



CARARE and EDM

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Background

- CARARE developed its metadata schema to support harvesting of archaeology and architecture content for Europeana
- The schema is based on:
 - MIDAS heritage
 - LIDO
 - CIDOC data standards
 - Europeana Data Model
- Mapping it to Europeana Data Model (EDM) underpins an XSLT, which enables automatic transformation of CARARE records to EDM format

The CARARE schema provides

- Familiar concepts
- Rich where the domain calls for it, e.g.:
 - Time – from earliest prehistory to modern dates
 - Space – place names, coordinates, bounding boxes and polygons
 - Monument character
- Includes events and collection information

Supports interoperability

Documenting a heritage object using the CARARE 2.0 schema

- a quick guide!

CARARE 2.0 approach

- Distinguishes “heritage assets” – a painting, book, drawing, image, film, 3D reconstruction or real- from world archaeological monument/historic building
- Digital representations (or digital resources) of the heritage asset which can be found online
- Allows for events (historical, field activities, laboratory work) to be related to heritage assets or digital resources
- Includes collection and other contextual information
- Allows one heritage asset to be related to another (whole/part, parent/child, predecessor/successor, version) allowing for alternate interpretations to be offered.

Heritage asset



Castle of Kavala
Cultural and Educational
Technology Research
Institute

Core details:

- Title
- Description
- General type
- Character (subject, time period, etc)
- Spatial location (place name coordinates)
- Rights
- Provenance
- Actors
- Relation to digital resource

Digital Resource

3D Search Engine results for

polymnia.ipet.gr/akoutsou/3dsse/PredefinedViewpoints.php?id=1a5

3D Scene Search Engine

:: Exploring 3D scenes using keywords :: About 1 result (0.784178 mseconds)

The Old Town Of Kavala See it in 3D →

Country: Greece County: Kavala
Era: 19th century - Early Ottoman times

The old town of Kavala is located on the Panagia peninsula and it is a maze of narrow streets flanked by pastel coloured houses. Some of the main edifices are the Imaret, a typical building of Mohamed Ali founder of the last Egyptian dynasty and the lighthouse, which offers splendid views over Kavala.

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Castle Of Kavala More about it → See it in 3D → See it in on map → What is close to it →

Kavala's castle or Fortress, as the locals use to call it, is located on the peninsula of Panagia (Virgin Mary). The outer walls surround the peninsula along the coast on three sides and only a part of them is on land. The top of the peninsula is occupied by the citadel. The formation of both the external walls and the wall of the citadel (acropolis), follow the natural terrain formation and slope, having in some In Summary: In its current form the castle of Kavala dates back to early Ottoman times. In many places however, parts of the previous phases of classical, post-Roman and Byzantine times are preserved.

Functionality: Castle Typology: Castle

:: 3D Scene Search Engine Cultural and Educational Technology Institute - Research Centre "Athens" © 2011 ::
:: Please forward comments, issues or bug reports of 3DSSE to akoutsou@cei dot gr ::

There can be more than one digital resource linked to a heritage asset

Core details:

- Title
- Description
- Type and format
- Location of the resource online (URL, URI)
- Rights
- Relation to heritage asset

Activity



Core details:

- Title
- Description
- Date
- Actors
- Type of event (data acquisition, etc)
- Event methods and techniques
- General and specific purpose
- Relations to heritage asset and digital resource

Developments

- The version 2.0 of the CARARE schema was developed during 3D-Icons project to take on board:
 - ✓ Lessons learned during the CARARE project
 - ✓ Developments in EDM;
 - ✓ and to support the provenance and paradata required for quality assurance of 3D models

The main changes

- **Heritage Asset**
 - Scope has been broadened to include printed materials, archives and born-digital objects relating to the archaeological and architectural heritage
 - Becomes mandatory; there must be ONE in each CARARE object
 - The references section has been simplified
 - Provenance has been added
- **Digital Resource**
 - Has been simplified to focus on the type, format and location of the online resource.
 - It remains mandatory; there must be at least one in each CARARE object.
- *Record information* has been simplified.
- *Rights statements* have been simplified and metadata rights clarified.
- *Spatial information* has been updated.
- Elements for *types of relations* from heritage assets, digital resource activities have been specified for clarity

Achieving interoperability between the CARARE schema for monuments and sites and the Europeana Data Model

A quick overview then some detail





For individual monuments we generally have a series
of resources

This is a photo of part of a monume

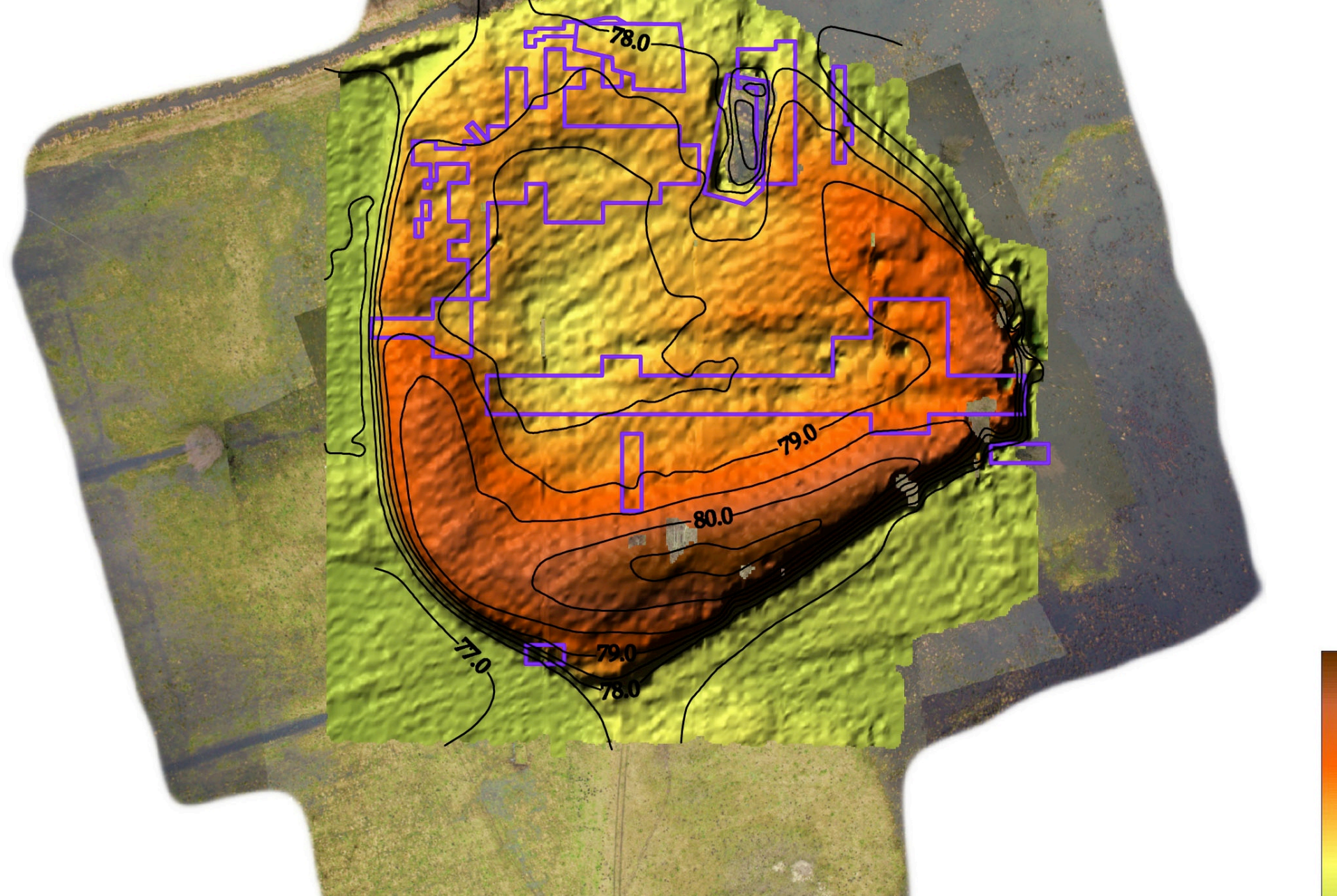


We can see more of the monument from the air





but what's going on beneath the surface?



lots of different sources of information



help build up the picture of the monument
and our understanding

Portal e-zabytek > Zabytek

Informacja o zabytku

Wicina-osada obronna



Wicina, woj. lubuskie. Osada obronna ludności kultury łużyckiej, 700 – 450 r. p.n.e., widok od południa. Stan z dn. 20-11-2010 r., fot. Miron Bogacki.



OGÓLNE INFORMACJE

Typ zabytku:

osada obronna

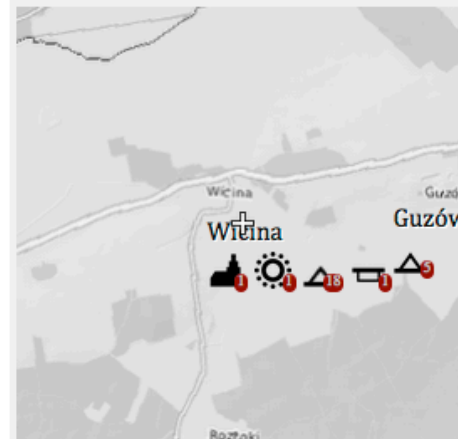
Chronologia:

wczesna epoka żelaza (700 - 450 r. p.n.e.)

Forma ochrony:

rejestr zabytków

Lokalizacja:



Właściciel praw autorskich:

Narodowy Instytut Dziedzictwa (CC BY-NC-ND 3.0)



And make this available online

Achieving interoperability with Europeana

- We made a mapping between EDM and the CARARE metadata schema: finding correspondences between the elements of both models
- Helps users of the CARARE schema to send good metadata to Europeana
- Why is it important to report on this?
 - Mapping is rarely an easy issue
 - Models are complex, with subtle differences in world views
 - Both CARARE and Europeana benefits from “mapping meditation”

One of the hardest (confronting) metadata exercises!



Sharing concrete experiences benefits all Europeana partners

How does this look in Europeana?



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Search

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Wicina-osada obronna



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Description:

Grodzisko w Wicinie, gm. Jasień, woj. lubuskie zostało wzniesione przez ludność kultury łużyckiej, we wczesnej epoce żelaza, w tzw. okresie halsztackim C-D, który odpowiada przedziałowi czasowemu pomiędzy 700, a 450 lat p.n.e. Relikty założenia obronnego są jednym z najcenniejszych zabytków archeologicznych na terenie Polski. Posiadają bezcenną wartość dla dziedzictwa kulturowego naszego kraju oraz Europy. Nieprzypadkowo obiekt, decyzją Wojewódzkiego Konserwatora Zabytków w Zielonej Górze, w dniu 12 września 1968 roku, został wpisany do rejestru zabytków, gdzie figuruje pod numerem L-6/C.

Grody, grodziska, osady obronne to, pod wieloma względami, wyjątkowe stanowiska archeologiczne. Ich znaczenie dla dziedzictwa kulturowego i potencjał naukowy jest nie do przecenienia. W Polsce jest ok. 2500 tego typu obiektów – z tego 1725 wpisanych do rejestru zabytków – i jedynie 70 to pradziejowe grodziska z późnej epoki brązu i wczesnej epoki żelaza. Pokazuje to jak rzadkim i ważnym zabytkiem jest osada obronna w Wicinie.

Opis zabytku

Osadę obroną zbudowano na piaszczystej wydmie wśród bagnistych łąk. Jest ona położona w pradolinie, pomiędzy dwoma uregulowanymi dziś ciekami wodnymi Szysznią i Widunią, które uchodzą do rzeki Lubszy będącej dopływem Nysy Łużyckiej. Nieopodal wznosi się połodowcowy masyw tzw. wyniesienia Żarskiego.

Obronny wał grodu miał drewniano – ziemną konstrukcję. Jego wysokość sięgała ok. 6 metrów, a podstawa miała ich przeszło 10. Najprawdopodobniej korona wału była podwyższona przez chroniącą obrońców palisadę. Budowa takiego masywnego założenia wymagała sprawnej organizacji i dużego nakładu pracy, co świadczy o rozwiniętym systemie społecznym. Czytelne do dziś pozostałości wałów pobudzają wyobraźnię i sprawiają, że obiekt trwale wpisuje się w miejscowy krajobraz kulturowy.

Obecne rozwalisko grodziska jest znacznie przekształcone, na skutek procesów naturalnych i działalności rolniczej. Zajmuje obszar 22 000m², a obwód jego wałów wynosi 541 metrów. Zabytek ma owalny lekko trójkątny kształt, a jego maksymalne wymiary wynoszą 176m na 172,5m.

Badania wykopaliskowe jednoznacznie wykazały, że warunki na stanowisku są relatywnie sprzyjające i pozwalają, podobnie jak w Biskupinie, na przetrwanie relikwów konstrukcji drewnianych grodu. Dobrze zachowane są również nawarstwienia kulturowe, które charakteryzuje bardzo duże nasycenie materiałem zabytkowym. Z jednego ara może pochodzić nawet ok. dwóch ton ceramiki. Najpłytsze nawarstwienia kulturowe znajdują się na majdanie, w centrum osady, gdzie mają 60-80cm głębokości, głębsze zalegają we wschodniej części grodziska, gdzie warstw kulturowe mają nawet do 3m miąższości.

Rekonstrukcja oryginalnych wymiarów grodziska, oparta na badaniach geofizycznych i pomiarach mikro rzeźby terenu, pozwala twierdzić, że maksymalna powierzchnia pradziejowego grodu wynosiła ok. 18 700m², a obwód wałów mógł wynosić do ok. 490 metrów. Przestrzeń użytkowa – tzw. majdan – pierwotnie miała przestrzeń ok. 10 850m², zaś obwód wewnętrznej strony wałów wynosił ok. 380 metrów.

Historia badań grodu w Wicinie

Pierwsze badania wykopaliskowe na grodzisku w Wicinie przeprowadził niemiecki archeolog Carl Schuchhardt. Prowadzone przez niego prace miały relatywnie nieduży, sondażowy charakter, a odbyły się w 1920 roku. Głównym



Mapping CARARE 2.0 to EDM

The basic approach for mapping a CARARE 2.0 record to EDM is the following:

- Elements of a Heritage Asset is mapped to the providedCHO of EDM
- Elements of one or more Digital Resources are mapped to the WebResource of EDM
- Elements of one or more Activities are mapped to the Event of EDM
- Spatial information of Heritage Asset is mapped to the Place of EDM
- Elements of a Heritage Asset and Digital Resources are mapped to ore:aggregation

Mandatory and recommended elements of EDM

☐ = Mandatory property

→ Blue = one of the blue properties is mandatory

○ Red = one of the red properties is mandatory

+ = recommended property

Core Classes

Properties for edm:ProvidedCHO	
○ dc:subject	+ dcterms:issued
○ dc:coverage	+ dc:date
○ dc:type	+ dc:identifier
○ dcterms:spatial	+ dc:publisher
→ dc:description	+ dc:source
→ dc:title	+ dcterms:alternative
✓ dc:language (if edm:type = TEXT)	+ dcterms:created
✓ edm:type	+ dcterms:isPartOf
+ dc:contributor	+ dcterms:temporal
+ dc:creator	+ edm:isNextInSequence

Properties for ore:Aggregation	
✓ edm:aggregatedCHO	→ edm:isShownAt
✓ edm:dataProvider	→ edm:isShownBy
✓ edm:provider	+ edm:object
✓ edm:rights	

CARARE 2.0 record (1/3)

```
<car:carareWrap xmlns:car="http://www.carare.eu/carareSchema" xmlns:xalan="http://xml.apache.org/xalan">
  <car:carare id="HA22">
    <car:collectionInformation>
      <car:id>10.5284/1011330</car:id>
      <car:title>The Virtual Amarna Project</car:title>
      <car:source>
        http://archaeologydataservice.ac.uk/archives/view/amarna_leap_2011
      </car:source>
      <car:statement>
        The pieces in the Virtual Amarna Museum come from the site of Tell el-Amarna in Egypt, the city built around 1350 BC by Pharaoh Akhenaten, as a place where he could centre his austere view of the cult of the sun, the Aten. The pieces illustrate not Akhenaten's own concerns, but the spiritual interests of the many thousands of people who came to live in the city. Although we can count Akhenaten as a monotheist, he seems not to have attempted an intolerant suppression of the beliefs and practices of most of his people. They continued to follow what was familiar to them, though we should not count this necessarily as a rejection of Akhenaten's ideas. Imposed conformity of belief belongs to much later periods of history, in Egypt and elsewhere. During the spring of 2008 and 2009, staff from the University of Arkansas, Center for Advanced Spatial Technologies (Katie Simon and Christopher Goodmaster) joined the British archaeological mission to Tell el-Amarna (directed by Barry Kemp), bringing with them a 3D laser scanner. A series of objects housed in the site antiquities magazine (that is maintained under the supervision of the Supreme Council of Antiquities of Egypt) was selected for scanning, as an experiment in this form of recording. The selection was done by archaeologist Anna Stevens and was intended to illustrate the theme of personal religion at Amarna. It reflected a piece of research, 'Investing in religion in Akhenaten's Amarna', that had been funded by the Templeton Foundation through the University of Cambridge and had been conducted by Barry Kemp and Anna Stevens between 2006 and 2008. A series of significant objects from the Egyptian site of Amarna were digitized using a Konica Minolta Vivid 9i triangulation laser scanner. The digital objects are part of the Virtual Amarna Museum - a web based "museum" providing public access to these objects as part of the Amarna Project's web materials. A range of objects were involved - including stone stele, ceramics, pendants, moulds and selected architectural elements. A portion of the scanned objects were used a part of the LEAP II project and were placed in the ADS archive as part of that effort. The LEAP II project produced an article in Internet Archaeology that can be accessed at http://intarch.ac.uk/journal/issue30/limp_index.html. The article addresses the application of high-precision 3-D recording methods to heritage materials (portable objects), the technical processes involved, the various digital products and the role of 3-D recording in larger questions of scholarship and public interpretation.
      </car:statement>
      <car:keywords>Artefact</car:keywords>
      <car:keywords>Building</car:keywords>
      <car:keywords>Figurine</car:keywords>
      <car:keywords>Laser Scanning Survey</car:keywords>
      <car:keywords>Mould</car:keywords>
      <car:keywords>Pendant</car:keywords>
      <car:keywords>Pot</car:keywords>
      <car:keywords>Spindle Whorl</car:keywords>
      <car:dcRelation>http://www.amarnaproject.com/</car:dcRelation>
    </car:collectionInformation>
    <car:dcRelation>
      http://intarch.ac.uk/journal/issue30/limp_index.html
    </car:dcRelation>
  </car:carare>
</car:carareWrap>
```

Collection information

elements of this class are not mapped to a class of EDM, yet

CARARE 2.0 record (2/3)

```
<car:heritageAssetIdentification>
  ▼<car:recordInformation>
    <car:id>22</car:id>
    <car:source lang="en">Archaeology Data Service</car:source>
    <car:country>United Kingdom</car:country>
    <car:language>en</car:language>
  </car:recordInformation>
  ▼<car:appellation>
    <car:name lang="en">Large offering table</car:name>
    <car:id>22</car:id>
  </car:appellation>
  <car:description lang="en">Large offering table</car:description>
  <car:generalType>Artefact</car:generalType>
  ▼<car:actors>
    <car:name lang="en">Barry Kemp</car:name>
    <car:roles namespace="en">creator</car:roles>
  </car:actors>
  <car:provenance lang="en">The Virtual Amarna Project</car:provenance>
  ▼<car:characters>
    <car:heritageAssetType>Artefact</car:heritageAssetType>
    <car:heritageAssetType>Building</car:heritageAssetType>
    <car:heritageAssetType>Figurine</car:heritageAssetType>
    <car:heritageAssetType>Laser Scanning Survey</car:heritageAssetType>
    <car:heritageAssetType>Mould</car:heritageAssetType>
    <car:heritageAssetType>Pendant</car:heritageAssetType>
    <car:heritageAssetType>Pot</car:heritageAssetType>
    <car:heritageAssetType>Spindle Whorl</car:heritageAssetType>
  ▼<car:temporal>
    <car:periodName lang="en">Amarna</car:periodName>
    <car:displayDate lang="en">c. 1350-1332 BC</car:displayDate>
  </car:temporal>
  </car:characters>
  ▼<car:spatial>
    ▼<car:locationSet>
      <car:namedLocation lang="en">Amarna, Egypt</car:namedLocation>
    </car:locationSet>
  </car:spatial>
  ▼<car:publicationStatement>
    <car:publisher>Archaeology Data Service</car:publisher>
  </car:publicationStatement>
  ▼<car:rights>
    <car:copyrightCreditLine>Barry Kemp</car:copyrightCreditLine>
    ▼<car:licence>
      http://archaeologydataservice.ac.uk/advice/termsOfUseAndAccess
    </car:licence>
    <car:europaRights>Rights Reserved - Free Access</car:europaRights>
  </car:rights>
  ▼<car:dcRelation>
    http://intarch.ac.uk/journal/issue30/limp_index.html
  </car:dcRelation>
  <car:dcRelation>http://www.amarnaproject.com/</car:dcRelation>
</car:heritageAssetIdentification>
```

Heritage Asset Identification

- recordInformation/id → edm:ProvidedCHO rdf:about
- appellation/id → dc:identifier
- generalType → dc:type AND edm:type
- provenance → dcterms:provenance
- characters/heritageAssetType → dc:subject
- temporal → dcterms:temporal
- spatial → dcterms:spatial AND edm:Place
- publicationStatement/publisher → dc:publisher
- rights/copyrightCreditLine → dc:rights
- dcRelation → dc:relation

CARARE 2.0 record (3/3)

```
▼<car:digitalResource>
  ▼<car:recordInformation>
    <car:id>22</car:id>
  </car:recordInformation>
  ▼<car:appellation>
    <car:name lang="EN">Large offering table</car:name>
    <car:id>22</car:id>
  </car:appellation>
  <car:type>3D</car:type>
  <car:format lang="en">pdf</car:format>
  ▼<car:link>
    http://archaeologydataservice.ac.uk/catalogue/adsdata/arch-1077-1/dissemination/pdf/22/22.pdf
  </car:link>
  ▼<car:object>
    http://archaeologydataservice.ac.uk/archives/view/amarna_leap_2011/images/thumbs/22/22_Images/22_01.JPG
  </car:object>
  ▼<car:isShownAt>
    http://archaeologydataservice.ac.uk/archives/view/amarna_leap_2011/downloads.cfm?obj=yes&obj_id=22
  </car:isShownAt>
  ▼<car:rights>
    <car:europaRights>Rights Reserved - Free Access</car:europaRights>
  </car:rights>
</car:digitalResource>
</car:carare>
</car:carareWrap>
```

Digital Resource

- Link OR isShownAt →
edm:webResource rdf:about
- description → dc:description
- format → dc:format
- rights/copyrightCreditLine →
dc:rights
- recordInformation/source →
dc:source
- extent → dcterms:extent
- Rights/europeanaRights →
edm:rights
- link OR isShownAt (more than
one DR's) → edm:hasView
- isShownAt (1st DR) →
edm:isShownAt
- link(1st DR) → edm:isShownBy
- object (1st DR) → edm:object

EDM record (1/2)

```
'<rdf:RDF xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:carare="http://www.carare.eu/carareSchema"
xmlns:edm="http://www.europeana.eu/schemas/edm/" xmlns:dc="http://purl.org/dc/elements/1.1/"
xmlns:dcterms="http://purl.org/dc/terms/" xmlns:dpla="http://dp.la/about/map/" xmlns:ore="http://www.openarchives.org/ore/terms/"
xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:wgs84_pos="http://www.w3.org/2003/01/geo/wgs84_pos#"
xmlns:skos="http://www.w3.org/2004/02/skos/core#" xmlns:owl="http://www.w3.org/2002/07/owl#">
  ▼<edm:ProvidedCHO rdf:about="22">
    <dc:description xml:lang="en">Large offering table</dc:description>
    <dc:identifier>22</dc:identifier>
    <dc:language>en</dc:language>
    <dc:publisher>Archaeology Data Service</dc:publisher>
    <dc:relation rdf:resource="http://intarch.ac.uk/journal/issue30/limp_index.html"/>
    <dc:relation rdf:resource="http://www.amarnaproject.com"/>
    <dc:rights>Barry Kemp</dc:rights>
    <dc:source xml:lang="en">Archaeology Data Service</dc:source>
    <dc:subject>Artefact</dc:subject>
    <dc:subject>Building</dc:subject>
    <dc:subject>Figurine</dc:subject>
    <dc:subject>Laser Scanning Survey</dc:subject>
    <dc:subject>Mould</dc:subject>
    <dc:subject>Pendant</dc:subject>
    <dc:subject>Pot</dc:subject>
    <dc:subject>Spindle Whorl</dc:subject>
    <dc:title xml:lang="en">Large offering table</dc:title>
    <dc:type>Artefact</dc:type>
    <dcterms:provenance xml:lang="en">The Virtual Amarna Project</dcterms:provenance>
    <dcterms:spatial rdf:resource="22/SP.1"/>
    <dcterms:temporal xml:lang="en">Amarna</dcterms:temporal>
    <edm:type>TEXT</edm:type>
  </edm:ProvidedCHO>
```

EDM record (2/2)

```
▼<edm:WebResource rdf:about="http://archaeologydataservice.ac.uk/catalogue/adsdata/arch-1077-1/dissemination/pdf/22/22.pdf">
  <dc:format xml:lang="en">pdf</dc:format>
  <edm:rights rdf:resource="http://www.europeana.eu/rights/rr-f"/>
</edm:WebResource>
<edm:Place rdf:about="22/SP.1"/>
▼<ore:Aggregation rdf:about="22#aggregation">
  <edm:aggregatedCHO rdf:resource="22"/>
  <edm:dataProvider>Archaeology Data Service</edm:dataProvider>
  <edm:isShownAt rdf:resource="http://archaeologydataservice.ac.uk/archives/view/amarna_leap_2011/downloads.cfm?obj=yes&obj_id=22"/>
  <edm:isShownBy rdf:resource="http://archaeologydataservice.ac.uk/catalogue/adsdata/arch-1077-1/dissemination/pdf/22/22.pdf"/>
  <edm:object
    rdf:resource="http://archaeologydataservice.ac.uk/archives/view/amarna_leap_2011/images/thumbs/22/22_Images/22_01.JPG"/>
  <edm:provider>LoCloud</edm:provider>
  <edm:rights rdf:resource="http://www.europeana.eu/rights/rr-f"/>
</ore:Aggregation>
</rdf:RDF>
```

Europeana preview

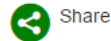
EDM Preview



View

Free Access - no-reuse

View item at
[Archaeology Data Service](#)



Share



Cite on Wikipedia



Translate details

Select language

Powered by Microsoft® Translator

Large offering table

Description: Large offering table

Geographic coverage: 22/SP.1

Type: [TEXT](#)

Subject: [Artefact](#), [Building](#), [Figurine](#), [Laser Scanning Survey](#), [Mould](#), [Pendant](#), [Pot](#), [Spindle Whorl](#)

Identifier: 22

Relation:

Relation:

Rights: [Barry Kemp](#)

Publisher: [Archaeology Data Service](#)

Source: [Archaeology Data Service](#)

Data provider: [Archaeology Data Service](#)

Provider: [LoCloud](#)

[Geographical coverage](#) ▶



Any questions?

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