



Champlain's Drawing Published With His "Voyages, 1613".

RESTORATION OF THE HABITATION OF PORT ROYAL, N. S.

By Kenneth D. Harris in Journal, Royal Architectural Institute of Canada

A project of considerable architectural, as well as historical interest, the Restoration of the Habitation of Port Royal, (sometimes referred to as Champlain's Habitation) has recently been completed by the Dominion Government at Lower Granville, Nova Scotia.

The Habitation has been reconstructed on its original site as nearly as practicable as a replica of the trading and colonizing settlement which was built in 1605 under the leadership of the Sieur de Monts, Founder and First Governor of Port Royal, and destroyed by English forces in 1613.

Samuel de Champlain, famous explorer and Chief Geographer to Henry IV of France, whose headquarters it was for about two years, states that de Monts allowed him to choose the location and to draw up the plan of the Settlement.

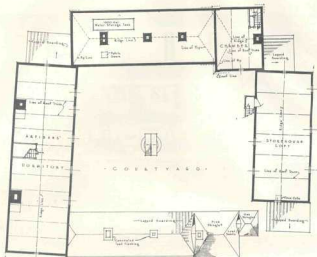
Enlargements are said to have been made to the Habitation during the summer of 1607, under the direction of the Sieur de Poutrincourt, who

later became second Governor of Port Royal, but there are no records of the nature of such changes.

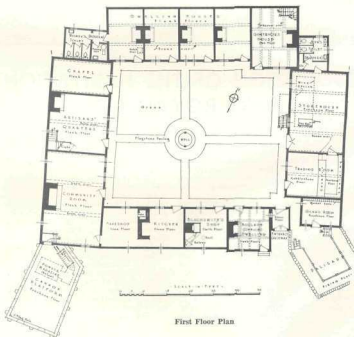
The Habitation comprises a group of buildings arranged around a Courtyard in the manner of 16th century farms in northern France, and is fortified at the two southerly corners by a cannon platform and a stockade or palisade. It is situated on the north shore of the Annapolis Basin about ten miles northeast of its outlet (Digby Cut) into the Bay of Fundy and seven miles southwest of the town of Annapolis Royal on the opposite shore of the Annapolis River.

The Habitation constituted the first permanent European trading settlement on the Continent, north of the Spanish settlements in the Gulf of Mexico. It ante-dates the English settlement of Jamestown by two years and the founding of Quebec by Champlain, by three years.

The reconstructed buildings stand as an ex-



Second Floor Plan



First Floor Plan

ample of the earliest European building traditions that were transplanted to the new world and as a memorial in commemoration of a number of interesting first events in the history of Canada and North America, including the following:

The institution of the first Social Club (l'Ordre de Bon Temps) with its ceremonial gatherings for meals in the Community Room; the production by Marc Lescarbot of the first written play or masque, "The Theatre of Neptune"; the first Christian baptism; the first gardening and wheat growing, the first water power and mill; the first refinery; the Christian cemetery; the first road construction and the first recorded sinking of a well.

In addition to the foregoing, many of the first maps of Acadia and charts of the Atlantic coastline were doubtless prepared by Champlain from his field notes, at the Habitation.

Historical references state that the buildings of the Saint Croix Island settlement which had been erected by de Monts in 1604 and "which had cost a thousand labours, were pulled down, except the Storehouse which was too large to transport" and that the woodwork was transferred during the summer of 1605 to Port Royal for the erection of the settlement in a healthier location.

It should be borne in mind that the first settlers had suffered severely from scurvy, exposure and lack of drinking water on St. Croix Island and it is probable that greater care was taken at Port Royal to erect substantial and weathertight buildings for a permanent settlement.

It is recorded that there were from forty-four to eighty or more people at Port Royal at one time and that with them were two master builders and a number of carpenters, joiners, board sawers, masons, stone cutters, blacksmiths and locksmiths.

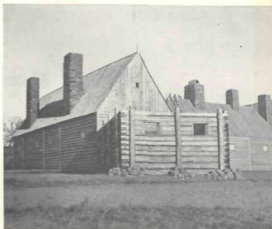
The Habitation was destroyed by fire by English troops from Virginia in 1613 after having been looted of everything of value including boards, bolts, locks and nails and joiners' work, which were carried off in the English ships.

The approximate site of the Habitation seems to have been first identified from Champlain's descriptions and regional map in 1911, and in 1924 it was marked by the erection of a stone cairn with tablet as a Dominion Historic Site.

In the summer of 1938 research work, including the collection of building data, was commenced, and a little later concurrently, an exploratory survey of the site on scientific lines was carried out.

No remains or indications of the original buildings existed above ground, and a small modern house with cellar stood on the site until removed at the time of the exploratory survey.

The research work involved, apart from the collation of historical evidence relating to Port Royal, investigations and study of the records of the earliest French-Canadian buildings in archives, museums and libraries, in which connection, as might be expected, much valuable data were obtained from the Province of Quebec. Consultations were carried out with architects, archivists and other historical authorities associated with the Universities of Dalhousie, Laval, McGill and Toronto, and of Harvard, U.S.A. Through the



South-West Corner of Settlement

Dominion Archivist, important data were obtained from France bearing upon early seventeenth century building methods in Normandy and Picardy, from whence the members of the expedition came.

The preparation of preliminary sketch plans and studies and of working and detail drawings was necessarily a process of gradual revision and development.

The documentary records of Port Royal give no clue as to the nature of the construction of the Habitation buildings, but the research work led



Storehouse, Looking North-East in Courtyard



South-East Corner of Settlement

to the conclusion that the buildings were "en colombage" or framed wood construction following the tradition and general practice in contemporary farm buildings in Northern France with which the leaders and the craftsmen of the expedition were most familiar.

Only the cannon platform and the palisade were probably built of logs.

The idea has long been prevalent that log



Wall Construction and Tie Beams

building construction was the earliest type of construction used by white men in Canada. As, however, the earliest records of buildings in French Canada indicate posts and sill (en colombage) construction, there can be little doubt that this type pre-dated log (pièces sur pièces) construction for buildings other than perhaps small isolated buildings.

The findings of the exploratory survey of the site closely accorded in the matter of dimensions of the Habitation with those given by Champlain, namely ten toises long by eight toises wide, or approximately sixty-four feet by fifty-two feet. These dimensions are inside the Courtyard. Groups of stones were found indicating roughly the positions of some of the foundations of chimneys and of the cannon platform, and small pockets of charcoal and decayed wood deposits were found near the lines of buildings and particularly in the area of the palisade.

By a process of soil reading in cross trenches, during the archaeological survey, it was possible to differentiate between natural and disturbed soil. This survey disclosed the fact that the 1613 surface slopes occurred at an average depth of about 18 inches below those of 1938. By this means the positions of shallow pits into which field stones had been placed for wall supports about 330 years ago also were identified, and the outlines of the various buildings determined. In a similar way the positions of the cellar under the Storehouse and of the well near the middle of the courtyard were identified. The well was excavated to a depth of 18 feet where a good supply of water was encountered. It was rebuilt with dry stone walls, and an oak cover with windlass and bucket of contemporary Normandy style was set above.

The basis of the construction work was (a) the documentary evidence consisting of Champlain's engraving or picture plan of the Habitation, together with his descriptions published in his "Voyages" in 1613, and the references and descriptions in Lescarbot's "History of New France" and in the "Jesuit Relations"; (b) the horizontal dimensions and location of the buildings as determined by the exploratory survey; (c) Contemporary building practice in the north of France as used in farm houses and barns and in small manoirs combined with the earliest recorded building practice in French Canada; (d) when no definite evidence exists, inference and reasonable probabilities, and (e) practical considerations of durability and modern tourist requirements.

The Champlain engraving or picture plan presents a strange mixture of truth and error. The layout of the Settlement and the appearance of the buildings generally, are doubtless indicated correctly, but the drawing obviously cannot be relied upon in detail. The engraving was first published in Paris in the 1613 edition of Champlain's "Voyages"—presumably from a drawing by Champlain himself, but it is probable that Champlain did not see it before publication, as there are discrepancies between the index letters on the picture and in the legend below, which it is unlikely would have escaped him. In consider-

ing the historical accuracy of this drawing, therefore, the engraver's interpretation of Champlain's sketch, his lack of knowledge of perspective drawing, his curious technique and to some extent his imagination also had to be taken into account.

In the reconstruction work, local materials have been used as far as practicable. It seems probable that the nine original chimneys would have been built of stone and clay. Therefore field stones and boulders and a local mountain trapp, roughly hammer dressed for the corners, have been used. The stonework is flush pointed in mortar composed of clay, sand and cement which exactly matches in colour the native red clay.

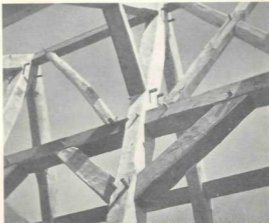
In conformity with historical evidence, bricks were made from local clay and sand and were used in the fireplaces, bake oven and blacksmiths' forge. The face bricks are of the same size as those which were used in the chimneys of the St. Croix Island Habitation in 1604 namely about 8" x 4" x 1 1/2", (of which dimensions there is an attested record dated 1797.) For the bake oven and forge a somewhat smaller brick, similar to those found in the bake ovens at Fort Louisbourg was used. About 5,000 bricks of the two sizes were made from clay dug at the site, sun dried and kiln baked by old-time brickmakers.

All framing timbers, where exposed to view, have been hand-hewn and adzed by broadaxemen in the old manner, which alone gives a feeling of antiquity to the construction.

Pine and spruce planking up to 20 inches in width, sawn rat tail, (tapering with the tree) and secured in place with oak and birch pins, has been used for floors and interior wall boarding of living quarters. The floors of the Storehouse, Guard Room and Cannon Platform are of halved logs (puncheon type) straightened at edges and laid and pinned on heavy bearers. The walls of the Storehouse and of the workshops and elsewhere show the picturesque colombage construction with heavy sills, posts and plates and having braces and diagonals set at various angles and filled in between with short horizontal log or pole nogging, roughly flattened. Wood nogging has been used in view of the fact that it would probably have been the handiest and most plentiful of materials. The proposal is to chink the joints in these walls with clay and moss if and when required, due to the shrinkage of logs.

The roofs and upper floor framing are of two types, in conformity with contemporary practice in the north of France and of many of the oldest buildings in Quebec. The coupled roof trusses as used in the larger buildings have main trusses spaced from about 5 1/2 feet to 8 feet apart and carry heavy lapped roof boarding laid from eaves to ridge resting on the horizontal purlins which span between the trusses. Such roof trusses with natural curved hammer beam braces may be seen in the Artisans' dormitory of the west buildings and in the Storehouse loft. The ground floor ceilings are of planking spanning between the tie beams, and the upper flooring is laid cross-wise thereon making a total thickness of about 3 1/2 inches.

The other type of roof construction has rafters spaced from a foot to 18 inches apart resting on purlins supported by the main trusses in much



Roof Framing Detail

the same manner as in modern buildings. This type was used when required to be covered with tiles or shingles as in the case of the Governor's dwelling. The upper floors have beams or joists fairly closely spaced and spanning between the tie beams. The rafters and beams were generally larger than in modern practice, roughly squared and seldom uniform in size. Throughout the buildings, wherever exposed to view, all timber framing is morticed and tenoned and pinned together in the old manner, no spikes or nails being used.



Coupled Truss Roof Construction



Community Room Fireplace

The roofs of the Governor's dwelling and of the Boulaye dwelling are covered with hand-made pine shingles, and those of the Entrance Gateway and of the well shelter and pigeon cote with oak shingles, the last-mentioned being of the same size as specimens of oak shingles of contemporary period removed from a small building in the north of France.

Governor's House Fireplace



Fortunately, suitable carpenters and skilled timbermen, experienced in the use of the broadaxe and adze, including oldtime ship builders, were available in the district, and such labour materially helped to ensure a faithful reproduction of the work of the original craftsmen.

In all doors and in the staircases, etc., the woodwork has been hand finished to show the old-fashioned concave plane marks and in no case are modern circular saw markings left exposed to view on woodwork.

The buildings are sided externally with lapped pine boarding (sawn with bandsaw to reproduce the appearance of whip sawn boarding) in random widths with the waste edges left on, only the bark being removed.

There is no evidence of lime having been used at the Habitation, but it seems probable that the walls of the buildings would have been plastered with clay and covered with lapped boarding on the outside.

The Governor's dwelling is, in accordance with documentary evidence, built and finished in a better manner than other buildings. It is stated to have been built by carpenters of fair sawn timber. Here, the floor and wall boarding is of oak, and as an example of the "very fair carpentry work" (*fait d'une belle artificielle carpenterie*) referred to by Champlain and Lescarbot, the fireplace has a hand-made moulded oak mantel shelf and overmantel with shields, upon which are emblazoned coats of arms of France and of de Monts and de Poutrincourt. The staircase leading up to the bedroom is of birch (for Lescarbot states that birch was found to be "very good for joinery") with hand-moulded newel posts and balusters of period design.

All the ironware used throughout, in hinges, bolts, fastenings and grilles for the 142 doors and windows and permanent shutters is hand-wrought of early seventeenth century French design as are also the lanterns and candle sconces, which latter are lighted electrically by wiring run through a concealed rigid conduit system. The panel boxes and switches are concealed behind removable sections of wide wall boarding so that there is no indication of electrical installation.

The Community Room which is located in the west building adjacent to the bakeshop and kitchen and is assumed to have been used for the daily festivities of the Order of Good Cheer, has a large fireplace with characteristic oak beams over on which are carved a date panel and fleur de lis design. The fireplace in this room is modelled on a spacious contemporary French farmhouse pattern with warming cupboards at the back.

All windows throughout the ground floor dwelling quarters and the dormer window of the Governor's house are glazed with pale green or amber antique glass, in some cases leaded and in others set in hand-made oak casements. The windows of the artisans' dormitory and of the workshops and storehouse, etc., are filled with a heavy oiled parchment treated to reproduce the appearance of thin, scraped buckskin and reinforced with stiffening pieces in the old manner.

The legend accompanying Champlain's engraving or picture plan describes the various

buildings of the Settlement with the exception of four dwellings in the north line of buildings which must have been occupied by the officers or gentlemen, including the surgeon and priests. While there is no historical record of the position of the Chapel nor of the Trading Room, these have been placed in accordance with the probabilities.

There is textual reference to leaky roofs in the original buildings. To avoid this condition in the reconstruction, heavy asphalt roll roofing has been laid (concealed from view) under the exposed lapped boarding. For the same reason, the junctions of chimneys and roofs and the numerous roof valleys have been flashed with concealed lead flashing. To ensure permanency all framed buildings have been set on concrete foundations and faced above ground with field stones.

A powder magazine and entrance lobby have been built in stone with a barrel vaulted roof under the cannon platform with stone steps and heavy oak doors giving access thereto.

The use and design of the small palisade shown on the picture plan, presented an interesting problem. Champlain states: "Toward the East is a palisade, fashioned like a platform, as can be seen from the following picture." Since a platform set near the top of the stockade, as shown by the engraver, would afford no protection to musketeers standing thereon, and there being no loopholes shown below, it seemed apparent that the engraver must have been in error. The solution decided upon was to build a firing platform about four feet wide around three of the inner sides of the palisade at a suitable height for musketeers to fire between alternately pointed poles and thus to be able to enfilade the east and south fronts of the Habitation.

The small lean-to building facing onto the palisade is assumed to have been a Guard room, and it is probable that the *Sieur de Boulaye*, who was a Captain in *de Poutrincourt's* regiment in France, and lodged in the small dwelling next to the Entrance Gateway, was Captain of the Guard at Port Royal.

The Entrance Gateway is constructed of oak, hewn out of logs. The double outer and single inner doors are $3\frac{1}{2}$ inches thick, the last named weighing about 600 pounds.

The whole of the exterior pine woodwork with the exception of the doors, has been left unpainted in order to allow it to weather to a natural grey colour. It is proposed to treat it later with a protective coating of colourless waterproofing. Exposed oak doors and windows have been treated with linseed oil to prevent warping, and other doors facing the courtyard have been painted in colours characteristic of the period, which colouring has remained distinctive of Quebec rural architecture.

In conformity with modern requirements, a water supply from the well with a pumping unit and storage tank has been installed. Toilets, harmonizing in external appearance with the other buildings, are inconspicuously placed in the northerly corners of the group of buildings with a septic tank drainage system carried to the north.

Flagstone walks and grass areas have been laid in the Courtyard and concealed surface water drains from the Courtyard, wine cellar, powder



Blacksmith's Forge

magazine and other points, have been run to discharge into the Annapolis Basin.

The relative costs of labour and materials in the reconstruction work are indicative of the unusual nature of the work, namely, cost of labour 62 per cent., and of materials 38 per cent, of construction costs.

As far as is known, the Habitation had no protection from attack on the north side. The explanation of this seems to be in the evidence that the French settlers were always friendly with the local Indians. There was an Indian village with a population of about 400 a little to the west of the Habitation and the Frenchmen traded bread which they baked and ironware wrought by their blacksmiths and other merchandise brought from France for furs and fish and game from the Indians.

The corner bastions facing, as it was then called, *L'Equille River* and commanding the navigable channel between the shore and Goat Island were placed there primarily as a means of protection against attack from the sea by the English.

Unfortunately for the "little square fort" however, on All Saints' Day in November, 1613, it was left unguarded, and some English troops from Virginia, under a Captain Samuel Argall, landed from their vessels and pillaged and destroyed the Settlement with little resistance.

In this connection, Marc Lescarbot in his "History of New France", relates as follows:

"The said English pillaged everything in the said settlement, took all the munitions of war which were there and all the provisions, merchandise and other things, demolished and tore down the carpenters' work and joiners' work which they thought would be of use, and carried it off in their vessels. This done they set fire to what remained."