THE ARCHIVAL APPRAISAL OF ARCHITECTURAL RECORDS

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ABSTRACT

Architectural records bear evidence of more than the history of design; because the construction process is linked to the social, political, and financial systems of the society in which the building activity takes place, the records also inevitably give evidence of these systems. This thesis maintains that, despite the undoubted value of these records for a diversity of research purposes, architectural records do not exist in significant numbers in Canadian archives, and argues that archivists have a professional responsibility as the makers and keepers of societal memory to encourage the growth of an adequate body of such records.

The Canadian system of public archives traditionally acquires records from both public and private sources in order to accurately reflect significant functions within Canadian society; one would therefore expect to find architectural records well represented in public archival repositories. In order to test this supposition, the holdings of these records in national, regional, and local public archives were researched, using the records of British Columbia architects as a case study. The research results indicate that, if the case of British Columbia is typical of other regions of Canada, the records of private architectural practices are not well represented at any level of the Canadian archival system.

A contributing factor to this scarcity is the difficulty archivists experience in appraising these records; a lack of reliable reference materials for analyzing such complex and voluminous records inhibits acquisition activity. A major part of the thesis

is a functional analysis of the architectural office as a means of providing a key to the provenance of architectural records. A review and assessment of the archival literature of appraisal follows. The study concludes by summarizing the strengths and weaknesses of the literature, and by proposing a means of encouraging the growth of architectural archives.

TABLE OF CONTENTS

DEDICATION

This thesis is dedicated to my husband Brock and to my children Jordan and Caitlin, in appreciation of their patience and support.

INTRODUCTION

Architecture is to make us know and remember who we are.

Sir Geoffrey Jellicoe (b. 1900), British architect.
International Herald Tribune (Paris, 6 Nov. 1989).

There can be no doubt that architectural records have values beyond documenting

the built environment. Building is among the most significant of human endeavors: to

shelter ourselves is fundamental to our very survival, and the degree of skill and beauty

we bring to the task is an expression of our society and culture. The structures that

surround us range from the utilitarian to the sublime, and express both the ordinary

occupations and concerns of daily life and the highest values and aspirations of the

society which created them. Moreover, the building process involves many of the social,

political, and financial systems which govern society, and therefore inevitably gives

evidence of these systems:

> Architecture . . . is a social act -- social both in method and purpose. It is
> the outcome of teamwork; and it is there to be made use of by groups of
> people, groups as small as the family or as large as an entire nation.
> Architecture is a costly act. It engages specialized talent, appropriate
> technology, handsome funds. Because this is so, the history of architecture
> partakes, in a basic way, of the study of the social, economic, and
> technological systems of human history .[1]

The study of architecture therefore reveals much more than the history of design,

and the records associated with the design and construction of buildings can be put to a

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[1]Spiro Kostof, *A History of Architecture: Settings and Rituals* (Oxford: Oxford University Press, 1985), 7.

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variety of uses. Researchers using architectural archives may include professors and students in architectural schools, architects involved in restoration and preservation projects, urban planners, heritage groups, architectural and social historians, and academic researchers from a variety of disciplines including sociology and education. Yet in spite of the diversity of purposes they may serve, the records of architectural practices are no longer actively acquired by many Canadian institutional archives.

In public archives, acquisitions of records from the private sector, including architectural records, have slowed and in many cases ceased in recent years due to resource limitations and increasing responsibility for institutional records.[2] Acquisitions of architectural records are further inhibited by factors associated with the nature of the records themselves; architectural records are voluminous, complex, and technical in nature, as well as being difficult and expensive to house and conserve because of their size and the fragile or transitory nature of the media on which they are created. As a result, archivists are often reluctant to acquire these records. This study aims to explore the issues and problems surrounding the acquisition and selection of modern architectural records. It is hoped that a baseline study of this sort will encourage further study, and ultimately, the preservation of a representative body of architectural records by an appropriate range of repositories.

Although the term "architectural records" is sometimes used to refer to all records relating to the construction process, regardless of provenance, for the purposes of this thesis, "architectural records" will refer to the records of architects and architectural

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[2] For an overview of the factors influencing the decrease in acquisitions of private records by public archives in recent decades, see Christopher Hives, "Thinking Globally, Acting Locally," *Archivaria,* No. 38 (Fall 1994) : 157-162.

firms. [3] The study will focus in particular on the records of firms whose practices span the years since 1950, because these are the records most at risk. The characteristics of modern architectural practice differ from those of earlier practices, in terms of both the number and the complexity of the transactions involved, and it is these characteristics which have given rise to the difficulties experienced by archivists in appraising the resulting records for acquisition and selection:

> Even in 1940, it was still possible for a major architect to present a full drawing set for a single house on one sheet. The archives of a major career, like that of Frank Lloyd Wright, could be embraced in 25,000 drawings. By 1979, the drawings of Piano and Rogers for a single project, the Centre Georges Pompidou in Paris, numbered 200,000. For built projects, duplication of records among designer, design and engineering consultants, client agencies, contractors, subcontractors, and regulatory bodies is vast and expanding. [4]

Architectural firms faced with having to manage and store these records are therefore less likely to retain project files once they are no longer needed for immediate business reasons, and archivists are less likely to see the value of acquiring records related to buildings which are too recent in date to be regarded as heritage buildings.

In order to establish the necessity for improving the status of archival acquisitions of the records of architectural practices, data was gathered to determine the extent to which the records of British Columbia architects have been acquired, both locally and nationally. It is assumed that, if the Canadian archival system is functioning effectively, a field of endeavor as significant as architecture should be documented by a representative

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[3] Because the thesis is intended as a general study of the archival appraisal of architectural records and as a starting point for further discussion, electronic records issues relating to the use of computer-assisted drafting (CAD) programs in architectural offices will not be discussed in any detail. To do justice to these issues, a separate, specialized study is needed.

[4] Nicholas Olsberg, "Documenting Twentieth-Century Architecture: Crisis and Opportunity," *The American Archivist*, Vol. 59, No. 2 (Spring 1996) : 129.

body of records in repositories at the local, regional, and national level, and that the results obtained for a single province such as British Columbia should be fairly typical of those which could be expected if similar studies were conducted for other regions. Based on these assumptions, it should therefore be possible to draw some conclusions about the overall state of architectural acquisitions in Canada. In the Canadian archival tradition, a group of characteristics has evolved which has come to be known as the "total archives" approach. These characteristics have been summarized by Terry Cook as consisting of four main principles which aim to ensure that, collectively, Canadian archives are as representative of the country's regions and peoples as possible: archivists should document the history of all society, and not just its elite; archivists should acquire all different forms of archival material; they should control the entire life cycle of records; and they should create archival networks which work cooperatively to develop strategies for acquiring materials on "important themes." [5]

Canadian public archival institutions have generally been given a mandate to acquire records from private sources as well as those of their institutional sponsors. Canada, unlike the United States, has never had a strong tradition of privately owned and operated historical manuscript collections or thematic repositories which seek to document a particular subject, person, activity, or profession. Instead, Canadians have relied on centralized public archives to collect historically significant materials of all kinds on our behalf. British Columbia has produced a distinctive architecture and many

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[5] Terry Cook, "The Tyranny of the Medium: A Comment on 'Total Archives'," *Archivaria*, No. 9 (Winter 1979-80) : 141-142.

notable architects; one would therefore expect to find the records of British Columbia architects in public archives at the national, provincial, and municipal levels.

The data was collected using a variety of methods: the current state of architectural acquisitions by British Columbia archives was determined by examining the British Columbia Archives Union List (BCAUL) for fonds containing architectural records. The extent to which the architecture of British Columbia is documented by the National Archives of Canada, and by the few thematic repositories which specialize in these records, was determined by examining repository guides, and by interviewing archivists at these repositories. This research supports the view that architectural records are not adequately represented in Canadian archives, and provides the background for the discussion of the different theoretical approaches to appraisal for acquisition which follows.

Ideally, the records of British Columbia architects should be readily available for study within the region in which they worked and which, presumably, was most strongly shaped by their creations. The extent to which British Columbia architecture is documented within the province was determined by searching the British Columbia Archival Union List (BCAUL) for the fonds of architects. The union list is a database of fonds- and collection-level descriptions of records held at 158 publicly accessible archival repositories in the province, created by the Archives Association of British Columbia and mounted on the University of British Columbia Library system. To keep the search as inclusive as possible, a very broad search strategy was used: the word index was searched using the key word "architect," with a truncation suffix, so that terms such as "architecture" and "architectural" would be included in the search results. The search

turned up a total of 122 descriptions, but the scope and content notes of these items revealed that only seventeen could be defined as the fonds of architects. The remaining fonds were eliminated because they were unsuitable as sources of information about architectural practice for one reason or another.[6] Of the remaining acceptable fonds, only three had closing dates later than 1960, indicating that the repositories where these records are held are not actively acquiring more recent records.[7] The seventeen fonds were distributed as follows: British Columbia [Provincial] Archives, 6; City of Vancouver Archives, 5; City of Victoria Archives, 3; University of British Columbia, 2; University of Victoria, 1. All of these are large, institutional archives whose primary responsibility is to ensure the preservation of their host institutions' records, but which have also acquired records of private provenance.

In addition to the architects' fonds held by these repositories, the Hallmark Society of Victoria holds the fonds of D. Bodnar, a researcher and heritage consultant who worked on the Canadian Inventory of Heritage Buildings Project. The fonds consists of reference files created by D. Bodnar in the course of her work on the project. According to the scope and content note for this fonds, the "files contain information about architects in British Columbia, much of which was derived from the "Dead Files" of the Architectural Institute of British Columbia." [8] The City of Vancouver Archives

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[6] Some were the records of landscape architects or naval architects; others consisted of records which pertained to some other aspect of a particular architect's life, rather than his architectural practice. (For example, the Charles Edwin Wills fonds at the North Vancouver Museum and Archives documents his term as a member of City Council.) Many fonds were eliminated because they were not the records of architects but of collectors, photographers, diarists, and artists with an interest in architecture.

[7] The latest is that of Peter Nave Cotton (1893 -1979), at the British Columbia Archives.

[8] Heritage Society of Victoria, Scope and content note for D. Bodnar fonds, British Columbia Archival Union List, <http://library.ubc. ca/WWW.64.archbc> November 21, 1997.

holds the fonds of the AIBC (1892 to 1978), which presumably was the source of the

reference material contained in the Bodnar fonds at the Hallmark Society. Both of these

fonds are described as consisting of textual records and, though they do document some

aspects of the profession in British Columbia, they are not the records of architectural

practices.

British Columbia architects have fared no better at the National Archives. The

Public Archives of Canada [9] established the National Architectural Archives in 1971,

with a mandate to "acquire, preserve and make available for research, architectural

records having national historical significance." [10] An article in the fall 1990 issue of *The*

Archivist, a publication of the National Archives of Canada (NAC), explains the factors

influencing the acquisition of architectural documents from the private sector: the term

"national significance" is interpreted to mean records which "illustrate the development

of architecture in Canada or that document the work of Canadian architects and

architectural firms in Canada or abroad." [11] According to the article, the National

Archives was at that time interpreting its mandate quite broadly in terms of the types of

records acquired: it sought documents which illustrated accomplishment in the field of

design, use of space, choice of materials and treatment of the environment, while also

attempting to document the work of firms whose less-inspired buildings are "part of our

milieu and [whose] history should be preserved, if only selectively, so that the archival

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[9] Since renamed the National Archives of Canada.

[10] Dorothy Ahlgren, "The National Architectural Archives: Preserving the Records of Architecture in Canada," *Section A Architecture Magazine*, Vol. 1, No. 2 (April/May 1983) : 4-7.

[11] Nadia Kazymyra-Dzioba, "The Architectural Program at the Archives," *The Archivist* , Vol. 17, No. 5 (September-October 1990) : 14-16.

record reflects the needs, tastes and trends prevailing in our society." [12] The NAC was also at that time acquiring theoretical studies, competition submissions, student drawings and other records of unbuilt projects.

Inclusive as the acquisitions program appears to have been, the National Archives does not seem to have sought out the work of architects in the regions. A number of strategies were used to assess the extent of the fonds of British Columbia architects held by the National Archives. The first was to search the National Archives' ArchiVIA CD-Rom (1992), available locally at the University of British Columbia's Special Collections Library. ArchiVIA contains three National Archives databases: Archival Holdings, Microform Holdings, and Government Record Group Inventories. Taken together, these three databases contain descriptions of federal government records, private records, documentary art, photographs, films, videos, sound recordings, philatelic holdings, and microforms. Using the keywords "architecture" and "British Columbia" resulted in one record, as did the words "architecture" and "B.C.," although, interestingly, they were not the same record. The descriptions for these records showed that they were not the fonds of architects and were only marginally relevant to British Columbia architecture. Using the keyword "architect" alone resulted in 193 items, but an item-by-item examination revealed that only three concerned British Columbia. Two of these were photographs from magazines and newspapers of buildings designed by Arthur Erickson, and the third was a political cartoon concerning the Canadian Embassy in Washington, designed by Erickson.

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[12] Ibid., 15.

The documentation provided with the ArchiVIA CD-ROM stressed that it was not a complete guide to the holdings of the National Archives, so in order to find an explanation for the poverty of these results, a research request was placed via electronic mail to the Cartography and Architecture division of the National Archives, asking specifically for fonds of British Columbia architectural practices. The reply received stated that "the National Archives holds no fonds for any architectural practices based in British Columbia", [13] and referred the researcher to three other archives whose holdings would be more likely to satisfy the research request. These were the Canadian Centre for Architecture in Montreal, the Canadian Architectural Archives at the University of Calgary, and the Canadian Architecture Collection at the Blackader Library, McGill University, Montreal.

The Canadian Centre for Architecture (CCA), founded in 1979 by architect, historian, and preservation activist Phyllis Lambert, is a museum and study centre devoted to the idea that architecture is a public concern. The CCA is host to a number of research and exhibit resources for the study and aesthetic appreciation of architecture, including a library, museum collections of prints and drawings, and an archives. The Centre also interprets its collections for the public through exhibits, publications, and public programs. The archives at the CCA "collects, conserves, and makes available bodies of archives from individuals and groups who have worked in a significant way, on the local or international scale, in architecture, urban planning, and landscape architecture. Particular attention has been paid to the archives of architects' offices,

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[13] Louis Cardinal, Chief, Cartography and Architecture, National Archives of Canada, <lcardinal@archives.ca>, "Architectural practices based in BC," private electronic mail message to Laura Cheadle, 1 October 1997.

especially in Quebec and Canada." [14] Of the fifty fonds in the archives, only two are the fonds of British Columbia architects. However, given the international scope of its acquisitions policy and the relatively small number of fonds in the CCA archives, it is not surprising that so few British Columbia architects are represented. As a private collection, it is under no obligation to represent the regions, and has focused on a few prominent architects whose work has attracted international attention.

The mandate of the Canadian Architecture Collection (CAC) at McGill University's Blackader-Lauterman Library of Architecture and Art is "to document the work of past and present architects who have studied and/or taught at the McGill University School of Architecture and Urban Planning. Through photographs, drawings, and corollary documentation, the CAC also seeks to represent the evolution of the McGill Campus, the city of Montreal, and the architectural heritage of Quebec and Canada." [15] The collection consists in large part of measured drawings of older buildings, done by students documenting heritage architecture in Quebec. The fonds of architectural practices in the collection are all based in eastern Canada.

The Canadian Architectural Archives (CAA) in the University of Calgary's Special Collections is of particular interest, because the focus of its acquisitions policy corresponds with the focus of this thesis. The archives was established with high hopes and a very broad acquisitions policy in 1974. In an article in the July 1978 issue of *The Canadian Architect* by Ernest Ingles, Head Librarian of the University Library's Special Collections, and Michael McMordie, assistant professor of architecture at the University

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[14] Canadian Centre for Architecture, *The Canadian Centre for Architecture* (Montreal: CCA, 1993)

[15] Canadian Architecture Collection, <http://blackader.library.mcgill.ca/cac/ >, 20 November 1997.

of Calgary, outlined the aims of the newly established archives. The leading principle governing the growth of the archive was to "compile information as comprehensively as possible"[16] relating to its central focus of interest, twentieth century Canadian architecture. Its goal was to "complement the efforts of other repositories and ensure that an adequate record [was] assembled for present and future study and enjoyment."[17]

The CAA's collection consists of forty-three fonds, six of which are those of British Columbia architects. This is the most extensive collection of British Columbia architects' records in any one place, and includes the work of some important and influential firms. Unfortunately, the CAA has been suffering severe space, staff, and funding shortages for some time, and is no longer acquiring new records. Many of the records in the existing collection have not been processed due to a lack of resources.[18]

It is clear from the results of this research that the records of British Columbia architects are not well represented at any level of the Canadian archival system. Further, most of the acquisitions are not of recent date and show little evidence of planning, even within the individual repositories. It would appear that, in this case at least, the Canadian tradition of relying on large, centralized public archives to acquire all the records of any significance from both the public and the private sector has not resulted in an adequate body of records. Given the current financial restraints on these archives, the situation is unlikely to improve. Does this mean that the Canadian tradition of "total archives" is not

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[16] Ernest B. Ingles and Michael McMordie, "Preserving the Past: The Canadian Architectural Archives," *The Canadian Architect* (July 1978) : 15.

[17] Ibid.

[18] Kathy Zimon, Fine Arts Librarian (Emeritus) and former Curator, Canadian Architectural Archives, <zimon@acs.ucalgary.ca> "Re: Acquisitions," private electronic mail message to Laura Cheadle, 26 November 1997. An independent consultant has been commissioned to make recommendations concerning the future of the Archives. No report has been submitted as of this writing.

a valid approach? The problem is not so much in the concept itself as in the disjunction between the way it has been interpreted, as a rationale for assigning all responsibility for public memory-making to government archives and other publicly-funded bodies such as universities, and the reality of the resource limitations these organizations must contend with. If public archives can no longer accept this responsibility, the archival community should be actively working towards proposing alternative solutions.

From the standpoint of archival theory, it is the professional responsibility of archivists to attempt to preserve the integrity of the "societal archives," formulated by Luciana Duranti as the concept of "one large archives, [with] the archival profession as its archivist." [19] From this point of view, ensuring the preservation of private records, including architects' records, is a function of the archivist's professional accountability, which descends from the cultural purpose of archival endeavors and is linked to the protection of the integrity and impartiality of the archival record:

> Archival theory posits that an archives is the whole of the documents made or received in the course of purposeful activity, and of the relationships among those documents. The circumstances of creation endow archives with certain innate characteristics, which must be maintained intact for the archives to preserve their probatory capacity. Finally, archival theory posits that it is the primary function of the archivist to maintain unbroken, continuing custody of societal archives, and to protect their integrity by keeping them physically and intellectually uncorrupted." [20]

The records of architects are, of course, not the only source of information about our built heritage available to researchers. The building itself carries a wealth of

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[19] Luciana Duranti, "The Concept of Appraisal and Archival Theory," *The American Archivist*, Vol. 57, No. 2 (Spring, 1994): 343.

[20] Ibid.

information for as long as it stands or can be reconstructed, and visual representations in the form of photographs, films, paintings and drawings of completed buildings and streetscapes are often available as well; published sources include professional and trade periodicals, product information, stock plans, and pattern books. In addition, most public archives have acquired some architectural records which relate either to the role of the government as a client commissioning projects, or to its role in overseeing compliance with building codes and regulations. However, without the office and project records of the architectural firms in which buildings are designed, knowledge of the total context of the architectural enterprise is missing. Architectural historian Spiro Kostof defines the context of architecture as "the identity of the patrons, particulars about the motivation for the buildings commissioned, the identity and careers of the architects, the nature of the materials of construction and their provenance, matters of finance, and so on."[21] Much of this contextual information is available in the most complete and reliable form through the preservation of the records of architects and architectural firms.

Clearly, not all records produced in all architect's offices can, or should, be kept. The archivist's professional duty to preserve the societal archives includes responsibility for making appraisal decisions which will result in a concentrated and usable representation of the architectural enterprise which is capable of serving all researchers equally. As Terry Eastwood has put it, "the modern archivist is the public memory keeper and, in the roles of appraiser and agent of access, something of a memory maker also, an active facilitator of public memory making and therefore a servant of the public

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[21] Kostof, *A History of Architecture*, 7.

or society collectively." [22] Archival appraisal is the process of evaluating documents for the purpose of continuing preservation. When archivists appraise records for acquisition, they select among records creators; some fonds will be acquired, while others will not. Archivists also appraise the records within an individual fonds and select those which best represent the functions and activities of the creator. All appraisal activity must be carried out in accordance with accepted theoretical principles which are rooted in the nature of archives, such that their inherent archival characteristics of naturalness, impartiality, authenticity, interrelatedness and uniqueness are preserved.

An archive or fonds has been defined as "the whole of the documents of any nature that every administrative body, every physical or corporate entity, automatically and organically accumulates by reason of its function or of its activity."[23] It is through this process of natural accumulation in the course of affairs that archives acquire their associated characteristics. Archival documents are authentic with respect to their creator; they bear authentic testimony of the actions, processes, and procedures which brought them into being. Because of this process of natural accumulation, the documents are interrelated and interdependent. Each document in an archival fonds is related to others and dependent on others for meaning, and is therefore unique in context: though there may be other copies of the document, there are none which have the same context within the fonds. It is the organic and unselfconscious accumulation of records as the by-product of the organization's activities which distinguishes archival materials from those

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[22] Terry Eastwood, "Towards a Social Theory of Appraisal," in *The Archival Imagination: Essays in Honour of Hugh A. Taylor*, ed. Barbara L. Craig (Ottawa: The Association of Canadian Archivists, 1992) , 80.

[23] Canadian Working Group on Archival Descriptive Standards, *Towards Descriptive Standards: Report of the Recommendations of the Canadian Working Group on Archival Descriptive Standards* (Ottawa: Bureau of Canadian Archivists, 1985), p.7.

available in other cultural institutions such as libraries and museums. The materials collected by these institutions are viewed as self-sufficient entities; although acquired singly, they are often managed and described as a group because of format, media, or subject similarities. They have no relationship to each other, except by having been brought together by some person or institution as a collection. Archival documents are impartial because they were formed in the course of a transaction and are therefore trustworthy sources of information because they were not collected to support any particular point of view or to give information on a predetermined subject. While the components of museum and library collections are viewed as being "by" someone or "about" something, an archival fonds is always "of" someone of something; it reflects the history, activities, and functions of its creator and preserves a part of the creator itself.

To provide a background for discussing appraisal issues and techniques, Chapter One consists of a functional analysis of the architectural enterprise, based on a literature review of the manuals of practice published by the national professional associations for architects in Canada and the United States. These two manuals are standards for the profession in their respective countries, and as such, constitute an authoritative source of information about the practice of architecture in North America. Much of the difficulty archivists experience in managing the architectural records in their repositories, including making appraisal decisions, is the result of insufficient knowledge of the provenance of architectural records; a true understanding of provenance entails familiarization with the functions and activities of the enterprise. The chapter begins with a brief discussion of the legal and administrative environment in which architectural firms operate, followed

by an analysis of the major functions of the modern architectural office, focusing on the primary operational function, the building project. The second and third chapters review the archival literature pertaining to the appraisal of architectural records, and evaluate the relatives merits of the proposed solutions. Finally, the conclusion summarizes the findings of the research conducted in the body of the thesis, proposes some areas for further research, and makes some general recommendations for improving the status of acquisitions, and for selecting among and within architectural fonds.

Chapter One

FUNCTIONAL ANALYSIS OF THE ARCHITECTURAL FIRM

Form ever follows function.

Louis Henry Sullivan (1856-1924), U.S. architect.
"The Tall Office Building Artistically Considered," in
Lippincott's Magazine (March 1896).

In archival theory and practice, provenance and documentary form are interwoven concepts which enable archivists to carry out a range of archival tasks, including appraisal. Provenancial relationships are established by the way a body carries out its functions, activities, and transactions and organizes its records. Documentary form, in the diplomatic sense, refers to "documents containing information described or transmitted by means of rules of representation and governed by rules of procedure." [1] A thorough understanding of the functions of the records creator and the activities related to each function provides the context in which to analyze the documentary forms which are the residue of those activities:

> To understand the meaning of a particular documentary form, therefore, and appraise its value, it is essential first to determine the nature of the bureaucratic action (for example, the function, activity or transaction) that generated it, as well as the social, legal and administrative structure that provided the context for the action. It is only when provenancial relationships have been delineated and elucidated that the documentary forms that embody them can be understood and appraised in a coherent and defensible manner. Moreover, because the analysis of administrative action precedes the analysis and appraisal of the forms themselves, it becomes possible not only to determine what can and cannot safely be destroyed, but also to identify gaps in the documentation." [2]

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[1] Heather MacNeil, "Weaving Provenancial and Documentary Relationships," *Archivaria* No. 34 (Summer 1992) : 192. MacNeil is summarizing the more detailed explication of the term given by Luciana Duranti in "Diplomatics: New Uses for an Old Science," *Archivaria* 28 (Summer 1989) : 7-27.

[2] Ibid.

The functions within an organization can be divided into primary and secondary functions: a primary function denotes a substantive or operational function, while secondary functions are those of a facilitative or housekeeping nature.[3] This analysis will focus on the primary functions of the architectural office, and in particular the building project, because it is the project files which are at the heart of architectural practice, and which pose the most difficult problems for archivists. Although office administration functions and activities are an integral part of an architectural practice, and the records of these activities should be selectively acquired along with the project files, they are not treated in depth in this thesis. With a few important exceptions, the office administration functions carried out in architectural firms do not differ significantly from those of other types of businesses of a comparable size: the records of these functions can therefore be appraised according to the same principles applied to these types of records found in other settings. Secondly, administrative records form a very small proportion of the records of an architectural firm, in comparison with the project files: an appraisal of the records of Chicago architect Harry Weese, conducted by the Chicago Historical Society in 1979, found that ninety-five per cent of the records were project files, while the remaining five per cent consisted of general administrative office files, promotional literature, professional association files, and civic papers.[4] Appraisal decisions concerning these

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[3] Terry Eastwood, "General Introduction," *The Archival Fonds: from Theory to Practice*, ed. Terry Eastwood (Ottawa: Bureau of Canadian Archivists, 1992), 11.

[4] Tawny Ryan Nelb, "Architectural Records Appraisal: Discussion of Problems and Strategies for the Documenting Michigan Project," *American Archivist*, Vol. 59 (Spring 1996) : 231.

records therefore have less impact on the time and resources of archival institutions acquiring an architectural fonds.

The legal and administrative context of architectural practice encompasses such factors as the statutory and regulatory environment in which architecture functions, as well as the legal and administrative structure of the firm. These factors are discussed briefly as background to the functional analysis of the architectural firm.

The Legal Environment

In Canada, the state influences building and architecture through laws and administrative codes which regulate the architectural enterprise. The practice of architecture, professional conduct and discipline are governed by statutory law in the Architects Acts of the various provinces. Through these statutes, each of the self-regulating provincial licensing bodies is empowered to make regulations and by-laws concerning such matters as: requirements for admission into professional training programs and the profession; qualifications and conditions for temporary licensure; standards for professional training programs and for any examinations administered as an entry requirement; standards of practice and performance; codes and regulations of ethics and conduct; the conducting of fee surveys and the publication of the results; authority to administer a program of liability protection for the public; matters relating to the composition and conduct of the governing council and committees of the provincial association, and sundry items affecting its membership or the general public. Through the provincial associations, the provinces also regulate the practice of architecture by

requiring firms to register or acquire a Certificate of Practice before offering services to the public; requirements for firm names and legal formats for the business are delineated in the Acts, Regulations, and Bylaws. [5] Collectively, this body of law governs the establishment of the firm, the administration of its business operations, and the relationship of the firm, its principles and employees to the profession.

An architectural firm's legal structure establishes it as an entity that can enter into contracts, borrow funds, and be held accountable. The firm may be established as a proprietorship or a partnership. In a sole proprietorship, the owner/architect is responsible for any work the firm has undertaken, whether it is carried out by the architect or by an employee. In a partnership, the responsibility and benefits of the work are shared among the partners. Most firms of any size are partnerships; normally the partners employ staff, which may include one or more associates. Associates have the same status as other members of the staff in terms of liability, however they may share in the organization and policy-making of the firm, and possibly in the profits, depending on the terms of their employment.

Two other legal structures are sometimes employed for carrying out specific projects. A sole proprietor or partnership firm may elect to form a composite organization with another firm or firms for the term of the project. In this case, the name of their combined organization will be followed by the title "Associated Architects," and the responsibilities of each party will be detailed in a legal agreement. The joint venture

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[5] The Committee of Canadian Architectural Councils, "The Architectural Profession: Self-regulation of the Profession in Canada," revision to *The Canadian Handbook of Practice for Architects*, Vol. 1, Sec. 1.2 (Ottawa: The Committee of Canadian Architectural Councils, 1992), 2.

similar type of arrangement, but is used in projects involving a party or parties other than an architect, such as an interior designer or an engineer.[6]

While the provincial Architects Acts establish architecture as a self-governing profession, other laws and regulations enacted and enforced by federal, provincial and municipal bodies, collectively known as the authorities having jurisdiction, limit this autonomy through such instruments as building codes, zoning by-laws, and amenity standards. In addition, since most of the work of architects and architectural firms is carried out on à project basis, all parties involved are bound by the requirements of contract law. Together, these last two bodies of law directly affect the primary function of architectural practice, the building project, and the resulting documentation.

The requirements of the authorities having jurisdiction over the construction industry are reflected in the types of approvals and permits which must be obtained at various stages of the project's development. Normally, a set of documents including both written records and drawings must be submitted for each approval or permit. The authorities having jurisdiction over building projects consist of departments and ministries at the federal and provincial level, as well as municipal departments, boards, and committees. Because the requirements vary over time and from jurisdiction to jurisdiction, they are not detailed in the theoretical project analysis below. Archivists who have responsibility for architectural records will need to research the requirements of the authorities who have jurisdiction in the area.

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[6] The Royal Architectural Institute of Canada, *The Canadian Handbook of Practice for Architects*, Vol.1, "Architectural Practices and Services" (Ottawa: The Royal Architectural Institute of Canada, 1977), 2-4.

The contract defines the scope of services the architect must deliver, the roles and relationships of the parties involved, and the types of documentation each party in the contract is responsible to supply. In Canada and the United States, most contracts are based on one of the standard forms of agreement published by the national professional association for architects. The type and number of contracts written for a project is determined by the choice of project delivery system. There are three main systems, which differ in terms of the separation between design and construction responsibilities, and in the sequencing of design and construction activities over the course of the project. The traditional approach is the "design-award-build" system in which the design and construction of the building are treated as separate responsibilities, under separate contracts. The architect, as a professional, acts in the role of agent for the owner, coordinating and overseeing the construction process, while the builder's role is that of a vendor providing goods and services for a specified price. In this method, the architect completes the entire design for the building before any construction takes place.

The same separation of responsibility between architect and builder prevails in "fast-track" projects, but the design and build processes are overlapped, so that construction is underway before the design is completely finished. "Design/Build" projects may also be fast-tracked, but in this type of project delivery system, responsibility for both design and construction is vested in a single entity. The owner writes one contract for both services with a design/build organization, which may be

composed in a number of ways. In this type of project, the architect may be hired as an independent subcontractor by the design/build organization.[7]

The Administrative Environment

The organization, management, and operation of architectural firms is diverse, and may change substantially over the life of a particular firm. Typically, as the firm grows, it moves from having a small staff of generalists to a larger staff with a higher degree of · specialization as the number and complexity of the projects increase. This necessitates a more formal organizational structure: management roles are defined and assigned to the firm's principal partners and perhaps to the staff as well. The principals set policies and make decisions concerning the overall operation of the organization, and are usually responsible for initial client contact.

Below this level, the office may be structured according to a vertical or a horizontal design. In a vertical structure, the office is divided into functional departments such as administration, design, and production, with a distinct hierarchy of responsibilities and salaries, headed by a principal or associate. Each project has a project manager, appointed by the principals at the initiation of the project. In a horizontal structure, each principal is responsible for every function and becomes in a sense a project manager. At the beginning of a project, the principal puts together a team or group which carries out the design, production, and contract administration functions,

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[7] The American Institute of Architects, *The Architect's Handbook of Professional Practice*, Vol. 2, Section 2.1, "Delivery Approaches," (Washington: The American Institute of Architects, 1987), 2 -14.

with assistance from functional groups for specifications, office administration, and engineering services. [8]

Regardless of which organizational structure is used in the firm, building projects typically progress through recognizable phases toward completion. For the purposes of this thesis, this process of carrying out a building project is presented as an idealized, theoretical sequence of the common steps in the design, documentation, and construction of a building. In the following analysis, the building project will be thought of as a single function which is carried out in stages or phases, with specific activities associated with each phase, and documentary forms resulting from each activity. The analysis is based upon and adapted from the contractual definition of the architect's basic services outlined in the Committee of Canadian Architectural Council's "Standard Form of Agreement Between Client and Architect," and on the explanation of these phases and tasks contained in the Royal Architectural Institute of Canada (RAIC) *Canadian Handbook of Practice* [9] and the American Institute of Architects (AIA) *Handbook of Professional Practice.* [10] The Handbooks of Practice constitute a nationally recognized standard for the profession in their respective countries, and contain detailed information about the progress and management of the building project. The American Institute of Architects published its first *Handbook* in 1920, and has revised it continuously since that time. The *Canadian Handbook of Practice* was first published in 1974, and has undergone some minor updating since. A completely revised edition is in the planning stages, but has not

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[8] RAIC, *Canadian Handbook of Practice,* Vol. 1, "Office Organization and Practice," 4-7.

[9] The Royal Architectural Institute of Canada, *Canadian Handbook of Practice*, 4 vols. (Ottawa: The Royal Architectural Institute of Canada, 1977).

[10] The American Institute of Architects, *The Architect's Handbook of Professional Practice*, 4 vols. (Washington: The American Institute of Architects, 1987).

been published as of this writing. The *Canadian Handbook* has been used as the primary reference work in the following analysis of project phases and activities, supplemented by information from the American Institute of Architects' *Handbook.*

The Primary Function: The Building Project

For any given building project, a number of project delivery approaches is possible. For the analysis which follows, it is assumed that a "design-award-build" approach has been used. This is the most common and best understood approach; the others are variations which have arisen over the years. [11] The differences between these approaches affects the architect's sphere of competence in relation to the other juridical persons involved in the project; although the types of records created do not change, they may not all be located in the architect's project files. For archivists appraising architectural records, it is therefore necessary to check the contract documents at the beginning of the appraisal process in order to determine which method was used for the project at hand. Once the project delivery method is known, it should still be possible to relate the documents to project phase and to assess the completeness of the project file.

In this analysis, it is also assumed that the project in question is a large, moderately complex building. The size of the project does not affect the project phases or record types, but the activities within each phase are obviously simpler if carried out by a single architect working on a small residential renovation project. Project phases are numbered sequentially. Each phase is analyzed in terms of its general purpose and place

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[11] AIA, *The Architect's Handbook*, Vol. 2, Section 2.1, "Delivery Approaches," 1.

within the building project, the activities normally conducted by the architect during each phase, and the document types typically associated with each phase. Project phases and activities are discussed in narrative form, supplemented by an appendix which presents the same information in the form of a table. The analysis is intended as a general guide to project activities and document types, rather than as a definitive catalogue of all project transactions and records. Detailed information about specific documents and the persons involved in their creation and distribution can be found in the Handbooks of Practice on which the analysis was based.

1.   The Requirements and Predesign Phase [12]

Collectively, the activities associated with this phase are commonly referred to as "architectural programming," which has been defined as "the process by which criteria are developed for the design of a space, building, facility, physical environment, and/or any unit of the environment. It is the means through which data about the needs of the ultimate building user are determined and expressed for the instruction of the architect in the development of a design solution." [13]

The purpose of the requirements phase is to clearly state the design problem in both philosophical and physical terms, in order to clarify the client's intentions and objectives, and to communicate them to the architect. During this phase, the client or his agent identifies a potential project, collects pertinent data, prepares a program of

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[12] The following discussion and analysis of the activities carried out in the Requirements and Predesign Phase of a building project, and the documents associated with these activities, are based on and adapted from the *Canadian Handbook of Practice*, Vol.1, "Requirements and Predesign," 1 - 13.

[13] Ibid., 2.

requirements for the building project, and selects the architect who will be responsible for carrying it out. All of the activities and resulting documents in this phase are the responsibility of the client, although the client may engage the architect or an external consultant early in the process to assist in the preparation of the program of requirements. The architect normally becomes involved at the predesign phase; this stage begins when the client presents the initial program of requirements (also referred to as the design brief) to the architect for evaluation.

The programming process is evolutionary and iterative; that is, the data collection, preparation of the brief, and review are ongoing throughout the requirements and predesign phase, and may extend into the design and construction phases. In a large, complex project, the design brief is developed in stages, and there are a number of decision points during the process, at which it can be considered that the design brief, up to that point, functions as a type of feasibility study. At each of these points, the client's options are to advance, defer, or abandon the project. When the design brief is complete, the design phase begins.

1.1   Determine General Requirements

This activity is aimed toward the preparation of the Initial Design Brief for internal review and assessment by the Client and his advisors, prior to appointing the architect. The types of information collected and presented in the brief at this stage of development include: the philosophy of the building's function and operations; space and occupancy definition and relationships; an implementation program if phasing is required; site and climate factors and determinants; land use and site development

requirements; organization and management requirements for construction and operation. This is the first decision point for proceeding with the project. The records associated with determining general requirements generally consist of:

- feasibility studies

- initial design brief

1.2   Select Consultants

The architect may be engaged at other points in the predesign process, but it is usual to make the selection as soon as the client has prepared the initial design brief and made the decision to proceed with the project. The architect may be selected by one of three methods. The simplest is by direct selection; normally, the client will have worked with the firm on a previous project. In the comparative selection method, the client identifies several possible firms and evaluates them according to criteria appropriate to the project. The formality of the process varies, but in public projects it is usual to publish a request for proposals and then evaluate the submissions and interview a selected group. Alternately, a design competition may be held for a high-profile or challenging project. The competition may be open, or limited to a selected list of invited participants. Although the records related to the selection process are the property of the client, the architect may retain copies of the proposal, particularly for important competitions.

Normally, the architect is engaged first, and then assists in the selection of the other consultants. The process for selection of consultants consists of the invitation, followed by evaluation of the submitted proposals, interviews and identification of the successful candidate, preparation of the Client/Architect Agreement and Consultants'

Contracts, negotiation, and finally signature of the contract. The records associated with selecting consultants typically include:

- invitation/request for proposal (published)
- proposals/submissions
- evaluation reports
- notes and correspondence
- minutes and conference reports
- client/architect agreement
- consultants' contracts

1.3 Conduct Research and analysis

1.3.1 Environmental Research

Environmental research encompasses the investigation of all the characteristics of the proposed project area which could influence the project, and vice versa. The term "environment" is used broadly, and includes consideration of human and political factors, as well as those relating to the physical environment. The aim of the research is to determine whether the project is appropriate to the community, and to ensure that local influences are taken into account during the design process which follows. The research can include diverse types of studies, such as: use analysis and potential; market availability; commercial viability; comparison with similar facilities; availability of materials, services, construction labour or operating staff; regional growth patterns; governing regulations and by-laws; sources of funding for mortgages, loans, and grants; and political, economic, social and ecological factors. At this point, the client may decide to begin promotional and public relations activities, including testing public reaction to the proposal. The records associated with conducting environmental research typically consist of:

- maps, surveys, studies, and reports

1.3.2 Location and Site Analysis

If more than one site is under consideration, further studies may be undertaken to evaluate the relative merit of each site in relation to a scale of priorities. Once the site is determined, factors concerning the site's topography, soils, services and zoning are investigated to confirm the suitability of the site to the project, and to gather information relevant to the design. Many of these types of specialized studies are provided by experts at the client's expense, and form part of what is termed "owner documentation." Factors investigated at this stage include: land assembly and purchase vs. lease options; transportation and access; land uses and functions; utilities; parking, landscape, and drainage; terrain; subsoils; existing structures; future development; community relationship; orientation; climate; zoning and by-laws. The records associated with conducting location and site analysis typically consist of:

- maps, surveys, studies, and reports

1.3.3 Financial Analysis

During this phase, the client prepares a complete financial analysis of the proposed project, including such factors as land costs, funding, consultants' fees, construction costs including surveys, permits and utility fees, marketing, taxes, and overhead. At the conclusion of the research and analysis phase, the project has reached the second decision point: if the client decides to go ahead with the project, this is the point at which the site is secured and financial commitments are made for the capitalization of the project. The records generated by these activities consist of:

- real estate and financial records and reports

1.4   Prepare Detailed Operational and Facility Programs

During the concluding stages of the requirements and predesign phase, the detailed programs of operational and facilities requirements are developed. The operational program sets out functional and space requirements, often in the form of itemized lists of personnel, furnishings, and equipment per room or space. Systems requirements concerning the specifics of processing, manufacturing, servicing, and goods and people movement pertinent to the facility are detailed, as are organizational requirements relating to management functions and hierarchy. Other operational elements of the program include maintenance, technical, and financial requirements.

The detailed facility program refines and elaborates on the basic philosophy of the building and details requirements for such things as site organization and development, climatic requirements affecting internal and external spaces, occupancy requirements and space relationships. The facilities program also includes quality and performance standards and sets a realistic budget; performance and cost evaluations of similar facilities may be included as guidelines. For ease of communication, much of the information in the detailed operational and facilities program is presented graphically, in the form of diagrams and tables.

The final version of the design brief is now compiled and prepared for evaluation by the architect. At this stage, the brief is a written and diagrammed document containing the data compiled for the operational and facilities programs, as well as project procedures, time and cost objectives and constraints, and performance and quality parameters. This is the client's third decision point in the requirements phase, prior to the

engagement of the Architect and consultants. The records associated with setting out the detailed requirements for the project consist of:

- detailed operational program

- detailed facility program

- final design brief/program of requirements

1.5   Evaluate the Program

Upon receipt of the client's design brief, the architect evaluates the program and either accepts it or identifies the areas in which further information is required before proceeding to the design phase. The evaluation is presented in the form of a report, accompanied by a preliminary budget estimate for such costs as land and site development, demolition, construction, equipment and furnishings, consultant's services, building operation, financing, marketing, taxes and insurance. The client in turn reassesses the program of requirements based on the architect's evaluation report, makes any adjustments, and authorizes the architect to proceed with the design of the building. The records consist of:

- program evaluation report and recommendations

- preliminary budget

1.6   Assemble the Project Team

The key members of the project team going into the schematic studies phase are the client, the architect and prime consultants (structural, mechanical, and electrical), and related consultants having expertise in specialized areas, including building type specialists, inspection and testing firms, landscape architects, project managers,

schedulers, traffic experts, urban planners, and environmental experts of various types.

The process for selection of consultants for the Design phase is as described in item 1.2, as are the records generated by the process:

- invitation/request for proposal (published)
- evaluation reports
- minutes and conference reports
- consultants' contracts

- proposals/submissions
- notes and correspondence
- client/architect agreement

2. The Schematic Design Phase [14]

There is no phase of the project which does not include design, however the most intense design activity is concentrated in the two phases referred to as schematic design and design development. These two terms are used to indicate the planning activities preceding the preparation of the working drawings and specifications. The primary objective of the schematic design phase is to identify, analyze, confirm, and organize the factors that will influence the design, and to translate the results of this analysis into a design concept. While the contractual obligations of the architect at this stage are well defined in terms of responsibilities and required documents, it is much more difficult to neatly analyze the whole of the activities which obtain to the design process as a creative activity, and to relate those activities to standard documents. Nevertheless, it is possible to speak of the process of developing a concept for the project in a generalized way.

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[14] Unless otherwise noted, the discussion and analysis of the activities carried out in the Schematic Design Phase of a building project are based on and adapted from the *Canadian Handbook of Practice*, Vol. 1, "Schematic Studies," 1-24.

According to the AIA *Architect's Handbook*, "most firms start with an analysis of the base data and then work through sketches, talking and thinking until they reach a level of understanding necessary to form a concept." [15] The *Handbook* defines four tasks common to the design process: establishing design goals, developing a *parti*, or basic organization, for the project, selecting a design vocabulary, and evaluating concept alternatives. [16] The methods employed for carrying out these tasks vary greatly depending of the type and scale of the project, the size of the team at this stage, and the organizational culture of the firm; the documentary residue of these activities varies accordingly.

This functional analysis is based on contractual structure in order to be able to speak in theoretical terms of the activities and documentation belonging to the design phase of the project; nevertheless it must be recognized that the formal documentation required by the terms of the contract represents only part of the documentary residue of the creative activity which takes place at the schematic design stage, and possibly, in terms of understanding the design process, not the most important part. The inherent contradiction between the importance of this phase in giving evidence of the architect's creative process in forming the design concept, and the ephemeral nature and low value often assigned to these records by their creators, poses difficult theoretical questions for archivists during the acquisition and selection process. [17]

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[15] AIA, *The Architect's Handbook*, Vol. 2, Section 2.5, "Building Design ," 8.

[16] Ibid.

[17] This problem will be discussed in more depth in Chapter 3, "Appraisal for Selection."

2.1   Conduct Schematic Design

As this stage begins, the architect considers aspects of the site and location that affect the design, such as orientation, adjacent land uses, availability of utilities, local building practices and applicable building codes, access and egress points, circulation and movement patterns, and assists the client in obtaining further detailed information regarding topographic and subsurface conditions. Space diagrams are prepared to identify the comparative size and relationships of the functional areas and spaces required, which allows proportions and volumes to be established, and enables the architect to begin the preliminary architectural planning and designing. Circulation diagrams for pedestrian and vehicular traffic, which includes vertical transport such as elevators and escalators, are prepared, linking relevant spaces and site constraints. These diagrams establish some basic planning relationships, which enable the architect to consider the overall form the project could take, using sketches and block models to create massing studies. Massing studies are used to define the sculptural quality of the building, space between buildings, and the effect of sun, shade and wind on the project, among other things.

In developing a design scheme, the architect must correlate the functional, structural, and aesthetic elements which have come to light during previous phases, and create a logical solution. Many quick studies may be prepared during the process of conceiving the possible alternatives; the best of these will be reviewed by the design team, and one or two will be presented to the client for comment. Working within the known constraints, the architect then develops the design concept sufficiently to permit area estimates to be made. Outline specifications for quality and performance of materials

and equipment are prepared: at the schematic design stage, the specifications are usually stated in terms of minimum standards, rather than specific materials or equipment. The design process consists in part of activities which do not necessarily generate records: the activity of conducting schematic design is broken down into sub-activities in order to describe the elements of the design process, however the records listed below do not necessarily belong to a specific sub-activity exclusively, but to the process as a whole:

- study sketches and models
- study notes and diagrams (space, circulation, massing)
- presentation drawings and models
- minutes and conference reports
- outline specifications

- massing models
- studies and reports
- notes and correspondence
- photographs

2.2   Conduct Time and Cost Studies

The architect also investigates construction costs, labour and market conditions relevant to the preliminary schemes, and advises the client as to materials, techniques and constraints. A cost estimate is prepared, based on current area, volume or other unit costs, and related to the budget previously prepared by the client. A preliminary schedule is proposed. The related records include:

- detailed studies and reports
- preliminary master schedule
- updated preliminary cost estimate

2.3   Review With Authorities

Throughout this phase, the architect continues to review applicable statutes, regulations, codes and by-laws. Prior to making the final schematic design presentation to the client, the architect must also review and coordinate the project with all authorities having jurisdiction. While the authorities should have been identified during the requirements phase, the actual sequence for obtaining approvals and the anticipated timing of preliminary reviews should be known and incorporated into the project schedule at this stage.   The records consist of:

- submissions and permit drawings
- minutes and conference reports
- notes and correspondence
- permits and approvals

2.4   Present Schematic Design

The design is presented to various groups during the approval stages, in order to ensure that the client and others who are involved in the decision-making aspects of the project have understood the basic design concept, the character and physical relationships of the spaces and activities, and to confirm that the design has met the program of requirements. Audiences for the presentations include the client, the planning authorities, community groups, and user groups. A variety of presentation methods and materials may be used, including:

- presentation drawings: perspectives, sketches
- flow diagrams
- plans, elevations, sections
- presentation models

- other presentation materials: overhead projection transparencies, computer files, printed materials, photographs

2.5 Obtain Client Approval

The schematic design drawings, the outline specifications, the area calculations, and the cost analysis are presented to the client for review and approval. This may take the form of a Schematic Design Report, particularly for a large project. The schematic design report generally functions as an approval document which summarizes all aspects of the schematic design process and is signed or accepted in writing by the client. The records consist of:

- schematic design report with client signature/approval

- minutes and conference reports

- authorization to proceed into design development

3. The Design Development Phase [18]

In the design development phase, based on the approved schematic design documents and estimate of construction cost, the architect prepares for the client's approval design development documents consisting of drawings and other documents appropriate to the size of the project. At this stage, the project documents aim to fix and describe the size and character of the entire project as to the architectural, structural, mechanical, and electrical systems, materials and such other elements as may be

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[18] The following discussion and analysis of the activities carried out in the Design Development Phase of a building project, and the documents associated with these activities, are based on and adapted from the *Canadian Handbook of Practice*, Vol. 1, "Design Development," 1-12.

appropriate. By the end of this phase, all important aspects of the project should have been defined and described, so that all that remains is the formal documentation step of construction contract documents. The architect continues to review applicable statutes, regulations, codes and by-laws, and prepares a revised and updated estimate of construction cost, which is again submitted to the client for review and formal approval.

3.1 Develop Architectural, Mechanical, Structural, and Electrical Design

The architect develops the architectural, structural, mechanical, and electrical drawings to determine more precise aspects of planning, appearance and the method of construction, sufficient to illustrate and define the design concept in terms of plan, form, character and materials. The design development phase is marked by increased collaboration between the architect and other consultants and technical personnel. At the start of this stage, the architect calls together all the parties involved, which may include associated architects, engineers, specialist consultants, specifications writers, and others, to brief them in detail with respect to the design. Subsequent meetings with representatives from all disciplines are held to present and coordinate schemes and select solutions to design problems. Detailed drawings, cost estimates, schedules and specifications are prepared by the architect and consulting specialists as the design develops, for formal presentation to and approval by the client before proceeding to the contract documents phase. The design development drawings consist of:

- site plans indicating site improvement

- plans, elevations, sections (architectural, structural, mechanical, electrical)

- schedules and notes

- large scale details

3.2 Determine Major Systems and Materials Choices

The outline specifications for architectural, structural, mechanical and electrical trades which were drafted in the schematic design phase are extended during design development to record subsequent or additional decisions, for submission to the client with the design development drawings. They form the basis for the architect's statement of probable construction cost and serve to inform the client of the quality of construction proposed. The outline specifications are often accompanied by product literature and samples or prototypes. The architect may develop the outline specifications by using a project data sheet, which functions as a means of recording decisions reached after appropriate investigation, providing detailed information for estimating cost, and establishing the completion of the design development phase and readiness to proceed to contract documents. The records associated with this activity consist of:

- outline specifications

- project data sheet

- samples and product literature

3.3 Update Time and Cost Plans

By the end of the design development phase, the construction time and cost framework of the project are established. It is a normal requirement of the Client/Architect Agreement that the architect, at the conclusion of the design development process, provides a construction cost statement to the client as part of the final design development documents. Only minor adjustments can be made during the

succeeding contract documents phase without a major re-working of the design, therefore all the relevant factors which could affect time and cost must be assembled and refined. If there are significant variances from the original time and cost plans, the client is notified and a detailed analysis of relevant factors is prepared. A variety of planning tools and techniques may be used to prepare design development time and cost plans, including precedence diagrams and planning networks. The related records include:

- updated preliminary master schedule

- updated preliminary cost estimate

3.4   Conduct Further Reviews with the Authorities

One of the major uses of the design development documents is to review design details with the authorities having jurisdiction. By the end of this phase, permissions from all authorities should have been assured. Records related to securing permits consist of:

- submissions and permit drawings
- notes and correspondence

- minutes and conference reports
- approvals and permits

3.5   Present Design to Client

Because the basic design concept will have been presented and approved at the schematic design stage, presentations at the design development phase tend to focus on developing, reviewing, and obtaining decisions for specific details of the concept. Maintenance factors relating to the design and confirmation of previously projected cost statements are likely to be given particular emphasis. Presentation records include:

- presentation drawings: perspectives, sketches

- flow diagrams

- plans, elevations, sections, details

- presentation models

- samples, prototypes, mock-ups of key components

- trade literature, test reports

- other presentation materials: overhead projection transparencies, computer files, printed materials, photographs

3.6 Obtain Client Approval

The architect presents the design development documents to the client, which include: site plans indicating general location and nature of site improvements; plans, elevations, sections, schedules and notes as required to delineate the architectural, structural, mechanical, and electrical systems; large scale details of significant design aspects; outline specifications; updated cost and time plans; samples, prototypes, and mock-ups of key components; trade literature, test reports, and value analyses for significant systems; color and interior presentations; preliminary furniture and equipment layouts. Approvals are often obtained by signatures on the documents. The end of this phase is marked by the architect's receipt of written authorization to proceed to the contract documents phase. The records at the end of this phase consist of:

- design development documents with client signature/approval

- minutes and conference reports

- authorization to proceed into contract documents

4. The Construction Documents Phase

Based on the approved design development documents and the approved estimate of construction costs, the architect prepares the drawings and specifications that set forth in detail the requirements for the construction of the project, and assists the owner in preparing the necessary bidding and contractual information for construction. The Construction Specifications Institute (CSI) has standardized the organization of construction documents in North America; participants in the construction industry, including architects, recognize the construction documents as consisting of six elements which are assembled in various ways to comprise the bidding documents, contract documents, and project manual. The American Institute of Architects' *Handbook* describes each of the six elements as follows:

- *Bidding requirements*, including the invitation to bid (or advertisement), information and instructions to bidders, bid forms, and requirements for bid security.
- *Contract forms*, including the form of agreement between owner and contractor that will be used, any necessary performance bond, labor and materials bond, and other certificates that must be executed
- *Contract conditions*, including the general conditions of the contract for construction, which outlines the rights, responsibilities, and duties of owner and contractor (as well as architect and possibly construction manager), and any supplementary conditions particular to the project at hand
- *Specifications*, outlining the levels of quality and the standards to be met in the construction of the project; the format recommended by the CSI and incorporated into many industry standards and products includes these 16 divisions:
  1. General Requirements
  2. Sitework
  3. Concrete
  4. Masonry
  5. Metals
  6. Woods and Plastics
  7. Thermal and Moisture Protection
  8. Doors and Windows
  9. Finishes
  10. Specialties
  11. Equipment
  12. Furnishings
  13. Special Construction
  14. Conveying Systems
  15. Mechanical
  16. Electrical

- *Drawings*, documentation of the architectural, structural, mechanical, electrical, civil, landscape, and interior design of the project
- *Addenda* to any of these documents issued during the bidding or negotiations phase
- *Contract Modifications*, in the form of orders for minor changes in the work, change orders, and construction change directives [19]

At the beginning of this phase, the architect again briefs the participants in the project, distributes copies of the documents prepared during the design development phase, assigns responsibilities and sets up communications channels. Of all the project phases, the preparation of construction documents typically takes the most time and resources, requiring careful scheduling and coordination.

4.1   Production Planning and Control

As the project makes the transition from the design development phase to document production, the architect or project manager determines the time, staffing and resources necessary to produce the construction documents. This may involve preparing small sketches or "cartoons" of each sheet required, showing what is to be included, scales of drawings, and layout of the sheet. The specifications document may be blocked out into the appropriate sections, and the remaining content of the project manual may be outlined for further development. A budget may also be prepared for each sheet. Before the active production begins, the architect should have a plan, schedule and budget for producing the construction documents. [20] The records related to this activity consist of:

- "cartoon drawings" of sheets to be drafted

- draft or outline of project manual and specifications document

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[19] AIA, *The Architect's Handbook*, Vol. 2, Section 2.6, "Construction Documents," 1.

[20] Ibid., 19.

- budget and schedule for production

4.2 Produce Working Drawings

The drawings produced are variously referred to as contract drawings, construction drawings, and working drawings, indicating the many functions they serve. They form part of the construction contract and are therefore key legal documents, but they also function as a guide to field inspection and as the basis for cost estimates requiring computation of exact quantities of materials and labour and methods of construction. They provide instructions for contractors and are used as a basis for shop drawings. The drawings work with the specifications to illustrate and describe the project to all parties involved in the construction process.

Structural, mechanical, and electrical drawings are produced concurrently with the architectural drawings, and then assembled into the construction set. Although less standardized than the specifications, conventions for sequencing the drawings have grown up which are widely recognized and followed in the construction industry. The Canadian and American handbooks suggest the same sequence for the contract drawings: the drawings are grouped by discipline, with the architectural drawings presented first, followed by structural, mechanical, plumbing, electrical, and any special disciplines such as landscaping. The architectural set is usually prefaced with explanatory materials such as an index or table of contents, keys to symbols and abbreviations, notes, and a location map. The plans, elevations, sections, details, and schedules follow, usually in that order.

Within each of the consulting discipline sets, the same order is followed, although not all

elements will be present in each of the sets. [21]

Most firms have standards for sheet size, layout, and title block. The title block

contains the following types of information:

- firm name, address and phone number
- project title and address (and owner's name and address)
- drawing title and sheet number
- names and addresses of consultants
- notation of who worked on the drawing, including checking
- dates of issuing drawings (for bid, permit, construction, etc.)
- dates of revisions
- architect's seal and signature
- engineer's seal and signature [22]

The working drawings consist of:

- architectural plans, elevations, sections, details, schedules, and diagrams

- structural, mechanical, and electrical plans and details

- utility and site plans and details

- landscape work and art work

4.3   Write Specifications

The specifications are the written counterpart of the drawings; together, the

specifications and working drawings translate the design concept into a detailed

description of the building. The specifications describe the requirements for the

building's materials, equipment, components, construction systems, and workmanship,

usually in the CSI format described in item 4. Within each of the sixteen sections, the

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[21] See *The Architect's Handbook of Professional Practice*, Vol. 2, Sec. 2.6, "Construction Documents," 8-9, and the
    Canadian Handbook of Practice, Vol. 2, "Contract Documents - Drawings," 3-4.

[22] AIA, *The Architect's Handbook*, Vol. 2, Sec. 2.6, "Construction Documents," 10.

architect selects an approach to specifying. These approaches fall into three broad categories, which may be used individually or in combination. Proprietary specifications list products and assemblies by one or more acceptable trade names. Prescriptive specifications consist of detailed statements for ingredients and proportions, together with a detailed description of the operations which must be performed to produce the required result. Performance specifications describe how the materials and systems must perform in the completed building.

The specifications are widely distributed. Among the parties who will be using the specifications are: architects, authorities, clients, contractors, engineers, estimators, fabricators, lawyers, insurance agents, manufacturers and suppliers, and others. Like the drawings, they form part of the contract and therefore have legal significance. Because of their complexity and legal importance, specification writing has become a specialization within the profession; many firms employ an architect whose main function is to write specifications for the firm's projects.[23] The records consist of:

- specifications for materials, equipment, manufacture, methods of installations, design and performance criteria, and workmanship

4.4 Prepare Bidding Documents

The Bidding Documents are all the documents required to bid or negotiate the construction agreement with a contractor or contractors.[24] The architect's role at this

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[23] The Committee of Canadian Architectural Councils, "Construction Documents Phase - Specifications," revision to the *Canadian Handbook of Practice* (Ottawa: The Committee of Canadian Architectural Councils, 1991), 1 - 4.

[24] For a brief general description of each category of documents, refer to item 4 on page 43 of this thesis. For a more detailed description of the role and content of these documents, see *The Architect's Handbook of Professional Practice*, Vol. 2, Sec.2.7, "Bidding and Negotiation," 4 - 10. The general purpose of the documents in the bidding process can be deduced from the document name. The scope of this thesis does not permit a detailed analysis of each bidding document.

stage is to assist the owner in preparing these documents to a standard that enables the contractor to submit a comprehensive and accurate bid, and to deliver a project adequate for its intended purposes. Both the AIA and the RAIC provide standard forms and documents for use in bidding and negotiation of construction contracts. The records related to the bidding process consist of :

- advertisement or invitation to bid
- bid forms
- form of owner-contractor agreement
- labour and material payment bond
- specifications

- instructions to bidders
- information on bid security or bond
- performance bond
- general and supplementary conditions of contract
- drawings

4.5   Compile the Project Manual

The Project Manual consists of the project documents that can be bound into book format, including the bidding requirements, specifications, and contract forms and conditions. Procedural and administrative information can be found in three places in the project manual;   in the general conditions of the contract, and in Division 1 of the specifications and Part 1 of each of Divisions 2 through 16 of the specifications. The general conditions area of the contract for construction defines the duties, rights and responsibilities of the parties involved, and includes requirements for contract administration duties. Division 1 of the specifications details standard office procedures such as the required format for submission of shop drawings, procedures required by owners, and procedures governing the specific project, such as applicable codes. The

same kinds of information are contained in Part 1 of each division of the specifications, as they relate to the particular trade in question. [25] The project manual consists of:

- the contract forms: agreement, performance bond, payment bond, certificates

- conditions of the contract: general and supplementary

- specifications

4.6   Coordination, Review and Checking

The client and architect conduct a joint policy review during document preparation at agreed-upon intervals. The architect also conducts internal review and coordination meetings prior to each of the client review meetings. Because construction documents are produced by many people working in different departments within the firm and in consultant's offices, a significant part of the architect's activities at this stage is aimed at ensuring that the documents are consistent. "Progress prints" of drawings and drafts of project manuals are commonly shared within the project team, and coordination meetings may also be held. Different firms have different methods for tracking versions of documents: the date and purpose of the revision may be noted on the title block of a drawing or on the cover of the project manual, forming a record of issue dates and purposes.

Construction documents are often produced by technicians who may not be conversant with the larger context for the documents they are producing, therefore most firms have a protocol for document checking. Often a checklist is used by the drafter as

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[25] AIA, *The Architect's Handbook*, Vol. 2, Sec. 2.6, "Construction Documents," 4.

the drawing develops, and by the project manager who reviews it.[26] Records related to coordination, review and checking consist of:

- minutes and conference reports
- progress prints

- project manual outline and drafts
- checklist for drawings

4.7 Update Time and Cost Plans

The architect updates the cost plan, time schedules and quality standard criteria prior to each client review. At the end of the contract documents stage, the architect prepares the final overall cost estimate.

- final pre-bid estimate of costs

- master schedule

5. The Bidding and Contract Negotiation Phase[27]

In the bidding and negotiation phase, the architect assists the client in soliciting a satisfactory bid from qualified contractors, which will become the basis for the contract for construction. During preceding phases, the architect will have assisted the client in the preparation of the bidding documents, and advised the client regarding the methods of bidding, ensuring that he or she is familiar with bid periods, bidding procedures, bid opening, analysis of bids, and the awarding of the project to the successful contractor.

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[26] Ibid., 18-21.

[27] The following discussion and analysis of the activities carried out in the Bidding and Contract Negotiation Phase of a building project, and the documents associated with these activities, are based on and adapted from the *Canadian Handbook of Practice*, Vol.2, "Tender/Contract Stage," 1 - 26.

5.1 Invite bids

There are five basic types of bid calls, distinguishable by the degree of exclusivity: for private projects, a higher degree of exclusivity is usual, while public projects must remain more open. The usual methods used to solicit bids for private projects are by negotiation, if only one or two contractors are being considered, or by direct invitation to selected candidates. For public projects, a degree of selectivity may be exerted by setting prequalification criteria concerning the contractor's organization, history, experience, and methods of operation, as well as character and financial references. If there are no prequalification criteria, the bidding is open to all. The method for advertising the call for bids and making the bidding documents available to contractors will depend on the type of bidding method chosen. When all of the documents needed by contractors to prepare a bid have been prepared, the bid invitation is issued and the bid documents are made available to prospective bidders. The bid documents consist of:

- advertisement or invitation to bid

- instructions to bidders

- bid forms

- information on bid security or bond

- form of owner-contractor agreement

- performance bond

- labour and material payment bond

- general and supplementary conditions of contract

- specifications

- drawings

5.2 Bidding Period and Receipt of Bids

5.2.1 Clarify bidding documents

The architect advises the client as to the required length of time for receiving bids. The architect's role during the bidding period is to assist the client, and to answer questions from the contractors. Clarifications, explanations, and changes to the bidding documents which arise during the bidding period are made in the form of written addenda, which are provided to all registered bidders.

- addenda

5.2.3 Arrange Bid Briefing Meeting

The information in the bidding documents may be supplemented by a briefing meeting organized and chaired by the architect, which the contractors preparing bids are required to attend as a group. The meeting may include a site inspection.

- minutes and conference reports

5.2.4 Conduct Bid Opening

At the closing of the bid period, the bids are opened at a public or private meeting, depending on the client's policy. The architect may conduct the bid opening, or the owner may choose to do so. For public projects, the bids are usually opened publicly, with representatives for the bidders in attendance. The representatives may sign a register. As the bids are opened, each bidder's base bid price is read aloud, together with

information about bond or bid securities. After the meeting is adjourned, the bids are turned over to the architect for analysis and recommendations.

- register of representatives

5.3   Analyze the Bids

The selection of the successful contractor is the owner's decision, assisted by the architect. Usually, the contract will be awarded to the lowest responsible bidder. The architect carefully reviews the bids with regard to the completeness of the bid, proposed substitutions and alternates, the bidders' experience with similar projects, commitment to projects currently underway, staff and expertise, and finances and reputation. After evaluating the bids, the architect makes a presentation of the evaluation to the client and recommends a particular bidder as the successful contractor. The records consist of:

- reports

- presentation materials

5.4   Assist in Negotiation of Bids and Award of Contract

Before the client issues a formal letter of acceptance to the contractor, a pre-award meeting may be held between the architect, the client and the contractor, to negotiate items not included on the tender form, and administrative matters pertaining to the setting up of the field office, schedule, and start-up procedures. The letter of acceptance, given without qualifications, has the status of a binding contract and allows the work to get started while the formal contract is being drawn up and executed. The architect may assist in preparing the letter of acceptance, but it will normally be approved by the client's

lawyer before the client signs and issues it. Once it has been awarded, the unsuccessful bidders are notified by letter.

The architect also assists in the preparation of the contract, filling in required information or amending terms but, as for the letter of intent, the client's lawyer must approve and review it. At a minimum, a copy will be made for the client and the contractor, though other copies may also be made for the architect and the client's lawyer. All copies must be signed. To execute the contract documents, the client and contractor sign and impress their seals on the cover of each document.

A pre-construction meeting, called and chaired by the architect, will generally be held to introduce the parties who will be involved in the project, including representatives for the client, the architect, consultants and prime subcontractors. The meeting serves to establish lines of communication, procedures for shop drawings, instruction changes, inspection and testing, and to outline the contractor's schedule. The records relating to this activity include:

- letter of acceptance from client to contractor

- signed and sealed contract

- minutes and conference reports

6. The Construction Phase

During the construction phase, the emphasis shifts from the architects' artistic and technical abilities to management activities. The activities conducted during this phase fall into two broad categories, contract administration and inspection. Contract

administration activities aim to ensure that the contractor receives necessary information and decisions in a timely manner, in order to complete the building as required by the contract. By making inspections, interpretations, recommendations, and reports, the architect aims to ensure that the contractor is meeting the schedule and quality standards specified by the contract.

6.1 Contract Administration

The architect is responsible for responding to the flow of inquiries, submittals, and requests for changes and payments that occur during the construction phase, and for monitoring the progress of the work in relation to the project schedule. Records consist of :

- project organization charts

- procedures

- correspondence

6.1.1 Review and Approve Submittals

The contractor submits a variety of documents and materials, which he has already approved, for the architect's further approval during the project. The most important of these are the shop drawings, which show how a particular aspect of the work is to be fabricated and installed. They are not contract drawings, but demonstrate how one aspect of the work will satisfy the contract documents. The drawings are stamped with the date of approval or rejection and signed by the architect and any consultants. [28] Other submittals must also be approved. Submittals include:

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[28] AIA, *The Architect's Handbook*, Vol. 2, Sec. 2.8, "Construction Contract Administration," 3-7.

- shop drawings
- samples
- test results
- maintenance agreements
- project photos
- field measurement data

- product data
- mock-ups
- warranties
- workmanship bonds
- record drawings
- and operating and maintenance manuals

6.1.2 Provide Supplementary Instructions

The architect provides detailed drawings and clarification instructions as required, and prepares change orders for the client's approval. Minor changes which are consistent with the construction contract can be made on the basis of a written directive from the architect, which is binding on the contractor and client. A change order issued by the client is necessary in instances where the change will result in an adjustment to the price or time specified in the contract. A change order is initiated by the contractor's proposal or by the architect's proposal request to the contractor, which requires the contractor to provide information on how the change will affect the contract price and date. If the contractor's quote is acceptable, the architect prepares a change order for the client's approval. The change order is signed by the client and counter-signed by the architect.[29]

- site instructions
- contemplated change orders
- change orders

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[29] Ibid., 15-16.

6.1.3 Monitor Contract Schedule

The contractor submits a detailed progress schedule for the project immediately following the award of contract. The architect is responsible for carefully reviewing the schedule at the time it is submitted, to ensure that all factors affecting the timing have been taken into account, and at appropriate intervals during construction, to check the actual progress of the work against the schedule, and for reporting to the client. Schedules are prepared in a variety of formats, including lists of activities with related dates, graphs and charts, and logic diagrams such as critical path or PERT diagrams. [30]

- updated schedules and reports

6.1.4 Review and Approve Applications for Payment

During construction, the contractor performs a portion of the work up to a designated phase or date, and then applies for a progress payment. The architect reviews the work to ensure that it is in accordance with the contract, and processes the application for payment, checking with any consultants and obtaining their approval before issuing the certificate for payment to the client.

- applications for payment

- certificate for payment

6.1.5 Attend Project Meetings

Project review meetings between representatives of the client, the contractor and the architect are held regularly during the course of the project. Normally, the architect arranges the meetings, takes the minutes, distributes them, and acts as chair. The purpose

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[30] Ibid., 16.

of the meetings is to inform the client concerning the status of the project and any

problem areas. [31] Meeting records include:

- minutes and conference reports

- status reports

6.2   Conduct Inspection

Under the terms of the contract, the architect is required to carry out a general

review of the work at intervals appropriate to the stage of construction, to keep the client

informed of the progress and quality of the work, and report to the client any defects or

deficiencies observed in the course of the site reviews. Additional inspections may be

carried out by independent specialists whose services are ancillary to those of the

architect. These may include inspection and testing services related to excavation and

backfilling, pilings, concrete, masonry, structural steel, waterproofing, and so on. The

reports resulting from any such specialist reviews are reviewed and interpreted by the

contractor and the architect. [32] Inspection records may include:

- architect's personal inspection diary

- inspection reports from consultants, testing firms, authorities

- inspection certificates from authorities

- contractor's construction reports

- correspondence with contractor and client

- progress photographs

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[31] RAIC, *Canadian Handbook of Practice*, Vol.2, "Construction - Contract Administration," 27.

[32] Ibid., Vol. 2, "Construction - Inspection," 9-10.

7. The Commissioning and Post Construction Phase (Project Close-out) [33]

Commissioning is the stage when the building is put into service by the client. As the project nears completion, the architect's activities are focused on preparing the building for occupancy and use, and ensuring that the terms of the contract between the client and the contractor have been met.

7.1 Conduct Inspection for Substantial Completion

As the project nears its end, the contractor inspects the work to determine whether it is substantially complete according to the definition provided in the contract, prepares a list of incomplete or unsatisfactory work, and applies to the architect for a certificate of substantial completion and release of holdback moneys. The contractor is required to include with the application all data, operating instructions, evidence of tests, maintenance manuals, record drawings, and any materials which enable the client to operate the building. The architect then inspects the work with the contractor, and advises whether the application is accepted. Records related to inspection for substantial completion include:

- contractor's application for Certificate of Substantial Completion, with addenda and submissions: evidence of tests, maintenance manuals, record drawings, keying schedule

- inspection record and report

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[33] The following discussion and analysis of the activities carried out in the Commissioning and Post-Construction Phase of a building project, and the documents associated with these activities, are based on and adapted from the *Canadian Handbook of Practice*, Vol.2, "Commissioning and Post-construction Stages," 1-15, and *The Architect's Handbook of Professional Practice*, Vol.2, Sec. 2.8 "Construction Contract Administration," 19-21.

7.2 Issue Certificate of Substantial Completion

If the work has reached a level of completeness in accordance with the definition for substantial completion contained in the contract, the architect issues the certificate to the client, with a copy to the contractor. Appended to the certificate is a list of items to be completed or corrected. The contractor continues to work on the project, and assembles the remaining documentation, including bonds and guarantees. Once all the documentation is received from the contractor, the architect issues the certificate for payment of holdback moneys.

- Certificate of Substantial Completion

- contractor's remaining documentation: bonds, guarantees, warrantees

7.3 Conduct Final Inspection and Issue Final Payment Certificate

When the contractor considers that the work is complete, a request for final inspection is submitted to the architect, who then conducts the inspection and makes a final deficiencies list. When the architect is satisfied that all deficiencies have been corrected and the contract requirements have been met, the final payment certificate is issued to the contractor and the client. The certificate shows the date of final completion, and states that the final payment is due to the contractor on that date.

- contractor's application for Final Payment Certificate

- final deficiencies report

- Final Payment Certificate

Secondary Functions

1.   Sustaining the Organization

Like any other business, the architectural office carries out functions aimed at managing and ensuring its viability as an organization. These administrative functions can be separated into four main categories: governance, finances, personnel, and physical plant. [34] Governance activities relate to the setting of policies and procedures, goal-setting, the establishment and termination of programs, the creation of juridical persons, and the appointment of officers. [35] In an architectural office, the records relating to governance include policy and procedures records and updates, directors' or partners' diaries, organizational charts, certificates of incorporation, business licenses, permits or registrations, records relating to mergers, reorganizations, joint ventures, and so on.

An architectural firm's financial and personnel activities and records do not differ significantly from those of other businesses which operate on a project basis. The *Canadian Handbook of Practice* provides a model of an accounting system for architectural offices, consisting of prime records (the cash journal, general ledger, and project ledger), and subsidiary records (the payroll journal, travel report and distance log, telephone charges, and petty cash). The project ledger is characterized in the *Handbook* as the most important accounting record the firm maintains; its function is to analyze the costs and fees of the firm for each project undertaken. [36] Typical personnel records

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[34] These categories are delineated as the four main areas of administration in Helen Samuels' *Varsity Letters: Documenting Modern Colleges and Universities* (Metuchen, NJ: The Society of American Archivists and The Scarecrow Press, 1992), 135 - 227.

[35] Ibid., 160.

[36] RAIC, *Canadian Handbook of Practice*, Vol. 1, "Office Organization and Practice," 15.

include individual employee files, records relating to benefit administration, employment insurance and workers' compensation, etc.

Property functions pertain to the acquisition, maintenance, and disposal of the premises in which the business operates. The most common arrangement is by leasing, although a firm may also acquire its premises through purchase or by building. If accommodation is purchased or built, the firm may choose to sell the property and lease back part or all of the premises. A variety of legal, real estate, and taxation records may be created, depending on the option chosen.

2.   Marketing and Public Relations

Any successful business must engage in promotion of its products and services at some level. In architectural firms, much of the marketing activity occurs within the context of specific projects, while public relations encompasses activities which are aimed at, or involve, the larger community in which the firm operates. Activities related to marketing and public relations include: identifying markets, analyzing the firm's ability to serve specific markets, creating a marketing plan, and creating marketing and communications systems and products. In sole proprietorships and smaller firms, these activities may be minimal, while in large firms they may be carried out by a specialized department or by hired consultants. The records related to these activities may include advertisements in various media, press releases, speeches, and records of participation by partners or employees in community organizations, task forces, committees and charities.

By delineating the legal and administrative environment of the architectural firm, and analyzing its main functions, this chapter provides the background necessary to discuss and evaluate the archival literature pertaining to the appraisal of architectural records. The literature is limited, in terms of both quantity and scope: it forms a relatively small part of the appraisal literature as a whole, and concentrates for the most part on practical methodological issues rather than theory. Nevertheless, it is worth examining for the purpose of evaluating its validity in relation to archival theory, as well as to identify gaps which may be addressed by further research.

Chapter Two

APPRAISAL FOR ACQUISITION

Appraisal is an evaluative process aimed at identifying documents which should be continuously preserved for an unlimited period. If the scope of the appraisal is confined to evaluating the documents within a particular fonds, the process is referred to as appraisal for selection. If the appraisal encompasses evaluating the records of more than one creating organization or person, or fonds among fonds, the process is referred to as appraisal for acquisition. Archivists necessarily engage in both kinds of appraisal activities on behalf of the institutions and organizations in which they work, but they also consider acquisition issues in the larger context of their professional responsibility towards the formation of our common documentary heritage. The appraisal literature pertaining to architectural records can be divided into two broad categories relating to these two aspects. One group consists of methodologies for use by individual repositories in locating and acquiring suitable additions to their holdings. In the second category are a number of proposals aimed at improving the acquisition of architectural records through cooperative activities which extend beyond the scope of the individual repository, variously known as acquisition, collection, or documentation strategies.

The elements of repository-based methodologies are consistent throughout the literature, although different authors have emphasized the individual elements to varying degrees. Appraisal for acquisition at the repository level is based on: the development and application of an acquisition policy as well as criteria regarding the records' creators,

content, media, and condition; the complementarity of the records in relation to the existing holdings; and potential research use.

In what appears to be the only widely available book-length manual on this subject, the Society of American Archivists' *Archives and Manuscripts: Maps and Architectural Drawings*, author Ralph E. Ehrenberg follows the appraisal process first articulated in 1956 by Theodore R. Schellenberg in *The Appraisal of Modern Public Archives*, which consists of the application of legal, evidential, informational, historical, and intrinsic criteria for determining value. This set of values has since come to be regarded as the standard, "traditional" approach to appraisal in archival literature. Ehrenberg's treatment of the subject is rather limited: as the title suggests, he considers the drawings in isolation from the textual records which would normally form part of the file, and applies these values to the drawings only, although he does suggest that the project specifications should accompany the master file of drawings. The discussion is further limited by an apparent assumption that the records being appraised are of public provenance, and this in turn leads to further assumptions about the values the records may have. In the American archival tradition, the term "archives" is defined as meaning government records that have no further administrative use to the originating office, while records of private provenance are referred to as "manuscripts." Ehrenberg appears to be speaking only of "archives" in this sense, and the drawings are therefore deemed to have little legal and administrative value, and are mainly acquired for their informational and intrinsic value. The manual therefore offers little assistance to the archivist appraising the records of architectural firms, which may still have all of these values.

In Ehrenberg's analysis, the informational value of the records is determined by the research uses they serve, and by their "significance". Ehrenberg cites Schellenberg and the policy of the National Archives of the United States for a definition of significance. According to Schellenberg, "records on buildings are ordinarily important only if the buildings themselves are important, and buildings acquire an importance because of the associations with them." [1] In other words, the significance of a building is not due to any inherent properties, but depends on the uses to which it has been put, or through links to some "important" person or event. The National Archives allows that buildings can have interest in and of themselves; criteria for determining architectural significance are related to originality of design and/or the embodiment of distinguishing characteristics derived from a period, a culture, or construction method. Historical significance is associated with "a building's functions and activities, and with important events and notable personalities, including designers, architects, and master builders associated with it." [2] Aesthetic value is based on research uses for the history of art and architecture, as well as intrinsic value as works of art. Artifactual value is said to belong to drawings which provide physical evidence of the technological development of graphic construction and reproduction. [3]

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[1] Ralph E. Ehrenberg, *Archives and Manuscripts: Maps and Architectural Drawings* (Chicago: Society of American Archivists, 1982), 18, quoting Theodore R. Schellenberg, *The Appraisal of Modern Public Archives*, Bulletin of the National Archives, No. 8 (Washington, D.C., 1956), 34.

[2] Ehrenberg, 18.

[3] Ibid., 20.

A virtually identical approach is outlined in John A. Dwyer's article "Managing Cartographic and Architectural Archives." [4] Dwyer, like Ehrenberg, treats architectural drawings as belonging in the same category as maps, listing a set of values to be applied to drawings, and suggesting some of the research uses such records may serve. No mention is made of the textual records in architectural project files. The article essentially recapitulates Ehrenberg's longer piece in summary form.

A technical leaflet entitled "Collecting and Preserving Architectural Records," published by the American Association for State and Local History, is as limited in scope as Dwyer's, although it exhibits a better grasp of archival principles. The leaflet devotes only a few short paragraphs to "collecting" and does not suggest any basis for making appraisal decisions, but it does recognize that architectural records consist of both textual and graphic materials, and urges archivists collecting these records to honour the archival principle of *respect des fonds* by acquiring the related textual records with the drawings. [5]

Francoise Hildesheimer's 1987 study, *The Processing of Architects' Records: A Case Study, France,* is probably the most comprehensive study of the subject to date, and constitutes the only example in the literature of a complete examination of the provenancial relationships influencing the creation of architectural records, and the documentary forms found in the project files. Hildesheimer first conducts a functional analysis of the roles and functions of the parties involved in the design and construction

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[4] John A. Dwyer, "Managing Cartographic and Architectural Archives", in *Managing Archives and Archival Institutions*, ed. James Gregory Bradsher (London: Mansell Press, 1988), 92-103.

[5] American Association for State and Local History , *Collecting and Preserving Architectural Records* (Nashville: AASLH, 1980).

process in France, the legal and administrative environment governing the profession and the building project, and the principal stages in building up the file. She then complements this analysis with an examination of the contents of a particular fonds, and makes suggestions concerning the archival functions of appraisal, preservation, classification and description. Regarding appraisal for acquisition, Hildesheimer is rather vague. She states that a fonds "should be processed in terms of what, in view of the impossibility of finding an objective definition, we may call its 'value' together with its physical condition and perhaps the problem of overlapping." [6] The value of a fonds in relation to other fonds concerns whether or not the architect has an area of specialization, or has produced projects which demonstrate innovation or have social implications. She then states that in practice is it often the state of preservation of the fonds which is the deciding factor. In other words, a fonds in which the files are in good order, complete, and well-preserved is a good candidate for preservation. [7]

Nancy Carlson Schrock also considers preservation factors to be a prime consideration in deciding whether to acquire a fonds, since acceptance of the records may commit the archives to a large investment of limited resources. The factors to be considered are conservation treatment, holdings maintenance, and reformatting if necessary. The steps in appraising with these factors in mind are, first, identifying the format, then determining whether the records have intrinsic or artifactual value, [8] and

[6] Francoise Hildesheimer, *The Processing of Architects' Records: A Case Study, France* (Paris: UNESCO, 1987) , 25.

[7] Ibid., 26.

[8] Like Ehrenberg, Schrock uses the National Archives of the United States definitions of these terms.

examining the condition and size of the individual drawings. [9] In order to make a

preliminary assessment of the condition of a large collection, Schrock outlines a sampling

method by which the archivist may make projections about the entire collection, based on

the sample. This information is then used in combination with an assessment of content

and scholarly value to determine the overall value of the collection in relation to the cost

of preserving it. Although Schrock has written extensively on appraisal for selection, she

has less to say on the subject of appraisal for acquisition. In a paper originally given at a

symposium on the appraisal of architectural records held in Cambridge, Massachusetts in

1985, she confines her comments in this regard to suggesting that appraisal at the fonds

level "requires an overview of the total field of architectural documentation, including

material in government collections." [10] The rationale for this suggestion is based on

considerations of the prominence and skill of the architect in combination with an

assessment of the uses to which the records might be put; by way of illustration, Schrock

offers the example of "the records of a less prominent architect whose work would only

be needed for renovation [and therefore] might be discarded if the projects are available

in public records.[11] There are a number of flaws in this line of reasoning. Firstly, few

archivists can claim to be conversant with the total field of architectural documentation,

and secondly, it is dangerous to assume that any body of records is useful for only one

purpose, and to make decisions about whether or not to acquire the records based on that

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[9] Nancy Carlson Schrock, "Preservation Factors in the Appraisal of Architectural Records", *The American Archivist*, Vol. 59, No. 2 (Spring 1994): 206 -213.

[10] Nancy Carlson Schrock, "Architectural Archives: Current Practice and Future Directions," in *Proceedings of the Symposium on the Appraisal of Architectural Records held April 26, 1985 Cambridge, Massachusetts* (Cambridge: MassCOPAR, 1987), 74.

[11] Ibid.

assumption. The records of an architect who is not "prominent" may well be of interest

to researchers for any number of other reasons. As noted previously in this thesis, the

National Archives of Canada includes such "uninspired" work in its stated acquisition

policy, on the grounds that such acquisitions are necessary if the needs, tastes, and trends

of a society are to be accurately reflected. [12]

The literature concerning acquisition includes a number of case studies which

describe how a particular repository has located and obtained its holdings or designed its

acquisition policy. Although these can sometimes be too pragmatic and singular to be of

general use, the example of the Manuscripts Division at the University of Minnesota

Libraries' Northwest Architectural Archives may be relevant to Canadian archivists in

public repositories which also acquire private records. As the only architectural records

repository in the region, the Northwest Architectural Archives attempts to serve the

community of researchers as a whole; its aims therefore approximate the "total archives"

ethos of inclusiveness and impartiality with respect to user groups. Because of the variety

of users, curator Alan K. Lathrop has attempted to develop an appraisal approach which

is aimed at service to the entire community. Before the archives was established, the

scope and objectives of the repository were determined, in relation to other kinds of

institutions in the area. Lathrop consulted representatives of public libraries, museums,

and historical societies in the Archives' geographical area to determine their level of

interest in collecting architectural records. Since none of these institutions expressed an

intention to acquire these materials, the University of Minnesota decided to establish an

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[12] Kazymyra-Dzioba, "The National Architectural Archives," 15.

archives with the broad objective of acquiring and preserving the records of architects, landscape architects, engineers, contractors, interior designers and associated professional associations in the region. It was also decided that the archives should be "comprehensive," meaning that it would collect all the records that a firm in one of these categories created during the design and construction process, rather than just a few selected drawings. With these broad objectives established, criteria for the repository's acquisition strategy were developed. These were based on considerations such as the importance of the firm or individual in the context of architectural history in the region, the completeness of the documentation, the age of the material, its subject matter and usefulness to the real and potential clientele of the repository, and its relationship to the existing collection. [13]

Above all these criteria, however, Lathrop stresses the knowledgeability of the staff regarding the client base, subject matter, and existing holdings as the most important key to building a good collection: "The importance of this cannot be emphasized strongly enough. No institution can deal knowledgeably with any kind of records, let alone architectural records, unless its staff is familiar with terminology and practitioners and with the types of documentation produced by the building profession in its area." [14] Lathrop discourages the notion that the approach used by the Northwest Architectural Archives is one which is generally applicable to all archives, and has little faith in blanket solutions to appraisal problems: "There are a few issues of general concern to archivists,

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[13] Alan K. Lathrop, "Appraisal of Architectural Records in Practice: The Northwest Architectural Archives," *The American Archivist.* Vol. 59, No. 2 (Spring 1996): 223 - 224.

[14] Ibid., 224.

but most can be resolved only on the local level because of the highly localized nature of research and user needs in every repository." [15]

Lathrop's skepticism about the amount of common ground among keepers of architectural records is not shared by others who have an interest in these records. In addition to the repository-level approaches discussed in the preceding pages, there are a number of proposals which suggest that the answers to many of the most difficult appraisal issues concerning architectural records may lie in cooperative strategies. Proposals for such strategies range in scope from fairly localized plans for collaborative activities among a defined group of repositories, to global, largely theoretical methodologies for documenting whole subjects on a national, or even international scale, and which take into account non-archival as well as archival sources. These cooperative measures differ not only in terms of their scope, but also in the extent to which they rely on strategic planning for defining and directing the cooperative activity. While some exhibit a high degree of planning at the outset, others have grown more organically from locally based initiatives seeking to connect to a larger community with shared interests.

A plan of the first type was proposed at a symposium held in August 1975 on the theme of "Architectural Records and Archives in Canada." Organized by the Society for the Study of Architecture in Canada (SSAC) and sponsored by the Canada Council, the symposium brought together archivists, historians, and architects to plan for a national acquisition strategy for Canadian architectural records. An article by James Knight, Chair of the Archives Committee of the SSAC, published in *Archivaria* in 1976, summarizes

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[15] Ibid., 227.

the ideas which emerged during the conference and advocates the establishment of a

cooperative, multi-institutional national acquisitions program.

> If tomorrow's archivists and researchers are to avoid the situation facing their
> predecessors, today's archivists must decide which recent records are worthy of
> retention and which are not. Haphazard survival must be supplemented by a
> deliberate national acquisitions programme. Because Canadian archival
> institutions have acquired so few primary architectural records, because almost no
> institutions have established priorities, begun programmes, and selectively
> acquired material, and because so much needs to be done, the definition of a
> national strategy for the management and collection of architectural records of
> more recent origin is urgently required. [16]

Knight went on to outline a plan by which responsibility for acquiring

architectural records, both public and private, was assigned according to provenancial and

territorial pertinence amongst the national, provincial, municipal, and university archives.

According to Knight's scheme, the Public Archives of Canada would take responsibility

for records of national importance from both the public and the private sectors, in

accordance with its mandate. It was to carry on acquiring records relating to the

construction of federal buildings and national building programs, as it had in the past, but

Knight admitted that "beyond this the criterion of national importance becomes

somewhat elusive." [17] Knight's solution was to limit the PAC to acquiring records

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[16] James Knight, "Architectural Records and Archives in Canada: Toward a National Programme," *Archivaria*, No. 3 (1976/77): 62 - 72.

[17] Knight, 71. In an article describing the Archives written in 1983, author Dorothy Ahlgren acknowledges the unresolved difficulties associated with applying the mandate without either encroaching on territorial prerogatives or seeming to ignore some regions while over-documenting others: "The acquisition of records of individuals and firms in the private sector is a delicate issue. Few architects design buildings uniformly distributed across the country, and a firm must be based somewhere, so there is inevitably a regional emphasis in every architectural collection. At a time when regional and national concerns are periodically in conflict this may result in differing opinions of the role the Public Archives of Canada should assume" Dorothy Ahlgren, "The National Architectural Archives: Preserving the Records of Architecture in Canada," *Section A Architecture Magazine*, Vol. 1, No. 2 (April/May 1983): 5.

relating to public building projects, buildings which had won national awards, designs submitted for national competitions, events of national significance and sponsorship such as Expo 67 or the 1976 Olympics, and selected national organizations and institutions, such as the Home Design Council and the Royal Architectural Institute of Canada, as well as the records of firms which had buildings in several provinces. He also includes a group he designates as "'mega-builders," defined as land-development companies, suppliers of mass housing, builders of shopping centres, office complexes, fast food chains, and other urban manifestations.[18]

Provincial and municipal archives were to assume responsibility for documenting any buildings erected by their respective levels of government. In addition, provincial archives were to acquire the records of architects and large development companies whose work and reputation were centred in the province, and the records of the provincial associations of architects. The acquisition activities of municipal archives would parallel those of the provincial archives, but with a local focus, and would naturally include permit and assessment records, two important sources for architectural records which fall within the jurisdiction of municipal governments. Knight acknowledged the existence of a few universities which had established programs for the collection of architectural records, but was vague about any precise definition of their role in the acquisition strategy.[19]

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[18] Knight, 69.

[19] Knight, 71-72.

A notable omission from Knight's scheme is any mention of the role of the architectural profession itself in documenting its activities and interactions. The plan assigns to the provincial archives of the respective provinces responsibility for acquiring the records of the provincial professional associations, rather than encouraging these associations to preserve their own records. Nor is there any suggestion that individual firms establish their own archival programs. Moreover, the plan assumes virtually unlimited resources supplied entirely by public archives, even to the extent of offering space and records management expertise to functioning businesses. Even keeping in mind that the article was written in the nineteen seventies, when public funding for cultural endeavors was considerably more generous that at any time before or since, the reliance on public archives seems naive. In any case, the institutions in question apparently have not acted on the proposal. In the intervening twenty years, there has been very little acquisition of architectural records of private provenance by any of these institutions.

A more recent example of a strategic approach is the Working Conference on Establishing Principles for the Appraisal and Selection of Architectural Records, held in April 1994 at the Canadian Centre for Architecture in Montreal and sponsored by the Joint Committee on Canadian Architectural Records and Research and the Society of American Archivists' Architectural Records Round Table. The conference brought together archivists, curators, and users to "discuss the inherent principles and problems in the appraisal and selection of architectural records, and to propose an agenda for the future analysis of these issues and for the development of a model documentation

strategy." [20] A documentation strategy is defined in the Society of American Archivists'

Glossary as:

> An on-going, analytic, cooperative approach designed, promoted, and implemented by creators, administrators (including archivists), and users to ensure the archival retention of appropriate documentation in some area of human endeavor through the application of archival techniques, the creation of institutional archives and refined acquisition policies, and the development of sufficient resources. The key elements in this approach are an analysis of the universe to be documented, [21] an understanding of the inherent documentary problems, and the formulation of a plan to assure the adequate documentation of an issue, activity, or geographic area."[22]

The conference is worth looking at in some detail, as it is represents a recent and

concerted effort by most of the key custodians of North American architectural archives

to come to grips with the issues discussed in this thesis. The papers given on the first day

of the conference by architects, curators, historians and others have since been published

in *The American Archivist Special Issue on Architecture* (Spring 1996), and form a

substantial contribution to the sparse literature on this subject. The results of the working

sessions on the second and third days of the conference, as summarized by Nicholas

Olsberg in the introductory essay for the special issue, were less satisfactory. The working

conference resulted in the publication of a set of principles, an identified set of problems,

and a research agenda. The principles and problems identified were already familiar to

the participants, most of whom had considerable experience with architectural records,

and the research agenda is unlikely to be taken up in a systematic way by either the

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[20] Nicholas Olsberg, "Documenting Twentieth-Century Architecture: Crisis and Opportunity," *The American Archivist*, Vol. 59 (Spring 1996): 128.

[21] This analysis is often referred to in the literature as a "macro-appraisal."

[22] Lewis J. Bellardo and Lynn Lady Bellardo, comps., *A Glossary for Archivists, Manuscript Curators, and Records Managers* (Chicago: Society of American Archivists, 1992), 12.

research community or the archival profession without a clearer understanding of the benefits of carrying it out. Since no coordinating body was formed to direct the studies and acquire funding, it is unclear how this research will be undertaken, or by whom.

The conference does not appear to have succeeded in its aim to "propose an agenda for . . . the development of a model documentation strategy,"[23] which is perhaps significant for what it says about the effectiveness of the strategy. In keeping with the stated assumption of the conference organizers that "the methods and techniques of documentation strategy could provide the most useful context in which to begin the search for appraisal criteria,"[24] the working sessions held on the second day of the conference attempted to utilize these techniques. In her influential article on documentation strategy, "Who Controls the Past," published in *The American Archivist* Spring 1986 issue, Helen Samuels defines the strategy as consisting of four activities: (1) choosing and defining the topic to be documented, (2) selecting the advisors and establishing the site for the strategy, (3) structuring the inquiry and examining the form and substance of the available documentation, and (4) selecting and placing the documentation.

The first of the four documentation strategy activities outlined by Samuels, the choice of topic, was decided in advance by the conference organizers. Each of three working groups was assigned an area within the broad societal context of architecture: the architectural profession and practice; architecture in institutional settings; and

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[23] Ibid.

[24] Olsberg, 130.

architecture in regional and cultural contexts. The composition of these groups was also

decided in advance, relieving the participants of the necessity of selecting the advisors,

designated by Samuels as the second activity required in a documentation strategy.

Interestingly, the conference failed to address a key activity, and one which would seem

to be crucial to the success of a documentation strategy. Along with selecting the

advisors, the second activity also requires establishing a site for the strategy. According

to Samuels, "a permanent base for the activity must be identified and a group of advisors,

representing the interests of the creators and users, selected to guide the project. The

advisory board and the administrative structure established at the permanent base will

develop, direct, and monitor the documentation strategy. . . . Appropriate sites for

documentation strategies must provide resources to sustain the effort, access to the

required expertise, and a long-term commitment to the activity." [25] No such body was

identified at the conference or subsequently.

The third and fourth activity outlined by Samuels can be considered together;

these activities involve structuring the enquiry, examining the form and substance of the

available documentation, and selecting and placing the documentation. The working

groups obviously could not examine the form and substance of all the available

documentation in the space of a day, but they did attempt to lay the groundwork for the

documentation strategy by conducting a "macro-appraisal" to define the functions

associated with each of the assigned areas of interest, and to tentatively assign

responsibility for documenting these functions to various types of creators and custodians,

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[25] Helen Samuels, "Who Controls the Past," *The American Archivist*, Vol. 49, No. 2 (Spring, 1986): 117-118.

based on what was known or might be projected about where such records might reside. These macro-appraisals were not included in the published proceedings of the conference. The reasons for omitting them can only be guessed at, but it is the observation of this author, who attended the conference as a student participant, that the results were far from encouraging as a test of the usefulness of the documentation strategy techniques. The products of the working groups' efforts consisted of a sketchy outline of some of the functions associated with the three environments, and a long list of things that were not known about the universe of documentation on architecture, but should be.[26] No plan for "selecting and placing the documentation" appears in the conference proceedings published in *The American Archivist*.

The difficulties experienced by the working groups in attempting to lay the groundwork for building up a documentation strategy for architecture point to a number of fundamental flaws in the premise of the strategy. Most of these problems can be traced to the failure to recognize that the techniques involved, while appropriate and workable within a single organizational entity with an identifiable structure and universe of documentation, are not transferable to broad subject areas which may be documented in a large number of unrelated repositories, each of which has its own interests primarily at heart.

Terry Cook, who, along with Helen Samuels and Richard Cox, acted as animator for one of the three working groups, asserted in a paper given at the conference that "the new approach [which] focuses first on appraising which functions, which creators or

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[26] These are listed in Nicholas Olsberg's conference overview in *The American Archivist*, Vol. 59, No. 2 (Spring 1996): 132 - 135.

institutions, which programs and activities are most important to document" [27] is easily translated to workable methods for documenting a subject such as architecture. Cook states that "there are a growing number of very practical ways to translate this new theoretical or conceptual or even philosophical approach into strategic and documentary plans for the architectural function, and for archives generally" [28] but he fails to mention what these ways might be. The only example offered in the paper is Cook's own "macro-appraisal" model for the National Archives of Canada (NAC), which is not really applicable to the aims of the conference. The NAC is not a subject area, but a functioning public archives with a defined mandate and an infrastructure for communicating with its constituency, the various offices and agencies of the government of Canada. Under these circumstances, a "macro-appraisal" of government functions is a logical first step in predicting where records are to be found within the organization. It is difficult to see how this method could be applied to a "broad societal function" such as architecture, especially if, as in the case of this conference, the goal is to identify all potential and actual creators of records pertaining to architecture. The task of first defining what functions constitute the entire architectural enterprise, determining who the records creators are, then contacting all such creators and gaining their cooperation requires an extraordinary amount of cooperation and commitment on the part of institutions which have no additional resources to direct toward the problem and no administrative structure for organizing their efforts. The permanent base, advisory board, and administrative

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[27] Terry Cook, "Building an Archives: Appraisal Theory for Architectural Records," *The American Archivist*, Vol. 59 (Spring 1996): 140.

[28] Ibid.

structure which Samuels identified as essential for developing, directing, and monitoring

the documentation strategy are not easily established. The success of multi-institutional

acquisition plans such as the one proposed at this conference, as well as Knight's earlier

plan, is predicated on the existence of a network or infrastructure and a resource base, but

in neither of these two plans for architectural records did such a base exist. As a result,

the plans have had no impact on the status of acquisitions of architectural records in

Canada. As Christopher Hives has put it, "acquisition networks and . . . documentation

experiment[s] share a common element -- while attractive in theory, they do not, in and of

themselves, provide an adequate foundation upon which to build cooperative activity. In

other words, trying to use documentation strategy for acquisition network development is

'putting the cart before the horse.'[29] In the absence of a functioning network, top-down

strategic approaches to appraisal such as the documentation strategy become unworkable.

This conclusion would appear to be confirmed through comparison with a more

successful cooperative effort, the Committee for the Preservation of Architectural

Records (COPAR) in the United States. Starting at the local level, this loosely organized

coalition of archivists, curators, users, and architects expanded incrementally to become a

national organization with a functioning network and an impressive list of publications,

including a national catalog of architectural records. In 1973, a small group of architects,

historians, librarians, museum curators, archivists and other interested parties formed the

Committee for the Preservation of Architectural Records to locate, preserve, and make

available for research architectural records in architects' offices and repositories of

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[29] Christopher Hives, "The Evolution of the Canadian Council of Archives and the Question of "Accountability," *ACA Bulletin*, Vol. 20, No. 2 (November 1995): 8.

various types in New York City. The Committee conducted a survey and published a guide to architectural resources in New York City, then followed this up with a mail-in survey of the collection policies and holdings of architectural records at repositories in the State of New York and several national surveys of State Archives, architectural schools, and firms in continuous practice since before World War I. These surveys sought mainly to determine what records existed in various kinds of repositories across the nation and to collect and share information about them, but they also had the effect of stimulating local interest. The Committee received requests, inquiries, and information from all areas in the U.S.A., as well as abroad.[30]

In response to this interest, the Committee then applied for and received funding from the National Endowment for the Humanities for a two year project (1976-78) to create a national information network for architectural records. The group started a newsletter, made contacts with existing organizations in each state, and distributed guidelines and information packets to people who wished to organize a local group in their area. The goal and outcome of all this activity was the creation of a union list, the *National Catalog of American Architectural Records*, based on existing catalogs and union lists and updated on an ongoing basis by a volunteer system for locating, saving, and organizing architectural records. Recognizing the need for a secure institutional setting and ongoing funding to continue its work, at the end of the project in 1980 the Committee formally transferred responsibility for its national activities to the Library of Congress, along with its files and the *National Catalog*. In an article published in that

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[30] Catha Grace Rambusch and Carol Hierselle Krinsky, "American Architectural Records: Creating Order and Organization," *Restaurator* 4 (1980): 115-119.

year, COPAR members Catha Grace Rambusch and Carol Hierselle Krinsky attributed

the success of the organization to its grassroots approach:

> Critical to the whole effort is the encouragement of activity at the local level -
> finding, sorting, arranging, and placing architectural records and the reporting of
> this information for inclusion in the National Catalog. The Committee has begun
> the task, provided an example, created a network, and devised a system to receive
> the information. Now it is necessary for others to organise their own collections
> and to inform the public at large of the treasures they have found. [31]
> Recognizing that existing repositories could not begin to house all the important

records discovered during the surveys, COPAR concentrated further effort on educating

the architectural profession about the value of its records, both as administrative tools and

as historical documents, in the hope that more firms would establish their own records

management and archives programs. The archives in architectural firms could then be

linked to the COPAR network and included in the National Catalog alongside the

holdings of archives, museums, and libraries. The Committee cooperated with the

American Institute of Architects to produce several publications aimed toward the

profession, including a brochure written by Nancy Carlson Schrock entitled

"Architectural Records Management," which outlines business reasons why architectural

firms should establish an integrated records management and archives program, gives

practical advice on how to go about it, and includes information about COPAR's

programs and resources. Schrock also co-wrote with fellow COPAR member Mary

Cooper Campbell a more comprehensive records management manual for architectural

firms. *Records in Architectural Offices: Suggestions for the Organization, Storage and*

Conservation of Architectural Office Archives, now in its third edition, is still the only

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[31] Ibid., 120.

such source for use by architects. Written with long-term preservation in mind, the manual encourages the establishment of an archives as part of the records management program. Though implemented locally, the COPAR approach has had far-reaching effects on the total available documentation concerning architecture in the United States.

As can be seen from this review, the body of literature concerning the appraisal of architectural records for acquisition is limited and of recent date. In North America, archival interest in these records was virtually non-existent until the nineteen sixties and seventies: the Canadian centennial of 1967 and the American bicentennial of 1976 generated an increase in public awareness of heritage issues, including heritage buildings. Public interest in materials for the study of architecture highlighted the scarcity of architectural holdings in archives, and the inadequacy of most archives' techniques for preserving and describing them. Over the last twenty to thirty years, archivists have attempted to find solutions to the inherent problems associated with these records. Appraisal issues have figured largely in these attempts, and particularly appraisal for acquisition, because for these records more than most, the expense of processing a fonds demands that every acquisition be justified. This has made the idea of cooperative acquisition planning for architectural records very attractive to archivists who have an interest in these records. However, of the three cooperative solutions examined here, only COPAR has gone beyond the realm of theory and produced a tangible result. The COPAR approach is not an acquisition plan as such, but a resource which can be used by individual repositories to guide their acquisitions with reference to other repositories' holdings and to share information about common concerns. The success of COPAR can

be attributed to its emphasis on network building at the grass-roots level; through surveys and newsletters the Committee was able to develop its national catalog and communications base, which could then be handed over to its permanent custodians at the Library of Congress as an established resource which required only maintenance, rather than having to be developed from the ground up. The other two plans discussed here sought to define what the society as a whole should document about architecture, and to assign responsibility for various functions and classes of records creators to repositories of different kinds, on the assumption that the infrastructure and resource base for implementing the plan would somehow be found. Until these problems are addressed, the plans remain unworkable. The documentation strategy approach is more seriously flawed, in that it makes a fundamental theoretical error in failing to distinguish between the kinds of information to be found in archives and in other kinds of cultural institutions, such as libraries and museums, which have an interest in architecture as a subject rather than as a field of human endeavor. This leads its proponents to proceed as though all sources of information on this "subject" are used in the same way, and the only question is whether or not a sufficient quantity of research resources has been amassed. Some writers have even suggested that it may be appropriate to create documentation to complete the historical record, if none exists. Helen Samuels, for instance, has proposed this approach:

> As archival practice focuses primarily on the activities that produce records, the documentation of activities that do not normally create or leave records is not an integrated and accepted activity. Yet, if archivists perceive their responsibility as documenting an institution, then the intervention to create or ensure the creation of records must also be an integrated part of their documentation activities.[32]

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[32] Helen Samuels, "Improving Our Disposition: Documentation Strategy," *Archivaria* No. 33 (Winter 1991-92): 135.

This kind of thinking ignores the nature of archives and, if put into practice, destroys the very qualities which make archival records valuable as impartial sources of evidence about their creators' activities: archival documents are impartial because they were formed in the course of a transaction and were not created or collected to support any particular point of view or to give information on a predetermined subject. The desire to fully document a matter should not be allowed to override fundamental theoretical principles which protect the nature of archives.

The literature concerning methodologies for use by single repositories is consistent in its elements, but differs in focus, which is usually related to the institutional affiliation of the writer. In fairness to the authors of these pieces, they do not claim to be advancing a theory, only to sharing their experience in the hope that others may find it useful. Authors whose experience is chiefly in the field of public archives, such as Shellenberg and Ehrenberg, have generally had experience only with the records acquired through government ownership of a building or through the government's regulatory role in the construction process. These writers tend to emphasize the historical and informational value of the records in relation to important persons or events, and have little advice to offer concerning the appraisal of records of architectural firms for acquisition. Alan Lathrop, as curator of a large repository for private records which document architecture in the American Northwest region, is reluctant to make general statements about appraising architectural records of private provenance, as is Francoise Hildesheimer. Both of these writers assert that acquisition and appraisal criteria must be tailored to the individual repository, and confine their comments to a few general

guidelines to be observed. In addition, Hildesheimer offers the example of a sound

methodology for making appraisal decisions, by analyzing the provenance of the records

thoroughly before proceeding to a direct examination of the records themselves and

application of appraisal criteria.

The devising of these criteria lies outside the realm of theory. Archivists seeking

guidance on these matters must refer back to the protection of the nature of archives as

their primary consideration in this, as in all archival activities, and to evaluate the

applicability of the various suggestions in the literature to their own circumstances

accordingly. [33] At the repository level, the general approach to appraising architectural

records for acquisition does not differ significantly from that which applies to other types

of private records although, as Alan Lathrop points out, for these records more than

most, knowledge of the realm of activity and the records it produces is critical. Due to

the technical nature of the records, the appraising archivist must be knowledgeable about

the records themselves, the practice of architecture, and the characteristics of the

architectural milieu in the repository's collecting area. The same foundation of

knowledge is critical to the process of appraising records for selection. Having made the

decision to acquire a particular fonds, the appraising archivist can rarely preserve the

entire fonds. In selecting within the fonds, the archivist must attempt to distill the

essence of the creator's functions so that the characteristics of the fonds are reduced to a

compact and useable form without loss of context and meaning.

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[33] In addition to the articles mentioned here, the Canadian Council of Archives publication *Building a National Acquisition Strategy: Guidelines for Acquisition Planning* (Ottawa: Canadian Council of Archives, 1995) provides a template for creating an acquisition policy and selection criteria.

Chapter Three

APPRAISAL FOR SELECTION

Less is more.

> Ludwig Mies van der Rohe (1886-1969),
> German-born American architect.

Appraisal for selection is the process of identifying those records within a fonds that should be preserved for an unlimited period of time. The aim of appraisal for selection is to preserve a compact, useable, and meaningful representation of the essential functions and activities of the records creator. Selection is a pragmatic activity which is driven by necessity; in the modern records-keeping environment, the volume of the records must be reduced to a level which an individual archives can reasonably expect to process and make available to researchers, given its available resources. As an archival function, it is a relative newcomer; the literature on this subject is virtually non-existent prior to the nineteen-twenties, but it has increased dramatically since then, as archivists have sought selection methodologies which are effective, systematic, and justifiable on theoretical grounds. [1]

The literature of appraisal for selection pertaining to the records of architectural offices is focused largely on a single series, the project files, with little reference to office administration records. While some commentators give a general nod to the principle that administrative records form part of the fonds and should be acquired along with the

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[1] For a history of the evolution of appraisal as an archival function, see Luciana Duranti, "The Concept of Appraisal and Archival Theory," *The American Archivist*, Vol. 57, No. 2 (Spring 1994): 328 - 344.

project files, only a few discuss specific record types within this broad category. Francoise Hildesheimer mentions general management files and "files covering other activities" [2] as categories in a records classification scheme, but without making recommendations for retention and disposition. In a manual published by the Massachusetts Committee for the Preservation of Architectural Records, *Records in Architectural Offices*, Nancy Carlson Schrock goes a step further than Hildesheimer, recommending permanent preservation for certain kinds of documents in a sample retention schedule. In this scheme, business organization records having permanent value to the originating office consist of the articles of incorporation, partnership agreements, by-laws, minutes of organizational meetings, stock certificates, annual financial statements, audit reports, general ledgers, contracts, tax and accounting records, job lists, and principals' notebooks and sketchbooks. Of all these record types, only the notebooks, sketchbooks, and job lists are designated as having value to an archival institution other than that of the creator. [3] The job lists in particular are considered to be useful to archivists, as they are "crucial for keeping track of a firm's output; they serve as the comprehensive record of the projects and, when organized by job number, then sorted by job name or client, can be a master index throughout the system." [4] In making this distinction between the records that should be retained by the archives of the originating firm and those which are worthy of continued preservation by other archival institutions which may acquire the firm's records, Schrock makes a clear distinction between the

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[2] Hildesheimer, 21.

[3] See Nancy Carlson Schrock and Mary Campbell Cooper, *Records in Architectural Offices: Suggestions for the Organization, Storage, and Conservation of Architectural Office Archives* (Cambridge, Mass.: Massachusetts Committee for the Preservation of Architectural Records, 1992), Appendix F.

[4] Ibid., 2.

primary value of the records, that is, their value to the creator, and secondary value to

other researchers. This division of values has been a touchstone of American appraisal

practice since Schellenberg first proposed it in 1956. According to Schellenberg,

secondary values can be subdivided into evidential and informational values:

> The secondary values . . . can be ascertained most easily if they are considered in
> relation to two kinds of matters: 1) the evidence they contain of the organization
> and functioning of the . . . body that produced them, and 2) the information they
> contain on persons, corporate bodies, things, problems, conditions, and the like . .[5]

Although Schellenberg considers both kinds of matters to be of interest to

secondary users, Schrock has apparently decided that informational value is paramount.

Aside from a few record types which directly support or supplement the information in

the project files, no administrative records are considered to be of interest to outside

researchers, despite their evidential value. This assumption should not be accepted

without question: the records of a firm's business office provide the context for the

project records, and a selection process which routinely eliminates them deprives

researchers of the evidence in these records, preserving a lop-sided picture of the

architectural practice. Whether the records are consulted for primary or secondary use is

irrelevant. As Duranti has put it, "there is no doubt that all those who wish to use

archives, be they primary or secondary users, have the same need for accurate and

authentic evidence." [6]

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[5] Theodore R. Schellenberg, "The Appraisal of Modern Public Records," in *A Modern Archives Reader: Basic Readings on Archival Theory and Practice*, ed. Maygene F. Daniels and Timothy Walch (Washington: National Archives and Records Service, 1984), 58.

[6] Duranti, "The Concept of Appraisal and Archival Theory," 339.

If the archival literature offers little guidance in defining selection criteria for the permanent preservation of these records, the architectural professional literature offers even less. The Canadian and American manuals of practice both offer some suggestions for project document filing and retention requirements, but neither mentions the office administration files. This does not necessarily indicate an oversight by either archivists or architects; the principles which determine the long-term value of administrative and financial records in architectural offices do not differ significantly from those of other businesses which operate on a project basis, and can be determined by referring to existing records management and archival literature concerning these records. The records that are unique to architects and that pose the most difficult selection questions are the project files; consequently, the literature is aimed primarily at these. Much of it has centred on determining the types of records which are most useful to different user groups, and on considerations relating to the condition, format and medium of the records. User groups for architectural records are identified as consisting of, firstly, the originating architectural office, then historians, students of architecture and related subjects, and preservation architects.

For the architectural office which maintains its own archives, legal requirements are usually the prime consideration, and most records management advice in architectural publications is chiefly concerned with protecting the firm against litigation connected with building projects. These articles offer few recommendations in terms of the values of different project record types for long-term preservation, but because the emphasis is on legal evidence, they tend to stress the importance of retaining the contract documents and any other records which give evidence of the client's approval or acceptance of design

decisions and changes.[7] Tellingly, in the AIA *Handbook*, the subject of what to retain in

the archives is discussed in the section of the manual concerning risk management, and

offers this advice:

> You should keep a project file for as long as you are at risk of being called into
> court to defend your services. In those jurisdictions with no special statute of
> repose for improvements to real property, that may mean forever. . . . What files
> should be kept? Clearly, your contract and all record documents -- that is, the
> final drawings and specifications -- should be maintained, as well as the
> chronological file of progress reports and correspondence, at least until the
> relevant statute of limitations period passes. After that, however, if space
> problems dictate, files can be reviewed and culled, with more material being
> culled as time passes. [8]

The *Handbook* offers no specific recommendations about which documents might

be culled, but evidence of competent practice as a defense against possible litigation is the

prime consideration. [9] From the standpoint of liability, if anything is to be discarded at

the close of the project, it is usually the schematic design and design development

drawings, since most of these have no legal significance to the firm unless they were

issued to the client or contractor for approval. Most legal commentators recommend

keeping all project records for at least the period defined by the statute of limitations, if

one exists in the jurisdiction in which the firm operates, although this is not necessarily

sufficient in terms of liability. James N. Nowacki, a lawyer specializing in construction

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[7] See, for example, William T. Lohmann, "Retention of Project Records," *Progressive Architecture* , Vol. 65, No. 2
   (February 1984): 59-60; Susan Midha, "Keeping Records 1: Litigation," *Architect's Journal* Vol. 185, No. 24
   (June 17, 1987): 71-72; The American Institute of Architects, *The Architect's Handbook of Professional Practice*,
   Vol. 2, Section 1.15, "Risk Management" (Washington: The American Institute of Architects, 1987), 27.

[8] AIA, *The Architect's Handbook*, Vol. 1, Sec. 1.15 "Risk Management," 27.

[9] Ibid.

law, is reluctant to recommend the destruction of any project records, regardless of the

statute of limitations:

> A statute of limitations or statute of repose may define an end-time for bringing
> suit and thus a time when documents can be discarded. Unfortunately, that time
> period can almost never be guaranteed. Simple fixed limits no longer exist in
> most jurisdictions. As a result, many lawyers advise that nearly all project
> documents be microfilmed for indefinite storage in the firm archives. The
> microfilm is not for the historian's use, but to fill the lawyer's need for evidence
> in case of suit. [10]

A few authors from both the architectural and archival professions have also

pointed out the long-term reference value of project records to the firm as sources of

information and design ideas for other projects, and for public relations and marketing

strategies.[11] These authors do not specifically mention certain records types as having

value for these purposes, although Schrock speaks of the common practice in

architectural firms of separating the "visual records" -- the slides, photos, and

presentation boards -- from the projects in which they were generated, and maintaining

them in the public relations or marketing area of the firm.[12]

An alternative to keeping all the project records indefinitely is to cull certain types

of documents from each project file at regular, pre-determined intervals according to a

records retention and disposition schedule. Schrock and Hildesheimer have proposed

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[10] James N. Nowacki, "In Search of the Past: A Lawyer's Perspective," *The American Archivist*, Vol. 59, No. 2 (Spring 1996): 189. See also Tawny Ryan Nelb, "Architectural Records Appraisal: Discussion of Problems and Strategies for the Documenting Michigan Architecture Project," *The American Archivist*, Vol. 59 (Spring 1996): 236.

[11] See Lohmann, 60; also Merle T. Westlake, "Stow It, Don't Throw It," *Architectural Record*, Vol. 178 (March 1990) : 41-43, and most of the articles on appraisal by Nancy Carlson Schrock.

[12] Schrock and Cooper, *Records in Architectural Offices*, 2,

schedules for the disposal of at least some parts of the project files in this manner. Schrock suggests the elimination of the following record types at the end of the project: feasibility and preliminary design drawings; redlines, comment drawings, check sets, and progress drawings created during the construction documents phase. Interim progress reports on construction may be eliminated after six years. At the end of ten years, she recommends the elimination of the program drawings, schematic and design development final sets, cost estimates, agency review documents, permits and approvals, sign-off drawings, and bid documents. Records which should be permanently retained include: site survey and existing conditions documentation, construction documents, record or as-built drawings, architect-consultant agreements, change authorizations, owner-architect agreements, owner-contractor agreements, work authorizations, final progress reports, and project invoices. [13]

Hildesheimer recommends that any superfluous copies and files whose contents are duplicated elsewhere should be eliminated at the end of the project, when the file is closed. It is not clear whether she means records that are duplicated elsewhere in the file, or in other agencies such as government offices. In neither case should this be considered a sufficient reason for eliminating documents; all archives are unique in context, and the purposes served by a document in one file do not duplicate its purposes in another. Hildesheimer goes on to suggest that records of payments on account may be discarded after the final settlement of payments. After a further interval of five years, invitations to bid and replies from contractors whose bids were not accepted are eliminated.

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[13] Ibid., appendices E, F, G, H.

Hildesheimer also recommends that appraisals and further eliminations be carried out at the end of various periods fixed by law, pertaining to the expiry of guarantee periods and statutes of limitations.[14]

Selecting project documents for permanent preservation by means of records management programs such as these results in a body of records which meets the immediate needs of the creating firm, but these are not necessarily the records which are considered the most valuable by researchers. There is little agreement between the different types of subsequent users about the relative values of document types. Most historians are not in favour of discarding any part of the project files. A case study of the appraisal of architect Bruce Goff's archives written by architectural historian David G. De Long provides an extreme example of this view. Goff, who worked from a studio in his home, stipulated in his will that De Long, who had written a doctoral dissertation on Goff's work, should be put in charge of closing out Goff's home and office after his death. Because Goff had frequently stated that all of his possessions were essential to understanding his work, De Long chose to regard the archive as consisting of everything in Goff's home, including his clothing and household effects. De Long was dismayed to find that no "conventional" repository was willing to accept the archive in its entirety:

> Some of the items enumerated that would not automatically qualify as architectural records but that are clearly pertinent to Goff's practice have been accepted by the Art Institute of Chicago, where the [drawings and papers] now reside. Other items, however, fell further afield and, over time, have begun to be separated from Goff's archives. (Here more serious problems occur, for many of these items, I now believe, can contribute significantly to our understanding of the architect. Rarely has any architect's career been so fully documentable by the preservation of his every extant possession; yet the opportunity for such

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[14] Hildesheimer, 23-24.

documentation is rapidly being lost.) Quite simply, no established institution was willing to accept the broad range of things that were made available. Architectural archives, for example, were unprepared to cope with Goff's paintings, but museum archives found them beneath their standards. Libraries would take the books only if they could be integrated within their own collections, and nobody was remotely interested in discussing the disposition of the phonograph records, to say nothing of the household items. The conventional shape of repositories thus imposes limiting conventions on the collections themselves and can, I believe, obscure a certain richness of knowledge.[15]

Extreme though this view is, it illustrates the generally conservative attitude towards selection shared by many architectural historians: any item which may shed light on the architect's creative influences and processes should be retained for the enlightenment of future historians. If forced to choose, most historians identify as the most valuable records for this purpose those which the architectural firm itself is least likely to retain for business reasons -- the records of the design's genesis and development which are contained in the schematic design drawings. The *Canadian Handbook of Practice* describes the place of the schematic design phase in the overall design and construction process as unique to the architectural profession:

> Of the many stages involved in a building project, Schematic Studies most clearly differentiates the Architect's work from that of other disciplines involved in the process. This is the prime creative task for which the Architect has been hired. Furthermore, unlike other stages, the Architect's management ability and technical knowledge are generally of secondary importance to his design skills during his schematic studies. [16]

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[15] David G. De Long, "The Historian's View," *The American Archivist*, Vol. 59, No. 2 (Spring 1996): 160.

[16] RAIC, Canadian Hanbook of Practice, Vol. 1, preface to "Schematic Studies."

In other words, this is the stage which captures the essence of architecture and distinguishes it from all other professions, yet the *Handbook* evaluates the records from this stage primarily in terms of their legal significance:

> Many drawings and notes produced at the schematic study stage are not going to be kept for any period of time. Most of those prepared during the "thinking" and "investigatory" phases will be scrapped within hours. However, it is vital to ensure that significant drawings be retained and any drawings issued to Consultants, Clients, or any outside party be stamped, numbered and dated not only for convenience, but for record and even possible legal proceedings at later dates.[17]

Traditional archival wisdom tells us that good records management results in good archives; the records that are retained over time by the creating organization for its own purposes are likely to be the most valuable for secondary purposes. But in the case of architectural records, to follow this advice is to neglect the heart of the architectural process, and in so doing to ignore the interests of a major user group, architectural critics and historians. There do not appear to be any published user studies of architectural archives, so it is not possible to determine accurately which groups make the most use of archival resources, but according to art historian and librarian Alfred Willis, few architects consult any archives other than those of the firms they work in, unless they specialize in restoration work. He supports this assertion by referring to a citation study of three major journals of architectural research conducted by student librarian Eugene E. Matysek. The journals were chosen for their focus on three distinct categories of research. The *Architectural Science Review* was considered to represent "hard" research

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[17] Ibid., 4.

in architectural design, while the *Journal of Architectural Education* represented "soft"

research in architectural design; both categories of research are mainly conducted by

architects for architects. The *Journal of the Society of Architectural Historians* was

chosen to represent historical scholarship in architecture; the articles in this journal are

mainly written by architectural historians for an audience of their peers. The study

showed heavy use of archival sources by the writers published in the historical journal,

but very little use by the authors whose works appeared in the other two architectural

research journals. Willis concludes that "for architectural scientists and other researchers

not involved in historical investigations, archives seem to have only marginal to slight

importance." [18] If this is true, project files which have been culled according to records

management guidelines do not serve the major user group for architectural records.

Aside from architectural historians, the second important user group for

architectural records is preservation architects. Unlike historians, they are less interested

in the evolution of the design than in the end result, or what was actually built. Alice

Carey, the owner of an architectural firm specializing in preservation, restoration, and

rehabilitation of historic structures, identifies very specific records as important to her

firm's work. For the purposes of this user group, the contract documents, the final

revision set of the contract drawings, as-built or record drawings, shop drawings, change

orders, specifications and materials tests, and progress photographs taken during

construction contain the most pertinent information. [19] Most of these are also valued by

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[18] Alfred Willis, "The Place of Archives in the Universe of Architectural Documentation," *The American Archivist,* Vol. 59 , Number 2 (Spring 1996): 195.

[19] Alice Carey, "The Importance of Construction Documents to Restoration Architects," *The American Archivist*, Vol. 59 (Spring 1996): 176-184.

the originating firm and are likely to be found in records which have undergone selection

for records management purposes, with the exception of the shop drawings. The records

management schemes cited in this paper do not recommend the retention of shop

drawings, nor are they valued by architectural historians, since they are not the architect's

work but the contractor's, and therefore give technical evidence of how a desired result

was achieved, rather than the architect's creative vision. In a restoration, this information

can be extremely valuable, as Carey attests:

> [Shop] drawings show the size and location of every bolt, nut, and screw; they
> indicate where each joint will be, and for example, whether it will be soldered or
> welded. [The] drawings not only aid in avoiding destructive testing; they are
> extremely helpful in reconstructing missing components. . . . Although shop
> drawings cannot be saved for every building, they should be saved for major
> projects. [20]

The existing literature which deals with the needs of user groups is very limited,

but it appears that no part of a project file can be routinely eliminated without

compromising its utility to researchers of some type.[21] Selection within the project file

cannot therefore be considered as a solution, viewed from a purely utilitarian standpoint

of maximum usefulness. However, there may be other, more valid practical reasons for

selecting within the file, based on format, condition, and preservation factors.

Architectural records pose complex conservation questions because of the variety

of materials and the amount of duplication typically found in a complete project file,

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[20] Ibid., 181.

[21] Although no data is available concerning the requirements of architecture students, they can be presumed to share the interests of both historians and preservation architects, and to need the most comprehensive records possible.

which may consist of written records, drawing originals and reproductions in an immense variety of supports and inks, models, photographs, and computer records. Many of these materials are extremely unstable and are therefore unsuitable for long-term preservation. Such literature as exists on this subject tends to consist largely of practical advice for identifying the drawing media and reproduction processes used in architectural firms at different periods. This background is essential in order to determine whether the records in question have intrinsic and/or artifactual value, and so must be preserved in their original form. The appraising archivist will have made a decision about these values for the fonds as a whole during the initial appraisal for acquisition; during appraisal for selection, the same criteria will be applied to specific parts of the fonds and to the individual project file. According to conservator Nancy Carlson Schrock, architectural records are considered to have intrinsic value in cases where:

- the physical form may be the subject of study, as in the case of drawings or copies made using experimental or rare materials and methods

- the drawings have artistic or aesthetic value

- the records are very old and are therefore rare

- they have unique or curious features, such as annotations, overlays, pasted additions or corrections

- they have value by association with an important designer or client, a civic function, etc.

- the information they contain cannot be captured in another format, or access requirements are compromised by reformatting

While any of these factors may constitute a reason for preserving the record in its original form rather than migrating it to another medium, none should be considered sufficient reason for keeping documents that would not otherwise be kept. Tests of intrinsic value should be applied only to records which have already been deemed worthy of continued preservation for other reasons. What is termed "intrinsic value" in Schrock's taxonomy is really artifactual value, and does not derive from the nature of archives but from considerations more appropriate to appraising a museum acquisition.

The selection methods discussed so far are all meant to be applied by individual repositories, independently of other institutions' holdings. As in the case of appraisal for acquisition, there have also been attempts to devise cooperative methods for selecting within project files. One of the aims of the Working Conference on Establishing Principles for the Appraisal and Selection of Architectural Records held in Montreal in 1994 was to identify "duplicate, marginal, and ephemeral records within a given fonds," in the hope that certain project document types could be eliminated during the selection process or de-accessioned from fonds previously acquired.[22] One of the precepts of the documentation strategy is that, if the universe of documentation is known to all participants in the plan, each repository can design its acquisition policy and selection criteria in relation to all the other existing documentation of the same subject. This is a very attractive idea to archivists dealing with architectural records, because construction

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[22] Olsberg, 129.

project documents are known to be widely duplicated and distributed among clients, consultants, regulatory bodies, and contractors. According to this plan, then, parts of a project file which are known to be duplicated in the records of regulatory agencies or in the client's records can be eliminated. If the archivist appraising a project file in the fonds of an architectural firm can ascertain which regulatory agencies are in possession of sets of drawings issued for permit, then the archivist might consider eliminating those drawings from the project file in the knowledge that they are still available in the archives of the agency or agencies in question. This of course assumes that these agencies keep all such records permanently. Although the means of achieving this ideal were not realized at the working conference, it is listed as a subject for study in the research agenda published in Nicholas Olsberg's conference overview:

> A better knowledge of the nature and range of architectural activities in regulatory agencies is critical to identifying the most succinct evidence of interventions, changes, and common practices in the making of the built environment and of vernacular forms of architecture. An analysis of the scope and character of these records and of their utility for research must be undertaken and its results made widely known, so that private records that duplicate such data and have less direct evidentiary value for these subjects can be allowed to disappear. Collaboration should be sought with appropriate government agencies to develop schedules for these records. [23]

This approach would certainly result in a less bulky project file, but the idea is unworkable and theoretically unsound. In the first place, it is not clear what such research would reveal that would be universally applicable in all jurisdictions. The only "architectural activities" in regulatory agencies are those which result from the oversight

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[23] Ibid., 134.

function granted to these bodies in codes and by-laws: the records are submitted by the architect to these offices in compliance with the codes and by-laws, where they are reviewed, approved (or not) and filed. If an archivist wished to eliminate "issued for permit" sets of drawings from the project files on this basis, the retention periods for these records would have to be determined from government records schedules, which vary between jurisdictions and over time. Staying current would be a formidable task. Aside from questions of practicality, however, this approach also ignores the contextual factors that give the records their value as evidence and concentrates entirely on informational value as the sole criterion for selection. There is no theoretical justification for conducting this kind of selection, which in fact violates the nature of archives by disregarding their inherent characteristics of uniqueness, naturalness and interrelatedness. The records have accumulated naturally to serve the creator's business needs, and the relationships among the documents are integral to their meaning. Every document is unique in context. As Terry Eastwood has put it:

> Each document has a unique place in the structure of an archives. . . . Being there signifies its relationship to activity and to the other documents accumulated in the course of that activity. . . . archives cannot be treated solely or even primarily for the information they bear. That view is a theoretical proposition following from a consideration of the nature of archives . . . [24]

Generally speaking, there is no part of the project file which is completely without value to researchers of some kind, and yet some reduction of the project files is desirable both for business reasons and for purposes of archival research and access.

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[24] Terry Eastwood, "What is Archival Theory and Why is it Important," *Archivaria*, No. 37 (Spring 1994): 128.

Unfortunately, records management and archival interests are at odds in the case of architectural records. Schrock has noted this conflict between records management practices and research interests in her work with COPAR, and has attempted to remedy the situation by alerting architects to the value of their records in publications aimed at the architectural profession. In a brochure written for the AIA, entitled "Architectural Records Management," Schrock recommends that firms establish an integrated records management and archives program. The records management program allows for the systematic elimination of records which are not needed for business purposes after a prescribed length of time, including some parts of the project files, but before anything is discarded, Schrock recommends that the records be re-evaluated by the firm's archivist according to a set of values related to the nature and status of the project, according to the firm's own criteria. Complete project files from a firm's most significant or innovative work are thereby saved indefinitely in the company archives, without undergoing the usual culling dictated by the records retention schedule. Thus, records of all the firm's projects are saved, but not all of them are saved in their entirety; the firm is not unduly burdened with records not needed for business reasons, yet the archives contains a select number of complete project files which may be used by the firm itself for reference purposes, and by subsequent researchers, regardless of their specific research needs.

The same selection technique may be applied by an archival repository which acquires the records of architectural firms. Records management schedules such as those devised by Schrock may be used to retroactively cull the majority of the project files in a given fonds according to business criteria laid out in the schedule, while selected others which meet a certain set of archival criteria are kept whole. Whether this process is

carried out by the firm's archivist or in an archives which has acquired the firm's records, the files are selected by a combination of scheduling and purposive sampling. According to Felix Hull, purposive sampling "takes place when a selection is made on a pre-conceived set of criteria, the intention being to retain the most significant or important records of a class or series."[25] It is used in cases where material which would otherwise be destroyed is considered to be of special value for research. Hull warns that the technique results in a biased or skewed picture of the series, however in the modified version proposed by Schrock, this is mitigated by the fact that the rest of the files in the series are retained, though not in their complete form.

Schrock's method conforms to another precept of Hull's, which he has termed "the principle of movable responsibility."[26] It is Hull's position that, although the initial responsibility for the records rests with the creator, an archivist should review the records after the passage of a suitable period of time, even if the records have been scheduled for destruction in a records management program. In this way, the archivist acts as a mediator between the interests of the creator and the interests of researchers.[27] In Hull's words, archivists are "the custodians of the evidence of the past and present for the future."[28] Archivists are in the best position to perform this function because, unlike either the records creators or researchers, they are acting on behalf of society, rather than

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[25] Felix Hull, *The Use of Sampling Techniques in the Retention of Records: A RAMP Study with Guidelines* (Paris: UNESCO, 1981), 11.

[26] Felix Hull, "The Appraisal of Documents - Problems and Pitfalls," *Journal of the Society of Archivists*, Vol. 6, No. 5 (April, 1980): 288.

[27] In Hull's view, the records manager's interests are the same as those of the administration, and the primarily aim is destruction, not preservation.

[28] Hull, "The Appraisal of Documents," 291.

from personal interest. While on the one hand the creators often cannot see beyond

relatively short-term business needs, researchers may be influenced by their particular

areas of interest and may therefore select in a biased way.

While it is clear that archivists are in the best position to make these decisions, the

archival literature concerning selection currently offers little guidance. No analysis of the

administrative records of architectural offices appears to have been undertaken, even by

those who specialize in these records. Schrock touches superficially on the subject as a

records management issue, but erroneously assumes that these records have no long-term

research value outside the firm. The project records have been considered in more depth,

but most of the resulting suggestions are invalid from a theoretical standpoint, and

frequently from a practical standpoint as well. A number of commentators have

suggested selecting within the project files as a means of reducing volume, either on the

basis of usefulness to some identified group of researchers, or on the basis of duplication

in some other location such as government offices. Even if it were possible to verify that

certain types of records within the project files were completely without informational

value for any type of research, or that the identical information could be found in the files

of a regulatory agency, this would still not form a basis for eliminating the records. Both

kinds of proposals ignore the contextual factors inherent in archives and so cannot be

considered theoretically sound. Ideally, all the project files would remain intact in order

to preserve their interrelationships, but this is clearly not practicable. Schrock's method

represents an acceptable solution, by allowing some culling of project files according to

records management principles, with a subsequent archival review, based on pre-existing

selection criteria for retaining complete files for some projects. While this too is a compromise, it is less harmful than any of the other proposals because the two types of selection are made by the appropriate party at the appropriate time, and because the archival bond between the components of the file is preserved as much as possible, preserving the value of the records as evidence as well as information.

CONCLUSION

The data summarized in the introduction to this thesis indicates that the records of modern architectural practice in British Columbia are not well represented at any level of the Canadian archival system. If a similar state of affairs exists in other regions of Canada, as may be reasonably assumed given the nature of the system, the evidence points to some serious shortcomings in such holdings nation-wide. Moreover, with the exception of the Canadian Centre for Architecture, which is privately owned and therefore operates under different conditions than the other institutions surveyed, none of the repositories which might be expected to have an interest in the records of British Columbia architects is actively acquiring such records at present. If Canadian archivists are to uphold their professional responsibility to ensure the place of architectural records in the nation's documentary heritage, they must find alternatives which do not rely exclusively on institutional archives. Instead, archivists should be directing their energies toward educating the architectural profession about the value of these records.

The provincial architectural associations are capable of providing the necessary link between the archival and architectural communities in each province. These associations are in regular contact with all registered practitioners within their respective jurisdictions through mail-outs, conferences, web sites, and so on, and therefore have the means to serve as a focal point for education about record-keeping and archives. Interest groups within the archival community could distribute educational materials through these channels, following the example of COPAR in the United States, as well as

offering speakers for meetings and conferences, developing workshops and continuing

education courses, and other educational initiatives. Liability issues are a strong

argument for establishing good records-keeping practices, and it is likely that assistance

in this area would be well received by the associations' members. This would create an

opportunity to educate architects about archival issues in a more general way, and to

encourage the establishment of well-maintained business archives.

By enabling the firms themselves to undertake integrated records management and

archives programs which preserve the records they require for their own short and long

term needs, including reference use, a basis for the preservation of archives which have

retained their archival nature is established:

> If selection is one of the mechanisms embedded in the routines and procedures
> accompanying the creation, maintenance and use of the documents, and/or it is
> based on the functionality of the documents and their aggregations (volumes, files,
> series) with respect to one another, the meaning of the whole is not reduced or
> changed but is concentrated and enhanced by its reduction in size, because such
> reduction would be based on contextual factors. [1]

It must be acknowledged that there are drawbacks to this approach; records in

private archives are not necessarily available to outside researchers if the firm does not

see any benefit in allowing access. However, because the main users of architectural

archives are architectural historians and critics who are interested in analyzing the design

approach of the architect or firm in question, permission may be granted more often than

not. Attention from serious scholars is likely to be perceived favourably by the records

creators; most architects are proud of their contribution to the built environment, and

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[1] Duranti, "The Concept of Appraisal," 336.

place a high value on the artistic and social aspects of their work. Once they are made

aware of outside interest, they may be more likely to preserve these records and make

them available for study.

There may, in any case, be little choice but to leave these records in the offices

where they are created: the widespread use of computer assisted design (CAD) programs

in modern architectural offices makes the establishment of in-house archival programs the

only practical means for capturing the project files in their entirety. Many of the records

created in the course of a modern architectural project exist only in electronic form; a

typical project file includes diverse types of computer files, including text, fax,

spreadsheet, raster image, vector graphics, CAD drawings and video with sound. [2]

Working drawings must still be created in paper form and distributed to the contractors

who actually build the project, at least for the time being, but many of the process

drawings which reveal the evolution of the design are never created as paper documents.

Paradoxically, the CAD files often provide a very complete and detailed process record,

in comparison with the traditional method of developing a concept through a series of

quickly discarded sketches created on trace paper. According to William J. Mitchell,

"designers working in a digital environment normally keep earlier versions of their work,

not only for backup, but also for reference and possible return points in case they want to

go back and redevelop a design from an earlier point, just as people do when they write

with word processors." [3] As a result, the records which are of the keenest interest to

students of design are more complete, yet less accessible, than ever because they are in

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[2] John Cirka, "Computers: Document Management," *Canadian Architect*, Volume 43, No. 3 (March 1998) : 31.

[3] William J. Mitchell, "Architectural Archives in the Digital Era," *The American Archivist*, Volume 59, No. 2 (Spring 1996) : 202.

electronic form. There is little benefit to the firm in converting the entire project file to hard copy. By storing the records of completed projects in electronic form, the firm avoids the expense of physically housing massive paper files; as long as the files remain readable on the firm's existing hardware and software, they can be re-created in electronic form on demand. Increasingly, archivists appraising architectural records are confronted with project records which exist largely in electronic media. Compounding the problem is the variety of hardware and software used by architectural firms, and the rapid rate of obsolescence typical in the industry. These problems are universal in dealing with electronic records, but are especially difficult when dealing with CAD files:

> In order to read a digital document, the software that was used to create it, or something equivalent, is required. With text files, this is often not difficult, because text files are relatively simple things. However, computer-aided design files, particularly big, complicated geometric models, generally can be read only with precisely the same software that created the document. . . . In many cases, even with the appropriate software, it would be necessary to have the hardware for which it was designed. [4]

Archives which acquire records from many different donors cannot possibly maintain the full range of hardware and software necessary to read these files: a more practical solution is to leave the records with the creators, and to offer assistance and advice about storage media, classification and filing structures, indexing, and other tools for ensuring long-term access within the firm.

A second drawback of in-house business archives, and one which has concerned Canadian researchers who are accustomed to finding the resources they need in

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[4] Ibid., 203.

centralized public repositories, is the dispersal of records which naturally results when records are kept in multiple small repositories.[5] Many of these concerns are being addressed by the increasing use of electronic networks and internet technologies for sharing information about archival resources. Although it is true that the records are more dispersed, it is becoming much easier to assess their relevance without carrying out a physical examination of the contents, as on-line descriptions become more available. Moreover, as more archives, public and private, exploit technological solutions for network building, cooperative acquisition programs may become more attainable, although not necessarily in the form in which they have been envisioned in the past. As Christopher Hives has pointed out, internet technology permits the development of electronic union lists, which can provide a foundation for inter-institutional development:

> For instance, an understanding of current holdings is necessary in the development of a province-wide acquisition strategy. With access to comprehensive information about archival holdings, repositories can collectively rationalize their acquisition programmes to avoid overlapping collecting practices and also identify material which may be falling through the cracks in the provincial archival system.[6]

The success of COPAR in the United States indicates that such network-building may well result in new archives being established, not only in architectural firms, but in other institutions which have an interest in seeing these records preserved. For instance, the architectural associations' offices might be persuaded to establish an archives which

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[5] See, for instance, historian Robert A. J. MacDonald, "Who is Preserving Private Records, " *Archivaria* No. 38 (Fall 1994): 155-157.

[6] Christopher Hives, "Thinking Globally, Acting Locally, " *Archivaria* No. 38 (Fall 1994): 159.

serves as a showcase for the profession. As the delegated governing bodies for the conduct and regulation of professional practice under the Architects Acts of the various provinces, the associations are required under Freedom of Information legislation to keep records of their activities as a public responsibility. The archives' mandates could be extended to include other types of records pertinent to the practice of architecture in the region, both as a public service and as a resource which would actively benefit the profession by functioning as a research facility and as a public relations vehicle for the profession through exhibits and public programs. The value of such programs for public education and outreach has already been recognized by other self-governing professional groups, including law and medicine: in British Columbia, the Legal Archives of the Law Society of British Columbia and the British Columbia Medical Association both have archives whose mandates include acquiring the records of members and former members, in addition to those of their sponsoring organizations. There are also examples, mainly from abroad, of the architectural profession taking responsibility for representing itself to the public through archives and study centres. The Royal Institute of British Architects in London has operated a library of architectural books and drawings since 1834, and together with Sir John Soane's museum, established a decade earlier, can lay claim to being "the first manifestations of the wish of architects to provide their successors with examples of the best or greatest in design." [7] Paris alone is home to three architecture centres, including the Maison De l'Architecture, which is entirely financed by the Ordre des Architectes, the French national professional body. [8] Schools of architecture might

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[7] John Harris, "Introduction," *Great Drawings from the Collection of the Royal Institute of British Architects* (New York: Trefoil Books, 1983), 7.

[8] Josephine Duval, "Paris Architecture Centres," *RIBA Journal* (June 1989): 30.

also establish archives for student projects, the fonds of alumni, or records acquired as instructional aids. Many of the oldest and most distinguished existing collections of architectural records were acquired by university libraries as instructional material to supplement their collections of books on architecture. Examples of such collections include those of the Ecole des Beaux Arts in Paris and the Avery Memorial Library at the Columbia University.

When all is said and done, if the architectural community itself does not value its documentary residue, no amount of exhortation or strategizing by archivists can ensure an adequate record of the architectural profession; nevertheless further archival research may support plans for an educational program for architects and provide archivists with answers to some of the most pressing appraisal questions. As noted previously, studies are needed to determine more accurately the uses the various parts of the project files serve for different constituencies of users. This information would be useful to all types of repositories in determining their acquisition policies and selection criteria, but it would be particularly valuable to public archives, which are currently in a position to acquire very few private records and must therefore choose those which are likely to be used by the broadest range of researchers.

Archivists also need more tools for interpreting the records in a more streamlined and consistent way. This thesis has attempted to address this need in two ways, by evaluating the strengths and weaknesses of the existing literature, and by conducting a functional analysis of the architectural office as a basis for further analytical work. The writing reviewed here falls into two broad categories; the first deals with methods

intended for use by individual repositories in locating, selecting and acquiring suitable additions to their holdings, while in the second category are a small number of cooperative acquisition strategies. None of the writings in the first category pretends to advance a comprehensive theoretical approach to appraising architectural records; most simply aim to impart some practical knowledge based on the author's experience. Given the under-developed state of the literature, perhaps the most appropriate recommendation is to caution that while the majority of the articles reviewed here have some useful information to impart, many of them betray an over-concentration on the informational value of the records, which has led some authors to recommend practices which fail to protect the integrity of the records. Nevertheless, two articles stand out as examples of appraisal methodologies which observe archival principles. Schrock's two-tiered appraisal technique is a valid approach for appraising and selecting records in the archives of architectural firms, through a combination of records management scheduling to meet legal and administrative requirements and qualitative sampling for archival retention. Hildesheimer's case study provides a useful example of a methodology for conducting a functional analysis of the records creator, together with an examination of an actual architectural fonds.

Attempts to solve appraisal questions through collaboration between interdisciplinary groups of archivists, museum curators and users of all kinds, as in the case of the Montreal conference, have met with limited success and may only have served to muddy the waters, in part because these groups have little common ground, outside of a concern to preserve architectural records. While archivists view the records as evidence

of actions and transactions, museum curators are more interested in the aesthetic and artifactual value of the records, and, as we have seen, researchers of various kinds have opposing opinions about which projects and which parts of a project file are the most useful for their purposes. As a result, there is little likelihood of these various interest groups coming to any conclusions about either acquisition or selection issues. Each discipline should therefore seek first to clarify its own aims and resolve some of these questions with reference to its particular area of expertise before conferring with other interest groups. For archivists, the primary aim is to devise appraisal techniques which preserve the archival nature of the records, that is, their qualities of naturalness, impartiality, authenticity, interrelatedness and uniqueness. Archivists can best equip themselves to deal with these records by educating themselves about the practice of architecture, both as a general subject and as it is manifested in the local environment. This is largely a matter of self-education and of access to sources of knowledge in the local area. An archives which deals with these records to any extent should have an extensive collection of reference works, including current and obsolete practice manuals, especially those issued by the national architectural association, as well as drafting textbooks, samples of standard contract forms, and information and examples to be used in identifying drawing media and reproduction methods. The archives should also establish links with any schools of architecture or art history departments in the region, as well as the local professional association; all of these are valuable sources of information which can be useful in appraising records for acquisition.

The functional analysis conducted in Chapter One of this thesis maps out the context of architectural practice in North America; this should be considered as a starting point for further research. A diplomatic analysis of a number of typical bodies of project records would be of particular value. Such studies should make it possible to make valid generalizations about the information found within the drawing sets and in the title blocks normally included on each sheet. Title block textual elements are more or less standard within the profession, and supplement the graphic content of the drawing sheets with diplomatic elements sufficient to identify and articulate the relationships among record forms, procedures, actions, persons, functions, and administrative structures. By identifying the title block elements in diplomatic terms, archivists should be able to more readily determine the place of each sheet within the file as a whole, and to make appraisal decisions which preserve the archival nature of the records.

Finally, it should be kept in mind that, until recently, archivists have paid almost no attention to these materials and, as for any new field of enquiry, it takes time for a body of knowledge to accumulate. The appraisal questions associated with architectural records can be resolved by means of traditional archival techniques; by using these methods to solve specific problems, a body of more generally applicable knowledge will emerge as a matter of course. Collaborative efforts have a place in this research, but it may in the end be more productive to tackle these questions one by one in real circumstances, than to force the issue in the hope that universal truths will emerge.

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APPENDIX: ARCHITECTURAL PROJECT ACTIVITIES AND RECORD TYPES, BY PROJECT PHASE

Table 1

Requirements and Predesign Phase Activities and Record Types

PROJECT PHASE	ACTIVITIES	RECORD TYPES
1 Requirements & Predesign * Note: all work included in this phase is the client's responsibility. The architect or other consultant may be hired to assist.	1.1 Determine General Requirements	• Feasibility studies • Initial Design Brief / Program of Requirements
	1.2 Select Consultants	• Invitation/Request for proposal (published) • proposals/submissions • evaluation reports • notes and correspondence • minutes and conference reports • Client/Architect Agreement • Consultants' Contracts
	1.3 Research and Analysis 1.3.1 Environmental Research 1.3.2 Location and Site Analysis 1.3.3 Financial Analysis	• Surveys, studies, reports
	1.4 Determine Detailed Requirements	• Detailed Operational Program • Detailed Facility Program • Final Design Brief / Program of Requirements
	1.5 Evaluate the Program	• Evaluation Report and Recommendations • Preliminary Budget
Predesign (architect)	1.6 Assemble the Project Team, including further Consultants	• Invitation/Request for proposal (published) • proposals/submissions • evaluation reports • notes and correspondence • minutes and conference reports • Client/Architect Agreement • Consultants' Contracts

Table 2

Schematic Design Phase Activities and Record Types

PROJECT PHASE	ACTIVITIES	RECORD TYPES
2 Schematic Design	2.1 Conduct Schematic Design 2.1.1 Determine Project's Essential Character 2.1.2 Prepare sketches, plans, views for Client approval 2.1.3 Consider and assess aspects of site and location affecting design 2.1.4 Determine feasibility, acceptability, and square foot estimates of developed design concept 2.1.5 Investigate systems and materials	• study sketches • study models • massing models • study notes and diagrams (space, circulation, massing) • studies and reports • presentation drawings and models • notes and correspondence • minutes and conference reports • photographs • outline specifications
	2.2 Conduct Time and Cost Studies	• detailed studies and reports • preliminary master schedule • updated preliminary cost estimate
	2.3 Review with Authorities	• submissions and permit drawings • notes and correspondence • minutes and conference reports • permits and approvals
	2.4 Present Schematic Design to Client	• presentation drawings: perspectives, sketches • flow diagrams • plans, elevations, sections • presentation models • other presentation materials: overhead projection foils, computer files, printed materials
	2.5 Obtain Client Approval	• schematic design report with client signature/approval • minutes and conference reports • authorization to proceed into design development

Table 3

Design Development Phase Activities and Record Types

PROJECT PHASE	ACTIVITIES	RECORD TYPES
3 Design Development	3.1 Develop Architectural, Structural, Mechanical, and Electrical Design	• site plans indicating site improvements • plans, elevations, sections (architectural, structural, mechanical, electrical) • schedules and notes • large scale details
	3.2 Determine Major Systems and Materials Choices	• outline specifications document
	3.3 Update Time and Cost Plans	• updated preliminary master schedule • updated preliminary cost estimate
	3.4 Conduct Further Reviews with the Authorities	• submissions and permit drawings • notes and correspondence • minutes and conference reports • approvals
	3.5 Present Design to Client	• presentation drawings: perspectives, sketches • flow diagrams • plans, elevations, sections, details • presentation models • colour and interior presentations • samples, prototypes, mock-ups of key components • trade literature, test reports • other presentation materials: overhead projection foils, computer files, printed materials
	3.5 Obtain Client Approval	• design development documents with client signature/approval • minutes and conference reports • authorization to proceed into contract documents

125

Table 4

Contract Documents Phase Activities and Record Types

PROJECT PHASE	ACTIVITIES	RECORD TYPES
4 Contract Documents	4.1 Production Planning and Control	• "cartoon" drawings, draft or outline of project manual and specifications document, budget and schedule for production costs
	4.2 Produce Working Drawings	• architectural plans, elevations, sections, details, schedules and diagrams; structural, mechanical and electrical plans and details; utility and site plans and details; landscape work and art work
	4.3 Write Specifications	• specifications for requirements as to materials and equipment, manufacture, methods of installation, design and performance criteria, and workmanship
	4.4 Prepare Bid Documents	• bid documents: advertisement or invitation to bid, instructions to bidders, bid forms, information on bid security or bond, form of owner-contractor agreement, performance bond, labour and material payment bond, general and supplementary conditions of contract, specifications, drawings
	4.5 Compile the Project Manual	• Conditions of the contract • Specifications
	4.6 Coordination, Review and Checking 4.6.1 Review progress with client 4.6.2 Conduct internal review and coordination meetings	• minutes and conference reports • "progress prints" • project manual outline and drafts • checklist for drawings
	4.7 Update Time and Cost Plans	• final pre-bid estimate of cost • master schedule

Table 5

Bidding and Contract Negotiation Phase Activities and Record Types

PROJECT PHASE	ACTIVITIES	RECORD TYPES
5 Bidding and Contract Negotiation	5.1 Invite Bids	• bid documents: advertisement or invitation to bid, instructions to bidders, bid forms, information on bid security or bond, form of owner-contractor agreement, performance bond, labour and material payment bond, general and supplementary conditions of contract, specifications, drawings
	5.2 Bidding Period and Receipt of Bids 5.2.1 Arrange Bid Briefing Meeting 5.2.2 Bid Opening	• addenda to bid documents • minutes and conference reports • register of representatives
	5.3 Evaluation of Bids	• reports, presentation materials
	5.4 Negotiation of Bids and Award of Contract	• letter of acceptance from client to contractor • signed and sealed contract • minutes and conference reports

Table 6

Construction Phase Activities and Record Types

PROJECT PHASE	ACTIVITIES	RECORD TYPES
6 Construction	6.1 Contract Administration	• project organization charts, procedures, correspondence
	6.1.1 Review and Approve Submittals	• submittals: shop drawings, product data, samples, mock-ups, test results, warranties, maintenance agreements, workmanship bonds, project photographs, record drawings, field measurement data, operating and maintenance manuals
		• site instructions, contemplated change orders, change orders
	6.1.2 Provide Supplementary Instructions	• updated or adjusted schedules, reports
	6.1.3 Monitor Contract Schedule	• applications for payment, certificate for payment
	6.1.4 Review and Approve Applications for Payment	minutes and conference reports, status reports
	6.1.5 Attend all Project Meetings	
	6.2 Inspection	• architect's personal inspection diary; inspection reports from consultants, testing firms, authorities; inspection certificates from authorities; contractor's construction reports; correspondence with contractor and client; progress photographs

128

Table 7

Commissioning and Post-Construction Phase Activities and Record Types

PROJECT PHASE	ACTIVITIES	RECORD TYPES
7 Commissioning and Post-Construction Phase (Project Close-out)	7.1 Inspection for Substantial Completion	• contractor's application for Certificate of Substantial Completion with addenda and submissions: operating instructions, evidence of tests, maintenance manuals, record drawings, keying schedule • inspection record and report
	7.2 Issue Certificate of Substantial Completion	• Certificate of Substantial Completion • contractor's remaining documentation: bonds, guarantees, warrantees
	7.3 Final Inspection and Issue of Final Payment Certificate	• contractor's application for Final Payment Certificate • final deficiencies report • Final Payment Certificate

129