

A Digital Corpus of Early Christian Churches and Monasteries in the Holy Land: Objectives and Structure

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Abstract

In the course of a seven-year-long project (2014–2021), all published architectural, archaeological, geographical, textual, and epigraphical data pertaining to early Christian churches (n=715) and monasteries (n=306) were collated in a comprehensive digital database. The objectives of the project and the structure of the database are described in detail, including an appendix outlining the templates of each section of the digital corpus (Appendix A). A designated section of the corpus is devoted to preconceived queries, which permit the generation of specific reports pertaining to geographical distribution, architectural components and members, index of terms mentioned in the inscriptions, and more. A Google search function covering the entire database is also available. At present, the database is undergoing the final stages of proofreading. When completed, it will be fully open to the public via the internet.

Keywords: Digital humanities

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1. Rationale and Objectives

The study of early Christian churches and monasteries in the Holy Land has considerable scholarly and public appeal. A comprehensive corpus of essential information on churches up to the early 1980s was compiled by Ovadiah (1970) and subsequently expanded with three supplements (Ovadiah and de Silva 1981; 1982; 1984). It encompassed a total of 318 churches, which have since then doubled, comprising now 715 and rendering Ovadiah's corpus outdated. About 450 structures in more than 335 sites are listed in the *Tabula Imperii Romanii Iudaea/Palaestina* (Tsafrir, Di Segni, and Green 1994). Many churches of Judea and Samaria are addressed in the *Corpus of Christian Sites in Samaria and Judea* (Hashahar Malka 2012a, b). As for monasteries, 306 have been documented to date,¹ but no corpus has been compiled.² Regardless, every year, new structures are being uncovered, continuously expanding the list and rendering the existing synthetic studies obsolete. In order to cope with this situation, the *Digital Corpus of Churches and Monasteries* was devised. Its objectives are to compile all available published data on these religious structures, permit their continuous updating, and make them accessible for further analyses and studies. Presently, a guest view of the corpus offers access to those parts of the database that have been proofread (<https://dig.corps-cmhl.huji.ac.il/>). In due course, pending thorough proofreading of all the data, it will be fully accessible via the internet. We hope that, in this capacity, it will not only constitute a useful source of information but also a research tool for scholars throughout the world (see Patrich 2019; Patrich et al. 2020).³

The chronological framework starts with Constantine and includes the Early Islamic period (until the beginning of the Abbasid period) and the two earlier *aulae ecclesiae* of Capernaum and Kefar Othnai. The geographical framework pertains to the three provinces of *Palaestina*. However, it excludes sites located in the present-day Hashemite Kingdom of Jordan and includes sites in the northern Golan and others in Western and Upper Galilee which belonged to Phoenice in the relevant period.

Literary sources pertaining to churches and monasteries and inscriptions uncovered therein are also included in the database. The study of inscriptions is essential for dating and bears on the rate of the country's Christianization, on the

1 For a full list of churches and monasteries mentioned in the literary sources, see Di Segni and Tsafrir (2015: 397–413, 415–424).

2 But one should bear in mind the list of monasteries compiled by Vailhé (1899; 1900) in the late 19th century. Based mainly on literary sources, it comprises 137 entries but actually encompasses ca. 125 monasteries. An augmented and modified inventory was published in a Greek translation by Koikylides (1906), listing 149 monasteries and a concise list of 40 new ones.

3 Proofreading is continuously ongoing, and more and more data is made public. Any comments or feedback are welcome.

one hand, and the survival of Christian communities under Muslim rule, on the other. Beyond chronology, inscriptions are an important source of information about church officials, ecclesiastical and monastic administrations, relationships with the lay society (both in the urban centers and the countryside), the cult of saints, and more.

2. Structure

The digital corpus comprises nine sections: Churches, Monasteries, Literary Sources, Epigraphy, Decorations (of floors and walls), Architectural Members (decorative), Bibliography, Map, and Queries and Reports. The map is an interactive on-screen feature that indicates the exact location of churches and monasteries in yellow and red dots, respectively. These dots are displayed on a Google Maps platform, which permits plain, terrain, and satellite views and zooming in and out. The basic map can be overlaid, on-demand, by six additional cartographical layers, displaying Roman roads, urban territories/bishoprics,⁴ precipitation, lithography, springs, and Streams. At a mouse's touch, each dot divulges the site name, and with a double-click, it opens the card of that particular church or monastery.

All text information in the corpus is searchable with a Google Search command. The search results are arranged according to the site's geographical attribution, name, and the sections detailed above. The ninth section of the digital corpus—Queries and Reports—is a research tool that enables posing more sophisticated queries to the database and receiving reports on various preconceived research questions, such as coordinates (enabling the production of hardcopy maps of churches and monasteries), chronological tables, bibliographical lists (written in full or in an abbreviated form for each particular site, or for the entire corpus of churches or monasteries), tables of all architectural components, a continuous register of texts and inscriptions for each particular structure, and a detailed index of all the inscriptions and architectural members. These reports can be generated as XML files and MS Excel tables (supporting the production of pie and rod charts).

The information concerning each structure in the database, whether a church or a monastery, is displayed on-screen according to the following structure:

- Church or monastery name, type (chapel, basilical, concentric, etc.), and function (parochial, monastic, pilgrims, etc.).
- Location (including a map).

⁴ The borders of bishoprics follow the urban borders established by Notley and Safrai (2005), albeit based on principles that recent studies have shown to be partly wrong (e.g., Di Segni 2012; forthcoming). However, since there is no new comprehensive study of bishoprics' borders, the map provides the best possible approximation.

- Source of knowledge: the years when the site was surveyed and/or excavated, the surveyors' and/or excavators' names, links to the relevant items in the database's Literary Sources and Epigraphy sections (if available), and bibliography in three different formats: author and year abbreviated format, title (presented as the cursor is placed over the abbreviated form), and full format provided in a new window when clicking on the abbreviated form.
- General site description, specifying its architectural components, the categories of small finds uncovered therein, plans, and photos.
- Detailed site description, specifying additional information concerning the body of the church, the *pastophoria*, the function of the lateral apses, the crypt (its description and function), cult of relics, burial loci, baptism, and upper galleries. The structures attached to the main body of the church are also specified here, including a secondary basilica (if present; e.g., 'En Kerem, House of Elizabeth [Holy Martyrs] and the basilical baptismal chapel attached to the Sussita cathedral), a *prothesis* chapel/*diakonikon*, a baptistery (only if attached and not integrated with the body of the main church), burial room or chapel, sacristy/*skeuophylakion*, and martyrs chapel (only if attached to the main body of the church and unrelated to the aisles and secondary apses). Each attached structure has a list of typological boxes or radio buttons to check and a description text window.
- The site's architectural evolution is displayed according to dated phases and sub-phases and specified to a quarter of a century if possible. The effects of the Persian invasion and the post-Arab conquest history are addressed there as well.⁵

The corpus's Literary Sources and Epigraphy sections of the application do not only present the texts (comprising only English translations for the Literary Sources section and texts with English translations for the Epigraphy section)⁶ but also index them according to numerous criteria (see Appendix A). The uploading of illustrative materials is also possible.

The information in the Decorations section pertains to floors and walls and can be dissected according to various criteria. Likewise, the Architectural Members section is very detailed, addressing all sorts of members (see Appendix A) and with a detailed typological table appended to each category. The uploading of illustrative materials is also possible for both sections and each architectural member category. A query can produce a list of all structures, whether churches or monasteries, in which a particular type of architectural member (e.g., a particular type of Corinthian capital) occurs.

5 As a rule, the corpus provides the excavator's opinion on these issues, even if disputable. However, if patently far-fetched or erroneous, an editor's comment is attached.

6 Leah Di Segni provided most of the English translations for both sections.

The Bibliography section presently holds more than 4800 entries, including ancient literary sources. It is a searchable and active repository in the sense that, wherever available, links are provided to external bibliographical databases (JSTOR, EBSCO, etc.), allowing one to read the articles on the screen. Publisher permits were acquired for scanning and uploading all entries from the *Encyclopedia of Archaeological Excavations in the Holy Land*, the *New Encyclopedia of Archaeological Excavations in the Holy Land*, *Ancient Churches Revealed*, *Collectio Maior* of the Studium Biblicum Franciscanum, and more.

Appendix A: Templates

The database is comprised of the following sections, some of which are interconnected:

- I. Churches
- II. Monasteries
- III. Literary sources
- IV. Epigraphy
- V. Decorations
- VI. Architectural members
- VII. Bibliography
- VIII. Map
- IX. Queries and reports
- X. Illustrative materials

The data of sections I–VII are entered in *edit mode* and presented to users in *view mode*. Text windows, menus, radio buttons, and checkboxes are presented in full in *edit mode* only; in *view mode*, only fields that contain data or are checked are visible.

I. Churches (Joseph Patrich)

The Churches section consists of the following pages: Church Name and Type, Location, Source of Knowledge, General Description, Detailed Description, and Architectural Evolution.

Church name and type

- ▶ Title (for sorting).
- ▶ Site name (required field, cumulative).
- ▶ Identification (text).
- ▶ Church name (required field, cumulative).

- ▶ Dedication (text).
- ▶ Functional type (selected from a pop-up menu): None; Parochial; Monastic (this choice enables a link to the Monasteries section); Monastic?; Memorial; Memorial?; Baptismal chapel; Baptismal basilica; Episcopal; Funerary chapel; Hermitage chapel; Martyr's chapel; Martyr's shrine; Pilgrims' church; Private estate; Burial (*coemeterium*); Aula ecclesiae; Unknown; Other.
- ▶ Church type (selected from a pop-up menu): None; Basilical; Cave chapel; Concentric (circular, octagonal); Double chapel; Double church; Cruciform; Trefoil; Transept; Ecclesiastical complex; Chapel; Cave church; Unknown; Other. Basilicas of various types are permitted: with annexes, freestanding, etc.

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Location

Churches known only from literary sources are not included in the corpus since they cannot be indicated on the map.

Coordinates: 4 (geographical systems) × 2 fields

- ▶ Coordinates, ITM (Israel Transverse Mercator Grid) system (i.e., New Israeli Grid, NIG): one latitude field, one longitude field (long integers).
- ▶ Coordinates, ICS (Israel Cassini Soldner Grid) system (i.e., Old Israeli Grid, OIG): one latitude field, one longitude field (long integers).
- ▶ Coordinates, UTM (United Transverse Mercator Grid) system: one latitude field, one longitude field (long integers).
- ▶ Coordinates, WSG84: one latitude field, one longitude field (long integers).
- ▶ Location (selected from a pop-up menu): None; Rural; Village/town; Urban; Para-urban.
- ▶ Geographical region (selected from a pop-up menu): Lower Galilee; Sea of Galilee; Western Galilee; Central and Eastern Galilee; Upper Galilee; Golan Heights; Beth Shean Valley; Mt. Carmel; Carmel Coastal Plain; Coastal plain; Sharon; Samaria Hills; Samaria Desert fringes; Southern and western Samaria; Judean Hills; Hebron Hills; Shephelah; Jerusalem (Old City); Jerusalem (extra-mural); Mount of Olives; Jerusalem (Greater); Judean Desert; Judean Desert fringes; Southern Jordan Valley (Desert of Jericho); Southern Coastal Plain; North-Western Negev; Beer Sheba Valley; Gaza strip; Central Negev; Eilat Region.
- ▶ Provincial affiliation (selected from a pop-up menu): None; Palaestina I; Palaestina II; Palaestina III; Phoenice I.
- ▶ Bishopric (cumulative).
- ▶ Topographical location (text).

- ▶ Distance from the nearest bishop's seat (text).
- ▶ Distance from the nearest settlement (text).
- ▶ Distance from Roman roads (text).

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Source of knowledge

- ▶ Checkbox with a link to the Epigraphy section (IV).
- ▶ Checkbox with a link to the Literary Sources section (III).
- ▶ Archaeological remains:
 - If surveyed, a checkbox opens a two-columned table named *Surveyors* with the headings *Name* and *Date*.
 - If excavated, a checkbox opens a two-columned table named *Excavators* with the headings *Name* and *Date*.
- ▶ History (a text field presenting the structure's history)
- ▶ Bibliography: *Add another item* button retrieves bibliographical references from the Bibliography repository (VII) and presents them in author-date format. Edit mode enables the assignment of row weights for arranging the items in chronological order. View mode permits three views: an abbreviated format specifying the author and year (in the said table), a full title presented when the cursor is placed on a given entry, and a full reference in a new window, including links to pdf files in the pdf repository (see Bibliography section, below) or official online databases.

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General description

- ▶ State of preservation/which parts were uncovered (memo text window).
- ▶ Illustrative material:
 - Photos (with an upload mechanism and a *hide image* option). Files must be less than 2 MB. Permissible file types comprise png, gif, jpg, and jpeg. The uploaded photos are stored according to church name in a designated photos repository.
 - Figures (with an upload mechanism and a *hide image* option). Files must be less than 2 MB. Permissible file types comprise png, gif, jpg, and jpeg. The uploaded figures are stored according to church name in a designated figures repository.
- ▶ General description (arranged in the following text windows): Atrium; Narthex; Façade and entries; Lateral walls; Nave; Aisles; External walls (for a concentric church); Central space (for a concentric church); Ambulatory (for a concentric church); Transept nave; Transept aisles;

Transept ends; Bema, chancel screen, and apse; Lateral spaces; Crypt (a checkbox; see also below in Detailed Description).

- ▶ Architectural members and liturgical furniture: an autocomplete list box permitting the selection of the appropriate card from the Architectural Members section (VI) in a new window.
- ▶ Floor and wall decorations: an autocomplete list box permitting the selection of the appropriate card from the Decorations section (V) in a new window.
- ▶ Small finds (each category is selected from a pop-up menu; multiple categories are permissible; drawings and photographs are enabled for each category). The view-mode output is a table arranged according to the following categories (with a text field for each): Pottery; Oil lamps; Coins; Glass; Stone vessels; Metal objects; Jewelry; Bones; Leather; Basketry; Ropes; Stamps; Wooden objects; Papyri; Inscriptions (enables a link to the Epigraphy section).
- ▶ Comments, discussion, and summary (text).

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Detailed description

Structure

- ▶ Orientation (Select a value from a pop-up menu): Facing east; Facing west; Other.
- ▶ Materials applied (walls) (checkboxes; multiple boxes permitted): Limestone; Marble; Kurkar; Basalt; Brick.
- ▶ Materials applied (roofing) (checkboxes; multiple boxes permitted): Tiles; Timber; Stone slabs; Concrete.
- ▶ Atrium (radio button): N/A; No; Yes.
- ▶ Water cistern (radio button): N/A; No; Yes.
- ▶ Narthex (radio button): N/A; No; Yes.
- ▶ Aisles (radio button): N/A; 2; 4.
- ▶ Colonnades/arcades (Select from a pop-up menu): None; Colonnade; Arcade of columns; Arcade of pillars.
- ▶ Number of nave columns in a row: Total/Extant in N/Extant in S.
- ▶ Number of aisle columns in a row: Total/Extant in N/Extant in S.
- ▶ Number of inner space columns (for a concentric church): Total/Extant.
- ▶ Number of ambulatory columns (for a concentric church): Total/Extant.
- ▶ Capital types (checkboxes; multiple boxes permitted): Doric; Ionic; Composite; Trapezoidal; Bi-zone; Basket; Corinthian.
- ▶ Transept Nave (a checkbox).
- ▶ Transept Ends (a text window).

- ▶ Transept Aisles (a checkbox).
- ▶ East end (select from a pop-up menu): None; External apse, polygonal; External apses, polygonal; External apse, round; External apses, round; External apse, quadrangular; Internal apse; Internal apses.
- ▶ Church head/chevet (select from a pop-up menu): None; N/A; Monoapsidal with open lateral rooms or spaces (mon-aps I); Monoapsidal with lockable *pastophoria* (mon-aps II); Dead-end aisles (mon-aps III); Two openings flanking the apse (mon-aps IV); Single opening flanking the apse (mon-aps V); Monoapsidal, flanked by a *martyrion* on the north and a *diakonikon* on the S (à la Syrie) (mon-aps VI); Monoapsidal, flanked by a *martyrion* on the south and a *diakonikon* on the N (à la Syrie) (mon-aps VII); A second apse on the N; A second apse on the S; Trefoil; Tri-apsidal; Tri-apsidal (central external, lateral internal).
- ▶ Central apse category (select from a pop-up menu): None; Apsidal; Quadrangular.
- ▶ Bema type (select from a pop-up menu): None; U-shaped; U-shaped without lateral openings; U-shaped with a lateral opening to the N; U-shaped with a lateral opening to the S; U-shaped with two lateral openings; T-shaped with three openings; T-shaped with an opening to the N aisle; T-shaped with an opening to the S aisle; T-shaped without openings to the aisles; Miscellaneous shapes, Transversal; Phenician.
- ▶ Bema type (text).
- ▶ Elevation of the bema above the nave (select from a pop-up menu): None; 1 step up; 2 steps up; 3 steps up; More.
- ▶ Altar remains (checkboxes, multiple boxes permitted): No remains; Plate, legs, imprints; Foundations; Base plate.
- ▶ Altar type (select from a pop-up menu): None; Wooden; Stone/table-like; Marble/table-like; Composite/table-like (stone and marble); Chest-shaped; Secondary altar table; Monopodium.
- ▶ Secondary table/s (a checkbox)
- ▶ Altar reliquarium type (select from a pop-up menu): None; No altar reliquarium; Base plate with a central depression; Depression in the floor; Depression in the chest.
- ▶ Altar location (selected from a pop-up menu): None; In the middle of the bema; On the apse cord, Inside the apse; Attached to the rear wall.
- ▶ Secondary tables (text).
- ▶ Ciborium (text).
- ▶ Ambo (radio button): N/A; No; Yes.
- ▶ Ambo remains (checkboxes, multiple boxes permitted): Base plate; Legs; Platform; Side plates; Indicated by a screen.
- ▶ Ambo description (text).

- ▶ Ambo location (radio button): N/A, N, S.
- ▶ Ambo materials (select from a pop-up menu): None; Limestone; Soft stone; Marble.
- ▶ Ambo placement (select from a pop-up menu): None; On the mosaic floor; On a rectangular slab; On a hexagonal slab; On a circular slab.
- ▶ Apse elevation (select from a pop-up menu): None; Flash with the bema; Elevated relative to the bema.
- ▶ Apse shape (select from a pop-up menu): None; Hemispherical; Horseshoe shape; Quadrangular.
- ▶ Synthronon (radio button): N/A; No; Yes.
- ▶ Synthronon remains (select from a pop-up menu): None; Grades; Incisions on walls; Indications on the floor; Other.
- ▶ Synthronon location (select from a pop-up menu): None; No synthronon remains; Against the apse; Lateral, in the bema; Both.
- ▶ Synthronon description (text).

Pastophoria (fieldset)

- ▶ *Pastophoria loci* (radio button): N; S; N & S.
- ▶ Description and function of northern (text).
- ▶ Description and function of southern (text).
- ▶ *Pastophoria* photos and plans.
- ▶ Create illustrative material (uploading an illustration from the media repository).

Lateral apses function (fieldset)

- ▶ Location (radio button): N; S; N & S.
- ▶ Northern apse description and function (text).
- ▶ Southern apse description and function (text).
- ▶ Lateral apses photos and plans.
- ▶ Create illustrative material (uploading an illustration from the media repository).

Crypt

- ▶ Accessibility and description (text).
- ▶ Function (text).
- ▶ Crypt photos and plans.
- ▶ Create illustrative material (uploading an illustration from the media repository).

Cult of relics (fieldset)

- ▶ Cult of relics loci (checkboxes, multiple boxes permitted): Under altar; N apse; S apse; Crypt; Funerary chapel; Elsewhere.

Reliquaries: shapes and contents (text)

- ▶ Reliquaries: photo and plans.
- ▶ Create illustrative material (uploading an illustration from the media repository).

Burial loci (fieldset)

- ▶ Burial loci (text).
- ▶ Burial loci photos and plans.
- ▶ Create illustrative material (uploading an illustration from the media repository).

Baptism (fieldset)

- ▶ Baptism photos and plans.
- ▶ Create illustrative material (uploading an illustration from the media repository).
- ▶ Loci (text).
- ▶ Baptism loci decoration.
- ▶ Create decorations (uploading an illustration from the media repository).
- ▶ Font structure (select from a menu): None; Monolithic; Masonry built.
- ▶ External shape (select from a menu): Circular; Cruciform; Trefoil; Square; Rectangular; Hexagonal; Octagonal; Oval; Other.
- ▶ Internal shape (select from a menu): Square; Rectangular; Trapezoidal; Hexagonal; Semicircular; Mushroom; Circular; Cruciform; Trefoil; Octagonal; Oval; Quatrefoil; Other.
- ▶ Ben-Peshat type (select a number from a pop-up menu).
- ▶ Baptistery types image: Insert the type's drawing to the right.
- ▶ Create illustrative material (uploading an illustration from the media repository).

Upper galleries (fieldset)

- ▶ Upper galleries (radio button): N/A; Above both aisles; Above N aisle; Above S aisle; Above narthex.
- ▶ Galleries description (text).

Attached structures (field collection)

- ▶ Attached structures' photos and plans.
- ▶ Create illustrative material (uploading an illustration from the media repository).
- ▶ Annex/es on the north (text).
- ▶ Annex/es on the south (text).

Secondary basilica (radio button)

N/A; Apsidal; Quadrangular.

- ▶ Secondary basilica description (text).

Prothesis chapel/diakonikon (radio button)

N/A; Apsidal chapel; Basilical; Crypt; Quadrangular chapel; Simple rectangular room; Trapezoidal room; Tripartite; Other.

- ▶ Prothesis chapel/diakonikon description (text).

Baptistery (radio button)

N/A; Apsidal chapel; Basilical; Crypt; Quadrangular chapel; Simple rectangular room; Trapezoidal room; Tripartite; Other.

- ▶ Baptistery description (text).

Burial room or chapel (radio button)

N/A; Apsidal chapel; Basilical; Crypt; Quadrangular chapel; Simple rectangular room; Trapezoidal room; Tripartite; Other.

- ▶ Burial room or chapel description (text).

Sacristy/skeuphylakion (radio button)

N/A; Apsidal chapel; Basilical; Crypt; Quadrangular chapel; Simple rectangular room; Trapezoidal room; Tripartite; Other.

- ▶ Sacristy/skeuphylakion description (text).

Martyr's chapel (checkboxes, multiple boxes permitted)

N/A; Apsidal chapel; Basilical; Crypt; Quadrangular chapel; Simple rectangular room; Trapezoidal room; Tripartite; Other.

- ▶ Martyr's chapel description (text).

Discussion and comments (text)

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Architectural evolution

- ▶ Phase no. (select from a pop-up menu): None; Phase 1; Phase 2; Phase 3; Phase 4; Phase 5; Abandonment.
- ▶ Phase name (as published) (text).
- ▶ Phase thumb (import from photos and drawings repository).
- ▶ Add items (click *Add items* to launch the widget).
- ▶ General outline (text).⁷

⁷ Specifies the main component for each phase; when alterations are drastic, each phase is given a separate number: e.g., Bethlehem I, Bethlehem II.

- ▶ Dating material (text).⁸
 - ▶ Phase date.
 - ▶ Century (select from a pop-up menu): None, 3rd c.; 4th c.; 5th c.; 6th c.; 7th c.; 7th c.?; 8th c.; 9th c.; 10th c.; 11th c.; 12th c.; 13th c.; 15th c.; 4th–5th c.; 5th–6th c.; 6th–7th c.; 7th–8th c.; 8th–9th c.; Early Christian/Byzantine; Middle Ages; Unknown; Other.
 - ▶ Within a century (select from a pop-up menu): None; Early; First half; Mid-; Second half; Late.
 - ▶ Subphases
 - ▶ Subphase A date
 - Subphase A—century (select from a pop-up menu): None; 3rd c.; 4th c.; 5th c.; 6th c.; 7th c.; 7th c.?; 8th c.; 9th c.; 10th c.; 11th c.; 12th c.; 13th c.; 15th c.; 4th–5th c.; 5th–6th c. 6th–7th c.; 7th–8th c.; 8th–9th c.; Early Christian/Byzantine; Middle Ages; Unknown; Other.
 - Subphase A within a century (select from a pop-up menu): None; Early; First half; Mid-; Second half; Late.
 - ▶ Subphase B date
 - Subphase B—century (select from a pop-up menu): None; 3rd c.; 4th c.; 5th c.; 6th c.; 7th c.; 7th c.?; 8th c.; 9th c.; 10th c.; 11th c.; 12th c.; 13th c.; 15th c.; 4th–5th c.; 5th–6th c. 6th–7th c.; 7th–8th c.; 8th–9th c.; Early Christian/Byzantine; Middle Ages; Unknown; Other.
 - Subphase B within a century (select from a pop-up menu): None; Early; First half; Mid-; Second half; Late.
 - ▶ Subphase C date
 - Subphase C—century (select from a pop-up menu): None; 3rd c.; 4th c.; 5th c.; 6th c.; 7th c.; 7th c.?; 8th c.; 9th c.; 10th c.; 11th c.; 12th c.; 13th c.; 15th c.; 4th–5th c.; 5th–6th c. 6th–7th c.; 7th–8th c.; 8th–9th c.; Early Christian/Byzantine; Middle Ages; Unknown; Other.
 - Subphase C within a century (select from a pop-up menu): None; Early; First half; Mid-; Second half; Late.
 - ▶ Iconoclastic evidence
 - Iconoclastic evidence (radio button): N/A; Yes; No; Undetermined.
 - Iconoclastic evidence, comments (text).
- Remove phase (button)
- Add another item (button)
- ▶ Effects of the Persian invasion (select from a pop-up menu): None; Destroyed; Damaged and restored; Deserted.

⁸ For each phase, dating is specified according to find categories: e.g., inscriptions, pottery, coins, literary, etc.

- ▶ Post-Arab conquest history (radio button): N/A; Modified; Unmodified; Built anew; Abandoned; Ceased to function; Still in use; Repaired.
- ▶ Post-conquest history comments (text).
- ▶ Conclusions (text).
- ▶ In continuous use (checkbox).

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II. Monasteries (Joseph Patrich)

Monasteries known only from literary sources are not included in the corpus since they cannot be indicated on the map. This section consists of the same six pages as the Church section.

Monastery name, type, and category

- ▶ Title (for sorting).
- ▶ Site name (required field, accumulative).
- ▶ Identification (text).
- ▶ Monastery name (required field, cumulative).
- ▶ Monastery type (selected from a pop-up menu): None; Laura; Cenobium; Hermitage/hermitages; Laura with a cenobium at its core; Cenobium with scattered cells outside its walls.
- ▶ Monastery category (checkboxes, multiple boxes permitted): None; Urban; Para-urban; Village; Isolated in the countryside; Desert; Pilgrims; Former fortress; Former farm; Former ruin.
- ▶ Source of sacredness (checkboxes, multiple boxes permitted): Old Testament site; New Testament site; Founder's tomb; Holy spring; Sacred objects.

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Location

Same as in the Church section + soils (text).

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Source of knowledge

Same as in the Church section + Discussion (text).

- ▶ State of certainty (select from a pop-up menu): None; Literary definitive; Archaeological definitive; Archaeological and literary definitive; Uncertain/Questionable.

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General description

- ▶ State of preservation/which parts were uncovered (text).
- ▶ Illustrative material (uploading an illustration from the media repository).
- ▶ The description consists of the following components with a separate text window for each: paths, enclosing walls, gate/s, courtyards, tower/s, church/es, library, scriptorium, dwellings, refectory, bathhouse, latrine/s, burials, storage facilities, cave/s, kitchen, baking oven, hostelry, hospital, stable, water installations, garden, agricultural and industrial installations.
- ▶ Links to Architectural Members and Decorations sections as in the Church section.
- ▶ Small finds (like in the Church section).
- ▶ Comments, discussion, and summary (text).

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Detailed description

Dimensions

- ▶ Total area (sq m) (text).
- ▶ Size class (select from a pop-up menu): None; Small; Medium; Large.

Structure

- ▶ Materials applied (walls) (checkboxes, multiple boxes permitted): Limestone; Marble; Kurkar; Basalt; Brick.
- ▶ Materials applied (roofing) (checkboxes, multiple boxes permitted): Tiles; Timber; Stone slabs; Concrete.

Components

- ▶ Built paths (a checkbox).
- ▶ Enclosing wall (a checkbox).
- ▶ Border marks (a checkbox).
- ▶ Gate/s (text; specify number).
- ▶ Rolling stone (select from a pop-up menu): None; At gate; At tower; At cave; Provenance unknown.
- ▶ Number of rolling stones (text).
- ▶ Tower/s (a checkbox).
- ▶ Courtyard/s (a checkbox).

Monastery church

- ▶ Monastery church no.
- ▶ Church location (select from a pop-up menu): None; Ground floor; Upper floor; Other.
- ▶ Church type (radio button): N/A; Single nave; Basilical; Cave; Other; Unknown; No traces.

- ▶ Diakonikon (a checkbox).
- ▶ Link to church section (to be selected from an autocomplete list box).

Remove (button).

Add another item (button).

- ▶ Library (a checkbox).
- ▶ Scriptorium (a checkbox).
- ▶ Baptismal font (a checkbox).
- ▶ Refectory (a checkbox).
- ▶ Dwelling type (checkboxes, multiple boxes permitted): Dormitory; Cells; Seclusion tower; Caves.
- ▶ Number of stories (text, specify number).
- ▶ Bathhouse (a checkbox).
- ▶ Latrines (a checkbox).
- ▶ Storage facilities, warehouses (a checkbox).
- ▶ Storage caves (a checkbox).
- ▶ Kitchen (a checkbox).
- ▶ Baking oven (a checkbox).
- ▶ Stable (a checkbox).
- ▶ Hostelry (a checkbox).
- ▶ Hospital (a checkbox).
- ▶ Tomb types (checkboxes, multiple boxes permitted): Cist tomb; Burial chamber; Ossilegium; Arcosolium.
- ▶ Retaining walls (a checkbox).
- ▶ Dung hills/midden (a checkbox).
- ▶ Garden (a checkbox).
- ▶ Agricultural installations (checkboxes, multiple boxes permitted): Oil press\es (o/p); Wine press\es (w/p); Animal pens (a/p); Fishery (f); Terraces (t).
- ▶ Workshops (a checkbox).
- ▶ Water installations (checkboxes, multiple boxes permitted): Cisterns; Channels; Spring; Aqueduct; Gutters.
- ▶ Water capacity (minimal, cubic m) (text).
- ▶ Painted plaster (a checkbox).
- ▶ Inscribed crosses (a checkbox).

SAVE

Architectural evolution

Same as in Church section.

SAVE

III. Literary Sources (Leah Di Segni)

Church/monastery name

An autocomplete list box; select a name of a church/monastery from the cumulative list.

- ▶ Source (import reference of an ancient text from the Bibliography section, as in the Church and Monastery sections; show row weights).

Remove (button).

Add another item (button) (show row weights).

- ▶ Book, chapter, paragraph, verse (text).
- ▶ Translation (text).
- ▶ Bibliographic reference (import journal article, book, or book section reference from the Bibliography section, as in the Church and Monastery sections; show row weights).

Remove (button).

Add another item (button).

- ▶ Summary (text).
- ▶ Key quotation(s) (text, separated by commas).
- ▶ Commentary (text).
- ▶ Keywords (text, separated by commas).
- ▶ Synthesis (text).⁹

SAVE

IV. Epigraphy (Leah Di Segni)

Church or monastery name (an autocomplete list box; select a name from the church/monastery cumulative list)

- ▶ Inscription number (text) (show row weights).
- ▶ Selected bibliography (import reference from the Bibliography section, like in the Church and Monastery sections; show row weights).

Add another item (button).

- ▶ Epigraphical corpora (text).
- ▶ Inscriptions corpora year (text) — Vol. (text) Pages (text) — Inscr. no.
- ▶ Inscription type (checkboxes, multiple boxes permitted): Acclamation; Boundary; Building; Commemorative; Dedicatory; Dipinto; Epitaph;

⁹ Addressing all texts pertaining to the site.

- Funerary; Graffito; Invocation/prayer; Label/sign; Laudatory; Quotation; Signature of a worker; Other (a text box).
- ▶ Location (text) (in which part of the church or whether on the floor [mosaic or stone] or the wall [stone, plaster or wall mosaic]).
 - ▶ On a moveable object (checkboxes, multiple boxes permitted): Chancel screen; Chancel pillar; Altar table; Altar base; Altar leg; Ciborium pillar; Reliquary ambo; Liturgical bowl; Lamp; Bread stamp; Ceramic vessel; Eulia; Metal object; Glass; Roof tile/brick; Other (a text box).
 - ▶ Illustrative material.
 - ▶ Create illustrative material (upload mechanism as in Church and Monastery sections).
 - ▶ Physical description (text).
 - ▶ Text (text).
 - ▶ Text image (download from the media repository as in Church and Monastery sections).
 - ▶ Translation (text).
 - ▶ Apparatus (text).
 - ▶ Commentary (text).
 - ▶ Given date (checkboxes, multiple boxes permitted): Year; Era; Month; Day of the month; Day of the week; Indiction.
 - ▶ Date (text).
 - ▶ Summary (text).

Contents

- ▶ Actions (checkboxes, multiple boxes permitted): Built, erected/was built, was erected; Was paved with mosaic; Was paved with stone; Was decorated; Was renovated; The work was done; Founded; Donated; Offered; Was consecrated; Other (a text box).
- ▶ Definition of a building or part of a building (checkboxes, multiple boxes permitted): Altar; Aulé (nave?); Baptistery; Baptismal (font); Bema; Hierateion (presbytery); Ciborium diakonikon; Ekklesia; Embolos (aisle); Eukterion; Frontisterion; Gerokomeion (old age home); Hagios topos; Koinobion/synodia; Konkhê (apse); Laura; Lenós (winepress); Martyrium; mesauloin (forecourt); Moné/monasterion; Naos; Nosokomeion (hospital); Orphanatrophion; Oikos; Perma/pelma (end wall/platform?); Plakosis (facing/paving); Prostheke (nave?); Psephosis; Psephotheteia (mosaic); Stegos (roof); Tomb; Xeneôn/xenodochion; Zographia (painting); Other (a text box).
- ▶ Ecclesiastical titles (checkboxes, multiple boxes permitted): Archbishop; Archdeacon; Archipresbyteros; Bishop; Chorepiscopus; Deacon;

Deaconess; Lector; Metropolitan; Patriarch; Periodeutes; Presbyter; Subdeacon; Other (a text box).

- ▶ Monastical titles (checkboxes, multiple boxes permitted): Abbot/hegumen; Anchorite; Archimandrite; Brother; Euterarios; Elder; Hesychast; Kelliotes/laurites; Monachos/monazon; Monastria/monachousa/virgin; Oikonomos; Recluse; Sister; Other (a text box).
- ▶ Epithets of clergy/monks (checkboxes, multiple boxes permitted): Abba; Christ-loving (philochristos); Father; God-loving (theophiles); God-fearing (theosebes, theotimetos); Lord (kyrios); Master (despotes); Most holy (hagiotatos); Most saintly (hosiotatos); Most reverent (eulabestatos); Most venerable (aidesimotatos); Most blessed (makariotatos, trismakarios); Other (a text box).
- ▶ Function descriptions (clergy/monks) (checkboxes, multiple boxes permitted): Apokrisiarios; Doorkeeper; Steward (dioiketes); Steward (oikonomos); Store-keeper; warden (paramonarios); Other (a text box).
- ▶ Titles/epithets of patrons/dedicators (checkboxes, multiple boxes permitted): Deceased; God-loving; Humble/sinner, etc.; Lord (kyrios); Makarios (deceased); Master (despotes); Pious (eusebes); Servant of God; Christ loving; Other (a text box).
- ▶ Geographical names (a text box).¹⁰
- ▶ Personal names (a text box).¹¹
- ▶ Professions (a text box).¹²
- ▶ Kinship terms (checkboxes, multiple boxes permitted): Children; Clan/tribe; Daughter; Father; Forefathers; Kin (oikos, diaferontes); Mother; Parents; Siblings; Son; Spouse; Other (a text box).
- ▶ Saint's names (a text box).¹³
- ▶ Epithets of saints (checkboxes, multiple boxes permitted): Apostle; Endoxos/otatos; Hagios/hagia; Martyr; Other (a text box).
- ▶ Epigraphical formulas (checkboxes, multiple boxes permitted): At one's own expense; Munificence (philotimia); Peace (eirene); Prayer (euchê); Remembrance (mnêmê); Remission of sins (aphesis amartiôn, lytron amartiôn); Repose (anapausis, koimêsis); Succor (antilêpsis, boêtheia); Salvation/preservation (sôtêria); Thanksgiving (eucharistia); From the foundations; Own efforts (spoudê); Own labor/expenses (kamatos/kopos); God of Saint X; Lord/Christ of Saint X; Lord/Christ; Accept the offering...; Lord/Christ, grant repose...; Lord/Christ, have mercy...; Lord/Christ, help...; Lord/Christ, protect...; Lord/Christ, remember...; Offering (prosporá/karpophoria); Saint X, accept the offering...

10 In alphabetical order and separated with commas.

11 In alphabetical order and separated with commas.

12 In alphabetical order and separated with commas.

13 Names separated with commas.

Those who offer/have offered/will offer; Whose names the Lord knows/
thou knowest, amen; Other (a text box).

- ▶ Quotations from LXX/NT (text)
- ▶ Epigraphical abbreviations (text)

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V. Decorations (Joseph Patrich)

Pertaining to a particular church or monastery.

Create decoration item

- ▶ Item number (required field, numeral, select from a pop-up numeral menu) (show row weights): 1, 2, 3, etc.
- ▶ Church/monastery name (required field, select a name of a church/monastery from an autocomplete list).
- ▶ Location in the architectural complex (required field, text).
- ▶ Mosaic floor (a checkbox).
- ▶ Wall mosaics (a checkbox).
- ▶ Opus sectile (a checkbox).
- ▶ Fresco (a checkbox).
- ▶ Stucco (a checkbox).
- ▶ Relief (a checkbox).
- ▶ Illustrative material.
- ▶ Create illustrative material (uploading an illustration from the media repository).
- ▶ Materials, palette (text).
- ▶ Density (text).
- ▶ Composition (text).
- ▶ Geometric patterns (text, enter values from the following patterns, separated by commas):
 - Avi Yonah patterns (link to patterns file).
 - Madden patterns (link to patterns file).
- ▶ Iconographic motives (text, enter values separated by commas).
- ▶ Floral motives (text, enter values separated by commas).
- ▶ Comments (text).
- ▶ Discussion (text).
- ▶ Inscriptions (a checkbox).

SAVE

VI. Architectural Members (Svetlana Tarkhanova and Joseph Patrich)

Includes liturgical furniture.

- ▶ Church/monastery name (required field, an autocomplete list box, select the suitable value from the cumulative list of churches and monasteries).
- ▶ Monastery part (text).

The template is arranged according to the following categories or components: columns and piers; bases and pedestals; capitals; components of entablatures, arches and apses; cornices, spring cornices, voussoirs; pilaster caps and bases; lintels, jambs, thresholds; window pans (flat, circular—checkboxes), frames and piers; gallery barriers; chancel screen posts; chancel screen plates; altar legs; altar plate (mensae); ambo members; decorative reliefs; ciborium; pavement (slabs, opus sectile, other); revetment plates; basins; liturgical objects; and other.

Each category or component is furnished with a text field, material checkboxes, a photo and drawing uploading mechanism, and a detailed typological list comprised of checkboxes [not presented here].

Example for columns and piers:

- ▶ Columns and piers (text).
- ▶ Typology (fieldset, checkboxes, several boxes permitted).
- ▶ Columns and piers materials (checkboxes, several boxes permitted): Limestone; Marble; Basalt; Stucco; Other.
- ▶ Columns (uploading an illustration from the media repository).¹⁴
- ▶ Lighting devices (uploading an illustration from the media repository).
- ▶ Lighting devices type (checkboxes, multiple boxes permitted): Polycandela; Metal vessel; Clay lamps; Glass lamps.
- ▶ Lighting devices (text).
- ▶ Bibliography (uploading a reference from the Bibliography section; show row weights).
- ▶ Conclusions (text).

SAVE

VII. Bibliography

A repository shared by all sections. The template is based on EndNote software with links to locally stored pdf files or online databases, such as JSTOR.

¹⁴ Files must be less than 2 MB; permitted file types are png, gif, jpg, and jpeg.

VIII. Map

Based on Google Maps, this section indicates the location of churches (yellow dots) and monasteries (red dots) and establishes links to the relevant entries in the Church and Monastery sections. It also permits hiding and showing church and monastery markers and various layers.

IX. Queries and Reports

This is a research tool that facilitates sophisticated queries of the database and produces reports for various preconceived research questions according to the database sections. The reports are provided as XML-format tables, which can be converted to MS Excel tables, permitting the automatic production of tables and charts.

Churches

- ▶ Church card.
- ▶ Church coordinates, allow the generation of a map by cartographic software.
- ▶ Churches, chronological table.
- ▶ Churches, bibliography, per church,
- ▶ Churches, bibliography (abbreviated), per church.
- ▶ Churches, bibliography, all churches.
- ▶ Church components table.
- ▶ Attached structures.
- ▶ Post-conquest history.

Monasteries

- ▶ Monastery card.
- ▶ Monastery coordinates, allow the generation of a map by cartographic software.
- ▶ Monastery, chronological table.
- ▶ Monastic components table.
- ▶ Monasteries, bibliography, per monastery.
- ▶ Monasteries, bibliography (abbreviated), per monastery.
- ▶ Monasteries, bibliography, all monasteries.
- ▶ Post-conquest history.

Literary sources

Texts card. A table of all churches or monasteries for which literary sources were inserted, enabling all the texts related to a particular church or monastery to be displayed.

Epigraphy

- ▶ Inscriptions card. A table of all churches or monasteries for which inscriptions were inserted, enabling all the inscriptions related to a particular church or monastery to be displayed.
- ▶ Index. An index of all categories in an inscription card presenting all relevant entries:
 - Actions.
 - Definitions of building.
 - Ecclesiastical titles.
 - Epigraphical abbreviations.
 - Epigraphical formulas.
 - Epithets of clergy/monks.
 - Epithets of saints.
 - Function descriptions (clergy/monks).
 - Geographical names.
 - Given date.
 - Inscription types.
 - Kinship terms.
 - Monastical title.
 - Moveable object.
 - Personal names.
 - Professions.
 - Quotations from LXX/NT.
 - Saint's names.
 - Titles/epithets of patrons/dedicators.

Decorations

Only 88 sites are presently addressed in this section. Therefore, no query has been posed for it as yet.

Architectural members

- ▶ Index. A table indicating with + and – signs which architectural members are present in each church.
- ▶ Typological tables. A typological chart and table of churches featuring a given component. Each table features a filter according to type.

X. Illustrative Material

A repository of figure and photo files related to a specific church or monastery; it is equipped with an uploading mechanism and enables every figure and the title to be hidden/shown for each; it permits image enlargement in a new window.

Appendix B: Technical

by Hagit Bagno, site developer and manager

The *Digital Corpus of Early Christian Churches and Monasteries in the Holy Land* was built with Drupal, a content management software used to create many websites and applications. Drupal has high-quality standard features, like easy content authoring, reliable performance, and excellent security. A feature that sets it apart is its flexibility; modularity is one of its core principles. Its tools help developers build the versatile, structured content required for a dynamic web experience.

The corpus includes many content types: churches, monasteries, literary sources, epigraphy, decorations, architectural members, and bibliographical records. They are all interconnected in one-to-one or one-to-many relations. A church can have many bibliographical records or many decorations.

Additionally, diverse queries were created in order to generate various reports from the data with respect to every entity in the system.

The site also includes a Google-based map of the Holy Land which displays all the churches and monasteries and a variety of layers.

Acknowledgments

The seven-year-long project, financed by the Israel Science Foundation (2014–2021), was headed by Joseph Patrich (general director) and Leah Di Segni (in charge of the database's Literary Sources and Epigraphy sections). The team included Dr. Svetlana Tarkhanova (Churches, Architectural Elements, and Liturgical Furniture sections), Sharon Burger, M.A. (Churches, Bibliography, and Decorations sections), and Dr. Tamar Backner (Monasteries and monastic churches). Hagit Bagno was the site administrator. Other team members who inserted data on church architecture for shorter terms included Alexander Melamed, M.A. Student (2014–2015), and Bar Kribus (2014–2015). The literary sources pertaining to the monasteries of the Judean Desert were inserted by Tamar Backner, while all other literary source entries were fed by Jonathan Schabbi, who also inserted most of the inscriptions in the Epigraphy section. A few inscriptions were entered by Nancy Benovitz. Thanks are due to all.

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