OSU Libraries
Collection Development

Library Evaluation for Category I Proposal

BS in Architectural Engineering
Title of Proposal

School of Civil & Construction Engineering
Department

Engineering
College

The subject librarian responsible for collection development in the pertinent curricular area has assessed whether the existing library collections and services can support the proposal. Based on this review, the subject librarian concludes that present collections and services are:

[x] inadequate to support the proposal (see budget needs below)
[ ] marginally adequate to support the proposal
[ ] adequate to support the proposal

Estimated funding needed to upgrade collections or services to support the proposal (details are attached)

Year 1:
$2,224 (2 journal subscriptions)

Ongoing (annual):
Year 2: $2,357
Year 3: $2,499

Comments and Recommendations:

Date Received: 08/15/16

Date Completed: 08/29/16

Laurel Kristick
Collection Assessment Librarian

Signature

Kerri Goergen-Doll
Head of Collections & Resource Sharing

Signature

8/31/16
Date

Faye A. Chadwell
Donald and Delpha Campbell
University Librarian and
OSU Press Director

Signature

Date

Oregon State University Libraries Evaluation of the Collection Supporting a Proposal to Initiate a Bachelor of Science Program in Architectural Engineering

This Oregon State University Libraries and Press (OSULP) assessment reviews the print monographic, e-book, and electronic serials collections needed to support the proposed Architectural Engineering program. As stated in the Cat 1 proposal, this program "will provide students with breadth and depth in the engineering sciences of buildings and their systems: structural systems; heating, ventilation and air-conditioning (HVAC) systems; electrical and lighting systems; construction engineering and management. The program will emphasize integration across architectural engineering disciplines as well as with the existing civil engineering and construction engineering programs." From the OSULP perspective, students and researchers will tap various components of the library collections.

Summary of Recommendations

The monographic collection appears to be adequate to support the proposed program.

The journal collection is inadequate to support the proposed program. OSULP recommends the addition of two highly relevant journals: *Materials and Structures* ($1,398/year) and *Structural Control and Health Monitoring* ($826/year). Journal inflation for engineering titles is currently averaging 6% per year, so the cost of the journals is expected to increase each year.

Year 1: $2,224
Year 2: $2,357
Year 3: $2,499

Print Monographs and E-Books

Library evaluations of proposed programs have traditionally included the analysis of OSULP's print monograph collection. Comparing the monograph collection with other universities' collections is routine. This analysis includes a comparison of the monograph collection with peer institutions with a program similar to the one proposed.

Table 1. Monograph Comparison with Peer Institutions.

Subject	OSU	Univ. Colorado	Univ. Kansas	Univ. Nebraska	Univ. Texas	OSU Rank	Median Collection Size	OSU Compared to Median
Buildings – design and construction	235	512	376	492	771	5	492	47.76%
Architectural design	192	806	884	855	1,161	5	855	22.46%
Engineering design	488	462	548	352	674	3	488	100.00%
Structural engineering	212	254	235	296	461	5	254	83.46%
Engineering estimates	62	55	58	51	89	2	58	106.90%
Power resources	1,268	1,375	1,321	1,697	2,550	5	1,375	92.22%
Lighting	189	346	375	306	495	5	346	54.62%

Subject	OSU	Univ. Colorado	Univ. Kansas	Univ. Nebraska	Univ. Texas	OSU Rank	Median Collection Size	OSU Compared to Median
Interior lighting	12	20	22	18	28	5	20	60.00%
Electric lighting	63	100	114	113	185	5	113	55.75%
Construction industry – management	212	228	227	238	473	5	228	92.98%
Ventilation	182	134	174	226	345	3	182	100.00%
Air conditioning	224	246	235	368	444	5	246	91.06%
Heating	186	204	231	264	362	5	231	80.52%
Electric power systems	314	290	204	339	454	3	314	100.00%
Total	4,197	5,518	5,162	6,232	8,806	5	5,518	76.06%

The growing availability of e-books makes it possible to expedite access to more information from various locations. Students are able to access the books from their computer or mobile device at any time. The library currently has over 4,000 e-books in civil engineering, construction and other related subject areas, making the monograph collection adequate to support the program.

OSU is well served by the OSULP investment in the Orbis/Cascades Alliance, whose combined collection is substantial. Students and faculty can order from the collections of all the libraries in the Orbis Cascade Alliance through the Summit catalog. University of Oregon, Portland State University, University of Washington and Washington State University are some of the larger research libraries represented in the Summit catalog. Books requested through Summit are delivered to OSUL within three to five working days.

Serials/Journals

The OSULP maintain an adequate collection of journals appropriate for this proposed program. There is concern that with regular price increases to our licenses and a flat budget that access may be eroded over time. The OSULP already have sacrificed timely access to some titles in favor of an embargo period to cut costs (these journals are only available after a 12-18-month delay). In additional, some subscriptions have been cancelled over the last 10 years. A list of key journals for this program was developed using the "Construction and Building Technology" subject category in the Journal Citation Report (JCR). This produced a list of 61 journals (see Appendix A). The list includes those titles that we have current access to, those with embargoes, cancelled titles and those not owned by the OSULP.

OSU Libraries has current subscriptions to 22 of these titles (36 %), and delayed access to an additional 6 titles. Of the high-impact journals (impact factor >= 2), the library has current access to 6 titles and delayed access to 3 of the 12 journals. There are 2 highly relevant journals that are OSULP does not have access to except through inter-library loan requests.

Recommended new titles:

Materials and Structures (ISSN 1359-5997) $1,398/year
Structural Control and Health Monitoring (ISSN 1545-2263) $826/year

In addition to the recommended new subscriptions, the library will monitor usage of inter-library loan (ILL) for titles under embargo and those with no access to determine whether usage justifies the acquisition of additional journals. To date, none of the titles with restricted or no access have generated significant ILL requests (i.e., more than 5 requests over the past 5 years).

Indexes and Databases

The core indexes to the relevant information for this program are listed in Table 3. The OSULP maintain access to all as these are core to many of OSU's primary research areas.

Table 3. Current Indexes and Databases

Database	Years Covered	Description
ASCE Research Library	1990-present	Full-text access to all American Society for Civil Engineering (ASCE) journals and proceedings.
ASTM Compass	1931-present	Full-text access to all standards (including historical standards) and journals published by the American Society for Testing and Materials (ASTM)
Compendex	1970-prsent	This online version of Engineering Index covers all areas of engineering including civil engineering.
Web of Science	1970-present	Multidisciplinary database of bibliographic information gathered from thousands of scholarly journals.

Key library services & librarian expertise

The Primary Contact for the School of Civil & Construction Engineering is Lindsay Marlow. Primary Contacts serve as the major contact for faculty, staff and students, monitors trends in curriculum and research, attends relevant college, departmental and program events to gain insight, and identifies how OSULP expertise and resources can be most effectively used. They promote OSULP expertise and collaborate with the Expert Leads to integrate and leverage that expertise throughout the OSU Community.

The collection in Civil & Construction Engineering is built by the Collections Council. Providing access to items not owned by OSULP is the domain of the Interlibrary Loan and Summit staff both at OSULP and at lending libraries. Print articles located in the OSU Libraries collections may be requested via the Scan and Deliver service, which provides PDFs of the requested articles. Additional services for students include the physical attributes of the libraries including excellent computer facilities, study areas for individual and group work, and practice rooms for students.

Respectfully submitted,

Laurel Kristick
Collection Assessment and Science Librarian
August 29, 2016

Appendix A. Core Journals for Architectural Engineering

Rank	Journal Title	Journal Impact Factor	OSU Holdings
1	Computer-aided civil and infrastructure engineering	5.288	1998-1 year ago
2	Indoor air	4.33	1998-1 year ago
3	Cement and concrete research	3.48	1995-present
4	Cement & concrete composites	3.399	1995-present
5	Building and environment	3.394	1995-present
6	Energy and buildings	2.973	1995-present
7	Materials and structures	2.453	N/A
8	Automation in construction	2.442	1995-present
9	Construction and building materials	2.421	1995-present
10	Building research and information	2.196	1997-18 months ago
11	Leukos	2.167	2009-2013
12	Structural control & health monitoring	2.082	N/A
13	Journal of building performance simulation	1.807	N/A
14	Steel and composite structures	1.796	N/A
15	Tunnelling and underground space technology	1.741	1995-present
16	Journal of constructional steel research	1.702	1995-present
17	Journal of structural engineering	1.7	1983-present
18	Lighting research & technology	1.667	1999-present
19	Road materials and pavement design	1.547	N/A
20	International journal of concrete structures and materials	1.411	2012-present
21	Building simulation	1.409	N/A
22	Journal of materials in civil engineering	1.295	1989-present
23	ACI structural journal	1.227	1987-1996
23	Magazine of concrete research	1.227	N/A
25	ACI materials journal	1.154	1987-1996
26	Journal of construction engineering and management	1.152	1983-present
27	Sustainable cities and society	1.044	2011-present
28	International journal of architectural heritage	1.025	N/A
29	Structural concrete	1.023	N/A
30	Journal of building physics	1	1999-present
31	Materiales de construccion	0.96	1967-present
32	Advances in cement research	0.949	N/A
33	Indoor and built environment	0.943	1999-present
34	Structural design of tall and special buildings	0.898	N/A
35	Journal of performance of constructed facilities	0.893	1987-present
36	International journal of pavement engineering	0.877	2002-18 months ago
37	HVAC&R research	0.871	2004-18 months ago

Rank	Journal Title	Journal Impact Factor	OSU Holdings
38	Bauingenieur	0.866	N/A
39	Computers and concrete	0.849	N/A
40	Journal of Asian architecture and building engineering	0.75	N/A
41	Wind and structures	0.746	N/A
42	International journal of ventilation	0.662	N/A
43	Journal of advanced concrete technology	0.658	N/A
44	Revista Romana de Materiale-Romanian journal of materials	0.612	N/A
45	Advances in structural engineering	0.577	N/A
46	Building services engineering research & technology	0.575	1999-present
47	International journal of steel structures	0.533	2001-2008
48	PCI journal	0.526	1956-present
49	Cement Wapno Beton	0.512	N/A
50	Proceedings of the Institution of Civil Engineers-structures and buildings	0.429	N/A
51	Beton- und Stahlbetonbau	0.425	N/A
52	Advanced steel construction	0.346	N/A
53	Structural engineering international	0.299	N/A
54	Informes de la construccion	0.227	1971-present
55	ASHRAE journal	0.223	2004-present
56	Bauphysik	0.205	N/A
57	Stahlbau	0.201	N/A
58	ZKG international	0.187	N/A
59	Revista de la construccion	0.185	N/A
60	Engineering journal-American Institute of Steel Construction	0.033	Most recent 3 months
61	Science and technology for the built environment	None	2015-18 months ago