

# POLSON PARK AND CALVIN PARK, 1954-1962: TWO LAND ASSEMBLY SUBDIVISIONS IN KINGSTON, ONTARIO

Robert McGeachy has a B.A. from Trent University, an M.A. from the University of Ottawa, and a certificate in Masonry-Heritage and Traditional from Algonquin Heritage Institute in Perth. He has taught in China and in Southern California. This coming fall he will begin teaching in New York City.

> ROBERT McGEACHY

## ABSTRACT

Between 1954 and 1962, the land assembly program, which involved all three governmental levels of the Canadian federal system, produced nearly 600 lots in two Kingston subdivisions: Polson Park and Calvin Park. This article is a case study of the political and social dynamics behind the creation of these two land assembly subdivisions. Particular attention is paid to how a policy formulated at the upper echelons of the federal and provincial governments was implemented at the municipal level and became enmeshed in local politics. In short, this presentation examines the relationship between the state and architecture in the form of housing.

## INTRODUCTION

Between 1954 and 1962, three levels of the Canadian federal system, the federal, provincial, and municipal governments, jointly created two subdivisions, consisting of approximately 600 lots, in Kingston, Ontario: Polson Park and Calvin Park. This article is a case study focusing on how a policy formulated at the upper echelons of the federal government, in consultation with provincial premiers, was executed within a municipal environment. These interactions also reflect the various governments' attitudes towards such crucial issues as private builders, home ownership, and public rental housing.<sup>1</sup>

## THE LAND ASSEMBLY PROGRAM

Polson Park and Calvin Park were products of the federally directed land assembly program, which was introduced in 1949 to help ease a severe housing shortage



FIG. 1. AERIAL OF POLSON PARK, AUGUST 4, 1960

GEORGE LILLEY PHOTOGRAPHIC FUND, QUEEN'S UNIVERSITY ARCHIVES, V25.527.30

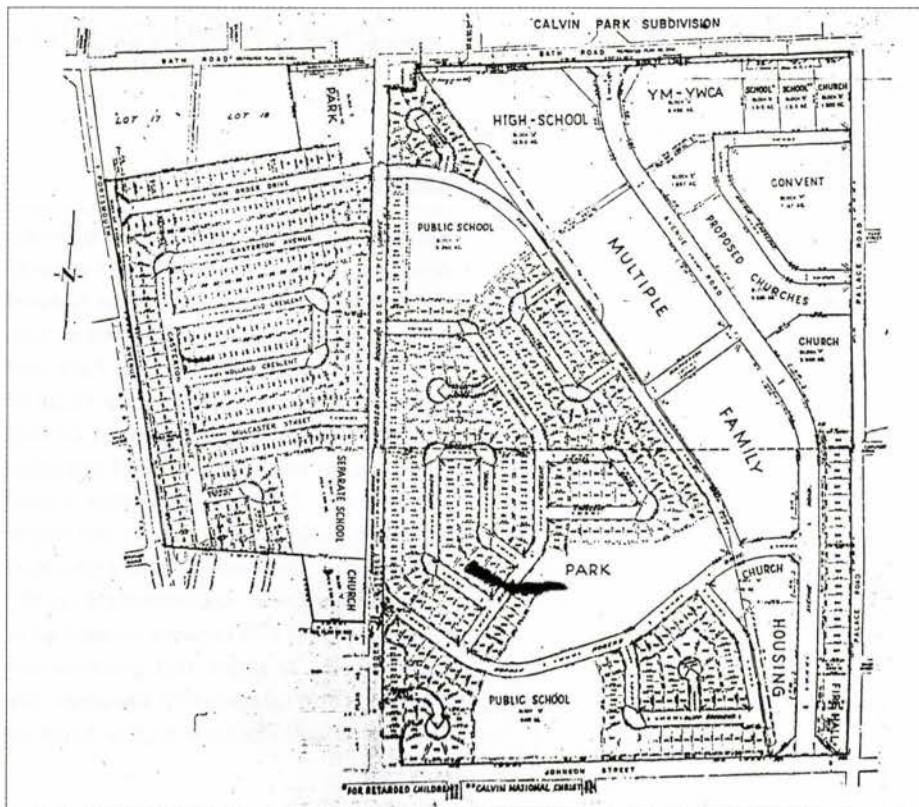


FIG. 2. KINGSTON DURING THE 1960S. POLSON PARK IS THE SUBDIVISION TO THE LEFT AND CALVIN PARK THE SUBDIVISION TO THE RIGHT.

program, which helped produce such subdivisions as Polson Park and Calvin Park.

In Canada, the federal government was the primary body charged with formulating a housing policy; various amendments to the National Housing Act (NHA) were the fundamental building blocks of this evolving housing policy. Faced with a severe housing crisis, the Liberal government of Louis St. Laurent made some noteworthy amendments to the NHA in 1949, including the land assembly program. During his November 15, 1949 House of Commons presentation, the then Minister of Reconstruction, Robert Winters, outlined the land assembly program's objectives: providing the means to increase the nation's housing supply and somewhat ease the pressure of urban sprawl.<sup>7</sup> More precisely, the land assembly program was to generate the infrastructure for subdivisions, such as Polson Park and Calvin Park, which were basically planned communities replete with relatively affordable housing

KINGSTON WHIG STANDARD, OCTOBER 24, 1962, P.

organized in a comfortably ordered manner. These subdivisions would, in effect, act as bulwarks and decelerate the expansion of potentially chaotic urban sprawl around such municipalities as Toronto.<sup>8</sup> As urban theorist Allan Irving noted, "Urban planning represented one twentieth century thrust to establish something stable, structured and rationalized within a modernist world of chaos, flux and incessant change." In that respect, urban planning represents a modern "ideal of large-scale, technical and efficient city plans."<sup>9</sup> Kingston's land assembly subdivision represented efforts to achieve the modern ideal of urban planning.

From an ideological perspective, the 1949 NHA amendment marked a change in direction for the federal government in regards to city planning and housing; specifically, the federal government was beginning to play a progressively

in Canada. Among the various factors causing the shortage were the steady urbanization of Canada's population, the sharp increase in the number of households being formed with the arrival of the "baby boomers," and the wartime residential construction slump.<sup>2</sup> A more intangible factor was that a higher proportion of the Canadian population than before the Second World War believed that owning a home was an attainable goal.<sup>3</sup>

While in 1946 the Federal Minister of Reconstruction, C.D. Howe, estimated that 480,000 units would be needed by 1952 to alleviate the housing shortage, the private construction industry was having difficulty meeting this challenge.<sup>4</sup> With the notable exceptions of such prominent financiers as E. Taylor, who built Don Mills, most

building companies were small and unable to undertake ambitious multi-home projects.<sup>5</sup> Furthermore, because of financial difficulties, many municipalities in Ontario and elsewhere discontinued their pre-Second World War practice of providing builders with serviced land to build on.<sup>6</sup> As a result, already overstretched builders were often required to take on the additional financial responsibility of servicing the land for their projects; that is, providing such necessities as sewer lines and sidewalks. In short, the nation's housing predicament probably would have worsened without substantial public intervention in the housing field. Reluctantly, the federal government, with sometimes equally reluctant provincial and municipal support, intervened in the housing field with such programs as the land assembly

more interventionist role in these two interrelated fields. Although Part V of the 1944 version of the NHA called for the federal government to start encouraging city planning in Canada, for constitutional reasons little had been done until the land assembly program was introduced to fulfill such mandate.<sup>10</sup> Traditionally, the federal government was reluctant to interact directly with municipalities since municipalities were well within provincial governments' constitutional sphere of influence, as C.D. Howe (the almost legendary "Minister of Everything") noted in a 1947 article.<sup>11</sup> City planning was very much a municipal concern and, therefore, a provincial concern. Likewise, the Liberal governments of Mackenzie King and St. Laurent were averse to intervening directly in the housing market by providing such initiatives as extensive social housing programs. During the Second World War, and in the immediate postwar years, the federal government built thousands of houses for war industry workers and veterans; however, as Howe observed, these were extraordinary efforts to meet an immediate crisis. In normal times, the federal government preferred using more indirect means to stimulate the housing industry, such as providing credit to homebuyers and homebuilders.<sup>12</sup> In a 1953 speech Robert Winters, the Liberal Minister of Resources and Development, said: "In the field of real estate it has never been possible to entertain the myth that the interests of government and private enterprise are opposed."<sup>13</sup> The federal government, in his view, aided, not hindered, private-sector housing by providing such services as helping to create serviced land for developers to build houses on and by insuring mortgage funds.<sup>14</sup>

Because of the seriousness of the housing situation in 1949, St. Laurent decided to break with traditional federal practices, to introduce the land assembly program

and to begin to deal directly with municipalities. After negotiations with provincial premiers were conducted and the necessary enabling acts to permit the federal government to work directly with municipalities were passed, the basic procedures for implementing the land assembly program were formulated. According to the official land assembly program protocol, at the request of a municipal government, the federal government, through the federal crown corporation called the Central Mortgage and Housing Corporation (CMHC), would purchase a tract of land for a subdivision. The CMHC would then plan the subdivision and construct its roads, sewers, and lot boundaries. Finally, the CMHC would sell the lots first to individual buyers and then to developers. Some provisions were made to try to ensure that the developers would sell the lots and houses at a reasonable price. In exceptionally rare cases, the CMHC itself built the houses in a land assembly subdivision. Most of the steps of a land assembly project were subject to approval by provincial and municipal authorities.<sup>15</sup>

From a financial perspective, the federal government was responsible for 75% of a land assembly project's costs and the respective provincial government was responsible for the remaining 25%. The revenue from the sales of a project's lots was divided by the same ratio.<sup>16</sup> It is significant that the federal government expected to recover the costs of its investment: it was not interested in running the program at a deficit. A public housing project, though, with its reduced rents and ongoing capital and administrative costs, would almost certainly be run at a continual loss. In other words, the land assembly program did not break with the basic laws of the marketplace.

The nature of the subsidy passed on to the buyer was a serviced lot sold at a

price slightly below the prevailing market price for a comparative lot. In short, the land assembly program represented a compromise: the federal government intervened in the housing market without unduly disrupting the dynamics of the private market. According to a 1951 CMHC document, lot prices in land assembly subdivisions were to be set at a level that was acceptable to 70% of an area's builders.<sup>17</sup> The federal government was reluctant to undertake the more interventionist strategy of a public social housing program where it would build units and rent them to low-income tenants at a rate well below the prevailing market rate. Although the 1949 amendment to the NHA also called for a public housing program for low-income tenants, preference was given to the land assembly program. By 1952 a reported 2,078 public housing units had been, or shortly would be, erected in Ontario. In contrast, 11,345 land assembly lots were sold or ready to be sold.<sup>18</sup>

The disparity between the land assembly and public housing programs was evident in Kingston as, from 1954 to 1962, only 71 publicly funded rental units were constructed; these were located in northeastern neighbourhood Rideau Heights, one of the city's least affluent neighbourhoods.<sup>19</sup>

Practical and attitudinal considerations can account for the output disparities between the public housing and land assembly programs. From a procedural perspective, constructing and running a public housing project was a more complex endeavour than preparing and selling the lots of a land assembly subdivision.<sup>20</sup> As such, Polson Park and Calvin Park were reflective of their times and the federal government's preference for encouraging homeownership.

From an architectural and city planning perspective, land assembly such as

Polson Park and Calvin Park reflected the prevailing trends of the 1950s and early 1960s. For instance, as will be discussed in more detail later, the subdivisions' layouts incorporated several—what were then contemporary—city planning concepts drawn from British and American doctrines.

From an architectural perspective, Polson Park and Calvin Park, as was common for North American subdivisions during that era, consisted mostly of small houses such as bungalows, which was also reflective of the federal government's homeownership-centred housing policy. That predominance of small houses in the two subdivisions mirrored such key socio-economic trends during the late 1950s and early 1960s as the growing rate of homeownership and the rising middle class.<sup>21</sup> From a more conceptual perspective, Polson Park and Calvin Park illustrate how such factors as status, aspirations, and gender can interact within the milieu of a newly created neighbourhood to fashion a sense of identity for its inhabitants.<sup>22</sup>

### THE ONTARIO AND KINGSTON GOVERNMENTS AND LAND ASSEMBLY

The CMHC needed the cooperation of provincial and municipal authorities to complete a land assembly project. During the 1950s and early 1960s, when a land assembly project was undertaken in Ontario, the primary provincial authority, the CMHC, would interact with was the Department of Planning and Development (DPD), which was responsible for assisting municipalities produce and implement city plans. In Kingston, the provincial representative was W.M. Nickle, who became the Minister for the DPD in 1955.<sup>23</sup> The DPD was established to help the province cope with a growing and increasingly urbanized population: in 1951, 55.1% of Ontario's population lived in cities of at

least 10,000 residents; in 1971, the percentage had reached 73.8.<sup>24</sup> For various reasons, the DPD had difficulty fulfilling its appointed role and, in the early 1960s, the larger and more established Department of Municipal Affairs absorbed most of the DPD's duties.<sup>25</sup>

Arguably, the most important political actor in a land assembly project was the municipal government. According to the land assembly program's basic procedures, the municipal government was responsible for requesting a land assembly project, providing services up to the project's edge, and approving the proposed subdivision's final plan. Any land assembly subdivision plan needed to conform to municipal bylaws.<sup>26</sup>

Kingston's municipal government, like others in Ontario, could be divided into two basic branches: administrative and legislative. During the Polson Park and Calvin Park projects, the city planner, George Muirhead, who began his career in Kingston in 1955, played a prominent role. At that time, Kingston's population was approximately 48,000 and it was unusual for a medium-sized city to have a planner on staff.<sup>27</sup> While Muirhead could provide a great deal of professional expertise, he did not have the final authority to approve or reject a land assembly project plan. Kingston municipal government's legislative branch, more particularly Kingston City Council, had the power to decide the fate of a land assembly project.

Many of the 22 members of the biannually elected Kingston City Council were drawn from the elite of the local business community and shared the federal



FIG. 3. KINGSTON CITY HALL, AUGUST 2, 1959

government's preference for encouraging homeownership. For instance, from 1950 to 1962, local entrepreneurs, mainly presidents or owners of small businesses, made up nearly a third of the aldermen.<sup>28</sup> As the Italian political theorist Gaetonio Mosca noted, taxes frequently squeeze the middle class the hardest; consequently, they are likely to seek public office.<sup>29</sup> To possibly over-generalize, office holders will often seek—and often with sound justification—to benefit those with backgrounds similar to their own.<sup>30</sup> In that case, evidence will demonstrate that Polson Park and Calvin Park can be considered middle-class subdivisions, which were constructed with government assistance.

Real property played a vital role in city politics. Until 1960, only those Kingstonsians who were at least 21 years old and who owned \$400 of real property could participate in municipal elections, either as candidates or voters.<sup>31</sup> Kingston, like most other Canadian municipalities, derived most of its revenue from property taxes.<sup>32</sup> One result of that dependency on real property was the erosion of municipalities' autonomy because the cost of running a city was outstripping the revenues that property taxes provided;

hence, municipal governments had to increasingly rely on provincial subsidies.<sup>33</sup> Understandably, substantial land assembly projects were of great interest to Kingston's aldermen as they could, to a limited extent, alleviate some the challenges the city was facing during the 1950's and 1960s. In fact, before Polson Park and Calvin Park, there had been two unsuccessful efforts to undertake land assembly projects in Kingston.<sup>34</sup> Some of these challenges were typical of those facing any Canadian medium-sized town; others were unique to Kingston.

### KINGSTON'S SPECIFIC NEEDS

Kingston's downtown, located at the waterfront, was run-down. Kingston City Hall, without its imposing portico (fig. 3), in effect symbolized the poor condition of the city's commercial centre. In 1955, the portico was removed for safety reasons and was not restored until 1966; a move sharply criticized by S.D. Lash who, in a letter to the *Kingston Whig Standard*, characterized the removal of the portico as an act of vandalism.<sup>35</sup> In an extensive report written in 1960, *A Planning Study of Kingston, Ontario*, George Muirhead and George Stephenson (who was a professor in the University of Toronto Town and Regional Planning Program) went further and described the block adjacent to Market Square, which was behind the City Hall, as presenting a "scene of almost unbelievable desolation."<sup>36</sup> The two planning experts also noted that the waterfront by Kingston City Hall was the site of declining traditional heavy industries which were potentially impeding the possibility of constructing a marina to attract the steadily growing number of pleasure boaters plying Lake Ontario and other nearby waters.<sup>37</sup>

While many medium-sized cities during that era had a less-than-idyllic downtowns,

Kingston's situation was exceptional because of its highly developed sense of self derived from its rich heritage; explicitly, Kingston was Canada's first capital, Sir John A. Macdonald's hometown, and the site of one of the nation's most prominent institutions of higher education, Queen's University. The downtown area was where much of the city's heritage architecture was located and where the city presented its image to a broader audience.<sup>38</sup> As historical geographer Brian Osborne and historian Donald Swainson observed, Kingston is often referred to as the "Limestone City" because of the abundance of limestone in its heritage buildings. That epithet refers to the "fabric of the architecture," which is "a dominant and striking element of the total urban image."<sup>39</sup> Yet the city's architectural fabric in the 1950s and 1960s was in danger of becoming permanently frayed. Lash decried the civic leaders' apparent lack of care for the city's unique ambience and lamented, possibly overdramatically, "Kingston is surely the city of barbarians, a city where the almighty dollar is all important—where history is bunk."<sup>40</sup>

The condition of Kingston's downtown was also important for more pragmatic financial reasons. As Muirhead and Stephenson reasoned, Kingston's downtown heritage buildings could be a lucrative tourist destination; nonetheless, it would be necessary to clean up the area before the tourists would come to visit and spend their money. With a great deal of work, downtown Kingston was capable of becoming a "stimulating

and enticing shopping district and one of the finest and most unique in Canada."<sup>41</sup> In order to succeed, Kingston needed to preserve its heritage, to placate concerned citizens such as Lash, while also turning a profit exploiting its heritage.

Like many communities, Kingston suffered from a severe housing shortage whose causes included pockets of decrepit housing stock, a rising population and a shortage of land.<sup>42</sup> The situation was exacerbated by the high proportion of land within city limits devoted to institutional use.<sup>43</sup> The Federal Department of Justice owned one of the largest portions of institutional land in the city, the Penitentiary Farm. That farm, located in Kingston's west end, would become the site both of Polson Park and Calvin Park.

Along its western borders, Kingston was also facing a challenge in the form of the rapidly growing upstart Kingston



FIG. 4. LT. COL. S.M. POLSON TURNS THE SOD WHILE JESSIE POLSON AND W.M. NICKLE LOOK ON

Township. Like many municipalities, Kingston was competing with its suburban rival for much needed residents and industries. Though it may have lacked Kingston's strong sense of almost hagiographic heritage, the flourishing suburb had more land and cheaper taxes to offer new homeowners, developers, and industries. For Kingston City Council, the possibility of losing out to Kingston Township was probably galling as relations between these two entities were, at times, less than cordial.<sup>44</sup>

In all probability, Kingston City Council never intended Polson Park and Calvin Park to be a cure-all for Kingston's problems. The *Planning Study* was an indication that they were trying to find a means to cope with a whole series of challenges within the city, which had just expanded with the annexation of substantial areas in 1952. Among the report's recommendations was the need to revitalize the Sydenham Ward and the Central Downtown Area. In addition, Rideau Heights, an impoverished area located in the city's northeastern section, was in need of improvement.<sup>45</sup> The new subdivisions and the *Planning Study* were essentially part of the ongoing process of improving Kingston's vitality. The land assembly subdivisions would provide some much-needed houses to supplement Kingston's overstretched housing stock. People who thought about moving from Kingston to the rapidly growing Kingston Township might decide to move to the new subdivisions within city limits. Furthermore, the new subdivision homeowners would contribute essential tax revenues that could help pay for such projects as repairing Kingston City Hall's portico.

In 1954, Kingston City Council made a request for a land assembly project to be constructed on a piece of the Penitentiary Farm that had become available.<sup>46</sup> In 1955,

the CMHC purchased a substantial portion of the farm along with a plot belonging to the Provincial Department of Health; the cost of the purchase was \$63,040, or \$1,000 per acre.<sup>47</sup> The official sod-turning ceremony for the new subdivision, named Polson Park, took place on June 22, 1957 (fig. 4).<sup>48</sup>

Figure 4 symbolically shows how three levels of government cooperated on the project. Lt. Col. S.M. Polson, who is kneeling with the shovel, and Jessie Polson, who is looking on, are descendents of Neil Polson, a notable Kingston mayor during the 1890's.<sup>49</sup> The name "Polson" ties into Kingston's strong sense of heritage. The participant standing to the centre of the ceremony is W.M. Nickle, the Kingston member of the provincial parliament. While Nickle represents the provincial government, the Polsons metaphorically represent the municipal government. The federal presence is inferred by the fact that Nickle definitely was and S.M. Polson probably was a First World War veteran.<sup>50</sup> That is, their wartime service on behalf of Canada allegorically represented the federal government.

Polson Park was completed shortly after the sod-turning ceremony photograph was taken and its 228 lots were offered for sale to the general public on April 27, 1957.<sup>51</sup> There was some scepticism in the period leading up to the sale, as a number of buyers were concerned about the quality of lots that were produced by a governmental program; nonetheless, by



FIG. 5. AERIAL OF POLSON PARK, AUGUST 4, 1960

the time the lots went on sale, the scepticism had vanished.<sup>52</sup> Buyers lined up outside the CMHC office for their chance to purchase a fully serviced Polson Park lot that was priced between \$1,375 and \$1,450. In contrast, private developers were charging approximately \$2,500 for unserviced lots in their various projects.<sup>53</sup> The CMHC charged professional homebuilders an \$800 surcharge for each lot to discourage excessive land speculation; the surcharge was refunded if the homebuilder charged CMHC approved prices.<sup>54</sup> Those who could afford the Polson Park lot prices had the opportunity to live in a professionally planned subdivision.

The majority of Polson Park's houses were completed in 1958.<sup>55</sup> The aerial view in figure 5 demonstrates how Polson Park's layout created a sense of place that incorporated then-contemporary city planning concepts. As George Muirhead observed, selected aspects of the post-World War II British New Town movement were incorporated into Polson Park's design. He also noted that the CMHC planners who designed Polson Park were British or British-trained, as were most of the planners in Canada.<sup>56</sup> The British New Town movement

emphasized the creation of medium-sized units, which would not overwhelm the residents. The units would have green spaces so the residents would not be completely disengaged from nature and to reduce the sense of alienation, which also could be termed "depersonalization."<sup>57</sup> British-born Humphrey Carver, a prominent advocate for social housing and a senior CMHC official, was in favour of planning on a relatively small scale to avoid overcrowding or a sense of detachment from society.<sup>58</sup> As seen from figure 5, Polson Park shows some New Town movement's doctrinal influence, as it is relatively compact and interspersed with a reasonable amount of green spaces. The photograph was taken before Calvin Park was completed; hence the large tracts of undeveloped land surrounding Polson Park.

American city planning doctrines strongly influenced Polson Park's design. The United States, like Canada, was facing the challenges of a rapidly urbanized population and the impact of the automobile. One result was the rise of low-density suburbs around major urban centres, which generally consisted of bungalows populated by white middle-class families.<sup>59</sup> The suburbs shared an architectural similarity as regional distinctiveness began to erode: by the 1960s, suburbs across the United States started to closely resemble each other. One benefit of that design homogenization was the reduction of housing prices to a point where middle-class families could afford their own home.<sup>60</sup> Although Polson Park was not a suburb, it did share many of the characteristics of American suburbs, such as a low density and relatively standardized architectural designs.

The influence of American city planner C.A. Perry's principles on Polson Park's design can be discerned from figure 5.<sup>61</sup> According to his concept, city planning should revolve around the smallest urban

collective component: the neighbourhood unit. Elementary schools, retail stores, and public recreation facilities should be situated within walking distance of a neighbourhood unit's homes.<sup>62</sup> An unpublished CMHC pamphlet strongly implied that Polson Park was a neighbourhood unit with amenities, such as an elementary school, situated within walking distance.<sup>63</sup> Nonetheless, Polson Park was an imperfect neighbourhood unit since it lacked local convenience stores, as could be found in several older Kingston quarters; as a result, local residents needed to drive to do their shopping. In 1957, the shopping situation improved for Polson Park residents when the nearby Kingston Shopping Centre opened. In 1963, the Kingston Branch of the YM-YWCA opened and provided recreational facilities a short distance from Polson Park.<sup>64</sup>

Polson Park's design was in keeping with the CMHC planning doctrine. In a 1946 article, senior CMHC official S.A. Gitterman demonstrated how the CMHC had incorporated some of Perry's ideas into its planning practices. Like Perry, Gitterman advocated using the neighbourhood unit as the smallest workable planning unit with an elementary school at the core. Houses in this unit, Gitterman stressed, should be a maximum of half a mile from a school.<sup>65</sup> Later CMHC publications also contained concepts that were strongly reminiscent of Perry's work in the field. For instance, Perry recommended protecting neighbourhood units from heavy traffic by having major streets flow around their circumference and serving their interiors with less-busy arterial roads.<sup>66</sup> The CMHC had a similar philosophy regarding traffic flow. According to the Crown corporation's 1956 publication, *Principles of Small House Grouping*, a grid-pattern street system was unsatisfactory because it would invite "traffic to move in all directions," thus multiplying traffic hazards and

reducing the privacy of residential streets.<sup>67</sup> It was preferable to design a subdivision that incorporated varied types of streets, including major thoroughfares, collector streets, and minor residential streets. Cul-de-sacs and loops could help slow traffic and create visually interesting areas.<sup>68</sup> As shown in figure 5, Polson Park's interior mostly consisted of winding roads and cul-de-sacs, while its exterior borders consisted of wide and straight thoroughfares.

In his detailed study, urban planner Dimos A. Zarkadas compared Polson Park with Sydenham Ward, a neighbourhood dating from the eighteenth century and located in a southeastern sector of Kingston. Of the two neighbourhoods, Polson Park had larger lots, greater spacing between buildings, more homogeneous building types (i.e. small detached houses), more open spaces, proportionally fewer sidewalks, and a greater number of curvilinear roads.<sup>69</sup> Overall, the land use in Sydenham Ward was far more intensive.<sup>70</sup> The older neighbourhood was a more integrated part of Kingston and embodied much of the city's traditional image. The newer neighbourhood, on the other hand, was a more autonomous part of the city.

In her critical assessment of city planning, *The Death and Life of Great American Cities*, originally published in 1961, Jane Jacobs argued that the modern tendency to isolate various functioning parts of a city damaged its life and spirit.<sup>71</sup> Diversity and organic interdependence, for her, enhanced the quality of life in the city.<sup>72</sup> As Irving pointed out, such notion was almost pre-modern and harkened back to a Romantic ideal that parts functioned to create an organic whole.<sup>73</sup> Modern city planning tended to separate the various parts of a municipality. It is highly debatable if Polson Park damaged Kingston's life and spirit; still,

the subdivision was a concrete example of the modern city-planning trend of dividing an urban area into autonomous components.

While the next land assembly subdivision to be constructed in Kingston, Calvin Park, shared many of Polson Park's design attributes, its creation was a considerably more complicated process.

### CALVIN PARK

In 1959, another section of Penitentiary Farm became available. Kingston City Council formally asked the federal and provincial governments to begin a land assembly project, which would be named Calvin Park (after the Calvins, a prominent local nineteenth-century family). CMHC planners prepared a plan for the subdivision (fig. 6), which Muirhead and Nickle approved. Kingston Traffic Engineer Ken Linesman, however, did not share their enthusiasm.<sup>74</sup> He worried that if constructed as presented, Calvin Park would obstruct some of the city's principal traffic arteries. In the original plan, Avenue Road, a projected thoroughfare, is drawn as being Calvin Park's eastern border; that configuration was in keeping with the basic CMHC planning ethic of not having major roads cut through a projected subdivision.

After some long-drawn-out political proceedings in Kingston City Council, a modified Calvin Park plan (fig. 6), which addressed Linesman's concerns, was adopted. Avenue Road (later renamed Sir John A. Macdonald Boulevard) was extended through Calvin Park. Incidentally, that is another example of heritage being evoked as the new "boulevard," a more elegant sounding name than "road," was named after one of Kingston's most famous sons, Canada's first Prime Minister.

Although this disagreement was of relatively minor importance, it was indicative

of the impact the escalating number of automobiles was having on city planning. As early as 1942, a traffic survey reported how the growing number of automobiles was steadily challenging the Kingston's road system.<sup>75</sup> The Calvin Park design disagreement highlighted how traffic engineers and city planners were, at times, in conflict over the planning process' priorities. City planners were primarily concerned with designing comfortably laid out, relatively traffic-free subdivisions, while traffic engineers concentrated on the impact of new subdivisions on a city's traffic flow.<sup>76</sup>

There was another political dispute during Calvin Park's creation, this time involving the YM-YWCA building located in the northwest corner of Calvin Park. In 1959, the organization received assurances that it would soon be able to purchase land for its building.<sup>77</sup> Nickle listed his role in the YM-YWCA land deal as one of his accomplishments in his June 6, 1959 election advertisement, which appeared in the *Kingston Whig Standard*.<sup>78</sup> In 1961, YM-YWCA executives were frustrated because they had not yet received an opportunity to purchase the land for the new building. YM-YWCA Director, Bruce Matthews, issued a strong statement criticizing the various politicians involved in the land dealings.<sup>79</sup> The YM-YWCA was eventually able to purchase the land, albeit at a higher price than that promised by Nickle in 1959, and constructed the new building.<sup>80</sup> In 1963, the YM-YWCA located in Calvin Park opened its doors for its members.<sup>81</sup>

The planning vs. traffic and the YM-YWCA disputes underscore the sometimes-asymmetrical nature of power. On one hand, the CMHC had all the appearances of power: a large budget, offices in many cities throughout Canada, and access to the upper echelons of the federal government.<sup>82</sup> On the other hand, it was almost powerless during the Calvin Park project as its officials were reluctant to resist the traffic engineer's efforts to modify the subdivision's original plan and respond to the YM-YWCA executive's sharp public criticisms.<sup>83</sup> In short, even though the CMHC apparently had a great deal of potential political power, the organization's leaders could not or would not exercise that power for fear of inflaming the local political situation. The CMHC did, nevertheless, have the power to set the price for the lots in Calvin Park.

Calvin Park's lots were reasonable when compared to the prices of lots then being sold in the Kingston area by private developers. In 1962, the average price for an unserved lot was \$1,859. The price was the product of a balancing act, as the CMHC sought to set lot prices that



FIG. 6. CALVIN PARK SKETCH MAP



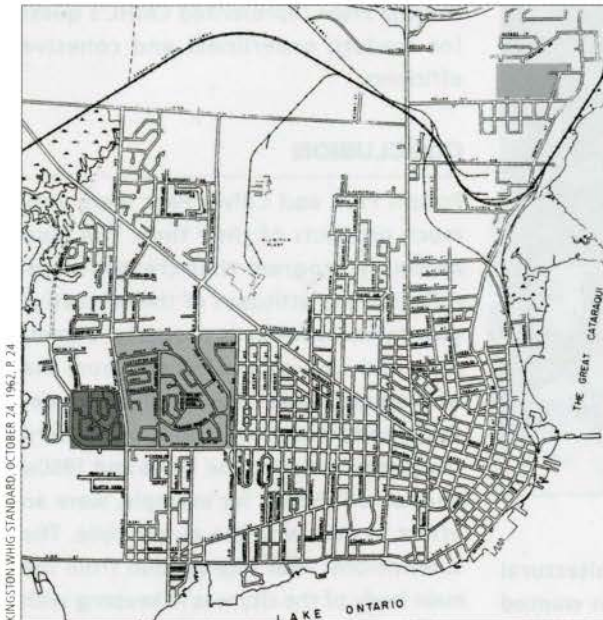


FIG. 7. CALVIN PARK MAP

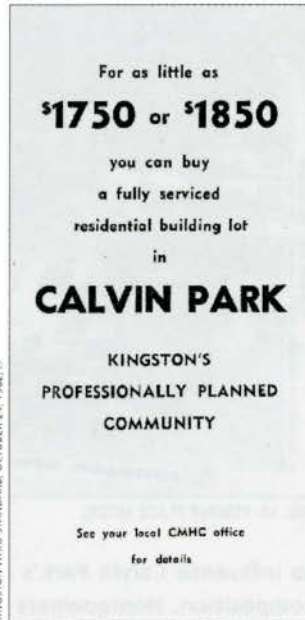


FIG. 8. CALVIN PARK ADVERTISEMENT

were reasonably affordable without being so low that they alienated local developers.<sup>84</sup> Phase 1 of Calvin Park had a very short-term effect on Kingston lot prices; in 1963, the average price was \$2,594. The sharp price increase suggests that private investors were recouping revenues they had lost when they lowered their prices to compete with the Calvin Park Phase 1 lots.<sup>85</sup>

According to a 1962 *Kingston Whig Standard* article, potential buyers needed an annual income of at least \$5,350 to purchase a lot and house in the subdivision.<sup>86</sup> Evidence suggests that this figure is reasonably accurate. According to the 1961 census, the average income for the non-farm labour force in Ontario was \$4,471.<sup>87</sup> A general guideline frequently used by real estate agents is that a family should be able to afford a house costing approximately two and half times its annual income.<sup>88</sup> The 1961 census also showed that housing in Kingston was expensive. The median price for a house in Kingston was \$14,190, almost \$2,500 more than in comparatively sized Ontario

cities.<sup>89</sup> Houses in Calvin Park probably cost around \$15,000. Dacon Construction Limited, a Kingston firm that built houses in Calvin Park, advertised models costing from \$15,790 to \$16,248.<sup>90</sup> In short, evidence strongly suggests that a substantial portion of Kingstonians probably did not earn enough to purchase a home in Calvin Park.

The income range quoted in the *Kingston Whig Standard* cannot be considered a conclusive indicator as to who could afford to live in Calvin Park. The article's author evidently did not take into account such factors as interest rates, potential buyers' debt loads, and credit ratings when calculating the quoted figure. Nonetheless, the number demonstrates the complexity of formulating public policy *vis-à-vis* determining who would actually benefit from the land assembly program.

CMHC statistics in 1956 indicate that the average income of a house-buyer using mortgage funds provided with the backing of the National Housing Act (NHA) was \$5,312; that sum was over the midpoint

of the nation's income range.<sup>91</sup> During the 1950s and early 1960s, the land assembly program generally produced considerably more units than did the public housing program.<sup>92</sup> In 1957, the CMHC Director of Development Division, J.S. Hodgson, questioned the value of the land assembly program, as he believed it essentially subsidized middle-income homebuyers without benefiting those in the lower income brackets.<sup>93</sup> CMHC President Stewart Bates shared Hodgson's reservations. Bates, whose tenure lasted from 1954 to 1964, favoured more social welfare-oriented programs than those favoured by the governments of Prime Ministers Louis St. Laurent and John Diefenbaker.<sup>94</sup> Evidence supports the assertion that Calvin Park was very much a product of the land assembly program, which primarily benefited middle-class homeowners.

The CMHC advertisement's slogan for Calvin Park was "Kingston's Professionally Planned Community" (fig. 8). That slogan was probably intended to attract white-collar professionals who were generally regarded by such social commentators as C. Wright Mill in the 1950's and 1960's as being the mainstay of the middle class.<sup>95</sup> City planning was becoming recognized as a distinct professional discipline taught at such institutions as the University of Toronto<sup>96</sup>; hence, the term "professionally planned" created a sense of administrative order to which white-collar professionals probably aspired. A sampling of names taken from the 1964 *Might's Kingston and District City Directory* (the first year Calvin Park was included in the directory) shows that most of the recorded residents were white-collar middle-class professionals.

The largest block (62.4%) consisted of the related professional classifications: owners and managers, self-employed, middle class: professional and related, middle class: supervisory positions (table 1).

Available data also indicates that most Calvin Park residents came from other parts of Kingston; the dispersion of middle-class professionals in the new land assembly subdivision is, in a sense, reflective of Kingston's overall economic composition as the city had a very large service sector partly because of the large number of local institutions.<sup>98</sup> While urban historians John Weaver and Michael Doucet observed that homeownership is not an automatic badge of membership to the middle class, evidence strongly suggests that Calvin Park could be classified as a middle-class subdivision as the majority of the sampled residents were members of that class.<sup>99</sup> As such, it can be concluded that a fairly restricted portion of Kingston's population could actually take advantage of the land assembly program and the subsidy it offered: a serviced lot at a below market price. As Polson Park's lot prices were similar to those of Calvin Park, the occupational composition of both land assembly subdivisions was almost certainly parallel.

In addition to having the power to set the prices of lots, the CMHC also had the power to use indirect and direct means

**Table 1**

Classification of occupations of 85 sampled Calvin Park residents, 1964<sup>97</sup>

Classification	Number	(%)
Owners and managers	13	15.3
Self-employed	2	2.4
Middle class: professional and related	29	34.1
Middle class: supervisory positions	9	10.6
Working class: blue collar primary sector	6	7.1
Working class: blue collar secondary sector	2	2.4
Working class: white collar	1	1.2
Occupation not given	13	15.3
Military: no rank given	10	11.8
<b>Total</b>	<b>85</b>	<b>100.2*</b>

\* 0.2 is the result of rounding off.

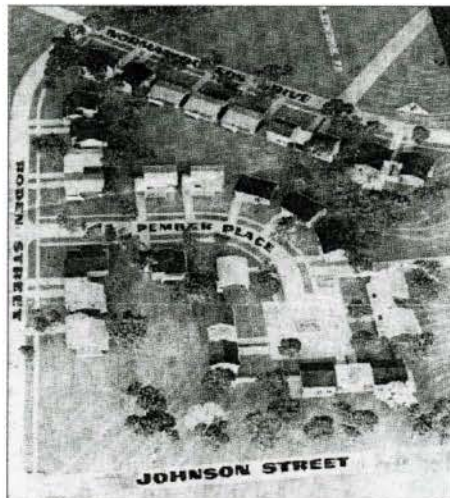


FIG. 10. PEMBER PLACE MODEL

to influence Calvin Park's architectural composition. Homeowners who wanted to attain NHA mortgage funds had to have houses that adhered to CMHC Building Standards; such safeguard constituted indirect CMHC control over houses' design.<sup>100</sup> In 1963, the CMHC selected a few developers to construct 29 houses in a section of Calvin Park called Pember Place, thus directly controlling the design of the houses in that segment of Calvin Park. In keeping with its practices, as outlined in *Principles of Small Group Housing*, the Crown corporation sought to create a "balanced architectural appearance" in Pember Place (fig. 10) by having three selected developers construct houses that met strict criteria for such considerations as setbacks, landscaping, colour schemes, and structural design.<sup>101</sup> Elements such as spacing between and the size of the houses were coordinated so Pember Place exhibited a sense of cohesion without being either too monotonous or too eclectic.<sup>102</sup> As with Polson Park, there was a degree of consistency in design of the houses found in Pember Place and Calvin Park; nevertheless, the designs were not uniform, a trend that would become common in later "cookie cutter" subdivisions.<sup>103</sup>

Pember Place represented CMHC's quest for modern orderliness and cohesive efficiency.

**CONCLUSION**

Polson Park and Calvin Park were very much products of their time. The land assembly program that created them reflected the attitudes of the respective governments towards property, ownership, and who should benefit from the offered assistance. The subdivisions' designs epitomized the trend of modern city planning during the 1950s and 1960s. The curved streets, for example, were an effort to deal with the automobile. The subdivisions' near segregation from the main body of the city was in keeping with modern city planning's tendency to isolate various components of a municipality. Finally, the predominance of middle-class professional homeowners in these neighbourhoods corresponds to the rise of the middle class during that era.

**NOTES**

1. For a comprehensive study of Canadian housing policies, see: Bacher, John C., 1993, *Keeping the Marketplace*, Kingston and Montreal, McGill / Queen's University Press.
2. Miron, John R., 1988, *Housing in Post-War Canada: Demographic Change, Household Formation and Housing Demand*, Toronto and Kingston, McGill / Queen's University Press, p. 7-9.
3. G. Barker, J. Penney, and W. Secombe, 1973, *Highrise and Superprofits*, Kitchener, Dumont Press, p. 8; and Porter, John, 1965, *Vertical Mosaic: An Analysis of Social Class and Power*, Toronto, University of Toronto Press, p. 4-5.
4. Howe, C.D., 1947, « July 22, 1946 Speech in the House of Commons », *Official Report of Debates: House of Commons, Second Session—Twentieth Parliament, 10 George VI, Volume VI 1946*, Ottawa: King's Printer, p. 3673.
5. Sewell, John, 1993, *The Shape of City: Toronto Struggles with the Modern*, Toronto, University of Toronto Press, p. 82.

6. Rea, Kenneth, 1985, *The Prosperous Years: The Economic History of Ontario, 1939-1975*, Toronto, University of Toronto Press, p. 49.
7. Winters, Robert, 1950, « November 15, 1949 Speech in the House of Commons », *Official Report of Debates: House of Commons, First Session—Twenty First Parliament 13 George VI, 1949, Volume 2, 1949*, Ottawa, King's Printer, p. 1722.
8. Sewell : xiii-xviii.
9. Irving, Allan, 1993, « The Modern/Postmodern Divide and Urban Planning », *University of Toronto Quarterly*, vol. 62, no. 4, summer, p. 474-475; and Central Mortgage and Housing Corporation, 1956, *Principles of Small House Grouping*, Ottawa, p. 32.
10. Carver, Humphrey, 1975, *Compassionate Landscape*, Toronto, University of Toronto Press, p. 70.
11. Howe, C.D., 1947, « Meeting Canada's Housing Needs », *Public Affairs*, October, p. 220.
12. Howe, *Public Affairs* : 218.
13. Winters, Robert H., 1953, « Housing: Government Encouragement of Private Initiative », Unpublished Address to the Banquet Meeting of the Appraisal Institute of Canada, Chateau Laurier, Ottawa, April 1, RG56, vol. 132, file 119-1-6, National Archives of Canada (hereafter NA).
14. Winters, 1953.
15. Griesinger, W., *Federal-Provincial Projects, June 23, 1952*, RG56, vol. 132, file 119-1-6, NA; and Winters, 1950 : 1722.
16. Winters, 1950 : 1722.
17. McClaskey, Angus, 1951, *Letter to A.E.K Bunnell*, April 9, RG56, vol. 132, file 119-1-6, NA.
18. Department of Planning and Development, 1952, *Federal-Provincial Projects in Regard to Housing, September 5*, RG56, vol. 132, file 119-1-6, NA.
19. Stephenson, Gordon, and George Muirhead, 1961, *A Planning Study of Kingston, Ontario*, Kingston, The Corporation of the City of Kingston, p. 30.  
After John Robarts became Ontario's Premier in 1962, public housing for low-income tenants became an important governmental priority. The Ontario Housing Corporation (OHC), formed in 1964, became responsible for constructing public housing projects throughout the province. In Kingston, the OHC would build hundreds of units mostly located in low-income areas of the city (Richard Harris, 1988, *Democracy in Kingston: A Social Movement in Urban Politics, 1965-1970*, Kingston and Montreal, McGill / Queen's University Press, p. 95-96).
20. Ontario Department of Planning and Development, 1952, *Letter to Clerks of all Municipalities Having a Population of 5,000 Concerning Federal and Provincial Housing Projects, September 5, 1952*, RG56 vol. 132, file 119-1-6, NA.
21. For the impact of the Bungalow in North America see King, Anthony D., 1984, *The Bungalow: The Production of Global Culture*, London, Routledge & Kegan Paul, p. 137-153. For the increase of homeownership in post-World War II Canada, see Miron : 7-9.
22. Harris, Richard, and Geraldine J. Pratt, 1993, « The Meaning of Home, Homeownership, and Public Policy », in Larry S. Bourne and David F. Ley (eds.), *The Changing Social Geography of Canadian Cities*, Kingston and Montreal, McGill / Queen's University Press, p. 281-297; and Hummon, David M., 1989, « House, Home and Identity in Contemporary American Cultures: Housing Culture and Design », in Seth M. Low and Erve Chamber (eds.), 1989, *Housing, Culture and Design: A Comparative Perspective*, Philadelphia, University of Pennsylvania Press, p. 207-229.
23. Pierre G. Normandin (ed.) , 1963, « Nickle, William McAdam », *The Canadian Parliamentary Guide: 1963*, Ottawa, p. 659-660.
24. Lionel D. Feldman, 1974, *Ontario: The Municipal Dynamic*, Toronto, Ontario Economic Council, p. 4.
25. « Community Planning Branch to be Transferred to Municipal Affairs, » *Ontario Planning*, vol. 7, no. 1, January 1960, 30; and Ontario Economic Council, 1973, *Subject to Approval: A Review of Municipal Planning in Ontario*, Toronto, Ontario Economic Council, p. 59.
26. Griesinger.
27. Robertson, Ian, 1981, « Retiring City Planner Made Order from Chaos of Old Building Bylaws », *The Kingston Whig-Standard* (hereafter *KWS*), January 2; and Stephenson and Muirhead : 22.
28. Harris : 157-161.
29. Mosca, Gaetonio, 1970, *The Ruling Class*, Hannah P. Kahn (trans.) and Arthur Livingston (ed.), New York, McGraw Hill Book Inc., p. 270.
30. Wright, Erik Olin, « Class and Politics », *The Oxford Companion to Politics of the World*, p. 143.
31. « By-Law Results No Surprise », *KWS*, December 4, 1960, p. 13.
32. For characteristic budget discussions, see McBurnie, George, 1962, « City Expenditures for '62 Estimated at \$8,604,980 », *KWS*, April 10, p. 15. In 1955, an estimated three quarters of all municipal revenues in Canada were derived from property taxes (Kitchen, Henry, and Melville L. McMillan, 1985, « Local Government in Canadian Federalism », in Richard Simeon (ed.), *Intergovernmental Relations*, Toronto, University of Toronto, p. 236).
33. Taylor, John H., 1986, « Urban Autonomy in Canada: Its Evolution and Decline », *Power and Place*, p. 285-286.
34. The aborted projects were to be called Butterhill Farm and Knox Farm (McGeachy Robert, 1991, *Creating Subdivisions: The Land Assembly Program in Kingston, Ontario 1950-1962*, unpublished M.A. thesis, University of Ottawa, p. 51).
35. Angus, Margaret, 1966, *Old Stones of Kingston: Its Buildings Before 1867*, Toronto, University of Toronto Press, p. 22; and Lash, S.D., 1959, « Letter to the Editor », *KWS* June 31, p. 4.
36. Stephenson and Muirhead : 33.
37. Stephenson and Muirhead : 34.
38. Goffman, Erving, 1959, *The Presentation of Self in Everyday Life*, New York, Doubleday & Company, Inc., p. 1-2.
39. Osborne, Brian, and Donald Swainson, 1988, *Kingston, Building on the Past*, Westport, Ontario, Butternut Press, p. 1.
40. Lash : 4.
41. Stephenson and Muirhead : 33.
42. Stephenson and Muirhead : 30-31.
43. Dowell, John, 1967, « City's Dilemma-Tax Exempt Property », *KWS*, October 3.
44. Charles, Lawrence, 1975, *The Effectiveness of the Official Plan in the Development of an Area: A Case Study of the City of Kingston*, unpublished M.A. Thesis, Queen's University, p. 34.
45. Stephenson and Muirhead : 31-35.
46. *Kingston City Council Meetings*, January 14, 1954, p. 45.
47. *Kingston 3/55: Basis of Calculations For Submissions to the Executive: April 29, 1957*, unpublished CMHC report, ca. 1957, RG56, vol. 171, file 119-2-K, NA.
48. « Polson Park Land Assembly: Ceremony Conducted at New Site », *KWS*, June 22, 1957, p. 15.

49. Gray, Jeff, 1994, « A Neighborhood from the Boom Years », *KWS*, July 9, p. 2; and Normandin : 659-660.
50. Normandin : 659-660.
51. *Sale of Lots-Polson Park Land Assembly Project*, unpublished CMHC report, RG56, vol. 171, file 119-2-K, NA.
52. George Muirhead, Interview, June 19, 1989.
53. « Sale of Lots-Polson Park Land Assembly Project »; and Spurr, Peter, 1976, « Five Land Banks », *City Magazine*, vol. 2, no. 1, March-April, p. 12.
54. Spurr : 11.
55. « Polson Park Project Taking Shape », *KWS*, July 19, 1958.
56. Gray : 2; and Zarkadas, Dimos A. , 1996, *Urban Design Analysis of Two Residential Neighborhoods in the City of Kingston: Recommendations for Improving and Supplementing the City of Kingston Zoning By-Law*, unpublished Master's Report, Queen's University, p. 2-3.
57. Osborn, Frederic J., 1979, « New Towns », *Encyclopedia of Urban Planning*, New York, McGraw-Hill Book Company, p. 30-734.
58. Carver, Humphrey, 1962, *Cities in the Suburbs*, p. 98-99; and Carver, 1975 : 117-118.
59. Jackson, Kenneth T., 1985, *Crabgrass Frontier: The Suburbanization of the United States*, New York, Oxford University Press p. 241.
60. Jackson : 240-241.
61. Whitfield, Kate, 2004, « The Inner Suburbs of Kingston, Ontario: 1950's and 1960's Neighborhood Units », *Urban Plans: Past and Present: An Exhibition in the W.D. Jordan Special Collections & Music Library, January 19<sup>th</sup> to February 15<sup>th</sup>, 2004*, W.D. Jordan Special Collections & Music Library Occasional Paper no. 2, Queen's University Library, p. 14-15.
62. Perry, Clarence A., 1939, *Housing for the Machine Age*, New York, Russell Sage Foundation, p. 50-51.
63. Central Mortgage and Housing Corporation, n.d., *Kingston's Polson Park*, unpublished pamphlet.
64. Zarkadas : 2-12.
65. Gitterman, S.A., 1947, « Objective of Community Planning », *Public Affairs*, October, p. 255.
66. Perry : 57.
67. Central Mortgage and Housing Corporation, *Principles* : 32.
68. Central Mortgage and Housing Corporation, *Principles* : 47.
69. Zarkadas : 3-13, 3-16, 3-18, 4-14.
70. Zarkadas : 4-18.
71. Jacobs, Jane, 1984, *Death and Life of Great American Cities*, Harmondsworth, Middlesex, Penguin Books, p. 15-17, 24.
72. Jacobs : 156.
73. Irving : 479.
74. « Nickle OKs Pen-Land Plans: Project is Approved; Remainder Up to City », *KWS*, September 29, 1960.
75. Low, R.A., 1942, *Traffic Survey of the City of Kingston*, Kingston, Town Planning Commission of the City of Kingston, p. 2-3.
76. « Professional Responsibility of City Planners and the Responsibility in Urban Transport », *Ontario Planning*, vol. 8, no. 4., April-May 1961, p. 1.
77. « YM-YWCA Wants Site For Building Settled », *KWS*, November 2, 1960, p. 1.
78. « There is No Substitute For Good Government: Nickle Gets Things Done... », *KWS*, June 6, 1959, p. 21.
79. « YM-YWCA Seeks Title », *KWS*, May 17, 1961, p. 1.
80. « Six Acre Site Tickles Y Leaders », *KWS*, May 30, 1959, p. 15; and Coll, A.E., 1961, *Letter to the Secretary of the Executive*, May 15, RG 56, vol. 172, file 119-2-K, NA.
81. *Official Opening and Dedication of the New YM-YWCA Building, April 24, 1963*, unpublished Program of the Dedication Ceremony, Vertical File, Kingston Frontenac Public Library, Central Branch.
82. For example, see Central Mortgage and Housing Corporation, 1962, *Annual Report: 1962*, Ottawa, Central Mortgage and Housing Corporation, p. 30-40.
83. *Report of the Proceedings of Special Joint Meeting in the Planning Office at 8:00 p.m., Thursday, March the 24<sup>th</sup>, 1960*, RG56, vol. 172, file 119-2-K, NA; and Hunt, George, 1961 *Letter to C. MacDiarmid*, May 31, RG 56, vol. 172, file 119-2-K, NA.
84. See « CMHC Recommendations for Subdivision Design Published as a Guide to Assist NHA Builders », *The Central Mortgage and Housing Corporation Builder's Bulletin*, vol. 79, September 14, 1956.
85. Spurr : 12.
86. « New Subdivision: Taxes on Average House Gauged at \$40 Monthly », *KWS*, October 24, 1962, p. 8.
87. Poduluk, Jenny R., 1968, *Income of Canadians*, Ottawa, Dominion Bureau of Statistics, p. 167.
88. Harris : 35.
89. Cited in Harris : 35.
90. Dacon Construction Ltd., ca. 1962, *Welcome to Easy Street*, unpublished advertisement, Vertical File, Kingston Frontenac Library, Central Branch.
91. Central Mortgage and Housing Corporation, 1961, *Canadian Housing Statistics: 1957*, Ottawa, Queen's Printer, p. 19.
92. By 1952, 2,078 public housing units and 11,345 land assembly units were built or almost built in Ontario (Department of Planning and Development).
93. Hodgson, J.S., 1957, *Letter to Hignett*, May 3, RG56, vol. 171, file 119-2-K, NA.
94. Carver, 1975 : 108.
95. Mills, C. Wright, 1951, *White Collar: The American Middle Classes*, New York, Oxford University Press, p. ix-x.
96. Hodge, Gerald, 1986, *Planning Canadian Communities: An Introduction to the Principles, Practice and Participants*, Toronto, Methuen, p. 362-364.
97. The classification of occupations is taken from Harris, *Democracy in Kingston* : 160. The sampling is taken from *Kingston and District City Directory, 1964*, Toronto, Might's Directories Ltd.
98. In 1951, 40.1% of Kingston's workforce was employed in the service sector. Stephenson and Muirhead : 24; and Kirkland, John, 1969, *Housing Filtration in Kingston: 1953-1969*, unpublished M.A. Thesis, Queen's University, p. 101.
99. Weaver, John, and Michael Doucet, *Housing the North American City*, Montreal and Kingston, McGill / Queen's University Press, 1991, p. 468.
100. Central Mortgage and Housing Corporation, 1954, *Building Standards*, Ottawa, Central Mortgage and Housing Corporation, p. 7.
101. « Model Housing Project in Calvin Park », 1963, *KWS*, August 21, p. 15.
102. Central Mortgage and Housing Corporation, *Principles* : 43-45.
103. Zarkadas : 4-19.