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Appendix III  
Federal Heritage Buildings Review Office  
Building Reports 90-161 to 90-178 and  
90-199



**FEDERAL HERITAGE BUILDINGS REVIEW OFFICE****BUILDING REPORTS 90-161 TO 90-178 AND 90-199****TITLE: Eighteen Buildings  
Canadian Forces Base Toronto  
Toronto (Downsview), Ontario****SOURCE: Dana Johnson, Architectural History Branch**

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**INTRODUCTION**

This report examines 18 structures (logged under 19 FHBRO numbers; Building #55 and Building #56, originally constructed as separate units, are now joined), sited in the north-central sector of Metropolitan Toronto (Figure 1), within the northwest quadrant of Canadian Forces Base Toronto (formerly CFB Downsview). These buildings were constructed at various points between 1928 and 1944 to accommodate the manufacturing activities of the de Havilland Aircraft Company of Canada, currently a subsidiary of Boeing Aircraft. This industrial complex was central to the operations of the Canadian aviation industry during the Second World War, for it produced roughly 17 per cent of the aircraft which Canada provided for the Allied cause during that conflict.<sup>1</sup> When de Havilland abandoned its quarters for a new, specially designed plant further south, the earlier manufacturing facility was purchased by the government of Canada in 1953 for use as a supply depot for the Department of National Defence (DND).<sup>2</sup> DND is now seeking FHBRO evaluation of its oldest buildings on the original de Havilland site, though officials report that they have no plans at this time for major changes.

Since it deals with a group of structures erected within a 17 year period for a single purpose (if for different phases of the manufacturing process) within a restricted locale, this report will depart from the usual format. It will first give a general historical survey, which will provide a thematic context for all of the buildings under consideration. It will then discuss in general terms the issues of architecture and environment before turning to the informal treatment of individual structures. Since the FHBRO has not hitherto evaluated any comparable industrial complexes, and since the design of individual buildings followed the specialised needs of the manufacturing process rather than contemporary standard plans for DND buildings, no use has been made of benchmarks except where noted otherwise.

The 18 subject buildings are as follows:

FHBRO #	Building Name	Constructed in <sup>3</sup>
*90-161	Plant #1, Building #1	1929
	Building #3	1940
	Building #4	1937-39
	Building #5	1943-44
	Building #6	1942
	Building #9	1942
90-162	Workshop, Building #10	1938
90-163	Electrical Sub-Station #3, Building #11	1938
90-164	Fire Pump House #14	1938
	Garage #15	1938
90-165	Storage Shed, Building #18	ca. 1938
90-166	Auto Hobby Club Garage, Building #21	1939 (?)
	Storage Building #28	1939 (?)
90-167	Chapel Building #37	1940
90-168	Storage Building #38	1928/1944
90-169	Storage Building #39	1939
90-170	Storage Building #41	1944
	Storage Building #42	1944
90-171	Workshop Building #43	ca. 1942
90-172	Office Building #45	1944
90-173	Base Transportation Garage	1943
*90-174	Building #55	1943
90-175	Central Heating Plant #4, Building #56	1943
	Cafeteria Building #57	1943
90-176	Workshop Building #58	1943
90-177	South Gate House, Building #171	1942
90-178	Plant #2 Complex	1940
90-199		

#### HISTORICAL ASSOCIATIONS

##### Thematic

The 18 buildings surveyed in this report were constructed at various times between 1928 and 1944 to house the operations of the de Havilland Aircraft Company, a subsidiary of a British aeronautics firm. Because the various buildings were constructed at various times within a 17 year period, each structure may illustrate, in its original use, one of three historical themes, depending on when each was built: the early development of the aircraft industry in Canada, this country's contribution to the Allied effort during the Second World War, and the impact of the war upon the Canadian economy. In their adaptive use for postwar aircraft production, these buildings collectively illustrate the importance of the aircraft industry to the development of Canada in the 1940s and 1950s, a subtheme of the third element.

On the first of these historical themes, de Havilland, which began operations in Canada in 1928, is the oldest large-scale aircraft company still in existence. During its formative years, however, it was a rather minor player in the industry in this country. On the second, the company, and this plant specifically, played a major role in the production of aircraft during the Second World War, when Canada provided over sixteen thousand completed machines for the Allied forces, roughly 17 per cent of which were manufactured here. In addition, the plant assembled sections of hundreds of aircraft begun or finished elsewhere and repaired many more damaged machines. Finally, this complex is a generic example within federal ownership of the historical theme of the enormous impact of the war on the Canadian economy. In the facility's switch from wartime aircraft production to civilian use before the company opened a new plant in 1954, these buildings illustrate the impact of the war in fostering a distinctly Canadian aircraft industry active in both domestic and foreign markets. The aircraft which fuelled this transition was the Beaver, which the Historic Sites and Monuments Board of Canada declared to be of national historic importance in 1974 for its role in the opening of the North. (The HSMBC plaque has been erected at the new Downsview plant and not at the CFB Toronto site.)

a) De Havilland and the Early Years of the Aircraft Industry in Canada

Because of their early dates of construction, the hangar section of Building #38 and the 1928 sections of the Plant #1 complex illustrate the initial development of the aviation industry in Canada. A subsidiary of an important pioneer British-based operation which began business in Canada in 1928, de Havilland was neither the first company of its type nor consistently the largest in the country. It is, however, unique in being the only firm which has, continuously for the past half-century, produced finished aircraft in Canada under its own name.<sup>4</sup>

The early years of aviation in Canada were marked by the establishment of a few companies in Canadian ownership and, more typically, the opening of branch plants of British and American firms to manufacture or assemble aircraft parts and machines. The industry initially was focused in Montreal, where Fairchild and Canadian Vickers - the latter being the first such concern to establish itself in Canada - dominated. Fleet Aircraft in Fort Erie, Ontario, and Canadian Car and Foundry in Fort William were other large concerns. The industry was, however, relatively modest in its scale of operations and level of employment. "At the outbreak of war in 1939," noted a government study in 1942, "there were eight aircraft companies in Canada and one or two plants providing overhaul facilities. The number of personnel employed during the four years prior to the War averaged less than 1,000, and fewer than 40 aircraft were produced each year."<sup>5</sup>

The hangar section of Building #38 and the earliest parts of the Plant #1 complex of CFB Toronto illustrate the modest scale of this pioneer phase in the history of the aircraft industry in Canada. De Havilland Canada began aircraft production in 1928 in a former canning shed at Mount Dennis, northwest of the city of Toronto. Later that year, the company offered shares to the public and purchased a 70 acre plot further east, at Downsview, for a permanent assembly plant. This 25,000 square foot facility, Plant #1, Building #1, was erected in 1929.<sup>6</sup> With the awarding of a contract by the DND for the manufacture of 25 Tiger Moths in 1937, the company undertook an expansion of the existing Plant #1, now referred to as Building #4, which was opened in 1939. Additional support buildings were also erected nearby; these are shown in the aerial view of 1939 (Figure 2).<sup>7</sup>

One of the first aircraft companies to operate in Canada, de Havilland is the sole large-scale representative still in business under its original name. (Fleet Aircraft is also active, but its level of employment is much lower and, since the war, it has largely been a parts manufacturer.) The de Havilland company itself was not, however, a major player in the nascent aircraft industry. "When war broke out in 1939," notes the official company history, "de Havilland Canada was one of the smallest aircraft companies in the country."<sup>8</sup>

#### b) De Havilland and Canada's Contribution to World War II

The majority of the buildings surveyed in this report were erected between 1939 and 1945 in support of Canada's commitment to provide materiel to the Allies during the Second World War. In contrast to its minor role in the prewar aircraft industry, de Havilland and this plant played a critical function in the provision of goods for Canada's war effort, for they produced some 17 per cent of the total Canadian output of finished aircraft during the war years, generating goods valued at over two hundred million dollars.<sup>9</sup> This is the sole plant of its type, dating from this period, in federal hands. Though all of these buildings were integral parts of the operations of the company during the war, the Plant #2 Complex appears to have been the single most important structural addition in terms of its role in the wartime aircraft manufacturing process.

During the period 1939-45, the Canadian aviation industry underwent startling and rapid change. Between 1939 and the end of 1941, the workforce rose from barely one thousand to 37,000.<sup>10</sup> Two years later, it had nearly doubled, to almost seventy thousand labourers. By the end of 1943, aircraft production was Canada's largest employer of female workers and the second-largest of men, and the sector's output represented just short of 5 per cent of the country's total manufactures.<sup>11</sup>

The impact of such high levels of economic activity was especially evident in Ontario, where between half and two thirds of the industry was then located. By the end of the war, aircraft production was the second-largest industry in the province in terms of value of output, after the automobile sector.<sup>12</sup>

De Havilland's central war role is connected to its production of both the Tiger Moth trainer (1939-45) and the Mosquito fighter (1941-45) at this plant. The former was employed in the British Commonwealth Air Training Plan (BCATP). Indeed, the Tiger Moth was considered to be "the BCATP's basic trainer," according to the air force history.<sup>13</sup> The Mosquito was a night bomber and fighter critical to the war efforts of the air forces of Great Britain, the United States, and Canada. Its importance to the Allied war effort may be gauged by the fact that a museum has been established in England devoted solely to this aircraft. "I turn green with envy when I see the Mosquito," commented the German Reichsmarschall Hermann Goering.<sup>14</sup>

The Downsview plant produced 1133 Mosquitos and 1384 Tiger Moths between 1939 and 1945,<sup>15</sup> some 17 per cent of Canada's aircraft production during this period. The company grew from a modestly scaled operation, among the smallest of its type in the country, to one of the largest, with a workforce comprising roughly 10 per cent of the entire industry. In its physical expansion, the plant accurately reflected this massive expansion, increasing from the original 25,000 square foot facility at the beginning of the war to a complex of 1.2 million square feet five years later.<sup>16</sup> The structure which appears best to represent this enormous expansion is the Plant #2 Complex, constructed in 1940 to accommodate the assembly lines for new Tiger Moth contracts.

The important contribution of the de Havilland company must be placed squarely within the complex tapestry of Canada's war effort. This country's contribution to the Allied cause is often seen largely in terms of our direction of, and contribution of resources to, the BCATP, towards which Canada provided \$1.6 billion, or three-quarters of the total cost.<sup>17</sup> Such a focus obscures the breadth of Canada's effort. In fact, Canada was the fourth-largest supplier of war goods to the Allies, its production of materiel reaching some \$10 billion and its total wartime expenditures for all purposes totalling a remarkable \$21 billion.<sup>18</sup>

### c) The Second World War and the Transformation of the Canadian Economy

The development of the de Havilland company property after the war illustrates the way in which the Second World War fundamentally altered the nature of the Canadian economy. This theme cannot, however, be associated with any single building within this former industrial complex.

The precise parameters of this economic transformation are a matter of some dispute among historians,<sup>19</sup> but the broad outlines of the change are clear. First of all, the war expanded Canada's manufacturing capacity: in the six years between 1939 and 1945, the Gross National Product more than doubled, from \$5.6 billion to \$11.9 billion. The government played a central role in this massive increase: it spent over ten billion dollars in commodity purchases alone, an amount roughly twice the total GNP in 1939.<sup>20</sup> Secondly, the war focused economic activity uniquely on the production of goods and services for the war effort: at its height in 1943, the country was devoting an astonishing 64 per cent of her productive capacity to war-related purposes; the comparable figure for the first conflict was barely 10 per cent.<sup>21</sup>

Finally, the war involved the Canadian government in the management of the private sector economy to an unprecedented degree. The Dominion Bureau of Statistics argued that such involvement constituted a "re-direction of the nation's entire economic life."<sup>22</sup> Through tax provisions, it encouraged existing companies to expand to meet wartime needs. When alternative arrangements were impossible, it directly financed such expansion. In many cases, it established Crown corporations to manufacture goods - such as synthetic rubber, optical products, and armaments - which privately owned companies were unwilling or unable to make. By 1945, the value of direct government-financed industrial output stood at \$856 million, an amount six times the capital invested in the country's entire iron and steel industry at the beginning of the war.<sup>23</sup>

Many economists argue that the result of this government activity and investment was a fundamental reorientation of the Canadian economy. Government agencies certainly believed that such a transformation had, indeed, taken place. At war's end, according to the Dominion Bureau of Statistics, "Canada, with greatly increased skill and plant capacity, has now entered a new era in manufacturing development."<sup>24</sup> In the process, it added, "far-reaching transitions have been necessary in manufacturing industries to establish them on a war-time basis; these are of vital importance to a study of Canadian industry in the period through which it is now passing."<sup>25</sup>

Because of the high degree of government involvement in sponsoring and supporting it, the aircraft parts and assembly industry in general and the de Havilland company in particular illustrate these "transitions" from prewar, to wartime, and then postwar industrial production with special clarity. The company itself grew from an insignificant player in the aircraft industry to its largest single producer in 1942. Once the war was over, the de Havilland company was returned to civilian control and production. In 1946 it initiated the manufacture of the mainstay of its operations through to the 1960s, the Beaver aircraft, the

fabrication of which sustained the company throughout the 1940s and 1950s and justified the construction of a new plant in 1953. The history of this site between war's end in 1945 and its sale to the government in 1953 therefore offers a significant example of the impact of the war on the development of a single industry.

#### Person/Event

No person or event of historical importance is known to be directly associated with any of these buildings, and no further reference will be made to this criterion in the following discussion.

#### Local Development

The assessment of "Local Development" will depend upon the parameters of the relevant "community." Aerial photographs taken in the 1920s and 1930s (for example, see Figure 2, which dates to 1939) reveal the Downsview area to have been an agricultural region located well to the north of the city of Toronto. Dominated by farming activities, it was a mile or more distant from any settlement and possessed no industrial activity whatsoever. Workers reported that the site was originally so isolated that car pools had to be organised to ferry in workers and, because of the lack of civic amenities, water was brought in by truck.<sup>26</sup>

This isolated location did, however, have a number of advantages as the site for an aircraft plant: it was on undeveloped, and therefore relatively cheap, property in close proximity to the city of Toronto and consisted of extended areas of flat land unbroken by watercourses. Of greater significance, no doubt, was the fact that immediately to the east were the airfields of the Toronto Flying Club which, since 1931, had served as the city's public airport (shown on Figure 2).<sup>27</sup> Furthermore, the de Havilland lands were serviced by the line of the Canadian National Railways, which ran along the western boundary of the property.

The oldest structure on this site was not originally built here: a hangar, which is currently part of Building #38, was initially erected in 1928, when the company was operating at Mount Dennis. Designed to be portable, it was moved to Downsview when a permanent plant was opened a year later, and has twice been moved since. This hangar and Plant #1, Buildings #1 and #4, represent the first thrust towards the development of this area for purposes other than agriculture. The construction of additional structures immediately before the war illustrates a later phase of this process.

With the exception of the conversion of the Toronto Flying Club lands to an air force base during the war, agricultural pursuits continued to dominate the lands surrounding the de Havilland

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plant for some time. As a comparison between Figure 2 (1939) and Figure 3 (1946) makes clear, there was relatively little change in land use patterns in the district until the decade after the war (cf. Figure 3 and 4). Modifications did, however, take place in the immediate area of the de Havilland plant. Successive expansions of both the airport and the plant required the purchase of adjacent farms and residences and the conversion of these lands, eventually totalling 595 acres, to industrial and airbase use. Conversion of the Toronto Flying Club property to military purposes during the war forced the relocation of the city's airport to Malton (now Lester B. Pearson International Airport) in 1942, but wartime activity at CFB Downsview (which, after the firm's takeover by the government in 1942, took in the former de Havilland airfield and that of the Toronto Flying Club) made the extended site the focus of wartime and demobilization activities on a broad scale.

The relevant "community" during the 1940s may legitimately be considered to be the agricultural district surrounding the plant, but it is also possible to argue that this massive expansion actually created a new "community" bounded by the federally regulated lands of the de Havilland plant and the adjacent, federally owned, CFB Downsview (now CFB Toronto). In light of this, the report will provide some information which relates individual buildings of the war period to both of these concepts of "community."

Early in the 1950s, the de Havilland company decided to abandon its unplanned and jerry-built industrial complex for an integrated and more efficient operation, designed for civilian aircraft production and located to the south (Figure 1). This new facility was opened in 1954. The year before, two central military supply depots were established by DND, at Toronto and Namao, Alberta, and the former de Havilland plant was purchased by the government for storage, office, and service purposes.

These changes paralleled a more general shift in the economic usage of the area from agricultural to industrial and commercial pursuits. In the decade and a half after the war, the surrounding lands, which in the 1930s and 1940s had been rural and agricultural in character, were gradually taken over for industrial, commercial, and residential purposes (see Figure 4). The former de Havilland complex is now a part of the city of North York within metropolitan Toronto. The region has been transformed by suburbanization, with the addition of substantial subdivision housing and commercial and small- and large-scale manufacturing development. CFB Toronto now constitutes an independent sector, closed to the public, within the broader suburban community (see the 1988 site plan, presented as Figure 6).

## ARCHITECTURE

### Aesthetic Design

Typical of structures erected for manufacturing purposes during the 1920s, 1930s, and 1940s, these buildings exhibit highly simplified and functional exteriors. Only the 1929 section of Plant #1 includes any detailing of a traditional kind, a spare application of decoration largely of classical derivation. These modest touches were designed to distinguish the administrative from the manufacturing areas of the plant.

Later structures examined in this report reflect, to varying degrees, the influence of the International style. During the 1920s and 1930s, industrial structures adopted a variety of forms, the most noteworthy being a flattened and sleek modernism derived from the Bauhaus movement in Germany. In this style, bold basic volumes - the cube, the cylinder, or the cone - enclosed a series of interior plant functions which were expressed externally by the progression of forms themselves. The interplay of these varied forms and planes and their lighting treatments were central to the modern industrial aesthetic. "Industrial structures represented," one source has noted, "the brave new world of science and technology,"<sup>28</sup> and the design of factories was to reflect the utilitarianism and rationalism of the new age. Decorative programmes were, therefore, both sparsely applied and frankly "industrial" in character. Such design was usually characterized as clean, efficient, and sharp rather than (as it had been in the earlier period) picturesque, or monumental, or imposing. This meant, not an absence of detailing, but its deemphasis; relief was provided by greater attention to the arrangement of units and the use of variations in surface and materials, rather than a formal decorative programme based on precedents.<sup>29</sup>

At its best, such design demanded artistic cleverness and sophistication from the architect. For cost reasons, this thrust more often produced designs which followed the Moderne dictate of simplicity, without giving any consideration to its parallel demand for appropriateness in composition and effect. The results were all too often starkly plain and uninspiring. This tendency gave "industrial moderne" architecture a well deserved reputation as generally unimaginative in design and, at its worst, overwhelmingly tedious. With certain modest exceptions, the subject buildings at CFB Toronto fit squarely within this highly simplified and undecorated phase of Moderne design.

### Designer

In the construction of buildings between 1928 and 1931, de Havilland commissioned the prominent and prolific Toronto architectural firm of Mathers and Haldenby to design a hangar, the administrative building, and the adjacent manufacturing plant.<sup>30</sup> The final two elements now constitute Plant #1,

Building #1, while the hangar has reportedly been dismantled on at least two occasions and is now integrated within Building #38.<sup>31</sup> Characterised by Toronto architectural critic Patricia McHugh as a "versatile, dependable 20th-century architectural firm," Mathers and Haldenby specialized in institutional, industrial, and commercial design, often of some considerable scale. Its work tended to employ more stylistically conservative approaches.<sup>32</sup>

## ENVIRONMENT

### Site/Setting

These buildings are now located in a series of clusters at the north end of the runways for CFB Toronto, but this site arrangement is rather different from the conditions which prevailed when the first industrial buildings were erected on this location more than a half century ago. Originally, de Havilland purchased for its site part of the block of land bounded by a series of concession roads, now Keele Street on the west, Sheppard on the north, Dufferin on the east, and Wilson on the south. As Figure 2 clearly shows, this area was, during the 1930s, largely occupied by farms, though there was scattered residential development to the southeast. The plant occupied only the northwest corner of this large tract, alongside the intersecting rail line, with runways (initially unpaved) laid out in a X-pattern to the south and east (Figures 2 and 9).

An aerial photograph taken in 1946 (Figure 3) illustrates the extent of expansion engendered by wartime demands. Plant #1 and its ancilliary structures have been expanded into a much larger industrial complex located along the south side of Sheppard Avenue and to the north of the original facility. The simple pattern of landing areas shown in Figure 2 has become the complex and formal arrangement of runways of the 595 acre CFB Downsview, which melded the facilities of de Havilland and the Toronto Flying Club to the east. Though the industrial plant had expanded greatly in response to the needs of the war, the lands surrounding continued to retain their agricultural use (Figure 3).

By 1953, when the government purchased the de Havilland plant for use as a military supplies depot, the postwar growth of Toronto had extended the limit of built-up areas to the southern edges of the airport and into lands to the north of the site, as Figure 4 points out. In the decade that followed, further suburbanization took place on all sides of the government-owned lands, while functional considerations generated considerable construction within the depot site. An aerial view of 1966 (Figure 5) illustrates the degree to which the former de Havilland plant was expanded and changed under government ownership. Additional structures - notably the enormous warehouse building #151 - were erected on newly purchased lands to the west of the rail line and

Sheppard Avenue (which had previously bisected the site) was realigned to the north (cf. Figures 2 and 3 with Figures 1 and 6) to accommodate runway expansion.

These modifications in the site took place within a context of rapid change to the surrounding areas. Lands which, in the 1940s, were agricultural had, by the 1960s, undergone the process of suburbanization as the growth of Metropolitan Toronto transformed properties formerly used for farming into the location of tract housing, commercial development, and small- and medium-scale manufacturing concerns.<sup>33</sup> As the map presented as Figure 1 clearly shows, the city of North York is now a fully developed part of the Metro Toronto agglomeration, and CFB Toronto now is a federally owned oasis within a wholly urbanized community.

Landmark

These buildings are located within the boundaries of CFB Toronto, a site which is closed to the public. As a matter of policy, none of the buildings within the base boundaries is included on the city of North York's list of buildings of architectural importance. The city's architectural historian indicated that, at present, city officials are not concerned with the fate of depot buildings, though there was a substantial segment within the community - which includes veterans and former employees of the de Havilland company - who are thought to be strongly attached to the preservation of at least some of the buildings formerly owned by the company. As the earliest buildings on site, the original portable hangar (now part of Building #38) and the 1929 administration/manufacturing building (Plant #1, Building #1) are considered to be of greatest public interest. North York is a community which possesses very modest heritage resources.<sup>34</sup> Any landmark value which individual structures at CFB Toronto would possess derives largely from the knowledge of those who work on site now, and the memories of those veterans and former employees who remember it from its wartime role.

## INDIVIDUAL INFORMAL BUILDING REPORTS

90-161	Plant #1, Building #1	1929
	Building #3	1940
	Building #4	1937-39
	Building #5	1943-44
	Building #6	1942
	Building #9	1942

This is an additive structure of five parts, Buildings #6 and #9 having been constructed as a unit. The initial portion (Building #1) was erected in 1929 and originally consisted of a frontispiece with shops on the lower floor and administrative quarters above, a hangar behind, and a paint shop alongside to the west (Figures 7, 8, and 9). A factory addition, to house the assembly of Tiger Moths (Building #4) was constructed on the east side immediately before the outbreak of war, while further Tiger Moth contracts led to the construction of two more assembly bays (Building #3) in 1940.<sup>35</sup> According to construction records provided by base authorities, further sections were added in 1942 (Buildings #6 and #9) and in 1943-44 (Building #5). The whole structure has since been converted to an office and warehouse for the DND's central supply depot. Its present appearance is shown in Figures 10 to 15.

## HISTORICAL ASSOCIATIONS

Thematic

With its additions, the original aircraft assembly plant and administration building (Plant #1, Building #1, 1929, Figures 7 and 10) represents all three of the historical themes listed above: the early development of the aircraft industry in Canada, this country's contribution to the Allied war effort, and the impact of the war on the Canadian economy. Because of its date of construction and continuous role in the manufacture of aircraft from 1929 until 1954, this structure would appear to be more directly implicated in all three of these themes than any other in the complex. No attempt has been made to inventory other sites which might illustrate one or more of these themes but, in the context of existing knowledge regarding aircraft manufacturing sites, it is difficult to conceive how another structure in federal government hands could do so.

Local Development

The early date of construction of the original section of this building places it within the first stage of urban expansion in an area formerly used entirely for agricultural pursuits. The establishment of the de Havilland plant predates large-scale residential and industrial development in this district by roughly three decades.

## ARCHITECTURE

### Aesthetic Design

The earliest of the structures originally erected on this site, the Plant #1 building (Figures 10 to 15) is noteworthy for the simply detailed, classically inspired decorative repertoire used in its front elevation; its irregular composition derived from its function as an assembly plant constructed in five phases; and its hybrid combination of a formally treated administration building fronting a functionally designed and unadorned hangar (cf. Figures 7 and 10), to which a number of industrially styled additions were made just before and during the Second World War (Figures 11 to 15). In aesthetic terms, the building somewhat awkwardly combines a classically inspired ornamentation with an asymmetrical arrangement of forms. The structure as a whole therefore constitutes a relatively conservative example of Moderne industrial design employing a mix of stylistic references.

The structure's exterior is marked by a hierarchy of decoration which helps to identify the relative importance of interior activities. The administrative areas, located initially on the second floor of the northern section of Building #1 (1929, Figure 7) and later added to by Building #5 (1943-44, Figures 10, right hand side, and 11) are stark rectangular blocks marked by their large window areas. Their function is emphasised by changes in the treatment of wall surfaces: on Building #1, thin pilasters were set between the windows, while the window groupings are separated by columns with representational capitals and bases. The entire composition is unified by a projecting framing course running across the facade and connecting the heads of the pilasters and the capitals. Doors were placed within stone surrounds whose simplicity illustrates the essentialist character of Moderne decoration. Building #5, constructed later for administrative purposes, employed a similar scheme, but lacks the slender pilasters between the windows on the front elevation (Figure 12).

Other sections of the Plant #1 building were used for production and are more starkly industrial in character. Long brick walls are broken only by openings required by the original function. Expansion has been integrated into the existing design by the simple expedient of adding upper storeys of prefabricated steel panels and stock industrial fenestration (Figures 13, 14, and 15).

### Functional Design

This building is an additive structure erected in five phases between 1929 and 1944 and is composed of six linked blocks, arranged precisely to house its original purpose as an assembly plant for the production of Tiger Moth aircraft. The corporate history emphasises the fact that Plant #1 was carefully composed

so that aircraft production could be carried out efficiently on the assembly line model.<sup>36</sup>

Because of the number of processes involved and the scale of the final product, the assembly of aircraft required the construction of very large open spaces unimpeded by supports. The use of structural steel to span the spaces between the walls was a standard response to this functional need and provided areas easily expandible when the need arose for further manufacturing capacity during the war. This same flexibility made these manufacturing spaces readily adaptable to warehouse use when the former de Havilland plant was transferred to DND ownership.

#### Craftsmanship/Materials

In spite of the fact that it includes a slightly more formal decorative programme than other buildings on site, this concrete block, brick, and steel-framed structure is composed of standard contemporary materials, handled in no special fashion. The wartime use of steel is somewhat unusual, but was no doubt justified by the plant's critical manufacturing function. The decorative elements are reportedly of cast concrete, a common response in the early decades of the 20th century to the need for stock ornamentation.

#### Designer

The original section of this building was designed by the prominent Toronto architectural firm of Mathers and Haldenby.<sup>37</sup> It has not been possible to determine the architect or architects of later additions.

### ENVIRONMENT

#### Site

Plant #1 was originally located in the northwest corner of the company's property, amidst vacant fields, with unpaved landing areas laid out to the southeast and agricultural fields on the other sides (see Figure 2). Over the years, much change has taken place to the immediate area. Since the time of its construction, the structure has been expanded several times, much of the surrounding land has been paved for runway and roadway purposes (cf. Figures 2 and 5), and additional aircraft manufacturing facilities have been built upon the surrounding lands. The site has therefore taken on the formal character of a much larger-scale facility of industrial appearance.

#### Setting

Plant #1 was the first of a series of industrially styled structures erected on these lands. The first additional construction was sponsored by the company and was physically joined to Plant #1, but the exigencies of wartime required a vast expansion of manufacturing facilities following no master plan. These wartime buildings are largely of a similar scale and of

similar materials, but illustrate a different design aesthetic, are more starkly industrial in character, and lack Plant #1's original decorative detailing.

Under government ownership, existing structures have been retained (and often significantly altered) for new purposes. Additional construction has been purpose-designed and is generally more massive in scale than prewar and wartime work. CFB Downsview (now CFB Toronto) has been constructed to the south, thereby forming a military complex of nearly six hundred acres on the former de Havilland and Toronto Flying Club airfields, and a much larger de Havilland plant has been erected, also to the south (see Figure 1 for locations).

#### Landmark

Plant #1 is the oldest and most prominently situated of the pre-1945 buildings on a site which is now closed to the public. Because of its wartime role, the former de Havilland plant is reportedly a place widely known in the municipality, and this building is regarded as the one most recognisable to the older segment of the community's population because of that role. Nevertheless, this building's undistinguished architectural presence and the closed nature of the present site now make it of significance only to those who work in the area.<sup>36</sup>

90-162

Workshop, Building #10

1938

This building (Figures 16 and 17) was reportedly erected in 1938 to house the manufacture of parts for the main assembly plant and was known as a Hammer House because it accommodated a steam fitters' workshop. It is currently used for a general workshop and was declared surplus to DND needs as long ago as 1985.

## HISTORICAL ASSOCIATIONS

### Thematic

This building was a part of the initial prewar manufacturing concern and was constructed to support the assembly of Tiger Moth aircraft. During the war, it continued to play the same role. It therefore appears to represent the same themes as plant #1, though it performed a less important role in the manufacturing process.

### Local Development

This building's prewar date of construction illustrates the first stages of urban expansion in a formerly agricultural area. The establishment of the de Havilland plant in 1929 and its expansion nine years later predate large-scale residential and industrial development in this region by roughly three decades.

## ARCHITECTURE

### Aesthetic Design

In comparison to the elementary classicism of Plant #1, the design of Building #10 is informed by the aesthetic of the International style.<sup>39</sup> Starkly industrial in character and lacking in any meaningful references to traditional approaches to architectural form and decoration, the structure is a simple rectangular box of several levels, featuring unbroken banding of the floors and windows, industrial fenestration which extends from floor to ceiling, and subtly differentiated exterior planes in glass, brick, and concrete. The cleanly demarcated and uncluttered lines of the exterior are marred by an L-shaped, one-storey asbestos panel-covered addition, which detract from the quality of the original design.

Modest in scale and function, this building nevertheless displays the major elements of the International style as employed in an manufacturing structure, and represents an early and able example of a modernist design approach which no doubt would have been considered especially appropriate in a structure erected by a leading contemporary expression of modernity and the triumph of technology, the aircraft industry.

### Functional Design

Characterised in its functional design by its open work areas, this structure uses a standard system of steel framing to provide the necessary spaces. The melding of the aesthetic of the

International style and functional requirements for high levels of natural light demanded the use of large areas of windows of stock steel construction.

#### Craftsmanship and Materials

Industrial buildings generally demanded no special constructional competence, for they usually posed relatively simple functional demands. This structure is composed of a steel frame on a concrete block foundation. Walls are reportedly of brick with considerable expanses of stock steel fenestration separated by bands of exposed concrete. While these materials were standard for the period, the building is notable for the way in which they were melded with considerable refinement and precision.

#### Designer

In the limited time available for the preparation of this report, no architect or builder was determined for this building.

### ENVIRONMENT

#### Site

This building is located along the railway line south of the original plant building, on lands formerly used for the storage of aircraft; Figures 3 and 9 contrasted with Figure 5 show the sequence of development. At the time of its construction, unpaved landing areas were laid out to the south and east (see Figure 2). Since that time, additional aircraft manufacturing facilities have been built upon the surrounding lands, notably the much larger Plant #2 Complex immediately to the east, and formerly open areas have been either built upon or paved over, so that the site has taken on the formal character of a much larger-scale industrial plant.

#### Setting

This is the earliest of a small group of buildings - which includes Workshop, Building #10 and the two hangars, Building #55 and Building #58 - whose exterior design is informed by the aesthetic of the International style. Most of the other buildings constructed between 1938 and 1944 were simpler in style, though they were carried out in a scale and of materials similar to this building. Several of the structures erected after the government purchased the complex in 1953 - for example, Plant #2 and Building #151 - were much more massive in scale and were decidedly different in their overall aesthetic treatment.

#### Landmark

Though the former de Havilland plant is reportedly a complex widely known in the community, this building is reportedly less readily identifiable, for it is located away from the main traffic routes and the clean, simple lines of its International style are as yet generally unappreciated by heritage agencies. Local officials report that the building would not be recognised by very many people, even if they worked on the base.<sup>40</sup>

90-174	Base Transportation Garage Building #55	1943
90-177	Workshop Building #58	1943

Located some two thousand feet east of the group of buildings treated thus far, these two large-scale structures, both of which enclose some 64,000 square feet of space, are virtually identical in size and design. They were reportedly constructed as aircraft hangars in 1943. Though erected as separate units, they are now physically connected by links to the Central Heating Plant #4, Building #56 and Cafeteria Building #57, all of which were constructed in the same year. Figures 43 to 52 show the building, starting from the centre of the north elevation and touring the building counterclockwise:

While the FHBRO has examined many Second-World-War-era hangars, these two buildings do not follow the design of contemporary hangars erected either by DND for the BCATF or by the Department of Transport for various airport and military purposes. Instead, their importance in the manufacturing process demanded the production of specialised designs erected in the best materials then available. Under DND ownership, a control tower was added to Building #55 (in 1958) and the two structures have been converted to alternative uses: Building #55 houses the base transportation garage, while Building #58 accommodates an equipment repair workshop.

## HISTORICAL ASSOCIATIONS

### Thematic

These two structures illustrate the massive expansion of the company under government auspices during the Second World War, in support of the war effort. Their functional role, as aircraft hangars, directly supported the wartime responsibilities of the company in the assembly and maintenance of aircraft, and this relationship places them among the more significant buildings on site to represent the second theme listed above. Along with other wartime buildings on site, they are a generic illustration of the third theme.

### Local Development

After the Plant #2 Complex, which is a massive 450,000 square feet in size, these are the two largest of the group of buildings erected during the Second World War. In their scale, function, and date of construction, these structures represent the huge expansion of the north end of the air base site for the manufacture of aircraft for wartime use. This building bears testimony to the fact that this period is arguably the most important phase in the history of both the company and the airbase: its large scale in comparison to earlier construction and the structure's placement almost a third of a mile east of the existing plant both indicate that these buildings illustrate

a new phase in the development of the de Havilland company. As Figure 3 makes clear, however, the physical impact of this expansion was limited to the boundaries of federally controlled lands. The establishment of the de Havilland plant here in 1929 and its extension in response to wartime demands predate large-scale residential and industrial development in this district by as much as 25 years.

## ARCHITECTURE

### Aesthetic Design

These two nearly identical structures (Figures 43 to 52) represent something of a departure from hangar design during the Second World War in both aesthetic and functional terms. Though some specialised hangars of metal on a steel frame were erected, much the largest number were of wood. Wooden hangars designed by DND for wartime use were generally of three sizes: singles measuring 112 feet by 125 feet; doubles, 224 feet by 160 feet; and double doubles, 224 feet by 320 feet.<sup>64</sup> (Seaplane hangars, measuring 171 feet by 212 feet and possessing a span of 160 feet, were also designed for coastal stations or for very large planes inland.) Roofs were either flat or very gently sloped, though there was also a little-used bow-truss variation which provided a 130 foot, rather than a 112 foot, span and a distinctive curved roof shape.<sup>64</sup> The exteriors of these hangars were marked by a rectangular boxiness and a consistent pattern of openings, a continuous band of windows on two or three sides, with a long row of doors extending along the remaining elevation(s). Along both sidewalls were added one- to two-storey wings to house offices and storage areas, often fronted by tall but very shallow pockets into which the doors were rolled.

Building numbers 55 and 58 departed from these standards in four significant ways. First, each is slightly smaller in size than the regular double double hangar, a fact which suggests that these were specialised designs. Secondly, interior lighting was increased by the provision of three massive transverse monitors, which are so large that they cover most of the roof area and, from the hangar door elevations, appear as an unbroken third level. Furthermore, brick and steel were prominently used in their construction, at a time when the military almost uniformly built in wood. Finally, unusual care was taken in presenting a precise and polished design aesthetic. The enormous hangar doors, for example, were engineered so that they present an unbroken plane when closed but, when opened, required no large protruding storage pockets which would have disturbed the clean lines of the International style design. This imaginative solution to the handling of the doors contrasts with the traditional contemporary military answer to this problem, which was to express these storage areas clearly, even though such an expression badly disturbed the lines of the structure. A control tower, added to Building #55 in 1958, disturbs the clarity, linearity, and precision of the original volumes.

These two buildings are clearly within the aesthetic of the International style and, as such, their design represents a considerable change from the functionality of most contemporary military work. Volumes are clearly articulated and carefully and artistically arranged; lines are precisely delineated; the windows and walls form nearly unbroken planes; and the absence of a cornice adds to the severely geometric regularity of the design. Though, functionally, the building appropriately announces its role as a hangar, the careful handling of materials, the attention to detailing, and the overall cohesiveness of the design place it well in advance of contemporary hangars designed by DND. Various reversible changes disturb the clarity of the original conception: on Building #55, mechanical enclosures have been built on the roof of the western wing; a control tower has added an obtrusive vertical element at the southwest corner; and extensive infilling with incompatible materials has taken place along the western side. On building #58, siding of a contrasting colour and texture now clads the east sidewall, and vents project from the otherwise flat planes of the north and east walls. In spite of these changes, the building retains the coherence of its original design inspiration.

#### Functional Design

Both buildings responded to the need to provide very wide clear spans and large open areas for the maintenance of aircraft by including long, unsupported steel trusses cross-braced, monitors glazed with large expanses of glass in prefabricated steel frames for lighting, and two sets of doors for access. Shifts in use reportedly have led to minor interior changes and the blocking in of most of the openings along the southwest side of Building #55 (Figures 45 and 46). Though aesthetically jarring, the addition of the control tower gives the building a more complex functional programme, akin to the combined-function passenger terminals/hangars found at this time in some small civilian airports.

#### Craftsmanship and Materials

These structures were both built of standard materials - concrete, brick, and steel. The design included huge areas of movable doors and prefabricated windows set in steel frames. In keeping with the tenets of the International style, the materials were given careful treatment so that their constructional qualities contributed to the clean lines of the design. Except for interior modifications to services and surfaces, no major repairs have reportedly been made to either building.<sup>65</sup>

#### Designer

In the limited time available for the preparation of this report, it was not possible to determine either the architect or builder of this structure.

## ENVIRONMENT

### Site

Located about one third of a mile to the east of the original plant site, these buildings are the remains of a row of hangars constructed well to the east of Plant #1, along the south side of Sheppard Avenue. Several of these hangars were demolished in the expansion of runways in the 1950s (cf. Figure 3 with Figures 5 and 6). Sheppard Avenue has been realigned around the runway extension and is now called Carl Hall Road. These two circumstances have created a distinct physical separation between the two sections of the former de Havilland plant.

These two hangars are the earliest and largest buildings in an assemblage of structures a considerable distance to the east of the original plant. As a result of changes to buildings and traffic patterns in the immediate area, the historical relationship between these hangars and the rest of the former de Havilland plant has been broken. Additional buildings have also been constructed on adjacent lands: a modern laboratory (Building #201) and various small-scale support structures have been erected to the north. The historical character of an aircraft manufacturing and assembly complex has been altered by the intrusions of the airbase.

### Setting

These are very large-scale structures of a type and design which originally fit in well with both the airbase to the south and the former manufacturing complex to the west. Later buildings erected under DND ownership were quite varied in scale but were more contemporary in design. With the realignment of the runways, these hangars are now dominating elements in an isolated grouping of buildings distinct from the rest of the depot.

### Landmark

While the former de Havilland plant constitutes a site widely known in the area, the isolated position of these buildings makes them familiar only to those working in the area.<sup>66</sup>

90-199

Plant #2 Complex

1940

The construction in 1940 of this massive structure (Figures 57 to 66), which now consists of almost 44,500 square metres of space, nearly quintupled the size of de Havilland's manufacturing facilities.<sup>76</sup> It was built to accommodate the assembly lines required for the production under licence of Avro Anson and Fairey Battle aircraft, as well as the large number of Tiger Moths contracted for by the federal government in that year.<sup>77</sup> It currently houses a hangar, offices, and a heating plant.

### HISTORICAL ASSOCIATIONS

#### Thematic

As noted above, this structure was erected to enable the company to fulfill contracts for the assembly of de Havilland's own Tiger Moth, as well as of Avro Anson and Fairey Battle aircraft produced under licence by de Havilland for British companies. These three types of aircraft were fundamental to the operation of the BCAPT: of the 102 schools in existence in January of 1944, 70 employed one or more of these for training purposes.<sup>78</sup> Its massive size reflects the scale of Canada's contribution to wartime aircraft production, and to the BCATP specifically.

#### Local Development

Strategically located immediately south of the original Plant #1, the Plant #2 Complex represents an extensive expansion of the physical facilities of the de Havilland company which, in turn, represented an intrusion of industrial activity into a formerly agricultural area. Its construction marked an important stage in the growth of the de Havilland plant itself and confirmed the large-scale industrial character of the site.

### ARCHITECTURE

#### Aesthetic Design

The Plant #2 Complex is an irregularly shaped, additive structure of severely industrial design. Before numerous additions were made to it (Figure 67), it constituted a competent but unremarkable design solution to the need for specialised manufacturing space. A number of additions have since been made, with the result that the structure provides a less architecturally coherent, more jerry-built appearance than the comparable Plant #1. Lacking in any traditional stylistic references, the design of the Plant #2 Complex responded to the demands of the functional programme, which required an aircraft assembly and repair facility combined in a single large-scale structure. Its fine, and apparently largely untouched, north elevation (Figure 60) consists of the precise lines and clear volumes characteristic of the International style, as described in the earlier reports on Building #10 and the two hangars, Buildings #55 and #58. Unfortunately, this design quality is not

carried through on the other elevations, which tend to be cluttered, disconnected, and incoherent architecturally. While the structure has fine aesthetic elements along the north side, overall its functional appearance is consistent with the simplest forms of industrial design during the 1930s and 1940s.

### Functional Design

According to the company history, this building was designed with great care to accommodate an assembly line producing the Avro Anson, and then the de Havilland Mosquito. The necessity to manufacture aircraft quickly and efficiently - the company completed more than one finished plane every day - and the huge scale of the product itself required a precisely designed sequence of working spaces within enormous open areas uninterrupted by structural supports. This was handled in a modern fashion, by the use of reinforced concrete, concrete block, and brick for foundations and walls, and steel trusses to support the roof. The building is reportedly an early example of a large-scale assembly line in Canada.<sup>79</sup>

No building plan was submitted with the request for evaluation, but officials on site state that these large open spaces were readily adaptable for the building's current use as a hangar and storage facility. Many additions have been made to the initial building but the original functional programme has been largely retained in spite of major changes both to function and structure.

### Craftsmanship and Materials

This structure was built of standard materials, handled in a standard fashion. It consists of bearing walls of concrete block and brick on a reinforced concrete foundation. Asbestos panels were used to clad some sections, and these have occasionally been replaced by aluminum or vinyl. Though the scale of the project is remarkably large, this type of work required no exceptional constructional expertise to carry out. The exterior shows considerable evidence of structural repair, and additions have been made without reference to aesthetic considerations, often in materials incompatible with the original work.

### Designer

In the limited time available for the preparation of this report, it was not possible to determine either the architect or builder of this structure.

## ENVIRONMENT

### Site

This massive building was erected immediately to the south of Plant #1, on property formerly used for the landing and temporary storage of aircraft (cf. Figure 2 with Figures 3, 5 and 6). Over the years, much change has taken place to the immediate area.

Since the time of its construction, this building has been added onto several times, and much of the surrounding land has been paved for runway, apron, and roadway purposes (cf. Figures 2 and 5). With the construction of this building, the area took on the formal character of a much larger-scale industrial facility.

Under government ownership, existing structures have been retained for new purposes, and additional construction has been purpose-designed and equally stark in appearance. Both from the air (see Figure 5) and on the ground, the structure dominates the northwest corner of the airbase.

#### Setting

This structure was constructed some 15 years after Plant #1. Though both are visually identifiable as industrial buildings, Plant #2 is much larger in scale and, in its total lack of traditional stylistic references, is clearly more modern in appearance. In its undecorated and functional appearance, the Plant #2 Complex fits in with other buildings erected for wartime use, though its massive scale makes it distinctive. Buildings which followed were carried out generally in a similar manner and were of similar materials as this building, but are smaller in scale.

#### Landmark

This building's scale alone makes it stand out within this section of CFB Toronto, but its location off the main internal roadways and behind the Plant #1 building make it less visible than the original manufacturing facility. Plant #2's undistinguished architectural presence and the closed nature of the present site make the building of significance only to those who work in the area.<sup>80</sup>

#### Endnotes

- 1 The company's role in wartime aircraft production was calculated from figures provided in the annual reports of the Dominion Bureau of Statistics on aircraft production in Canada, entitled The Aircraft Industry (Ottawa: Dominion Bureau of Statistics, 1940-46); numbers of aircraft produced by de Havilland are listed in Fred W. Hotson, The de Havilland Canada Story (Toronto: CANEV Books, 1987), p. 243. The history of the company is also described in Fred W. Hotson, The DH Canada Story (Toronto: de Havilland, 1978).
- 2 The purchase of the company's property in 1953 and its conversion to a supply depot are both noted in Canada. Department of National Defence, Report for the Fiscal Year 1953-54 (Ottawa: Edmond Cloutier, 1955), p. 57.

- 3 The dates of construction listed are those provided by the owner department, with the exception of Plant #1, Building #1, whose date of construction was given by the department as 1938, when photographic and documentary evidence shows that it was built in 1929; see Hotson, The DH Canada Story. pp. 11-12 and 40.
- 4 The role of aviation in Canadian development is emphasised in *ibid.*, *passim* and is confirmed by general economic histories, the most recent of which is Michael Bliss, Northern Enterprise: Five Centuries of Canadian Business (Toronto: McClelland and Stewart, 1987).
- 5 On the establishment of Canadian Vickers, see Canada Year Book 1938, p. 718. The quotation is from Canada Year Book 1942, s.v. "The Influence of the War on Manufactures," p. 359.
- 6 For the early history of the de Havilland company in Canada, see Hotson, The de Havilland Canada Story, Chap. 1.
- 7 *Ibid.*, pp. 59-89 gives a detailed account of the company's 1937 contract and its wartime activities.
- 8 *Ibid.*, p. 59.
- 9 *Ibid.*, p. 243.
- 10 Canada Year Book 1942, s.v. "The Influence of the War on Manufactures," p. 359.
- 11 Canada Year Book 1946, pp. 402-03.
- 12 Canada Year Book 1948-49, p. 580.
- 13 W. A. B. Douglas, The Creation of a National Air Force, Vol. 2 of Official History of the Royal Canadian Air Force (Toronto: University of Toronto Press, 1986), pp. 360 and 363.
- 14 *Ibid.*, *passim* and Hotson, The de Havilland Canada Story, pp. 59-64. On the Mosquito Aircraft Museum, see Jude Garvey, A Guide to the Transport Museums of Great Britain (London: Pelham Books, 1982), pp. 27-28; the Goering quotation is cited in this source on p. 28.
- 15 Hotson, The de Havilland Canada Story, p. 243.
- 16 *Ibid.*, p. 55.
- 17 Canadian Encyclopedia, s.v. F. J. Hatch and Norman Hillmer, "British Commonwealth Air Training Plan."

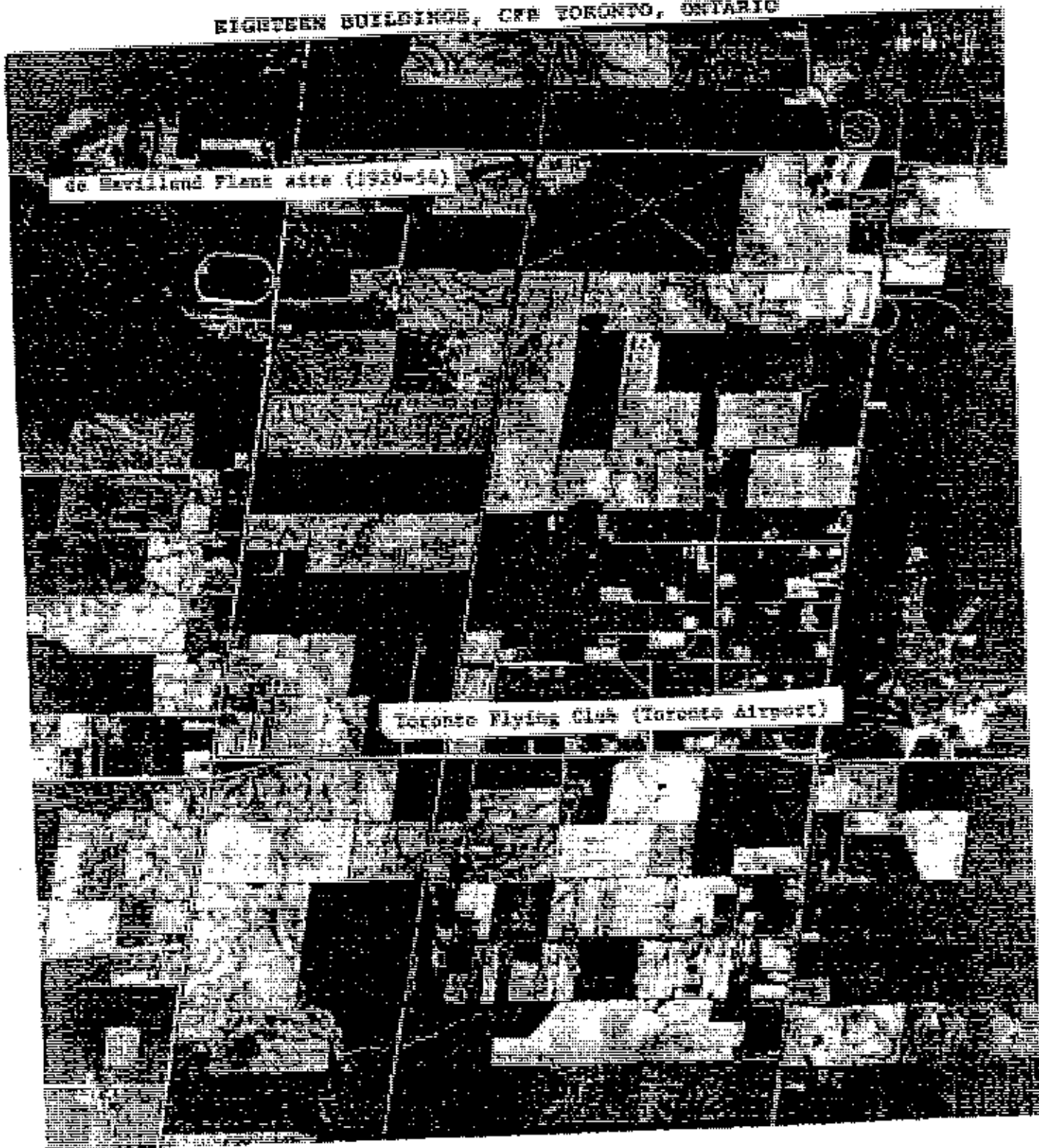
- 18 Canadian Encyclopedia, s.v. C. P. Stacey, "World War II" and Michael Bliss, Northern Enterprise, pp. 448-50.
- 19 See the cautionary notes of Bliss, Northern Enterprise, pp. 449-52 on this point.
- 20 *Ibid.*, p. 448.
- 21 Canada Year Book 1945, s.v. "Changes in Canadian Manufacturing Production From Peace to War 1939-44," p. 364.
- 22 *Ibid.*, p. 365.
- 23 *Ibid.*
- 24 Canada Year Book 1951, p. 574.
- 25 Canada Year Book 1954, p. 366.
- 26 Hotson, The de Havilland Canada Story, p. 31.
- 27 On the development of the Toronto municipal airport, see T. M. McGrath, History of Canadian Airports (Ottawa: Transport Canada, 1984), pp. 640-41; Julie Harris, "Airports," in Building Canada: A History of Public Works, senior ed. Norman Ball (Toronto: University of Toronto Press, 1988), pp. 293 and 294; "Toronto's Trans Canada Air Terminals: A Résumé of the Fundamental Factors Dealt With in the Consideration and Selection of Toronto's Two New Municipal Airports," Canadian Engineer, 75, 5 (2 August 1938): 6-10 and "Construction of Toronto's Two Airports," *ibid.*, 75, 6 (9 August 1938): 8-13.
- 28 Venturi, Scott-Brown, and Izenour, Learning From Las Vegas (1972), cited in Reyner Banham, A Concrete Atlantis: U.S. Industrial Building and European Modern Architecture, 1900-1925 (Cambridge, Mass.: The MIT Press, 1989), p. 3.
- 29 On the development of the modern movement in greater detail than is necessary here, see Banham, A Concrete Atlantis, and Kenneth Frampton, Modern Architecture: A Critical History (London: Thames and Hudson, 1985).
- 30 Information provided by Norm Attikin, archivist, Mathers and Haldenby, Toronto in conversation with the author, 28 November 1990.
- 31 The hangar was erected at de Havilland's first industrial site, in nearby Mount Dennis, but was dismantled and moved when the Downsview site was developed; see Hotson, The de Havilland Canada Story, p. 20.

- 32 There is no history of the firm; information provided by a former employee, Ken Elder, Chief, Period Architecture, Heritage Conservation Program, Architectural and Engineering Services of Public Works Canada for Environment Canada. See also Patricia McHugh, Toronto Architecture: A City Guide (Toronto: Mercury Books, 1985), where the quotation may be found on p. 255.
- 33 On the growth of Toronto and its suburbanization in the postwar period, see James T. Lemon, Toronto Since 1918: An Illustrated History (Toronto: Lorimer, 1985), esp. pp. 108-111.
- 34 Telephone conversation with the Chief, Heritage Section, Property and Economic Development, City of North York, 9 April 1991 (hereafter cited as North York Heritage interview); telephone conference conversation with John Davy, Public Relations Department and Fred Hayes, Curator, de Havilland Historical Collection, both employees of Boeing Aircraft, Toronto, 20 February 1991 (hereafter cited as Boeing interview).
- 35 Hotson, The de Havilland Canada Story, pp. 67-69.
- 36 Ibid.
- 37 Norm Attikin, archivist, Mathers and Haldenby, Toronto, conversation with the author, 28 November 1990.
- 38 North York Heritage interview; Boeing interview.
- 39 In addition to sources cited in note 29 on the development of the International style, see Henry-Russel Hitchcock and Philip Johnson, The International Style, rev. ed. (New York: W. W. Norton, 1966).
- 40 North York Heritage interview; Boeing interview.
- 41 North York Heritage interview; Boeing interview.
- 42 DND Freehold Building Card, copy in FHBRO docket.
- 43 North York Heritage interview; Boeing interview.
- 44 North York Heritage interview; Boeing interview.
- 45 North York Heritage interview; Boeing interview.
- 46 North York Heritage interview; Boeing interview.
- 47 DND Freehold Building Card, copy in FHBRO docket.

- 48 Ibid.
- 49 North York Heritage interview; Boeing interview.
- 50 The structural history of this building has been derived from Hotson, The de Havilland Canada Story, pp. 11-12. Boeing's interest in the building was described in Boeing interview.
- 51 No inventory of surviving civilian hangars has yet been prepared, but staff of the Architectural History Branch familiar with civilian and military airports indicate that relatively few 1920s-era hangars are still in use. On the hangars at Camp Borden, which have been declared to be of national historic significance, see Ian Doull, "Royal Flying Corps Hangars, Canadian Forces Base Borden, Ontario," Historic Sites and Monuments Board of Canada, Agenda Papers, 1989-9, Ottawa, February 1989, pp. 133-79.
- 52 DND Freehold Building Card, copy in FHBRO docket.
- 53 This judgement is based on a conversation with Ian Doull, AHB, 19 February 1991.
- 54 Norm Attikin, archivist, Mathers and Haldenby, Toronto, conversation with the author, 28 November 1990.
- 55 North York Heritage interview; Boeing interview.
- 56 On the design and prevalence of the Quonset hut, see Ian Doull, "Upper Quonset Hut, Signal Hill National Historic Park, St. John's, Newfoundland," Informal FHBRO Report #87-102, pp. 3-7.
- 57 North York Heritage interview; Boeing interview.
- 58 DND Freehold Building Card, copy in FHBRO docket.
- 59 North York Heritage interview; Boeing interview.
- 60 The building is shown on a 1944 aerial view of the site but not on one dated 1942; see Hotson, The de Havilland Canada Story, p. 78.
- 61 North York Heritage interview; Boeing interview.
- 62 Telephone conversation with Chris Barnard, Special Projects Officer, CFB Toronto, 20 February 1991 (hereafter Barnard interview).
- 63 North York Heritage interview; Boeing interview.

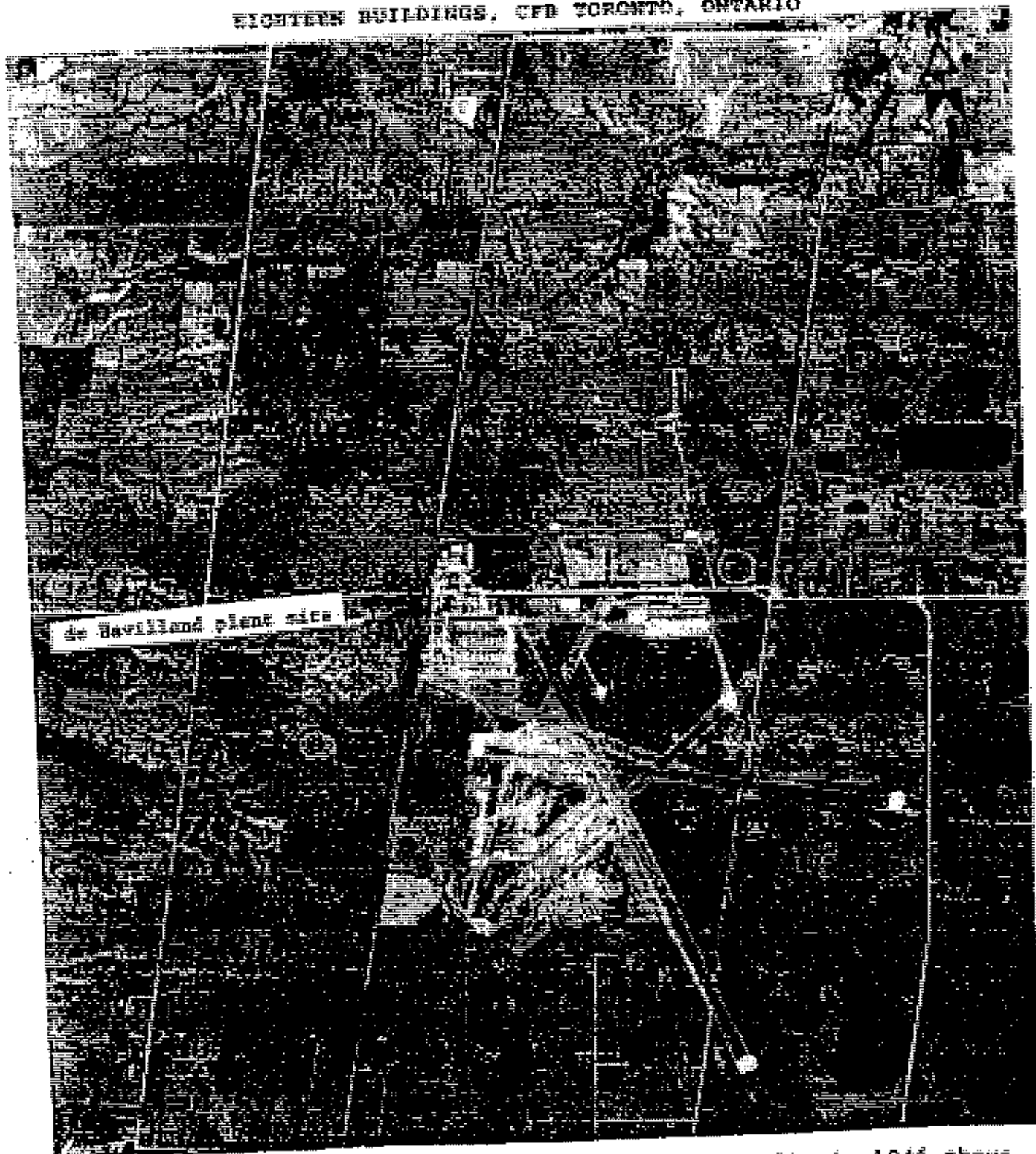
- 64 This is based on an inventory of historical documentation on hangar construction in Department of National Defence files and provided by the Historical Division, DND through the courtesy of Liliane Grantham.
- 65 Barnard interview; DND Freehold Building Card, copy in FHBRO docket.
- 66 North York Heritage interview; Boeing interview.
- 67 DND Freehold Building Card, copy in FHBRO docket.
- 68 North York Heritage interview; Boeing interview.
- 69 Barnard interview; DND Freehold Building Card, copy in FHBRO docket.
- 70 DND Freehold Building Card, copy in FHBRO docket.
- 71 North York Heritage interview; Boeing interview.
- 72 DND Freehold Building Card, copy in FHBRO docket.
- 73 Ibid. and Barnard interview.
- 74 DND Freehold Building Card, copy in FHBRO docket.
- 75 North York Heritage interview; Boeing interview.
- 76 Hotson, The DH Canada Story, p. 55.
- 77 Hotson, The de Havilland Canada Story, pp. 62-63.
- 78 Calculated from F. J. Hatch, Aerodrome of Democracy (Ottawa: Department of National Defence, 1983), Appendix 1.
- 79 Hotson, The de Havilland Canada Story, pp. 63 and 81-82.
- 80 North York Heritage interview; Boeing interview.

EIGHTEEN BUILDINGS, CNE TORONTO, ONTARIO



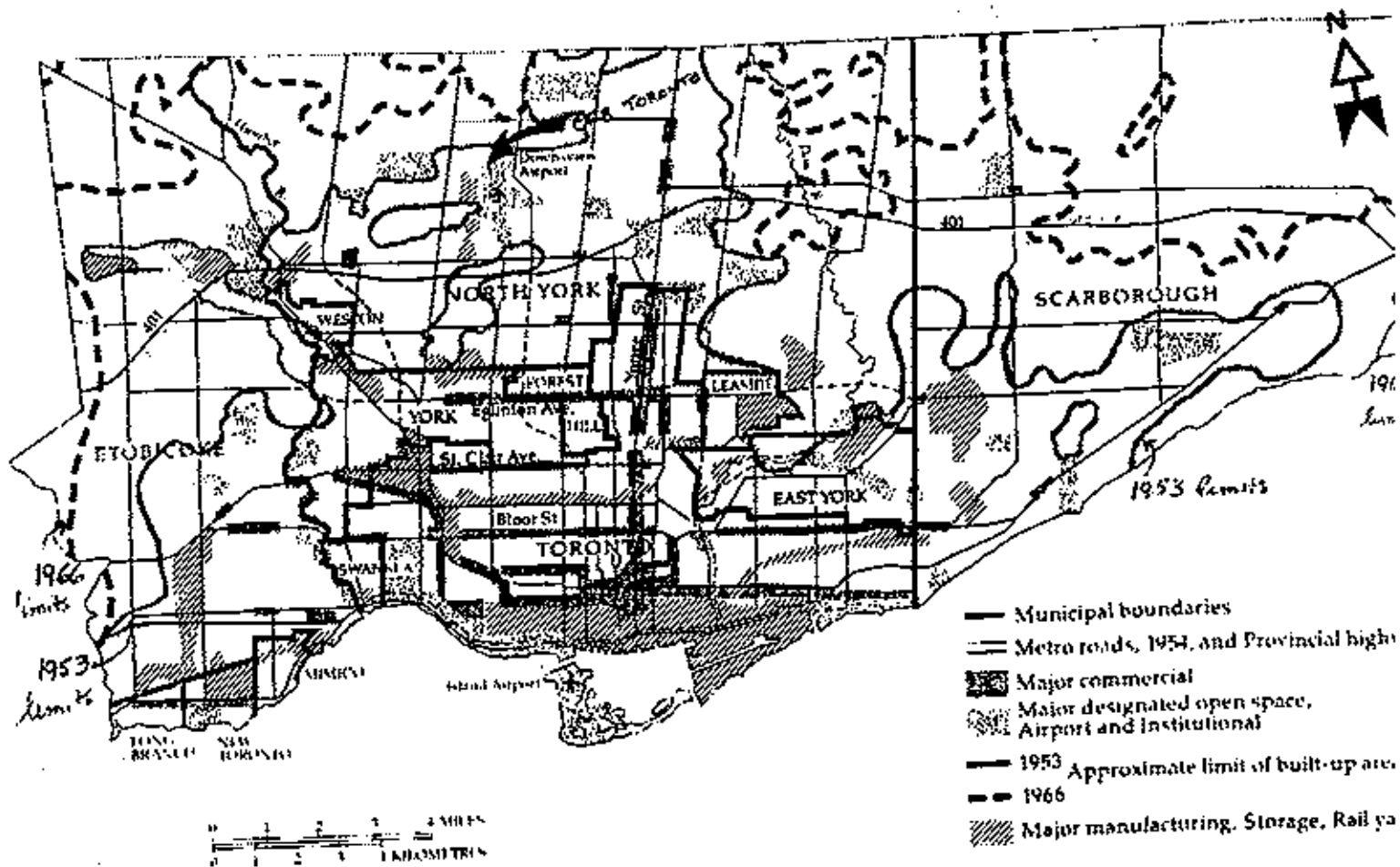
2 This aerial view of the De Havilland plant site in 1939 shows the overwhelmingly agricultural nature of the surrounding lands. The plant (marked), with its X-shaped runway pattern, is in the upper centre of the photograph; the former Toronto Flying Club property, at that time the Toronto airport, is also identified. (Energy, Mines, and Resources Canada [EMRC], National Air Photo Library [NAPL], A6591-91.)

EIGHTERN BUILDINGS, CPD TORONTO, ONTARIO



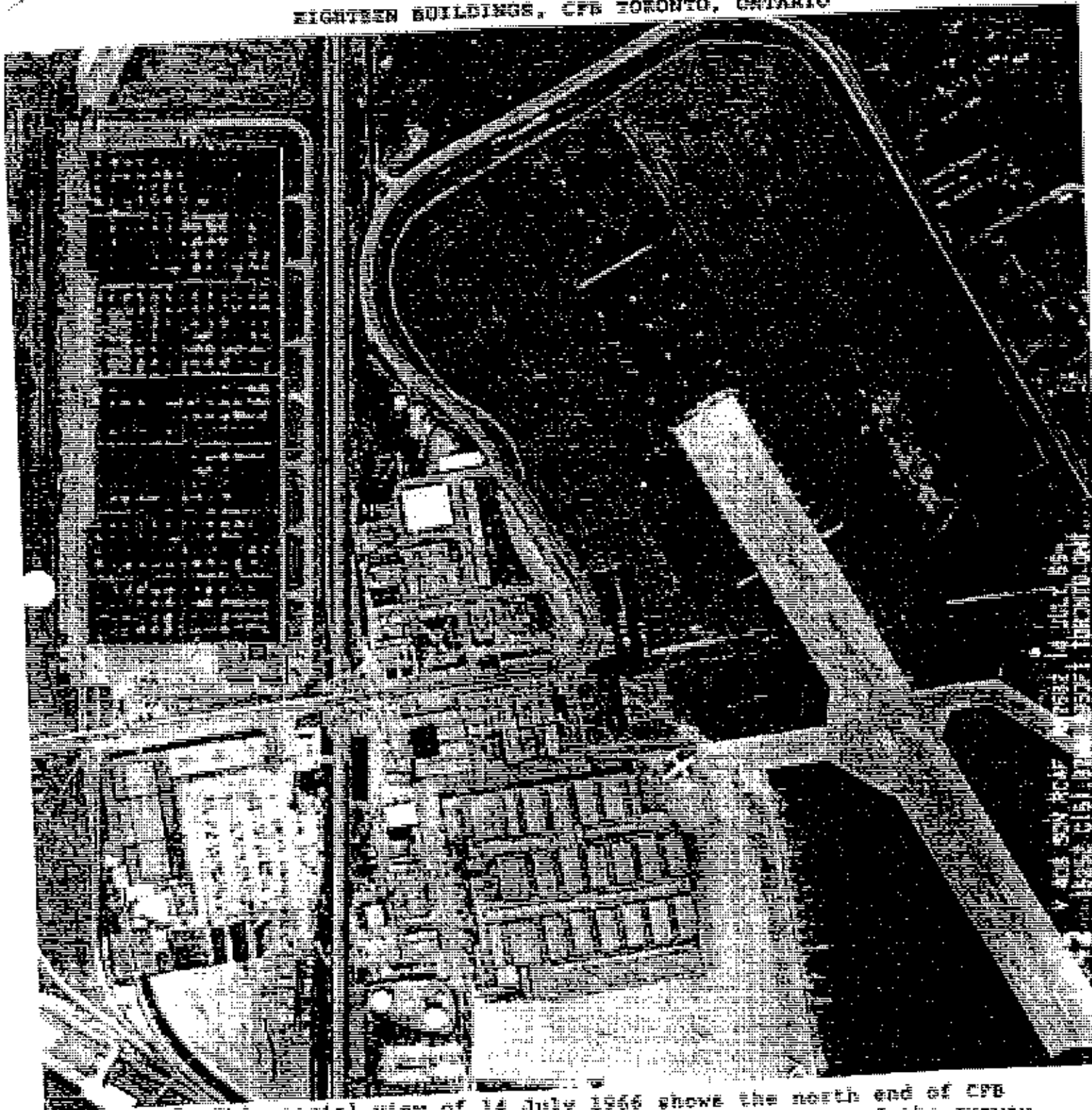
- 3 This aerial view of the de Havilland plant site in 1946 shows both the wartime expansion of facilities and the continuing agricultural dominance in the surrounding lands. (EMRC, NAPL, A9667-18.)

## EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



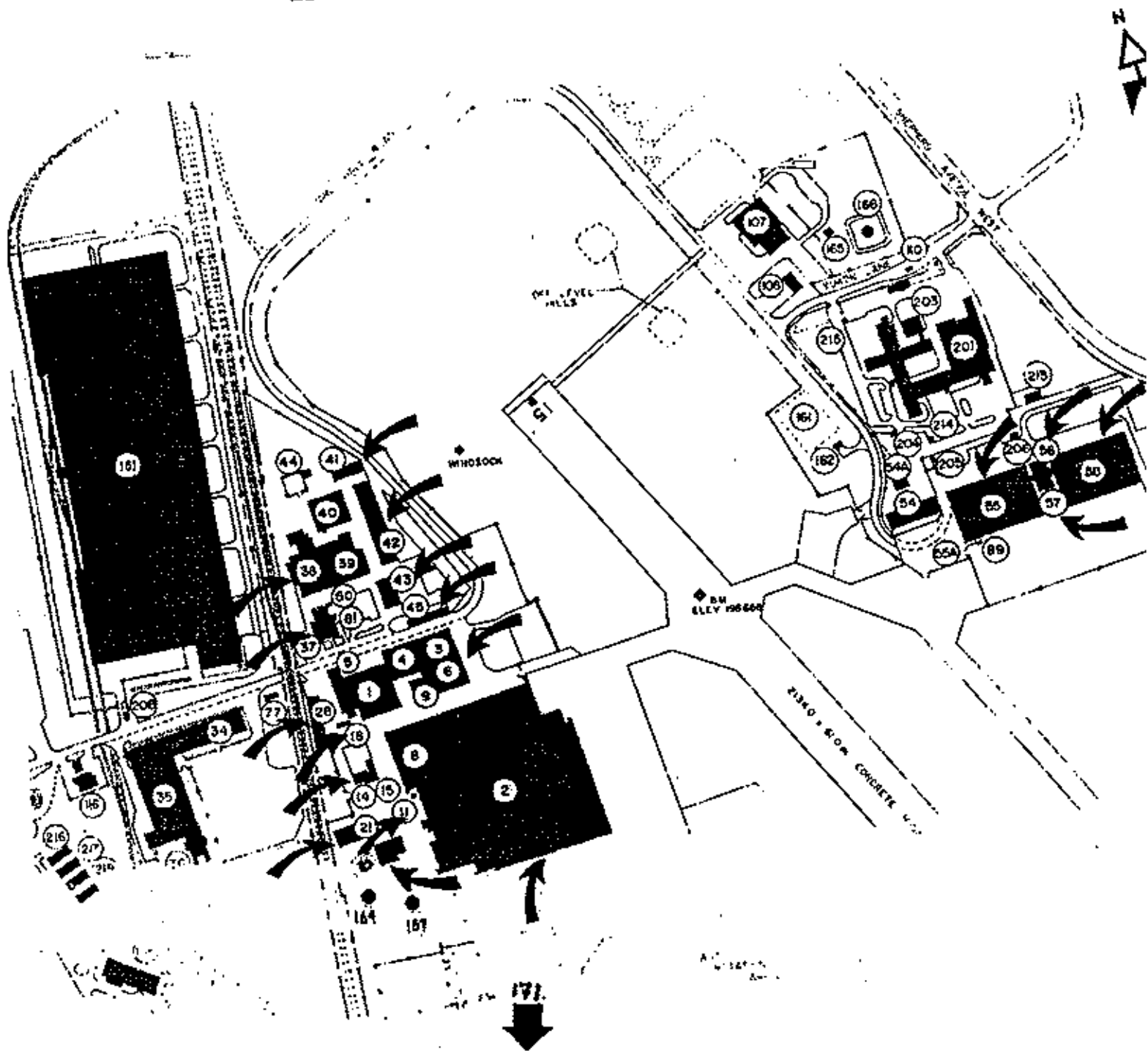
- 4 This map of the Metropolitan Toronto region shows the extent of built-up areas in 1953 (solid line marked) and 1966 (dotted line marked) and illustrates the rapid suburbanization on all three sides of the city and the eventual engulfment of CFB Toronto by residential and commercial development. (James T. Lemon, *Toronto Since 1918: An Illustrated History* [Toronto: Lorimer, 1985], Figure 4, p. 135.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



5 This aerial view of 14 July 1955 shows the north end of CFB Toronto and illustrates particularly the impact of the runway extensions of the 1950s. It should be compared with the site plan in Figure 6. (EMRC, NAPL, VRR2682, #642.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



6 Site plan of the north end of CFB Toronto, showing the placement of the 18 subject buildings in 1988. (Department of National Defence [DND], Canadian Forces Base Toronto, Drawing #L-DB6-8410-101.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

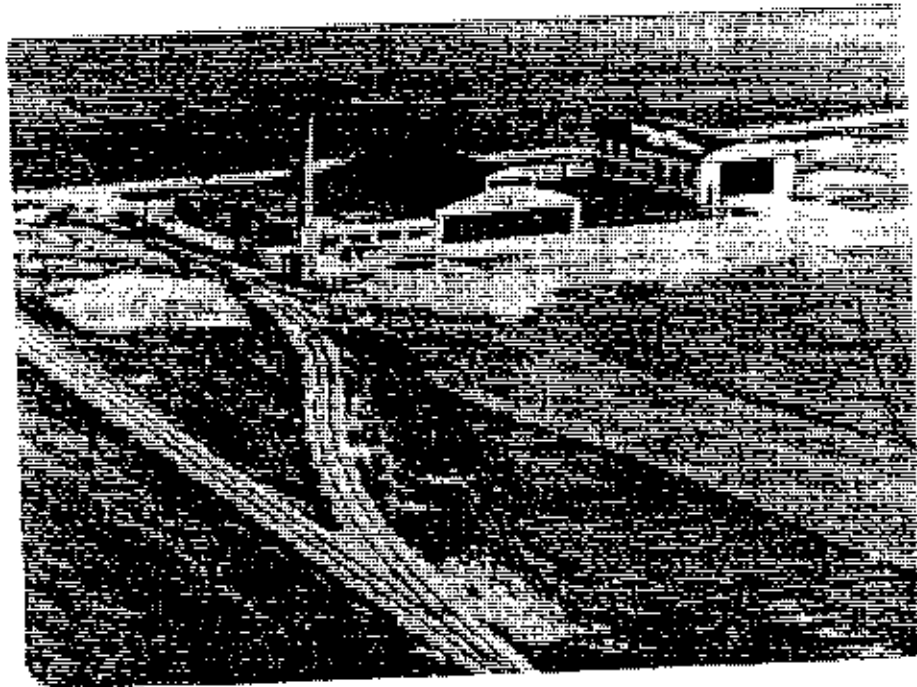


- 7 The original administration building, workshop, and hangar of the de Havilland Aircraft Company (now Plant #1, Building #1); built in 1929, Mathers and Haldenby, architects; north (Sheppard Avenue) and east side elevations, ca. 1930. (Fred W. Hotson, The de Havilland Canada Story [Toronto: CAVEV Books, 1983], p. 26.)



- 8 The same building in 1937, from the southeast. (Ibid., p. 55.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

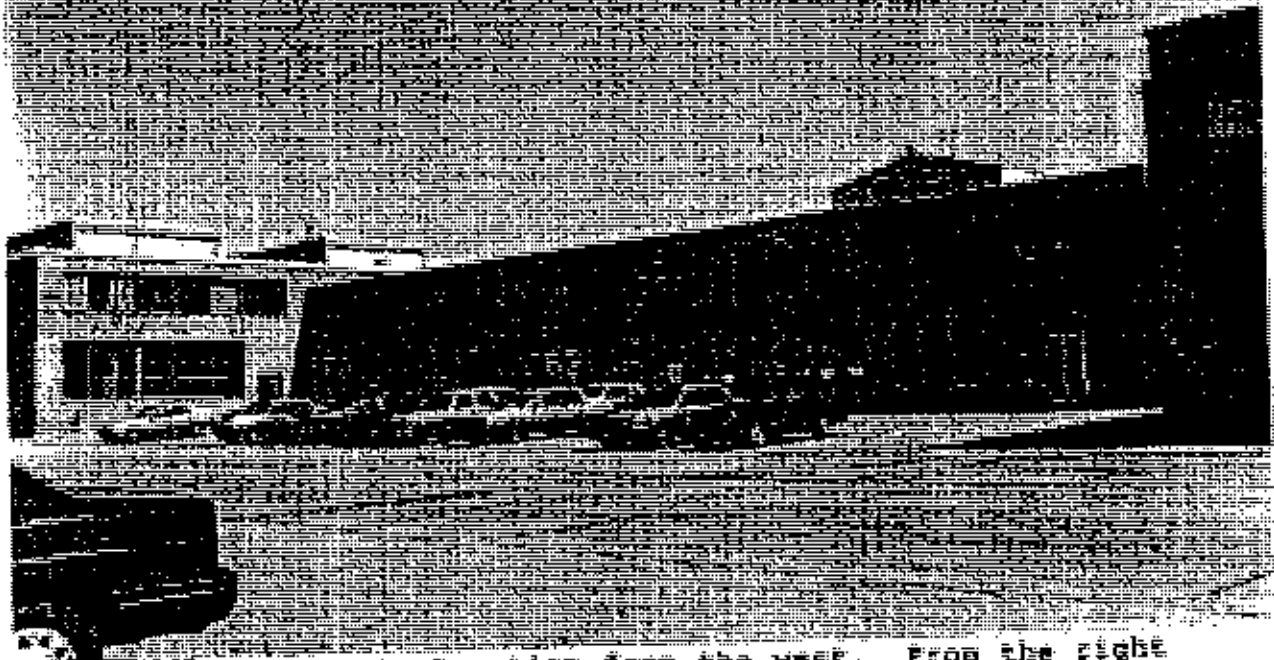


- 9 An aerial view of the de Havilland plant from the southwest, ca. 1929. The hangar in the upper right corner with the north arrow on the roof is now a part of Building #38. (Ibid., p. 246.)

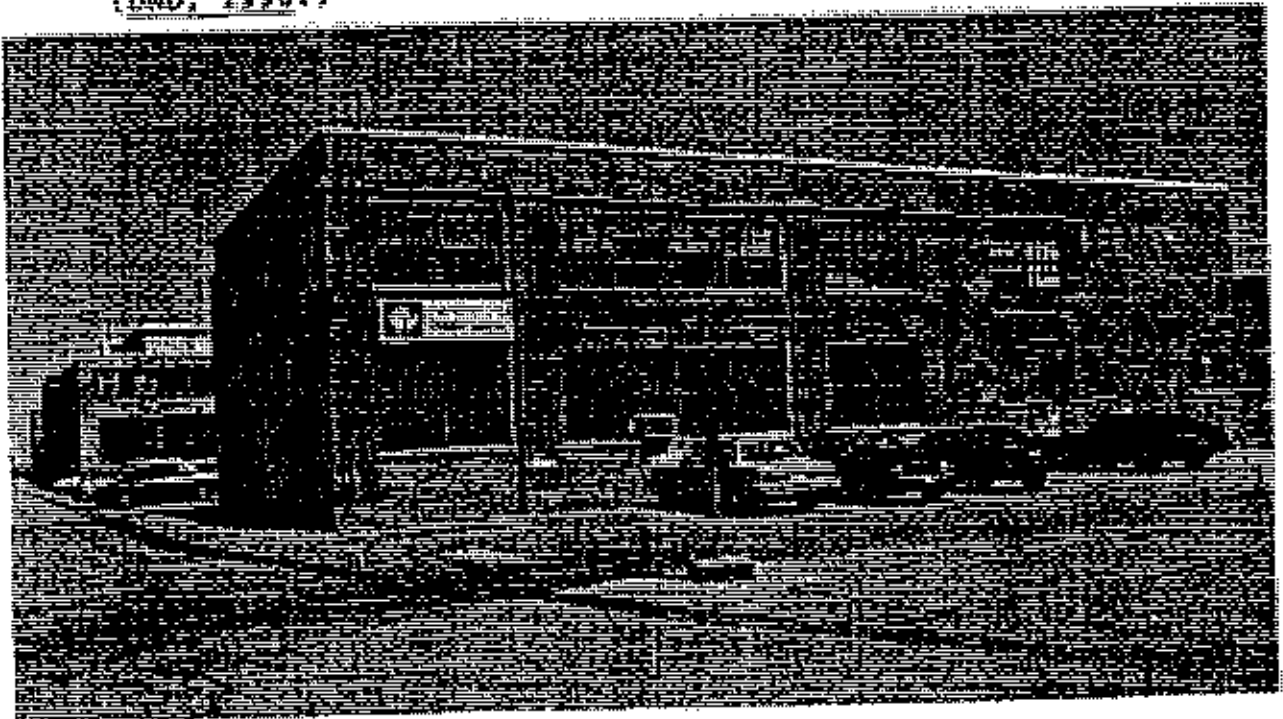


- 10 Plant #1, Building #1, front (north) elevation; built in 1929, with many additions; Mathers and Haldenby, architect for the original section; other architects undetermined. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

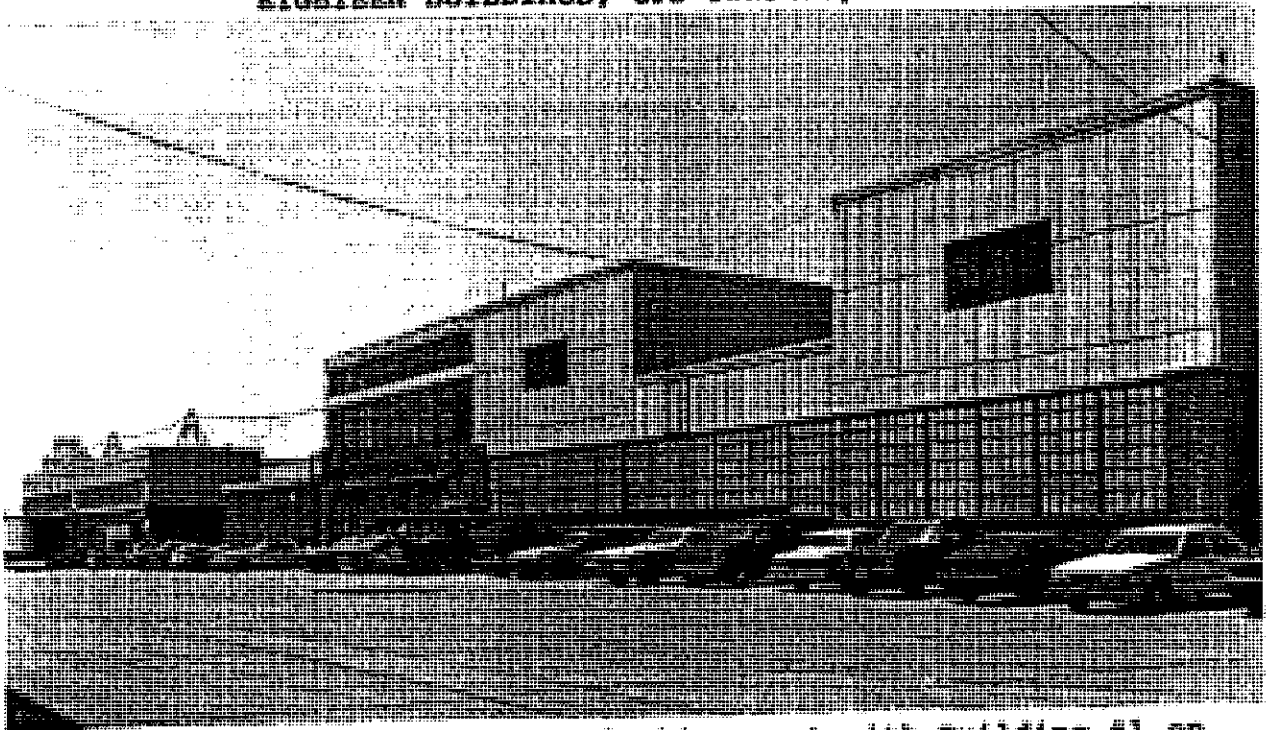


11 Plant #1, front elevation from the west. From the right edge, one sees Building #5, Building #1, and building #4. (DND, 1990.)

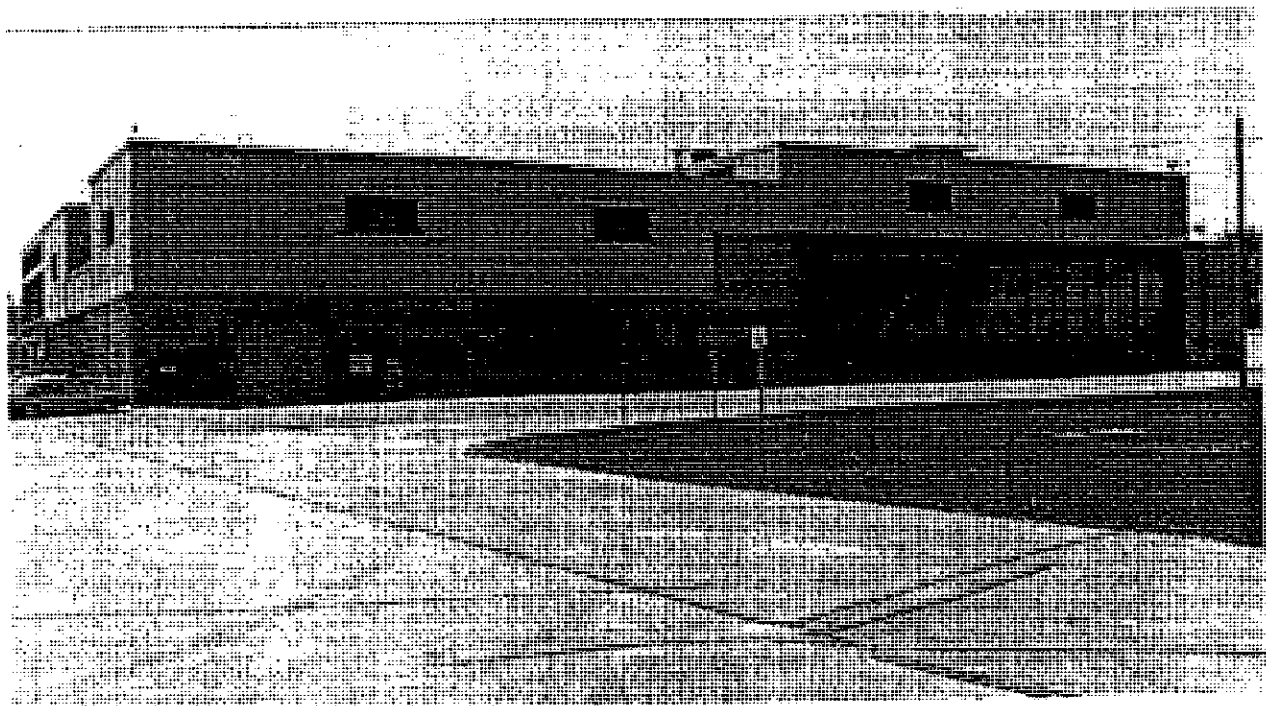


12 Plant #1, Building #5, front and west side elevation. To the left stand Building #4 and Building #3. (DND, 1990.)

**EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO**

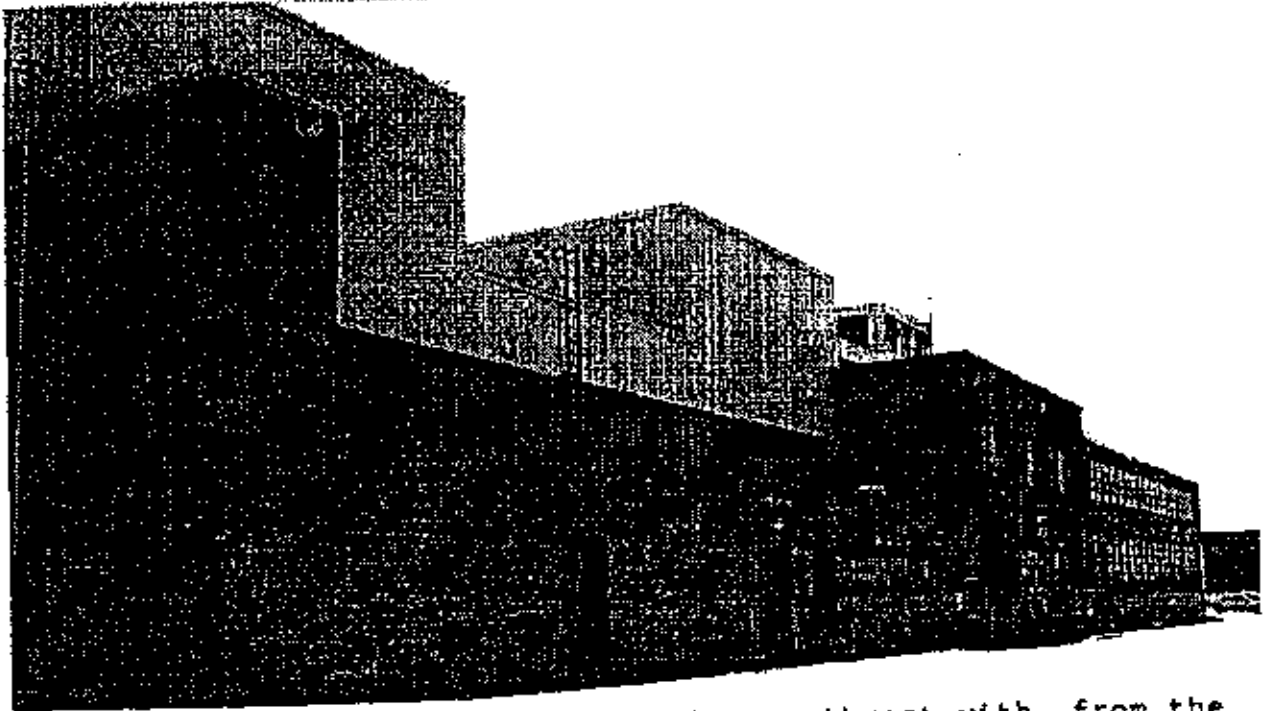


13 Plant #1, rear elevation, looking west with Building #1 on the left and Buildings #6 and #9 on the right. (DND, 1990)

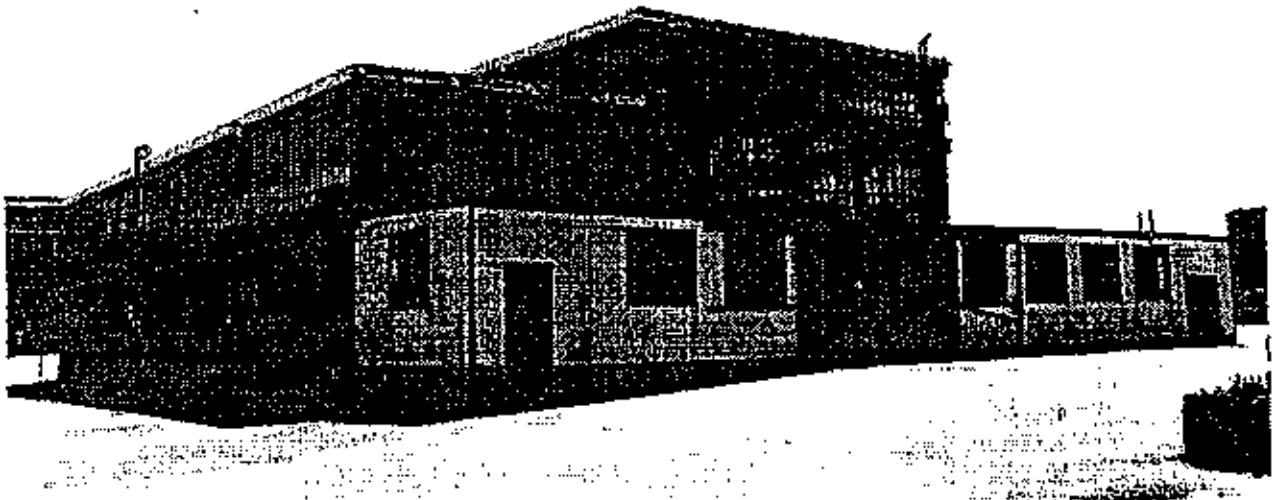


14 Plant #1, east side elevation of Buildings #6 (left) and #3 (right). (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

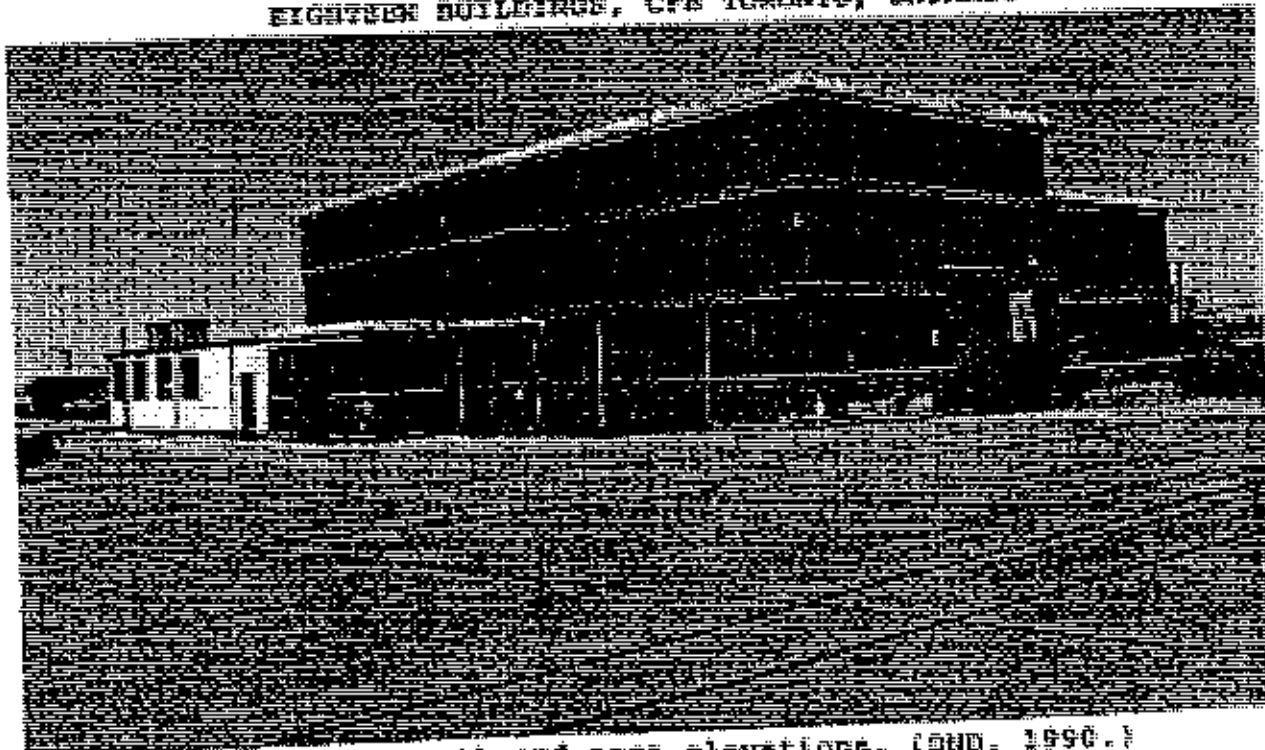


15 Plant #1, front elevation looking southwest with, from the left, Building #3, Building #4 and, in the background, the east side of Building #5. (DND, 1990.)

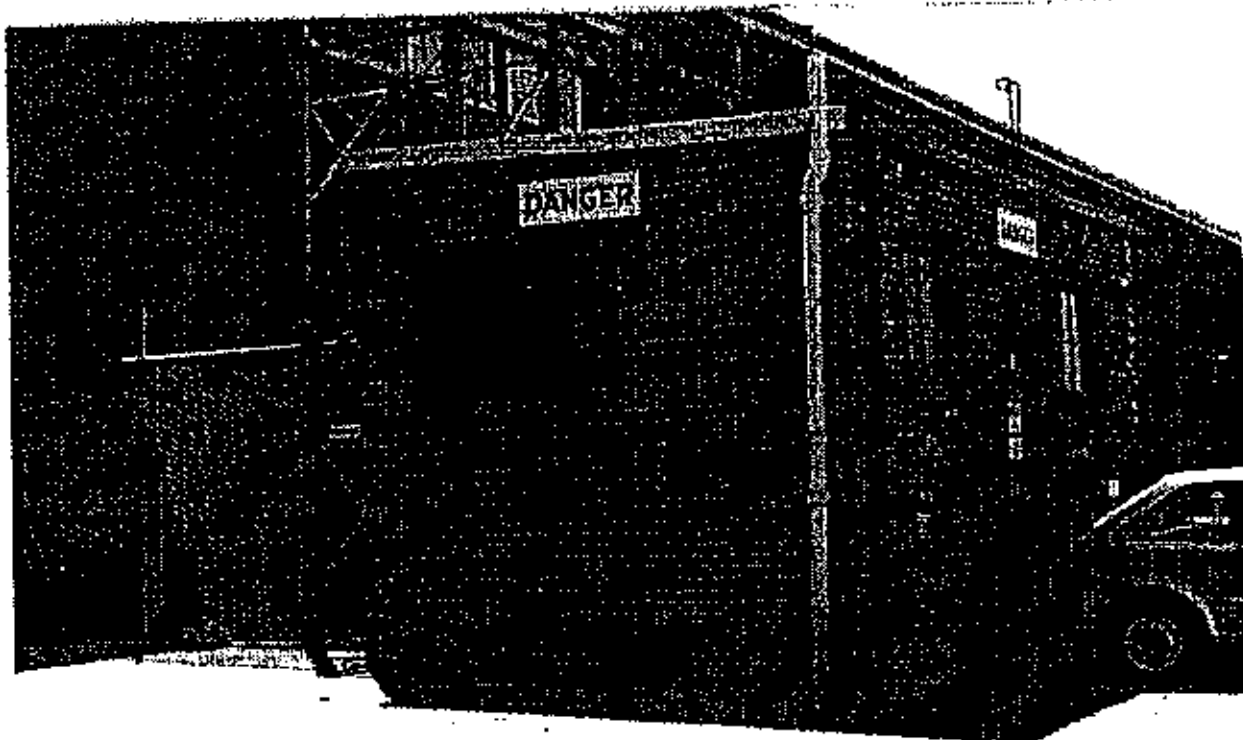


16 Workshop #10, constructed in 1938, architect undetermined; north and west elevations. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



17 Building #10, south and east elevations. (DND, 1990.)

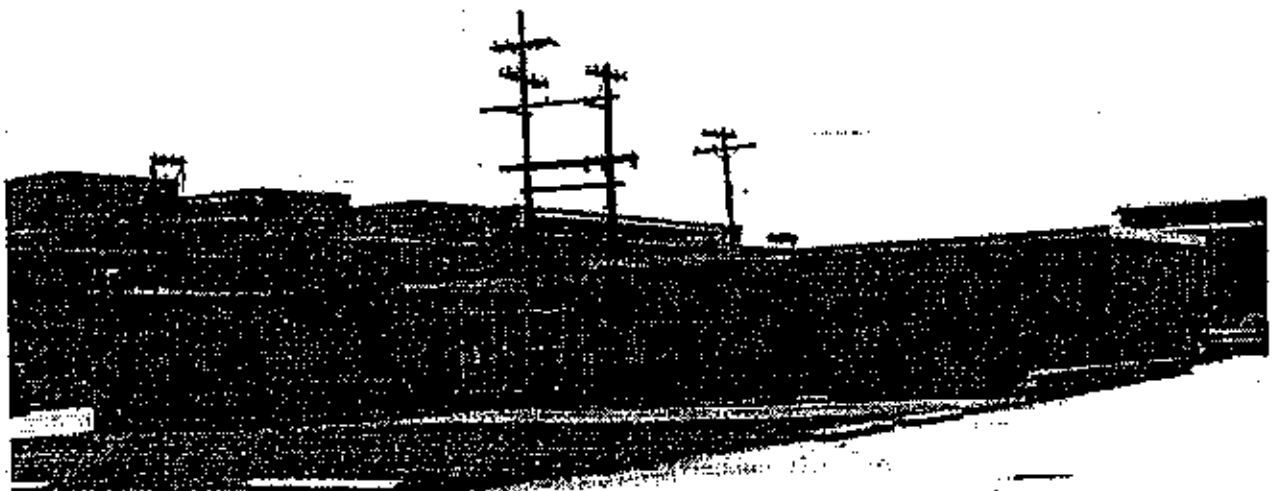


18 Electrical Sub-Station #3, Building #11; built in 1938, architect undetermined; south elevation. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

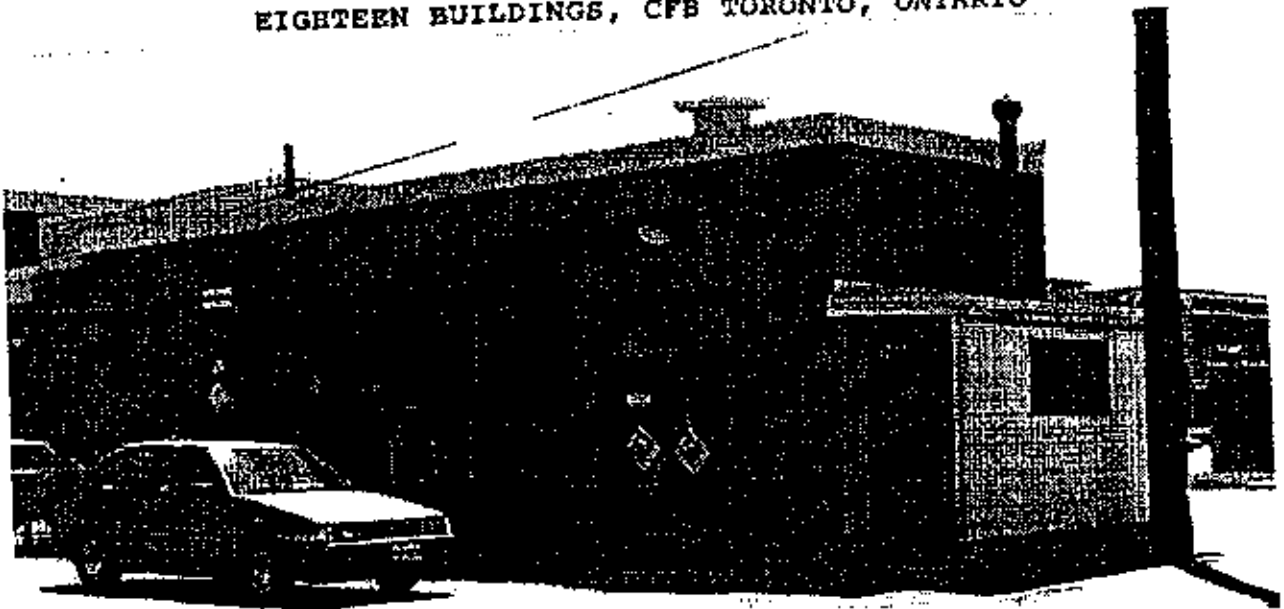


19 Fire Pump House and Garage, Buildings #14 and #15; constructed in 1938, architect undetermined; main (east) and south side elevations. (DND, 1990.)

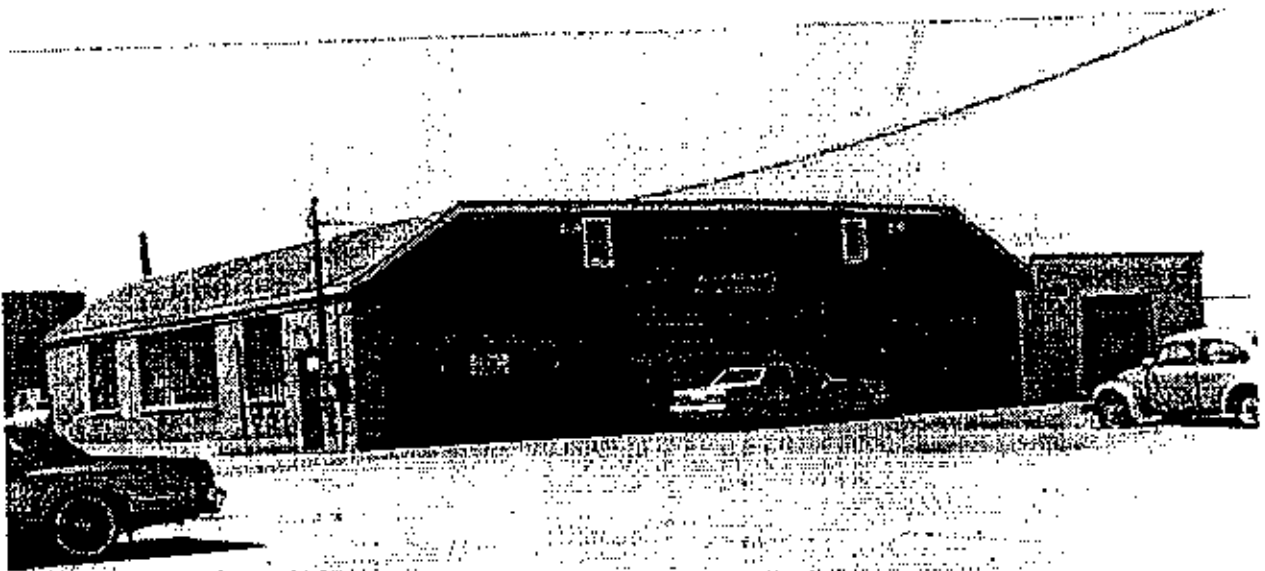


20 Fire Pump House and Garage, Buildings #14 and #15, rear (north) elevation. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



21 Storage Building #18, constructed ca. 1938, architect undetermined; south elevation. (DND, 1990.)

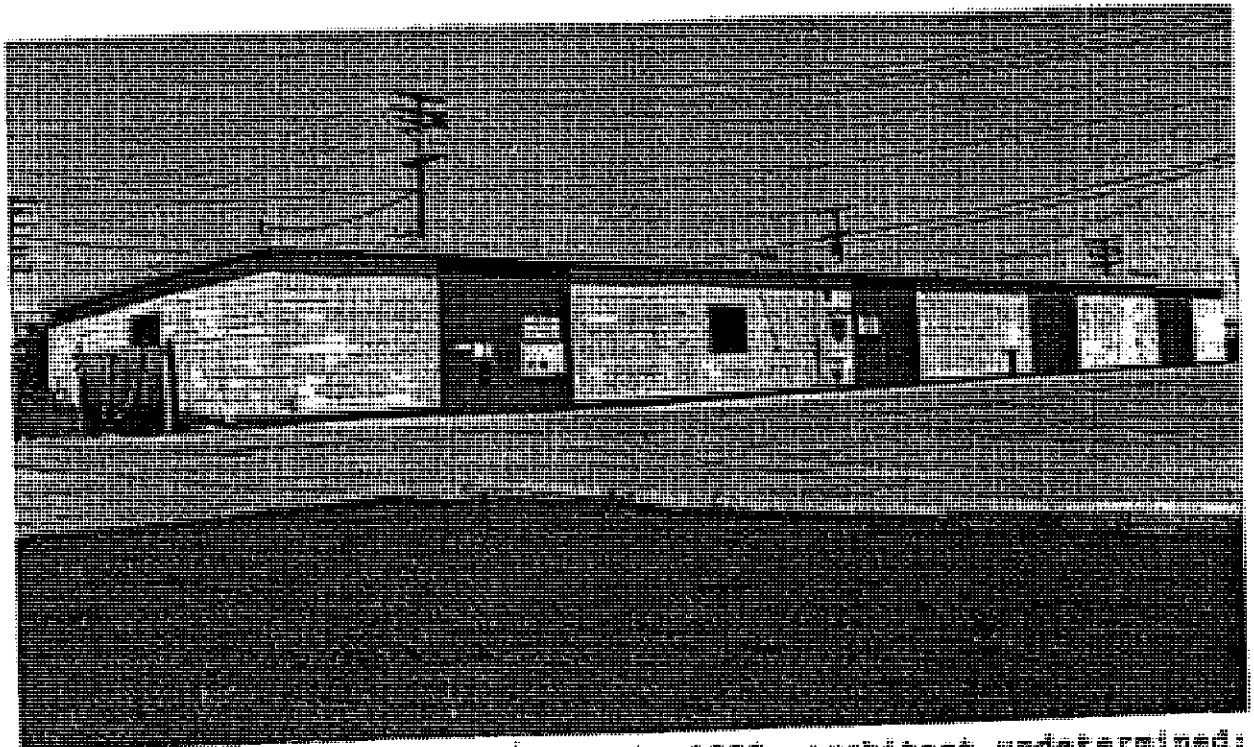


22 Auto Hobby Club Garage, Building #21, constructed in 1939, architect undetermined; south elevation. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

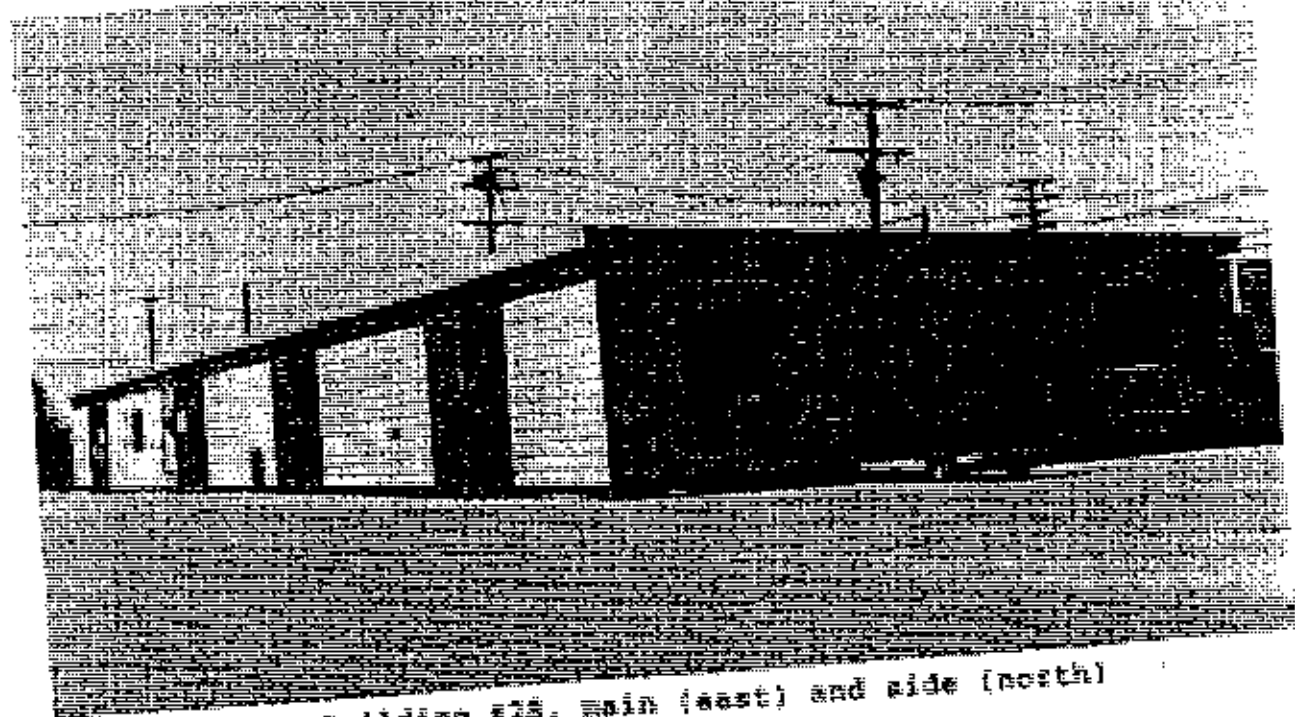


23 Auto Hobby Club Garage, Building #21, north elevation. (DND, 1990.)



24 Storage Building #28, built in 1939, architect undetermined; east (main) and south (side) elevations. (DND, 1990.)

EIGHTEEN BUILDINGS, CPN TORONTO, ONTARIO



25 Storage Building #18, main (east) and side (north) elevations. (DND, 1990.)

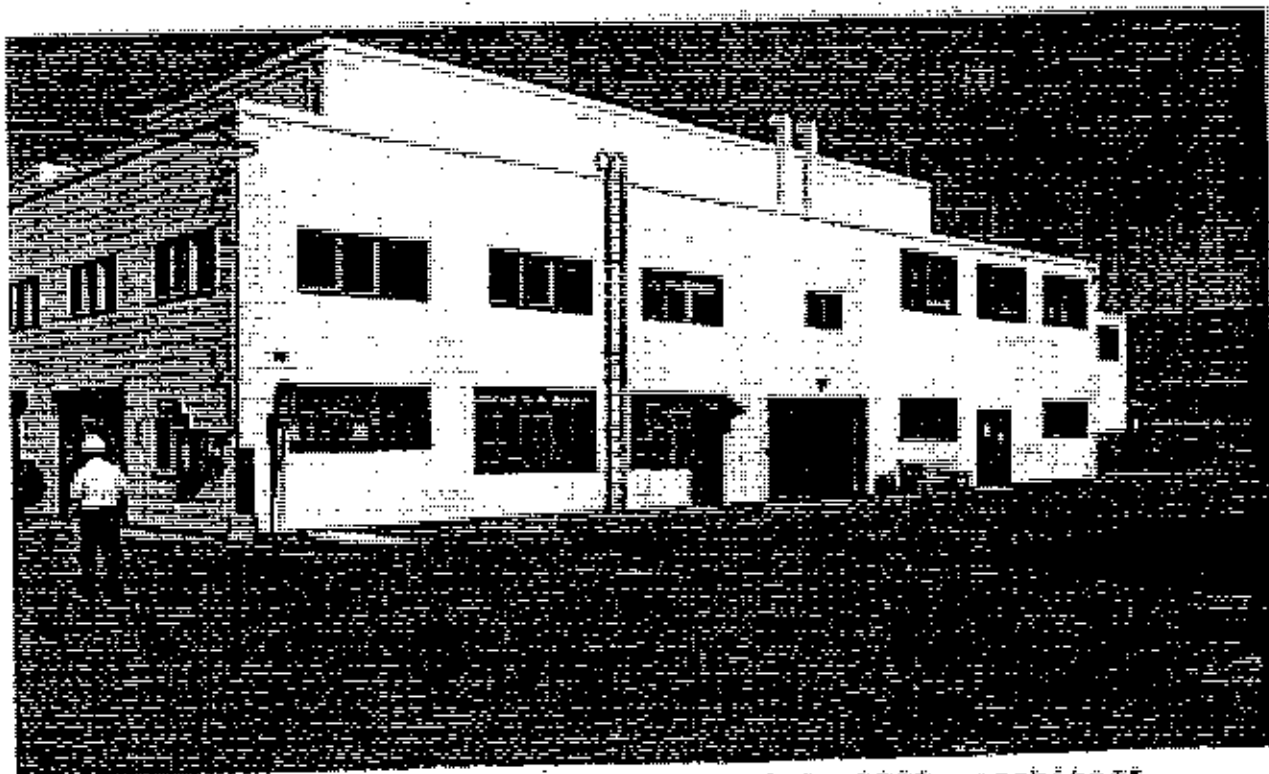


26 Chapel Building #37, built in 1940 with additions; architect undetermined; main (south) and side (east) elevations. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



27 Chapel Building #37, rear (north) elevation. (DND, 1990.)

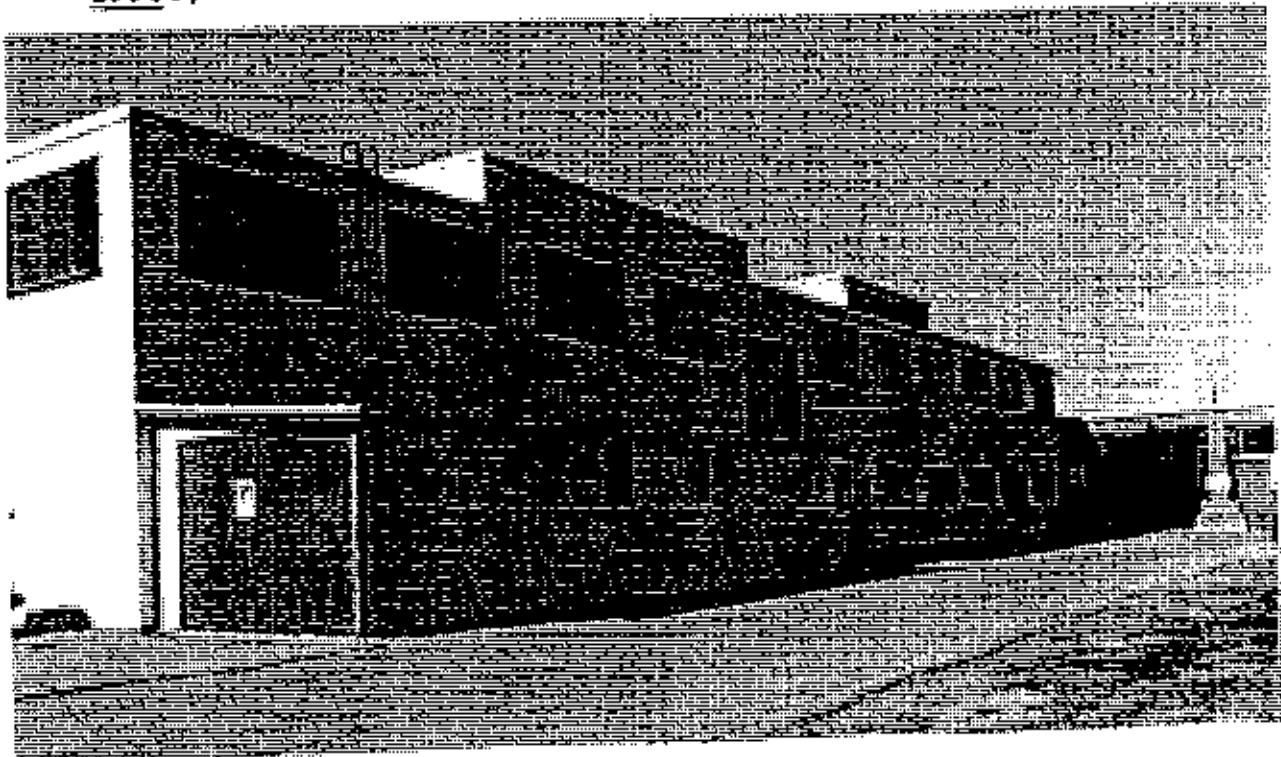


28 Storage Buildings #39, constructed in 1939, architect undetermined; main (east) elevation from the south. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

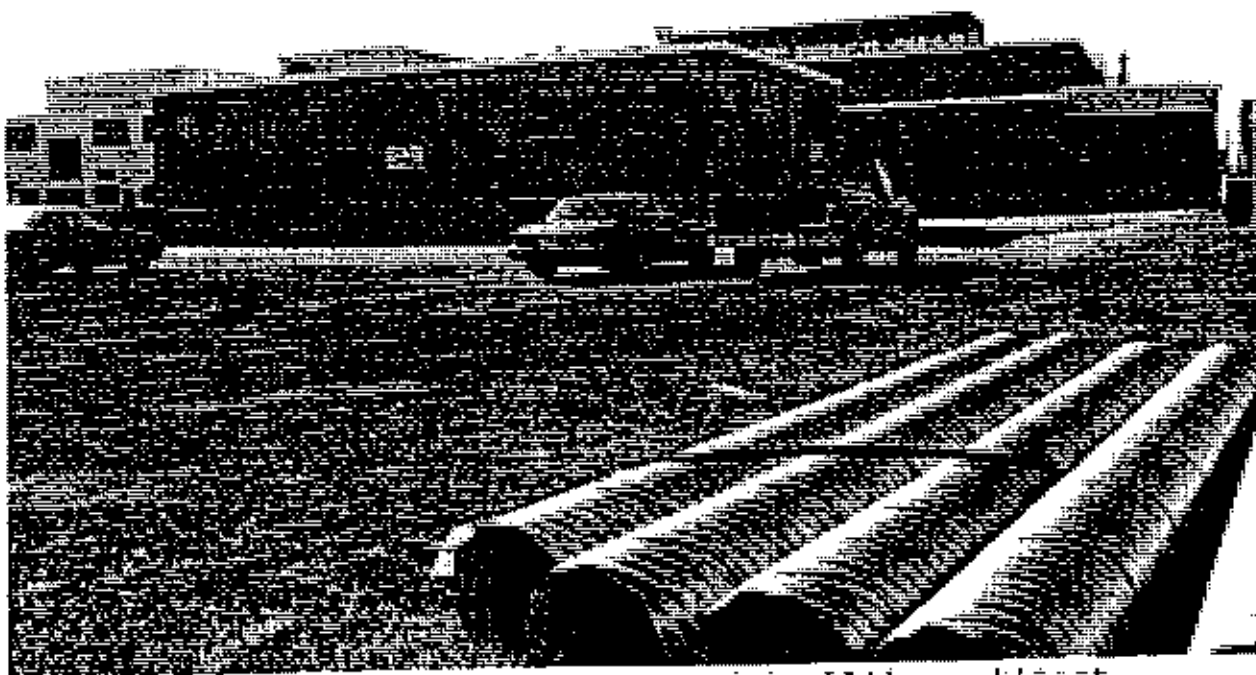


29 Building #39, main (east) elevation from the north. (DND, 1990.)



30 Building #39, side (north) elevation. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



31 Storage Building #38, constructed in 1944, architect undetermined; north elevations. (DND, 1990.)

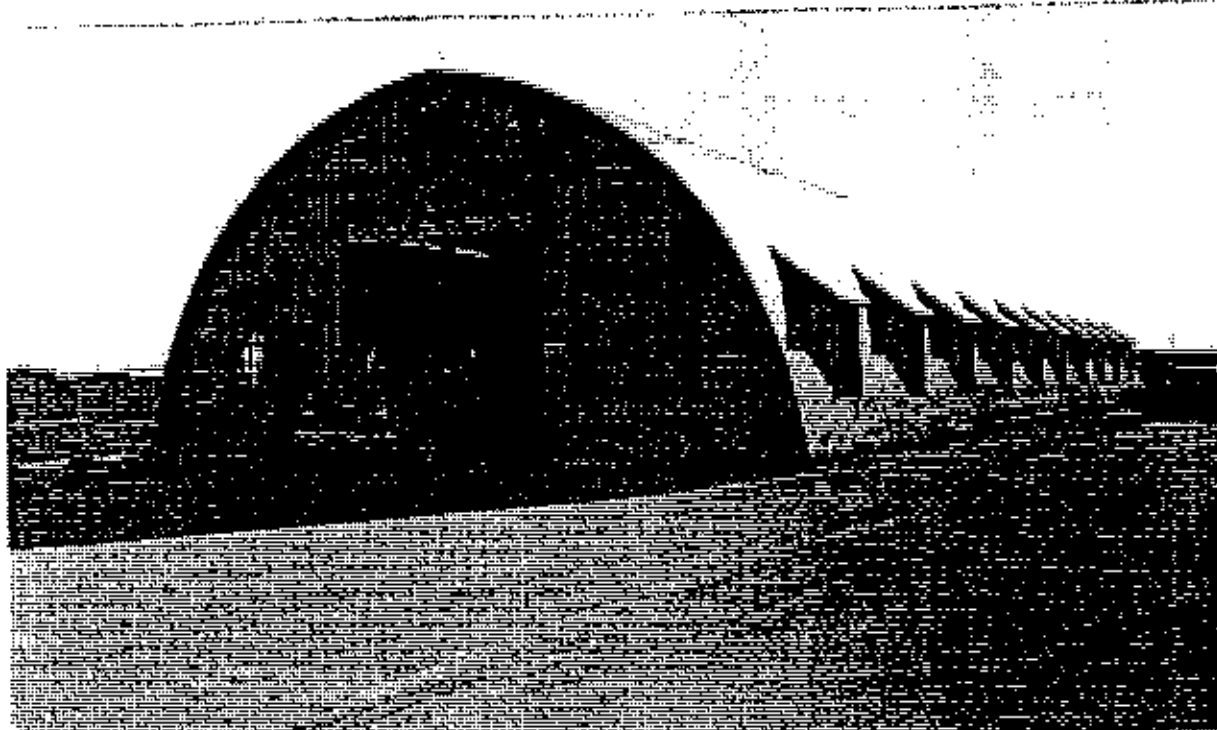


32 Storage Building #38, west (side) elevation. The curved-roofed section on the right side of the photograph is the portable 1928 hangar originally erected at Mount Dennis. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

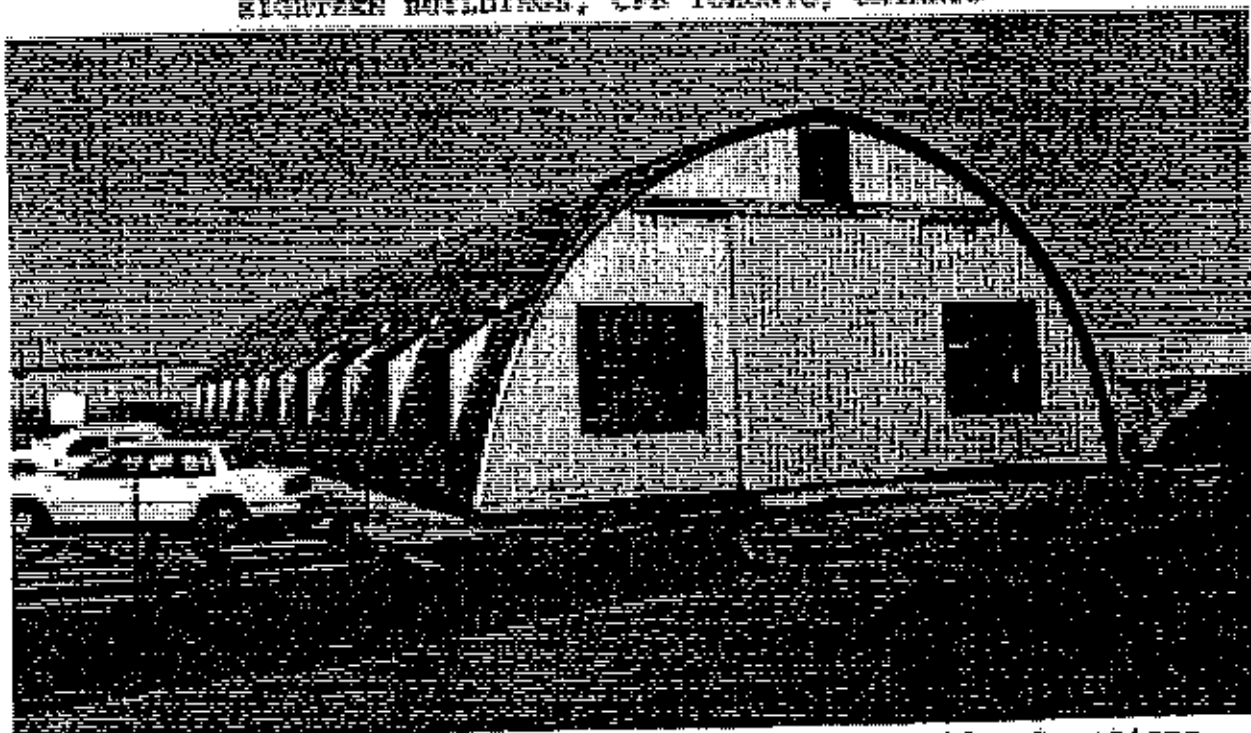


33 Building #28 (left) and Building #39 (right), south side elevation. (DND, 1990.)

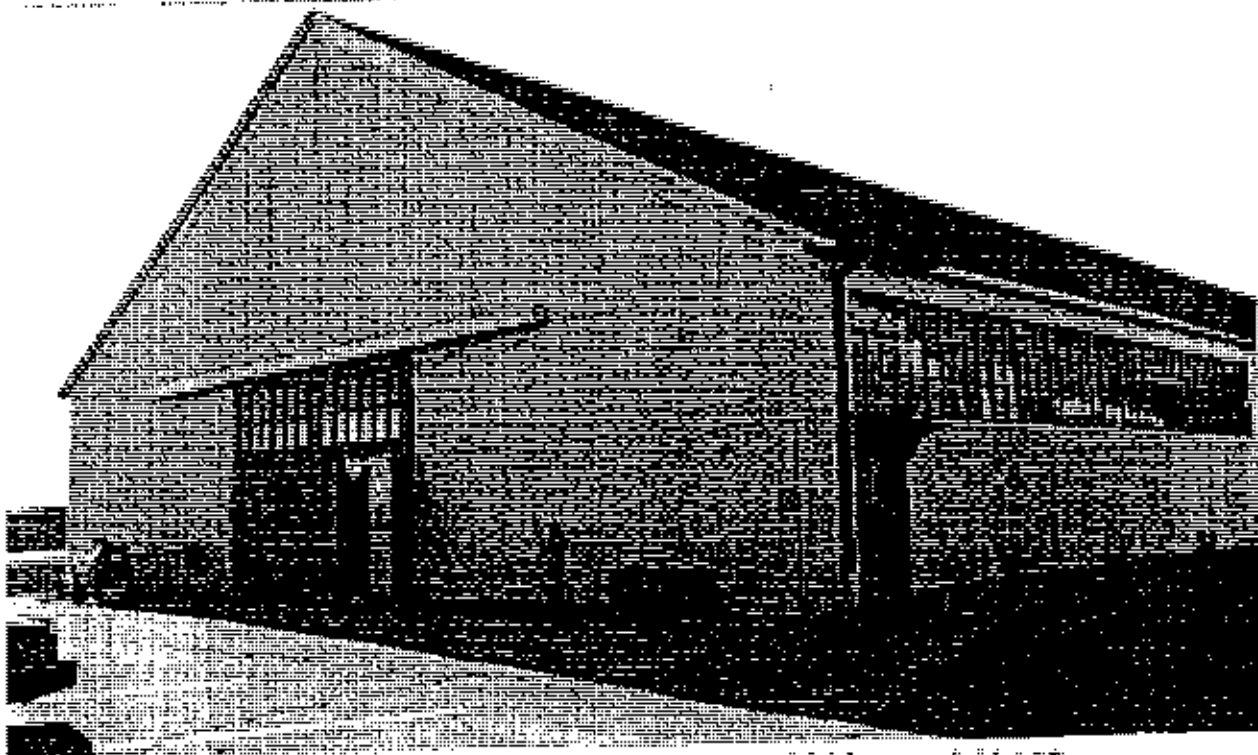


34 Storage Building #41, constructed in 1944, architect undetermined; main (west) and south side elevations. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



35 Storage Building #41, rear (east) and south side elevations.  
(DND, 1990.)

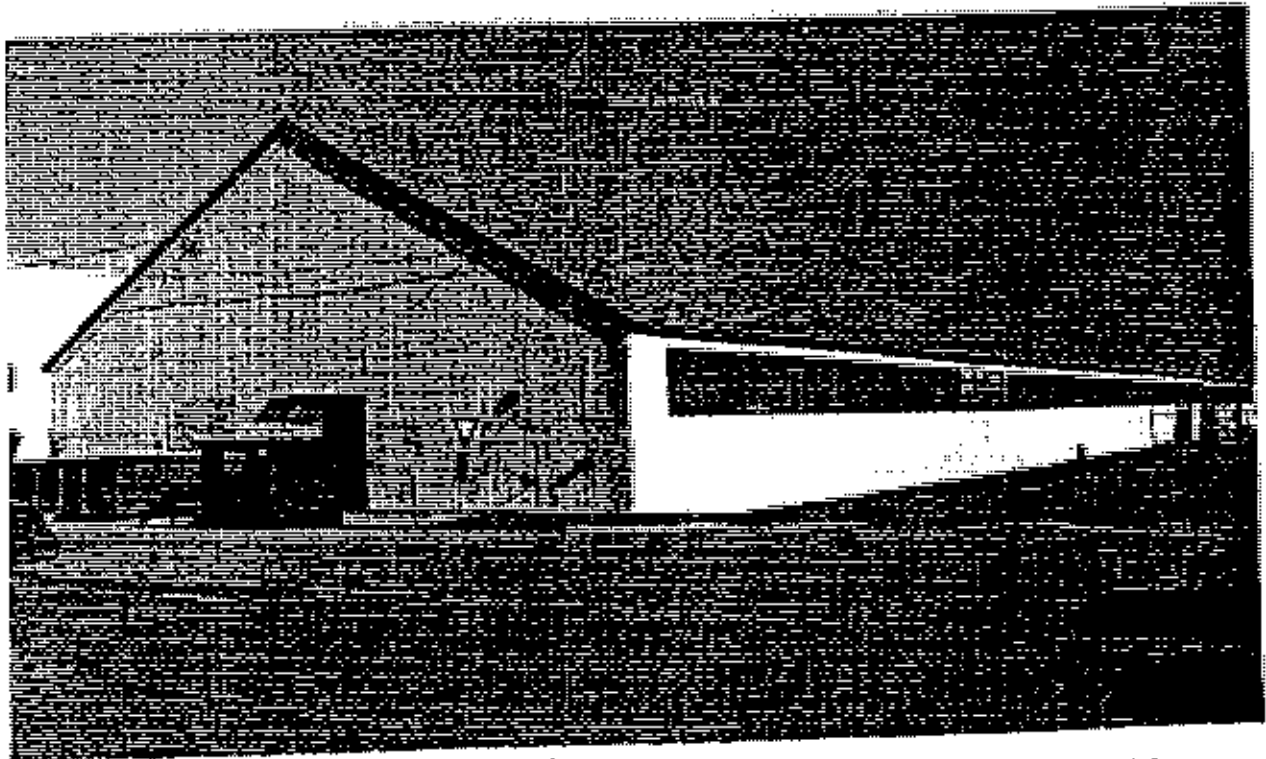


36 Storage Building #42, constructed in 1944, architect  
undetermined; main (north) and partial west side elevations.  
(DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

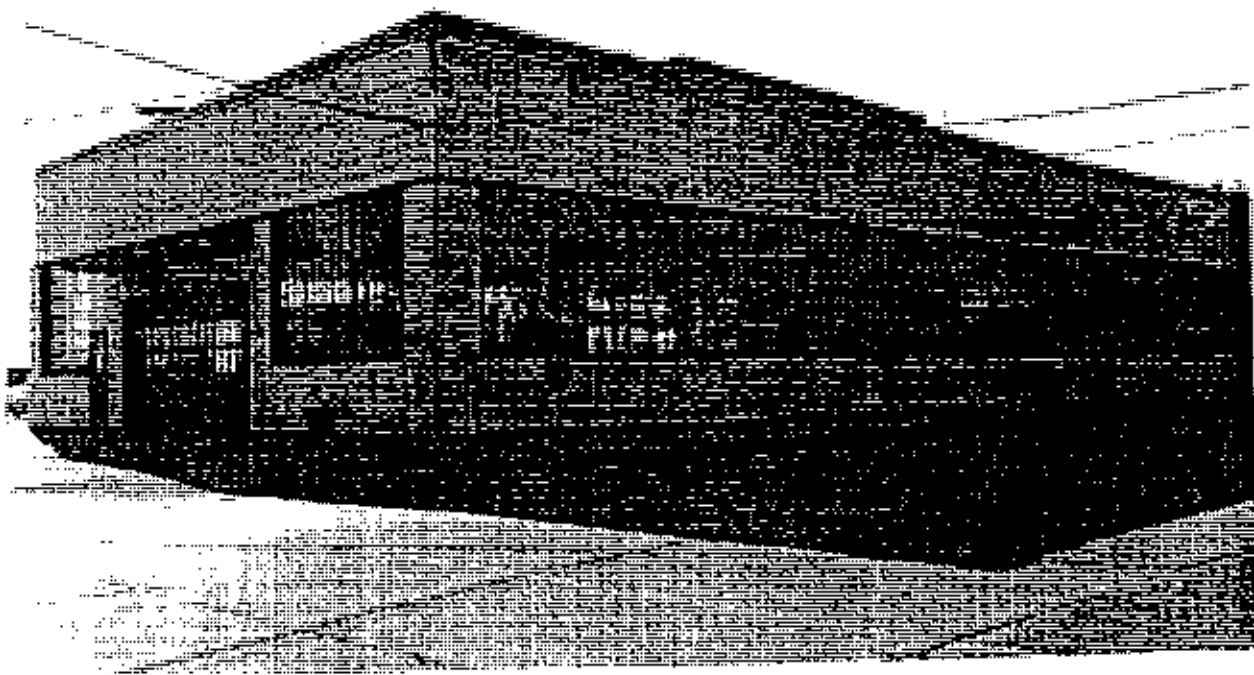


37 Storage Building #42, west side elevation. (DND, 1990.)

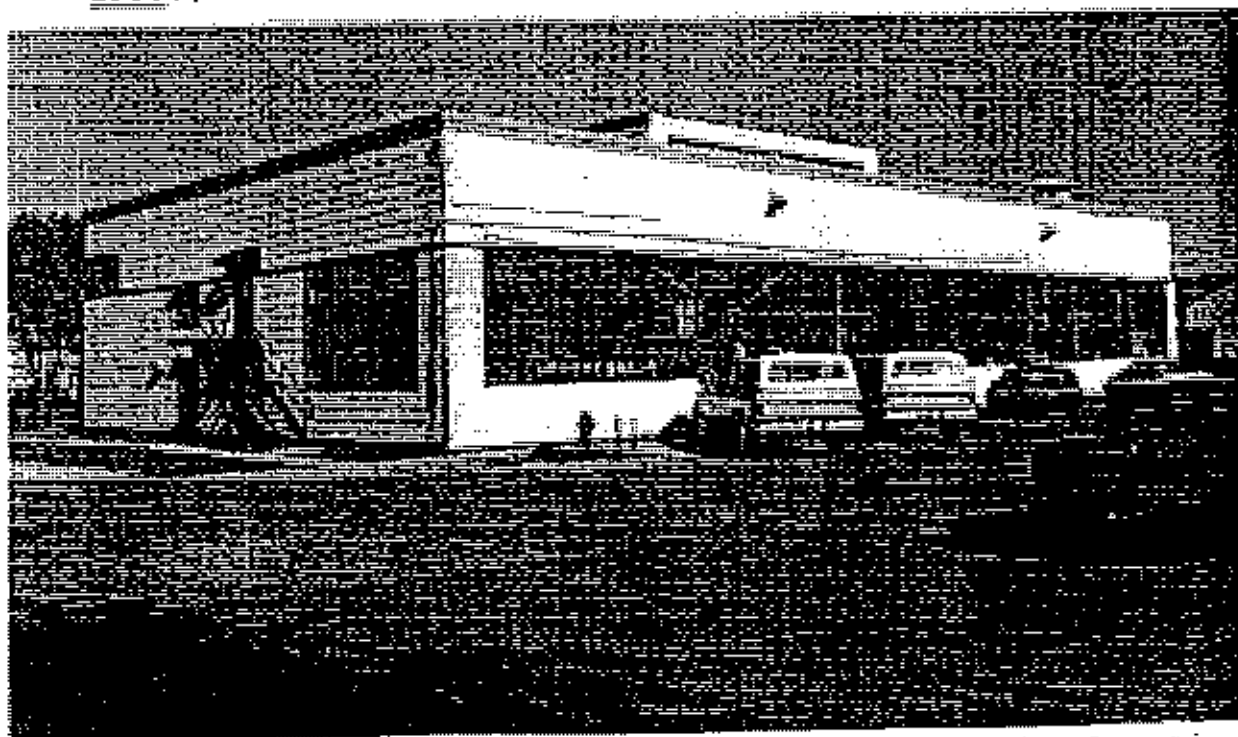


38 Storage Building #42, rear (south) and east side elevations.  
(DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



39 Workshop Building #43, constructed ca. 1943, architect undetermined; main (north) and west side elevations. (DND, 1990.)

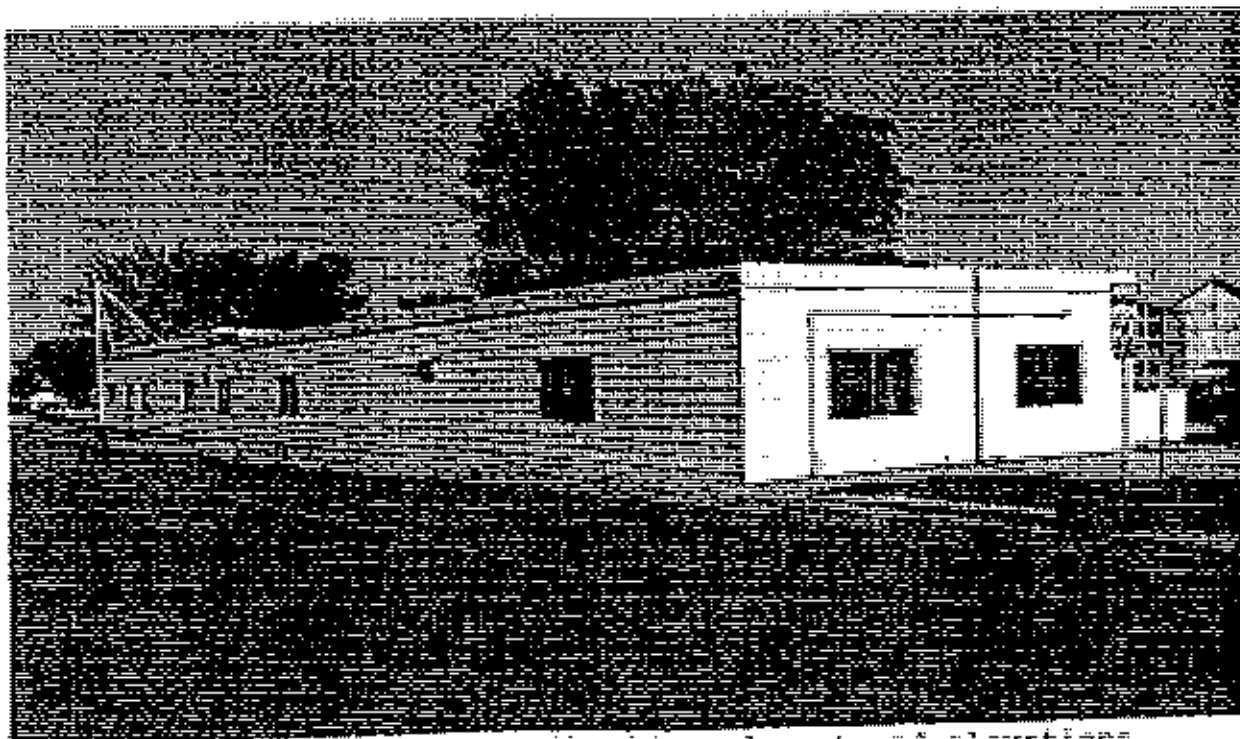


40 Workshop Building #43, rear (south) and east side elevations. (DND, 1990.)

EIGHTEEN BUILDINGS, CPB TORONTO, ONTARIO

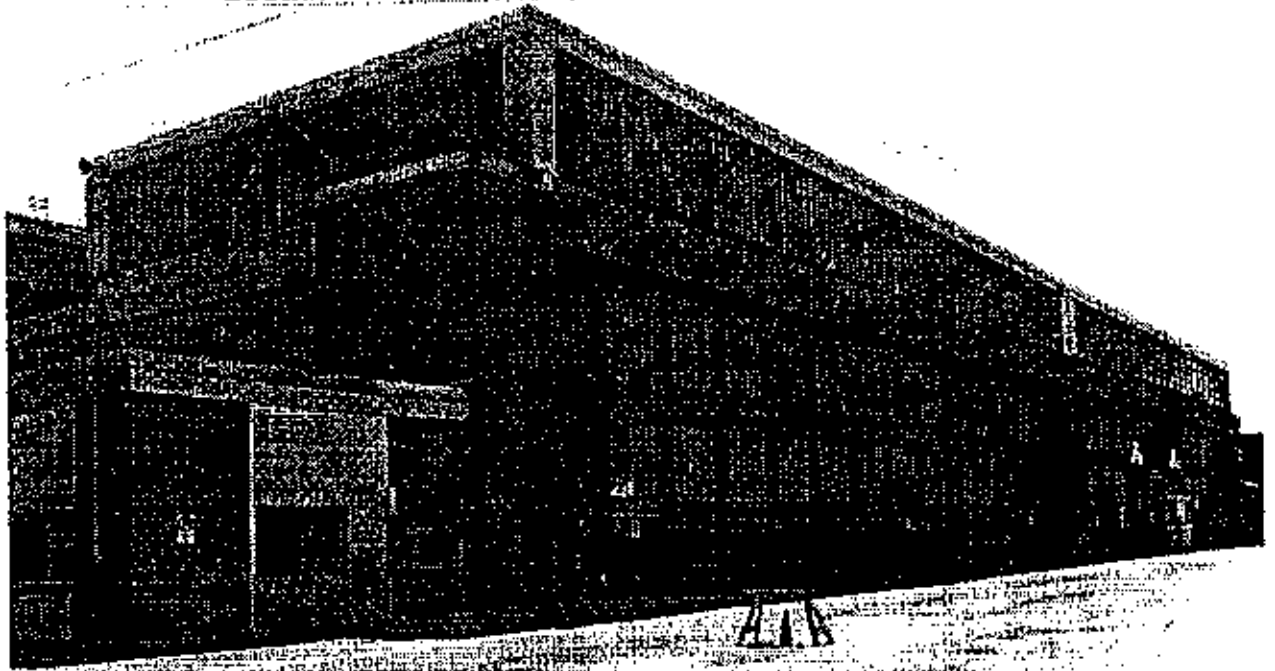


41 Office Building #45, constructed in 1944, architect undetermined, main (north) and west end elevations. (DND, 1990.)



42 Office Building #45, south side and east end elevations. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



43 Base Transport Garage Building #55, constructed in 1943, architect undetermined; north and (on the left) partial east side elevation looking southwest. (DND, 1990.)

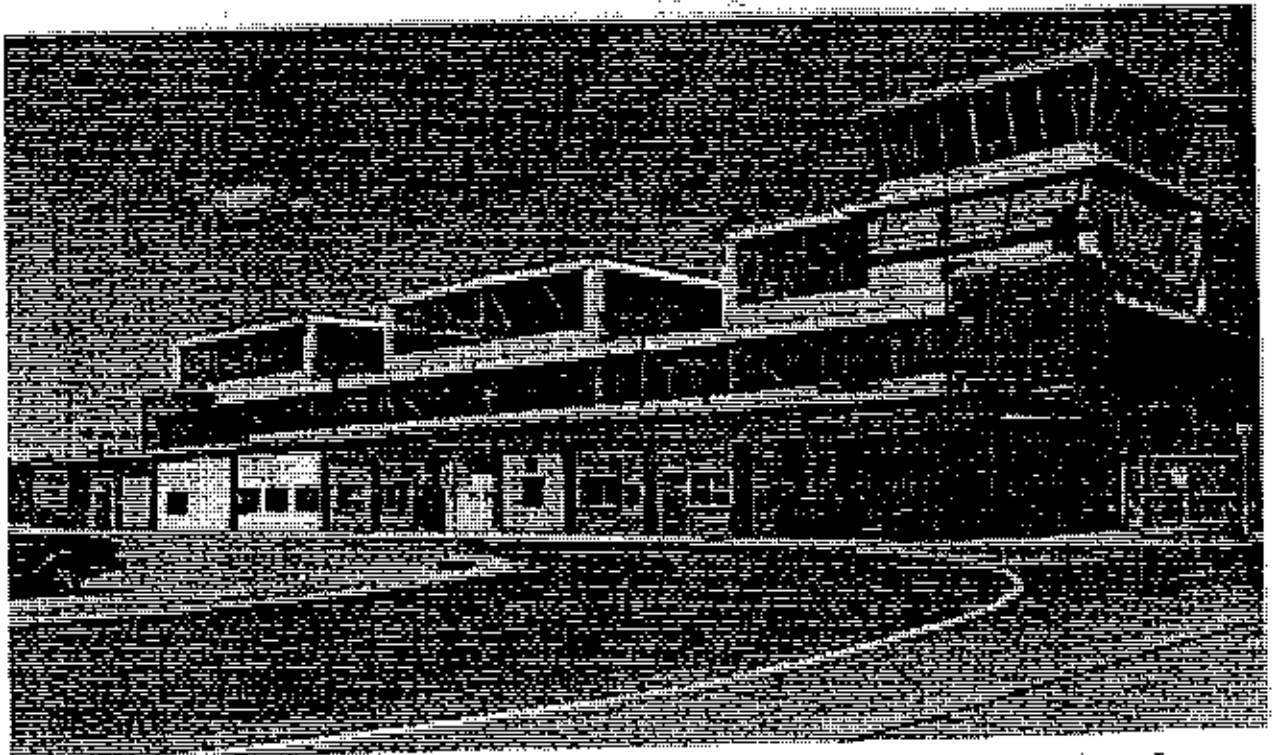


44 Base Transport Garage Building #55, north elevation looking southeast with Heating Plant Building #56 behind to the left and Workshop Building #58 behind that. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



45 Base Transport Garage Building #55, west side elevation looking south. (DND, 1990.)

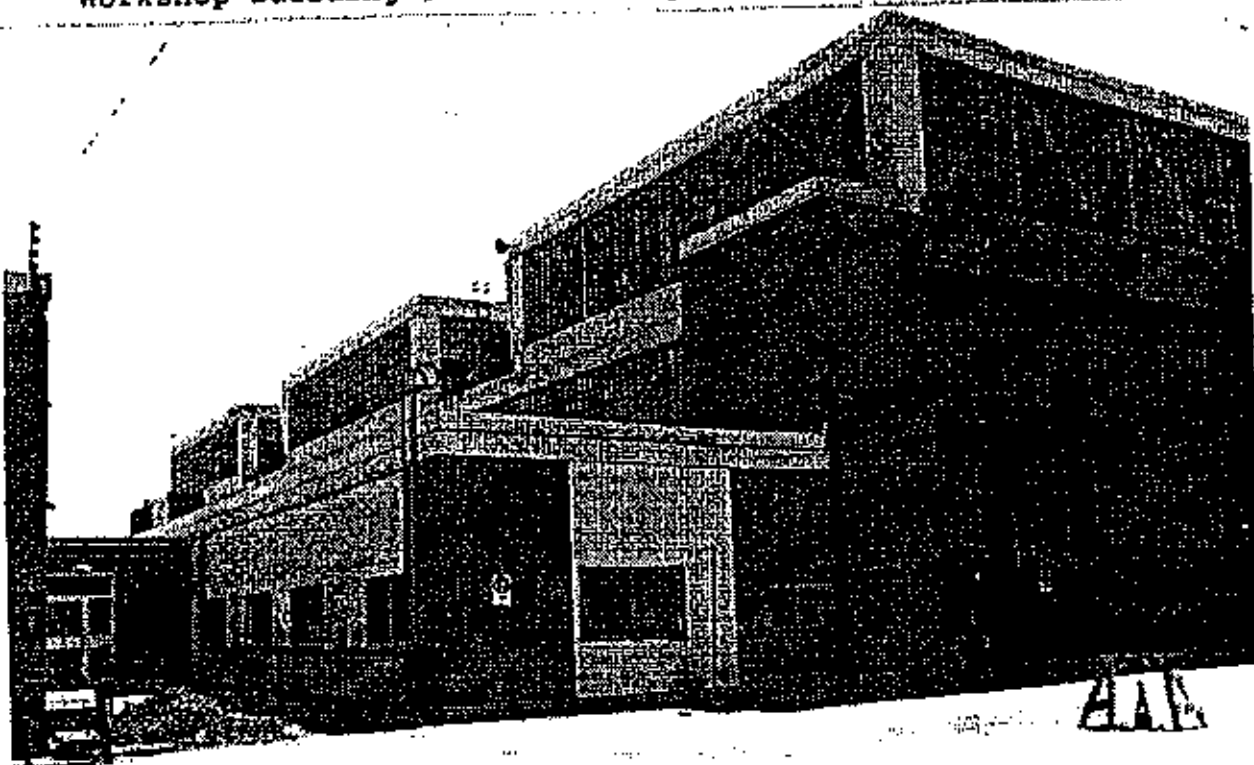


46 Base Transport Garage Building #55, west side elevation from the southwest. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

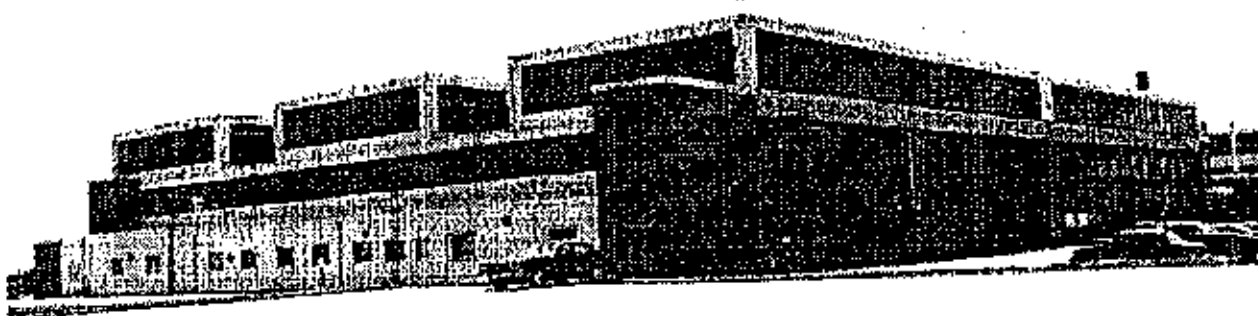


47 Base Transport Garage Building #35, south elevation, with Workshop Building #58 to the right rear. (DND, 1990.)

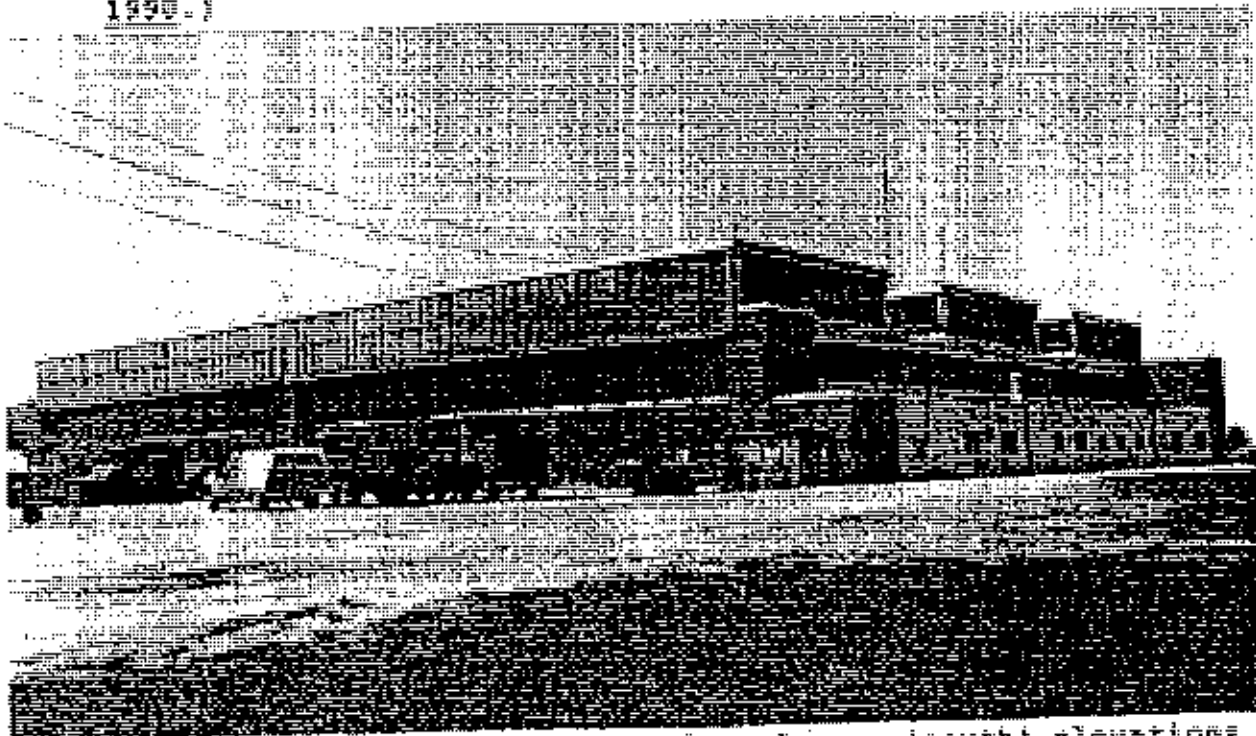


48 Base Transport Garage Building #55, east side elevation from the north. This returns the reader to the point of view of Figure 43. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

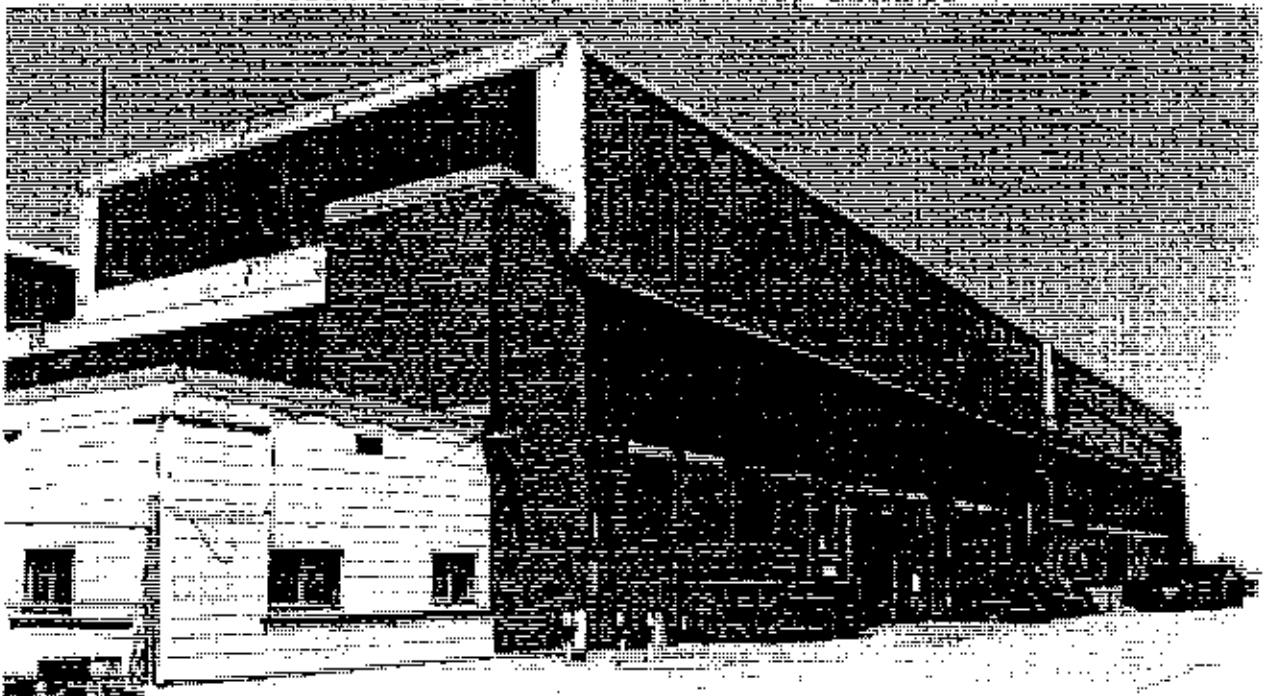


49 Workshop Building #58, constructed in 1943, architect undetermined; front (north) and east side elevations. Buildings #56 and #55 are just visible to the right. (DND, 1990.)

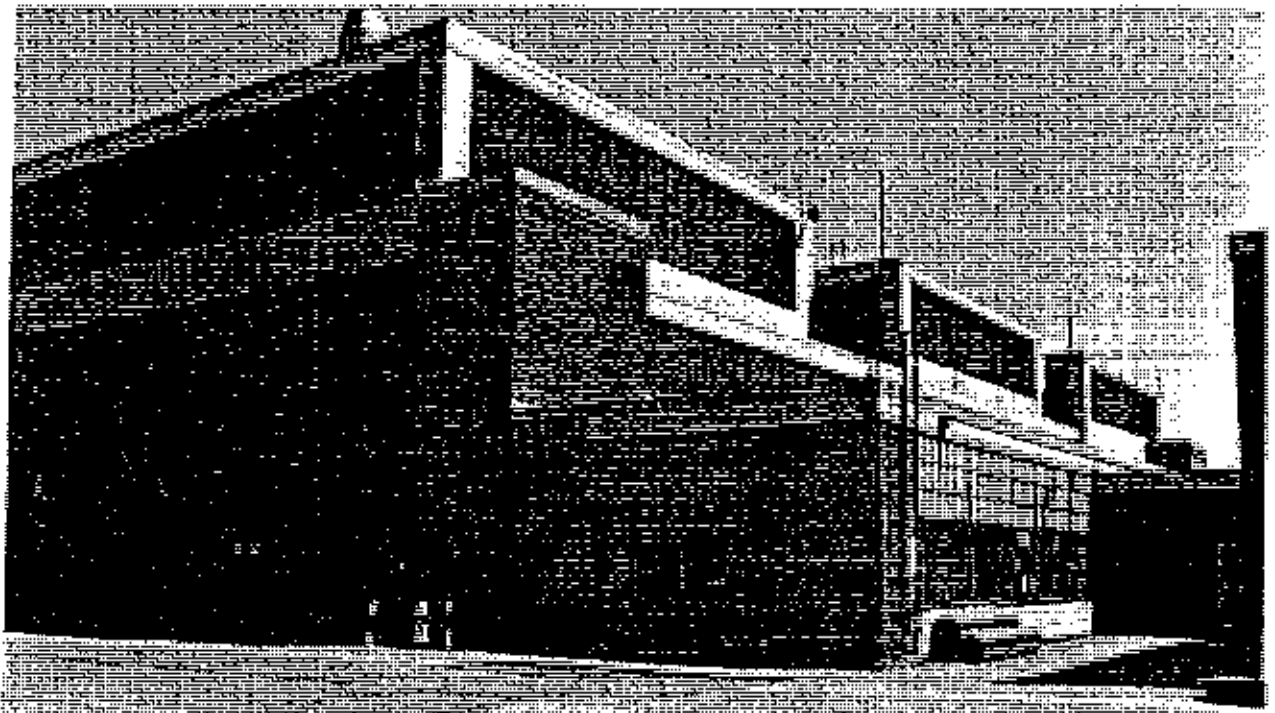


50 Workshop Building #58, east side and rear (south) elevations. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

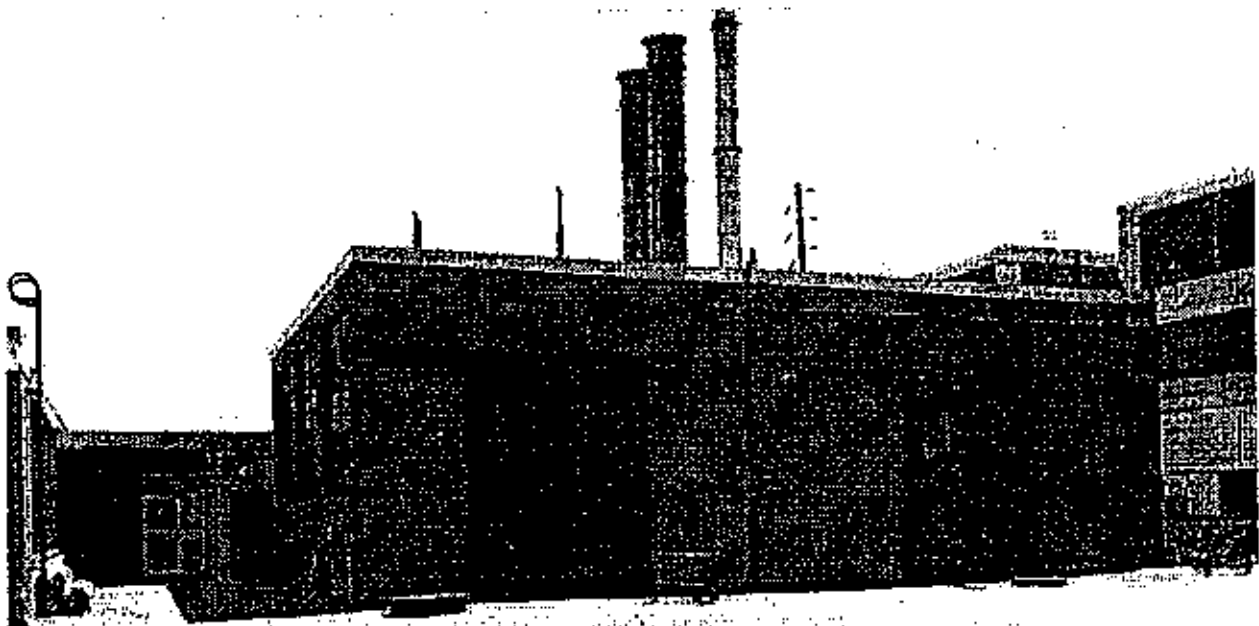


51 Workshop Building #58, south and (to the left) partial west side elevations. (DND, 1990.)

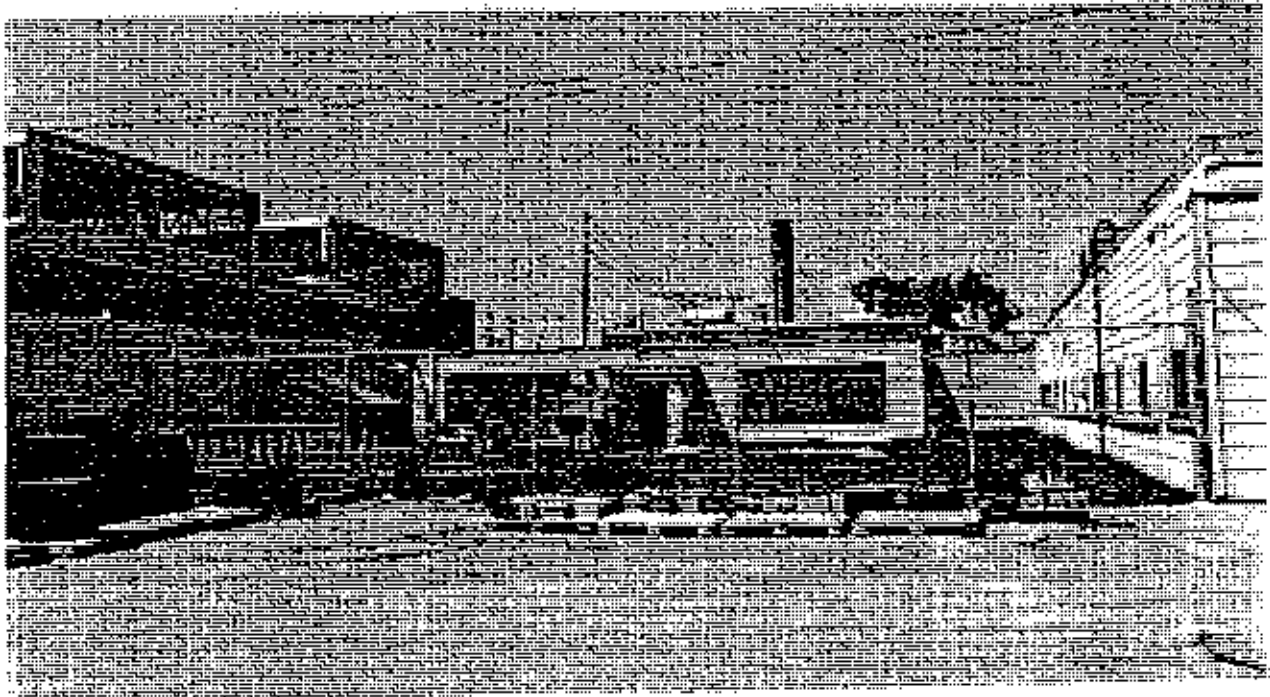


52 Workshop Building #58, west and (to the left) partial north elevations. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

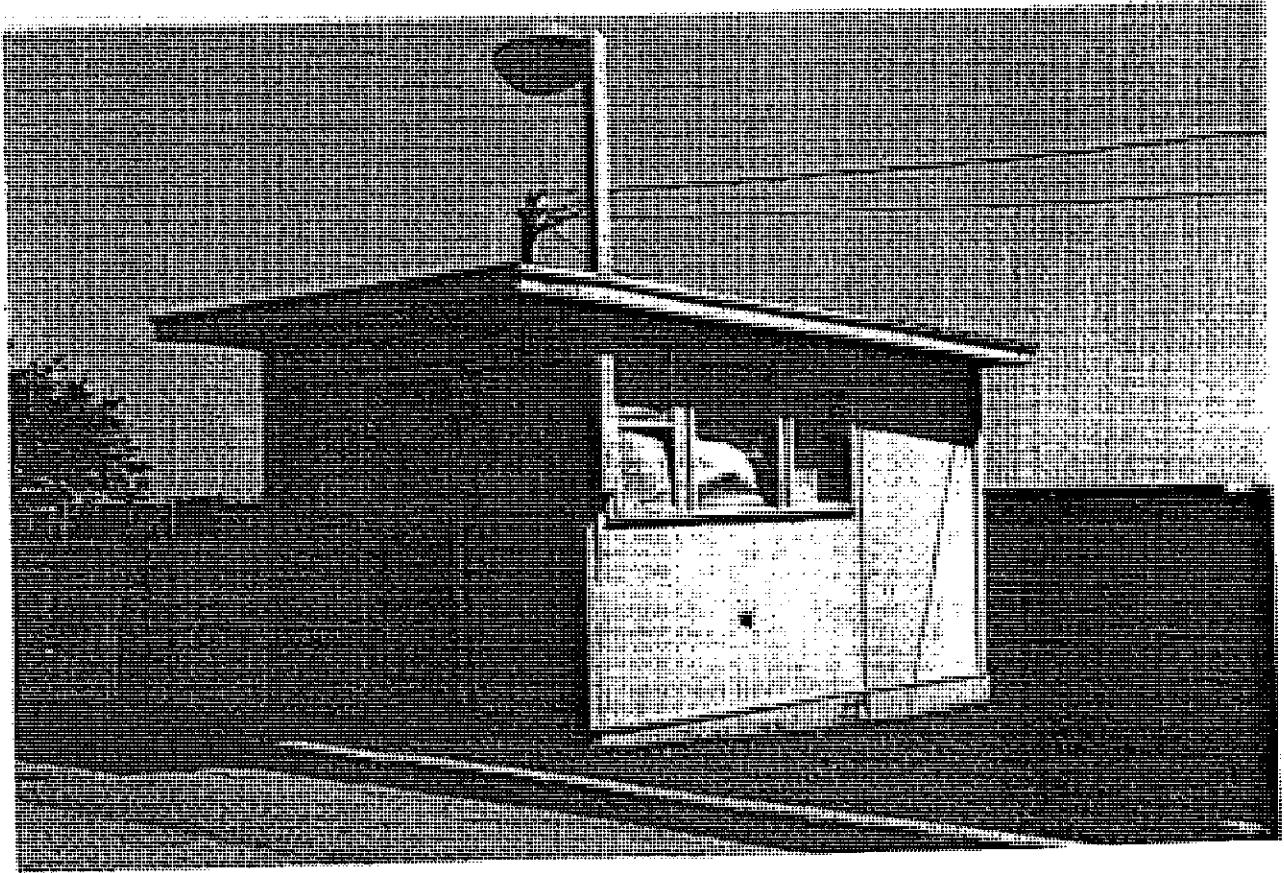


53 Central Heating Plant #4, Building #56, constructed in 1943, architect undetermined; front (north) elevation. (DND, 1990.)



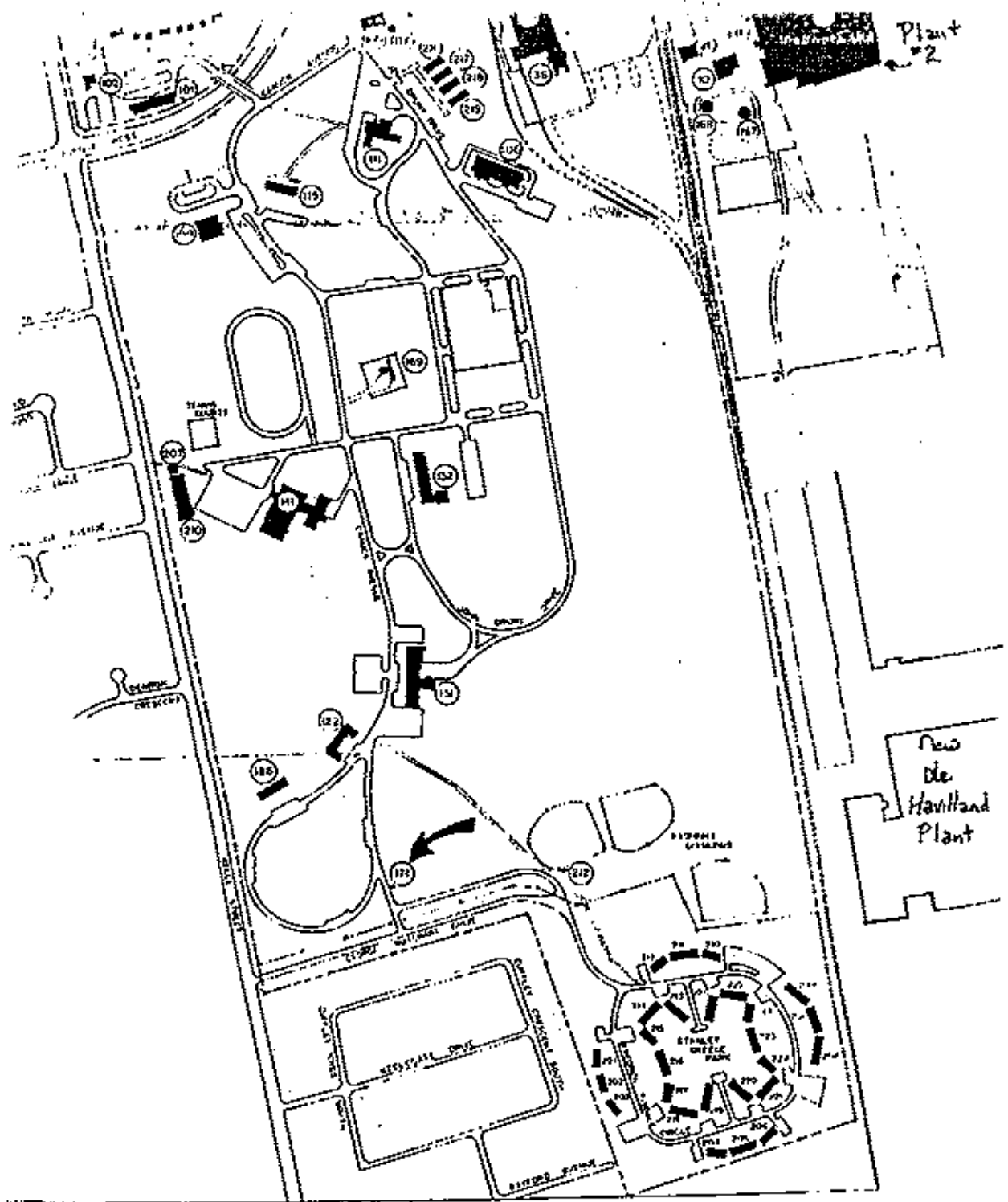
54 Cafeteria Building #57, constructed in 1943, architect undetermined; front (south) elevation. (DND, 1990.)

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55 South Gate House Building #171, constructed in 1942,  
architect undetermined; front and side elevations. (DND,  
1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

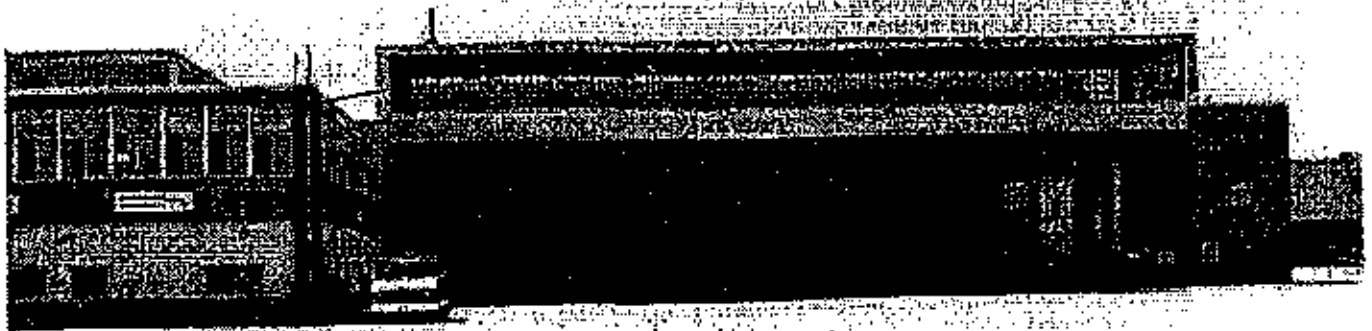


56 Map of the southwestern section of CFB Toronto, showing the location of South Gate House Building #171. (DND, Drawing #L-D86-8410-101 (1988).)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



59 Plant #2 Complex. northeast corner showing the terminal section of the hangar. (DND, 1990.)

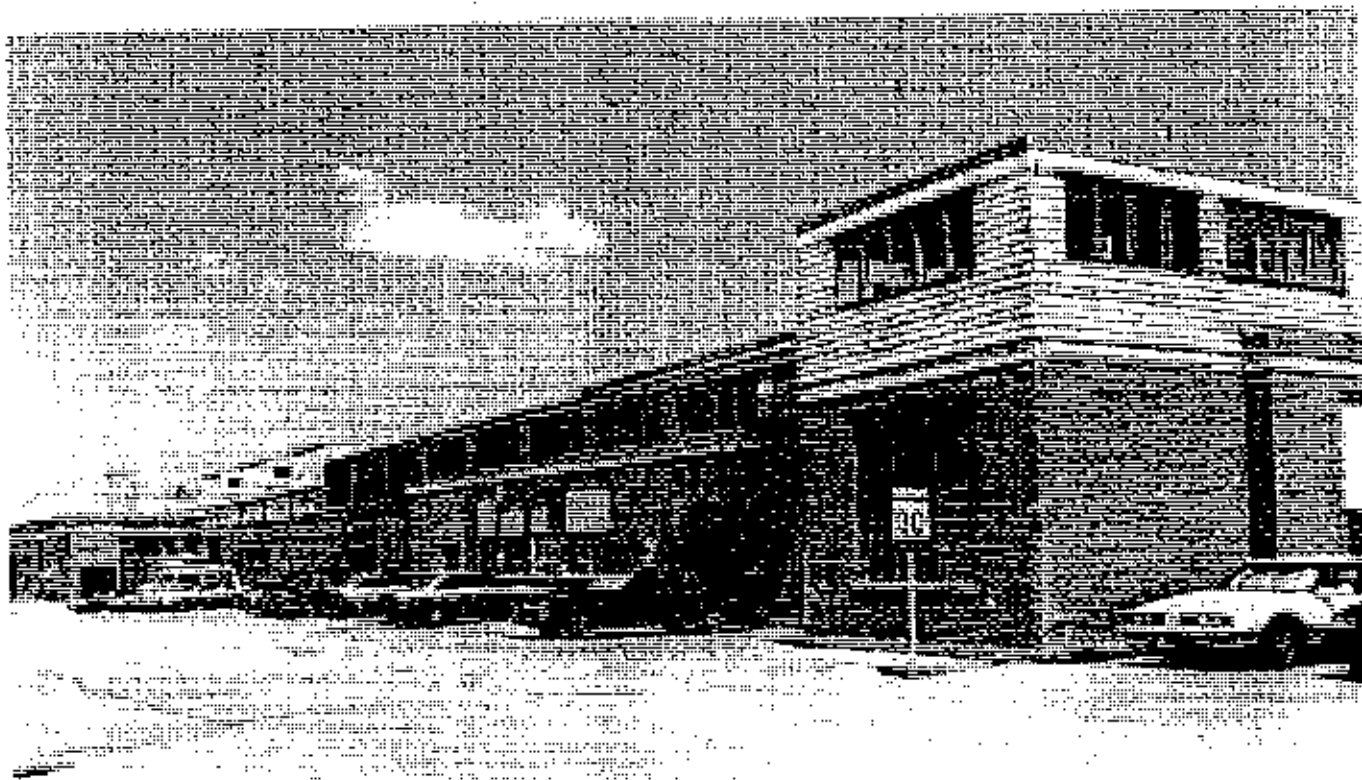


60 Plant #2 Complex. northeast corner showing the hangar attached to the terminal facilities. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

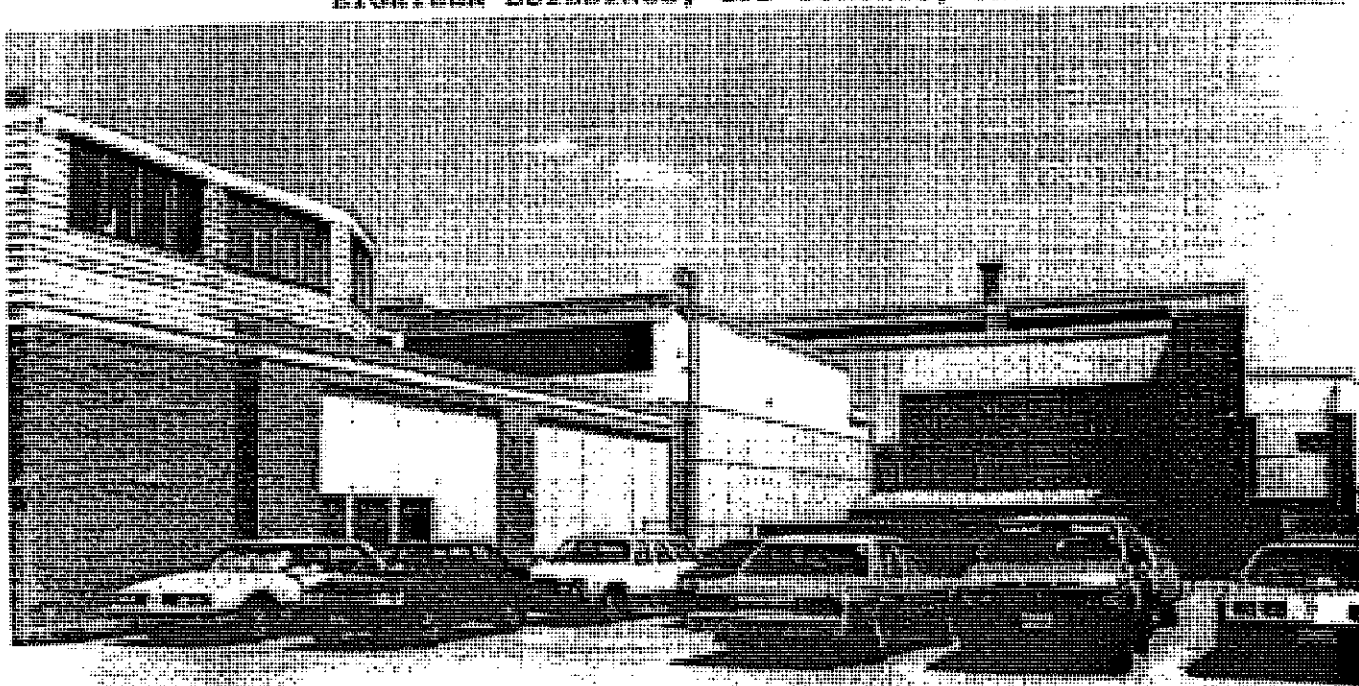


63 Plant #2 Complex, west elevation looking south. (DND, 1990.)

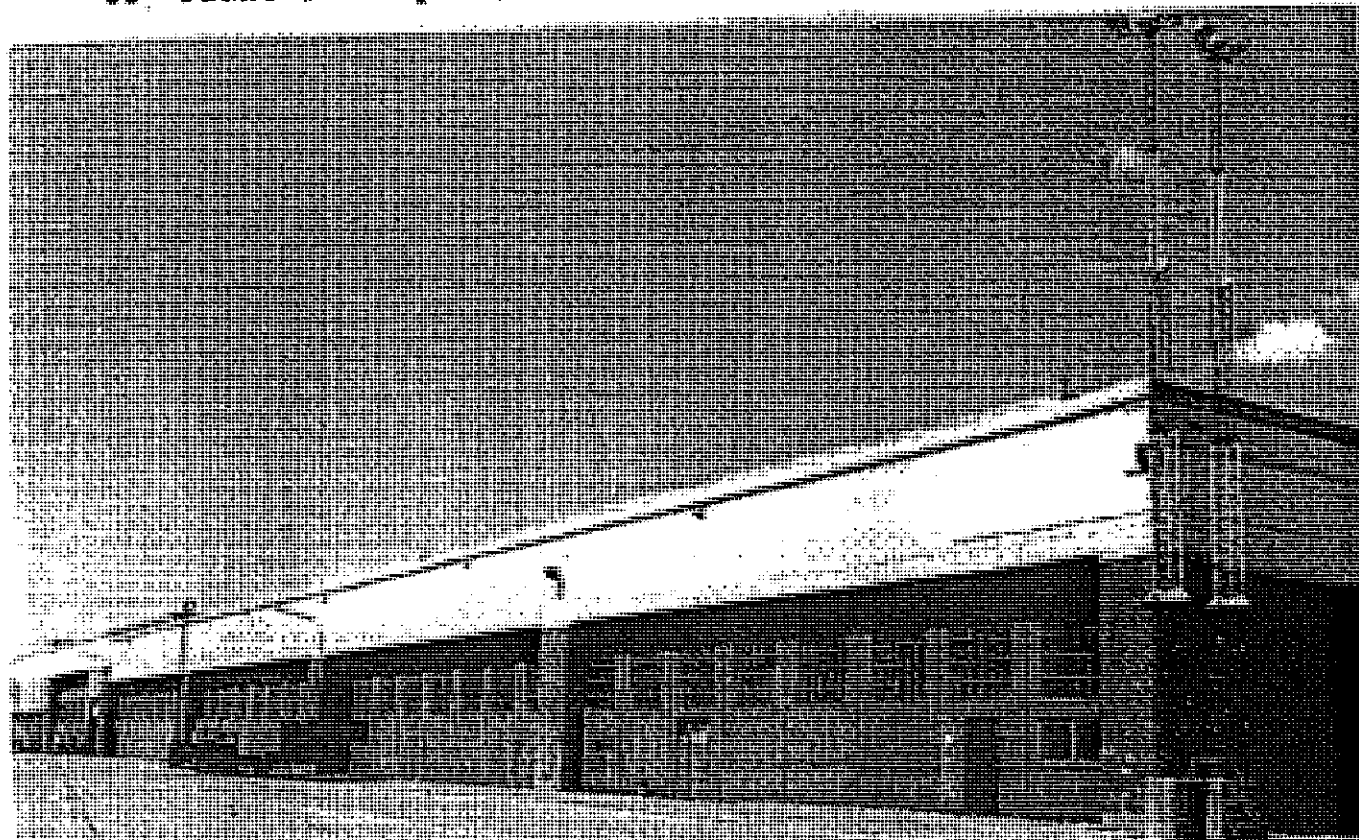


64 Plant #2 Complex, west elevation looking north. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO

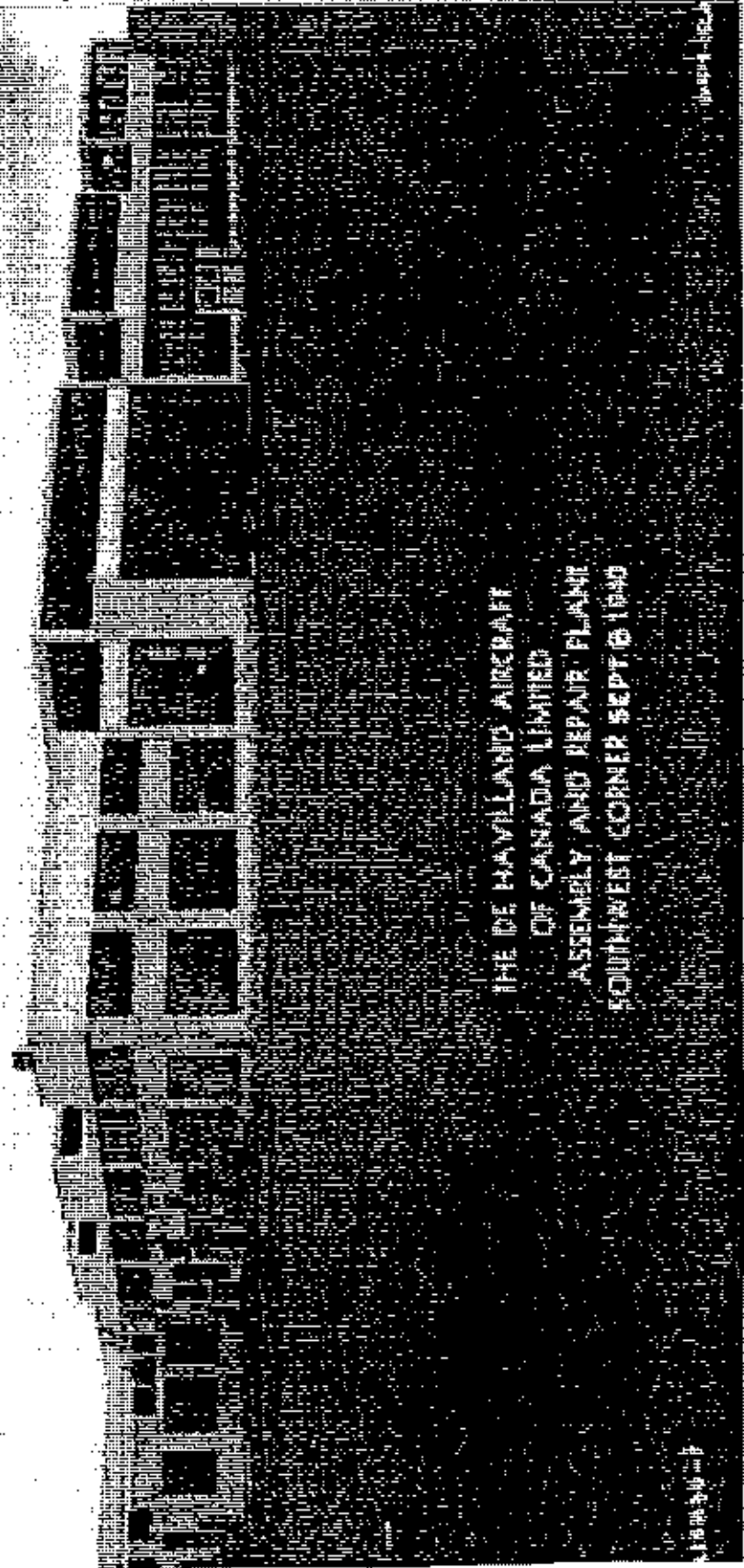


65 Plant #2 Complex, southwest corner. (DND, 1990.)



66 Plant #2 Complex, south elevation looking west. The twin light standards on the right are visible on the left side of Figure 58. (DND, 1990.)

EIGHTEEN BUILDINGS, CFB TORONTO, ONTARIO



67 Plant #2 Complex, as it appeared under construction in September of 1940. The section on the left half of this photograph is shown on the left side of Figure 63; the section to the right is now buried behind additions. (NA, C85220.)

