

FHBRO Number 96-51

Kingston, Ontario

Redoubt***FINAL DRAFT***

Fort Henry

The Redoubt, the main work of Fort Henry, was constructed between 1832 and 1836 for the Master General, Board of Ordnance. A six-sided casemated fortification, the redoubt, was built to observe and defend the glacis on the north-west front, dominate the eastern approaches to the dockyard and naval and commercial harbour of Kingston, command the entrance to the Rideau Canal, defend the dry ditch on all faces, and provide bomb-proof space for barrack accommodation, the storage and shifting of gunpowder and other support activities. The redoubt was the work of two members of the Corps of Royal Engineers: Lieutenant Colonel Gustavas Nicolls, who produced the design and Lieutenant Colonel Ross Wright, who oversaw the construction. External modifications include: the diverting of water from the valleys between the dos d'ânes of the casemates into internal cast iron vertical pipes and the blocking up of the original gargoyles (1844-46), the replacement of the 24-pdr. SBML gun in the north-east angle with an 8-inch shell gun on a common traversing platform (1845), the dismounting of nine 24-pdr. guns (1859), the sheathing of the superior slope of the parapets in pine boards (1861-64), the replacement of the 8-inch shell gun with a 7-inch (11 0-pdr.) Armstrong Gun RBL (1875), the demolition of the west curtain (1895), the covering of the terreplein with a built-up roof and the re-sheathing of the superior slope of the parapets (1914-15), the re-construction of the facing stone of the escarp walls on a concrete footing, the reconstruction of the interior revetment walls of the East and West Officer's Quarters, the reconstruction of the gorge curtain, the demolition of the brick chimneys on the main and west face parapets, the removal of the temporary roofing on the ramparts, the pouring of a concrete slab and the application of a waterproofing treatment on the terreplein, and the mounting/re-mounting of various guns (many not directly associated with the redoubt) (1936-38). Internal modifications include: the attachment of a welded wire mesh reinforcement to the brick vaulted ceilings of the casemates on the upper level of the main front and the application of a plaster finish and the fitting up a number of casemates for museum use (1936-38). Fort Henry is owned by Parks Canada, a federal government agency and is leased to the St. Lawrence Parks Commission, an agency of the Government of Ontario. The Fort was declared a National Historic Site in 1923. See FHBRO Building Report 96-51.

Reasons for Designation

The redoubt was designated Classified because of its important historical associations, the qualities of its architectural design and the important role it plays in the environment.

The redoubt is integrally related to the theme of the defense of colonial Canada by the British between the War of 1812 and 1870 and directly related to the development of the Canadian Permanent Forces.

The completion of the Redoubt in 1836 was part of a major upgrade of the Kingston

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defences accomplished between 1832 and 1848. The civilian employment generated by this project and the increased personnel needed to man the defences gave a boost to the economy of Kingston.

Viewed from the dry ditch, the Redoubt is impressive for the tall, slightly battered, coursed limestone ashlar escarp walls pierced by 302 loopholes and topped by a sloped masonry parapet. The interior spaces, in particular the enlisted men's casemates, with their uncoursed squared rubble walls and ceilings of segmental brick vaulting demonstrate a simple geometry, plain surfaces and feeling of solidity.

Over its lifetime the Redoubt has demonstrated a remarkable adaptability to change. The ramparts have been rearmed on a number of occasions. The casemates have served as barrack accommodation, cells for enemy aliens and prisoners-of-war, a military museum and a variety of administrative uses.

One of the remarkable engineering achievements of the Redoubt, attributable both to the prowess of the designers and the skill of the masons, is the open arcaded gallery on the rear of the main front: the face - a range of segmental stone arches of long span, formed with voussoirs, supported on massive stone piers; the roof - a series of segmental stone vaults of long span over oblong vaulting compartments separated at each pier by transverse semi-circular arches; and the floor - stone pavers supported on shallow segmental stone arches spanning between the party walls of the casemates.

Of the works attributable to Lt. Colonel Gustavas Nicolls, this is one of the most notable.

The relationship between the Redoubt and the site has maintained a high level of integrity over the years. As the heart of the Fort Henry defensive complex, it is highly recognized by many visitors and the local community.

Character Defining Elements

The heritage character of the Redoubt resides in features expressing its status as a specialized military structure, a closed work with flank defence of the ditch on the gorge face only, the mounting of artillery in open battery for landward and seaward defence, the musketry defence of the dry ditch and the accommodation of officers and enlisted men in casemated barracks. Externally, the features characteristic of this building type are the six-sided trace (six slightly battered escarp faces making up the main front, sides and curtain, and two demi-bastions flanking the gorge), the construction of the escarp walls (coursed limestone ashlar facing, rubble hearting and coursed squared

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rubble backing, capped by a thick cut-stone faced parapet), and the regularly spaced musketry loopholes in casemates and galleries. A notable feature, commonly seen on casemated rampart walls generally, but found on the Redoubt, is the treatment of the interior revetment walls facing the parade: the basic unit of composition, an arched bay with a central door flanked by two windows; on the main face, superimposed arches, the upper rank exposed to form an open arcaded gallery; on the side faces, recessed panels defining each casemate and rectangular sinkings as decoration. These features merit protection.

The heritage character of the exterior would be best protected by solving a number of the problems inherent in the initial design; i.e., the lack of a proper connection between the escarp wall, vaulted casemates and interior revetment walls and a means of waterproofing the superior slope of the parapet and terreplein. This work would need to be done in a sensitive manner so as not to diminish the visual qualities of the structure. The character would also be protected by the installation of permanent, functioning drainage for the ramparts, regular repointing of the ashlar masonry of the escarp, parapet and interior revetment wall faces, removing non-historic corroded iron elements embedded in the masonry walls and keeping the existing catchbasin and drains in the parade square clear.

Internally the features most characteristic of this type of structure are the vaulted bomb-proof construction of the casemate roofs (segmental profile brick vaults of 8 rings, a gabled dos d'ânes of rubble masonry covered in rough flags, an asphalt layer, refuse stone and a cover of gravel and rubbish), the stove heating of the enlisted men's casemates (a masonry flue buried in the escarp wall, cast iron clean-out, wall thimble for stove pipe, cap stone and cast iron chimney stack projecting from the parapet), the open fireplace heating of the officer's casemates (an inclined masonry flue in the party wall, cap stone and cast iron chimney stack projecting from the parapet) and the internal stairs serving the upper storey and terreplein placed in the angles of the main front.

The heritage character of the interior would be best protected by monitoring the performance of the waterproofing over the casemates, checking the condition of the floor joists supporting the upper storey of the two storey casemates which are pocketed into the masonry party walls, and replacing deteriorated wood window and door components in kind.

The historic relationship between the Redoubt, the parade square, and the various elements making up the outworks (main ditch, reverse fire galleries, counterscarp wall and musketry galleries) has been enhanced by the restoration work of 1936-38 but is suffering of late from the intrusion of modern services ;e.g., electrical transformers,

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surface mounted electrical conduit, gas regulator valves, vent stacks etc. Where feasible these services should be buried or concealed behind existing surfaces. The continued maintenance of the outworks facing the Redoubt, introducing a program for the regular replacement of the wooden traversing platforms and carriages of guns mounted on the ramparts and the restoration of the historic grade and paving of the parade square would assist in preserving the military character of the work.

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