present-day communication modalities, and it has grown organically with the changing technologies. The new station building houses transmitting equipment not only for long-distance shortwave communication with other continents and with ships and aircraft all over the world but also for ultra-shortwave sound and television broadcasts and cellular mobile telephony. Most decommissioned long-distance radio communication establishments in the world have been demolished as longwave circuits were superseded by shortwave circuits and the latter were subsequently replaced by satellite links.

3. ICOMOS EVALUATION

Actions by ICOMOS

The site was visited by an ICOMOS mission in August 2003. The International Committee for the Conservation of the Industrial Heritage (TICCIH) has been consulted about the Varberg Radio Station.

Conservation

Conservation history:

The radio station has been fully operational until the 1960s, but it has remained an industrial site until 1997, since it has been partly opened to the public. The site and the equipment have been well maintained and are in operational condition. Some equipment is still used by the Swedish Navy or for other purposes. The site is now being equipped for the reception of visitors.

State of conservation:

The state of conservation of the site is considered very good. The ICOMOS mission was also satisfied with the

large buffer zone around the site, preventing the erection of any large structures which might impinge visually on the site itself. Within the boundary of the proposed World Heritage Site there are a number of small masts, landlines and other minor structures built over the last 70 years. Some of these may be preserved but others may well be removed as operational requirements change.

Management:

The ownership has been recently changed, and the entire site has been taken over by the newly established Grimeton World Heritage Foundation. The former owner, Telia Mobile, has provided an endowment for the upkeep.

The Alexander Society has several hundred members, and they form a valuable resource for the interpretation and long-term maintenance of the site.

A considerable amount of income for the Grimeton Foundation will come from the use of the existing equipment by the Swedish Navy and other communication requirements. This income will be used, eg for the employment of a qualified radio station manager.

The revised management plan is considered fully satisfactory for the correct management of the site.

Risk analysis:

The proposed site is situated in an attractive part of Sweden with a fair amount of development pressure. However, this is mainly concentrated in the coastal region. The location of wind power stations is regulated by law and monitored by the Municipality. The land-use planning and development are well under control, and no adverse effects are foreseen for the site. There are no specified natural hazards in the region.

Authenticity and integrity

The aerials, station building, machinery and landscape of the Grimeton radio station are all original and have been well maintained. The aerials have been recently repainted, which needs to be done every 30 years. The main radio building has not been altered externally; minor alterations have taken place internally as operational requirements have changed over the years. Only one of the two original generator sets survives but that is in pristine original condition and is operational. The adjacent workers' village with its different-sized houses depending on social status has been well preserved and no significant alterations have taken place.

The surroundings of the site have also been maintained in a good condition, and the integrity of the landscape is intact.

Comparative evaluation

TICCIH, The International Committee for the Conservation of Industrial Heritage, has carried out a comparative study on radio transmitters. Following from this, the Grimeton Varberg Radio Station stands out as the best preserved and in many aspects unique heritage site.

Very few sites remain to document this early development, including some sites in Norway, America, Newfoundland

and Russia. Important is the early Marconi radio site of 1901 at the Lizard, Bass Point in Cornwall, England, and there are archaeological remains of the first antennae built by Fleming and Marconi in 1901 at Poldhu, England.

On the World Heritage List, so far, there are no other sites representing modern communication technology.

Outstanding universal value

General statement:

The Varberg Radio Station at Grimeton is an outstanding and exceptional monument representing the development of telecommunications in the early 20th century. The site is the only one remaining of this type. The original installations from the 1920s have been kept without major changes. Some new equipment has been added following the development in the field; the site thus represents a record over several decades of evolution. Even though not used anymore, except for limited purposes, the equipment has been maintained in working order.

Evaluation of criteria:

Criterion ii: The spread of the systems of worldwide communications from the middle of the 19th century with the development of submarine cables, has transformed the way in which people could communicate. The discovery of radio communication has greatly contributed to this development. The large numbers of Swedes who emigrated to America in the 19th century makes this site significant facilitating exemplifying how people could then be in touch across the ocean without vast expense. The Varberg radio station is an outstanding monument representing the process of development of communication technology after the First World War.

Criterion iv: The Varberg radio station at Grimeton is the only large radio station of the early 1920s to be preserved in the world, representing a major outcome of the early development. The site continued in use until the 1960s, and thus includes equipment documenting the further development of technology over some three decades.

4. ICOMOS RECOMMENDATIONS

Recommendation with respect to inscription

That the property be inscribed on the World Heritage List on the basis of *criteria ii and iv*:

Criterion ii: The Varberg radio station at Grimeton is an outstanding monument representing the process of development of communication technology in the period following the First World War.

Criterion iv: The Varberg radio station is an exceptionally well preserved example of a type of telecommunication centre, representing the technological achievements by the early 1920s, as well as documenting the further development over some three decades.

ICOMOS, March 2004

Station radio Varberg (Suède)

No 1134

1. IDENTIFICATION

<i>État partie :</i>	Suède
<i>Bien proposé :</i>	Station radio Varberg
<i>Lieu :</i>	Comté de Halland
<i>Date de réception :</i>	21 janvier 2003
<i>Catégorie de bien :</i>	

En termes de catégories de biens culturels, telles qu'elles sont définies à l'article premier de la Convention du patrimoine mondial de 1972, il s'agit d'un *monument*

Breve description :

La station radio Varberg de Grimeton dans le sud-ouest de la Suède fut construite en 1922-1924. C'est un monument exceptionnellement bien préservé consacré aux premières phases du système des télécommunications transatlantiques sans fil. Le site comporte le matériel de transmission, y compris le système d'antennes avec ses six pylônes de 127 m de haut chacun. Bien qu'ils ne soient plus utilisés régulièrement, les équipements ont été conservés en état de marche.

2. LE BIEN

Description

La station radio Varberg est située à 7 kilomètres à l'est de Varberg, dans la paroisse de Grimeton, au sud-ouest de la Suède. Le site couvre une superficie de 109,9 hectares et comprend des constructions abritant l'émetteur radiotélégraphique d'ondes ultralongues d'Alexanderson construit en 1922-1924, les pylônes portant les antennes, des transmetteurs d'ondes courtes et leurs antennes ainsi qu'une zone résidentielle comportant les logements de fonction du personnel de la station. Le bien proposé pour inscription se compose du site de la station d'origine à l'exception d'une zone contenant le « nouvel » émetteur et l'antenne de la station de radiodiffusion Teracom AB. Les principaux bâtiments, de style néoclassique, sont l'œuvre de l'architecte Carl Akerblad.

À l'intérieur du bâtiment qui abrite l'émetteur d'Alexanderson, près de la moitié du hall est occupée par l'alternateur à haute fréquence, également dû à Alexanderson, d'une puissance de 200 kilowatts, et les équipements qui l'accompagnent : baies de commandes, machines auxiliaires, transformateurs haute fréquence et le modulateur magnétique d'Alexanderson. Ces installations

sont en état de marche. L'autre moitié du hall contient des émetteurs d'ondes courtes installés à partir de la fin des années 1930. Ces derniers sont toujours en état de marche bien qu'ils ne soient plus utilisés, à l'exception de deux émetteurs qui sont remis en service occasionnellement.

La plus grande partie du site est occupée par le système d'antennes. Il repose sur six pylônes, de 127 m de haut chacun, disposés en ligne et espacés de 380 m. Les pylônes ont été dessinés et construits sous la surveillance du professeur Henrik Kreüger. Placé en haut de chaque pylône, un dispositif d'où rayonnent les ondes radioélectriques est relié à une bobine d'induction au sol. Enfoui dans le sol, un réseau de contrepoids de fils de cuivre s'étend jusqu'aux limites du site et des propriétés adjacentes. Un réseau de fils électriques portés par des poteaux en bois relie les bobines d'induction avec le réseau enterré. Un transformateur, destiné à faire fondre la glace et implanté à proximité du hall de l'émetteur, fournit de l'électricité pour chauffer les fils et éviter les problèmes de gel pendant l'hiver. Le site comprend aussi un grand nombre d'antennes de transmission par ondes courtes de différentes conceptions et dont certaines sont encore exploitées, ainsi que d'autres qui ne sont plus utilisées. La zone résidentielle comprend douze maisons destinées à héberger le directeur et le personnel de la station.

Histoire

Au XIXe siècle, les progrès scientifiques et techniques des télécommunications découlèrent des inventions scientifiques comme celles de Michael Faraday, J.C. Maxwell, H. Hertz et Guglielmo Marconi. L'utilisation du télégraphe a débuté dans la seconde moitié du siècle. À partir de là, les transmissions radioélectriques et télégraphiques se sont développées au début du XXe siècle. Les premières expériences de transmission radio transatlantique datent de 1915 et 1919.

En Suède, l'ingénieur en chef Ernst Fredrik Werner Alexanderson (1878-1975) a contribué de manière décisive à l'application de ces techniques. Il a mis au point plusieurs innovations, notamment l'alternateur haute fréquence pour obtenir des oscillations sinusoïdales (une fréquence propre non amortie), qui a permis d'améliorer la communication sans fil longue distance et qui a fourni les bases techniques de la téléphonie sans fil et conduit ensuite à la radiodiffusion. Il a aussi développé l'antenne à accords multiples, un système d'antennes verticales qui permit une importante amélioration des communications radio en ondes longues.

Alexanderson promut le programme de réseau radiotélégraphique international mis en place après la Première Guerre mondiale. La *Radio Corporation of America* fut constituée pour l'exploitation et la commercialisation de ces réalisations techniques. De la fin de la Première Guerre mondiale jusqu'au milieu des années 1920, le réseau international de stations a été construit selon les plans d'Alexanderson, y compris la station radio Varberg de Grimeton, construite en 1922-1924. L'ingénieur en génie civil Henrik Kreüger (1882-1953) fut chargé de la construction des six pylônes à Grimeton, les plus hautes structures construites en Suède à l'époque.

À la fin des années 1920, avec le développement rapide des émetteurs électroniques pour les communications radio longue distance, la technique mise au point par Alexanderson devint obsolète. De toutes les grandes stations du réseau Alexanderson, il ne reste aujourd'hui que la station radio Varberg, les autres ayant été modifiées ou démolies. La station Varberg a été utilisée en service normal jusque dans les années 1960 puis elle a été maintenue en état de marche pendant encore plusieurs années.

Politique de gestion

Dispositions légales :

Auparavant, le site était la propriété de *Telia Mobile AB* et de *Teracom Svensk Rundradio AB* avec l'État pour seul actionnaire. Les bâtiments résidentiels sont situés sur des terrains privés. Actuellement, la propriété de la totalité du site a été transférée à la Fondation du patrimoine mondial de Grimeton nouvellement constituée.

La station radio a été inscrite sur la liste du patrimoine culturel national en 1996 en vertu de la loi sur les monuments culturels (SFS 1988:950). Le conseil administratif du comté de Halland, situé à Halmstad, en est l'organe de surveillance.

Aux termes du Code de l'environnement et dans le cadre de la planification nationale, le Conseil du patrimoine national a déclaré la station radio et ses abords d'intérêt national pour la conservation du patrimoine. La municipalité de Varberg est responsable du suivi du site et de sa protection. Un plan d'ensemble préparé conformément à la loi d'urbanisme et de construction (SFS 1987:10) et adopté par le conseil municipal prévoit la protection de la zone de Grimeton.

Structure de la gestion :

La responsabilité de l'entretien et de la gestion du bien appartient essentiellement aux propriétaires. La décision finale sur les questions relatives à l'importance culturelle du site revient en dernier ressort au conseil administratif du comté, dans l'exercice de ses fonctions officielles. Le musée du comté apporte la connaissance technique. Aux termes de la loi d'urbanisme et de construction, la municipalité de Varberg doit faciliter l'évolution positive du site et de ses abords.

Un comité exécutif de gestion de la station radio a été établi. Il est constitué de représentants de *Telia Mobile AB*, du conseil administratif du comté et de la Société des amis d'Alexander. Le plan de gestion du bien pour la période 2003-2007 a été révisé par le Conseil local du patrimoine mondial de Halland en septembre 2003 pour tenir compte du nouveau mode de propriété.

Ressources :

Telia Mobile AB, le propriétaire du bien, entretient la station radio conjointement avec le conseil administratif du comté, pour un budget de 2,5 millions de couronnes suédoises par an. Un programme de travaux d'entretien des pylônes est en cours.

La Société des amis d'Alexander, essentiellement constituée d'anciens salariés de la station radio, a un rôle important dans la préservation de la mémoire et la transmission du savoir aux jeunes générations.

Au plan régional, l'expertise est fournie par le conseil administratif du comté et par le musée du comté de Halland pour les tâches appropriées. Le Conseil du patrimoine national et le Telemuseum apportent leur compétence en matière de conservation. Le Conseil, conjointement avec la Société des amis d'Alexander, le Telemuseum et *Telia Mobile AB*, a formé un comité d'étude des méthodes de conservation. Un colloque international organisé en 1997 a réuni des experts autour de problèmes relatifs à la conservation des anciens matériels électriques.

Encore utilisé aujourd'hui, le site n'est que partiellement ouvert au public depuis 1996, mais depuis l'ouverture, 4 500 visiteurs ont été accueillis chaque année. La construction d'un nouveau bâtiment est proposée pour l'accueil et l'information des visiteurs.

Justification émanant de l'État partie (résumé)

La station radio Varberg de Grimeton a été construite après la Première Guerre mondiale dans l'esprit du retour à des conditions de paix et la restauration de la communication entre les hommes. Le site est un exemple éminent des sites de communication transocéanique sans fil construits au début du XXe siècle ; il est le seul survivant des grandes stations de transmission radio basées sur les techniques antérieures à l'ère de l'électronique.

Critère ii : Avec le télégraphe sans fil, à la fin du XIXe siècle, les dernières barrières limitant les communications instantanées sur de très grandes distances disparurent. Vers les années 1920, tout point de la terre est en principe accessible par radio. Après la Première Guerre mondiale, un plan grandiose fut lancé pour relier les différentes parties du monde par un réseau de liaisons radiotélégraphiques ayant son centre à Radio Central, Long Island, New York, et utilisant la technique des transmissions en ondes longues d'Alexanderson. L'établissement de Grimeton fut créé dans le cadre du réseau mondial de radiotélégraphie qui a contribué à de nouveaux modèles de communication entre les pays et les continents. Dans les années 1940, quand de nombreuses liaisons furent interrompues, Grimeton servit de lieu d'échange de paroles libres entre l'Ancien et le Nouveau Monde.

Critère iv : La station radio Varberg présente l'éventail complet des techniques de la transmission sans fil, de l'époque antérieure à l'électronique aux moyens de communications actuels ; elle s'est agrandie et a évolué pour accueillir les nouvelles technologies. Les nouveaux bâtiments de la station abritent des matériels de transmission pour les communications longue distance en ondes courtes avec d'autres continents, des navires ou des avions partout dans le monde, mais aussi pour les émissions de radiotélévision en ondes ultracourtes et la téléphonie cellulaire et mobile. La plupart des installations de radiocommunication longue distance dans le monde ont été déclassées et démolies quand les ondes kilométriques

ont été remplacées par les transmissions en ondes courtes, celles-ci à leur tour remplacées par des communications par satellite.

3. ÉVALUATION DE L'ICOMOS

Actions de l'ICOMOS

Le site a été visité par une mission de l'ICOMOS en août 2003. Le comité international pour la conservation du patrimoine industriel (TICCIH) a été consulté au sujet de la station radio Varberg.

Conservation

Historique de la conservation :

La station radio a fonctionné jusque dans les années 1960 et elle est restée un site industriel jusqu'en 1997, n'ayant été que partiellement ouverte au public. Le site et les équipements ont été bien entretenus et sont en état de marche. Certains équipements sont encore utilisés par la marine suédoise et pour d'autres besoins. L'équipement du site pour recevoir des visiteurs est en cours.

État de conservation :

L'état de conservation du site est considéré comme très bon. La mission de l'ICOMOS est satisfaite de la vaste zone tampon prévue autour du site, empêchant la construction de toute grande structure susceptible d'affecter l'approche visuelle du site lui-même. Dans les limites du site proposé pour inscription sur la Liste du patrimoine mondial, il existe un certain nombre de mâts d'antenne plus petits, de lignes terrestres et d'autres structures mineures construites au cours de la période d'existence du site qui s'étale sur les soixante-dix dernières années. Certains de ces équipements peuvent être conservés, mais d'autres pourraient être supprimés dans le cadre de l'exploitation courante du site.

Gestion :

Le mode de propriété a été récemment changé et la totalité du site a été reprise par la Fondation du patrimoine mondial de Grimeton, nouvellement constituée. L'ancien propriétaire, Telia Mobile, a prévu une dotation pour l'entretien.

La Société des amis d'Alexander est forte de plusieurs centaines de membres et constitue une ressource précieuse pour l'interprétation du site et sa maintenance à long terme.

Un des revenus importants de la Fondation Grimeton proviendra de l'utilisation des équipements existants par la marine suédoise, et d'autres usages dans les communications. Ce revenu financera par exemple le recrutement d'un directeur de site qualifié.

Le plan de gestion révisé est considéré comme pleinement satisfaisant pour une gestion correcte du site.

Analyse des risques :

Le site proposé est situé dans une partie attrayante de la Suède qui connaît une assez forte pression de développement. Cette dernière portant cependant essentiellement sur la région côtière. L'implantation des usines éoliennes est régie par la loi et contrôlée par la municipalité. L'affectation et l'aménagement du sol sont parfaitement contrôlés et aucun effet défavorable n'est prévisible pour le site. La région ne connaît pas de risques naturels particuliers.

Authenticité et intégrité

Les antennes, les bâtiments de la station, les machines et le paysage de la station radio de Grimeton sont tous d'origine et ont été bien entretenus. Les antennes ont été repeintes récemment et doivent l'être tous les trente ans. Le principal bâtiment de la station radio n'a pas subi de modifications extérieures ; des changements mineurs ont été apportés à l'intérieur pour satisfaire l'évolution des conditions d'exploitation au fil des ans. Un seul des générateurs d'origine est en place, mais il est en état de marche, en parfaite condition et totalement d'origine. Le village voisin des ouvriers, avec ses constructions dont la taille varie en fonction du statut social de leurs occupants, est bien conservé et n'a pas subi de modifications importantes.

Les abords du site sont bien préservés et en bon état, et l'intégrité du paysage est respectée.

Évaluation comparative

TICCIH, le comité international pour la conservation du patrimoine industriel, a mené une étude comparative sur les transmetteurs radio. Il ressort de celle-ci que la station radio Varberg de Grimeton se distingue des autres stations comme étant la mieux préservée et, par bien des aspects, un site patrimonial unique.

Il subsiste très peu de sites témoignant des premières installations de transmission radio - quelques sites en Norvège, aux États-Unis, à Terre-Neuve et en Russie. Un site important est l'ancien site radio de Marconi datant de 1901 au cap Lizard, situé à Bass Point en Cornouaille, et on trouve également des vestiges archéologiques des premières antennes construites par Fleming et Marconi en 1901 à Poldhu, en Grande-Bretagne.

Jusqu'à présent, la Liste du patrimoine mondial ne comprend pas d'autres sites représentant la technologie moderne des télécommunications.

Valeur universelle exceptionnelle

Déclaration générale :

La station radio Varberg de Grimeton est un monument remarquable et exceptionnel représentant le développement des télécommunications au début du XXe siècle. Le site est le seul préservé de ce type. Les installations d'origine des années 1920 ont été conservées

sans changement majeur. Certains nouveaux équipements ont été ajoutés selon les progrès réalisés dans ce domaine ; le site témoigne donc de l'évolution des techniques sur plusieurs décennies. Même s'ils ne sont plus utilisés, sauf pour des besoins limités, les équipements ont été conservés en état de marche.

Évaluation des critères :

Critère ii : L'extension de systèmes de communications à l'échelle mondiale depuis le milieu du XIXe siècle, avec le développement des câbles sous-marins, a transformé le mode de communication entre les personnes. La découverte de la communication radio a beaucoup contribué à ce développement. Le grand nombre de Suédois qui ont immigré en Amérique au XIXe siècle souligne toute l'importance de ce site qui a facilité les contacts intercontinentaux pour un coût relativement modeste. La station radio Varberg est un monument exceptionnel illustrant le processus du développement de la technologie des communications après la Première Guerre mondiale.

Critère iv : La station radio Varberg de Grimeton est la seule grande station radio du début des années 1920 à être conservée dans le monde, témoignant de l'application de grands développements scientifiques. Le site fut utilisé jusque dans les années 1960, et contient donc des équipements témoignant du développement technologique sur près de trois décennies.

4. RECOMMANDATIONS DE L'ICOMOS

Recommandation concernant l'inscription

Que le bien soit inscrit sur la Liste du patrimoine mondial sur la base des *critères ii et iv* :

Critère ii : La station radio Varberg de Grimeton est un monument exceptionnel qui témoigne du processus de développement de la technologie des communications dans la période qui suit la Première Guerre mondiale.

Critère iv : La station radio Varberg est un exemple exceptionnellement bien préservé d'un type de centre de télécommunications qui représente les réalisations technologiques du début des années 1920, et qui apporte des éléments d'information sur l'évolution des télécommunications sur quelque trois décennies.

ICOMOS, mars 2004