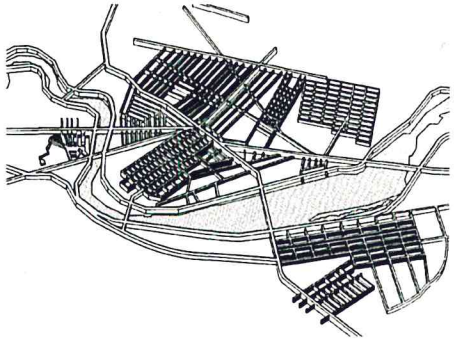
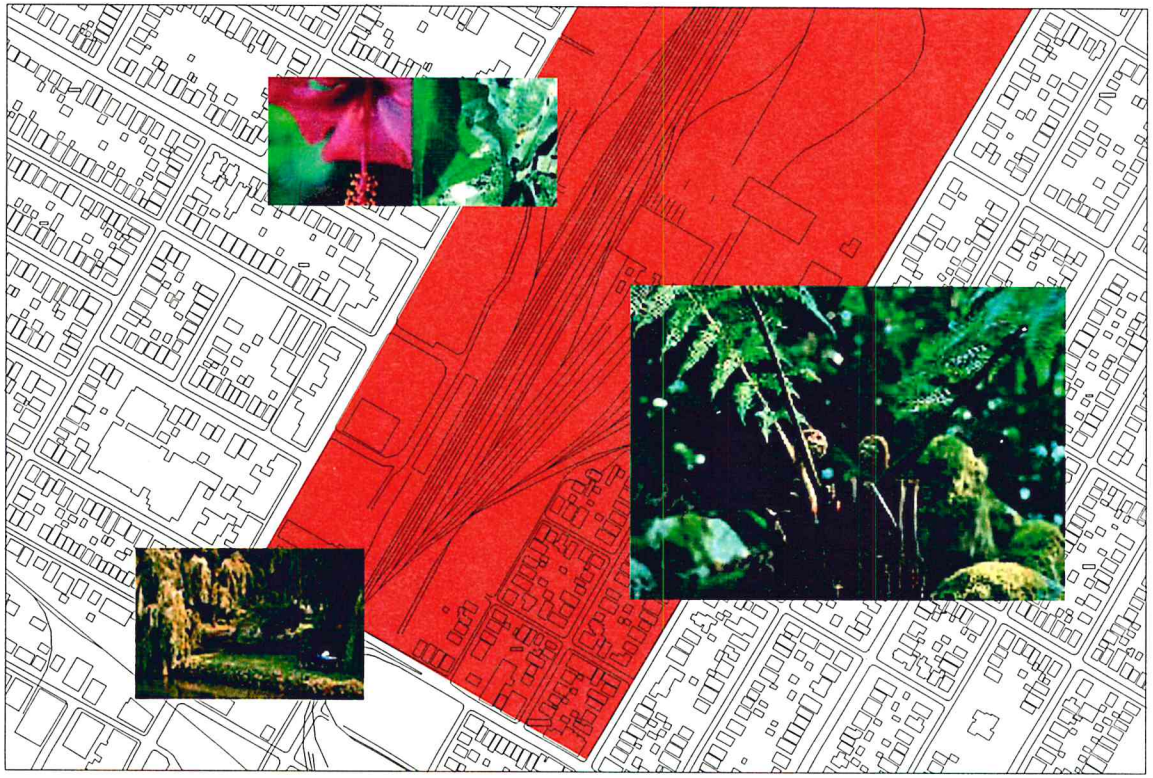
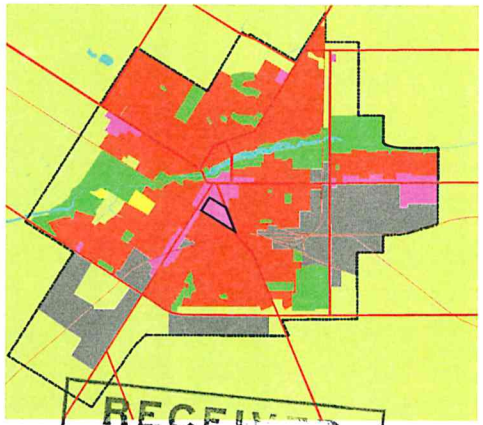
The Cleansing Fields

Restoring Abandoned Industrial Sites Within Small Communities







By Ed J Vandermaarel ON870026

Final Design Submission Dec 2003

Thesis Submission
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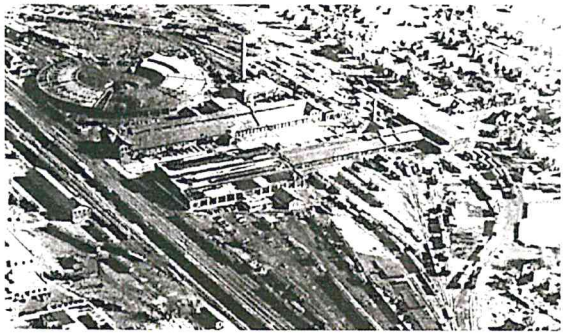
Thesis Statement

"The Cleansing Fields"



Thesis Problem

Research has shown that small communities in Southwestern Ontario contain contaminated and derelict lands left abandoned by past industrial activity. Man has failed by focusing on the present leaving these discarded and decayed sites to act as cancers metastasizing the very heart of the small community. The activities that once existed within these industrial sites were the nucleus for the establishment, vitality and development of these communities.

Thesis Statement

The Cleansing Fields *is a process, integrated over time, combining man made interventions and the natural environment to restore contaminated and derelict lands, abandoned by past industrial activity, for contemporary uses to benefit the people of the community.*

The urban dynamics of these small communities have dramatically transformed from forest to eventual abandonment over the last two centuries. I have compared the historic development patterns with the contemporary patterns of the small community to obtain insight from this transformation. The conclusions provide the basis required to develop a revised use of the abandoned land, appropriate for today's urban patterns and dynamics, both physical and emotional.

My Thesis proposes a series of potential interventions on the abandoned lands within an architectural and urban planning framework to direct a cleansing process to foster new growth in and around the "Cleansing Fields". The underlying position is that the industrial sites must be "Cleansed" in ways to foster new life to both the lands and the surrounding community. The cleansing process must take place over time to minimize the socioeconomic impact to the community and reintegrate the redevelopment into the community, its built and new form, and its spaces into the abandoned lands. My Thesis proposes to examine the tensions between the ideological, technological and philosophical aspects of proposed interventions that support the cleansing process from an architectural viewpoint.

My proposal will integrate a series of ideas to reinforce the planning framework. On the

ideological level, the whole community will benefit from the cleansing process. The cleansing of these industrial sites will be the catalyst to promote and breathe new life into the community by removing the "Cancer in the Core". Theoretically, the intervention will develop and utilize technological processes and approaches yet to be realized. These technological approaches will form as incubators to the cleansing process and generate a cohesive relationship between technology and nature.

Philosophically, the intervention will be developed on the premise that “man needs to return to nature” to cleanse and reuse rather than discard these lands. Man has declared his rule over nature and now must foster approaches and ideas which will achieve a sensitive balance between our natural and urban environments.

On a spiritual and poetic level, it is my position that the earth is a “sacred place” where man is the caretaker and steward who enjoys and reinforces the abundant good gifts of God rather than abuses and wastes them. The cleansing process, will provide the community with "healing spaces”, reminding us of, and providing us with an environment suitable for the human habitat, an environment which will stimulate and support our growth within a natural balance of and respect for our environment.

Case Studies I

Three Small Communities and the Historical Urban Dynamics

Virtually every city in the nation's older industrial regions, no matter its size, grapples with the challenge of unused manufacturing facilities and other industrial sites....Public concern about health effects from hazardous chemicals, stricter environmental laws, and changing private-sector development priorities have made it increasingly difficult for communities to restore and reuse former manufacturing sites. [1]

It was 1853 when the first railway was constructed between London and Port Stanley in Southwestern Ontario. This encouraged economic growth in St. Thomas, a node on the railway connection, until 1960. Railways were developed from New York to Chicago to the American West as well as additional lines from Buffalo to Detroit as a viable means of transporting people and goods.

In St.Thomas, the Canadian Southern Railway announced in 1870 that it would develop its rail station and yards in the Town of Millersburg. At that time, Millersburg was a small community annexed to St. Thomas in 1871. While Millersburg has been largely forgotten by residents today, the transition in the late eighteen hundreds established St. Thomas as one of the fastest growing communities in Canada and encouraged immigration from Eastern Canada, United States, Britain and Ireland. Many who were in search of employment opportunities settled in St. Thomas.

Two main railways existed during this time which employed a total of 1,000 men in St. Thomas. This brought a substantial increase in its population and rapid growth to St. Thomas. Many new buildings were erected during this time.

By the early nineteen hundreds, St. Thomas had a very high standard of living due to the amount of the railway wages. The city was regarded as one of the most progressive cities in Ontario. Six railways existed at the time as well as a street railway. Fifty-six passenger trains and eighty five freight trains passed through the city every twenty four hours reinforcing its title as the "Railway Capital of Canada".

The railway systems appeared to flourish up to the end of World War II. Financial problems set in due to new technological changes. Improved automobiles, cheap gasoline, and larger transport trucks eroded the need for passenger and freight rail. Many of the existing abandoned rail systems are a result of the competing trucking industry which continues today.

The railway lands consists of approximately 50 acres of property near the central core of the community and presently obstructs access in the north to south direction for a span of nine blocks. The central core presently lacks cohesiveness due to the disintegration of the existing built form and the lack of newly created infill.

The Small Community

The scope of the research of this thesis examines three small communities within Southwestern Ontario, Canada. For the purposes of this research paper, I have defined a small community as one consisting of a population between 10,000 and 100,000 persons.

The three communities which I have chosen for my research are Stratford, Galt-Cambridge, and St.Thomas. These communities have been selected due to different geographical locations within Southwestern Ontario. They will be examined to study the common traits and differences of the growth patterns and urban dynamics of these small communities.

Stratford, is a community that has been developed inland in comparison to its geographical location in Southwestern Ontario, located central to three great lakes, Huron, Erie and Ontario. This community is remote from major transportation corridors.

Galt - Cambridge is a community which has developed along a major river and once relied on this system as its means of transportation and a source of power. The river forced a linear development pattern as there was constant competition for land along the river edge near the central core. The river supplied the power for its flour and fabric mills. Galt eventually merged with two other small communities, Preston and Hespeler, to create a new urban centre, Cambridge. The city hall for the new city remains in historic downtown Galt today. The research was concentrated on this area as the core.

Southwestern Ontario - Key Plan

St.Thomas is a community approximately 10 miles north of a Lake Erie port town, Port Stanley, and 25 miles south of a much larger centre, London with a population of 330,000 persons. St. Thomas developed as a centre for the manufacture and repair of rail transport. The rail shops were strategically located halfway between Detroit and Buffalo and provided the main economic base for the community.

The disintegration of this vital economic source and the inability to replace this source is the reason for the lack of continuity within St.Thomas to sustain an alternative plan. The result was a decline in population. The system would eventually be replaced by the technological advances of the automobile and a new transportation system. However, its infrastructure and support displaced industry to the periphery of the community.

Stratford, Galt-Cambridge, and St.Thomas, will be examined to understand their historic development patterns, population growth, economic generators, and present day land use. The resulting information will provide insight to develop a theoretical approach for the abandoned industrial sites within these small communities.

Stratford

The History of Stratford, Ontario

The following information is a chronological extraction of the history of Stratford.

1824 The Canada Company was formed and the government of Upper Canada granted it a million acres of land to settle. The district was known as the Huron Tract and included what is now Stratford and most of Perth County.

1827 Stratford is surveyed as a site for the Canada Company.

1828 The settlement of Stratford began with the surveying of the Huron Road by the Canada Company. Their agent, William "Tiger" Dunlop, planted his surveyor's stakes around the area that was to become this beautiful city.

1832 Stratford, began to take shape when Thomas Mercer Jones, a Canada Company director, gave a picture of William Shakespeare to William Sargint, the owner of the Shakespeare Hotel. Jones gave the village the name of Stratford and the creek, which had been known as Little Thames, was renamed the Avon River.

1832 'Shakespeare Hotel' opens as Stratford is officially named. The first sawmill & gristmill are built.

1834 Surveyor John MacDonald created the town plan. He placed the geographic centre of town at the point where four townships met. He then created four main roads radiating from the centre. Three of these roads were named for the Great Lakes to which they lead, Huron, Erie and Ontario.

1853 Perth County decided to separate from the Huron district, of which it had always been a part. A condition of separation was that Stratford become the county seat, with a courthouse, jail and registry office. The next year Stratford was incorporated as a village, and in 1859 it became a town.

1854 Stratford is incorporated as a village.

1856 The year 1856 signaled the arrival of the Grand Trunk Railway and the Buffalo and Lake Huron Line, beginning Stratford's long history as a major rail centre. Stratford becomes a railway town with the coming of the Grand trunk and Buffalo-Lake Huron railways.

1859 Stratford becomes a town.

1871 In 1871 a locomotive repair shop came to town; it was expanded in 1889 and 1906.

1882-1889 Stratford reaches a population of 9000, and is designated as a city. The present jailhouse and courthouse are built.

1885 Stratford is incorporated as a city.

1886 The furniture industry becomes a major economic generator. This industry attracts prospective workers to the area, a time of economic hardship in other parts of the country.

1901 The 1250 seat "Theatre Albert" is built (now the Avon Theatre).

1904 The Parks Board was established. It created Upper Queen's Park, a professionally designed horticultural system around the area where the Festival Theatre now stands. The Parks Board was founded, eventually servicing 850 acres of city parkland.

1905-1912 A major accomplishment. The Board and citizens dissuade the Canadian National Railway from laying its tracks along the Avon River.

1918 Stratford's signature swans were introduced to the park system in 1918. First swans were given to the city by a Michigan CNR employee.

1923 The Grand Trunk amalgamated with the Buffalo and Lake Huron Railway and was taken over by the Canadian National Railway.

1935 The Shakespearean Gardens open.

1936 R. Thomas Orr, an original member of the Parks Board, claims succees in having the Shakespearean Gardens created.

1953 Tom Patterson, a Stratford-born reporter for Maclean's Magazine, and a group of local supporters opened the Stratford Festival. As the CNR shops closed and the success of the furniture industry waned, the Festival helps make tourism a significant industry for the city.

1957 Stratford Festival moves into a new permanent structure.

1964 CNR is a significant contributor to the town's economy until the closure of the shops.

1982 150th anniversary of the founding of settlement.

1985 A $3 million addition to Festival Theatre is constructed to allow production facilities to be housed in one of North America's largest backstage areas.

1993 With corporate success comes industrial dispute. A general strike, which started with furniture workers and chicken pluckers, became so unruly that the army, along with its tanks, was called in to put a stop to the strike. The strike was a major event in Canadian industrial history and is the subject of playwright James Reaney's play Kingwhistle! Canadian Travel & Tourism Industry nominates the Stratford Festival as the Canadian Attraction/Event of the year. Population reaches 28,200 with an economy based on theatre and automotive industries.

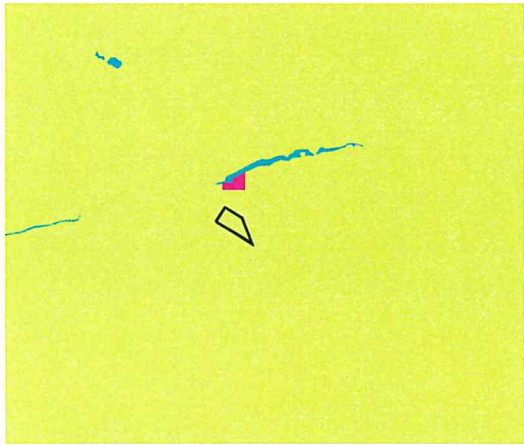
1997 Stratford named "Prettiest City in the World" as champion of the Nations in Bloom Award presented in Spain. Act III, a $13 million Festival Theatre renovation project, updates patron services including seating, box office and theatre store.

2000 Today Stratford has a diversified economy featuring manufacturing, finance and service-related businesses.

Refer to Notes and References for Historical Bibliography [3]

Historic Development Patterns of Stratford

Stratford's location was based on its position amongst three great lakes, Huron, Erie and Ontario. When John MacDonald created the town plan, he placed the geographic centre of the town at the point where four townships met. He then created four main roads radiating from the centre. Three of these roads were named for the Great Lakes to which they lead, Huron, Erie and Ontario. Its centre originated adjacent to a natural water stream, which was eventually dammed to create a lake and run the mills developed on the small settlement.

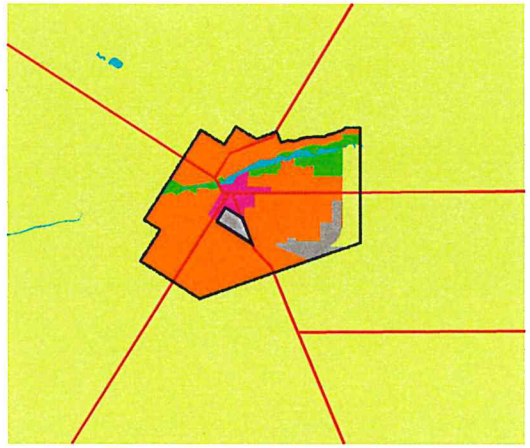


1830

- the location is selected halfway between Goderich and Kitchener on a river stream, the route determined to avoid the northerly swamp, land economically unfeasible for building new roads
- settlers create a town plan placing the geographic centre at a point where four townships meet
- four main roads are created radiating from this centre, three of which lead to the Great Lakes Huron, Erie, Ontario
- mills are formed along the stream, a dam creates a small lake area

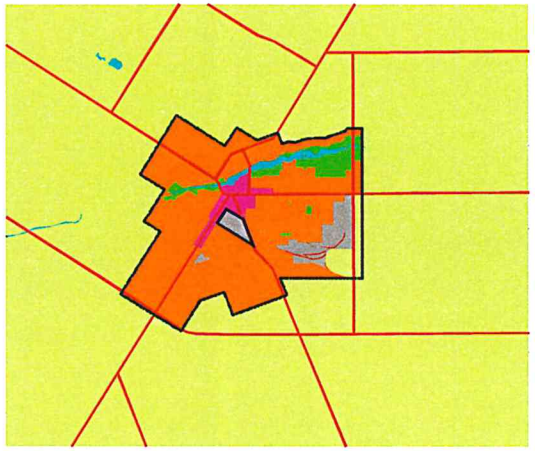
Land Use

- Water
- Park Land
- Industrial
- Residential
- Commercial
- Institutional
- Agricultural
- Highways



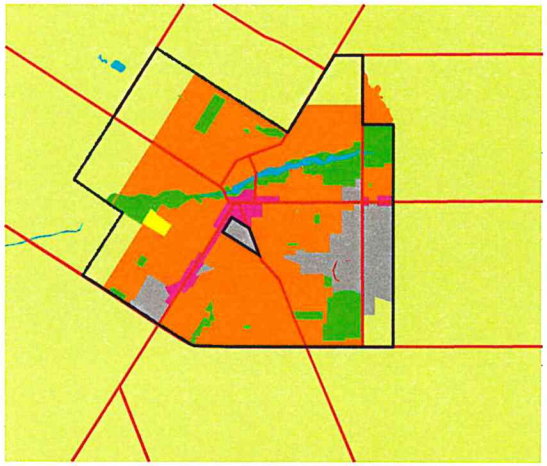
1885

- in 1856, the arrival of the Grand Trunk Railway and the Buffalo and Lake Huron Line, begins Stratford's long history as a major rail centre
- Stratford becomes a railway town with the coming of the Grand trunk and Buffalo-Lake Huron railways
- in 1871, a locomotive repair shop comes to town and was expanded in 1889 and 1906
- Stratford reaches a population of 9000, and designated a city
- Stratford makes the decision that the park lands are a very important part of their community
- the railway shops and lands are forced to be developed outside the central business area to the south and eventually to the southeast of the community
- residential areas expands as does the central business district (CBD)



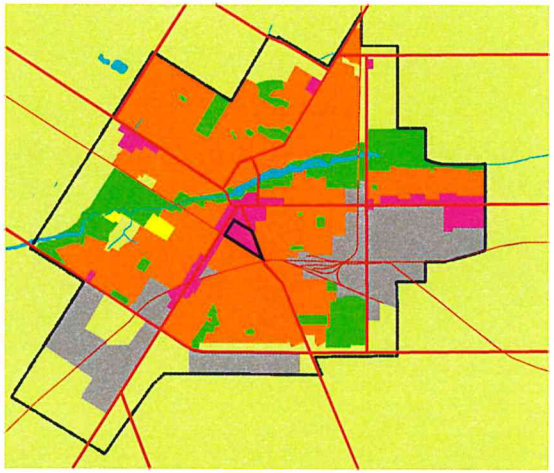
1904

- the CNR is dissuaded to lay its new line of tracks along the Avon River, thus forcing their development to the periphery of the city
- the furniture industry begins in Stratford and becomes one of the community's main industries as well as a main contributor of Canadian furniture manufacturing
- the CBD area expands along main transportation routes
- residential areas continue to expand



1949

- Tom Patterson, a Stratford-born reporter for Maclean's Magazine, and a group of local supporters opened the Stratford Festival
- the CNR shops announce closing
- the success of the furniture industry wanes
- the Festival makes tourism a significant industry for the city
- Stratford has a diversified economy featuring manufacturing, finance and service-related businesses
- Stratford Festival moves into a new permanent structure
- CNR is a significant contributor to the town's economy until the closure of the shops



1999

- there is a refocus in the industrial sector towards decentralization of factories from the large centres to smaller communities in part to reductions in manufacturing costs and largely due to the new advance in transportation technology
- the city expands its industrial sector towards the periphery of the community as large tracts of land are required for the new factories
- the CBD expands along the corridors
- residential areas expand to meet the labour demand of the automotive industry
- the existing railway shops are abandoned and the property unused
- Stratford Festival grows and constructs a new addition
- the rail and furniture industries have been replace by the automotive and tourism industries, the main economic generators for the community

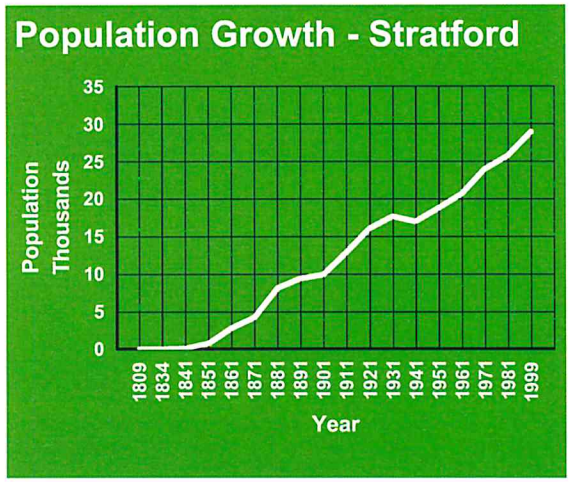
Stratford Population and Employment Patterns

Stratford first became inhabited in the early 1830's. Its population growth patterns have remained constant since its origination with steady growth. This is accounted for by the constant existence of a multi-tiered economic force which was able to fill the valleys of the recession felt in other communities.

City	Stratford
Year	
1809	n/a
1834	39
1841	133
1851	783
1861	2,809
1871	4,313
1881	8,239
1891	9,500
1901	9,959
1911	12,946
1921	16,094
1931	17,742
1941	17,038
1951	18,785
1961	20,647
1971	23,994
1981	25,781
1999	29,000

The leaders of Stratford had the vision to foresee that technological change was imminent. They realized that systems would evolve and that the present technological and economical systems would also be replaced for a small community to survive.

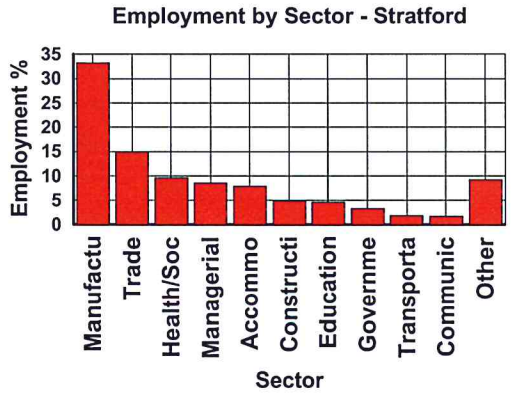
Stratford possessed a two tiered economic system. This allowed Stratford to continue its growth without experiencing the recessions felt by other communities. From the 1850's to the 1950's, the Railway Shops existed as its main economic generator, while the Furniture industry existed as its secondary economic generator. From 1950's to the present it is automotive industry which supports the mainstay of the employment sector while tourism, through the Stratford Festival, has become secondary economic generator.



Current employment statistics for the City of Stratford were researched. The following charts depict the current labour force in effect.

Manufacturing and trade appear to be the highest source for employment. It should be noted that Stratford has a higher than normal labour force in employment for the Accommodation / Food Service category which accounts for the tourism.

City	Stratford
Population	29,000
Labour Force	15,650
% Labour Force	54.0
Sector	
Manufacturing, Primary Industry	33.3
Trade	15.0
Health/Social Services	9.6
Managerial / Professional	8.6
Accommodation/Food Service	7.9
Construction Industry	4.9
Education	4.6
Government	3.3
Transportation	1.9
Communication	1.7
Other	9.2
Total	100.0



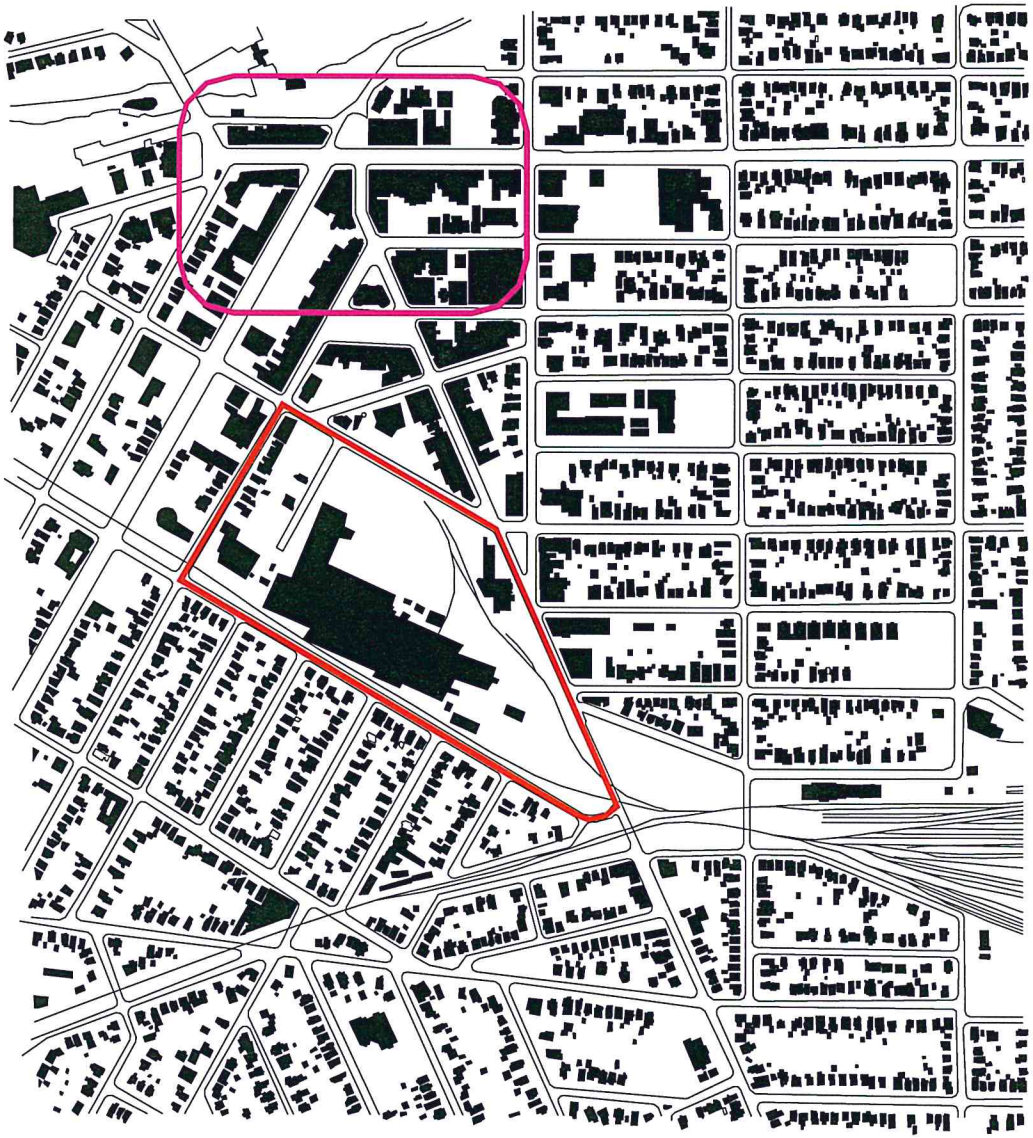
Abandoned Railway Lands

The lifeline to the Stratford economy was once the locomotive repair shops. It was located on approximately 17 acres to the south of the central core of the town. It was the determined political force in the early 1900's that located this economic generator outside the core to accommodate green space believed to be an asset. Many communities of its time often centralized its rail shops, yards and industrial areas in the centre of the town.

Stratford focused its central core around the development of a park system which eventually formed into the Stratford Festival and the tourism industry. This has been a valuable resource which generates social and cultural activities in the core of Stratford. Stratford has thus benefited from having tourism as a secondary economic generator.

The rail activities were once the main contributor to the economic base in Stratford. These lands have been left abandoned due to new forms of technology and transportation. The industrial sector of the community has grown towards the periphery of the community, due to large
available tracts of affordable land and access to economical means of transport.

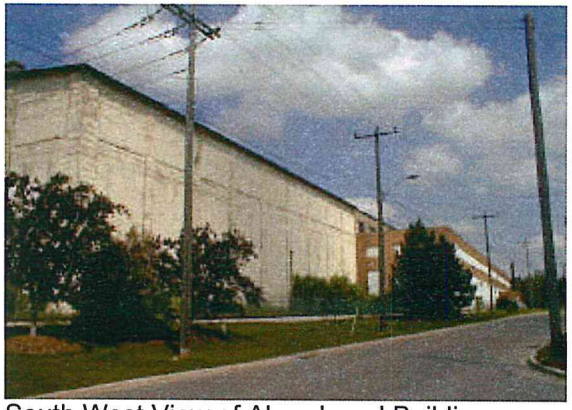
The abandoned property and associated existing buildings are located adjacent to the central business district.



Central Business District
Abandoned Railway Lands

North West View of Abandoned Buildings

North View of Abandoned Buildings



South West View of Abandoned Buildings

South West View of Abandoned Buildings

Galt - Cambridge

The History of Galt-Cambridge, Ontario

1784 The British Crown granted to the Six Nations Indians, in perpetuity, all the land along the Grand River six miles deep on each side of the river from its source to Lake Erie.

1791 The Indians, led by Joseph Brant, had the land surveyed and divided into Indian Reserve lands as well as large tracts which they intended to sell to developers.

1802 Nathanial Dodge, a millwright turned trapper and Indian trader, agrees to build a mill for Alexander Miller on the banks of Mill Creek. Mr. Miller later discovers that he does not have legal title to the land and abandons the site.

1816 William Dickson and Absolam Shade find the remnants of the Alexander Miller mill at Mill Creek and rebuild it for a short period of time while the Dumfries Mill was being built. Dickson and Shade decide on a site for a village which will serve as a focal point. The settlement is to be known as Shade's Mills. Mr. Shade takes on the task of developing the town site. Survey of the Dickson lands begins and progresses into 1817. One such developer was the Honourable William Dickson who, in 1816, came into sole possession of 90,000 acres of land along the Grand River which was later to make up North and South Dumfries Townships.

Mr. Dickson intended to divide the land into smaller lots to be sold, primarily, to Scottish settlers whom he hoped to attract to Canada. In the company of Absalom Shade, Mr. Dickson immediately toured his new lands intending to develop a town site which would serve as the focal point for his attempts to populate the countryside. They chose the site where Mill Creek flows into the Grand River and in 1816 the settlement of Shade's Mills was born.

1817 First sawmill is erected on Mill Creek.

1818 Work begins on Dumfries Mill, the settlement's first operational grist mill.

1819 Dumfries Mill commences operations. The first bridge is built across the Grand at Galt primarily at Shades' expense at Main Street. The first religious service is held.

1820 The village consists of ten buildings, a saw mill, a distillery, Shade's house and store, three log houses, a blacksmith shop, a small building and the remains of the temporary mill used until the Dumfries Mill became operational.

1821 The first tavern opens near the corner of Main and Water Streets.

1824 Shade opens a Credit store at the east end of the Main Street bridge on the south side of the street.

1825 Scottish settlers arrive. The first post office is opened in this Region named Waterloo. The new settlement grew slowly but by 1825, though still very small, it was the largest settlement in the area and was important enough to obtain a post office. Mr. Dickson decided that a new name was needed for the Post Office and consequently the settlement and he chose Galt in honor of the Scottish novelist and Commissioner of the Canada Company, John Galt. In its early days Galt was an agricultural community serving the needs of the farmers in the surrounding countryside.

1827 John Galt visits the village of Galt and the settlement's new name is confirmed. Shade wins a contract to open a road from Galt to the site of the Canada Company's new settlement at Guelph on the Speed River.

1828 The first school house is built on the southeast corner of Dickson and Water Streets.

1830 There is a large influx of Scottish immigrants into Galt. By the late 1830's, however, the settlement began to develop an industrial base and a reputation for quality products. Galt was the largest and most important town in the area until the beginning of the 20th century when it was finally overtaken by Kitchener. The town continued its steady if unspectacular growth and reveled in its reputation as an industrial town whose products reached around the world.

1831 Shade constructs the first flat bottom barge designed to carry wheat, grain, flour, high wines, pork and furs down the Grand River from Shade's store through the new Welland Canal and heavier populations east. The barges lasted only three years. The original bridge is destroyed by a flood.

1832 Shade builds the first stone house in Galt on Water Street South later incorporated into the Imperial Hotel. A new bridge is built across the Grand at Main Street.

1834 The new Main Street bridge is washed away and replaced. Cholera, carried off one fifth of the population after it is brought to town by a traveling circus.

1837 Galt's growth is increased by the Galt-Dundas Road which improves travel. A dam is built across the Grand River just north of Queen Street. A canal is built to provide water power for the planned factories. Foundations for the grist, woolen and saw mills are laid down.

1838 The Township Hall is erected on Dickson Street on the site presently occupied by the Cambridge City Hall.

1840 The Main Street bridge is once again washed away and replaced. The first bridge at Queen Street is erected to increase the value and usefulness of the factory lots along the "canal". Galt's first Bank is opened.

1842 Galt's first fire company is formed. The first foundry and machine works is formed later known as Cowan & Co. on Water Street North.

1850 Galt is incorporated as a village. Population is 2,250.

1851 Fire destroys much of the business district. Galt's prominent businessmen promise to purchase into the Great Western Railway stock if the company agrees to charter, build and operate rail line from Hamilton to Galt.

1852 A branch of the Great Western Railway to Galt is begun. Berlin is named the County Town in Waterloo County. The Galt and Guelph Railway Co. is incorporated.

1854 The Galt and Guelph Railway Line begins.

1855 The Great Western Railway takes over construction of the rail line from Galt through Preston and Hespeler to Guelph.

1856 The line of the Galt and Guelph Railway is completed as far as Preston. The second major fire destroys much of the north side of Main Street. The wooden structures are replaced with stone structures. A new Town Hall is built. The first bridge over the Grand River at Concession Street is proposed. The first Malt house is built.

1857 Galt is incorporated as a Town. One axe factory, two chair factories, four sash factories, one stove and shingle factory, four foundries, three machine shops, two woolen mills, one distillery, one malt house, one brewery, three carriage factories, one haime factory, and two weekly newspapers. Galt has its first Mayor. The cornerstone of the new Town Hall and Marketing Building are laid. Floods once again wash out the Main Street bridge and damage the Queen Street bridge. The Galt and Guelph Railway Line is completed through Hespeler to Guelph. A new bridge is built at Concession Street.

1858 The Concession Street bridge is washed out by a flood.

1859 A knitting mill begins on West Main Street later Grand Avenue. The Concession Street bridge is washed out by a flood again. A new three textile storey mill built on South Water Street on the former Isaac Sours mill site.

1860 The Victoria Wheel Works is established as the Steam Bending Hub and Spoke Factory, Victoria Works. Galt Soap Works is established.

1862 The Granite Block on Main Street is severely damaged by fire.

1864 A new "Lower Bridge" is completed at Concession Street, promising to be the strongest bridge. The Galt Brewery is established. Laidlaw and Ross establish a company to make wood working tools.

1865 A telegraph line is established between Galt and Guelph. A line existed in Guelph as early as 1950. The cornerstone of the Galt branch of the Commercial Bank is laid.

1866 A business survey places Galt economically at the head of all towns in Upper Canada. The Main Street bridge sags on the West end is declared unsafe and is closed to the public.

1867 Galt is listed as one of the wealthiest towns in Ontario. A new bridge is built across the Grand River at Main Street. A major fire burns in downtown Galt and consumes buildings on Main and Ainslie Street.

1871 Dickson Park was created on twenty-one acres of land. The Galt cheese factory opens. Galt council pays a bonus of 35,000 dollars to the Grand Truck Railway to establish a Berlin-Galt Branch.

1872 Cant, Gourlay and Co. (later the Canada Machinery Corp.) begins building a new factory next to the Great Western Railway.

1873 The Grand Trunk Railway becomes Galt's second railway as the line is officially opened. Galt Council pays $110,000 to attract the Detroit / Toronto line of the Credit Valley Railway to Galt. The line is later purchased by CPR.

1877 The first telephone in Galt is in operation. The paddle-wheel steamboat "Empress of India" is launched on the Grand River intended for pleasure cruises.

1878 The "Empress of India" is carried over the dam at Dickson Mill with a loss of eight of the seventeen passengers. The Main Street bridge was washed out by a flood again. The Hamilton Bridge and Tool Co. erects a new iron bridge at Main Street.

1879 The Credit Valley Railway line from Toronto reaches Galt. The Railway's bridge is built across the Grand River by the Toronto Bridge Co. 5 spans, 250 feet across and is the largest iron bridge that has ever been built in Canada to this date. The Railway station is located on Samuelson Street near Water Street. The new Main Street Bridge is open for use.

1881 The Galt Knitting Co. later known as the Tiger Brand is established.

1882 The Grand Trunk Railway, later part of the CN system, absorbs the Great Western Railway.

1883 The Credit Valley Railway is taken over by the CPR.

1886 The Galt Gas Works is established and the first gas fired street lights are installed. A dynamo manufactured by Royal Electric Co. of Montreal is installed in the Dumfries Mill to produce electric power for downtown Galt.

1887 The first, one storey, section of the Market Building is erected. A new iron bridge is built across the Grand River at Queen Street. A contract is let to build a bank and store building on Water Street South of the Post Office. It will house the Merchant's Bank, eight stores, and offices of various sizes.

1890 A charter is granted for the formation of the Galt and Preston Street Railway Co. Galt's first electrically powered machinery is installed at the C. Turnbull Co. Factory.

1891 Galt's first hospital is completed. Contracts are let for the new waterworks system.

1892 A new bridge is built over the Grand River.

1894 The Galt and Preston Street Railway begins.

1895 The Galt and Preston Street Railway carries 7,000 passengers in the month of February alone.

1896 The Galt and Preston Street Railway Co. expands and becomes the Galt, Preston and Hespeler Street Railway Co.

1898 The iron bridge at Queen Street (now Parkhill Road) is washed away by a heavy flood. The other two bridges are also damaged.

1900 P. W. Gardiner & Sons Ltd. takes over the Gilholm Saw Mill on Harris street to begin manufacture of interior and exterior doors, sash, trim and other millwork.

1901 Eugene Langdon Wilkes donates twenty-eight acres to the Town of Galt for Victoria Park, named in honor of Queen Victoria.

1902 The citizens of Galt vote on June 2 to buy ten acres of land at a cost of $1,600 from Mr. William Jackson to create Jackson Park. The park was later renamed Soper Park in honour of Dr. A. Soper.

1903 The Galt Robe Co. is established.

1904 Galt's first automobile is purchased by Dr. H. F. MacKendrick for a reported $1,250.00. The Grand Valley Railway opens a line between Brantford and Galt. Galt Knitting Co. factory is built on Water Street South across from the former Robinson and Howell factory where the company had operated since 1881.

1905 Canadian Tap and Die Co. Ltd. opens its factory at 27 York Place. The company changes its name to Wells Bros. Co. of Canada in 1914 and then to Greenfield Tap and Die Corporation of Canada in 1920.

1906 Geo. C. Kaiting & Sons Ltd., is organized to manufacture leather belting and other leather specialties. Galt town officials are authorized to enter into negotiations for a contract with the Hydro Electric Power Commission to being electrical Power from Niagara to Galt.

1908 The Galt, Preston and Hespeler Street Railway Co. Merges with the Preston and Berlin Street Railway to form Galt, Preston and Hespeler and Preston and Berlin Street Railway Co. The amalgamated company then agrees to lease their lines to the Canadian Pacific for 99 years.

1909 The Canadian Potato Machinery Co. Ltd. is established on Jarvis Street to manufacture potato planters, dusters and sprayers. The company trade name is "O.K. Canadian".

1910 A contract to bring Niagara-generated electric power to Galt is signed with the Hydro Electric Power Commission. Canada Machinery Corporation is formed by Dominio Charter with the consolidation of the operations of MacGregor, Gourlay Co. Ltd., John Ballantyne Co. of Preston, Hespeler, Sussex Machinery Co. of sussex N. B. and the woodworking division of Goldie McCulloch Co. of Galt.

1911 The Galt Gas Works and Electric Light Works is purchased by the town. The first Niagara-generated electric power arrives in Galt on March 15. Street lights are operational in April with domestic lighting available in July. Canadian Motors Ltd., Galt also known as the Galt Cat Co. is established. The last "Galt" car was built in about 1915.

1912 Heavy floods on March 20 and April 7 cause $100,000.00 in damage. Construction of the Lake Erie and Northern Railway is begun.

1913 B. F. Sturtevant Co. of Canada Ltd., opens a plant in Galt to manufacture blowers and, later, air conditioning equipment. The timber dam across the Grand River is replaced by concrete under the leadership of David Spiers.

1914 The Galt Armoury is erected on the site of Galt's first grist mill, the Dumfries Mill. Galt Knife Co. established to manufacture various types of machine knives for the wood working industry. The Galt, Preston and Hespeler and Preston and Berlin Street Railway is renamed the Grand River Railway. On October 22, it is announced that the Canadian Pacific Railway plans to lease the lines of the Lake Erie and Northern Railway Company "for 999 years from December next". Galt's downtown merchants hold a "Shop-in-Galt" day on November 19, to attract more business to their stores.

1915 Galt is incorporated as a city on June 1. Riverside Silk Mills is established.

1916 Passenger service on the Lake Erie and Northern Railway between Galt and Brantford is inaugurated on February 7. Shimer Cutter Head Co. is established at 20 Hobson Street manufacture woodworking machine cutters.

1917 The Bell Telephone building on Ainslie Street south is erected.

1918 Floods in the spring cause a total of $8,416 damage to the Main Street and concession Street bridges. The concession street bridge suffers the heavier damage.

1920 McCaskey Systems Ltd., originally organized in Hamilton in 1909 as the Dominion Register Co., purchases a factory on Beverly Street and proceeds to manufacture charge account register systems, counter cheque books and cash register systems. The company becomes Victor-McCaskey Ltd. in 1953, the Victor Adding Machine Co. (Canada) Ltd. in 1958 and Victor comptometer Ltd. in 1961.

1921 The Grand trunk Railway becomes part of the Canadian National Railway.

1922 The new depot of the Lake Erie and Northern Railway at Main Street opens on December 23.

1925 The Canadian Pacific Transport Co. begins a Galt-Preston bus service on September 14.

1927 The Canadian General Rubber C. begins operations in Galt on Middleton Street in the old Victoria Wheel Works plant.

1929 Major floods cause $250,000.00 in damage. The Sandiland Valve Mfg. Co. is organized to manufacture high pressure valves and fittings.

1931 A new bridge is built across the Grand River at Main Street at a cost of $52,000.00. It is opened on December 22, and was designated a Heritage Structure on July 19, 1982.

1932 The Canadian Pacific Railway bridge across the Grand River is rebuilt. It is announced in June that the Canadian Bridge company of Walkerville will replace all the steel work on the existing bridge with heavier steel. A temporary bridge is to be built to handle rail traffic while the bridge is rebuilt.

1934 The new bridge is built across the Grand River at Queen Street now Parkhill Road. It costs $45,000.00 and is officially opened on May 19.

1935 A new bridge across the Grand River at concession Street is built at a cost of $49,000.00 and is opened in December.

1940 Plans for a proposed Royal Canadian Air Force "Airdome" north of Galt are released.

1953 Construction begins on a new and modern factory for Allan-Bradley Canada Ltd.

1954 Galt suffers through three separate floods including Hurricane Hazel which causes serious flooding as the edge of the storm passes through the area on October 16. The Galt Knitting Co. is renamed Tiger Brand. Allan-Bradley Canada Ltd. begins operations in March.

1955 The Grand River Railway closes down its electric train passenger service on April 14, retaining only its local freight service. The Galt-Preston bus service is extended to Hespeler to help maintain the inter-urban public transit.

1956 A collision of two Canadian Pacific Railway trains on May 2 results in the collapse of the railway's bridge over Water Street North.

1957 Canada Coach Lines takes over the operation of the Galt-Preston-Hespeler Bus Line from the Canadian Pacific Railway in March.

1960 The MacDonald-Cartier Freeway, Highway 401 opens on November 17.

1961 The Grand River Railway closes down the last of its electric rail service on October 1, leaving only diesels to haul local freight traffic.

1963 The Babcock & Wilcox partnership purchases the Goldie-McCulloch interests in Babcock-Wilcox and Goldie-McCulloch Ltd.

1967 Graeme Ferguson, Robert Kerr and Roman Kroiter join forces to form Multiscreen Corporation Ltd. in Galt. It is the forerunner of IMAX Corporation which opens its first theatre in North America in 1971, Cinesphere at Ontario one of the theme films for Expo '67 in Montreal.

1970 "The Mall" on Main street opens on a site formerly occupied by the Canadian Pacific Railway freight yards and earlier still by the Victoria Wheel Works.

1972 Dobbie Industries Ltd. once Canada's largest privately owned textile enterprise, goes into receivership.

1973 The City of Cambridge is formed as the City of Galt, the towns of Preston and Hespeler and parts of the Townships of North Dumfries and Waterloo amalgamate. The John Galt Mall opens on Hespeler Road. It is Cambridge's first fully enclosed mall and occupies 180,000 square feet. Dundas Street is closed for about one year as the railway overpass is built. Work on the $3.2 million project begins in July.

1974 On May 17, the Grand and Speed Rivers flood their banks in some of the worst flooding in memory. In the Downtown Cambridge core alone, there is an estimated $5 million damage. The city along with other hard hit areas is declared a disaster area. Hearings to determine responsibility go on for months.

1976 Downtown Cambridge Business Improvement Area (BIA) is established. Freure Homes Ltd. unveils plans for a massive $20 million redevelopment proposal for Downtown Cambridge in mid- June. The proposal includes a hotel, retail stores, offices, a parking garage, transit terminal, senior citizens apartments and other apartments. It would cover seven acres and would be the

largest construction project in the city's history if built. Work on the first stage of the Riverbank Development begins in September on the former Turnbull Woollen Mill at Parkhill Road. The site will cost $200,000 and will open as Mill Race Park in July 1977.

1977 Construction begins on a bridge at Concession Street to replace the bridge built in 1935. The new bridge costs $1 million and is built by Dufferin construction of Hamilton.

1978 Council approves plans for the $6 million reconstruction of the "delta", the intersection of Highways 8 and 24. The final decision to go ahead with the project occurs in March 1979.

1980 City Council approves an $8.2 million flood control project, prepared by Phillips Planning and Engineering for Downtown Cambridge. It will see earth and concrete barriers built along the banks of the Grand River.

1981 The concept of a dome-covered pedestrian mall in the Downtown Cambridge shopping district is revived in January with the release of an economic and technical feasibility study prepared by a team consisting of Barton Myers Architect, M. M. Dillon, Engineers and Planners and Woods, Gordon Management Consultants. Costs for building the dome are placed at about $6 million. Cambridge is hopeful that Volkswagen will build a parts plant in Cambridge as the automobile builder asks the city to extend an option on 100 acres of land until November. Hopes are dashed when the auto maker decides to build in Barrie instead.

1982 The Canada Machinery Corporation (CMC), owned by Ingersoll-Rand since 1975, closes down in October. The business had originated in 1872 as Cant, Gourlay and Co.

1983 The Grand River Division of the Canadian Railway Historical Association announces plans to open a new railway museum at Myers Road and Highway 24 on June 5.

1984 Cambridge is rumored to be on the short list for the Honda Motor Company's $100 million automotive assembly plant. City officials are disappointed when Alliston, Ontario is chosen as the site of the plant. The rail museum proposed by the Grand River Division of the Canadian Railway Historical Association runs into difficulties as federal authorities decide to pour no more money into the project. Attempts to open the facility continue into 1986 when it is finally abandoned. Architect Nick Hill undertakes a Heritage Conservation Study of the south side of Main Street between Water and Ainslie Street. The area is designated as Cambridge first Heritage Conservation district 1985.

1985 Flood control work continues on the Grand River in Downtown Cambridge as the channel is deepened by blasting and carrying away unwanted bedrock.

1986 Construction begins in May on the 1.2 million square foot Toyota Motor Corporation plant. Cambridge Fairview Corporation and Fidra Realities Inc. propose the building of a regional shopping centre and commercial development at the northeast corner of the intersection of Hespeler Road and Highway 401. To be called Cambridge Center, the project is initially valued at $70-80 million is to provide 1,200 full and part-time jobs and to consist of a 484,000 square foot shopping facility, a trade centre, a 200 room hotel and an Olympic sized skating rink. "Store Wars" begins as the developers of both "Cambridge Centre" and the "John Galt Mall" struggle to gain Council approval for the construction of a regional sized mall. Final approval was finally won by "Cambridge Centre" in an Ontario Municipal Board decision reached in December 1988.

1987 Construction begins on a new bridge on King Street over the Speed River. The bridge is to be built one half at a time to enable traffic to continue to cross the river. Sheldon's Engineering, an industrial landmark since 1896, announces the closing of its manufacturing facilities on Grand avenue on December 7. The plant officially closes on February 26, 1988. Hespeler Furniture Co. announces that the company will relocate its manufacturing plan in Durham Ontario although the administrative and sales offices are to remain in Cambridge.

1988 The Cadillac Fairview - Fidra plan to build the $80 million Cambridge Centre Mall wins Ontario Municipal Board approval in December.

1989 Construction begins on the 300,000 square foot Knob Hill Farms Food Terminal. The project is valued at $20 million. Cambridge's unemployment rate hits 3.3% in October, the lowest in Canada. At the same time an economic slowdown is predicted for Cambridge as a result of pressures on the Canadian dollar. It is initially expected to be rather mild and short-lived.

1990 Croydon Furniture Systems Inc., formerly Inter Royal and before that Royal Metal announces that its Cambridge plant will close in June. The John Galt Mall announces major expansion plans which involve bringing a Sears Clearance Store and a new food court

to the mall first built in 1973. Construction begins on the $20 million Jamieson Parkway Place a 10 storey condominium tower located near Franklin Blvd and Highway 401.

1992 The $14 million Highway 24 by-pass in Hespeler is officially opened on November 13.

1995 The Croyden Furniture Systems factory at the north east corner of Water St. N. and Dundas is demolished in January. The company started as Royal Metal Manufacturing co. in Preston in 1945 and moved to the Water St. / Dundas St. site in early 1950's. The company operated as Inter-Royal Corp. Ltd. from 1970 to 1988 when it was purchased by Cryoden. Preston Metal and Roofing Products announces in June that it is closing its doors after 45 years in business. The company manufactured rolled metal building products for agricultural, commercial construction and architectural markets. The John Galt Mall is sold to Devan Properties and Hudson Bay Company Real Estate Ltd. early in July. It is soon announced that the mall will be substantially upgraded and will add new Zellers and Bay Department stores. The mall is also to be renamed "Cambridge Centre".

1997 The Toyota Motor Manufacturing Co. announces that the Cambridge manufacturing plant will start production in the late spring or early summer of 1998 of a new vehicle to be named the Solara. The car is described as a "mid sized affordable and comfortable sports coupe".

Refer to Notes and References for Historical Bibliography [4]

Historic Development Patterns of Galt-Cambridge

Galt originated along the Grand River. The river provided the main means of transportation for the distribution of goods and it also provided the power source to drive the grain, textile and saw mills. Galt developed in a linear north south pattern to take advantage of the power of river and maximize the use of the land along its banks, both sides of the river. Barges were used to transport wheat, flour, pork and furs to other areas.

Galt also became a major distribution and manufacturing centre due to its location and access towards Dundas. It manufactured items such as doors, trim, millwork, leather products, farm machinery, cash registers and plumbing supplies.

As the community expanded, the foundries developed along the river to support the manufacture of many of its products.

Technology continued to change and eventually the car and the transport truck became the main means of transportation and for the transportation of goods respectively.

By 1960, the McDonald Cartier Freeway, known as the Highway 401 was constructed as a major highway link between Windsor and Toronto. This highway passed between Kitchener-Waterloo and Cambridge on route to Toronto and Windsor attracting new industry to this transportation route.

As industry moved away from the centre of the community, residential areas began to sprawl outward creating suburban areas. The importance of the industrial properties adjacent to the river began to wane and eventually buildings and properties were left abandoned.

In 1972, Galt became part of a much larger municipality, Cambridge, which included absorbing two other small communities, Preston and Hespeler increasing its population eventually to 100,00 persons.

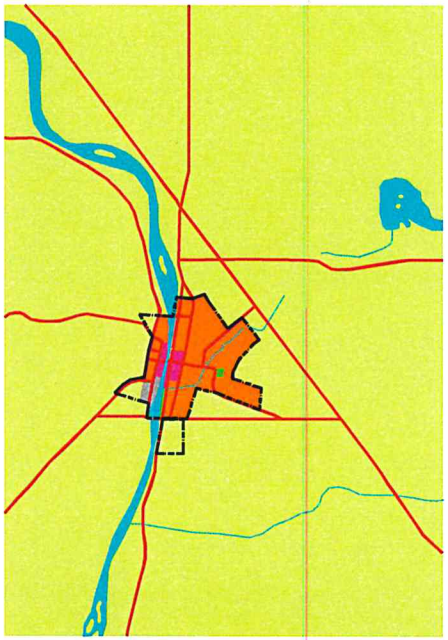
The area of Galt remains the political centre of business for the newly formed Cambridge.

1816

- the location is selected between Lake Huron and Lake Ontario on the banks of a major river system, the Grand River
- the first mill is built in 1816, the first bridge in 1819
- mills are formed along the stream, a dam is created

Land Use

- Water
- Park Land
- Industrial
- Residential
- Commercial
- Institutional
- Agricultural
- Highways

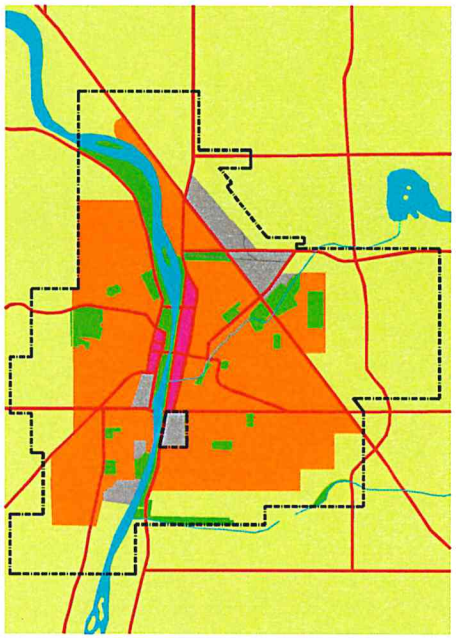


1850

- Galt is incorporated as village
- the Galt and Guelph Railway Line begins and rail becomes the predominant mode of public transport and distribution of goods
- the business district begins to expand at the centre of town
- foundries begin to line the properties along the Grand River to support the manufacture and repair of rail transport while the mills continue to expand
- residential area continues to expand, Galt becomes a "live where you work" community, within walking distances
- the first gas fired street light was introduced
- a market building is erected
- bridges continue to be washed out by floods and rebuilt

1910

- the CBD continues to grow linear in pattern along the rivers edge
- foundries continue to increase to support the rail industry and the manufacture of goods which are exported around the world
- foundries locate along the river system as well as expanding along the improved rail corridor system
- the automobile is introduced and passenger bus service begins in 1925
- residential areas expand to support the need for workers

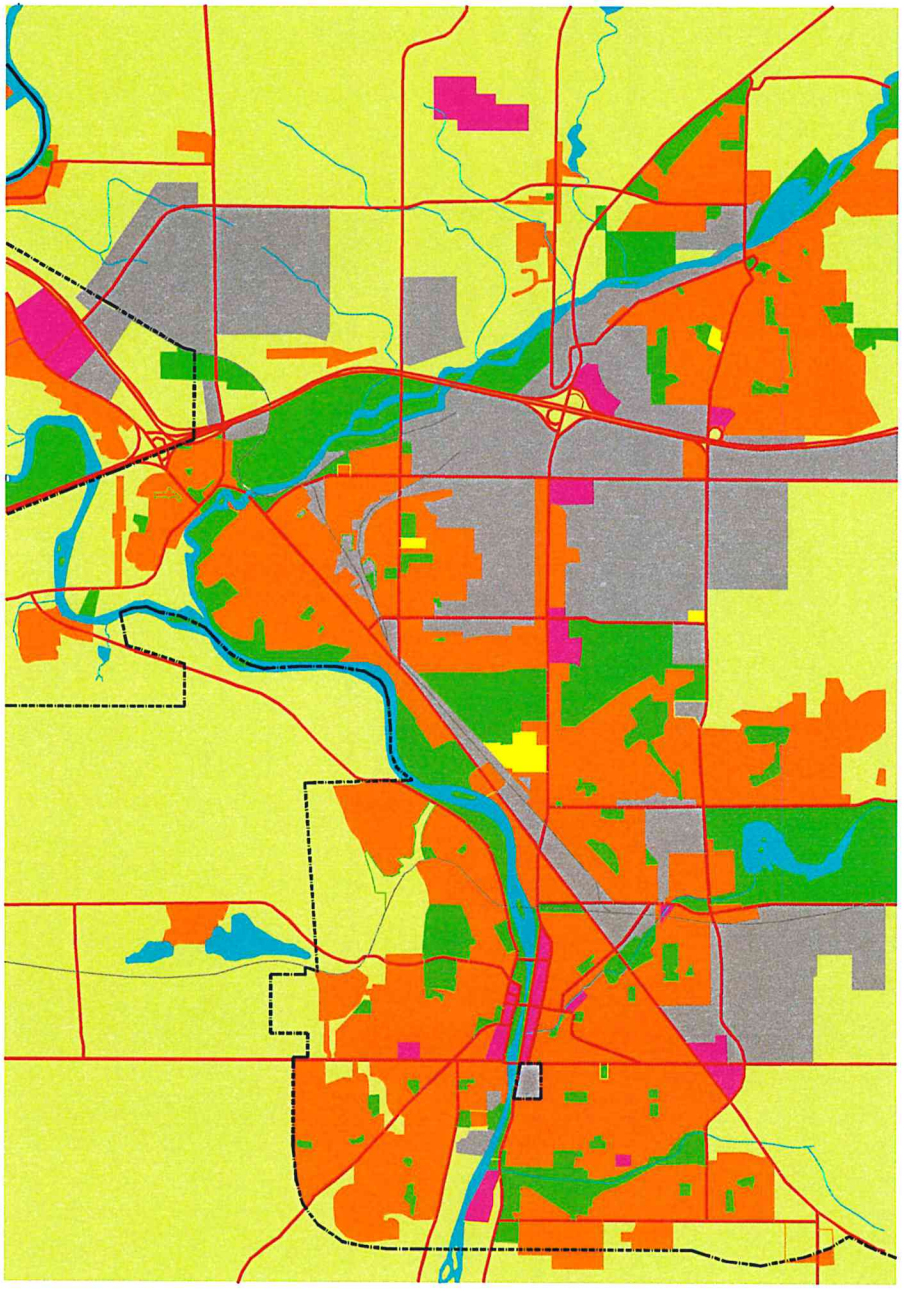


1950

- construction begins on the new Allen-Bradley Plant continuing Galt's presence in the market of manufactured valves and fittings
- Grand River Railway closes down
- bus service is extended to maintain inter urban transit
- Canada Coach expands its bus service
- the McDonald Cartier freeway opens in 1960
- the mall is introduced to Galt in 1970 in one of the old Railway buildings

After 1972

- Cambridge is formed incorporating Galt, Preston, and Hespeler
- Galt remains the political centre for Cambridge



1999

- truck transport becomes the main source for distributing goods
- the car is the "icon" for personal transportation
- new technology in the industrial sector leaves the old foundry buildings abandoned and in need for reuse
- the mall concept increases towards the major transportation corridors leaving the CBD distraught
- residential areas continue to expand outward at a rapid pace

Galt-Cambridge Population and Employment Patterns

Galt was first inhabited around 1816. Its population growth has been a constant increase since its inception. Its growth increased at a rapid pace after 1950 when rail activity began to close down. Galt made a place as a major manufacturing and distribution centre.

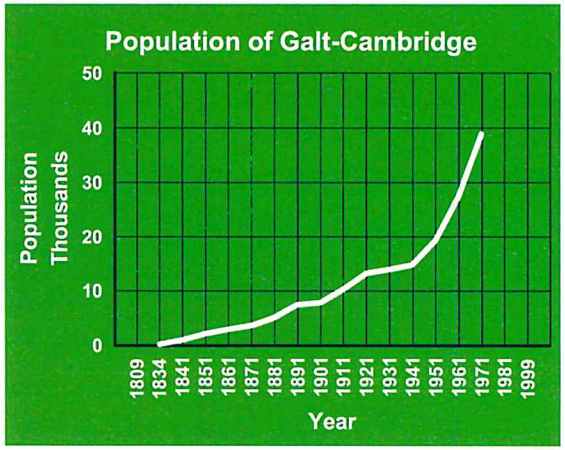
Its location near major centres such as Toronto and Kitchener allowed it to become a bedroom community to access employment opportunities of those larger centres.

Employment opportunities due to new technologies in the industrial sector lured people to this area. It is known as the silicon valley of Southwestern Ontario.

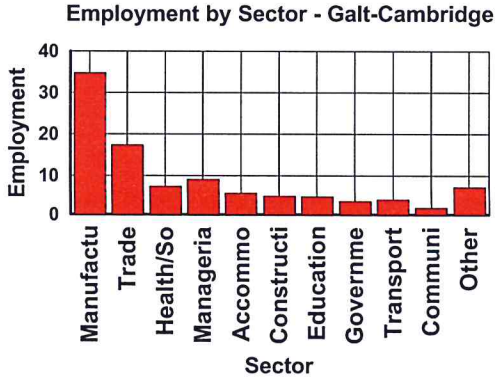
Galt's population has remained stable due to its ability to foster a multi-tiered economic base similar to Stratford. While this community largely employees persons in the automotive industry, it also possesses a broad range of other manufactured goods and technologies. This has allowed Galt to weather recessions in a positive manner due to its availability of employment opportunities. The population statistics end after 1972 for Galt since it formed into Cambridge, a much larger municipal area and distorting the population comparison to 100,000 persons.

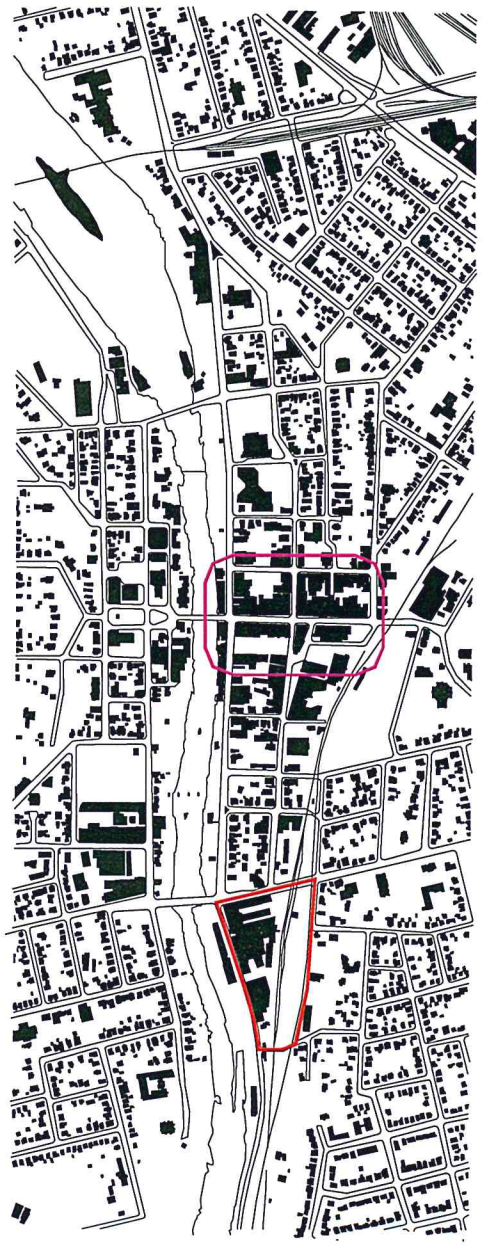
City	Galt
Year	
1809	n/a
1834	250
1841	1,074
1851	2,250
1861	3,078
1871	3,828
1881	5,187
1891	7,537
1901	7,866
1911	10,333
1921	13,332
1931	14,036
1941	14,858
1951	19,361
1961	27,647
1971	38,897
1981	
1999	

Current employment statistics for the City of Galt-Cambridge were researched. The following charts depict the current labour force in effect. As with Stratford, manufacturing and trade appear to be the highest source for employment. Managerial employment is t third highest sector of employment in Galt-Cambridge.



City	Galt
Population	105,000
Labour Force	53,800
% Labour Force	51.2
Sector	
Manufacturing, Primary Industry	34.8
Trade	17.4
Health/Social Services	7.4
Managerial / Professional	9.1
Accommodation/Food Service	5.6
Construction Industry	4.8
Education	4.7
Government	3.4
Transportation	3.9
Communication	1.7
Other	7.2
Total	100.0



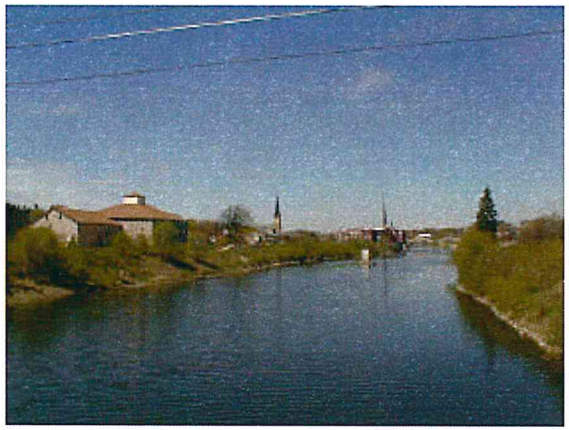


Central Business District
Abandoned Lands

Abandoned Foundry Buildings and Lands

Foundry shops and mills once lined the Grand River to use it as its source of power and distribution of goods. These locations were once the periphery of the community near the central business districts.

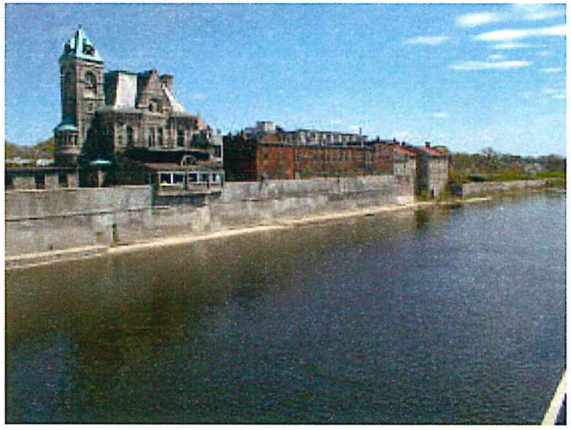
Today some of these buildings have been demolished, some of them adapted for reuse as massive flea markets, big box of the downtown.



Grand River View North

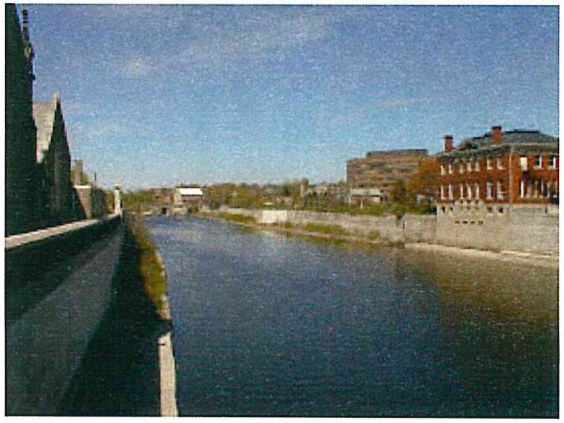
There is an opportunity in this community of Galt to develop these properties and to help redevelop the core of the community to recreate the vitality that once existed.

The property identified was once a foundry lost in the development of new technology. Its property consisting of approximately 12 acres near the CBD. A majority of its existing



Grand River View at the Central Business District

buildings have been removed while this research was being performed. The power of the Grand River is displayed by the shear retaining walls in business district. In many areas of the core these walls and embankments rise 20 feet or more above the elevation of the Main Street. These bunkers have been increased over time due to flooding which has occurred in the downtown since the early 1800's.



Grand River View North towards the CBD

Abandoned Foundry Building Water Street

View North at Concession Street

Water Street View South of Foundry Property

St.Thomas

The History of St.Thomas, Ontario

1809 Talbot Road was surveyed from Port Stanley to Southwold, Yarmouth, Malahide and Bayham Townships.

1810 Two settlers Daniel Rapelje and David Maudeville settled at the intersection of Talbot Road and Kettle Creek and became the first citizens of what is now St.Thomas.

1811 Talbot Road was surveyed westward to Aldborough and Dunwich Townships. Immediate flood of settlers occur for lots on Talbot Road (Upper Canada).

1812 US war on Great Britain. Great Britain becomes victorious and gains control.

1813 Americans won the battle at Lake Erie destroying the British fleet. Control was gained as far as Chatham.

1815 Peace agreement is signed. Village begins its development at the base of the hill, Kettle Creek at Talbot Road. Daniel Rapelje develops a mill.

1817 James Hamilton opens the first store.

1820 Daniel Rapelje divided land at the top of the hill for lots and donated land for the first church, erected in 1822.

1828 Town was described as being mostly on the flats.

1830 Edward Ermatinger decided to settle due to the availability of good roads, Port Stanley access to Marine transport and due to the period of rapid growth.

1833 In three years, two stores grew to eight stores, two large taverns, two shoe factories, a cabinet warehouse, and a saddle / harness factory. Thomas Curtis purchases frontage from St. George to Mary Street.

1837 Population 700. Two newspapers exist, the Tory / Journal.

1838 Troops were stationed in St.Thomas which became a boom to the merchants and businessmen.

1841 The first disastrous fire occurs at the Alexander's store on the northwest of Talbot and Stanley Streets. Twenty five houses, stores, barracks, the St.Thomas hotel and all buildings both sides of Talbot Street burned as far westward as McKay's store at King St.

1844 A plank road was opened from Port Stanley to London on Talbot to Stanley Street and rejoined Port Stanley Road, routed around two river crossings. This required only one bridge over Mill Creek. Two bridges were built later in the valley now known as Highway #4 (Sunset Drive).

1846 Population grew to 1,000 persons. The community was becoming more diversified as a large distribution centre for the prosperous agricultural community.

1851 The County of Elgin was established. St.Thomas was incorporated as a village.

1850 - 1855 Merchants brought goods through Port Stanley and distributed product through St.Thomas and London. The railway began to cause major growth changes for St.Thomas.

1853 County Courthouse and jail buildings were erected.

1854 The Great Western railway was developed. Windsor - London - Niagara was developed.

1855 Great Western was connected to Toronto which resulted as a blow to St.Thomas.

1856 London and PSTR (Port Stanley Terminal Railway) was completed which created a disaster for the village of St.Thomas. London became a major competitor. The shares of the developed railway was later sold by St.Thomas to the City of London for 25k, 125k was originally invested.

1855 - 1860 St.Thomas entered a state of depression and a decline in population.

1860 The American Civil War created some stimulus. Prosperity was confined to the west end at the brow of the hill. During the 1860's there was a slow increase in the town's size and population.

1861 St.Thomas was incorporated as a town.

1865 A severe fire occurred where three frame business buildings on the north side of Talbot opposite Church Street were damaged.

1870 The south side of Talbot Street, Stanley Street to William Street, half of the buildings were burned. The development of brick buildings began incorporating firewalls. Canadian iron foundry on railway property south of Talbot east of Balaclava. Railway wheel car production.

1870 - 1914 Railways produced the main economic growth other industry related to local needs and natural products : wood, clay, agriculture and specialized such as cosmetics, chocolate, shoes, car wheels for rail, agriculture machinery, monuments, and alcoholic beverages.

1871 Fire limits were established. Population growth charges 2200 people.

1871 - 1881 St.Thomas becomes the "pride of the west". Neil Darrach becomes the first councillor. Population grew from 2,197 to 8.367

1872 Great Western was developed from Glencoe to Welland. The Canadian Southern railway was developed to Amherstburg. Millersburg, a tiny rival to St.Thomas was immediately to the north of the railway development. At that time one built a house near one's work. Millersburg was a section east of the London and Port Stanley tracks. These were the only buildings between John and Metcalfe Streets. The Catholic church, Hay's Bakery, Moors's Tannery and a Presbysterian Church existed. The 26,000 sf CASO station was constructed as a rail administrative centre. The next 20 years St.Thomas grew together with Millersburg. John Street to Metcalfe Street trace the growth.

1879 Street railway was introduced.

1881 St.Thomas was incorporated as a City. Streets are unpaved. Alma College opened. Talbot Street was a hub. St. Thomas was known as the "Railway City" due to its connections and stage coach lines. Credit Valley Rail Woodstock to St. Thomas.

1883 Erie Iron was built at Curtis and St. Catherine, where they made agricultural implements and wheel barrows.

1898 Electrified railway was introduced.

1903 Pere Marquette used Michigan Central Tracks from St. Thomas to Niagara Falls and to Victoria and Black Rook (Buffalo). CASO most important industry to locate here. MCR Michigan Central Railway. Passenger and Freight System was very active.

1911 Electricity displaced gas.

1915 - 1925 The population increased from 17,029 to 17,152.

1918 - 1930 Little economic growth occurred during this period.

1919 Talbot Street is paved.

1925 There is a dismal financial picture of the street railway development due to modern services. Loss of rail to other modes of transportation is notable.

1925 - 1943 The population decreased from 17,152 to 16,493.

1930 MCR becomes part of NYCentral. Railway. The automotive industry increases.

1937 New industry, Weatherhead arrives.

1945 World War II. Timken Roller Bearing arrives. Timken becomes a cornerstone to the St. Thomas industrial sector. It is the end of prosperity. The mass production of trucks and the establishment of modern highway systems begins. Automobiles become personal symbols. Railways try to modernize with diesel power and longer trains, less maintenance, cheaper fuel. Diesel plants are developed in London which becomes disastrous for the St. Thomas economy.

1947 The Pere Marquette Railway becomes part of C&O.

1949 The population grows to 19,724.

1950 Diversified industries with national and international reputation arrive. St. Thomas is no longer dependent on the railway.

1957 Passenger service is terminated.

1959 The population grows to 19,751.

1960 Wabash Railway becomes part of Norfolk and Western. Industry is attracted to its newly annexed lands and becomes the most progressive of post war years.

1965 Freight service is terminated.

1967 The Ford plant arrives.

1970 Industry expands again. Easterly industrial development affects the downtown. A new hospital is built on Elm Street. The Arena and Collegiate are built distant from the downtown.

1974 A downtown improvement plan was established.

1981 The St. Thomas by-pass is completed. Larger trailer transports are utilized for distribution. Population grows to 27,600.

1999 Population grows to 32,000.

Refer to Notes and References for Historical Bibliography [5]

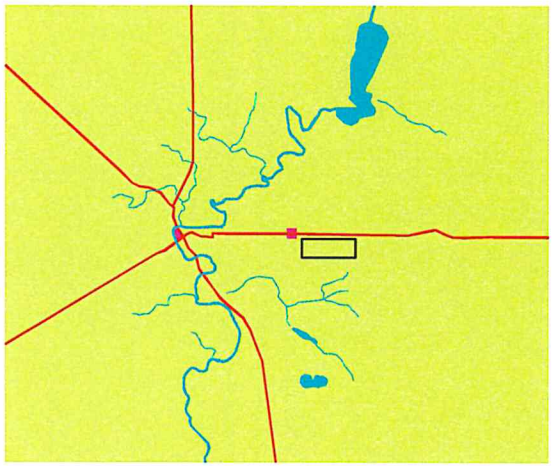
Historical Development and Employment Patterns of St.Thomas

St. Thomas is located at a node along the Kettle Creek intersecting trails north to south into the Port town of Port Stanley and east west through a trail that paralleled Lake Erie.

Although not as dominant as the Grand River in Galt-Cambridge, it was the Kettle Creek river node which attracted settlers as a source of power to begin saw mills and grain mills. St.Thomas developed in a linear pattern not due to the river system but rather as infill between another community 1 mile to the east named Millersburg.

As population increased the community grew easterly and eventually annexed Millersburg into St.Thomas creating one of the longest main streets in a community in Southwestern Ontario.

The community which began its CBD in the west end of the community eventually expanded easterly since the terrain around the river base was a major obstacle for development.

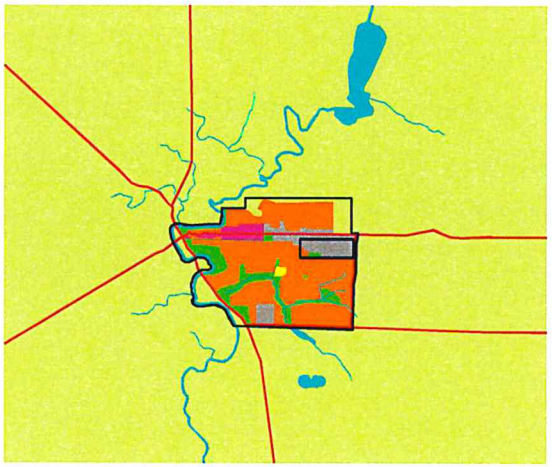


1810

- the location of St.Thomas is selected along Kettle Creek at the intersection of a north-south and east-west
- mills are formed along Kettle Creek

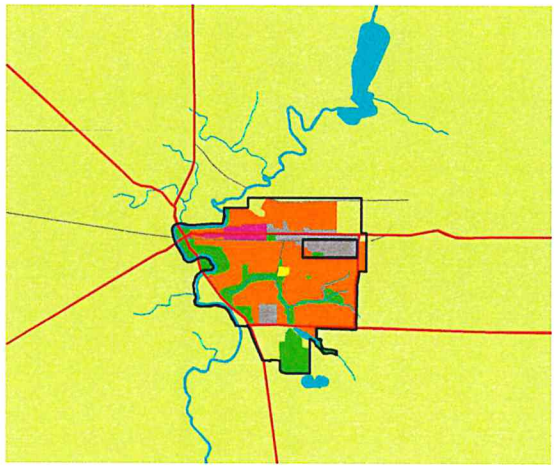
Land Use

- Water
- Park Land
- Industrial
- Residential
- Commercial
- Institutional
- Agricultural
- Highways



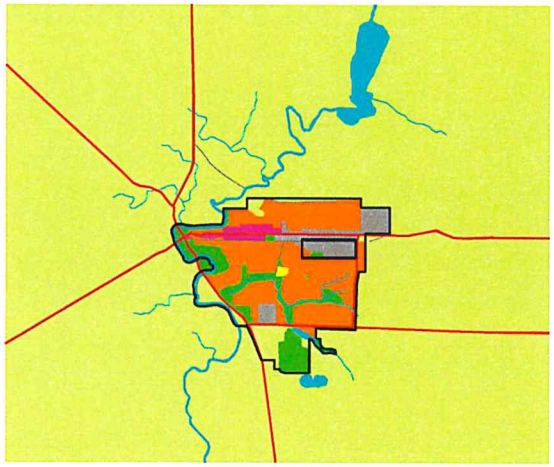
1880

- merchants began to bring goods in from Port Stanley distributing them in St.Thomas and London
- railway began to make major changes in St.Thomas, Great Western - Windsor to London to Niagara was developed
- London and Port Stanley rail was completed creating a disaster for St.Thomas because London became a major competitor
- 1860 St.Thomas entered a state of depression
- 1880s rail begins to become the main economic base as rail yards are established east of the CBD for the manufacture and repair of rail systems



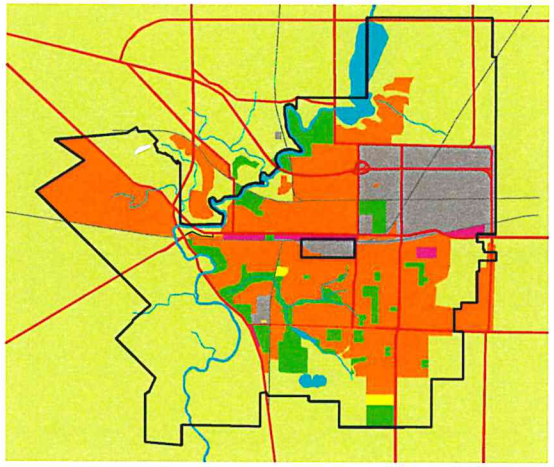
1910

- MCR rail shops locates to St.Thomas to reinforce St.Thomas as the Railway Capital of Canada
- 1920 - 1930 there is little growth



1950

- new industry begins to arrive into the City and Timken Roller Bearing becomes a cornerstone industry
- trains no longer hold importance as public transport, the car becomes the choice for personal transport
- the development of modern highway systems begins
- St.Thomas is no longer dependent on the rail systems
- freight service is terminated
- industry is attracted to the new annexed lands
- Ford of Canada builds a plant in 1967 that eventually supports over 3,000 employees



1999

- industry continues to expand easterly affecting the vitality of the downtown
- a downtown improvement plan is attempted
- a new by-pass is completed in 1981 which disintegrates the downtown even further
- a new arena, high school, and sports complex are built on the periphery of the city also affecting the downtown
- the central business district becomes distraught
- the railway yards and the foundry is left abandoned leaving approximately 50 acres of property distraught in the centre of the community

St.Thomas Population Growth and Employment Patterns

St.Thomas experienced major setbacks in its population growth. During the mid 1800's, its decision to support a rail connection from Port Stanley to London proved to be disastrous as it reinforced London as a major competitor in the manufacture and distribution sectors.

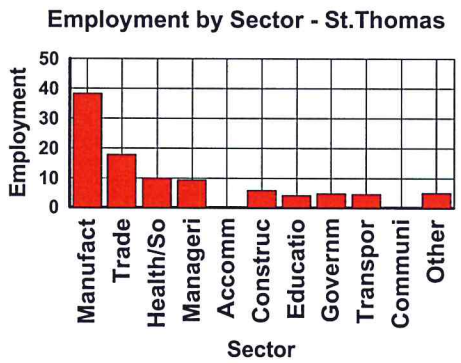
St.Thomas experienced a decline in its population in the mid 1900's at a time when a shift occurred in the termination of the rail industry and the beginnings of the automotive industry.

City	St.Thomas
Year	
1809	2
1834	623
1841	834
1851	1,240
1861	1,720
1871	2,200
1881	8,367
1891	10,920
1901	13,474
1911	16,028
1921	17,043
1931	17,115
1941	16,566
1951	18,122
1961	20,465
1971	24,032
1981	27,600
1999	32,000

It has continued a steady pattern of growth since the 1950's due to a strong automotive manufacturing market and the arrival of new technologies in developing the automobile. It has attracted industry due to its access to the 401 corridor being 20 minutes from St.Thomas coupled with a strong source of employees and large tracts of valuable land at reasonable rates.

Current employment statistics for the City of St. Thomas were researched. The following charts depict the current labour force in effect. Manufacturing and trade appear to be the highest source for employment. Its hospitals appear to be a major source of employment, largely due to the existence of the St.Thomas Psychiatric Hospital located on approximately 100 acres of property in the area. As well The St.Thomas Elgin General Hospital serves a number of surrounding communities.

City	St.Thomas
Population	32,000
Labour Force	16,016
% Labour Force	50.1
Sector	
Manufacturing, Primary Industry	38.4
Trade	17.9
Health/Social Services	10.0
Managerial / Professional	9.2
Accommodation/Food Service	-
Construction Industry	5.8
Education	4.2
Government	4.8
Transportation	4.6
Communication	-
Other	5.1
Total	100.0



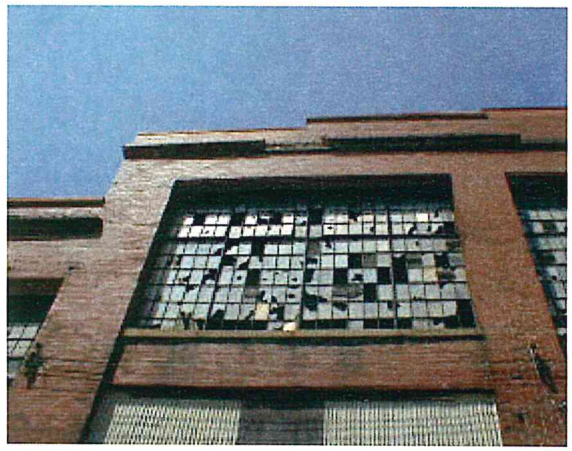
Abandoned Railway Lands

The loss of railway transport had an enormous impact on the economy and development of the City of St.Thomas. This loss left approximately 50 acres of abandoned lands and buildings one block south of the main street core.

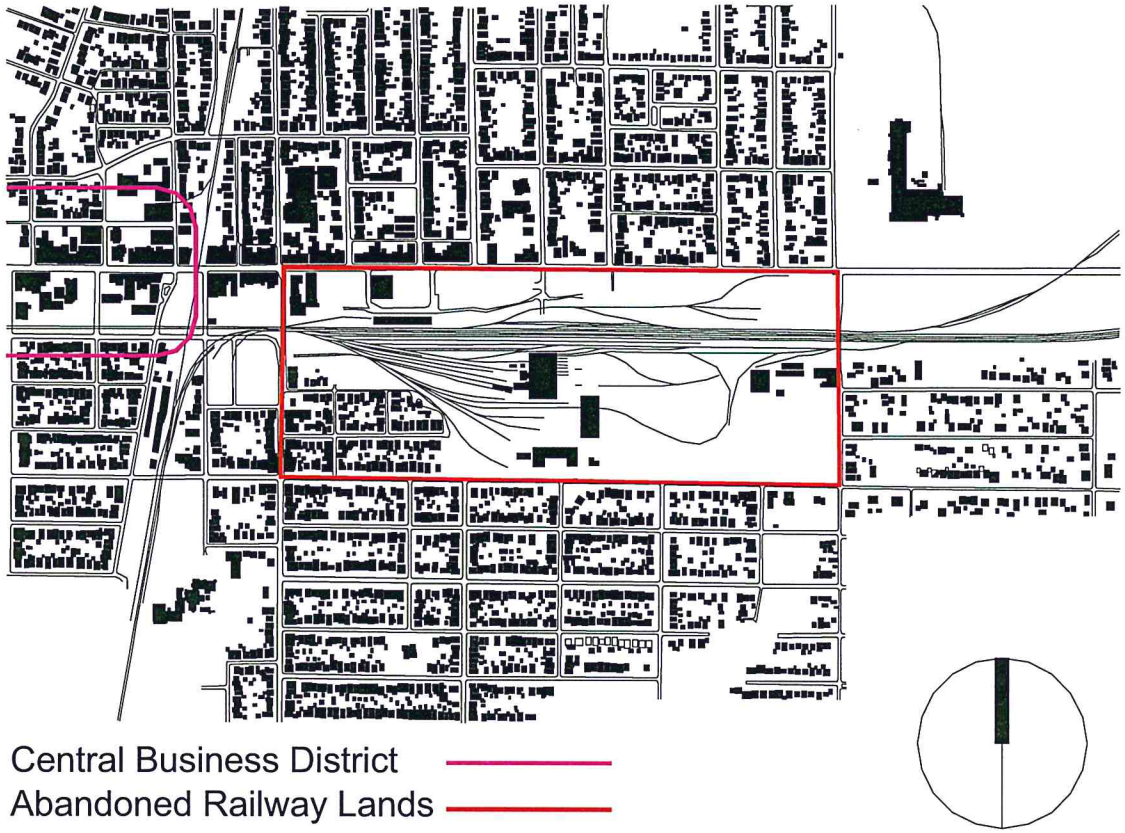
The activity on this property once provided St.Thomas with the economic base to sustain the community. The shift to the automobile and the automotive industry has left the centre of this town desolate and defragmented.

There exists an opportunity to redefine the City core and establish the density of activities to revitalize the core as once existed.

BX Control Tower



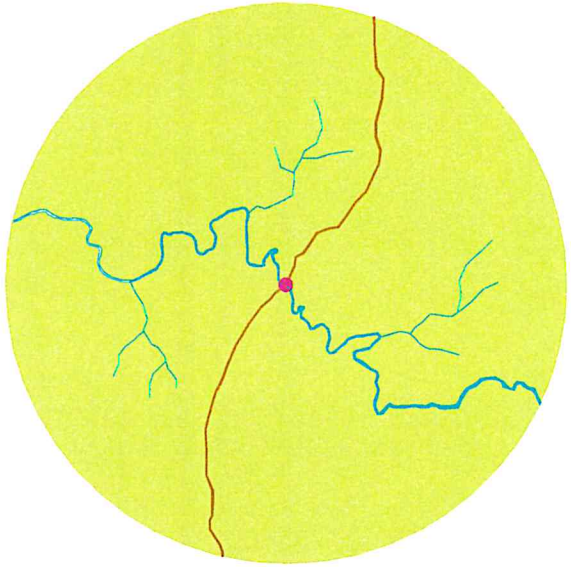
MCR Rail Shops - South Facade



MCR Rail Shops - Southeast View

Canada Southern Train Station

Historic Model



1810 - 1830's

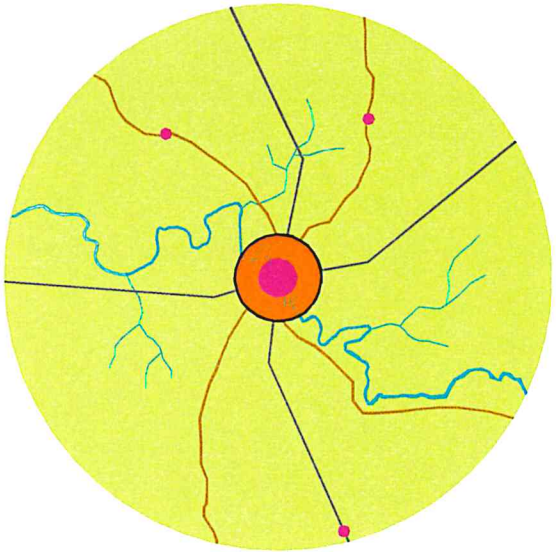
Summation of Three Small Communities

Stratford, Galt-Cambridge, and St.Thomas have been researched and examined to establish common traits and differences amongst the urban development patterns and land use of these small communities.

The common characteristics have been extracted and utilized to create a historic model incorporating these traits. The model has been developed over time between the 1800's and 2000 to reflect the similar time growth of the communities which have been examined.

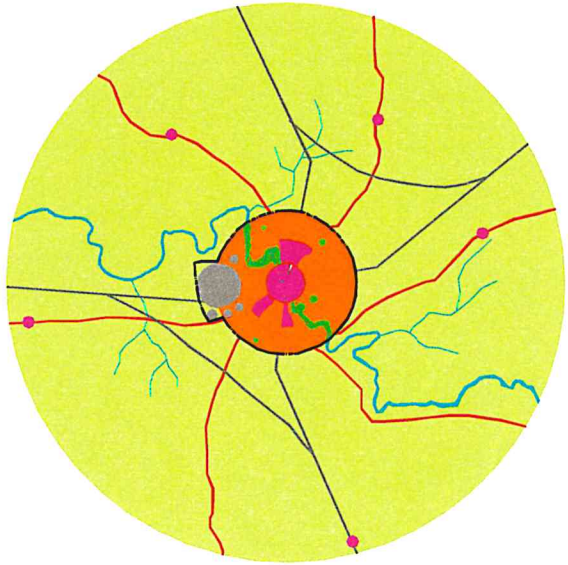
The resultant model indicates open areas of abandoned lands in or near the core and the manner in which urban sprawl occurs within small communities.

- through exploration, a trail is developed in the countryside
- the explorer discovers vast areas of unclaimed land and settles beginning a node along the trail
- the settlement node is developed at the intersection of the trail and a river, the source for drinking water, the development of mills, using the river as power source, and means of transportation.



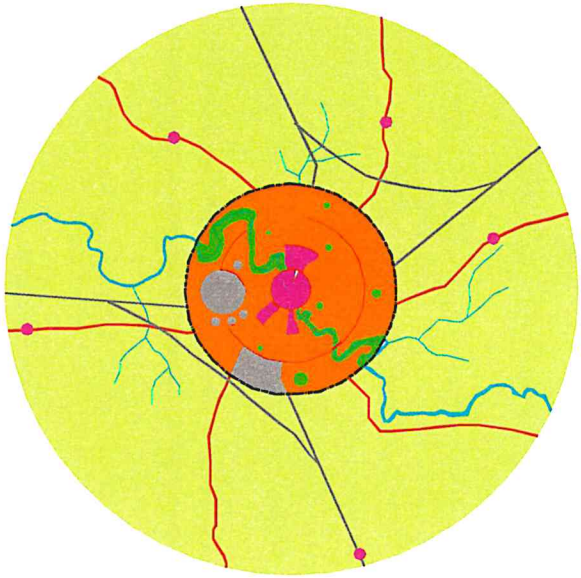
1830 - 1860's

- through time, the settlement attracts immigrants to the area to live and develop the newly discovered lands
- other settlements originate as local trade centers for goods, such as agricultural goods and furs
- the settlement grows to serve its new inhabitants, many of its people live above their places of work in the village
- the horse and carriage are the means of transport
- rail begins its arrival to link communities across the country



1860 - 1920's

- trails are turned into dirt roads
- railway becomes the predominant means of public transport and for the transport of goods
- some communities develop into major railway yards for the distribution of goods and the manufacture and repair of railway yards
- additional industrial shops are created to support the rail technology
- a new technology develops, the internal combustion engine, and the automobile arrives
- commercial areas (CBD) expand along the main original transportation routes
- green space is created along river edges and parkettes in residential areas



1920 - 1960's

- the automobile increasingly becomes the transportation of choice for personal means of transportation
- truck transport begins to make an impact on the rail industry as its importance declines as a means for transportation and goods distribution
- the communities which have developed based on its major railway yards begin to feel an economic impact as the need for rail employees dramatically increases
- roads are increasing to support the vehicular capacity cutting swaths through valuable agricultural land
- the suburban subdivision is introduced focusing on the concept that every family should own a house and a place to park their car

1920 - 1960

- existing commercial areas (CBD) maintain their status quo, for the time being
- green spaces are created along river edges and parkettes are created in residential areas
- the automobile industry expands dramatically to support the manufacture of the car and car parts, creating industrial areas on the outskirts of the community served by rail and truck transport.

1960 - 1999

- families own 1, 2 or 3 personal vehicles in a small community.
- urban design manifests itself around accommodating the car
- freeways and expressways are formed linking communities to major urban centres
- truck transport becomes the predominant means of distributing goods fostering a just in time delivery service to the industrial sector
- the use of the rail industry drastically diminishes leaving abandoned rail yards
- the suburban subdivision continues to grow outward from the community creating "urban sprawl"
- central business districts feel the impact of sprawl and many cores become distraught
- the mall becomes a popular place to shop due to its free parking, indoor temperature control and one stop shopping concept
- the "big box" retailer develops along major highway corridors - also known as disposable retail

1960 - 1999

- green space continues to be developed along river edges and parkettes in residential areas
- some communities create "dams" to feature conservation areas and provide sources for power on the periphery of the city
- industry is attracted along the new main transportation corridors due to close proximity to the corridor, and large tracts of economical developable land.
- pockets of abandoned land are left in or near the core of the community due to the change in industrial and transportation technology as well as the progression of urban sprawl.

There are a number of observations which resulted from the research of the community of Stratford, Galt-Cambridge, and St. Thomas which provides insight into alternative design plans for the cores of these small communities.

The general observations discovered through the research are as follows:

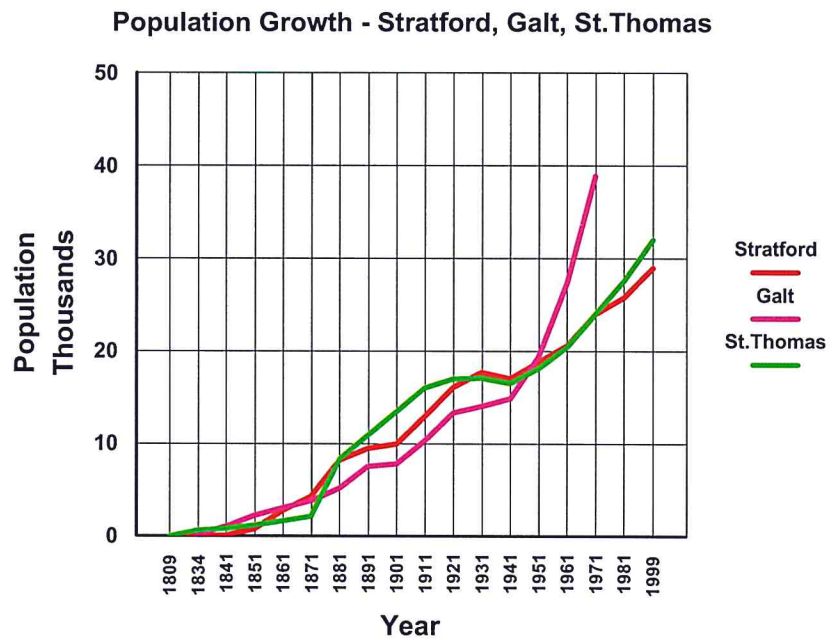
1. All the communities researched possessed large tracts of continuous abandoned industrial lands within or near their cores.
2. All the communities experienced a shift in the location of their industrial lands due to the dynamics of changing technology.
3. The automotive industry remains predominant in all the communities as the main employment generator.
4. All the communities experienced the development of a new freeway system, located on the periphery of the community either by way of the 401 or a by-pass rerouting traffic around the community
5. All the communities experienced a major decrease of activity in their cores resulting in the erosion of the fabric of their downtowns
6. All the communities experience urban sprawl
7. All the communities, with the exception of Stratford lacked large areas of green space, within their core areas.
8. All the communities, with the exception of Stratford, lacked an alternative activity within the core to create activity.

9. According to Galt-Cambridge's population growth statistics, it's growth appeared to be the least affected in changes to transportation technology over time. Galt possessed a multifaceted manufacturing and technology base diverse during its history. This, however, did not preclude Galt from possessing a downtown core which experienced disintegration.

City Year	Stratford	Galt	St.Thomas
1809	0	n/a	2
1834	39	250	623
1841	133	1,074	834
1851	783	2,250	1,240
1861	2,809	3,078	1,720
1871	4,313	3,828	2,200
1881	8,239	5,187	8,367
1891	9,500	7,537	10,920
1901	9,959	7,866	13,474
1911	12,946	10,333	16,028
1921	16,094	13,332	17,043
1931	17,742	14,036	17,115
1941	17,038	14,858	16,566
1951	18,785	19,361	18,122
1961	20,647	27,367	20,465
1971	23,994	38,897	24,032
1981	25,781		27,600
1999	29,000		32,000

10. Galt-Cambridge experienced early signs of redevelopment within it's core largely due to the restoration of existing historic buildings.

11. While Stratford's population growth statistics appear to be unstable over time, its downtown core appeared to be the most vital out of all three of the communities. This possibly was due to its due to its decision in the 1900's to locate the railway outside of its core and focus on the parks and lakes in its core area.

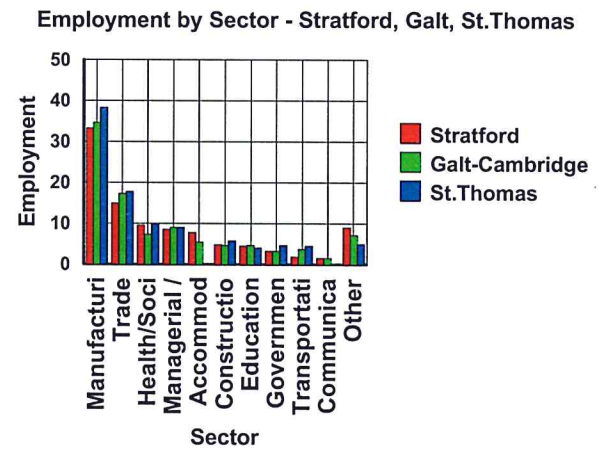


12. St. Thomas possessed the largest continuous area of abandoned property of the three communities, Stratford 17 acres, Galt 12 acres, and St.Thomas 50 acres.

13. St.Thomas experienced major space fluctuations in its population growth over the last 150 years.

14. St.Thomas relied primarily on the manufacturing industry as its economic support during the past 150 years.

15. All abandoned sites were contaminated by industrial toxins left through previous manufacturing processes.



Case Studies II

A Study of Restored Abandoned Industrial Sites

In order to gain insight into approaches for the cleansing and restoration process of abandoned industrial sites, it is important to research completed projects and to understand the history behind these sites, the problem which was, and the approach taken for a solution, whether the successful or unsuccessful.

As part of my research I have selected three projects for Case Studies. The first two Case Studies are similar in respect that they their abandonment was a result of the change in transportation and distribution technology. This is similar to the historic urban dynamics of the three small communities in that rail transportation was abandoned for newer technology. The "Eden Project" is a cleansing and restoration of an abandoned open pit mine. This project will lend insight into the unique approach taken for the cleansing, restoration, and reuse of abandoned site as well as architectural response to the site.

Old Port in Montreal which served as a distribution port served by the railway industry became obsolete once rail transport become uneconomical to distribute goods throughout Canada and the Northeastern United States. Containers and transport trucks became popular and the opening of the St. Lawrence Seaway allowed ships to traverse through the Great Lakes system to access other ports.

The Old Port District was then restored into a popular tourist destination, with restored locks, urban parks, and piers. Year round events complimented the restoration to create activities for the resident and the traveler.

Like Old Port, The Forks in Winnipeg also became abandoned due to the loss of the railway industry. This location in the core of the city once served as a "Gateway to the West" for many immigrants that envisioned Canada as the land of opportunity.

The restoration of The Forks provided a balance of activities catered to both the local residents and the tourist. It now provides a recreational, cultural, and commercial venue in the centre of Winnipeg incorporating the historical buildings which exist since the 1900's.

The Eden Project located in St. Austelle England combines unique restoration concepts with modern architectural approaches. This project is a complete restoration and reuse of an open pit mine into a indoor and outdoor botanical garden showcasing plants of the world. It was developed for scientific study, and education but its main financial support is through its tourism component.

A detailed history of each site and its present uses are described in the following pages.

Old Port of Montreal

History

Montreal exists today due to its natural landscape that acted as a port of call to traders as early as the 1600's. The Old Port site and Old Montreal, which was declared a historical district in 1963, are still widely sought out attractions for tourists today interested in Canadian History.

A fur trading post was set up in Montreal in 1611. This became the location where fur traders stopped to transfer their goods. The Lachine Rapids which lie directly ahead was an impossible obstruction to cross especially with the loading and weight of the furs. The fur trade continued to grow and expanded greatly after 1760 with the beginning of British rule. The fur trading industry experienced phenomenal growth which spawned the development of the one of the first port facilities in Canada. Piers were constructed for each merchant to load and unload his merchandise. A steamship made its first trip between Montreal and Quebec City in 1809.

The size of trading vessels grew as time went on and by 1821, the Lachine Canal was excavated for the third time being completed by 1825. A Harbour Commission was formed in 1830, to manage, expand and improve the port facilities. The next 20 years would be ones of continued development.

Since the Harbour Commission's goal was to develop a port to accommodate ocean vessels, it began dredging the channel between Montreal and Lac Saint-Pierre in 1850.

As with the other smaller communities studied, the railway industry began to have an impact on the Old Port of Montreal around 1850. The Old Port District made Montreal a prominent commercial hub in the North American distribution system. The railways linked Canada, the Eastern United States with Europe through this port. The activity generated at this port has seen up to 1,000 1,000 ocean vessels every year.

Western Canada and its wheat farming again increased the importance of this port location. Railway activity developed into a transcontinental train in 1886 and by 1898, the Federal Government realized the importance of this port to the country. It began to improve the port facilities so that by 1922 there existed new grain silos as well as a cold storage warehouse. The well known Clock Tower had been built by this time as well.

Shortly after, Old Port of Montreal became North America's second largest port, New York City being the largest. This port was one of the largest grain-handling ports in existence at the time. The grain activity reached its peak in 1934.

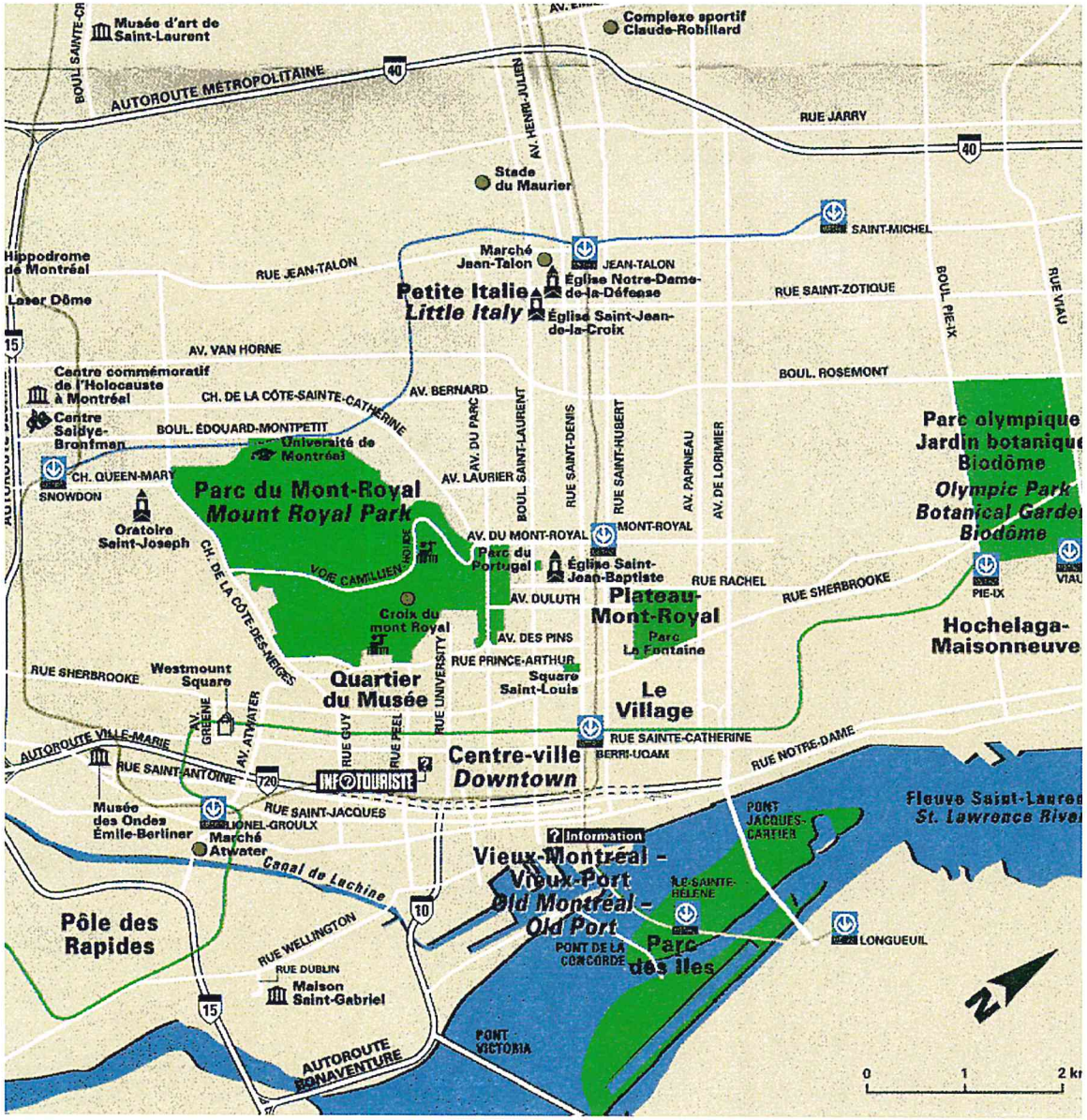
Historic Clock Tower Restored

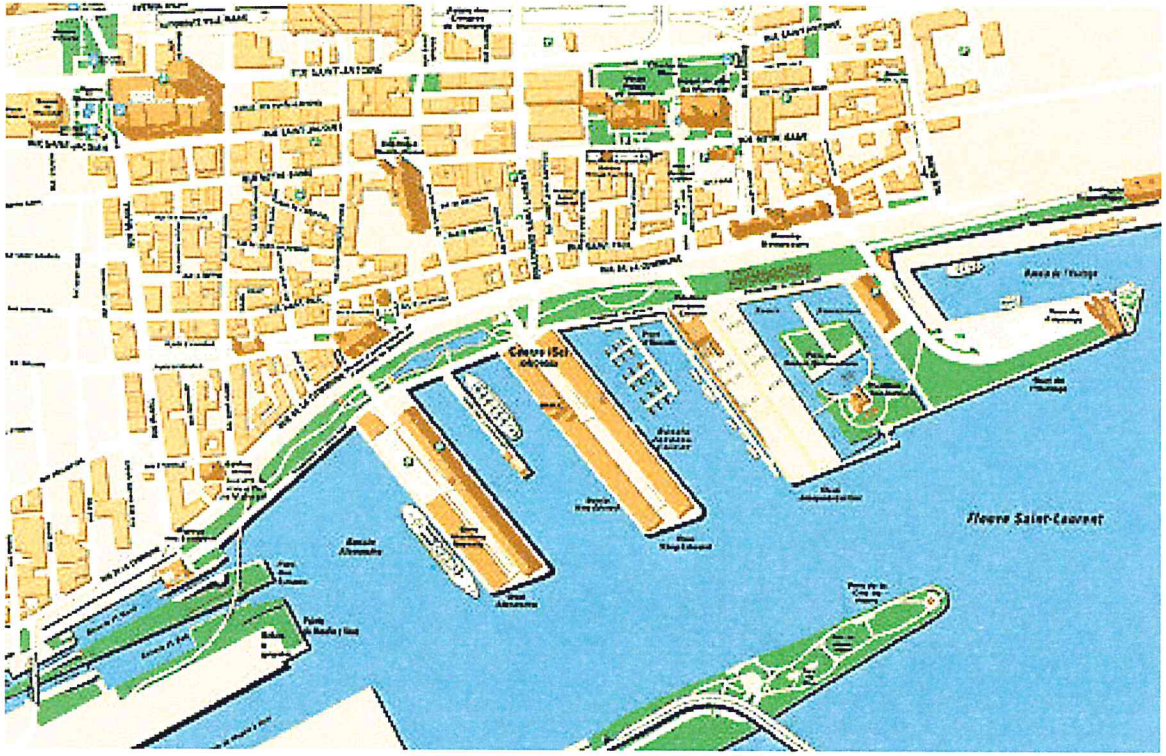
The port lost its importance by 1959 when the St. Lawrence Seaway was opened. This allowed ocean vessels to traverse through the Great Lakes without having to stop at the once significant Montreal Port. There was a very significant decline in its operations at this point.

In the 1960's, container ships began to appear. These vessels required a terminal designed to load, unload, and distribute large containers in short periods of time. The Harbour Commissions decided to fill in the basin between the Jacques Cartier and Victoria piers. This development became very controversial since it was felt that any revival plans of the Old Montreal would be compromised. In a way it was one of the first signs of port sprawl and a precursor to the abandonment of the port facilities.

Restoration and Revitalization of Old Port

The Old Port became a historical district in 1963. The container area was relocated in 1976 east downstream. At this time most of the port operations moved to this area. Redevelopment plans were announced in 1977 by the Canadian Government to revitalize the old section of the port. The goal of this redevelopment was to utilize the Old Port area as a "window" from the City of Montreal to the river.





The Redevelopment Plan incorporates a year round program of activities for tourists

Redeveloped Plan

In order to promote the Old Port of Montreal, the Federal Government created a company to manage this territory in 1981. The Canada Lands Company (Old Port of Montreal) Ltd. was spawned and later became The Old Port of Montreal Corporation Inc.

The cleansing and redevelopment of the Old Port was completed by 1992. At the centre of its design approach was its strict adherence to the its philosophy that the history of the Old

Port was important to the people of the city. Its plans incorporated ideas to restore and to preserve its history of the area, specifically with an eye to maintain its habourfront identity.

Historical Elements Incorporated into Revitalization Plans depicting Industrial Era

Communicating the Industrial Era through Architectural Elements

As part of the Old Port revitalization, the Lachine Canal was also restored beginning in 1990. This project involved a team of archaeologists restoring a 0.7 km section of the canal on the Old Port property. Granite walls, pavement and stonework from the 19th century was restored. Eight original lock gates were rebuilt and restored utilizing authentic materials.

The Old Port has developed into a popular year round heritage tourist site. The

Restored Canal System

Restored Pier and Urban Park on the Pier Beyond

Restored Canal System and Edges of Piers

management group has developed a significant program of events for every month of the year. It has developed a 172,000 sq.m. urban park which features special lighting to illuminate the grain elevator at the front of the docks at night. Interestingly, as a counterpoint to the historical buildings well, the Lock Keeper's House is a modern structure whose architectural language utilizes materials of the industrial and maritime character to communicate its history of the area.

The revitalization plan of this large Canadian Centre primarily incorporates a focus towards the tourist industry. This can be seen clearly in the features which have been instilled in the redevelopment plan and include a wide variety of historically significant buildings. The Clock Tower, King Edward Pier, Alexandra Pier, Jacques Cartier Pavilion, Fine Dining Restaurants, Fast Food Restaurants, Promenades, Montreal Science Centre, The Port d'Escale Marina and the 19 mini Boutiques of the Old Port all cater to the traveler as points of interest.

It has become not only a tourist attraction to more than 7 million visitors every year but also a major recreational and cultural centre to those who live and work around the area.

Port d'Escale Marina

Revitalized Pier and Illuminated Grain Elevators Opposite

"The Forks", Winnipeg, Manitoba

History

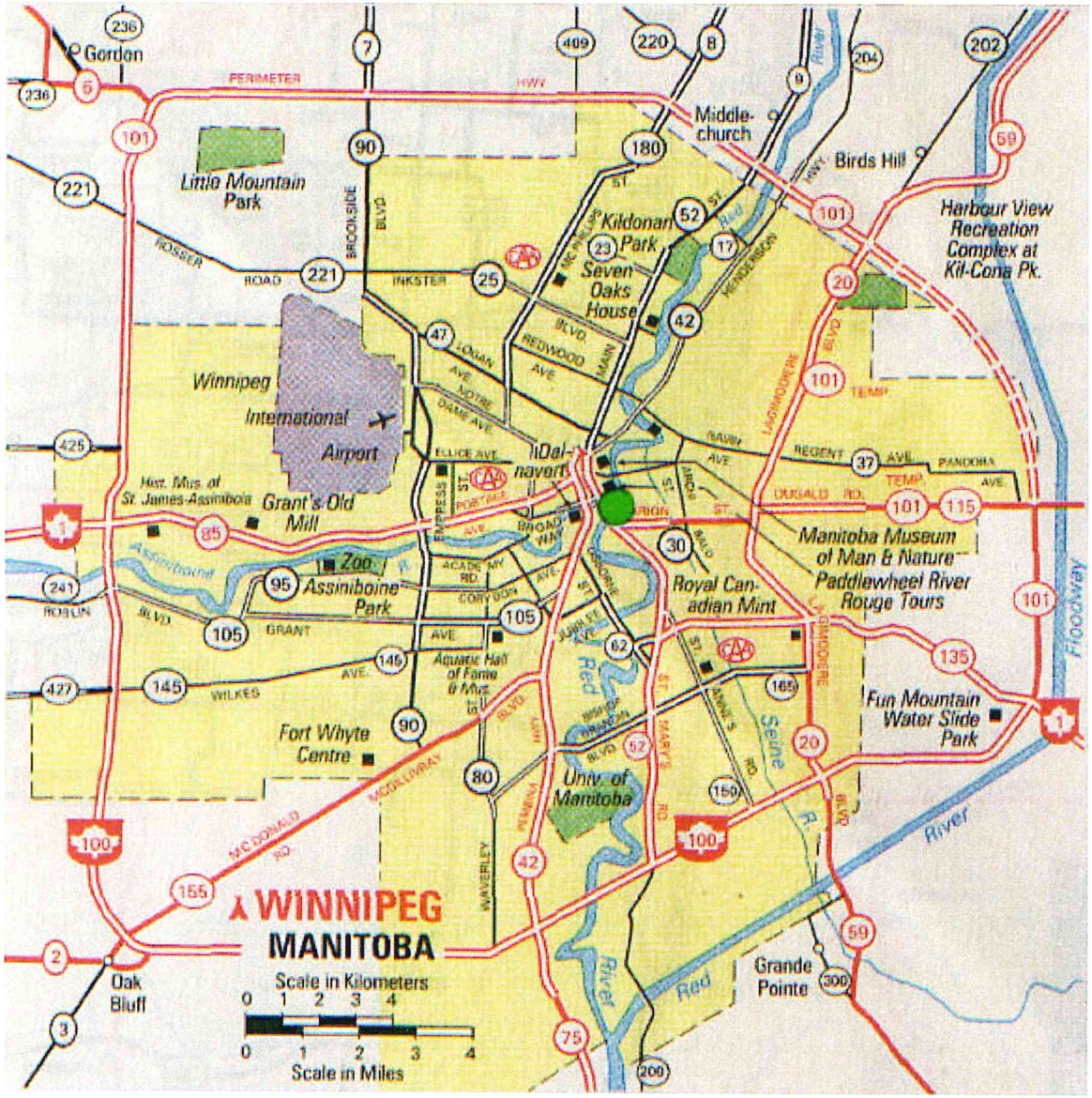
The Forks of the rivers has been a "meeting place" for hundreds of years. This location was a popular area for trading, hunting, fishing and celebrating by the Aboriginal people who came here from across the North American plains.

Archaeologists, through their controlled digs, have unearthed numerous heritage materials in The Forks area. It was evident that numerous native camps existed at one time in the area. This area became an important strategic location for explorers by the 1700's as travelers migrated westward across the country.

Agriculture, specifically the grain industry has been the prime resource which supported the inhabitants of Manitoba since the 1800's. During the 1800's, the province faced challenges to enable its growth as a major supplier of grain product to the world.

The prairies could produce abundant harvests, but it was difficult to transport the product to world markets. Rivers, and wagons were used, but until the train arrived, growth was very limited. While there were many high yield years of product, the surplus was wasted since it could not be efficiently exported to other remote market areas. As well, during years of crop failure, food could not be imported quickly and the inhabitants were then required to expand their buffalo hunt to supply food for the winter.

During the 1870's to 1890's, "The Forks" became prominent as one of the main early railroad hubs in the prairies. The Forks became a junction for a number of railway including Northern Pacific, Manitoba Railroad, the Canadian Northern, the Grand Trunk Pacific Railroad, and the Canadian National Railway. With the advent of railway, the City began to be shaped by more urban forces.



"The Forks" Site location

With the arrival of the first steam locomotive on the prairies in 1877 and the subsequent railway building, the area near the junction of the rivers soon became a major rail terminus and a critical link between east, south and west.

All structures and their traces that existed prior to the creation of the junction were removed to make way for the miles of track that served as the sidings. The buildings which are now present at The Forks were constructed around the beginning of the 20th century.

Winnipeg grew from a small settlement into a large centre of Western Canada between 1870 and 1886. Its population increased from 25,000 in 1871 to 150,000 in 1891. The area around the Forks grew at an astonishing rate. Many of the immigrants who traveled through to the west came through The Forks since this was a major railway centre. In 1872, two immigration sheds were constructed at The Forks each of which accommodated 500 people.

The volume of immigrants also spawned the development of 'the flats' which was formed on the northwest corner of The Forks' flood plain. The Flats housed the immigrants which were destitute within the City of Winnipeg. At one point in time, this was home to approximately 2,000 people.

As with most cities, the immigrants changed the cultural nature of Winnipeg. This city was considered to be the gateway to the west in Canada and it emerged as a major industrial and commercial centre with the advent of the railway and became a major player in the national and the international markets. The railway continued to influence the growth of Winnipeg at a phenomenal increase of rate until 1960.

When modern rail facilities were built on the outskirts of the city in the 1960s, the marshaling yards at The Forks became obsolete. This left The Forks site abandoned as the rail activities which once took place depleted. The site became desolate in the

"The Forks" shortly after the abandonment by the railways

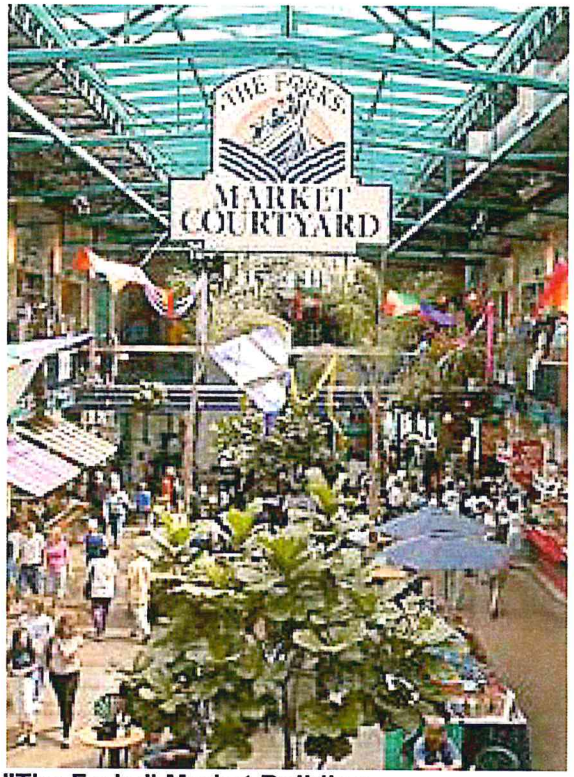
City's core and left the existing buildings without functions for a number of years. But the site was not forgotten; from the rich history of The Forks was born a vision for the future.

Winnipeg began to experience the effect of changes in technology and transportation. Its role as the gateway to the west diminished. The City decreased substantially in population. Winnipeg lost its prominence but this benefited Calgary and Edmonton in Alberta as the oil industry began to prosper at an astonishing rate. As with other urban centers, Winnipeg experienced the effects of sprawl as the residential areas continued to grow on the periphery of the City, industrial parks began to develop and shopping centers were spawned as the new locations of commercial areas.

Restoration and Revitalization of "The Forks"

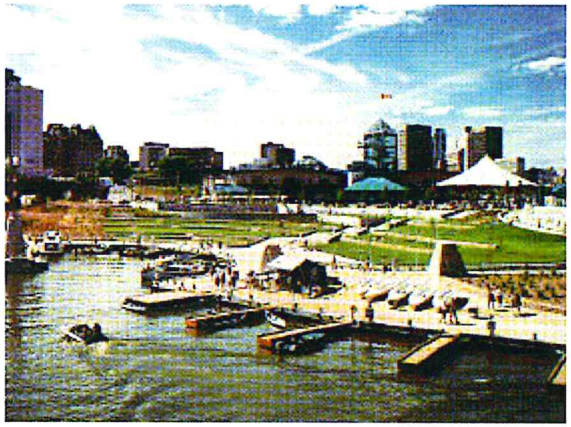
The Forks has been revitalized as a "meeting place" as it once was during the native and the immigrant inhabitancy. It has become a place for celebrating the culture, a tourist venue and main urban and recreational centre for Winnipeg.

Many of the buildings which were once utilized during the railway era still remain and have been adapted for reuse. These buildings and structures include most of the buildings constructed at the turn of the 20th century such as the Union Station 1908-1911 which is still used as a passenger railway terminal.



"The Forks" Market Building

"The Forks" site today showing the axis defining the urban park.



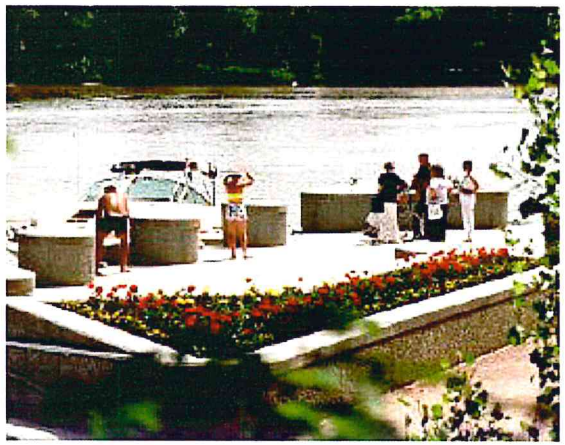
The docks at "The Forks"

Other heritage structures include the bridge and its building structure which is used for the office of Parks Canada, and the National Cartage Building which has become the Johnston Terminal. The Grand Trunk Railway Building Stable Structure which was constructed between 1909-1912 and the Great Northern Railway Stable Building have been joined together to form what is now The Forks Market.

Aerial photo of "The Forks" site

The urban park meets the River

The boat docks along the river



The Forks Market is a venue that is open year-round and also contain a number of fast foods and full service restaurants. It boasts a second floor, "The Hayloft" which markets locally handcrafted items, arts, crafts and specialties from across the country and around the world. Riverside patio dining is available during the summer. Natural light is introduced in the building by skylights and provides a bright, airy courtyard to enhance the shopping experience all year round in Canadian winter climates.

"The Forks" has been named a National Historic Site by Parks Canada due to its significant heritage importance in Canada. The cultural history of the site provides events for interpretive exhibits of Canada's history,

Cultural summer events

beautiful native gardens and a Heritage Adventure playground for children.

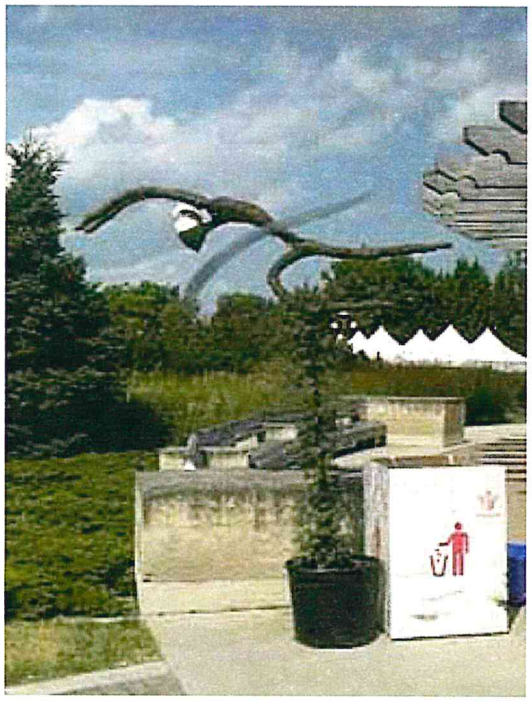
"The Forks" has become known as a meeting place once again for Winnipeg's young and old to come together and celebrate the various cultural activities all year round. Summer events include native history provided through interpretive dance while during the winter, an area is provided for winter skating.

"The Forks" is a venue for tourists where visitors can stroll along the riverwalks and join

Cultural activities involve children

The organizers of "The Forks" have also realized the value in providing events for the younger crowd and the site has become a venue for the International Children's Festival.

Observation tower incorporated in the adaptive reuse of the "Forks" Market



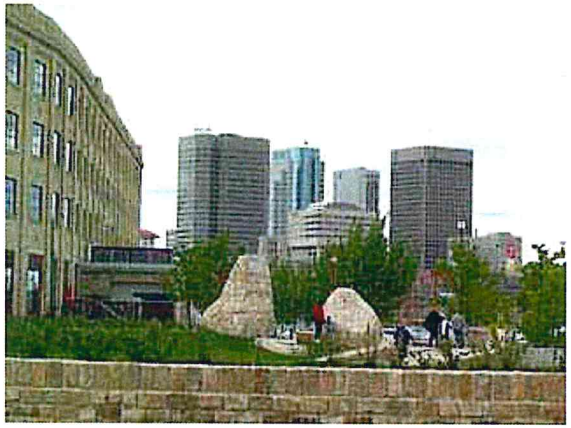
The people of Manitoba have displayed their pride in their history by retaining local artist Marcel Gosselin who created "The Path Of Time". This sculpture was developed to display the traces of chronological continuation of human ingenuity through its tools and technologies. The sculpture is made from limestone and bronze and is located in the park's circle. The artist placed the sculpture strategically so the summer sun can reflect one section of the carvings onto the limestone interior. The spring and autumn sun reflects on another set.

The Forks also benefits by its location adjacent the two rivers. Docks adjacent to the National Historic Site allow recreational boaters the option to enjoy the sites.

Its organizers have recognized that the history of the area and the availability of the site provides an opportunity to display their pride and teach the younger generations of the importance of communicating cultural history in the community.

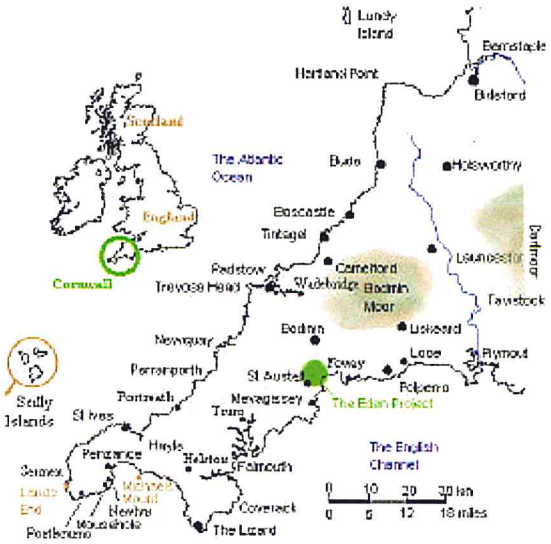
The designers have used architectural language and materials to convey their cultural history, not only through the adaptive reuse of their buildings but by also incorporating sculptural display within their parks.

As with The Old Port in Montreal , "The Forks" in Winnipeg has been designed to cater to both the tourist and as a recreational, cultural, and commercial venue in the centre of Winnipeg. The Forks has become a tourist attraction to more than 7 million visitors every year. The success of this revitalization has been created due to the sensitive balance of catering to both tourist traveler and the residents within the community.



Orientation Park

The Eden Project, St. Austell, England



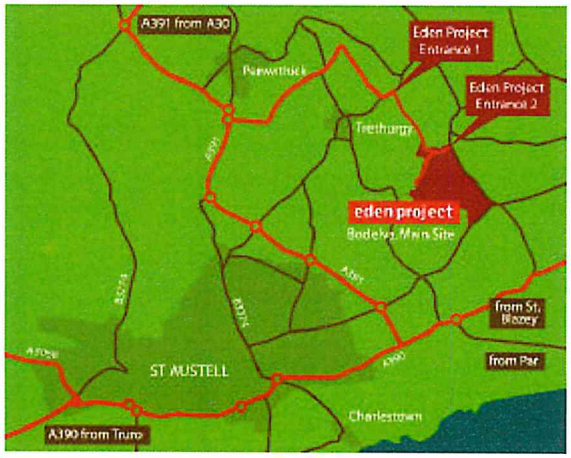
Key Plan Location of The Eden Project

History

As a Case Study, this project differs from that of Old Port in Montreal and The Forks in Winnipeg. It is a study of reclaiming an abandoned open pit mine once used for extraction of china clay. Located just outside of St. Austell, England, this project introduces concepts to reclaim and redevelop the land for a for an alternate use.

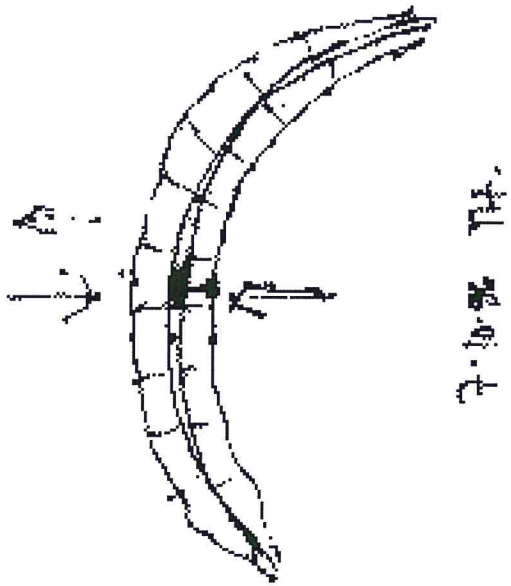
This project, named The Eden Project, referencing a biblical period, was initially conceptualized by Tim Smit, a composer and record producer. His understanding of the area of Cornwall, England, lead to the creation of botanical gardens as a tourist and education tool. The regional location in Britain's extreme southwest possessed a warmer climate than normal due to the Gulf Stream.

Initially in 1994, Tim Smit envisioned the idea of creating the world's largest greenhouse. The result was the construction of two large biomes connected together each composed of



Location northeast of St.Austell England

China clay quarry in 1994

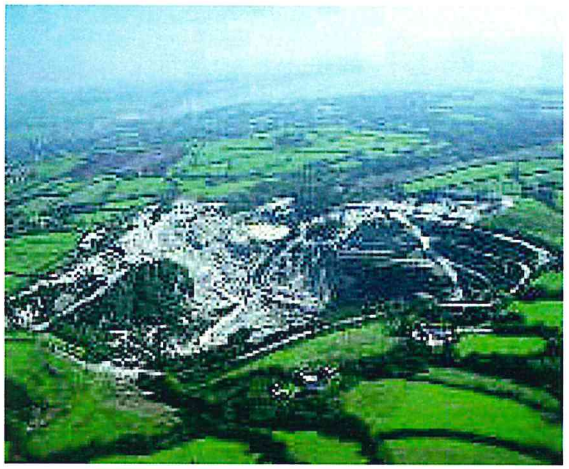


Smit's early vision of world's largest green house.

four overlapping domes of various scale melded together. An aerial photograph depicts the shape of various golf ball like objects of various size each overlapping. At first glance those experienced with architectural history would label the designer as Buckminister Fuller since the domes have a common resemblance to the geodesic structures he invented.

In 1995, Smit assembled a team to pursue his dream after he successfully completed another project, the Gardens of Heligan Project, an estate turned large garden attraction.

His team was made up of a number of contributing partners including Nicholas Grimshaw & Partners who gained valuable experience and acclaim on the Waterloo Station glass project. The project was executed utilizing a design/build approach to construction.

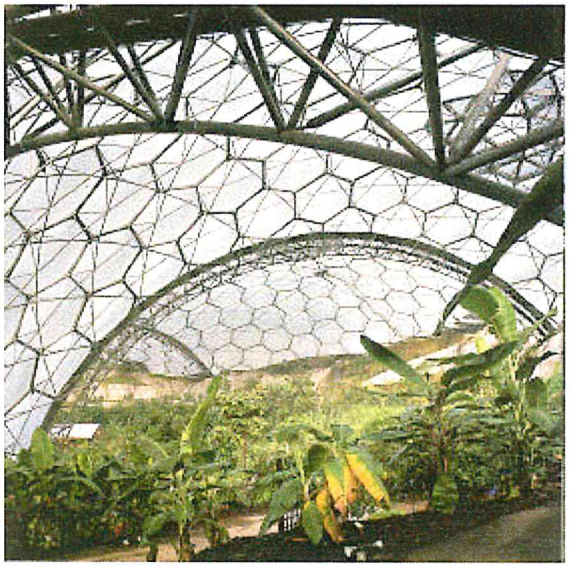


Aerial view of the Eden site

After much thought towards his largest greenhouse approach, Smit decided that it may be more appeasing and marketable as a tourist attraction to create three domes to

View of the Eden Biomes

Site layout of the biomes



Interior of the biomes

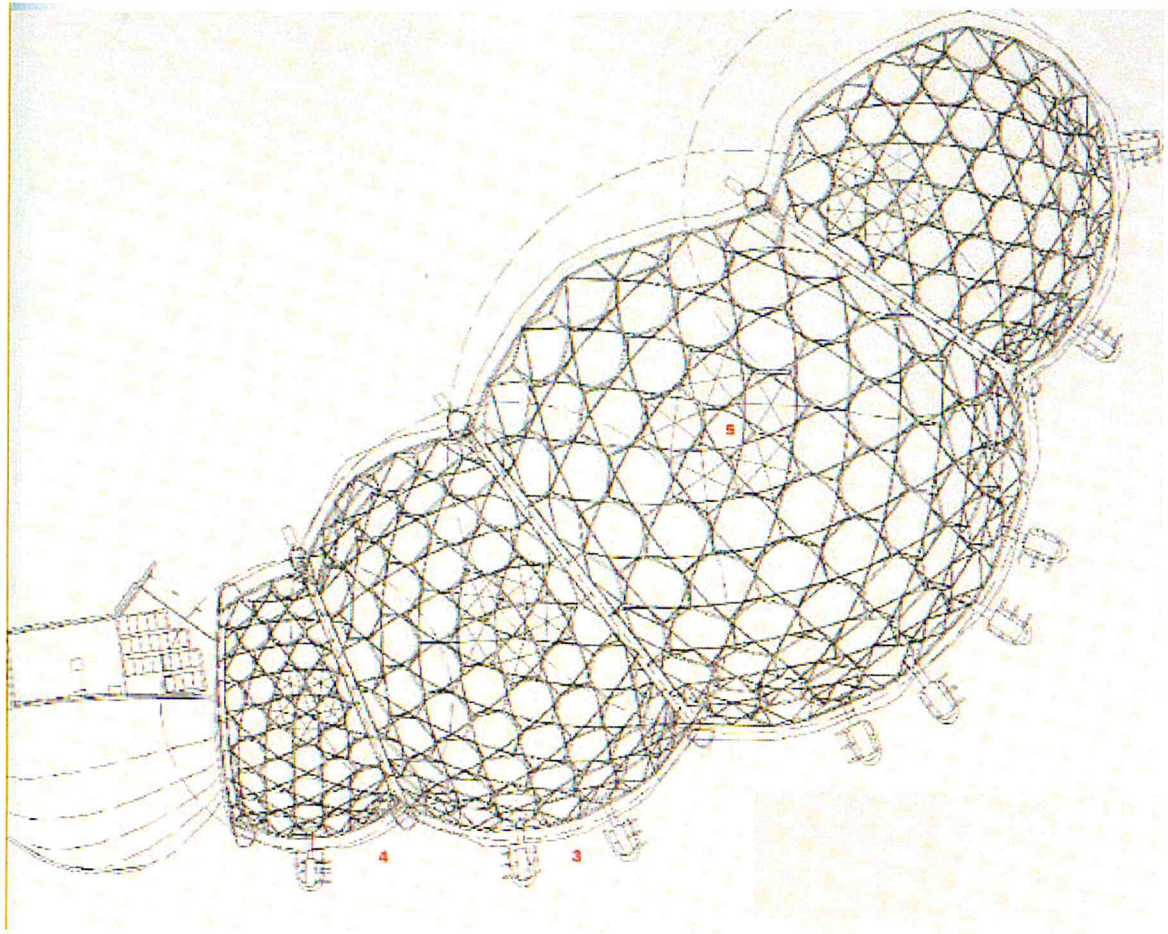
Mechanical ventilation

showcase the tropics, the Mediterranean, and the desert.

As with any large unique project, the Eden Project pursued a number of design approaches. In one of the earlier designs, Grinshaw utilized similar trusses and construction approach as was designed in the Waterloo glass project. This was not feasible due to the varying lengths and connection at the grade. It proved too costly to complete since each truss required independent design and fabrication.

Restoration and Revitalization of the Eden Project Site

Smit's ultimate goal was "to promote the understanding and responsible management of



Roof plan showing geodesic structure

the vital relationship between plants, people and resources leading to a sustainable future for all."[6]

The site was selected after a search by Smit who eventually found this abandoned mine. The crater, approximately 50 metres in depth has since been developed into a 37 acre vegetated tourist attraction and education centre. It now houses thousands of plants in its present two biomes. The third biome is a project that will take place once funding is place.

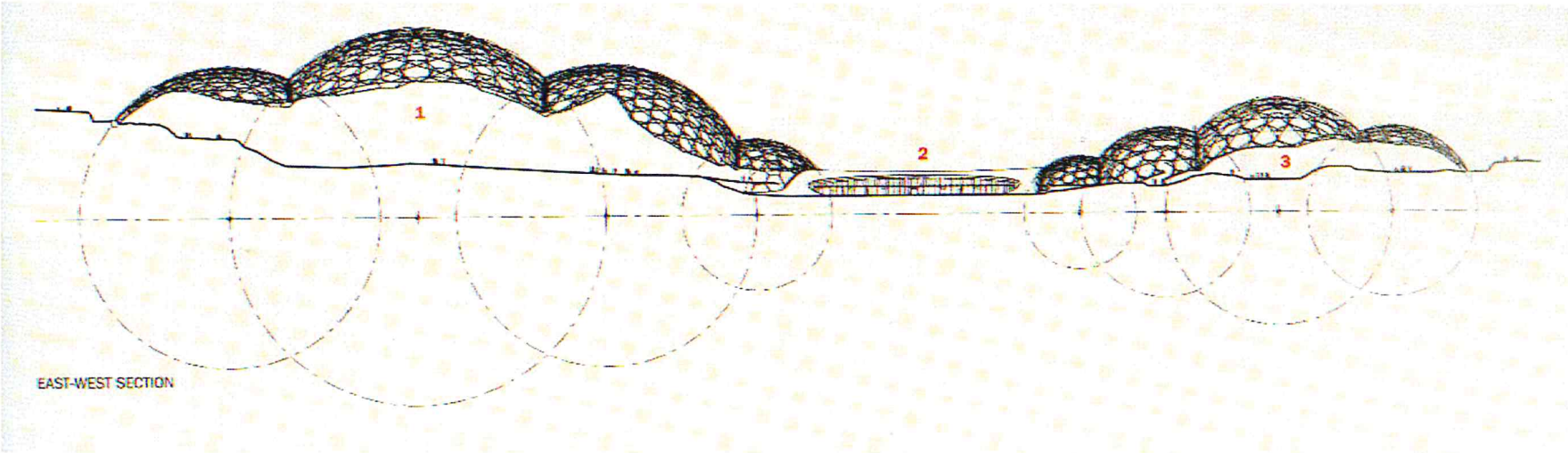
The three biomes have been designed for various levels of interpretation. The Humid Tropics represents plants and environments of the Rain forests and Oceanic Islands. The Warm Temperate regions representative of the Mediterranean, South Africa and California are displayed in two conservatories. The third biome, yet to be constructed, will be the "Roofless Biome" with plantations which are resident to Corneal England climates. The biomes display a fabulous range of plants from the India to Chile as well as the native plants.

The project began with 6 months of site work to clear the site and flatten areas for access and pedestrian movement. The design and construction team manufactured topsoil for plantings on site by excavating existing soil and other waste. As well the ground water which continually seeps into the pit from the surrounding properties is utilized for irrigation on the site.

The giant biomes were designed and constructed into the sides of the open-pit clay mine. The structure at Eden is the largest self-supporting structure in the world. The domes cover over 320,000 square feet of tropical rain forests. As well the trees within reach heights of up to 160 feet. The placement into the sides of the pit provided the opportunity to design rammed earth walls in the edges of the pit to provide a method of retaining heat and economizing by utilizing the sun's energy.

The domes were designed using a transparent light weight roof system. A thin tubular steel frame structure is draped with hexagon-shaped transparent pillows made of layered a specially designed layered film. These domes are able to support up to 65 lbs per square foot of snow load and withstand 45 lbs per square foot of wind suction.

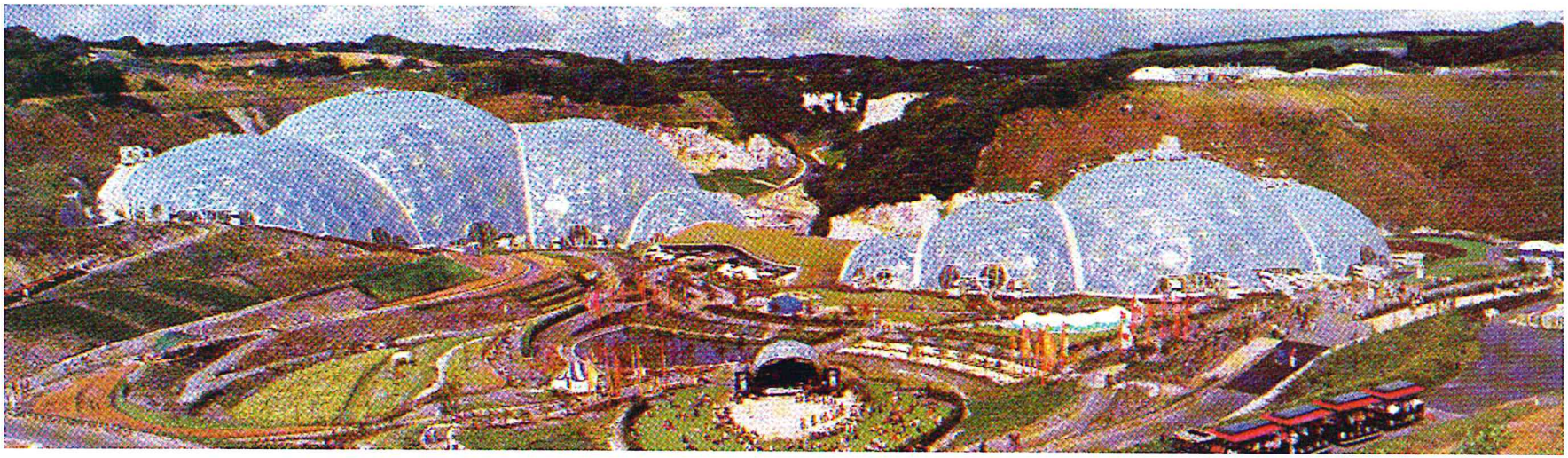
The site was selected by Smit for a number of reasons to sustain this type of attraction. The fact that it faced was south was one of the most important features when creating a site for the world's largest greenhouse. The natural topography of the site provided a sheltered environment for the whole



Cross section of the Eden Project biodomes

development. As well the approach to the site provided views to sea. Since the site had been abandoned as a mine pit previously, its new use was a welcomed as an revitalization for the area.

However there were some issues that required attention at this location as well. This site had little level ground and therefore was very costly and time consuming to create level areas suitable for use. The site was also very prone to flooding being 50 metres below the adjacent grounds. It also had no soil for the growth of the trees and vegetation and topsoil was excavated and manufactured on the site. The most difficult problem was that of the site being very unstable due to its previous activity of being a mine and water constantly seeping into the pit.



Phase One, The Gateway to Eden opened to the public in May 2000 launching the site as a major tourist attraction to half a million visitors simply to watch construction of this unique project. By March 2001, The Eden Project opened fully to the public. June of 2001 welcomed the one millionth visitor to the gardens.

The site incorporates all the facilities of a tourist attraction including a visitor centre, a media centre, garden restaurant, an amphitheater, and of course the botanical gardens.

The Eden Project like Old Port in Montreal and The Forks in Winnipeg was developed as a tourist environment. However, the Eden Project is strengthened by becoming an educational venue to inform the many visitors how people come to rely on plants for the necessities of everyday life and provides the tourist with an greater awareness of nature in this world.

Gantry Plaza State Park Queens, New York, NY

History

Gantry State Plaza Park which now occupies part of the west edge of Queens in New York City, USA was once a major terminus for both rail and ferry transportation.

The area became predominant with new homes and businesses during the 1850's since this terminus was one of the main commuter lines leading east to Long Island. The land in these areas became quite valuable for industrial use and became occupied by oil refineries and manufacturing plants. In 1876 gantries were constructed to pull the railway cars from the barges onto the rail tracks. These gantries were one of the first in New York City used to transfer goods from the water transport to land-rail transport.

Once World War II ended, the industrial activity waned in a decline that have left traces for 50 years. Left behind were acres of unused railway, empty factory buildings and manufacturing appurtenances.

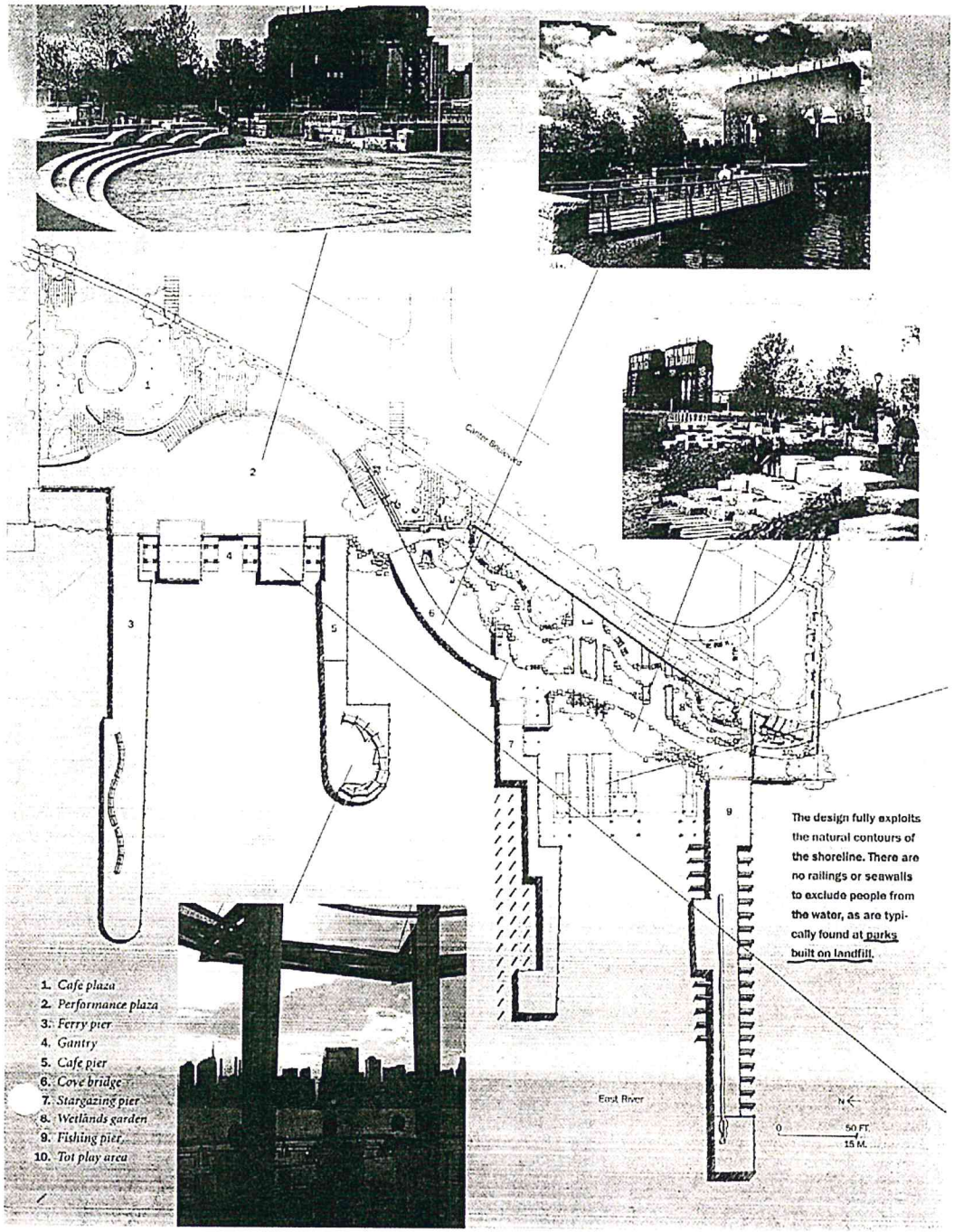
Restoration and Revitalization of Gantry Plaza State Park

The decline of the industrial era left 74 acres of prime waterfront real estate for redevelopment and was eventually taken on as a revitalization project by the Queen's West Waterfront Development. Gantry Plaza State Park presently occupies a 19 acre waterfront esplanade along the East River.

Thomas Balsley, Landscape Architect and his associates developed a design philosophy of "All things for All People" approach for Gantry Park.

View of the Gantries. New York City is in the background.

This approach for the design of the public spaces was important especially in the diverse community in which it existed. Residents of low



The design fully exploits the natural contours of the shoreline. There are no railings or seawalls to exclude people from the water, as are typically found at parks built on landfill.

rise housing expressed concerns that mid-rise to high-rise buildings would provide a barrier to the waterfront. These concerns were addressed and as well the area was designed as a mix of uses in order that the community would become synergized.

"The mix is what makes the difference between parks that alienate people and become settings for mayhem, and parks that give people of different culture and economic backgrounds, a place that they all can enjoy" says Balsley.

The design of the park consists of two parts being North Gantry Plaza and South Gantry Interpretive Park. North Gantry offers open space, while South Gantry provides softer organic elements. The maze of walks and plantings provide a human scale to the park.

North Gantry is surfaced in granite and provides areas such as a performance plaza and features such as a proscenium arch. It is hoped that the ferry will be one day reestablish to this point and therefore the plaza provides an important waiting and viewing area.

Entry to the South Gantry is provided through a gateway formed by an open grate metal bridge which spans a march fostering shallow water plants leading to a pathway introducing an interpretive garden. Native grasses and common shoreline waterfront plants have been reintroduced to provide a sense of place and return to nature along the waters edge.

Railroad tracks have purposely been left in some area and incorporated as reminders that for the past decades they were the traditional industrial foliage of the area.

The designers also incorporated a stargazers pier to add the element of romance to the park.

The gantries framing New York City in the background.

The Performance Plaza

Seniors enjoying the view and the conversation

It provides dim lighting, and allows visitors to view the stairs from specially designed chaise lounges carefully distributed on this third pier. A pier to the south provides a sitting area for fishing on a n undulating bench with a cut and bait table at its terminus. A flat slab like table complete with a faucet supplies water to the fisherman for cleaning fish through a gutter that runs the length of the bench.

Thomas Balsley characterized a successful project by the presence of people. "Folks generally tell you more by whether they show up to enjoy it or abuse it. After two years, Gantry Plaza State Park shows nothing but kindness from its users"

** Digital photos were provided courtesy of Mr.Thomas Balsley, Thomas Balsley Associates

Cove bridge which spans from the Performance Plaza to the Stargazing Pier

The Wetlands Garden Area

Additional Case Studies

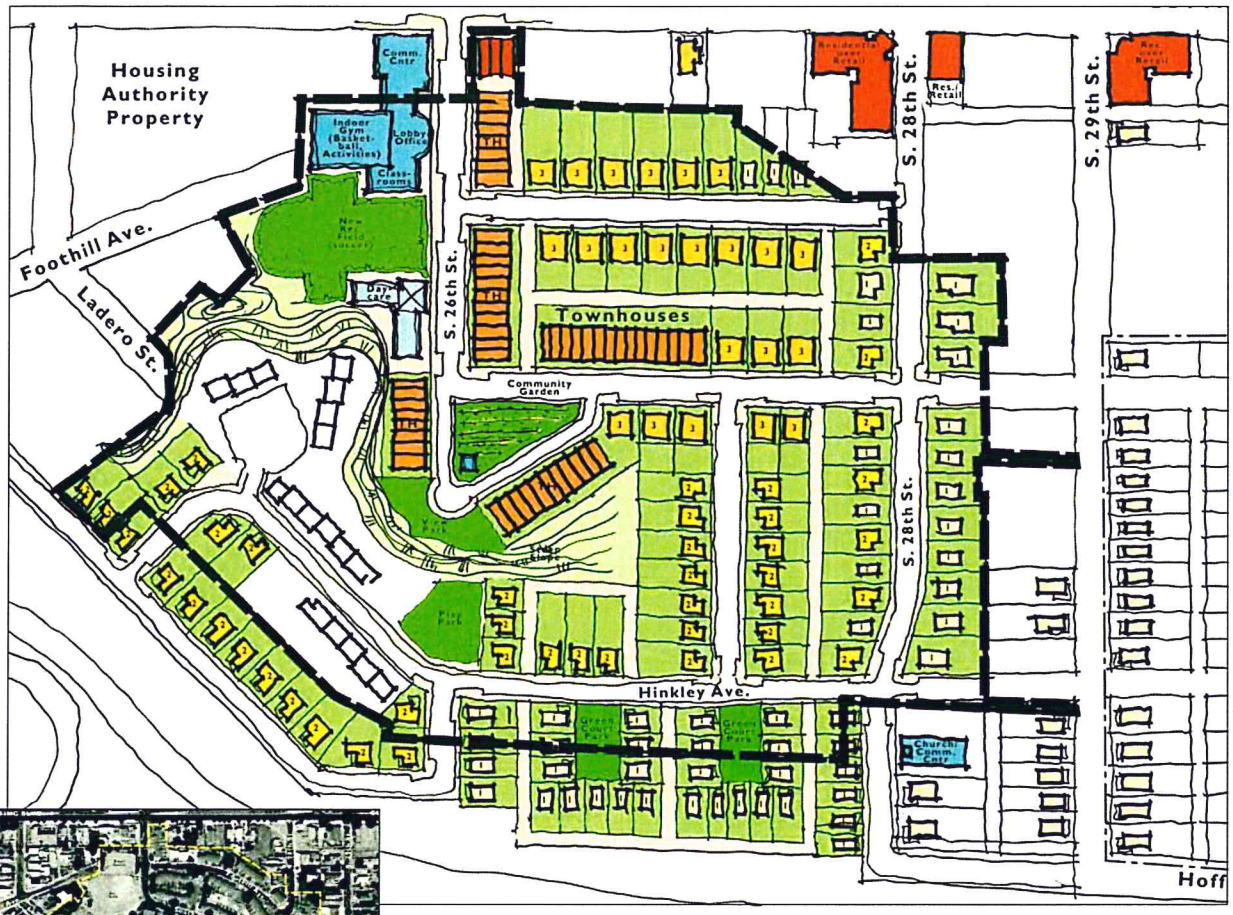
Calthorpe

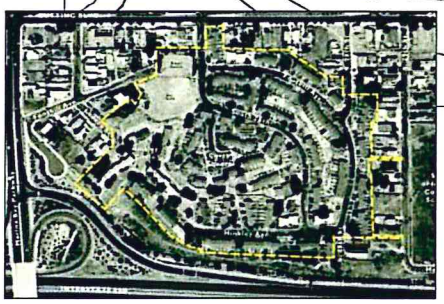
Duany & Plater-Zyberk

OMA Koolhas

Easter Hill HOPE VI Project

Richmond, California





The revitalization of Easter Hill will replace a deteriorated public housing site (left) with a dynamic, pedestrian-scale community of varied housing types and open spaces.

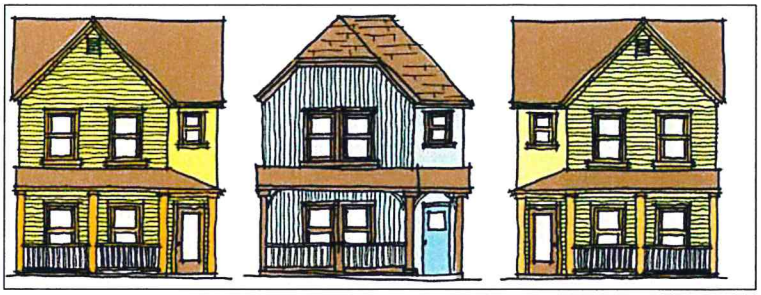
A drive-by shooting at this project's first community meeting reinforced the urgent need for positive change in this struggling Bay Area neighborhood. Undeterred by the violence, public housing residents participated in a series of Calthorpe-led design charrettes to plan the revitalization of their neighborhood. Shaped in large part by this community input, the Easter Hill HOPE VI project will replace 300 units of dilapidated, crime-ridden public housing with a new mixed-use neighborhood of parks, townhouses, duplexes, and single-family homes. The heart of the project is a new 20,000 square foot community center, which will contain a gymnasium, classroom space, police substation, and computer learning center. All new housing will face the street and have front porches for "eyes-on-the-street" security. A dusty existing field at the center of the site will be transformed into a soccer field for older children, while a new daycare center will accommodate younger children.

Vacant lots throughout the surrounding neighborhoods will be purchased for new infill and mixed-use development, thus assuring that the entire community will benefit from the new high-quality redevelopment.

HOPE VI is a federal Department of Housing and Urban Development (HUD) grant program to replace 1960's-era "institutional"-style public housing projects with a mix of smaller-scale, mixed-income housing units that create a more livable and diverse environment.

Local residents worked with project planners in a design charrette to plan the future of their community.

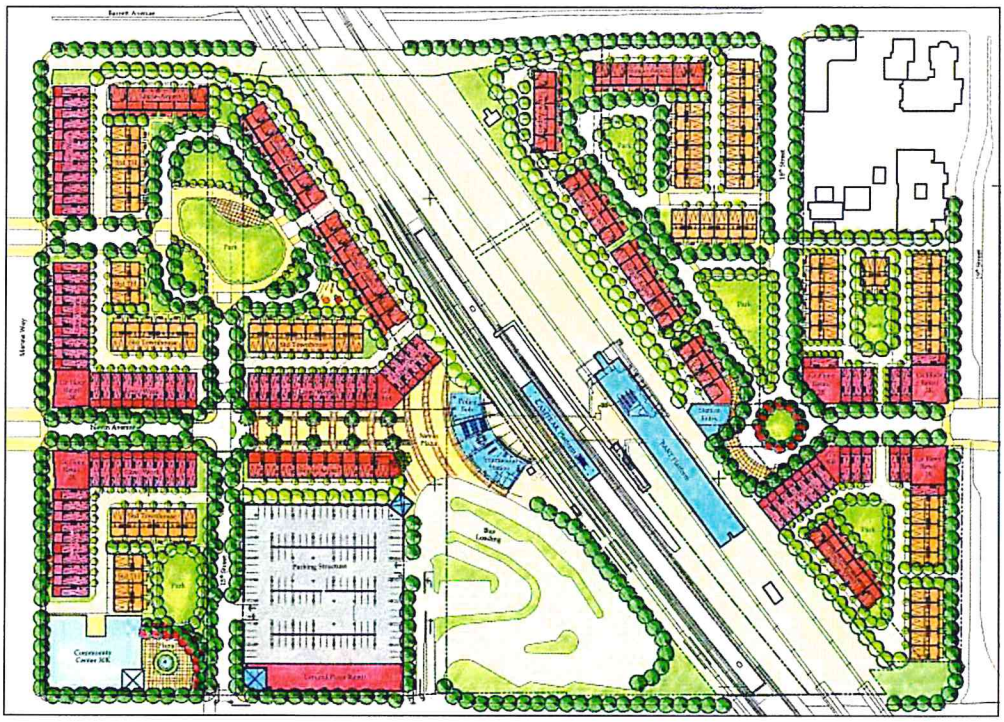
Acknowledging the architectural style of the surrouding neighborhood is important to the successful integration of new housing into a community. With this in mind, Easter Hill Hope VI Plan proposed a variety of traditional housing styles for this rejuvenated community.



In the process of site design a goal was to create and link a variety of open spaces. These places allow for residents to enjoy both active and passive recreation.

Richmond Transit Village

Richmond, California



The existing Richmond Station is important for its regional proximity and intermodal connections to BART, AMTRAK, and AC Transit bus service. The plan intends to energize the underutilized land which surrounds the station with uses which promote transit ridership, home-ownership opportunities, accessibility, and building types which maintain the character of the area.

This infill project, directly adjacent to the multi-modal transit station in Richmond, California, provides a mix of ownership housing opportunities in a high density, mixed-use configuration. The winning plan in a competition sponsored by BART and the Richmond Redevelopment Agency, the plan promotes transit ridership by providing high-density housing within walking distance of the regional rail system (BART), Amtrak, and AC Transit bus service, all linked by a new intermodal station.

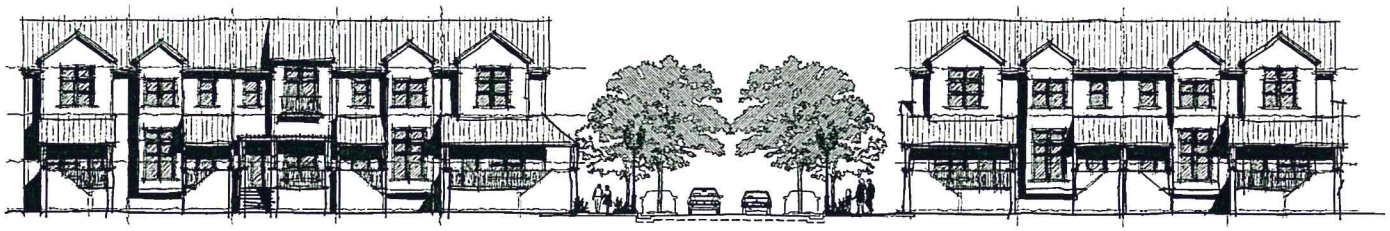
Currently isolated from other uses by surface parking lots and vacant city-owned land, the transit station is the centerpiece of the new development. Surrounding the transit center on the difficult site, bisected by the BART and railroad tracks, houses and townhouses face small parks at the center of each neighborhood. Fronting an office building and an existing retail center, and continuing into the intermodal station from both sides, live/work townhouses provide opportunities for small businesses or home offices. New streets link neighborhoods to each other and to the intermodal station.

The southwest corner is anchored by a new performing arts center and plaza and includes retail to reinforce the existing retail uses across the street. A new parking garage, with storefronts at ground level, replaces BART's surface parking lots and serves the retail and performing arts center as well.

Calthorpe Associates and the project developer, The Olson Company, are committed to building in established, in-town neighborhoods. By providing a diverse range of unit types at competitive prices, as well as through an innovative mortgage assistance program, the project made quality ownership opportunities available to a wide variety of households.

Live/Work townhouses and retail frame Nevin Street, the main entrance to the Transit Station.

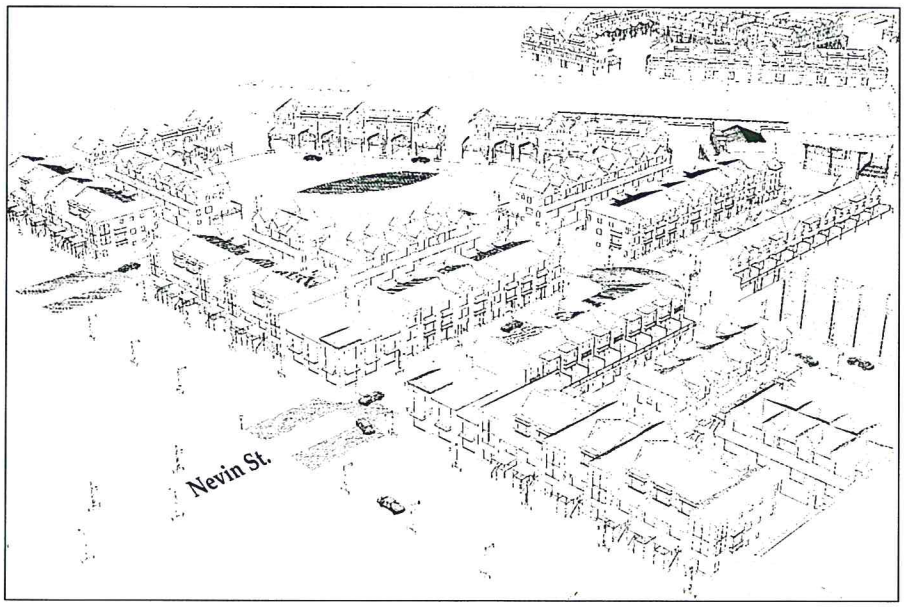
Single-Aspect townhouses buffer the neighborhoods from the train right of way.



Standard Townhouses are alley fed and have porches fronting the street.

The plan includes a mix of housing types, including townhouses and live-work units. The project emphasizes architecture that promotes transit-supportive densities and maintains the scale and character of the existing city fabric.

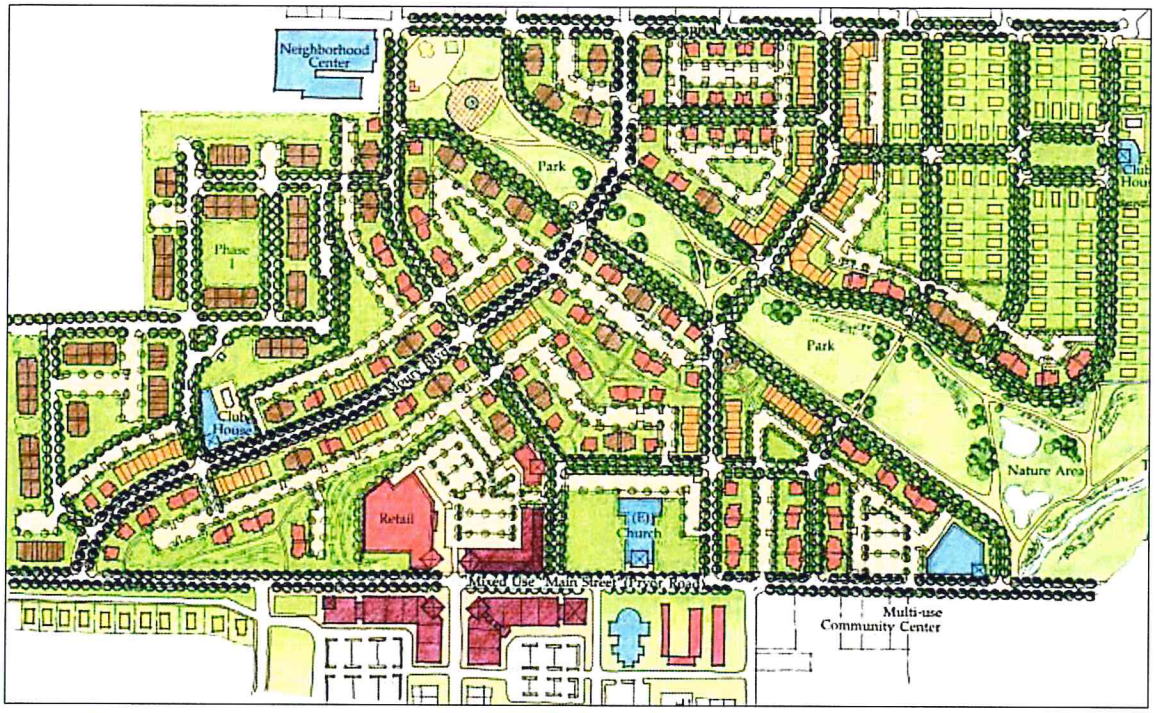
Townhouses surround a half-acre park, which creates a central gathering space for the neighborhood.



The transformation of Nevin Plaza from a sunken pedestrian-only walkway into an important automobile and pedestrian entrance into the site allows cars to get closer to the station for drop-offs and creates a safer environment for pedestrians as they walk to the station.

Carver Redevelopment Project

Atlanta, Georgia



Urban Revitalization. A commercial district has been created along Pryor Road, a major connector road. Townhomes are predominately located along major residential boulevards that connect adjacent neighborhoods to Pryor Road. Highest density housing is located along the Linear Park creating a visual edge to the park.

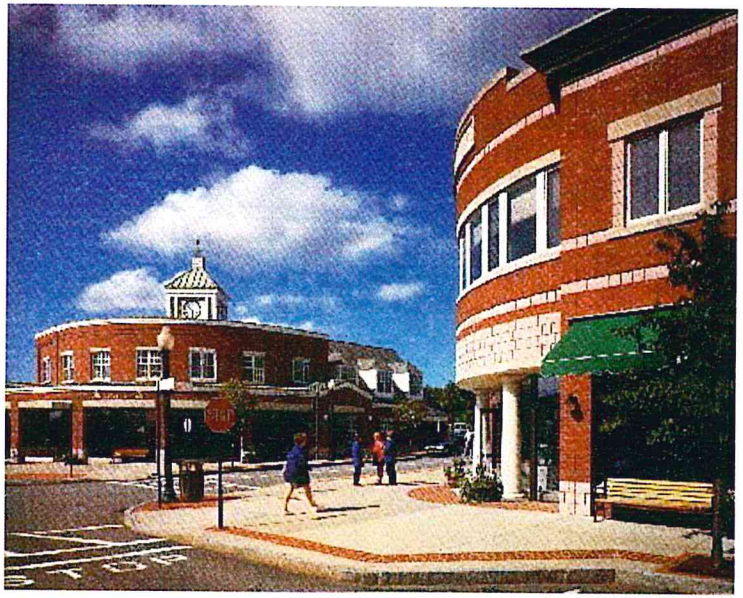
In 1953, the 105 acre Carver public housing project was built south of downtown Atlanta, at the time the largest public housing community in the city. The layout and design of the neighborhood created an unfriendly, auto-dependent environment that discouraged any sense of community among its residents. The Carver Redevelopment project was one of the first projects approved by the US Department of Housing and Urban Development (HUD) under the Hope VI program. Calthorpe Associates proposes a new mixed-income neighborhood that will reflect traditional ideas of community.

The Redevelopment Plan includes ground-floor retail and a new Community Center along Pryor Road. Pryor Road is an important route within the region and the most visible gateway to the site. To create a pedestrian-supportive boulevard that serves the region and the neighborhood, the City of Atlanta plans extensive streetscape improvements along Pryor to compliment the proposed retail and civic uses. The residential areas integrate a range of income and age groups by providing a variety of housing types. The plan incorporates townhouses, apartment buildings, duplexes and single-family homes. All of these housing types are integrated within each development phase, translating to a healthy mix of "for-sale" and rental products.

A Linear Park follows the site's low point where a creek passes below Pryor Road to the community center. The Linear Park meets a range of purposes, providing informal playfields while providing a needed detention area and trail-side wetlands. A portion of the linear park may become a future site of the Atlanta Baseball Youth Academy, which will encourage city-wide use of the facilities through a training camp and multi-purpose community facility.

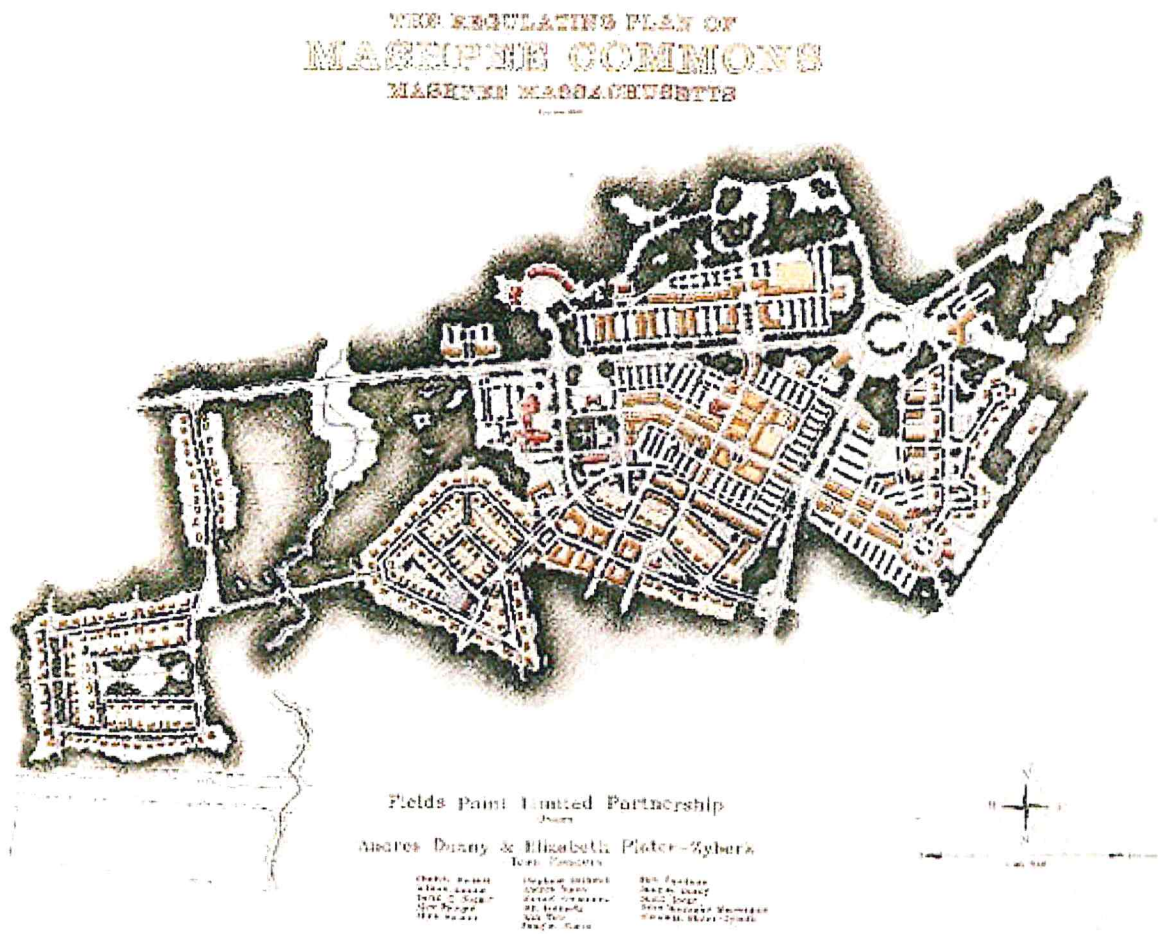
The plan also features an interconnected network of streets. Connections and alternative routes distribute traffic so that no one street is overburdened. One notable street is Moury Boulevard, which will have double rows of trees on both sides of the street. It will be lined with townhouses and "manor homes" that have fronts and stoops reminiscent of Georgetown, D.C. A network of trails provides connections to the Adult Education/ Vocational Campus just to north, to other neighborhoods, and to other points along the City's extensive trail network.

Mashpee Commons,
Cape Cod, Massachusetts



Mashpee Commons

Cape Cod, Massachusetts, 1986



Twenty years ago, *U.S. News and World Report* announced that the shopping mall was replacing "main street" as the core of America's communities. Seeking to reverse that trend, the owners of an existing 1960s era strip mall decided to actually turn their 65,000-square-foot shopping center into a small town main street. Then for good measure, they decided to build a classic New England village around the thriving new retail district they had created.

Buff Chace and Douglas Storrs, the developer/planners of Mashpee Commons, have received national attention for their dramatic transformation of the once tired New Seabury Shopping Center in the town of Mashpee, about 65 miles south of Boston. Two new intersecting streets–Market and Steeple–form the core of a new downtown behind the existing center. The district includes retail stores (some with apartments above), offices, restaurants, banks, a post office and multi-screen movie theater. A library, church, school, police station and fire station are clustered around a nearby town common.

After the initial transformation of the retail area was underway, architects Andres Duany and Elizabeth Plater-Zyberk were brought in to lead a public charette to plan a community surrounding the core commercial district. The resulting master plan adds more retail stores, offices and several residential groupings. In-

Prominent in the plan of Mashpee Commons (above) is a traffic circle that connects roads from five directions. The former New Seabury Shopping Center, built in the 1960s (left), is located at 8 o'clock on the circle. While most of what is seen here remains, new buildings added behind existing stores (opposite) define a new, more pedestrian-oriented street network.

Mashpee Commons' reconfigured commercial district is centered at the corner of Market and Steeple Streets. Buildings here incorporate many physical and symbolic features that are commonly observed in older New England towns and cities.

The modest village post office (below) by local architect Tony Ferragamo is made more prominent by its placement between flanking symmetrical storefronts. A small public plaza gives even further emphasis.

Across the street, a classical portico (below right) by Bill Dennis defines the entry to a mid-block arcade. A red brick bank and an office building (bottom right and opposite), both by Randall Imai, anchor the corner of Market and Steeple Streets.

Substantial masonry bank buildings have long been a fixture of small town main streets. Before the advent of federal banking insurance, the image and appearance of one's building conveyed an important message about the soundness of the institution within.

Though times (and banking practices) have changed, the developers of Mashpee Commons have continued this tradition by locating a formally designed bank at the village's most prominent intersection.

The village's new retail streets (this spread) provide an intimate, friendly place to shop and stroll. Buildings are close to the street and sidewalk. On-street parking puts shoppers nearer to stores, and it creates a buffer between pedestrians and moving traffic.

Street trees, benches, storefronts, sidewalks and canopies at Mashpee Commons have all been detailed to provide a comfortable and engaging environment for pedestrians.

Because the 40-foot setbacks mandated by local codes would have made it impossible to locate buildings so close to the sidewalk edge, the developer instead chose to retain ownership of all of the village's streets.

For zoning reasons, such streets are considered to be part of the center's own internal circulation and parking system.

Toronto's Parc, Downsview Park

Toronto suffers from neglect. Of all major North American cities Toronto spends the lowest amount on public space.

No major city spends less on park operations. Can Toronto survive as urban beauty becomes increasingly important to a city's prominence in the world marketplace? Will Toronto's own negligence turn Canada's central hub into a peripheral global city? Despite its derelict spending, Toronto has the opportunity to convert the city's one inherent asset into its greatest civic amenity.

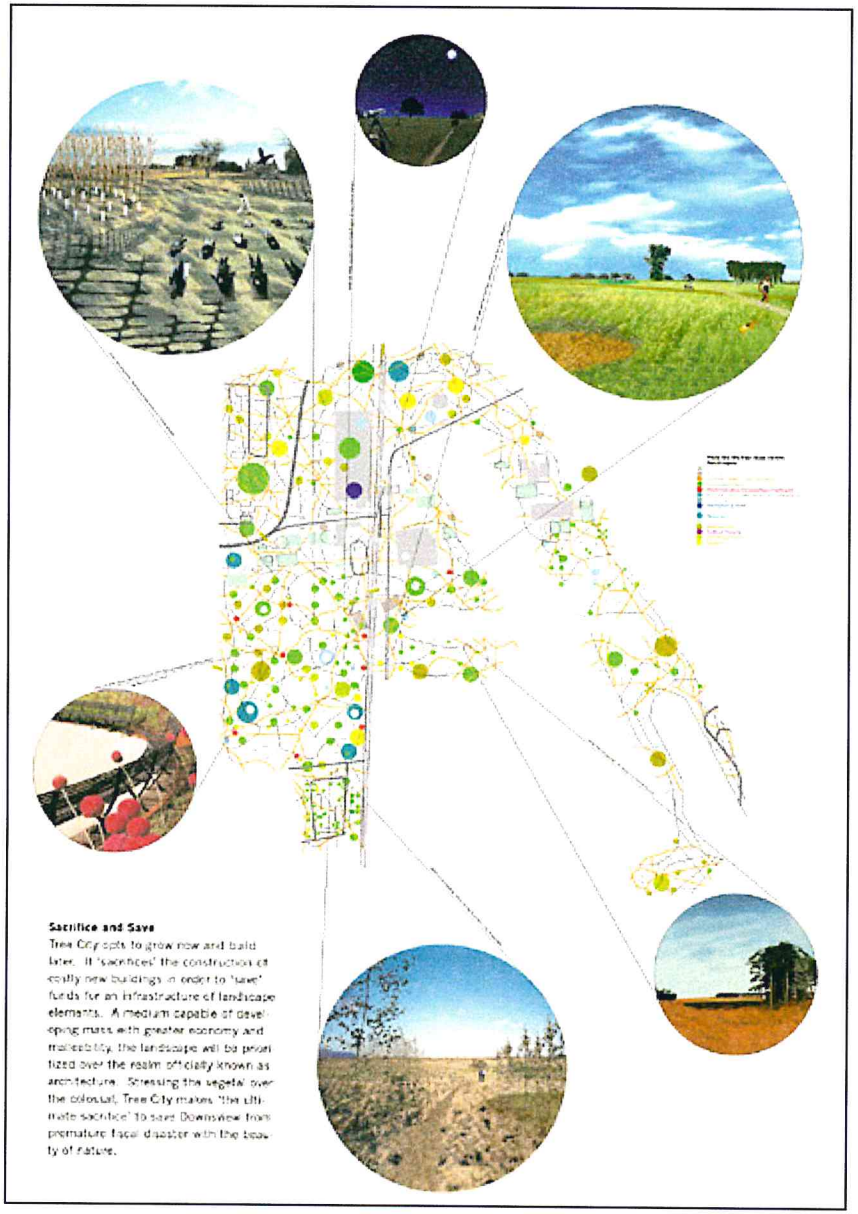
We propose to use Toronto's most distinguishing feature as the park's primary urban component. Trees rather than buildings will serve as the catalyst of urbanization. Vegetal clusters rather than new building complexes will provide the site's identity. An urban domain constituted by landscape elements. Tree City attempts to do more by building less, producing density with natural permeability, property development with perennial enrichment.

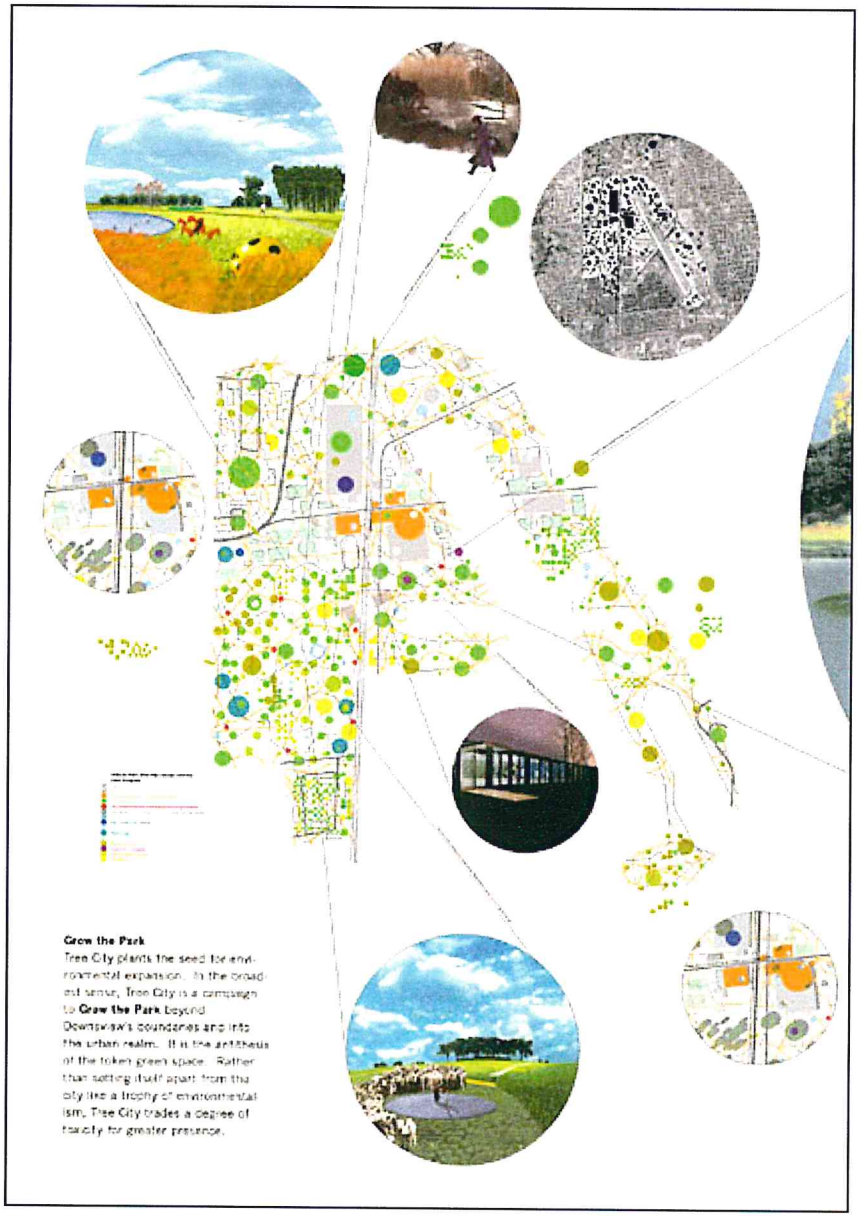
Tree City is a feasible urban alternative within the stated available budget. Landscape elements will be planted incrementally over time as funding permits, gradually building up the park's mass into a flexible patchwork of planted clusters separated by open unintegrated areas. This will be staged as three long term phases: (1) site and soil preparation, (2) pathway construction, and (3) cluster landscaping. The outcome is a matrix of circular tree clusters covering 25% of the site which is supplemented by meadows, playing fields and gardens. Tree City treats the park as if it is an adult soon capable of sustaining itself rather than a child in need of eternal care. While most infrastructures decrease in value over time, Tree City's natural network will appreciate as the park matures. We propose that capital generated from the park's appreciated land value be spent to manage the park's infrastructure and to support future development in an existing cycle of implantation and speculation. Tree City is therefore a plan for attainable growth rather than a proposal to create extensive bulk. By foregoing costly buildings in order to dedicate funds for landscaping, Tree City sacrifices the static in order to save what can grow.

Tree City assumes the park's suburban context to be its virtue. The locale offers an ideal opportunity to explore the unrealized promises of low density metropolitan life. Long notorious for its predictability and deathly uniformity, the suburb now has the potential to function as a playground for the urban population to unwind. Tree City's landscaped clusters are programmed for various leisure activities. Adopting the cross-cross figure of the existing runway, Tree City's clusters are complemented with 1000 crossing paths to be used by cyclists, joggers and pedestrians. Its amalgamated landscape will offer a green destination within Toronto's expanding core, making Downsview a counterpart to the Downtown.

Located near railways, major expressways and GO Transit lines, Tree City can function as both a point of destination and dispersal. Visitors will be able to visit the site by numerous public and individual means from within the city. At the same time, it can serve as a transportation hub for connections to other outlying areas. As a hub, Tree City would accommodate the extension of Sheppard Avenue under the runway, the future extension of the east-west subway, as well as the development of the existing railway tracks for intermodal transportation.

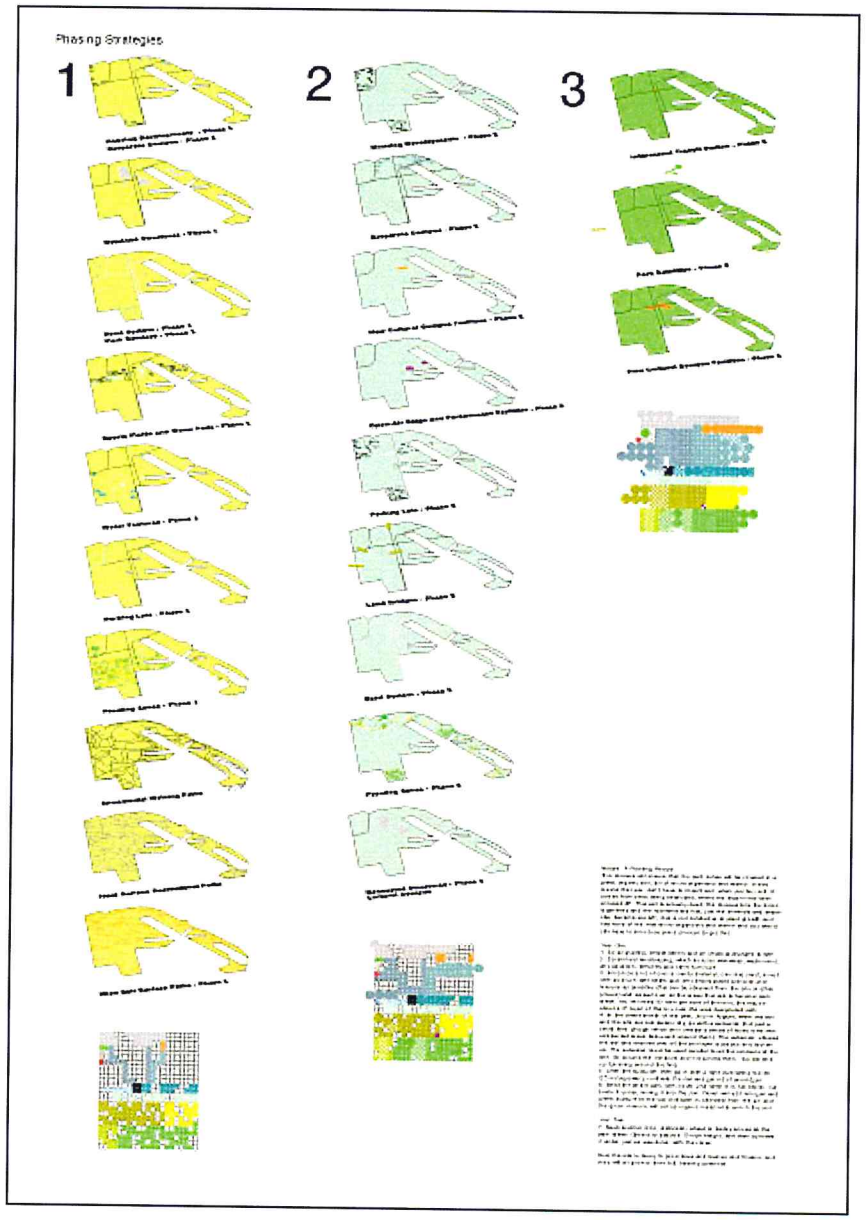
Ultimately, we envision this vegetal epicenter to connect with the city's green spaces and form a Tree infrastructure for the Greater Toronto Area. By continuing its landscape clusters and extensive pedestrian pathways into adjacent areas, Tree City can link up with the Black Creek and West Don ravines, integrating Downsview into the system of wooded river valleys, parks and public paths so unique to Toronto's urban domain. Earth bridges over Keele Street to the west and Sheppard Avenue to the north will knit Downsview's ecology with the city. In this Tree City grows the park into Toronto to foment urbanization.


Sacrifice and Save
Tree City opts to grow now and build later. It 'sacrifices' the construction of costly new buildings in order to 'save' funds for an infrastructure of landscape elements. A medium capable of developing mass with greater economy and malleability, the landscape will be prioritized over the realm officially known as architecture. Stressing the vegetal over the colossal, Tree City makes 'the ultimate sacrifice' to save Downsview from premature fiscal disaster with the beauty of nature.


Grow the Park
Tree City plants the seed for environmental expansion. In the broadest sense, Tree City is a campaign to **Grow the Park** beyond Downsview's boundaries and into the urban realm. It is the antithesis of the token green space. Rather than setting itself apart from the city like a trophy of environmentalism, Tree City trades a degree of toxicity for greater presence.


Manufacture Nature
Instead of restoring Downsview to a previous natural state, Tree City manufactures nature for civic ends. It is a fabricated landscape designed first and foremost to orchestrate on site leisure activities, traffic, and commercial development. 100% 'artificial' and 100% 'natural' Tree City is unambiguously administrative in ambition AND entirely organic in spirit. It is a blueprint that directs the park's activities while managing its own growth.


1000 Pathways
An offering of endless experiences: 1000 Pathways is a series of trails strewn over the entire park. The pathways are interconnected to provide intimate alternatives for the Downsview visitor and provide an inexhaustible array of experiences for even the most frequent user. The 1000 Pathways produce 1000 Entrances: an open edge condition connecting the Toronto to a multitude of differing zones on all the park's sides.


Phasing Strategies
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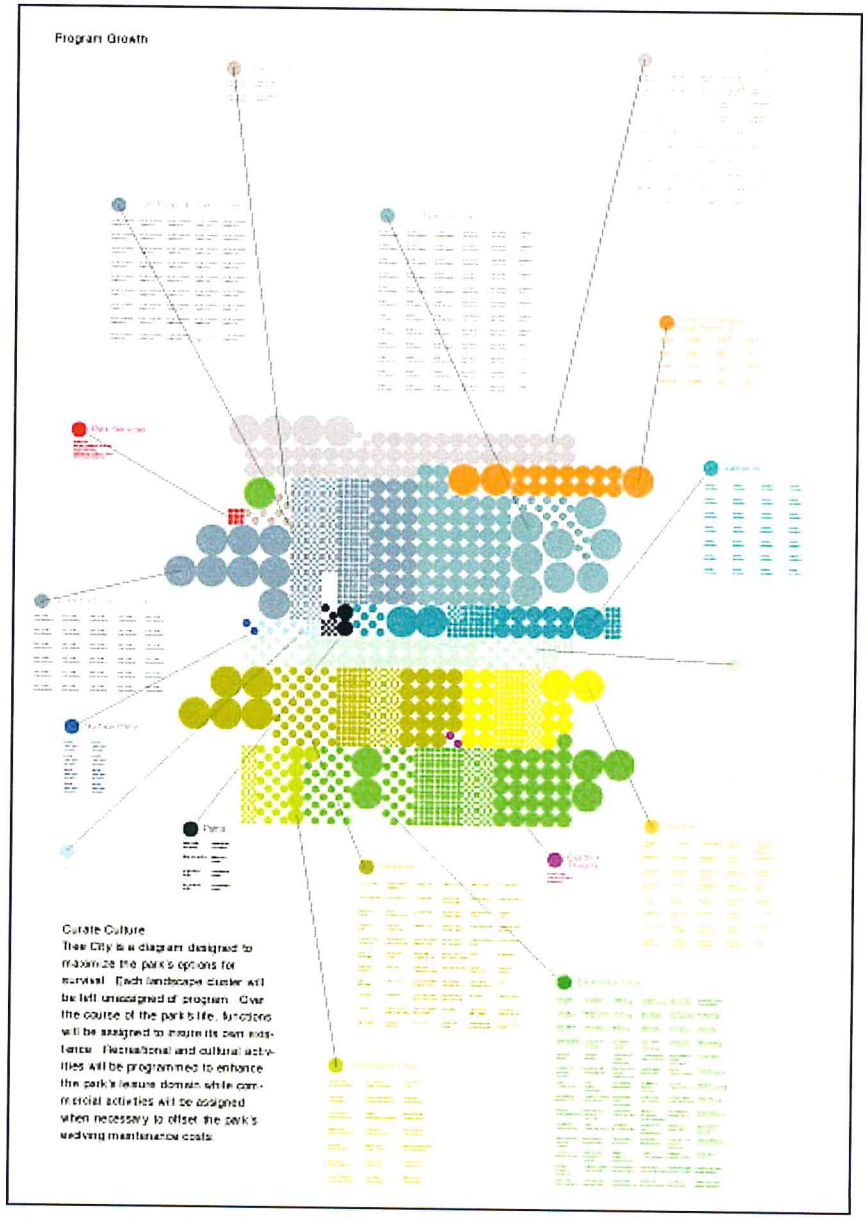
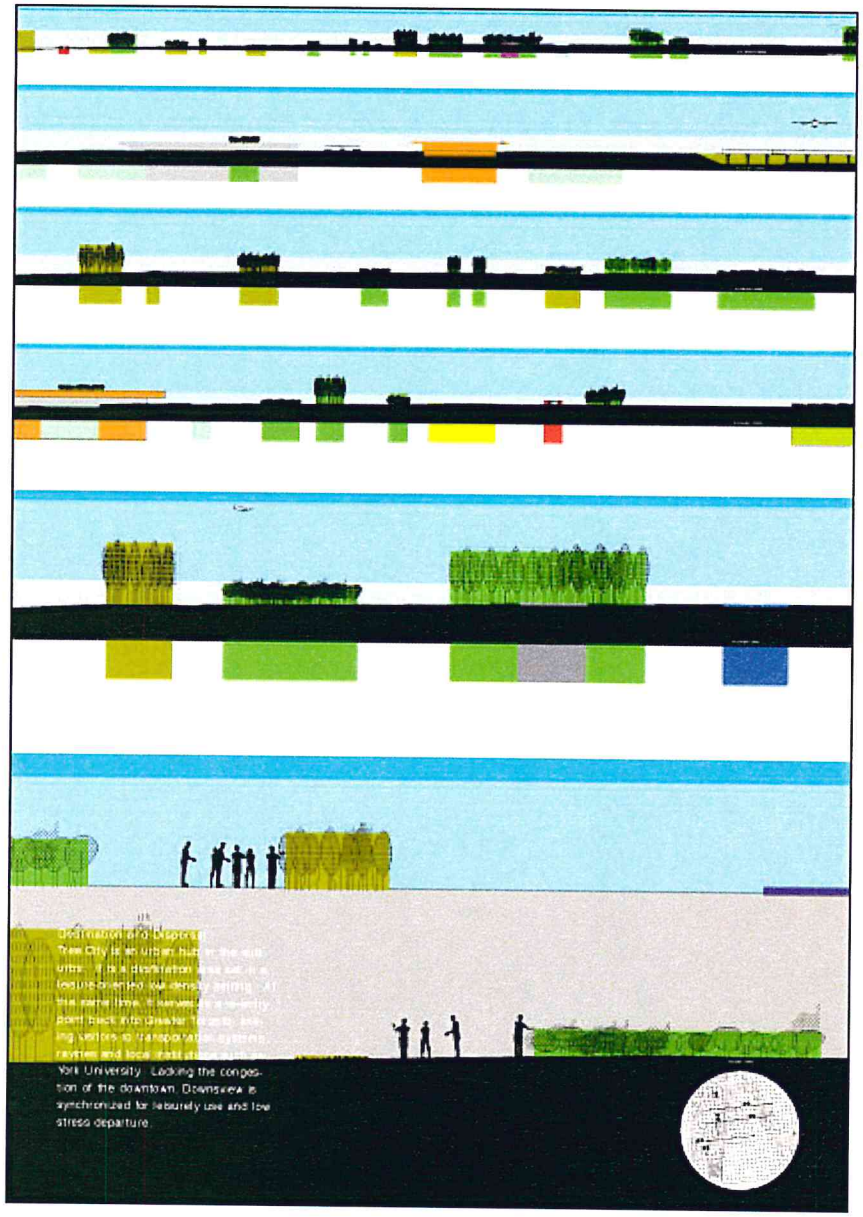
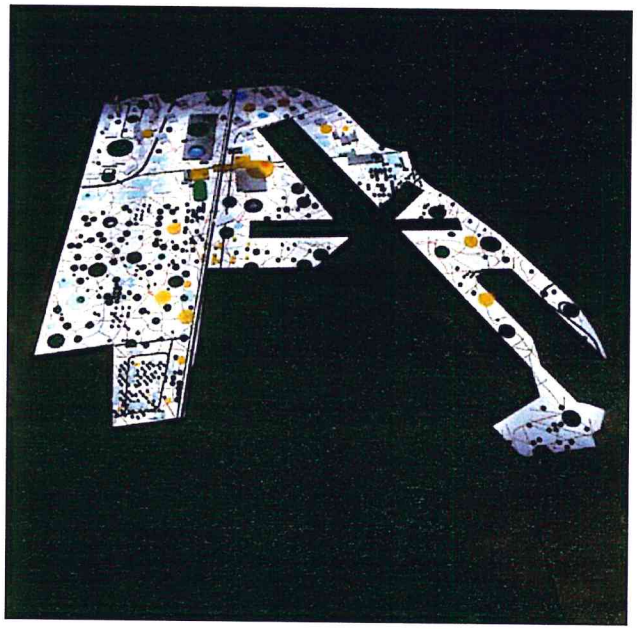

Program Growth
Curate Culture
Their City is a diagram designed to maximize the park's options for survival. Each landscape cluster will be left unassigned of program. Over the course of the park's life, functions will be assigned to insure its own existence. Recreational and cultural activities will be programmed to enhance the park's leisure domain while commercial activities will be assigned when necessary to offset the park's evolving maintenance costs.


York University. Lacking the congestion of the downtown, Downsview is synchronized for leisurely use and low stress departure.



Findings

A number of case studies were researched to identify the transferable planning principles which could be utilized to provide programmatic direction for the Thesis work. The questions which were reviewed to filter the principles were (1) Why the case study was chosen ? (2) What works for the project ? (3) What doesn't work for the project ? and (4) What is the crucial element that lends value to each site or in other words what was the catalyst for the each particular site ?

The following conclusions were identified in response to these questions as they related to the 9 case studies researched.

Case Study 1 - Old Port of Montreal, Montreal, Canada

Why was this case study chosen?

- the site was a large abandoned industrial site in the core of the City
- the site was impacted by the loss of rail transport
- 1977 revitalization plan, completed in 1992 - redeveloped at a pace that could properly integrated into the community

The Catalyst...

To display the port's history through the cleansing and adaptive reuse of the majority of its existing structures

How was it activated ? by...

- (a) creating a major tourist venue - bring visitors to the core of the city
- (b) creating a mixed use of urban space and activities to bring the residents of the city to the core

What works

- restoring the historical district by retaining elements from the past which were important to the identity of the community and the people
- the philosophical design approach with strict adherence to the history of the Old Port, particularly the Industrial Era which provided the vocabulary for the overall project.
- main focus was to maintain a harbourfront identity, the water was a major element in the revitalization of this project that provided a focal point - historic canal, leisure boating pier, dock promenade
- providing year round activities for both tourists and residents - interesting place to visit with things to do
- integration of tourist components due to the scale of the City and the scale of the

abandoned site within the core of the City - positive economic injection to support the revitalization costs
- inclusion of mixed uses such as urban parks, interpretive areas, fine dining, fast foods, and cultural spaces such as the Science Centre
- a series of natural landscape cleansing concepts were introduced to breath life into the site such as mixed type green spaces, trees, and seasonal plantings

What doesn't work
- modern structures were designed to look like heritage buildings because of the strict adherence to the historical code - the importance of the history of the era was identified but the importance of the individual structures weakened the impact of the importance of those structures
- context setting in a major city, the scale of this project is enormous and dramatically larger than any development required to 'cleanse' the site of the small community.

Case Study 2 - The Forks in Winnipeg, Manitoba, Canada

Why was this case study chosen?
- the site was a abandoned industrial site in the core of the city
- the City was shaped by the advent and the loss of the railway

The Catalyst...
The concept of developing the site as a meeting place for all people, based on a historical theme since the site was once a meeting hub utilized by natives and immigrants.

How was it activated ? by...
- (a) creating a plan incorporating a mix of uses for the site such as the commercial market building, cultural interpretive spaces, amphitheater, recreational parks, boat docks, and fast food restaurants
- (b) creating programs with a focus on year round indoor and outdoor activities to attract local activity of all ages
- c) minor focus was tourism, educating visitors on the cultural history of the City and retailing locally made crafts and art

What works
- creating a place for all people of all ages with a broad range of activities, the 'meeting place' an approach designed for the residents of the community
- adaptive reuse of existing railway structures incorporated into the new uses
- incorporation of a number of natural cleansing ideas such as the natural restoration and stabilization of the river bank, the integration of urban park, and the adaptive reuse of existing structures for present day uses.

What doesn't work
- the spanse of this site appears to go on forever and the concept of creating the main ideas around serving the people of Winnipeg have left this site underutilized, the same idea could be more concentrated providing zones for developing mixed type residential uses to bring people to the core

Case Study 3 - The Eden Project, St. Austelle's, England

Why was this case study chosen?
- the site was a abandoned site used for extraction of china clay
- this site was inland and therefore water was not a focus as with the previous Case Studies
- the site, structures, and processes promoted cleansing and the research of the cleansing process

The Catalyst...
To develop the site as research and education centre in the form of the largest greenhouse to 'promote' the understanding and management of the vital relationship between plants, people, and resources leading to a sustainable future for all

How was it activated ? by...
- (a) creation of the education and research centre
- (b) tourism became a byproduct to generate funding once people became not only interested in its cause, but also paid to view the construction of the unique facility

What works
- while the site could not be feasibly restored ie. fill in the hole, topsoil was manufactured on site by mixing existing soil with imported waste
- the site faces south making the selection of this site very important to its use as a greenhouse
- the natural topography of the site provides a sheltered environment since it is in a pit
- the structures, multiple geodesic biomes proved to be a very economic modern structural system since it was set into a multi-layered site, required large open spanses, and could be expanded will relative ease

- new technology was developed for this project - transparent panels were designed as pillows of layered film specifically designed to support large amounts of snow loading
- the program as a research centre researches, develops, teaches, and promotes the cleansing process

What doesn't work

- the site has very little level ground and therefore many of the areas were disturbed to make the site suitable for traversing and construction
- the location became very prone to flooding because of the level of the grade compared to the surrounding area
- the site is very unstable due to its previous use as a clay mine as is constantly
- the site is set outside the boundaries of any community and therefore did not provide valuable information or direction on effects within a populated area

Case Study 4 - Gantry Plaza State Park, Queens, New York, NY

Why was this case study chosen?

- the site was an abandoned site once used for rail and ferry transportation
- the design was designed by a Landscape Architect who is noted for his incorporating of natural cleansing concepts into his plans

The Catalyst...

The designer's concept of developing a site as a place with "All Things for All People", activities for all ages and particularly cultures, important especially in the diverse community in which it existed

How was it activated ? by...

- (a) incorporating low to mid rise housing to intensify the site and eliminate the barrier to the waterfront which was a downfall of high-rise buildings
- (b) providing a mix of park uses in order that all can enjoy, rather alienating people

What works

- the original site which was 74 acres was developed with mixed use functions including residential to intensify the area
- the site was developed for the use of the residents of various economic and cultural backgrounds
- design of two parts, North Gantry providing open spaces, and South Gantry providing interpretive areas, organic elements, walks and plantings of a human scale
- cleansing concepts such as native grasses and shoreline waterfront plants have been reintroduced to provide a sense of place and return the waters edge
- incorporating historical elements such as the rails and gantries into the plan to provide a sense of past

What doesn't work

- the concept works very well within a large scale American City and is very successful here because of the cultural diversity of the residents but the park scale and spaces may not apply in a small community concept

Case Study 5 - Easter Hill Hope VI Project, Richmond, California by Calthorpe

Why was this case study chosen?

- this site incorporated major physical cleansing - possessed approximately 300 dilapidated housing units and required a new approach to deter crime-ridden public housing
- the approach required was to redesign the area to benefit the people of the area
- the scale of the project was similar to those sites within small communities

The Catalyst...

An approach designed for security, "eyes-on-the-street", reinforced by a drive-by shooting at the project's first community meeting.

How was it activated ? by...

- (a) "institutional" style public housing projects and a mix of small scale, mixed income housing units to create a livable and diverse environment
- (b) inclusion of community buildings such as daycare, community centre with gymnasium, soccer facilities, and neighborhood parks
- (c) incorporation of a police substation in the community centre

What works

- small community approach to housing by creating mixed type units to face the street and have front porches reinforcing social contact and provide security the residents of community
- inclusion of natural concepts such as multiple neighbourhood parks and community garden spaces linked together to create a flow between the various types of open spaces to allow active and passive recreation
- incorporating various types of natural park spaces including play parks, kid parks, community gardens, court parkettes
- incorporating a mix of various housing types and scales
- incorporating traditional housing styles utilizing surrounding architecture as a point of departure

What doesn't work

- the site is a neighborhood enveloped within a larger residential context - what is lacking as it relates to the small community revitalization is the direct relationship to the adjacency of mixed uses such as commercial retail, large format stores, and wide open abandoned industrial

Case Study 6 - Richmond Transit Village, Richmond, California by Calthorpe

Why was this case study chosen?

- the site was underutilized and developed as an infill project centred around an existing rail transit station
- to identify whether small community sites could be redeveloped central to the rail stations and rail
- to identify the design approach to the development of the infill

The Catalyst...

To energize the underutilized lands surrounding the station with uses to promote the use of transit

How was it activated ? by...

- (a) by developing high density, home-ownership opportunities, accessibility, and building types to enhance, maintain, and promote the character of the area
- (b) providing a mixed use of activities for the residents of the area including commercial, performing arts, urban parks, community centre

What works

- incorporating high density housing, live/work townhouses, and a diverse range of unit types to activate the area and provide rider ship for the transit system
- using the station as a transit station directly accessible by surrounding neighborhoods
- housing was developed facing small parks in sub neighborhoods
- establishing street links to surrounding neighborhoods
- intensification of retail by eliminating surface parking and providing a parking garage as part of the retail components
- provision of a central park which provides a 'central gathering space' for residents

What doesn't work

- the re-initialization of mass rapid transit appears to be very successful in the community of Richmond where the population includes a surrounding regional draw - this may prove to very premature thinking in terms of the small community and developing links to other communities - planning for the future 50, 100 years should not be out of the question

Case Study 7 - Carver Redevelopment Project, Atlanta, Georgia by Calthorpe

Why was this case study chosen?

- this site was a total urban revitalization of an existing 105 acre public housing project developed in 1953, a modern abandonment
- to identify the faults of the 1950's approach to urban revitalization

The Catalyst...

To correct a failed approach and to revitalize an urban area which had created an unfriendly, auto dependent environment which discouraged any sense of community amongst its residents

How was it activated ? by...

- (a) developing a plan for a mixed income neighborhood
- (b) providing housing types for a broad base of incomes with a broad mix of 'for sale' and rental units
- (c) utilizing natural areas for the development of a multi-use linear park

What works

- retail and community centre facilities are positioned along the major connector road, a visible gateway to the site
- reflecting the traditional architecture of the community in the new development
- redesigning boulevards to allow pedestrian supportive walks and pathways
- incorporation of a linear park central to the neighborhood which provides a range of functions such as informal play fields, formal sports areas, retention area, and trail-side wetlands
- highest density housing is placed at the edges of the linear park providing a visual edge
- interconnected network of streets is provided to create alternative routes to distribute traffic and deliver streets which are not overburdened
- the scale of this development, its context to surrounding uses, and its revitalization of natural areas provide for a dynamic and successfully utilized project

What doesn't work

- a great deal of the sites' surface area is dedicated to the automobile in terms of the number of streets to maneuver through the site, the incorporation of a second alley street behind the units to accommodate access to garages, additional parking, plus surface parking areas for retail

- while there are a number of connector pathways and links to the housing types from the main linear park, there appears to be a lack of park types and sizes directly adjacent to the residential components for various uses

Case Study 8 - Mashpee Commons, Cape Cod, Massachusetts by Duany & Plater-Zyberk

Why was this case study chosen?

- the core of the site, being an abandoned shopping mall, was reverted into a small town main street of commercial activity
- to identify the response to the transformation and reasons behind the demise of this 1960's shopping mall approach

The Catalyst...

The incorporation of the concept of using traditional design approaches and main street principles to re-energize an underutilized and inactive area

How was it activated ? by...

- (a) removing the shopping mall and developing in its place 'main street'
- (b) utilizing 'main street' as the main organizer and hub for the community's retail activity
- (c) incorporating a traditional palette of materials and architectural styles to compliment the neighborhood, in this case New England classic village

What works

- a design that incorporates all the mixed use elements of a community 'main street' central business district including offices, restaurants, banks, a post office, library, church school, police and fire station
- a mix of housing types including small lot single family homes, townhouses, rear yard accessory units, and apartments over shops
- the development of this plan, retail first, runs counter most post war suburban developments where large tracts of housing are built first and commercial, retail, and business follow

What doesn't work

- while this approach is quite successful to the area of Mashpee Commons, the design of a new town centre with its town hall, library, post office buildings must first demand these uses. In a small community, these uses typically are established and should they require replacement it is unlikely that they would be replaced in one cohesive move to honor a town centre.

Case Study 9 - Downsview Park, Toronto, Ontario by OMA Rem Koolhas

Why was this case study chosen?

- the site is an abandoned military site dedicated by the Government for use as recreational green space
- this case study provided an example of the implementation process of the green spaces utilizing natural environmental processes over time to cleanse the site

The Catalyst

The response to the OMA identification of Toronto's poor record of investment in public space. The goal was to generate an urban park over time and which provides and example of the 21st Century standards of excellence in landscape architectural design and urban recreational design

How was it activated ? by...

- (a) developing a strategy in lieu of a design identified as 'Tree City" for a series of operations, phase by phase, of various components of the park to be implemented over time with no identifiable functions for the program spaces - use of spaces would be developed over time as the space became remediated and a use identified
- (b) defining an all encompassing approach 'Grow the park + Manufacture nature + Curate culture + 1000 pathways + Destination and dispersal + Sacrifice and save = low density metropolitan life

What works

- an implementation process focused on how to restore and cleanse the soil
- the approach was responsive to the interests of the community
- the approach provided a mix of randomness and future choice
- the approach is a living entity, implemented over time, which has a clear beginning but no apparent end

What doesn't work

- in relationship to the small community and the location of its abandoned sites being in the core of the community, this site is located on the periphery of Toronto rather than its core which may have taken a different approach
- the scale of this site in relationship to the whole City of Toronto is quite small in comparison to the small community and the scale of its site - the impact on the small community has been much greater.

Conclusions

During the research of the case studies and the development of the conclusions a number of findings were identified which were common. Based on my conclusions the common findings are as follows:

1) **Site Cleansing**
All the case studies researched utilized or promoted a level of cleansing principles to restore the abandoned sites such as:
- adaptive reuse of existing structures and elements
- seasonal plantings and native grasses
- natural restoration
- natural stabilization of water edges
- manufacture of topsoil on site mixed with imported waste
- community gardens
- utilizing natural areas as links
- water retention areas
- trail-side wetlands
- natural remediation

2) **Local Focus**
All case studies focused on programs which were responsive to the interests of the residents of the community or the area. A common theme throughout all the case studies was the concept of developing a place(s) for people of all ages' and a central gathering space. Two of the case studies researched identified tourism as the secondary focus. However, these centres were major cities over 3million population.

3) **Provide a Sense of Past**
The majority of the case studies retained, restored, or integrated historical elements, structures, traditional approaches or styles into the restoration plans. History was identified as being important to the community to provide a sense of past.

4) **Traditional Residential Approaches**
A number of case studies incorporated a residential component into the restoration plan. Those residential projects exhibited approaches that reverted back to traditional urban planning concepts.

5) **Mix of Urban Parks**
The majority of the case studies integrated a mix of urban park types as part of the restoration plan and included elements such as amphitheaters, linear park links as organizers, and active and passive recreation which consists of, community gardens, water parks, formal and informal play fields, and pedestrian walks and pathways

6) **Diverse Environment**
The majority of the case studies incorporated a mix of uses as part of the restoration plan to provide a livable and diverse environment for the community.

7) **Diverse Activities**
The majority of the case studies developed year round programs to activate the restored site.

8) **Reestablished Links**
Some of the case studies identified traditional approaches to the design of their infrastructure by reestablishing and realigning street links to the surrounding areas.

In summary the findings also showed that not one of the case studies reintroduced any form of industrial activity to revitalize the site. As well in the mixed use sites, there was no identifiable formula which prescribed a ratio of residential to commercial to institutional to urban park uses.

The above list of findings form the transferable planning principles to help define the program for the design stage of the Thesis work.

Cleansing Through Bioremediation

All abandoned industrial sites contained some level of contamination left as a result of bi-products or processes that once existed on these sites. Understanding this, contamination requires removal or treatment prior to redevelopment of these sites.

Removal of contaminants is only a practical option for small quantities and from an ethical perspective, it only transfers the problem to another location. Treatments on site often require the expenditure of large amounts of energy which is not environmentally responsible.

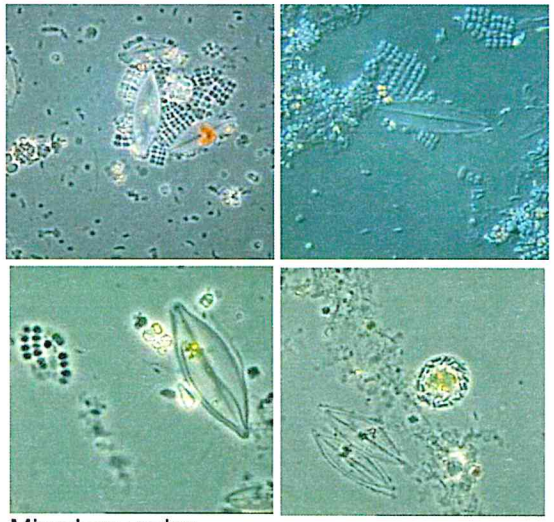
Current research shows that new methods are available to treat the existing contaminated soils in place. This process is described as bioremediation. Bioremediation is described as using microorganisms to remove compounds from soil, sludge, groundwater, or surface water and returning them to their "clean and natural state".[7] The bioremediation process or biotreatment utilizes microbes by enhancing them to be capable to degrade significant toxic compounds. The process in achieved through the physical means of mixing, aeration or by chemical means, which adds limiting mineral nutrients. Since microbes, which are required for the biotreatment process may be already present, indigenous, to the contaminated soils, this initial cleansing process can be an economic advantage.

The biotreatment process of soils can be dealt with in two distinct manners. The first is "ex situ", which translates to *"from place"*. This involves the excavation and treatment by placing the soil into a defined treatment area. Mineral nutrients and external organisms are then added to the soil, and then mixed to assure proper distribution of the soil.

The ex-situ scenario is often referred to as "land farming" since the microbes are being "tilled-in" to degrade the contaminated areas. The mixing either takes place by placing the soil in an area 12-18" deep and then mixing with a tiller or placing the soils in berms 5' high by 15' wide using a composting machine to mix the nutrients.

Another ex-situ technique is referred to as bio-pile and is becoming very popular. This technique places the soils into cells using a network of perforated or slotted pipes to draw fresh air through the soil using a vacuum system. This system utilizes less equipment and less treatment area.

The second method of biotreatment of soils is "in situ", which is treating the contaminated soil without excavation. This is often used for areas where contamination has migrated under existing built form or infrastructure. The mineral nutrients and organisms are added directly into the ground through wells or infiltration galleries to allow the degradation of the contaminated material.



Microbes under microscope degenerating contaminants

The in-situ biotreatment process is also valuable in cleansing contaminated groundwater. This approach contains all the cleansing below grade in order that the toxins are not emitted inadvertently into the air. This is desirable where the groundwater is heavily laden with volatile fuels.

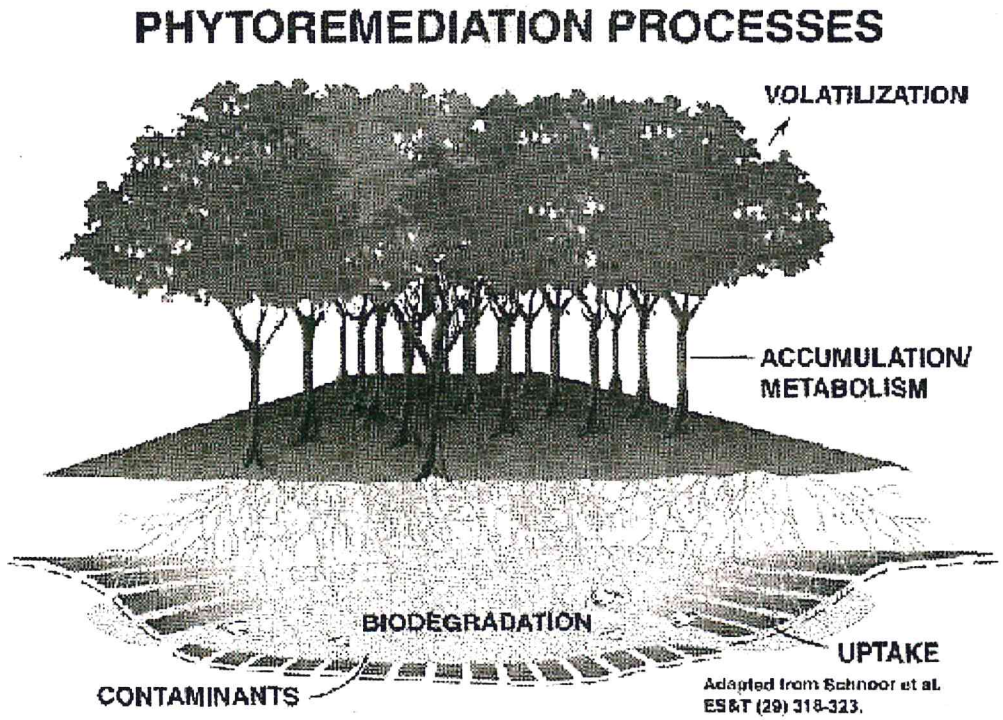
The result of all these bitotreatment methods is the same. The contaminated material is treated and converted to innocuous carbon dioxide and water. The soil or ground water is returned to "clean" standards.

The bioremeditation process has a tremendous natural rehabilitating advantage in comparison to the traditional method of total excavation and removal off-site for treatment for those concerned with the long term maintenance and stewardship of the earth, since the existing soil is treated in place lieu of being replaced. Most soils have an indigenous population of microbes present particularly shallow soils with inherent vegetation. In most cases, it is prudent to add external microbes to allow degradation of specific toxins, speed the contamination removal, and provide greater removal. This is refereed to as bio-augmentation and will enhance the biotreatment process regardless of the level of indigenous microbes.

In parallel with the passive approach to in-situ bioremediation, research has also shown that soil remediation through phyto-enhancement or 'phytoremediation' is also an environmentally friendly option to assist with the cleansing process. In general, phytoremediation is the use of plants for the remediation of soil, sediments and water. This process can either remove contaminants through direct uptake by plants, or through evapotransportation. Direct uptake results in the accumulation, and bio-degradation of contaminants and enhancement through the root structure of the plants. This is also known as rhizosphere. The evapotransportation process reduces the infiltration of surface water, serving as natural barriers.

Specific trees, known as phreatophytes, take up large quantities of water and then can be used to treat the contaminated groundwaters hydraulically.

The advantages of the phytoremediation process is the low cost of this technology, positive environmental results, and public acceptance. The process however can take several years. Tree planting such as hybrid



willows or dogwoods are extremely successful in the decontamination of abandoned industrial sites. The phytoremediation process shows

Dogwood

success in the extraction of heavy metals, and recalcitrant organics, found commonly at manufactured gas sites and refinery sites. The research indicates that the abandoned industrial sites can be decontaminated to allow redevelopment of these sites in an economical and environmental manner through the process of bioremediation. There is a dramatic increase in environmental awareness and conservation. The biotreatment process should be embraced as a leading cleansing approach in the retention of our soils and earth.

While in-situ bioremediation is an ideal responsible solution, the process takes more time. It is the process aspect of the 'cleansing' that will be highlighted in the design phase of the Thesis. The opportunity to exhibit this natural process is part of the educational component of the "Cleansing Fields"

Man As Steward of The Earth

"The old people came to love the soil
to be close to mother power.
It was good for the skin to touch the earth
and the old people like to remove their moccasins
and walk with bare feet on the sacred earth.

The soil was soothing, strengthening, cleansing
and healing.
That is why the Indian still sits upon the earth.
To sit or lie upon the ground
is to be able to think more deeply
and to feel more keenly;
he can see more clearly into the mysteries of life
and come closer in kinship to other lives about
him....

Kinship with all creatures of the earth, sky and
water
was a real and active principle.
The heart away from nature becomes hard;
he knew that lack of respect for growing, living
things
soon led to lack of respect for human, too.
So he kept his youth close to its softening
influence. [8]

T.C. McLuhan

It has become evident through the research that small communities and cities have been adversely affected by the abandoned lands following the industrial era. At the same time, advances in science and technology have removed people from nature. The abandoned industrial lands within our communities have fragmented the cores of our communities.

I believe it is our responsibility as stewards to tend to our Earth. The Earth was provided to us by our Creator, and as in the image of God, we must play the stewardship role in caring for our Earth. "As image-bearer of God, Man possesses the possibility both to create something beautiful and to delight in it."[9]

We can also learn from the aboriginal peoples, who for generations, have shown a connection with nature and the importance of nature to reinforce their well-being. They believe that being close to nature means being close to their Creator, which is the foundation for existence. The aboriginal people believe that the natural world provides life-giving nourishment to the physical, emotional, aesthetic, moral, and religious realms of their lives.

William McDonough, Architect stated in Restoring the Earth..."*design leads to the manifestation of human intention, and if what we make with our hands is to be sacred and honour the Earth that gives us life, then the things that we make must not only rise from the ground but return to it - soil to soil, water to water, so everything that is received from the Earth can be freely given back without causing harm to any living system. This is ecology. This is good design.*" [10]

Good design involves the sensitive consideration of our ecology, environmental awareness and the sustainability of nature in the cores of our small communities. The quality of our life needs to be our priority, and therefore a balance between nature and technology is required.

Returning soil to soil, and water to water is man's responsibility, since Man was provided with all the goodness of nature. Too often we have abused this goodness and have ignored our own well being. These sites should be cleansed and restored. They should be utilized as examples to educate our children, at an early age, to think about environmental awareness, their natural sustainability and our own well being.

The Case Studies indicate that the cores in the community, if left abandoned, further erode the community. We need to use these sites and teach by example that "ecological, economic, and social responsibility are cornerstones to sustainable urban cores".[11] As designers we need to develop architectural responses to "Cleansing"; ie., ideas and framework that serve as tools to enhance these sites within any community.

Orr (1992) cited from Ontario Eco-Architecture, suggests that there are 6 characteristics which portray ecological sustainability and serve as useful guidelines.

1) requires recognition that humankind is finite and fallible.
2) ecological sustainability can only be reached through educated empowered communities and a return to civic virtue - through active responsibility.
3) ecological sustainability is rooted in the past.
4) nature is a model....not a set of limits
5) we must recognize the need for the decentralization and smaller scales of operation, due to our inability to manage large scale complex systems
6) sustainability requires the recognition of interconnectedness and a systems view of nature.[12]

It is also of prime importance in the cleansing process that natural linkages be restored, and reconnected. This parallels the objective of returning soil to soil, water to water.

In order to provide balance within the community, there must also be an integration of nature and culture. This can be achieved by integrating the natural environment with the cultural and built environment, integrating the outdoors with the indoors, and utilizing teaching and experimental garden plots. It important to provide an understanding through cultural and historical reminders of the past, the progression of activities that once existed on the site, in order that we are reminded to avoid repeating our mistakes and celebrate the worthwhile aspects as well.

An 'In Depth Report into the Cities & Green Living: Smartgrowth',[4] indicates that there is a great deal of evidence to indicate we place a high value on those benefits that we are losing in today's urban dynamic. People have a deep sense of place and history and to the natural world. Writer Tony Hiss describes his research documenting strong human preferences for green landscapes with water, winding paths, long and sweeping vistas, and hidden natural places.[13]

Similarly, in a recent public poll, 63% of respondents cited "the beauty of nature" as a reason for wanting to protect the environment and 78% supported changes in the development patterns in order to preserve farmland. They also indicated that the lowest approval was given to the "cookie cutter" subdivisions and complexes, highway strip development, shopping plazas with large parking lots, while they gave the highest rating to natural areas, farmland, wood lots, parks and streams.[14]

As communities spread out further, we lose connectedness to our cores and our community roots. We must travel longer distances to enjoy recreation and playground areas.

There are a great number of ways to return our abandoned lands to nature. Healing gardens are being designed within hospitals and hospices to provide calm spaces for seniors, or troubled city teens. These gardens provide restorative places that therapeutically weeds the mind of unpleasant experiences. Gardens can provide therapeutic spaces for the community.

Healing gardens can also incorporate healing and cleansing plants. For example research

shows that broccoli protects against cancer due to the natural chemicals it contains. Also many well known medicines come from plants such as *Ephedra* species which provides ephedrine, a nasal decongestant while *Digitalis* (foxglove) provides digoxin and digitoxin used as heart medicines.[15]

There are a number of species of trees which speed the process of soils regeneration, particularly the poplar, willow, Manitoba maple, and elm species, in the proper circumstances. As well elder and dogwood are popular varieties to stabilize slopes and watercourse

channels.

Since the density of the subdivision within the small community has increased, there is little room for the individual backyard garden experience. We need to provide spaces in the community giving everyone the opportunity to participate in nature and gardening. Cleansing our soils and providing new life to the lands will not only breathe new life into the core, but it will regenerate the edges of the site as attractive places to live, play, work, visit, and socialize.
Consider this in the view of the comments by John Ormsbee Simonds.

> *"The parks of the future will be an integral part of urban life-not an antidote to it."* [16]

The activities within these cleansed fields will not only provide therapy to the community, the colors provide therapy as well. A well designed landscape can utilize plants that cleanse, color, and provide fragrance, to the decrepit soiled landscape which has existed in the cores of communities for decades.

We must learn from the past and recognize that industry and nature must coexist. As designers, we must focus our efforts to cleanse and restore our abandoned lands. It is our Earth and our responsibility as Man to care for our Earth. It is our responsibility to utilize these sites and provide urban balance between the environmental and the technological. These sites must be the healing grounds within our communities.

The Earth is a fragile piece of real estate. We must become stewards of our Earth provided to us by our Creator and reintegrate nature. These large expanses of abandoned lands provide an excellent opportunity to demonstrate the "Cleansing" principle. It is possible to bring new life to these lands and refresh the community through reforestation, bioremediation, parklands, healing gardens, and rehabilitated structures and begin to cure the cancer in our communities' cores.

Planning Framework

The Cleansing Fields

Many small communities in Southwestern Ontario contain contaminated and derelict lands left abandoned by past industrial activity. Man has failed by focusing on the present leaving these discarded and decayed sites to act as cancers metastasizing the very heart of the small community.

The earth is a sacred place where man is the caretaker and steward who enjoys and takes pleasure in the abundant good gifts of God. As caretakers, it is man's responsibility to intervene to provide healing to these sites, restoring them in order that they may foster new growth and new uses to cure the core. Healing requires man's return to the natural environment, implementing a process to reclaim these lands by cleansing them.

The Cleansing Fields is a process, integrated over time, combining man made interventions and the natural environment to restore contaminated and derelict lands, abandoned by past industrial activity, for contemporary uses to benefit the people of the community.

RAIC Syllabus
Ed Vancomsdrpl
November 2002

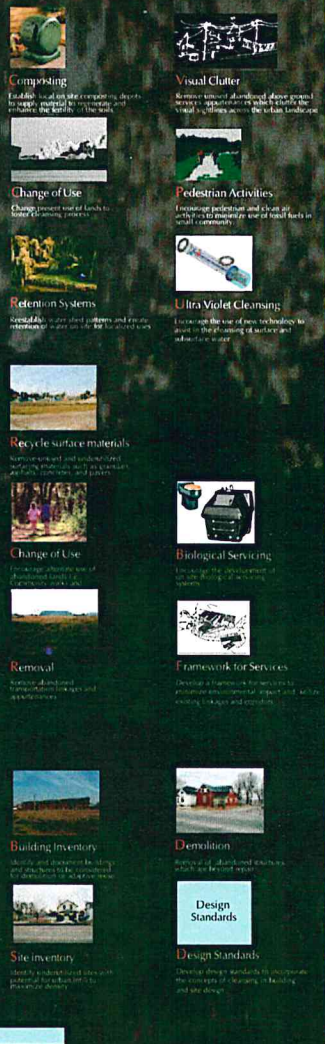
Community Implementation

- **Environment**
  - Soils
  - Air
  - Water
- **Infrastructure**
  - Streets
  - Services
  - Linkages
- **Built Form & Urban Spaces**
  - Existing
  - New Form

Identification and Inventory of Community Assets

Intervention

Bioremediation Composting Phyto-remediation Recycling Demolition



Reclamation

Habit Changes Plantings Natural Cleansing Infill Adaptive Reuse

(Re)Integration

Market Gardens Urban Orchards Car as Servant Plan for the Future Wind Power Sustainable Buildings

Integration of Infrastructure and Environment

PF

Planning Framework

St. Thomas: Examining The City and The Site

The City of St.Thomas is located in Southwestern Ontario midway between The City of Windsor and the City of Toronto, 20 kilometres south of the 401 Corridor. The City has a population of approximately 30,000. St.Thomas serves as a centre to smaller trade areas such as Port Stanley (5.000), Aylmer (10,000), Belmont (2,000) Fingal (1,000) and Shedden (1,500). These smaller communities are convenience centres for the agricultural areas as well as rural bedroom communities to the larger cities.

While the City of St.Thomas is largely an automotive manufacturing community, it also serves as a bedroom community to it northerly neighbour, the City of London. The City of London boasts a population of 400,000 and is home to both the University of Western Ontario and the main Fanshawe College Campus.

The City of St.Thomas, benefits and suffers by its existence so near the City of London. The City of London is directly adjacent the Highway 401 Corridor and therefore is competitive towards attracting new manufacturing facilities. However, the lower cost of living levels in the City of St.Thomas have provided the perfect haven for starter families to begin in their first homes while being able to take a short commute to the City of London for employment. The City of London also provides a large selection of large format, big box, and specialty retail shops that are utilized by St.Thomas residents.

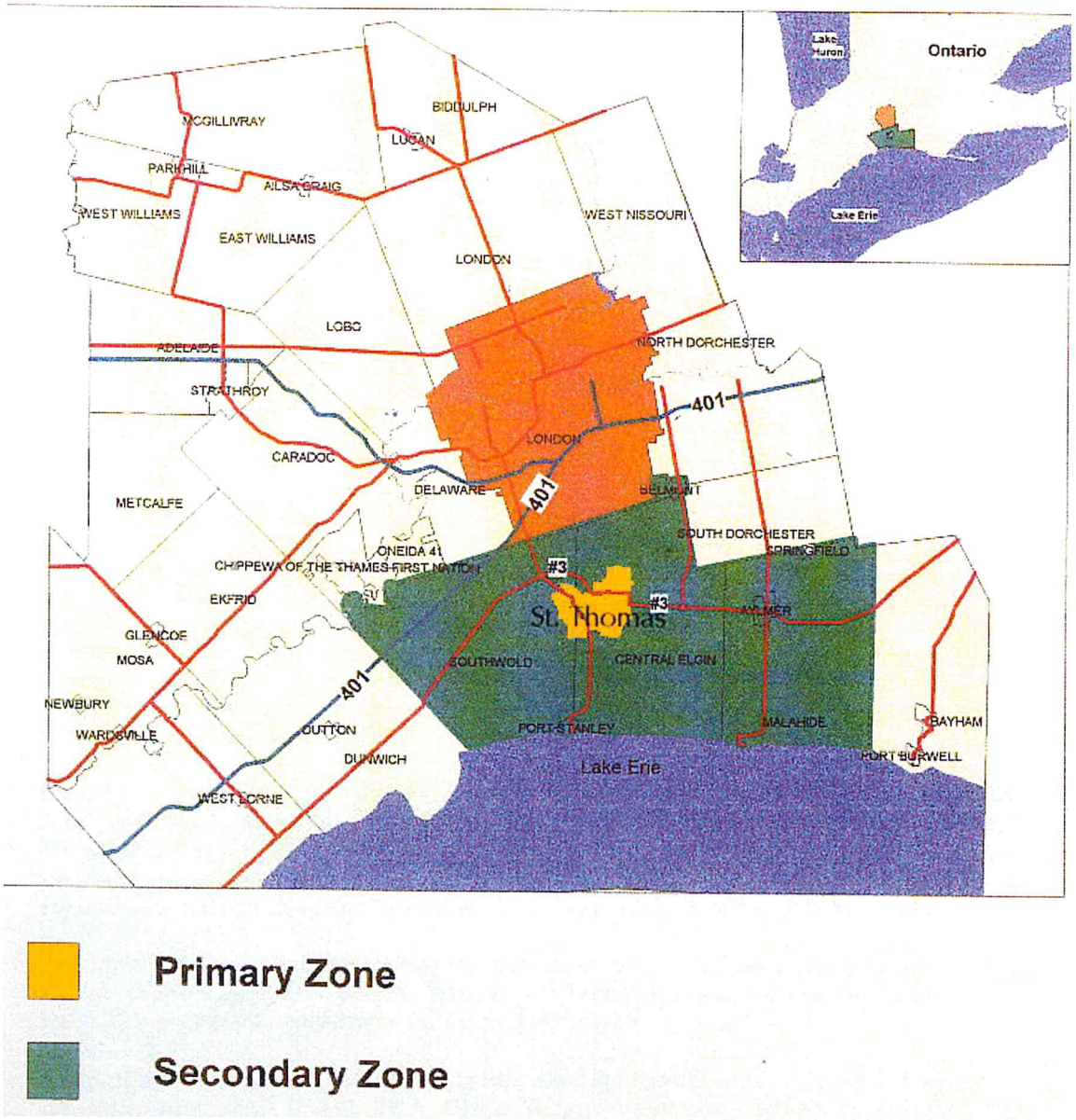
Regional Commercial Systems Study

Research was performed to understand the demands within the City of St.Thomas. A "Retail Market Demand Analysis" was undertaken by Mr. Scott Morgan of Land Development and Planning Consultant for The City of St.Thomas, in order to provide insight for the future regional commercial systems and primarily to identify ways that St.Thomas could regain much of its lost retail income from The City of London

Customer intercept surveys and consumer telephone survey were conducted in and around the City of St.Thomas. A trade area model was developed from the results of the survey. The "Trade Area" is divided into two distinct zones being the Primary Zone - The City of St.Thomas, and the Secondary Zone being Central Elgin, Southwold Township, and Malahide Township.

It is also interesting to note that the average household incomes vary within the "Trade Area" The City of St.Thomas average household incomes are on average 12% below the provincial average, Central Elgin 2% above the provincial average, and Southwold Township 20% below the provincial average.

RETAIL MARKET ANALYSIS
City of St. Thomas/Municipality of Central Elgin
Trade Area



These averages have a direct effect on the market share of sales that can be captured from these areas and also the types of commercial retails best suited to cater to these provincial averages.

It is also expected that the "Trade Area" population will expand in the following numbers:

Year	Central Elgin	City of St.Thomas
1999	64,000	34,000
2006	71,000	--
2021	84,000	44,000

It was identified that new format chain stores were "notably" lacking in the "Trade Area" in the range of 40,000 to 100,000 square feet. This fact is most largely due to the nearby London competitive market which has a population base of 400,000 or 10 times that of St.Thomas. Since London has developed St.Thomas into their capture market zones, it is difficult for St.Thomas to attract sizable representation of the new format chain stores.

Capture rates were surveyed to identify those market areas which were provided primarily within the City of St.Thomas. Conversely the low capture rates indicated market areas where people were driving out of the city to purchasing specific items..

High and low capture rates were documented for the City of St.Thomas (Primary Zone) as shown on the following page.

Highest Capture (Primary Zone)

Retail Type	Capture Rate
supermarket	96.2 %
specialty food	88.2 %
promotional department store	95.5 %
general merchandise	92.0 %
shoes	78.1%
camera/ photo/ optical	91.1 %
garden centre / nursery / florist	85.8 %
pet stores	75.5 %
hardware / paint / wallpaper	80.3 %
sporting goods / crafts	72.8 %
drugs / cosmetics	96.9 %
tires, batteries and accessories	96.6 %

Lowest Capture (Primary Zone)

Retail Type	Capture Rate
Sears	51.4 %
men's and ladies wear	42.8 %
family wear / unisex	32.4 %
children's wear	7.3 %
fabric / wool	37.9 %
book / stationery / card	57.8 %
jewelry / gift / novelty	38.7 %
toy / hobby	29.9 %
furniture / appliances	16.9 %
electronics / computers/ CD's	34.1 %
lighting / floor covering / interior	44.9 %
china / kitchenware / bath / linen	45.3 %
picture framing /sewing machine / antiques	6.3 %
home improvement centre	54.8 %

In the Secondary Zone, the local capture rates by the City of St.Thomas commercial operators are generally below 45% with some exceptions.

Retail Type	Capture Rate
specialty food	61.7 %
promotional department store	79.7 %
general merchandise	59.6 %
shoes	54.7%
jewelry/ gift/ novelty	78.4 %
sporting goods / crafts	48.8 %
lighting / floor covering / interior	46.8 %

Retail and Commercial Opportunities

There are needs in the apparel, accessories, home furnishings, durables, and semi-durables areas as well as the home improvement sector. A planning horizon of the year 2006 was established and set as a reasonable time frame for adjustment of retail and commercial needs. The year 2006 forecasts a population growth to 38,000 in the City of St.Thomas and warrants retail commercial space totaling 330,000 sq.ft. This translates into a breakdown of retail space as follows:

Warranted Retail Type	Area (sq.ft.)
Supermarket	32,363
Promotional Dept. Store	91,115
Specialty DSTM	158,173
Office supply / computer	17,168
Tire / Batteries / Accessories	10,360
Home improvement	20,345
Total (rounded)	**330,000**

In addition 36,000 sq.ft. of other space is warranted by 2006 as follows:

Warranted Other Types	Area (sq.ft.)
Personal Services	3,800
Other Services	300
Bank / Trust	3,345
Restaurants	10,540
Liquor / Beer / Wine	1,340
Offices	16,725
Total (rounded)	**36,000**

Therefore this is a total 363,000 sq.ft. of warranted retail and commercial space required by the year 2006.

The results of the analysis also discovered that full service hotel and hospitality spaces were needed. Space planning ratios were used to identify an immediate need of 150 to 225 rooms required based on the average of 500 sq.ft. per room.

It was identified that 363,000 sq.ft. of additional retail and commercial space could be supported by the year 2006. This space could be distributed into a number of supported divisions within the City of St.Thomas.

There was a need identified for approximately 32,000 sq.ft. of Supermarket space with an additional 90,000 sq.ft. of Department Store requirement. It was also speculated that these additional areas would have no adverse effects on the existing Zellers and Sears department stores. It was suggested in the analysis that promotional department stores might be accommodated at a centralized site adjacent to the St.Thomas Downtown.

Specialty Department Store Type Merchandise (DSTM) including big box was also warranted and could sustain an additional 158,000 sq.ft. by the year 2006. It would be more appropriate to fulfill this requirement with a number ie. 6 big box stores in the ranges of 10,000 to 20,000 sq.ft.. It was identified that a large format big box in the 40,000 to 120,000 sq.ft. space range may be constrained by i) target market of London and ii) timing since St.Thomas would be near the end of life cycle thresholds for such formats.

TBA format, Tires, Batteries and Accessories, could also sustain additional area in the range of 10,000 sq.ft. by 2006. This would justify doubling the area of a CTC type store considering 1/2 of its operation is retail related, the remainder being storage, car repair, and other service related functions.

It was also identified that Office Supply could sustain an additional 17,000 sq.ft. by the year 2006. This space could be accommodated in a new format facility. It is also anticipated that

this would cause a moderate sales transfer in the sector.

Home Improvement Related Merchandise (HIRM) could sustain 20,000 sq.ft. by the year 2006. It was believed that this area would be insufficient to be supported by a new format facility. Significant sales transfers would occur if new format was introduced affecting existing HIRM businesses.

The analysis showed that overall demands could support 363,000 sq.ft. of new retail and commercial space by the year 2006 and 630,000 sq.ft. by the year 2021. Utilizing the common factor of 25% coverage, this would equate to the land area requirements of 33 acres.

There is presently a supply of potential sites downtown that could meet this requirement. It was also evident that downtown is readily accessible by all of Central Elgin and its defined "Trade Area". It was acknowledged in the report that it would be good planning philosophy to accommodate the expanded retail in or near the downtown rather than the peripheral locations. However poor existing building stock and parking costs are preventing downtown development.

The hamlets of Port Stanley, Belmont and Sparta, play a stable tourist role within the Trade Area of Central Elgin and would be tributary to the economy within St.Thomas.

Leisure Report

The information gathered was obtained from a St.Thomas Leisure Report developed in 1990 and updated 1997. The plan addresses future development of leisure opportunities for the City of St.. Thomas. It is a documentation of its current facilities, current trends, community groups and organizations, user, and business surveys.

The development of leisure opportunities in St.Thomas is influenced by population trends, demographic and leisure trends, and public satisfaction with leisure opportunities.

The population trends from 1996 pop. is expected to grow by an average of 295 new dwelling units per year (based on 2.7 persons per dwelling). Yarmouth Township within Central Elgin is expected to grow by an average of 61 new dwelling units per year till 2016. This results is a total of 14,676 dwelling units in St.. Thomas and Yarmouth township combined. It also shows that the largest level of growth are the ages 35-45, 45-54, and 55-64 ,thus the aging of the baby boom generation.

The category for children under 14 is expected to double in numbers between 1991 and 2011 and those 55 and over are also anticipated to increase substantially.

As people grow older, they become less active and less inclined to engage in strenuous activities. This has a bearing on the direction of the final recommendations. There is no point in building a hockey rink now that will be empty in 15 years, while neglecting to provide adequate parks and trails that an aging group would utilize.

The predictions say that resting, watching TV, reading, hobbies, attendance of museums, theaters and places of worship will be popular leisure activities in years to come.

Canadian Trails to Greenway Network promotes the rehabilitation of abandoned rail corridors for recreational purposes. Volunteering is an activity people do more of as they get older. Ninety-seven (97) percent of households in St.. Thomas and Yarmouth township presently make use of parks and facilities. Two (2) out of five (5) households feel that more parks are needed in St.Thomas for activities such as walking (29%), cycling (25.5%), and playgrounds (10.6%).

It was recommended that The City of St.Thomas proceed with a family oriented "water play" park to meet the demand on leisure aquatics. There will be a growth in the number of children under 14. In 1991 20.5 % of St.. Thomas and Yarmouth population was under 14 and this is expected to double by 2011.

There were a a number of direct recommendations that resulted from the Leisure Report. While there were issues which related to safety and upgrades, the recommendations that were relevant to the towards the research of the thesis were as follows:

1) It was recognized that there is insufficient current demand for a third ice surface based on current rental times.
2) There should be a phased development of Pinafore Park to meet community defined needs. This development should include the construction of a family-oriented "water-play" facility.

3) The Parks and Recreation Department should address upgrading the two unlit ball diamonds at Timken to three fully-serviced lit diamonds. This indicated a demand for baseball.

4) The Jaycees Pool should remain open to meet demand for lessons that are projected to take up most of it's capacity in

light of the closing of the Lions Pool and the Talbot Street YMCA pool.

There study also indicated a deficiency in neighborhood parks even when school properties are included. The recommended size for a community parkland is 4 to 6 hectares minimum to be used for major playground, tennis, walkways, senior level softball diamonds and soccer fields, washrooms and concession, picnic areas, and parking.

The neighborhood parkland size should be 1.5 to 2 hectares minimum used for playground, tennis courts, outdoor ice rink, junior level softball diamonds and soccer fields, walkways, and limited parking.

Special open space should be allotted for site specific recreations according to environmental, heritage or other key features.

Recommendation Regarding Parks and Open Space Development

There were also a number of recommendations regarding parks and open space requirements in the study.

1) That a new parkland classification "Special Open Space" be adopted to allow the municipality to include heritage sites.

2) In order to meet the future growth projected in the report through 2016 that additional parkland in the Neighborhood Park classification be acquired in preferably two parcels, each between 3 and 3.9 hectares in size. The location will depend on the rate and nature of development system.

3) The lands owned by the City of St.. Thomas the Education and Recreation Complex, including the 14 acre parcel next to Douglas J. Tarry Complex which is currently underdeveloped and designated for "recreation uses", be recognized as serving the needs for residential development in the immediate area as a Neighborhood Park under the new classification system for South St.Thomas.

4) The City of St.. Thomas should proceed with a detailed study to address the phased development of "Community links" for bicycle and walking trails utilizing railway right of way wherever possible

5) Lake Margaret on the south periphery should be a "community resource" and the City of St.. Thomas should coordinate the efforts of the public and private sectors to ensure the maximum benefit for the community as-a-whole, including general public access to a "green belt" surrounding Lake Margaret.

The additional statistics were also identified form the report as follows:

One (1) in every ten (10) households felt they were not well served by leisure activities in the City.

Three (3) out of every four (4) households felt that new and improved pedestrian facilities for leisure off general transportation purposes are very or somewhat important.

Seven (7) out of ten (10) households feel that new and improved bicycle facilities for leisure off general transportation purposes are very or somewhat important.

Recommendations Regarding Program and Activity Development

The report outlined some recommendations in regards to Program and Activity development.

1) Wherever possible, consideration should be given to a "mixed pedestrian use" for the abandoned railway right-of-way property to include cycling and walking.

2) The proposed Leisure services Council should provide a coordinated effort to ensure that programs and activities include special populations ie. barrier free and seniors activities.

It was identified that two (2) out of three (3) and three (3) out of five (5) households rate the quality of parks as good or excellent in serving the leisure time and needs of residents.

Housing Requirements

A Report was prepared in 1999 by Lapointe Consulting Inc. For St.Thomas Population Projections and Housing Requirements. The population growth has grown to 32,275 persons from 1991-1996 with a 5-yr. Growth rate of 6.4%. The report identified that the Housing Requirements, for the next 20 year period , 1999-2019, will continue to grow with a makeup of 72% in single detached housing with apartments in second at 16%.

The population is estimated to grow to an estimated 36,824 by 2006, 38,738, in 2011 and 40,450, in 2016. Since 1996, St.Thomas has a population growth rate equal to that of Ontario and a rate higher than that of London with steady growth. This supports the fact that

St.Thomas is largely a bedroom or starter home community. As well the 45-64 age group is the fastest growing age group in population. The average household size has been in decline from 3 person in 1971 to 2.5 in 1996. Thirty-four (34%) have a household size of 2 with twenty-six (26%) having a household size of 1 in second place.

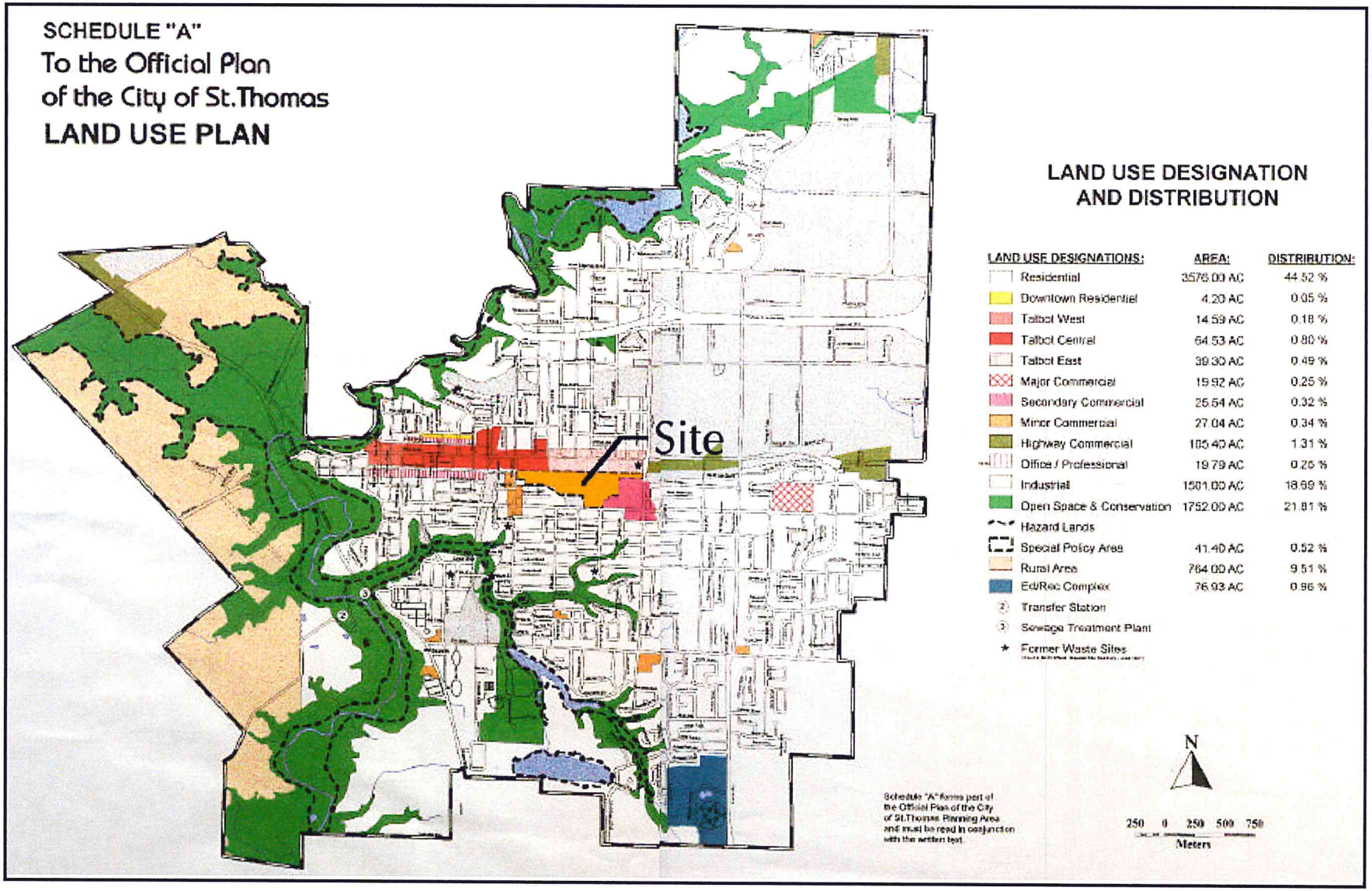
The continued trends indicate projections that St. Thomas' share of single detached dwellings will be 10% of the London CMA housing requirements. The portion of the housing demand in St.Thomas traditionally accommodated through high density housing forms is presently being satisfied through lower density housing forms such as bungalows or street townhouses.

There were a number of recommendations identified in the Housing Report mainly that of monitoring, types of housing, available land supply, and projections issued by the Ontario Ministry of Finance.

The report indicates that The City of St.Thomas has sufficient designated Residential land to accommodate the projected 20 year housing demand up to 2019.

St.Thomas

Regional Context



St.Thomas

Land Use Plan

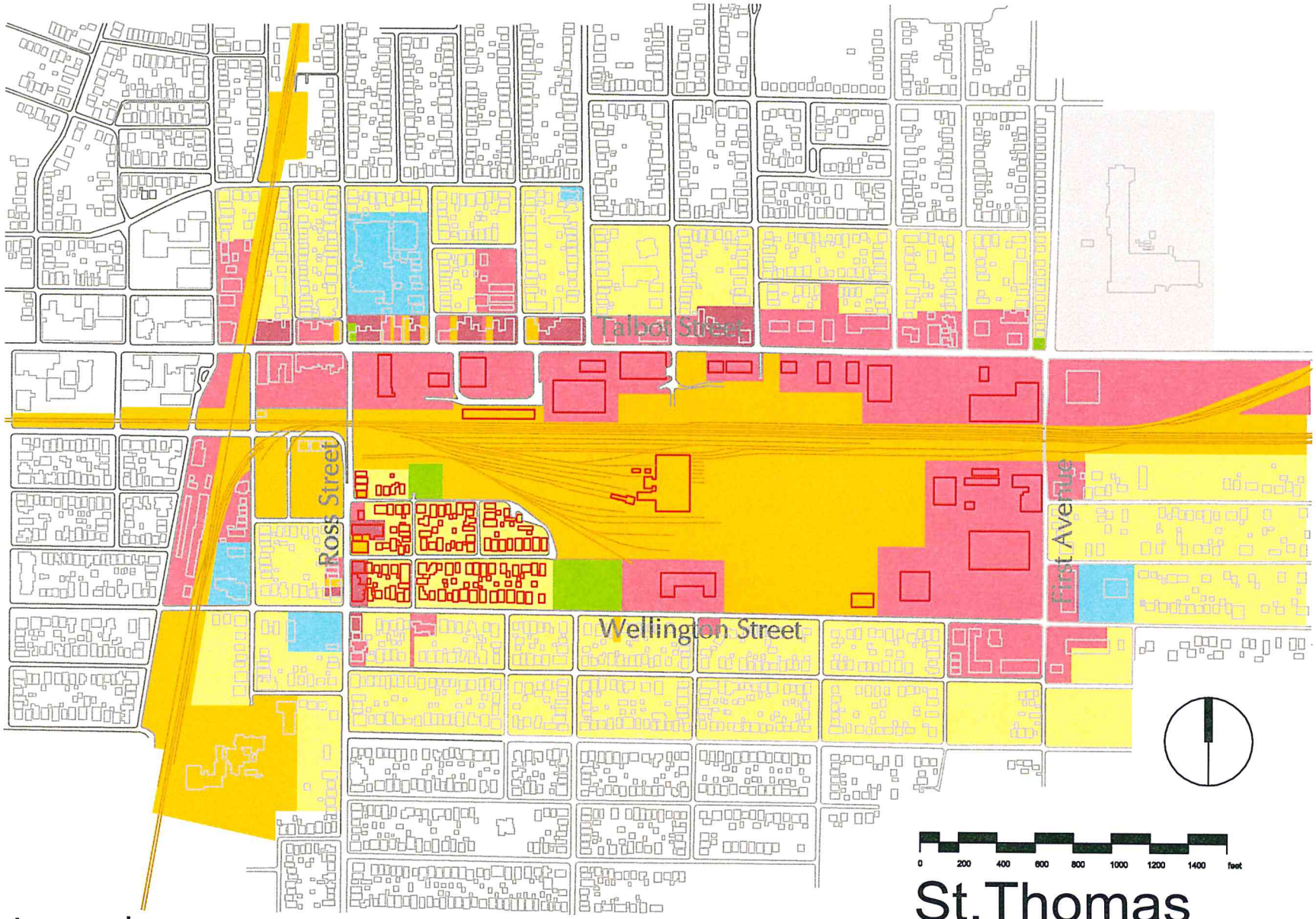
St. Thomas Site - Inventory of Buildings and Spaces

An inventory of the buildings and the spaces was conducted in and around the railway site to determine the present Land Uses as well as the condition of the structures. This included the buildings and the spaces which existed on Talbot Street, First Avenue, Wellington Street and Ross Street. The information gathered from this exercise was utilized to determine the areas which required the highest level of cleansing as well as to determine the effect the abandoned sites have on the edges of the site.

The information gathered from this inventory are shown graphically on the Land Use Plan and the Inventory of Built Form and Spaces Plan. Refer to the Appendix for the Inventory Table and Photos which was the information utilized to create Condition and Land Use maps.

Legend

Use		Condition		
Use	**Colour Code**	**Level**	**Description**	**Colour Code**
Abandoned		Level 0	Abandoned Land / Undeveloped Land	
Commercial / Service		Level 1	Abandoned Structures - Recommend Demolition	
Residential		Level 2	Abandoned Structures suitable for adaptive reuse	
Mixed Use		Level 3	Structures requires above average maintenance and renovations	
Institutional		Level 4	Structures which require little upgrade or maintenance	
Industrial		Level 5	Modern structures which require no upgrades	
Recreational				

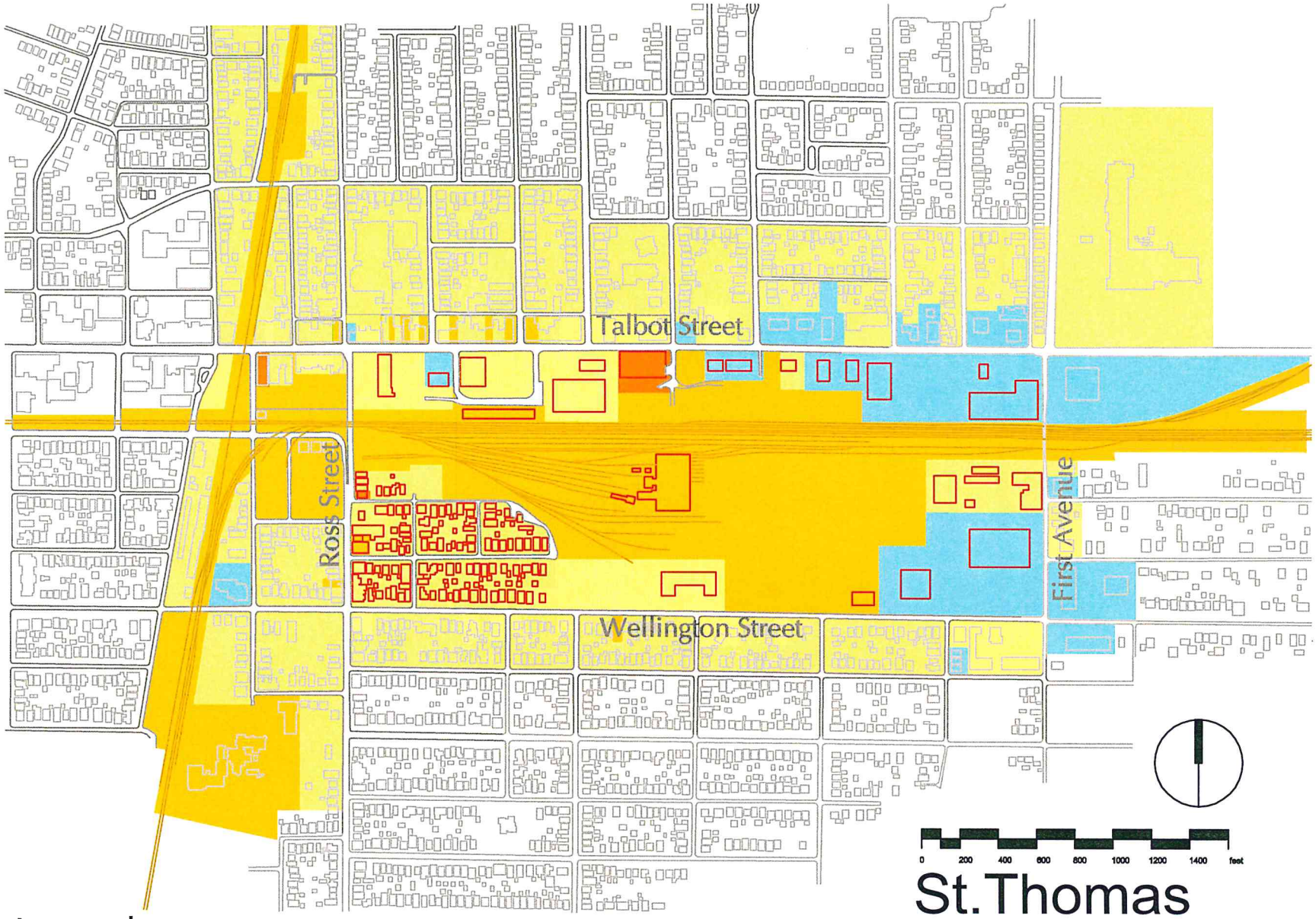


St.Thomas

Inventory of Land Use

Legend

- Abandoned
- Commercial / Services
- Residential
- Mixed Use
- Institutional
- Industrial
- Recreational

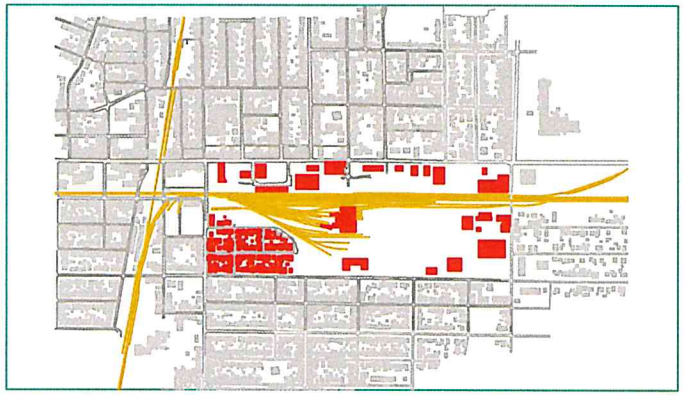


St.Thomas

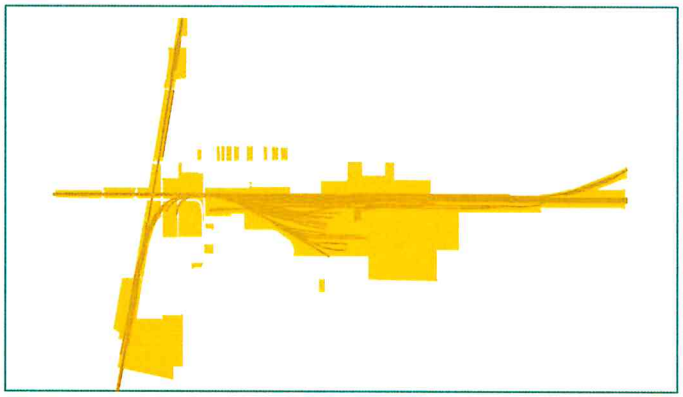
Inventory of Condition of Built Form and Spaces

Legend

- Level 0 Abandoned Land / Undeveloped Land
- Level 1 Abandoned Structures - Recommend Demolition
- Level 2 Abandoned Structure Suitable for Adaptive Reuse
- Level 3 Structures which require above average Restoration
- Level 4 Structures which require minimal Restoration
- Level 5 Modern structures which require no Restoration

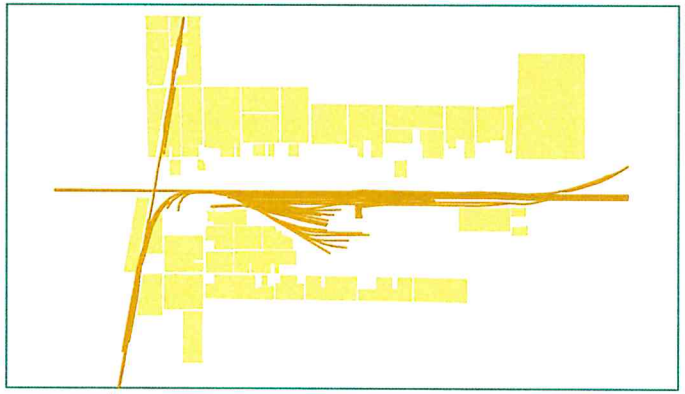


Built Form and Spaces



Level 0

Level 1 and 2



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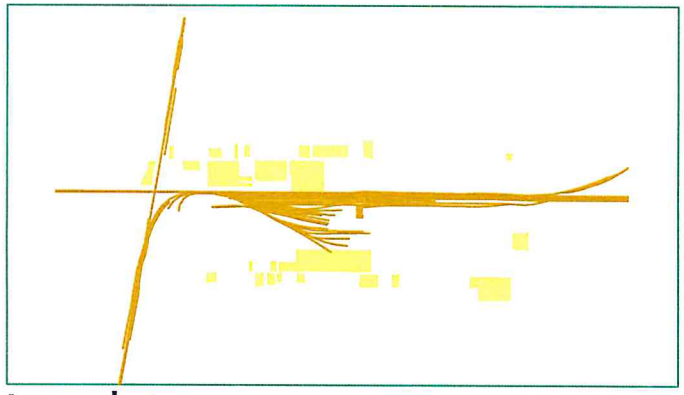
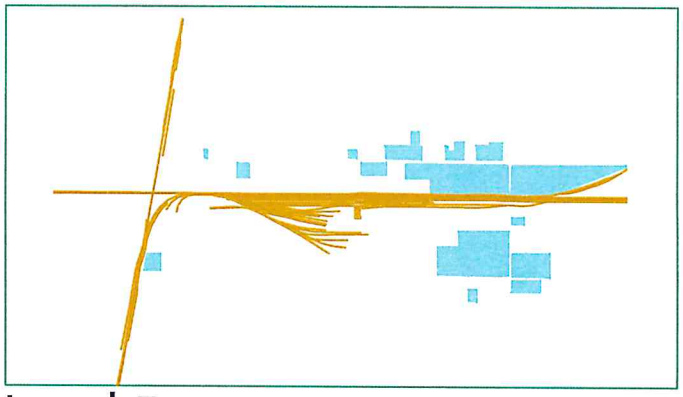


Level 4



Level 5

St.Thomas

Photo and Building Legend

Photo Legend

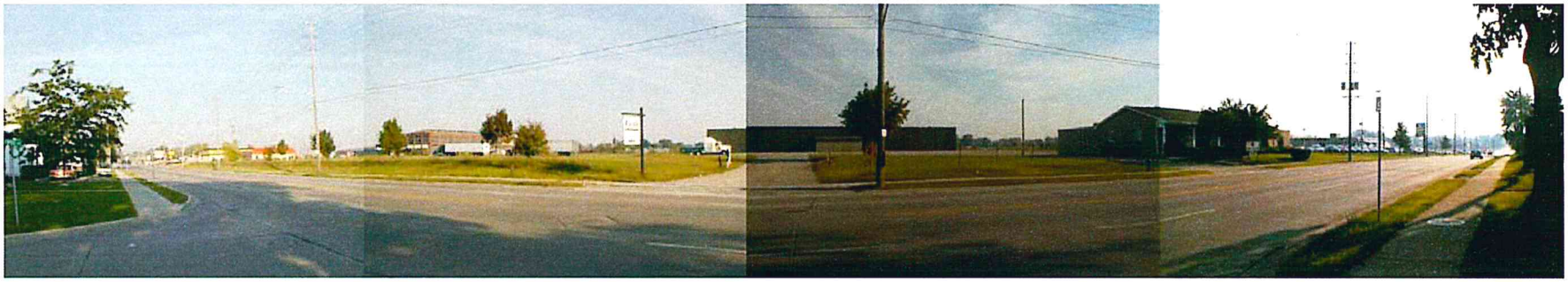
1. Corner of First Ave. and Wellington Street - View to Northwest
2. Corner of Second Ave. and Wellington Street - View to North Former Gas Station
3. Corner of Wellington Street and Third Ave. - View to North
4. Third Ave. - View to North
5. Corner of Wellington Street and Fifth Avenue - View to North
6. Fifth Avenue - View to North
7. Corner of Wellington Street and Ross Street - View to East
8. Ross Street - View to North
9. Ross Street - View to South
10. Ross Street Underpass - View to North
11. Corner of Talbot Streets and Ross Street Underpass View to South
12. Corner of Talbot Street and Manitoba Street - View to South Former Railway Station
13. Corner of Talbot Street and Balaclava Street - View to South Former Rail Repair Shops
14. Corner of Talbot Street and Woodworth Avenue - View to South Former Canron Foundry Site
15. Talbot Street - Fastfood Alley - View to West
16. Corner of First Ave. and Talbot Streets - View to Southwest Former Canron Foundry Site
17. Railway Lands - View to Northwest
18. Railway Lands - Former Railway Station - View to North
19. Railway Lands - View to Northwest
20. Railway Lands - View to Southwest

Existing Built Environment

A. Big Box Grocery
B. Services
C. Residential Single Family
D. Commercial
E. Corner of Wellington Street and Fifth Avenue View to North
F. Abandoned Grocery Store
G. Abandoned Railway Station
H. Railway Lands
J. Corner of Wellington Street and Fifth Avenue View to North
K. Abandoned Grocery Store
L. Abandoned Railway Station
M. Abandoned Auto Dealership
N., Light Commercial - Fast Food
O. Abandoned Foundry Site
P. Heavy Industrial

1. Corner of First Ave. and Wellington Street - View to Northwest

2. Corner of Second Ave. and Wellington Street - View to North - Former Gas Station



3. Corner of Wellington Street and Third Ave. - View to North

4. Third Ave. - View to North

5. Corner of Wellington Street and Fitth Avenue - View to North

6. Fifth Avenue - View to North

7. Corner of Wellington Street and Ross Street - View to East

8. Ross Street - View to North

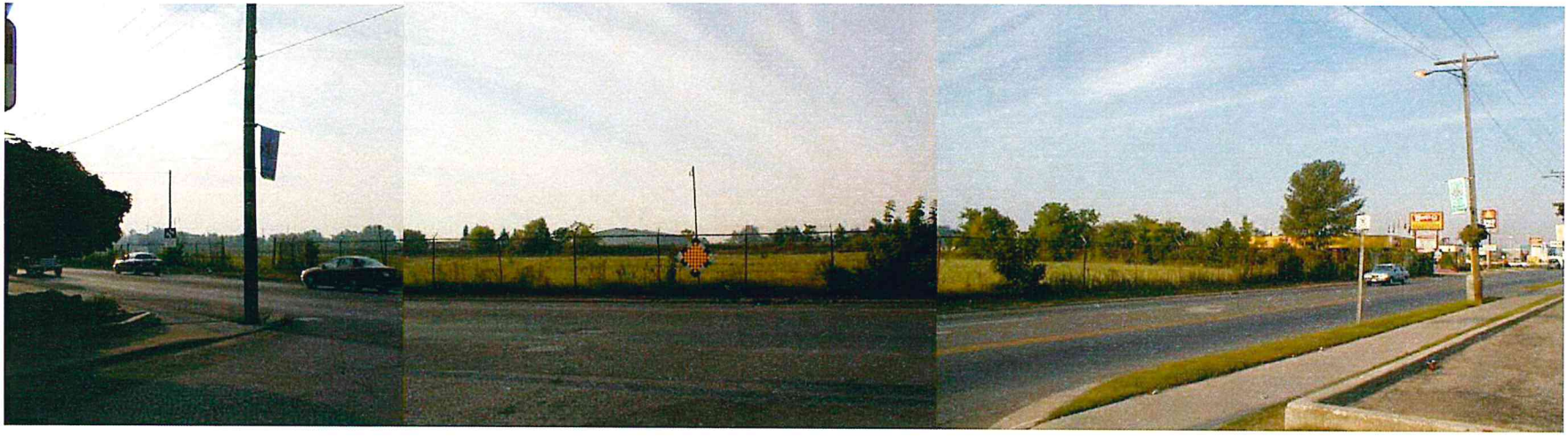
9. Ross Street - View to South

10. Ross Street Underpass - View to North

11. Corner of Talbot Streets and Ross Street Underpass - View to North

12. Corner of Talbot Street and Manitoba Street - View to South - Former Railway Station

13. Corner of Talbot Street and Balaclava Street View to South - Former Rail Repair Shops

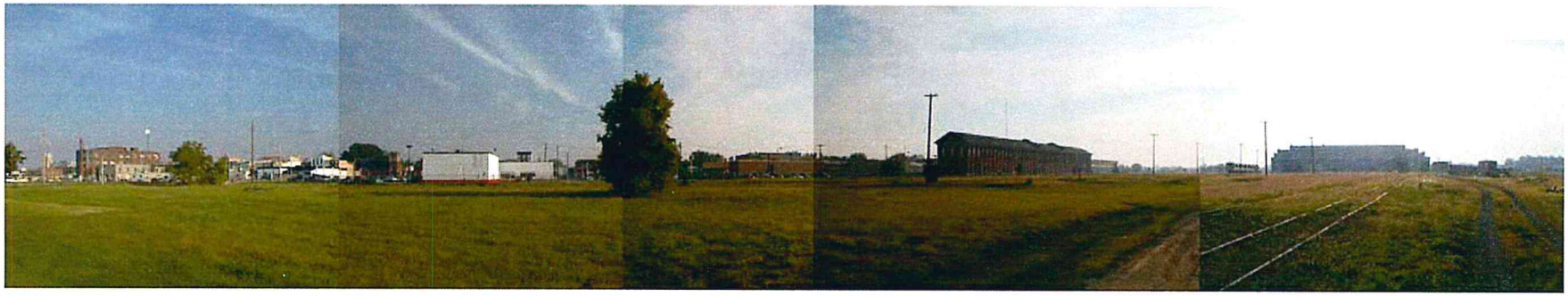


14. Corner of Talbot Street and Woodworth Avenue - View to South - Former Canron Foundry Site

15. Talbot Street - Fastfood Alley - View to West

16. Corner of First Ave. and Talbot Streets - View to Southwest - Former Canron Foundry Site

17. Railway Lands - View to Northwest



18. Railway Lands - Former Railway Station - View to North

19. Railway Lands - View to Northwest

20. Railway Lands - View to Southwest

Observations Inventory of Built Form and Spaces: Land Use and Condition

St. Thomas

An inventory of the buildings and the spaces was conducted in and around the abandoned site in St. Thomas in order to determine the present Land Uses as well as the condition of the structures and spaces.

The streets around the site, Talbot Street, First Avenue, Wellington Street and Ross Street form the boundaries of the site proper for the purposes of this research. However, the abandoned railway corridor both in the east-west and north-south direction have been shown on the maps to provide the extended context.

Photos of all the properties around the boundaries have been documented and are contained in the Appendix.
The main built form and spaces internal to the site were also documented by use of photos. The housing stock which exists internal to the site to the Northwest of Wellington and Ross Street were not individually documented. A cursory assessment was performed of this area and it was determined that the housing stock in this internal area was consistent with that of the Wellington Street edge.

Land Use

The Land Use map created from the inventory indicates that the abandoned lands are predominant in and around the site. This extends to the rail corridors. The area around Ross Street also indicates that the abandoned lands have extended beyond the street boundaries. This is prevalent at the intersections of the east-west and the north-south rail corridors.

The commercial area Northeast of Wellington and Ross Streets appears to be absorbing some of these abandoned lands. This area, however, has never been part of the original railway land. This development occurred after the 1940's.

There is evidence that St.Thomas has grown easterly along Talbot Street as the commercial areas are now directly adjacent and surrounding a large industrial area. The industrial land northeast of Talbot Street and First Avenue contains approximately 25 acres and was the first manufacturing plant to be constructed in St.Thomas as part of the Postwar Industrial Era. It continues to produce parts for the automobile industry and most likely will for some time. A foundry once existed on the site kitty corner to this. The foundry was closed and demolished approximately 10 years ago. This land was left abandoned up until 2001 when it was developed into a large format retail plaza,

extending the commercial area on the south side of Talbot Street to First Avenue.

Commercial uses exist on both the north and south sides of Talbot Street. The commercial use on the north side of Talbot Street is comprised of mixed use building types. These buildings are typically commercial on the street level and residential on the second and third levels. In some cases, the residential components are distressed beyond repair. These mixed used areas however are older than the more easterly commercial properties on Talbot Street which tend to be one storey structures as well.

There are two green space zones within the specified site area. One directly adjacent to Wellington Street is known as the New York Central Ball Park and is a historical park developed during the railway era to serve the residents who lived and worked there. This park is still used today by minor baseball leagues. The second green space area is a termination point recently created to signify the CASO Trail and its contributors.

It is also apparent that the north-south rail corridor, while abandoned, is extending blight beyond rail corridor. Areas adjacent to the corridor are decaying, particularly a large 11 acres site to the southwest. This property was once a private girls school as was abandoned approximately 10 years ago.

Condition

The Condition map created from the inventory also indicates that the lands are predominantly abandoned in and around the site.

There are few structures that have been described as Level 1 Condition, Abandoned Structures recommended for demolition, and Level 2, Abandoned structures suitable for adaptive reuse.

However there are large areas of built form and spaces adjacent to the abandoned lands which have experienced significant deterioration. The majority of the uses are described as a Level 3 Condition, structures which require above average maintenance and renovations. The majority of these areas are of residential use, constructed to support the railway era, now over 120 years old.

Blight continues to extend into the commercial areas with some buildings in the business district abandoned. In many cases, the buildings are in use on the ground floor as commercial retail space with its residential components on the upper floors abandoned.

There are also indications that new development has taken place in and around the research site area. The majority of Level 4 Condition, structures which require little upgrade or maintenance are those which have been constructed during the last 40 years. These are typical of being large format stores such as Giant Tiger, and Canadian Tire, as well as retail commercial plazas. These Level 4 Condition areas are also typically in the west of the site.

The Level 5 Condition, modern structures which require no upgrades, also exist. These structures are represented primarily by those structures which have been constructed in the last 20 years. The location of the Level 5 structures also indicates the migration of development towards the east end of the City. A large sector of this Level 5 has been constructed in 2001 as a large commercial plaza. As well the large format stores, Zhrs groceries makes up a lage area of the Level 5. The remaining Level 5 areas are comprised mainly of the fast food district and drive through restaurant, Tim Horton's, McDonald's, and Swiss Chalet type facilities.

The Condition Map indicates that the majority of the study area is a Level 0 to Level 3 Condition. The abandoned lands have not been significantly redeveloped during the last 120 years and the areas surrounding the site have also deteriorated. The areas which have been developed are typically those lands to the east of the downtown business district of the City which and were undeveloped during the railway era.

St.Thomas: Observations

Historical Urban Dynamics

Stratford, Galt-Cambridge and St.Thomas all possessed large tracts of continuous abandoned industrial lands within or near their cores. Research showed that through time, advancements in technology have altered the dynamics of these small communities. These communities have lost vital industries and commerce that once sustained them.

Industry has changed to support the use and the development of newer, faster and more creative means of transportation to accommodate new lifestyles and this industry has moved to the periphery of our communities adjacent to more convenient and economical means of transportation. This transition over time has ultimately left voids within the cores of our communities where the sustaining industries once existed.

Two of the small communities studied lacked green space in their cores and require recreational space in the core area. Stratford was the exception to this observation. This community appeared to be more dynamic because it capitalized on its river system by creating recreational and green space in the core area. Stratford also placed great importance on the past by restoring districts and buildings in the core of the central business district.

The large blocks of abandoned lands have acted as obstacles to the cross connections of the community. In the case of Galt-Cambridge the river plays a major obstacle to the unification of the community. Its connections are provided by way of large bridges suited for the automobile. There are a lack of pedestrian connections from the suburban periphery green spaces to the core areas.

Railway lines exists within all the communities and for the most part have been abandoned. The corridors that remain are very strong elements which have the potential to connect the periphery of the community with the core. However, the railway infrastructure such as bridges, subways, and crossings that remain and show signs of deterioration and neglect since they are not being utilized.

All the small communities possess historically significant abandoned buildings on these lands, many of which are recyclable. As in the case of Stratford, these buildings act as a link to the historical past of the community. These buildings have the potential to support activities to restore the downtown.

The shopping districts near these abandoned lands have also deteriorated. The research showed that the abandoned lands have eroded the community historically. These commercial districts are part of the historical foundation of the community. Some areas adjacent to the abandoned lands show buildings in such a state of disrepair that they should be demolished. Some buildings have been demolished and infill is required to compliment the historic fabric of the community.

Presently there are very few new residential uses in the downtown cores. The communities all show rapid housing growth on the periphery in the form of single family residences.

All the communities were impacted by the development of a new freeway system, located on the periphery of the community either by way of the 401 or a main by-pass rerouting traffic directly through or around the community. The automobile is the preferred mode of transportation in the small community.

While the communities possess unique historical buildings which can be restored into retail shops, the research showed that all the communities have big box retail areas placed on the periphery of the community adjacent to main traffic corridors.

The population statistics provided some insight as to the development of each of the small communities. Galt's growth appeared to be the most stable over time out of the three communities studied. This occurred due to Galt's diversity in the manufacturing industry, not only supplying to the automobile industry, but the manufacturing of plumbing fixtures and farm machinery also existed. It was apparent during the research that Galt was the least affected in changes to transportation technology over time. Galt possessed a multifaceted manufacturing and technology base. This however did not preclude Galt from possessing a downtown core which experienced disintegration.

Stratford and St.Thomas experienced less stable patterns with downturns during the 1950's due to deregulation of the railways and increased activity in the use of the automobile. Both of these communities possessed rail yards for the purpose of manufacturing and repair of trains. The rail was a major employer within these small communities. St.Thomas experienced a major increase in population after 1871 due to the arrival of the railway. Prior to this time, growth was difficult due to competition from outlying communities.

Stratford's core appears to be the most vital out of all three of the communities, since it made the decision to locate the railway outside of its core and focus on the parks and lakes in its core area during the early 1900's.

St. Thomas possesses the largest continuous area of abandoned property of the three communities and therefore possesses the greatest opportunity to regenerate its core.

Employment patterns also indicate that St.Thomas lacks the diversity of the other communities. Currently, its primary resource of employment is the manufacturing trades directly related to the supply and manufacture of the automobile. St.Thomas would greatly benefit from the introduction of a unique activity to provide an additional source of employment. The creation of this new activity would assist St.Thomas in resolving its fluctuations in population as seen during the last 150 years. Diversity has reinforced Galt's growth. However, it has not directly redefined their core. Stratford on the other hand has benefited from its focus on the core recreation and downtown. It's population growth has not had the success of Galt's most likely due to its location, distant from the 401 corridor.

All the researched abandoned industrial sites contained some level of contamination as a result of bi-products or processes that once existed on these sites. Other research showed that there are environmentally friendly approaches to cleansing and restoring these sites by treatment of the contaminants on the site. The process of cleansing in place serves as a more responsible approach over the traditional approach of trucking away to other locations or burning.

One process, in-situ bioremediation, utilizes microorganisms to remove compounds from soil, sludge, groundwater, or surface water and returning them to their clean and natural state, returning soil to soil and water to water. The bioremeditation process has a tremendous natural rehabilitating advantages for those concerned with the long term maintenance and stewardship of the Earth, since the existing soil is treated in place in lieu of being replaced.

Another process, phytoremediation, is also an environmentally friendly option to assist with the cleansing process through the use of plants for the remediation of soil, sediments and water. Contaminants are removed through direct uptake by plants, or through evapotransportation. The low cost of this technology, positive environmental results, and public acceptance provides a number of advantages.

The abandoned industrial sites can be decontaminated to allow redevelopment of these sites in an economical and environmental manner through the process of bioremediation. Phytoremediation has the possibility of also increasing the profile of environmental awareness and conservation.

These processes, however, take more time but the results provide a responsible approach to the cleansing.

St.Thomas: Examining The City and the Site

The inventory of the buildings and the spaces was conducted in and around the abandoned site in St. Thomas. It became apparent that the abandoned lands are extending beyond the street boundaries of the site and are having a negative impact on these neighborhoods. The abandoned lands have not been redeveloped during the last 120 years and the areas surrounding the site have significantly deteriorated.

The St.Thomas commercial uses exist on both the north and south sides of Talbot Street. The commercial uses on the north side of Talbot Street are comprised of mixed use building types. These buildings are typically commercial on the street level and residential on the second and third levels. In some cases the residential components have completely deteriorated and have been abandoned.

It is also apparent that the north-south rail corridor, while abandoned, is extending its blight beyond its corridor. Areas adjacent to the corridor are decaying, particularly a large 11 acres site to the southwest. This property was once a private girls school and was abandoned approximately 10 years ago.
There are large areas of built form and spaces adjacent to the abandoned lands which have experienced significant deterioration. The majority of these buildings require above average maintenance and renovations.

Some new development has taken place in and around the research site area during the last 20 years. These are typically large format stores such as Giant Tiger, Canadian Tire, recently abandoned for a larger outlet, as well as retail commercial plazas. The big box stores and current new development are locating on the periphery of the community.

The City of St.Thomas is largely an automotive manufacturing community, it also serves as a bedroom community to its northerly neighbour, The City of London. The City of St.Thomas, both benefits and suffers by its existence so near the City of London. London is directly adjacent to the Highway 401 Corridor and therefore is competitive towards the attraction of new manufacturing facilities. Lower cost of living levels in the City of St.Thomas have provided the perfect haven for starter families to begin in their first homes while being able to take a short commute to the City of London for employment.

Research showed that there was lack of new format chain stores in the areas most likely due to the nearby London competitive market. There are particularly needs in the apparel, accessories, home furnishings, durables, and semi-durables areas as well as the home improvement sector. A total 363,000 sq.ft. of needed retail and commercial space is required by the year 2006. An enlarged Canadian Tire and Wal-Mart have recently be added in response to this need and placed on the periphery of the community.

The analysis also discovered that full service hotel and hospitality spaces were needed in the range of 150 to 225 rooms. St.Thomas could support a new 6-plex theatre but would come at a cost of the existing outdated theatre, downtown.

Research was obtained from a St.Thomas Leisure Report updated 1997. Research indicates that resting, watching TV, reading, hobbies, attendance of museums, theaters and places of worship will be popular leisure activities in years to come. [1]

Also ninety-seven (97) percent of households in St.. Thomas and Yarmouth township presently make use of parks and facilities and 2 out of every 5 households feel that more parks are needed in St.Thomas for activities such as walking, cycling, and playgrounds. The study indicated that a family oriented "water play" park is required to meet the demand on leisure aquatics.

Research also showed that there is insufficient current demand for a third ice surface based on current rental times. However, there are a lack of baseball and soccer facilities for minors in the City as well as special open space for site specific recreation according to environmental, heritage or other key features.

Research specifically identified that a new parkland classification "Special Open Space" be adopted to allow the municipality to include heritage sites, that additional parkland in the City be acquired, that the City should address the development of "Community Links" for bicycle and walking trails by utilizing abandoned railway right of ways wherever possible.

The research also showed that 3 out of every 4 households felt that new and improved pedestrian facilities for leisure are required, and 7 out of ten 10 households feel that new and improved bicycle facilities for leisure activity are required.

Housing requirements for the City of St.Thomas show that St.Thomas is largely a

bedroom community and 45-64 age group is the fastest growing age group in population. The portion of the housing demand in St.Thomas traditionally accommodated through high density housing forms is presently being satisfied through lower density housing forms such as bungalows or street townhouses.

The research indicated that The City of St.Thomas has sufficient designated Residential land to accommodate the projected 20 year housing demand up to 2019.

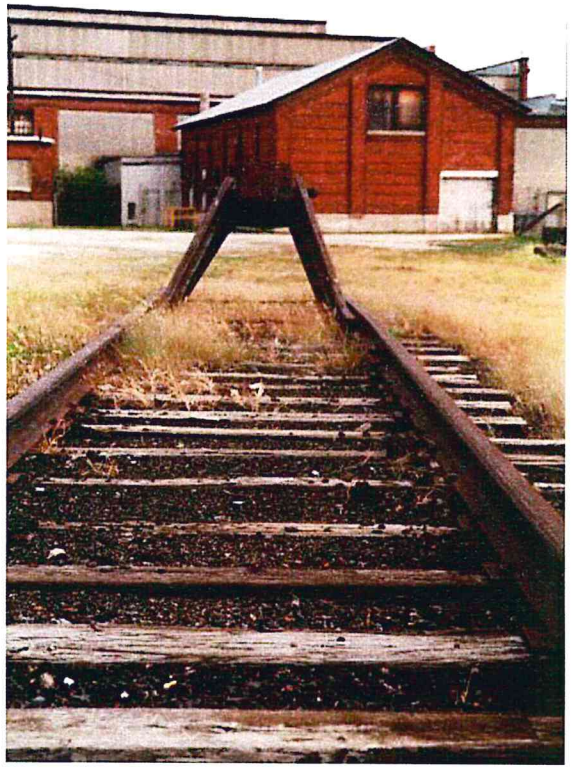
There exists a tremendous opportunity for small communities to regenerate their cores. The large abandoned lands must be reintegrated into the fabric of the community and these lands must be planned in such a way that the design reinforces the existing core of the community.
The research has reinforced my theoretical position that these industrial sites can be "Cleansed" to foster and breathe new life into the lands and the community. The cleansing and restoration process for these sites must take place over time to minimize the socioeconomic impact to the community and reintegrate the redevelopment into the community.

The proposed interventions must support the cleansing process from an architectural and environmental viewpoint integrating a series of ideas to reinforce the planning framework. The whole community must benefit from the cleansing process.

Most importantly, the cleansing and restoration must generate a cohesive balance between technology and nature. Changes in industry and technology left these lands abandoned and there must be coexistence, in order that we do not continue to leave our abandoned lands as cancers in the community in the future.

It is important for Man to have a sense of place as identified by the integration of historical buildings and elements in the revitalized urban landscape of the Case Studies. They not only provide landmarks within the community but also continuity within the community.

Man is the steward of the Earth and Man needs to reintegrate nature, to cleanse, to heal, and to reuse, returning soil to soil and water to water. The Earth remains to be a sacred place where Man is the caretaker and steward to enjoy and to reinforce the abundant good gifts of God rather than abuse and waste them.



The design stage will focus on restoring the abandoned industrial lands within the community of St.Thomas. The cleansing of this industrial site will be the catalyst to promote and breathe new life into the whole of the City of St.Thomas. Metaphorically, "The Cleansing Fields" will be the basis for integrating a series of ideas which reinforce the regeneration of these lands.

Design Response

Thesis Statement

The Cleansing Fields *is a process, integrated over time, combining man made interventions and the natural environment to restore contaminated and derelict lands, abandoned by past industrial activity, for contemporary uses to benefit the people of the community.*

Panel C: Context

Regional, Local, Historical, and Site Context for the City of St.Thomas, On, Canada and its abandoned railway lands.

Panel I: Inventory

Inventory of existing built form and spaces within and around the abandoned site described in terms of Levels. Level 0 being abandoned spaces to Level 5 being recent modern built form.

Panel CF: Conceptual Framework

Integrating the findings of the research and the resulting Planning Framework of transferable principles into a matrix of concepts implemented over time, by the community.

The transferable principles were assigned into the three activity groups of Intervention, Reclamation, and (Re) Integration which would be implemented over time by the Small Community. Each of these activity groups were further divided into the elements of Environment, Infrastructure, and Built Form & Urban Spaces. Concepts were prepared to fit each of the activity / elements for the proposed design solution.

Panel In: Intervention

The activity of Intervention is deemed the starting point, the point at which the community identifies a problem exists, the point at which the community realizes someone needs to address the problem of the abandoned lands. In terms of the principles, it is the activity which the community identifies a change of use is necessary and begins to encourage activity to the site. Compost is imported from the community households and intermixed with local soils to begin the cleansing process in the hot zones of past industrial activity. Healing nurseries, urban forests and urban orchards are also introduced to the site to assist in long term decontamination.

It is the point where all planning begins, recycling existing surface materials, removing abandoned linkages and abandoned industrial appurtenances. In terms of built form, a building and site inventory is developed to identify buildings for adaptive reuse and those for demolition as well as those elements which can be used to identify a sense of the past in the present and in the future.

Panel Rc: Reclamation

Reclamation is the activity where the ground work for all natural cleansing take places, insitu bioremediation, localized plantings to aerate the soils, development of water retention areas, restoring natural watercourses, and converting existing rail corridor as trail connections to the periphery of the community. Alternative sources of energy are introduced such as wind and solar power to supplement the local power grid. The beginning of restoring existing historic built form occurs, development of urban infill on the edges of the site, and the initial planning of mixed used development to the site.

The growth from the healing nurseries are relocated and the urban forests and orchards are thinned as time passes. The excess trees are relocated throughout the community to enhance other areas.

Transitional microbial pods are erected on the hot zones of contamination and used on a year round basis to continue the cleansing process. Recreation is introduced immediately to the site in localized contained areas as well as recycled base is laid for future roads which become access to these areas during the reclamation activity.

Panel Ri: Re Integration

(Re) Integration is the activity of introducing, attracting, and developing the long term uses for the site which will benefit the community. Each small community will differ in terms of their end requirements. These needs are identified through local needs studies. The cleansing process results in a reuse of the abandoned industrial lands within a decontaminated environment.

The (Re) Integration activity promotes long term cleansing principles to restore the abandoned sites. The result is adaptive reuse of existing structures and elements, seasonal plantings and native grasses, natural restoration, manufacture of topsoil on site mixed with imported waste for community gardens, utilizing natural areas as links, and integrating water retention areas for long term use.

The site is powered by alternate sources of energy from the wind turbines and solar panels. The existing transfer table is retained to gather water through rainwater harvesting and the new retention pond supplies water for the building cooling systems, and landscape watering.

A local focus is developed to benefit the people of the community. Programs which focus on creating a 'A Place For People of All Ages During all Seasons'. In this regard the historical railway shops is restored as a community centre complex for wide variety of year round programs. This complex houses seniors activities, library activities, and recreational activities for the community. Surrounding this built form is a linear park which incorporates formal sports such as baseball and soccer, skateboard and roller blade park, children's water park, roundhouse pad converted to an amphitheater for outdoor movies and theatre, community gardens, and memory gardens.

The findings identified that historical elements and built form was identified as being important to the community to provide a sense of past. While existing buildings have been reintegrated where possible, other elements such as selected rail track and railway appurtenances have also been retained throughout the site. Specific to the solution, the roundabout contains the historic steam train that once traveled the local rails. As well, a microbial pod was retained as a reminder of the cleansing process in the future.

The restoration of the abandoned lands aided the cleansing of the core integrating a multitude of uses to the site. These uses included activities such as higher density housing form, long term care centre for seniors with healing gardens, commercial retail, hotel, and fast food zones typical of the small community. A key approach to the mixed use component was the integration of residential above the street retail to attract a larger base of residential activity to the lands.

An increase in the number of cross connections was established to invite the community to the site and disperse heavier traffic loads from the periphery arteries. Major through flows were connected across the lands from the north to the south and east to the west of St.Thomas.

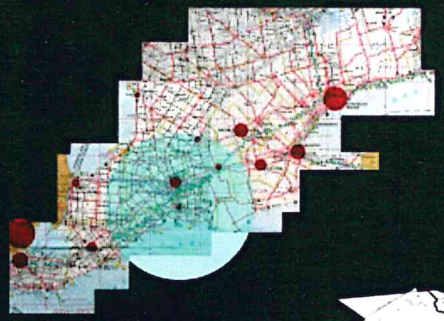
Panel V: Vignettes

1. transitional microbial decontamination pods, electron microscopic photo of decontaminating microbe, the basis for the form of the pods
2. community centre, a place for all people for all seasons
3. urban orchards utilized to accelerate decontamination, and to enhance the community by providing urban trails
4. wind turbines to provide off the grid alternative sources of energy. Conversion of rail to trail corridors to create pedestrian linkages of the core to the community periphery

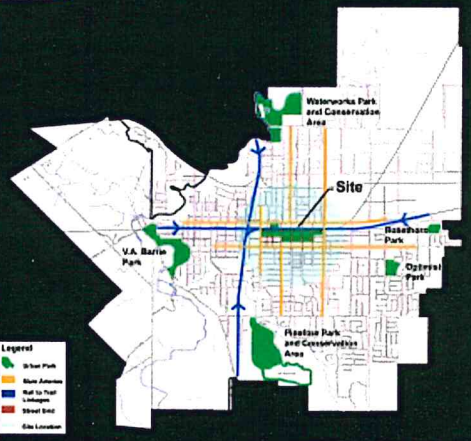
The Cleansing Fields

Context

St.Thomas, Ontario

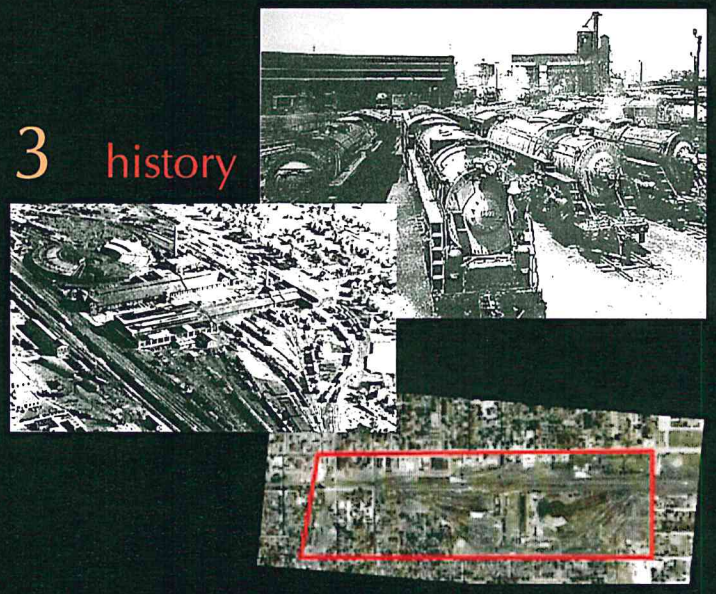


1 regional



2 local

3 history



4 site micro

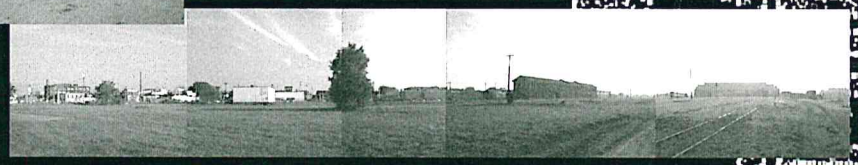


Photo Legend

Existing Built Environment

C

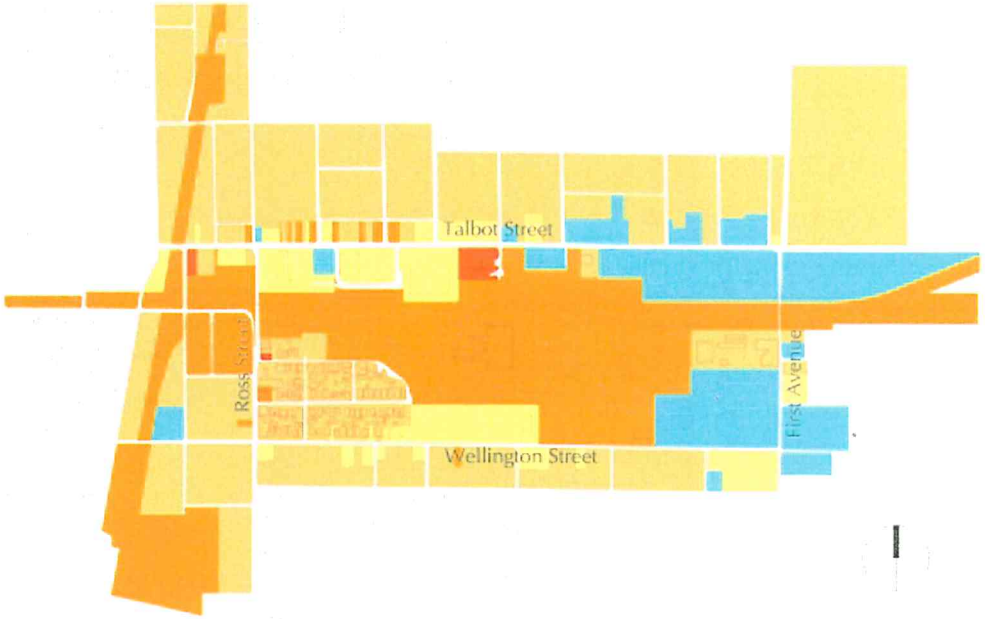
RAIC Sudbury
Ed Vandermeer
December 2003

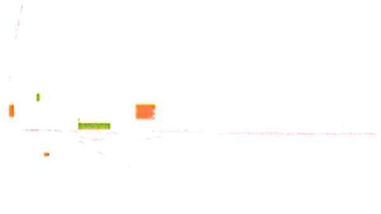
The Cleansing Fields

Inventory

St.Thomas, Ontario

Level 0





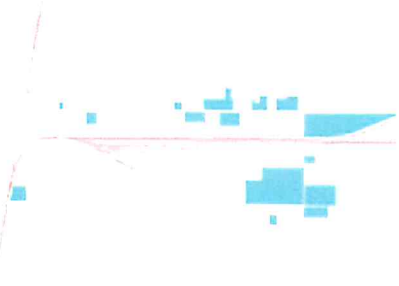
Level 1&2

Legend

- Level 0 Abandoned Land / Undeveloped Land
- Level 1 Abandoned Structures - Recommend Demolition
- Level 2 Abandoned Structure Suitable for Adaptive Reuse
- Level 3 Structures which require above average Restoration
- Level 4 Structures which require minimal Restoration
- Level 5 Modern structures which require no Restoration

Level 3

Level 4



Level 5

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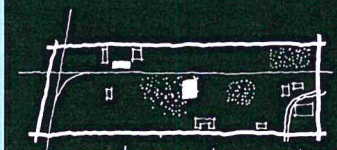
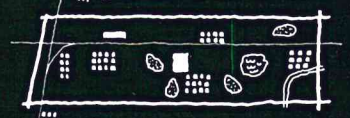
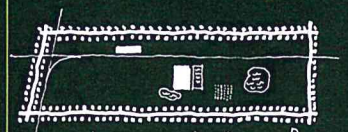
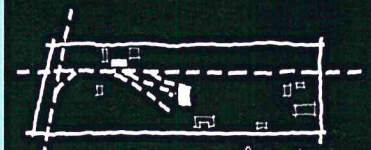
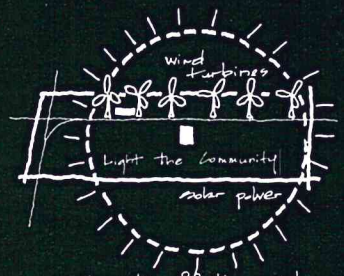
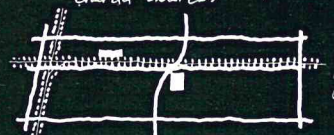
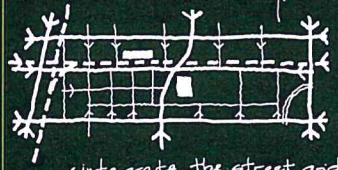
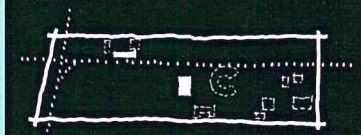
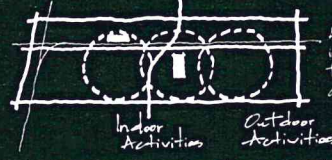
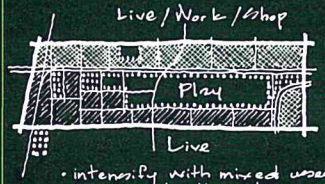
December 2003

The Cleansing Fields

Conceptual Matrix

Community Implementation

Identification and Inventory of Community Assets

	Intervention	Reclamation	(Re)Integration
Environment	 • import community compost • inventory past natural watercourses. • identify safe areas for immediate use.	In situ Bioremediation  • introduce · urban forests & orchards · healing nurseries • retention ponds to cleanse the soil • transitional microbial pads.	 • disperse plantings from healing nurseries throughout the community • introduce urban gardens into the community • utilize rainwater harvesting to recycle water for building and site use. • childrens activities. waterpark.
Infrastructure	 • inventory sense of past elements • remove the abandoned and the obsolete. • recycling existing surfaces.	 • provide off the grid energy sources  Introduce The Site To The Community • convert rail corridors to trail corridors • integrate main through fares • provide islands to promote exposure to the site.	Invite the Community.  • integrate the street grid to reconnect the periphery of the site • provide alternative modes of access to site ie. pedestrian, cycling etc.
Built Form & Urban Spaces	 • research historical elements that provide sense of past • assess structures & spaces for adaptive reuse, demolition relocation • assess sites usable for urban infill on site edges.	 A Place For All in the Community to Enjoy in All Seasons Indoor Activities Outdoor Activities. • reuse existing historical buildings for community functions • Provide buildings & spaces for diverse year round activities.	Intensify · Activate with Mixed Uses  • intensify with mixed uses to activate the site • provide varying density of living space • integrate traditional design elements into new buildings.

CF

Concept Framework

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Ed Vandermeer
December 2011

The Cleansing Fields

Legend

- existing residential traditional vernacular (heritage restored)
- existing commercial restored facades
- new commercial
- street connections
- new residential
- existing buildings restored for adaptive resuse
- restored waterways, retention ponds
- removed buildings and elements
- historic features
- mixed use
- buildings to be removed
- wind turbines
- transitional microbial pods

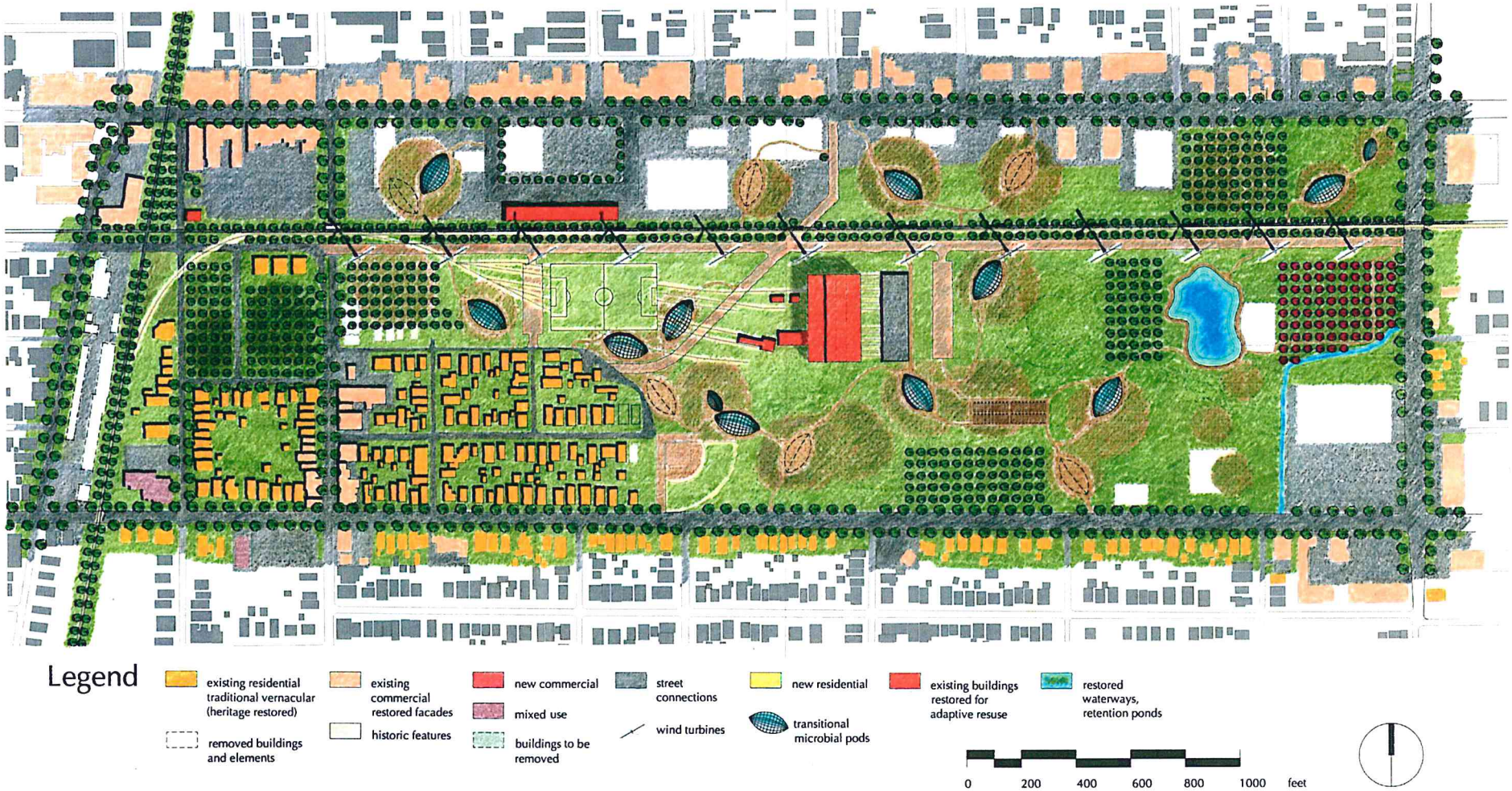
0 200 400 600 800 1000 feet

Intervention

St.Thomas, Ontario

In

The Cleansing Fields



Legend

- existing residential traditional vernacular (heritage restored)
- removed buildings and elements
- existing commercial restored facades
- historic features
- new commercial
- mixed use
- buildings to be removed
- street connections
- wind turbines
- new residential
- transitional microbial pods
- existing buildings restored for adaptive resuse
- restored waterways, retention ponds

0 200 400 600 800 1000 feet

R e c l a m a t i o n S t . T h o m a s , O n t a r i o

Rc

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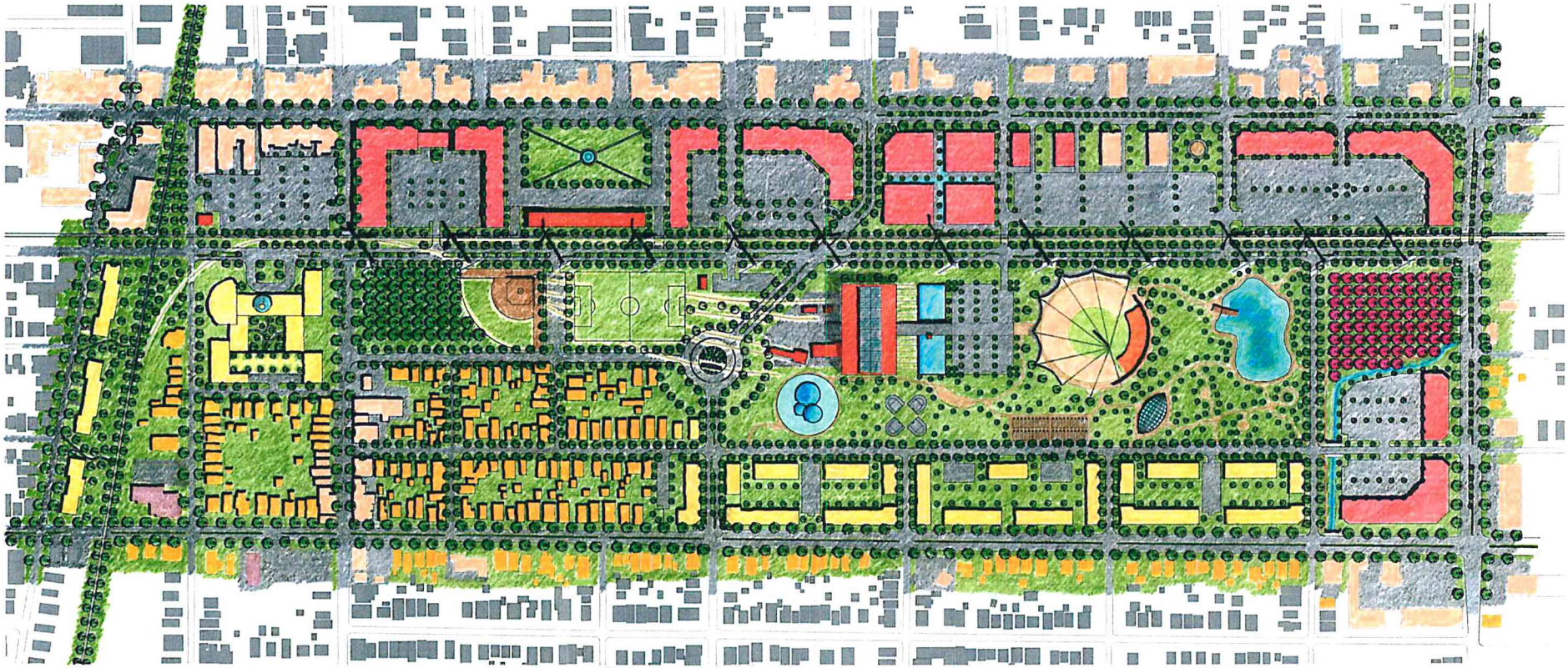

Legend

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- wind turbines
- transitional microbial pods

0 200 400 600 800 1000 feet

(R e) I n t e g r a t i o n St. Thomas, Ontario

Ri

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Ed Vandermaarel
December 2003

The Cleansing Fields

Vignettes

St.Thomas, Ontarlo

1

2

3

4

1. transitional microbial decontamination pods
2. community centre, a place for all people for all seasons
3. urban orchards utilized to accelerate decontamination, and to enhance the community by providing urban trails
4. wind turbines to provide off the grid alternative sources of energy. Conversion of rail to trail corridors to create pedestrian linkages of the core to the community periphery

Appendix

Inventory Table and Photos

Inventory Table

Talbot Street - South Side

Address	Occupancy	Use	Colour Code	No. of Storeys	Condition	Colour Code	Remarks
1012	Eastway Ford Car Dealership	Commercial		1 1/2	Level 5		Former foundry
Talbot and First Avenues Intersections							
966-1000	Talbot Commons Retail Plaza	Commercial		1	Level 5		Former foundry - new plaza 2001
964	Price Choppers Grocery Store	Commercial		1-2	Level 5		
960	Wendy's Hamburgers	Commercial		1	Level 5		
950	Taco Bell	Commercial		1	Level 5		
940	All Pro Auto Glass	Commercial		1	Level 5		
936	Pre-used Cars Dealership	Commercial		1	Level 3		
930	Mr. Submarine, Talbot Animal Care, First Choice Hair Cutters, CD Music Warehouse, CanTel Phones	Commercial		1	Level 5		
904	The Mufflerman	Commercial		1	Level 5		
900	vacant lot				Level 0		Former gas station
852	Salvation Army Thrift Store, Great Lakes Used Autos	Commercial		2	Level 1		
808	Mac's Milk Store, Maxine Schmidt's Gallery, Cooperators Insurance, Waite's Printing Services, Next Level Fitness	Commercial		2	Level 4		
800	Canadian Tire Corp.	Commercial		2	Level 4		
780	vacant Canadian National Property			2	Level 2		Historical designated property
780	Giant Tiger	Commercial		1	Level 4		
730	Price Check Grocers	Commercial		1	Level 4		
700	Talbot Mercury car dealership	Commercial		1-2	Level 4		
Talbot and Ross Streets Intersections							
668	Burty Bob's Bar	Commercial		1	Level 3		

Talbot Street - North Side

Address	Occupancy	Use	Colour Code	No. of Storeys	Condition	Colour Code	Remarks
669	vacant building	Abandoned		3	Level 2		
679	Currah Parkette	Open space			Level 5		
679-687	Audio Video Experts	Commercial / Residential		3	Level 4		
683-685	vacant Lot	Commercial / Residential		2-3	Level 4		
701-703	Mid Town Tavern	Commercial / Residential		3	Level 3		
705-709	Cafe Phu Cuong Restaurant	Commercial		1	Level 3		
713	vacant lot						
715	Stitch and Sew	Commercial		1	Level 3		
717	Capri Pizza	Commercial / Vacant		2	Level 3		
719	vacant building	Commercial / Residential		2	Level 3		
727-729	Dr. James Pallo Dentist, Dan Muscat Jeweler	Commercial / Residential		2	Level 3		
729	State Farm Insurance	Commercial/ / Residential		2	Level 4		
737-739	vacant store	Commercial		1	Level 3		
Horton Street Intersection							
741-743	Bank of Montreal	Services		1	Level 4		
745-751	vacant building			1	Level 0		Former bar
759-763	Yuppy Puppy	Service / Residential		3	Level 3		
765-767	vacant building						
771	Hammersley's Fish Market	Commercial / Residential		3	Level 3		
773	Barber Shop	Service / Residential		3	Level 3		
777	Ron's Used Furniture	Commercial / Residential		3	Level 3		
779	International Hair Stylists	Service		2	Level 3		

783	vacant store			2	Level 2		
789	Lorel Restaurant	Commercial / Residential		2	Level 4		
791	Lorel Coffee Shop	Commercial / Residential		2	Level 4		
795-797	vacant, lower level	Commercial / Residential		2	Level 2		
Manitoba Street Intersection							
801-809	vacant building			2	Level 2		
811-813	Rosalinda's Hair Styles	Service / Residential		2	Level 3		
815-817	Collect It all	Commercial / Residential		2	Level 3		
823-825	The Junction Hotel	Commercial / Residential		3	Level 3		
827-831	Remax Realty, Sid's Eatery, H&R Block income tax	Commercial / Residential		2	Level 4		
Alma Street Intersection							
845	Fixed Right Firestone	Services		1	Level 4		
877	The Station Restaurant	Commercial		1	Level 4		
Balaclava Street Intersection							
891	Harry's Charcoal Burgers	Commercial		1	Level 5		
899	Ramona's Deli	Commercial / Residential		2	Level 3		
905	St. Thomas Tire	Services / Residential		1	Level 4		
925	The Brunswick	Commercial / Residential		2	Level 3		
Inkerman Street Intersection							
939	Burger King Canada	Commercial		1	Level 5		
945	BlockBuster Video	Commercial		1	Level 5		
955	McDonalds Canada	Commercial		1	Level 5		
965	Golden Crown Chinese, Pro File Computers, Liberty Tax, vacant, Subway, Elgin Dollar Store	Commercial		1	Level 3		Mini plaza
Woodworth Avenue Intersection							
979	Scotts Chicken Villa	Commercial		1	Level 5		
985	Pizza Hut	Commercial		1	Level 5		
987	Golliger's Travel Agency, Prespa Construction, The Electronics Depot	Commercial		1	Level 4		Mini plaza

Arthur Avenue							
995	Tim Hortons	Commercial		1	Level 5		
1009	East End Kwik Way Variety, Domino's Pizza, Cango Gas Bar, East End Videos	Commercial		1	Level 5		Mini plaza
Alexandria Street							
1015	Can-Ron Parkette	Open space			Level 4		
Talbot and First Avenue Intersection							
1055	Canadian Timken	Industrial		1	Level 3		

First Avenue - East Side

Address	Occupancy	Use	Colour Code	No. of Storeys	Condition	Colour Code	Remarks
First Avenue and Talbot Street Intersection							
1012 Talbot	East Way Ford Car Dealership	Commercial		2	Level 4		
	CN / CP Underpass				Level 0		
4	Crown Upholstery	Commercial		1 1/2	Level 3		
6	Dr Hertwig's Office	Services		1	Level 5		
Steele Street							
10	Single family residence	Residential		1	Level 3		
12	Single family residence	Residential		2	Level 4		
14	Single family residence	Residential		1	Level 4		
20	Woody's Auto Body	Commercial		1	Level 4		
Mary Street							
24	Retail Plaza - Jewellry, Inusurance Office, Mailbox Plus, Computer, CAA Travel Agency	Commercial		1	Level 5		
First Avenue and Wellington Street Intersection							

First Avenue - West Side

Address	Occupancy	Use	Colour Code	No. of Storeys	Condition	Colour Code	Remarks
First Avenue and Wellington Street Intersection							
295 Wellington	Zehrs Grocery Store	Commercial		2	Level 5		
7	Home Hardware - Beaver Lumber Retail	Commercial		1	Level 3		
	CN/CP underpass				Level 0		
966-1000 Talbot	Retail Plaza	Commercial		1	Level 5		
Wellington Street Intersection							

Wellington Street - North Side

Address	Occupancy	Use	Colour Code	No. of Storeys	Condition	Colour Code	Remarks
117	Multi-unit residence - duplex	Residential		2	Level 3		
119	Multi-unit residence - duplex	Residential		2	Level 3		
Wellington Street and Ross Street Intersections							
123 Ross	Select Second's used Funriture	Commercial/ Residential		2	Level 3		
157	Single family residence	Residential			Level 3		
161	Single family residence	Residential		1 1/2	Level 3		
163	Single family residence	Residential		1 1/2	Level 3		
165	Single family residence	Residential		1 1/2	Level 3		
167	Single family residence	Residential		2	Level 3		
167 1/2	Single family residence	Residential		2	Level 3		
Lydia Street							

169	Single family residence	Residential		1 1/2	Level 3	
171	Single family residence	Residential		1 1/2	Level 3	
173	Single family residence	Residential		1	Level 3	
175	Single family residence	Residential		2 1/2	Level 4	
177	Single family residence	Residential		2	Level 3	
179	Single family residence	Residential		2	Level 3	
181	Single family residence	Residential		1	Level 3	
183	Single family residence	Residential		1 1/2	Level 3	
185	Single family residence	Residential		1	Level 4	
187	Single family residence	Residential		1 1/2"	Level 3	
189	Single family residence	Residential		1 /12	Level 4	
191	Single family residence	Residential		1 1/2	Level 4	
193	Single family residence	Residential		2 1/2	Level 4	
	NYC Baseball Park	Open space			Levle 4	
235	Besst Retail Plaza and Gas Bar	Services		1	Level 4	
237-239	Besst Auto Repair and Midas Auto Repair	Services		1	Level 4	
	Abandoned Railway Yards	vacant			Level 0	
265	Knights of Columbus Hall	Services		1	Level 4	
275	Chrysler Car Dealership	Services		1 1/2	Level 5	
285	Zehrs Grocery Store	Commercial		2	Level 5	
Wellington Street and First Avenue Intersections						

Wellington Street - South Side

Address	Occupancy	Use	Colour Code		Condition	Remarks
Wellington Street and First Avenue Instersections						
308	Retail Plaza - Pet Value, Little Caesars, Craft Store, Rogers Video	Commercial		1	Level 4	
296	Retail Plaza - Convenience Store, Quick Cuts, vacant store	Commercial		1	Level 4	
292	Ramada Inn	Services		2	Level 4	
288	Doctor and Dentist Office	Services		1	Level 4	
Second Avenue						
284	Single family residence	Residential		1 1/2	Level 3	
282	Single family residence	Residential		1 1/2	Level 3	
280	Single family residence	Residential		1 1/2	Level 3	
278	Single family residence	Residential		1	Level 3	
276	Single family residence	Residential		1	Level 3	
274	Single family residence	Residential		1	Level 3	
272	Single family residence	Residential		1	Level 3	
270	Single family residence	Residential		1	Level 3	
268	Single family residence	Residential		1	Level 3	
266	Single family residence	Residential		1	Level 3	
264	Multi-unit residence - duplex	Residential		1 1/2	Level 3	
Third Avenue						
262	Multi-unit residence - duplex	Residential		1 1/2	Level 3	
260	Single family residence	Residential		1 1/2	Level 3	
256	Single family residence	Residential		1	Level 4	
254	Single family residence	Residential		1	Level 3	
252	Single family residence	Residential		1 1/2	Level 3	

250	Single family residence	Residential		1 1/2	Level 3	
248	Single family residence	Residential		1 1/2	Level 3	
246	Multi-unit residence - duplex	Residential		2	Level 4	
242	Dentist Office	Services		1	Level 4	
Fourth Avenue						
234	Multi-unit residence - duplex	Residential		1 1/2	Level 3	
232	Single family residence	Residential		2	Level 3	
230	Single family residence	Residential		1 1/2	Level 3	
228	Single family residence	Residential		1 1/2	Level 3	
226	Single family residence	Residential		1 1/2	Level 3	
224	Single family residence	Residential		1 1/2	Level 3	
222	Single family residence	Residential		1 1/2	Level 3	
220	Empty lot	Residential			Level 0	
218	Single family residence	Residential		1 1/2	Level 3	
216	Single family residence	Residential		1 1/2	Level 3	
Fifth Avenue						
208	Single family residence	Residential		1	Level 4	
204	Single family residence	Residential		1 1/2	Level 3	
202	Single family residence	Residential		1 1/2	Level 3	
200	Single family residence	Residential		1 1/2	Level 3	
198	Single family residence	Residential		1 1/2	Level 3	
196	Single family residence	Residential		1 1/2	Level 3	
194	Single family residence	Residential		2 1/2	Level 4	
Smith Ave						
184	Multi-unit residence - 4 plex	Residential		2	Level 4	
182	Single family residence	Residential		2 1/2	Level 3	
180	Multi-unit residence - duplex	Residential		1 1/2	Level 4	
178	Single family residence	Residential		1 1/2	Level 3	

178	Single family residence	Residential		1 1/2	Level 3	
176	Single family residence	Residential		1	Level 3	
174	Single family residence	Residential		1	Level 3	
170	Soteria Fitness Centre	Services		2 1/2	Level 3	
164 1/2	Multi-unit residence - duplex	Residential		1 1/2	Level 3	
164	Multi-unit residence - duplex	Residential		1 1/2	Level 3	
162	Residence	Residential		1	Level 3	
160	Multi-unit residence - duplex	Residential		2	Level 3	
	Parking lot	Commercial				
154	Hong Kong Variety	Commercial / Residential		2	Level 4	
Wellington Street and Ross Streets Intersections						
144	St. Thomas Pentecostal Church and parking lots	Institutional		2	Level 3	

Ross Street - West Side

Address	Occupancy	Use	Colour Code		Condition	Remarks
Ross Street and Welllington Street Intersection						
117-119 Wellington	Multi-unit residence - duplex	Residential		2	Level 3	
112	Paul's Bicycle Annex	Commercial / Residential		2	Level 3	
100	Vacant Building	Commercial		1	Level 3	
96	Vacant Building	Residential		1 1/2	Level 3	
92	Mulit-unit residence	Residential		2 1/2	Level 3	
88	Single-family residence	Residential		2 1/2	Level 3	
86	Single-family residence	Residential		2 1/2	Level 3	
84	Single-family residence	Residential		2 1/2	Level 3	
80	Single-family residence	Residential		2 1/2	Level 3	

74	Single-family residence	Residential		1 1/2	Level 3	
66	Single-family residence	Residential		1 1/2	Level 3	
62	Mulit-unit residence	Residential		2 1/2	Level 3	
60	Mulit-unit residence	Residential		2 1/2	Level 3	
Amelia Street						
	Abandoned Lands				Level 0	
Centre St.	Multi-Unit Residences	Residential		2 1/2	Level 3	
	CN/CP Subway				Level 3	
	Parking Lot	Commercial				
668 Talbot	Burty Bobs Bar	Commercial		1	Level 3	
Ross Street and Talbot Street Intersection						

Ross Street - East Side

Address	Occupancy	Use	Colour Code		Condition	Remarks
Ross Street and Talbot Street Intersection						
	Talbot Mercury Car Lot	Commercial		2	Level 4	
	CN / CP Subway				Level 3	
	Abandoned Railway Lands				Level 0	
33	Single family residence	Residential		1 1/2	Level 3	
35	Single family residence	Residential		1 1/2	Level 3	
37	Single family residence	Residential		1 1/2	Level 3	
39	Abandoned Residence	Residential		1 1/2	Level 1	
Jomas Street Intersection						
43	Restaurant, MD Electronics, Best Laundry Matt	Commercia;l		1	Level 3	
71	Vacant building	Commercial		1	Level 1	

79	Vacant building	Commercial / Residential	2	Level 1	
81	Auto parts plus	Commercial / Residential	2	Level 1	
Barnes Street					
91	Better Used Furniture and More	Commercial / Residential	2	Level 3	
95	Income Tax Accounting	Services	2	Level 3	
107	Bennett's Appliances	Commercial / Residential	2	Level 3	
111	Orange 989 Hall	Services	2	Level 3	
115	Paul's Bicycle Repair	Commercial / Residential	2	Level 3	
119	Used Furniture Shop	Commercial / Residential	2	Level 3	
121	Select Seconds Used Furniture	Commercial / Residential	2	Level 3	
Ross Street and Wellington Street Intersection					
154 Wellington	Hong Kong Variety	Commercial / Residential	2	Level 4	

Inventory Photos

Talbot Street - South Side


1012


966-1000


966 - 1000


964


960


950


940


936


930


904


900


900


900-852


852


808


800


780


780


730


700


668

Talbot Street - North Side


669


679


679-687


683-685


701-703


715-717


727-729


737-739

Horton Street


741-743


745-751


753-767


759-773


779-783


789-791


795-797

Manitoba Street


801-809


815-817


823-825


823-825


827-831

Alma Street


845

Talbot Street - North Side (continued)

877

Balaclava Street

891

899

905

925

Inkerman Street

939

945

955

965

Woodworth Avenue

979

985

987

Arthur Avenue

995

1009

Alexandria Ave.

Currah Parkette

First Avenue

1055

First Avenue - East Side

Talbot Street


First at Talbot


First Ave. Subway


4


6

Steele Street


10


12-14


20

Mary Street


24


24

Wellington Street

West Side


First at Wellington


7

Wellington Street - North Side


117-119

Ross Street


121


157-161


163-165


167-167 1/2

Lydia Street


169


171


173


175-177


179


181


183


185


187


189-191


193


NYC Ball Park


NYC Ball Park


Transformer Station


235


237-239


239

Wellington Street - North Side (continued)


239


CN Rail Yards


CN Rail Yards


265


275


285


295


295

First Avenue

South Side

First Avenue


308


296


292


288

Second Avenue


284


280-282


278


274-276


270-272


266-268

Wellington Street - South Side (continued)


264

Third Avenue


262


260


256


252-254


248-252


246


242

Fourth Avenue


234


232


230


226-228


222-224


218


216-218

Fifth Avenue


208


202-204


198-200


194-196

Smith Avenue


184

Wellington Street - South Side (continued)


180-182


178


174-176


170


164-166


162-164


160


154

Ross Street


144

Ross Street - West Side

Wellington Street


117-119 Wellington


112


100


96


88-92


80-86


66-74


60-62

Amelia Street


Amelia Street


Abandoned Site


Centre St. Residence


Ross Street Subway


668 Talbot

Talbot Street

East Side


Ross at Talbot


Ross Street Subway


Rail Lands


33-37


39

Jonas Street

Ross Street - East Side (continued)


43


71


79


81

Barnes Street


91


95


107


111


Ross at Wellington NE

Wellington Street


Ross at Wellington SE

Site - Internal


Abandoned Station


Abandoned Track


View West


View West


CASO Station - East


CASO Station - South


Rear of 800 Talbot


CASO Station - West


View South


View West


View West


Rear of 700 Talbot


View from Wellington

Notes and References

1. [1] Bartsch, Charles and Collaton, Elizabeth, 1977) Brownfields. Cleaning and Reusing Contaminated Properties, Westport, Conn.; Praeger: Cited through: Manufactured Sites, Rethinking the Post-Industrial Landscape, edited by Niall Kirkwood, published Spon Press, 2001.

2. [2] Hall, Joseph, Transportation Reporter, The Toronto Star Section C5, Context June 27, 1999.

3. [3] Adelaide Leitch. The Floodtides of Fortune. The Story of Stratford. 1980 The Corporation of the City of Stratford. The Beacon Herald Fine Printing Division, Stratford, Ontario and T.H. Best Printing Company Ltd., Toronto, Ontario.

4. [4] Jim Quantrell. Time Frames. Historical Chronologies of Galt, Preston, Hespeler and Cambridge, 3rd Edition. Cambridge 1998. City of Cambridge Archives.

5. [5] Wayne Paddon, George Thorman, Don Cosens and Brian Sim. St. Thomas: 100 Years a City 1881-1891, The St. Thomas Centennial Committee. St. Thomas 1981. Phibbs Incorporated, Publisher, St. Thomas, Ontario.

6. www.oldportofmontreal.com

7. Canadian Architect, September 1995, City Profile: Winnipeg: Agrarian Metropolis, Pages 18-27, A Southam Business Publication

8. www.parkscanada.pch.gc.ca/parks/manitoba/the_forks

9. Architectural Record, January 2002, The Eden Project, Pages 93-99, McGraw-Hill Construction Information Group.

10. www.edenproject.com

11. [7] www.biodyne-srq.com, Using The Power of Microbes, Biodyne, The Viable Alternative.

12. Manufactured Sites: Rethinking the Post-Industrial Landscape, edit by Niall Kirkwood, Spon Press 2001.

13. [8] T.C. McLuhan, source unknown.

14. [9] Abraham Kuyper quoted by Frank E. Gaebelein, The Creator & Creativity, Christianity Today (October 5, 1984): Page 33.

15. [10] Submissions to the Ontario Association of Architect Committee on the Environment Call for papers for Envirofest, June 1998, Ontario Eco-Architecture 4, Places for the Soul: The Role of Environmental Design in the Reconciliation Process., Paul Shelton, O.A.L.A/ C.S.L.A.

16. [11] Submissions to the Ontario Association of Architect Committee on the Environment Call for papers for Envirofest, April 1996, Ontario Eco-Architecture, Environmental Education: Teaching Sustainability Through Design, page 105, Nina-Marie E. Lister, B.A., M.Sc. Pl., Ecological Planner ,Paul A. Steven's, B. arch., OAA.

17. [12] ibid. Page 106.

18. [13] Cities and Green Living: Smart Growth, Paving Paradise, Sprawl and the Environment.

19. [14] ibid.

20. [15] www.edenproject.com

21. [17] Garden Cities 21, Creating A Livable Urban Environment, page 160, John Ormsbee Simonds. McGraw Hill 1994

22. Retail market Demand Analysis, Regional Commercial Systems Study, City of St. Thomas / Municipality of Central Elgin, W. Scoot Morgan, MCIP,RPP, Consultant, Land Development Planning

23. The QMS Group, The Final Report of The Update of the 1990 Leisure Master Plan Prepared for The City of St. Thomas and the Township of Yarmouth, 1997

24. Lapointe Consulting Inc. in Association with Dillon Consulting, Population Projections and Housing Requirements: City of St. Thomas Housing Report, 1999

25. Central Elgin Planning Office, and Dillon Consulting Limited in Association with Lapointe Consulting Inc., Land Supply Requirements: City of St. Thomas, 2000

26. Spiro Kostof, The City Shaped - Urban Patterns and Meanings Through History. A Bulfinch Press Book, Little Brown and Company, 1991.

27. The Ministry of Municipal Affairs and Housing, Ontario, Breaking Ground, An Illustration of Alternative Development Standards in Ontario's New Communities, Alternative Development Standards, Queen's Printer for Ontario 1997.

28. Katz, Peter, The New Urbanism, Toward an Architecture of Community, 1994.

29. Mapart Publishing, Kitchener & Area Maps, Schwerdt Graphic Arts Ltd, 1997 Edition

30. Mapart Publishing, London & Area Maps, Schwerdt Graphic Arts Ltd, 1997 Edition

31. The Corporation of the City of Cambridge, Future Directions: Core Areas in Focus, Final Report & Recommendations, 1997.

32. Submissions to the Ontario Association of Architect Committee on the Environment Call for papers for Envirofest, May 1995, Ontario Eco-Architecture, Robert Chiotti, The Earth As Primary Architect, 1995.

33. The Regional City, Planning for The End of Sprawl, Peter Calthorpe and William Fulton, Island Press

34. The Livable City, Revitalizing Urban Communities, McGraw Hills Companies Inc. 2000