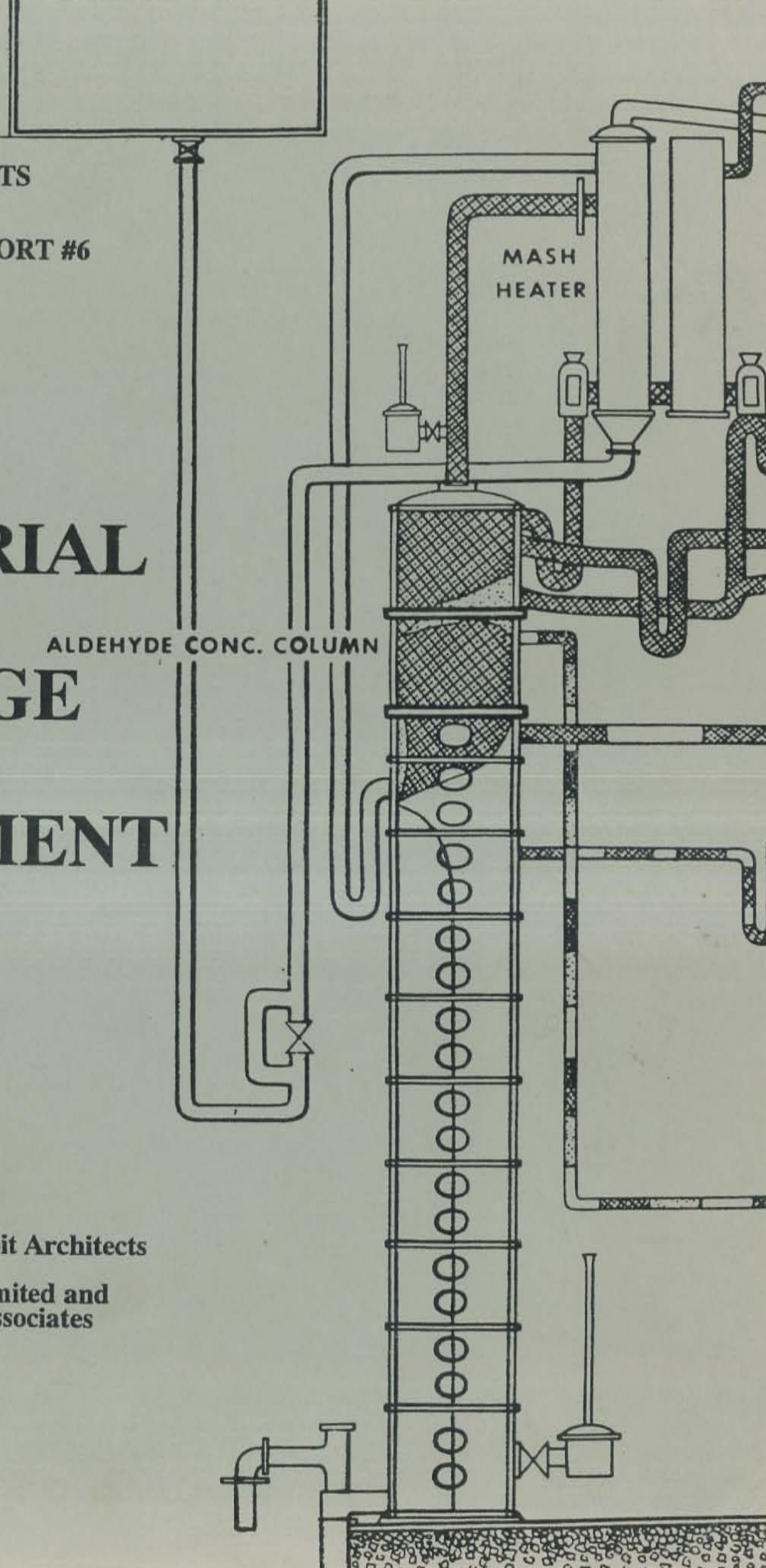
GOODERHAM & WORTS

HERITAGE PLAN REPORT #6

INDUSTRIAL HERITAGE ASSESSMENT



Prepared for Roger du Toit Architects

By Historica Research Limited and
David Nasby and Associates

March, 1994

HISTORICA
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March 9, 1994

Roger du Toit
Roger du Toit Architects Limited
50 Park Road
Toronto, Ontario
M4W 2N5

Re: Gooderham & Worts Industrial Heritage Survey

Dear Mr. du Toit:

The following report represents the work undertaken by our firm in association with David Nasby and Associates for the industrial heritage assessment of the Gooderham & Worts property. It combines a process history with building descriptions indicating the historically significant aspects of the property. The report also includes an outline for an interpretive program for the property.

I trust this information will assist in evaluating heritage planning issues associated with the redevelopment of the Gooderham & Worts property.

Yours sincerely,

Christopher Andreae,
President

cc. David Nasby, David Nasby and Associates

TABLE OF CONTENTS

SECTION A
PROCESS DESCRIPTIONS

1 BEVERAGEALCOHOL

1.1. Mashing

Starchy material such as wheat and corn must first be converted into a sugar that can be fermented. The usual process is to mash the grain with an enzyme, commonly malt, to first convert the starch into sugar. Yeast is then added to a wort composed of this mash and water and the resulting fermentation produces a beer of about 6% to 10% alcohol. This is distilled to the desired alcoholic strength.

1.1.1 Grain Storage

Process

Grain and corn was received at the plant by rail and, in the 19th century, by water. The Grand Trunk completed a railway south of the G & W site in 1856. Thus when the distillery was rebuilt in 1859–1860 a rail siding was constructed adjacent to the mill (building #3). Grain was dumped into a hopper beside the building and elevated into bins above the mills.

Grain and corn was elevated to the top of the mill, cleaned, and dumped into one of six bins. From the bins, the grain was moved by gravity to the mills.

The mill building was originally built in 1859/1860 with six bins of 2,500 bushels or a total capacity of 15,000 bushels. By 1900 the mill had grain storage capacity of 23,000 bushels. Although six bins are still found in 1990 in the building, the larger bins were likely constructed after the 1869 fire. Working at maximum production, the storage bins contained a one week supply of grain.

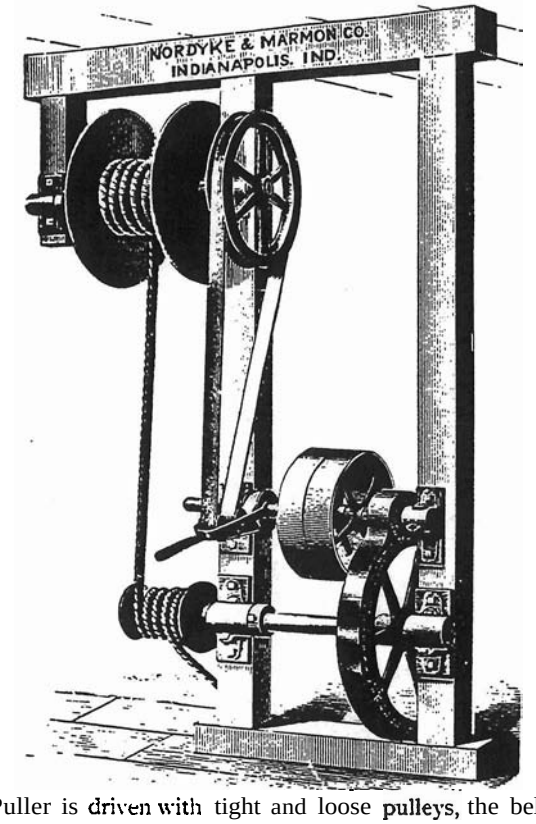
Although constructing the bins over the milling equipment took advantage of gravity feed, the location of the bins was unusual. In most merchant grist and flour mills storage bins were located beside the milling equipment. Distilleries, however, typically placed their bins over the milling floor. In the G & W mill, the building had to be stronger to support the weight of the grain and the building was taller than if the bins were located to one side.

A separate grain elevator was built on the G & W wharf at the foot of Trinity Street. As by 1885 G & W was consuming 400,000 bushels of grain annually additional storage was necessary. Grain was brought from the elevator to the mill by carts.

On Site Resources

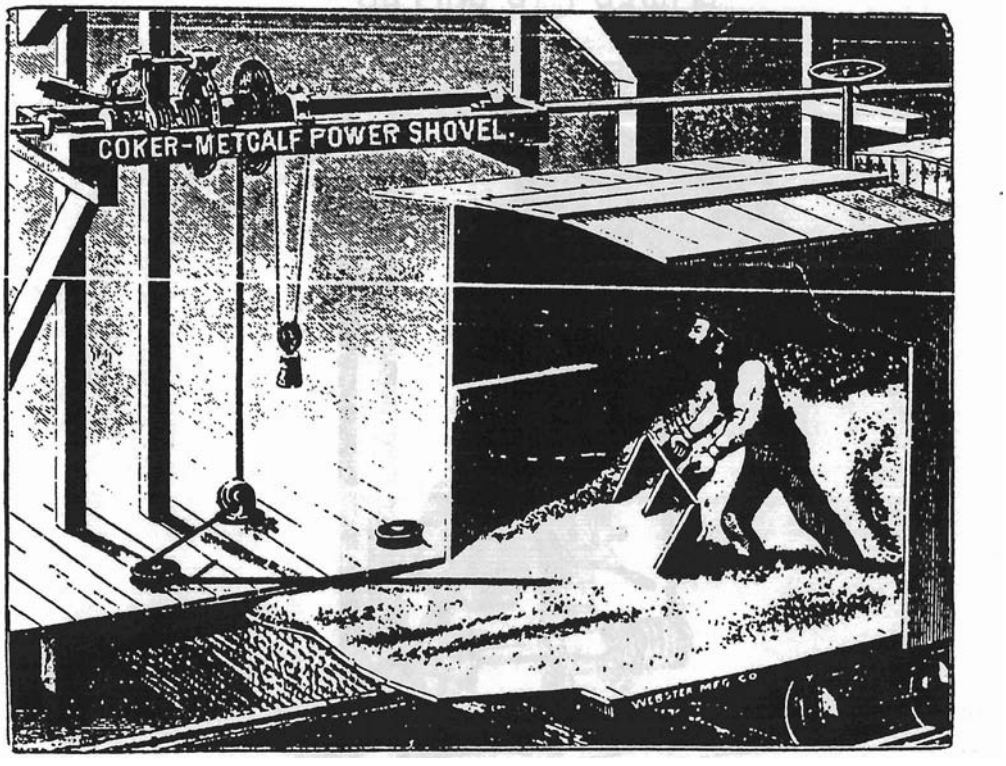
See Section B: Stone Distillery – Mill Building #3

POWER **CAR PULLER.**



Our Car Puller is driven with tight and loose pulleys, the belt shifter being conveniently placed. Other details are shown clearly in the cut above. It is very substantial and durable, and is easily operated. The rope is not included with the puller, but we are prepared to furnish it, together with grooved guide wheels, pulley blocks, hooks, etc.

FIGURE A-1
Railway car puller in which a cable was used to haul cars into position for unloading. A similar system is located in 1994 in Building #3.
Source: Nordyke & Marmon Company, ***Catalogue #48: Flour Milling Equipment***



The Coker-Metcalf Power Grain Shovel In Use.

This Power Grain Shovel in operation is entirely automatic, enabling one man to unload a car of 500 bushels of grain in about fifteen minutes. it goes in gear at any point in the car where the man stops, and draws the shovel with grain to the door. It occupies little space and is easily installed. '.Where grain in quantity is handled, this shovel is a great convenience and a labor-saving device.

FIGURE A-2
Grain plough used to unload grain from railway cars. A haulage system and ploughs of similar design are located in 1994 in Building #3.
Source: Nordyke & Marmon Company, ***Catalogue #48: Flour Milling Equipment***

1.1.2 Milling

Process

The mill building is part of the 1859 building. Although the building was damaged in the 1869 fire, the interior appears to have been rebuilt along similar designs to the original plan. Much of the milling equipment survived the fire because the grain stored above fell onto the equipment and preserved it.

As originally built the mill contained a hursting mill consisting of eight run, or pairs, of 54 inch French burr stones. Only five run of stone were generally in use at one time. The other three were being dressed. [Figure A–3] Milling exposed the kernels to successive grindings that first remove the bran and then reduce the endosperm to a flour. The meal was sifted after each grinding to remove bran and produce various grades of flour. Until the 1870s grinding was undertaken by millstones. Grinding grain by millstones could not provide a good separation of bran from the endosperm. Usually grain could only be passed twice through millstones as further grinding produced too much fine bran in the flour. Stone grinding produced a product known as middlings which consisted of a mixture of bran and endosperm. It had no human market and was sold as animal food.

Later, probably during the 1880s, milling was augmented by ten steel rolls, nine inch in diameter and 30 inches long were installed used for bran and coarse middlings. During the 1870s the first practical roller mills were developed. These mills provided far greater control over the process and several grindings could be undertaken to reduce the flour. [Figure A–4] The power requirements were the same as for stone mills and the same quantity of flour were produced. Roller mills were also less labour intensive as a millstone had to be dressed every 10 to 15 days to ensure a good grinding surface. When roller mills first appeared, millers began to substitute the second grinding by millstones with roller mills.

After World War One the stone hursting mill was removed and replaced by a hammer mill, a third type of mill that came into use in the late 19th century. These were high speed grinders that could produce a coarse meal in a one stage reduction.

In overall design, the G & W mill was typical of a well designed grist mill. The mill was located adjacent to the engine room that provided power for all the equipment.

Sifting, scalping and grain cleaning equipment was located in the two floors between the grain bins and outside walls. Sifters, scalpers and reels were used to remove coarse refuse in grain such as straw and rocks, to separate bran and germ from the endosperm, and to produce various grades of flour. In the milling trade sifting is known as bolting. By world war one bolting was done by five gyrating scalpers and one round reel. Narrow four foot passages extend along the north and south sides of the bins. Along the other two walls the distance from the bin to the wall is about 12 feet. After the grain was ground it was transported to bins in the mashing room.

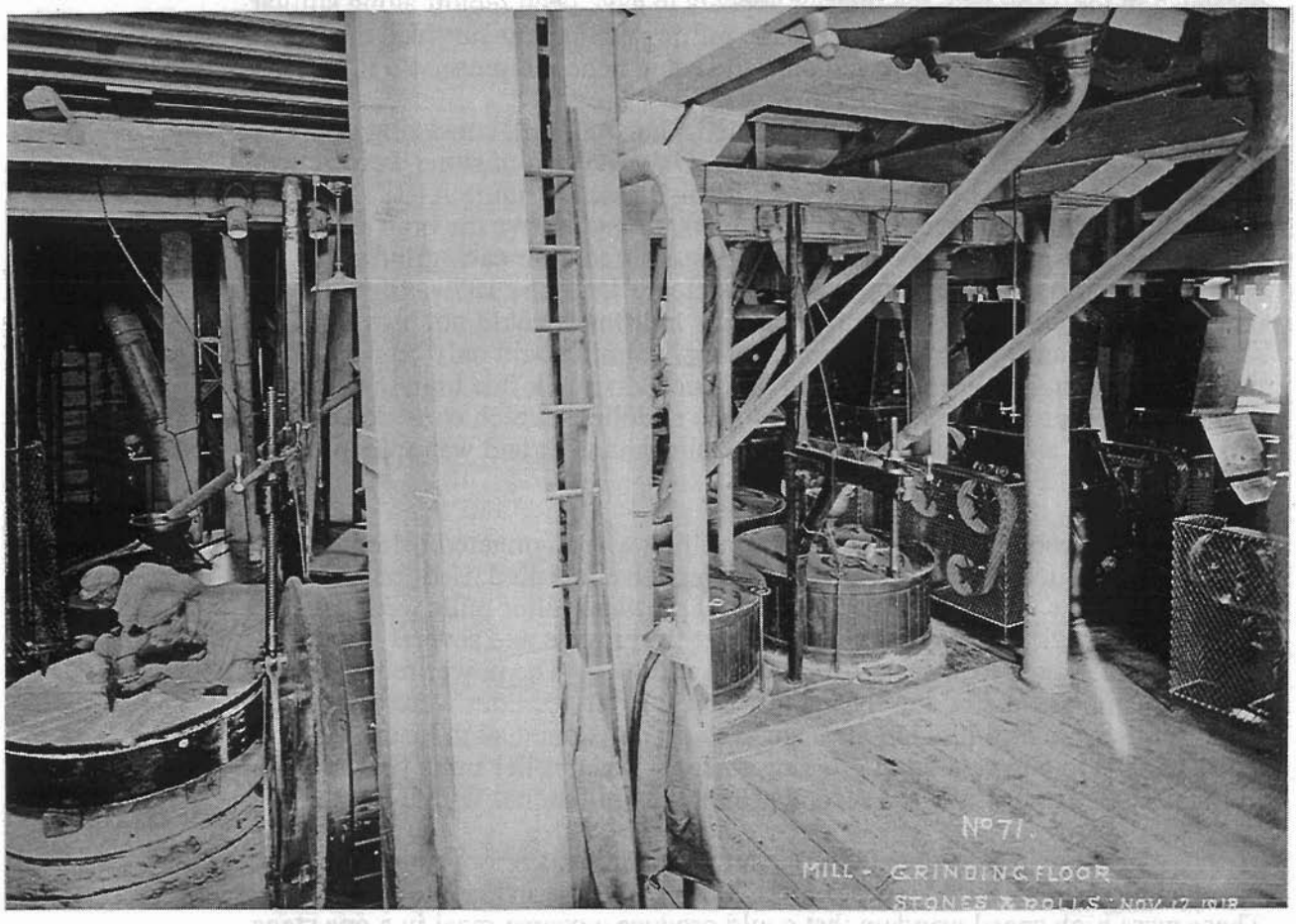


FIGURE A–3
The milling floor in Building 3, Nov 12, 1918. The floor, some chutes, power transmission shafts and equipment remain in 1994 but evidence the stone mills has vanished.
Source: G&W/British Acetones photograph #71.

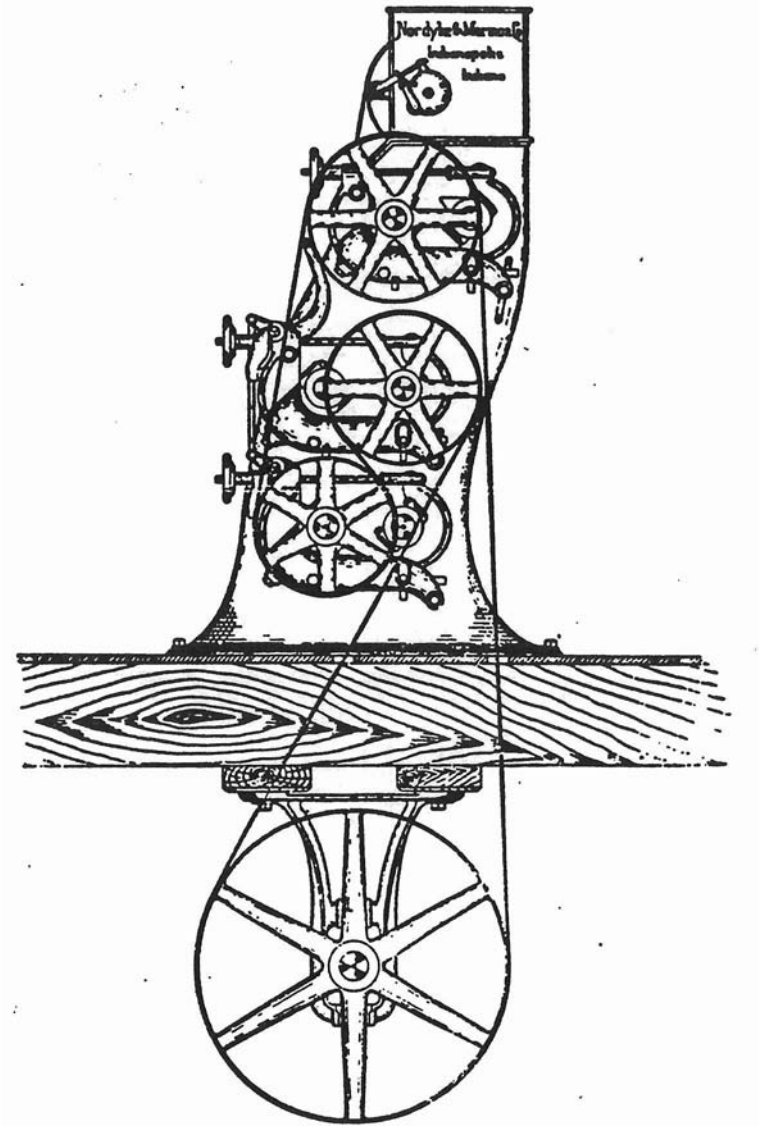


FIGURE A–4
Three high roller mill, powered from a line shaft below the floor, used by G&W around the turn of the century; in 1994 two almost identical mills are located in Building #3.
Source: Nordyke & Marmon Company, Catalogue *#48: Flour Milling Equipment*

All machinery except the hursting mills were belt driven by a steam engine located in a separate room adjacent to the mill building (building #2A). [Figures A-14, 15] The hursting mill was driven by shafts and gears and the main gear train was situated on a brick platform on the ground floor. The mill equipment was steam powered until at least 1918. Line shafting on the ceiling of the ground floor powered both the elevating machinery and the mills on floor 1.

No evidence could be seen for how power was brought to the equipment on the scalping floors. Some belt connections must have been provided in the 19th century. After the first world war the equipment was converted to electric power. The grain elevator was still operated by belts and pulleys but powered by an electric motor. The belts and shafts for all milling equipment was removed.

During the first world war the mill worked 24 hours a day, six days a week and had an average daily capacity of 4,000 bushels. The G & W mill had a capacity similar to a medium sized grist mill. A small grist mill had a production of about 100 barrels per day while a large one would be about 6,000 barrels. G & W had a capacity of about 800 to 900 barrels.

Milling is presumed to have ended when grain alcohol production ceased at G & W in 1957.

On Site Resources

See Section B: Stone Distillery – Mill Building #3; Engine Room #2A

1.1.3 Malting

Process

Malt is an enzyme created during the germination of barley. The enzyme was essential in the manufacture of grain alcohol as it converted the starchy matter of grain into sugar. In the 19th century this was referred to as a diastatic ferment. Nineteenth century whisky grist contained generally 25% or more malted barley. The balance consisted of corn mixed with malted and unmalted rye, oats and wheat. It appears that G&W used no more than 10% malt.

Until the 20th century malt was the only economic way of converting starch into sugar. In the early 20th century a new process was developed that used fungal amylase.

When malt was used only as an enzyme, 19th century distillers commonly employed the so called "long" malt process. This consisted of steeping the barley in water for 48 to 70 hours and then leaving the grain to a prolonged "flooring" at a moderate temperature. This produced the maximum amount of enzyme. A short malt period was considered seven to ten days while a long malt process was about 20 days.

When the barley was taken out of the steep, the first step in "flooring" was to place the grain in a couch, or heap, to germinate for 12 to 24 hours. The heap

retained the heat of germination and speed up the process. After germination had occurred, the grain was plowed, or turned over, twice a day for two or three days. On the fifth day of flooring, the malt was sprinkled, if necessary, with two to five gallons of water per quarter of grain (8 bushels).

Malting floors were constructed of cement, tiles, or slate, of which tiles and cement were considered the best material.

Germinated barley, called green malt, contained the maximum amount of enzyme and was preferred by distillers that used malt for its diastatic characteristics. Kilning of malt restricted its enzyme power. When a distiller could not use green malt, a malt kilned at a low temperature was sometimes preferred.

When germination has reached the correct stage, the grain was transferred into a malt kiln. Kilning terminated the germination process and drying the malt enabled it to be stored and to prevent any mold growth. Kilning took about four days while flooring took ten to 20 days. Thus, the flooring time determined the capacity of a malt house.

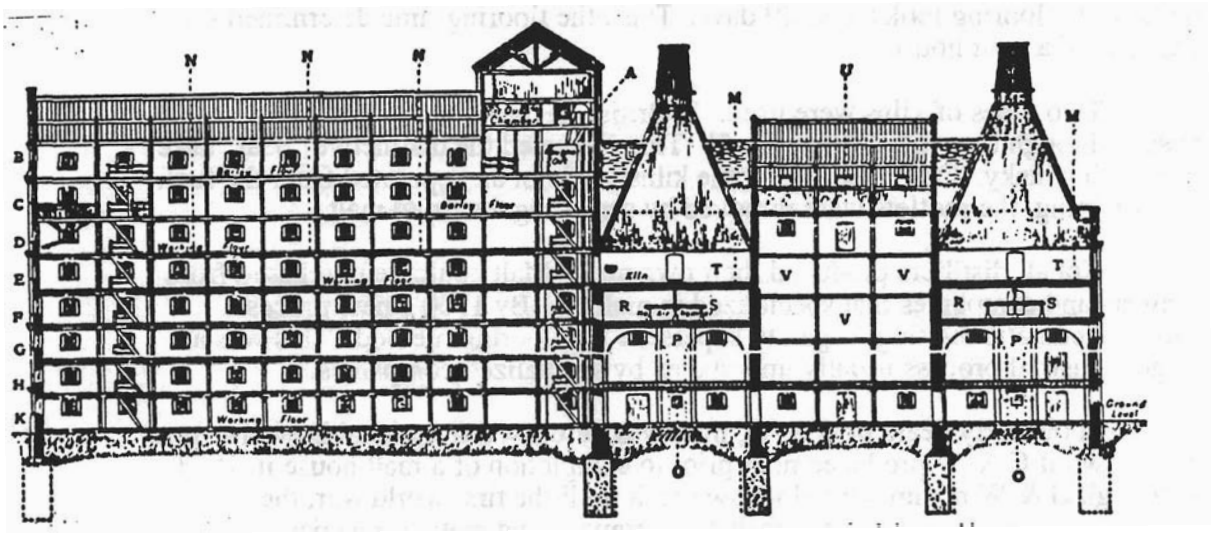
Two types of kilns were used. In British designs the combustion gases passed through the malt. [Figure A-5] This produced the distinctive "peat" taste of scotch whisky. On the continent the kilns used hot air separated from the fuel. After kilning, the rootlets were removed by screening the dried malt.

Not all distillers produced their own malt. Malt could be purchased from brewers and companies that specialized in malting. By 1900 a new process, called pneumatic malting, began to supersede the flooring method. This was a large industrial process usually undertaken by specialized companies.

In the early years of G & W, malt was purchased from local brewers. It is not known if G & W produced malt prior to completion of a malt house in **1863.** Although G & W manufactured its own malt until the first world war, the company continued to purchase malt.from brewers and malt companies.

The G & W malt house seems to have represented the current practice in malt house design. Barley was stored in the attic (floor **3).** The two floors directly below, floors **1** and 2, were used as malt floors. This arrangement continued until malting ended. Although the ground floor was designed for malting, it does not seem to have been used for this purpose.

Contemporary descriptions give the capacity of the malt house as 40,000 bushels per year. In reality the capacity was probably closer to half that amount. Each floor of the G&W malt house is 6,690 ft^2 and therefore would have a capacity of 268 bushels per floor or **536** bushels for the two floors. If flooring time is optimistically given as 10 days then there would be **36** possible maltings per year or 19,000 bushels per year.



F'IGURE **A–5**
Longitudinal section of a 200 quarter (1,600 bushel) malt house at **Mortlake,** Scotland. By the end of the 19th century, the recommending that optimal floor coverage was 8 **bu/quarter** (200 ft^2). The capacity of this building was about three times that of the G&W malt house but the design elements are very similar those that still exist in 1994 in Buildings **#35/36.**
Source: Encyclopedia Britannica, 11th edition, **(1911), vol 17, p.503.**

No evidence of a steeping tank was noted in 1994. Good designs called for the steeping cisterns to be located at the top of the malt house. This would have been on the second floor and the floor at the south end was of timber unlike the concrete covering over the rest.

As originally built barley seems to have entered the malt house by means of an inclined elevator. The location of the elevator may account for the fact that there are no doors on the first and second floor as they would have interfered with the loading hopper on the ground. The ground floor door was offset to the north. The elevator was powered by a steam engine on the third floor and connected by line shafting in the roof trusses. No evidence of the elevator, engine or line shafting remained in 1994. Only a portion of a chimney suggests that the system was actually installed.

In addition to the elevator, loading doors opened on the front of the building from the second and third floors. A hand operated hoist was still in place in 1994 on the third floor. Trap doors seem to have been used to move the barley from the top floor to the malt floors below. Several trap doors are still visible.

Doors entered into the malt kilns from floor 3 (attic), floor 1, and the ground floor. No kiln floors remain. The number of doors into the kiln suggest that there were once four floors per kiln. Signs on the doors on floor 3 state "#1 Malt Kiln Area 149,477 cubic inches" and "#2 Malt Kiln Area 149,477 cubic inches." The malt capacity of each floor is estimated at 268 bushels. The capacity of each "malt kiln area" is approximately 67 bushels. (one bushel equals 2218 cubic inches) If one assumes that each kiln served one malt floor, then four floors would have been necessary in each kiln. The remains of four floors can be seen in building #36A.

The G & W kilns appear to have followed British design. Contemporary plans depict two furnaces in the basement in locations that agree with the existing furnaces in 1994. They rested on heavy stone walls, suggesting that the extra stone wall in the east kiln is a later addition.

G & W reduced their malt production over the years as more was purchased from outside suppliers. The buildings were gradually converted into other uses. By 1890 the east kiln (building #36B) is indicated as for malt storage. All of the windows and a doorway to Mill Street were bricked in.

Kiln #36A was used up until World War One. During the war, and probably afterwards, the attic of the malt house was used for bran storage from the mill. The *Report of British Acetones* (Photo #167) shows a tall ventilator on top of building #36A while a glass cupola is situated on Building #36B. Fire plans for 1915 indicate that it was still a kiln. The malt house (building #35) was later used as a rack warehouse and at closure, in 1990, for lumber storage. The kilns (building #36) were used for storage and as an engineer's office.

On Site Resources

The malt process is surprisingly well represented at G & W.
See Section B: Maltings – Buildings #35 & #36

1.1.4 Mashing

Process

Grain mashing converted starch into sugar and produced a liquid known as a wort. Distillery mashing was similar to the process employed in brewing. However distillers attempted to convert the starch as completely as possible into alcohol yielding material.

A grist of malted and unmalted grains was mixed with hot water (66° to 77° C) and agitated for several hours. Throughout most of the 19th century mashing was done in large wooden tanks or tuns fitted with mechanical agitators. Typically these mash tuns were about 18 feet in diameter and eight feet deep.

By the end of the century mashing a preliminary cooking at high temperature was undertaken in horizontal cylinders or convertors known as "Steels Mashers." Mash produced by the convertor was more rapidly broken down by enzyme reactions of the malt. The mash was pumped into mash tuns to continue the process.

After the starch material had been converted into sugar the liquid was pumped through a cooler before entering the fermenting tuns.

Some contemporary sources indicate that the entire mash including the grain passed through the fermenting process and was pumped into the still. Others indicate that the spent grains from the mashing process were known as "draff" and used as cattle food.

In the 1860s mashing at G&W was done in four copper lined mash tuns. A pre–fire description indicated that the ground meal was stored in bins over the mash tuns.

By 1900 mashing was undertaken in four Cyprus wood tuns 16 feet in diameter and 5'6" deep. Each tun was heated with four steam heating coils and fitted with mixing rakes driven from below through mortised wheels and shafts from the mill engine. The grist was conveyed by spouts to hopper cars from storage bins located on the top floor of the mash building. The meal bins has a storage capacity of one day's production of the mill. The hopper cars measured the grist and conveyed it to the proper mash tun. After mashing the wort was pumped through six inch copper pipes to the fermenting room.

After World War One, two cylindrical mash cookers were installed that appear to be "Steels Mashers." Installation of these cookers resulted in considerable changes to the design of the ground floor. These grain mashers are still located in 1994 on the ground floor of Building #5.

On ***Site Resources***

See Stone Distillery – Building #5

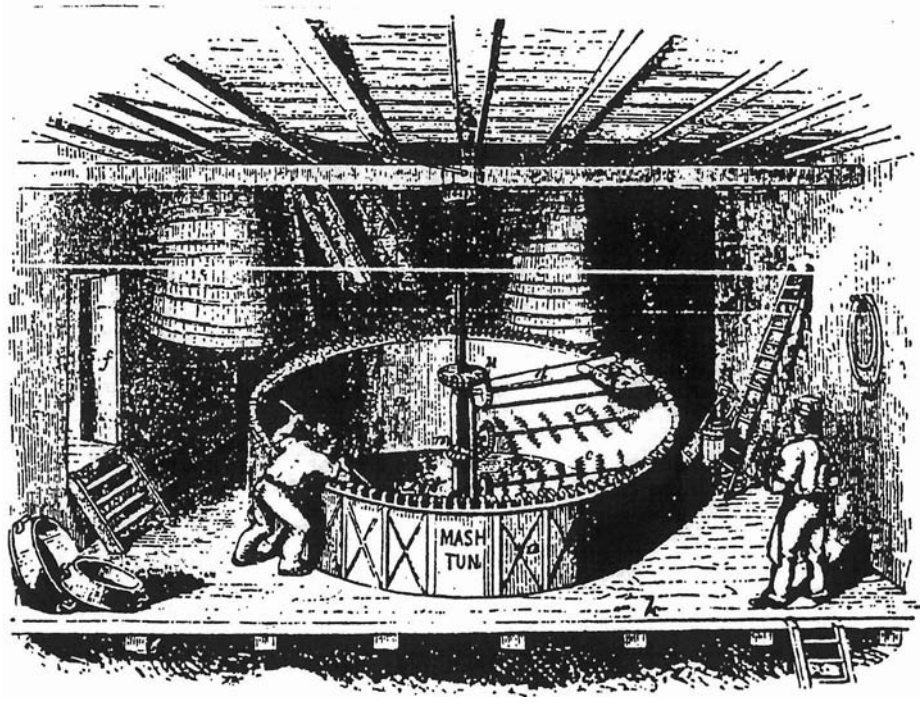


FIGURE A–6
A late 19th century distillery mashing area that was likely typical of that used at G&W. The drum type "Steels Masher" that is in Building #5 in *1994* is a 20th century development.
Source: ***Chemistry, Theoretical, Practical and Analytical as applied to the Arts and Manufacturers, 1882,*** p.70.

1.2 Molasses Mash

Process

Molasses mash was used to manufacture rum and industrial alcohol. As molasses was already a sugar, no special mash process was needed. Molasses was diluted with water and ready for fermentation.

Although rum could have been produced at G & W during the 19th century, there is no material or documentary evidence of the use of molasses in the plant until the 20th century. About 1902 the company began to molasses to produce industrial alcohol. The process is described in the industrial alcohol section of this report.

Sometime after 1918, perhaps 1920, G & W began to produce rum. After 1957 only rum was being produced and both grain and industrial alcohol production ceased.

On Site Resources

See Section B: Stone Distillery – Buildings #8 & #9 [Used for industrial as well as beverage alcohol].

13 Fermentation

1.3.1 Yeast

Process

Yeast was prepared in such a manner as to ensure a pure and vigorous culture which actively attacked the sugar in the mash. A master culture, kept in the laboratory, was purified through standard biological methods to eliminate any possibility of contamination. The pure yeast culture was used to inoculate a small amount of sterile sugar medium in a test tube. After about 24 hours, the growth was transferred to a much larger container holding a sterile molasses mash. The procedure was repeated, the culture being transferred to increasingly greater volumes of sterile molasses mash until a sufficiently large culture is established. This is used to seed the fermentation tanks. The yeast process specifically used at G&W was not researched.

On Site Resources

See Section B: Stone Distillery : Buildings #6 & #7

1.3.2 Fermentation

Process

Fermentation began with the addition of yeast to the wort in fermenting tuns. The resulting reaction converted the mash sugars into a 6% to 10% alcohol solution and carbon dioxide. Fermentation lasted from three to nine days, depending upon the season. [Figure A-7] Once the process was completed, the fermented wort was called a beer or a wash.

In order to prevent unwanted bacterial growth, a small quantity of acid was often added to the wort in a process known as souring. The acid created a better working medium for the yeast.

At the beginning of fermentation the wort temperature was about 60 ° F. and during the process rose to about 85 to 88 ° F. If the temperature went too high, the fermenting tuns were fitted with either water jackets or with pipes inside the tuns known as "attemperators" through which cold water could be pumped.

The fermented liquid, or wash, was pumped into a beer well prior to entering the distillation column.

Fermentation at G&W was historically undertaken in large wooden tuns located in buildings #6,#7,and #8. Pipe connections were made on the cover of the tuns in order to collect the carbon dioxide from the fermentation.

Beginning in 1916 the company began to replace the wooden tuns. At closure in 1990 the tuns were made of copper and did not have cover connections to capture carbon dioxide. The tuns were subsequently scrapped.

An 5,996 gallon acid tank was located outside building #6 in 1969.

On Site Resources

See Section B: Stone Distillery – Buildings #6, #7
Pure Spirits Complex – Building #57.

1.4 Distillation

1.4.1 Continuous Distillation

Process

Distillation is a purification process in which the beer, or wash, is separated into alcohol, water and other components by means of steam. Modem distilleries contain stills constructed of several columns in which the wash is redistilled on a continuous basis until the desired strength of alcohol is achieved and all undesired impurities are removed. Until multiple distillation columns were used, alcohol was purified, or rectified, by redistilling the wash several times in individual operations and filtering out impurities.

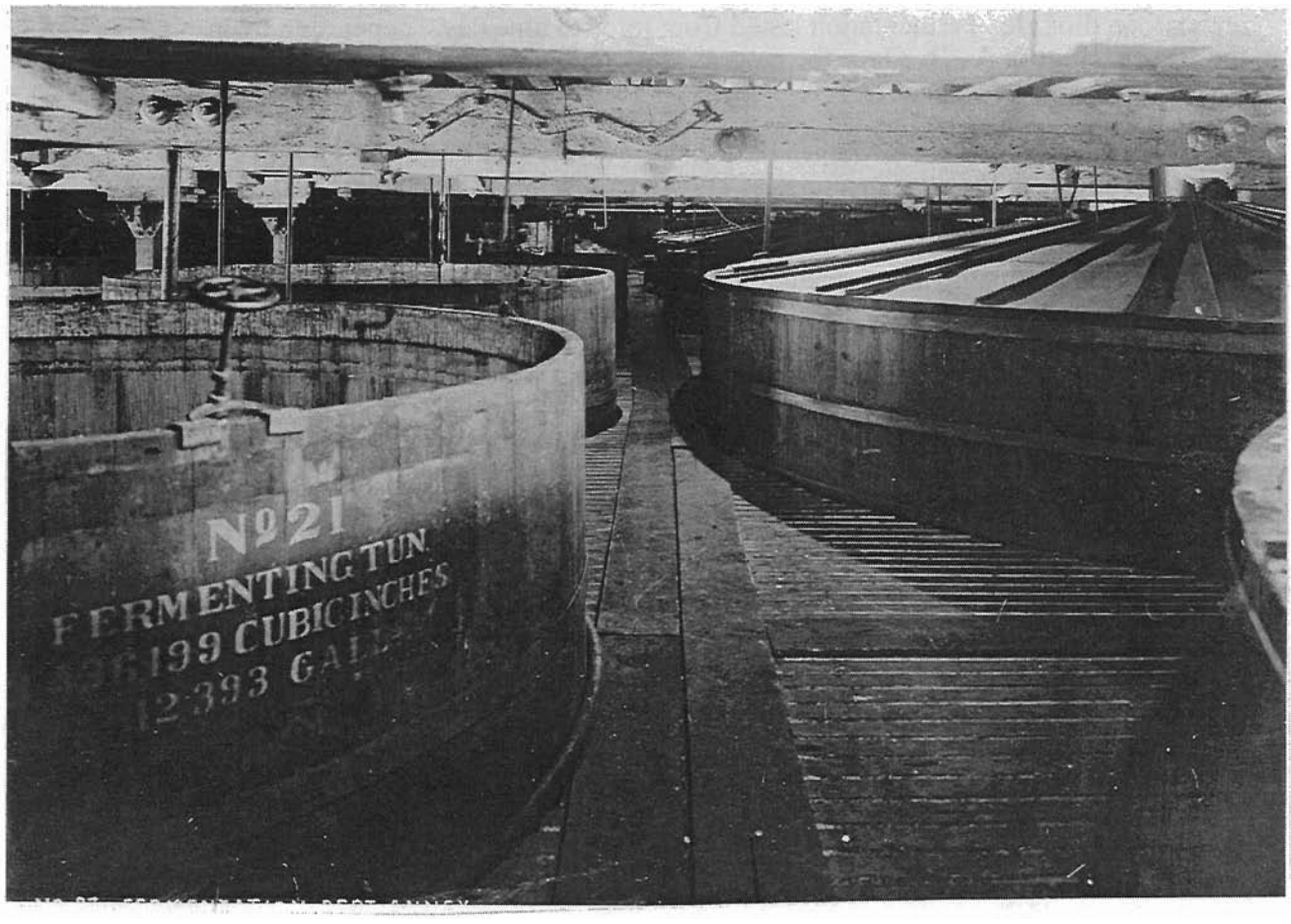


FIGURE A–7
Fermentation tuns in Buildings 6 or 7, Nov 19,1918. These wooden tuns were later replaced with copper tanks. In 1991 these copper tanks were removed, leaving concrete bases to indicate the size and pattern of tanks in these buildings. Source: G&W/British Acetones photograph #87.

The first distillation of a beer produced a product known as "low wines" that yielded between 45% and 75% alcohol and contained impurities. These impurities imparted distinct odors and tastes which were objectionable in beverage alcohol. Redistillation of alcohol removed the impurities and increased the alcoholic content. Historically, alcohol was purified, or rectified, by redistilling the wash several times in pot stills and filtering out impurities.

In the early 19th century Aeneas Coffey invented a still that bears his name in which the rectification was undertaken in one continuous operation. Coffey's still economized on time, fuel, and material as well as obtaining a spirit of higher purity than could be obtained by a pot still. The earliest Coffey stills were a double still consisting of two adjacent columns termed the analyzer and the rectifier. Both columns worked on essentially the same method. Later, additional columns were added to the system to produce better quality alcohol. Until the late 19th century the Coffey still was not considered suitable for whisky manufacture. The product was considered too pure a spirit, devoid of taste and suitable only for industrial alcohol. Pot or batch distillation was seen as the only suitable process. By 20th century all forms of beverage alcohol could be made in the stills.

The process of distillation began when the beer was pumped from the beer well into the analyzer column. This column was also known as the beer column or wash still. The columns are divided into a number of chambers by perforated copper plates. Each compartment is connected to the next by means of a drop pipe standing slightly above the level of plate and passing downwards into a cup which forms a seal. Each compartment also contained a safety valve in case the plates were choked or the pressure in the still rose excessively.

Steam from the base of the analyzer passed upwards and then to the bottom of the rectifier. Wash was pumped into the column near its middle. The upward pressure of steam kept the wash from passing through the perforations in the copper plate until its level reached the top of the first drop pipe. The wash then passed into the cup on the plate below and so on to the next plate. In this way, the wash flowed from compartment to compartment of the analyzer until it reached the bottom and passed out of the analyzer by means of a spent wash siphon. The spent wash was used as a cattle feed.

The steam on its upward passage through the analyzer carried the alcoholic vapors and other volatile matter of the wash. The alcohol passed from the top of the analyzer to the bottom of the rectifier and then upward through the rectifier from compartment to compartment.

At a specific location in the upper part of the rectifier, the bottom of the compartment was formed of a heavy copper sheet, known as the spirit plate. It was placed so that alcohol vapors condense either on or immediately above the plate. The alcohol passed out of the still from the spirit plate chamber to be cooled and collected. Vapors with a lower boiling point than alcohol, such as the aldehydes, passed out the top of the rectifier and were collected separately. Less volatile components of the wash were termed fusel oil and passed out the base of the rectifier to be cooled and gathered in a separate vessel.

The original 1837 Gooderham distillery was described as a wooden distillery. All vessels, pipes and stills were made of pine. The pipes were 9"

square with a boring of 2 1/2" in diameter. The distillery contained equipment for filtering the spirits through charcoal. A description of a contemporary wooden distillery "near Toronto" is given in ***Chemistry, Theoretical, Practical and Analytical*** (pp. 104–104).

G & W probably relied on pot stills although there is a reference that by 1850 G & W was using a "patent still" (continuous still) to produce 50 over proof (o.p.) spirits.

The 1859 plant was constructed with a continuous still. The main column was 40 feet tall and was located on the third and fourth floors of the distillery. The original still equipment was constructed by Booth and Son in Toronto.

By 1872 the company operated six stills. There is no indication if all were continuous of if some were pot stills. Some were probably used for primary distillation and others for rectification.

In the 19th century most distilling in Canada was carried out between October and May. Traditionally, the water supply in summer months was of poor quality and unsuitable for mashing. As well, unrefrigerated water was used as the coolant in the condensers and warm summer water was less efficient as cold winter water. The G & W plant was typical in that it operated from October 15 to June 15 each year.

Secondary distillation, or rectification could be undertaken throughout the year. In order to provide stock for rectification in the summer, alcohol from the primary distillation was stored in vaults under the malt house.

When the plant closed in 1990 the company was using a five column still consisting of a four column still and one column of a second unit. Distillation was.carried out with 10 pounds of steam. Most of the distillation equipment in 1994 in building #5 was built by the E. B. Badger and Sons Company, Boston and the Vulcan Copper Supply Company of Cincinnati.

Distillation commonly produces two grades of alcohol – #1 alcohol and #2 alcohol. #2 alcohol was used extensively by vinegar manufacturers. Distillery by–products included fusel oils and distillery slop.

On Site Resources

See Section B: Stone Distillery – Building #5
Pure Spirits Complex – Buildings #55 & #56

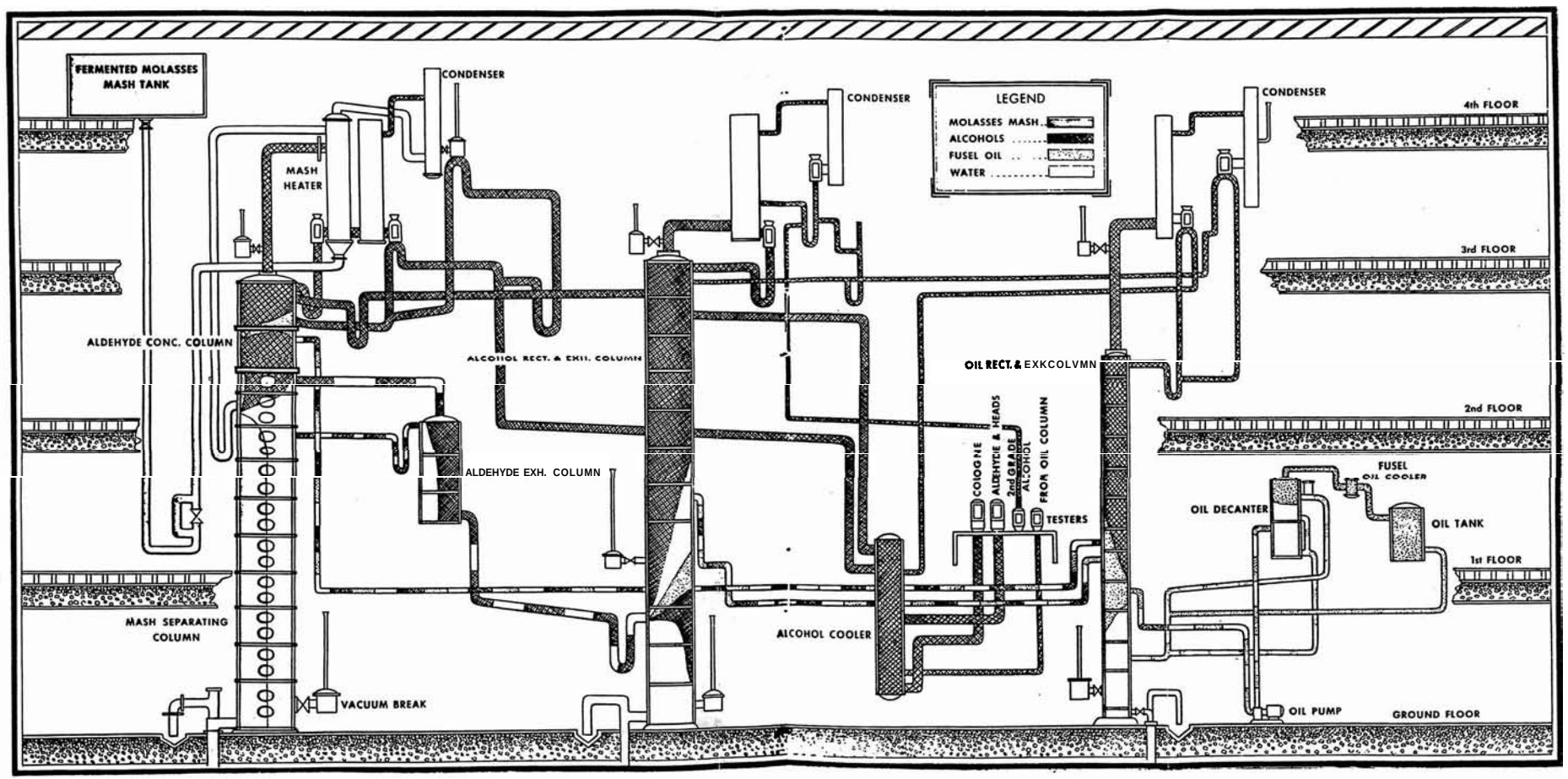


FIGURE A-8
Schematic diagram of beverage alcohol distillation in Building #5 in c.1938. A similar layout exists in the building in 1994 although some equipment has been replaced and additional columns have been added. Source: *Alcohol in Industry*, Gooderham & Worts, 1938.

1.4.2 Redistillation

Process

The first product of distillation – the "low wines" – were relatively low in alcoholic content and contained numerous impurities. The Coffey still automatically continued the distillation of the low wines to increase the alcohol and removed impurities. Prior to the advent of this still and in the manufacture of certain beverage alcohol, the alcohol was redistilled in discreet operations in a pot still in order to obtain the desired spirit.

Redistillation separated the low wines into three components – foreshots, clean spirit and feints. Foreshots had the lowest boiling point and were the first liquid removed from the still. Feints were the last part of the redistillation of the low wines. Feints contain fusel oils that had some commercial value as a by–product. Some of the foreshots and feints were added back to the low wines to increase the efficiency of the redistillation process."

After Gooderham & Worts closed their windmill for milling purposes, a distilling column was constructed in the building to rectify spirits. Alcohol was piped from the charcoal rectifiers and redistilled in two copper pot stills to 60 o.p.

Although the first distillation was not done in the summer, redistillation could be undertaken throughout the year. Alcohol from the first distillation was stored in vaults below the malt house (building #35) until they were redistilled.

A feint storage and tank shed was located on Trinity Street in 1880. The reason for storing feints is not known.

The rectifying stills were moved into a new building, called the pure spirits building in 1873. The building was constructed to manufacture neutral spirits for use as a base in gin, vodka, cordials and blended whisky.

Although the building contained four self contained areas, by the first world war the building only contained three stills in buildings #54, 55 and 56. In 1880 building #53 was called a "spirit house." By 1909 the building may have been used to produce special beverages as it had water tanks on the 2nd and 3rd floor and syrup barrels on the 3rd floor. By 1943 it was a still house.

Buildings #54–56 contained the three working stills. Still # 1 had a capacity of 4,000 gallons while #2 and #3 stills had capacities of 7,000 gallons. Number 2 and number 3 stills were used for the manufacture of whisky. The purpose of #1 still is unknown. The lines from the tail boxes went directly into the #2 tank house (building #61) which contained 16 9,000 gallon tanks. During the first world war, the pure spirits building was used for butyl alcohol rectification. Building #57 was also part of the pure spirits complex but used to store alcohol and fusel oil.

By 1969 the pure spirits building was no longer used as a distillery. Building #53 seems to have been used as an excise office and as an entrance into mixing room #61. Building #54 contained a denatured tank while #55, 56, and 57 were used for "anti–freeze drumming."

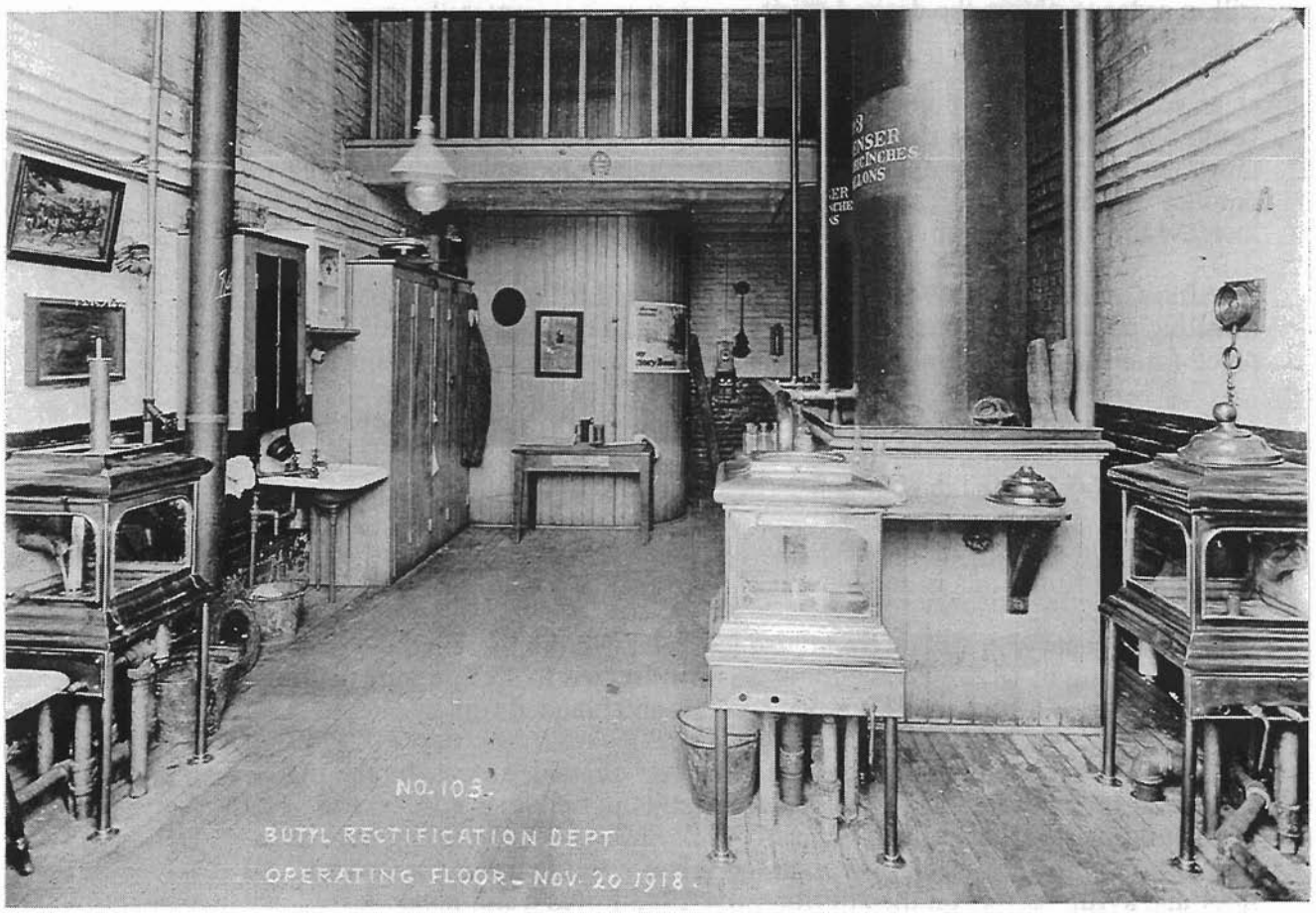


FIGURE A–9
The interior of the "Pure Spirits" Building 53, 54, 55 or 56, November 1918. The mezzanine level at the back of the photo and the corbeled brick to support a floor can still be seen in most of these buildings in 1994 but the exact building cannot be determined from this photo due to the extensive remodeling of the interior at various times during the 20th century.
Source: G&W/British Acetones photograph #103.

On Site Resources

See Section B: Maltings – Building 35
Pure Spirits Complex – Buildings 53 to 56

1.4.3 Filtering

Process

Impurities could be removed by filtering the spirits through charcoal. The technique was very simple but was not as effective as redistillation and did not increase the alcoholic content of the spirit. A charcoal column was commonly seven to 30 feet tall and three feet in diameter. In most cases spirits were filtered prior to redistillation and therefore were part of a larger rectification process.

By 1838, and probably since the still opened in 1837, G & W used charcoal to filter their spirits. This product was filtered through tall wooden rectifying vats containing charcoal and poured into barrels for aging. This type of alcohol was called "common whisky". It is not certain if the spirit was redistilled as well.

The Gooderham Company used charcoal filtering until the late 19th century. After the new distillery was completed, charcoal filtering took place on third and fourth floors of building #5. The charcoal filtering equipment consisted of 42 800 gallon tanks.

The company operated a charcoal burning shed to supply charcoal. By 1890 the building had been replaced by a copper shop (buildings #71 and 72). The land is now the vacant area west of building #75. This suggests that the company purchased it charcoal from outside suppliers.

Industrial alcohol was also filtered and in the early 20th century the General Distilling Co had a rectification house in its molasses distillery.

On Site Resources

None identified.

1.5 Mixing/Distribution

Process

Mixing Buildings #61 and 62 were last used to fill barrels and as a central area through which almost all of the product pipes in the complex passed. Filling barrels with spirits, both for aging and for sale, was the older of the two functions.

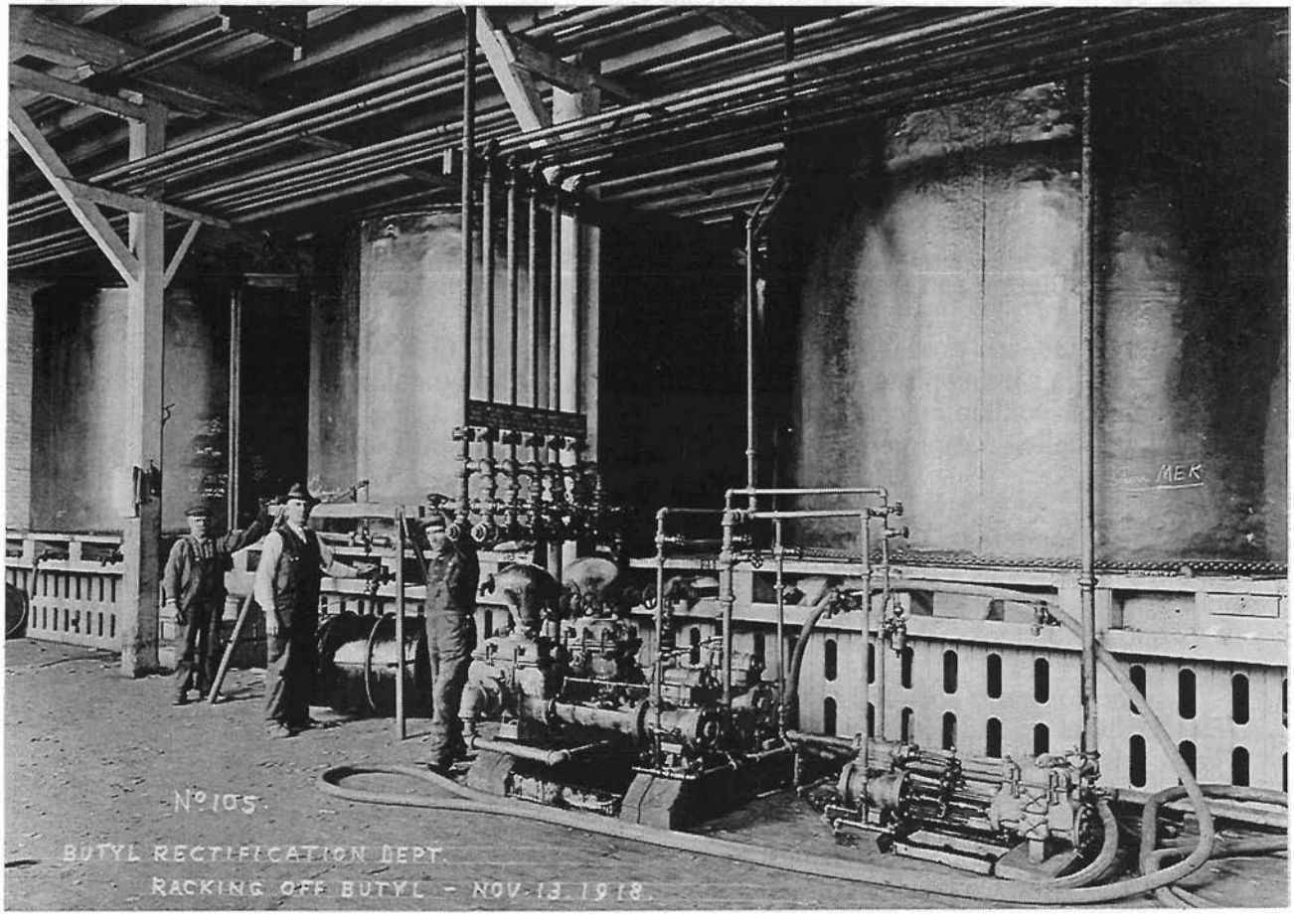


FIGURE A–10
Racking of butyl alcohol in Building 61 or 62, Nov 13,1918. The layout of tanks, pumps and associated equipment and pipes was largely unchanged until the facility was scrapped in 1991; the wooden tank platform remains in 1994.
Source: G&W/British Acetones photograph #105

In 1880 the "racking of spirits" into barrels occurred in building #34. By 1915 no building was identified for that function; building #34 having been converted into a paint shop. It may be that one of the tank storage warehouses was used for racking. By 1918 "mixing" or "racking" was probably undertaken in tank houses now called building #61 or 62.

The term "mixing room" was not used until after the first world war when the name was applied to a former tank house (building #61). The former cooperage and tank house, Building #62, was a mixing room by 1969. The mixing rooms came to play a central part in the operation of the distillery. Virtually all liquids used in the complex passed through the mixing rooms by pipe. The mixing rooms were connected by pipes to:

- Spirit receiving tanks in building #5
- Rail tank cars at building #60
  Denatured warehouse building #47
  Tank houses # 48, 49 and 50.
- Truck connections outside #61.

As G & W manufactured both beverage and industrial alcohol, the different products had to be handled in separate systems. Pipes were colour coded to ensure that improper connections were avoided.

On Site Resources

See Section B: Pure Spirits Complex – Buildings #61 & #62

1.6 Aging

Process

The aging of alcohol involves a series of chemical reactions producing changes in the original distillate that improve the aroma and taste of the final product.

Prior to 1885 G & W alcohol was filtered through charcoal and then aged for between two months and one year and sold as common whisky. In 1880 buildings #31, 32, 33 were used for the storage of spirits, probably in barrels. Additional warehousing was done in tanks in buildings #61, 62, and 63. Buildings #58 and 59 were for the storage of "spirits and whiskey," suggesting this was for bottle and barrel storage.

In 1885, an aging law was introduced whereby spirits had to be aged for two years before being sold. All whisky referred to as rye whisky was stored in barrels. The spirits required for chemical and mechanical uses were kept in tin and copper tanks. This alcohol had to be kept white and clean, otherwise the druggists could not use it if it had any colour.

As a result of the aging law that required two years of storage, the company had to increase the manufacturing as well as storage capacity.

By 1915 only building #42 was a rack warehouse; all other storage, including the east half of building #58 was in tanks. The building #59 and the rest of building #58 were a bonded warehouse and spirit storage. By 1943 #58 and #59 were converted to an antifreeze canning operation.

Most of the warehouses were specifically built for spirit storage. However some buildings were converted to rack storage. By 1918 the malt house (building #35) was used for general stores and by 1943 all four floors had been converted into a rack warehouse. Building #34 was used as a rack house by 1943.

For some years, around the 1940s two rack warehouse, #43 and 44 were used as general warehouse of the Howell Forwarding Co.

On Site Resources

See Section B: Buildings #42 #43 #44, #64, 65, #66, #75: barrel warehouses
Building #48, 49, and 50: tank storage.
Maltings: Building #35 [later used as rack house]

1.7 Blending, Packaging and Shipping

Process

Various batches of alcohol were blended together to produce a standard product. This was then poured into bottles or barrels for sale. No research was undertaken on blending or packaging history.

Little evidence of blending operations were noted on the G & W property. The principle survivors in 1994 were the tank bases and barrel dump trough in Building #61. The process of bottling was not researched for the property. A bottle storage warehouse was located south of the tracks in 1915 but was removed by 1943.

No bottling was done at the plant by the 1980s. Products produced at other plants were warehoused on the property. By 1943, after building #58 and #59 were converted into an anti–freeze line, beverage bottling was undertaken in the former laboratory (building #25).

In 1880 a small shipping warehouse was located near the railway tracks and connected by a "raised tramway" to building #62. A shorter tram was used after the "long room" building #62A was completed in 1883. The shipping warehouse disappeared when warehouse #74 was completed on that site in 1927.

By 1943 the former east boiler house (building #46) had also been converted into bonded storage.

Building #62A ("Long Room") was constructed in 1883 and used for bulk shipping. This was a long, low building used as a barrel transfer warehouse. This area was used to hold stock material awaiting shipment. There were five lines of rails for barrels.

The conveyor system from the canning plant, third floor, entered into room **62A.** There was also a narrow loading bay between **62A** and the packaging building. This had a covered roof and a large chute in it. This seems to have been a garbage drop for extra material from the packaging department.

On Site Resources

See Section B: Pure Spirits Complex – Buildings #58 & #59
Case Goods Warehouse – Building **#74**

2 INDUSTRIAL ALCOHOL

21 Manufacture

Process

The General Distilling Company was organized by the owners of G & W to produce industrial, non–potable alcohol from molasses. No reason for the construction of the plant was found. G & W may have been looking for new products. As well, molasses alcohol could be made in the summer which would complement the winter distillation of beverage alcohol.

The plant was completed in 1902 and operated virtually independently of the G & W distillery. The complex was constructed on the site of two former G & W tank houses at the comer of Mill and Parliament Streets. The company converted 100 tons of molasses into 10,000 gallons of alcohol per day. The distillery operated in the summer for about six to ten weeks or until all the molasses was used up.

The distillery needed a large storage facility for molasses. By 1915 a 1,250,000 gallon molasses tank had been constructed where the present large glycol tank stands. By 1918 the tank had been converted to butyl storage but was back to molasses by 1943. A smaller outside molasses tank seems to have been constructed after 1918.

In general, the process for manufacturing industrial alcohol was identical to beverage alcohol. The main object .was to produce as high a yield of alcohol as possible. Taste and flavour were of secondary consideration and only important when the alcohol was employed for some purposes such as pharmaceutical products.

Industrial alcohol was filtered and redistilled like beverage alcohol. The General Distilling charcoal filter room was 123 feet by 29 feet and located between the distillery and boiler house. It contained 32 cast iron rectifying filters using charcoal.

During the first world war the industrial alcohol complex was converted into an acetone plant. Although the buildings of the General Distilling Co were newer than the original G & W plant, they were demolished sometime after the first world war. They may have been too expensive to reconvert to alcohol production after the war.

Large scale industrial alcohol production ended with the removal of the General Distilling plant. G & W produced some industrial alcohol in its originally distillery after this date. In the 1920s, the company began to produce anhydrous alcohol in the original distillery building.

Possibly the largest single use of alcohol in Canada, in the 1930s, was as an antifreeze. G & W developed a new product called "Hot Shot" as a blend of denatured alcohol, certain oils and other ingredients which produce a non–corrosive solution. The demand for "Hot Shot" enabled the company to change

from shipping the product in only steel drums to producing sealed gallon and quart cans of the antifreeze.

Ethylene glycol was stored in tanks at the west end of the property and brought by pipes to the canning department in building #58/59. The business was so important that by the 1940s the former bottling line in the building had been moved and replaced with the anti–freeze line.

Until closure of the plant, G & W continued to import industrial alcohol to the plant to supply the industrial needs of Toronto.

On Site Resources

See Section B: The vacant area along Mill Street is all that remains of the General Distilling Company plant.
Pure Spirits Complex – Buildings #58 & #59.

2.2 Denatured Alcohol

Process

Since an excise duty was collected on pure spirits, most industrial alcohol was sold as denatured alcohol. G & W in the 1930s carried over 100,000 gallons of various grades of industrial alcohol in stock for immediate delivery. This required a large denaturing department for both the storage and movement of drums.

The most common denaturent was methanol. A methanol line ran from pump in building #74 to denaturing building #47. The pipe ran through #62A but did not enter mixing rooms #61 and 62. A second pipe ran from pump house #60 through mixing room to #47

The denatured alcohol building was built in 1887 as a tank house and converted to its current use before 1943.

Building #47 contained 12 large alcohol tanks that are used to mix denatured alcohol. Denaturing chemicals were stored in small metal tanks of five to ten gallons and then mixed with ethyl alcohol. Compressed air was used to mix the chemicals. By the 1980s, G & W no longer manufactured industrial alcohol at their plant as the company's distilling process had become too expensive. Instead, G & W bought ethyl alcohol from Montreal and denatured it in Toronto so that they could supply the local markets.

On Site Resources

See Section B: Denatured Building #47

2 3 Anhydrous Alcohol

Process

Distillation in a continuous still **can** produce alcohol that is about 95% pure, the remaining consisting mostly of water. For most commercial uses, alcohol of this strength or weaker is used. Consequently, alcohol is stored at that strength.

It was only during the 1920s that the large scale commercial production of anhydrous ethyl alcohol became financially viable. Ordinary alcohol is 95% alcohol and 5% water. Ordinary distillation methods will not remove the remaining 5% of water because it is the nature of ethyl alcohol to hang on tightly to this remaining water.

Several processes may be used in the manufacture of absolute or anhydrous alcohol. **A** "few years ago" G & W installed a process by which the vapor of boiling alcohol was bubbled through ethylene glycol **running** down the column from plate to plate. This chemical had a remarkable affinity for water and as it descended, it carried away water remaining in the alcohol. The product was condensed and collected as absolute alcohol that was 99.98% pure. The product was piped from the still in building #5 to the mixing room #61. The still was not in use by 1969.

On Site Resources

See Section B: Stone **Distillery** – Building #5 [anhydrous alcohol still]

3 ACETONE

Process

Acetone was a solvent in production of cordite – an explosive used in great quantities by the British in the First World War. By the early 20th century, the British Ordnance Committee had standardized the formula to consist of 65% gun cotton, 30% nitroglycerin, and 5% mineral jelly (Vaseline). Acetone was the solvent to reduce the nitroglycerin and gun cotton into a jelly. One pint of acetone was sufficient to make one pound of cordite.

The British Acetones Toronto Limited was formed early in 1916 to manufacture acetone fiom corn by the, then, newly discovered Weizmann process. G & W converted their industrial alcohol plant operated by the General Distilling Co. into an acetone plant for the duration of the war. The first agreement with British Acetones was that only the property of the General Distilling Company would be used. The G & W facility would only provide milling and mashing facilities. Then, "through the patriotism of Gooderham and Worts", the entire plant was gradually converted to the production of acetone by the end of the war. The plant produced 2,850 tons of acetone during its operating history from August, 1916 to November, 1918.

Acetone could be produced by several methods. One process used before the War consisted of converting alcohol into acetic acid, the acetic acid into calcium acetate, and finally calcium acetate into acetone. Acetone was also extracted from seaweed and this became an important source during the War. But all methods had production limitations and war demands forced the development of new technologies.

British Acetones adopted the Weizmann process at the G & W plant. This was a bacteriological process analogous to the manufacture of alcohol. A starch solution, either grain or corn, was inoculated with a "culture" and the ensuing fermentation produced a beer of acetone (0.7%), butyl alcohol (1.4%), ethyl alcohol (0.08%), carbon dioxide and hydrogen.

The Weizmann process produced large quantities of butyl alcohol – a product for which there was limited commercial or military demand during the war. Therefore, in 1917 British Acetones began constructing a plant to convert the alcohol by means of a catalytic process into methyl–ethyl–keytone (MEK), a solvent with similar characteristics to acetone. Only a small quantity of MEK was shipped before the war ended.

On Site Resources

After the war, most of the former General Distilling Co. plant was demolished. The only remaining building is a former still house constructed on Mill Street sometime between 1916 and 1918. This building is not owned by G & W.

An iron cooler still remains in Building #6. [Figure B–16; further research should be undertaken to confirm if this was an acetone mash cooler]

4. DISTILLERY BY–PRODUCTS

4.1 Mill By–Products

Bran, the outer covering of a grain of wheat, was removed from the grain during milling and separated from the meal by means of scalpers.

The method of handling bran at G & W in the 19th century is unknown. By the early 20th century the bran was blown from the ground floor of the mill (building #3) through a 12 inch galvanized pipe to an 82 inch cyclone separator in the attic of the malt house (building #35). Here the bran was sacked and sold.

Middlings were another mill by–product. In the 19th century middlings were a poor grade of flour produced by mill stones and that contained a high level of bran. It was only suitable for animal feed. With improvements in flour purification and milling techniques, the term middlings came to be applied to a high grade intermediate flour and to a finished product used as animal feed after the flour has been extracted. No documentation on the use of middlings from the G & W mill could be located.

On Site Resources

None identified.

4.2 Fermentation/Distillation By–Products

4.2.1 Mash Grains and Distillery Slop

Process

The residue from mashing and distillation could be used for cattle food. The spent grains from the mashing process were sometimes known as "draff" while the residue from the still was known as distillery slop. Distillery slop could also be concentration as a thick syrup and burned in a furnace. The ash, containing about 35% potash, was a valuable fertilizer while gases from the furnace could be washed with water to recover ammonia. This process was not used at G & W.

In the 1830s no ready market existed for distillery slop in Toronto. Therefore, Gooderham expanded into a dairy operation in order to use the by–product. In 1843, the firm purchased 22 cows and by 1850 the herd had expanded to 108 cows. By the early 1860s G & W had sold the cattle business to William Lumbers. Distillery slop was piped under Trinity Street and sold to Lumbers' operation.

By the early 1870s G & W had reestablished itself in the cattle business and opened a large farm on the east side of the Don River, about 3/4 mile from the distillery. In the mid 1880s, the company was feeding 2,500 head of cattle from distillery slop. The slop was pumped through a six inch copper pipe directly from the distillery to the farm. The pipe crossed the Don on the south side of the Grand Trunk Railway bridge. The farm and pipeline were still in operation in 1911.

By the 1880s three slop vats were located near the railway in the vicinity of building #60 perhaps to supply the retail trade. By 1915 two large slop tanks were located at the west end of the property on the site of the small glycol tank today. One was removed by 1918.

There seems to have been a switch from liquid slop to dried slop in the early 20th century. By 1915 slop drying was undertaken on the first floor of building #4. By 1918, a two story, wooden louvered shed on top of the mill boiler house (building #2) was probably associated with slop drying. In 1994 Building #4 still contained a slop drying rack and storage hopper. The area was still used for drying in 1943.

On Site Resources

See Section B: Stone Distillery - Buildings #4 & #5.

4.2.2 Carbon Dioxide

Process

Carbon dioxide from fermentation could be collected, purified, and stored in cylinders to be sold or utilized for the production of dry ice. By the 1940s the Liquid Carbonic Company had a factory at the northwest corner of the G & W property. This probably was the firm that used the carbon dioxide from the fermentation. The former Liquid Carbonic plant is now a vacant field.

On Site Resources

None identified.

4.2.3 Distillation By-Products

Distillation yields small quantities of by-products, primarily in the form of aldehydes and fusel oils. Only the fusel oils had any commercial value as solvents. Fusel oil are an undesirable impurity in ethyl alcohol and are removed by filtering and redistillation. Fusel oils consist of several alcohols such as amyl, propyl, and butyl alcohol. Amyl alcohol came into demand because of its high boiling solvent and its use in nitrocellulose plastics, films and lacquers. Butyl alcohol found use as a solvent in many applications. G & W had a fusel oil tank in building #57 from at least 1880 until at least the 1940s. When the plant closed in 1990 fusel oil was still collected and stored in Building #5. At the early part of the 20th century aldehydes had no particular use as they were too reactive to be used as solvents.

On Site Resources

See Section B: Building 5

5. AUXILIARY SYSTEMS

5.1 Fire and Explosion Protection

***Explosion*:**
Protection from explosions was very important in the production of volatile alcohol. Preventative measures included ventilation slats in the flooring of the distillation building #5. All switches, lights and telephones were enclosed in explosive proof electrical boxes.

Buildings #53 to #56, the "Pure Spirits Building," has a distinctive glass front and the four distilling areas were separated by brick walls. The west wall of each floor is composed of glass doors that was designed to blow outwards if the distillery blew up. [Figure A–11]

Many doors through the complex were constructed of heavy metal that seemed to be explosion proof as well as fire proof. They separated buildings such as between the mashing in building #5 and the grain elevators in building #3. Another set were the doors from building #53 into building 61. This double door with a timber door on the east side and a metal door on the west side of the wall for fire protection.

Steam engines and pumps may have been retained at G & W longer after electric motors became practical in order to minimize the threat of sparks prevalent in motors.

Fire
Virtually all buildings were of masonry construction to reduce the fire hazard. The spacing between the buildings, especially the rack warehouses may have also been designed to reduce the risk of fire spreading from building to building.

Fire protection by the 1880s was limited to six pumps located through the property. About 1895 a fire pump house was constructed to hold a boiler room and two 1,000 gallon per minute fire pumps. Steam was always kept in one boiler and the second boiler was always ready for use. Steam was provided by two 85 horsepower Babcock and Wilcox boilers. Fire protection water was brought from the bay. In 1927 a large water reservoir was constructed under the case goods warehouse #74 to provide an assured supply of water for the pumps.

Sprinkling of the buildings did not occur until after 1915. This seems rather late for such a vulnerable complex. Good sprinkler systems had been developed in the late 19th century. In 1915 only the boiler room for the fire pumps in building #60 was sprinkled. All buildings were sprinkled by 1943.

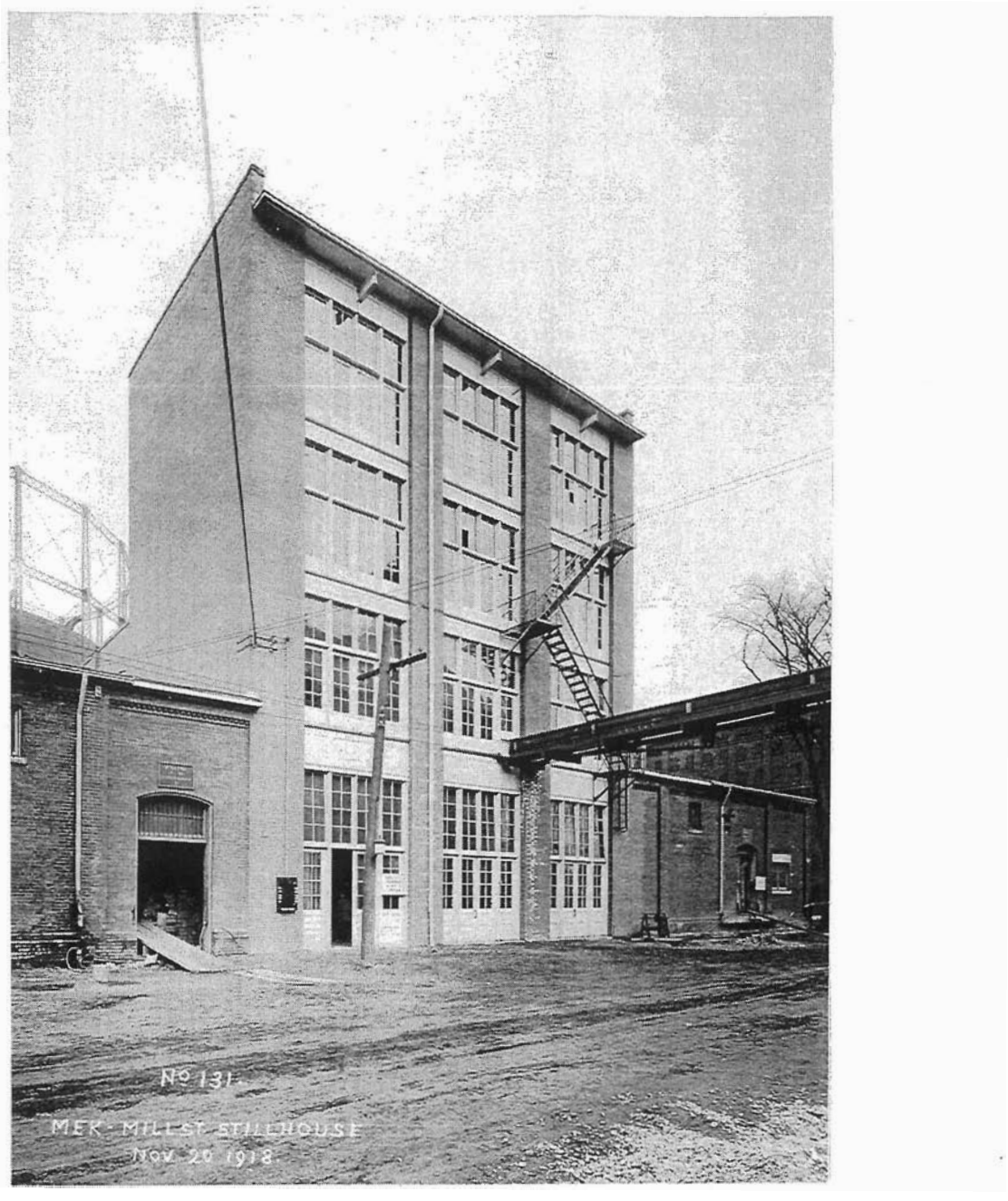


FIGURE A–11
The MEK still house used in the manufacture of acetone in 1917–18. The glass walls indicate the three bays for still columns. Each is separated by thick brick walls to deflect the blast of an explosion out onto Mill Street rather than into the adjacent equipment. The building still stands in 1994 at the northwest corner of Mill and Trinity Street. The building is owned by the City of Toronto and is not part of the redevelopment scheme.
Source: G&W/British Acetones photograph #131

5.2 Material Handling

5.2.1 Vertical Haulage

Hoists: A non–functional hoist serves all floors on the outside of the north side of Building #5. On the ground, to the right side of the building, was an "eye" through which a cable passed and was pulled by horses. A hand operated winch is found in the attic of the malt house. (Building #35) Small hoists were found in several buildings including the slop drying areas (Building #4) and the malt kiln (Building #36).

Bucket Elevators: The malt house is assumed to have once contained an elevator to carry barley to the top floor. No evidence of the hoist remains. The mill building contained bucket elevators typically found in grist mills for the movement of grain. A coal hoist was located in the boiler room to load an overhead coal bunker.

Gravity Slides and Chutes: Warehouse buildings #59 and #74 have spiral slides to move case goods. Chutes, or spouts, were used in the mill building as gravity feed for the mills. Trapdoors in the malt house were used to bring material from the upper floors.

Pneumatic: Bran was once moved from the mill building to the attic of the malt house by air. No evidence of this system exists today.

Freight and Barrel Elevators: The malt house (building #35) contains an electric freight elevator installed after the building was completed. It served the basement and all floors except the fourth (attic). The electrically powered hoisting equipment was situated on the top floor. The cables have been removed and the carriage is situated in the basement. Rack warehouse #42 contained a freight elevator and evidence of a rope hoist in 1994. Portable barrel hoists were used in the smaller rack houses. Case goods building #74 had an elevator.

5.2.2 Horizontal Haulage

Belt Conveyors: In 1994 various conveyors, both belt and roller, could be seen in buildings #58 and #59 for the movement of case goods. Conveyors also carried packages to other buildings. Other buildings may have once had conveyors but the evidence has been removed.

Screw Conveyors: Screw conveyors exist in the mill building and mash cookers to move grain. No evidence of other screw conveyors were noted.

Tramways: In 1880 a small shipping warehouse was located near the railway tracks and connected by a "raised tramway" to building #62. After the "Long Room" (building #62A) was completed in 1883, a shorter tram ran from this building to the railway. The shipping warehouse disappeared when warehouse #74 was completed on that site in 1927. The "Long Room" (building #62A) had barrel rails and plates in the shipping area. A movable barrel runway connected the drum reconditioning building #63 with the denatured alcohol building #47.

5.2.3 Liquid Transport: Pipes and Pumps

A characteristic of the G & W complex are the large number of overhead bridges used to carry steam pipes and product lines between the buildings. Because alcohol does not freeze, it can be taken through above ground pipes. The principal products pumped through pipes included:

- Molasses from dock to storage tanks
- Molasses from storage tanks to fermenting tuns;
- Raw beverage spirits from distillery to mixing room;
- Spirits from mixing room to denaturing room and tank storage;
- Beverage/industrial alcohol from rail cars/tanker trucks to mixing room;
- Ethylene glycol from storage tanks to anti–freeze canning;
- Methanol from rail cars to denaturing room;
- Denaturing line from railway to building #54;
- Anhydrous alcohol from distillery to mixing room;
- Beer well to distillation column;
- Distillery slop to farm.

In addition to fixed pipe routes, flexible hoses were used with portable pumps to empty and fill fermenting tuns and pump the wash to the beer well.

Several duplex and simplex steam pumps were located throughout the property but none seemed to have been in use when the plant closed in 1990. At the time of closure the main molasses pump, a modern electric pump from West Germany, was located in building #8. Alcohol pumps used for unloading rail cars and tank trucks were located in Building #60.

A slop pipeline was used to connect with the Don farms. The pipeline was 3/4 mile long and operated from about 1872 until the early 20th century. Portions of this pipe are still buried adjacent to the stone distillery and were identified in 1994.

5.2.4 Compressed Air

In the early 20th century compressed air was used to move acids in the MEK plant, to handle the butyl and for pneumatic construction tools. Two air compressors are located in Building # 2A. Compressed air was used to clean pipes of fluids after the pumping operation is over and to mix products in the denaturing room. In the early 20th century two air compressors were located on the "stone floor" of the mashing area. The principal compressor was operated by steam. A smaller compressor was operating by a belt drive only used when demand was heavy.

5 3 Weighing

A wagon scale house stood outside the mill (building #3) from the 1880s until at least 1943, A variety of scales were found throughout the complex. A flour scale was located in the mash house (building #5). A track scale was located on the ground floor of the mill building.

Weighing was a very important component of record keeping for excise requirements and to keep track of production yields. Three large tank scales are located in a loft in Building #61. Tank scales for spirits were noted in the still area, mixing rooms and the pure spirits building. Barrel scales were noted in several location such as the mixing room (building #62) and the denaturing building.

Dormant Warehouse **Scales, with Two** Iron **Pillars** and **Sliding Poise** Beam.

No. 1, Capacity, 5,000 lbs.....Platform, 48x48 in.. .....each, $

No. 4, Capacity, 3,500 lbs.....Platform, 41×43 in..... "

FIGURE A-12
A Fairbanks warehouse scale of c.1865. Scales of similar design are still located with the G&W complex in 1994. The largest and most distinctive are three immense tank scales in the loft of Building #61.
Source: ***Illustrated Catalogue of American Hardware of the Russell and Irwin Manufacturing Company,*** 1865.

5.4 Barrel and Drum Manufacturing

Initially a cooperage for repairing and cleaning barrels was located in building #5. This area was later converted into additional fermenting rooms. By 1880 a cooper was located in building #28 and by 1890 had expanded to include building #32. As well a large barrel (wash?) house had been built on the west side of the malt house.

Until at least 1890, a cooperage for new barrels was located at Cherry and Front Street, a half mile to the north. By 1943 the former tank house, building #62, was used as a cooperage and continued in this function until at least 1969. There is no cooperage on the property today.

In 1915 building #8 was a fermentation room but by 1918 it had been converted to a drum washing room. By the 1930s the space was called a drum room for the manufacture of steel drums. This required presses, rolls and other metal working machinery to produce these steel containers. No evidence of drum making equipment existed by the 1980s.

Building #63 was constructed as a tank house in 1879. By 1943 it had been converted into a paint shop and may have been used to paint drums. By 1969 it was called a drum paint shop and the shop continued to recondition steel barrels until the plant closed. Alcohol has such an affinity for water that it will be drawn into the barrel and cause rust and barrels returned from customers had to be cleaned. The barrel reconditioning unit had two barrel rollers. Chains were put into the barrel and the machine rotated the barrel until all rust was removed. Barrels were also painted. None of this equipment was evident in 1994.

5.5 Cooling

Cooling was needed in the both fermentation and distillation. As early as 1850 an ice house was constructed by G & W to provide cooling for the condensers. From at least 1880 until the early 1920s an ice house was located where building #75 was built in 1927. No mechanical refrigeration equipment seems to have been built in the complex. By the 1890s the company had an intake pipe from the harbour. When in operation, Building #2A contained two electric water pumps to bring water from the harbour for cooling. The intake pipe had a water filter and the line was periodically back washed to remove sediments. The pumps were still in place in 1994.

5.6 Utilities

Gas: The distillery received gas lighting in 1841. This was the time when municipal gas were installed throughout the city. Gas jets were noted in Malt House #35 and riser pipes for gas were observed in Mill Building #3.

Electricity: The date when G & W received hydro is unknown. The original service was 550 volts at 25 cycles. It was brought into the Trinity Street pumphouse and metered there for distribution to the plant. As demand grew, a new switchboard was established on the General Distilleries property. In 1890 a

building north of the fermentation building was called "electric light". The purpose of the building is unknown.

Water: The distillery obtained city water from watermains on Trinity Street and Mill Street. By the 1890s the company had a water intake pipe extending into the harbour that provided cooling water and a supply for the fire protection system. The intake began 3,200 feet from the shore of Toronto Island and was 79 feet below water level. The temperature of the water ranged from 35° F in winter to 58° F in summer.

Sewage: No information on sewage systems was located.

5.7 Transportation

5.7.1 Railways

Railways were an important means of both importing raw materials and exporting finished products. The original route of the 1856 Grand Trunk ran along the south side of the distillery building. The building was served by a railway siding. In the 1920s a new grade separation scheme relocated the mainline further south over what had formerly been harbour. G & W became interested in railways as a natural extension of their milling activities. The Gooderham family was involved in the promotion of both the Toronto, Grey & Bruce Railway and Toronto & Nipissing Railway.

5.7.2 Water

The original shoreline of Toronto harbour is delineated by the railway siding. Gooderham's first wharf and windmill had been established at the foot of Trinity Street in the late 1830s. The original wooden wharf and store house was replaced by a longer, sturdier structure and a large grain elevator as business expanded. By the 1860s, G&W owned schooners on the Great Lakes.

The first filling of the harbour around G & W occurred in the 1890s as a result of the tripartite agreement. Much of the area was filled with railway yards. By 1906, G & W was isolated from the harbour by a wide belt of railway tracks. The tracks must have created problems trying to transfer goods from the company's wharf to the distillery. The problem would have been alleviated with the grade separation project of the 1920s. However, the Gooderham wharf and grain elevator were removed for the project – thus ending the company's presence on the waterfront.

By the early 20th century the marine loading equipment had long since been dismantled from the former wharf elevator. All grain and corn arrived by rail. The elevator was seldom used except when excess corn and grain could not be handled at the mill.

G & W maintained a slip at the foot of Parliament Street in order to receive barges of molasses brought in from Hamilton. A pipeline connected the slip to the storage tanks at the distillery.

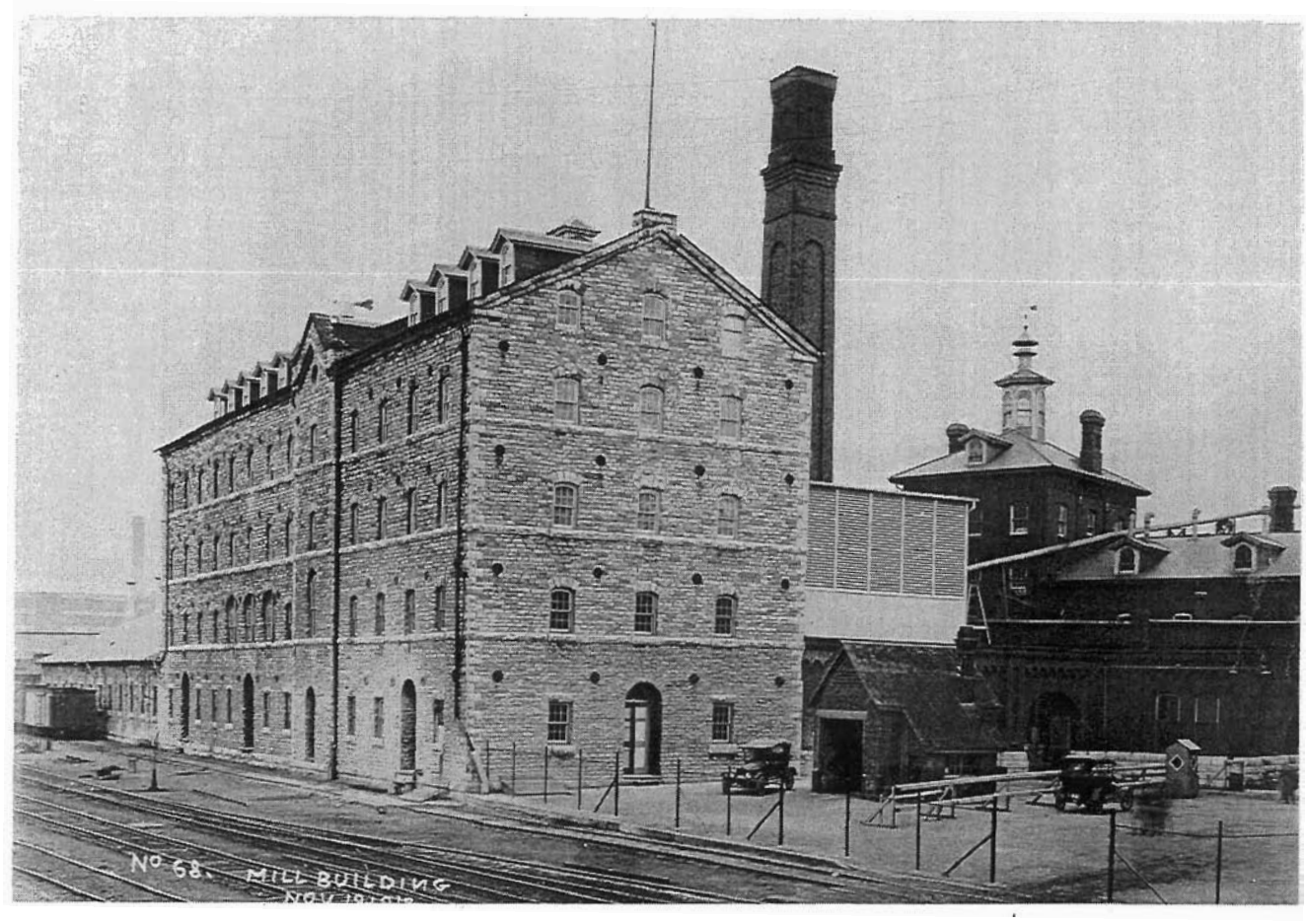


FIGURE A-13
The Mill Building (Stone Distillery) November, 1918 showing the Grand Trunk Railway mainline and company sidings on the left. The grain unloading hopper is visible at the comer of the Mill Building. A weigh house is situated between the two automobiles and was used to receive goods delivered by road. The louvered wail of the Mill Building behind the weigh house was associated with grain drying.
Source: G&W/British Acetones photograph 68.

5.7.3 Road

G & W used road vehicles to move commodities among its buildings and to ship products. For example, grain was transported from the elevator to the mill by carts. During the first world war acetone was taken by motor truck in the summer months to the wharf and shipped by water. By the early 20th century, G & W operated an assortment of road vehicles. A few resources of early road transport still exist. The red paving bricks used on Trinity Street is a 19th century road surface, now uncommon. Building #52 was constructed for stables in 1877–1880. By 1918 it was a coach house and garage and later only a garage. The building was still a garage in 1969 but was subsequently converted into offices for G & W.

5.8 Process Steam

Steam was used for mashing, operating the stills, slop drying, heating buildings, and to provide power for pumps and engines. In addition to the boiler houses, pipes were necessary to carry steam to various buildings and equipment. Large iron pipe brackets are located in Building #61.

5.8.1 Boiler Houses

Mill Boilers: Buildings #2 and #4 were originally built in 1859–1860 and rebuilt after the 1869 fire. [Figure A–141 It was a one story building and contained six boilers with a total capacity of 600 h.p. An "economizer" was installed in early 1870s and was still in use in 1918. Economizers pre–heat boiler water from the flue gases prior to entering the chimney.

The boiler house was extensively modified in 1889 when four boilers were installed by the John Abell Company. These boilers are no longer in place indicating that the existing boiler was constructed after 1918. By 1918 the boilers were removed from #4 and the area used for slop drying. The floors above the boiler buildings were used for this purpose.

The mill boilers were no longer in use by 1918 but were retained in serviceable condition. The boiler room contained four 100 horsepower horizontal return tube boilers that worked on 70 pounds of steam. They used a Jones underfeed stoker. A forced draft was provided by a 30 foot diameter fan.

In 1994 the mill boiler room contained three gas fired boilers and provided steam heat for the buildings. These boilers were probably installed within the last 20 years.

East Boiler House: The east boiler house (building #46) was completed in 1886 and contained eight 100 h.p. boilers that worked under 60 pounds of steam. By 1943 the building had been converted into a bonded warehouse.

West Boiler House: This boiler house had been constructed near the intersection of Mill and Parliament Streets to provide steam for the General Distilling Company plant. The boiler house was subsequently demolished.

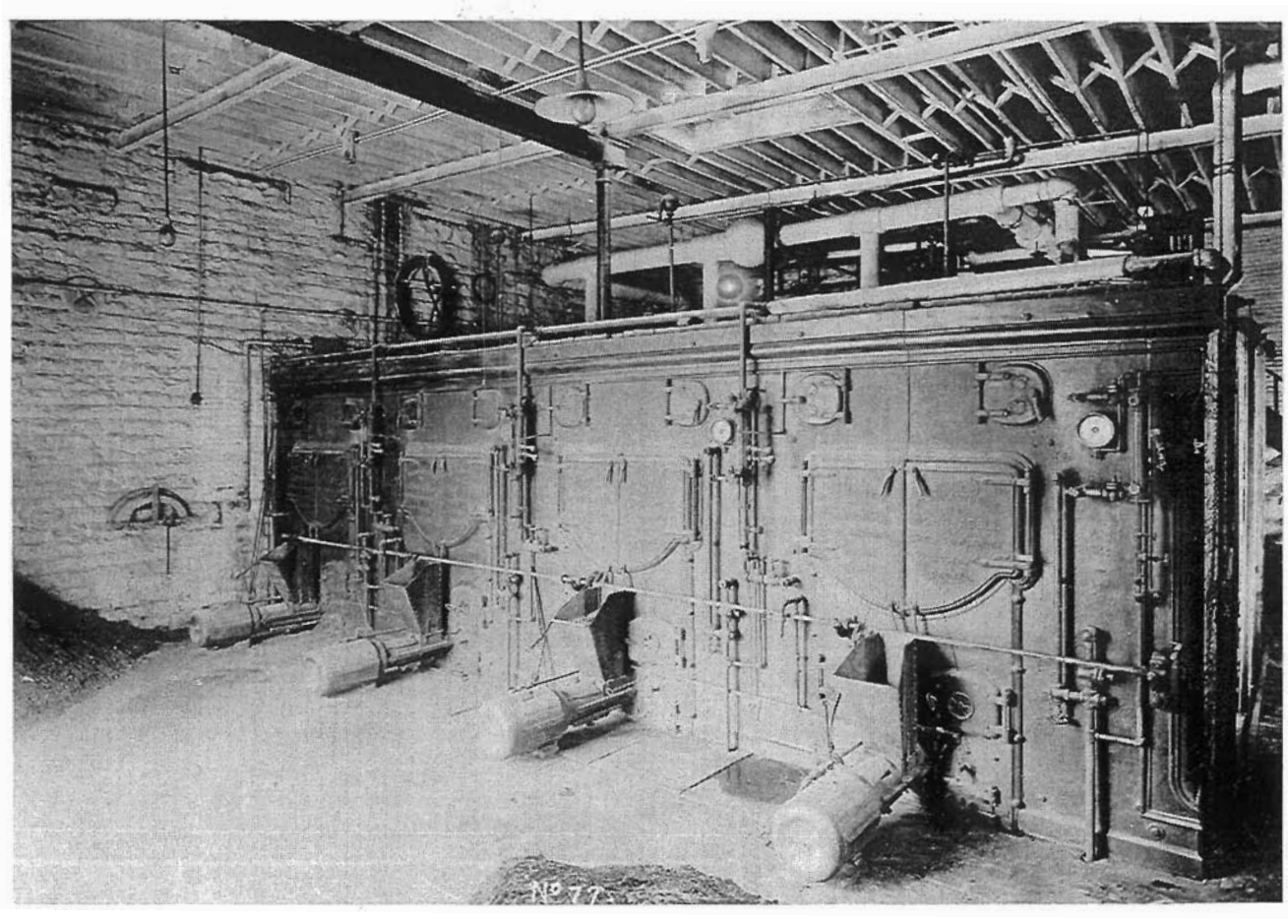


FIGURE A–14
Boilers, likely in Building #4, November, 191.8. In 1994 a Taylor coal fired boiler still remains in Building #2 but has been out of service since the early 1970s.
Source: G&W/British Acetones photograph 77.

These three boiler houses were interconnected but the operation was complex because the west boiler house operated under 125 pounds of steam. Generally, the "60 pounds system" was provided by the east boiler house for the Trinity Still Building, mill engine, mash equipment, and mash pumps.

Unidentified Boiler House: *In* 1880 a small, two boiler building was in operation west of #47 and south of #46. The area is vacant today and the complex was replaced by the east boiler house.

Building #60 Boiler House: The stack and ash doors associated with this boiler still exist.

Pump ?

5.8.2 Coal and Ash Handling

In 1880 coal storage was located at the west end of property. The plant consumed 7,000 to 8,000 tons of slack coal annually. Coal was received only by rail. By 1915 coal storage was south of the tracks. Coal was brought by carts from the storage area to the boiler rooms. Today steam is produced in gas fired boilers. During the 1870s, the considerable quantity of ash produced by the boilers was used to build roads in low lying areas surrounding the distillery.

5.9 Industrial Power

5.9.1 Steam Engines

When the mill was constructed in 1859, a centrally located engine house (Building #2A) was designed to power all equipment. [Figure A-15] The building was so arranged that the major power users were located on either side of the steam engine. On the east side was the mill that required power for grinding, elevating and cleaning grain. On the west side was the mashing operation that required power to operate agitators.

The engine was manufactured by Bartley and Gildert and survived the 1869 fire. It was a vertical beam engine, turning a 26 foot flywheel and with a nominal 40 h.p but capable of working at 100 h.p. The company was proud of its motive power as the engine room was described as being carpeted and having the feel of a "ladies parlor." By 1880 the engine was rated as 150 h.p.

In 1882 the engine had been replaced with a Thomas Worswick 28" by 60" single cylinder horizontal steam engine with Brown valve gear that worked on 60 pounds of steam and produced 400 (later 500 horsepower) at 60 rpm. [Figure A-16] The flywheel ran within a wooden housing and the location of the housing can still be seen today. The engine was scrapped in 1957.

Power was transmitted by shafts and gears to the stone mills. Belt drives were used to operate the mill equipment.

The former engine room #2A still exists although all the equipment has been removed.

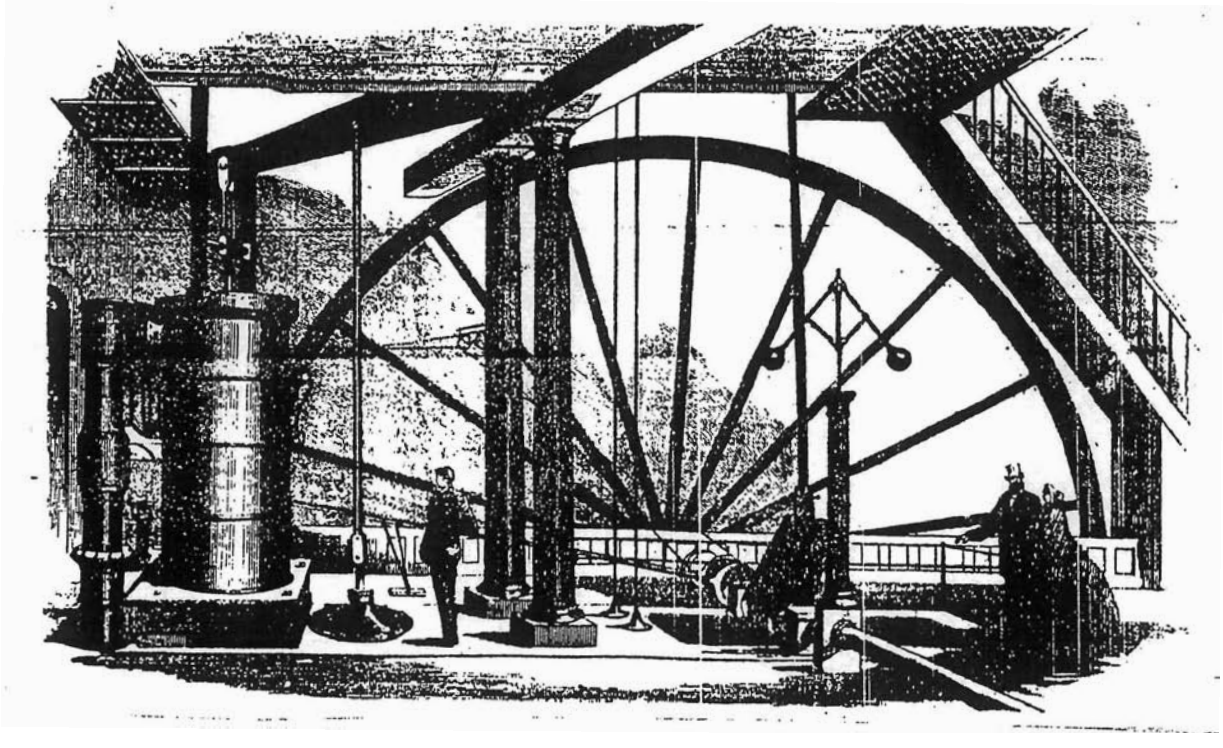


FIGURE A–15
The engineer's floor of the 1859 Bartley and Gilbert steam engine in 1863. The layout of the former engine room as seen in 1994 was determined by the need to house this engine.
Source: *Canadian Illustrated News*, April 23,1863.

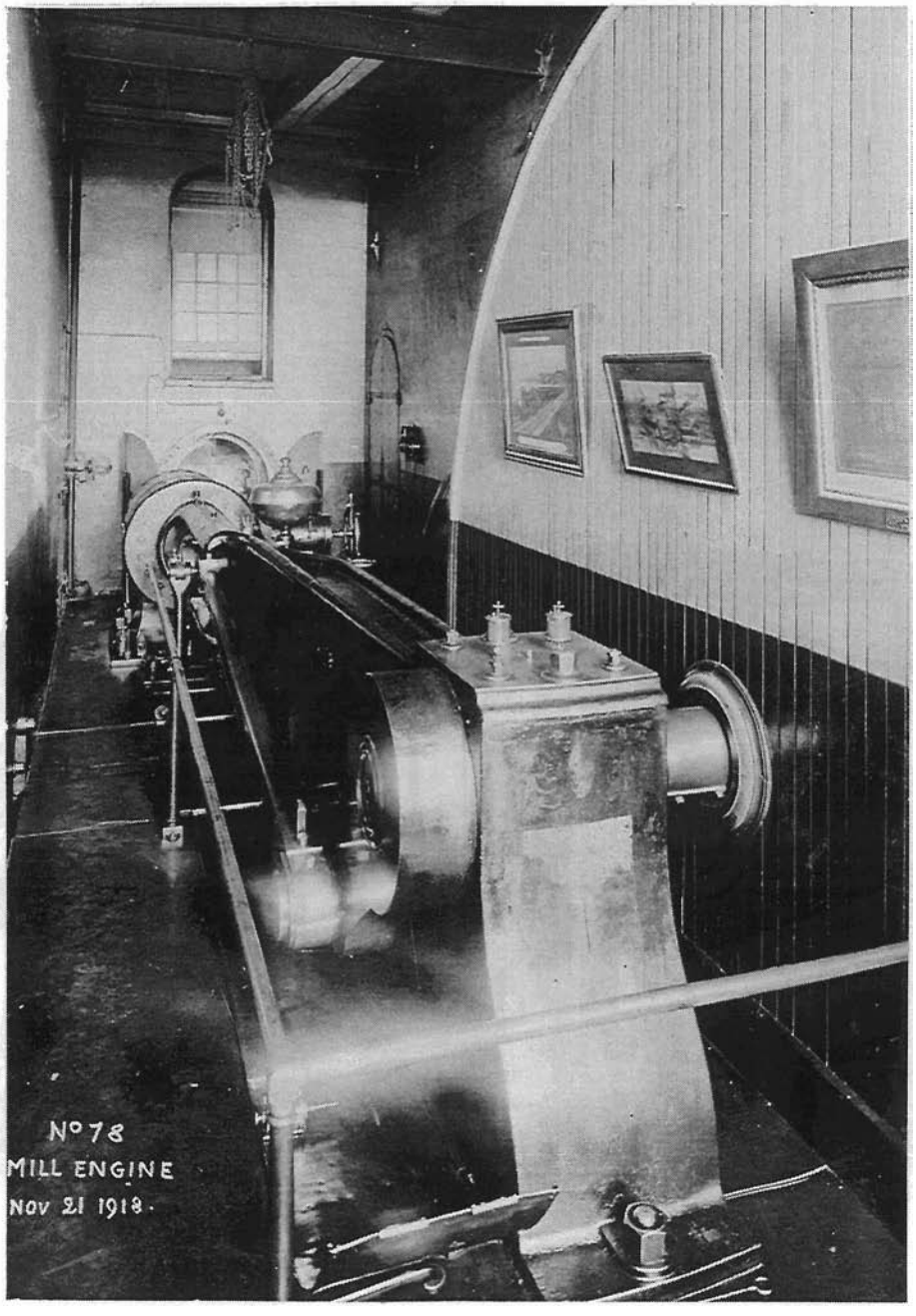


FIGURE **A–16**
The engineer's floor of the 1882 Thomas Worswick steam engine in November, 1918. Piaster marks on the engine room wall in 1994 indicate the location of the wooden flywheel housing shown in this photo; see Figure B–2.
Source: G&W/British Acetones photograph #78.

5.9.2 Other Forms of Power

Wind: For two years in the 1830s G & W relied on a windmill for power. Although it became a landmark structure on the harbour shore, wind was not a reliable source of power and the mill was only able to grind 50 barrels of flour per week. After the second year of use, a 16 h.p steam engine was installed and from then on G & W relied on steam power.

Electricity: The date when electric motors came into use is not known. Small horsepower motors are now used throughout the plant. Two gasoline engines are used to power the fire protection water pumps.

5.10 Plant Maintenance

A small paint storage and tool house was in existence in 1918 on site of building #74. A paint shop located in buildings #27 and #34 in 1915. Building #8 was still used in 1994 as a machine shop for site maintenance. All of the machines are driven by overhead line shafting driven from an electric motor. Down the middle of the floor is a truck driveway. In the northwest corner is a shop for metal working. It contains mainly modern tools. A large sheet metal shear was manufactured by the Excelsior Tool and Machine Company of St. Louis, Illinois. It is also a belt driven machine.

Building #45 was completed in 1887 as a carpentry and plumbers shop.This building has continued in use for the same purpose to the present day. The west half of the building is used as a workshop. All of the equipment is relatively typical and modern woodworking equipment. There is a few remnants of former belt drive pulleys on the ceiling. There appears to be nothing special about the equipment or function of this area. The east half of #45 is used as a steam pipe fitting shop. The equipment in it is modern and of no particular importance.

Much of the distillation equipment was manufactured of copper. In 1880 a copper shop was located on the site of the present building #74. By 1890 the former charcoal house had been converted into a copper shop and the old copper shop converted into a paint and storage area. Enlarged over the years, the new copper shop continued in that use until at least 1969. It was know as building #71 and #72. The area is now vacant and some of the equipment may have been removed to Building #2.

5.11 Employee Facilities

In 1885 the company employed 150 men. The number of employees at the time of closure was not determined for this study. By the 1980s there were three main employee areas. Building #45A, although referred to as the First Aid building seems to be used as a lunch room. It was described in that function in 1915. By 1943 it had become a time room but after 1969 reverted back to a lunch room.

Other employee areas are provided throughout the complex. Lockers for employees were located on floor 1 of building #5. At one time floor 2 contained

an abandoned washroom area. It had a large industrial sink, a shower and two toilets. A coverall list on the wall was dated October 19,1955. An employee lunch room and showers is in the southwest corner of building #8. Lunch rooms/change rooms were also located in Buildings #74 and #75.

5.12 Laboratories and Offices

By the 20th century laboratories played an important role on the quality of the product. British Acetones maintained two labs during the first world war. A bacteriological lab was located over the G & W offices (building #25) while a chemical lab was located in a General Distilling Company building. Building #25 was later converted into a bottling plant and today is offices. It is connected by a pedestrian bridge to the fermenting building.

A modem laboratory is located on floor 2 of building #6 and is constructed within the framing of the ceiling. There is a bridge connection between this floor and the office building across the lane.

On floor 2 of building #7 is an old autoclave made by the Bramhall Deane Company of New York. It was a rather attractive copper barrel about 2 feet in diameter.

By 1880 offices were located on the second floor of #31, and #33 and have continued in that function to the present day. Throughout the years, other offices have been located throughout the property. The second floor of the former boiler room of building #60 had been converted into offices but is now vacant. The office was reached by an inside staircase adjacent to the doorway to the alcohol pump house. Apparently this was the original sales office for McGinnis Distilleries.

In the 1980s buildings #25,27,28,31,32,33,and 34 were used by Hiram Walker as offices while G & W used Building #52.

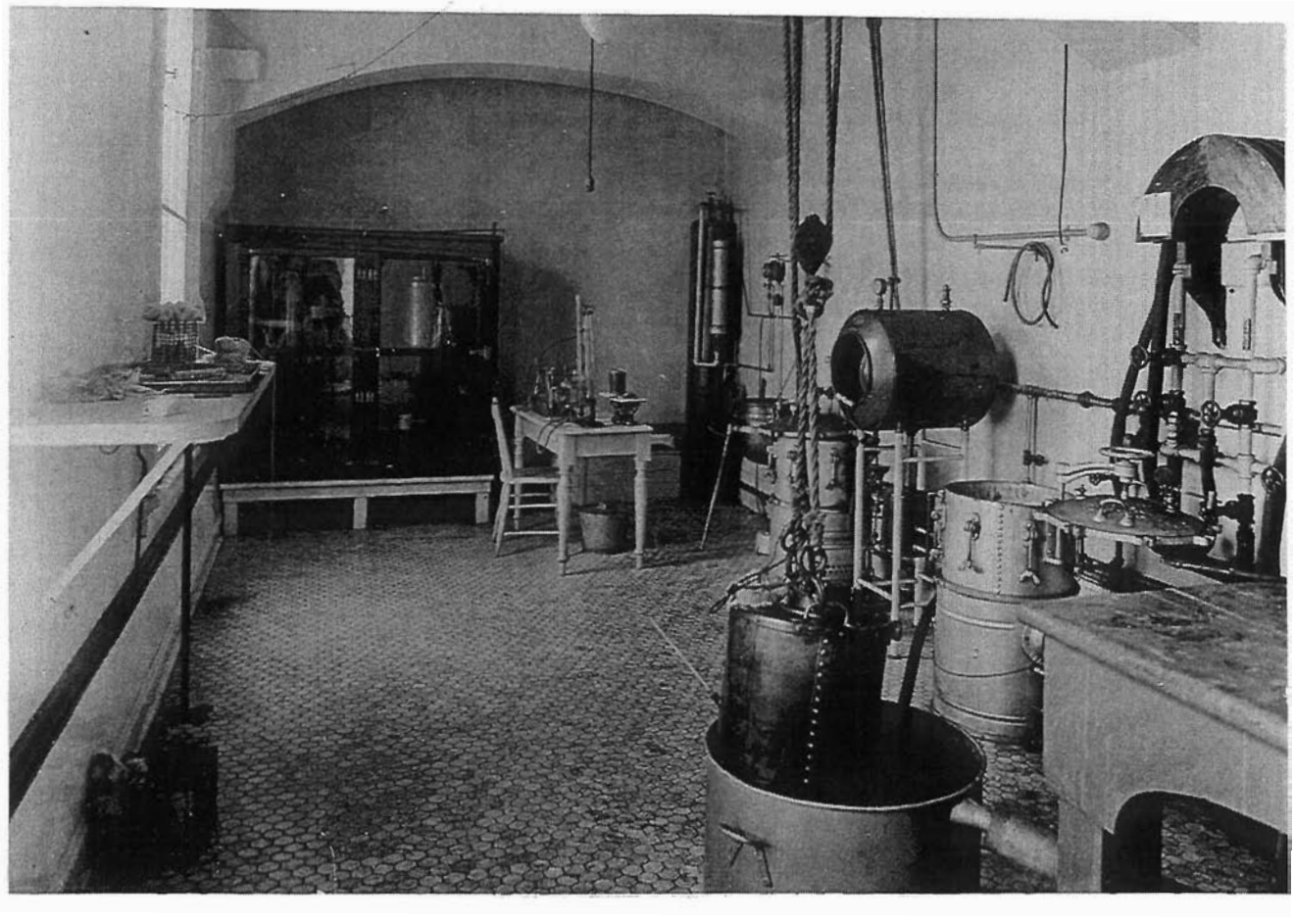


FIGURE A–17
The sterilization room (location unknown) November 1918. In 1994, the copper autoclave in this photo, or another one of identical design, is still located in the mezzanine of Building #7.
Source: G&W/British Acetones photograph #2

6. OBSERVATIONS

- Major modernizations of the complex was undertaken in the 1920s and 1940s. After the second world war, the small size of the plant did not encourage further modernization.

- In the 20th century there was a transition from grain to molasses alcohol. This evolution began in the early 20th century when the production of industrial alcohol from molasses began. Grain alcohol production ended in 1957 and only molasses was undertaken at closure.

- The importance of industrial alcohol increased during the 20th century. Anhydrous alcohol was introduced as a product line in the 1920s and antifreeze by the 1930s. As industrial alcohol distilling could not keep up with demand, increasing amounts of alcohol were transported to the site and the plant used as a distribution centre for the Toronto market.

- Acetone production was undertaken for a very short time in 1917/18. The process had no effect on changing the product lines of the company as acetone production ended with the war.

- Distillation is the distinctive process of the spirit industry. The existing distillation columns probably date from no earlier than the 1930s. Although the process is distinctive, the equipment is modern.

- Industrial alcohol became a major *G* & W product by the early 20th century. *G* & W was also an early producer of anhydrous alcohol in Canada.

- Large quantities of process steam were necessary to power engines and pumps, dry slop, heat buildings, and operate the distillation columns. Even after electrical power replaced steam engines in the mid 20th century, process steam was still necessary and is used today.

SECTION B

BUILDING DESCRIPTIONS

INTRODUCTION

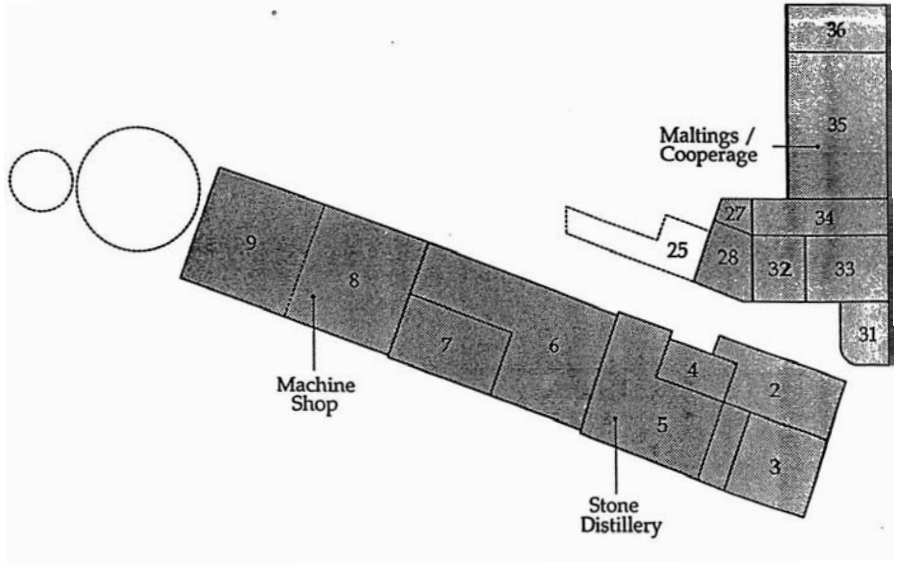
The following building descriptions describe the spaces and equipment that are of industrial interest.

All buildings are numbered by the system used by G&W and adopted in the Roger du Toit Architects plans for redevelopment. In order for this report to highlight the importance of the former steam engine, the unnumbered engine room in the Stone Distillery is called #2A.

Several buildings were not described in this study because any industrial significance appears to have been removed in subsequent renovations. The following buildings have not been described in this report:

Buildings Numbers: 25, 27, 28, 31–34, 52

The American connection of the Gooderham & Worts operation can be seen in usage of the term "rack warehouse." British terminology, and the one commonly used in Canada was "barrel warehouse."



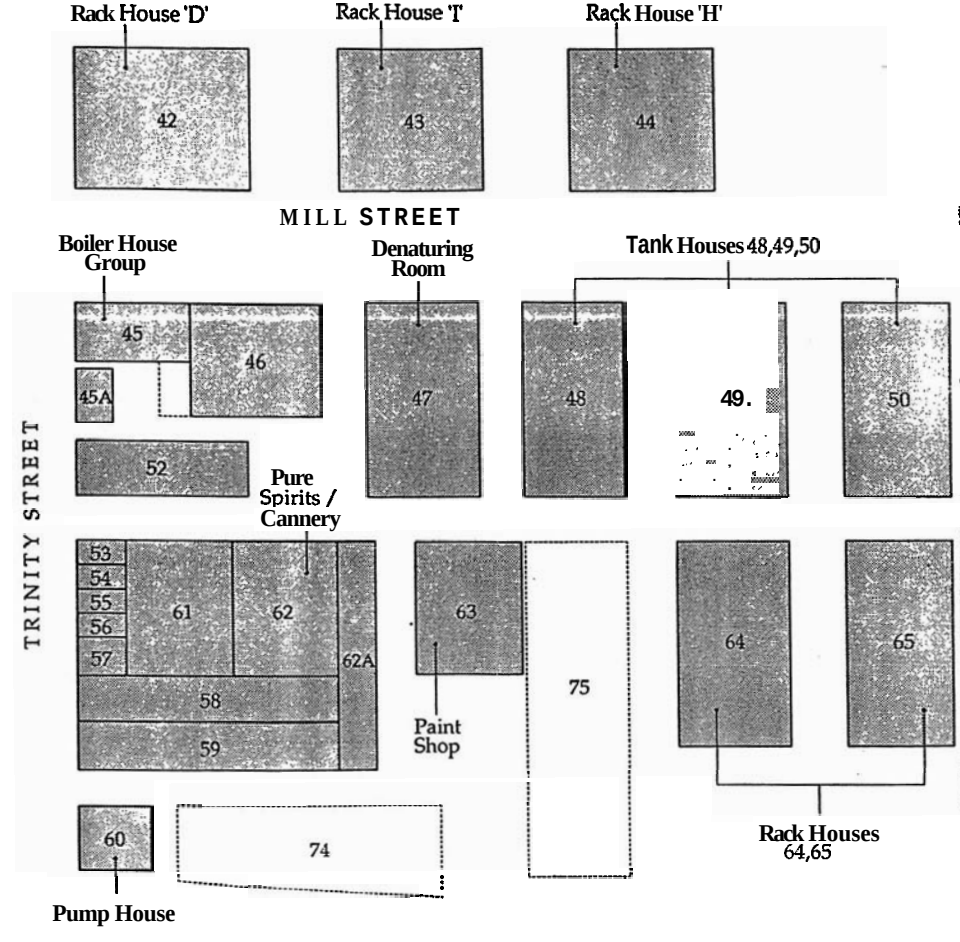


FIGURE B–1
Location of buildings described in Section B of this report.

STONE DISTILLERY

1. BACKGROUND

For much of the 19th century, alcohol production at the Stone Distillery (Buildings #2–9, built 1859–60) was linked with the operations of the malt house (Building #35–36, built 1863–64) and the Pure Spirits Complex (Buildings #53–59, 61–62A; built 1873/83). The relationship of the Stone Distillery to these buildings, Trinity Street and the railway line south of the complex helped to dictate the operation of the plant.

Buildings #2–7 were rebuilt after a fire in 1869 and are the oldest standing structures on the property. Buildings #8–9 were completed in 1877–80. Numerous structural changes and modifications to the distilling processes have occurred throughout the complex over time. For example three floors were subsequently added to Building #4. In almost all of the buildings, rearrangement of equipment has created changes in room size and floor configurations.

Process activity seems to have ended in Building #3 in the 1950s and since then has been used for storage. Buildings #2, 4–9 were in use when the distillery closed in 1990 although process activities in Buildings #4 and #9 seem to have virtually ceased by this time.

As the complexity of the Gooderham & Worts property increased, the Stone Distillery became more inter–linked with the operations on the rest of the property. For example, in 1886 Building #46 was constructed as a second boiler house to augment the production of the Stone Distillery. After the coppershop near Building #74 was demolished, some of the coppersmithing equipment was relocated in Building #2. For a number of years steel drums were manufactured in building #8; this was Iater relocated in building #63.

Since 1990, when the first inventory associated with the redevelopment was undertaken, significant quantities of equipment have been removed. The scrapping of the fermenting tuns in Buildings 6 and 7 significantly diminished the visual impact of these spaces and reduced this area's interpretation potential. Equipment stored in various rooms throughout the Stone Distillery has also been removed.

2. DESCRIPTION

2.1 Building #2 (Boiler Room)

A process description is found in Section A, Part 5.8.

At the shut down of operations in 1990 this was the plant's main boiler room. Steam is provided by three gas fired boilers; they were probably installed within the last 20 to 30 years.

Along the south wall is a large coal fired boiler manufactured by the Taylor Company. The boiler seems to have been out of service for many years. No date of construction was noted. It seems to be a 3 drum, bent tube design and

stands about 20 feet tall and fired by an automatic stoker made by Combustion Engineering of Montreal. The firebox was in a well, several feet below the floor level of the boiler room. An early 20th century reinforced concrete coal bunker is located over the boiler room and connected to the fire box by a conveyor. The original brick chimney is still in service. The base of the chimney comes into the room and is free standing at the middle towards the west end.

Two large pieces of equipment in this room are a bending break and a roll and were moved there from the former coppershop. The equipment is unlikely to have been used in this new location.

West of the chimney is a small, two story service area. The ground floor contains modem, boiler water treatment equipment. Near the entrance to this area is a desk containing boiler operating manuals. The second floor appears to have been used as a staff room and has a small shower. It is reached by a staircase along the side of the chimney.

A. Equipment **Typical/Unique** to Distillery Operations
- None observed

B. General Equipment
- Sheet metal equipment: 8 ft. geared sheet roller, Maker Robins, c1900; 8 ft. sheet metal break, Maker unknown, c1900.
- Maintenance desk containing quantity of operating manuals related to boiler function.
- Taylor boiler, associated coal bunker, stoking equipment, brick chimney
- ***See also equipment register***

2.2 Building #2A (Power House)

A process description is found in Section A, Part 5.9.

The room is connected to Building #2 by two small, thick walled brick and stone rooms. The functions of these rooms could not be determined. One contained a water treatment tank. [Figure B-2]

The narrow room is three stories high with windows on the south wall. High up in the room the walls are braced with steel "I" beams. They seems to be reinforcements put in after the building was completed. Above the "I" beams the stone wall becomes timber. The ceiling of this room is the 4th floor of Building #5. The engine room is a dramatic architectural space even without the former beam engine.

This room once contained a beam steam engine. On the east wall are patterns in the plaster of the removed housing of two large fly wheels. These were apparently the fly wheels from the original c.1860 powerhouse. The outline of a large fly wheel can be seen on the wall on the east side. Another indication that this was once a powerhouse are the heavy iron frames built into the east and west walls. These frames once supported the fly wheel shafting. Iron tie rods extend down the side of the wall to hold the frames in place. On the east wall is a

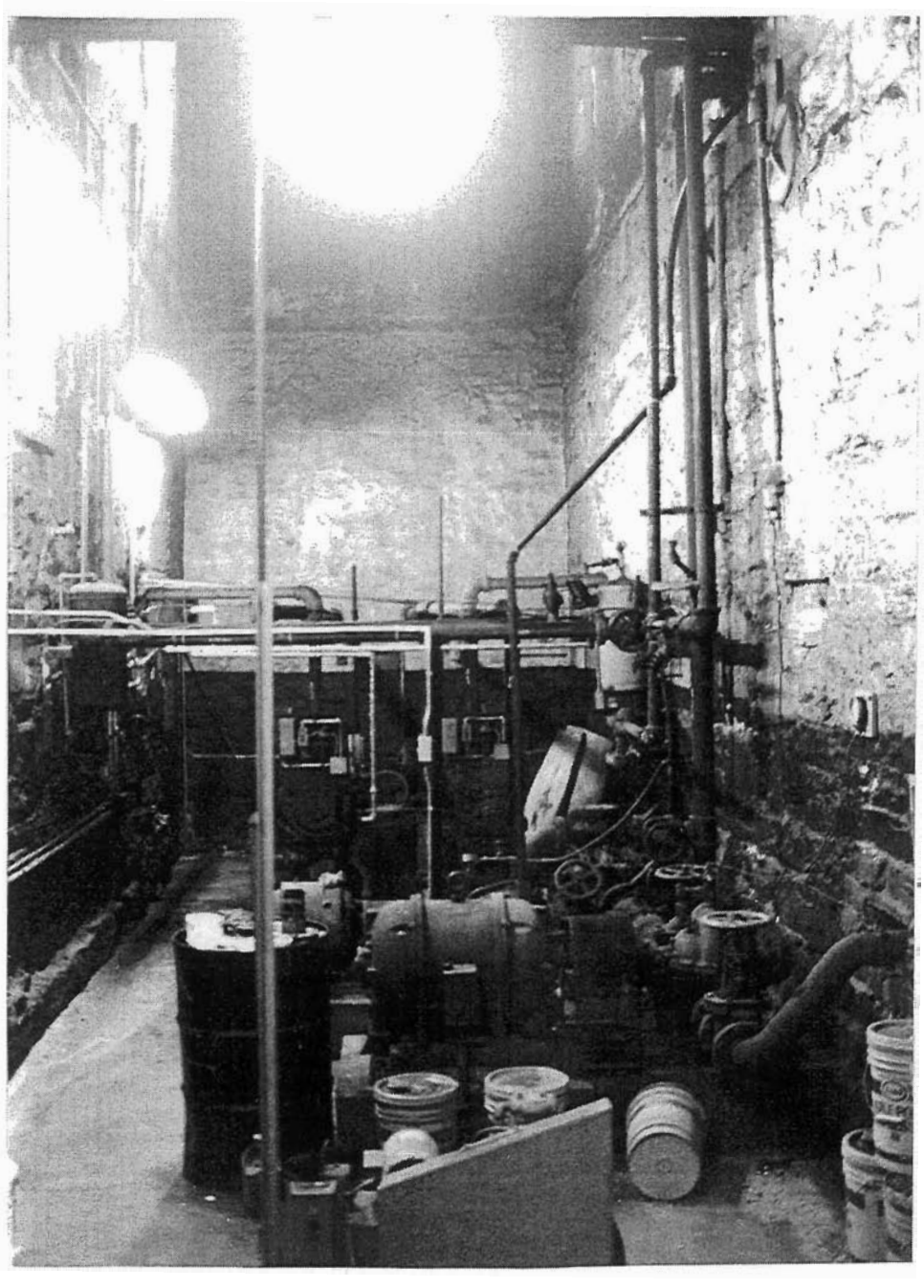


FIGURE **B–2**
Building **2A** showing electric **water** pump and two early Ingersoll Rand air compressors in background. Building *3* is an left and Building 5 is on right. See also Figure *A–16.*
Source: Historica Research Limited, November, 1993

large bricked in arch in the centre of the larger fly wheel casing. These heavy iron fittings are also visible in Buildings #3 and #5.

Plaster work starts at about 14 feet above the ground. This was the original operator's floor when the beam engine was in operation. A timber bridge along the north wall provides a walkway between Buildings #2 and #5. Originally this may have been the entrances to the engineer's floor.

In 1993 the floor of the room contained two electric water pumps and two early 20th century Canadian Ingersoll Rand air compressors.

A. Equipment Typical/Unique to Distillery Operations
- None observed

B. General Equipment
- Large duplex steam water pump, C1900–30.
- 2 horizontal air compressors, C1930.
- Embedded cast iron yokes and stabilizing iron tie bars in east and west walls, associated with earlier steam engine operations.
- Marks of flywheel housing and engineer's floor level in wall plaster.
- Tall, narrow proportions of room.
- ***See also equipment register***

23 Building Number #3 (Granary)

A process description is found in Section A, Part 1.2. This multi floored building was contained a grain elevator and mill. The extent equipment and arrangement of machinery and storage facilities is generally common to the operation of a grist mill.

Floor 1

The ground floor is entered from engine room #2A, Trinity Street, and a loading door along the railway tracks. Adjacent to the track entrance is a Fairbanks track scale (Type T, 75 ton capacity) for weighing railway cars. The weights and measures certificate indicates it was last serviced in 1968. The track platform outside has been removed.

Power for equipment in this room was probably originally transmitted from Building 2A by line shafting attached to the ceiling. Some line shafting still exists that once operated a car puller and grain shovels. [Figure B–3, A–1,2] A vertically mounted windlass was used as a "wildcat" for pulling hand grain ploughs for unloading boxcars on the railway siding. A second, lower unit features a large horizontal capstan that was used to spot railway cars over a hopper on the adjacent railway siding. The pulling gear exited the building through a hole in the adjacent wall leading to a double turning block mounted on the exterior wall. Both units late 19th or early 20th century and have been identified as made by the Nordyke & Marmon Co. Although this grain handling equipment was once common to grist mill operations, this equipment is likely a unique survival for grist mills associated with a distillery.

Adjacent to the windlass was a bucket elevator to lift unmilled grain to floor 5. A grain hopper was located outside the building but has since been removed. The buckets are housed in wooden chutes. The floor around the elevator is of wood in order to service the bottom of the elevator – the rest of the room is a concrete floor. A second elevator for milled grain is located near the west wall. Three wooden chutes extend from the mills on the floor above to connect with the bucket elevator. The elevator hoisted grain back to floor 5.

On the west wall are a complex series of blocked openings and cast iron brackets that relate to the iron frames that can be seen in Building 2A. [Figure B–4] A massive cast iron bracket supports an "I" beam that seems to support part of the ceiling. The columns supporting the room are made out of cast iron with large cast capitals. A wooden staircase at the northwest corner goes to the milling room.

A small frame office in the northeast comer contains electrical switchboxes. Stored in the room are 13 grain shovels, a Gooderham & Worts sign and miscellaneous equipment and stores.

A. Equipment Typical/Unique to Distillery Operations
- None observed

B. General Equipment
- Large Fairbanks railway car beam scale, incomplete.
  Line shafting on underside of ceiling with appropriate pillow blocks, pulleys, clutch gear for rail car spotting and grain ploughs.
- About 13 wooden grain ploughs for unloading grain from rail cars.
- Grain receiving hopper attached to elevators for transporting grain to the upper floors.
- Outboard ends of the two built–in yokes and tie bars to support axle bearings as described in the Engine Room.
- Large cast iron bracket attached to west wall (approximately 5'x 3')
  See also equipment register

Floor 2 – Milling Floor

Two 3 pair high, 6 roller Nordyke and Marmon Company mills have been moved from the centre of the room to storage on the southwest wall. [Figures A–4, B–5] The patent date on these mills was May, 1883. The original location of the two mills is clear from the foundations on the floor. Six rollers were lying on the floor and all seemed to be 2 feet by 8 1/2 inch rollers. Catalogue plans indicate that the mills were powered by belting from below the floor. All grain chutes seem to be in place and end in mid air·were the mills were formerly located. Two, approximately 12" diameter, metal pipes lead to the windows from the mills and had probably been installed in the mid 20th century for dust control. A small frame office in the southeast comer contained wax and tools for repairing belts. There is no sign of line shafts or belting in the room. A cupboard on the north wall seems at one time, to have been a window in an exterior wall, facing over the boiler room. It was converted into a cupboard after the wall was bricked in on the

boiler room side. The walls in this room have been parged and cut to look like large stone blocks about 18 inches tall and 2 feet long. The beams supporting the floor above are supported on unusual stone brackets that look like roughly dressed stone. A staircase at the southwest wall climbs to the bottom of the grain bins on floor 3. A door behind the staircase leads across an enclosed bridge through the powerhouse room (#2A) into Building #5. The ceiling is formed by the base of the grain bins and is supported by 6 iron columns. The base of the bins are supported on large timber beams and held in place with large iron plates and tie rods. There are three bins, each with one internal division, providing 6 storage bins in total.

A. Equipment Typical/Unique to Distillery Operations
- None observed

B. General Equipment
- 2 Nordyke & Marmon Co mills, c1883, generally good condition; brass hinges on inspection doors removed; spare set of rollers.
- Mill beds, mill feed spouts from storage bins one floor.
- Elaborate woodwork comprising the "V" bottoms of the grain storage bins.
- belt tools and related supplies.
- storage cupboard in former window.
- *See also equipment register*

Floor 3

This floor contains the lower half of the grain bins. The bins are constructed of exterior braced 12" x 4" timbers on roughly 14" centres. The design and construction of the bins is typical of 19th century granary construction. The bins do not occupy the entire available floor space. On the east side, the distance from the bin to the wall is about 10 feet while on the west side the space is somewhat wider. These areas once contained grain cleaning equipment. Today the spaces contain the grain elevators. On the north and south the bins come with about 4 feet of the wall.

A. Equipment Typical/Unique to Distillery Operations
- None observed

B. General Equipment
- Wooden grain bins.

Floor 4

This floor is similar in design to Floor 3. The wooden sides on the east end of the grain bins have been left to weather naturally, all other surfaces of the bins have been painted with silver paint. An unusual feature is that a raised floor and dropped ceiling installed at the northwest comer. There is a low staircase on to this platform. The function of this platform could not be determined but may have been the location of grain cleaning equipment.

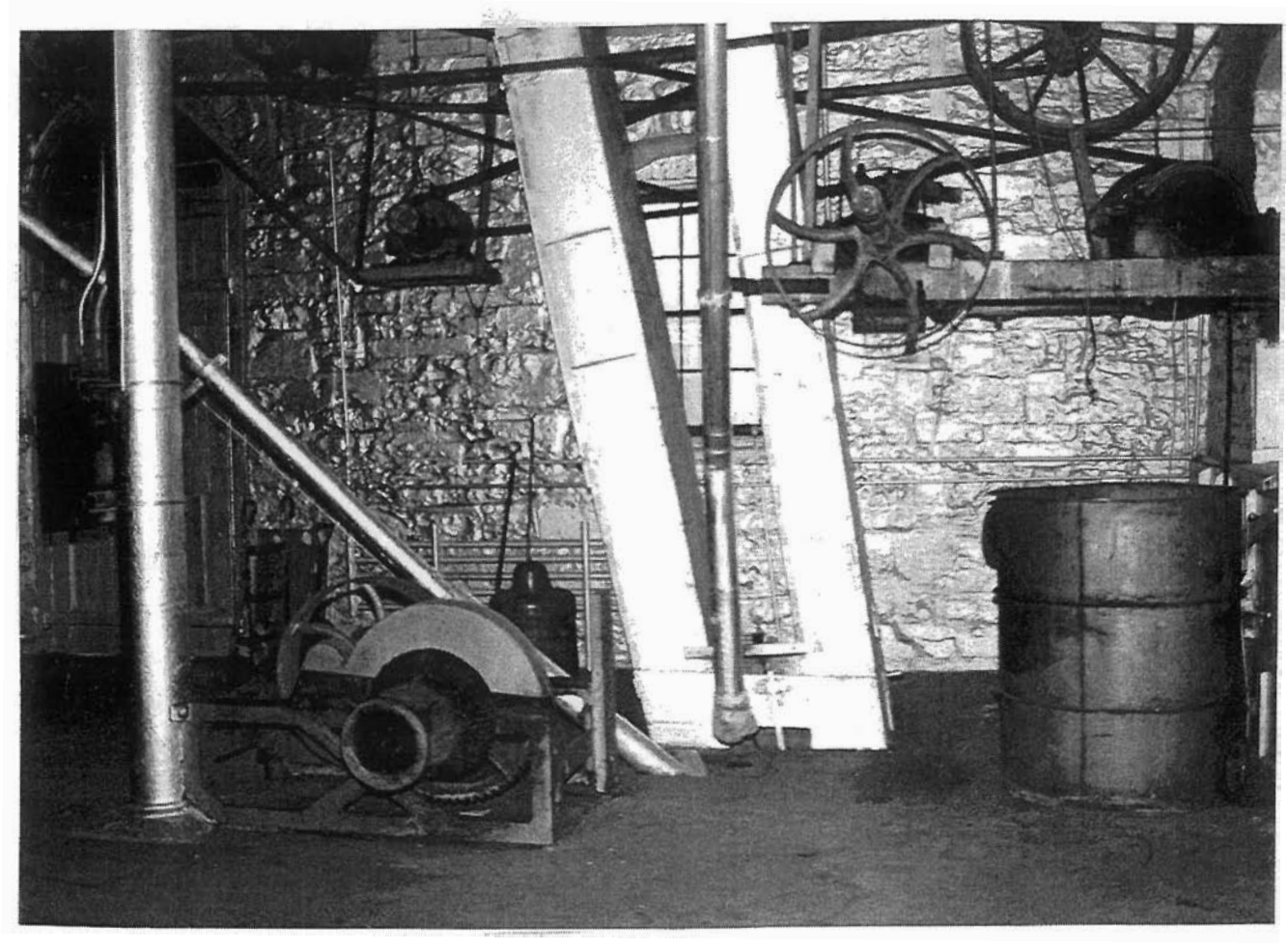


FIGURE **B–3**
Electric motor, belts and pulleys that once operated a rail car puller and grain shovels. Grain hoist was housed in the two wooden conduits in centre of photo.
Source: Historica Research Limited, November, 2993

FIGURE **B–4**
Cast iron bracket supporting a ceiling "I" beam. Behind are iron brackets built into masonry wall that were associated with power transmission from Building 2A on the other side.
Source: Historica Research ***Limited,*** *November, 1993*

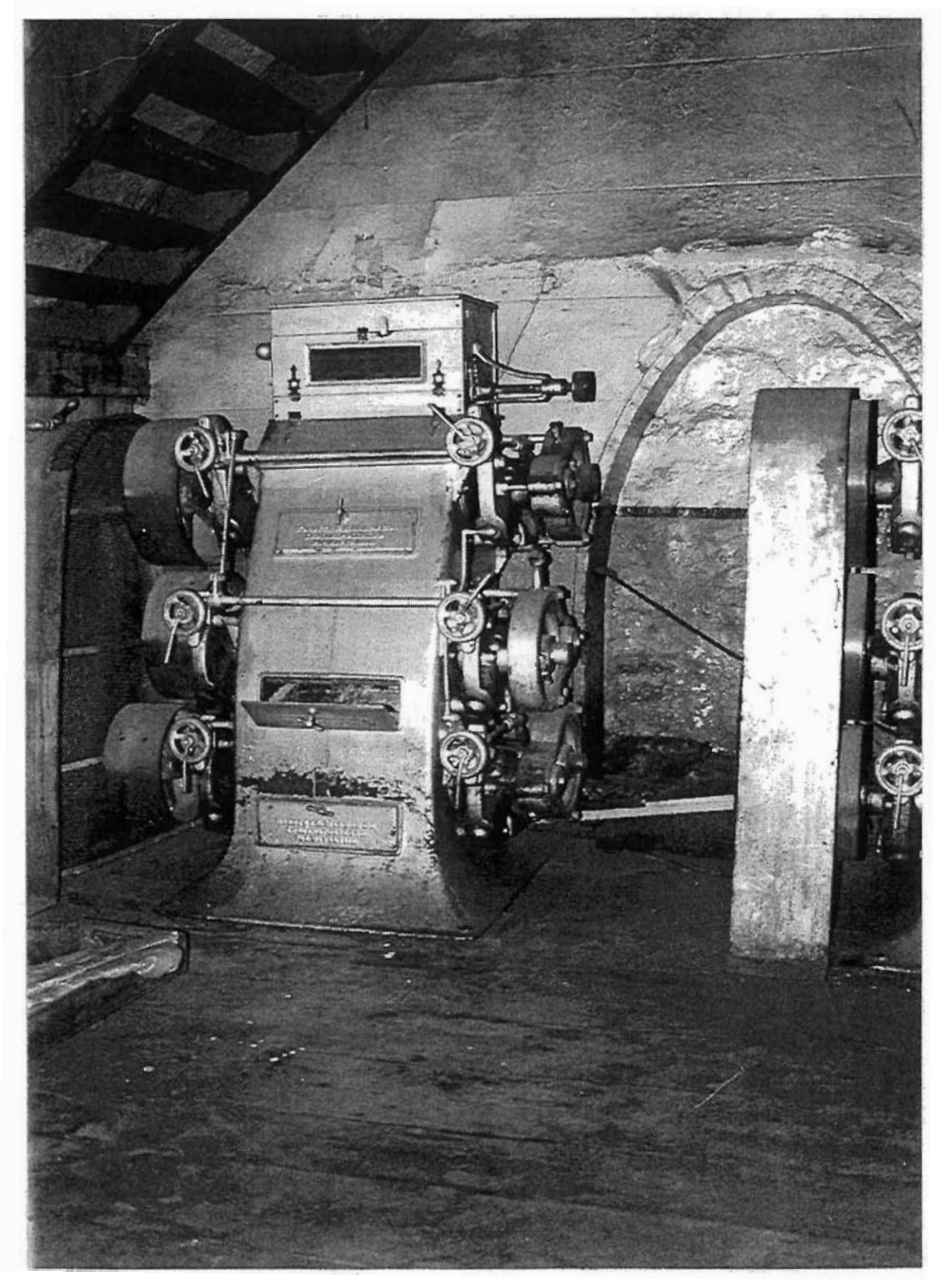


FIGURE B–5
Two **3** pair high, 6 roller Nordyke and Marmon Company mills relocated from the centre of floor 2, Building 3, to storage on the southwest wall.
See also Figure **A–4.**
Source: Historica Research Limited, November, 1993

The stone walls have been plastered and cut to form a block pattern. All surfaces have been painted with a silver paint except for the section on the east end. Here the original woodwork and plaster work is evident.

A. Equipment Typical/Unique to Distillery Operations
- None observed

B. General Equipment
- Wooden grain bins; especially original finishes on east end.

Floor 5

This attic floor contains the top of the elevating hoist and the distribution chutes to the storage bins. There is a dust collecting system on the north side of the floor. The bins were covered with wooden trap doors. The two bucket elevators were electrically operated by motors on this floor. The various distribution chutes went to the tops of the bins. At the very top of the milled elevator a chute dumped milled grain on to an augur that passed through the wall into Building #5.

A. Equipment Typical/Unique to Distillery Operations
- None observed

B. General Equipment
- Tops of the six grain bins and hatches.
- wooden trusses system supporting the roof.
- former line shafting.
- grain elevators; hopper, auger to transport (milled) grain to Building 5.
- large 20th century cyclone blower, maker B.E. Sturtevant Number 6.

2.4 Building #4 (Boiler Room; Mash Drying)

A process description is found in Section A, Part 4.2.

Floor I

The room contains a Babcock-Wilcox/Goldie-McCulloch boiler that seems to have been abandoned for several years. The boiler control panel includes a "John Inglis Company" pressure gauge that is much older than the control panel and has probably been added from a previous boiler installation. The flue for the boiler passed horizontally across the room and through a brick wall into the brick chimney in Building #2. The flue pipe is about 4 feet in diameter. The room contained a large hot water tank of 7,175 gallons. The ceiling has been removed on the west end. An opening extends up to the 3rd floor. The only internal connection on this floor is to Building #2. There is an external door on the north side. There is no staircase to the upper floors.

A. Equipment Typical/Unique to Distillery Operations
- None observed

B. General Equipment
- Babcock-Wilcox/Goldie-McCulloch boiler and associated control panel with John Inglis Company gauge.
- Opening in ceiling to upper floors
- ***See also equipment register***

Floor 2

This room was entered from floor 2 of building #5 by climbing up 4 steps and passing through a metal double, fire door. A large steel chimney passed from floor 1, through a small frame room on this floor, and through the upper floors to the roof. The interior of the box was lined with metal and may have been part of a mash drying operation. The floor is empty of equipment except for a small metal tank in the southeast corner. The west half of this floor has been partitioned off with a new timber wall. The floor on the west half is removed.

A. Equipment Typical/Unique to Distillery Operations
- Steel chimney and small room for mash drying?

B. General Equipment
- Riveted sheet iron fire doors
- Small riveted storage tank

Floor 3

This room is entered by stairs from floor *2* and by climbing one step up from floor 3 of Building *#5*. Most of the room was filled with a large inclined screen built on a waterproof surface containing a drain. [Figure B-6] There is evidence of considerable humidity in this room. A large metal stack rises through the northeast comer of this floor. Adjacent to the screen was a large metal "V" hopper suspended over an opening to the floor below. These were probably part of a mash drying operation. The equipment suggests that this part of the complex functioned as a "Dry House" and is therefore directly associated with the distillery operation. This floor was divided by a temporary plywood wall that partitioned of the section that had the floor removed.

A. Equipment Typical/Unique to Distillery Operations
- Large hopper; large diameter ducting from hopper
- Inclined rack mechanism, riveted iron construction; waterproof floor finish beneath mechanism.

B. General Equipment
- None observed

Floor 4

This room was entered by stairs from the floor below and without a step from floor 4 of Building 5. Floor 4 contains a cyclone fan that seems to have been used to draw dried mash from Floor 3 and blow it into the hopper also on Floor 3. A second pipe leading to the roof could not be determined for its function. The

FIGURE B–6
A large inclined screen on Boor 3 of Building 4, assumed to be *a* mash dryer.
Source: Historica Research Limited, November, 1993

rest of the room was vacant. A two ton travelling hoist manufactured by Provincial Engineering Limited, Niagara Falls, is suspended from the ceiling and extends over a large hole in the floor. On the next floor below was a trap door that could be opened so that the crane could lift from the ground floor to the top.

A. Equipment Typical/Unique to Distillery Operations
- Small hopper and runs of ducting probably associated with mash drying.

B. General Equipment
- 2 ton travelling crane.

2.5 Building #5 (Mashing)

A process description is found in Section A, Part 1.1.4. Mashing occurred in the east end of this building.

Floor 1

The floor is dominated by two large riveted steel steam mash cooker drums with mixers powered by a chain drive to an electric motor. The cookers appear to have been out of service for many years. Between one of the cookers and the east wall is a duplex pump. The mashing area is separated from the distilling side by a frame wall, probably built in the early 20th century. An excise cage extends along the north wall. It is divided into two sections; one containing the base of two tanks, the other containing the base of a Fairbanks scale tank. The tanks had been removed after the distillery closed in 1990. A trough is suspended from the ceiling near the southwest comer of the room. It seems to have run from Floor 2 (above) to the railway tracks. Although long out of service it may have been used for distillery slop (A process description is found in Section A, Part 4.2.1)

A. Equipment Typical/Unique to Distillery Operations
- Two horizontal "Mash Cookers" of steel riveted construction with internal mixers driven via chain drive from one central electric motor.
- [Figures B–7, 8]
- Large duplex steam pump, c1930.
- Excise cages and scale tank.
- Slop trough
- *See also equipment register*

B. General Equipment
- None observed

Floor 2

Staircases at the east end connected this room to the floors above and below. In addition, a corridor extended over Room 2A to the Mill Building #3 and a fire door provides access to Building #4. The mashing area is arbitrarily separated from the distilling side by a lightly built frame wall, probably built in the 1950s. The ceiling is supported by four rows of riveted "I" beams. The centre of the floor is open to the tops of the mash cookers below. An auger was suspended

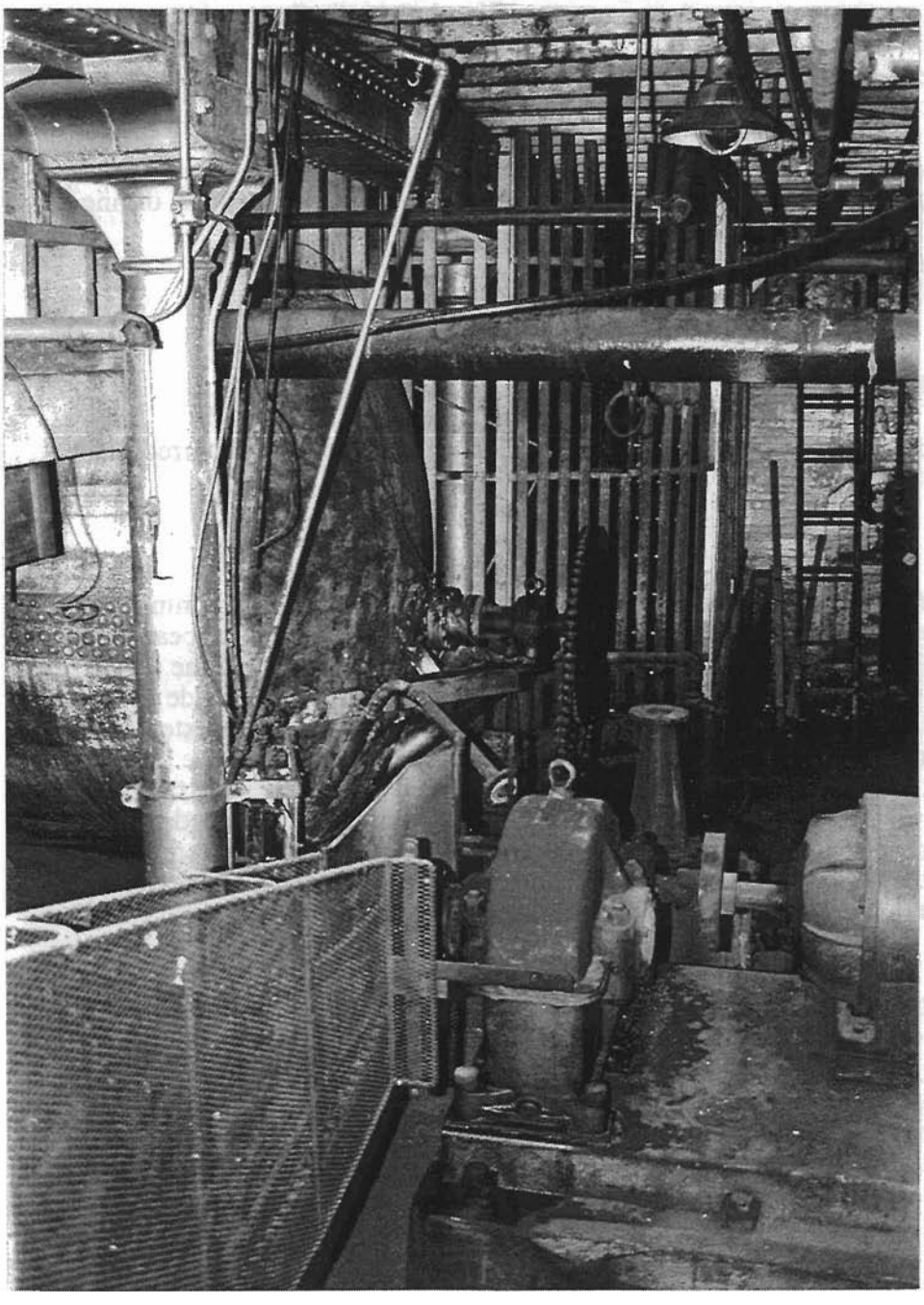


FIGURE B-7
One of two large riveted steel steam mash cooker drums showing the chain drive and electric motor. The wooden frame of an excise cage is in the background. Note the riveted "I" beams supported by cast iron columns.
Source: Historica Research *Limited, November, 1993*

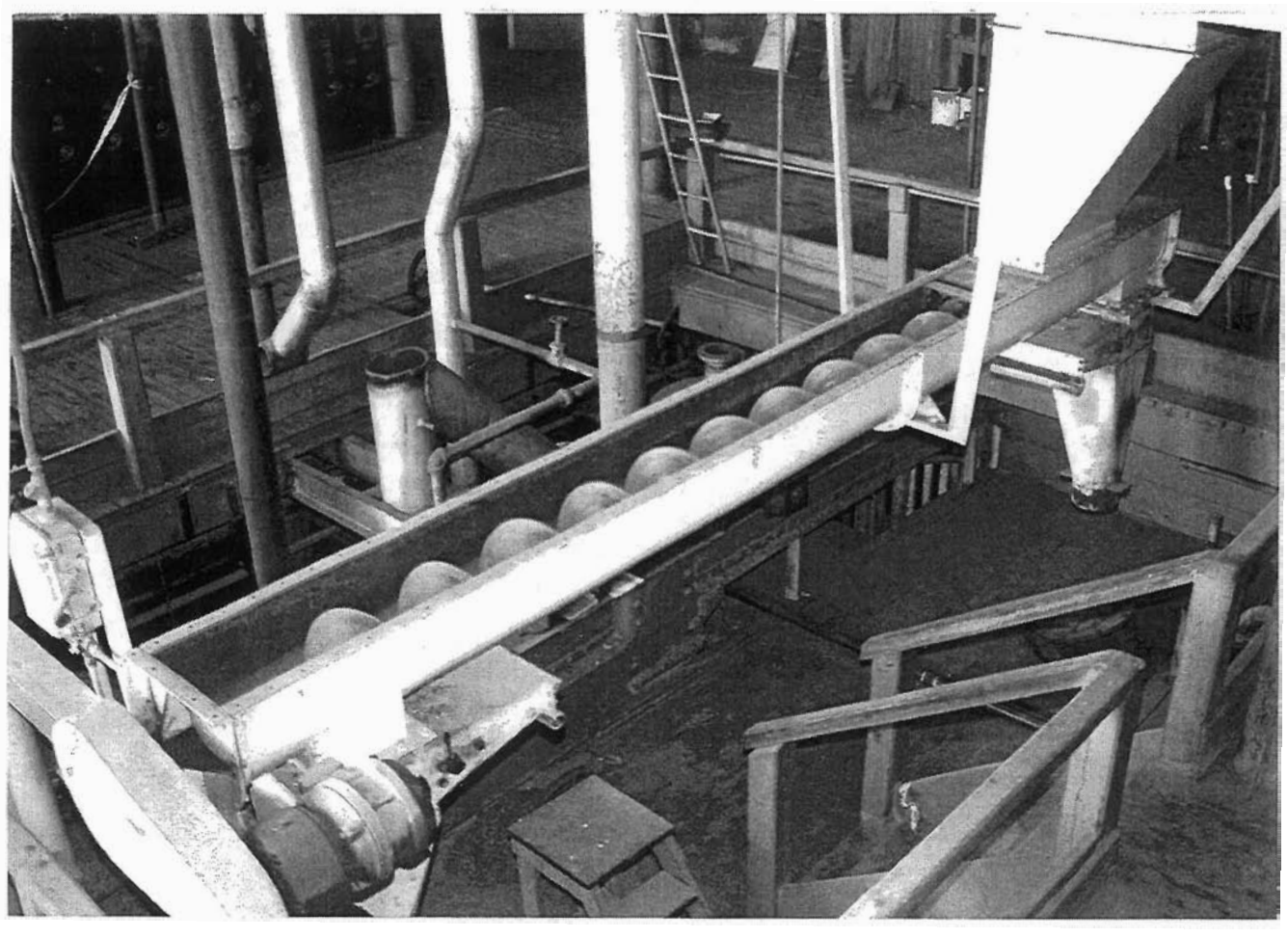


FIGURE **B–8**
Centre of floor 2, building 5 showing opening to tops of mash cookers below and auger to load grain into the cookers.
Source: Historica Research *Limited, November, 1993*

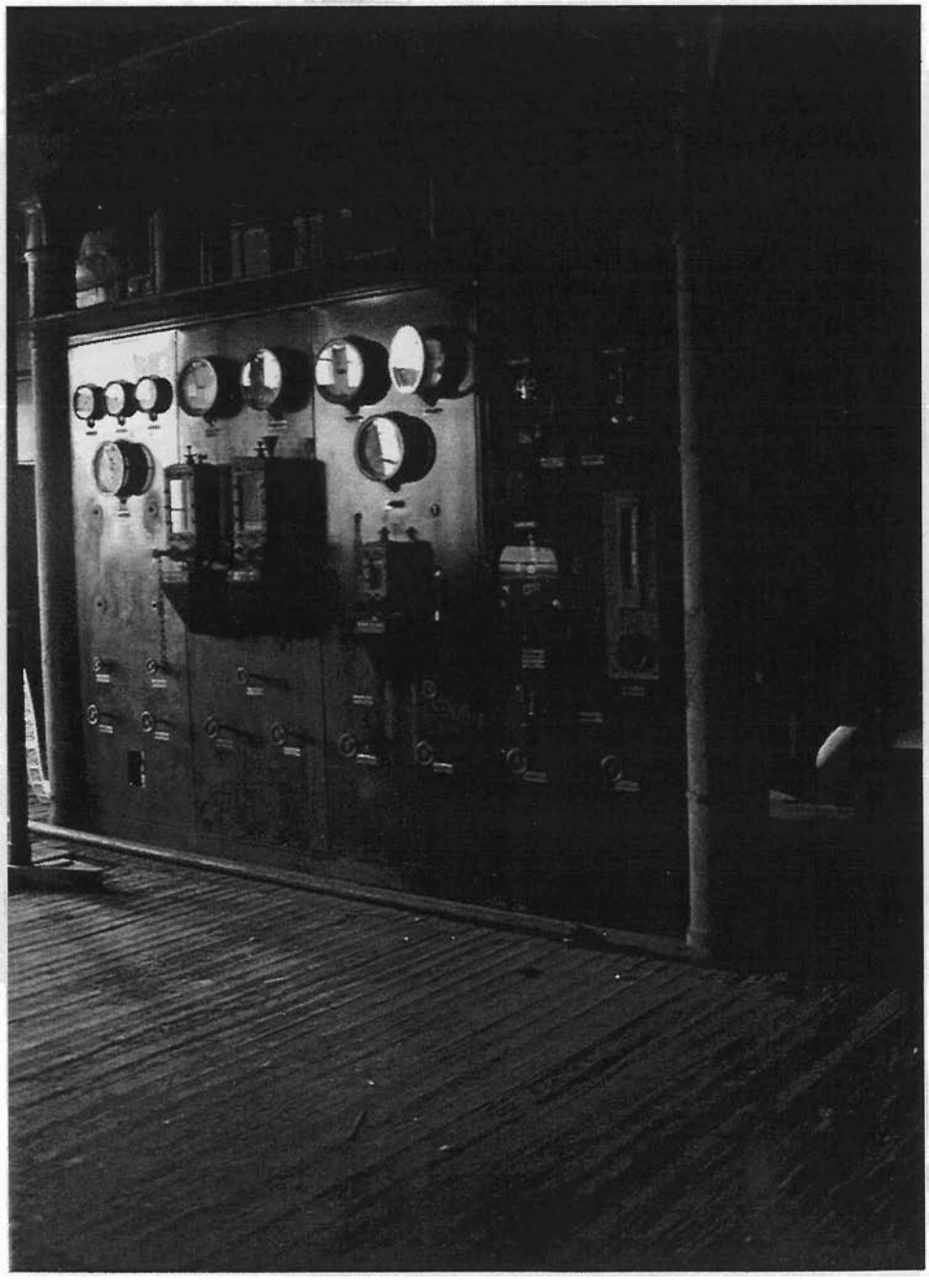


FIGURE B–9
Control panel for an abandoned anhydrous alcohol still on floor 2, building 5. The equipment appears to have been installed c1929–31.
Source: Historica Research Limited; November, 1993

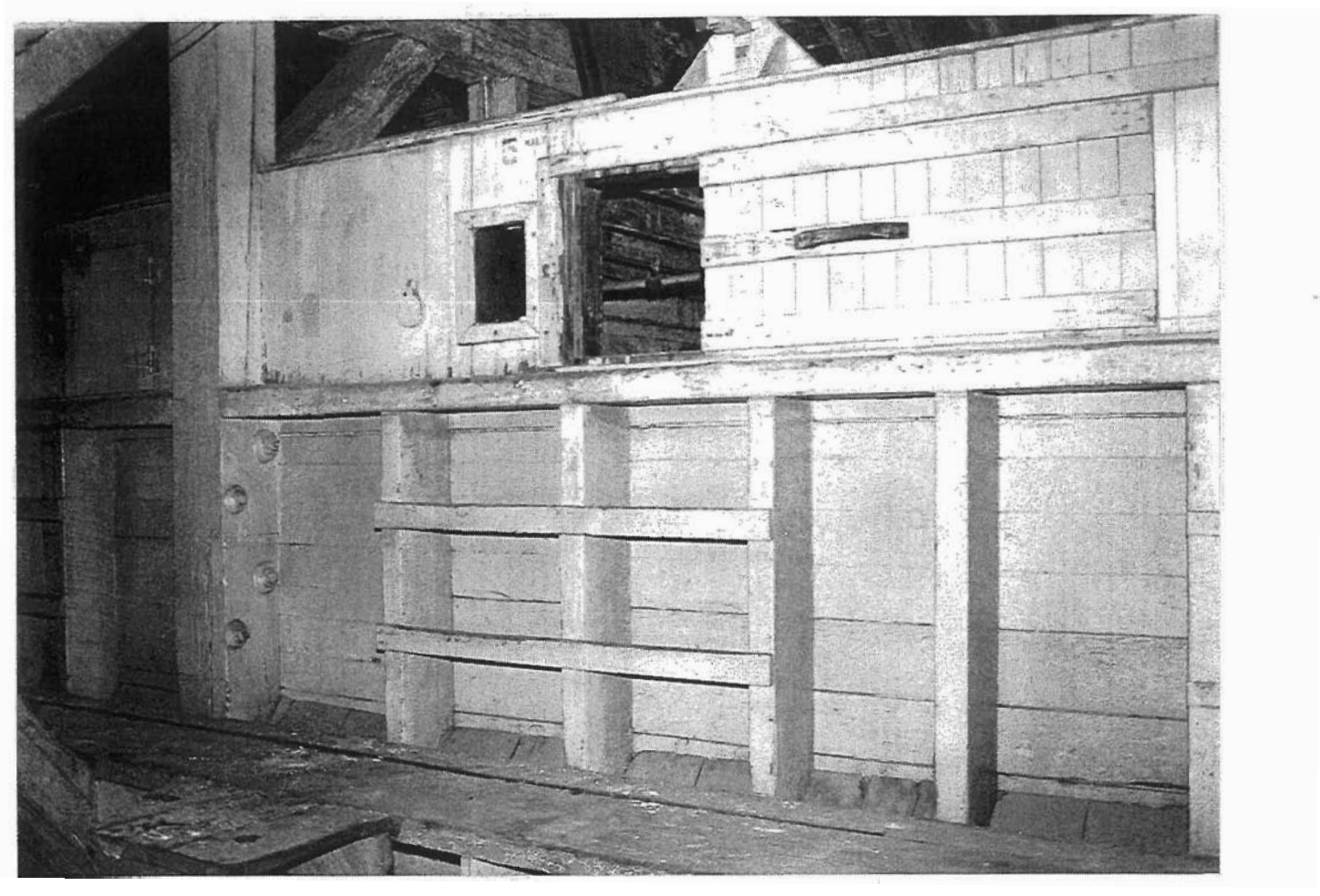


FIGURE B–10
Wooden bins on floor 5, building 5, used to store milled grain and malt transported by conveyor from the mill (building #3).
Source: Historica Research Limited, November, 1993

over the opening to load grain into the cookers. The control panel, manufactured by Badger, and still columns an anhydrous alcohol still fill the west end of the floor. A process description for anhydrous alcohol is found in Section A, Part 2.3.

A. Equipment Typical/Unique to Distillery Operations
- Hoppers and piping associated with mash cookers [Figure B–8]
- Anhydrous alcohol still columns and control panel, c1930 [Figure B–9]
- ***See also equipment register***

B. General Equipment
- Riveted "I" beam construction of ceiling supports.

Floor 3

This floor contained the chutes connecting the grain hoppers to the cookers and remains of the anhydrous alcohol still columns. Along the east wall was a wheat scale that measured grain before it was added to the cooker. It is connected by ducts to bins on the floor above. All floors have an open space between each of the planks, probably to allow for ventilation of heat, steam and alcohol vapours. As on the floor below and above, the floor is made of 2"x4" laid with a gap of about ½" between them. The east end contains the base of a tank and various pipes used in the mashing process. There is one step up into Building #4 from this level. The stone wall ends on the east side at about three feet above the floor. The rest of the wall is frame to the ceiling. The wall is supported by iron columns and large timber beam. The other side of the wall is Engine Room #2A.

A. Equipment Typical/Unique to Distillery Operations
- Anhydrous alcohol distilling column and associated equipment passing through from floor below.
- Mashing equipment.
- *S* latted wood floor construction.

B. General Equipment
"automatic wheat scale", c1900, surrounded by wooden cage.
change from stone to wood on wall with building 2A.
- ***See also equipment register***

Floor 4

This floor extends over building #2A. A row of pillars supporting the ceiling indicate the location of the west wall for the engine room. A fire door leads into building #4. The base and five chutes of the hoppers that contained milled grain is on this floor. A 450 gallon glycol supply tank was probably associated with the production of anhydrous alcohol.

A. Equipment Typical/Unique to Distillery Operations
- Glycol tank
- Slatted wood floor construction.

B. General Equipment
- Grain bins

Floor 5

This floor contains five wooden bins that were used to store milled grain and malt transported by conveyor from Floor 5 of the mill (building #3). [Figure B–10] A heavy metal fire door provides an entrance into the mill. The mashing end of Building #5 is separated fiom the distilling end by a timber wall and from the mill, building #3, by a brick wall. The prominent pediment of the engine room is visible at the east end of this floor.

A. Equipment Typical/Unique to Distillery Operations
- None observed

B. General Equipment
- Grain bins; conveying equipment
- Fire door

2.6 Building #5 (Distillation)

A process description is found in Section A, Parts 1.4 and 4.2.3. Distilling occurred in the west end of this building.

Floor 1

The floor is dominated by the base sections of the column stills and associated piping and pumps. [Figures A–8, B–11] The area also contained an excise cage with two spirit scale tanks and a second cage contained a fusel oil scale tank. The iron support columns for the floor above support timber beams on the west side and a riveted iron/steel beam on the right side.

A. Equipment Typical/Unique to Distillery Operations
- Base sections of column stills and associated piping and pumps.
- Two "excise cages" containing copper scale tanks; one scale tank has been maintained in polished condition and rests on a good condition Fairbanks 60,000lb beam scale retaining much of its c1900 decoration. [Figure B–12]
- *See also equipment register*

B. General Equipment
- None observed.

Floor 2

The floor contained the control panel and operator's station for the still. The control panel, manufactured by Vulcan Copper & Supply Co, Cincinnati, Ohio, appears to have been installed in the 1950s. The floor also contained the base of two pure spirit tanks (tanks removed after 1990) and an employees locker room (c1950s?). The ceiling is supported by one row of steel beams and two rows of timber beams; beams rest on posts and capitals of the same design. However, the steel beams seem to rest on cast iron pads on the capitals whereas the wooden beams are on timber pads.

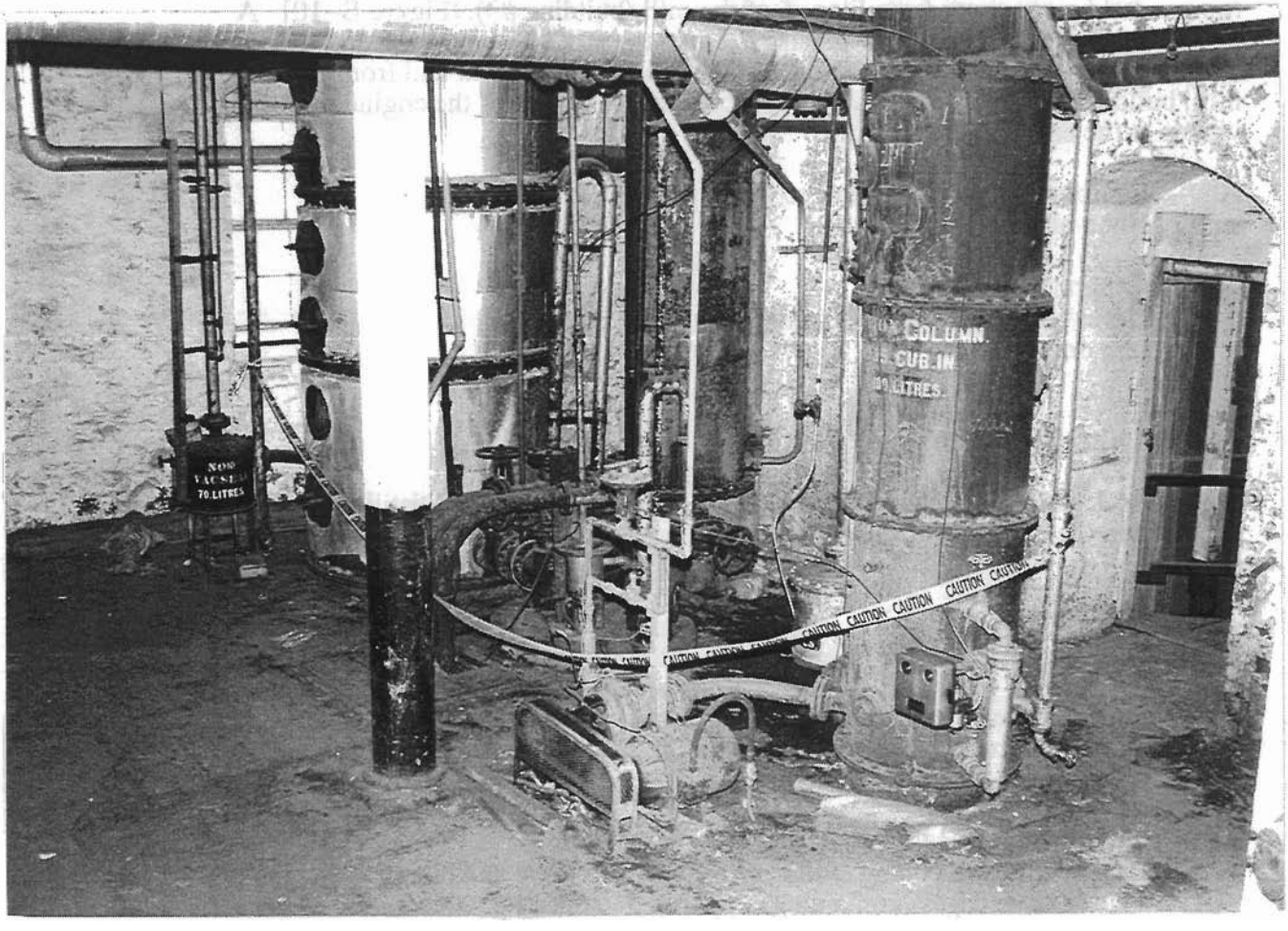


FIGURE B-11
Base sections of the column stills and associated piping and pumps on floor 1, Building 5, and used until 1990.
Source: Historica Research Limited, November, 1993

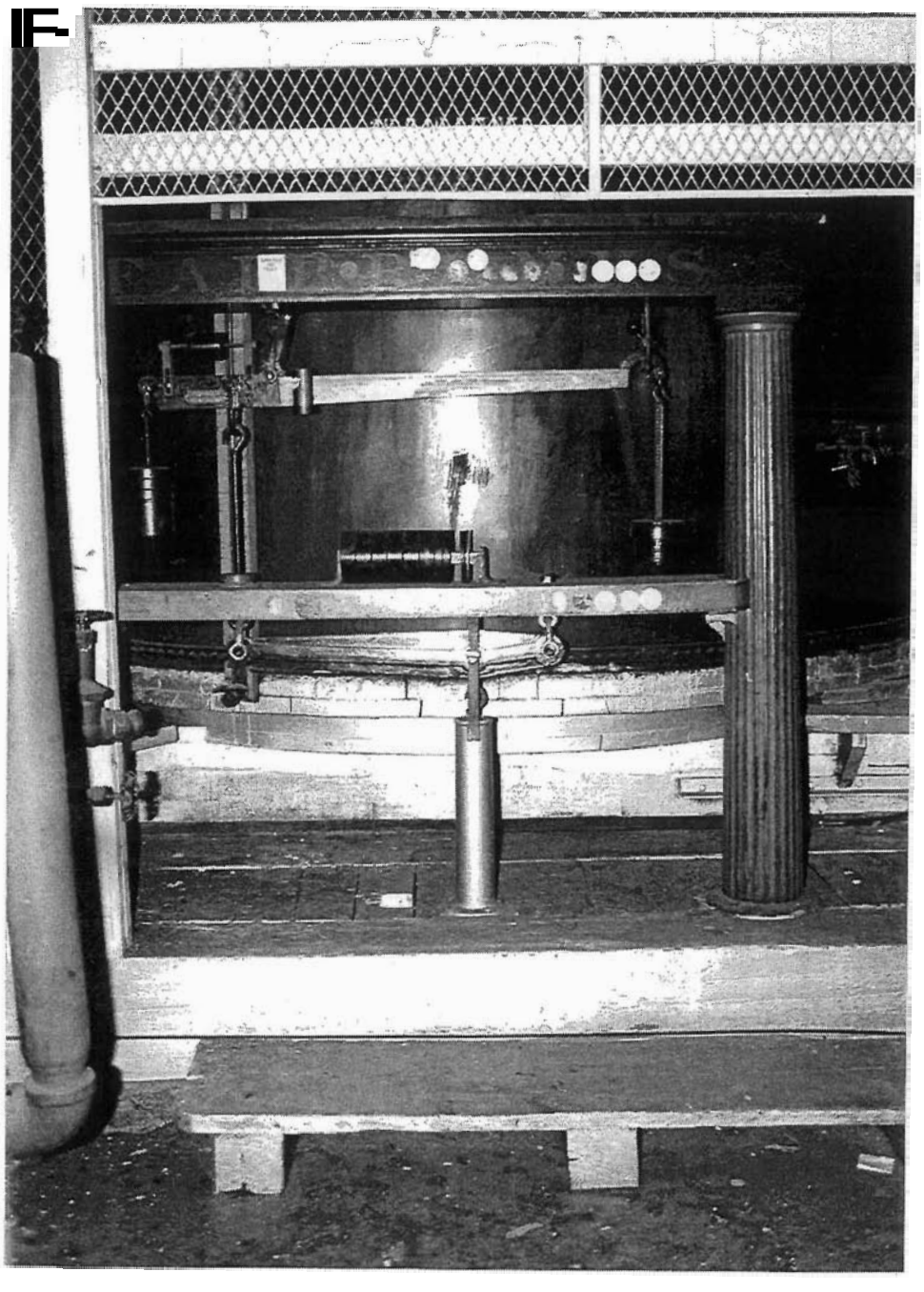


FIGURE B-12
Excise cage with one **spirit** scale **tank on** floor *1,* Building *5.*
Source: Historica Research Limited, November, 1993

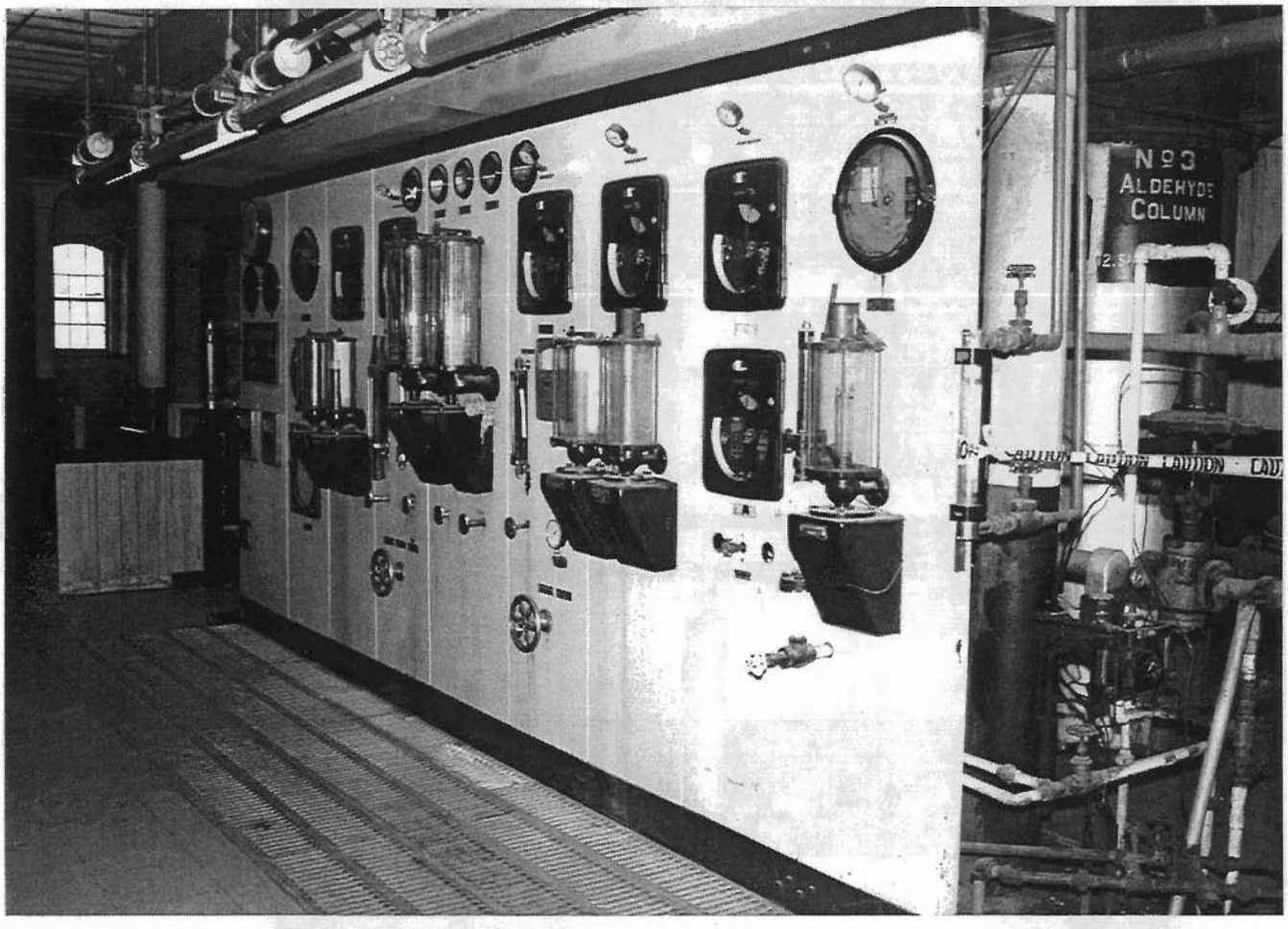


FIGURE B–13
Control panel and operator's station on floor 2, Building 5. The panel appears to have been installed in the 1950s.
Source: Historica Research Limited, November, 1993

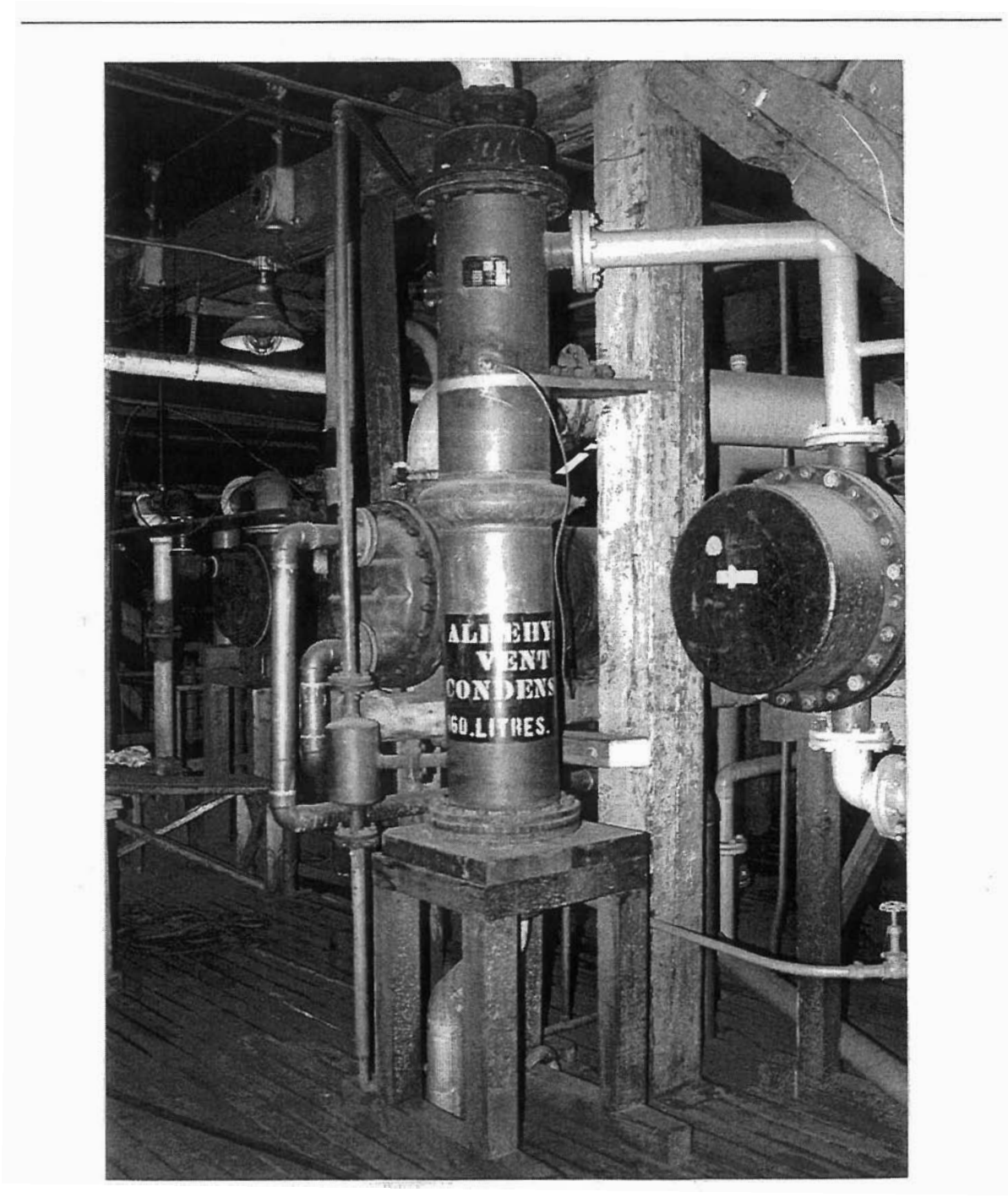


FIGURE B-14
Tops of distillation columns on floor 5, building 5.
Source: *Historica Research Limited, November, 1993*

A. Equipment Typical/Unique to Distillery Operations
- Still control panel complete with tail boxes and instrumentation; small control panel for regulation of air/water/steam(?); both c1950 [Figure B–13].
- small bank of tail boxes, apparently by Badger, C1930 oup of flow spouts with glass bowls of the similar date and manufacture.
- Timber base of two removed spirit tanks.
- *See also equipment register*

B. General Equipment
- Riveted "I" beam construction of ceiling supports.

Floor 3

This floor contained a change house containing a large industrial sink, a shower and two toilets. This area is separated by a frame wall probably 40–50 years old – from the rest of Building #5. The rest of the floor contained sections of the distillation columns. On the north wall is a freight door to the outside.

A. Equipment Typical/Unique to Distillery Operations
- Distilling columns passing through to the upper floors.
- Slatted wood floor construction.
- *See also equipment register*

B. General Equipment
- Change house with wash–up facilities.

Floor 4

This floor contained sections of the distillation columns; most equipment identified as E. B. Badger and Sons Company, Boston. There were two large, white fiberglass tanks of unknown purpose on the floor.

A. Equipment Typical/Unique to Distillery Operation
- Distilling columns passing through to the upper floors.
- Slatted wood floor construction.

B. General Equipment
- None observed.

Floor 5

The west end of this floor contains the tops of the distillation columns. Several of the pipes have flash arrestors on them. The north end of the building contains a riveted steel water tank known as City Water Tank #1, 8,129 gallons. There was space in this area for a second tank but there is no sign of its location. There is a hand operated hoist on this floor. The cable extends to a trap door with a pulley system near the junction between the milling bins.

A. Equipment Typical/Unique to Distillery Operations
- Tops of distilling columns and associated condensing equipment [Figure B–14].
- Numerous vents exit the roof, characterized by heavy cast steel flame arrestors.
- *See also equipment register*

B. General Equipment
- Riveted steel "City Water" tank of 8129 gallons.
- Small cast iron geared hand winch.

2.7 Building #6 (Fermentation)

A process description is found in Section A, Parts 1.2 and 1.3.

Floor 1

This floor contains raised concrete bases for fermenting tuns. Tanks were removed after 1990 and the room is effectively empty of equipment. A steel beer well (Beer well #1, capacity of 69,740 litres) is located at the south east part of the building. A duplex steam pump stands beside the beer well. A cast iron cooler is on the northwest comer and may date from the days in which acetone was produced although drawing #49–9 (June, 1949) describes it as a "hot water heater."

A. Equipment Typical/Unique to Distillery Operations
- Small duplex steam pump; welded steel beer well tank; mash cooler [Figure B–16; unique to G & W acetone production?]; concrete bases of fermenting tuns [Figure B–15]
- *See also equipment register*

B. General Equipment
- None observed

Mezzanine

This steel catwalk floor once provided access to the tops of the; now removed fermentation tuns.

A. Equipment Typical/Unique to Distillery Operations
- Signage for tun capacity

B. General Equipment
- None observed.

Floor 2

This floor is in the attic and contained a timber catwalk and a former production laboratory; a process description is found in Section A, Part 5.12. The floor also contains a yeast culture tun and a platform with a scale tank. In the 1940s a

FIGURE B–15
This floor contains the raised concrete bases of fermenting tuns in building #6. Note the channel in the base that once accommodated pipe connections. Tanks were removed after 1990 and the room is effectively empty of equipment. See also Figure **A–7.**
Source: Historica Research Limited, November, 1993

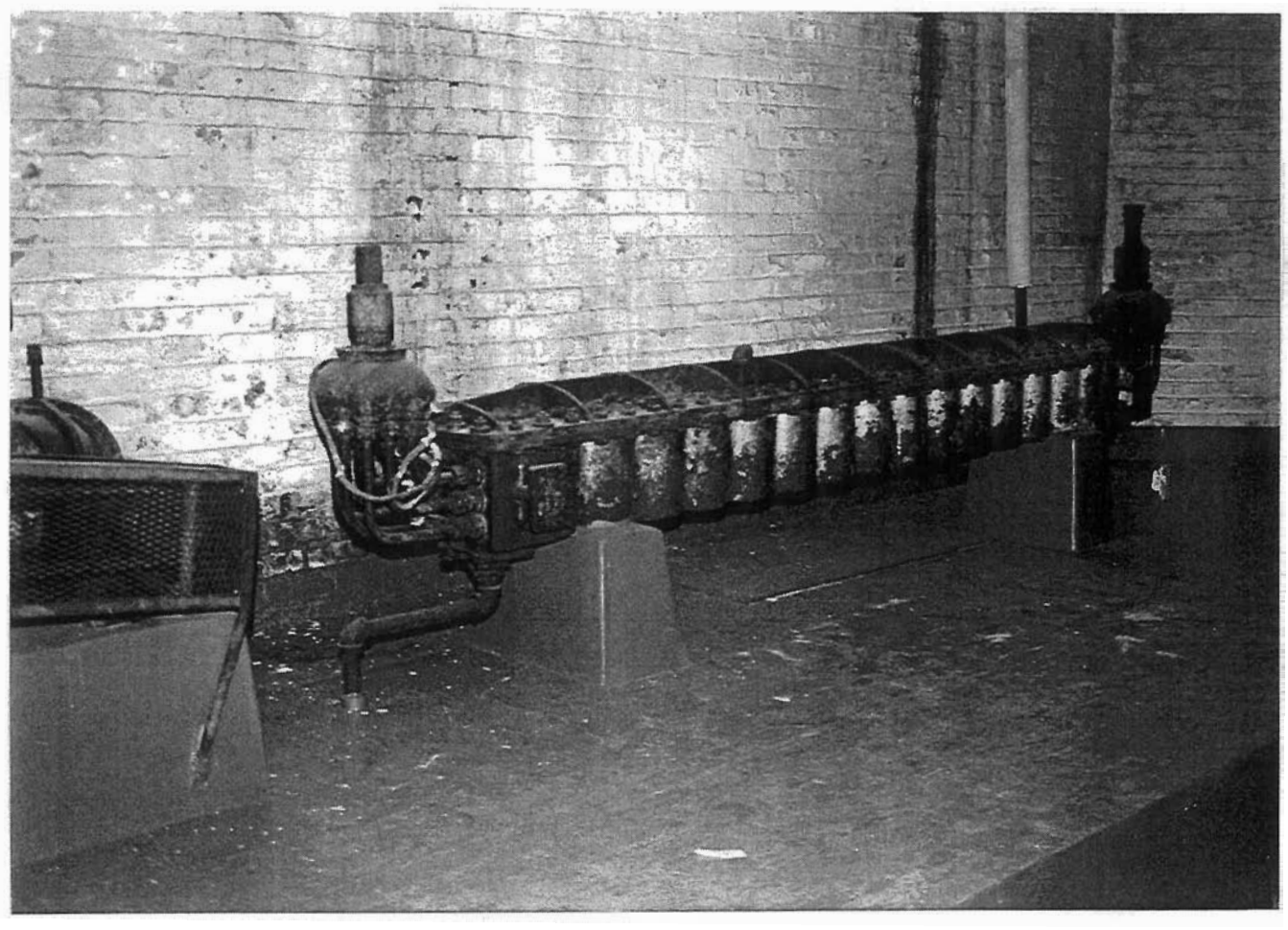


FIGURE **B–16**
Cast iron cooler in building 6 that may have been used to cool mash used in the production of acetone. See Section A, Part **3.**
Source: *Historica Research* ***Limited,*** *November, 1993*

carbon dioxide gas scrubber and flow meter were located on this floor. A foot bridge provides connection between this floor and the former office building #25 across the lane. The timber framing for the roof is quite remarkable. It does not seem to form any convention of framing. There are numerous steel or metal splice plates holding timbers together. Shims are used to adjust the location of the purloins. This was done to correct a sag in the roof in the last 10–20 years. The shimming of the roof has exposed mortise and tenons in the original beams that held the structure in place.

A. Equipment Typical/Unique to Distillery Operations
- Scale tank (Marked #1, 11030 litres) Fairbanks beam scale, C1930;
- Process lab containing minimal lab equipment, c1950;
- *See also equipment register*

B. General Equipment
- Roof truss system.

2.8 Building #7

A process description is found in Section A, Parts 1.2, 1.3 and 5.12.

Floor 1

This level was functionally the same as Building #6.

Mezzanine

This floor is similar to Building #6.

Floor 2

This floor contains the yeast culture areas. There were three yeast tanks on the top floor and a scale tank (Number 2, capacity 126,000 litres). A copper autoclave is also in this area. [See Figure A–171

A. Equipment Typical/Unique to Distillery Operations
- Scale tank resting on a C1910 beam scale with cast fluted columns. Three riveted copper yeast tubs.
- A small copper autoclave on stand, C1930.
  See also equipment register

B. General Equipment
- None observed

Penthouse/Cupola Floor

A 640 litre yeast Donor tub (Tub #1) is located in a small cupola in the roof over Building #7. The room is well lit with windows on three sides. The room is reached by a staircase from Building #7.

A. Equipment Typical/Unique to Distillery Operations
- Yeastdonortub.
- Design of penthouse.
- ***See also equipment register***

B. General Equipment
- None observed

2.9 Building #8 (Maintenance)

A process description is found in Section A, Parts 1.2 and 5.10 Building #8 is constructed of brick and attached to the west end of the stone distillery and was used as a machine shop when the distillery closed. A large molasses tank is located in the southeast comer of the room. Adjacent to the molasses tank is a duplex steam pump that may have been the molasses pump. Much of the building is a machine shop and all machines are driven by overhead pulley systems from two electric motors. The equipment includes an engine lathe, shaper, vertical milling machine and a drill press. The machine shop is noteworthy in that it is in such unusually good working order, still powered by line shafting and belting, evocative of a turn of the century small manufacturing facility. One would expect to find a maintenance/ millwright shop associated with a distillery, but the scale of this shop is appropriate to the whole of the G&W operation rather than strictly associated to the stone distillery. The room also contains a carpentry and metal working area equipped primarily with modem tools and a large sheet metal shear. An employee lunch room and showers is in the southwest comer. There is a loading door on the south side for the railway tracks. The roof is supported by timber posts. There is a garage door on the north side with a concrete ramp leading down to the working floor.

A. Equipment Typical/Unique to Distillery Operations
- Molasses tank
- ***See also equipment register***

B. General Equipment
- line shafting with pillow blocks, pulleys and clutch gear; welding/forge/casting area with related equipment; bank of wooden cupboards (locked, contents unknown), c1880; combination desk/cupboard (locked, contents unknown), c1880.
- ***See also equipment register***

2.10 Building #9 (Molasses Tank)

A process description is found in Section A, Part 1.2. The building provided an enclosed heated space for the bottom half of a large riveted steel molasses tank (Tank #2). The upper half of the metal tank extends above the roof. [Figure B–17] The building was heated with steam radiators. The roof is supported on timber posts on roughly 12–14 foot centres around the tank. The posts carry the roof and the tank is structurally independent of the building. There is a track loading door on the south side. Drawing #39–5–A, dated March, 1939, is a

framing plan for the tank and roof, suggesting the tank was installed in the building at this time. The area around the tank contained storage for sheet metal equipment, cables and pipe supplies. There are a number of steam pumps of which one still appears to be connected to steam. At the west end of the building was a small scale tank of perhaps a few hundred gallons. It was not used for legal measurements. Along the north side of the building was a raised level that seems to have been for chemical storage antifreeze blending and handling.

A. Equipment Typical/Unique to Distillery Operations
- Large duplex steam pump evidently used for the unloading and transporting molasses; two unidentified pieces of (fire protection) equipment in red enamel; Molasses tank
- ***See also equipment register***

B. General Equipment
- Quantity of materials handling and hoisting equipment, slings of various types; hand tools.
- ***See also equipment register***

FIGURE B–17
Molasses Storage Tank No. *2* contained in building *#9.*
Source: Historica Research Limited, ***November,*** *1993*

PURE SPIRITS

1 BACKGROUND

Buildings 53 – 57 Built: 1873 [Figure A–91.
A process description is found in Section A, Parts 1.4.2 and 5.1.
Original Function:

- Rectification (redistilling) of alcohol to remove impurities and increase alcoholic content.

Subsequent Function:

- During First World War, complex used for butyl alcohol rectification;
- in 1940s/50s Buildings #55–57 used by James Barclay Company Limited as a distillery
- Building 54 in 1924 contained a gin still; in 1944 ground floor used as excise office
- Buildings 54, 55, 56: by First World War stills in buildings produced whisky; lines from still tail boxes went directly into "No. 2 Tank House" (Building 61); in 1969 buildings used for "anti–freeze drumming;"
- Building 53: called a "spirit house" (1880); still house (1943); by 1969 building unused except as entrance into Building 61;
- Building 54: in 1969 contained a denatured tank;
- Building 57: in 20th century used to store alcohol and fusel oil.

Buildings 58–59 built: 1873; later addition of Floors 3 and 4.
A process description is found in Section A, Parts 1.7 and 2.1.
Original Function:

- Case goods storage.

Subsequent Function:

- Bottling line added latter;
- By 1915 east half of Building 58 was in tanks; rest of building and Building 59 were bonded warehouse and spirit storage;
- By 1943 Buildings 58/59 were converted to an antifreeze canning operation; (beverage bottling transferred to former laboratory – Building 25).

Buildings 61 – 62 Built: 1873 [Figure A–101
A process description is found in Section A, Part 1.5.
Original Function:

- Tank warehouses 1 and 2.

Subsequent Functions:

- By 1918 "mixing" or "racking" was probably undertaken in tank house Building 61 or 62. (In 1880 "racking of spirits" into barrels occurred in Building 34);
- Term "mixing room" not used until after First World War when name applied to former tank house (Building 61);
- Former cooperage and tank house (Building 62) was a mixing room by 1969.
- Last use before closure: fill drums and barrels, mixing and as a central area through which almost all product pipes in complex pass; mixing rooms played central part in operation of distillery.
- Building 61 called "Canadian Government Excise Bonded Warehouse #2."

2. DESCRIPTION

21 Building 53

Floor I
Empty of equipment; entrance into Building 61 (double door – timber door on the east side, metal door on west side of wall); high ceiling;

Floor 2
Empty except for piping; large circular opening in ceiling that once held large water tank, interconnecting door to Building 54 bricked in;

Floor 3
Low ceiling; contains a large copper drum of 449 gallons; circular hole in floor for former water tank;

Floor 4
Two water demineralizing units (National Bottler's Supply Company of Chicago: "Polar Water Still"); interconnecting door to Building 54 bricked in; functional door to the second floor of Building 61.

2.2 Building 54

Floor I
Empty of equipment except for platform scale; staircase removed and access to upper floors from balcony entrance from Building 53; floor has been raised on timber deck above the Trinity Street grade; large copper roof drain along wall; variety of piping within and crossing the floor; interconnecting doorway to Building 55 is bricked in.

Floors 2–5
Entrance is from exterior balcony; denaturing tank of 1,997 gallons in place (welded tank, probably not more than 30–40 years old); interconnecting doorway to Buildings 53 and 55 is bricked in.

Floors 3–5
Brick corbeling in walls indicates locations of floors 3,4,5; most of these floors have been removed and exist only as mezzanines; floor 3 has been largely removed to accommodate tall equipment; floor 4 is relatively complete except for large hole for equipment passage; floor 5 does not exist except for brick corbeling and two "I" beams that probably were put in to keep the walls stable; interconnecting doorway to Buildings 53 and 55 on floor 4 is bricked in.

23 Building *55*

Floor I
Interconnecting doorway to Buildings 54 bricked in but doorway to Building 56 is open; relatively modern overhead crane running the length of the building with a half ton capacity; no equipment on the ground floor; steam heat radiator and

miscellaneous pipes; copper roof drain comes through the building; copper sink on the wall adjoining Building 54; concrete cap on floor that may be well cover;

Floor 2
Floor is slatted for ventilation; floor is at a lower level than the original brick corbeling (according to blueprints, tank floor was put in 1940s about 4 feet lower than original floor) two identical weigh scale tanks, manufactured of riveted copper (capacities of 1,257 gallons); inter connecting doors to Buildings 54 and 56 are bricked in; last weights and measures certificate is 1959; scales were built by the Gurney Company; floor was called the closed receiver weigh room; number of valve handles on long shafts to pipes that are high off the floor (probably designed to be reached from original second floor was higher). [Figure B–18]

Floor 3
Small mezzanine at rear of building; low ceiling; no equipment on this floor;

Floor 4
Empty of equipment; interconnecting doorway to Building 54 bricked in but open into Building 56; large double leafed trap door on floor;

Floor 5
Consists of steel "I" beams spanning the building; no actual floor but brick corbeling on walls;

24 Building *56*

Floor 1
Contains distillation equipment probably used by the Barclay Distillery to produce brandy; small platform scale; small steam pump [Figure B–19]; floor is concrete with floor drain; interconnecting doors into Buildings 55 and 57;

Floor 2
Contained the tops of a wine still (2,628 gallons) and a beer column; yeast tub (340 gallons); 1950s control panel of indicator lights; two tail boxes [Figure B–21]; interconnecting doorway to Building 55 bricked in;

Floor 3
Short platform at rear of building;

Floor 4
Contains two condenser rectifying still columns; interconnecting doorway to Building 55 is a metal fire door; small trap door in floor;

Floor 5
Floor is complete in this building and rests on the same style of "I" beam joists as in Building 55; contains the top sections of distilling column (Dephlegmator – copper with capacity of 44 gallons; doubler rye still – 110 gallons) [Figure B–20]; small trap door in floor; roof access trap door; roof vents on Buildings 54, 55 and 56 that are operated by strings from the top floor.

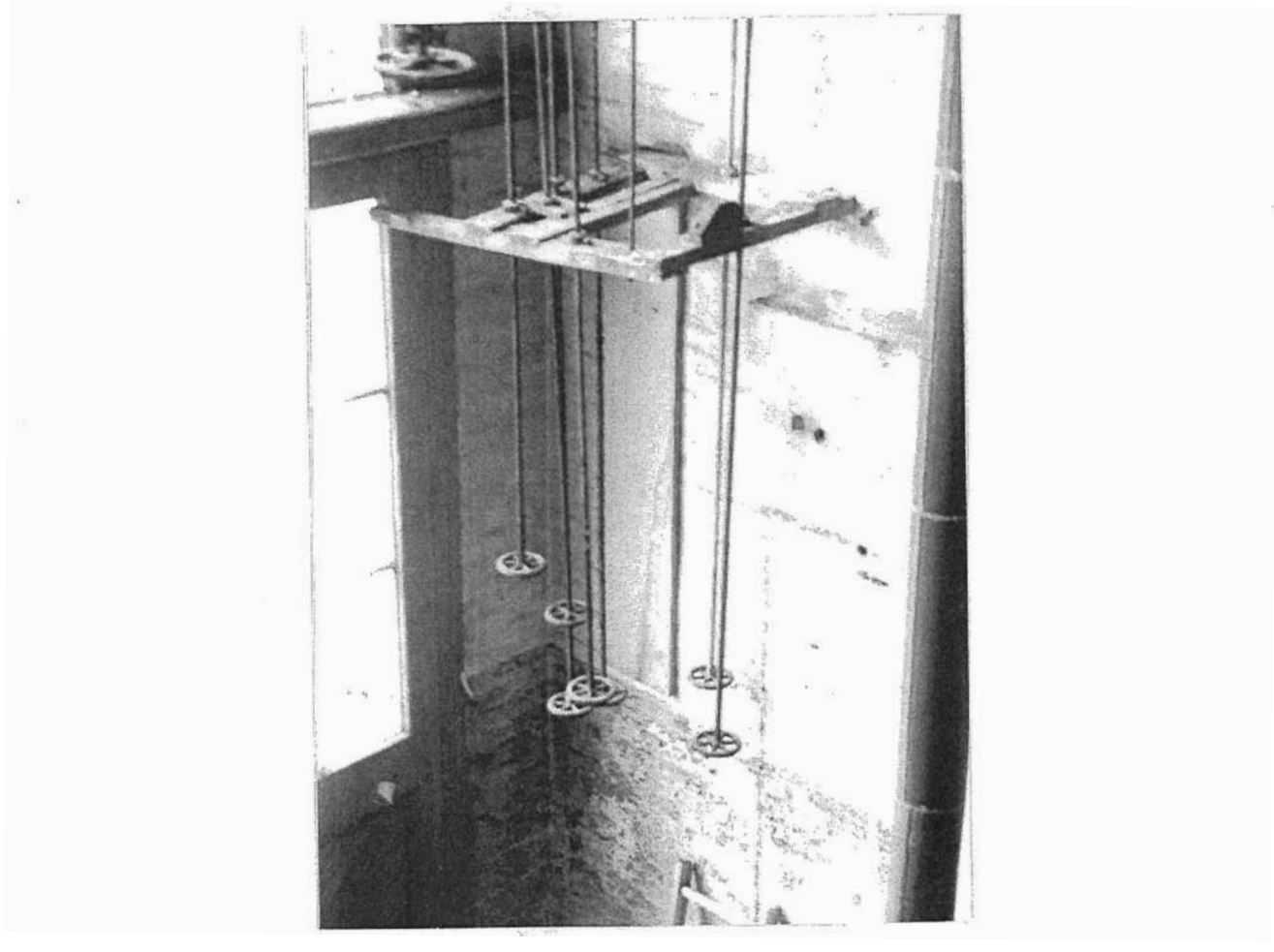


FIGURE B-18
Valve handles on long shafts on Floor Two, Building 55.
Source: Historica Research Limited, August, 1993

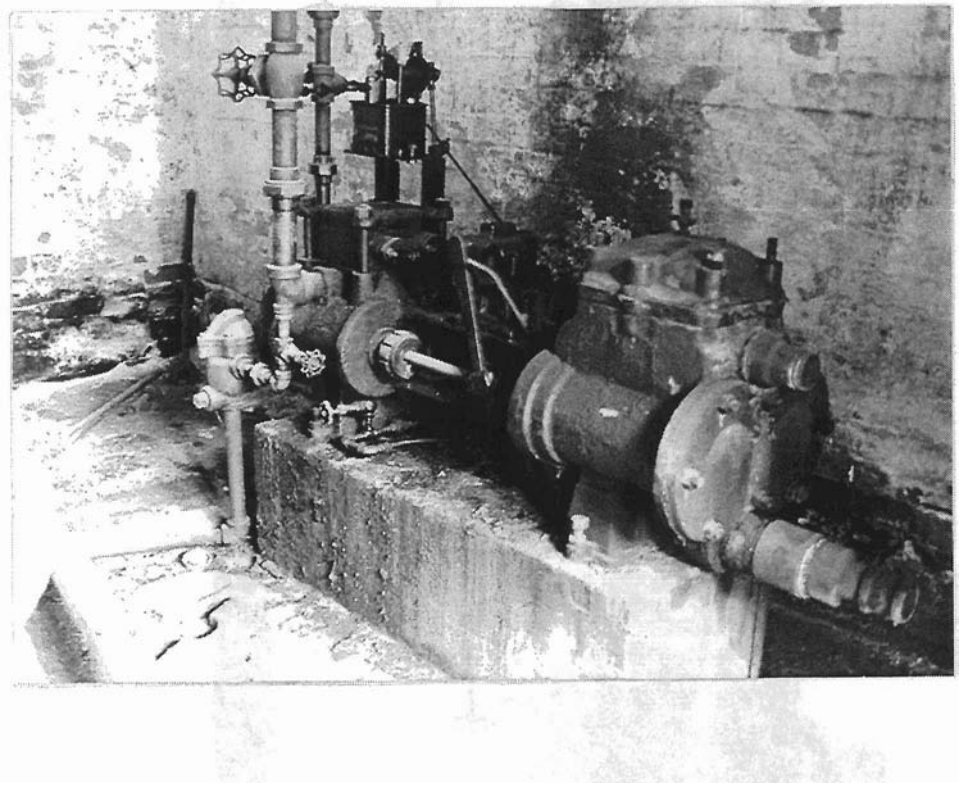


FIGURE B–19
Steam pump on Floor *One*, Building 56.
Source: Historica Research Limited, August, 1993

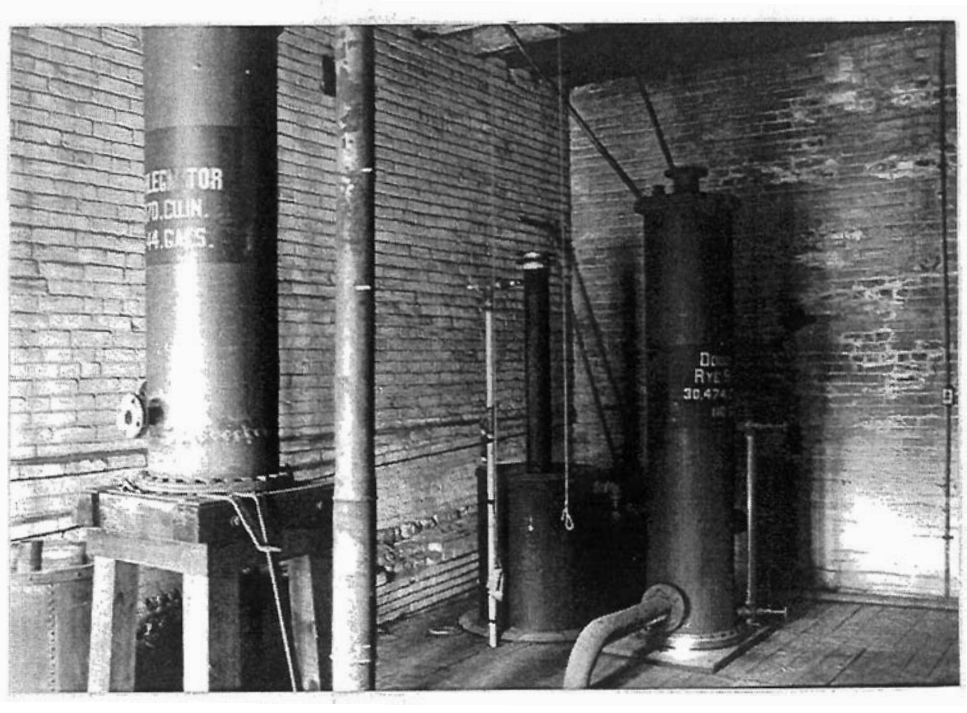


FIGURE B-20
Dephlegmator and doubler rye still, Floor Five, Building 56.
*Source: Historica Research Limited, **August,** 1993*

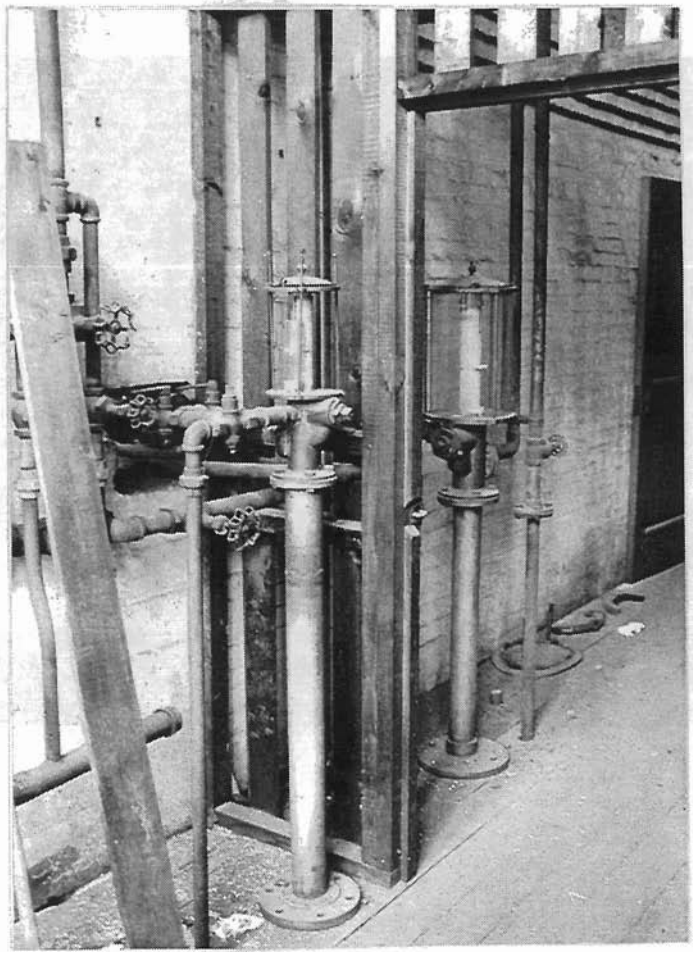


FIGURE B–21
Alcohol tail **boxes** on Floor Two, Building *56.*
Source: *Historica Research Limited,* ***August,*** *1993*

2.5 Building 57

Floor 1
Single story building once containing three mash tuns (removed after 1990); tuns removed but location indicated by circular concrete bases; interconnecting door to Building 56;

Pipe Bridge
Pipe bridge from the "Pure Spirits Complex" to the distillery held water lines, glycol lines, alcohol lines and steam lines; two alcohol lines hang down from the pipe bridge and were used for bulk filling of trucks; bottom of the two lines was a plastic line and came from the scale tanks on top of Building 59. [Figure B–40]

2.6 Building 58

Floor 1
Separated from Building 59 by brick fire wall; originally case goods storage; present use as archive and small artifact storage; front end of building contained parts stores; conveyor runs along south wall; ceiling supported on iron posts with timber beams; connecting openings to Building 59;

Floor 2
Originally case goods storage; three connecting doorways to Building 59 and four openings for case goods and conveyors;

Floor 3
Functioned as single large room with Building 59; contained a canning line for antifreeze, windshield washer fluid, transmission fluid and engine oil; three rows of timber posts support roof; bridge connection to Building 74 (case goods warehouse); conveyor system runs down middle of floor, ends in an incline that takes case goods to a loading dock on east wall of Building 62A; washroom on north side of floor (toilet tank in men's washroom is made of wood; double sink with ornate support brackets); most of floor vacant but parts of a canning line at west end; fire escape on the south wall; fire escape added in late 1980s on the north wall (leads to the roof of Building 61); on southwest side is glassed office for the manager, office reached by two steps up from main floor; floor of room is covered with a asphalt type material that apparently stopped leakage to floor below when breakage occurred;

Floor 4
Small structure running the width of the building but only about 20 feet deep; contained one scale tank and four mixing tanks; [Figure B–22] tanks have been removed (after 1990) but weigh bridge is still in place as is the motors for two of the mixing tanks; antifreeze was brought into this area and mixed with dye in mixing tanks and then pumped into the scale tank before either going to the canning line or direct by gravity feed to the tank cars or road tankers; access to roof of third floor; walls are brick on the north, south and west side and timber on the east side; copper pipe runs along the ceiling and brought bulk ethylene glycol from bulk storage; the pipe passed over the five tanks and the liquid could be regulated into each.

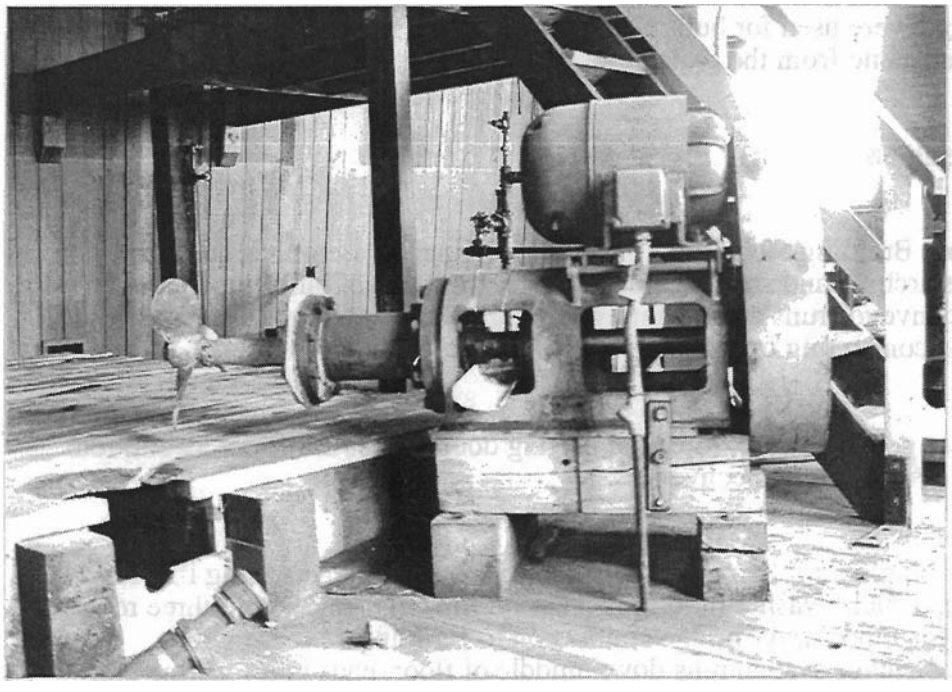


FIGURE B-22
Mixing unit and wooden tank base; copper tank removed, Floor 4, Building 58/59.
Source: *Historica Research Limited,* ***August,*** *1993*

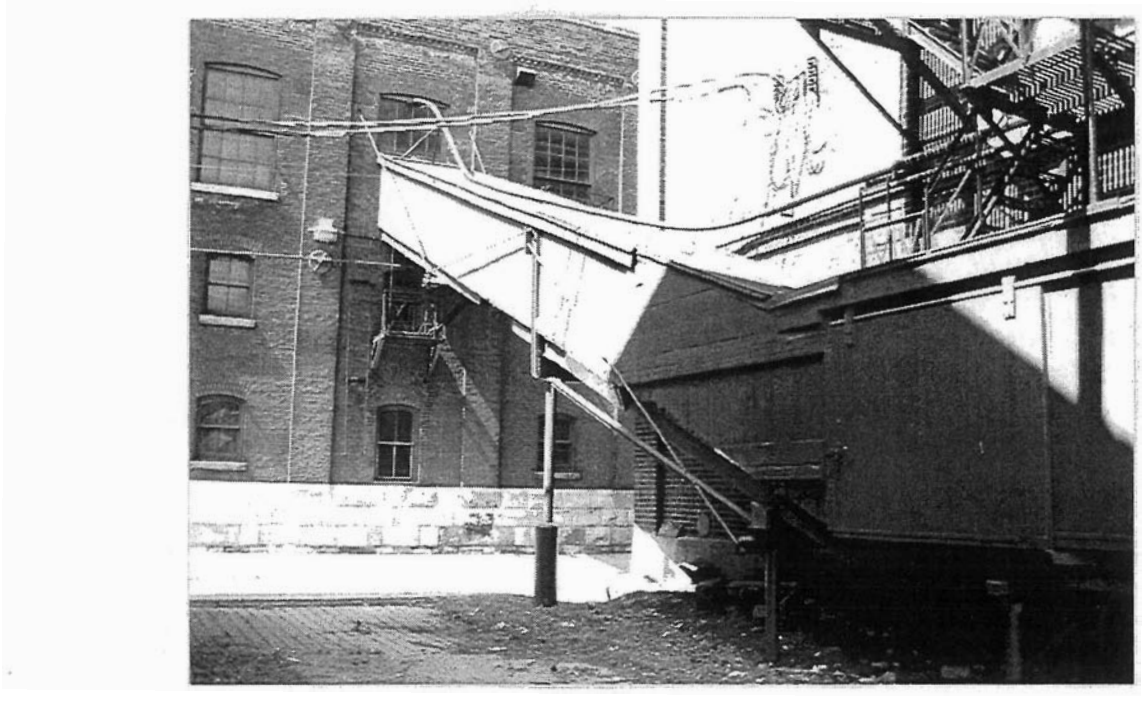


FIGURE B-23
Case goods conveyor from Floor 3, Building 58/59 to railway siding.
Source: Historica Research Limited, August, 1993

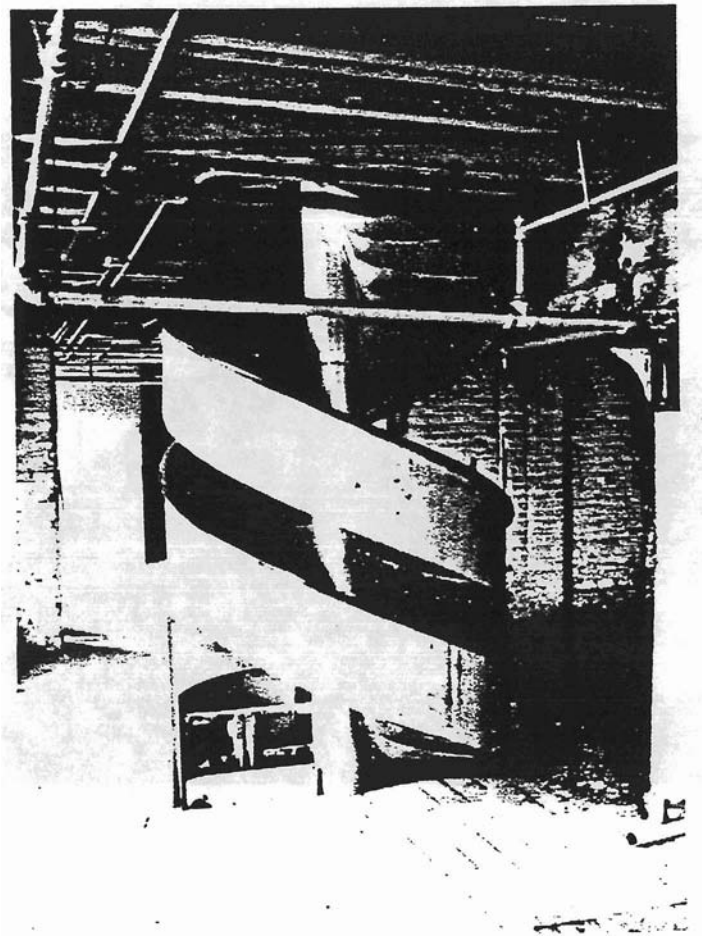


FIGURE B–24
Case goods slide, Floor 1, Building 59.
Source: Historica Research Limited, August, 1993

2.7 Building 59

Floor 1
Spiral slide for case goods from floors 2 and 3 [Figure B-23]; two other spiral slides to floor 2 only (Building 74 also has spiral slides to move case goods); four loading dock doors along south wall; space divided with temporary partition walls (at time of plant closure area was used for liquor salesmen supplies);

Floor 2
Completely open without partitions; exterior fire escape; one loading door on the south side of room; case goods conveyor on east wall; southeast comer of is brick shaft that may have been for an elevator (now removed);

Floors 3-4
See Building 58;

Case Goods Bridge
On southeast comer to connect with Building 74 and therefore built after the original building; area of bricked in window can be seen; bridge constructed on three "I" beams with timber floor and walls and clad in sheet metal;

Case Goods Track Conveyor
From floor 3 connecting to railway siding [Figure B-24]; plastic pipe on conveyor that connected scale tanks to tank cars for bulk shipments; constructed of wood joists and wooden sides resting on steel piles; two sliding doors at the lower level adjacent to tracks that may have been used for unloading into trucks;

Alcohol Pipes/Bridges
Alcohol lines run along the west side of Buildings 58/59 to a railway loading facility attached to the pumphouse. There appear to be three alcohol lines, one red fire protection line and a yellow line. There is also a black pipe that comes to a valve and bracket on the side of the pumphouse that was probably used for truck filling.

Garbage Chute:
Narrow loading bay between Buildings 59 and 62A; small truck bay containing a metal chute from third floor cannery line; used to remove paper packaging waste for dumping into a truck. The bay is quite narrow, perhaps 7 feet wide and 25 feet deep; obviously designed for smaller trucks than in use today; bay has been carved out of Building 62A; roof is timber beams with metal flashing; roof for garbage chute cuts across the two windows on the second floor Building 59.

2.8 Building 61

Floor 1
Until 1990 contained 21 spirit tanks to receive unmatured alcohol from distillery (Building 5); only one tank left after scrapping (#16a - capacity of 2,350 litres); most of facility was used to drum industrial alcohol off the premises; alcohol was received in tanks from scale tanks on floor 2.

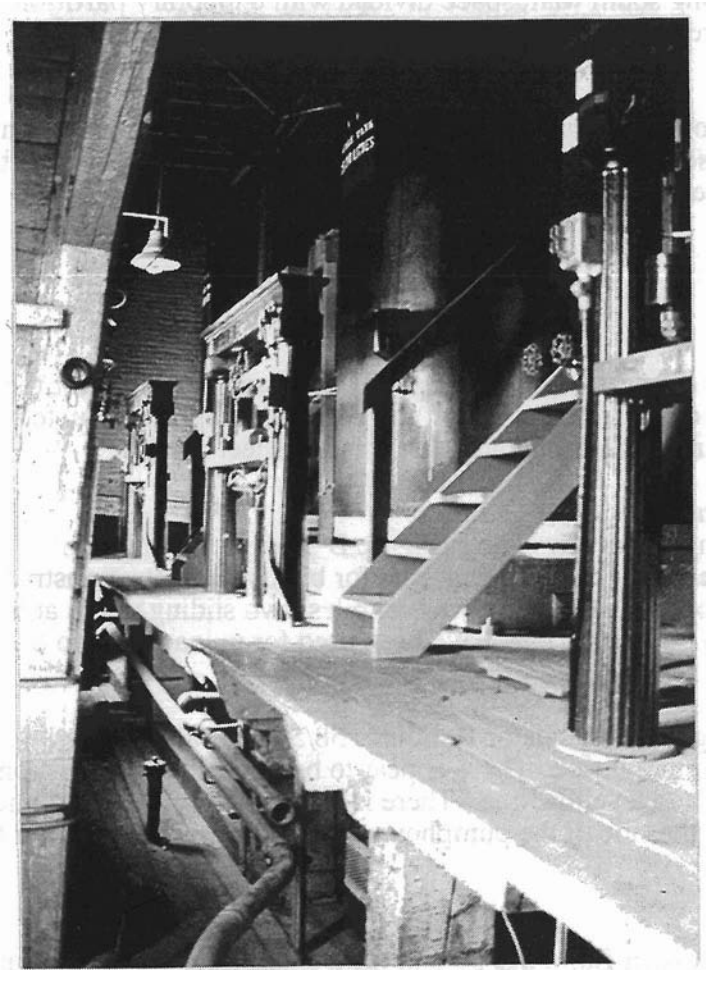


FIGURE **B-25**
Scale Loft in Building 61, showing three scale tanks of 25,210 litres manufactured by Fairbanks Company.
Source: *Historica Research Limited, August, 1993*

Tank Floor
Tanks were removed after plant closed down in 1990, only the timber floor bases remained; tanks were built on brick walls about 6 feet above grade, brick walls provided a dyke system presumably for containing accidents; raised tanks enabled piping and pumping facilities underneath the tanks; two steam operated pumps for bulk handling of industrial alcohol and one electric stainless steel pump for beverage alcohol; small electric portable standby pump; four lead filters in which alcohol was filtered to remove lead that might have been picked up from storage tanks (2 filters are large apparatus on stands, 2 are smaller units on the floor); not in use for many years and replaced by stainless steel filter still in place; copper catch basin lies beside the filter; partially disassembled steam pump; pure spirits foreman's office once located on top of former tank at the southeast corner; no evidence of office today except for paint lines on the brick wall and an opening through the wall that provided access to tanks in Building 62; sprinkler system under tank platform as well as in ceiling;

Main Floor
Long dump trough used for emptying barrels of beverage alcohol for weighing and storage; fascia boards along tank platform contained holes for former manifolds used to fill barrels and shelf for bung storage [Figure A–101; platform scale for measuring barrels after filling from spirit tanks; three small trap doors in wall that are used for pipes to go to bulk delivery. On the walls above the north side are heavy iron brackets that at one time, supported large diameter low pressure steam pipes to heat the facilities;

Floor 2 (Scale *Loft)*
narrow room running width of #61 [Figure B–41]; east wall is light frame construction, clad in sheet metal; (South Room) contains 3 scale tanks (25,210 litres) produced by Fairbanks Company [Figure B–25]; tanks were used for measuring beverage or unmatured industrial alcohol; alcohol came to tanks from tank houses 4, 9 and 10 or by bulk delivery from truck; an electric pump on this level could be used to both fill and empty the tanks; the three tanks are constructed on a platform with pipe connections underneath; stair *case* divided north and south rooms; provided access to ground floor; removed during scrapping of ground floor tanks after 1990; (North Room) contains two flavouring tanks made of copper (471 gallons); used to mix caramel into the rum beverage; floor made of lead with a gutter down the middle; north side has a mezzanine level containing a water demineralizer to provide soft, pure water for diluting the beverage alcohols.

Alcohol *Pipes/Bridges*
On north wall of Building 61 is an alcohol line with a valve for bulk shipment; an overhead pipe bridge connects to adjacent building across the lane. [Figure B–41]

2.9 Building 62

Floor I
Brick wall divides Buildings 61 and 62; contains 4 spirit tanks, 3 demineralized water tanks; rest of floor empty in 1993; barrel scale; demineralizing unit consisting of three large sealed tanks; room used for barrel and can storage prior to filling from the spirit tanks; three small trap doors in wall that are used for

pipes to go to bulk delivery; on wall above the north side are heavy iron brackets that at one time, supported large diameter low pressure steam pipes to heat the facilities; employee locker room area now only indicated by paint on east wall.

2.10 Building 62A, "The Long Room"

A process description is found in Section A, Part 1.7.

Built: 1883; Long, low building used as a barrel warehouse to transfer stock material to rack houses or for shipment ; received barrels for filling in Building #61. [Figure B–26]

Five rail lines for barrel storage; steel drums received from paint shop (Building 63) across lane; small door connected to Building 62; after the barrels had been weighed, filled, stenciled and weighed again, they would be rolled back into this room and stored on the five barrel tracks for shipment; handled both barrels and 45 gallon steel drums; steel drums were reconditioned in the adjacent shop whereas barrels were used in a turnaround process of filling, to storage, and returning; barrels at the end of the runway were moved to the loading dock by rolling on steel plates. The conveyor system from the cannery crossing down through the long room to the east wall. There is a barrel scale and a dismantled steam pump at the south end of the long room; at south end of the long room is a hydraulic truck lift and most barrels and drums were shipped from the south end door; conveyor system from third floor of Building 59 passed through Building 62A;

Alcohol Pipe Bridge connects to Buildings 47 and 63. [Figure B–42]

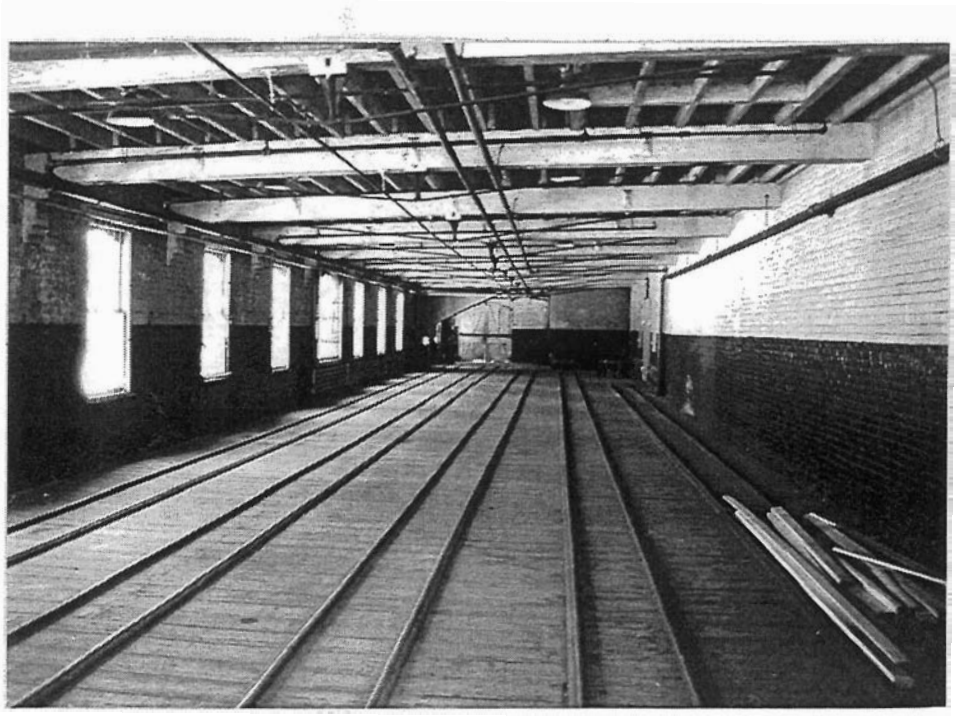


FIGURE B–26
Barrel rails in Building 62A, "Long Room."
Source: Historica Research Limited, August, 1993

THE MALTINGS

1 BACKGROUND

A process description is found in Section A, Part 1.3. The malt house and kilns were constructed in 1863–4. The cellar was built to store alcohol for redistillation. The malt kilns were enlarged, apparently sometime between 1877–84 and achieved their present appearance.

Malt was apparently manufactured using the west kiln until the early 20th century. The east kiln was converted to other uses at an earlier date. The west kiln still conveys the impression of a kiln whereas the east kiln has been significantly altered. By 1924, the east malt kiln had been converted into nine malt storage bins. The west kiln and the malt house were used for spirit storage. For a time in the 20th century, the Malt House was known as the "Canadian Government Excise Bonding Warehouse F Annex" and that it was used by the Barclay Distillers.

By the time of closure in 1990, the ground floor of the Malt House was used for temporary lumber storage and the kiln was used as an engineer's office.

2. DESCRIPTION

2.1 Malt House

Cellar

Plans indicate a series of brick arches or vaults that were once used to store alcohol (See Section A, Part 4.2). Only the eastern vault can be reached through the freight elevator shaft. The only unusual feature is a brick chamber built into this vault and entered by a large trap door adjacent to the front door on Floor 1. The purpose of the tank is unknown but it is not parged and does not appear to have been watertight.

Floor 1

The exterior door is separated from the malt floor by two steps. The malt floor is separated by a wooden fence from a walkway between the front door and the staircase. Apparently, this fence was added to provide access to the upper floors after the building was converted into a rack warehouse. (See Section A, Part 1.6) A height elevator has been constructed in the southeast comer of the floor and served the cellar and floors 1–3. The ceiling height is very low – to the bottoms of the beams it is only about 5 feet while to the joists the freight is about 6'2". Several gas jets were noted with protective metal plates fastened to the joists to deflect the heat. The brick wall separating the malt house from the kiln once contained several opening but all are now bricked in. The former entrance into the kiln appears to have been at the west end of the wall. Two former openings were very narrow, perhaps two feet wide and began about three feet from the floor. These may originally have been similar to the doors on Floor 2.

The floor is coated with concrete to provide a water tight floor. At one time the floor was completely ringed by a concrete gutter and curb along the edge of the wall. Much of the gutter has been filled with concrete at a later date to provide a flat floor. At the northwest corner is a short section of gutter on the north wall. In fact, most of the gutter on the west wall has been filled in. Vestiges of a former drainage and water supply system remain along the east and west walls. Three 4 inch drain pipes from Floor 2 extend into the gutter. The pipes appear to be galvanized iron, heavily painted. Suspended from a beam near the southwest comer are two downspouts that have been removed and placed in storage.

The windows on all the floors are interesting in that the upper sash is fixed. There is a window on either side of a wooden shutter that can be raised upwards for ventilation. All windows floors have been protected with iron bars. These seem to have been fitted in at a later date than the original construction and may date from the 1920s when this was converted into an excise area.

The south wall has been affected by construction of a newer building against the wall. All windows have been blocked in and large tie plates inserted into the brick wall. All floors have fire sprinklers. Attached to the elevator wall on the southeast side was a swinging iron bracket used to hold a fire hose. A similar system is located on the ground floor of Rack House D (Building #42). The floor is littered with construction timber and was apparently last used for lumber storage. At least one trap door in the ceiling on the north end could be seen.

Equipment Typical/Unique to Distillery Operation

- concrete floors, down spouts, gutters, low ceiling, former doors leading to kiln; ***See also equipment register***

General Equipment

gas jets, freight elevator

Floor 2

The ceiling is somewhat higher on this floor than on floor 1; the bottom of the beams are about 5 feet 6 inches while the height to the joists is about 6 feet 6 inches.

The wall separating the malt floor from the kiln contains both bricked in openings and former doors to the kiln. Two blocked doors begin part way up the wall and extend into Floor 3. The former west door has been partially bricked in, leaving a small entrance that once led to the kiln. The hardware and paint scheme are identical to the doors on the fourth floor. The doors are almost like window shutters starting about 3' from the ground and only going up to the 6' level. Although the doors work on the malt side, the wall has been bricked in on the kiln side. Several gas jets were noted with protective metal plates fastened to the joists to deflect the heat. There is a trap door opening in the ceiling leading to Floor 3. Directly below it is a similar trap door through the concrete floor leading to Floor One.

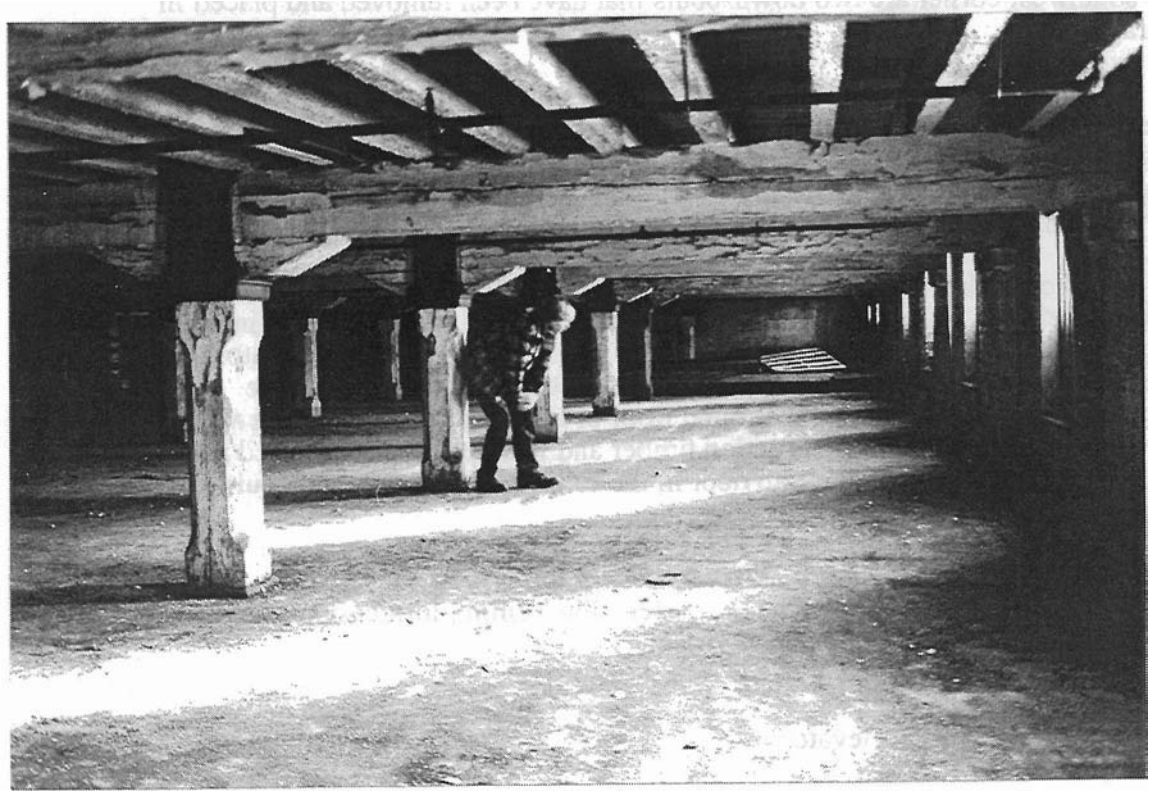


FIGURE B-27
Floor 1 of Malt House, showing low ceiling, heavy timber framing and concrete floor.
Source: *Historica **Research** Limited, December, 1993*

FIGURE 3–28
Gas jet fixture and heat plate, Malt House
Source: *Historica Research Limited December, 1993*

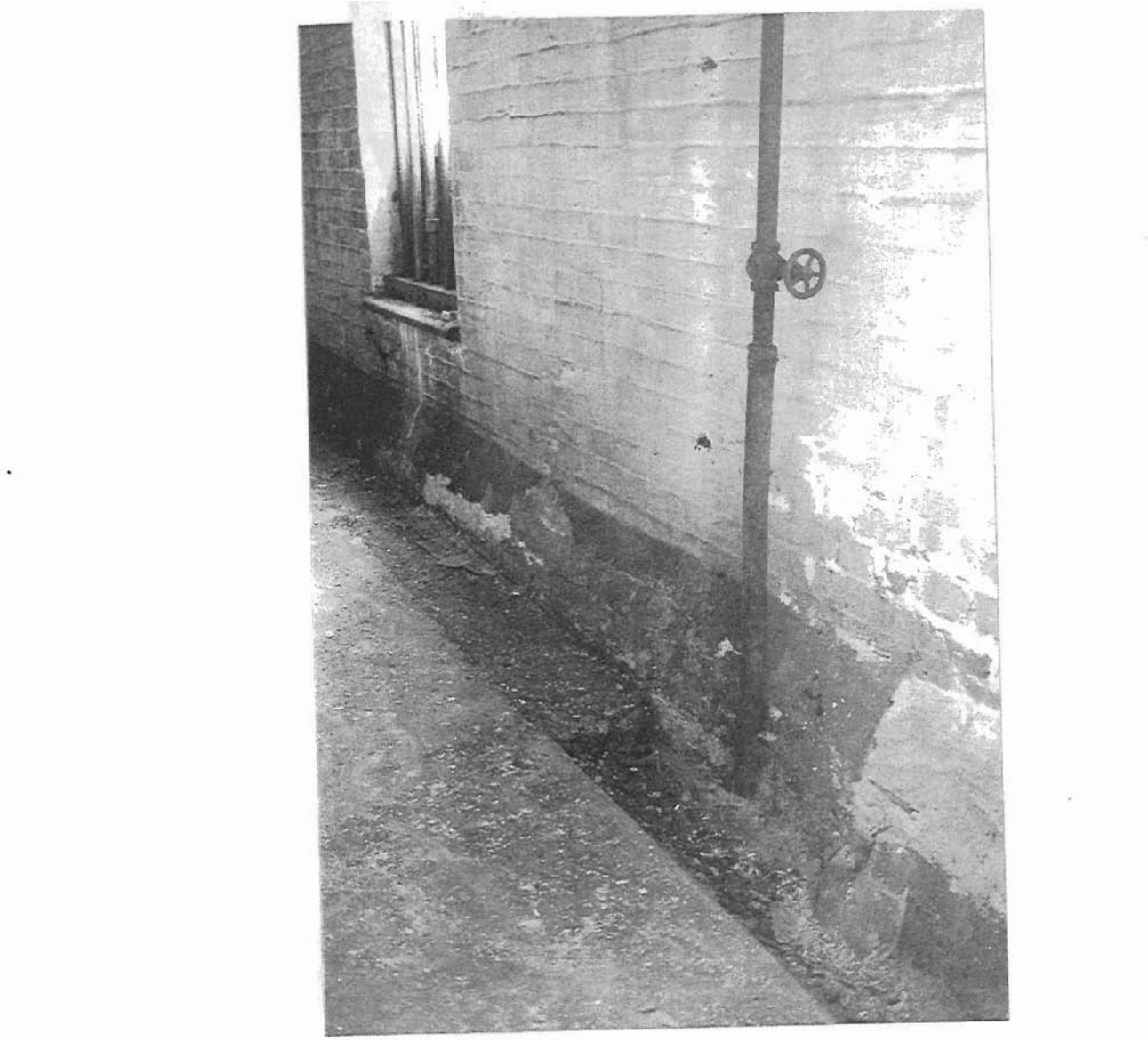


FIGURE B-29
Concrete gutter, curb and drain pipe on **west** wall of Floor **1.**
Source: Historica Research Limited, December, 1993

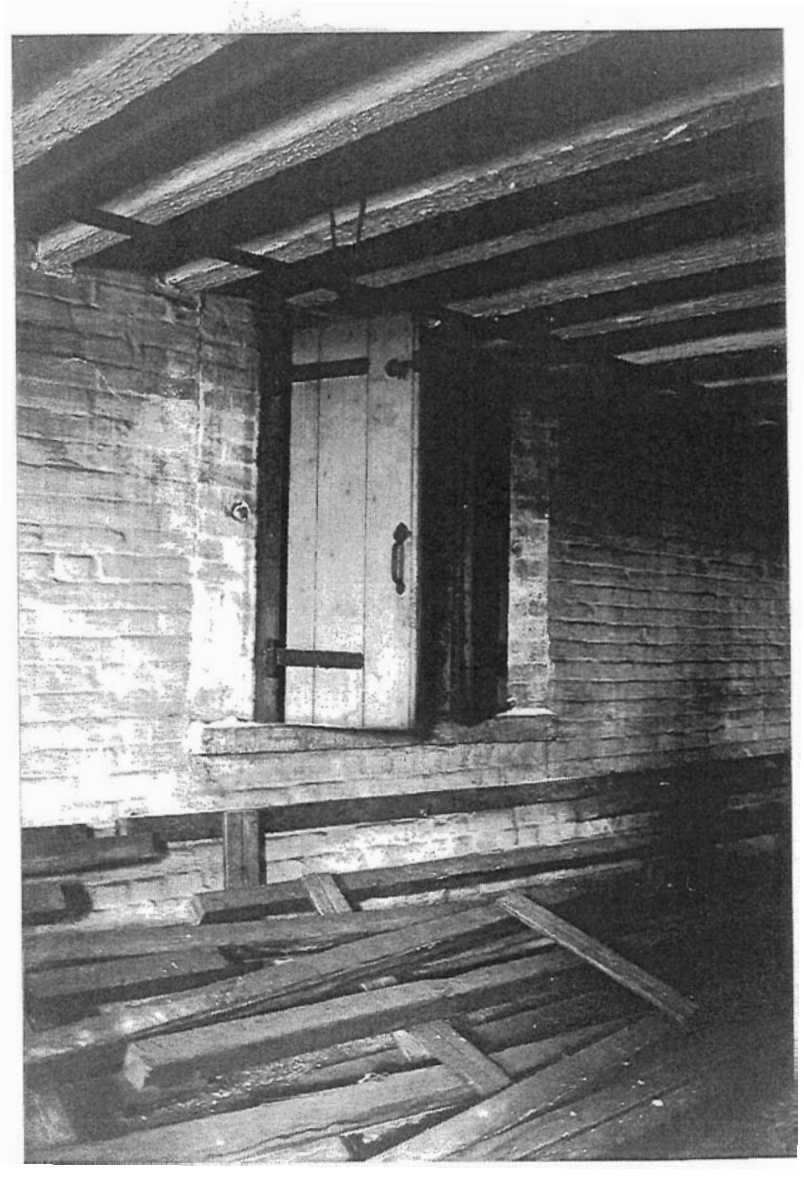


FIGURE B–30
Former doors connecting Floor *2* of Malt House to the west Kiln. The entrance behind these doors has been bricked in.
Source: Historica Research Limited, December, 1993

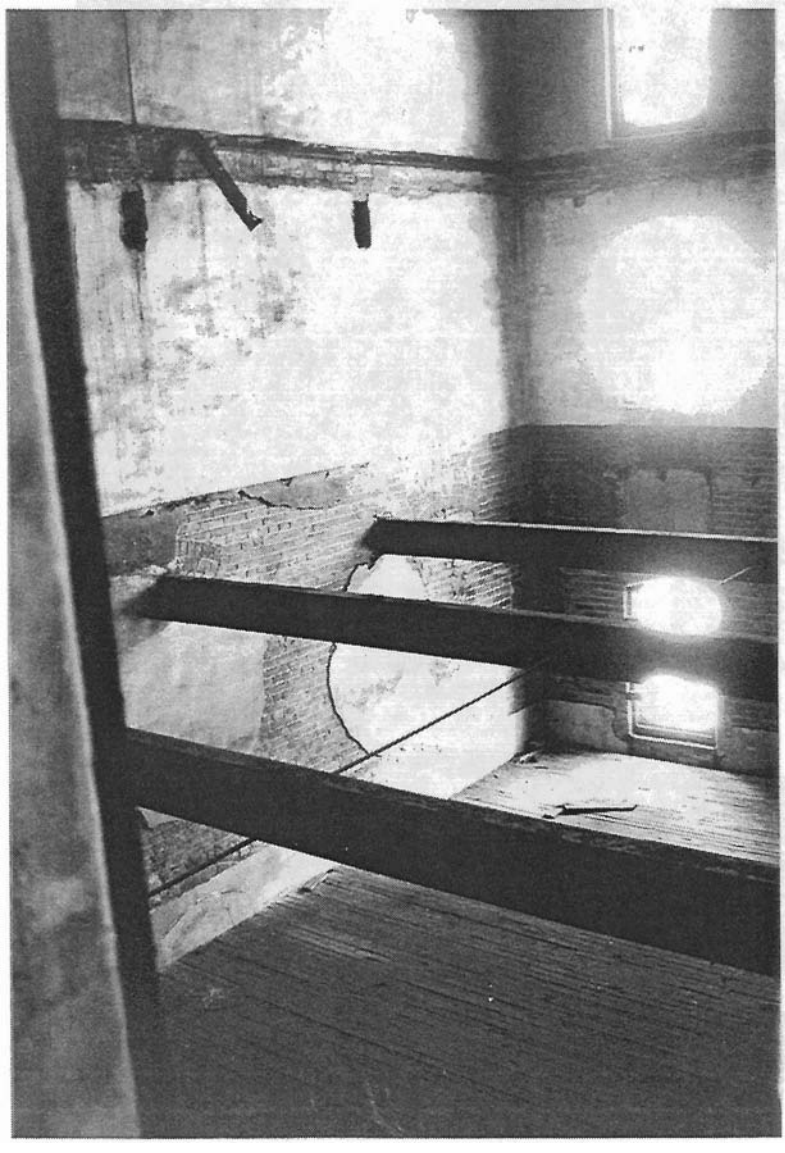


FIGURE B–31
Looking into the west kiln of Building #36 from Floor **4 of** Building #35.
Source: Historica ***Research Limited,*** *December, 1993*

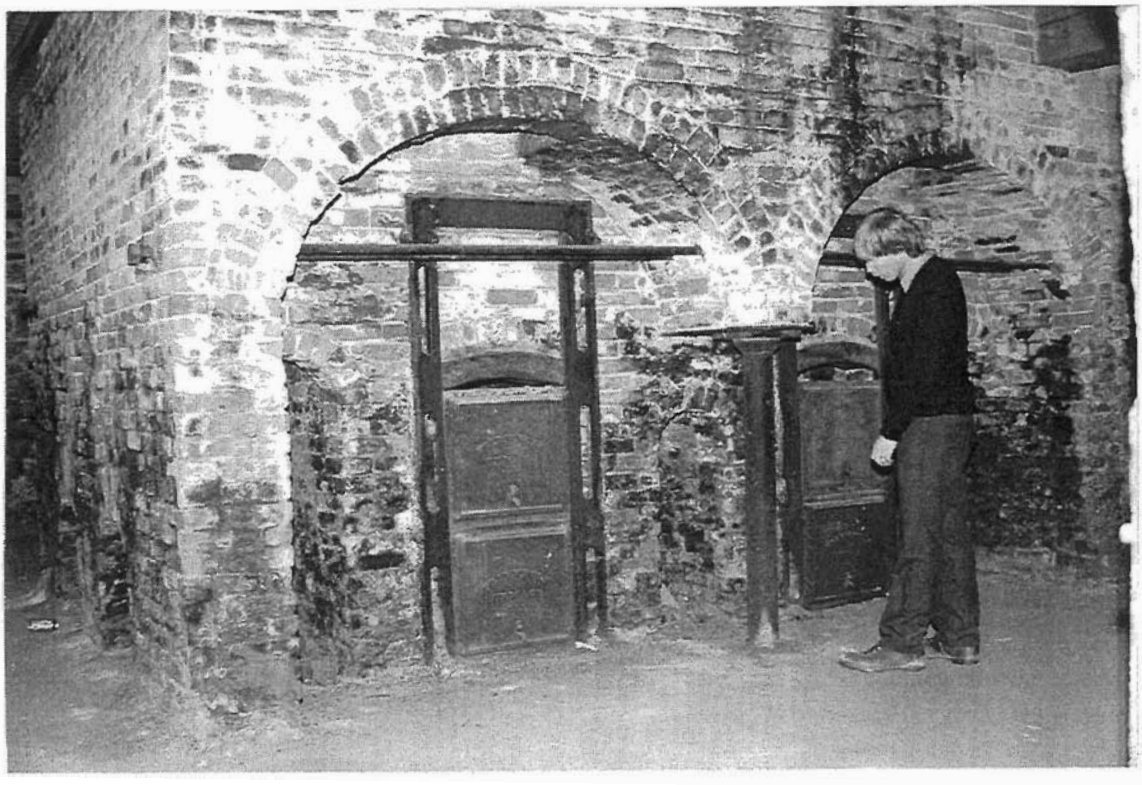


FIGURE B–32
Kiln furnace, manufactured in Chicago by "Fred W. Wolf," in basement of Building #36.
Source: Historica Research Limited, December, 1993

Four iron tie rods were attached to the beams parallel to the north wall and the rods passed through the brick wall into the two kilns. The rods are anchored by a decorative loop and "eye" attached to the post. It is hard to imagine how these tie rods could have worked. One would assume that they would simply pull the beam off the cap of the column. There is a little bit of movement but not enough to suggest 130 years of tension.

There was no exterior freight door opening on the east wall. The floor has a concrete finish for waterproofing built on top of a wood joist and floor base. The freight elevator has been added at a later date since the back of the elevator shaft has a window in it and the east side of the shaft is about two feet from the wall that produces a useless space with a window. The south wall has been protected with wooden hoarding to approximately waist height. The hoarding was likely a later addition from when the floor was used as a barrel warehouse.

Equipment Typical/Unique to Distillery Operation

- concrete floors, low ceiling, former doors leading to kiln, trap doors; *See* also *equipment register*

General Equipment

- gas jets, freight elevator

Third Floor

The ceiling height to the base of the beams is about 7 feet while to the bottom of the joists was about 8 feet. The floor has a waterproof concrete surface of similar construction to Floor 2. An "L" shaped section of floor on the east and south side is of timber and slightly higher than the concrete finish. The ceiling of floor two shows no sign of modifications therefore suggesting that the wood is a later replacement of the concrete with wood.

A chute in the ceiling near the northeast comer appears to have been a grain chute from Floor 4. No confirmed location trap doors from Floor 4 were noted although several floor trap doors were noticed that led to Floor 2. However, several changes in the ceiling framing suggested that there were once openings to Floor 4. The joists have been modified in various places. In some cases, a trap door seems to have been cut into the ceiling. In a large section near the south end, a whole series of new joists have been put in that have a smaller section than the original heavier joists. The original joists appear to be 2" x 12" whereas the later ones seem to be 2" x 10".

There was no kiln entrance floor from this floor. However, the tops of bricked in arches can be seen. There was an exterior freight door on the east wall. The door, and that in Floor 4, above, are offset from the main entrance on Floor 1. There are windows in three sides of the building and only the kiln side is blank. Iron rods hang down from the ceiling to support a second layer of barrel racks. Although the iron rods are in place, the barrel runways on the floor for the lower level of storage have been removed. Attached to the ceiling on the west side about half way along the building is a pillow block that probably once contained lime shafting. A hole has been drilled through a beam on the opposite side of the

bay and the shaft would have continued through to the second bay to the south. Several gas jets were noted with protective metal plates fastened to the joists to deflect the heat. The same system of four iron tie rods noted on Floor 2 were noted on this floor. The rods passed through the brick wall into the two kilns.

Attached to the first beam south from the north wall were iron hooks that could hinge down to approximately waist height. Three of them were noticed on the north side of this beam and one on the south side. This was the only location in the kiln to have this feature. The hooks were held up against the beam by resting on square nails hammered in the timber.

Equipment Typical/Unique to Distillery Operation

- concrete floors, low ceiling, trap doors, iron hooks?; ***See also equipment register***

General Equipment

- gas jets, freight elevator

Floor 4

The floor is constructed of wood and the ceiling is open to the rafters. The room is very tall as the roof has a steep pitch. The framing is a queen post truss and dormer windows provide light into this area at approximately the 10 foot level. The floor has been modified to include barrel rails for storage.

A staircase at the north end leads into a mezzanine level and to a cupola over Building #36B. The purpose of the mezzanine is unknown but it may have been a water storage tank for steeping grain. It is lit on three sides with small windows in a skylight. The staircase shows signs of heavy use. The framing of the mezzanine is quite remarkable. It consists of heavy timbers in both a north–south and east–west direction. The timbers have been heavily modified with additions and removals to the wood.

The brick wall separating the malt house from the kiln has been extensively modified. Directly below the mezzanine platform is a bricked in arch that would have been a very narrow person door. There are holes in the brick wall where other timbers were once placed.

The staircase into the cupola led to a door for former ***#1*** Malt ***Kiln*** with a capacity of 149,477 cubic inches. The original paint finish seems to be on the doors. On the main floor, was another entrance into ***#2 Malt Kiln*** with a capacity of 149,477 cubic inches.

There was an exterior freight door on the east wall. A hand operated winch, similar to the one on the top floor of Building #5 was used to haul goods up to this level. The cable passed through the brick wall in a purpose built iron casting. A dormer over the roof in the vicinity of the freight room provided high ceiling access into the loft. The front wall was tied back into the timber framing with iron tie rods on either side of the freight door.

Suspended from the rafters in front of the freight door was a wood and steel trough with a hopper and copper fittings and a valve attached to it. The top of a freight elevator is at the southeast comer. The hoist mechanism is in place although the cables have been removed. It appears to date from the 1920s.

There is evidence of a brick chimney on the south wall. It ended above the window but there is no evidence of the flue. The floor was heated with iron radiators.

A gas jet was attached to the pillar adjacent to the freight doorway. The actual jet has been removed but the gas pipe is complete up to that point.

One small trap door was noted beside the hoist door. Other trap doors may have been boarded over.

Equipment Typical/Unique to Distillery Operation

- barrel dump trough; *See* also *equipment register*

General Equipment

- winch

2.2 Building Number 36 (Malt Kilns)

East Kiln

This kiln has been heavily altered since its original use and was converted from a malt kiln much earlier than the west kiln. The exterior entrance to the kilns is from the east wall. This is not the original entrance into the building. The floor ramps up to the kiln floor. In the basement, it can be seen that the original entrance was at the level of the exterior grade. This entrance was bricked, raised and converted into the existing ramp. Likely stairs originally once led down to the basement and up to the kiln floor. There are only two floors in this kiln. The main floor is mill construction (2x6 laid on end), of unknown age. Judging by the basement walls and timber joists, the original floor height was similar to the existing floor. The room once had windows but they are bricked in. Half way up the wall is the indication of a former floor that would have lined up with the large door openings noted on Floor 2 of the Malt House. The existing floor probably date from the 20th century and have nothing to do with the kiln operation. The floor above is also of wood and unknown age and like the main floor probably had nothing to do with the kiln operation. The space above these two floors is a vast open void. All windows have been bricked in. The walls in this area indicate that several floors once existed. The location of the lowest of these floors was indicated in the wall plaster and joist holes in the brick wall. A second, higher floor above was also noted by joist holes in the walls. There may have been a third floor as indicated by a brick ledge that may have supported joists. The building once had as many windows as building 36A but they have all been bricked in. A doorway once lead to Mill Street but it has also been bricked in; the evidence can be seen in the basement wall.

West Kiln

The kiln is entered by a door from the east kiln through a brick wall. The kiln has the same existing floor arrangements. There is evidence in the walls of three former kiln floors in the void above the upper floor. "I" beams have been inserted, perhaps to support the walls. The walls have been plastered. The middle of the former floors was in alignment with Floor 4 of the Malt House (Building #35). A set of double doors separated the two buildings; wooden doors were on the malt house side and metal doors on the kiln side. The kiln was were later used for barrel storage and last as an engineering's office. A hole has been cut in the bottom floor and a hoist installed. Steps lead down to a door facing onto Mill Street. Further steps continue down to the basement.

Basement

The west half of the basement contains the furnaces. The east half has been subdivided into three, massively supported narrow rooms. It does not appear that a furnace was ever constructed in the eastern half of the building. The furnace consists of two fireboxes both manufactured by "Fred W. Wolf" of Chicago, Illinois. Each has a fire door and ash door. It appears that the furnace worked by heating the mass of air in the basement rather than specific ducts. There are numerous openings around the brick work that would have allowed for considerable air circulation. The furnace is rather decorative as the centre of the brick arches separating the two furnaces is supported by iron pillars. Apparently this allowed air to circulate between the two fireboxes. The furnace is symmetrical in that it could be fired from both ends. However, the doors on the west end were single units for the firebox and ash box rather than separate as on the east side. There was no makers mark on the west doors. Stacked along the north wall of the furnace room are flooring grates that probably came from kiln flooring. There are also some rather unusual rakes that may have been used for malting or perhaps for the furnaces. However, with four of them, that seems too many for the furnace and they may have something to do with the malt. The framing for the staircase to the basement is newer than the rest of the building.

Cupola

A staircase at the north end of Building 35 leads into a cupola over the east kiln. The cupola area is separated from the malt house by a brick wall. The attic space of the kiln has been floored and the cupola can be reached by ladder. The kiln is tied together with tie rods running north and south. The interesting feature about the kiln is that a cupola exists on the east side but has been removed from the operating, west side.

Equipment Typical/Unique to Distillery Operation

- furnace, iron grates, floor marks in wall, door openings to Building #35; *See also equipment register*

General Equipment

- none noted

RACK HOUSES 42, 43, 44, 64, 65, 75
TANK HOUSES 48, 49, 50

1. BACKGROUND

A process description is found in Section A, Part 1.6.

Rack House D (Building #42): constructed in 1890
Rack House I (Building #43): constructed in 1891
Rack House H (Building #44): constructed in 1891
These buildings continued to function as originally built until the end of alcohol aging on the property.

Tank House No. 4 (Building #48): constructed 1884; enlarged 1887
Tank House No. 9 (Building #49): constructed 1889
Tank House No. 10 (Building #50): constructed 1889

Rack House G (Building #64): constructed as Tank House #12 in 1889
Rack House J (Building #65): constructed as Tank House #11 in 1889

Rack House M (Building #75): constructed 1927

The roofs of all rack warehouses are supported independently of the walls. The rack supports have their own footings directly onto the ground. The footings for the brick wall are quite independent.

2. DESCRIPTION

21 Building Number 42 (Rack House D)

By 1990 the building was no longer used because of regulatory problems with the freight elevator.

Floor 1

On the ground floor beside the freight elevator was a fire hose basket on a swinging bracket. A freight door was located in the south wall directly opposite the elevator. The footing of the rack columns are large stone blocks.

Floors 2–4

A walkway floor extends around all four walls. The floor on the west wall is fairly wide, about 18'. The walkway around the other three sides is about 6–8' wide. The racks are 3 high. The building is sprinkled and has explosion proof lighting and electrical outlets. The racks could be loaded from the east or west end.

Floor 5

The layout of this floor was similar to floors 2–4. In addition was a rope hoist attached to the brick wall at the west end of the floor. Half of the sheave protruded up into Floor 6. Directly below the sheave are holes in the floor boards on all floors to the ground to enable a rope to run from Floor 1 to the sheave. The sheave is attached to an axle that extends across the walkway to the racks. Adjacent to the racks is a rope take up that powered a hoist to the floor above.

Floor 6

The roof has a very gentle pitch. On the west wall, half way between Floor 6 and 5 is a large iron sheave, about 6–7' in diameter. An iron lever on the left side is a foot operated brake. Trap doors are located in the floor at the ends of each row of racks. A timber brace ran the length of the walkway, parallel to the racks. Large diameter holes in this brace, directly above each trap door seemed to suggest that there were once pulleys that were used to lower barrels to Floor 5. The pulleys could have been powered by a rope fiom the axle on Floor 5. The system was probably used until the freight elevator was installed. There is a similar arrangement of braces and trap doors was also observed on the floor at the east end. However, the large sheave was missing.

A staircase extends from Floor 6 up to a man hatch in the roof. The staircase to Floor 6 is new, probably in the last 20–30 years.

Equipment Typical/Unique to Distillery Operation
- timber racks; See ***also equipment register***

General Equipment
- iron sheave and hoist

2.2 Building Numbers 43 & 44 (Rack Houses I, H)

Building Number 43 (Rack House I)
This building is a seven high rack warehouse. There is a wooden walkway down the middle and the racks are supported on stone footings. The only piece of equipment is a barrel lifter sitting in the main walkway. Freight doorways are located at either end of the walkway. The north end of this warehouse was adjacent to a railway line. It may have rail loading facilities which were not observed. In the wells on either side of the entrance to the south door, were heat exchangers or radiators. These were finned pipes about 12' long. The heating system was along the central walkway and along the perimeter of the building. The footings run north and south so the heating was only along the east and west walls. The rack warehouse had chimney vents on either side and they protrude above the roof about 18 inches.

Building Number 44
This building is identical Building #43.

Equipment Typical/Unique to Distillery Operation
- timber racks; *See also equipment register*

General Equipment
- none noted

23 Building Number 75 (Rack House M)

Floor 1

The freight elevator is on the ground floor and not operating and had a capacity of 2,000 lbs. It appears to have been installed at the time of construction of the rack warehouse. The centre of the floor is concrete. The racks, themselves, rest on concrete footings but the floor itself is earth. There are double freight doors at each end of the centre walkway. The earth floor seems to contain miscellaneous things that have fallen down over the years. There are windows at every floor level but they have metal shutters over them so the building has no natural light. On the east wall behind the elevator were two steam pressure gauges. On the ground floor were two electric barrel lifters. A barrel scale complete with its weights and other fixtures was set up in the walkway. The door on the north end, which appears to be similar to that at the south end consisted of a heavy wooden interior door with a riveted steel security door on the outside.

Floor 2

An employee change house is located on floor 2 between the staircase and the west wall (See Section A, Part 5.11). It has a wooden ceiling to protect it from the open space above. The change room contained steel lockers for clothing, a drinking fountain, cast iron sink, coopers anvil, several copper vessels, chair, lap desk, and a barrel pad. The change room was the width of two barrel ways

Floors 3–7

The staircase is in the middle of this building opposite the freight elevator. The floors are lit with explosion proof lighting and outlets and switches. Wooden chocks rest on the rails for the barrels. The building is empty except for the racks. The building is sprinkled from the ceiling and with perimeter sprinklers. There are walkways between every second row of racks for access. There are no barrel racks in the area between the staircase and the side wall since there is no barrel access to this area. The void in the frame is filled with diagonal wood bracing from floor to ceiling. A similar design is used between the elevator and side wall.

Floor 8

Generally the floor is similar to the previous floors. The roof is of mill construction. The freight elevator ends at this floor and the hoist house is on the roof. A recording thermometer is on the staircase heading opposite the elevator. The roof appears to be tied with steel rods attached to the vertical posts.

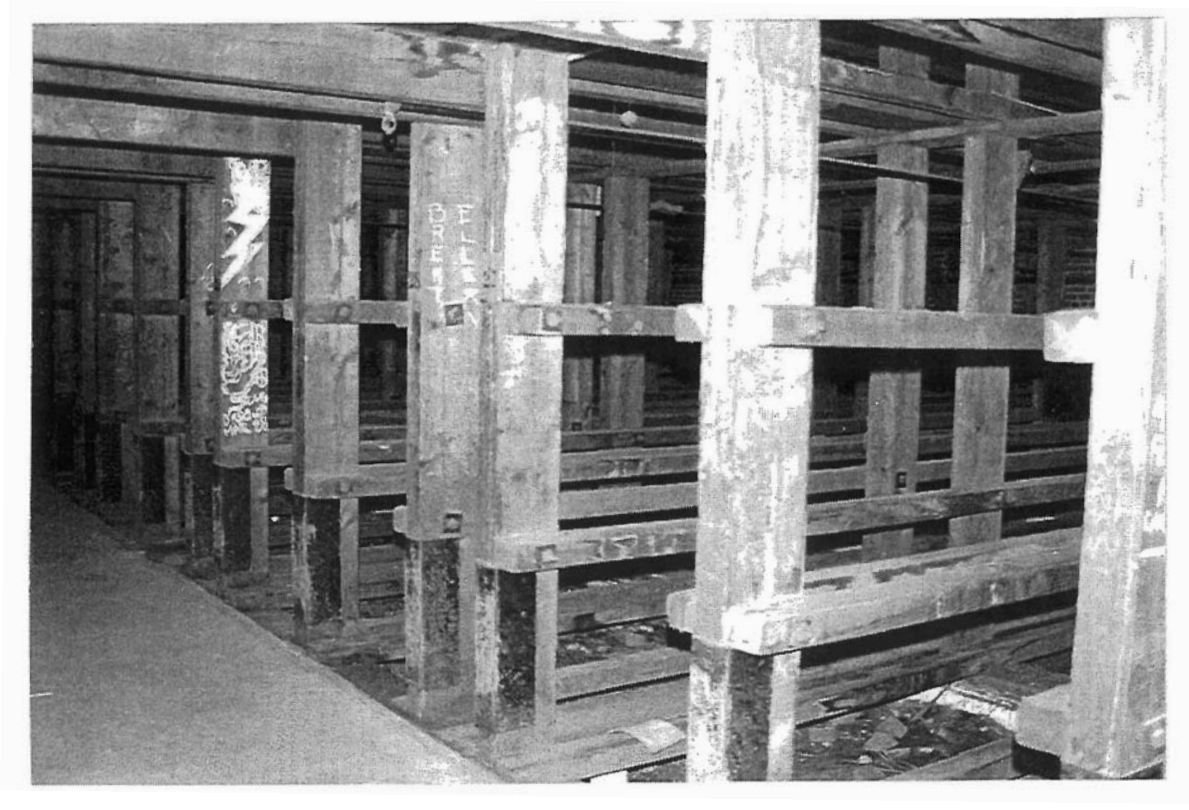


FIGURE B–33
Ground floor of Rack House M (Building #75) showing empty timber racks for barrel storage.
Source: Historica Research ***Limited,*** *December, 1993*

Equipment Typical/Unique to Distillery Operation
- timber racks; ***See*** also ***equipment register***

General Equipment
- nonenoted

2.4 Buildings Number **48/49/50** (Tank Warehouses)

Building Numb-- 48

All of the tanks have been removed. This building was identical to Building #49 with the evidence or tne catwalk down the middle, 32 tanks in four bays, resting on stone footings with a timber base. The only difference is that were no windows on the east side. A portable pump was in the equipment area on the south side. There are secondary walkways at a higher level between the outer rows of posts. The base of the tanks has been cut into the walkways. The doors on all of the warehouses were double locked.

Building 49

This was tank warehouse that contained 28 tanks. These were built up on stone platforms about 3' high. The tops of the foundations were laid with timber planks approximately 12" x 4". The tanks themselves have been removed since 1990. A catwalk once ran the length of the building from north to south. This has been removed except for a small section at the south end. The floor is earth. The roof is supported by three rows of columns producing four bays. Windows ran along the east and west wall at about the 10' height. There were no windows on the north side facing Mill Street but three windows and a door entrance on the south side. An area about 12' wide remains at the south end as an entrance way and workspace area. At the north end, the tanks came right up to the wall. Two small brick chimneys were located on the east and west wall presumably for ventilation.

Building Number 50

This building was identical to Building #49 with three rows of columns producing four bays, each with seven tanks for a total of 28 tanks; the tanks have been removed. Unlike Building #49, the tank bases were of concrete. There were concrete platforms on each side of the building and then a wide double width concrete platform that held two rows of tanks in the middle. There was no evidence of a catwalk down the middle of the this building. The vents in the brick wall on the east and west side were noted. There were windows on the west wall and south wall. A barrel dump trough was located in the work area at the south side. This seems relatively late, probably from the 1950s. It is hard to say when the tanks were removed. In Building #49 were dust masks and cutting blades. In this building there was no evidence that cutting was done, suggesting the tanks had been removed some time ago.

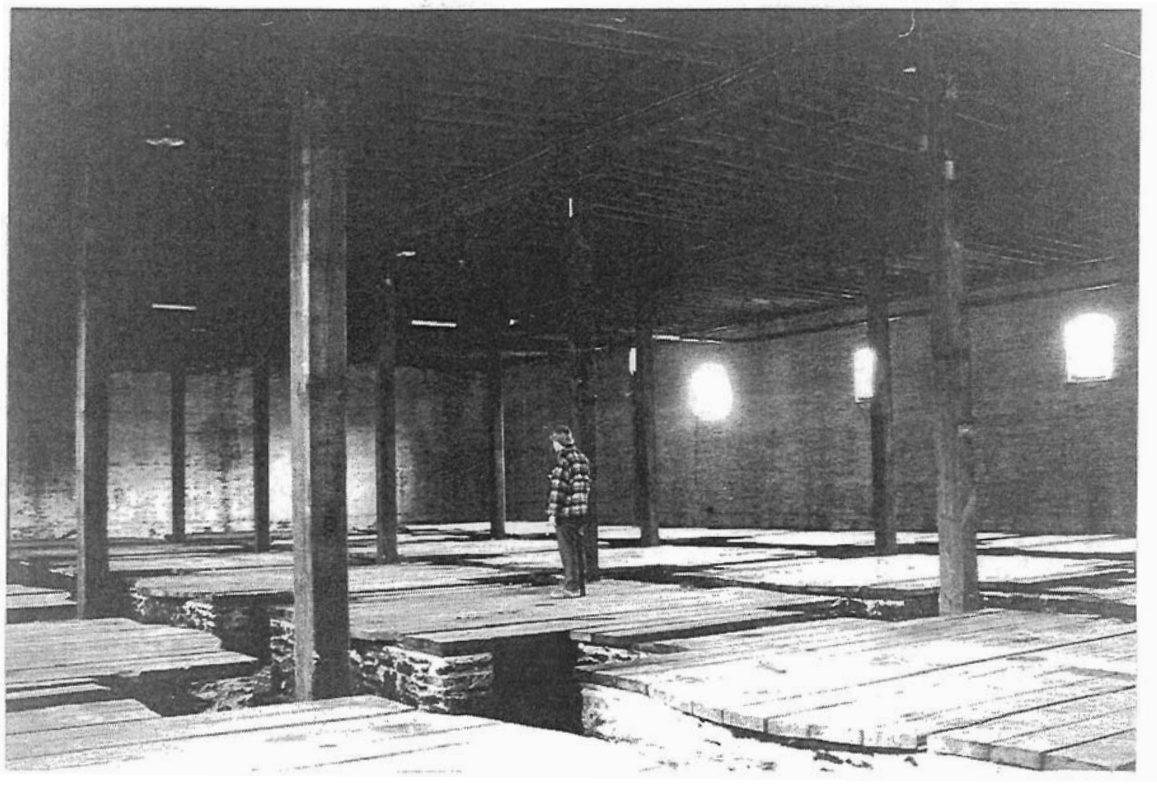


FIGURE B–34
Tank house (Building #49) showing stone bases on which the tanks rested.
Source: Historica Research Limited, December, 1993

Equipment Typical/Unique to Distillery Operation
- none noted

General Equipment
- nonenoted

25 Building Numbers 64 & 65 (Rack Warehouses)

Building Number 64

Building **#64** was a seven high barrel warehouse. It has metal exterior doors and sliding wood and glass interior doors. **A** barrel rail ran down the centre walkway. The floor is earth and the columns rest on stone or brick footings. The floor down the middle is of timber. The only piece of equipment was a barrel lifter. Doors were located at the north and south end of the building. The piers are constructed of stone.

Building Number 65

This building was identical to Building #64. The only difference was the absence of a barrel rail down the centre walkway.

Equipment Typical/Unique to Distillery Operation
- *See equipment register*

General Equipment
- nonenoted

DENATURING ROOM
BUILDING NUMBER 47

1. BACKGROUND

A process description is found in Section **A,** Part 2.2. Built in 1887 as Tank House #7; converted at some later date, likely early 20th century, into industrial alcohol denaturing room.

2. DESCRIPTION

Main Floor

Architecturally, the building is similar to Buildings 48–50. The building appears to have originally been a tank warehouse judging by the configuration of the pillars and the shallow pitch of the roof. It has been converted into a mixing building. The bases of tanks were located along the east and west wall. Large skylights have been constructed into the roof. The building is very bright because of the skylights. The mixing mezzanine is reached by a steel ladder and an intermediate walkway that ran at the tops of the storage tanks. The walkway is suspended from the ceiling by steel rods hooked over beams. The building also contained several steam pumps and an early, riveted copper kettle ("Number 19 Mix Kettle"). **A** closure in 1990, the building contained 12 large alcohol tanks used to mix denatured alcohol. These tanks have been removed. The denaturing chemicals were stored in small metal tanks of 5 to 10 gallons and then mixed with ethyl alcohol as it comes from the still. Since G&W did not manufacture industrial alcohol at the end - their distillery was too expensive – they bought ethyl alcohol from Montreal and denatured to supply the local markets.

Mixing Mezzanine

A mezzanine level was raised about 12 feet in the air so material could be fed by gravity into the appropriate tank. There were pipe connections to each of the tanks. The mezzanine contained scale tank Number 17 (capacity 6,100 litres). There were 9 alcohol connections on the east and west side for the movement of liquids to various tanks and different buildings. Included on the stencils were tank truck and tank car pipes. The centre of the building has a concrete floor. The edges, where the raised tanks are, have brick piers on earth floors. Gutters are in the concrete floor, not for barrel emptying but for wash water.

Office Mezzanine

On the south wall is an office on a mezzanine level with a small pipe storage area, known as Denatured Store **#6.** The office mezzanine consisted of two small rooms with windows overlooking the production floor. Staircases entered the room from both the east and west side.

Equipment Typical/Unique to Distillery Operation

- mezzanine; *See also equipment register*

General Equipment

- *See equipment register*

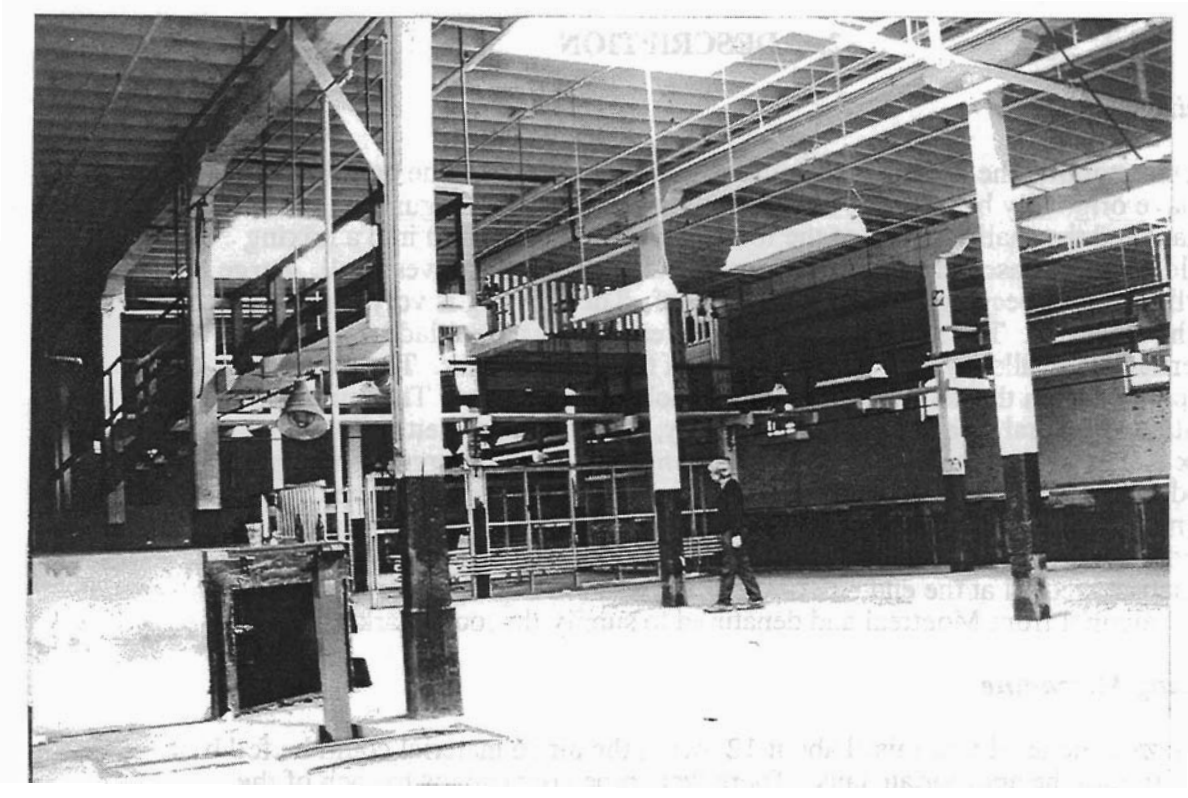


FIGURE B-3
Main floor of Denaturing Building (Building #47) looking towards the mixing mezzanine.
Source: Historica Research Limited, December, 1993

PAINT SHOP/DRUM RECONDITIONING BUILDING NUMBER 63

1. BACKGROUND

A process description is found in Section A, Part 5.4.

Built in 1879 as Tank House 3 and converted in 20th century into a shop to recondition steel barrels. Steel barrels returned from customers had to be cleaned of rust and painted.

2. DESCRIPTION

The building last contained drum rollers for cleaning the scale out of drums. In the rafters is a belt driven air compressor. There was a small workshop office in the southwest comer. The ceiling has four skylights built into it similar to the denaturing building.

Equipment Typical/Unique to Distillery Operation

- none noted

General Equipment

- *See equipment register*

EAST BOILER HOUSE
BUILDING NUMBER 46

1. BACKGROUND

A process description is found in Section A, Part 5.8. Built in 1886 as a boiler house; used in 20th century for antifreeze canning, mezzanine on north side used for glycol storage. At the time of closure in 1990 a large amount of machinery was stored including bottling equipment, fan blades and scales.

2. DESCRIPTION

The west wall of this building had boilers in it. The chimney base is still in place. It is about 15' square. The "clean out" for the chimney is on the east side and the opening is still there. The metal door does not have any identification marks. On the south side is a bricked in flue. Along the west wall, near the bottom, are three low arches. They are about 12" wide and 2' tall. These probably were ash box "clean outs" to the outside wall. [The layout for the arches and flue on the north side of the chimney is identical] The flue clean outs can be seen on the outside of the west brick wall. They have a raised arch surround. The floor contains a variety of equipment brought into the building for storage. Included are two barrel lifters, the parts of several platform scales, a safe, and a dolly. The patent date on the safe is 1875 and it was manufactured by the Taylor Company of Toronto. Sitting on a dolly in the middle of the floor is a barrel trough similar to the one seen in the rafter of the malt building. It and its mate came from the pure spirit building and were replaced. The trough is made from roughly 6" x 3" with a tin or copper lining. Barrel tracks ran along the top although the track is missing from much of one side. Sitting on the floor is a large earthenware vessel.

The floor in this building is made of paving bricks. The west end of the building has been laid with a timber floor on top of the bricks. Ramps lead up to the wooden level. A conveyor belt ran from a loading dock on the inside of the east wall to a mezzanine level over the north half. The mezzanine level was empty of any equipment. Parts of the floor seem exceedingly heavily built out of 4" x 4". A row of windows runs around the upper floor on the north end south sides. A second floor may have been in this building in sections of it although this is not evident. There is no clear sign of where a second floor would have been. The northeast comer of the building shows bricked arches of rather large windows or doors. The function of these openings could not be determined. It is very likely that this mezzanine that exists was put in for storage of can goods. The ceiling is supported on a grid of three columns by three columns. Six of the supports on the east end are timber. The three columns on the west side, close to where the boiler was, are of iron. All of the bases are of stone. This building was not fitted with explosion proof electrical fittings. Hanging from the mezzanine floor was a coal rake. It consisted of a four pronged, long handled rake.

Equipment Typical/Unique to Distillery Operation

- ***See equipment register***

General Equipment

See equipment register

WOODWORKING/PIPEFITTING BUILDING NUMBERS 45, 45A

1. WOODWORKING/PIPEFITTING, BUILDING #45

This building was completed in 1887 and was referred to as a "fitting shop." A process description is found in Section A, Part 5.10. The west half of the building is used as a workshop. All of the equipment is relatively typical and modem woodworking equipment. There is a few remnants of former belt drive pulleys on the ceiling. There appears to be nothing special about the equipment or function of this area. The east half is used as a pipe fitting shop. The equipment in it is modem and of no particular importance.

Equipment Typical/Unique to Distillery Operation

- *See equipment register*

General Equipment

- *See equipment register*

2. Building Number 45A

Building 45A was completed in the 1920s as a lunch room and first aid station. A process description is found in Section A, Part 5.11.

This building has not been recorded because it has been completely gutted and modernized inside leaving nothing of historic industrial significance.

CASE GOODS WAREHOUSE
BUILDING NUMBER 74

1. BACKGROUND

A process description is found in Section A, Part 1.7. This building was completed in 1927 as a case goods warehouse and remained in the function until closure of the plant in 1990. The building was heavily used until the 1980s when an LCBO warehouse opened in Whitby to handle the retail trade directly. The warehouse was last used for shipping to duty free stores and army bases.

2. DESCRIPTION

Reservoir

Beneath Floor 1 is a water reservoir for fire purposes (See Section A, Part 1). There is a trap door from floor 1 to the water tank at the northwest comer of the floor.

Floor 1

The floor is vacant of production equipment and is storing desks and other material from the other offices. In the centre of the floor is a spiral case goods slide. [Figure B-36] It made of rollers rather than polished metal. On the north side of the building is a freight elevator and the main entrance into the building. The case goods slide turns into a roller conveyor that leads to a freight door on the north side. Just to the west, or left side of the main entrance and freight door is a small, enclosed office. It is of panel construction with windows on the three interior sides. There is a window on the north wall to the outside. The floor is raised above the concrete of the main floor to have a wood or tiled base. The main staircase and entrance to the exterior on the north centre part of the wall also has a small, wooden enclosure on the west side. Inside this enclosure is a pipe from the cistern below. This seems to be the intake pipe from the reservoir for both the sprinkler and local fire protection. A large pipe comes out of the building to a sprinkler system whereas a smaller diameter pipe goes to a fire hose and hydrant. There are four freight doors on the south wall, used for loading into railway box cars. On the southwest comer is a small employee change room (See Section A, Part 5.11). It is raised up on a concrete pedestal two steps from the main floor. I assume it is raised to provide the plumbing. There is a row of metal lockers against the east wall of the change room. The building is not square and this can be seen in the post and beam pattern. The post run in three parallel rows down the length of the building. The supports along the south wall are of variable distance from the wall whereas the other bays are 12-14' wide. The south row of supports ends about 2/3 of the way to the west wall as the building becomes narrow enough to dispense with this row.

Floor 2

This floor is vacant of all equipment. On the north wall is the housing for the freight elevator and staircase. In the middle of the room is the spiral case goods slide. As on the floor below, the supports on the south wall end about 2/3 of the way along. The elevator door and stairway door are metal fire doors. The bridge to Building #58/59 cuts through the staircase and a landing and extension of the staircase is required to get to Floor 3.

Floor 3

This floor is more or less identical to Floor 2. Unlike the previous floor, however, the wood and brick walls are unpainted. The freight elevator housing is separated from the staircase housing by the bridge over to the case goods building. There is a temporary wooden wall about 1/5th of the way from the east wall. The room has a sign saying "Duty Paid Room". Judging by the paint and wear on the wall, it probably is 40 or 50 years old. The room itself is empty. The case goods slide from Floor 4 above is wooden. On the Floor 3 it turns into the roller conveyor.

Floor 4

This floor is identical to the previous two. The case goods slide is a small, wooden extension above the floor level. There is a trap door that covers most of it when not in use. There is a small excise cage called a Bonding Warehouse for Consolidated Alcohols Limited. This is on the north side adjacent to the stairwell. The stair housing and elevator housing are in the same location as the ground floor and Floor 2. Because the staircase terminates here, the housing is only the width of the staircase and the freight elevator appears to protrude further into the room. The walls and pillars in this room have been painted. The floor has been made of hardwood planks.

Equipment Typical/Unique to Distillery Operation

- *See equipment register*

General Equipment

See equipment register

FIGURE B–36
Case goods slide on Floor **3 of** Building #74.
Source: Historica Research Limited, January, 1993

PUMP HOUSE
BUILDING NUMBER 60

1. BACKGROUND

This pump house was completed in 1895 to provide fire protection for the distillery (See Section A, Parts 5.1 and 5.8). Later, an alcohol pump was added to enable the bulk transfer of product between the plant and rail tank cars.

2. DESCRIPTION

East Room (Canadian Government Excise Alcohol pump room)

The ground floor of the east side contains three pumps of which two were steam operated. The two steam pumps were standby pumps. There is a small sliding door to the track side, that may have once held a connection for pipes to tank trucks. In the wall against the southwest comer is a bricked in arch. It may be that this was a clean out for the flue. A electric pump was originally used as an alcohol pump for unloading rail cars and tank trucks. There is a rack along the west wall that contains hosing that probably was used to connect with the tank car. On the north wall is a small bricked–lined chamber that rises about 4' off the floor. A tank of some type is buried in sand inside this enclosure. It may be a gasoline tank for the fire pumps next door.

Equipment Typical/Unique to Distillery Operation

- alcohol pump, hose rack; *See also equipment register*

General Equipment

- *See equipment register*

West Room

This room is completely open to the roof. It is a very tall space. The building has only been painted to approximately the 20' line and the brick is unpainted for the remaining 20 feet to the peak of the roof. The base of the former chimney is in the southeast comer. Adjacent to it is a very narrow door that leads out the south wall. A window in the south wall has been bricked in, relatively recently with concrete block. On the east wall beside the chimney is a small office of wood construction, It has a window on the west wall facing into the boiler room. There is no door on the room but it once had one. The main entrance is on the west wall and was a large double door. It had a light transom above it. Three other windows on the west wall have been bricked in with concrete block. There does not appear to have been any windows on the north wall. On the east wall is a bricked in arch that led originally to the east half room. The room is dominated by two fire pumps. They both appear to be gasoline rather than diesel engines. Associated with the two engines are the piping for lake water and for fire water into the building.

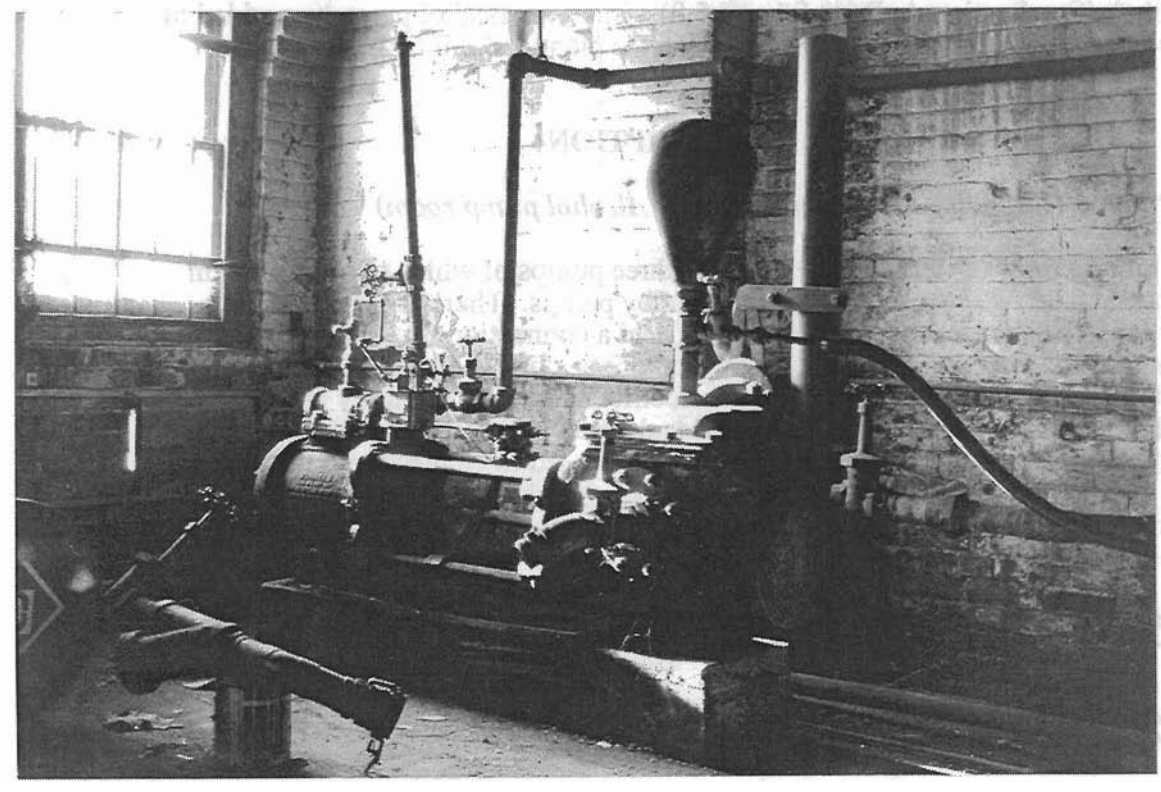


FIGURE B–37
Alcohol pump in East Room of Pump House (Building #60)
Source: Historica Research Limited, January, 1993

On the north wall are the steam indicators from the days when the pumps were steam powered. There are two water pressure gauges which still work and register at 85 pounds. The steam pressure gauge and vacuum gauge are not in service. The gauges were manufactured by the Northey Manufacturing Company Limited of Toronto. A boiler inspection certificate is hanging on the east wall. It is dated December 23,1957. The boiler at that time was a 36" x 10'4 1/2" Kidwell Water Tube Boiler manufactured by the Taylor Engineering and Construction Company of Toronto.

The piping leading from them is painted red and has very much the look of a fire pump house of the 19th century. The old steam gauges are still mounted on the wall in a cross pattern of four gauges.

Until the late 1970s the property was protected by two duplex steam pumps. They were replaced by gasoline pumps when the last stationary steam engineer retired. One set of pumps has been donated to the Hamilton Museum of Steam and Technology. The second set of pumps is still owned by Gooderham and Worts and may be warehoused at a firm called Lackie's.

Equipment Typical/Unique to Distillery Operation

- *See equipment register*

General Equipment

- *See equipment register*

Sales Office

The second floor on the east side had been converted into offices. The sales floor was reached by an inside staircase adjacent to the doorway to the alcohol pump house. Apparently this was the original office for McGinnis Distilleries when they were starting out.

EXTERIOR FEATURES

Attached to the exterior of many buildings are pipes and connected to one another by pipe bridges. One foot bridge connected the office with Building #6. Two large metal tanks are located at the west end of the property. Scattered throughout the property are numerous tanks, various pulleys and hoists for material handling, and miscellaneous equipment. A monument to the original windmill is located outside Building #31.

ARCHAEOLOGICAL FEATURES

Documentary research suggests that buried historic features may have historic or scientific value. Possible features associated with the evolution of the G & W property include:

- former shoreline of Toronto Harbour and associated docks
- Gooderham mansion
- workers' housing along Mill Street
- the original windmill

In addition, these sites may aid in developing site interpretation options. For example, exposing the foundations of the 1830s G & W windmill could contribute to a better understanding of the site. Other possible sites of interpretive value include:

- wagon/truck scale (Building #1)
- railway track scale and grain hoppers (outside of Building #3)
- former coppershop
- British Acetones plant

A site assessment, that meets municipal and provincial guidelines for archaeological assessments, should be undertaken prior to site redevelopment. This assessment would include an excavation strategy for sites of potential historic, scientific or interpretive value. Specific study objectives should be developed to determine what information could be obtained from an excavation. If possible, potential sites should be tested by means of test pits/trenches, remote sensing or bore hole samples to confirm that physical evidence of the historic resource still exists.

During site development, unpredicted archaeological finds may be encountered. Although many sites are known from map and documentary evidence, some unexpected resources should be anticipated. An appropriate level of archaeological monitoring should be undertaken during construction.

FIGURE B–38
Looking south east towards buildings #5–8. Note yeast culture penthouse on buildings #6–7, foot bridge connecting buildings #6, #25, and various tanks.
Source: Historica Research Limited, November, 1993

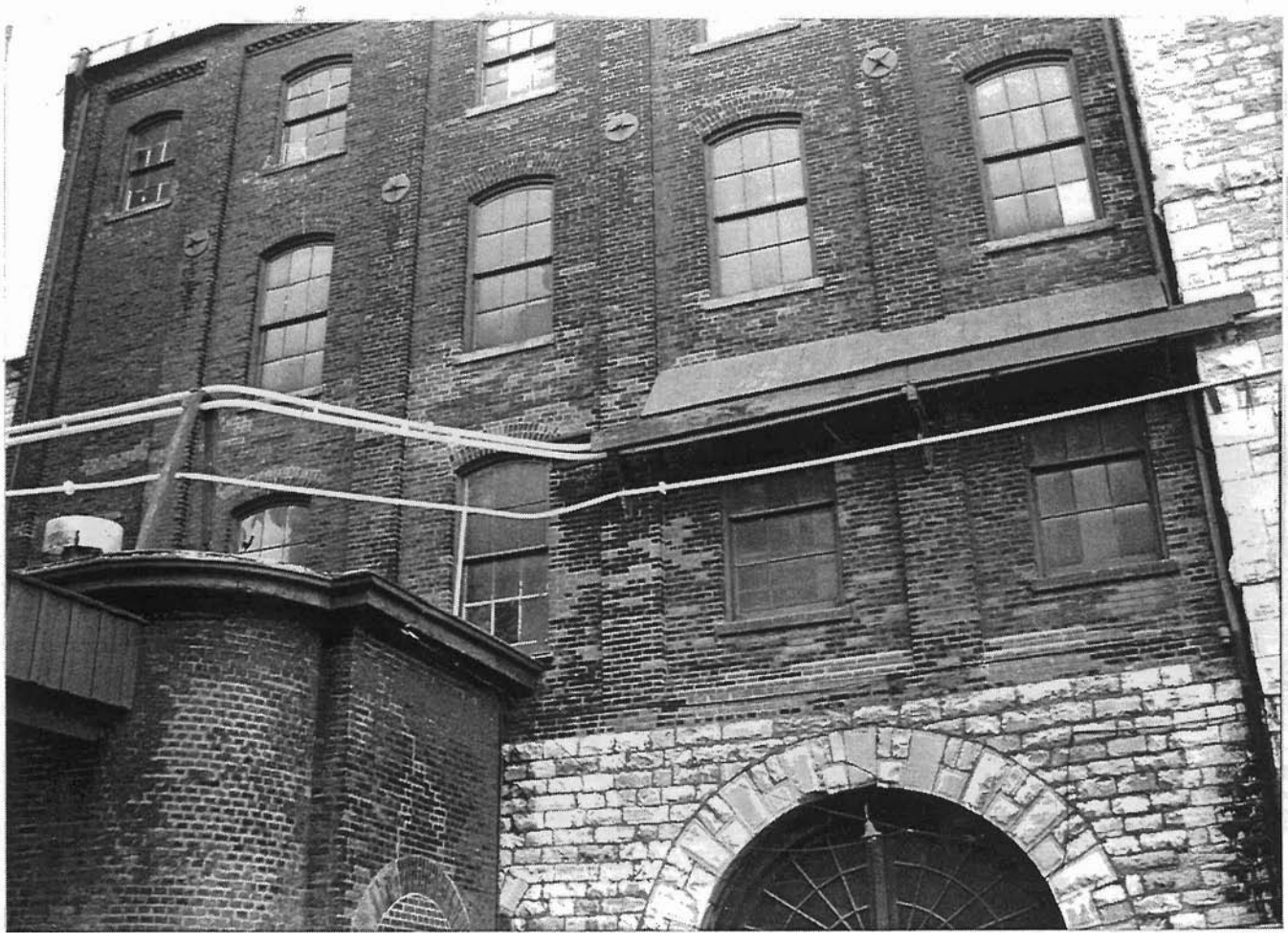


FIGURE B–39
The north wall of building #4 showing pipes attached to exterior of building.
Source: Historica Research Limited, November, 1993

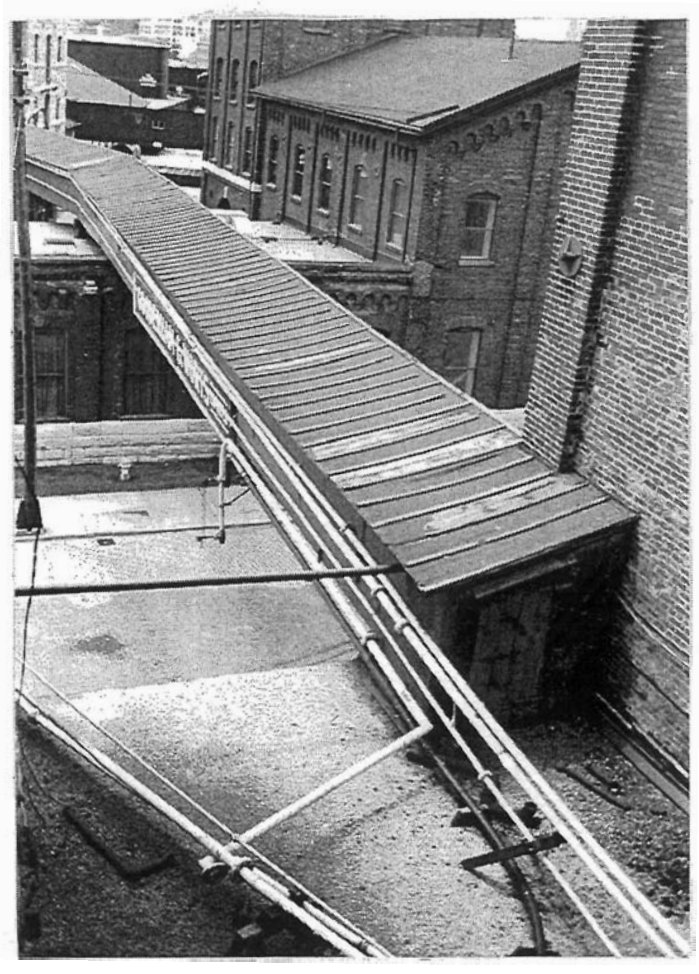


FIGURE 3-40
Pipe bridge from Building 57 to distillery Building 2 held glycol lines, alcohol lines and steam lines.
Source: Historica Research Limited, August, 1993

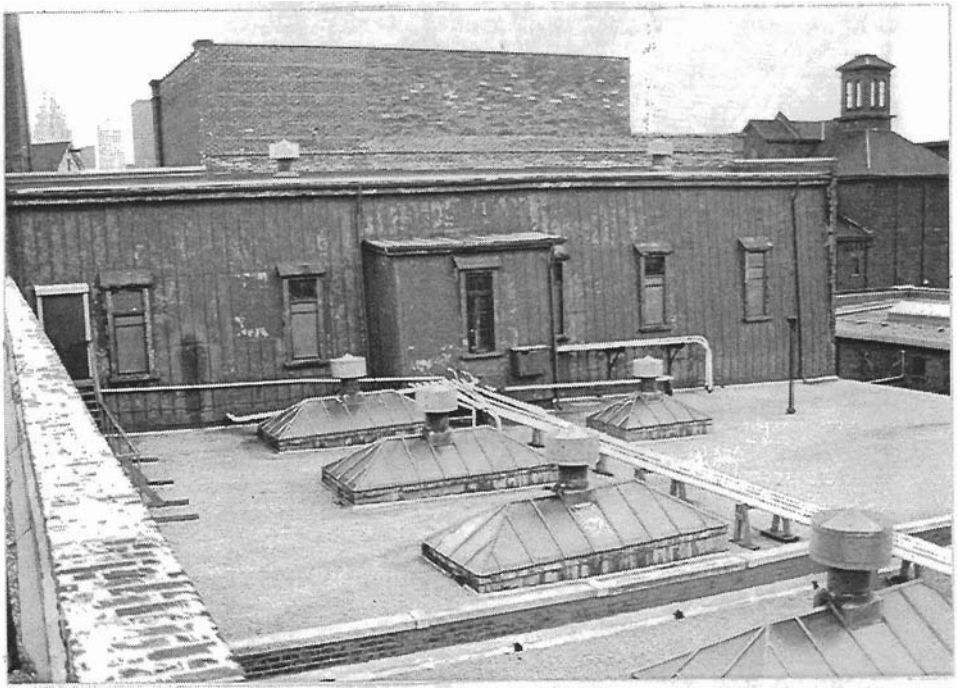


FIGURE B–41
Sheet metal cladding on Scale Loft of Building 61 and roof mounted alcohol pipes.
Source: Historica Research Limited; August, 1993

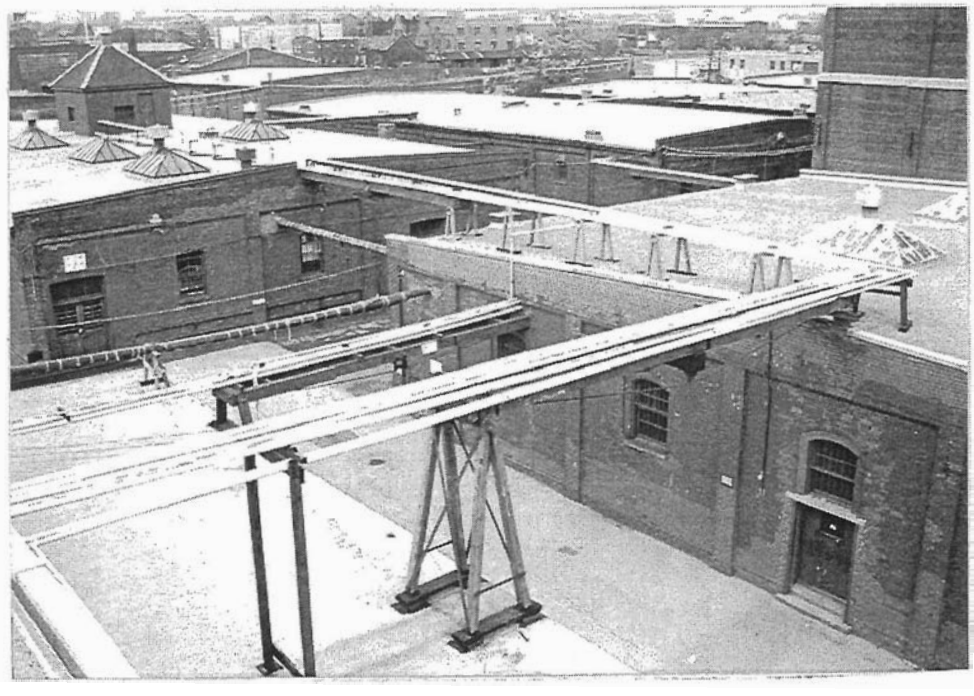


FIGURE B–42
Alcohol pipe bridge on roof of Building 62A, connecting Building 61 with Buildings *46/63*.
Source: *Historica Research Limited,* ***August,*** *1993*

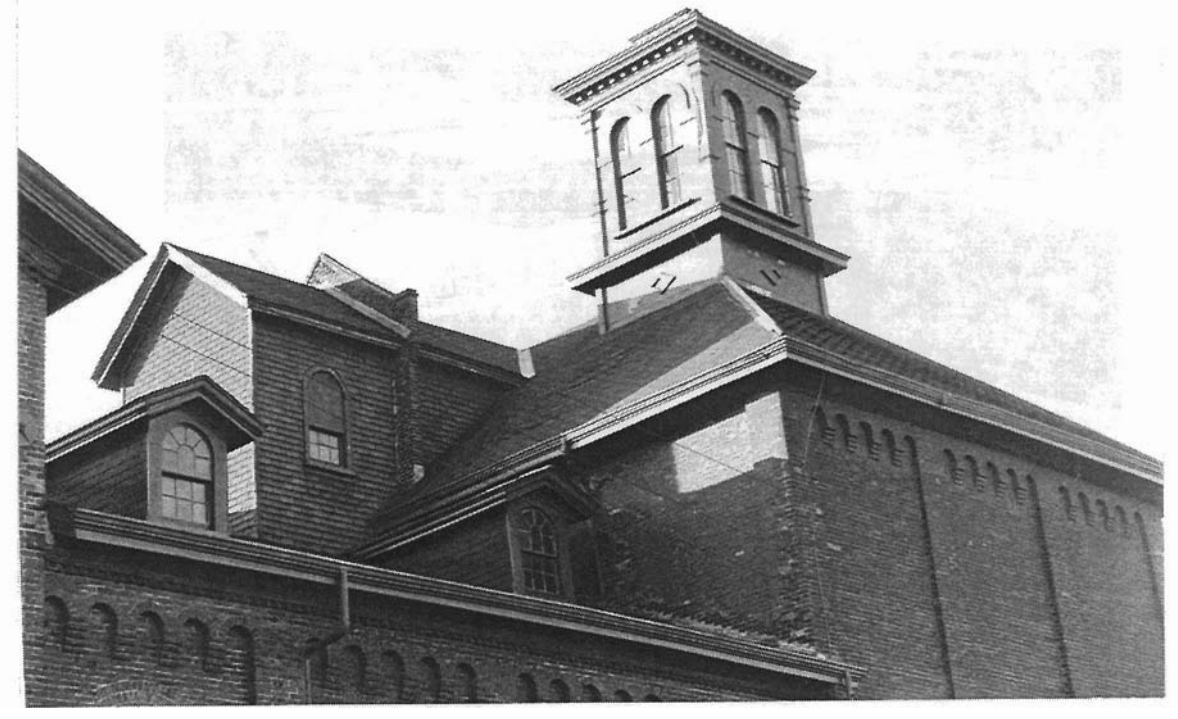


FIGURE B–43
Exterior of Malt house showing ventilating cupola of the east kiln of building #36 and the connecting mezzanine level above Floor 4 of building #35
Source: Historica Research Limited, December, 1993

OBSERVATIONS

- Most equipment found within the G & W distillery was installed between the 1920s and 1950s. Apart fiom a limited number of artifacts such as the car puller, 3 high roller, the scales, scale tanks, and steam pumps, there is no evidence of equipment that could date from early periods of operation. However, since the distillation process did not change significantly over the years, many of the physical resources also represent processes from the late 19th century. As a distilling complex, Gooderham & Worts is the last of its type in Canada.

- The malt house and kilns are believed to be a rare survivor of a 19th century process but further research is necessary to determine the building's provincial or national significance. The Maltings is one of few survivals of 19th century purpose–built buildings associated with the beverage alcohol industry in Canada and possibly North America. The maltings is the least altered of the Trinity Street buildings. The building structure is part of the manufacturing equipment. Although equipment has been removed, the remaining space and finishes relate to the former operation.

- The production of alcohol was associated with the risk of fire and explosion. The company maintained a fire fighting system after 1895. Explosion proof switches and lights are found throughout the complex. Buildings #53–57 dates from 1873 while most equipment is probably 20th century. The architecture is of interest because the design is part of the process: blow–out walls were constructed to minimize damage during an alcohol explosion.

- Barrel warehouses are a distinctive architectural form on a distillery and were constructed in the 1880s and used until the present day for the aging of alcohol to improve the quality of the product.

- Very little of packaging and shipping equipment remains. Apart from the dump troughs, there is virtually no evidence of blending. For the last 30 years of its operation, G&W produced bulk alcohol for blending at other facilities. Some equipment has been dismantled and placed in storage. Of the complex, the "long room" (building #62A) has been used continuously for storage and shipping since 1883.

- Numerous auxiliary systems were required that, while not distinctive to alcohol production, were essential to the operation of the G & W complex. For example, systems were needed to move the considerable quantities of material and products around the plant, cooling systems was necessary in the distillery, and adequate transport facilities were essential to bring in raw materials and export finished products. Of all the systems associated with the G & W facility those of steam and power generation and fire protection were the most distinctive systems.

Weighing was an important and distinctive operation throughout the distillery and the process is well represented with several scales and scale tanks. The largest and best preserved are the scale tanks in the loft above building #61.

- Steam engines provided the important source of 19th century industrial power and were used primarily for milling and mashing until c.1920. These engines were located in a central engine room and although the equipment has been removed, the remaining space and finishes relate to the operation. Steam was also used to operate numerous pumps located throughout the entire complex.

- Since 1990, when the first inventory associated with the G&W redevelopment was undertaken, significant quantities of equipment have been removed. The scrapping of the tanks in the Denaturing Building and Tank Houses significantly diminished the visual impact of these spaces and reduced this area's interpretation potential.

The mill/granary in Building #3 is a well preserved example of a mid-19th century Ontario grist mill operation.

SECTION C

INTERPRETIVE PROGRAMME

1. INTERPRETATION OBJECTIVES

1.1 Objectives of Site Interpretation

i. Create an environment that will promote an understanding of the history and significance of:

- *the process, events, and people associated with Gooderham & Worts;*
- *the buildings and artifacts and their spatial arrangements.*

ii. Provide visitors with entertaining and informative ways to enjoy and understand the evolution of the G&W complex.

iii. Ensure the conservation and preservation of historically important material remains of the G&W complex for the knowledge and enjoyment that they can provide to future generations.

1.2 Approach to Interpretation

A wide variety of themes could – and should – be interpreted within the Gooderham and Worts complex. Some possible themes include:

Industrial History: The production of beverage alcohol in Toronto.

Architecture: An examination of architects, their styles, and the evolution of building usage.

Corporate History: Business history of Gooderham Family, the economic growth/impact of firm and the development of government regulations (excise, weights & measures, etc.)

Social/Labour: Working conditions, temperance movements and prohibition.

This report takes one of these themes – interpretation of industrial history – and develops an interpretation framework for the G & W complex. The interpretation framework should be regarded as a model for site development rather than as the definitive approach to site interpretation. The following approach has been taken:

1. This plan recommends a *Primary Theme* of:

The beverage alcohol industry in Toronto, Ontario and Canada

This theme provides for a general interpretation of the beverage alcohol process with specific reference to G&W as appropriate. The Gooderham & Worts distillery was originally built to produce beverage alcohol – principally Canadian Whiskey. Early accounts of the distillery describe

equipment and operations devoted to the production of Canadian Whiskey. The earliest surviving buildings, The Stone Distillery and the Malt House were designed to accommodate whiskey production at the highest level of technology of the period. The evolution of the complex, and the products it produced are of national significance to Canadians.

ii. Principle *Sub-themes* include:

Process: There will be opportunity to relate changes in production from product to product through time by means of Corporate history and descriptions of building use evolution, but the main thread of interpretation will that of the purposes for which the G & W Distillery complex was created.

Allied *trades/crafts:* The themes of allied trades/crafts are intimately related to distillery operations but due to changes and redevelopment constraints will be required to be located in areas in the complex that are seen as "appropriate" to either the scale of the chosen site or relationship to allied functions.

iii. A practical *Time Frame* for interpretation includes:

The era *from c1880 to c1930*

Distillery technology was virtually unchanged over this time period. Most of the important buildings date from the 1860-80s. The Gooderham & Worts family and distillery were at their most distinguished time. The historic involvement of Hiram Walker begins in this era. Most of the equipment and plant layout date from the early 20th century.

iv. Location of Interpretive Programme:

Interpretation would occur throughout the complex using an interpretive centre to orient visitors and in *situ* preservation of historic resources.

v. Interpretation Techniques

The interpretation plan assumes that the primary method by which visitors will experience the site history will be by means of a passive, self guided tour of permanent installations. ,

- This plan is Passive in that no areas have been set aside for demonstrations nor is there a provision for guides to explain specific areas. Primary means of interpreting artifacts, buildings and events include display panels (text, graphics, photographs), audio/visual aids and publications such as maps and guides.

- The interpretive plan will be ***Self Guiding*** by the use of signage and maps to guide visitors. For building code reasons, difficulty of access, and security of artifacts not all historically interesting areas may be available to the general public. The concept of scheduled tours or "on demand" access should be considered for these areas.

- This study assumes that ***Permanent Displays*** will only be changed for maintenance reasons or to reflect new data or interpretations of events. For the most part artifacts will be utilized in "as found" locations. Some type of interpretive centre will be necessary to introduce visitors to the physical characteristics of the site and to historical themes and issues. The specific function, size and location have not been developed in this study.

1 3 Interpretation Techniques

Although this study assumes a relatively modest use of interpretation techniques, many additional methods could be added depending upon the type of visitor, available budget, physical space and client wishes. Additional techniques **can** be added to enhance the basic concepts and might include:

Reconstructions: schematic representations (eg. space frames) or researched reconstructions of missing features such as the missing steam engine in Building 2A
Commemoration: such as the existing "Windmill Cairn"
Demonstrations: eg coppersmithing, barrel making
Models: depictions of the property, buildings or equipment at historically important time periods
Miniaturization of process/ pilot plants: demonstrate processes such as distillation, bottling
Audio guides, video presentations, computer simulation
Archaeological remains: expose ruins, display artifacts
As found dereliction/decay: eg leave areas of former railway right–of–way to experience natural regeneration
Guides/living history/volunteers
Sectioning of artifacts
Off site activities: visits to other museums, walking/driving tours to sites linked to the G&W complex

For the security of some artifacts may have to be displayed under glass. Wherever possible, artifacts should be presented in public spaces. **A** considerable number of artifacts may never be placed on permanent display. Therefore an "open storage" area should be considered to display artifacts that do not pertain to the interpretive themes.

2. IMPLEMENTATION ISSUES

2.1 Impact of Redevelopment

Based on a review of work in progress, the interpretive plan described in this report can be implemented within the scope of the proposed property redevelopment of the Gooderham and Worts site. Areas for displays and interpretive activities can be provided and are important. Some historic structures and artifacts will be preserved *in situ.*

What is not certain at this time is the type and number of visitors expected to use the display/interpretive facilities. It is assumed that a marketing survey will be conducted as the redevelopment proceeds to assess the types of retail outlets. Visitor demands and expectations for interpretation could be assessed as part of that study. The type of visitor, duration spent on visit and scope and content of display/interpretation need to be developed in order to project staff requirements, space allocations and capital/operating budgets.

2.2 Budget

No capital or operating budget has been developed for this interpretive plan.

2.3 Administration/Staff

At this time in the redevelopment proposal it is premature to recommend an administrative framework for the site. Although a variety of models could be considered, two general approaches appear to be most workable at the property. One option is to have the heritage resources and interpretive programme managed and operated by the developer/landlord. A second alternative is to transfer ownership of these resources to a non-profit foundation to manage and operate. Each of these approaches has advantages and disadvantages to the property owner, the historic resources and to the delivery of the interpretive programme. In either model, an advisory board should be established in order to develop policies and review goals and objectives of public interpretation.

Creating the interpretive programme could be undertaken on a contract basis. Professional historians, curators, designers and conservators will be required to write story lines, conserve artifacts, design and install exhibits, and create visitor services. Once the programme has been completed, there would be no need for full time employment of people with these skills.

No operating staff requirements have been developed in this report. However, one or more staff people will be required to monitor conservation of artifacts, review and manage visitor services, and oversee contracts for changes in exhibits or programmes.

2.4 **Implementation** Schedule

This Interpretive Plan is a general outline of physical resources available that will form core subject material with which to accomplish interpretive goals and strategies. Once themes and interpretive strategies have been confirmed, detailed plans will be required, employing interpretive media and methods appropriate to the theme and interpretive goals.

Prior to the physical commencement of redevelopment, the following activities should occur:

i. An administrative structure and advisory board should be established to develop policies for:

- artifact selection (materials/artifacts/equipment for interpretation of main themes)
- Conservation principles (degree and appropriateness of conservation methods to respect the integrity of materials, mediated by levels of public access)
- Disposal Plan (principles and decision–making process to guide dispersal of equipment/artifacts/building elements surplus to the needs of interpretation or restoration and development of site)

ii. A market survey should be undertaken to determine the scale, cost and content of interpretive programmes and facilities

iii. Capital and operating budgets should be established;

iv. A professional team should be available during the redevelopment phase to ensure that significant artifacts are protected and to begin implementation of an interpretive programme.

3. AREAS AND RESOURCES

3.1 Buildings Proposed for Interpretation

Building #	*Building Description*
35,36	Maltings
45,46	Plant Maintenance
58/59,61,62,62A	Pure Spirits Complex
2–7	Stone Distillery
60	Pump House
42	Rack Warehouse
47	Denaturing (to be determined; not essential for this study)

The following interpretative plan has been developed on a building–by–building basis. The actual route that a person may follow may not relate to the building. The themes in this report are interconnected – if one complex is redeveloped before another, the interpretation scheme cannot work to its maximum effect.

All historic buildings and spaces within the G & W property will be interpreted by means of one or more themes described in Section 1.2. In this section, however, only the minimum number of buildings necessary to develop a comprehensive interpretation plan of industrial heritage have been described. Several buildings not mentioned here are extremely distinctive of industrial processes and could be used in an interpretive programme. The most striking example is the Pure Spirit Complex #53–56. These have not been used in this interpretation programme because they illustrate processes that can be described elsewhere in the complex with more space. However, these important buildings should be interpreted to explain the uniqueness of their design.

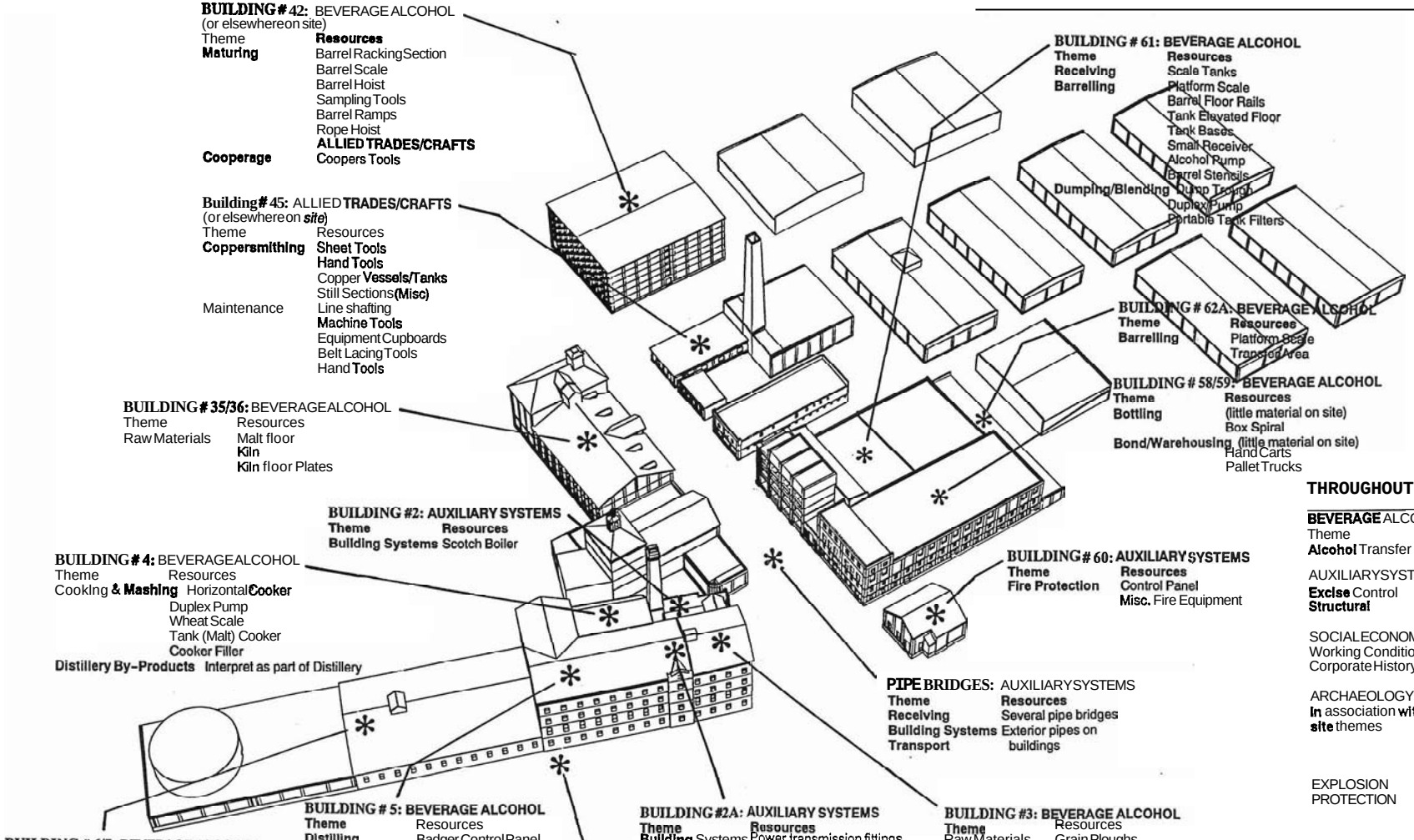
In addition to in *situ* interpretation in buildings, an interpretive centre will be required to orient people to the site. The location and content of such a facility should be considered in conjunction with more detailed site development plans.

3.2 Types of Resources

- Buildings and structures;
- Artifacts, plans, papers, both on property **and** acquired from other collections. Equipment and artifacts described in this interpretation plan are **a** preliminary list and not meant to be exclusive or inclusive for each interpretive area;
- Archaeological features: eg. windmill; former shoreline; former utilities and buildings;
- Sound/Video: oral histories, historic movie footage, modem videos;
- Off Site Resources: Still House (Mill and Trinity Streets), former workers' housing, Gooderham's "Flat Iron Building," distilling museums such as the Seagram Museum, Waterloo

3 3 Artifacts not part of This Interpretive Plan

In addition to those artifacts and areas described in this interpretive plan, there are many artifacts that could be left *in situ* but are not essential to interpretation. Some resources should be left because of their scientific value but many could be left because of their aesthetic value or technical interest. The Malt House floors are an example of scientific value whereas the scales and scale tanks in Buildings #6 and 7 have aesthetic and technical interest. The conditions for leaving this material are described in the following section.



BUILDING # 42: BEVERAGE ALCOHOL
(or elsewhere on site)

Theme	Resources
Maturing	Barrel Racking Section
	Barrel Scale
	Barrel Hoist
	Sampling Tools
	Barrel Ramps
	Rope Hoist
	ALLIED TRADES/CRAFTS
Cooperage	Coopers Tools

Building # 45: ALLIED **TRADES/CRAFTS**
(or elsewhere on *site*)

Theme	Resources
Coppersmithing	**Sheet Tools**
	Hand Tools
	Copper **Vessels/Tanks**
	Still Sections **(Misc)**
Maintenance	Line shafting
	Machine Tools
	Equipment Cupboards
	Belt Lacing Tools
	Hand **Tools**

BUILDING # 35/36: BEVERAGE ALCOHOL

Theme	Resources
Raw Materials	Malt floor
	Kiln
	Kiln floor Plates

BUILDING # 4: BEVERAGE ALCOHOL

Theme	Resources
Cooking **& Mashing**	Horizontal **Cooker**
	Duplex Pump
	Wheat Scale
	Tank (Malt) Cooker
	Cooker Filler

Distillery By-Products Interpret as part of Distillery

BUILDING # 6/7: BEVERAGE ALCOHOL

Theme	Resources
Fermenting	**Fermenter Bases**
	Duplex Pump
	Molasses Scale Tank
	Yeast Donor (Penthouse)
	Yeast Tanks
	Molasses Scale Tank

BUILDING # 5: BEVERAGE ALCOHOL

Theme	Resources
Distilling	Badger Control Panel
	4 Column Distillation
	Installation C/W
	Condensers etc.
	Explosion Fixtures
Receiving	Scale Tank (Receiver)
	Fusel Scale Tank

BUILDING #2: AUXILIARY SYSTEMS

Theme	Resources
Building Systems	Scotch Boiler

BUILDING #2A: AUXILIARY SYSTEMS

Theme	Resources
Building Systems	Power transmission fittings

RAIL TRACK: AUXILIARY SYSTEMS

Theme	Resources
Transport	Track Scale
	Rail Siding

BUILDING # 61: BEVERAGE ALCOHOL

Theme	Resources
Receiving	Scale Tanks
Barrelling	Platform Scale
	Barrel Floor Rails
	Tank Elevated Floor
	Tank Bases
	Small Receiver
	Alcohol Pump
	Barrel Stencils
Dumping/Blending	Dump Trough
	Duplex Pump
	Portable Tank Filters

BUILDING # 62A: BEVERAGE ALCOHOL

Theme	Resources
Barrelling	Platform Scale
	Transfer Area

BUILDING # 58/59: BEVERAGE ALCOHOL

Theme	Resources
Bottling	(little material on site)
	Box Spiral
Bond/Warehousing	(little material on site)
	Hand Carts
	Pallet Trucks

BUILDING # 60: AUXILIARY SYSTEMS

Theme	Resources
Fire Protection	Control Panel
	Misc. Fire Equipment

PIPE BRIDGES: AUXILIARY SYSTEMS

Theme	Resources
Receiving	Several pipe bridges
Building Systems	Exterior pipes on
Transport	buildings

BUILDING #3: BEVERAGE ALCOHOL

Theme	Resources
Raw Materials	Grain Ploughs
Transport & Milling Grain	Grain Plough Capstan
	Car Puller
	Grain elevators
	Roller Mills
	Grain Bins (Raw)
	Grain Bins (Milled)

THROUGHOUT SITE

BEVERAGE ALCOHOL	
Theme	Resources
Alcohol Transfer	Select significant piping **runs**
AUXILIARY SYSTEMS	
Excise Control	
Structural	
SOCIAL ECONOMIC	
Working Conditions	
Corporate History	
ARCHAEOLOGY	
In association **with**	Former Utilities
site themes	Windmill
	Wharf **& Shoreline**
	Former Buildings
EXPLOSION PROTECTION	Explosion fixtures

FIGURE C-1
Location of interpretation **areas in** buildings described **in** this **report**

4. INTERPRETATION OF PROPERTY

4.1 Malt House and Kilns (Buildings # 35–36)

4.1.1 Potential Process Interpretive Themes

History/Evolution of Building Usage
Grain transport
Malting
Kilning

4 . History of Building Usage and Industrial Processes

See Pages 11,101: The Maltings and Kiln House were purpose built to perform the Malting and Kilning of Barley and had been used for the purpose for which it was built for a considerable period of time. These structures have had other uses that were also performed elsewhere on the site.

4.1.3 Approach to Building/Process Interpretation

It is proposed to undertake interpretation of the former function of these building on a small scale within the confines of future development and usage. The historical use of these building as they were designed to be used is the most compelling aspect of these spaces. The fact that there has been subsequent uses will not be ignored but noted through a general time line interpretation of the building. The main restraints affecting site interpretation is the effect that redevelopment may have on the significant structural aspects of the buildings that are distinctive to malt houses and that little original equipment remains in place.

4.1.4 Artifacts

***In Situ* Resources**

There is very little movable equipment surviving that is directly related to the former function of theses buildings. Rather it is the built environment itself that will provide the most evocative interpretation.

Inventory Number	*Description*	*Interpretive Value*
35–1–1/2	Gas Jets	Early Illumination
	Kiln Floor Plates	Kilning
	Kiln Furnace Fronts	Kilning

Items Required from Storage or Other Locations

74–1–3	Barrow	Grain Transport

Additional Items Required to Permit Interpretation (provisional)

Malt Ploughs
Grain Bags
Quantity of Malting Barley
Quantity of Malted Barley

4.1.5 Locations for Themes Interpretation

It is proposed that adjacent areas of Building # 35 and **36** and the basement furnace the Kiln be used as indicated on the floor plans.

4.1.6 Techniques

- Restore to period appearance a portion of Malt Floor
- Restore to period appearance a portion of the Kiln Floor
- Restore period appearance of Furnace fronts
- Recreate areas with artifacts and descriptive materials.
- Restore/Describe and Interpret Equipment that is in place.
- Restore/Describe and Interpret Equipment from storage/other locations.
- Incorporate acquired Materials as required.
- Other techniques as developed.

4.1.7 Artifacts That Could Be Left *In Situ* but not part of This Interpretive Plan

Not a factor at this point in plan development.

4.2 Plant Maintenance (Buildings 45 & 46)

4.2.1 Potential Process Interpretive Themes

History/Evolution of Building Usage
Allied Trades and Crafts: cooperage
coppersmithing
plant maintenance

4.2.2 History of Building Usage and Industrial Processes

See Pages 48, 82, 83, 124

4.2.3 Approach to Building/Process Interpretation

The decision to locate interpretive activities in these areas will be largely driven by proposed development plans for these buildings. The main restraints to interpretation will be space limitations determined by development plans and the availability of artifacts for meaningful interpretation. This area could support interpretation of Allied Trades and Crafts that have been carried out at various times and locations throughout the Distillery complex.

4.2.4 Artifacts

In Situ Resources

There are few artifacts or equipment to be found in situ that evidently relate to former uses for these building. For interpretive purposes, artifacts and equipment from other sites would be brought to this location.

Items Required from Storage or Other Locations

Inventory Number	*Description*
Cooperage	
58–1–15/16	Hoop Driver
58–1–20	Anvil
8–1–13	Punch
4	Coopers Bench
75–2–6	Anvil
Coppersmithing	
2–1–2	Sheet Roller
2–1–5	Metal Break
8–1–2	Shear
8–1–3	Hand Shear
8–1–12	Anvil
8–1–20	Forming Anvil

Inventory

Number	*Description*
	Various Copper Vessels
	Various Copper Still Sections
	Small Tank Sections
Maintenance	
2–1–6	Vise
8–1–1	Power Hacksaw
8–1–5	Cupboard
8–1–6	Cupboard
8–1–7	Cupboard
8–1–8	Lathe
8–1–9	Shaper
8–1–10	Turret Shaper
8–1–11	Drill Press
8–1–11a	Line Shafting/Pulleys
8–1–14	Melt Pot
8–1–15	Lace Vice
8–1–18/19	Pipe Wrenches
58–1–13	Foundry Patterns
	Work Benches
	Hand Tools
	Work in Progress

Additional Items Required to Permit Interpretation (provisional)

Cooperage
Set of Hand Coopers Tools
Barrels
Stave/Head Stock

Coppersmithing
Hand Tools/Stakes
Bench (May be found on site)

4.2.5 Locations for Themes Interpretation

Not identified.

4.2.6 Techniques

- Recreate areas with artifacts and descriptive materials.
- Restore/Describe and Interpret Equipment that is in place.
- Restore/Describe and Interpret Equipment from storage/other locations.
- Incorporate acquired Materials as required.
- Other techniques as developed.

4.2.7 Artifacts That Could Be Left In *Situ* but not part of This Interpretive Plan

Not a factor at this point in plan development.

43 Pure Spirits Complex (Buildings 58/59, 61,62,62A)

43.1 Potential Process Interpretive Themes

History/Evolution of Building Usage
Receiving
Filling/Barrelling
Dumping
Blending/Transfer
Bottling
Warehousing

43.2 History of Complex Usage and Industrial Processes

See Pages 18,23,25,28,39,85: It is apparent from descriptions of the various parts and equipment of the Pure Spirits Complex that distilling operations were carried out on a considerable scale. The Pure Spirits complex as described apparently functioned as a supplier of distilled spirits to other parts of the Complex for further handling or processes. Not specifically mentioned is Filling or Barrelling of Spirits for transportation to Rack Houses and it is assumed that either this was too minor an operation to warrant mention or that spirits were pumped to another location for this function. Dumping or the emptying of spirits is not described but may have been too minor a function to warrant description. Mixing is mentioned, supported with sufficient mention of tankage to support a Blending function. Spirits sold in bottles was a contemporaneous practice along with sale in gallons and barrels but there is no mention of a bottling or filling function within the Pure Spirits Complex. One Warehouse is described as "bonded" which could contain spirits in bulk or in consumer containers. The Shipping Room likely served the purpose of a transfer area for barrelled spirit or the shipping of consumer containers.

4.3.3 Approach to Building/Process Interpretation

The Pure Spirits Complex would be interpreted as supporting functions integral to an integrated distillery with reference to its historic associations and functions. Distilling will be referenced as it applies to historic usages when describing the history of the Complex but will not be interpreted as a process theme using in situ artifacts. Distilling will be interpreted in the Stone Distillery with reference that distilling occurred at other locations in the G&W Complex. Interpretation restraints are that much important equipment has been remoyed including the blending tanks, other tankage, and piping and hoses for the filling operation and there are equipment gaps, especially the absence of bottling equipment.

4.3.4 Artifacts

In Situ *Resources*

Inventory

Number	*Description*	*Interpretive Value*
Receiving		
61–2–4/5/6	Tank Scales	
Filling/Barrelling		
58–1–15116	Hoop Driver	
58–1–17	Stencils	
58–1–21	Taps	
Dumping		
58–1–14	Bung Puller	
61–1–1	Scale	
62a–1–1	Scale	
61	Dump Trough	
Blending/Transfer		
61–1–7	Pump	
62a–1–2	Pump	
53–4–1/2	Water Still	Amelioration to final proof
58–1–18	Funnels	
58–1–19	Sample Pails	
61–1–2/3	Pad Filter	
61–1–8	Tank	
61–1–10	Light Fixture	Leave all explosion–proof light fixtures etc. in place
61–2–2/3	Flavour Tanks	
62–1–1	Dip Stick	
Bottling		
58	Box Spiral	

Items Required from *Storage or Other Locations*

Filling	
45–1–2/3	Brands
74–1–15	Stencils
74–1–17118	Taps
Dumping	
45–1–1	Floggers
Blending/transfer	
74–1–24–26	Pad Filters
74–1–30	Samplers
Bottling	
58–1–2	Foil Crimper
Warehousing	
74–1–19120	Pallet Trucks
74–1–21122	Pallet Trucks
74–1–23	Pallet Truck

Additional Items Required to Permit Interpretation (provisional)

Inventory Description	*Interpretive Value*
Sterile Hoses for Taps	Filling
Bung Hammers	Filling
Other Stencils	Filling (from artifact collection Building # 58)
Leather aprons/gloves	Filling/dumping
Bungs	filling
Sterile Hose	Transfer
Barrels	Filling/dumping
Bottling Equipment	Bottling

4.3.5 Locations for Themes Interpretation

Locations for interpretive activities include portions of:

Building # 61 – *Themes of Receiving, Blending*
Building # 62 – *Themes of Filling, Receiving*
Building # 62A – *Theme of Barrel Transfer*
Building # 58/59 – *Theme of Bottling/Warehousing*

4.3.6 Techniques

- Restore/Describe and Interpret Equipment that is in place.
- Restore/Describe and Interpret Equipment from storage/other locations.
- Incorporate acquired Materials as required.
- Recreate areas with artifacts and descriptive materials.
- Other techniques as developed.

4.3.7 Artifacts That Could Be Left In *Situ* but not part of This Interpretive Plan

Efforts should be made to leave in place artifacts and equipment of historic and/or aesthetic interest that can co–exist with proposed redevelopment requirements. All items left in situ must have the benefit of conservation, stabilization and appropriate security and will be identified as to type and usage.

4.4 Stone Distillery Building (Buildings # 2–7)

4.4.1 Potential Process Interpretive Themes

History/Evolution of Building Usage
Process
- grain receiving
- elevating and grain storage
- milling and milled grain storage
- mashing & cooking
- yeasting
- fermenting
- distilling
- receiving
- excise control
- transfer
- (drying and by–products)

Steam Production
Power Generation and Transmission

4.4.2 History of Building Usage and Industrial Processes

See Pages 5,8,15,17,18,34,43,45,55: The Stone Distillery Complex has been associated with the production of Beverage Alcohol since its construction. The themes that are proposed for interpretation are central to the function of this purpose–built structure.

4.4.3 Approach to Building/Process Interpretation

The Stone Distillery (Building #5) contains several clusters of distilling columns and related equipment installed at various times, that have produced over time a variety of distilled products including Beverage Alcohol and Industrial Alcohol. The groups of equipment are quite wide spread and only vaguely interconnected posing a challenge for interpretation of all in situ equipment.

It is proposed to achieve the goal of interpreting the distilling of beverage alcohol by removing much of the later period (Vulcan) equipment and by employing the earlier Badger units and related equipment. Some relocation of equipment will be required but this action will not jeopardize any historical integrity as there has been a history of moving production equipment to accommodate changes in methods and usage. The installation will be compact and understandable.

The scale and function of grain bins will be interpreted by leaving portions in place for incorporation into development plans. If all of the fifth floors are to be left undeveloped it may be feasible to leave equipment and installations on these floors intact for special interpretive purposes. Restraints, if any, to theme interpretation have not yet been determined.

4.4.4 Artifacts

In *Situ* Resources

Inventory Number	*Description*
Grain Receiving	
3–1–1	*Car* Puller
3–1–2	Plough Puller
3–1–3	Line Shafts
3–1–4	Track Scale
3–1–5	Ploughs
60–1–1/2	Car Movers
Elevating and Grain Storage	
	Elevator Shafts
	Grain Bins
Milling and Milled Grain Storage	
3–2–617	Roller Mills
3–2–8	Elevators
3–5–9	Blower
	Milled Grain Bins
Mashing and Cooking	
5a–1–1	Duplex Pump
5a–1–2	Chain Drive
5a–1–3/4	Cookers
5a–2–5	Cooker Filler Auger
5a–2–6	Small Mash Cooker
5a–3–7	Wheat Scale
Yeasting	
7–2–1	Sterilizer
7–2–2	Incubator
7–2–3/4/5	Yeast Tanks
7–3–7	Donor Tub
58–1–5	Yeast pail
Fermenting	
6–1–1	Duplex Pump
	Various samplers/funnels
	Fermenter Bases
Distilling	
5–1–7	Badger Still Unit
5–2–10	Badger Control Panel
5–2–11	Badger Tail Boxes
5–2–17	Badger Still Unit
5–2–18	Slop Tester
5–2–19	Tail Boxes
5–2–20	Badger Still Unit
5–3–21	Badger Still Unit
5–4–23	Condensers

Inventory Number	*Description*
Distilling (continued)	
5-5-27	Condenser Tops
	Alcohol Pumps
	Beer Pumps etc
	Explosion Proof Fixtures
Receiving	
5-1-1	Alcohol Pump
5-1-2	**Tank** Scale
5-1-3	**Tank** Scale
5-1-4	**Tank** Scale
	Various samplers/funnels
Excise Control	
	Excise Cages
	Double Lock–up
58-1-23	Hydrometers
Transfer	
	Alcohol Pumps
	Alcohol Piping in situ
Drying and By–products	
4–3–2/3	Mash Dryer and Hoppers
4-4-4	Hopper
Steam Production	
2-1-7	Boiler
2-1-8/9/10	Flue Shovels
2-1-12	Gauge
4-1-1	Gauge
	Facsimile Control Panel(?)
Power Generation and Transmission	
	Remnants of Steam Engine Locations
	Embedded Shaft Bearing Blocks

Items Required from Storage or Other Locations
None identified.

Additional Items Required to Permit Interpretation (provisional)
Future programme developments will identify other artifacts.

4.4.5 Locations for Themes Interpretation

Locations for interpretive activities are marked on floor plans and include portions of:

Building # 2 – ***Theme of Steam Production***
Building # ***2A*** – ***Theme of Power Generation & Transmission***
Building # **3** – ***Themes of Grain Receiving; Grain Elevation &Storage; Milling &Milled Grain Storage***
Building # 4 – ***Themes of Milled Grain Storage; Mashing andCooking; (Drying and by –products)***
Building # 5 – ***Themes of Distilling; Receiving; Excise Control; Alcohol Transfer***
Building # ***6*** – ***Themes of Fermenting; Transfer***
Building # ***7*** – ***Theme of Yeasting***

4.4.6 Techniques

- Restore/Describe and Interpret Equipment that is in place.
- Relocate some major items to complete distillation unit
- Restore/Describe and Interpret Equipment from storage/other locations.
- Incorporate acquired Materials as required.
- Recreate areas with artifacts and descriptive materials.
- Other techniques as developed.

4.4.7 Artifacts That Could Be Left In *Situ* but not part of This Interpretive Plan

Efforts should be made to leave in place artifacts and equipment of historic and/or aesthetic interest that can co–exist with proposed redevelopment requirements. **All** items left in situ must have the benefit of conservation, stabilization and appropriate security and will be identified as to type and usage.

4.5 Pump House (Buildings # 60)

4.5.1 Potential Process Interpretive Themes

History/Evolution of Building Usage
Alcohol Transfer
Fire Protection

4.5.2 History of Building Usage and Industrial Processes

See Pages 36,39,128

4.5.3 Approach to Building/Process Interpretation

The Pump House has been used for the purpose for which it was built since constructed and will provide a logical venue for proposed interpretive activities. Restraints, if any, to theme interpretation have not yet been determined.

4.5.4 Artifacts

***In Situ* Resources**

Inventory Number	*Description*	*Interpretive Value*
Fire Protection		
60–1–3/4	Fire Pumps	
60–1–5	Gauges	
Alcohol Transfer		
60–1–6	Pump	
60–1–7	Pump	
	Piping	

Items Required from Storage or Other Locations

58–1–8/9	Fire Nozzles

Additional Items Required to Permit Interpretation (provisional)
Future programme developments will identify other artifacts.

4.5.5 Locations for Themes Interpretation

Locations for interpretive activities are marked on floor plans and include portions of:

Building # 60 (West) – *Theme of Fire Protection*
Building # 60 (East) – *Theme of Alcohol Transfer*

4.5.6 Techniques

- Restore/Describe and Interpret Equipment that is in place.
- Restore/Describe and Interpret Equipment from storage/other locations.
- Incorporate acquired materials as required.
- Recreate areas with artifacts and descriptive materials.

4.5.7 Artifacts That Could Be Left In *Situ* but not part of This Interpretive Plan

Not a factor at this point in plan development.

4.6 Rack Warehouse (Building # 42)

4.6.1 Potential Process Interpretive Themes

History/Evolution of Building Usage
Maturing/Sampling
Barrel Racking
Hoisting

4.6.2 History of Building Usage and Industrial Processes

See Pages 27,113

4.6.3 Approach to Building/Process Interpretation

The Rack Warehouse has been used for the purpose for which it was built since constructed and will provide a logical venue for proposed interpretive activities. Restraints, if any, to theme interpretation have not yet been determined.

4.6.4 Artifacts

***In Situ* Resources**

Inventory Number	*Description*
Barrel Racking	
	Wood Racking
Hoisting	
42–1–1/2	Barrel Hoist (and associated equipment)
42–2–3	Hand Winch
42–6–4	Rope Hoist

Items Required from Storage or Other Locations

Maturing/sampling	
35–4–6	Dump Trough
45–1–1	Bung Floggers
58–1–14	Bung Pullers
58–1–18	Funnels (+ Others)
58–1–19	Sample Pails (+ Others)
58–1–22	Thief
43–1–4	Barrel Scales (+ Others)
Hoisting	
35–4–5	Barrel Ramps (+ Others)

Additional Items Required to Permit Interpretation (provisional)
Future programme developments will identify other artifacts.

4.6.5 Locations for Themes Interpretation

Locations for interpretive activities include a portion of Building #42.

4.6.6 Techniques

- Restore/Describe and Interpret Equipment that is in place.
- Restore/Describe and Interpret Equipment from storage/other locations.
- Incorporate acquired Materials as required.
- Recreate areas with artifacts and descriptive materials.

4.6.7 Artifacts That Could Be Left In *Situ* but not part of This Interpretive Plan

Not a factor at this point in plan development.

FIGURE C–1: Interpretive plan - Schematic

THEME	RESOURCES	TECHNIQUE
1. BEVERAGE ALCOHOL		
Raw Materials	***Building #3***	
a. Transport & Milling Grain	–Rail scale	Restore & Interpret
	–Car Puller	" "
	–Grain Ploughs	" "
	–Grain Plough Capstan	" "
	–Grain elevators	" "
	–Roller Mills	" "
	–Grain Bins (Raw)	Leave Portion in Place, Restore & Interpret
	–Grain Bins (Milled)	Leave Portion in Place, Restore & Interpret
	–Cyclone Blower	Restore & Interpret
	Building #35/36	
	–Malt Floor	Isolate Section for Interpretation
	–Kiln	Restore & Interpret
	–Kiln Floor	Restore Section for Interpretation
b. Cooking & Mashing	***Building #4***	
	–Horizontal Cooker	Restore & Interpret One Cooker & Drive Train
	–Duplex Pump	Restore & Interpret
	–Wheat Scale	"
	–Tank (Malt) Cooker	"
	–Cooker Filler	" "
c. Fermenting	***Building #6***	
	–Fermenter Bases	Interpret Remains
	–Duplex Pump	Restore & Interpret
	–Molasses Scale Tank	Restore
	Building #7	
	–Yeast Donor (Penthouse)	Restore & Interpret
	–Yeast Tanks	Restore & Interpret
	–Molasses Scale Tank	Restore & Interpret
d. Distilling	***Building #5***	
	–Badger Control Panel	Relocate, Restore, Interpret
	–4 Column Distillation Installation with Condensers etc.	Restore & Interpret
	–Explosion Fixtures	Restore & Interpret
e. Receiving	***Building #5***	
	–Scale Tank (Receiver)	Restore & Interpret
	–Fusel Scale Tank	Restore & Interpret
	Building #61 (Loft)	
	–Scale Tanks	Restore & Interpret

THEME	RESOURCES	TECHNIQUE
f. Barrelling	***Building # 61***	
	–Platform Scale	Restore & Interpret
	–Barrel Floor Rails	Isolate Section, Restore & Interpret
	–Tank Elevated Floor	Isolate Section, Restore & Interpret
	–Tank Base(s)	Restore & Interpret
	–Small Receiver	Restore & Interpret
	–Alcohol Pump	Restore & Interpret
	–Barrel Stencils	Restore & Interpret
	Building # 62a	
	–Platform Scale	Restore & Interpret
	–Transfer Area	Restore & Interpret
Maturing	***Building # 42 (or #65)***	
	–Barrel Racking Section	Restore & Interpret
	–Barrel Scale	Restore & Interpret
	–Barrel Hoist	Restore & Interpret
	–Sampling Tools	Restore & Interpret
	–Barrel Ramps	Restore & Interpret
	–Rope Hoist	Restore & Interpret
h. Dumping/Blending	***Building # 61***	
	–Dump Trough	Restore & Interpret
	–Duplex Pump	Restore & Interpret
	–Port. Tank Filters	Restore & Interpret
i. Bottling	***Building # 59*** [Little Material on site]	
	–Box Spiral	Restore & Interpret
		Interpret Bottling?
j. Bond/Warehousing	***Building # 58/59*** [Little Material on site]	
		Interpret Shipping?
		Interpret "in–bond"?
	–Hand Carts	Restore & Interpret
	–Pallet Trucks	Restore & Interpret
k. Alcohol Transfer	***Throughout Site*** [Select significant piping runs]	
l. Distillery By–Products	***Building # 4*** [Interpret as part of Distillery]	

2 ALLIED TRADES/CRAFTS

a, Cooperage	***Building # 42, 45 or elsewhere***	
	–Coopers Tools	Isolate Section, Restore & Interpret
b. Coppersmithing	***Building # 45*** [Animation possibilities with retail]	
	–Sheet Metal Break	Relocate, Restore & Interpret
	–Sheet Roller	Relocate, Restore & Interpret
	–Power Sheer	" "
	–Anvil, Sheet Forming	" "
	–Anvil	" "
	–Hand Shear	" "
	–Hand Punch	" "
	–Copper Vessels	" " "
	–Copper Tanks (Small)	" "
	–Still Sections (Misc)	" "

THEME	RESOURCES	TECHNIQUE
c. Maintenance	*Building # 45, 8, or elsewhere*	
	–Line shafting	Relocate, Restore & Interpret
	–Engine Lathe	" " "
	–Shaper	" " "
	–Turret Milling Machine	" " "
	–Drill Press	" " "
	–Power Hacksaw	" " "
	–Equipment Cupboards	" " "
	–Belt Lacing Tools	" " "
	–Hand Tools (Various)	" " "

3. OTHER THEMES/GENERAL OPERATIONS/BUILDING SYSTEMS/SOCIAL LANDSCAPE

a. Building Systems	*Building # 2, 2a*	
	–Scotch Boiler	Restore & Interpret
b. Fire Protection	*Building # 60*	
	–Fire Pumps	Interpret
	–Control Panel	Interpret
	–Misc. Fire Equipment	Restore & Interpret
	Throughout Site	
	–Explosion Fixtures	Restore & Interpret
c. Excise Control	*Throughout Site*	
d. Working Conditions	*Throughout Site*	
e. Structural	*Throughout Site*	
f. Corporate History	*Throughout Site*	
g. Archaeology of Site	*Throughout Site*	
	–Windmill	
	–Wharf & Shoreline	
	–Former Buildings	
	–Former Utilities	
	–Site Recording	

4. INDUSTRIAL ALCOHOLS AND OTHER INDUSTRIAL PRODUCTS

a. British Acetone	*Building # 5-7, 58*
b. Wartime Alcohol	*Interpret*
c. Denatured Products	*Building # 47*
d. Other Products	

SECTION D

RECOMMENDATIONS

RECOMMENDATIONS

Recommendation One: Conservation Guidelines for Industrial Heritage

The following Guidelines should be read in conjunction with those prepared for the Equipment Register.

1. When historically important equipment or areas cannot be preserved in *situ*, the area should be recorded to standards similar to that of the Historic American Engineering Record.

2. Material evidence that traces the location of former equipment should be preserved; this is especially true of the iron castings and plaster evidence that marks the location of the former steam engine in Building #2A and the Maltings, Buildings #35/36.

3. Artifact policies should be developed so that equipment, signage and small artifacts identified during the redevelopment of the property can be inventoried and placed in safe storage such as that presently provided in Buildings 58 and 74.

4. Conservation policies should be developed so that machinery and artifacts can be conserved and safely displayed and interpreted in the future redevelopment of the G&W complex.

5. Remnants and artifacts within the G&W complex that do not have high intrinsic historic value – bins, tanks, boilers, and equipment bases – or are superfluous to interpretation needs could nevertheless be left in place to provide visual interest in the redevelopment.

6. Artifacts not retained for interpretive purposes should, if historically significant, be offered to appropriate museums.

7. When a space will not be used either due to building code restrictions, or its lack of commercial value, that space should be made secure and the artifacts conserved, inventoried and stabilized.

8. Wherever possible equipment, and traces of equipment should be preserved in situ and interpreted. In particular, exterior pipes and small details – such as the excise double locks on doors, explosion proof fixtures, and pulleys – should be left in place.

Recommendation Two: Historic Archaeological Resources

Archaeological investigations should be undertaken as appropriate, or required, in order to further the understanding of the social, economic and technological evolution of the distilling industry in Ontario, and to assist in site interpretation.

Recommendation Three: Interpretation Programme

1. An advisory board for the management of interpretive programmes and the conservation of historic resources should be developed.

2. A visitor survey should be undertaken to determine the type and number of visitors expected and the scale, cost and content of interpretive programmes and facilities.

3. Capital and operating budgets should be established for the conservation and interpretation of heritage resources.

4. A professional interpretive team should be assembled prior to the redevelopment phase to ensure that significant artifacts are protected and to develop an interpretive programme. An appropriate staff should be hired once development is complete

Recommendation Four: Resources of Scientific/Historic Value

The following building areas have been identified as so historically significant that all, or a significant part, of each area should be preserved in situ and the redevelopment scheme be modified, if necessary, to accommodate their preservation. In each case, these areas represent rare survivors of process spaces that were either once technologically important and no longer exist or, were always rare industrial activities:

Engine Room, Building #2A [Reasons: wall finishes, evidence of floors, shape of room, vestiges of power transmission]

Malt House/Kilns, Buildings #35/36 [Reasons: floor finishes and profiles, evidence of kiln floors, kiln furnace and ventilation, shape of rooms]

Pure Spirits, Buildings #53–56 [Reasons: evidence of floors, shape of rooms, multiple floor levels, evidence of tank bases]

Scale Loft, Building #61 [Reasons: tank scales, confined space, pipes and manifolds]