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Résumé de l'article

Dans les années précédant la Grande Guerre, l'administration municipale de Toronto devient le théâtre d'un conflit majeur au sujet du rôle du bureau du *City Architect*. La place de la science dans la ville est un enjeu récurrent de ce conflit. La Ville requiert-elle, pour réaliser des choix techniques, des individus pourvus de compétences scientifiques poussées, distincts d'un personnel à la formation plus classique ? Sur le plan du discours, le conflit soulève la question d'un choix entre « la science » et « la politique » comme mode d'appréhension des questions techniques dans la ville. Le conflit se conclut avec la réorganisation du bureau du *City Architect*, la nomination à sa tête d'un architecte au profil professionnel et académique plus solide, un engagement solennel du conseil municipal à ne plus s'ingérer dans le travail de ce dernier et un code du bâtiment tenant compte des nouveaux usages de la construction en béton armé.

Science in the City: Contesting the City Architect's Office in Toronto

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Abstract: The City of Toronto experienced a major dispute over the functions of the office of the City Architect in the years just before World War One. Running through the dispute was the issue of science in the City. Did the City need, in the administration of technicalities and the addressing of technical questions, persons with a greater degree of scientific competency—as distinct from more traditionally trained personnel? Rhetorically, the question too was posed of whether “science” or “politics” should guide technical questions in the city’s business. The outcomes included a reorganized office of the City Architect, a new City Architect with stronger academic and professional credentials, a solemn promise from City Council to avoid interfering in his work and a building code which caught up with new practices in reinforced concrete construction.

Résumé : Dans les années précédant la Grande Guerre, l’administration municipale de Toronto devient le théâtre d’un conflit majeur au sujet du rôle du bureau du *City Architect*. La place de la science dans la ville est un enjeu récurrent de ce conflit. La Ville requiert-elle, pour réaliser des choix techniques, des individus pourvus de compétences scientifiques poussées, distincts d’un personnel à la formation plus classique ? Sur le plan du discours, le conflit soulève la question d’un choix entre « la science » et « la politique » comme mode d’appréhension des questions techniques dans la ville. Le conflit se conclut avec la réorganisation du bureau du *City Architect*, la nomination à sa tête d’un architecte au profil professionnel et académique plus solide, un engagement solennel du conseil municipal à ne plus s’ingérer dans le travail de ce dernier et un code du bâtiment tenant compte des nouveaux usages de la construction en béton armé.

Introduction

Toronto's civic fathers early on recognized that they needed the services of scientific and technical experts¹ but learnt as well that as much as any other aspect of city governance the employ of such experts could engender political problems. The first Toronto City Engineer, William Kingford hired in 1855 over candidate Sandford Fleming, soon quit in a dispute over pay for an assistant. In 1891-92, as the City was studying the electrification of its street railway, City Engineer William T. Jennings quit in a similar dispute regarding his authority over his subordinates versus the authority of City Council. His temporary successor, Granville C. Cuninghame, was also forced out in a dispute with one of the City Aldermen that led to a sensational libel suit.² Then in 1907 Edward Shuttleworth lost a lucrative job performing water analyses for the City's Medical Officer of Health due to a conflict of interest relating to his partnership in a water company.³

An even more serious and more revealing case of the problem of expert knowledge came in the form of a major dispute over the functions of the office of the City Architect in the years just before World War One. At one level this too focussed on institutional authorities—those of the City's staff, committees of Council, individual members of Council, Aldermen and the Board of Control. At another level it involved the epistemological authority of technical experts and politicians. In part the efficient and effective functioning of the Architect's office—which included the city's corps of building inspectors—was at issue. In part there was a focussed issue relating to the still novel use of reinforced concrete as an urban building material and its accommodation within the city's building code. Running through the dispute however was the issue of science in the City. Did the City need, in the administration of technicalities and the

1. While the relationship between science and technology is relevant to the issues in this paper I will avoid a lengthy digression into that topic. For a stimulating discussion see Joel Moky, *The Gifts of Athena* (Princeton: Princeton University Press, 2002). See also Ronald Kline, "Construing 'Technology' as 'Applied Science': Public Rhetoric of Scientists and Engineers in the United States, 1880-1945," *Isis* 86, 2 (1995): 194-221.

2. This incident is dealt with at length in James Hull, "Elephant Hunters Inspecting Concrete Sidewalks," *Ontario History* 100, 2 (2008): 205-220. Not that the issue of political oversight and engineering expertise was a new one. See Michael S. Mahoney "Organizing Expertise: Engineering and Public Works under Jean-Baptiste Colbert, 1662-1683," *Osiris* 25, 1 (2010): 149-170.

3. Toronto *Globe*, 25 December 1907, 5. For Shuttleworth see R.J. Clark, "Professional Aspirations and the Limits of Occupational Autonomy: The Case of Pharmacy in Nineteenth-Century Ontario," *CBMH/BCHM* 11, 8 (1991): 43-63 and Jennifer D. Beales and Zubin Austin, "The Pursuit of Legitimacy Professionalism: The Evolution of Pharmacy in Ontario," *Pharmaceutical Historian* 36, 2 (2006): 22-27.

addressing of technical questions, persons with a greater degree of scientific competency—as distinct from more traditionally trained personnel? Rhetorically, the question too was posed of whether “science” or “politics” should guide technical questions in the city’s business.⁴ Matters came to a head in a judicial inquiry into the workings of the City Architect’s office, in response to a list of specific charges brought by a member of Council, a list which included a lack of proper technical training in the Architect’s office. The inquiry’s results would include a reorganized office of the City Architect, a new City Architect with stronger academic and professional credentials, a solemn promise from City Council to avoid interfering in his work and a building code which caught up with new practices in reinforced concrete construction. Commentators at the time, including reformist members of Council, lauded the outcome as one which brought scientific rationality in the form of up-to-date technical practice to the overseeing and facilitation of the City’s growth.

This incident affords an opportunity to examine the place of science—both actually and rhetorically—in debates over city governance and urban progressive reform in the early twentieth century. Reform was a protean concept and brought together men and women who argued for many different reforms from many different perspectives. They wanted new styles of municipal governance, new roles for municipal governors and new objectives for the outcomes of the processes of municipal government. This usually meant more government but did not necessarily mean more democracy. Indeed the experience of bossism seemed to suggest that democracy, as it was practiced at the civic level, was part of the problem not part of the solution.⁵ Finegold goes so far as to argue that the “incorporation of experts into city politics” was itself a crucial political process which made possible urban reform coalitions.⁶ Scholars have in great detail dwelt on the essentially conservative nature of progressive reforms and debunked rhetorical claims for any impartial scientific rationality in the employment of technical expertise.⁷ Indeed so

4. On this see Carl Schmitt, *The Concept of the Political*, trans. George Schwab (New Brunswick, NJ: Rutgers University Press, 1976), 31-32.

5. See Paul Rutherford, *Saving the Canadian City: The First Phase 1880-1920* (Toronto: University of Toronto Press, 1974), xvii-xx.

6. Kenneth Finegold, *Experts and Politicians* (Princeton: Princeton University Press, 1995), 15.

7. See for instance John F. Bauman, “Disinfecting the Industrial City,” in *The Age of Urban Reform*, ed. Michael H. Ebner and Eugene M. Tobin (Port Washington: Kennikat Press, 1977), 117-130 and Martin J. Schiesl, *The Politics of Efficiency* (Berkeley: University of California Press, 1977). Also see Myles Leslie, “Reforming the Coroner,” *Ontario History* 100, 2 (2008): 221-238.

much so that the genuine amelioration of urban environments and at least qualified success in addressing the problems of urban growth occasioned by the employment of such experts is overlooked. The present case study shows three things. First, that new standards for concrete construction did get incorporated into the City of Toronto's building code quickly and shows how that happened. Next, that this outcome occasioned not just controversy but also some dubious practices, unrestricted pursuit of self-interest and obliging of well-connected business interests. Finally, that while City Council got the expertise it recognized that it needed, the relationship between political governance and expert utility was little changed.

Regulating Toronto's Growth

With its status as provincial capital, diverse manufacturing base and railway connections east, west and north, Toronto by the end of the nineteenth century was without rivals as Ontario's metropole.⁸ Like other North American cities, Toronto experiencing two kinds of growth. It had expanded outward, turning small adjacent municipalities into suburban districts while its downtown core started to grow upwards with an increasing number of multi-story commercial buildings.⁹ Both types of growth posed challenges for the city's mode of governance as well as for its physical infrastructures. While the quality of their construction occasioned complaints, concrete sidewalks did replace older wooden ones and electrification brought a new source of power and illumination to streets, business and homes. The electrified street railway system aided urban growth and consolidation though fares and service were hotly disputed.¹⁰ The completion of the Ashbridges Bay Treatment plant in 1913 marked a

8. Toronto lacks a comprehensive scholarly history. Useful works include the popular history by Bruce West, *Toronto* (Toronto: Doubleday, 1979) as well as Victor L. Russell, ed., *Forging a Consensus* (Toronto: U of T Press, 1984); Frederick H. Armstrong, *A City in the Making* (Toronto: Dundurn, 1988); J.M.S. Careless, *Toronto To 1918. An Illustrated History* (Toronto: James Lorimer and Company, 1984) and the companion volume James Lemon, *Toronto Since 1918, An Illustrated History* (Toronto: James Lorimer and Company, 1985).

9. Richard Harris, *Unplanned Suburbs* (Baltimore: Johns Hopkins University Press, 1996) offers the best scholarly account of Toronto's growth in this period. Chapter 3 of Lorenzo Spagnoli, *Toronto La costruzione della 'citta che funziona'* (Milano: Etas Libri, 1998) covers the period discussed in this paper.

10. Peter G. Goheen, "Currents of Change in Toronto, 1850-1900," in *The Canadian City*, ed. Gilbert A. Stelter and Alan Artibise (Ottawa: Carleton University Press, 1984), 74-108. See also Christopher Armstrong and H.V. Nelles, "Suburban Street Railway Strategies in Montreal, Toronto, and Vancouver, 1896-1930," in *Power and Place: Canadian Urban Development in the North American Context*, ed. Gilbert A. Stelter and Alan F.J. Artibise (Vancouver: University of British Columbia Press, 1986), 187-218.

critical change from dumping untreated waste into Lake Ontario.¹¹ From a variety of motivations, private ownership of some but not all of the city's utilities gave way to public. Public transit started in 1910 and the Toronto Hydro-Electric System began its operations the next year.¹²

Such civic populism did not address all the city's woes.¹³ Property speculation and poorly controlled development went hand-in-hand with an admitted crisis in housing for the poor. For some, the solution rested in the panacea of planning.¹⁴ The influence of City Beautiful city planning in Toronto can be seen with the establishment of the Civil Improvements Committee in 1911 and design of the Town of Leaside as a railroad suburb by Frederick Todd, designer of the Town of Mount Royal.¹⁵ However after the first decade of the 20th century the grandiose City Beautiful and Garden City utopianism gave way to more focused concerns by planners including zoning laws and improved building codes.¹⁶ A new ideological model of city planning "sought to create a more economical and efficient system of land use and transportation [...] in terms of the needs of the emerging business system [...] It was a concern for economy and efficiency in the urban environment that corresponded with the introduction of Taylorism in the realm of work."¹⁷

As Harris has commented, "[b]uilding regulations are one of the great influences upon the modern city [...] they shape the urban landscape and

11. Catherine Brace, "Public Works in the Canadian City: the Provision of Sewers in Toronto 1870-1913," *Urban History Review* 23, 2 (1995): 33-43; James P. Hull, "Raising Standards: Public Works and Industrial Practice in Interwar Ontario," *Scientia Canadensis* 25 (2001): 7-30.

12. Christopher Armstrong and H.V. Nelles, *Monopoly's Moment: The Organization and Regulation of Canadian Utilities, 1830-1930* (Toronto: University of Toronto Press, 1988).

13. Paul Rutherford "Tomorrow's Metropolis: The Urban Reform Movement in Canada, 1880-1920," *CHA Historical Papers* 6, 1 (1971): 203-26. For a reply to Rutherford see John C. Weaver, "'Tomorrow's Metropolis' Revisited: A Critical Assessment of Urban Reform in Canada, 1890-1920," in *Canadian City*, Stelter and Artibise, 456-477.

14. See for instance Walter van Us, "The Plan-Makers and the City: Architects, Engineers, Surveyors and Urban Planning in Canada, 1890-1939" (Ph.D. thesis: University of Toronto, 1975) and James Lemon, "Plans for Early 20th-Century Toronto: Lost in Management," *Urban History Review* 18, 1 (1989): 11-31.

15. John Sewell, *The Shape of the Suburbs* (Toronto: University of Toronto Press, 2009), 12, 52. For contemporary efforts at city planning and use of by-laws in a de facto zoning fashion see Elizabeth Bloomfield, "Reshaping the Urban Landscape? Town Planning Efforts in Kitchener/Waterloo, 1912-1926," in *Shaping the Urban Landscape*, ed. Gilbert A. Stelter and Alan F.J. Artibise (Ottawa: Carleton University Press, 1982), 256-303.

16. Matt Sendbuehler and Jason Gilliland, "'...to produce the highest type of manhood and womanhood': The Ontario Housing Act, 1919, and a New Suburban Ideal," *Urban History Review* 26, 2 (1998): 42-55.

17. Richard Foglesong, *Planning the Capitalist City* (Princeton: Princeton University Press, 1986), 199-200.

the operations of the construction industry.”¹⁸ Building codes are of two types, fire codes and structural codes. Fire, followed by health and sanitation, formed the principal motive for building regulations. While such concerns were genuine, they aimed also at the regulation of the, especially, foreign-born, poor and the protection of property values. Building regulations functioned as a form of zoning, setting different construction standards in different part of urban areas.¹⁹ Zoning addressed the persistent urban tensions between private property and public space in part balancing the desire to attract new investment in construction with the desire to protect existing investment. Both the regulations themselves and their enforcement “reflected the local balance of political forces.”²⁰ For structural codes, conservatism was the order of the day. New materials where properties had only been studied in the laboratory usually had higher safety factors than tried-and-true materials long used in actual construction practice.

Toronto’s “building code” consisted of a set of By-laws, occasionally comprehensive in scope and frequently being amendments to existing By-laws. In fact the newly chartered City of Toronto (1834) addressed fire regulations in its first by-law.²¹ This not having prevented a disastrous fire in 1849 the city slowly increased its capacity to oversee construction and regulate building types.²² By the end of the century the city was divided into Fire Limits (zones) moving outward from the central business district and labelled ‘A’, ‘B’ and so on. The Limits permitted different types of construction, using different materials of different flammability. Thus A required all brick or other fireproof material, B allowed some wood for stables, building extensions and the like, C allowed wood dwellings.²³ Obviously, the details of these Limits were of extreme interest to developers and property holders. As well, expansion of the City necessitated changes in the description of the Limits. Aldermen would sponsor changes to the By-law to place certain districts within certain Fire Limits. City Council had more or less complete control over provisions of the code except when, as for instance with electrical wiring, provincial or

18. Richard Harris, “The Impact of Building Controls on Residential Development in Toronto, 1900-1940,” *Planning Perspectives* 6, 3 (1991): 269-296.

19. See Stelter and Artibise, *Power and Place*.

20. Harris, “Impact”.

21. Richard Harris, *Unplanned Suburbs* (Baltimore: Johns Hopkins University Press, 1996).

22. Ibidem. For a discussion of the first Great Fire of Toronto see Frederick H. Armstrong, “The First Great Fire, 1849,” in *City*, Armstrong, 251-276.

23. For a look at the limits see City of Toronto Council Minutes (hereafter “CM”), 20 December 1912, item 1341, and appendix B, p. 929; CM, 6 April 1914, item 406 and appendix B, p. 141.

federal regulations took precedence.²⁴ However, as Taylor observes, during the late nineteenth and early twentieth centuries senior levels of government by and large left municipal authorities alone “to pursue their policies of growth and physical and social amelioration.”²⁵

Necessarily, the growth of municipal administration and the ambitions of planners and would-be planners were intertwined with the ambitions of municipal politicians and proposals for political reform. Reformers wanted more activist city government but not democracy as they “set out to free the municipal government from the control of old guard politicians [...] believ[ing] that the proper model for municipal government [...] was the corporation.”²⁶ As with other urban North Americans, Torontonians faced the same problems and the same range of options in defining relationships among individual elected representatives, city council collectively, the mayor and the city’s staff.²⁷ Drawing inspiration from New York’s Tilden Commission, various attempts were made in the 1870s and 1880s to reduce the power and authority of individual Aldermen either through an executive committee, a stronger Mayor, commission style of government or otherwise, none of which succeeded. Finally however, mandated by the Province of Ontario in 1896, the Toronto Board of controlled was created. It consisted of the Mayor and three Controllers appointed from and by the Alderman. Board could be overruled by 2/3 vote of Council. In 1903 this was changed to elect Controllers at large.²⁸

While political oversight of the building by-law remained firmly in the hands of Council and its committees, administration of building regulations would be done by the City Architect’s Department. In his Annual Report for 1901 the City Engineer had recommended that such an official be appointed. His duties would include the preparation of estimates for the construction and repair of city buildings and the enforcement of the building by-law. The first incumbent was Robert McCallum, a senior civil engineer with the Ontario government who had previously practiced architecture in Toronto.²⁹

24. For example Council could only ask that “the proper authorities” require enclosed wiring in all buildings, CM, 23 March 1914, item 348.

25. John H.F. Taylor, “Urban Autonomy in Canada: Its Evolution and Decline,” in *Power and Place*, Stelter and Artibise, 269-291.

26. Rutherford, *Saving*, xix.

27. This discussion follows Patricia Petersen “The Evolution of the Board of Control,” in *Consensus*, Russell, 181-191.

28. Patricia Petersen, “Leave the Fads to the Yankees’ The Campaigns for Commission and City Manager Government in Toronto 1910-1926,” *Urban History Review* 20, 3 (1992): 72-84. S. Morley Wickett’s ambitious 1913 scheme for a metropolitan government in the Toronto region with administrators for each technical area though prescient also came to nothing.

29. “Want a City Architect,” *Globe*, 10 July 1903, 7.

On the night of 19 April 1904 a fire began in the E & S Currie building (a site occupied today by the TD Centre); by morning much of Toronto's central business district had been consumed.³⁰ On the front lines, McCallum advised against use of dynamite to clear a fire break as likely to do more harm than good. In the following days he helped oversee emergency provisions for fire recovery and supervised the job of tearing down the standing walls of gutted buildings. Looking towards the future, McCallum commented on the need for better enforcement of the existing building by-law and maintaining strict limits on building heights. He recommended a restriction of four stories unless fireproof construction was guaranteed and absolutely no higher than seven stories.³¹

The immediate rebuilding of downtown Toronto and the pressures of the city's continued population growth kept the City Architect busy. In an overhaul of the city's bureaucracy the City Architect's office came out from under the control of the Property Commissioner. It became effectively a department of city government, a development which McCallum viewed as a victory over the system of "political" appointments. The Architect found himself with a plethora of routine and special duties, including the need to update the city's building by-law. Some of this work, though demanding, was uncontentious. However the demands of buildings, politicians, fellow professionals and individual property owners would again and again embroil McCallum in public disputes which, by the beginning of the next decade, would erupt into demands for a major reorganization of the Architect's department.

Watching your city's central business district reduced to ashes is a fairly convincing illustration of the inadequacy of existing building codes and fire protection measures. It was great fires which "prompted all the larger cities to establish controls" on types of buildings and building materials allowed in different districts.³² To the exigencies of fire recovery were added the pressures of new ideas in residential, industrial and commercial construction.³³ Within a month of Toronto's great fire McCallum had proposal in hand for improvements to the city's building code.³⁴ Not all

30. Reports appear of course in all the Toronto newspapers. For a convenient account see Frederick H. Armstrong, "The Second Great Fire," in *City in the Making*, Armstrong, 296-327. A more general study of fires in urban North America is Mark Tebeau, *Eating Smoke: Fire in Urban America 1800-1950* (Baltimore: Johns Hopkins University Press, 2003).

31. "Plans for New Buildings Laid," *Globe*, 22 April 1904, 9.

32. Harris, "Impact." See also Tebeau, *Eating Smoke*.

33. The new use of concrete in construction and influence of technical standards is dealt with in Amy E. Slaton, *Reinforced Concrete and the Modernization of American Building, 1900-1930* (Baltimore: Johns Hopkins University Press, 2001).

34. Toronto's two great fires, those of 1849 and 1904, are addressed in Armstrong, *City in the Making*.

were favourably impressed and in the minds of some the urgency for change cooled as fast as the ashes. After reaching a compromise, McCallum presented to the Fire and Light Committee, which directly oversaw his office, a thoroughly reformed by-law. Much changed from the old one, it ran to eighty pages in length and included rules and tables for estimating strengths of materials and load-bearing structures which all those submitting plans would have to use. A 100-foot height limit applied and five classes of buildings were recognized. The powers of the City Architect would be increased but a procedure would be in place to appeal his rulings or to appeal to use “materials, appliances or processes” other than those in the by-law.³⁵ In one such case Gustave Kahn (a relative of the great industrial architect Albert Kahn), representing the Concrete Trussed Steel Company disputed before the city’s Board of Control McCallum’s refusal to issue a permit for a building being erected on Temperance Street. Kahn disagreed with McCallum’s assessment that the strength of proposed concrete beams was inadequate but the Board in this case chose to support the City Architect.

The use of concrete in urban construction was a crucial technical and commercial question.³⁶ As early as 1903 Board of Control had involved itself in charges that concrete sidewalks had been improperly laid by the City Engineer and further that the City Engineer had not been enforcing concrete specifications in contracts.³⁷ The US National Association of Cement Users, founded in 1904, quickly issued recommendations for concrete construction in that country. In January of 1908 the newly-founded trade journal *Canadian Cement and Concrete Review* noted that many Canadian cement users would be attending the upcoming annual convention of the Cement Users’ Association in Buffalo, New York. This, the editors felt, raised the issue of forming a Canadian organization.³⁸ The Canadian Cement and Concrete Association (CCCA) was formed 20 April 1908 in Toronto, selecting as its President Peter Gillespie, lecturer in Applied Mechanics at the University of Toronto. Among its stated aims was “bringing before the Canadian public the legitimate claims of Portland cement as a safe and artistic material of construction” and to that end immediately went to work on developing standard specifications for the material.³⁹

35. “New Building By-Law”, *Globe*, 30 May 1904.

36. For an excellent discussion of these matters see Slaton, *Reinforced Concrete*. See also Benjamin Sims, “Concrete Practices: Testing in an Earthquake-Engineering Laboratory,” *Social Studies of Science* 29, 4 (1999): 483-518.

37. “Money for Exhibition,” *Globe*, 9 April 1903, 5; “Radial Railway Matters,” *Globe*, 7 May 1903, 10.

38. Editorial, *Canadian Cement and Concrete Review* 2 (1908): 1.

39. *Programme of the 1st Annual Meeting of the Canadian Cement and Concrete Association at the King Edward Hotel 1-6 March 1909*.

The following year the Association met in London Ontario where the delegates heard from CCCA Vice President Gustave Kahn, General Sales Manager of the Trussed Concrete Steel Company who spoke on “The Commercial Aspect of Reinforced Concrete in Canada.”⁴⁰ Perhaps unsurprisingly the City of Toronto’s practices regarding the use of concrete were the objects of Kahn particular disapprobation, with both the City Architect and brick making interests the culprits. A major item of business on the first day of the meeting was a discussion of proposed standard specifications for concrete usage in construction. To carry forward work on standardization a committee was named consisting of Gillespie, Young, Kahn and a Montreal consulting engineer J.A. Jamieson. An editorial in *The Canadian Engineer* praised the proposed standard developed by the committee and remarked that such was much needed as Canadian cities were re-evaluating and revising their building codes with respect to materials.⁴¹

Criticisms and Inquests

In the Spring of 1911 “a committee of architects, engineers, contractors and business men were engaged in preparing an application for the revision of the Toronto Building By-Law.”⁴² While acknowledging the need for a new by-law City Architect McCallum ruled out any substantive changes in allowances for reinforced concrete construction. This drew a tremendous blast from the President of W. Gillett Co., considering in which city to locate a new factory, who claimed that because of the Toronto By-law reinforced concrete construction was unnecessarily costly. Specifically curtain walls were required to be too thick, shape and load bearing estimates of steel beams and other stress allowances were simply wrong. This, he said, compounded the high cost of building materials in Toronto.⁴³ McCallum later denied charges that the City’s by-law discouraged the building of reinforced concrete residential housing, an issue important to those wanting to develop apartment buildings. In fact, though, the by-law used various means to obstruct such development. Apartment housing as “a new and potentially disruptive form of residential development in the early decades of the twentieth century”

40. See the *Annual Report and Proceedings of the Canadian Cement and Concrete Association*, 1910.

41. *The Canadian Engineer*, 8 June 1911, 801. The standard is printed in full in *Canadian Cement and Concrete Association Proceedings* 3 (1911): 86-95.

42. University of Toronto Archives, Young Papers, C.R. Young to W.J. Francis, 13 April 1911. Young also kept in touch with similar developments in Montreal. Young to J.A. Jamieson, 30 March 1911; and Young to W.J. Francis, 13 April 1911.

43. *Globe*, 22 November 1911.

represented a particular challenge to those framing restrictions on building in North American cities.⁴⁴

The Architect's department also drew criticism over its inspection services. The city was divided into nine inspection districts with an inspector for each plus two elevator inspectors and one special inspector. Assistant Architect Price functioned also as Chief Inspector. In May of 1913 the Toronto Trades and Labor Council claimed that inferior material was being used in construction in many buildings in Toronto, blaming the City Architect's office for not having more inspectors. The Bricklayers and Mason's Union further called for appointment of a "practical stonemason" to the City Architect's staff of inspectors. As Kargon and Knowles note

an emerging economy of certified 'experts' was by the turn of the century in direct competition with the electricians and mechanics who had traditionally dominated engineering work in the city [...] As [...] cities expanded, new architectural styles emerged and new construction materials, such as steel and concrete, were called into use [...] Previously, much of the installation work [...] would have been performed by skilled craftsmen [...] [now] professional engineers began to promote themselves as the right 'men for the job'. Technical colleges provided foundations in scientific theory not taught in the shop, as well as hands-on training in laboratory classes.⁴⁵

Concomitant with this, municipalities needed suitably qualified experts to regulate the new science-based technologies. Appropriately trained engineering graduates soon "staffed city inspection departments."⁴⁶ Price admitted poor material may have been used as inspectors were rushed at some times of the year. In one district the inspector could only get around to houses under construction every three weeks during which time a great deal of building could have gone on. Undoubtedly the city's rapid growth had led to a housing shortage which put "enormous pressure on inspectors to turn a blind eye to infractions."⁴⁷

44. Richard Dennis, "'Zoning' before Zoning: The Regulation of Apartment Housing in Early Twentieth Century Winnipeg and Toronto," *Planning Perspectives* 15, 3 (2000): 267-299. Also CM, 1 April 1912, item 376; CM, 15 April 1912, item 456; CM, 29 April 1912, item 482.

45. Robert H. Kargon and Scott G. Knowles, "Knowledge for Use: Science, Higher Learning, and America's New Industrial Heartland, 1880-1915," *Annals of Science* 59, 1 (2002): 1-20.

46. *Ibidem*.

47. Harris, "Impact"; "Unsound Material Used in Building," *Globe*, 3 May 1912, 8; "Inspector Visits Houses Only Once in Three Weeks," 4 May 1912, 9; "Another Building Inspector," 18 May 1912, 8. For the issue of standards, expertise and workplace control see also Amy Slaton and Janet Abbate, "The Hidden Lives of Standards: Technical Prescriptions and the Transformation of Work in America," in *Technologies of Power*, ed. Michael Thad Allen and Gabrielle Hecht (Cambridge: MIT Press, 2001), 95-143.

Collapse of a wall at the new Wm. Nielson factory, killing two and injuring fifteen, in early May 1912 threw these issues into sharp relief.⁴⁸ Price insisted that a post-accident inspection showed workmanship and materials at the factory to have been sound. This was confirmed by University of Toronto professor C.H.C. Wright who gave expert testimony at an inquest into the deaths. The inquest however provided an open season on the Architect's department for its foes. Engineer Robert V. King, a public critic of the City Architect's office over the by-law, volunteered his own critical expert testimony that the factory had been an accident waiting to happen. The builders alleged that they had had to rush to finish the building because of delays in getting a permit issued. S.G. Beckett, designer of the building, said architects believed the city by-law was too severe and walls had to be too thick. Even though its cause had yet to be (and never was properly) determined, an embattled McCallum said the by-law would be amended to take into account lessons of the Neilson collapse.

Mayor H.C. Harkness, doing his own damage control, said that if McCallum needed more inspectors he should ask for them. McCallum replied that in the last appropriation money to hire more staff had been cut out. Council controlled both the hiring and promotion of city staff, one of the ways in which the authority, though not the responsibilities, of department heads was circumscribed. In the wake of the Neilson inquiry two engineers and three additional building inspectors were added by the City Architect's staff and some junior staff received promotions and raises. The latter however came only over objections by Alderman John Wanless. Wanless, a successful jeweller who had previously sat on York Township Council, complained about the competence of the Architect's staff, the care with which inspection done and, gratuitously, the tardiness of McCallum in showing up for work in the mornings.⁴⁹

On the 15th of April 1912 Controller McCarthy gave notice of his intention to bring in a Bill to limit the height of new buildings to ten stories.⁵⁰ Not wishing to deal with this issue outside of a more comprehensive

48. The accident and resulting inquest was extensively reported in all the Toronto newspapers during the entire month. The following account is combined from various papers and editions.

49. For example CM, 27 May 1912, item 604 dealing with the promotion of three Building Inspectors from Junior to Senior Class. D "Few Building Inspectors," *Globe*, 30 May 1912, 4; 6 June 1912, 9 July 1912, 8. Wanless, served only briefly (1912-1914) on Toronto Council before moving on to the Toronto Board of Education where he pushed for higher teacher qualifications and salaries. The Wanless neighbourhood, and thus the neighbourhood school, streets and park in Toronto are named for him, thanks to developer friend W.S. Dinnick. He was only distantly related to the better known physician and missionary Sir William James Wanless.

50. CM, 15 April 1912, item 458.

consideration of the City's building by-law, Council referred McCarty's Bill to the Committee on Fire and Light.⁵¹ In June a new building by-law passed, the highlight of which was the provisions for reinforced concrete construction. It gave details for the performance of various tests on cement, aggregate and steel, the mixing and placing of concrete, assumptions to be used in strength calculation, calculation of bending moments and allowable stresses.⁵² Then in August Council amended the building by-law further to increase the allowable height of new buildings from 100 to 124 feet.⁵³ Such changes served only to whet builders' appetites. Alleged shortcomings in the building code figured more and more prominently in criticisms of the City Architect's office. The technical press damned with faint praise changes which had relaxed "a little of the undue severity [...] towards reinforced concrete construction" without adopting the CCCA's proposed standards.⁵⁴ Members of the local engineering community weighed in.⁵⁵ A.H. Harkness characterized the existing building code as "antiquated" and "unreasonable," adding that "[t]here is no one in the City Architect's Department who has had sufficient experience in modern architectural engineering design." H.B. Gordon talked of unnecessary delays and arbitrariness in the application of by-laws. A Mr. Curry of Curry and Sparling, architects, felt that more effective supervision of the Chief Architect, not just regulation, was needed and blamed matters in part on the illness of the City Architect McCallum.

"A shake-up is coming for the City Architect's Department," predicted the *Toronto Globe* on August 18th, one which "has been threatening for years." Ald. Austin said he would call for an inquiry by the Board of Control while Ald. McGuire thought that it should be a judicial inquiry under County Judge Denton. But Controller Church, while agreeing that the Department had grown too big, suggested making McCallum consulting architect, with the current Assistant Architect G.F. Price, who had been Acting City Architect during McCallum's bouts of illness, the Department Head and hiring more staff. Council as a whole decided that the Board of Control would investigate the City Architect's office with a view to reorganizing it "to increase[e] its efficiency." C.R. Young, in a tone of magisterial objectivity, opined that an inquiry into the functioning

51. CM, 27 May 1912, item 596.

52. CM, 24 June 1912, item 691. The By-law was number 6107. For details see CM, (1912) Appendix B, p. 456-472. See also the account of the passing of by-law in the *Toronto Evening Telegram*, 24 June 1912, 21.

53. CM, 19 August 1912, item 872.

54. "Defects in the Toronto Building By-Law," *The Canadian Engineer*, 26 February 1914, 38.

55. The following is from the *Evening Telegram*, 16 August 1912, 13-15.

of the City Architect's office was now "desirable" and characterized the technical criticisms of the building code as having been "made from a scientific standpoint," as some provisions of that code were "unreasonable and unpractical."⁵⁶

Council also set to wrangling over the mechanism of political oversight of the Architect's office. In September 1912 Aldermen Rawlinson and Wanless successfully moved that henceforth "all matters relating to the Building By-law emanating from the City Architect's Department be reported direct to the Committee on Fire and Light and not through the Board of Control." The next month Ald. McBrien gave notice of intent to introduce a Bill placing the City Architect's Department under the authority of a renamed Fire and Building Committee with street lighting given to the Board of Control as the Mayor was a member of the Hydro-Electric Commission.⁵⁷ Board of Control contended with the Aldermen by assigning one or more Departments to each Controller, ostensibly to promote better lines of communication between city and administration and the elected politicians. Controller John O'Neill was appointed for the Property, Fire and Architect's departments. However Council placed the City Architect under the Committee on Property, instructing him to deal with the Property Committee not the Board of Control.⁵⁸

The stars were aligning against the embattled City Architect. Late in 1912 what styled itself a Citizens Committee had been formed at the Toronto Engineer's Club. The interested citizens included representatives of the Canadian Society of Civil Engineers, Ontario Association of Architects, Toronto Society of Architects, Builders' Exchange, Canadian Manufacturers Association, the Toronto Board of Trade, and, of course, the Canadian Cement and Concrete Association. Solidifying his position as the key player in the concrete building game, C.R. Young settled in as Secretary of the new committee. The committee characterized the by-law as "unnecessarily strict [...] too conservative." Specific objections included the "regulations concerning plate girders, the calculation of wind pressure on sloping roofs, the figuring of live loads on columns and [...] excessive thickness of curtain walls."⁵⁹ These efforts bore fruit early in the next year when the City's Property Committee voted to make changes in the building code to include: less brickwork on external columns and less thickness of curtain walls, changes in calculating live-load on

56. CM, 19 August 1912, item 866. See also the account in the Toronto *Evening Telegram*, 20 August 1912, 22.

57. CM, 3 September 1912, item 902; CM, 20 October 1912, item 1134.

58. CM, 1912 Appendix A, Board of Control, report no. 4, p. 207; CM, 25 March 1913, item 383; CM, 7 April 1913, item 457.

59. "Not Satisfied With Building By-Laws," *Globe*, 28 December 1912, 3.

columns and the addition of 2” gypsum blocks to the list of allowable fireproofing material. The Architect was also requested to include specifications for hollow tile construction.⁶⁰ Such changes were both over the objections of the City Architect and a plea to support him from city Alderman Sam McBride.

Speculation was soon rife in the press that McCallum’s days as City Architect were numbered. Board of Control was just about ready to try to dismiss him, though both McCallum and Assistant Architect Price had many friends among the Aldermen. The axe came down that summer when McCallum was effectively dismissed, given a three month leave of absence—what amounted to severance pay. His loyal subordinate Price stepped into his shoes as acting City Architect while the City sought a successor. By the autumn the Board thought they had their man, recommending Charles Henry Challenor Wright, University of Toronto Professor of Architecture and Drawing to be the next City Architect at a proposed salary of \$6000. In spite of support from the Mayor, Council would have none of it, first amending the proposal to set the salary at \$4500 and then throwing out the whole Board recommendation. An attempt to appoint Acting City Architect Price to the permanent position (at \$4500) also failed. While there were other issues, the two camps identified starkly competing views of the nature of the technical expertise needed. Wright’s supporters lauded his scientific qualifications and said that the issue was a competent and professional city staff. Wright was himself a graduate of the School of Practical Science, predecessor of the Faculty of Applied Science and Engineering, and had been a member of its faculty since 1890. His scientific training was such that he had assisted in the replication of Roentgen’s x-ray experiments by the renowned University of Toronto physicist J.C. McLennan. Supporters of Price hailed him as a practical man with knowledge of the department and said that the issue was promotion from within the city staff.⁶¹ Price had had some limited technical training in Ireland and apprenticed with the renowned E.J. Lennox, before joining the City Architect’s department in 1905.⁶² Wright on the other hand may have had a solid understanding of strengths of materials science but he was not actually trained as an

60. “Changes Are Made In By-Law,” *Globe*, 21 February 1913, 4.

61. Compare this to a contemporaneous debate over whether the Property Commissioner should be an Alderman or a civil servant promoted from within clearly related to disputes between Council factions and different ideas about the role of Council and Board of Control. *Telegram*, 25 June 1912, 10, 20.

62. Jesse Edger Middleton, *The Municipality of Toronto* (Toronto: Dominion Publishing Company, 1923), 216.

architect at all.⁶³ In the course of the debate a frustrated and angry Alderman John Wanless, who had supported the Board of Control's original recommendation, raised further issues about improprieties in the granting of a building permit for the Hillcrest racetrack in which Alderman McBride had a financial interest.⁶⁴ Wanless had been pushing for a thoroughgoing reorganization of the Architect's office in view of "many complaints" again it and the need for "qualified and vigorous heads who will devote their whole time to the City's business."⁶⁵

At Council's 24 November 1913 meeting Ald. Wanless gave the full list of complaints which would form the basis of a judicial investigation, a list which included inadequate "technical and practical training" of both the acting City Architect as well as building inspectors and other members of his staff.⁶⁶ Such an inquiry would be no innovation. Investigations had been made into the Parks Department (1908) and Works Department (1911) and would be made into the Fire Department (1915), all of which found minor corruption.⁶⁷ Early in the new year the inquiry opened under Judge Herbert Denton.⁶⁸

The Denton inquiry was front page news with evidence of graft, favouritism and selective enforcement of the building by-law.⁶⁹ Torontonians learned that employees in the City Architect's department were making much of their incomes preparing plans for outside clients, plans which of course that same department would have to approve. One headline proclaimed that employees of the City Architect's office "Made Big Money on the Side."

63. Richard White, *The Skule Story: The University of Toronto Faculty of Applied Science and Engineering, 1873-2000* (Toronto: FASE, 2000), 43; C.R. Young, *Early Engineering Education at Toronto, 1851-1919* (Toronto: University of Toronto Press, 1958), 91. Although stopping just at the beginning of this period, an excellent source for what had been going on in the professor of architecture in Canada is Kelly Crossman, *Architecture in Transition* (Montreal and Kingston: McGill/Queen's University Press, 1987).

64. CM, 1913 Appendix A, Board of Control, Report no. 25, p. 1551; CM, 27 October 1913, items 1091, 1092, 1097, 1099. See also the account in the *Star*, 28 October 1913, 4. Sam McBride (1866-1936) was one of the leading organizers of standardbred horse raising and harness racing in Canada. He was president of the Toronto Driving Club which operated the short-lived Hillcrest track (located at Bathurst and Davenport) as well as the more prominent Dufferin Park.

65. CM, 13 January 1913, item 59.

66. CM, 24 November 1913, items 1183 and 1184.

67. Petersen, "Fads."

68. *Star*, 5 January 1914, 8. Denton is better known for heading up a 1926 inquiry into the Toronto Harbour Commissioners and for his role in two important morality cases in Toronto. See Lyndsay Campell, "A Slub in the Cloth," *Canadian Journal of Law and Society* 15, 1 (2000): 187-220 and Steven Maynard, "Horrible Temptations," *Canadian Historical Review* 78, 2 (1997): 191-235.

69. The work of the inquiry can be followed through the various newspaper accounts of the day. See in particular *Star*, 9 January 1914, 1; 23 January 1914, 1; 4 February 1914, 5.

When Council deferred action on proposed increases in salaries of members of the Architect's office pending the Denton report, McBride, echoing George Washington Plunkitt, opined that if members of the Department are to be prevented from earning a few honest dollars on the side then their salaries better be raised. Acting Architect Price testified in his own defence, stating that he did do work for builders but that he never passed on his own plans and thus was not in conflict of interest. Price did admit that plans for the Hillcrest racetrack may have been fast tracked to oblige a council member. Alderman McBride was shocked, shocked that that could have been the case. Price also told the inquiry that he had no university architecture or engineering degree.⁷⁰

Nor of course did Judge Denton. For his technical expertise he had to look elsewhere. As Turner so acutely points out "decision makers, whether this means judges, the public, representative bodies, administrators, or commissions, must rely on or judge claims which they cannot epistemically fully own, that is to say other people's knowledge which they can only get second hand and can't judge as a peer."⁷¹ In this case the expertise was in fact close to hand as it was none other than Professor C.R. Young who gave the principal expert testimony. Young already enjoyed a reputation locally as an expert in matters of municipal engineering. The previous year he had prepared, at the request of City Commissioner C.R. Harris and the City Engineer's office, first a report and then designs for what became the Prince Edward viaduct. At Denton's request Young prepared a report critical of the City's building code "which, he declared, [was] in many respects not in conformity with modern engineering practice."⁷²

Young may indeed have been an expert witness but impartial he was not. Even while working on his report he found time to pen an article for *The Canadian Engineer* informing his colleagues in the profession of his dissatisfaction with the Toronto building code. He rated it as inferior to those currently in use by a number of U.S. and Canadian jurisdictions as well as Canadian Society of Civil Engineers' standards.⁷³ While not mentioned explicitly, but in fact at the heart of Young's criticism, was the CCCA reinforced concrete standard. In effect, Young was using both the technical press and his role as a paid expert witness to criticise the Toronto City Architect for not using a standard which he had played a principal role in developing. Young's behind-the-scenes work with the concrete association would however remain out of the public eye.

70. *Star*, 26 February 1914, 1.

71. Stephen Turner, "Political Epistemology, Experts and the Aggregation of Knowledge," *Spontaneous Generations* 1, 1 (2007): 36-47.

72. "Buildings' High Cost Injustice in Toronto," *Globe*, 21 February 1914, 1.

73. C.R. Young, "The Structural Requirements of the Toronto Building By-Law of 1913," *The Canadian Engineer*, 26 February 1914, 383-88.

In the early evening of 17 March, 1914 smoke began to billow and flames flickered from Toronto's Woodbine Hotel.⁷⁴ Midnight found firefighters combing through the wreckage of the King Street West building. The next day's newspapers gave front page treatment to the heavy insurance losses as well as loss of life, the death count eventually rising to five.⁷⁵ Denton convened a special session of his inquiry to consider the tragedy. Price tried to throw blame onto the Board of Control for having overruled the City Architect's department on matters regarding the hotel but in some respects he would be the fire's sixth victim.⁷⁶ In his report Denton cleared Price and others from outright bribery and related financial malfeasance, but condemned the practice of members of the Department accepting fees for drawing up plans for buildings which the Department would have to approve.⁷⁷ He urged that the "City Architect's Department should be completely reorganized under a new name and with increased jurisdiction and powers." The Department's inspection system was singled out for criticism, the Judge noting that "[t]he majority of the present inspectors are either bricklayers or carpenters." Denton recommended higher qualifications for the City Architect, as professional witnesses had urged. The Building by-law was characterized as excessively long and conservative and in need of revision for clarity and to reduce the cost of building. Denton concurred in C.R. Young's conclusions that the by-law added unnecessarily to the cost of building in Toronto due in particular to the amount of steel required in reinforced concrete construction. Judge Denton characterized the Woodbine Hotel fire as a case of neglect and criticised Price in this regard. The report also indicated the need to clarify the jurisdiction of the Architect's office with respect to other City Departments, such as Health.⁷⁸ Denton indicated that he had not looked into "other matters which do not properly fall within the scope of the investigation," which was understood to mean allegations of chicanery by Alderman McBride and his associates, a decision criticized by, among others, the *Evening Telegram*.⁷⁹

With the ball now back in Council's court, Mayor Hocken and the Board of Control quickly agreed that in future the Board would not make changes or hear deputations seeking changes in building plans; the Architect would have last word. This had been at issue in the confused

74. See account in the Toronto *Star*, 18 March 1914, 1 et seq.

75. "Two Burned to Death," *Globe*, 18 March 1914, 1.

76. "Woodbine Hotel Fire Under Judge's Probe," *Globe*, 20 March 1914, 1

77. CM, 6 April 1914, item 380.

78. Lengthy accounts are given in the daily newspapers. See *Star*, 2 April 1914, 1; *Star* 3 April 1914, 5; *Telegram*, 3 April 1914, 12, 30, 35. For Price's statement in his own defense refuting Denton's charges see "Architect Accuses Judge of Ignoring Evidence," *Globe*, 2 May 1914, 3.

79. *Telegram*, 3 April 1914, 14.

finger pointing over the Woodbine Hotel fire. In fact, lessons had not been learnt. In a repeat of the Woodbine fiasco the Property Committee on its own authority ordered the issuance of permit for construction of a downtown hotel.⁸⁰ That Committee did recommend reorganization of the City Architect's office, revision of the building code especially regarding concrete and that "in future the reports on all matters pertaining to the Building By-laws be made by the City Architect to this Committee."⁸¹ On 17 July 1914 Council adopted the recommendation of the Committee including: a general tightening up of internal procedures, confirming "the former heads of the departments [...] in their old positions," acknowledging the need to amend the building code and instituting competitive exams for appointments to technical positions. This model was said to be "similar to that mapped out by His Honor Judge Denton and follows closely the system now in vogue in New York City."⁸²

While Denton's conclusions pointed to the need for a thorough-going overhaul of the City Architect's office they did not clearly point out who ought to head that office. Both the acting incumbent, Price, and the academic, Wright, were strong contenders. Alderman Sam McBride, spoiling for a fight, stood first and foremost among Price's advocates. Dismissive of academic attainments McBride was sure, to the contrary, that the city needed "more practice and less theory." He also allowed that he was of a mind to take his council opponent, Alderman Wanless, to court over the latter's allegations regarding Hillcrest. Unmoved, Wanless repeated his allegations, both those investigated and upheld by Judge Denton regarding the Architect's office, and those His Honour had left unexamined. In particular he returned to the issue of conflict of interest inherent in those in the employ of the City through the Architect's office soliciting and taking on business from local builders. Aldermen Wanless and Church felt that Price had confirmed his lack of judgement in his response to Judge Denton's report. The Mayor himself drew attention to further cronyism in the Architect's office under Price who, it seemed, was willing to do favours for those who were willing to offer him support in his attempts to gain confirmation as City Architect. Professor Wright, for his part, campaigned on the academic front, devoting more classroom time to a discussion of concrete in his Building Materials course at FASE and putting questions about concrete on the final examination.⁸³ As Council debated the merits of Wright and Price in their 4 May 1914 meeting they

80. "Committee Dictates to the City Architect," *Globe*, 28 April 1914, 8.

81. CM, (1914) Appendix A, Report no. 6 of the Committee on Property, 505.

82. CM, (1914) Appendix A, Report no. 13 of the Committee on Property, 1389-92.

83. Bound copies of the examination are kept at University of Toronto Archives (no accession number).

also had before them another candidate. Willis Worth Pearse (b. 1872) was a local boy made good in that classic Canadian fashion of moving to the United States.⁸⁴ The grandson of a successful Toronto building contractor, after graduating from Toronto's Jarvis Collegiate he had earned a B.Sc. and C.E. at New York's Cooper Union. He had practiced as an architect in that city rising to be Vice President and chief architect of John Radley Company and earning solid professional credentials as an Associate Member of the American Society of Civil Engineers. Having made a reputation and a pretty comfortable living designing Fifth Avenue lofts and the like he was ready to return home. James Simpson, labour leader, Controller and future socialist Mayor of Toronto, welcomed Pearse's stated intention to made the building code more scientifically up-to-date as this "would be a great help to builders."⁸⁵ After a two and a half hour debate an exhausted council adjourned, returning the next day to give the job with its now \$5000 salary to Pearse.⁸⁶

The last remaining issue from the Inquiry was for the City to pay the bills. Most of the \$2513.67 went to the City's Counsel, however C.R. Young pocketed a tidy \$253.75 for his time and trouble, having spent a week and a half dissecting the city's building code. He received also the praise of both Judge Denton and his peers. The Canadian Bridge Company's C.M. Goodrich extended to Young his "compliments on the clear way in which you have demonstrated the unnecessary severities of" the existing By-law. R.K. Palmer, Engineer with the Hamilton Bridge Works too praised Young and noted that he had "often noticed the inconsistencies arising in these building by-laws" blaming "ignorance [and] local politics."⁸⁷ Indeed.

Conclusions

Pearse, the very model of a modern scientific architect, settled comfortably into his role as City Architect. In an address to the Toronto Builder's Exchange Pearse said that he was working on a new building by-law and explained that one change he had in mind "will lessen the steel work and reduce the cost of the buildings."⁸⁸ He knew exactly what to do when he received a request from the Montreal Lumber Association to

84. Middleton, *Toronto*, 268-9.

85. An interesting discussion of the relationship between Socialism and urban reform looking particularly at the role of the "expert" is given in Finegold, *Experts and Politicians*, 18-22.

86. CM, 5 May 1914, item 552.

87. Young Papers, C.M. Goodrich to C.R. Young, 26 May 1914; R.K. Palmer to C.R. Young, 6 May 1914.

88. *Star*, 17 February 1915, 2.

specify Canadian wood products in conformity with civic Made-in-Canada mandates. He agreed with Association President A.H. Campbell that tests of various woods would have to be made to determine whether they were up to code and that none other than C.R. Young would be the man to do the job.⁸⁹ Not that all was smooth sailing. Council continued to keep the City Architect, and other senior administrators, on a short leash in a variety of ways. The Architect had to get permission from Council for such expenditures as the installation of telephones in the homes of three senior inspectors.⁹⁰ A frugal Board of Control denied Pearse's request for \$565 to purchase a testing machine.⁹¹

This story had some fairly unambiguous winners. These included the members of the concrete users trade association, though it is difficult to believe that the conservatism of McCallum or Price represented anything other than speed bumps on the road to concrete's ubiquity as a structural material. Professor C.R. Young is most surely another as he received public notoriety and a boost to a career as perhaps the most important engineering educator in Canada in the first half of the twentieth century—a career which would often see his services tapped as expert witness or arbitrator. In fairness it can be claimed that the public interest was served by a more up-to-date building code. Building codes “did have the desired effect of reducing the risks of fire and of limiting health hazards.”⁹² The plight of the urban homeless notwithstanding, more people are better housed today than ever imagined in the past and reinforced concrete structures, except under a very great deal of provocation, do not fall down.

Seemingly, we are hearing themes familiar to historians of North American urbanization and technology. It is a story of the rise of administrative expertise in municipal governance where doughty tribunes of the people such as McBride—remembered as one of the city's most popular Chief Magistrates and with his name attached to one of the large Toronto Island ferries—contended with thin-lipped progressives like Wanless—virtually forgotten beyond the north Toronto enclave where he has streets, a park, a school and a neighbourhood named for him. It is also a story of new engineering techniques based on laboratory investigation and university level programmes of training. The triumph of appointed administrators over grasping ward-healers of course was not so simple as a victory of the good guys over the bad guys but rather a much more subtle dynamic as various groups contended for authority and advantage

89. Young Papers, W.W. Pearse to C.R. Young, 24 June 1914. See also Young to S.E. McGorman, 20 February 1915.

90. CM, (1914) Appendix A, Report no. 4 of the Committee on Property, p. 363.

91. CM, (1915) Appendix A, p. 1190.

92. Harris, “Impact.”

in expanding turn of the century cities. Engineers wielded their new knowledge as much to their own benefit as for a claimed social good and that knowledge could be and was used to gain commercial advantage. As Turner has acutely observed “Experts typically make their reputations as real scientists, economists, or whatever. And they typically are careful to say nothing that conflicts with the rules of the game in their fields [...] But this does not mean that their pronouncements on policy conform to well-defined rules of the game [...]. Policy issues [...] are partly based on facts, partly based on uncertain claims, on beliefs about human conduct and on other things [...]. They are epistemically different from what is ordinarily understood as science.”⁹³

As well, however, we find in this tale evidence of just how limited was the victory of urban reformers. First of all, the victory was a narrow one indeed, serving most of all the interests of a fairly conservative segment of the business community. Indeed Council pretty much explicitly chose an Architect whose expert opinions would oblige builders and developers. This seems to be an instance of what Martin and Whitley distinguish as “policy-based expertise (as opposed to expertise-based policy).”⁹⁴ Schiesl has noted how urban reformers believed “That persons with advanced training and experience should be continually involved in the implementing of public policy.”⁹⁵ However the day to day operations of the city’s technical services would in fact still be a contested terrain between appointed professionals and elected representatives. In addition, even the victory of science over practice or what historian of engineering Monte Calvert terms “school culture” over “shop culture”⁹⁶ proved, in this instance to be ephemeral, at least in the medium run. Pearse’s tenure as City Architect was short lived as he moved on to a senior administrative position with the Toronto Board of Education in December of 1919. Sam McBride, by then a Controller, promptly moved Price’s name as successor and the next year, Council confirmed him. A contemporary biographer identified Price as an expert in fire prevention.⁹⁷

93. Turner, “Political Epistemology.”

94. Aaron K. Martin and Edgar A. Whitley, “Managing Public Expectations of Technological Systems,” *Spontaneous Generations* 1, 1 (2007): 67-77.

95. Schiesl, *Politics of Efficiency*, 112.

96. Monte A. Calvert, *The Mechanical Engineer in America, 1830-1910: Professional Cultures in Conflict* (Baltimore: Johns Hopkins University Press, 1967).

97. Middleton, *Toronto*, 216, 269.