Viking-Age Ring Fortresses (Denmark) No 1660

1 Basic information

Official name as proposed by the State Party
Viking-Age Ring Fortresses

Location
Vesthimmerland, Mariagerfjord, Odense, Slagelse and Køge Municipalities
Northern Jutland, Southern Denmark and Zealand Regions
Denmark

Brief description
The Viking-Age Ring Fortresses consist of five archaeological sites comprising a system of monumental ring-shaped Viking-Age fortresses sharing a uniform geometric and scalable design. The fortresses at Aggersborg, Fyrkat, Nonnebakken, Trelleborg and Borgring were positioned strategically near important land and sea routes across the Jutland peninsula and on the islands of Funen and Zealand in present-day Denmark. Each made use of the natural topography of their surrounding landscape for defensive purposes. Constructed between about 970 and 980 CE, they were in use for only a short period of time. While their function can only be inferred, their scale, shared layout and resource-intensive engineering, as well as their short period of construction, suggest a symbolic role in the consolidation of the kingdom of Denmark under King Harald 'Bluetooth' Gormsson. They are seen as an emblematic demonstration of the centralised power of the Jelling Dynasty, and a testimony to the socio-political transformations that the Danish realm underwent in the late 10th century, which included conversion to Christianity. They also signalled a wider transition in Northern Europe, which saw the formation of Nordic states and the beginning of the Scandinavian Middle Ages.

Category of property
In terms of categories of cultural property set out in Article I of the 1972 World Heritage Convention, this is a serial nomination of five *sites.*

Included in the Tentative List
30 January 2018

Background
This is a new nomination. The World Heritage Committee previously examined the transnational serial nomination Viking Age Sites in Northern Europe, Denmark, Germany, Iceland, Latvia and Norway at its 39th session (Bonn, 2015):

Decision: 39 COM 8B.22

The World Heritage Committee,

1. *Having examined Documents WHC-15/39.COM/8B and WHC-15/39.COM/INF.8B1,*
2. *Defers the examination of the nomination of the Viking Age Sites in Northern Europe, Denmark, Germany, Iceland, Latvia and Norway, to the World Heritage List in order to allow the States Parties to:*
   a) *Explore further the full scope, scale and nature of Viking Age sea and river migration and trade routes, and the settlements that these routes engendered through:*
      (i) *Definition of the main parameters of time, space and cultural terms related to the migrations;*
      (ii) *Mapping of the major migration and trade routes and of the surviving evidence for Viking trade settlements along these routes;*
      (iii) *Selection of the routes where significant remains survive which illuminate migration and trade and the key facets of influence and cultural exchange;*
   b) *Define a nomination strategy, that might include one or more series, which could allow key aspects of the Viking Age migrations to be reflected on the World Heritage List, and allow future nominations to be accommodated;*
   c) *On the basis of this further work, submit a new serial nomination;*
3. *Considers that any revised nomination would need to be considered by an expert mission to the sites;*
4. *Recommends that the States Parties consider inviting ICOMOS to offer advice and guidance in the framework of the Upstream Process.*

As recommended by the World Heritage Committee, ICOMOS provided advice to the State Party under the Upstream Process from October to December 2019.

Consultations and technical evaluation mission
Desk reviews have been provided by ICOMOS International Scientific Committees, members and independent experts.

An ICOMOS technical evaluation mission visited the nominated property from 27 September to 1 October 2021.

Additional information received by ICOMOS
A letter was sent to the State Party on 5 October 2021 requesting further information about the boundaries, as well as the protection of the nominated property and its buffer zones.

Additional information was received from the State Party on 12 November 2021.

An Interim Report was provided to the State Party on 20 December 2021 summarising the issues identified by the ICOMOS World Heritage Panel.
Further information was requested in the Interim Report regarding the extent of scheduled areas within the proposed boundaries, the protection of component part 5 (Borgring) and of the broader landscape, and management.

Additional information was received from the State Party on 17 February 2022.

All additional information received has been incorporated into the relevant sections of this evaluation report.

Date of ICOMOS approval of this report
9 March 2022

2 Description of the nominated property

Note: The nomination dossier and additional information contain detailed descriptions of this property, its history and its state of conservation. Due to limitations on the length of evaluation reports, this report provides only a short summary of the most relevant aspects.

Description and history
The nominated property is a chain of five monumental ring-shaped fortresses that constituted a system constructed in the late 10th century CE under the rule of King Harald 'Bluetooth' Gormsson. Built in a short space of time (about 970 to 980 CE) using large-scale resource-intensive engineering, the enclosures were strategically positioned across the Viking-Age Danish kingdom close to important communication and trade routes. The common feature of the fortresses was their precise geometrical and scalable design, which incorporated natural topographical features for defensive purposes.

Aggersborg (component part 1)

The largest of the circular fortresses, Aggersborg, is the northernmost of the archaeological sites. It was located on a prominent rise, opposite today's town of Løgstør in Northern Jutland, on the shore of Limfjord, which was the key Viking-Age military and commercial east-west transit corridor and one of the most important navigation routes in Northern Europe at the time. Due to its strategic position, Aggersborg controlled the maritime Limfjord passage and part of the Haervejen – the historic main road running north-south through the Jutland peninsula. Aggersborg fortress was in use from the early to mid-970s to about 1000 CE. The fortress was probably the royal seat in medieval times, as evidenced by a fortified royal estate constructed on the beach in the period from about 1200 to 1300 CE.

Fyrkat (component part 2)

Fyrkat fortress, located near the present town of Hobro in Northern Jutland, was situated on a promontory overlooking the valley of the Onsild Å river. It was positioned to control a section of the Haervejen and the Mariager Fjord, which provided access to the Kattegat sea. Built in 975 CE, the fortress functioned for about five to fifteen years before being destroyed by fire.

Nonnebakken (component part 3)

The fortress at Nonnebakken was built on a promontory on Funen island in proximity to a river and marshes. It was constructed next to the Viking-Age settlement of Odense, which slowly developed after 900 CE to become a town that is now the third largest city in Denmark. Odense eventually took over some of the functions of the fortress, once the latter ceased to operate. In the 12th century CE a Benedictine convent was created on the site. From the 19th century onwards city buildings and streets spread over the site of the fortress. Today, Nonnebakken fortress is the only component part of this serial nomination located in an urban context, buried under the central area of present-day Odense.

Trelleborg (component part 4)

Trelleborg fortress, situated near Slagelse on Zealand island, was erected on a small peninsula between the Tude Å and Vårby Å rivers. The straits between Zealand and Funen islands were major seaborne traffic lanes and served as choke points to the Baltic Sea. The strongest fortified site of all five, it is the only one with an outer ward protected by an additional outer rampart with a gateway. Longhouses arranged in an arch shape stood inside the ward. The outer fortification was added after a fire in 980-981 CE. The fortress was in use from the early to mid-970s to about 1000 CE, and possibly re-occupied in the High Middle Ages. It was erected on an earlier Neolithic and Iron Age site. Among the finds uncovered at Trelleborg is the only complete Viking warrior's shield found in Denmark. North of the fortress, evidence of work associated with shipbuilding was discovered.

Borgring (component part 5)

Borgring fortress on Zealand island was situated on a slope overlooking the Køge Å river. It protected land-based traffic. The fortress had no ditch, but was surrounded by a brook and water-locked depressions that probably played a similar protective role.

All five fortresses, which vary in size, were equipped with a circular rampart with four gateways located close to the cardinal points, which divided the interior into four radial segments. Aggersborg, Fyrkat, Trelleborg and Nonnebakken fortresses had a concentric ditch. The internal layout of these enclosures included axial streets encircled by a ring street. Geometrically ordered near-identical wooden longhouses stood inside the structures. No axial or ring streets have been recorded at Borgring. The absence of longhouses, street grid, or a ditch may suggest that this fortress was never completed, or that it served a symbolic purpose.

Cemeteries were found outside the circular rampart at Fyrkat to the northeast of the fortress, and at Trelleborg inside the outer ward. The graves at Trelleborg show evidence of pagan and Christian burials. At Fyrkat, the burials are considered pagan.

Abandoned after a short period, the ring fortresses show no evidence of having been maintained. They possibly stopped serving their intended purpose – offensive or defensive. The function of the fortresses can only be inferred. Finds from excavations conducted at the archaeological sites include crafts and items of daily life activities, as well as grave goods and death paraphernalia.

The area of the five component parts originally totals 49.333 ha, with buffer zones totalling 10.802 ha. The boundary of component part 1, Aggersborg, includes the fortress from the outer berm of the ditch with a limited external zone to the west and north. The boundary of component part 2, Fyrkat, encloses the fortress and a cemetery located immediately to the northeast of the structure. The boundary of component part 3 surrounds the extent of the Nonnebakken fortress and includes, to the north, the possible location of the so-called "Odins Vi" shrine. The boundary of component part 4, Trelleborg, encompasses the fortress and the ward with its radially-set houses and the cemetery, as well as the area to the north, at the confluence of Tude Å and Vårby Å rivers, where evidence of work related to shipbuilding has been found. The boundary of component part 5 includes the fortress and the area around Borgring, reflecting future research potential.

The buffer zones around the component parts include the important immediate and wider setting of each fortress, as well as key views. In component part 1, the large buffer zone includes evidence of earlier and later activity on the site, the coastal foreland south of the fortress and the approach to the island of Borreholm. The area through which the Haervejen must have passed in the vicinity of Aggersborg is included as well. At Fyrkat and Trelleborg the buffer zones include almost all the visual catchment of the archaeological sites, even though in the first case the buffer zone does not include the whole of the Onsild Å river valley, and in the second case it does not include the whole course of the Tude Å river. At Borgring the buffer zone extends around the nominated property about 300 metres to the north, east and south, and about 400 metres to the west. It does not encompass the entire course of the Køge Å river. At Nonnebakken the entire historical context of the Viking-Age and medieval city of Odense is included in the buffer zone as an important setting.

The construction of the fortresses can be linked to a period of instability and political conflict that threatened the Danish realm under the Jelling Dynasty. It also coincides with a major cultural change in the Danish kingdom, namely its conversion to Christianity. The fortresses were part of a larger infrastructural project of King Harald, who created a network of defences that spread across what is now Denmark, northern Germany, southern Sweden and Norway. Strategically spaced in military terms and erected in relation to key fortified settlements of the time, they might have served as symbolic royal power bases in the political landscape of chiefdoms. Together with older central places of political and religious importance, and the earliest fortified towns, they constituted a centralised national control system tactically planned and implemented by the Danish king at the end of the 10th century CE.

ICOMOS notes that the State Party acknowledges the existence of two somewhat similar archaeological sites in Scania, in present-day Sweden. The ring fortresses of Trelleborgen and Borgeby may have once belonged to this group, as they share characteristics with the nominated property. However, since their dating is inconclusive and they do not appear to reflect the same geometrical precision in form and design as the nominated property's component parts, it is currently impossible to unequivocally conclude that they represent the same type of enclosure.

State of conservation

Archaeological research that has taken place at the component parts for almost a century continues with varying intensity to the present day.

Large-scale excavations and smaller targeted archaeological campaigns have been held at Aggersborg (component part 1) since 1945. The Fyrkat fortress site (component part 2) was first excavated in 1943. The works there included investigations of the cemetery. The first excavations at Nonnebakken fortress (component part 3) took place in 1953, while early excavations on the site of the Trelleborg fortress (component part 4) were conducted in 1934-1942. The Borgring site (component part 5) has only recently been identified as a Viking-Age ring fortress, following excavations in 2014.

To a large extent, investigations at Borgring and Nonnebakken have involved non-invasive geophysical surveys. In the 2000s, investigations at all sites included interdisciplinary topographical research that aimed to establish and map possible links between the Viking-Age ring fortresses, the maritime environment and military naval power of the time. More investigations are being planned at Trelleborg fortress in the near future (including experimental archaeology) and at Fyrkat, where another potential cemetery will be examined. Future geo-radar surveys and test drilling at Nonnebakken will help to better understand the landscape setting of this fortress.

The above-ground elements of the component parts have suffered gradual decay from the time they were abandoned. Contemporary fires destroyed wooden features, and recycling of wood and stones by the populations living in the vicinity probably further denuded the structures. Natural erosion of earthwork ramparts paired with sustained farming activities on the sites until the 19th and even 20th centuries have further affected the enclosures.

Based on the information provided by the State Party and the observations of the ICOMOS technical evaluation mission, ICOMOS considers that the state of conservation of the below-ground elements of the nominated property is good at all five component parts, and that the archaeological deposits are well preserved. Even at Nonnebakken, the structures buried under the city of Odense have been proven to be sufficiently preserved. The key above-ground features of all fortresses are traceable.

Factors affecting the nominated property
Based on the information provided by the State Party and the observations of the ICOMOS technical evaluation mission, ICOMOS considers that the main factor affecting the nominated property is development pressure. Currently, none of the component parts suffers from any physical threats. Four of them are located in rural settings where agricultural activities are permitted only within the existing agricultural areas. Component part 3, Nonnebakken, is located in an urban context and is subjected to typical minor development pressures associated with urban renewal interventions, infrastructural adjustments and other building maintenances.

ICOMOS notes that some pre-existing elements of infrastructure affect the nominated property, especially their visual impact on the proposed Outstanding Universal Value. A small portion of the eastern perimeter of Aggersborg fortress (component part 1) is under a road, which negatively affects the ability to understand the site. Wind turbines located within and outside the buffer zone of Aggersborg also affect views to and from the component part, though key vistas to the southwest are not affected. The wind turbines within the buffer zone will be removed at the end of their lifespan. Only the clusters located outside the buffer zone will be replaced with new turbines. At Trelleborg (component part 4), one wind turbine within the buffer zone, which has a negative visual impact, will be removed at the end of its lifecycle. Wind turbines outside the buffer zone are visible in the northern direction, but have little to no impact in terms of key vistas.

At Borgring (component part 5), a highway running close to the eastern boundary of the fortress intrudes into its immediate setting, which has a negative visual impact on the component part and produces traffic noise. Borgring lies within an area designated for a transport corridor laid out by the Danish State. Additional information provided by the State Party in November 2021 informed that the current plans for the corridor do not foresee changes to the existing carrying capacity of the highway near the Borgring component part. Should future expansion become necessary, it will involve widening of the road to the east, so as not to affect the archaeological site.

In terms of new developments, a “Hobro West” road link is planned about one kilometre northeast of Fyrkat fortress, outside the eastern perimeter of the component part 2 buffer zone. The State Party reports that a provisional Heritage Impact Assessment indicates this anticipated project will have no negative impact on the nominated property’s proposed Outstanding Universal Value.

New tourist infrastructure will be developed at Fyrkat, Trelleborg and Borgring. Provisional Heritage Impact Assessments prepared for these proposed developments indicate that none will have any physical or visual impacts on the nominated property’s proposed Outstanding Universal Value. Plans have also been developed to improve the visualisation and presentation of the Nonnebakken fortress. The proposed installations will have no physical impact on the below-ground archaeological deposits.

No major environmental pressures, including long-term effects of climate change, have been identified for any of the component parts. The locations of the fortresses on promontories and elevated plateaus, as well as robust vegetation covering the fortresses’ enclosures, serve as additional protection against environmental threats. Periodic monitoring of the water table should be considered, given the depth of some archaeological deposits, long-term precipitation variations and the associated changes to groundwater levels.

Despite high concentrations of visitors in the peak-season months and the almost unrestricted access to the archaeological sites, no deterioration of the fortresses is anticipated due to tourist inflow, even if traffic intensifies.

ICOMOS considers that the state of conservation is satisfactory and that factors affecting the nominated property are being controlled effectively.

3 Proposed justification for inscription

Proposed justification
The nominated property is considered by the State Party to be of Outstanding Universal Value as a cultural property for the following reasons:

- Viking-Age Ring Fortresses bears exceptional testimony to a cultural tradition through a system of large-scale circular fortresses that were a functional and symbolic expression of the new concept of state power in late 10th-century southern Scandinavia. As one of the great building projects of King Harald ‘Bluetooth’, this series signifies nobility, kingship and authority, and demonstrates Harald’s ability to command and utilise great resources during a key transition period in Northern Europe that included the conversion to Christianity.
- This group of outstanding monumental military works is without parallel in Scandinavia, and is exceptional within the wider European Early Medieval context. The ensemble makes a key contribution to the interpretation of historic developments in Viking-Age Scandinavia and Northern Europe, including early state formation. Shared characteristics include a monumental appearance, precise geometrical and symmetrical layouts, a circular shape enclosing a symbol of a cross, and similarity in construction. In terms of Viking-Age military architecture, it embodies the apogee of design, construction and use of traditional materials.

Based on the nomination dossier, the key attributes of the nominated property are: a uniform geometric and scalable design, which included circular earthwork rampart with four gateways located close to the cardinal points and,

typically, a concentric ditch, as well as internal axial streets encircled by a ring street; strategic location in the territory and close to major communication routes; and purposeful use of natural topography of the surrounding landscape.

Comparative analysis

The comparative analysis has been developed on the grounds of three parameters: the role of the system of fortifications that were developed and used over a short period of time in the process of state formation; the strategic location of the chain of fortresses, spread across a vast territory with strong regard to landscape features; and the precise symmetrical and geometrical layout and scalable design of the circular fortresses, with shared structural elements. These parameters have been considered within typological, chronological-regional and thematic frameworks. The fortresses have been considered as types of military properties under archaeological heritage. They were compared using the geo-cultural context of Scandinavia and Northern Europe, and Central/Eastern and Western Europe more broadly, within a timeframe of about 800 CE to 1100 CE. Within the thematic framework, the nominated property has been compared to structures revealing political and cultural associations with state formation, and the issues of power and control.

The comparative analysis has examined properties within Northern, Eastern and Western Europe inscribed on the World Heritage List and sites included in the Tentative Lists of States Parties, as well as other properties. Given the large number of fortified sites that date to about 800 to 1100 CE within the chosen geo-cultural context, the analysis focused on the most relevant examples representing the specified parameters.

Comparators on the World Heritage List include Jelling Mounds, Runic Stones and Church (Denmark, 1994, criterion (iii)) and Archaeological Border Complex of Hedeby and the Danevirke (Germany, 2018, criteria (iii) and (iv)). Neither, however, specifically includes a (ring) fortress, or can be considered a system.

Among sites on the Tentative Lists, the closest comparators include Western Stone Forts (Ireland, Tentative List); The Royal Sites of Ireland: Cashel, Dún Ailinne, Hill of Uisneach, Rathcroghan Complex, and Tara Complex (Ireland, Tentative List); Grobiņa archaeological ensemble (Latvia, Tentative List); and Sites of Great Moravia: Slavonic Fortified Settlement at Mikulčice – Church of St. Margaret at Kopčany (Czechia and Slovakia, Tentative Lists). None of these sites share the full combination of attributes with the nominated property. The key similarity in each of them is their function as some sort of centre of power. They do not demonstrate evidence of systematic planning according to a precise design, and all were constructed and used over a long period of time.

With regard to fortifications not on the World Heritage List or Tentative Lists, a large number of sites in Scandinavia and the Baltic seaboard, Central, Eastern and Western Europe, and the British Isles have been analysed using a qualitative approach. Among the Danish sites, fortified towns (e.g., Ribe, Aarhus), bridges (e.g., Ravning Enge Bridge near Jelling) and aristocratic settlements with palisades (e.g., Gammel Lejre, Tissø) were considered, though they differ from the nominated property in terms of typology.

The circular fortresses in present-day Sweden are important comparators, particularly the ring fortresses of Trelleborgen and Borgeby. Located in Scania in what was part of Danish territory at the time of King Harald 'Bluetooth', they were most probably associated with the nominated property, with which they share similarities. Current scholarship suggests that they were modified at the time the Danish ring fortresses were constructed, in order to be incorporated into the same network. However, it has not yet been established that they represent the same type of enclosure as the nominated series. Another potential comparator is a fortress at Foteviken in Scania. However, the current state of investigations there does not allow for a clear conclusion.

Frisian, Saxon and Slavic ring fortresses, which are considerably older, have been included in the comparative analysis as possible sources of inspiration for the nominated Viking-Age ring fortresses. Typical Slavic fortresses (e.g., Cösitz, Burg von Tornow and Raddusch, all in present-day Germany) rarely had a completely circular form and were smaller than the nominated sites. Among Frisian circular fortresses, a group of five *ringwallburgen* situated around the mouth of the river Scheldt in present-day Netherlands can be considered the closest model for the nominated property. Yet, the *ringwallburgen*, and other Frisian fortresses located in present-day Germany (e.g., Borgsumsberg and Tinnumburg), do not form part of a network.

A key comparator in present-day United Kingdom is the Burghal Hidage, King Alfred's defensive network erected about the 880s CE for the kingdom of Wessex. An example of a network of fortified places connected by military roads, which together formed a system financed by a new system of taxes, the Burghal Hidage nevertheless lacks the uniformity of plans that characterises the Viking-Age Ring Fortresses. In addition, it has evolved over many centuries, with most of its forts developing into towns and cities.

ICOMOS considers that the comparative analysis has demonstrated that the nominated serial property's combination of proposed Outstanding Universal Value and attributes is not yet represented on the World Heritage List. There are no contemporaneous architectural parallels to these ring fortresses as a unified system erected on the basis of a precise, scalable design, and which could be said to demonstrate the process of power consolidation and early state formation in the Northern European context.

ICOMOS notes that the ring fortresses at Trelleborgen and Borgeby in Sweden might conceivably be included in the nominated serial property. Should further research demonstrate convincingly that they are of the same type as the nominated series and belonged to the same group, ICOMOS considers that an extension of the current nominated serial property could be proposed by the relevant States Parties as a potential transnational serial property.

ICOMOS considers that the comparative analysis justifies consideration of this property for the World Heritage List.

Criteria under which inscription is proposed

The property is nominated on the basis of cultural criteria (iii) and (iv).

Criterion (iii): *bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;*

This criterion is justified by the State Party on the grounds that this chain of Viking-Age ring fortresses testifies to the socio-political phenomenon of the early state formation and Christianisation of Nordic tribes in southern Scandinavia. Constructed in the late 10th-century during the reign of King Harald 'Bluetooth', the five monumental enclosures testify to the sovereign authority of the Danish royalty. As a coherent system, they constitute an ideological marker of the unification of the kingdom of Denmark and an expression of the new concept of centralised royal power, which triggered the transition to statehood amongst Nordic chiefdoms and petty kingdoms. They may also be seen as a symbolic expression of a cultural shift that the Danish kingdom underwent upon King Harald's conversion to Christianity, which subsequently led to the integration of the region into the European cultural tradition.

ICOMOS considers that the nominated serial property can be seen as an exceptional testimony to the process of state formation and an expression of a cultural shift in the geo-cultural context of Scandinavia and Northern Europe. The monumental scale of the Viking-Age ring fortresses, built in a precise manner and within merely a decade, signifies a high degree of centralised control and is evidence of King Harald's state-building ambitions as well as his ability to muster military power, resources and local workforce to create a coherent system of surveillance and control spread over a vast territory.

Criterion (iv): *be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;*

This criterion is justified by the State Party on the grounds that the ring fortresses represent an outstanding example of monumental military architecture in Scandinavia and an exceptional integrated system within the wider context of the European Viking Age. They demonstrate high technical values of construction, and the exceptionality of a strictly-ordered geometry in scalable form which used natural topographical features for defensive purposes. Sharing a precise symmetrical layout and design, the five fortresses constitute a monumental unified system constructed between about 970 and 980 CE. Positioned strategically in the landscape and close to key communication and transport routes, they testify to the strong central power of the Jelling Dynasty, and particularly King Harald, who unified the vast territory under his rule.

ICOMOS considers that the nominated serial property is an exceptional example of military architecture that illustrates the centralisation of power in the Viking-Age Northern Europe, which led to the process of state formation, a significant stage in human history. It is outstanding in terms of the coherence of the design and construction of the entire ensemble, and its geometrical and symmetrical accuracy is impressive. The precise manner in which all five fortresses were built in a short time testifies to the existence of centralised power that was required to control and manage such a monumental infrastructure project involving resource-intensive engineering. Their strategic positioning linked to the control of major land and sea routes, and their territorial spread, hint at a unified system of governance over a vast area.

ICOMOS further considers that the typological uniformity of the component parts of the nominated property supports the serial approach. ICOMOS notes that Borgring fortress (component part 5) lacks evidence of a concentric ditch as well as axial and ring streets. However, ICOMOS notes that the absence of these elements can possibly be interpreted as the monument not having been completed, or having served solely symbolic purposes.

ICOMOS considers that the nominated property meets criteria (iii) and (iv), and that the serial approach is justified.

Integrity and authenticity

Integrity

The integrity of the nominated property is based on the wholeness and intactness of the design features and construction elements of the five ring fortresses that constitute a coherent group of archaeological sites. The boundaries have been drawn to encompass the archaeological and landscape elements that contribute to the proposed Outstanding Universal Value. The selection of serial component parts is justified.

The nominated serial property is of an appropriate size to include all the relevant attributes, including preserved above-ground earthworks and underground archaeological deposits. The above-ground elements have suffered gradual decay from the time the fortresses were abandoned. They have survived best at Aggersborg, Fyrkat and Trelleborg (component parts 1, 2 and 4). At Nonnebakken and Borgring (component parts 3 and 5),

the fortresses are barely discernible in the landscape as small elevations in the terrain. Located in rural areas, Aggersborg, Fyrkat, Trelleborg and Borgring are grass-covered. Agricultural activities are not allowed within these component parts. The ring fortress of Aggersborg has a farm occupying a part of its surface, and a section of its eastern perimeter is under a road, both of which detract from the integrity of this component part. Nonnebakken fortress, situated in an urban context, is completely covered by urban fabric, which affects the integrity of the site. It is vulnerable to typical urban development pressures, which are minimised and managed through existing spatial planning.

Elements of modern infrastructure have a negative visual impact on some of the individual component parts, especially wind turbines located within sight of Aggersborg and Trelleborg, as well as a highway passing close to the boundary of the Borgring fortress. The landscapes around the fortresses, especially at Fyrkat, Trelleborg and Nonnebakken, have changed substantially since the 10th century CE due to natural and anthropogenic factors.

The value of the nominated property as a whole lies primarily in archaeological deposits, which have been preserved at all component parts, even in areas previously excavated. The forms of the excavated features survive intact in the subsoil. ICOMOS notes that approximately fifty percent of the stratigraphy at Nonnebakken can be deemed preserved, which affects the wholeness of the underground deposit. Despite archaeological investigations that may have compromised the wholeness of the component parts, ICOMOS considers that the surviving below-ground elements and deposits at all five fortresses are sufficient to sustain the proposed Outstanding Universal Value of the nominated property.

Finds from excavations at the archaeological sites are stored at the local museums in respective municipalities and the National Museum of Denmark in Copenhagen.

ICOMOS notes that only the known extent of archaeological remains and the natural topographical features that formed an integral part of the defensive structures of the fortresses have been included within the boundaries of the component parts. The broader landscapes that constituted the strategic settings of the fortresses are contained within the buffer zones. ICOMOS recognises that these broader landscapes have a high level of protection, in terms of both their cultural and natural values, through relevant protection regimes and spatial planning documents that apply in the buffer zones. Nevertheless, ICOMOS considers that the boundaries of the component parts should be expanded, if and when possible, through minor boundary modification request to include the strategic landscape settings of the fortresses.

While some specific adverse effects of development have been identified, ICOMOS considers the integrity of the whole series of the nominated property as well as of each of the component parts to be satisfactory.

Authenticity

The authenticity of the nominated property is based on the ability of the series as a whole to truthfully and credibly express its cultural values through its attributes. It can be said to be authentic in its forms, designs, materials and substance as demonstrated by archaeological evidence, as well as the locations and settings of the component parts.

The archaeological deposits of the nominated property are preserved largely intact. The original forms of the fortresses have survived unaltered below ground at all component parts. ICOMOS considers that the original designs of the fortresses are authentic at all five component parts.

The above-ground elements have been substantially damaged. At Aggersborg, Fyrkat, Trelleborg and Borgring (component parts 1, 2, 4 and 5), farming activities and erosion over the centuries have affected the authenticity of the sites. Historic fires have destroyed the wooden elements of the fortresses. Recycling of wood and stones by the populations living in the vicinity might have further denuded the structures. These four fortresses are currently grass-covered. The area of Aggersborg fortress is also partly occupied by a farm, which affects the overall authenticity of this component. At Aggersborg, Fyrkat and Trelleborg, what remained of the original ramparts has been encased in protective layers of earth and turf, and the ditches have been re-cut. Undertaking such an indicative visualisation, rather than a reconstruction, is inspiring but may be confusing, as the actual surviving extent of the original ramparts, which are preserved in the earthworks but not visible, is not distinguishable. Nonnebakken fortress is covered by an urban overlay, its above-ground elements having been destroyed. The lack of more substantial above-ground remains here has an adverse impact on the ability of the series as a whole to fully convey its values.

The landscapes of the five fortresses have evolved and been transformed substantially through the centuries. The Kongens Borge (“The Kings’ Fortresses”) research project has been instrumental in mapping the changes. Research on the topography of the archaeological sites is ongoing. ICOMOS considers that, while the locations of the fortresses are geographically the same, the settings have partly changed.

Despite changes that occurred through centuries, ICOMOS considers the authenticity of the whole series of the nominated property as well as of each of the component parts to be satisfactory.

In conclusion, ICOMOS considers that the conditions of integrity of the whole series and of the individual component parts have been met, and that the conditions

of authenticity of the whole series and of the individual component parts have been met.

Boundaries
There are 140 people living within the nominated property – all within component part 3, Nonnebakken – and 12,322 within the boundaries of the buffer zones.

The boundaries of the component parts have been logically defined by the extent of the known or presumably preserved archaeological material, and include the features of the natural topography that formed an integral part of the defensive structures of the fortresses as well as other associated external elements. The boundaries have been delineated using either topographical features or administrative boundaries of the component parts of the nominated property. This approach has been applied consistently by the State Party.

The buffer zone around each component part has been established with the intent of protecting the important immediate and wider setting of each fortress as well as key views. Earlier or later evidence of activities around each ring fortress is also included within its buffer zone.

In the additional information received by ICOMOS in November 2021, the State Party explained that the buffer zones constitute an additional layer of protection for the fortresses and the fortifying elements of the natural topography, thus supporting the proposed Outstanding Universal Value of the nominated serial property. They also protect the important strategic locations of the fortresses in the broader landscapes in relation to key land and sea routes.

Evaluation of the proposed justification for inscription
In summary, ICOMOS considers that the comparative analysis justifies consideration of the nominated property for the World Heritage List. ICOMOS also considers that the proposed justification for inscription under criteria (iii) and (iv) is appropriate. The serial approach is justified, and the selection of component parts is appropriate. ICOMOS further considers that the conditions of integrity and authenticity of the whole series and of the individual component parts have been met.

4 Conservation measures and monitoring

Documentation
Historical and archaeological records, including maps and results of geophysical surveys and research programmes into the landscape and topography, are available for each component part. All structural elements and known archaeological remains within the component parts have been recorded. The landscape context has been documented using topographical and historical maps, LiDAR images and computer-based models.

Inventories and reports, as well as key cartographic material and data related to the protection and maintenance of sites, are stored at the Vesthimmerlands Museum, Historical Museum of Northern Jutland, Trelleborg Museum, Museum Southeast Denmark, Odense City Museums and National Museum of Denmark. The robust records constitute the baseline documentation for all the attributes of the proposed Outstanding Universal Value, and are adequate for future management, conservation arrangements and monitoring, as well as for disaster responsiveness.

In the additional information sent in February 2022, the State Party confirmed that all data from the archaeological investigations in the component parts, including details of the finds, have been registered in relevant online databases, some of which are accessible to the general public. A detailed review of the excavated objects has been published.

Artefacts excavated at the archaeological sites are stored under safe conditions in the National Museum of Denmark and local museums affiliated to the component parts – Hobro Museum (Fyrkat), Odense City Museums (Nonnebakken), Trelleborg Museum (Trelleborg) and Museum Southeast Denmark (Borgring). The objects are either in exhibition or in secure magazines, access to which is granted on request.

Conservation measures
Responsibility for maintenance of the nominated serial property resides with the relevant municipalities cooperating with local museums and, in the case of Nonnebakken, private owners. Experienced staff monitor the sites daily and implement conservation measures when necessary.

There is no long-term conservation plan in place for the nominated property. However, the activities in place are programmed. The maintenance of archaeological sites consists mostly of cutting the grass twice a year. Sheep grazing is practiced at Trelleborg, and is to be introduced at Fyrkat. No conservation measures are currently in place at Nonnebakken.

Monitoring
In the event of inscription on the World Heritage List, monitoring through the assessment of the condition of the nominated property's attributes will be done once every three years (at the beginning and mid-point of the Periodic Reporting cycle) using a four-point scale: preserved in a stable or improving condition; compromised; seriously compromised; or lost, where a major loss of significance would be recorded. Records will be kept in the museums at each component part. Factors affecting the property will be assessed and recorded annually. Erosion, water levels and severe weather events will be monitored and assessed, based on their spatial and temporal scale and their impact on the attributes.

ICOMOS observes that it is not clear what baseline data will be used as a point of reference for monitoring

purposes. No limits to acceptable changes or threats have been provided to inform actions.

ICOMOS considers that appropriate conservation measures based on regular maintenance have been deployed where necessary. However, an overarching long-term conservation plan should be developed for the nominated serial property.

5 Protection and management

Legal protection
All components are legally protected at the national level as scheduled ancient monuments by the Danish Museum Act (No. 1505 of 14 December 2006), which prohibits any physical alterations to the archaeological sites. Additional national designations add a layer of protection to the selected archaeological sites or parts thereof. Except for Borgring (component part 5), the sites are protected by the Danish Protection of Nature Act (No. 1042 of 20 October 2008), which includes a hundred metres protection zone around any scheduled ancient monument in which no physical alterations to the setting or the archaeological layers can be made, nor buildings erected without prior approval of the Danish Nature Agency.

Aggersborg, Fyrkat, Trelleborg, and Borgring (component parts 1, 2, 4 and 5) are located within areas designated as Rural Zones, where changes in land use are prohibited and agricultural land use restricted to existing agricultural areas. Nonnebakken (component part 3), situated within an urban context, falls under special national designation as a Cultural Heritage Area, where the heritage status of a location requires archaeological excavations to be conducted before any development project can be undertaken. All groundworks in the city zone require approval from the Agency for Culture and Palaces.

At the municipal level, all fortresses are cited in the respective municipal plans, which are regulated by the Planning Act (No. 1027 of 20 October 2008) that stipulates rules for land-use planning in the country. Aggersborg is referenced in the Municipal Plan (2017) for Vesthimmerlands Municipality. Fyrkat is cited in the Municipal Plan (2009-2013) for Mariagerfjord Municipality and is additionally protected by four registered protection orders (1963, 1964, 1981 and 2006). Trelleborg is referenced in the Slagelse Municipal Plan (2017-2028) and further protected by two registered protection orders. It is also mentioned in the District Plan 1137 (and the new District Plan 1224 currently in preparation), which regulates future alterations in the areas surrounding the fortress. Borgring is cited in the 2013 Køge Municipal Plan and will feature in a new plan currently under development. Two registered protection orders exist for Borgring. Nonnebakken is part of the Odense Municipal Plan (2020-2032) and is cited in two district plans (2-443 and 0-777).

In additional information received by ICOMOS in November 2021, the State Party clarified the specific provisions of the individual special zoning restrictions relevant to the nominated component parts and the buffer zones, and elaborated on the planning documents that apply in each case.

In additional information received by ICOMOS in February 2022, the State Party confirmed that the scheduling process for Borgring has been completed and addressed the discrepancies between the extent of the nominated component parts and scheduled areas. Minor variances in cases where the entire extent of the scheduled area was not included within the boundary of a component part have been corrected and revised maps have been provided. Full compliance between scheduled areas and component parts has thus been achieved for Aggersborg, Fyrkat and Nonnebakken. At Trelleborg and Borgring the nominated area is currently larger than the scheduled one. Further steps to extend the scheduled areas in these cases to cover the entire area of component parts will depend on the results of future surveys and related scheduling processes. In both cases, the sections of component parts that fall outside the scheduled areas are protected by compatible high-level nature protection. The State Party also reconfirmed the existing restrictions related to landscape setting protection, for which no strategic approach is in place.

Management system
Management of the nominated property at the level of the component parts resides with the Danish Nature Agency at Aggersborg (component part 1), the National Museum of Denmark at Fyrkat (component part 2) and Trelleborg (component part 4), the Museum Southeast Denmark at Borgring (component part 5) and the Odense City Museums at Nonnebakken (component part 3).

In the event of inscription of the nominated property on the World Heritage List, a Series Coordinator will be engaged to deliver a single integrated Property Management Plan (2022-2027) across the component parts. The Coordinator will report to the property's Management Board composed of representatives from the Danish Agency for Culture and Palaces, respective local museums, municipalities and communities, and key landowners. The Board will report to the Danish Agency for Culture and Palaces, the ultimate authority for administering the Danish Museum Act.

The Agency for Culture and Palaces has delegated its responsibility for monitoring and implementing protective measures at the nominated serial property to the Historical Museum of Northern Jutland at Aggersborg and Fyrkat, the Roskilde Museum at Trelleborg, the Museum Southeast Denmark at Borgring and the Odense City Museums at Nonnebakken.

The single integrated Property Management Plan (2022-2027), developed and approved in principle in December 2020, will become operational across the component parts within six months, should the nominated property be inscribed on the World Heritage List. It provides a basis for the long-term sustainable management of the

nominated property and makes provisions for Heritage Impact Assessments for development projects and activities that are planned for implementation within or around the nominated property. The Property Management Plan has been developed with relevant state institutions, municipalities, heritage organisations and community representatives. It prescribes a participatory management model.

As no natural disasters are anticipated for the nominated property, the State Party considers a risk preparedness strategy to be unnecessary.

The component parts are funded separately, from different sources, mainly through the municipalities and local museums. Some funds are from external sources or are project-based. Institutions and stakeholders responsible for the management of the component parts will collectively contribute to financing the Series Coordinator position.

ICOMOS considers that the management system for each component part is well resourced and funded. However, there seems to be no sustainable funding for the development and interpretation of the nominated serial property as a whole, as there is no direct state budget allocated to that end.

ICOMOS also notes that there are currently no formal management plans for the individual component parts and their buffer zones. While the existing processes seem effective, there is a need for each component part to have its own dedicated management plan and strategic action plan compatible with the specific conditions of each site and operationalised under the overall Property Management Plan.

In additional information sent in February 2022, the State Party presented a draft research strategy, which will be further developed and integrated with the Property Management Plan. It includes research on state formation processes and in-depth studies on the nominated ring fortresses as a system, including future comparative studies on other fortresses in Western and Northern Medieval Europe. The relationship of this serial property to other structures erected by Harald 'Bluetooth' will also be explored.

Visitor management

Aggersborg, Fyrkat, Trelleborg and Borgring fortresses (component parts 1, 2, 4 and 5) have onsite visitor facilities, while Nonnebakken (component part 3) has none, as it is not yet a tourist destination. Except for Nonnebakken, there is at least a small museum or exhibition space at each component part, where key information on the history and meaning of the fortress is provided in Danish and English, and sometimes German. Free guided tours are offered at Aggersborg and Borgring. Interpretative panels have been installed at all archaeological sites to guide visitors. Uniform signage has been introduced to emphasise the coherence of the fortresses as a chain. Programmes of local awareness promote the nominated property. Websites and apps have been developed for individual component parts.

The fortresses are accessible to the public yearlong without restrictions, except for Nonnebakken, where access to an area hosting a school is limited to off-school hours. Numbers of visitors are not controlled. At Fyrkat and Trelleborg, reconstructions of Viking-Age buildings located outside the components' boundaries offer an immersive experience. The Trelleborg reconstructions are also the basis for annual re-enactments. New museums are planned at Fyrkat, Trelleborg and Borgring. The first one is to house some of the finds from the excavations at Fyrkat. At Trelleborg, the existing museum and visitor centre are to be expanded and an "International Adventure and Knowledge Centre" created in the eastern section of the buffer zone. The planned museum at Borgring is to include an archaeological research facility (Borgring Exploratorium) located immediately outside the southern perimeter of the buffer zone, replacing an existing temporary tourist facility. The plans for Nonnebakken focus on improving the visualisation and presentation of the ring fortress, and include marking its outline in the landscape.

Tourism development at the individual component parts is integrated into different marketing strategies targeting national, regional and international tourism.

ICOMOS observes that there is no strategy for developing an integrated tourism plan around the fortresses as a group. An overall concept for an interpretation and promotion strategy of the ensemble also seems to be missing. ICOMOS considers that both should be developed and integrated into the Property Management Plan.

Community involvement

Community involvement and the active engagement of local communities in the protection, maintenance and management of the nominated property complement the administrative support provided by municipal authorities. The Aggersborg, Fyrkat and Trelleborg component parts are owned by the Danish State. The land of the Borgring component is owned by the Vallø Stift Foundation. Nonnebakken is situated on the land belonging to multiple private owners. Most of the land in the buffer zones is also privately owned. Including representatives of the landowners in the management structures should ensure more effective protection of the nominated property.

Effectiveness of the protection and management of the nominated property

In summary, ICOMOS considers that protection of the nominated property and the management system are both adequate. Sustainable financial resources should be secured for the development and interpretation of the property. Tourism and interpretation strategies should be developed and integrated into the Property Management Plan. The draft research strategy should be further developed and integrated with the Property Management Plan.

6 Conclusion

The primary interesting feature of the Viking-Age Ring Fortresses is the coherence of their system based on a uniform design, which demonstrates a high level of centralised power needed to manage a project of such scale and precision. The strategic positioning of the fortresses, linked to the control of major communication routes, and their territorial spread demonstrate the authority of King Harald 'Bluetooth' Gormsson, whose political ambition and tactical thinking led to the consolidation of the Danish kingdom.

The work done by the State Party to research and document the nominated property is thorough and the historical analysis is very detailed. The comparative analysis presented is particularly exhaustive.

ICOMOS considers that the Outstanding Universal Value has been demonstrated, according to criteria (iii) and (iv), and that the conditions of integrity and authenticity of the whole series and of the individual component parts have been met. Protection and management of the nominated serial property is adequate.

ICOMOS considers that the serial approach is justified and the selection of component parts is relevant to the proposed Outstanding Universal Value. The relevant States Parties could at a later stage consider proposing the Trelleborgen and Borgeby ring fortresses in present-day Sweden as a potential transnational extension of the nominated serial property, if the results of future research confirm that these two sites belong to the same group of Viking-Age ring fortresses.

ICOMOS recommends considering the possibility of extending the boundaries of the component parts to include the strategic landscape settings of the fortresses, if and when such extensions become possible, through minor boundary modification requests.

ICOMOS also recommends that dedicated management plans for each individual component part and its buffer zone be developed and operationalised under the Property Management Plan as well as an overarching long-term conservation plan.

7 Recommendations

Recommendations with respect to inscription
ICOMOS recommends that the Viking-Age Ring Fortresses, Denmark, be inscribed on the World Heritage List on the basis of **criteria (iii) and (iv)**.

Recommended Statement of Outstanding Universal Value

Brief synthesis

The ring fortresses of Aggersborg, Fyrkat, Nonnebakken, Trelleborg and Borgring, constructed between about 970 and 980 CE during the reign of King Harald 'Bluetooth' Gormsson, represent outstanding examples and technological mastery of military architecture. Strategically positioned close to important land and sea routes across the Jutland peninsula and on the islands of Funen and Zealand in present-day Denmark, all five enclosures were constructed based on a uniform, precise, geometric, scalable design, and incorporated elements of natural topography for defensive purposes. The structures included fortified circular ramparts with four gateways located close to the cardinal points. In most cases, they were equipped with a concentric ditch, axial streets encircled by a ring street, and rows of longhouses geometrically arranged in the four quadrants of the fortified ring.

While functioning for only a brief period, this chain of Viking-Age fortresses is representative of the largest monuments that illustrate the centralisation of power by the Danish Jelling Dynasty and the consolidation of the kingdom of Denmark under King Harald, who integrated a vast territory spreading from present-day northern Germany to Denmark, southern Sweden and Norway. This network demonstrates the existence of a strong royal authority that was able, through military operations and alliance building, to command sufficient resources to exert sovereign control over territorial waters, land traffic and trade.

The fortresses, the function of which can only be inferred, testify to the early stages of state formation and socio-political transformations of the late 10th century CE in the Danish kingdom, including the conversion to Christianity, which eventually triggered the progression of statehood and Christianity in the whole of Scandinavia, and heralded the beginning of the Middle Ages in Northern Europe.

Criterion (iii): The monumental scale of the Viking-Age ring fortresses, built in a precise manner and within a single decade, signifies a high degree of centralised control and is evidence of King Harald's ability to muster military power, resources and a local workforce to create a coherent system of surveillance and control over a vast territory. The ring fortresses testify to Harald's state-building ambitions and can be seen as an outstanding testament of the process of state formation and an expression of a cultural shift in the geo-cultural context of Scandinavia and Northern Europe.

Criterion (iv): The chain of fortresses represents an outstanding example of monumental military architecture in Scandinavia and an exceptional integrated system within the wider context of the European Viking Age. The network demonstrates high technical values of construction and the exceptionality of a strictly ordered geometry in scalable form. The precise manner in which all five ring fortresses were built over a short period of time testifies to the existence of centralised power that was required to manage such a monumental infrastructure project involving resource-intensive engineering. Their strategic positioning linked to the control of major land and

sea routes, and their territorial spread, hint at a unified system of governance over a vast area.

Integrity

All the elements necessary to express the property's Outstanding Universal Value are included within its boundaries. Archaeological deposits have been preserved at all five component parts sufficiently well to sustain the essential values of the property. The form of the excavated features survives intact in the subsoil. While the above-ground elements of the fortresses have suffered decay, the key structural elements of the Aggersborg, Fyrkat and Trelleborg enclosures are readable in the landscape. The Borgring and Nonnebakken fortresses are discernible only as small elevations, the latter being covered entirely by urban fabric. The landscape around the fortresses has changed substantially since the Viking Age due to natural and human-made factors. Elements of modern infrastructure have a visual impact on some of the individual component parts.

Authenticity

The original forms, designs, materials and substance of the ring fortresses have survived unaltered below ground at all five component parts, even in areas where archaeological excavations have taken place. The above-ground elements of the enclosures have been damaged due to various human activities and natural erosion over many centuries, and the landscapes of the five fortresses have evolved, but the strategic settings of the structures can still be comprehended. The five component parts contribute to the Outstanding Universal Value of the site as a whole, and the property does not suffer unduly from adverse effects of development and/or neglect.

Management and protection requirements

All five component parts are legally protected as ancient monuments at the national level through the Danish Museum Act (No. 1505 of 14 December 2006). At the municipal level, all of the fortresses are cited in the respective municipal plans, which are regulated by the Planning Act (No. 1027 of 20 October 2008). Spatial planning documents and special zoning restrictions provide additional protection to the property and the buffer zones.

The boundaries of the property reflect the highest level of national legal protection, with the exception of parts of Trelleborg and Borgring, where the process of extending the scheduled areas to cover the entire area of these component parts will depend on further archaeological investigations and negotiations with landowners. In these cases, the sections falling outside the scheduled areas are protected by compatible high-level nature protections.

Protection and management of the property reside at the highest level with the Danish Agency for Culture and Palaces. Management at the level of the component parts lies with the Danish Nature Agency at Aggersborg, the National Museum of Denmark at Fyrkat and Trelleborg, the Museum Southeast Denmark at Borgring, and the Odense City Museums at Nonnebakken. The management of the serial property will be coordinated by a Series Coordinator, responsible for the delivery of an integrated Property Management Plan (2022-2027) across all the component parts. A key mid- to long-term challenge will be to mitigate the negative visual impact modern infrastructure has on views to and from some of the component parts.

Additional recommendations

ICOMOS further recommends that the State Party give consideration to the following:

a) Supplementing the integrated Property Management Plan with dedicated management plans for each individual component part and its buffer zone,

b) Developing for the ensemble of fortresses an overarching conservation plan, a concept for an interpretation and promotion strategy, and an integrated tourism strategy,

c) Further developing the draft research strategy and integrating it with the Property Management Plan,

d) Establishing clear baseline data to be used as a point of reference for monitoring purposes, and specifying limits to acceptable changes in order to inform future actions,

e) Considering the possibility of extending the boundaries of the component parts to include the strategic landscape setting of the fortresses, if and when this becomes possible, through minor boundary modification requests,

f) Exploring the possibility of extending the serial nomination to include the two similar Scanian fortresses, should future research and sufficient evidence justify including these archaeological sites,

g) Providing updated figures for the areas of the revised boundaries of the serial property as a whole, and of each component parts;

Map showing the location of the nominated components