Now That We Have It, How Do We Keep Track of It?

A Model for Managing Construction and Building Records at Harvard University

Maureen Jennings
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Property Information Resource Center
Harvard University Planning Office
Who?

- Mission
- Patrons
- Resources
- Collections
The Property Information Resource Center (PIRC) is Harvard University's principal repository for records of the institution's buildings and land. The PIRC fulfills this purpose by collecting, organizing, cataloging, preserving, and providing efficient access to records and published information that documents Harvard University's built environment.

The PIRC helps Harvard University preserve its past and effectively plan for the future. Its collections document the rich and varied history of Harvard's built environment. Additionally, they provide critical background material for campus planning, new construction projects, and renovations to Harvard's buildings.
Patrons

- Facility Managers
- Internal Harvard project managers
- External project managers
- Architects
- Green Campus Initiative (LEED certification team)
- Land surveyors
- Planners
- Office of General Counsel
- Academic researchers
Resources

– Staff

• Part of the University Planning Office, Central Administration

• Two FTE professional (MLIS) staff

• One FT cataloger on a one-year appointment

• Student workers

• Library/Archives interns
Resources
- Technological Support

- Harvard University Technical Support
- UPO web/database manager
- In–office skill sets
Resources

– Budget

• $15K/year or less for initial start-up
• $10K or less/year for maintenance
• Minimal staff required to operate and maintain system
• Additional built-in features—report writing, special utilities, etc.
Collections

- Architectural Drawing Collection
- Maps & Surveys
- Books/Journals
- Deeds
- “Street Files” (Property History)
- Photographs (aerials, historic, current conditions)
Collections

Architectural Drawing Collection

Drawings:
- Rolled drawings on Mylar
- CAD files on CD
- TIF files on CD
- Aperture Cards

Associated Documentation
- Operation and Maintenance manuals
- Specifications
- Warrantees /Guarantees
- Land Surveys
- Reports
Capital Project Preparation Support

**USERS:**
- New capital project starting up
- Office of General Consul
- Planners
- Property Managers

**PIRC collections—Output**
- Existing conditions
- Underground utilities
- Easements, agreements with neighbors
- Site history
Collections
= Acquisitions

Project Close-Out Stage

CREATORS:
- Capital project close-outs
- Special Projects (land surveys, space inventories, etc.)
- Planners
- HRES acquisition materials

PIRC collections—Intake
- Construction project drawings
- Construction project records
- O&M / Spec info, etc.

Model Photographs: Jock Pottle for Robert A.M. Stern Architects
### IV. Materials Checklist

<table>
<thead>
<tr>
<th>Materials</th>
<th>PIRC</th>
<th>Distribution</th>
<th>Total #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADMINISTRATIVE DOCS.</strong></td>
<td></td>
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<tr>
<td>Transmittal</td>
<td>1</td>
<td>1</td>
<td>3</td>
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<tr>
<td>See Attachment 1 for example PIRC transmittal</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Contact List</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>See Attachment 3 for example</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A complete list of contact information (name, phone, e-mail, mailing address) for each person or firm (architects, contractors, sub-contractors, etc.) involved in the project.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As-built drawings, blacklines printed on Mylar</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><em>see note below for definition of &quot;as built&quot;; 0.5mil thickness, acceptable sizes are 24”x36” or 30”x42”</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As-built drawings, blacklines printed on paper</td>
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<td>2</td>
<td>3</td>
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<tr>
<td><em>see note below for definition of “as built”</em></td>
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<td></td>
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<tr>
<td>TIFF scans of as-built drawings</td>
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<td>1</td>
</tr>
<tr>
<td><em>see note below for definition of “as built”; scanned at 600 dpi resolution; file names must follow convention established in UPO’s CAD Standards publication.</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAD files of as-built drawings</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SEE UPO’s CAD Standards publication for a complete list of requirements. <em>See note below for definition of “as built”; X-refs must be bound, names must follow convention established in UPO’s CAD Standards publication.</em></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>CONSTRUCTION DOCS.</strong></td>
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<td></td>
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<tr>
<td>CAD files of Facility drawings</td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>SEE UPO’s CAD Standards publication for a complete list of requirements. <em>See note below for definition of “as built”; X-refs must be bound, names must follow convention established in UPO’s CAD Standards publication.</em></td>
<td></td>
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</tr>
<tr>
<td>Quality Assurance Checklist(es)</td>
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<td>1</td>
</tr>
<tr>
<td>See Attachment 2 for example</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Indices of electronic files</td>
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<td></td>
<td>1</td>
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<tr>
<td>Description follows, MS Excel template at upo.harvard.edu</td>
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<tr>
<td><strong>CONSTRUCTION DOCS.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specifications</td>
<td>1</td>
<td>1</td>
<td>3</td>
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<tr>
<td>As-Built Construction</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Operation and maintenance manuals</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Guarantee/warranty materials</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Addenda, change orders, sketches</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Why?

• Prior document management system not a good fit
  • Only one person able to perform system maintenance, "big footprint"
  • Compliance with standards not automated
  • One document, many formats not well-supported
• Timing—advances in technology
  • More materials generated electronically
  • Systems better able to support transfer and persistence of electronic files
• Changes to staffing structure
  • Downsizing: no full-time cataloger
  • Reorganization with UPO’s Planning Resources Group (consolidating resources)
• Expectations of patrons
  • Increased requests for on-line access
  • Universal access
• Ease of use
  • Increased requests for on-line access
  • Universal access

Why?
Physical Control
• Organizing hard copy materials according to AIA genre
• Numbering drawings so that each has a unique number
• Linking various formats by a common drawing number and extension
• Filing on-site or off-site

Intellectual Control
• Cataloging (database)
• Adding cross-references for capital project number, building name/number, genre, sheet number, date
• Tying in location of associated materials at HD

Records Management
• Harvard University Archives RMO
• Off-site, climate-controlled storage
• Legal/University guidelines for records retention
Critical Criteria:

- Security
- Ease of use for staff and patrons
- Adherence to standards
- Ability to catalog and store electronic media uniformly
- Prefer ASP model to self-hosted solution
Unequal relationships: drawing data and format data organized inconsistently; file name did not persist
What?
Data Model

 Desired Model

Equal relationships between drawing data (what applies to all formats?) and format data (what is specific to that format?)
Local Factors

Critical Criteria:

- Want to continue cataloging at the item (as opposed to set) level
- Need to serve diverse users with varying skill sets
- Geographically dispersed collections and patrons
- Want to continue business model (3-day turn-around time)
Initial Vendor Search:

- Initial Search (to generate vendor list)
- Literature search
- Consult internal resources at Harvard University & peer institutions (Cornell, Berkeley, Yale, etc.)
- Listserv queries
- Good ole Google
Industry-specific buyer's guides
Things to consider according to Tracey Robinson, Head of the Office for Information Systems in the University Library, Harvard University

- Size of your [materials] database?
- Other types of data you need to maintain?
- Scope and functions you are looking for?
- Number and type of users?
- Expectations about technology platform?
- Self-hosted, or ISP?
- Level of tech support staff you will dedicate to this application?
- Budget for purchasing system/migrating data/ongoing maintenance?

Source: e-mail to author, November 2005
Let go and let Google
Vendor Search: start to finish

- Establish critical criteria and wish list
- Write RFP (RFI step basically done by PIRC staff)
- Identify and call appropriate vendors
- Call current product users
- Send out RFPs to finalists
- Invite presentations
- Make selection
- Sign contract
Questions For Vendors

Product Summary Information

- Name
- Description
- Hardware Requirements
- Operating Systems/Networks
- Images/Document Storage
- Database Architecture
- Cost
- Training and Support
- Data Import/Export Utilities
- Company Location
Questions and desired answers

Questions for Vendors
PIRC hidden agenda

1. What is the operational platform?
   Oracle preferred for ease of data migration.

2. What types of data/formats can it manage? Must a cataloged item have electronic content?
   Needs to handle storage and delivery of CAD, TFF, etc. We prefer a system that will allow us to catalog items in a way that it does not require a file to be associated with metadata. We also need the ability to associate multiple files with a single item.

3. What library functions can it handle?
   Acquisitions, cataloging, process tracking, report generation, statistics tracking and generation, searching back-end and via OPAC.

4. How is e-content stored? How is it accessed? How is it retrieved?
   We want electronic content to be easily accessible, for example in a hierarchical folder structure.

5. If thumbnails of content are created for browsing purposes, are they generated on demand and can watermarks automatically be added?
   We prefer not to have to store thumbnails, but can if necessary. Thumbnails must be of sufficient resolution to be useful for verifying content, but not raw.
## Product Summary Information

### Archival Databases

<table>
<thead>
<tr>
<th>Researched By</th>
<th>Product Name</th>
<th>Description</th>
<th>Hardware Requirements</th>
<th>Operating Systems/Networks</th>
<th>Images/Document Storage</th>
<th>Database Architecture</th>
<th>Cost</th>
<th>Training and Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>KB</td>
<td>Voyager: <a href="http://www.vendrksys.com">http://www.vendrksys.com</a></td>
<td>Integrated library system with a few different modules packages for different types of content. Currently used by the business school although they are migrating out of it.</td>
<td>Windows</td>
<td>Oracle</td>
<td>Single User cost: Collections management module: $1400, Imaging module: $1300, Structural module: $1500</td>
<td>Training services provided and support provided for 15% of the licensed software amount per month.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KB</td>
<td>Rediscovery: <a href="http://www.redisov.co">http://www.redisov.co</a></td>
<td>Relational database system for museums, archives, and archaeological collections</td>
<td>Standard: Windows, HP and Novell networks are supported, Display of up to 99 images per object record.</td>
<td>SQL server, Oracle, or Visual FoxPro</td>
<td>Oracle, Sybase Adaptec server, Sybase SQL AnyWare, or Microsoft SQL Server.</td>
<td>Single User cost: $2000.</td>
<td>Training available for a cost, support and maintenance is 15% of software. Support is renewed annually and includes software support, new releases, bugs fixes, newsletters, and group notification.</td>
<td></td>
</tr>
<tr>
<td>KB</td>
<td>Aries: <a href="http://www.ariesons.com">http://www.ariesons.com</a></td>
<td>Used mostly by museums, but also by archival repositories and corporate clients. Large, robust system, and heavily used and supported.</td>
<td>Standard: Windows, TCP/IP networks</td>
<td>Oracle</td>
<td>Oracle, Sybase Adaptec server, Sybase SQL AnyWare, or Microsoft SQL Server.</td>
<td>Single User cost: $4000 for the first seat, $600 to each additional seat.</td>
<td>Training available for a cost, support and maintenance is 15% of software. Support is renewed annually and includes software support, new releases, bugs fixes, newsletters, and group notification.</td>
<td></td>
</tr>
<tr>
<td>KB</td>
<td>Mimios: <a href="http://www.willc.com/mimios_agile.sql.net">http://www.willc.com/mimios_agile.sql.net</a></td>
<td>Used mostly by museums; fairly robust relational database system. Easy to customize and manage.</td>
<td>Standard: Solaris (SPARC) this is true for Solaris running on SPARC machines only. The database is not available for Intel (Intel) machines running on Solaris. MS Windows 98/2000/XP, HP 9000 series-UX, HP Alpha OpenVMS, HP Unix, Linux (Red Hat), IBM OS/2/IX/VM, Any TCP/IP compatible network.</td>
<td>Oracle 8i</td>
<td>Oracle 8i</td>
<td>$5000 (not including database licenses)</td>
<td>Training is available for a fee, support packages available.</td>
<td></td>
</tr>
</tbody>
</table>

### Questions For Vendors

- What is the cost of the software, including any additional costs for support and maintenance?
- How is training available for the software, and what is the cost for this training?
- What are the system requirements for running the software, including the operating systems and network specifications?
- How many seats are available for the software, and what is the cost for each additional seat?
- Is there a trial version available for testing the software?
- What is the software's compatibility with other systems or software, including specific operating systems or network configurations?
- Are there any limitations or restrictions on the use or distribution of the software?
- How is support provided, including the availability of technical assistance and software updates?
- Are there any additional fees or requirements for ongoing support or maintenance?
- What is the process for renewing the software, including any renewal terms or plans?
- Are there any specific versions or releases of the software that are currently available, and how often are new versions released?
RFP Cover Letter

Via e-mail (per vendor request)

Vendor Rep
Vendor Info

RE: RFP

November 18, 2005

Dear X,

You have been selected to receive a Request for Proposal (RFP) for the Harvard Planning + Allston Initiative (HP+AI)’s Property Information Resource Center’s (PIRC) Integrated Library System Search. At the end of the RFP process, the PIRC will have selected the system with which to manage its current holdings and through which we serve our patrons. We will have detailed technical and cost information regarding data migration for our existing catalogs.

The attached RFP consists of the following sections:

I. Client Overview
II. System Needs Overview
III. Appendix I: Examples (screen shots) of main cataloging databases
IV. Appendix II: Overview of CAPS database
V. Appendix III: Overview of Documentum (current cataloging software)

Please fill out your responses to section II according to the instructions on page 5. Feel free to send along brochures or reports in addition to your comments in the space provided in the RFP. You may reformat the questions section to better suit your response, but please answer the questions in the same order as they appear in the RFP and ensure that your response answers the question specifically (your responses may be redundant in some cases, and that is acceptable).

The timetable for the proposal process is as follows:

<table>
<thead>
<tr>
<th>Target Date</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 18, 2005</td>
<td>Send out RFP</td>
</tr>
<tr>
<td>Dec. 07, 2005</td>
<td>Receive vendor responses to RFP</td>
</tr>
<tr>
<td>Dec. 15, 2005*</td>
<td>Vendor demonstrations</td>
</tr>
<tr>
<td>Jan. 6, 2006*</td>
<td>Make final decision</td>
</tr>
<tr>
<td>Spring 2006</td>
<td>Prepare for transition</td>
</tr>
<tr>
<td>June/July 2006**</td>
<td>Finalize transition to new ILS</td>
</tr>
</tbody>
</table>

*target dates; will vary as necessary
**depending on costs, new system may be implemented sooner

Please send your responses to me at the address below. If you have questions or need clarification on any part of this RFP, I can be reached at 617.496.2453

Sincerely,
Blah blah blah
RFP Response

Questions For Vendors

<table>
<thead>
<tr>
<th>Function</th>
<th>Vendor Ability</th>
<th>Vendor Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6 Demonstrate your product’s ability to cross reference and track</td>
<td></td>
<td></td>
</tr>
<tr>
<td>resource type. This enforces control over how collections are</td>
<td></td>
<td></td>
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<tr>
<td>organized. Resources and their associated metadata and digital</td>
<td></td>
<td></td>
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<tr>
<td>objects within collections or folders can be restricted in the same</td>
<td></td>
<td></td>
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<tr>
<td>manner, ensuring consistency.</td>
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<tr>
<td>SirsiDynix: This information could be stored as metadata.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3.7 Demonstrate your product’s ability to store and present text i.e.,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>memo field over 255 characters.</td>
<td></td>
<td>700 600 500 fluids</td>
</tr>
<tr>
<td>SirsiDynix: Each Note field supports up to 9,999 characters (the MARC</td>
<td></td>
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<tr>
<td>standard) and is repeatable.</td>
<td>1</td>
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<tr>
<td>3.8 Demonstrate your product’s ability to relate multiple digital</td>
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<tr>
<td>surrogates to one “parent” record.</td>
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<tr>
<td>SirsiDynix: Parent/child relationships are handled via the standard</td>
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<tr>
<td>methods of analytics, or bound with linking capabilities within Unicorn.</td>
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<tr>
<td>The Hyperion DNA allows the library to create hierarchies among</td>
<td></td>
<td></td>
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<tr>
<td>metadata records for better end-user browsing of collections.</td>
<td></td>
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<tr>
<td>Hyperion allows collections to be organized into a hierarchical</td>
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<td></td>
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<tr>
<td>structure according to a classification scheme defined by your staff.</td>
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<tr>
<td>Each level in the archive structure contains different resource types.</td>
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<tr>
<td>These resource types are created in the attributes policies on the</td>
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<tr>
<td>Hyperion administration screens. With Hyperion, parent-child relationships</td>
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<tr>
<td>are controlled by attributes associated with resource types. For</td>
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<tr>
<td>example, a collection resource type might have a parent-child</td>
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<tr>
<td>relationship with a sub-collection resource type. This enforces</td>
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<tr>
<td>control over how collections are organized. Resources and their</td>
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<tr>
<td>associated metadata and digital objects within collections or folders</td>
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<tr>
<td>can be restricted in the same manner, ensuring consistency.</td>
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<tr>
<td>Alternatively, Unicorn’s “bound-with” feature allows multiple</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bibliographic records to be linked to a single item record</td>
<td></td>
<td></td>
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<tr>
<td>representing one physical copy. This feature allows the library to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maintain proper cataloging for distinct titles that may circulate</td>
<td></td>
<td></td>
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<tr>
<td>as one item. Examples include:</td>
<td></td>
<td></td>
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<tr>
<td>- kits of multiple objects circulating as a single object</td>
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<td></td>
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<tr>
<td>- series issues bound as a single serial volume, but with separate</td>
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<td></td>
</tr>
<tr>
<td>title records for each issue</td>
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<td></td>
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<tr>
<td>- multiple monographic titles published as a single volume.</td>
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</tr>
<tr>
<td>The Bound-with wizard guides you through the process of linking titles</td>
<td></td>
<td></td>
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<tr>
<td>bound together. Staff identify the material desired to be the parent.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify the “child material” and add to tree. Unicorn recognizes the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>parent item ID, which links the parent call number to the child call</td>
<td></td>
<td></td>
</tr>
<tr>
<td>number when Link is selected. A parent call number can be linked to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>any number of child call numbers.</td>
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</tr>
</tbody>
</table>
Phase II

Implementation
Data Structure

Original scheme/process
- How was it done before?
- What about that system still works? What needs to change?

Mapping data
- Think like a patron: field names, cross-reference
- Think like a cataloger: which fields to use for which purposes? How will fields affect searching results and reporting functionality?

Data clean up
- What needs to be fixed immediately
- What can be fixed at a later time by running a utility
- What can be lived with

Migrating data
- Understanding data—what decisions went into the original scheme? Try not to re-invent the wheel
Specialized Customizations

- Reports
- Field renaming and repurposing
- Collection management tools
Red Book Report

General Project Info:
• Building Information
• Capital Project Information

Project Drawings Summary

<table>
<thead>
<tr>
<th>Drawing Number</th>
<th>Sheet Number</th>
<th>Format</th>
<th>Drawing Date</th>
</tr>
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<tbody>
<tr>
<td>5462</td>
<td>G1</td>
<td>HC</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5483</td>
<td>A1</td>
<td>AC</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5484</td>
<td>A1</td>
<td>HC</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5485</td>
<td>A2</td>
<td>AC</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5486</td>
<td>A2</td>
<td>HC</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5487</td>
<td>A3</td>
<td>AC</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5488</td>
<td>A3</td>
<td>HC</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5489</td>
<td>A4</td>
<td>AC</td>
<td>14-Jan-2004</td>
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<tr>
<td>5490</td>
<td>A4</td>
<td>HC</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5491</td>
<td>G1</td>
<td>DWG</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5492</td>
<td>A1</td>
<td>DWG</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5493</td>
<td>A2</td>
<td>DWG</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5494</td>
<td>A3</td>
<td>DWG</td>
<td>14-Jan-2004</td>
</tr>
<tr>
<td>5495</td>
<td>A4</td>
<td>DWG</td>
<td>14-Jan-2004</td>
</tr>
</tbody>
</table>

Specialized Customizations

Drawing Specific Info:
• Drawing Number
• Drawing Title
• Sheet Number
• Firm Info
• Format
• Drawing Date

Drawing Title: 100 Holyoke Center
HPR 2003-911 Security upgrades
Learning by Doing

- Testing
- Tweaking
- More testing
- More tweaking
- The occasional primal scream

Kahhhhhnnn!
Phase III

Post-Implementation
Post Implementation:

On-Going Tasks

- User feedback
  - Staff
  - Patrons
- Writing documentation
  - Staff
  - Patrons
- Updating website
- Dog and Pony Shows
- More Testing & Tweaking
Future Tasks

• Add in other collections
• Add building root information
• Provide secure access to electronic content for selected users
• Continue to write staff documentation and update user guides
What did we end up with?

EOS International

- ASP model (but could have self-hosted)
- Can catalog both hard copy and electronic content
- Files retain name when accessed
- Secure
- MARC or easy-MARC or Knowledge Builder module (locally-established schema)
- 24-hour support
What did we end up with?

Wishes Fulfilled

- Within budget
- Ease of operation
- Ability of patrons to link (with authorization) directly to electronic content
- Compliant with industry standards
- Security meets Harvard University Standards
- Can be used from any computer terminal, on- or off-campus
What did we end up with?

Patron Access/Security

Linked via https:

Catalog
(data about data)
Carlsbad, CA

Authorized User
(or staff)
Anywhere with internet access

Content
(electronic files)
Cambridge, MA
What did we end up with?

Staff Access/Security

Staff User
Logged into local server

Linked via https:
“data about data”
Carlsbad, CA

Direct access
Cambridge, MA

Catalog
(electronic files)

Content
What did we end up with?

Wishes As Yet Unfulfilled

- Some data fields not as flexible as desired; forced changes to original data migration plan
- Vendor-supplied documentation is not extremely comprehensive
- Clients have inconsistent control over searching options and some aspects of the display
- Thumbnail images of drawings not available
What did we end up with?
--Public view

Linking from PIRC home page
What did we end up with?

Simple Search: 90, auburn, floor—looking for floor plans of 90 Mt. Auburn Street

Type keyword(s) or phrase(s):
90 auburn floor

1. 
   - **06219_0026.0WG**
   - **Building Number/Name**: 06219 90 Mount Auburn Street
   - **Sheet Number**: A.2.1
   - **Drawing Title**: Floor plans - sub-basement
   - **Drawing Date**: 8/11/2006
   - **Firm Name**: Leers Weinzapfel Associates, Architects Inc.
   - **Support**: Mylar (TM)
   - **PIRC Drawing Number**: 06219_0026.HC
   - **Location**: PIRC; PUSEY

2. 
   - **06219_0026.HC**
   - **Building Number/Name**: 06219 90 Mount Auburn Street
   - **Sheet Number**: A.2.1
   - **Drawing Title**: Floor plans - sub-basement
   - **Drawing Date**: 8/11/2006
   - **Firm Name**: Leers Weinzapfel Associates, Architects Inc.
   - **Support**: Mylar (TM)
   - **Location**: PIRC; PUSEY

3. 
   - **06219_0026.TIF**
   - **Building Number/Name**: 06219 90 Mount Auburn Street
   - **Sheet Number**: A.2.1
   - **Drawing Title**: Floor plans - sub-basement
   - **Drawing Date**: 8/11/2006
   - **Firm Name**: Leers Weinzapfel Associates, Architects Inc.
   - **Support**: Mylar (TM)
   - **PIRC Drawing Number**: 06219_0026.HC
   - **Location**: PIRC; PUSEY
What did we end up with?

Browse Search/Author: 90 Mt. Auburn St.—I know Andrea Leers was the architect
What did we end up with?

## Results: Item-level showing link to view TIF file

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title:</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Linked Media:</strong></td>
<td>![icon]</td>
</tr>
<tr>
<td><strong>Firm Name:</strong></td>
<td>S/L/A/M Collaborative/Ondras Associates</td>
</tr>
<tr>
<td><strong>Drawing Title:</strong></td>
<td>Fourth floor furniture plan</td>
</tr>
<tr>
<td><strong>Drawing Creation Date:</strong></td>
<td>9/4/2001</td>
</tr>
<tr>
<td><strong>Dimensions [inches]:</strong></td>
<td>30 x 42</td>
</tr>
<tr>
<td><strong>Building Number /Name:</strong></td>
<td>100 Holyoke Center</td>
</tr>
<tr>
<td><strong>CAPS Project Number/Title:</strong></td>
<td>VPF 2000-001 FAD renovations</td>
</tr>
<tr>
<td><strong>Scale:</strong></td>
<td>1/8 in : 1 ft</td>
</tr>
<tr>
<td><strong>Sheet Number:</strong></td>
<td>A302</td>
</tr>
<tr>
<td><strong>Form/Genre:</strong></td>
<td>Architectural drawings</td>
</tr>
<tr>
<td><strong>Form/Genre:</strong></td>
<td>As-built drawings</td>
</tr>
<tr>
<td><strong>Location:</strong></td>
<td>PUSEY</td>
</tr>
<tr>
<td><strong>Copy 1:</strong></td>
<td>Available for Circulation</td>
</tr>
<tr>
<td><strong>Copy 1:</strong></td>
<td>Available for Circulation</td>
</tr>
</tbody>
</table>

1. **Copy:** 1 PUSEY  
   **Support:** Mylar (TM)  
   **Status:** Available for Circulation  
   **Drawing Number:** 100_S364_HC  
   **Condition and Quality:** Quality Good  
   **Collection Type:** DRAWINGS  
   **Media:** Blackline print  
   **Format:** Hard Copy

2. **Linked Media:** ![icon]  
   **Copy:** 1 PUSEY  
   **Status:** Available for Circulation  
   **Drawing Number:** 100_S364.TIF  
   **Collection Type:** DRAWINGS  
   **Format:** TIF  
   **Resolution (dpi):** 200
What did we end up with?

Results: Item-level showing link to view TIF file—secure log-in
What did we end up with?

-- Staff

Linking from PIRC home page

- Allows various levels of authorization (Admin, staff, student, etc.) to access records
- Auto-fill features, templates, macros all contribute to efficiencies in cataloging
- Flexible searching options
- Many customizable format/display options
Know who you are, what you have, and how you want/need to organize it.

Ask questions—use all possible resources: peers, experts, industry, cross-discipline concepts. The more thorough you are in this stage, the fewer surprises you’ll get in the later stages.

Search—be prepared to not find an exact 100% match for your needs: what features/functionalities are essential? What can you live without?

Purchase—make sure you’ve considered all possible angles for services, additional features, customizations, support, etc. Don’t forget to get your lawyers’ input in the contract.

Plug it in and go! Be prepared to tweak both the system and your procedures in response to user and staff feedback.
Landing page (choice of downloading a PDF version of the drawing index or searching on-line catalog):

http://www.upo.harvard.edu/pirc/search/drawindex.cfm

Direct to PIRC on-line catalog:

www.upo.harvard.edu/pirc/catalog

maureen_jennings@harvard.edu