

# OUEEN'S UNIVERSITY LIBRARY AND ARCHIVES MASTER PLAN

APPENDIX

September 2013 CS&PArchitects



# APPENDIX

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# 1. LAMP CONSULTATIVE PROCESS



CS&P Architects Inc. collaborated with the LAMP Steering Group, Queen's stakeholders and an expert team of consultants over the course of 9 months on the Library and Archives Master Plan. The goal of the consultative process was to secure the widest possible participation from stakeholders. The process was broad and inclusive, focusing on listening, engaging and supporting the participation of all stakeholders and with the objective to reach consensus on a shared vision.

A broad methodology for obtaining stakeholder feedback was utilized during the consultative process and included:

- Conference calls with Queen's Core Group Weekly calls to develop a management strategy and consultation process, monitor project scope and schedule, confirm goals and objectives and arrange for exchange of pertinent documents
- 2. Workshop Consultation Sessions Facilitate discussions with key stakeholder groups
- 3. Individual Interviews Facilitate discussion with key individual stakeholders
- 4. Digital Media LAMP Website development and implementation to broaden the consultative reach of the Master Plan
- 5. Print Media LAMP Posters, designed by CS&P, displayed on campus to engage and inform stakeholders

# 2. LAMP STAKEHOLDER/CONSULTANT MEMBERS

### Queen's LAMP Core Group members

Yvonne Holland – Manager, Campus Planning Nancy Petri – Library Business Officer Martha Whitehead – University Librarian

### Queen's LAMP Steering Group members

Paul Banfield - University Archivist Kim Bell – Staff, Library Mira Dineen – Student, Alma Mater Society Jackie Druery – Queen's Learning Commons Yvonne Holland – Manager, Campus Planning Shelley King - Professor, Faculty, English Xiang Li – Faculty, Chemical Engineering Suzanne Maranda – Librarian, Bracken Health Sciences Sharon Murphy – Queen's Learning Commons Nancy Petri - Library Business Officer Jane Philipps - Coordinator of Collection Development Laurie Scott – Associate University Librarian David Skillicorn - Faculty, Computing Matthew Scribner - Student, Society of Graduate and Professional Students Barbara Teatero – Curator, Special Collections Martha Whitehead – University Librarian (Chair) Allison Williams – Student, Alma Mater Society

### **Queen's LAMP Stakeholders**

# Stakeholder Groups

- 1. Archives
- 2. Collections
- 3. Academic Services
- 4. Information Technology
- 5. Operations (Accessibillity/Security/Operations/Equity/ Event/Hospitality/Planning)
- 6. Faculty (Senate Library Committee/Advancement Committees/Research Services)
- OLC Partners/Related Groups ((Student Affairs, IT Services, Health Counselling & Disability Services, Centre for Teaching & Learning, Emerging Technology Centre, International Centre, Union Gallery)
- 8. Douglas Library
- 9. Bracken Library
- 10. Law Library
- 11. Stauffer Library
- 12. Education Library /Teacher Resource Centre
- 13. Undergraduate Students
- 14. Graduate Students
- Resource Centres (International Centre, Career Services, Four Directions)

# Stakeholder Individuals

- 1. Provost and Vice-Principal Academic Alan Harrison
- 2. University Librarian Martha Whitehead
- 3. Dean, Faculty of Arts & Science Alistair McLean
- 4. Dean, Faculty of Business David Saunders
- 5. Dean, Faculty of Education Stephen Elliott
- 6. Dean, Faculty of Engineering & Science Kim Woodhouse
- 7. Dean, Faculty of Law Bill Flanagan
- Dean, Faculty of Graduate Studies (includes School of Policy Studies and School of Urban and Regional Planning)

   Brenda Brouwer
- 9. Vice-Principal, Research Steven Liss
- Associate Vice-Principal Information Technology and C.I.O.
   Bo Wandschneider
- 11. McGill Queen's University Press Executive Director Phillip Cercone
- 12. Queen's Quarterly Editor Boris Castell
- 13. Law Library Head Amy Kaufman
- 14. Engineering & Sciences Library Head Nasser Saleh
- 15. Queen's University Archivist Paul Banifield
- Jordan Library Curator of Special Collections Barbara Teatero
- 17. Education Library Head Corey Laverty
- 18. Health Sciences Library head Suzanne Maranda
- Stauffer Learning & research Services Head Nathalie Soini
- 20. Data & Government Documents Librarian Jeff Moon

# LAMP Consultant Group members

### Prime Consultant

CS&P Architects Inc. – Paul Cravit, Susan Lewin, Suzanne Cooke Wooland

#### Sub-Consultants

Collections Specialist - Reich + Petch Architects Inc. – Stephen Petri

Library Planning Specialist - Aaron Cohen Associates – Alex Cohen

Structural Engineer - Halsall Associates Ltd. – Shahe Sagharian Mechanical/Electrical/IT - HH Angus and Associates Ltd. – Kevin O'Niell, Len Williams

Cost Consultant - Turner Townsend cm2r – Greg Curran AV Consultant - Novita Techne – David Jolliffe

### LAMP WORKSHOPS (facilitated by CS&P)

CS&P facilitated 8 workshops within a structured framework; workshops 1, 2, 3, and 4 during Phase 1 - Discovery and Analysis – Data Collection and workshops 5, 6, 7, and 8 during Phase 2 – Exploration – Needs Assessment.

An additional source of stakeholder feedback was the Queen's Library and Archives staff workshop facilitated by Erik Lockhar. CS&P also participated in the Queen's Campus Master Plan Workshop facilitated by Urban Strategies.

#### WORKSHOP #1 - November 29th, 30th, 2012

**Purpose:** Meet with LAMP Unit Groups – focus on 'my own space' and seek LAMP feedback from those having a vested interest

Questions posed at Workshop:

- 1. Existing Facilities Queen's Library & Archives Strengths & Weaknesses What are some of the noteworthy strengths and weaknesses you can identify with the facilities you use and work in, that we should address in the Master Plan?
- 2. Library & Archives Master Plan of the Future The Library & Archives Master Plan presents an extraordinary opportunity to consider the Queen's Library & Archives network in new and exciting ways which better support changing technologies, teaching, learning and research environments today and in the future. What do you think the plan will look like? Please share your ideas.

### Participants

LAMP Steering Group Queen's Stakeholder Groups

- 1. Archives
- 2. Collections
- 3. Academic Services
- 4. Information Technology
- 5. Operations (Accessibility/Security/Operations/Equity/Event/Hospitality/Planning)
- 6. Faculty (Senate Library Committee/Advancement Committees/Research Services)
- 7. QLC Partners/Related Groups (Student Affairs, IT Services, Health Counselling & Disability Services, Centre for Teaching & Learning, Emerging Technology Centre, International Centre, Union Gallery)
- 8. Douglas Library (Jordan Special Collections & Music Library, Engineering & Sciences Library)
- 9. Health Science Library
- 10. Law Library
- 11. Stauffer Library
- 12. Education Library /Teacher Resource Centre
- 13. Undergraduate Students
- 14. Graduate Students

CS&P Architects Inc.

Aaron Cohen Associates Ltd.

Reich + Petch Architects Inc.

Novita Techne

# WORKSHOP #2 - January 16th/17th, 2013

Purpose: Meet with Library & Archives themed groups and seek LAMP feedback

### Questions/Themes posed at Workshop:

- 1. Focus on Learning Space: Tell us more about studying, learning in groups, working on research projects, services you use, technologies you want ... help us design spaces for all kinds of learners
- 2. Focus on Collections: Tell us more about your collections interests, how you use and create digital content, what you want for print collections... help us design spaces for all kinds of information
- 3. Collections Task Group: Detailed discussion of user needs, collections analysis process, storage options and communication with stakeholders
- 4. Archives: Detailed discussion of digital and physical content, storage options and stakeholders beyond Queen's
- 5. Operations: Efficiencies, future operations, security, current staffing, details of six buildings
- 6. Library Systems: Observations about current strengths and issues relating to Library IT planning and support; review of technology suggestions/questions arising from focus groups

### Participants

LAMP Steering Group

Queen's Stakeholder Groups

- 1. Focus on Research Collections
- 2. Focus on Learning Spaces
- 3. Collections Task Group
- 4. Archives
- 5. Operations
- 6. Stauffer Library
- 7. Douglas Library
- 8. Law Library
- 9. Health Sciences Library

CS&P Architects Inc.

Reich + Petch Architects Inc.

#### WORKSHOP #3 - February 14th, 2013

**Purpose:** Present and discuss key strategic objectives, key principles, spatial assessment of existing buildings, conceptual options and seek LAMP feedback

### Participants

LAMP Steering Group CS&P Architects Inc. Reich + Petch Architects Inc.

### WORKSHOP #4 - March 4th, 2013

**Purpose:** Present and discuss the Campus Master Plan, LAMP programme opportunities, test programme on Stauffer and Douglas Libraries, and seek LAMP feedback

#### Participants

LAMP Steering Group CS&P Architects Inc. Urban Strategies (Campus Master Plan Architect)

### WORKSHOP #5 - March 22nd, 2013

Purpose: Present and discuss Stauffer and Douglas LAMP principles and plans and seek LAMP feedback

Participants

LAMP Steering Group CS&P Architects Inc. Reich + Petch Architects Inc.

### WORKSHOP #6 - April 26th, 2013

**Purpose:** Present and discuss the conceptual framework for a Library Network and options and concepts for Law, Health Sciences, and Education libraries and seek LAMP feedback

### Participants

LAMP Steering Group Queen's Stakeholder Groups

- 1. Law Library
- 2. Health Sciences Library
- 3. Education Library

CS&P Architects Inc.

Reich + Petch Architects Inc.

### WORKSHOP #7A - May 24th, 2013

**Purpose:** Present and discuss design principles and plans for the Education and Law libraries, facilitate discussion with Resource Centres, discuss project phasing for Stauffer Library and seek LAMP feedback

#### Participants

LAMP Steering Group Queen's Stakeholder Groups

- 1. Education Library
- 2. Resource Centres (International Centre, Career Services, Four Directions)
- 3. Law Library

CS&P Architects Inc.

#### WORKSHOP #7B - May 31, 2013

**Purpose:** Present and discuss design principles and plans for the Health Sciences Library and seek LAMP feedback

#### Participants

LAMP Steering Group Queen's Stakeholder Group – Health Sciences Library CS&P Architects Inc.

#### WORKSHOP #8 - July 3, 2013

Purpose: Review proposed master plan interim report and design concepts with LAMP Steering Group

Participants LAMP Steering Group CS&P Architects Inc.

# WORKSHOPS (facilitated by Queen's and Urban Strategies)

# LAMP IN-HOUSE WORKSHOP – January 10th, 2013

(facilitated by Erik Lockhart) **Purpose:** Discuss new spaces and improvements to existing spaces, technology, and guiding principles

Participants LAMP Steering Group Queen's Stakeholders (Library and Archives Staff)

# CAMPUS MASTER PLAN WORKSHOP - April 30th, 2013

(facilitated by Urban Strategies) **Purpose:** LAMP coordination with Campus Master Plan

Participants Queen's Stakeholders Urban Strategies CS&P Architects Inc.

# 4. LAMP PRESENTATIONS

Regular presentations were given to Queen's Stakeholders to communicate LAMP information and to facilitate discussion of proposed master plan design concepts with LAMP stakeholders.

- 1. LAMP Project Overview Presentation November 29th , 2012
- LAMP Workshop Presentations 2012 November 29th & 30th, 2013 January 16th & 17th, February 14th, March 4th & 22nd , April 26th, May 24th & 31st, July 3rd
- 3. LAMP Project Update Presentation April 26th, 2013
- 4. LAMP Senate Presentation April 30th, 2013
- 5. LAMP Campus Master Plan Presentation April 30th, 2013

In addition, the Chair of the LAMP Steering Group gave presentations to a variety of Queen's student, staff groups, faculty boards and departments, and the Senate Library Committe through the course of the project.

# 5. LAMP DIGITAL MEDIA



CS&P collaborated with Queen's Stakeholders to develop and implement the LAMP website during the early stages of the study to expand the consultative reach of the master plan. The website served both to disseminate LAMP information to a large university community and as a repository for feedback.

# 6. LAMP PRINT MEDIA



The Library & Archives Master Plan

Library and Archives Services

Collections Develop a sustainable collection model that improves preservation, access and disp

Technology Integrate new technologies seamlessly into the delivery o art libraries and archives.

Learning and Study Spaces Increase the number of individual and collaborative learning and concept the individual encounts

Sense of Place Restore, transform and walks the potential of underdeveloped likeary and archives provide memorable places for social and instillectual encounter and discovery.

Accessibility Provide safe, secure and universally accessible learning and study environments i compus liberaties and archives.

Diversity and Community Welcome and recognize cultural diversity and comm programming.

Facilities and Operations Develop a comprehensive and sustainable strategy for the facilities and operations of libraries and archives which aligns with the University's academic mission.



What we've learned so far... The Library & Archives Master Plan

#### Archival and Special Collections

What benefits or constraints can you imagine in a joint expanded facility for archival and special collections? What opportunities do you see for enhanced access, conservation, display and technology? Have your say-gueensu.ca/connect/lamp











LAMP Posters were designed by CS&P and displayed on campus and posted on the LAMP website to inform and engage Queen's Stakeholders.

During Phase One of LAMP, Discovery and Analysis, quantitative and qualitative data was collected on each of Queen's University 6 existing libraries and archives facilities. Over the course of several months pertinent documents were acquired, a thorough visual investigation was undertaken on each facility, and key facility staff was interviewed, yielding significant building condition and operation statistics.

# DOUGLAS LIBRARY

Address	Queen's University, Main Campus 93 University Avenue, Kingston, Ontario
Collections	W.D. Jordan Special Collections and Music Engineering and Science
Age of Building	1924 - 89 years
Renovation History	1964 North Addition 1996 Renovation (Engineering/ Science Library, Front Entry, north skylight) 1999 Renovation (Jordan Library and upgrade of 1923 stacks)
Area	12,166 SM (130,954 sf)
Percent of Total Library System	26.6%
Deferred Maintenance	\$900,000 (13.8% of total library deferred maintenance cost)
Operating Cost	Annual operating cost is very high. Cost includes steam, electricity, and water utility services as well as custodial, maintenance, and waste pick up.
ARCHITECTURAL	Douglas Library, the oldest of Queen's libraries is an iconic building designed in the Collegiate Gothic style and centrally located on the main campus. In 1964 a significant addition, which included 3 underground floors, was constructed on the north side of the library. In 1996 and 1999, the Engineering and Science Library and the Jordan Library were renovated. Today the library consists of 7 full stories spread over two adjoining wings, including 4 full basement levels and a rooftop mechanical penthouse. The library houses the Special Collections and Music Library, the Engineering and Science Library, and includes stacks, reading rooms, group study rooms, an electronic classroom and staff offices. There are 4 interior egress stairwells and 1 historic stair, as well as 2 passenger elevators and 1 freight elevator. The building fully complies with barrier-free requirements of the Ontario Building Code. The exterior walls of the original building is constructed of Kingston limestone with concrete block backup, cast-in-place concrete walls, and insulated pre-finished metal panels. The 1964 north Addition features Queenston limestone cladding. Windows are fixed and operable in painted steel frames with exterior non-insulating glass and interior single glazed units. Exterior doors are wood in wood frames; service doors are metal. The Douglas Library building is primarily roofed with sloping slate shingles with copper flashing, gutters, and downspouts. Additional sections of the roof include the inverted roof membrane assembly system with extruded polystyrene board insulation, the ballasted built-up roof system, and pavers on a rubber roofing membrane.

Roof drains directly connect to the municipal storm water system. The north elevation has a small skylight at grade, allowing light into the Basement. The building interior walls consist of concrete block and gypsum board partitions, plaster partitions, exposed stone and cast-in-place concrete walls. Wall finish is paint, wood paneling and ceramic tile. Interior doors are either wood or metal in metal frames, as well as some bronze and glass doors. Floor finishes include stone, carpet, vinyl composite tile, and ceramic tile. Floors in service areas are unfinished. Ceilings are painted gypsum board, acoustical ceiling tiles, and painted concrete. Parts of building, including the stack areas have a wet sprinkler system which poses a significant risk to the collections.

STRUCTURAL The building superstructure is reinforced concrete construction with cast-in-place concrete columns, load bearing walls, concrete beams, cast-in-place concrete floor slabs, poured concrete foundation walls, pile foundations, and poured concrete strip and spread footings. The roof structure consists of a reinforced cast-in-place concrete deck and structural steel.

#### MECHANICAL Plumbing

Domestic water supply enters the building through an 8" water main and a 3" water meter, located in the Ground Floor Mechanical Room. The system includes a steam converter and pump and supplies domestic cold water to the building's plumbing fixtures, drinking fountains and hose bibs, as well as supplying the domestic hot water system. Steam supply is from a central plant. The building utilizes copper piping for water distribution and cast iron for sanitary waste. There are 3 storm water pumps and 2 sewer ejector pumps located on Level 1. Sanitary and storm drainage utilize a common storm drainage system.

### HVAC

The building is cooled with chilled water circulated through air handling units located throughout the building. The chiller and pumps are located in the Mechanical Room on Level 1, and the cooling tower is on the roof. There are various exhaust systems for the Electrical Room, Emergency Generator Room, and washrooms. The South Reading Room on Level Seven has no ventilation or air conditioning. Heating of the building is provided by steam or hot water coils for the air handling units and forced hot water to unit heaters, reheat coils and perimeter radiation. The heating, ventilation and air conditioning are controlled by a DDC energy management system. There are multiple zones throughout the building. An air compressor for the control system is located in the Ground Floor Mechanical Room.

#### Life Safety

The building is partially sprinklered, with 10 zones. The system includes 2 fire pumps and a standpipe system, which serves fire hose cabinets located throughout the building. Handheld fire extinguishers are located in the hose cabinets and in all Mechanical Rooms. The north and south Reading Rooms on Level Seven do not have sprinklers. Siamese fire hose connections are located on the north side of the building.

#### ELECTRICAL Service/ Po

### Service/ Power/ Lighting

Power is supplied by the Kingston Public Utility Co. to the Library from a 5KV network switch located in the Electrical Room in the Main Building on Level 3. The electrical service provides power for panel boards, disconnect switches and transformers located in electrical closets throughout the building. Lighting fixtures types include incandescent, recessed compact fluorescent downlights, track lighting, chain hung fluorescent light with wire guards, strip and recessed fluorescents, pendant fixtures, incandescent potlights, and suspended fluorescent fixtures.

#### Life Safety/ Security

The building has a diesel fed emergency generator with storage tank located in the Electrical Room, which provides emergency lighting for the building and supports life/safety systems. Lighted exit signs are located throughout the building at egress points and paths of egress from the building. The fire alarm control panel is a multizone, addressable panel with battery back-up, and is located in the Communications Room. The fire alarm system is centrally monitored by both the Kingston (KFD) and the Queens Emergency Report Center (ERC). The library is connected to the campus DDC Monitoring System.

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Reference: Existing building information was provided by Queen's University and from the VFA Asset Detail Report, dated January 9, 2013

# STAUFFER LIBRARY

Address	Queen's University, Main Campus 101 Union Street, Kingston, Ontario
Collection	Humanities and social sciences, art, government documents, maps
Age of Building	1994 - 19 years
Renovation History	2005 – Queen's Learning Commons renovation on ground floor
Area	22,791 SM (245,320 sf)
Percent of Total Library System	49.8%
Deferred Maintenance	\$1,200,000 (18.4% of total library deferred maintenance cost)
Operating Cost	Annual operating cost is average. Cost includes gas, electricity, and water utility services as well as custodial, maintenance, and waste pick up.
ARCHITECTURAL	Stauffer Library is designed in the Neo-Gothic architectural style and is located centrally on the main campus. The building has 5 storeys, a full basement and includes a rooftop mechanical penthouse. In 2005 the Queen's Learning Commo

renovation significantly transformed the Ground Floor to create an enriched learning ARCHITECTURAL environment. The library houses the university's humanities and social sciences collections and contains state of the art computing and information services, seminar and training rooms, meeting rooms, maps, air photos, government documents, data collections, and the Union Gallery sponsored by the Alma Mater Society. There are 4 interior egress stairwells and 1 central spiral convenience staircase and several access stairways. There are 2 passenger elevators and 1 freight elevator. The building fully complies with barrier-free requirements of the Ontario Building Code. The exterior walls are constructed of limestone veneer with concrete block backup, castin-place concrete walls, insulated pre-finished metal panels, and exposed pre-cast architectural concrete. Windows are fixed and operable in aluminum frames with insulating glass. Exterior doors are glazed in wood frames; service doors are metal. The roof system is an inverted roof membrane assembly with extruded polystyrene board insulation. Roof drains directly connect to the municipal storm water system. The east elevation contains large skylights. The building interior walls consist of concrete block and gypsum board partitions, exposed stone and cast-in-place concrete walls. Wall finish is paint, wood paneling and ceramic tile. Interior doors are either wood or metal in metal frames. Floor finishes include stone, carpet, vinvl composite tile, and ceramic tile. Floors in service areas are unfinished. Ceilings are painted gypsum board, acoustical ceiling tiles, and painted concrete.

STRUCTURAL The building superstructure is reinforced concrete construction with cast-in-place concrete columns, load bearing walls, concrete beams, cast-in-place concrete floor slabs, poured concrete foundation walls, pile foundations, and poured concrete strip footings. The roof structure consists of a reinforced cast-in-place concrete deck. The mechanical penthouse structure is comprised of a steel roof deck supported by steel framing.

### MECHANICAL Plumbing

Domestic water supply to the building is through a 10" water main and a 4" water meter, located in the basement Mechanical Room. The system includes two pumps and supplies domestic cold water to the building's plumbing fixtures, drinking fountains, hose bibs, and to the domestic hot water system. The domestic hot water system consists of electric hot water heaters, located in Service Rooms on each floor of the building. The building utilizes copper piping for water distribution, black iron for perimeter heating system and cast iron for sanitary waste. There are 4 storm water pumps and 4 sewer pumps located in the basement. Sanitary waste is disposed to the site sewer main line, which is disposed to the municipal sanitary waste system.

#### HVAC

The building is cooled with chilled water circulated through air handling units located on the fifth floor Penthouse. Pumps, 2 chillers, 2 cooling towers, and a gas-fired steam boiler are located in the Penthouse. There are various exhaust systems for the Electrical Room, Emergency Generator Room, Mechanical Rooms and washrooms. Heating of the building is provided by a glycol loop to the air handling units, and forced hot water to unit heaters, VAV boxes, reheat coils, perimeter fin-tube radiation and perimeter ceiling mounted radiant panels. Hot water for the heating system is supplied by two hot water boilers, pumps, and two heat exchangers located in the fifth floor Penthouse. The heating, ventilation and air conditioning are controlled by a

DDC energy management system. There are multiple zones throughout the building. An air compressor for the control system is located in the Penthouse.

### Life Safety

The building is fully sprinklered, with eleven zones. The system is primarily a wet sprinkler system, with a dry system at the loading dock area only. The system includes an 8" feed line, two fire pumps, and a standpipe system, which serves fire hose cabinets located throughout the building. Handheld fire extinguishers are located in the hose cabinets and in all Mechanical Rooms. Siamese fire hose connections are located by the front entrance of the building.

### ELECTRICAL

#### Service/Power/Lighting

Power is supplied to the library from a 5KV network switch located in the Basement. The electrical service provides power for panels, transformers, disconnect switches and miscellaneous lighting and power requirements for the entire building. Lighting fixtures types include 1 ft x 8ft pendant mounted 2 lamp fluorescent fixtures, 6 inch x 8 ft 2 lamp fluorescents and a variety of 8 inch round flush mounted accent fixtures.

#### Life Safety/Security

The building has a diesel fed emergency generator located in the penthouse with the diesel tank and pumps located in the Basement. Emergency panel boards provide emergency lighting for the building and support life/safety systems. Lighted exit signs are located throughout the building at egress points and paths of egress from the building. The fire alarm control panel is a multizone, addressable panel with battery back-up, and is located in the Basement. The fire alarm system is centrally monitored by both the Kingston (KFD) and the Queens Emergency Report Center (ERC). The library has several control systems including a DDC Monitoring System to monitor and controls HVAC systems, a Library Access Control System, a Library Intrusion Detection System and a Computer Room Intrusion System.

Reference: Existing building information was provided by Queen's University and from the VFA Asset Detail Report, dated January 9, 2013

# LAW LIBRARY

Address	Sir John A MacDonald Hall Queen's University, Main Campus 128 Union Street, Kingston, Ontario
Collection	Law
Age of Building	1960 - 53 years
Renovation History	1966
Area	2,571 SM (27,674 sf)
Percent of Total	5.6%

Library System	
Deferred Maintenance	\$1,000,000 (15.3% of total library deferred maintenance cost)
Operating Cost	Annual operating cost is average. Cost includes steam, electricity, and water utility services as well as custodial, maintenance, and waste pick up.
ARCHITECTURAL	The Law Library is located in the Sir John A. Macdonald Hall, a limestone and pre-cast concrete paneled Modern building. Macdonald Hall is a 3 storey building including a basement housing the Faculty of Law and connected to the Dunning Hall Building and to Mackintosh-Corry Hall. The library occupies part of the Second and Third Floor as well as part of the Basement. The Library spaces include a large Reading Room connected to the floor above by a mezzanine, group study rooms, open study space, a moot court, conference rooms, adaptive technology room, graduate room, stacks, and offices. The library has 2 interior egress stairwells and 1 passenger elevator. The building complies with barrier-free requirements of the Ontario Building Code. The exterior walls are constructed of pre-cast concrete veneer panels and rough limestone with concrete block backup, and insulated metal panels. Windows are fixed or operable in wood or aluminum frames, either single or double glazed. Exterior doors are glazed in metal frames; service doors are metal. The roof system in an inverted roof membrane assembly with stone ballast. Roof drains directly connect to the municipal storm water system. Building interior walls are primarily clad in gypsum board, some rooms have wood paneling. Wall finish is paint, wood paneling and ceramic tile. Interior doors are either wood in hollow metal frames. Floor finishes include stone, carpet, vinyl composite tile, and ceramic tile. Ceilings are painted gypsum board, acoustical ceiling tiles, and painted concrete.
STRUCTURAL	The building superstructure consists of cast-in-place concrete floor slabs, poured concrete foundation walls on spread footings. The roof structure consists of concrete on metal pan supported by steel framing.
MECHANICAL	<b>Plumbing</b> The domestic water supply is provided by the Kingston Public Utilities Commission and enters the building through a 4" water main and a 1-1/2" water meter, located in the ground floor Mechanical Room. This water line supplies domestic cold water to the building's plumbing fixtures, drinking fountains and hose bibs, as well as supplying the domestic hot water system. The domestic hot water system is located in the ground floor Mechanical Room and consists of a 72-gallon, 4500 watt, electric hot water tank, a re-circulating pump and a hot water loop. An additional 175 Liter, 3800 watt, electric water heater is located in the basement Utility Room. The building utilizes copper piping for water distribution and cast iron for sanitary waste. There are three storm water pumps located in the basement. Sanitary waste is disposed to the site sewer main line, which is disposed to the municipal sanitary waste system.
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The HVAC system for the third floor consists of heat pumps. Circulating pumps, a steam converter and a cooling tower for this system are located in an adjacent building (Dunning Hall). Air handling units and return air fans, located in the third floor Mechanical Room, serve the remaining floors. Only a few locations are air-

conditioned. The first floor Library office area is cooled from small chillers in an adjacent room and on the roof. The first floor Computer Lab is cooled from a packaged, water-cooled chiller, located in an adjacent room. The large classrooms on the first floor are cooled from a 22-Ton, rooftop unit. The basement lecture halls are cooled from a 36.5-Ton rooftop chiller. Office number 207 has a window-mounted air conditioner. The building has various exhaust systems for the Electrical Room, Mechanical Rooms and washrooms. Heating of the building (all except the third floor) is provided by steam coils to the air handling units, steam coil unit heaters, hot water reheat coils and forced hot water perimeter fin-tube radiation. Hot water for the heating units is supplied from a steam converter and two circulating pumps, located in the ground floor Mechanical Room. Steam for the heating system is provided by a central plant. A condensate receiver and return pumps are located in the Mechanical Room.

The heating, ventilation and air conditioning are controlled by a mixture of diret digital controls and pneumatic controls, with pneumatic actuators. There are numerous zones throughout the building. An air compressor for the control system is located in the ground floor Mechanical Room.

#### **Fire Suppression**

The building does not have a sprinkler system. A 4" standpipe comes off of the main water supply line, ahead of the water meter, and serves fire hose cabinets located throughout the building. Handheld fire extinguishers are located in the hose cabinets. Siamese fire hose connections are located by the front entrance of the building.

### Life Safety

The building does not have a sprinkler system. A 4" standpipe serves fire hose cabinets located throughout the building. Handheld fire extinguishers are located in the hose cabinets. There is a Siamese hose connection at the front entrance of the building.

ELECTRICAL

### Service/ Power/ Lighting

Power is supplied underground to the building from Dunning Hall's main distribution panel to the Macdonald Hall main distribution panel located in the Macdonald Hall main Electrical Room. This service feeds panelboards and disconnects throughout the building. Library lighting includes fluorescent fixtures that are surface, wall and pendant mounted, as well as recessed downlights.

#### Life Safety/ Security

Emergency power is supplied underground from Dunning Hall's emergency panelboard located in the main Electrical Room in Macdonald Hall. This provides emergency power to the emergency lighting fixtures for the facility. Lighted exit signs are located throughout the building at egress points and paths of egress from the building. The fire alarm control panel is a multizone zone, addressable panel with battery back-up. The fire alarm system is centrally monitored by both the Kingston (KFD) and the Queens Emergency Report Center (ERC). The library is connected to the campus direct digital controls Monitoring System.

Reference	Existing building information was provided by Queen's University and from the VFA
	Asset Detail Report, dated January 9, 2013

### HEALTH SCIENCES LIBRARY

Address	Botterell Hall
	Queen's University, Main Campus 18 Stuart Street, Kingston, Ontario
Collection	Health Sciences
Age of Building	1977 - 36 years
Renovation History	1991 – Addition, 5 storey with basement and sub-basement 2005 – Learning Commons renovation (CHEER)
Area	2,882 SM (31,022 sf)
Percent of Total Library System	6.3%
Deferred Maintenance	\$1,500,000 (23.0% of total library deferred maintenance cost)
Operating Cost	Annual operating cost is very high. Cost includes steam, electricity, and water utility services as well as custodial, maintenance, and waste pick up.
ARCHITECTURAL	Health Sciences Library is housed in Botterell Hall, a Modern building with precast concrete bands and aluminum strip windows. Botterell Hall has twelve stories, a full basement, full sub-basement and a rooftop mechanical penthouse and is attached on the south facade to the Cancer Research Institute. In 2005 the Ground Floor was renovated to house the Centre for Health Electronic Education Resources (CHEER). The library occupies part of two floors on the Ground and Basement Levels and contains a learning commons space with group study rooms and open study space, an electronic classroom, stack space, and staff offices. The library has 2 egress stairwells and 1 passenger elevator. The building partially complies with barrier-free requirements of the Ontario Building Code. The exterior walls are constructed of pre-cast concrete veneer panel walls with concrete block backup, insulated metal panels and cast-in-place concrete walls. Windows are fixed in aluminum frames with insulating glass. Exterior doors are glazed in aluminum frames; service doors are metal. The roof system is an inverted roof membrane assembly with extruded polystyrene board insulation. Roof drains directly connect to the municipal storm water system. The building interior walls consist of concrete block and gypsum board partitions, exposed brick and cast-in-place concrete walls. Wall finish is paint, wood paneling and ceramic tile. Interior doors are either wood or metal in metal frames. Floor finishes include stone, carpet, vinyl composite tile, epoxy coating and ceramic tile. Floors in service areas are unfinished. Ceilings are painted gypsum board, acoustical ceiling tiles, and painted concrete.

STRUCTURAL The building superstructure consists of concrete frame construction with cast-in-place columns, beams, and floor stabs. Foundation walls are cast-in-place concrete with strip and spread footings, and pile foundations. Roof construction is a cast-in-place concrete deck.

#### MECHANICAL

### Plumbing

Domestic water supply to the building is through 2 - 6" water main and a 4" water meter, located in the Basement Mechanical Room. The system supplies domestic cold water to the building's plumbing fixtures, drinking fountains and hose bibs, as well as supplying the domestic hot water system. The domestic cold water system utilizes a pump. The domestic hot water system is located in the Sub-Basement Mechanical Room. Steam supply is from a central plant and enters the Sub-Basement through an 8" line. The building utilizes copper piping for water distribution and cast iron for sanitary waste. There are two storm water pumps and two sewer ejector pumps located in the Sub-Basement. Sanitary waste is disposed to the site sewer main line, which is disposed to the municipal sanitary waste system.

#### **HVAC**

HVAC is provided by heat pumps distributed throughout the building with multiple zones. Pumps, 2 chillers, a heat recovery system, 4 cooling towers, and air compressors are located in the Penthouse. Air compressors and 2 centrifugal pumps are located in the Sub-Basement. The building has exhaust systems for the Electrical Room, Emergency Generator Room, Mechanical Rooms and washrooms.

#### Life Safety

The building is fully sprinklered and includes a fire pump, a standpipe system, and handheld fire extinguishers and 2 exterior Siamese connections.

# ELECTRICAL

#### Service/ Power/ Lighting

Power is supplied to the building from the Public Utility Network. The electrical service provides power for panels, disconnect switches and miscellaneous lighting and power requirements for the entire building. Library lighting is primarily fluorescent fixtures, either ceiling mounted, recessed, or wall mounted with 2, 3, and 4 foot lamps. The library also has incandescent lighting fixtures, ceiling and wall mounted.

#### Life Safety/ Security

Botterell Hall has 2 diesel emergency generators located in the penthouse and the First Floor. Emergency panel boards provide emergency lighting and power for the building and support life/safety systems. Lighted exit signs are located throughout the building at egress points and paths of egress from the building. The fire alarm control panel is an outdated multizone, non-addressable panel with no battery back-up, and is located on the First Floor. The fire alarm system is centrally monitored by both the Kingston (KFD) and the Queens Emergency Report Center (ERC). The library is connected to the campus DDC Monitoring System.

Reference:

Existing building information was provided by Queen's University and from the VFA Asset Detail Report, dated January 9, 2013

# EDUCATION LIBRARY

Address	Duncan McArthur Hall Queen's University, West Campus 511 Union Street, Kingston, Ontario
Collection	Education
Age of Building	1972 - 41 years
Renovation History	-
Area	2,345 SM (25,241 sf)
Percent of Total Library System	5.1%
Library Replacement Cost	\$9,156,475
Deferred Maintenance	\$520,000 (8.0% of total library deferred maintenance cost)
Operating Cost	Annual operating cost is low. Cost includes steam, electricity, and water utility services as well as custodial, maintenance, and waste pick up.
ARCHITECTURAL	The Education Library is located in Duncan McArthur Hall, the Faculty of Education building on the west campus. The building design has been described as, "a prototype design for a typical early 1970's era Canadian public high school" The facility has 3 storeys, a partial basement and a rooftop mechanical penthouse. The library houses the university's Education collection and the Teacher Resource Centre (TRC) collection and features a large 3 storey central atrium space with mezzanines, an electronic classroom, stacks, group study rooms, open study areas, a simulated classroom area, and offices. The TRC serves local school boards. There is 1 interior egress stairwell and 1 open convenience staircase and 1 freight elevator in the library. The building partially complies with barrier-free requirements of the Ontario Building Code. The exterior walls are constructed of face brick masonry veneer and precast concrete panel walls with concrete block backup, cast-in-place concrete walls. Windows are fixed and operable in aluminum frames with insulating glass. Exterior doors are glazed in aluminum frames; service doors are metal. The roof system in an inverted roof membrane assembly with extruded polystyrene board insulation. Roof drains directly connect to the municipal storm water system. The atrium features 16 – 4 foot diameter round skylights. The building interior walls consist of concrete block and gypsum board partitions, exposed brick. Doors are either wood or metal in metal frames. Floor finishes include carpet, vinyl composite tile, quarry tile, terrazzo, and ceramic tile. Floors in service areas are unfinished. Ceilings are painted gypsum board, acoustical ceiling tiles, and painted concrete.

STRUCTURAL The building superstructure consists of concrete frame construction with cast-in-place columns, beams, and floor stabs. Foundation walls are cast-in-place concrete with strip and spread footings, and pile foundations. Roof construction is a cast-in-place concrete deck.

#### MECHANICAL

### Plumbing

Domestic water supply enters the building through a 6" water main and a 4" water meter, located in the basement Mechanical Room. The system supplies domestic cold water to the building's plumbing fixtures, drinking fountains and hose bibs, as well as supplying the domestic hot water system. The domestic hot water system consists of 2 steam heated hot water tanks located in the Basement. The building utilizes copper piping for water distribution and cast iron for sanitary waste. Sanitary waste is disposed through a 8" site sewer main line, which connects to the municipal sanitary waste system.

### HVAC

HVAC is provided by air handling units and return air fans. Area heating is controlled by room thermostats. An adjacent Refrigeration Plant provides chilled water for air conditioning. Steam converters and pumps deliver hot water to air handling units and unit heaters. The facility also includes steam unit heaters and electric baseboard heaters, with steam delivered from a Central Plant. There are exhaust systems for the Electrical Room, Mechanical Rooms and washrooms. The heating, ventilation and air conditioning are controlled by a DDC energy management system.

#### Life Safety

The building does not have a fire sprinkler system. A 4" standpipe system serves fire hose cabinets located throughout the building. Handheld fire extinguishers are located in the hose cabinets and in all Mechanical Rooms. Siamese fire hose connections are located at the south and east side of the building.

### ELECTRICAL

#### Service/ Power/ Lighting

Power is supplied to the building from the Public Utility Network. The electrical service provides power for panels, disconnect switches and miscellaneous lighting and power requirements for the entire building. Library lighting is primarily fluorescent fixtures, either ceiling mounted, recessed, or wall mounted with 2, 3, and 4 foot lamps. The library also has incandescent lighting fixtures, ceiling and wall mounted.

#### Life Safety/Security

The building has a diesel emergency generator located in the main Electrical Room. Lighted exit signs are located throughout the building at egress points and paths of egress from the building. The fire alarm control panel is a multizone, addressable with battery back-up located in the Basement. The fire alarm system is centrally monitored by both Kingston (KFD) and the Queens Emergency Report Center (ERC). The library is connected to the campus DDC Monitoring System.

Reference:Existing building information was provided by Queen's University and from the VFAAsset Detail Report, dated January 9, 2013

# ARCHIVES

Address	Kathleen Ryan Hall Queen's University, Main Campus 50A Arch Street, Kingston, Ontario
Collection	Archives
Age of Building	1907 - 106 years
Renovation History	1982
Area	2,392 SM (25,747 sf)
Percent of Total Library System	5.2%
Deferred Maintenance	\$1,400,000 (21.5% of total library deferred maintenance cost)
Operating Cost	Annual operating cost is very low. Cost includes steam, electricity, and water utility services as well as custodial, maintenance, and waste pick up.
ARCHITECTURAL	The Archives is housed in Kathleen Ryan Hall, a concrete and masonry Neo-Classical building clad in rusticated limestone with a hipped roof. The building is 5 storeys, including a basement and is located on the main campus. The Archives provides archival management and conservation of University records and culturally significant records of organizations and individuals. The Archives building features extensive archival storage space, offices, lab and administrative spaces, and a large Reading Room. There are 2 steel egress stairways and an elevator. There are 2 main entrances one on the north and the other on the south face of the building, neither of which faces a street. Building orientation and access, both by pedestrians and vehicles is compromised. The building does not comply with barrier-free requirements of the Ontario Building Code. Exterior walls are rough stonework with concrete block backup. Windows are single glazed in wooden frames with interior aluminum framed units. Exterior doors are solid wood in wood and steel frames. The roof systems include a ballasted 4-ply built-up roof over 4" of insulation over the flat sections and asphalt shingles over the sloped portions of the roof. Roof drains on flat roofs and and rainwater leaders draining sloped roofs directly connect to the municipal storm water system. The building interior walls consist of concrete block and gypsum board partitions. Wall finish is paint on masonry and gypsum board partitions. Interior doors are acoustical ceiling tiles and painted concrete.
STRUCTURAL	The building superstructure is masonry foundation walls with concrete strip and spread footings. The exterior walls are rusticated masonry with concrete block backup. Floors are constructed of cast-in-place concrete and the roof structure is believed to be wood.

# MECHANICAL

#### Plumbing

Plumbing consists of domestic water, sanitary, drain and vent pipe systems including service equipment and fixtures.

#### HVAC

Heating for the building is provided by a heat exchanger and distribution system, including supply and return piping systems, pumps, tanks and heat radiating devices. The cooling system for the building includes chillers, cooling towers and cooling heat exchangers and distribution systems, condensing units, piping supply and return systems, pumps and tanks. The HVAC system includes a temperature control system, ventilation systems consisting of dedicated make-up supply air and exhaust systems. There are also dedicated mechanical systems to support contained sensitive environmental chambers and special conditions such as the use of laboratory gases.

Life Safety The building does not have a fire suppression sprinkler system.

#### ELECTRICAL

Service/ Power/ Lighting

Power is supplied by the Kingston Public Utility Co. to the Archives from a 5KV network switch located in the Basement Electrical Vault Room. The electrical service provides power for panelboards, disconnect switches, transformers, and miscellaneous electrical equipment. Lighting fixtures types include chain hung 1 and 2 lamp fluorescent fixtures, ceiling mounted 1 lamp fluorescent fixtures, 2 ft x 2 ft U-Bent fluorescent fixtures, wall mounted fluorescent valance fixtures, and 3 lamp incandescent fixtures.

# Life Safety/ Security

The building receives emergency power to a distribution panel located in the Basement Electrical Room. Lighted exit signs are located throughout the building at egress points and paths of egress from the building. The fire alarm control panel is a multizone, addressable panel with battery back-up, and is located in the front entry vestibule of the building. The fire alarm system is centrally monitored by both the Kingston (KFD) and the Queens Emergency Report Center (ERC). The library is connected to the campus DDC Monitoring System.

Reference: Existing building information was provided by Queen's University and from the VFA Asset Detail Report, dated January 9, 2013

# 8. COLLECTIONS BENCHMARKS

### PRELIMINARY BENCHMARKING

The purpose of the library benchmarking is to assist in developing a framework for a sustainable library collection model for the LAMP as a library system, and to compare best practices from other comparable Canadian University research library systems.

### UNIVERSITY OF GUELPH

#### Library Buildings

The 262,133 sf McLauglin Library is the principal repository for Library material at the University of Guelph. This heavily used Library supports 1,500,000 annual visits, and includes nearly 1.3 million volumes. A collection management statement is currently under development.

### **Planning Process**

The University of Guelph launched the Library Master Space Plan (LMSP) Project and hired a consultant, Cannon Design International to support the development of a plan. A priority is to recover space for student needs within the existing Library, while not increasing the building footprint significantly. The stated goal is to better respond to the study needs of students today and into the future (10 to 20 years), and to build a plan that balances the needs of the diverse community of undergraduate students, graduate students, and faculty. Extensive student consultation is a lynchpin of the plan. A draft plan and initial concepts will be ready for September 2013 with a goal for completing the LMSP by December 2013.

### Strategic Direction

The Library will look to better align funding, skills, and human and operational resources with the mission and strategic direction of the university. Specifically, new strategies will be developed to sustain the Information Resources budget and maximize the effectiveness of future budget allocations. Base budget lines and a multi-year plan to support collections space management tasks and projects will be established, in order to preserve the university's past investments in scholarly collections and to create space for their future growth.

### Actions to Date

Over the past six years the Library has invested over \$1.5 million to upgrade and enhance Library space and to expand much needed student study space. During this period an estimated 890 electric outlets were added, and seating capacity was increased by 43 percent to 2713 from 1887. Many of these projects were incremental, addressed only part of the needs, and were completed as part of annual planning. The LMSP was commissioned to guide future decisions and investments.

#### **Planning Targets**

Interim results from the extensive student engagement process that was engaged by the LMSP indicate that students love the library, but there are presently not enough seats, plugs, and study rooms to address the needs of students. A policy to determine Library seat count based on student enrollment was developed. The present ratio is 13% (2713 seats), with the desired ratio being targeted at 20% (4320 seats). This represents a greatly increased space need for student study space, which, with a fixed footprint, requires a corresponding reduction in collections space. Preliminary planning results target a reduction of print collections from 41% of total Library space to 28% of total Library space.

# 8. COLLECTIONS BENCHMARKS

# UNIVERSITY OF BRITISH COLUMBIA

# Library Buildings

The University of British Columbia has 15 branches and divisions, including on and off campus locations and an Okanagan campus locations. Total square footage is 380,850 sf. This heavily used Library system supports 2,800,000 annual visits, and includes nearly 6.5 million volumes.

### **Planning Process**

The University of British Columbia developed the UBC Library Strategic Plan 2010-2015. The Plan speaks to the need to better respond to the study needs of students by developing user centered spaces and services, to accelerate research capabilities, and to be a leader in implementing open access digital repositories. The plan identifies the need to meet changing cirriculum and research needs by strengthening and preserving collections, by implementing a comprehensive digitization program, and by achieving a stable, sustainable collections funding model.

# Strategic Direction

As part of its strategic plan and budgetary forecast, UBC Library has developed collection and service consolidations at various campus braches and sites. This process began is 2012 and will take 3 years to complete. It is expected that these transformative changes will allow the Library to strengthen its position in research, teaching and learning on campus. The UBC print collections are expected to continue to grow over time, and therefore require a long term strategy for storage, access, and preservation. A comprehensive digitization program is being implemented, to provide unlimited access to materials of research and teaching value.

### Actions to Date

The new BC Integrated Research Library (IRL) is a new \$10 M modular storage facility in south campus, to be completed end of 2014. This facility will provide 2,280 sm of high density collection storage, as well as a digitization area. The lowest circulation items from central library collections are to be relocated to the IRL, freeing up physical spaces at the branches for other uses including student and research services, informal learning space, multimedia labs, spaces for scholarly exchange, and other uses. It is expected that the preservation environment in the IRL will extend the life of collections up to 7 times, ensuring their availability to future generations. The collection consolidation and reorganization at various branches are presently underway, and are intended group higher usage and highlighted information and materials to better reflect the multidisciplinary nature of students, researchers and faculty.

### **Planning Targets**

Since 2002 there has been a decrease of 59% in print circulation at UBC Library, and a corresponding increase in online reference. This number is expected to increase upwards to 90% over the next 10 years. The Library budget has increased from 21% on electronic materials in 2002 to 72% today. "What will distinguish libraries in the future is not what we electronically license, but what we have in our collections that we make available to the world." (Alan Bell, UBC Library). As the new long term storage building will provide space for a large number of lower circulating documents, increased space within the existing Library building will be available for other student oriented uses.

### 8. COLLECTIONS BENCHMARKS

### UNIVERSITY OF SASKATCHEWAN

# Library Buildings

The University of Saskatchewan has 7 branches, with the Murray Library as the central largest Library. Total square footage is 271,250 sf. This heavily used Library system supports 1,640,963 annual visits, and includes nearly 2,096,000 printed volumes, 3,087,000 microform, and 456,891 government documents, for a total of 5,639,891.

### **Planning Process**

The University of Saskatchewan developed the University Library Strategic Plan in 2011, which looked at the medium to long term future of the branch libraries, keeping in mind anticipated budgetary and cost reductions. The vision for the next phase of the University Library Transformation Project includes a focus on the revitalization of the Special Collections and Archives space. The potential to build a high density storage unit was looked at, which, if implemented, could free up stack space and provide an opportunity to re-conceptualize and reconfigure the University Libraries spaces and services. The benefits of consolidation could provide for more efficient operations, which may allow for enhanced user services such as longer hours and new types of learning and study spaces.

### Strategic Direction

As part of its strategic plan and budgetary forecast, the university undertook a collections review of 6 branch libraries: Education and Music, Engineering, Law, Murray, Natural Sciences, and Veterinary Medicine. The Health Sciences Collection was not reviewed as it was in the final planning stages of a move into a new facility. In this analysis, it was found that approximately 1.1 million print items were eligible for storage or disposal, and that a significant number of items acquired pre-2008 were not circulating at a high enough rate to warrant prime library space. The ability to share materials in a regional initiative could also impact the number of items needed to be retained in storage. The conclusion was that high density storage would be more efficient for the storage of a significant amount of the material currently housed on open shelves. With the disposition of the identified materials, and consolidation of collections, it would be physically possible to reduce the current 6 branch libraries to three libraries.

### Actions to Date

An RFP was initiated and awarded for design work for a University Library Transformation project, as well as a Master Plan for Murray Library. The design work and Master Plan Development for the Murray Library will be completed in 2013, for Board approval. Work has begun in 2012 on the planned disposition of collections within the Veterinary Medicine Library, to be completed in 2013/14. Work has begun in 2013 to examine the disposition of the collections within the Engineering library, targeted for completion in 2014.

#### **Planning Targets**

Since 2007 there has been an overall decrease of 17% in print circulation at the University of Saskatchewan Libraries: over the last 10 years there has been a decrease of 42%. This number is in comparison to an increase in gate counts by 29% since 2007, illustrating the higher space demand for Library services, and demand for more and different types of learning spaces. Preliminary planning results target a 40% reduction of print collection area in the branch Library system, to enable a reduction, repurposing and consolidation of Library spaces.

# 9. LAMP PROJECT VISITS



Robarts Library, University of Toronto



Hunt Library, North Carolina State University

- 1. Robarts Library, University of Toronto, Toronto, Ontario February 21st, 2013
- 2. Hunt Library, North Carolina State University, Raleigh, N.C. May 1st & 2nd, 2013
- 3. McLaughlin Library, University of Guelph, Guelph, Ontario December 2012
- 4. University of Toronto Library Storage Facility, Downsview Park, Toronto, Ontario May 17th, 2013

# 10. UNDERGROUND ARCHIVES PRECEDENTS

### ALBERT & SHIRLEY SMALL SPECIAL COLLECTIONS LIBRARY

University of Virginia, Charlottesville, VA

The library houses the University's Rare Books and Special Collections, which include valuable documents such as Thomas Jefferson's original papers. As an adjunct to the main University libraries, the new facility establishes a separate, but related identity. Constructing the bulk of the new library below grade preserves the library quadrangle as an open green. The library provides seminar rooms, visiting scholar offices, exhibition and meeting spaces, rare book and manuscript preparation spaces, a state of the art digital processing area and a new below-grade archive.



### BEINECKE RARE BOOK AND MANUSCRIPT LIBRARY

Yale University, Hewitt Quadrangle, New Haven Connecticut

The building was designed by Pritzker award winning architect Gordon Bunshaft of Skidmore Owings & Merrill. It is the largest building in the world reserved exclusively for the preservation of rare books and manuscripts. A six-story above-ground glass-enclosed tower of book stacks is surrounded by a windowless rectangular outer shell, supported only on four massive piers at the corners of the building, which descend 50 feet to bedrock. The outer walls are made of translucent veined marble panels quarried from Danby, Vermont, which transmit subdued lighting and provide protection from direct sunlight. At night, the stone panels transmit light from the interior, giving the exterior of the building an amber glow. The building has also been called a "laboratory for the humanities" A public exhibition hall surrounds the glass stack tower. Two basement floors extend under much of Hewitt Quadrangle. The lower level also features a secure reading room for visiting researchers, administrative offices, and book storage areas. The level of the building two floors below ground has movable-aisle compact shelving for books and archives.



# 10. UNDERGROUND ARCHIVES PRECEDENTS

# THE MORGAN LIBRARY

New York City, New York

The Morgan is a museum and research library located on Madison Avenue, in New York City. It was founded to house the private library of John Pierpont Morgan in 1906, which included, besides the manuscripts and printed books, some of them in rare bindings, his collection of prints and drawings. It was extensively renovated and updated and expanded by Pritzker award winning architect Renzo Piano, with state of the art collections facilities (several floors of below grade storage and exhibitions facilities for changing installation from the collections (at grade).



# UNDERGROUND ARCHIVES

Wampum Pennsylvania, USA

Underground Archives is a commercial high quality archival storage facility in Wampum Pennsylvania, USA. The facility is developed in a secure subterranean facility in Western Pennsylvania, carved into a geologically stable swath of bedrock. Underground Archives is completely underground. Underground Archives is a complete highly secure, environmentally-controlled facility with subterranean infrastructure dedicated to secure protection of archival assets.

The underground storage facilities are dust-free and environmentally controlled. The facility also provides data protection and disaster recovery strategies in addition to its secure structure. It provides:

- Geographic separation for optimal survivability
- Climate controlled, HEPA filtered environments
- Media-specific protective environments
- Slotted and closed case media rotation options
- Disaster recovery capacity
- Secure chain-of-custody controls, scanning at both point of collection & destination for a clear audit trail

# 11. LAMP REFERENCE DOCUMENTS

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