

*Returned by
M. Scanlon*

REPORT

LOWELL NATIONAL HISTORICAL PARK AND PRESERVATION DISTRICT

CULTURAL RESOURCES INVENTORY

prepared for

DIVISION OF CULTURAL RESOURCES
NORTH ATLANTIC REGIONAL OFFICE
NATIONAL PARK SERVICE

by

SHEPLEY BULFINCH RICHARDSON AND ABBOTT
ARCHITECTS
BOSTON MASSACHUSETTS

of the Town of
LOWELL
BELVIDERE VILLAGE,
Taken by Mr. J. W. ...
BENJ. NATHAN.
1832.

- Exploration
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Architects Boston, Massachusetts

PROPERTY OF
LOWELL NATIONAL HISTORICAL PARK

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CHAPTER THREE

HISTORY OF THE DEVELOPMENT OF LOWELL

In 1820 the area called East Chelmsford was an agrarian district with a population of about 200, living on scattered farms and at the crossings of the few roads. By 1830, the industrial town of Lowell had sprung up in the former farm fields, with nearly 6500 citizens and four large textile manufacturing corporations. Ten years later the population of the city of Lowell was nearly 21,000 and miles of canals powered dozens of textile mills. Throughout the nineteenth century and into the twentieth, Lowell continued to grow. Population peaked at 120,000 by 1920, and in the 1920s and 1930s most of the mills moved out of Lowell or failed. The hard times that hit Lowell are not yet over, but the city's revitalization is clearly underway. This chapter examines the history of Lowell's development, and describes many of the historical resources in the Lowell National Historical Park and Preservation District that reflect the periods and patterns of that development.

Following the initial contact between the native inhabitants and English settlers discussed in the preceding chapter, Lowell's development can be described in seven historical periods:

East Chelmsford Hamlet

From 1686, when Chelmsford farmers purchased much of the present area of Lowell from its native owners, through the first two decades of the nineteenth century, the settlement was predominantly agrarian. Very little that was built in these years still stands in the Park and the District, but the hamlet left an imprint on the area that can still be detected.

The Lowell Experiment

In 1821, the "Boston Associates" selected East Chelmsford as the site for the development of large textile mills. Over the next two decades, Lowell was established. Canals were dug, the streets of the central area were laid out, and a full-fledged city was built. That period gave to modern Lowell its basic plan, and to the Park and the District over five dozen buildings. The initial period of industrial establishment was completed in 1839, when the

tenth and last major textile corporation, the Massachusetts Cotton Mills, was chartered.

The Experiment Expands

From 1840 through 1865, the canal system, the mills, and the city itself all grew, filling in the urban framework established in the preceding decades. Among the extant historical resources from this period are the completed canal system and major buildings in most of the surviving millyards.

The Industrial City Matures

The post-Civil War era brought continued expansion for the textile corporations, increased industrial diversification, and an emergence of the city's commercial and political sectors into a more equal relationship with Lowell's corporate giants. Much of the present fabric of the city dates from this period, which culminated in the dedication of the grand new City Hall in 1893.

Multilingual Lowell

The long-established Irish and the many French Canadians in Lowell were joined in the 1890s and the early decades of the twentieth century by immigrants from a wide spectrum of European countries. Both the population and the industrial output of the city reached their peaks around 1920. The major commercial and industrial buildings surviving from that period have an air of confidence about their designs that the following decades betrayed.

Collapse of Lowell's Textile Industry

The industrial collapse of the 1920s and the 1930s was foreshadowed by the Bigelow Carpet Company's departure from the old Lowell Manufacturing Company millyard in 1914, and the cessation of production by the Middlesex Company in 1918. One after another of the major and minor textile mills and the Machine Shop closed in the following decades, and several were razed. The demolition of the remaining mills and boarding houses of the seminal Merrimack Manufacturing Company in the early 1960s hopefully marked the last time there was more profit in tearing down Lowell's past than in preserving it.

Revitalization of Lowell

The opposite approach to dealing with Lowell's past characterizes the period of the city's development from the mid-1960s to the present. The adoption and implementation of the urban cultural park concept grew out of a determination that Lowell would find its brightest future in the appreciation and preservation of the resources from its past.

EAST CHELMSFORD HAMLET: 1686 to 1820

History

English settlement in the general area of present-day Lowell dates to 1653, when families from Concord and Woburn petitioned the General Court for a grant of land on the Merrimack River near the Indian fishing grounds at Pawtucket Falls. They received the grant and established the town of Chelmsford. At the confluence of the Merrimack and the Concord Rivers, a triangular tract was set off from the larger grant and reserved for the sole use of Indians, who had seasonally gathered fish at those falls for centuries. There John Eliot established one of his "praying villages" for Christian Indians. The grant for that village, called Wamesit, included most of the central area of modern Lowell.

Relations between the Indians at Wamesit and the Englishmen at Chelmsford were peaceable until the mid-1670s, when King Philip's War broke out. Mistrustful of the angry and frightened English settlers and militia, the Pennacooks at Wamesit abandoned their village and fled into the woods in 1675. Throughout 1676 and 1677 they returned periodically, only to flee again. When they left behind their elderly and blind in the winter of 1676, English settlers set a torch to the village, burning the wigwams and their occupants.

Many of the Indians who survived the soldiers' attacks, the torch, and the starvation and sickness that accompanied the exile from Wamesit were captured and sold to slavery. Few of the remainder returned to Wamesit. In 1686, Wannalancit, the last sachem of the Pennacook Indians, sold the Wamesit tract to two English settlers. They transferred ownership of the "Wamesit Purchase" to a group of fifty proprietors,

who divided the land and established farms.

Throughout the next century and more, the area remained agricultural. It was informally regarded as a part of Chelmsford, paying taxes to that town and participating in its affairs until 1725. That year the General Court refused to seat a Wamesit resident who had been elected as a Chelmsford representative. When the Wamesit settlers countered with a refusal to pay taxes to Chelmsford, the area was formally annexed to the town of Chelmsford.

East Chelmsford was bounded on three sides by major rivers, so the early river crossing points did much to determine the locations of major roads (Figure 3-1). By 1774, the Concord River was bridged where East Merrimack Street now spans the river. An early ferry crossed the Merrimack River at the foot of the present Bridge Street. In 1792, the Proprietors of the Middlesex Merrimack River Bridge built the Pawtucket Bridge across the Merrimack River just above Pawtucket Falls.

The roads connecting these crossings were adopted by the nineteenth century town builders as principal streets. The road from Chelmsford ran along the south bank of the Merrimack River and extended all the way to the Town Landing at the crook of the Merrimack below the Pawtucket Falls, the same course followed by present-day Pawtucket Street. About a half mile before its Town Landing terminus, that road crossed the road leading to the Pawtucket Bridge. The bridge road was called Mammoth Road on the north side of the river, and led to New Hampshire. South of the river, the road set the general course now followed by School Street.

Midway between the Pawtucket Bridge and the Town Landing, the road from Chelmsford split and sent one fork eastward across the fields, woodlands, and orchards to the bridge over the Concord River, and from there towards Boston. This road established the course of Merrimack Street, Lowell's main thoroughfare. The way to Billerica branched south from that main road and ran along the west bank of the Concord River. The Billerica road became Central Street.

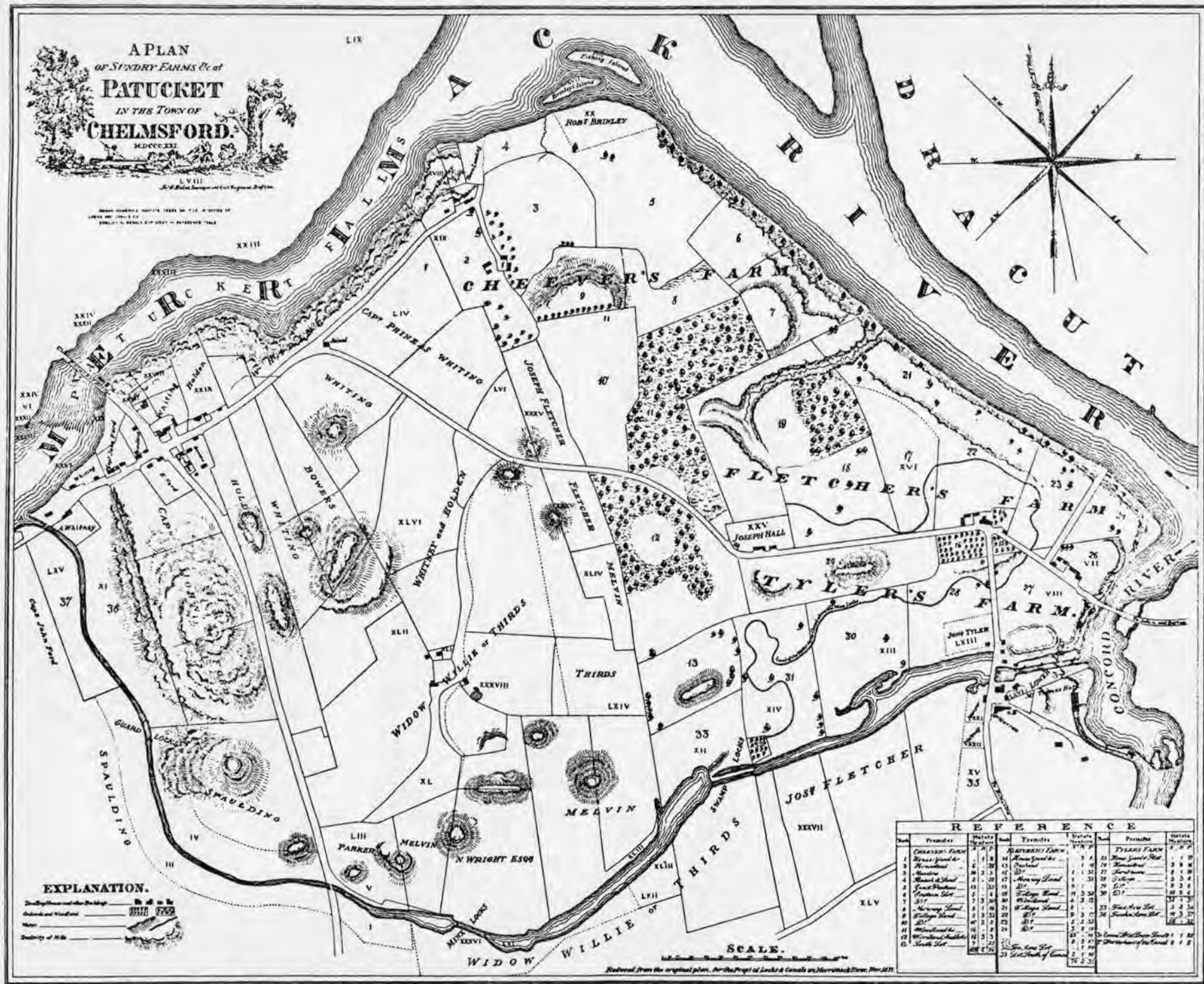


Figure 3-1 Map of East Chelmsford in 1821, by John G. Hales.

In 1792, the same year the Merrimack River was bridged, even more momentous events were afoot in the area. A group of Newburyport merchants obtained a corporate charter as the Proprietors of Locks and Canals on Merrimack River. Their purpose was to build a navigational canal around Pawtucket Falls in order to open the New Hampshire hinterlands for trade with their town at the mouth of the river. The Pawtucket Canal was completed in three years at a cost of about fifty thousand dollars. From its starting point above the falls, the 9,000 foot canal curves south and then east, skirting high ground just south of the falls, and meets the Concord River near its junction with the Merrimack River.

In 1793, a year after the Proprietors of Locks and Canals were incorporated, a competing canal corporation was chartered called the Proprietors of the Middlesex Canal. Boston interests financed this ambitious effort, expending over \$600,000 by 1803 to construct a twenty-seven mile canal linking the Merrimack River from a point about a mile above the Pawtucket Falls to the Charles River at Charlestown, and hence to the port of Boston. The longer canal circumvented not only Pawtucket Falls, but also all the lesser rapids downstream on the Merrimack River. In the face of such competition, the tolls collected and the level of the maintenance of Pawtucket Canal gradually declined.

Even before the canals brought new activity to the agrarian hamlet, other non-agricultural concerns had established themselves in East Chelmsford. As early as 1697 the Proprietors of the Wamesit Purchase had offered a plot of land to anyone who would build a mill on River Meadow Brook, a small stream that flowed into the Concord River about a mile south of the confluence with the Merrimack River. That offer was apparently not accepted, although a century later River Meadow Brook was extensively developed by Moses Hale as a waterpower source for mills. The stream is now called Hale's Brook.

In the 1730s Nicholas Sprague, Jr. built a fulling mill on the east side of the Concord River near its mouth. Small sawmills, grist mills and others followed which used the water power resources of the Concord River, River Meadow Brook, and even the

mighty Merrimack. Several of these establishments warrant mention, although none even hinted at the scale of the industrial complexes that were to come in Lowell.

Just outside the District, the Chelmsford Glass Company was established in 1802 at Middlesex Village, where the Middlesex Canal meets the Merrimack River. One of the longer-lived of early American glassworks, the factory operated there until 1839. John Ford ran a sawmill just above the Pawtucket Falls, one of the few mills to exploit the waterpower of the Merrimack River before the 1820s.

Moses Hale's mills on River Meadow Brook were more typical, as they were built on a stream far easier to harness than the Merrimack. In 1790 Hale built a fulling, dyeing and dressing mill there and in subsequent years he expanded, adding grist and sawmills and a wool-carding operation. Hale introduced the manufacture of a new product to the area in 1817 when he began grinding gunpowder on the River Meadow Brook.

Three other early waterpower developments on the Concord River took place on sites that were more fully exploited after Lowell was established. By 1820 Thomas Hurd owned most of the mills near the mouth of the Concord. The most important of these was on the west bank, immediately south (upstream) of the mouth of the Pawtucket Canal. Hurd acquired the cotton spinning mill built there in 1813 by local citizens Phineas Whiting and Josiah Fletcher, and before 1821 Hurd built a small power canal to operate a wool-weaving mill. The Middlesex Company, one of the major Lowell textile establishments, bought the site by 1830.

Upstream from Hurd, Nathan Ames, a blacksmith, established an iron forge at Massic Falls, ca. 1800. John Fisher became a partner in 1812. An island in the narrow river at those falls made the harnessing of waterpower a relatively simple matter. In the early nineteenth century, a dam was constructed from the island to the east bank, and a mill bridged out to the island from the west bank. The channel it straddled was its waterpower source. The forge operated until 1836, when Perez Richmond bought the site and established paper and batting factories.



Figure 3-2 Spalding House, 383 Pawtucket Street, built 1761, photographed ca. 1920.



Figure 3-3 Whipple's Powder Mill, Lawrence Street, built ca. 1821, photographed 1979.

Still further upstream, Oliver Whipple built a power canal along the west bank of the Concord River just above Hale's Brook in the early 1820s. Whipple came to East Chelmsford in 1818 to manage Moses Hale's powder mill. He used the new canal to operate his own, larger powder mill. Whipple later rented out mill space along the canal and sold power to other small manufacturers.

Despite the modestly-scaled industrial activity and the two transportation canals circumventing Pawtucket Falls, the East Chelmsford hamlet was still primarily agricultural in 1820. Approximately two hundred people inhabited the area on scattered farmsteads and in small clusters of houses, taverns, mills, and stores at Middlesex Village (the northern terminus of the Middlesex Canal), Falls Village (where the Pawtucket Bridge crossed the Merrimack), and around the Pawtucket Canal's Lower Locks and nearby Concord River bridge. There were also small settlements in West Dracut across the Pawtucket Bridge from Falls Village, and in Tewksbury across the Concord River bridge on sites now within Lowell and partially within the LHPD.

Historical Resources

Aside from the general routes of Pawtucket, School, Merrimack, Central, and Bridge Streets, and the basic course of the Pawtucket Canal, very little remains in the Park and District from the pre-1820 period. The 1821 map of "Patucket" by John G. Hale indicates approximately sixty "Dwelling Houses and other Buildings" in East Chelmsford (Figure 3-1). Of these, only the Spalding House at 383 Pawtucket Street, built ca. 1761, survives (Figure 3-2). On the north side of the Merrimack River in Pawtucketville (once West Dracut), the Colonel Varnum House at 81-83 Varnum Avenue may date within a decade of the 1792 construction of the Pawtucket Bridge.

The only survivors among the early mills and their canals are the rebuilt Whipple's Canal and a single building of his gunpowder factory on Lawrence Street. That rubblestone mill dates to ca. 1821 (Figure 3-3).

Additional historical resources may survive from the East Chelmsford hamlet as archeological remains.

The iron forge site at Massic Falls on the Concord was redeveloped for paper and batting mills after 1836 and remained active throughout the nineteenth century. Those later mills are now also gone. Below-ground testing would be required to determine if any remains of the early use of the site are still extant. On the Whiting-Fletcher spinning mill site, where Hurd built a small canal and operated a wool weaving mill before 1821, the Middlesex Company later developed a major millyard (demolished in 1956). Middlesex drew water for power from both the Concord River and the Pawtucket Canal. The canal Middlesex used off the Concord River throughout the nineteenth century followed the course of Hurd's early canal. Beneath the parking lot now on that site, evidence of the basic course, if not actual elements of Hurd's canal, may survive.

The East Chelmsford settlers farmed the land, fished in the rivers, and traded at the river crossings. Their utilization of the resources of the area was more like that of their Indian predecessors than like the industrialists that followed. The great fall of water at Pawtucket Falls was to the settlers mainly an obstacle--useful when it blocked fish, a nuisance when it blocked boats--and the Pawtucket Canal was solely a means of circumnavigating the obstacle. In the period that followed 1820, the power of the fall of water became the area's most important natural resource, and the canal became a means of harnessing that power.

THE LOWELL EXPERIMENT: 1821-1839

History

The transformation of the hamlet East Chelmsford into the industrial city of Lowell was astonishingly quick. The 200 farmers and tradesmen of 1820 were already outnumbered by carpenters, masons, laborers, and mill workers in 1824, when the population is estimated to have been 600. Two years later, 2,500 lived in the newly chartered Town of Lowell. The burgeoning industrial development attracted 3,500 residents by 1828, and 6,500 by 1830. Additional corporations were chartered in the early 1830s, and their workers and the accompanying storekeepers, milliners, doctors, clerks, and other townspeople swelled the town's population to 12,000 by 1832.

1834 saw the first of many annexations, when Belvidere, the part of Tewksbury on the east bank of the Concord River, was added to Lowell. The town's amazing growth was acknowledged by the state in 1836, when Lowell was incorporated as the third city in Massachusetts, with a population of 17,500. 21,000 lived in the city by the end of the initial period of development in 1840.

The events that transferred East Chelmsford into the city of Lowell were not foreshadowed by Hurd's mills on the Concord River, or Hale's expanding industrial complex on River Meadow Brook, but rather by a new sort of factory that developed on the Charles River at Waltham near Boston. In 1814 a fully integrated cotton mill was established there that could perform every process necessary to transform raw cotton into finished cloth. Most American cotton mills at that time produced cotton yard, which they sent out to handweavers to make into cloth. Even the English textile industry, far more advanced technically and much larger in scale, divided the many stages of cloth production among separate establishments.

The Boston Manufacturing Company at Waltham had three other characteristics that made it unusual among American textile mills of the time. First, it utilized power looms. This English invention was decades old, but the exportation of power looms or even drawings of them from the British Isles was strictly

prohibited. The initiator of the Waltham factory, Francis Cabot Lowell, had closely observed these mechanized looms on a visit to England and Scotland and in 1814 essentially reinvented the device in Boston, with the aid of an American master mechanic, Paul Moody.

The Waltham enterprise was also atypical among American textile mills of that time in that it was well-capitalized, under the corporation form of organization. Francis C. Lowell recruited the other shareholders from among his Boston mercantile associates. This group that provided the capital for both the Waltham factories and the founding of Lowell is commonly referred to as the "Boston Associates."

Another peculiarity of the Waltham operation was its work force. The company recruited young women from the surrounding area to operate the mills' machinery and lodged them under careful supervision in company-owned boarding houses. Most American textile factories of the early nineteenth century had constant difficulty finding and keeping enough operatives, and they usually hired whole families and staffed their mills with men, women, and even children. Most of the young women of the Waltham factory worked there a few years, then left to marry or to return to their families. The use of the power loom, corporate capitalization, the fully integrated organization of the production process, and the recruitment and housing of a work force of young women were the special characteristics of the Waltham operation that would be adopted in transforming East Chelmsford into Lowell.

The most compelling result of the establishment of the Boston Manufacturing Company in Waltham for the "Boston Associates" was its immense and immediate profitability during a time when other American cotton mills were failing. With the addition of a second mill in 1818 and a third in 1820, Boston Manufacturing quickly reached the limits of the waterpower available from the Charles River at Waltham. By 1820, the "Boston Associates" began seeking a larger site with greater waterpower potential, where they could apply the Waltham formula on a grand scale and even add calico printing to their plain cotton cloth production.

Patrick Tracy Jackson, Kirk Boott, Warren Dutton, Paul Moody (Francis Cabot Lowell having died in 1817) investigated sites as far afield from Boston as Gardiner, Maine. In the autumn of 1821, they selected the area around the Pawtucket Falls on the Merrimack River at East Chelmsford. They purchased four-hundred acres of farmland within the crook of the Merrimack River, west of its confluence with the Concord River. They also bought up the shares of the Proprietors of Locks and Canals on Merrimack River, the corporation that owned the Pawtucket Canal and accompanying Merrimack River water rights. In February, 1822 the Merrimack Manufacturing Company was chartered by shareholders Jackson, Appleton, Kirk Boott and his brother John Wright Boott, and Paul Moody, the master mechanic. Land and canal ownership was transferred to the new corporation, and Kirk Boott was appointed as the first treasurer and agent, with day-to-day executive authority for the venture.

The burst of construction activity that followed must have seemed frenzied to the displaced farmers and other residents of East Chelmsford. The decrepit Pawtucket Canal was broadened and deepened, and its system of locks was redesigned. As a transportation canal it originally had four sets of locks to raise or lower vessels bypassing the Pawtucket Falls. In rebuilding the canal, three sets of locks for navigation were retained, but just two main levels were established, divided by the Swamp Locks at the midpoint. A new canal, the Merrimack, was dug north from the Swamp Locks basin to the banks of the Merrimack River over a thousand yards away. The Merrimack Manufacturing Company, the first great mill complex, was built beside the river. Its waterwheel was in motion by September of 1823, and later that fall cotton cloth was being produced.

In addition to the various mill buildings and a print works for producing calicoes, the corporation built double houses of brick and wood and longer brick rows on the streets parallel to the Merrimack Canal, directly in front of the millyard. The operatives (mostly unmarried females) were lodged in boarding houses, while the more skilled workers (usually men with families) were provided individual apartments referred to as tenements.

In 1824 a second mill was built in the Merrimack yard, and the next year a third. The first two were equipped with Waltham-built machinery. The third mill, however, was outfitted with machines built in the new Machine Shop still under construction at Swamp Locks within the fork of the Pawtucket and the Merrimack Canals.

The initial intention of the "Boston Associates" apparently was to carry out the entire East Chelmsford development under the aegis of the Merrimack Manufacturing Company, and in 1824 new mills were planned for a site southeast of the Swamp Locks. Figure 3-4 shows the plan for that project, with a new canal parallel to the Pawtucket Canal below Swamp Locks, mills along the island between the canals, and row after row of freestanding boarding houses, of the Merrimack Company's double-house type. Before that plan was carried out, however, the directors of the Merrimack Company decided that the possibilities at East Chelmsford were too vast to be developed under a single management, and two crucial changes were agreed to and implemented. First, new companies would be allowed to purchase mill sites and waterpower. In 1825 the Hamilton Manufacturing Company was incorporated and Merrimack Company sold to the new corporation a site for two mills and the accompanying waterpower rights with which to operate them. The waterpower was delivered by a new canal in the location of the one indicated on Figure 3-4.

The second part of the Merrimack Company's reorganization involved divesting itself of all its real estate (except its own millyard and housing sites), of the canal system, and of the Machine Shop. Rather than offering these assets for sale on the open market, or creating a new corporation to administer them, Merrimack Manufacturing revived the Proprietors of Locks and Canals. That corporation, which built the Pawtucket Canal in the 1790s, had been inactive since Merrimack had bought up its shares in 1821-22. Its charter was still in effect, however, so several Merrimack shareholders recapitalized Proprietors of Locks and Canals by purchasing the shares. Then the Merrimack Company sold to that corporation the undeveloped land, the canals, and the Machine Shop. Kirk Boott assumed the posts of Agent and Treasurer of the Proprietors of Locks and Canals, while still retaining the same positions at Merrimack Manufacturing Company.

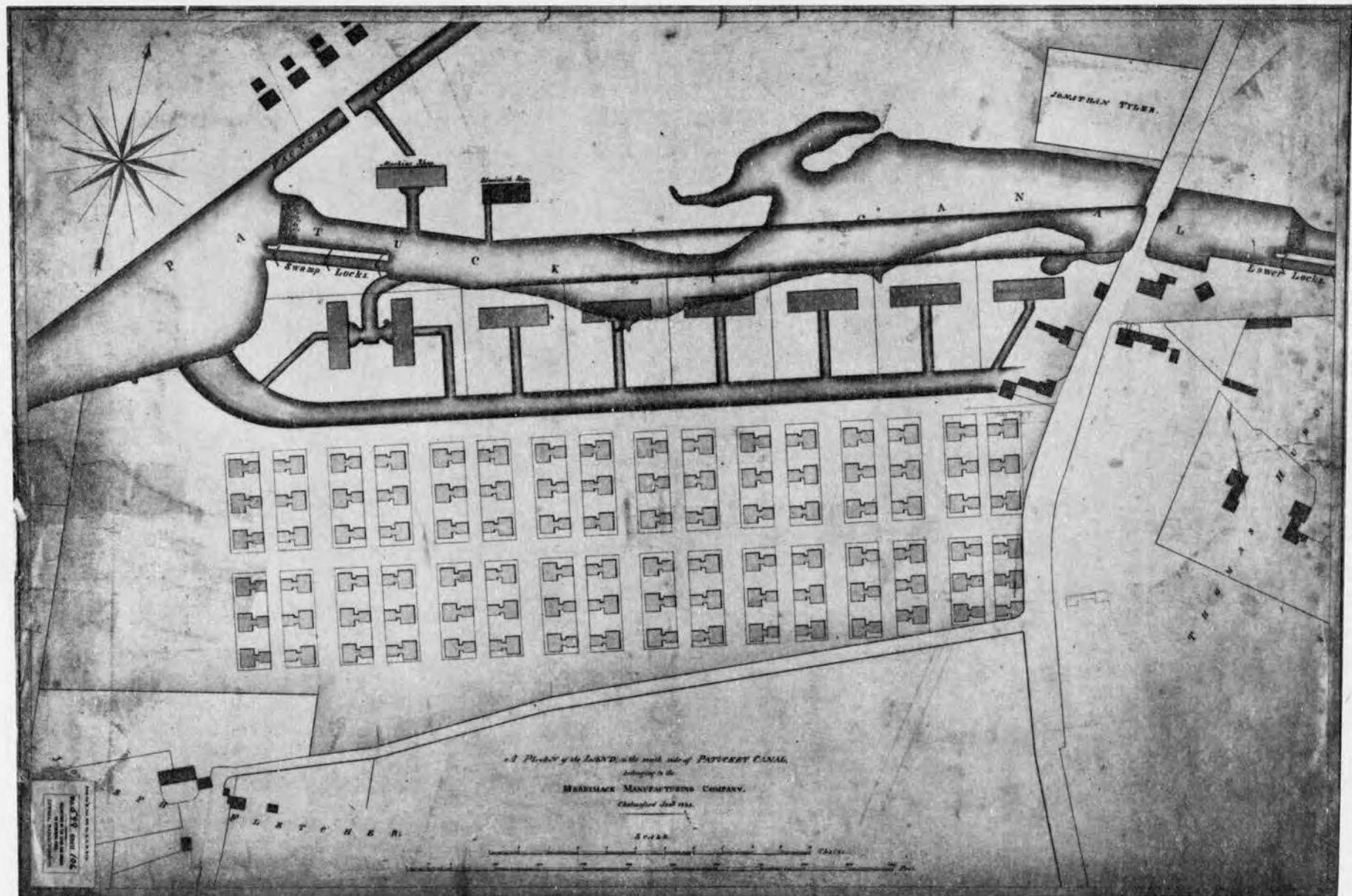


Figure 3-4 "A Plan of the Land, on the south side of the Patucket Canal, belonging to the Merrimack Manufacturing Company. Chelmsford, Jany. 1824."

Once the decisions were made to accept new manufacturing corporations, and to re-establish the Proprietors of Locks and Canals to take charge of real estate development, machine building, and the canal system, the pattern was set for the full industrial development of the area. Around the mills, the other aspects of a complete town were beginning to emerge. In 1824-25, the Merrimack Company built a stone church near its employee housing which was named St. Anne after Kirk Boott's wife. Rev. Theodore Edson, the Episcopal minister hired by Boott, later estimated the settlement consisted of about 600 people in 1824.

Anticipating the need for additional residential space for the rapidly growing population, a corporation was chartered in 1825 to build a bridge across the Merrimack River just above the Concord River confluence, to make East Dracut accessible to the burgeoning industrial community. Shops began to rise along the two main streets of the new Merrimack Street and Central Street, which followed the courses of two old roads. By 1826, the population numbered about 2,500, and the General Court granted a petition establishing the new township of Lowell out of the eastern part of Chelmsford. Nearly 3,000 acres located west of the Concord River and south of the Merrimack River formed the new town.

The same year as the town was established, the Hamilton Canal was completed, extending almost two-thousand feet from the Swamp Locks basin, parallel to the lower Pawtucket, and discharging back into the Pawtucket's lower level. On the "island" between the new and the old canals, two Hamilton mills were operating by 1827.

Two more corporations were chartered the next year, the Appleton Manufacturing Company and the Lowell Manufacturing Company. The Appleton Company acquired the southwest end of the power island already occupied by the Hamilton Company, while Lowell Manufacturing began building its cotton and carpet weaving mills across the Pawtucket Canal from Hamilton, between the Merrimack and Pawtucket Canals. The Lowell Canal was dug from the Merrimack Canal to the Pawtucket Canal, bringing "upper level" Merrimack Canal water through Lowell Manufacturing's breast wheels, then discharging it into the lower Pawtucket Canal, a drop of thirteen feet. Lowell Manufacturing's site was so swampy

that the first stones for the foundations were laid upon the ground, then built upon as fill was dumped around them to create a new surface at a dry and useable level. Mill sites were not chosen for ease of construction, but rather for efficient delivery of waterpower.

In 1828, the town's population topped 3,500. Two years later, the town's population reached 6,500, and a brick Town Hall was erected across Merrimack Street from St. Anne's Church. The digging of the long Western Canal had begun in 1828, but was halted by the depression of that year. In 1830 the work resumed, to bring water from Swamp Locks basin to new mill sites on the Merrimack River, just west of the Merrimack millyard. Helping finance that work were several investors who were new to Lowell, including Amos and Abbott Lawrence, Boston's leading textile merchants. The Lawrences received a charter as the Middlesex Company in 1830 and began woolen textile production on Thomas Hurd's Concord River site. The Lawrences became shareholders and selling agents of many of the Lowell mills, and gave their name to the mill town which sprang up in the 1840s and in the 1840s helped found the mill town that bears their name located eight miles downstream from Lowell on the Merrimack River. The Lawrences invested in all three Lowell textile corporations chartered in 1831--the Proprietors of the Tremont Mills, the Suffolk Manufacturing Company, and the Lawrence Manufacturing Company. By 1832 all three of these new companies could utilize Western Canal waterpower at their sites west of the original Merrimack millyard.

The 1832 "Plan of the Town of Lowell and Belvidere Village" drawn by Benjamin Mather provides an excellent reference for assessing Lowell's first decade of growth and examining the basis for some later patterns (Figure 3-5). Mather records both actual and planned development on such sites as the Suffolk, Tremont, and Lawrence millyards, but generally shows them as they were built. In the northeast corner of Lowell, he even shows a "Contemplated Canal" where the Eastern Canal would be built three years later, and indicates mills along its east and north sides, where the Massachusetts and Boott Mills were established later in the decade. Mather shows a "Rail Road" exiting from Lowell toward the southeast, complete with an

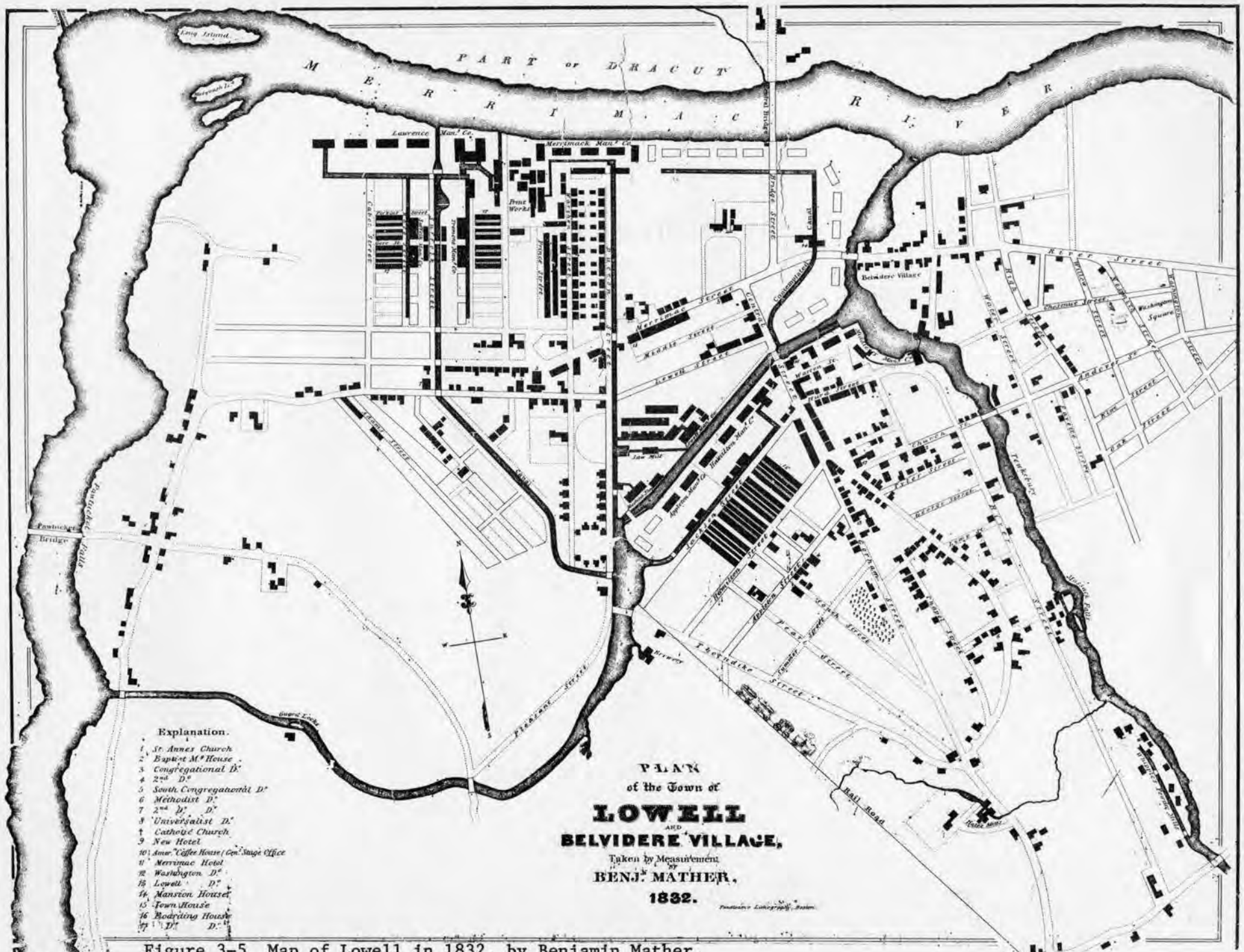


Figure 3-5 Map of Lowell in 1832, by Benjamin Mather.

engine and top-hatted engineer, a passenger car and two baggage cars. The Boston and Lowell Railroad was under construction along that route by 1832, but the first train did not run until three years later.

Lowell's population exceeded 12,000 in 1832, and Mather's map shows the uneven patterns of development resulting from this extremely rapid growth combined with the strategically scattered siting of millyards. The routes of the principal streets were all inherited from the rural hamlet of East Chelmsford, as was the arc of the Pawtucket Canal. The major new elements were the fan of canals from the midpoint at the Swamp Locks basin, and the mills positioned along them according to the dictates of waterpower. Water had to be delivered at a high level to the breast wheels, then flow away unimpeded. These requirements placed the mills around the Swamp Locks, and along the Merrimack River below the bend.

Arrayed in front of each millyard was the company-owned housing built for the workers in the mills. The boarding houses' proximity to the millyards was necessitated by the long, fourteen-hour workdays, and also expressed the paternalistic relationship of the corporations toward the female workers. Unless the corporations could safeguard the young women's reputations, few would be willing to leave home to work for the mills.

The housing built by the seminal Merrimack Manufacturing Company differed architecturally from that of later companies, but set the spatial relationship of housing in relation to the millyard copied by the others. Merrimack's housing consisted mostly of double houses or four-unit buildings, in either brick or wood, set along Dutton and Worthen Streets perpendicular to the millyard. The Dutton Street houses are visible at the center of Figure 3-6. Only Prince Street had Merrimack Company housing in longer rows.

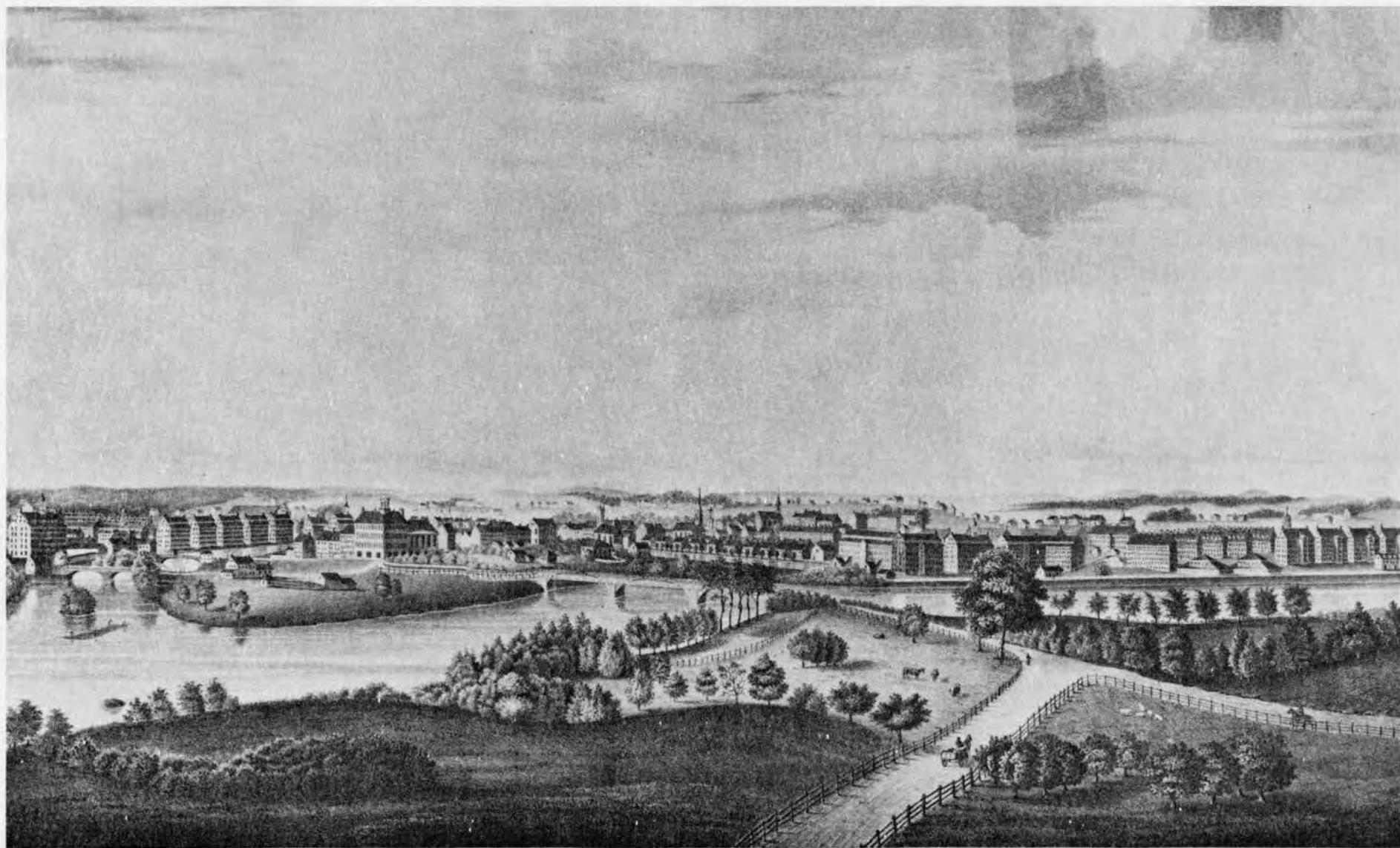
The Hamilton Company's housing adopted the overall siting introduced by the Merrimack Company and set the precedent more widely followed in terms of building type. That company built pairs of block-long brick rows set back-to-back across the Hamilton Canal from the millyard. As Mather's map shows, Appleton, Suffolk, and Tremont Mills generally followed this pattern. Lawrence and Boott Mills would later adopt

the same model, as would the Massachusetts Mills, although the pattern had to be altered somewhat to fit the latter's L-shaped millyard. Lowell Manufacturing had an irregularly-shaped millyard between the Merrimack and the Pawtucket Canals, and built rows on a less rigid configuration. The Machine Shop's work force was predominantly male, so the employee housing the Proprietors of Locks and Canals provided to those employees consisted of double tenement houses more suitable for families. They were placed along Dutton and Worthen Streets and around a court off Dutton, between the Merrimack and Western Canals. Most of the corporations placed the agent's house near the boarding houses symbolically between their operatives and other elements of the town.

The Middlesex Company apparently built no conventional boarding houses. The company did own considerable real estate in the neighborhood of its millyard, and perhaps lodged employees in buildings originally constructed for other purposes.

By 1832 two concentrations of shops, offices, and institutional buildings had formed in Lowell near the the corporation housing of the established mills. Merrimack Street around the Merrimack Canal could rightfully claim to be the town center. On the east side of the canal were St. Anne's Church, the new Town Hall, and several shops. On the west side were the town's leading hotel, the large, brick Merrimack House; the Bank block, said to be the town's first brick commercial building (1826); the Congregational Church; the Merrimack Company's school; and more shops. The Boston and Lowell Rail Road located its depot at the corner of Dutton and Merrimack (Figure 3-7), and after the line opened in 1835 the importance of this area of town was even more firmly established. Philander Anderson, a cartographer and engineer for the railroad, signed the design for the depot. Its three sides of Doric colonnades must have made it one of the most stylish Greek Revival buildings in town, until a train would pull directly through the "temple."

The other concentration of commercial buildings lined Central Street from Merrimack Street on the north to beyond the Gorham Street intersection on the south. Before 1820, there had been a tavern or two located near the Lower Locks of the Pawtucket Canal along the



VIEW OF LOWELL, MASS.

TAKEN FROM THE HOUSE OF ELISHA FULLER, ESQ. IN DRACUTT, BY E. A. FARRAR.

Figure 3-6 "View of Lowell, Mass. Taken from the House of Elisha Fuller, Esq: In Dracutt, by E. A. Farrar." Pendleton's Lithography, Boston, 1834.

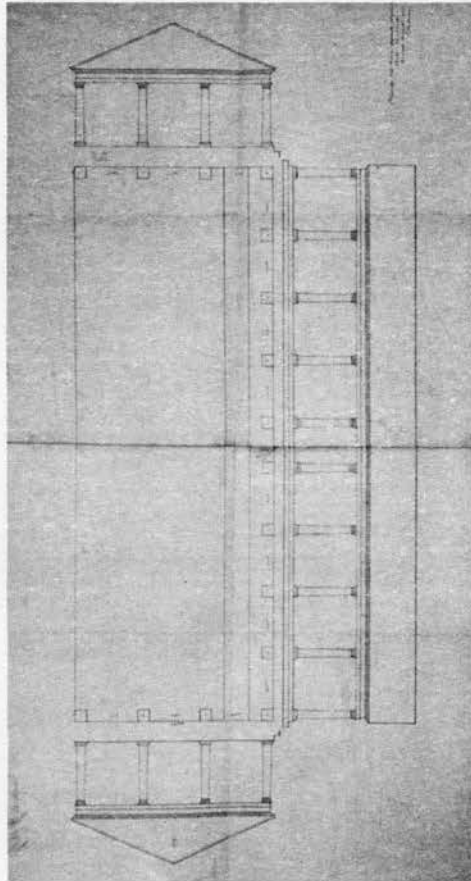


Figure 3-7 Plan and elevations for the Boston and Lowell Rail Road station, Lowell. Drawn by Philander Anderson, 1835.

road that became Central Street. By the early 1830s several hotels and substantial brick blocks graced Central Street, which was advantageously sited between the Middlesex millyard on the east and the Hamilton and Appleton Companies on the west.

Throughout the entire central area of Lowell, including both Merrimack and Central Streets, deeds to parcels bought from the Proprietors of Locks and Canals contained explicit restrictions specifying a set back for sidewalks and requiring that buildings over twelve feet tall be built of brick or stone and roofed with slate or other incombustible material. Two kinds of structures initially resulted from these restrictions--substantial brick blocks, usually three stories tall, which contained shops, offices, and living quarters; or modest, wood-frame shops, called "ten-footers" for their careful avoidance of the height restriction on wooden buildings.

The two types were not necessarily the products of different builders or different types of investors. In 1836 Tappan Wentworth, a prominent Lowell lawyer, hired Horace and Samuel Howard, a housewright and a mason, respectively, to build shops and houses on Merrimack near Kirk Street. The contracts describe a three-story brick building flanked by five or six small shops, to be built ten feet tall of "lath and plaster."

The Proprietors of Locks and Canals' ownership of most of the central area of town not only affected the form of buildings erected on lots the company sold, but also influenced broader patterns of the town's growth. The Proprietors retained large undeveloped parcels through the 1830s that were neither used for mill sites nor available for private residential or commercial construction. By the early 1830s many merchants, storekeepers, tailors, milliners, doctors, lawyers, teachers, and others had come to Lowell to serve the growing population of industrial workers. These townspeople mostly settled primarily outside the central area where most undeveloped land was still owned by the Proprietors of Locks and Canals.

Chapel Hill, the largest early non-corporate residential area, was on the southeast side of town, beyond the Central Street commercial area and the Hamilton

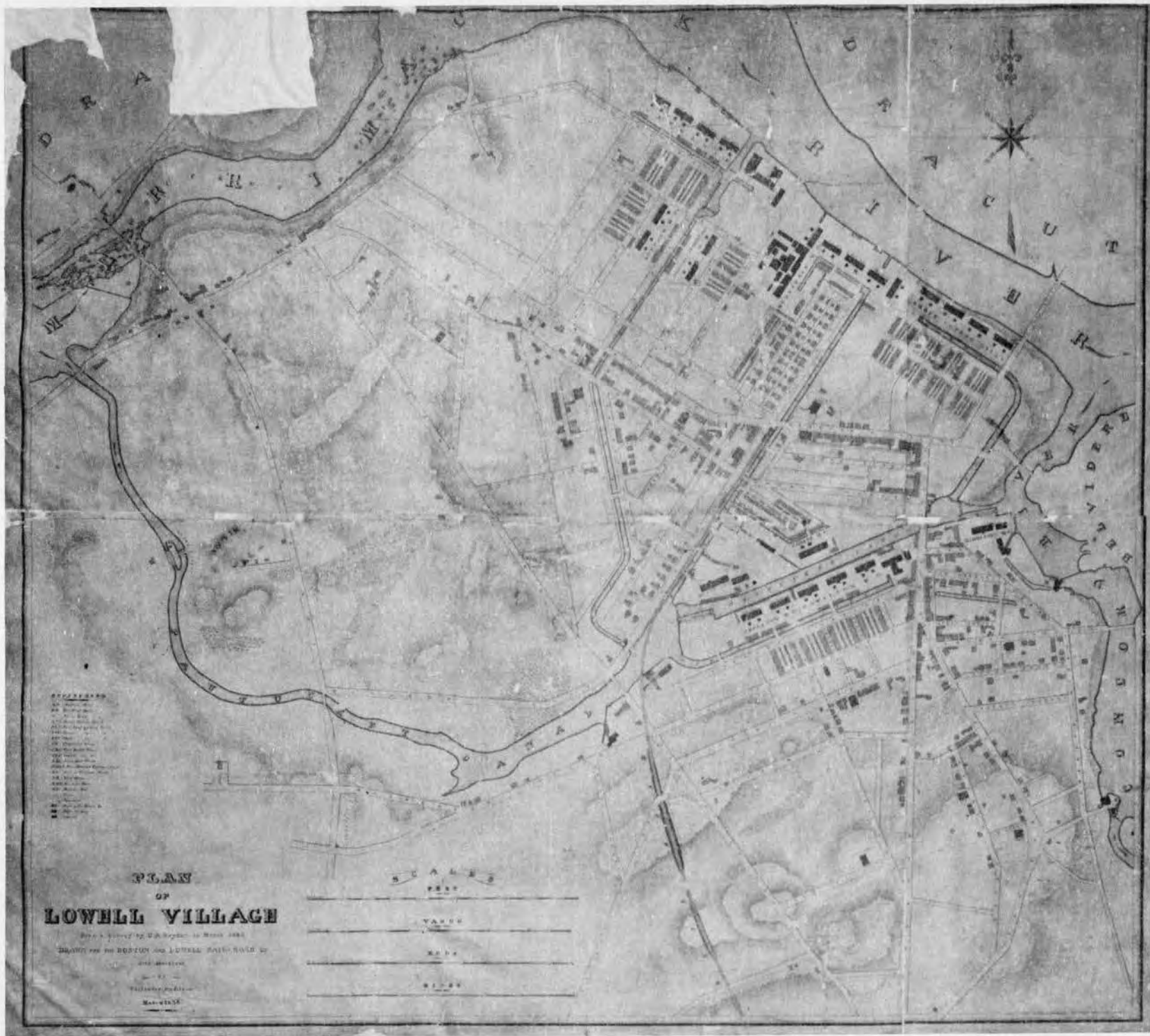
and Appleton millyards. The Universalist Church built in this area by 1832 gave the section its name. It was east of Chapel Hill on the Concord River that independent manufacturers such as Ames and Fisher and Whipple built their establishments, whose workers bolstered the residential growth at Chapel Hill.

Various other residential concentrations existed. Belvidere Village on the east side of the Concord River was part of Tewksbury until 1834, when it was annexed to Lowell. On the opposite side of town, the pre-1820 settlement at Falls Village saw added residential development, and a fine stone hotel was built on Pawtucket Street in 1824, called the Stone House (Figure 4-34).

Another important residential area was not well indicated on Mather's map nor on a more accurate and detailed map drawn in 1835 (Figure 3-8). Only a few houses are shown on the western side of the Western Canal, where it strikes off at a diagonal from the Swamp Locks basin. The Lowell directories of the early 1830s indicate, however, that most of the town's sizable Irish population lived in that area called the Acre. Contemporary accounts describe the housing as huts built on a tract which was kept off the market by a dispute over ownership. Apparently the huts and the social standing of their occupants were too humble to gain Mather's attention and recording. Saint Patrick's, the church of the Irish Catholic community, is indicated by Mather. This wooden church was built on land donated by Kirk Boott for the Proprietors of Locks and Canals and was dedicated in 1831.

Lowell's rapid growth in the 1820s accelerated in the 1830s. The Boott Cotton Mills were chartered in 1835 and like most of its predecessors, entered into a contract with the Proprietors of Locks and Canals to have four mills built and equipped. The Boott Mills were situated on the Merrimack River between the Merrimack Company and Bridge Street. Waterpower was supplied by the new Eastern Canal, which flowed north from the Pawtucket Canal just above the Lower Locks, paralleling the last stretch of the Concord River, then turning ninety degrees to parallel the Merrimack River. In that stretch the canal flows west while the river flows east. The Eastern Canal and the first of the Boott Mills were in operation by mid-1836.

Figure 3-8 "Plan of Lowell Village from a survey by U. A. Boyden in March 1834. Drawn for the Boston and Lowell Rail-Road Co. with additions by Philander Anderson March 1835."



The construction of Boott Mills and its accompanying boarding houses necessitated the removal of Kirk Boott's own house, which had stood alone on the large tract of land between Merrimack Street and the Merrimack River, west of Bridge Street. The house was moved to Falls Village near Pawtucket Street, and John Street was laid out north from Merrimack Street across the former houselot to the millyard. This new street and the new mill spurred the commercial development of the northern side of Merrimack Street, which had lagged behind the southern side, but most of the former grounds of Boott's house were not sold by the Proprietors of Locks and Canals until 1845.

In 1836 the town's population exceeded 17,500. A commission appointed by the town recommended that a city form of government be adopted. The Massachusetts General Court concurred and chartered Lowell as the third city in the state, following Boston and Salem.

The new city, in conjunction with the Middlesex County government, built a combined public market and courthouse on Lowell Street (renamed Market Street) which was opened in 1837. Behind the Market House was the town landing on the Pawtucket Canal where produce, lumber, bricks, and other supplies were unloaded from rafts and small boats that had made their way down the Merrimack River from New Hampshire, or that had travelled up from Boston via the Middlesex Canal.

Kirk Boott died suddenly in 1837 at age 47. As agent of the Merrimack Manufacturing and of the Proprietors of Locks and Canals he had been the most influential individual in the early planning of the town. His death came near the end of the initial period of Lowell's development, for it was in 1839 that Massachusetts Cotton Mills, the last of the large Lowell textile corporations to be initiated, received its charter. Massachusetts bought the mill site between the Boott millyard and the Concord Rivers. The Proprietors of Locks and Canals contracted to build four mills, and by 1840 the first was in production. That year the city's population had reached 21,000, a hundredfold increase in twenty years.

By the early 1840s, the mills were straining the capacity of the canal system, and the city's rapid and

uncontrolled growth was made all the more uneven by the Proprietors of Locks and Canals' retention of sizable undeveloped tracts in the heart of the city. These problems were confronted and to a degree solved in the ensuing decades, in a distinct, second phase of Lowell's development.

Historical Resources

Considering the very substantial development in Lowell since 1840, it would not be surprising if the city retained very few structures dating from the 1820s and 1830s. The twenty buildings within the Park and the District constructed in the 1820s, and forty-four built in the 1830s that still stand constitute an historical resource of the highest importance to Lowell.

Growth of all the elements of Lowell in the 1820s and 1830s is striking, but it was the mill complexes of the major textile corporations that dominated the new city and were its reason for existence. Five major complexes were built in the 1820s--Merrimack, Hamilton, Lowell Manufacturing, Appleton, and the Machine Shop--but none of their structures of that first decade remain. The rebuilt Pawtucket Canal, the Merrimack Canal, and the Hamilton Canal are the most important extant elements of the industrial infrastructure of the 1820s. The Lowell Canal, dug in 1828 to power Lowell Manufacturing's mills, has been covered over since ca. 1910, but remains in operational condition beneath the pavement.

Some of the millyards built in the 1830s--Suffolk, Lawrence, Boott, and Massachusetts Mills--contain major buildings from their original construction campaigns. Two others of that decade have been razed--the Middlesex Company and the Tremont Mills. In the Suffolk millyard only the Counting House (562 Suffolk Street) and a boarding house (199 Cabot Street, Figure 4-10) still stand from the 1830s. Both are built of brick with granite trim, have pitched roofs and very little decorative trim. The oldest mills to survive in one of the major millyards in Lowell are Mills No. 3 and No. 4 of the Lawrence company. They date to the millyard's initial development in 1833-34. They have since been joined by a connector mill, and



Figure 3-9 Mill No. 2,
Boott Cotton Mills.
Built 1835, top floor
added ca. 1880,
photographed 1979.

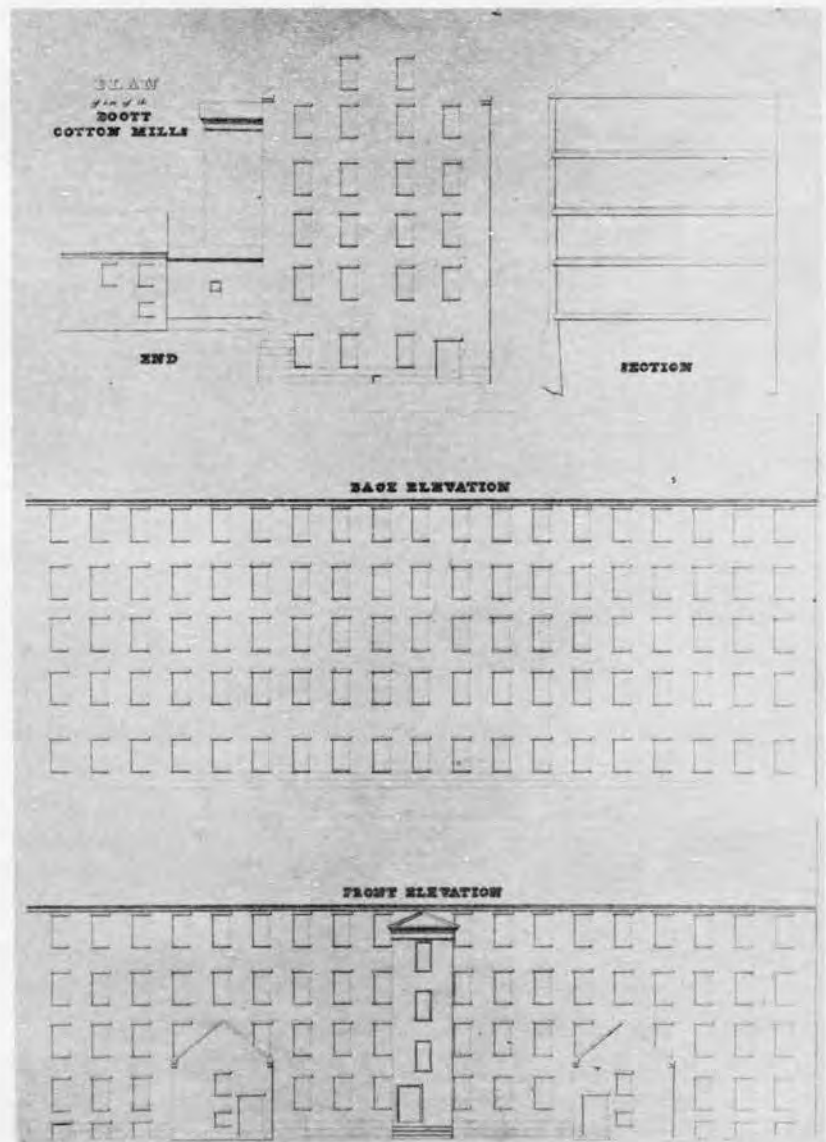


Figure 3-10 "Plan of
one of the Boott Cotton
Mills," 1835.

have had stories added. A portion of a cotton storehouse built ca. 1833 also survives in that millyard.

The Boott millyard retains the most complete group of initial buildings. All four original mills and the Counting House still survive. They are now joined by connector mills into two long structures, and increased one floor in height (Figure 3-9). These brick mills were originally four stories tall, 150 feet long, and 45 feet wide--typical dimensions for Lowell mills of the 1820s and 1830s (Figure 3-10). Their original end-wall gable roofs were lost when the flat-roofed upper floors were added, and central stair towers were removed after the connector mills with new stair towers were built. The four original mills in the Massachusetts millyard also survive, dating from 1839-41 (Figure 4-8). The Western Canal, its short spur, the Lawrence Canal, and the Eastern Canal all date from the 1830s as well.

The major component missing from all of the mill complexes is the corporation boarding houses and tenement rows. The pairs of boarding houses, set perpendicular to the millyards, were a crucial part of the architectural framework of Lowell's early industrial plan. Only fragments of these housing schemes survive.

The Suffolk Company retains the greatest number of relatively intact examples of corporation housing--namely two. The boarding house at 199 Cabot Street previously mentioned was fortuitously saved through conversion to industrial use when the neighboring rows were torn down. A Suffolk rowhouse at 113-131 Cabot Street was built ca. 1845-50, and is described later in this chapter. A former Massachusetts Mills boarding house is the most prominently sited of the surviving boarding houses. Built ca. 1839-40, the long brick row at 28-56 Bridge Street is commonly called the Bridge Street Boarding House. It has been converted to storefronts on the ground floor, but retains most of its paired, parapet-linked chimneys, and even some of its dormers. Adjacent on Bridge Street (#70-96) is the Surf Building, an apartment block with a commercial ground floor. At its core are two Boott boarding houses built ca. 1835, linked together and thoroughly remodeled ca. 1900. Traces of the two former boarding houses can only be seen on the back walls, but they do preserve, albeit somewhat faintly, the historic relationship of residential buildings to

the millyard. Another Boott boarding house used by H. & H. Paper Company stands west of the Surf Building, separated by a long parking lot that was the site of four more boarding houses. It too has been drastically altered, but like the Surf Building, demonstrates the original relationship of boarding house and millyard.

Four agent's or superintendent's houses of the 1821-1839 period are extant. The earliest is the wooden house at 243 Worthen Street, built about 1825 for Paul Moody, superintendent of the Machine Shop. At that time Worthen Street had not yet been laid out, and Moody's house faced Dutton Street across a large decorative, semi-circular pool. The Lawrence Company agent's house at 119-121 Hall Street is an imposing rubblestone mansion occupied by the Lowell Day Nursery. It was occupied by Lawrence or Tremont agents for nearly a century, from 1833 to 1926. The rectory of St. Jean the Baptist Church at the corner of Merrimack and Austin Streets (outside the LHPD) was built ca. 1835-40 by the Suffolk Company as its agent's house. More modest is the brick house behind St. Anne's Church, built ca. 1835 for the first agent of Boott Mills, Benjamin French. French may have had the house built with his own funds, for he continued to live there through the 1840s, after Linus Child had become Boott Mills' agent and Boott and Massachusetts Mills had built a double house for their agents on Kirk Street.

Important examples of alternative forms of company-owned housing have been found at two locations just outside the District. On either side of Wamesit Court off Dutton Street near Fletcher are three small, wood-frame cottages, one-and-a-half stories tall, linked into trios by lateral wings. Circumstantial evidence suggests that five of these cottages were built by the Lowell Manufacturing Company alongside the Lowell Canal in 1828-32 and were removed to their present site after 1850. If these cottages are former corporate housing, their idiosyncratic form in Lowell may relate to Lowell Manufacturing's recruitment of carpet workers from Medway in southern Massachusetts, where similar wooden cottages were built in the early nineteenth century as workers' housing.

Oliver Whipple's house stands at the corner of Moore and Whipple Streets near his powder works and canal (but beyond the District). It is a two-story, wood-frame Greek Revival house with a long ell at the rear, built in the 1820s. The rear ell is outlined on maps as early as 1832. There are entrances to several dwelling units along its length. It is probable that Whipple housed some of his workers there behind his own residence, in sharp contrast to the major Lowell corporations separation of different classes of workers into different types of housing.

While most of the buildings now standing along the main business streets of Merrimack and Central were constructed much later in the nineteenth century, Lowell retains excellent examples of commercial and institutional architecture from the 1821-1839 period. St. Anne's Church and rectory and the Old Town Hall are most prominent. The First Unitarian Church at 72 Merrimack Street built in 1832 as a freestanding structure, but now part of the continuous block of buildings, has bold Greek Revival cornice and pilasters.

The Bank Block of 1826 (350-376 Merrimack Street) exemplifies the basic form employed for commercial construction throughout Lowell's early years. The trabeated granite ground floor accommodating storefronts, the two brick upper floors, the end-wall gable roof, and the long rectangular plan were typical of many early structures long since replaced. The brick building at 509 Market Street, built in 1833-34 by bricklayer Joel Davis, is a similar structure, although it has been more altered on the ground floor and is more symmetrically composed on the upper floors. Its location and date of construction link it to the establishment of the Suffolk, Tremont, and Lawrence Mills nearby.

A highly idiosyncratic building in the same general area (582 Merrimack Street) was erected in 1832 for one Doctor John B. Barnes. It stands just west of the Western Canal. It was refaced with buff-colored brick in the 1920s, but its side and rear walls show the original load-bearing, rubblestone construction and four-story height that earned the building the nickname "Barnes' Folly." One of the contracts for its construction is recorded in the Registry of Deeds.

It states that the structure was built to accommodate shops below and residences above.

The Union Block at the Corner of Central and Middlesex Streets and the Nesmith Block at the corner of John and Merrimack Streets employ the same basic elements as the Bank Block, but add a curved-corner motif favored by Lowell builders for decades thereafter (Figure 4-17). Its use may have been inspired at least in part by the city's irregular street plan, which results in numerous acute and obtuse-angled corners. The Union Block was built before 1832. Originally about twice the length that survives today, it shows a rather tentative use of the motif, responding to an oblique-angled intersection with a simple, rounded, right-angled plan. The Nesmith Block, built soon after 1835, adopts its acute-angled intersection precisely, and displays equivalent facades to both of the streets it faces (Figure 4-14).

The Central Street area retains more buildings of the 1821-39 period than Merrimack Street due to more intensive redevelopment of the latter. At least a dozen buildings of that period stand on or near Central Street within the District. The Old Market House (40 Market Street) is the most prominent among the dozen. It is similar in its simple Greek Revival styling to the original form of the Old Town Hall, and has received considerably less alteration. The Mansur Block at 101 Central Street bears the name of an early Lowell grocer and real estate developer (Figure 3-12). When built in ca. 1836, the building was twice its present length, extending to the corner of Market Street.

136 Central Street is a fragment of the American Hotel building, which was built and has been demolished in several stages. The portion now standing on Central Street owes its appearance to remodelings of ca. 1860-70, but an inn and tavern occupied the site much earlier, and may survive in fragmentary form in a small brick building dating from the 1830s which is attached to the rear of the main block.

Two other early hotels which retain more of their original appearances are located in the Tower's Corner area where Central and Gorham Streets meet. J. J. Turner's Hotel at 278 Central Street is a brick



Figure 3-11 The Coburn Row, 100-126 Appleton Street, built ca. 1832-34, photographed 1979.



Figure 3-12 The Mansur Block, 101 Central Street, built ca. 1836, photographed 1979.

structure, built ca. 1825. Mrs. Betsey Hildreth operated a private boarding house in the building in the 1820s. Later it was a hotel called the Union House, and still later, the Farragut Hotel. The porch and mansard roof are additions, but the outline of the double, parapet-linked end-wall chimneys are visible beneath modern aluminum siding.

The Lowell Hotel stands nearby on Gorham Street (#80) in part of a trio of early Lowell buildings that is unmatched anywhere in the Park and the District (Figure 4-19). The three-story hotel was constructed of brick ca. 1831, with trabeated granite storefronts. One of its early owners was Horace Howard, the housewright who helped build the store and "ten-footers" for Tappan Wentworth on Merrimack Street. Howard was occasionally listed in the city directories as a designer or architect, and he is known to have drawn the plans for the city-county Market House. He was also an early owner-occupant of the middle house in the Gorham Street trio (#72-76), which was built ca. 1832. This two-story double house is highly unusual for its early construction of ashlar granite. 62 Gorham Street is a two-story brick structure, built ca. 1830. Originally a house for a tailor (who had a shop elsewhere), it had storefronts by 1850, and perhaps earlier. All three buildings in this group have incurred some alterations, particularly to the ground floors, but they retain their original forms, and even more significantly, their original relationship to one another.

The Gorham Street trio originally marked the approximate boundary between the predominantly commercial district of upper Central Street, and the residential area south of it. Numerous Greek Revival houses from Lowell's early decades still stand south of the LHPD in the neighborhood historically called Chapel Hill and now known as Back Central Street.

There is an important early residence near this area and within the LHPD. The rowhouse at 100-126 Appleton Street was built ca. 1832-34 by Cyril Coburn (Figure 3-11). The facade is of brick with granite trim, while the sides and rear are of local rubblestone, a combination occasionally seen elsewhere in Lowell. The original eight dwelling units of the row were owned by individuals until the mid-1840s, when

the Hamilton Company bought up the row to house skilled workers and their families, demonstrating the compatibility of Lowell's private and corporation-built housing.

The narrow southward extension of the District along the Concord River includes some historical resources dating from the 1821-1839 period. Luther Lawrence built a brick-ended house in the early 1830s on Lawrence Street (#48). He was a brother of Amos and Abbott Lawrence, the textile merchants and financiers. Luther served as the second mayor of the new city of Lowell, before dying from a fall into a Middlesex Company wheelpit in 1839. Tappan Wentworth, a prominent lawyer and developer, later bought and remodeled the house, and his heirs occupied it into the twentieth century.

There are a few other houses of the 1821-1839 period further south on Lawrence Street related to the industrial development along the Concord River. The house at 202 Lawrence Street was built ca. 1840 near Richmond's paper and batting mills. It is a one-and-one-half story cottage with then stylish Greek Revival features such as a front-facing gable roof and a recessed entryway flanked by engaged Doric columns. The house at 8 Clarks Court, between Lawrence Street and the Concord River, is more old-fashioned with its end-wall gable roof and centered entry. It was built ca. 1834-37 by William Stickney, a carpenter who worked nearby at Whipple's Powder Mills. The other far-flung reach of the district that contains resources from the 1821-39 period is the northwest portion, on both banks of the Merrimack River along the Pawtucket Falls. The Old Stone House (267 Pawtucket Street) is the most imposing (Figure 4-34). The large rubblestone structure was built in 1824 as a hotel. Much more modest is the Federal-style house at 279 Pawtucket Street, a wood-frame structure built in 1827 for Jones Dow, a tailor. Across the river on Riverside Street, three brick houses of the 1820s or 1830s mark the small settlement that continued to develop on the Dracut side of the Pawtucket Bridge.

Among certain types of structures important in the initial development of Lowell, such as boarding houses, archeological resources may be of more

consequence than the few buildings that still stand. The Merrimack, Middlesex, and Tremont millyards and the Machine Shop yard, all major components of the Lowell Experiment, have been demolished. The potential these sites have for containing important below-ground archeological remains of the 1821-1839 period varies considerably. The Merrimack Company's mills were the first to be built, and were the most recently demolished. Only a portion of the millyard is within the District, however, and most of the included area has recently been redeveloped. The new Lowell High School Annex, under construction in 1979, occupies most of the Merrimack Company housing sites contained in the District. An office of the Union National Bank and three tall apartment towers have been built in recent years on the former millyard. Their parking lots may cover subsurface millyard remains, but this possibility cannot be confirmed without below-ground testing.

The Middlesex millyard, between Warren Street and the Concord River, actually predates Merrimack as an industrial site. A cotton-spinning mill was established there in 1813 and a wool-weaving mill before 1821. Several structures from the Middlesex Company's development of the millyard in the early 1830s survived until the millyard was razed in 1956. The parking lot pavement now covering the site is ridged and pitted, indicating uneven settling of fill over subsurface features of the old yard. Above-ground the retaining walls on the Warren Street side of the yard include parts of building foundations. On the other side of the millyard a heavy stone arch projects out of the ground near the Lower Locks of the Pawtucket Canal. The arch is related to Middlesex's raceway off the Pawtucket Canal. These features are indications of the survival of considerable below-ground remains on the Middlesex site. These remains probably relate not only to the 1821-1839 period, but to the whole history of development on that site, since the millyard underwent gradual, evolutionary change from the 1810s until demolition in 1956.

The Tremont millyard is even more promising than the Middlesex. The millyard has not been redeveloped since the demolition of most of its structures in the 1930s. Many foundations and cropped walls are visible throughout the yard. A one-story ruin of mill

and wheel house stands at the southern end of the millyard, containing four 1919-24 electric generating turbines in place. Like Middlesex, the Tremont millyard has remains from several periods of mill construction.

The Machine shop site appears to offer little in the way of accessible, below-ground remains of its early structures. The yard underwent intensive redevelopment throughout its productive years, sacrificing the majority of its earliest fabric to expansion until the yard was razed in the early 1930s. Much of the yard has been redeveloped, and the parking lots on the remainder do not reveal uneven settling suggestive of below-ground foundations.

Other millyards have undergone more selective demolition. Among them, the Hamilton millyard may contain below-ground remains of some interest. A print works was constructed on the eastern end of the millyard in 1830, and its structures were demolished in 1935 and 1936. Photographs taken during demolition show substantial footings and foundations still in place when the filling of the site began, which must still exist today.

The importance of company-owned boarding houses to the comprehensive planning of Lowell and the paucity of surviving examples enhances the significance of any archeological remains of these structures. There are numerous boarding house sites that have not been redeveloped. Robert Schuyler's excavation in 1977 of Merrimack Company boarding houses, now the site of the new High School annex, adds to knowledge of the daily lives of Lowell mill operatives. Four Boott Mills boarding houses were demolished in the 1930s and their sites are used as paved parking lots. The site of the parking lot east of Elliot Street and south of Jackson contained Hamilton Company boarding houses until ca. 1930, and has not been redeveloped. Lawrence Company boarding houses stood on the block bounded by Hall, Perkins, Suffolk, and Cabot Streets, and most of that area is now paved and used for parking.

Elsewhere in the District, some secondary industrial sites potentially contain significant 1821-39 remains, though redevelopment affected many of these sites. The Belvidere Woolen Company millyard opposite the

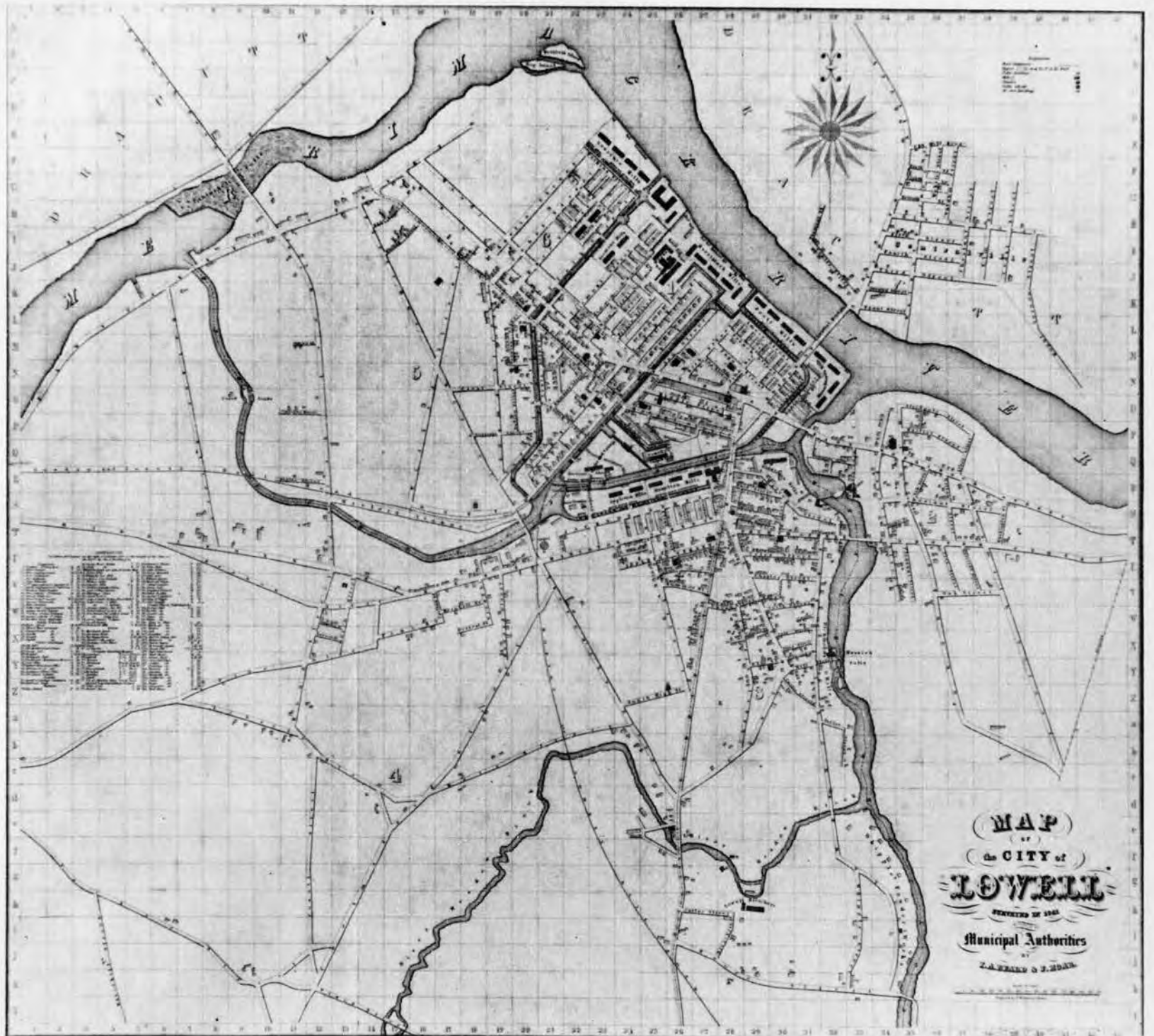
Middlesex Company site across the Concord River was largely razed in the 1930s, except for one last Company storehouse at the foot of Chestnut Street, which was recently removed. Many of Belvidere's buildings still standing in the early twentieth century dated from the 1850s, but the industrial use of the site and some of its structures dated to development in the 1820s and 1830s. A parking lot now covers the site, and it is uncertain how extensive below-ground features might be.

The site of Richmond's paper and batting mill, established in 1836, has been cleared of buildings except for a ca. 1850 storehouse and a ca. 1870 mill. On the rest of the site, the grade has been changed through the addition of fill, beneath which there could be remains of the earlier millyard.

Whipple's Powder Mills were active throughout the 1821-1839 period. The area was extensively redeveloped in the later nineteenth century, leaving a single rubblestone building of the old powder works, and probably little potential for the survival of other 1821-39 material, even below the ground.

The unfolding of the "Lowell Experiment" from 1821 to 1839 was and is still viewed as a period of astonishingly rapid growth and achievement. The streets and canals built in that period determined the urban form framework of central Lowell. While most of the early buildings are gone, several mills, a few agent's and boarding houses, and many commercial and institutional buildings are still in use within the Park and District. Over the next twenty-five years, the city grew substantially within the industrial city plan already established.

Figure 3-13 "Map of the City of Lowell" in 1841, by Beard and Hoar.



THE EXPERIMENT EXPANDS: 1840-1865

History

The severe economic depression that struck the United States in 1839 checked but did not halt the rapid growth of Lowell and the Lowell textile corporations. The population of nearly 21,000 in 1840 exceeded 33,000 in 1850 and neared 37,000 in 1860. The slowed growth in the 1850s reflected the national economic troubles of the mid-'50s. The spindles turning in the city more than doubled between 1843 and 1868, from about 200,000 to over 450,000.

Massachusetts Cotton Mills, chartered in 1839, proceeded with the construction of its mills despite the 1839 depression, pressing the first one into production by 1840. The depression years were even profitable at Lowell Manufacturing Company, where an ingenious employee named Erastus Bigelow succeeded in developing the first power loom for carpets between 1839 and 1842. Of broader importance to the future development of the city were the studies of the power canal system commissioned by the directors of the Proprietors of Locks and Canals. In 1839 James F. Baldwin carried out an assessment of the system, and in 1840 James B. Francis, the British-born chief engineer of the Proprietors of Locks and Canals, repeated the study and concurred with Baldwin's conclusions. As Locks and Canals had hoped, Baldwin and Francis proved that the various corporations were drawing considerably more water than allocated under the terms of their mill power contracts. On the basis of this evidence, the Proprietors of Locks and Canals renegotiated the agreements with the corporations, increasing the number of mill powers for which rents were paid from about sixty-five to nearly ninety.

Both Baldwin and Francis reported that the system was operating at its maximum capacity. They found that the canals were carrying so much water that it created turbulence which depleted available power. In the dry months, several of the companies, especially Lawrence, Suffolk and Tremont Mills on the Western Canal, were not receiving the water they needed. The engineers' major recommendation was that another canal be built to supplement the Pawtucket Canal and that water rights upriver be bought. The new canal's course would run parallel to the Pawtucket Falls before turning inland. It would be a costly project,

and it was not until the mid-1840s that the decision was made to dig the canal.

The final sale of a mill site on the Lowell canal system was made before the Northern Canal was begun. In 1844, the Prescott Manufacturing Company was chartered and it purchased a lot between the Eastern Canal and the Concord River south of the Massachusetts millyard (Figure 3-13). From the start, the investors in the Prescott Company overlapped with shareholders of the Massachusetts Mills, and in 1847 Massachusetts bought out Prescott.

In 1844 Uriah Boyden, James Francis' assistant at Locks and Canals, installed and tested an experimental turbine in an Appleton Company mill. Francis witnessed the tests, and was convinced of the superiority of the turbine over the breast wheels used by all of the Lowell mills. Turbines produce more useable power with a given amount of water than breast wheels, and occupy far less space. Turbines are also less subject to variable water conditions than wheels. Francis' endorsement caused most, if not all, new mills built in Lowell after that time to be powered with turbines and the gradual conversion of existing mills. Boott Mills, for example, installed turbines in the massive mill it built in 1847-49, and by 1859 had replaced all the breast wheels in its earlier mills (Figure 3-14).

It was the corporations' eagerness to expand that spurred both the plans for the new canal and the concern with making the most efficient use of the available water power. In 1845 the Lawrence Company began construction on a new mill over 250 feet long, the Merrimack Company was building a mammoth new mill, and the Hamilton Company started work on a mill over 300 feet long. The standard length of the Lowell mills of the 1820s and 1830s was 150 feet. In the Suffolk, Tremont, Hamilton, and Appleton millyards, mills were constructed which linked pairs of existing structures, an action made feasible in part by advances in fireproofing technology. The connector mills were generally more richly detailed than the mills they linked, and were designed to appear as central pavilions of long, freestanding mills.

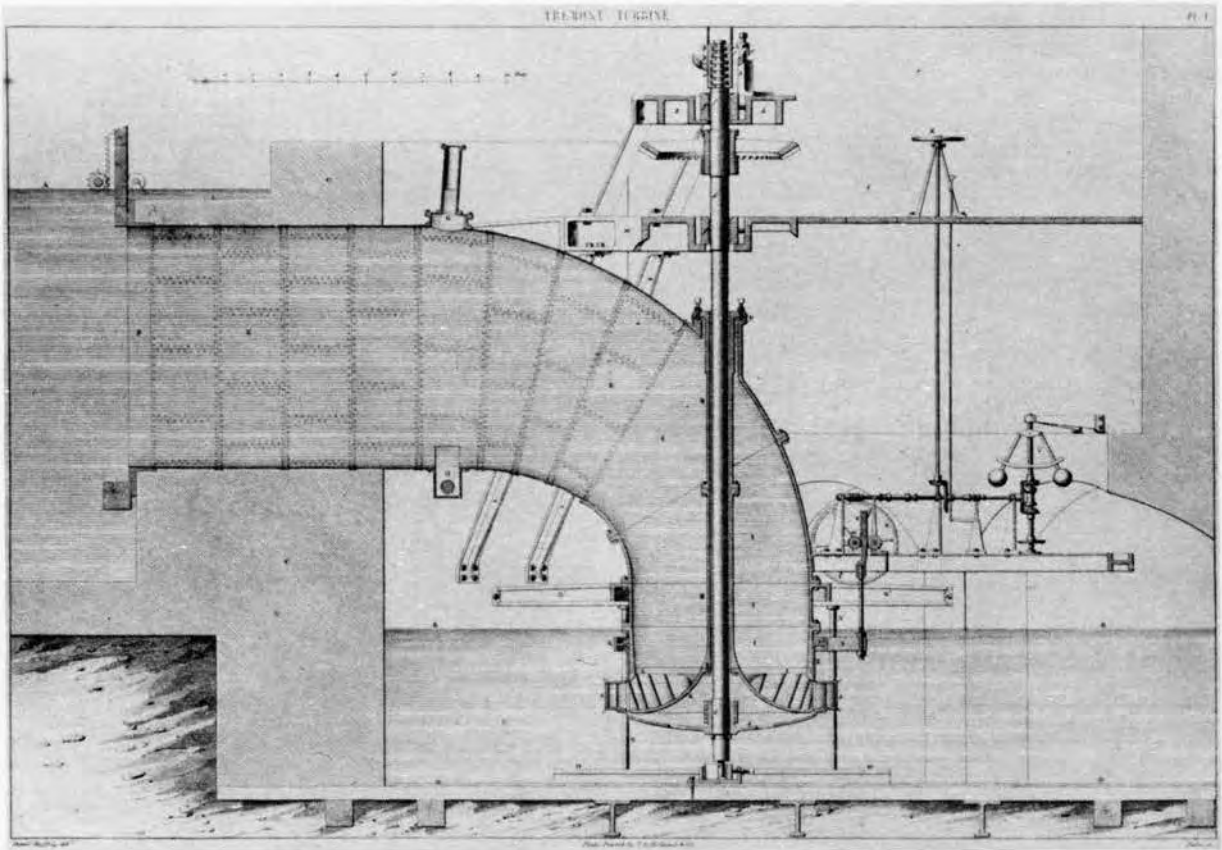


Figure 3-14 "Tremont Turbine." Plate I in James B. Francis' Lowell Hydraulic Experiments, 1855.

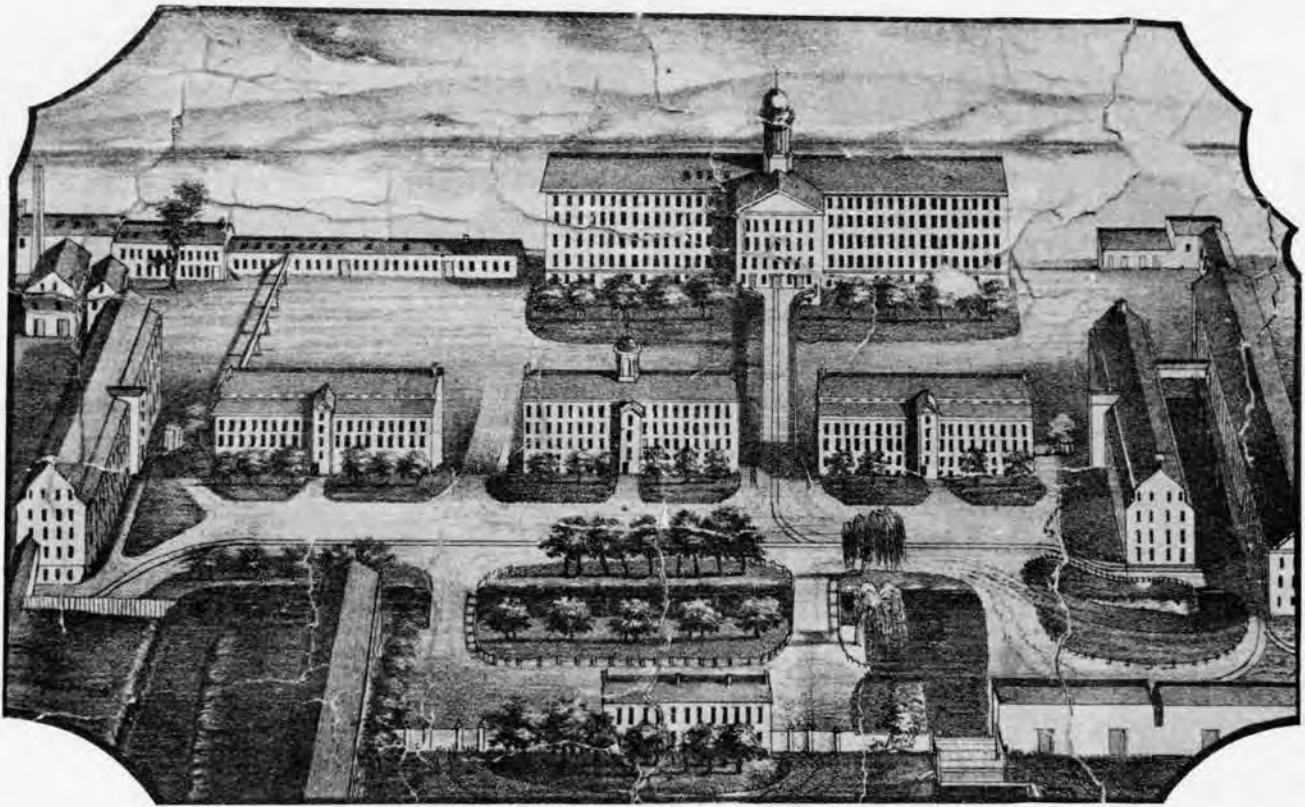


Figure 3-15 Millyard of Merrimack Manufacturing Company, 1850. From "Plan of the City of Lowell" by Sidney and Neff.



Figure 3-16 Boott Mills, 1850. From "Plan of the City of Lowell" by Sidney and Neff.

In 1845, the Proprietors of Locks and Canals initiated the Northern Canal construction. They capitalized the project by selling at auction the many undeveloped parcels of land they still owned throughout central Lowell, and also sold the Machine Shop to a new corporation, chartered as the Lowell Machine Shop. Nearly \$500,000 were raised by these sales, approximately the amount spent to build the Northern Canal.

Agents for the Proprietors of Locks and Canals acquired lands and water rights in New Hampshire in 1845. The purpose of these acquisitions, and of the various dam building and channel development projects that followed, was to augment the flow of the Merrimack River in the dry summer months by using New Hampshire lakes as reservoirs.

After the Proprietors of Locks and Canals sold the Machine Shop and the undeveloped real estate, the corporation itself was purchased from its former shareholders by the textile companies for \$600,000. It was reorganized into a service corporation whose sole function was to maintain and operate the canal system for the various companies. The Proprietors of Locks and Canals on Merrimack River's time as "The Shop that Built a City" was over. In this modified form, it began the construction of the Northern Canal in 1846, under the direction of J. B. Francis. Within two years, a channel 4,374 feet long, 100 feet wide, and 20 feet deep was built (Figure 3-17). Much of the canal had to be cut through bedrock, while the portion along the Pawtucket Falls was carried behind a high wall footed on ledge that was submerged beneath the river when the project began.

The building of the Northern Canal was the most dramatic engineering feat in the industrialization of Lowell. The course of the canal parallels the Merrimack River along the Falls, then turns inland just above the river's bend and runs southeast to meet the Western Canal. The Northern Canal supplied water power to the Suffolk, Tremont and Lawrence millyards, all formerly served by the Western Canal. The Northern Canal's waters reversed the direction of the flow of the western Canal at their junction, turning the older canal into a feeder back to the Swamp Locks basin. Under Moody Street a tunnel was constructed in 1847 connecting the Western to the Merrimack Canal, supplying additional water from the Northern

to the Merrimack Company's millyard. A smaller underground tunnel was built in 1848-49 connecting the Merrimack and Eastern Canals, to increase the water at the end of the latter canal where maintaining adequate water levels had previously been difficult.

Francis carefully evaluated the flow of water through the revamped system and on the basis of his findings the Locks and Canals Company was able to increase the number of mill powers sold to the corporations (for which an annual maintenance fee was received) from ninety-seven to one hundred thirty-six. Additional water was available for a set fee during the months when the Merrimack River ran high.

In the course of his study of the reworked canal system, Francis discovered what he felt was a considerable threat to the city. The construction of the new Northern Canal and its gatehouse, and a simultaneous widening of the abutments of the Pawtucket Bridge partially obstructed the flow of the Merrimack River over the Pawtucket Falls. Francis determined that in the event of flooding, these new obstructions would divert a destructive torrent down the Pawtucket Canal and into the center of the city. Between 1848 and 1850 he directed a complete rebuilding of the upper Guard Locks including a massive wooden guard gate that could be dropped against a flood. His calculations were questioned and the guard gate was derided as "Francis' Folly" until 1852, when the gate held back flood waters that exceeded any in living memory.

The increased water power gained by the construction of the Northern Canal was eagerly put to use by the mills. The Prescott Company built a weaving mill and a spinning mill in 1846, each over two hundred feet long. The Middlesex Company built a new mill in 1846 enabling it to double its production by 1849. Boott Mills began construction of No. 5 Mill in 1847 which stretched five hundred feet along the riverbank. No. 5 Mill was powered by turbines from the time of its completion in 1849, increasing the millyard's capacity by sixty percent. A new weaving mill and other buildings were erected by Lowell Manufacturing in 1848, to utilize the new Bigelow power loom for carpets.



Figure 3-17 Aerial view of the Northern Canal, 1979.

Massachusetts Mills built a "Union Mill" in 1851 that linked two of its four original mills, and the Lawrence Company built a pair of connecting mills in 1854 and 1855. These connecting mills were all decidedly Greek Revival in style, each crowned by a gable roof treated as a broad pediment. Massachusetts Mills broke new stylistic ground in 1862 when its second connecting mill was built in the Italianate style, with segmental hoods over the windows and octagonal stair towers (Figure 4-8).

Corporation housing reflected the dramatic increase in scale as well. In the mid-1840s, the Merrimack Company replaced six of its wood-frame, two-and-one-half story double houses with one massive brick "New Block" three-and-one-half stories in height (Figure 3-39).

Reflecting the growth of the textile mills, the newly-independent Lowell Machine Shop underwent a major expansion in the late 1840s. Among its new products were steam boilers, which supplemented and eventually supplanted water power as Lowell's main source of motive power.

The major corporations and the canal system were not the only aspects of the city which grew substantially in the 1840-1865 period. In 1846, the same year "Whipple's Best Powder" was blasting out bedrock along the course of the Northern Canal, Oliver Whipple was rebuilding and lengthening his own canal on the Concord River. In its new form the canal generated about 500 horsepower. Rather than undertaking a major expansion of his own powder works, Whipple opted to rent mills along his canal to a variety of manufacturing enterprises and to sell water power to his tenants. A bolt factory, a print shop, carpet manufacturers, bobbin makers, dye houses, and others quickly established themselves in "Whipple's Mills." Whipple sold his powder works in 1855 to a bolt factory, but the thriving industrial community along the canal continued even after his active involvement ceased.

A new mill was built in 1854 by Belvidere Woolen Manufacturing Company on the east side of the river opposite the Middlesex millyard. Belvidere Woolen was incorporated only a year before, but its millyard had been the site of small mills since the 1810s. The new three-story brick mill measured only fifty-one feet by ninety feet.

The city's pattern of rapid population growth continued through the 1840s. The 1840 population of 21,000 swelled to 33,000 by 1850, exerting great pressure on Lowell's housing supply. When the Locks and Canals Company auctioned its real estate in 1845, the lots were snatched up immediately and almost as quickly built upon, mostly with houses for the burgeoning population. The area between Merrimack Street and the Boott Mills boarding houses, nearly vacant in 1841 (Figure 3-13), was solidly built by 1850 with churches, schools and houses, most of brick or stone. The city bought two sizable parcels northwest and south of the city center, designating them the North Common and South Common respectively. Housing rapidly surrounded them, along with a forbidding new jail and a courthouse building at the South Common.

A health report written by a Lowell doctor named Josiah Curtis in 1849 describes seriously overcrowded living conditions in the central area of Lowell. Curtis makes mention of both the Acre neighborhood and the Middle Street area as especially congested and unhealthy. Lowell's foreign-born inhabitants, a group constituting roughly one-third of the population by the mid-1860s, suffered from particularly poor living conditions.

Most of Lowell's early immigrants were Irish who continued to reside in the Acre around St. Patrick's Church. Much of that area had been unavailable for purchase before the 1840s, forcing the Irish to squat there in crude shelters. The Locks and Canals Company land sale of 1845 and a resolution of a decades-old dispute over land ownership finally put the Acre's house lots on the market. More substantial housing was quickly built, though overcrowding apparently remained a problem. The Irish community's increasing numbers as much as increasing wealth per capita may explain its ability to replace the wooden St. Patrick's Church of 1831 with a massive stone church begun in 1854.



Figure 3-18 "View of Merrimack Street, Lowell, Mass." in 1856.



Figure 3-19 View from the east along Merrimack Street, 1979.

The city's commercial districts along Merrimack and Central Streets followed the general trend toward larger buildings (Figures 3-18 and 3-19). Both of those streets were considerably built up before 1840, but after that date the redevelopment of lots began. In 1846, Boston investors built a new commercial block on the corner of Kirk and Merrimack Streets, replacing a brick structure previously on the site. The curved-corner Welles Block (175 Merrimack Street) resembles the commercial buildings of the 1830s in materials and general form, but differs from them in scale. The three stories of the Welles Block stand considerably taller, for instance, than the three-story Nesmith Block, built ca. 1836.

The Nesmith Building constructed ca. 1844 on John Street next to the corner Nesmith Block represented a bolder departure in both scale and style (Figure 4-14). Its taller three stories tower over the three of the corner block, and the building is Italianate in style rather than the familiar Federal/Greek Revival style. Perhaps for the first time on a Lowell commercial building, Italianate corner quoins, bracketed cornice, round-headed windows, and segmental-arched storefronts replaced the severe detailing, flat stone lintels, and trabeated granite ground floors of Lowell's earlier commercial buildings.

This shift in scale and in style is clearly illustrated by the first two "manufacturing laboratories" James C. Ayer built to house his prospering patent medicine business. The first, built in 1852 on Jackson Street (#28), was a brick structure of three stories, with an end-wall gable roof and flat granite lintels and sills above a trabeated granite ground floor. Ayer's business was growing so fast that by 1858-59 he built a new headquarters on Market Street across from the millyard of Lowell Manufacturing (#165, Figure 3-22). That building stands in marked contrast to the Jackson Street structure in scale, with its greater length and four-story height, and in style, with its Italianate cornice and flat roof, cast-iron storefronts, and segmental-arched windows with decorated brickwork caps. Those caps in particular were a hallmark of Lowell buildings, particularly industrial buildings, for decades.

Lowell annexed Centralville in 1851, prompting public purchase of the Central Bridge in the mid-1850s. The former Dracut neighborhood continued to be predominantly residential.

The city government was growing as well, and in 1853 a joint effort of the city government and the Boston and Lowell Railroad replaced the outgrown, original train depot at Dutton and Merrimack Streets with a much larger station. It was commonly called Huntington Hall, after one of the two public meeting halls it housed along with space for city government offices and the train station. It spanned the block between Dutton and Shattuck Streets, at Merrimack Street.

The city's and the corporations' growth slowed in the mid-1850s, when the Depression of 1857 disrupted the economic life of the whole country. In the decade between 1845 and 1855, the number of spindles operating in the Lowell mills had doubled from 200,000 to 400,00. In the next ten years, a relatively modest 50,000 spindles were added in the city. The effects of the mid-fifties downturn were also reflected in the 1860 census, which counted 36,000 Lowell residents. That number represented an increase of ten percent over 1850, compared to population growth of nearly fifty percent during the 1840s.

Lowell's population actually dropped between 1860 and 1865, falling to 31,000. The drafting or enlistment of young men into the army was one cause. Two Lowell soldiers, Luther C. Ladd and Addison O. Whitney, were the first casualties of the Civil War when they were killed in Baltimore in April, 1861. Another cause of Lowell's decline in population was that most of the Lowell textile corporations severely curtailed production or shut down entirely during the Civil War, once they ran out of their basic raw material, cotton from the American South. Ten thousand operatives were reportedly dismissed. Some of the corporations attempted at considerable expense to convert from cotton to woolen production, but these attempts were generally costly failures, at least in the short run.



Figure 3-20 View from the southeast
in the Boott millyard, ca. 1870.

Several of the corporations used the war years to carry out major rebuilding campaigns in their mill-yards, demonstrating the corporations' pre-war profitability and their confidence in post-war recovery. As mentioned, Massachusetts Mills built a second connecting mill in 1862. Boott Mills closed down three times for rebuilding and improvements between 1861 and 1863. New construction in that millyard included connecting mills with new stair towers between both of its pairs of original mills, and a large new Cotton House (Figure 3-20). Upper floors were also added to a number of Boott buildings, including No. 5 Mill. Appleton added a fourth mill to its millyard in 1861. Both Suffolk and Tremont Mills took down their original mills in 1862, and rebuilt long new mills in their places.

Woolen mills flourished during the Civil War because of the continued availability of wool and the wartime need for woolen products such as blankets and cloth for uniforms. The Middlesex Company, the only major Lowell corporation originally to specialize in woolen goods, had collapsed financially in 1858 due to mismanagement and the Depression of 1857. Reorganized and recapitalized, largely by the drug manufacturer J. C. Ayer and Benjamin Butler, a Civil War general, the Middlesex Company built a large new mill and other buildings in 1862.

Belvidere Woolen found its site opposite Middlesex too constricted for expansion, and in 1862 erected a whole new complex further upstream on Whipple's Canal. Within the next two years, three new enterprises built woolen mills along Whipple's Canal. Charles Stott, Belvidere Woolen's agent, owned one of the companies, while the others belonged to Alfred Chase and L. W. Faulkner.

Another expression of confidence in the city's future was the chartering of the Lowell Horse Railroad Company in 1863. It inaugurated service in 1864 on four miles of tracks through the city streets, laid at an investment of nearly \$70,000.

The post-war years fulfilled the expectations of a return to growth and productivity, and in the ensuing decades much of the historic fabric of present-day Lowell was built. The 1840-1865 period is also

well represented in the modern city, however, as described below.

Historical Resources

The Park and the District include seventy-eight structures built in the 1840s and forty-five built in the 1850s, reflecting the effect on construction of the Depression of 1857. Only twenty-seven buildings of the 1860s were inventoried, but these include many major industrial buildings.

The foundation of Lowell's continued expansion in the 1840-1865 period was improvements in the canal system, and the greatest of those, the Northern Canal of 1846-47, is the premier historical resource surviving from that period in Lowell. Its Gatehouse and Great River Wall are particularly handsome utilitarian constructions (Figures 3-17 and 4-33). The Francis Gate complex on the upper Pawtucket Canal is not an engineering masterpiece on the order of the Northern Canal, but the careful observation of the interaction of natural and man-made factors that prompted James B. Francis to build the Guard Gate exemplifies the foresight and the scientific methodology brought to his work on the canal system. The Moody Street Feeder, and its controlling Merrimack Gatehouse, both built in 1848, typify the increased complexity and efficiency of the revamped canal system.

The canal started by Oliver Whipple in the 1820s and expanded in 1845 is the District's most intact water power feature outside the main canal system. The present form of that canal, which runs north beside the Concord River and then turns ninety degrees west to parallel Hale's Brook emptying into that stream, is largely a product of the 1840s. Most of it is within the LHPD, but a portion near Hale's Brook is not.

Most of the structures built by the major corporations between 1840 and 1865 have been lost due to millyard redevelopment or to twentieth century demolition, but several typical examples do survive. Hamilton's Mill #4 of 1846 most clearly represents the new long mills first built in the 1840s. A top floor with segmental-arched windows was added in the 1880s, but the rest of the floors display granite sills and lintels. Unlike the rectangular lintels used in preceding decades,

these are slightly peaked. They also project forward from the wall plane, and rest on projecting granite blocks. All of these modifications are Greek Revival in flavor, and they contribute to a livelier wall surface than seen on mills of the 1820s and 1830s.

In the Boott millyard, the No. 5 Mill of 1847-49 still extends most of the combined length of the four original mills. Several of the alterations to that mill, including modification of its central pavilion and addition of an upper floor, probably were made during the Civil War. Conspicuous Civil War-era additions in the Boott millyard are the connecting mills between the pairs of original mills, and the wooden stair towers which flank those connector mills. One of those four towers has been removed, and the other three have lost their capping balustrades, but the clock and belfry atop the tower flanking No. 2 Mill remain a major landmark in the city. (Compare Figures 3-20 and 4-7.)

At the Lawrence millyard one of the two connecting mills (Mill No. 7) built in the mid-1850s still survives. Its Greek Revival detailing like that of the Massachusetts Mills' 1851 "Union Mill" (Mill No. 5), provides an interesting contrast to the other Massachusetts connecting mill (No. 6), built in 1862 with Italianate detailing. The Boott connecting mills of the early 1860s are rather Greek Revival in their heavy use of granite, but have decidedly Italianate stair towers.

The single Merrimack Company building that still stands dates from ca. 1860. The Yorick Restaurant on Dutton Street at (#91) Merrimack Street was built to house Merrimack Company employees. It originally contained three tenements or apartments and probably accommodated executives or overseers and their families.

The 1840-1865 period was one in which private and small corporate industrial enterprises grew in number and size. Structures representing a cross-section of these still stand in the LHPD. Some of these factories produced supplies used by Lowell's textile giants. One of these was D. C. Brown's handsome rubblestone Reed Factory that still stands on Church Street (#242) at the corner of Warren Street. It was built in

three stages between 1840 and 1853, for the manufacture of reeds, heddles, harnesses, and other power loom parts and accessories.

James C. Ayer's patent medicine business was unrelated to the textile corporations, unlike Ayer himself, who published criticisms of corporate mismanagement and made substantial investments in Middlesex and other corporations. All three of the buildings constructed for his business still stand, including the two already discussed which date to the 1850s. Twenty-eight Jackson Street of 1852 was subsequently raised a fourth story, and 165 Market Street of 1857, was lengthened by a few bays in the early 1860s (Figure 3-22).

The introduction of gas lighting was an event of considerable importance to mid-nineteenth century Lowell. Replacing smoky whale oil lamps, gas light improved health conditions in the poorly ventilated mills. The gas illumination of the city streets in 1850 was a source of civic pride. The gasworks on School Street north of the Pawtucket Canal were constructed in 1849. One of the two striking stone and brick buildings in that yard dates to ca. 1865. The headquarters of the Lowell Gas Light Company at 22 Shattuck Street, built in 1859, is a late example of Lowell's favorite rounded-corner form (Figure 3-21), updated through an increased use of decorative brickwork and decreased reliance on stone trim. The windows are segmental-arched with brickwork hoods, and the building is topped with an arched, corbelled cornice.

Only one of the Civil War-era woolen mills on Whipple's Canal still survives, Mill No. 2 (645 Lawrence Street) of the Belvidere Woolen Company (Figures 4-26 and 4-27). Built of brick in 1862, Mill No. 2 is conservative in its use of rectangular granite lintels. Except for the major loss of the mill's unusual gambrel-with-double-clerestory roof, which was replaced when an additional story was added in the 1880s, this modest-sized establishment is remarkably intact. The storehouse, mill, stair tower, and power house all still stand. The LHPD boundary extends through this complex, excluding the mill itself while including the others.



Figure 3-21 Lowell Gas Light Company, 22 Shattuck Street, offices of the Lowell Historic Preservation District Commission. Built 1859, photographed 1979.



Figure 3-22 J. C. Ayer & Co. Building, 165 Market Street, built ca. 1858, photographed 1979.

The number of commercial and institutional structures still extant within the LHPD from the 1840-1865 period is surprisingly small, though several of these structures are noteworthy. The reasons for this paucity are unclear, although the Depression of 1857 and the Civil War must be factors. In addition, the 1845 Locks and Canals Company land auction was more a spur to residential development than commercial, since few of the parcels were located on the main commercial streets.

The Wentworth Block, built ca. 1844, faces the intersection of Merrimack (#256) and Shattuck Streets with a curved corner. Its mansard roof was probably added following an 1865 fire. Down Shattuck Street from that building, The Lowell Institution for Savings Building of 1845 (18 Shattuck Street) was substantially altered in the early twentieth century and again recently, but it retains its Greek Revival cast-iron balcony and basic, twin curved-corner form. The Welles Block of 1846, has also been somewhat altered in the early twentieth century and recently, but its sweeping curved corner remains the boldest in Lowell.

The Nesmith Building presents dual facades on Merrimack (#65) and John (#25-35) Streets. The L-shaped plan cradles the corner Nesmith Block (Figure 4-4). The John Street side was built first in ca. 1844, and may have introduced Italianate motifs to Lowell commercial architecture. At least one of its original storefront arches survives, and more may exist beneath later coverings. The Merrimack Street portion, built about ten years later and linked behind the corner block to the John Street building, has lost half of its originally symmetrical facade, and the first and second floors have been substantially altered as well.

Two other commercial buildings of the 1840s are relatively reserved in their handlings of corner sites. Simpson's Block, now called the Kearney Square Building (1-5 Merrimack Street), occupies the short block between Paige and Merrimack Streets on Bridge Street. Built ca. 1847, its unadorned brick walls trace the angles of the intersections. Its most striking features are the rubblestone rear walls. One hundred two Central Street is a similar structure of about the same date. Called Martin's Building, it is brick

throughout. Its greatest asset is its site alongside the Pawtucket Canal, though a low storefront now bridging the canal hides this relationship.

The District includes a pair of schools and a pair of churches from the 1840s and 1850s. The Worthen Street Methodist Episcopal Church at 200 Worthen Street is now the Lowell Girls' Club. The church has been considerably altered since its 1842 construction but retains the basic form and some of the detailing typical of Lowell's wood-frame, Greek Revival churches. The west end of the Shrine of St. Joseph the Worker at 37 Lee Street was built in 1850 as the Lee Street Church, a Gothic Revival edifice in rubblestone with granite trim.

The little brick building at 138-140 Middlesex Street is the Elliot School of 1845, now nearly hidden by siding and wings (Figures 4-22 and 4-23). The Colburn School at 122 Lawrence Street is much more visible. Its simple, Greek Revival form is typical of Lowell public buildings of the 1830s and 1840s. Built in 1846, the Colburn is the oldest school in Lowell still serving its original function.

Among the houses in the LHPD built between 1840 and 1865, the ones located in the areas sold in the 1845 Locks and Canals Company land auction can be discussed as a distinct group. Before the sale, streets such as Worthen Street north of Broadway (then called Mechanics Street) and Middle Street were developed with individually owned houses. Two hundred eighty-four Worthen Street was built ca. 1840 for Erastus Douglass, a bobbin maker in the Locks and Canals Company sawmill and bobbin factory near the Machine Shop. A double house of brick with granite trim, it was owned and occupied by Machine Shop employees throughout the nineteenth century. At 222-224 Worthen Street next to the Methodist Episcopal Church there is another double house built of wood ca. 1850. With its broad facade gable and classical ornament around the entry, it is a residential version of its ecclesiastical Greek Revival neighbor.

Middle Street was another area that was built up with houses in the 1830s and 1840s, but a subsequent redevelopment in the 1880s and 1890s replaced almost all of them. The exception is a three-story brick

building at 194 Middle Street. Built ca. 1844 and owned by Charles Hovey, an apothecary with a shop in City Hall, it probably originally was rented as residences, though it was occupied by stores and small manufacturers' shops.

The land sale of 1845 touched off very rapid residential development in several areas. Both sides of Kirk Street from Merrimack Street to French Street were quickly built up, and on the east side several houses survive in various states of preservation. The most important and intact is the double house built in 1846 by the Boott and Massachusetts Mills to accommodate their agents. That site was actually purchased for those corporations shortly before the general auction. Designed by local architect James H. Rand, the house follows the long-established pattern favored for Lowell corporation-owned residences, consisting of the end-wall gable form with twin parapet-linked chimneys and rectangular stone sills and lintels. In this case, the status of the occupants was acknowledged by the generous proportions, the use of newly popular brownstone rather than granite, and such details as the broad stone enframements of the entries.

South of the Agents' House on Kirk Street are two more brick blocks built after the 1845 sale and before 1850. Forty-five to forty-nine Kirk Street consists of three dwelling units, rather than two, but adopts the same general form as the Agents' House of end-wall gable roof, twin, linked chimneys, and two-story height. Twenty-one to twenty-nine Kirk Street, a far more damaged row, contained six dwellings. Only the northernmost two remain in residential use with the rest of the row serving as storage space for a nearby department store. Originally the northernmost three units were three stories tall and flat roofed, and the southerly trio were two-and-a-half stories tall with an end-wall gable roof. Nearby on Paige Street (#29-31), two units of a row built soon after the land sale exemplify a modest version of brick houses of that time.

Away from the central Kirk-John Streets area, most of the land sale houses which remain are more modest wooden structures, though the double house at 39-41 Moody, built before 1850, is a substantial

brick structure. More typical is the story-and-a-half wood-frame house at 44 Race Street, built soon after 1845, and a double two-story house at 120 Cabot Street, also built of wood at about the same time. Both are Greek Revival in their facade gable form, and they bear vestiges of ornament characteristic of that style. The Race Street house is one of a trio of similar cottages, the remainder of which stands just outside the LHPD boundaries.

As mentioned, the land sale was only one spur to development in the Acre. Settlement of the long-standing legal dispute over the ownership of the area made numerous lots available for purchase and improvement. Some houses along Suffolk and Adams Street (Figure 4-13) remain from the development that followed. On Marion Street, just north of Broadway Street, a story-and-one-half Greek-Revival cottage faces a low shed across a granite-paved driveway. That house, the shed, which was cut down from a similar cottage, and the paving are all that visibly survive of Donohoe's Court which was built ca. 1847-1852. It contained fifteen dwelling units in four buildings. The extant remnants symbolize the achievement of the Irish immigrants as they worked their way out of the terrible conditions of the early Acre.

One of the potentially most significant archeological resource within the LHPD from the 1840-1865 period is the site of Donohoe's Court in the Acre. Above-ground only half of one of four buildings and the cut-off remnant of another still stand. However, the other structures were removed only in recent years, and none of the site has been redeveloped. The building of the Court in the late 1840s and early 1850s perhaps eradicated any remains of earlier huts which might have stood on the site, but recovering domestic remains of even mid-nineteenth century vintage would add to our knowledge of the daily life of Lowell's Irish settlers. Such information could be compared with Robert Schuyler's findings on boarding house sites.

Other potential archeological sites dating to the 1840-1865 period are more difficult to assess. The Belvidere Woolen Manufacturing site on the east bank of the Concord included a mill built in the 1850s which was demolished in the twentieth century, but

as mentioned in the discussion on the preceding period, the degree and condition of remains on the Belvidere Woolen site are uncertain. The pitted parking lot over the former Middlesex millyard is a clearer indication of potential subsurface remains which must include the footings of the No. 2 Mill built there in 1862. The Prescott millyard was primarily a product of 1840s development, but the conspicuous fragment of a building which forms the retaining wall on the Concord River side of that site is a remnant of the 1911 Power House. Other remains of that yard may survive beneath the parking lot pavement.

On Whipple's Canal the sites of the Civil War-era woolen mills were redeveloped in the 1880s. The American Bolt Company bought one of Whipple's powder mill buildings and converted it for its own use. The building still stands, but American Bolt's additions are in ruins. The site may contain remains of early powder production as well as early bolt manufactory.



Figure 3-23 Detail of "Birds Eye View of Lowell" in 1876, by Bailey and Hazen.

THE INDUSTRIAL CITY MATURES: 1866-1893

History

The Lowell cotton mills were quick to resume full production following the Civil War, and the city began again the kind of rapid growth that characterized its early decades. After the wartime low of 31,000, the population reached nearly 41,000 by 1870. The next decade brought the largest increase recorded for any ten years before or after, a jump of almost 19,000 to nearly 60,000. Growth in the 1880s was also substantial, with over 77,000 residents recorded in the city in 1890.

Some of the increases in population were tied to the substantial annexations of this period. Three annexations in 1874 more than doubled the city's acreage. Two hundred acres of Belvidere were annexed from Tewksbury. Chelmsford gave up over 1,000 acres at the west side of Lowell, including Middlesex Village at the head of the defunct Middlesex Canal. The largest annexation added over 2,000 acres that had been in Dracut, including both Pawtucketville and more of Centralville. Another section of Belvidere was annexed to Lowell in 1888.

While this pattern of rapid growth is familiar in Lowell's history, there were three important changes taking place in the post-war city. First, the work force of the mills was changing from a group mainly composed of young women from New England, who worked in Lowell to earn cash wages for a few years, to a permanent operative class made up largely of immigrants. These immigrants had no nearby families and farms to which they could return in times of layoffs and wage cuts. The Irish first came to Lowell in relatively small numbers in the 1820s to work as laborers. Refugees of the potato famine swelled the ranks of the Irish in Lowell in subsequent decades, and by the 1840s there were Irish women working as operatives in the mills. The Yankee operatives remained in the majority until the Civil War. However, by 1863 two thirds of the births in Lowell were described as "of foreign origin" reflecting both the size of the immigrant community (perhaps as large as one-third of the population) and the large component of unmarried women workers in Lowell's native-born population.

Writing in 1856 the Lowell chronicler Charles Cowley stated that a great virtue of the city was that it had no permanent operative class, that..."a majority of our operatives were not born as such, and do not die as such." When he wrote again of Lowell in 1868, Cowley already recognized "...that our operative population has become less migratory." Cowley was observing that many of the workers employed in the mills after the Civil War were French-Canadians, replacing Yankee operatives who went home when the mills shut down or reduced production during the war and did not return.

The French Canadian community was large enough by 1868 to purchase its own church, the former Lee Street Church off Kirk Street. The church was renamed St. Joseph's, and French-speaking Oblate Fathers made up the staff. Most of the French Canadians lived in a single, crowded district called "Little Canada," located north and west of the Lawrence millyard, within the great bend in the Merrimack River.

A second evolutionary change in the city's previous pattern of development was the wide adoption of steam power by the major corporations to supplement water power. A steam engine had been tried unsuccessfully in the Prescott millyard in the late 1840s, and steam power was successfully used at Lowell Manufacturing by 1848. After the war, steam was the power source that allowed the mills to continue to grow, and by 1885 steam engines supplied more horsepower to Lowell manufacturers than did water power.

The third key difference between the pre-war and post-war city was that, while the major textile corporations remained the dominant economic resource of the city through the nineteenth century, other industries, commercial interests and political forces came into their own, beginning with the incorporation of Benjamin F. Butler's Wamesit Power Company in 1865 and culminating in the dedication of the new City Hall in 1894.

If Kirk Boott was the most conspicuous figure in Lowell's initial development and James B. Francis the guiding spirit behind its continued growth in the 1840s and 1850s, Benjamin F. Butler symbolized post-Civil War Lowell. Son of a boarding house

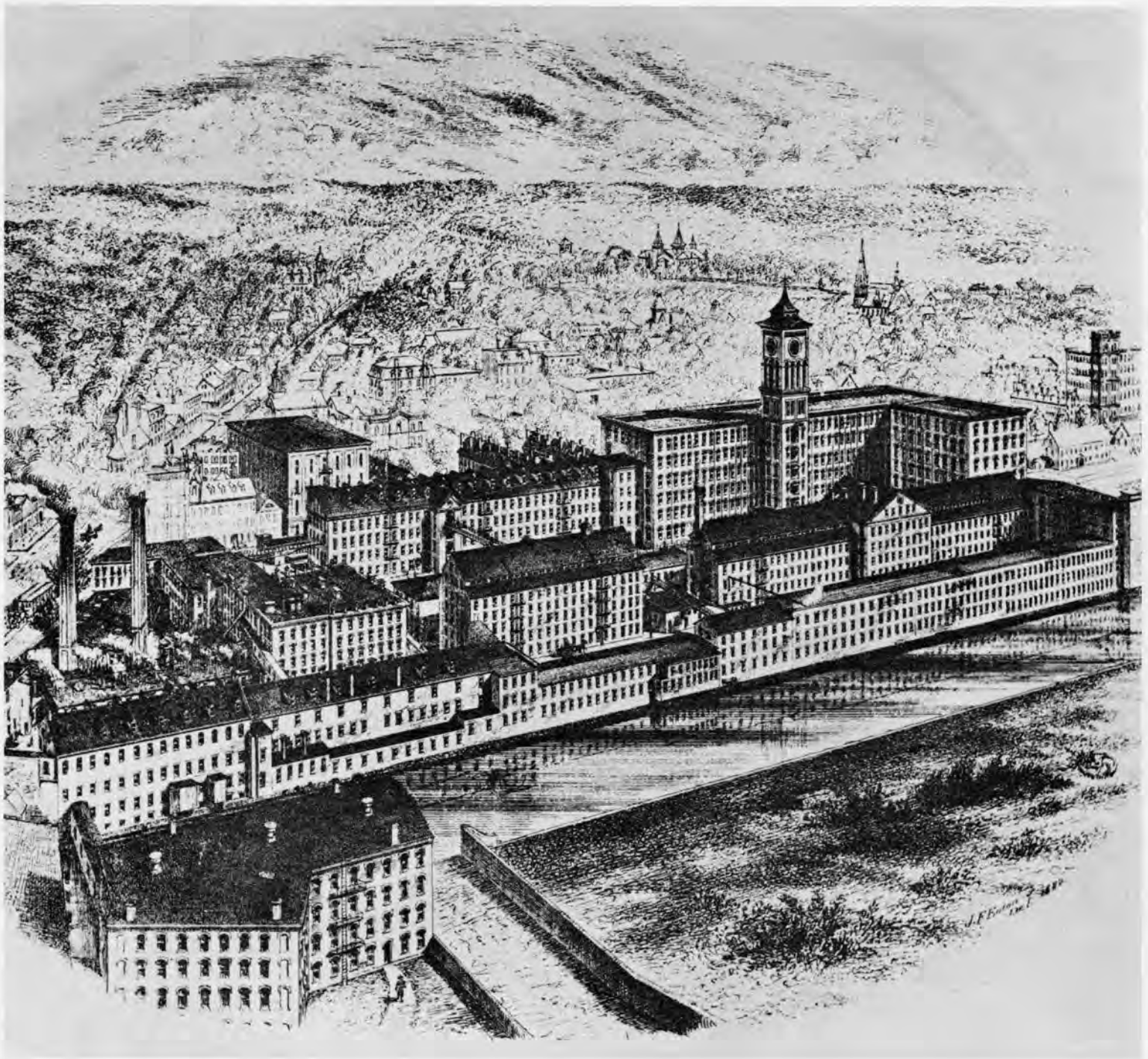


Figure 3-24 Hamilton Manufacturing Company, 1882.

keeper, he was a lawyer, militia officer turned Civil War general, major political figure in state, and occasionally, national politics, and a wealthy industrialist. Much of his success came through support of the labor force in their struggles with the established textile corporations. In 1865 Butler bought Whipple's Canal and most of the mill sites along it for the Wamesit Power Company. He participated in the chartering of the company, which could develop and sell steam and water power and lease mill sites as well as engage in manufacturing. A new surge of development began around the renamed Wamesit Canal. Butler owned major interests in at least two of the new factories, U. S. Cartridge Company and U. S. Bunting Company. His political connections brought in government customers for ammunition and flags and assured both enterprises of success.

The Hamilton Company led the way in post-war construction among the major corporations by erecting two large storehouses ca. 1868. The one between Jackson Street and the Hamilton Canal is 473 feet long, and features segmental-arched windows with Italianate brickwork hoods or caps, a motif followed throughout Lowell for most of the rest of the century (Figure 3-26). The other new storehouse was a ten-story brick pile on the south side of Jackson Street (Figure 3-24). Soon after, most of the millyards followed the Hamilton Company with major construction programs. New buildings or major alterations were started virtually every year between 1869 and 1884 in the Lawrence millyard. A four story, Italianate-style mill was built in 1870, probably as a knitting mill. The woolen products that had been a fiasco for the Lawrence Company and several other Lowell yards when attempted as mid-war conversions became a mainstay of Lawrence's production soon after the war. In the Lawrence millyard, as in all the others, new top floors were added to enlarge and update older mills. Octagonal stairtowers were also added, a striking feature of many Lowell millyards.

At Boott Mills, a large new mill was built in 1871, and another later in the decade. Boott had at least one steam engine by 1873, probably to help power the new mill. Massachusetts Mills made additions in the early 1870s that increased the spindles in that yard by nearly sixty percent between 1870 and 1876 and

almost doubled the 1870 figure by 1883. Steam power played a major role in that yard by the 1870s. At Lowell Manufacturing, a new Brussels Dye and Dry House was built in 1870.

The Suffolk Company and the Tremont Mills emerged from the war years in feeble condition. In 1871 controlling interests in both were purchased by Frederick and James Ayer. They combined the two yards administratively into one, and embarked on major building campaigns under the name of the Tremont and Suffolk Company.

Appleton joined in the general expansion with its large New Mill of 1873 built across Jackson Street from its main millyard (Figure 3-25). Steam engines freed this mill not only from the main yard, but also from the power island between the Hamilton and Pawtucket Canals. Applied on a grander scale this flexibility of location allowed by steam power helped wipe out the Lowell textile industry. As availability of waterpower declined in importance as a factor in the location of mills, other factors such as nearness to raw material, fuel and cheap labor became paramount, putting Lowell at a competitive disadvantage.

The 1872 depression briefly slowed construction throughout most of the city. However, the Lowell Machine Shop yard underwent a major expansion trying to keep abreast with orders for new machinery from mills retooling during the slowdown in production. Some other industrial construction went on in the 1870s, but most major projects were not underway until the 1880s. A major spur to development in several of the millyards in the 1880s was a joint project undertaken in 1882 by the city and several of the corporations to define the channel of the Merrimack. One of the results was that the riverside millyards were able to fill their portions of the riverbank, gaining new space for expansion. The Lawrence, Boott, Massachusetts, and Merrimack Companies all made additions on filled land in the 1880s or early 1890s. Several of the buildings Lawrence constructed in the 1880s had a peculiarly old-fashioned appearance because they used rectangular granite lintels, a feature popular in the first half of the century.



Figure 3-25 Appleton Company's "New Mill" on Jackson Street , built 1873, photographed 1979.



Figure 3-26 Hamilton Manufacturing Company's storehouse on Jackson Street, built ca. 1868, photographed 1979.

As the millyards were filling up, demolition preceded construction in several cases. In 1881 the Machine Shop took down its original Building #1 of the 1820s, and put a much larger new structure in its place. In 1882 the Machine Shop foundry rebuilt and enlarged. In the Lowell Manufacturing yard a Brussels Weave Mill was built in 1882 on a site where company-owned housing had stood. That company's elimination of housing for its operatives preceded the general trend in that direction by only about a decade. The Hamilton Company, which had even earlier eliminated a boarding house for a storehouse site, still had some under-utilized space within its millyard, and built there a large new mill in 1881-1882. Its six-story height and even taller clock tower dominated one end of the millyard.

The smaller mills also rebuilt and expanded in the 1880s. Stirling Mills on the Wamesit Canal took down its ca. 1860-65 mill in 1880 and built a new and larger structure (Figures 4-24 and 4-25). A fire destroyed the neighboring Chase and Faulkner Mills in 1880. Faulkner rebuilt in 1881, and expanded onto the Chase site in 1887.

In 1885, a national census of industries indicated that steam engines were producing more horsepower for Lowell's mills than was water power by a margin of about 13,000 to 11,000. A single corporation, Lowell Manufacturing, had steam engines capable of producing 1,550 horsepower in 1882. Despite the cost of fuel and equipment, the availability of power in such quantity was irresistible to the expanding millyards.

While the millyards were erecting Italianate buildings by leaps and bounds, Lowell's commercial districts were also putting on a new face. The earliest among the post-war commercial buildings closely resembled the simple Italianate industrial structures, slightly enriched with the addition of bracketed cornices. The Richardson Block at 295 Dutton Street, built in 1870, and the similar Robbins Building at 102-110 Merrimack Street of about the same date (now Prince's Books and Office Supplies) illustrate the type. Greenwood Brothers Store at 573 Lawrence Street, built in 1872, explores more ornate possibilities with its mansard roof, cast iron storefronts and especially

its window trim, cornice decoration, and signboards of cast concrete.

Neither Lowell merchants nor the city fathers were content for long to build in their generally restrained pre-war manner or to merely hint at the decorative possibilities of the current architectural styles. When a large new schoolhouse was needed in 1870, George Meacham, a Boston architect, was employed to produce a Second Empire design. The Green School (408 Merrimack Street) was constructed in brick with bold granite trim. A bank building constructed at the corner of John and Merrimack Streets ca. 1870 was even more ornate than the Green School (Figure 3-27). Constructed of marble of various colors in the High Victorian Gothic style, it was called the Marble Bank.

Another building that led the way for Lowell's merchants was the Masonic Temple built in the center of the Merrimack Street business district (#134) in 1871 (at left in Figures 3-28 and 3-29). Hocom Hosford, a successful dry goods merchant, sponsored the building, which contained stores, Masonic meeting halls, and the City Library. Boston architect Nathaniel J. Bradlee designed the Second Empire style building (Figure 3-30), which was constructed with a granite facade and cast iron storefronts. Earlier Lowell buildings had used those materials, but never in such a richly decorative fashion.

The 1872 Depression slowed commercial construction, just as it did industrial. Several major new buildings within the Central and Merrimack Streets commercial areas marked the economic recovery of the mid and late-1870s. Central Street entered into its period of greatest prominence with the construction, in rapid succession, of a new train station for the Boston and Maine Railroad, built in 1876 (#238-254), the Fiske Building, erected ca. 1877 with elaborate cast iron decoration (#219), and the Appleton Block, a large High Victorian Gothic structure, built in 1879 (#166). All appear to be architect-designed, but none of the architects are known. Otis Merrill, a carpenter-turned-architect who later achieved local prominence with his design for the new City Hall, took an office in the new Fiske Building and may have been its architect.

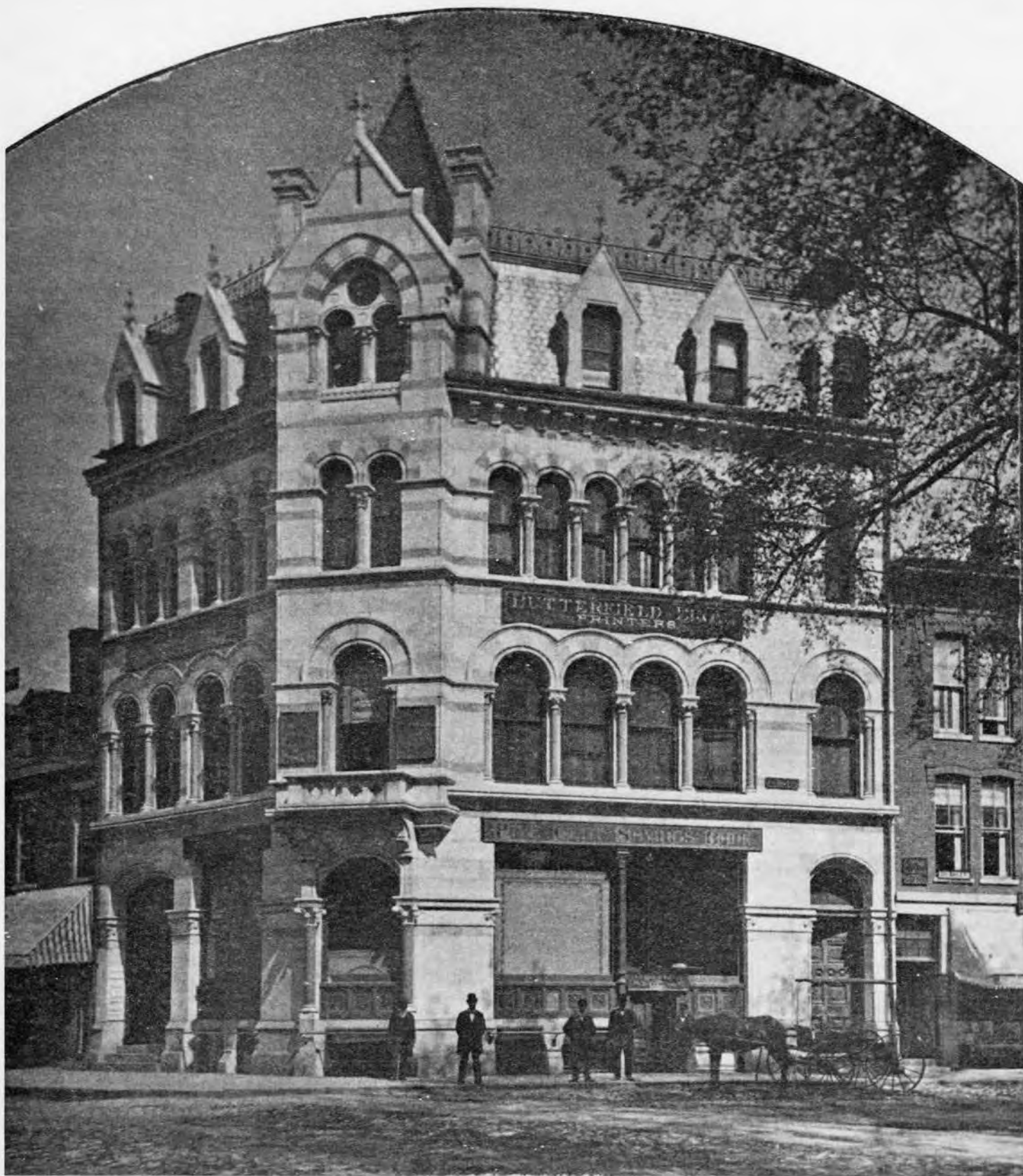


Figure 3-27 "Marble Bank" at the corner of Merrimack and John Streets, built ca. 1870. From an undated stereograph.



Figure 3-28 View from the east along Merrimack Street, ca. 1884.



Figure 3-29 View along Merrimack Street, 1979.

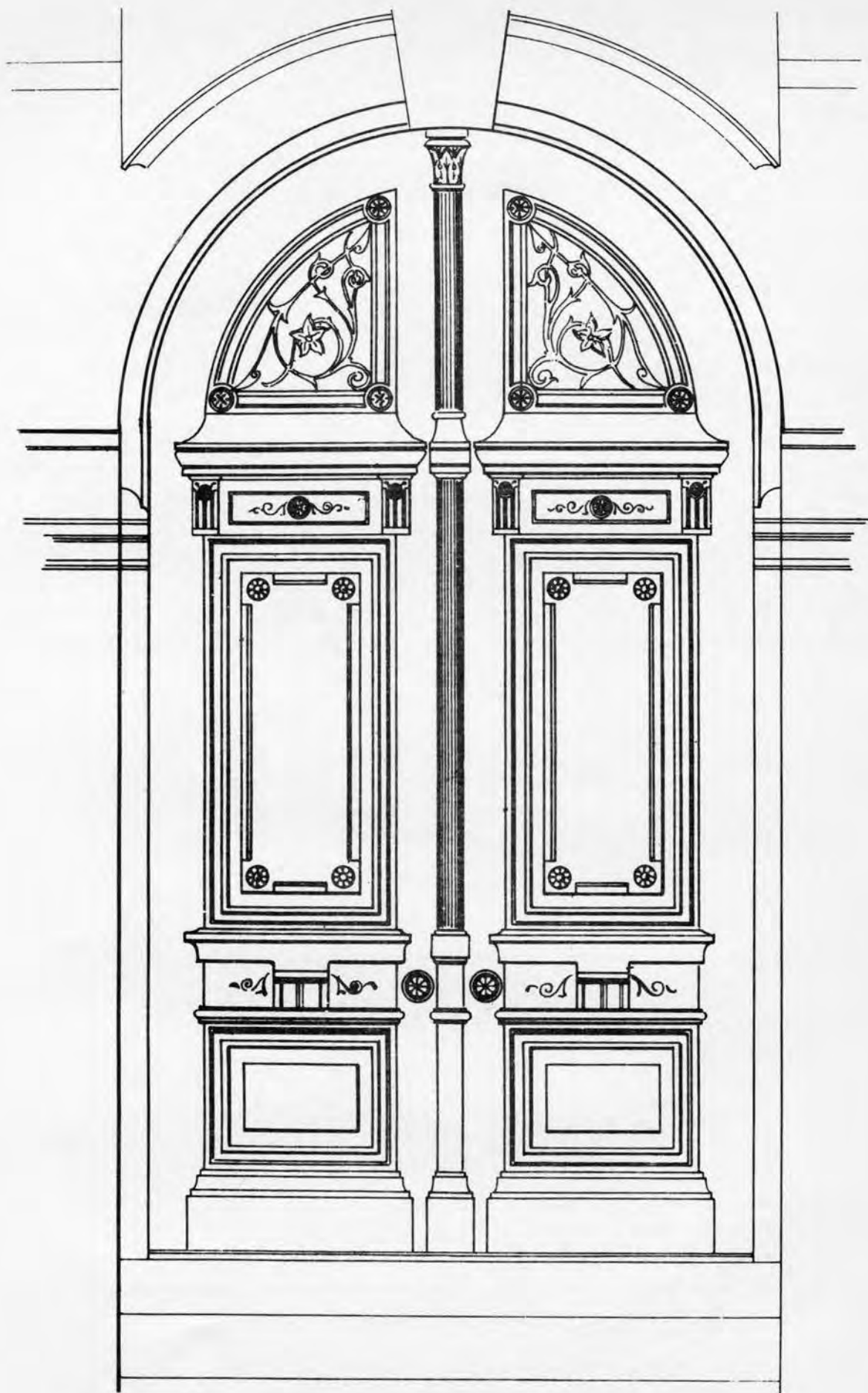


Figure 3-30 Detail for the doorway of the Masonic Temple (Hosford Building), drawn by Nathaniel J. Bradlee, 1871.

At the critical intersection of Merrimack and Central Streets, the brick, stone, and cast iron Wyman's Exchange was erected ca. 1880 to a four-story height (and raised to six stories ca. 1907-09). It replaced the original Wyman's Exchange, a daring building of ca. 1832 that used granite piers and lintels to achieve such open walls and large windows that local residents doubted its stability.

The 1880s and early 1890s brought more major new commercial structures than can be recounted. As in the millyards, earlier structures were sacrificed to clear sites, and in several cases boarding houses were demolished and their lots redeveloped with stores and offices.

The largest and most prominent of the commercial buildings of the 1880s is the Hildreth Building, constructed between 1882 and 1884 according to plans by Howe and Van Brunt, a prominent architectural firm from Boston. The Hildreth Building had a surface rich with brickwork and stone and metal ornament. It was the epitome of Queen Anne-style commercial architecture in the city. Most of the new construction of the 1880s and 1890s followed this stylistic lead, though on simpler buildings brickwork alone often provided all the decorative effects.

The Central Block, designed by Lowell architects Merrill and Cutler and built in 1881 between Market and Middle Streets on Central, was similar to Hildreth in scale and general style. The Bon Marché Building at 143 Merrimack Street built about a decade later in 1892 in a more restrained version of the same style.

Two areas that were almost wholly redeveloped with Queen Anne commercial buildings in the late 1880s and early 1890s were the northwest side of Dutton Street from Market to Broadway and all of Middle Street. Along Dutton Street many of the three and four-story structures were and are free-standing or semi-detached. On Middle Street, a fire in 1888 that destroyed the old firehouse gave impetus to the redevelopment. The Central Engine House was rebuilt in 1889 following a Romanesque Revival design by Merrill and Cutler. The handsome building itself, the protection it afforded, and the new street, Palmer, cut through to provide access from the firehouse to Merrimack and Market

Streets all encouraged the rapid redevelopment of Middle Street. Commercial and light industrial structures were built, arranged in two nearly solid rows of four and five-story structures, varying in the details of their fenestration and decoration but highly compatible in overall effect (Figure 4-5).

Most of Lowell's residential development in the 1865-1893 period occurred in the areas annexed in 1874 and 1888, entirely outside the LHPD. The Acre was the site of some new construction during this period, particularly along Broadway, which was extended west from Suffolk Street in the mid-1860s. The wood frame houses built shortly thereafter are either late Greek Revival or Second Empire in style, and each was designed to provide a number of dwelling units (Figure 3-31).

Another residential area within the LHPD that received quite a different kind of residential construction in this period was Pawtucket Street. There were houses along that road before Lowell was founded. In the 1870s and 1880s the scenic views of the river and the prevailing westerly wind, which blew the smoke of the mills away from this area, brought a new wave of house building to Pawtucket Street. West of School Street relatively modest frame houses for middle class occupants were built, while east of that line large houses and even mansions prevailed. Most pretentious of all was the Ayer Mansion, built in 1870 of brick and stone for Frederick Ayer from the designs of a Boston architect named Woodcock who had designed the Ladd and Whitney memorial obelisk on Monument Square. Smaller but still sizable wooden houses were built east of the Ayer Mansion along Pawtucket Street, such as #295 (Figure 3-33).

The growth of the city in area and population fostered plans for a larger city hall, both to accommodate the growing government and to provide an appropriate symbol of the prosperous city Lowell had become. In the late 1880s committees were formed, competitions were held, and eventually a design by the local firm of Merrill and Cutler was selected.

As the monumental Romanesque Revival structure was completed and dedicated in 1893, another severe depression disrupted the economic life of the city

and the country. In the years following that depression, the number and diversity of immigrants to Lowell greatly increased, and a new period in the city's history began.

Historical Resources

The structures built or substantially altered in the 1865-1893 period survive in such numbers within the LHPD that they establish the principal historical character of the area. Both earlier and later structures stand out as exceptions within this context of a late-nineteenth century city. There are ninety-three buildings dating from the 1870s in the LHPD, seventy-eight from the 1880s, and over one hundred built in the 1890s.

All of the standing millyards retain major structures from this period. Almost all the mills surviving in those yards from earlier periods were capped with upper floors and flat roofs between 1866 and 1893. The long Hamilton Company storehouse on Jackson Street, built ca. 1868, is an excellent example of the scale of post-Civil War industrial buildings, (Figure 3-26), and the attached Counting House translates the same motifs into a more human scale. Across Jackson Street and slightly to the west, the Appleton Company's "New Mill" of 1873 typifies the flexibility steam engines brought to the siting of mills (Figure 3-25). It also demonstrates the mill builders' tendency to concentrate decoration on the stair towers and the cornice.

Most of the Suffolk millyard, aside from the early Counting House and the surviving boarding house, dates from the 1860s, 1870s, and 1880s. The exterior face of the Lawrence millyard along Perkins Street is largely of 1870-1890 vintage, including the faintly High Victorian Gothic Counting House. Within the Lawrence millyard, most of the focal points such as the stair towers, octagonal chimneys and top floors date from the 1870s and 1880s. Most of the Lawrence buildings surviving from this period, and most in the other millyards as well, are simply decorated with brickwork hoods over the segmental-arched windows. Lawrence built several buildings in the 1880s in the pre-1850s manner with rectangular granite lintels, and the 1882 Warper Building (#16) and the 1883 Yarn Dyeing Building (#17)

are survivors from this anachronistic group.

Most of the exterior faces of the Boott millyard date from the 1870s and 1880s, and within the yard the four original mills and their connecting mills were all topped with Italianate upper floors, ca. 1880. Boott's wooden stair towers and belfry date from just before this period, but the octagonal stair towers and chimney date from the '70s and '80s, as do Mills No. 6, 7 and 9, No. 1 Cotton Storehouse, and other structures and additions in the millyard. The Massachusetts Mills' yard is almost as indebted to that period as Boott, although that yard also contains some major structures built in the subsequent period.

The Lowell Manufacturing millyard contains several structures from the 1866-93 period and some major structures from the subsequent period, but no structures earlier than 1865. The Brussels Weave Mill of 1882, a long structure with one narrow end toward Dutton Street, is the most prominent of the Lowell Manufacturing buildings of this period (Figure 4-15).

Aside from the major millyards, several other industrial buildings and complexes of the 1865-93 period still stand in the LHPD. The Stirling Mills (also called Sterling) off Lawrence Street on the Wamesit Canal is an intact woolen mill complex, consisting of a mill, office wing, carbonizing building positioned over Hale's Brook, and storehouse. The major building, the mill, dates from 1880; the others range from a decade earlier to a decade later.

Two of Lowell's smaller mills of the early 1890s, the John Pilling Shoe Company at 33 Shaffer Street and the Whittier Cotton Mills at 50 Stackpole Street have new leases on life as residences for elderly people. The Pilling Mill has been rehabilitated and is occupied as the Francis Gatehouse Mill, while construction work continues on the Whittier Mills.

In many cases, structures within Lowell commercial districts that appear to be strictly commercial structures and are now used as such were built for light manufacturing purposes. A brick building at

50-56 Middlesex Street, decorated with a variation of Lowell's standard Italianate trim, was built ca. 1870 as the Hills Brothers Carriage Manufactory. The third of the Ayer patent medicine company buildings, built ca. 1886, stands at 176-190 Middle Street (Figure 4-5). Many of the Middle Street buildings originally combined light manufacturing and wholesale activities.

Commercial and institutional buildings of the 1866-1893 period dominate Merrimack, Central and adjacent streets. The Old Post Office at the corner of Gorham and Appleton Streets and the New City Hall with its companion Memorial Library on Merrimack Street stand at opposite ends of the commercial district within the LHPD, bracketing this area. All three are built of granite in a Richardsonian Romanesque style; all were completed in 1893. Between these somewhat homogenous bracketing buildings the structures of the post-Civil War years demonstrate the rich variety of styles and materials that characterized the period. The following discussion can mention only a fraction of those buildings.

Opposite the Memorial Library are the Green School (408 Merrimack Street) and First Congregational Church (#400), the former built in 1870 (and shorn of its high mansard roof following a fire in the 1960s), and the latter constructed in 1885. Both use red brick as their basic material, both are rather richly trimmed with contrasting stone, but the school makes use of granite and is Second Empire in style, while the church employs brownstone in the High Victorian Gothic style.

The Bon Marché Building of 1892 (143 Merrimack Street) and the Lowell High School nearby on Kirk Street (#30), the older, southern part of which was also built in 1892, introduce yellow brick to Lowell construction. The department store displays an eclectic mix of decorative motifs in a style best described as commercial Queen Anne, while the High School, appropriately enough, is a much more academic design based upon Classical and Renaissance motifs. The Masonic Temple/Hosford Building like the Green School, lost its mansard roof following a twentieth-century fire.

The Wyman's Exchange at the corner of Merrimack and Central (#9) Streets, built ca. 1880 in red brick with cast iron and light stone trim in a High Victorian Gothic style, must have dominated that intersection when first constructed. However, very soon thereafter that building lost its pre-eminence to the Hildreth Building, built on the opposite side of Merrimack Street (#45) between 1882 and 1884. Even though most of the rich carving of its brown-stone trim has since spalled away, the Hildreth Building still dominates lower Merrimack Street with its great length and varied Queen Anne decoration. Two additional floors were added to Wyman's Exchange ca. 1907-09, perhaps in an attempt to re-establish the building's lost domination of the corner.

The foot of Merrimack Street at Kearney Square is anchored by the Runels (now Fairburn) Building (2-14 Kearney Square) and the Howe Building (#11), both products of the early 1890s. Prescott Street extends only a block from that intersection to Central. At its Central Street end are two four-story brick buildings that combine features of Italianate and Queen Anne styles. Called the Southwick (#66-82) and the Claflin (#58) Blocks, they were built ca. 1880. Both retain their original facade features to an unusual degree, including iron storefronts.

Along Central Street the major structures of the 1866-1893 period are McQuade's at #91 (originally the New Mansur Building, ca. 1885), the Appleton Block at #166 (1879), the Fiske Building at #219 (ca. 1877) and its neighbor Gray Furniture (originally Cook and Taylor's Building, 1884), the Rialto at #238-254 (formerly the Boston and Maine Railroad Station, 1876), and the Shedd Block at #295 (ca. 1883-1884). All are red brick buildings with trim of stone or cast iron. The 1870s structures represent variations on the exuberant High Victorian Gothic style, and all have lost cresting and pinnacles from their roof-lines. The Boston and Maine Railroad, in fact, has lost two mansardic towers. The Central Street buildings of the 1880s employ brownstone trim and decorative brickwork in a Queen Anne manner.

Extending off Central Street Middlesex Street retains a number of brick commercial or commercial/residential buildings from the 1870s and 1880s. Middle

Figure 3-31
Michael Rourke Building,
174-180 Broadway Street,
built ca. 1870-75,
photographed 1979.



Figure 3-32
L. McFarlin House,
681 Broadway Street,
built ca. 1870-75,
photographed 1979.

Figure 3-33
Rogers House, 295
Pawtucket Street, built
ca. 1873, photographed
1979.



Street consists almost exclusively of structures built between 1886 and 1893. Queen Anne features such as varied window size, shape and placement and decorative brickwork characterize both streets' buildings. An exception to the rule on Middle Street, in terms of both style and original function, is the Central Engine House at the corner of Palmer Street, which was built in 1889 in the Romanesque Revival style.

Elsewhere in the LHPD any list of characteristic 1866-1893 commercial and institutional structures should include the 1872 Greenwood Brothers Store at 573 Lawrence Street. Another is the Kirk Street School at 31 Kirk Street, built in 1881-1882, which provides a sharp contrast to the LHPD's other nineteenth century primary schools, the Green School on Merrimack Street and the Colburn School on Lawrence Street. The City Stables on Broadway at Fletcher was built in 1877 from plans by Otis Merrill, who a few years later prepared considerably grander designs for the new City Hall.

While the city as a whole abounds in residences built within the 1865-1893 span, the LHPD contains only a small sample. The main concentrations of these are in the Acre neighborhood, particularly along Broadway Street, and on Pawtucket Street. 174-180 Broadway Street, a multiple-family frame building in the Second Empire style, is typical of Acre houses built in the 1870s (Figure 3-31). Further out Broadway in the Francis Gate area #673, #676, and #681 are representative of the several small, single-family cottages built within the LHPD in that area (Figure 3-32). If the little cottages out on Broadway represent a step up the social ladder from the multiple-family blocks in the Acre, the larger and more richly decorated frame house at #415 Pawtucket Street, built for the family of an overseer in 1872, was up another step. This side-hall plan house, with its ornate doorhood and five-sided bay window, follows a very common Lowell form.

Many of the larger houses built along Pawtucket Street northeast of School Street in the 1870s and 1880s have been converted from residential to institutional or commercial use. Frederick Ayer's grandiose Second Empire mansion of brick and stone, built in 1870 is now the Franco-American School.

The large wood-frame Second Empire house at #295 Pawtucket Street, built a few years later for a banker and his family, is now a mortuary, as are other houses of the period along Pawtucket Street (Figure 3-33).

Indicative of Lowell's increasingly urban character in the 1866-1893 period was the construction of several brick apartment blocks, particularly along Middlesex and Appleton Streets. The Bancroft Block at 90 Appleton is a good example within the LHPD. Constructed in the early 1880s in the Queen Anne style, the block was originally built as an investment property for George Runels, a prominent Lowell businessman and one-term mayor.

The potential archeological resources within the LHPD from the 1866-1893 period mostly occur in sites previously mentioned. The Tremont and Middlesex mill-yards and the Machine Shop yard all underwent significant development in the period. The remains of those buildings could be expected to form a major component of the below-ground remains in those demolished yards. One site within the LHPD that was developed almost exclusively in the second half of the nineteenth century is the Faulkner millyard on the Wamesit Canal. The two woolen mills built there during the Civil War, probably on the sites of earlier powder mill buildings, both burned in 1880. Within that decade a single, larger mill complex was built on the combined yards. Woolen goods were manufactured there until the 1930s, and in 1937 the complex was demolished. As with all historic archeological resources, the significance of potential finds on the Faulkner site must be evaluated in terms of the information they might yield that could not be gained from other sources. In this case both the mills that burned in 1880 and the complex that replaced them are quite well documented in terms of building size, use materials, and locations, and a purposeful archeological study of the site would need to address other questions.

MULTILINGUAL LOWELL: 1894-1923

History

When writers in the first two decades of the twentieth century wrote of the changes Lowell was then undergoing, the word they often used to describe the city was cosmopolitan, not so much in the modern connotation of sophisticated, but rather in a more literal sense of being not limited by national boundaries. In their places of birth Lowell's citizens certainly were cosmopolitan; Frederick Coburn wrote in 1920 that one could ask directions of a dozen successive passers-by on the street, and hear replies in a dozen different languages, none of them English.

Lowell's population increased by one quarter between 1890 and 1900, from 77,000 to 95,000, with many immigrants among that number. The physical area of the city also grew, with a 1906 annexation of 1,000 acres from Tewksbury, along the eastern side of Lowell. By 1910 the city had 106,000 residents, and in 1920 the population of Lowell reached its peak, at nearly 113,000. Lowell's mills also continued the relentless expansion characteristic of their entire history, with a work force made up largely of the diverse immigrants. The mills' annual production of textiles, like the city's population, reached its highest point around 1920, but events of the preceding years foreshadowed the disaster that was to strike almost all the major textile corporations by the third decade of the twentieth century.

The city had seen a decided increase in labor disputes in the late 1880s, but the economic Panic of 1893 threw so many out of work that no one holding a job was likely to risk it. George Kennigott, a Lowell minister and sociologist who published a useful, though biased social study of the city in 1912, linked the increase in labor strife to the "newer immigrants" who were flooding the city, but it is equally true that the corporations used new groups of immigrants to break strikes by earlier residents and that language barriers made labor organizing difficult.

By the first decade of the twentieth century Lowell's immigrants included representatives of at least forty countries, but the largest new groups were Greek,

Polish, Portuguese, and European Jewish from several countries. All started settling in Lowell in sizable numbers in the 1890s, though the major influx of Greeks, by far the largest of the new groups, came in the first decades of the new century.

Like the Irish and the French-Canadians who had preceded them, the new groups tended to settle in concentrated areas. The Acre, by then largely under Irish-American ownership, became the primary settlement of the Greek population, and dozens of coffee houses lined its principal streets, particularly Market Street to the west of Dutton Street. The Greeks adhered to a pattern common to many immigrant groups, in that young men arrived well in advance of women or whole families. Of the eighteen hundred Greeks in Lowell in 1900, only about fifty were women. The coffee houses were the center of Greek social life, and above many of them were rented rooms. In the early years most of these were overcrowded, poorly maintained and grossly unsanitary. Health problems, particularly tuberculosis, were rampant.

Many of the Polish settled in Centralville, particularly along the banks of the Merrimack River around Lakeview Avenue. The Portuguese, who mostly came from the Azores or Cape Verde Islands rather than from Portugal itself, were concentrated south of the Central Street business district.

Of Lowell's 1900 population of 95,000, only about a fifth were native-born of native parents, and many of those were descendents of the Irish immigrants who arrived in Lowell before 1850. At least partially because of the influx of non-English speaking immigrants, most of the corporations divested themselves of their company-owned housing in the mid-1890s. Before that time, several of the corporations had demolished a boarding house or two to clear the way for expansion, but the divestiture in the 1890s was concerted and nearly complete. It extinguished the last aspect of the paternalistic "Lowell Experiment," which in most ways had been discarded once the work force was no longer young women from New England. Two principal reasons were cited by mill agents for selling the apartments provided to the better-paid employees and the operatives' boarding houses. Among the more skilled employees, there had been a

trend to reside away from the mills, in the outlying neighborhoods of their social peers. The boarding houses, on the other hand, were becoming increasingly difficult to manage according to their rather strict regulations and dormitory-style bedrooms because of the increasing diversity and demands of the operative population.

The Machine Shop retained its housing into the 1920s, and some of the Lawrence Company and Tremont and Suffolk Company boarding houses remained in corporate ownership until ca. 1910. Most of the tenements and boarding houses were in private hands by 1900. Some were quickly demolished, but most were rented out, under increasingly crowded conditions. Around 1900 Saiman Sirk, a Boston investor who bought many of the boarding houses from Boott, Merrimack and other companies, extensively remodeled two Boott boarding houses, joining them together into an apartment building called the Sirk Block (now called Surf's Building).

Other aspects of Lowell's development were also quick to reflect the wave of immigration. The new immigrants built churches when they had barely settled into the city, just as the Irish had built St. Patrick's in 1831 and the French-Canadians had purchased the Lee Street Church and made it St. Joseph's in 1868. The most prominent of the new churches was the Greek Orthodox Holy Trinity, completed in 1908 in the center of their settlement, just across the Western Canal from St. Patrick's.

Housing development and redevelopment also reflected the growth of the population and the movement away from the company housing. The 1,000 acres annexed from Tewksbury in 1906 are all outside the LHPD. Inside the District Clare Street was laid out in the early 1890s and almost wholly built up by 1900 with single and double houses and a few larger blocks (Figure 4-32). Litchfield Terrace, a few blocks west of Clare Street, was laid out and built with several small Colonial Revival cottages around 1910 as an investment by a Lowell dentist. On the east side of Perry Street in Belvidere a group of simple, two-family houses was developed under one ownership around the turn of the century.

While these developments were dispersing the city's population and providing an increased supply of small, single-family houses, the portion of the Acre within the LHPD was undergoing considerable redevelopment to larger structures to accommodate more people. "Triple deckers" with three dwelling units on three floors were the smallest of the new buildings, and frame structures up to five stories tall were built (Figures 3-37 and 4-13). Most of this building post-dated 1906, and probably reflected the ability of the Greek community to afford better housing.

A change in industrial business practices was to precipitate sweeping changes in Lowell. In 1893, the charter of the Massachusetts Mills was changed to allow the corporation to do business outside the state. Production of coarse white goods was immediately transferred to mills in Lindale, Georgia, where in 1896, 1898, and 1902 the company built new mills.

Steam power had freed the mills from the need to locate near great falls of water and southern sites had advantages over the older northern ones such as proximity to supplies of cotton, availability of cheaper labor and newer mills. As the Middlesex Canal was used to deliver the ties and engine parts of the Boston and Lowell Railroad that superseded it in the 1830s, some of the earnings of the Lowell mills went to build their southern competitors, protecting the investors but speeding the demise of Lowell as the "City of Spindles."

The mill buildings and the canal system could not be moved south, of course, and they represented a vast investment. Most of the corporations therefore modernized their millyards in the 1894-1923 period. The founding of the Lowell Textile School in 1895 by several mill owners and officers was another attempt to keep Lowell competitive, by training skilled workers in the areas of textile mechanics, chemistry, engineering, and design.

The most dramatic of the modernization campaigns occurred at the Appleton Company, which virtually rebuilt its millyard between 1898 and 1919. Directing the effort was Alexander Cumnock, one of the founders of the Lowell Textile School. He had



Figure 3-34 Massachusetts Mills Storehouse C on Bridge Street, built 1910, photographed 1979.

served as the Boott agent for thirty years before becoming the Appleton treasurer in 1898 at the age of sixty-eight. He switched the production of the millyard from sheeting to finer goods, and directed twenty years of rebuilding that left within the main millyard only a few fragments of the nineteenth century structures. Most of the Cumnock-era buildings were built of simple utilitarian design, with wide, segmental-arched windows and little or no decorative trim (Figures 4-20 and 4-21).

The old Lowell Manufacturing Company millyard was also considerably rebuilt in the early years of the twentieth century. Lowell Manufacturing was the first of the original group of Lowell textile corporations to go out of existence when Bigelow Carpet Company bought it out in 1899. Bigelow Carpet embarked on a sizable rebuilding campaign building the new weave mill which constitutes the northern face of the millyard in 1902. In 1905-6 the original 1829 Cotton Mill was replaced with a six-story worsted mill, and all of the buildings along the Pawtucket Canal were rebuilt between 1909 and 1911. Bigelow Carpet had further rebuilding plans, but scrapped them in 1914 and relocated its Lowell operations to Thompsonville, Connecticut. The millyard was leased by U. S. Cartridge Company during the First World War, was vacated in 1920, and was the first of the major millyards to be sold piecemeal.

The other millyards made some improvements during the 1894-1923 period, and further corporate changes were made as well. The Lawrence Company sold its secondary millyard east of the Western Canal to the Tremont and Suffolk Company in 1896 and turned solely to the production of knitted goods. Some new construction followed between 1905 and 1910 including Mill #12, a brick and frame structure that stood on the former site of the millyard's clock tower.

The Hamilton Company built one of the largest Lowell mills of the early twentieth century, choosing metal-frame construction rather than reinforced concrete, which was coming into favor in Lowell during that period. Mill #7 was raised in successive stages in 1911 and 1919 and finally measured 653 feet by 135 feet. The premier example of the new reinforced concrete construction was Massachusetts Mills'

ten-story Storehouse C, built in 1910 (Figure 3-34).

In 1911-1912 the Lowell Machine Shop merged with three other firms to form the Saco-Lowell Shops. The new company built reinforced concrete buildings on the foundry yard in 1920 and across Dutton Street on the sites of former company housing in 1923. As the last major buildings erected by one of the eleven Lowell corporations, they mark the end of an era.

Beyond the main corporations, similar consolidations and improvements took place. The Faulkner Mills on Wamesit Canal were incorporated in 1897 and then absorbed into the American Woolen Company in 1899. Frederick Ayer of Lowell was the president and a founder of American Woolen, which set out in the late 1890s to consolidate as much of the woolen industry in this country as it could. Elsewhere on the Wamesit Canal new mill buildings were erected early in the century by the Wamesit Power Company and leased to industrial clients. Waterhead Mills operated in a brick and wooden mill near the head of the power island formed by the Wamesit Canal, (900 Lawrence Street, rear). Further north just off the canal, U. S. Cartridge built new brick mills (685 Lawrence Street) after a severe explosion damaged its previous structures in 1903. Both of those complexes used brick construction, but consolidated the load of the building on thickened piers, which allowed wider segmental-arched windows to be opened between the piers. This modified masonry-bearing form of structure was widely used in other New England textile centers around 1900 but seldom appeared in the main Lowell millyards.

Some new structures were built in the commercial/ industrial district along Merrimack and Central Streets between 1894 and 1923, but not in numbers matching the activity of the preceding period. A 1911 description of the city suggested that Lowell had few major office buildings because the control of its major enterprises was centered in Boston. The tallest building in the city at that time (and for many decades thereafter) was built for a local company, the Lowell Sun newspaper. Its ten-story tower was built in 1910 (8 Merrimack Street), designed by Boston architect Clarence H. Blackall (Figure 3-35).

Figure 3-35 Lowell
Sun Building, as it
appeared when built
in 1910.



Figure 3-36
Lowell
Memorial
Auditorium,
as it
appeared
when built
in 1923.



The Sun Building was the exception rather than the rule, for only a few of the commercial and institutional buildings of the early twentieth century exceeded the scale established in the preceding years. The 1922 addition to the Lowell High School with its considerable length overwhelmed the original 1892 building. The Memorial Auditorium was built in 1923 of appropriately monumental scale (Figure 3-36). More typical of the period was the Bradley Block in 1912 on Central Street (#135-187). The site was purchased from the Hamilton Company, whose print works had been an industrial intrusion on commercial Central Street since the 1830s. The long Bradley Block is only two stories tall, and like the conversion of the Boston and Maine Railroad Station to a New England Telephone office in 1896 and a movie theatre in 1915, it represented a decline in the intensity of use of the site. The railroad had relocated to a new depot on Middlesex Street beyond Thorndike Street in 1894, removing the Central Street stations' original function less than twenty years after it opened.

These breaks in Lowell's previous pattern of expansion did not yet apply to population growth, largely due to continued immigration from Europe. By 1910 the census recorded over 106,000 in the city, of whom only one-fifth were native born of native parents. The 1920 census recorded almost 113,000 residents, a total not exceeded since that date.

The purchase of Lowell Manufacturing by Bigelow Carpet, and the exodus of Bigelow from the city in 1914 marked only the beginning of an accelerating pattern that touched all the major mills within the next few years. The Middlesex Company leased a major portion of its manufacturing space to the Ipswich Hosiery Company in 1913, and when that lease was renewed in 1918 Middlesex ceased manufacturing textiles; its sole business became the leasing of space in its millyard. The closings or major reductions in operations that affected the rest of the major Lowell textile corporations and most of the minor ones as well came in the 1920s, within the next period discussed.

Historic Resources

The Appleton and the Lowell Manufacturing/Bigelow Carpet millyards contain the greatest concentrations of industrial buildings of the 1894-1923 period within the District. Appleton demonstrates the challenges of rebuilding a millyard within a constricted, pre-determined site. The Lawrence, Massachusetts, and Boott millyards also contain structures or additions dating from that period. Massachusetts Mills' Storehouse C, built on former boarding house sites on Bridge Street in 1910 represents a new generation of mill buildings in its great height and length, and its reinforced concrete construction (Figure 3-34). Virtually the only Lowell Machine Shop/Saco-Lowell buildings that survive are the two reinforced concrete structures built in the early 1920s. Hamilton's Mill #7, built in two campaigns in 1911 and 1919, still occupies one whole side of that yard, facing mills built in the 1840s and 1880s.

Aside from the main millyards, factories of the period survive in various states of repair on the Concord River. The brick portion of the Waterhead Mills stand and is used as a furniture store (900 Lawrence Street, rear), but the wooden part burned down decades ago. This mill is quite unusual in its use of English bond brickwork. The U. S. Cartridge buildings on the opposite side of Lawrence Street (#685) suffered a major fire in recent years, but still present intact facades to Lawrence Street. A non-textile related industrial structure of considerable interest is the Father John's Medicine building on Market Street (#73-91). When the medicine manufacturer moved to that location in 1920, three distinct buildings stood on the site. The present unified facade was based on the design of the original central building, and was extended across the fronts of the two other buildings which otherwise were left intact.

The tall Sun Building of 1910 (Figure 3-35) and the long Bradley Block of 1912 (now the Saab Building) both still stand, representing two dimensions of 1894-1923 commercial building. The Colonial Building of 1906, facing Wyman's Exchange across Central Street at 24 Merrimack Street, is another prominent example of the period. The Neo-Classical Union National Bank Building of 1924, with granite facades



Figure 3-37 View of the west side of Adams Street, between Lagrange and Broadway Streets in the Acre neighborhood, November 1979.

on Merrimack (#61) and John Streets (#39) is comparable in scale to the adjacent Nesmith Building of the 1840s and 1850s which it imitates in plan (Figure 4-4). The Lowell Five Cents Savings Bank (36 John Street), built in the early 1920s opposite the John Street facade of Union National, is similar to the other bank in style but is built of brick with stone trim.

The Strand Theatre of 1917 still stands at 128-136 Central Street and is the last surviving major downtown movie theatre. Much of its ornate cast-ceramic marquee on Central Street is hidden behind a white metal screen. Several important public buildings of the period remain. An important city landmark, the Old City Hall, was transformed from a public to a commercial building in 1896 by means of a thorough, Colonial Revival-style remodeling. Lowell Trade High School on John Street (#64) at Paige Street retains its original exterior appearance (Figure 3-42) while the massive addition of 1922 to the main High School on Kirk Street dwarfs the original portion. The Memorial Auditorium built by the city in 1923 beside the Concord River on East Merrimack Street (#50) still serves as the terminus of that end of the central business district (Figure 3-36).

The LHPD contains several small areas developed with houses in the 1894-1923 period. Clare Street retains all of the original buildings from its initial development in the 1890s and early 1900s (Figure 4-32). Litchfield Terrace, a much smaller group, still has all seven of its houses, built ca. 1910. North of the Merrimack River, half-a-dozen larger houses built in the 1910s and early 1920s stand above the V.F.W. Highway. Both their view of Pawtucket Falls and their Colonial Avenue addresses (#22-92) predate the Highway. Within the Acre frame residential blocks built in the first decades of this century are the most common predominant building type (Figures 3-37 and 4-13). The four-story, wood-frame Panagiotopoulos Building at 172-178 Adams Street, built ca. 1900-1905, and some of the small, two-story houses along Marion Street between Lagrange and Broadway Streets represent two extremes within this period and type.

No archeological sites of potential significance dating primarily to the 1894-1923 period were identified within the LHPD.

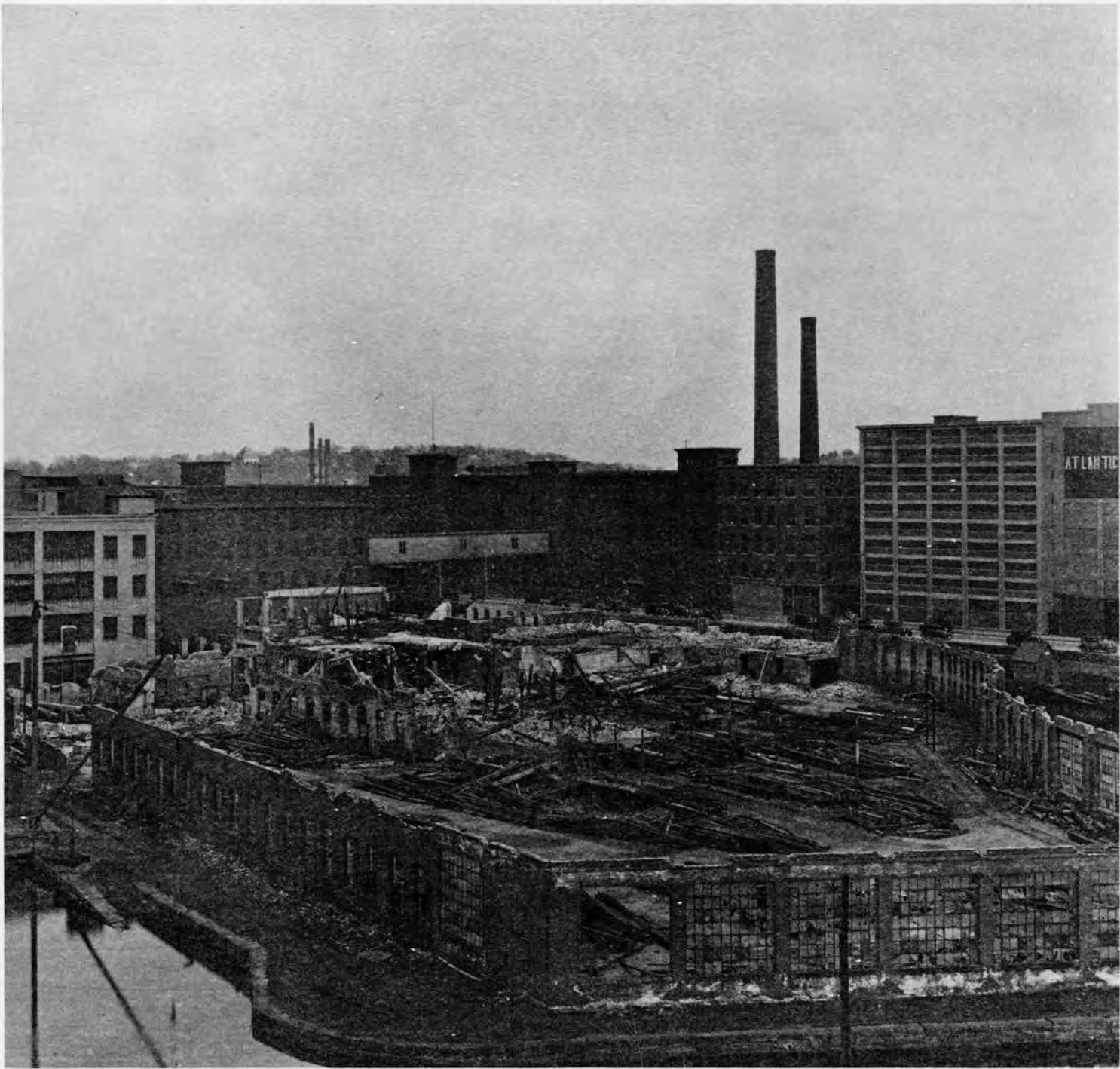


Figure 3-38 View of the foundry of the Lowell Machine Shop during demolition, ca. 1932.

COLLAPSE OF THE LOWELL TEXTILE INDUSTRY: 1924-1969

The Bigelow Carpet Company's abandonment of the Lowell Manufacturing millyard in 1914 and the end of Middlesex Company's production of textiles in 1918 initiated the dissolution of Lowell's textile industry. The Boott Mills and the Merrimack Company remained in operation on a reduced scale into the 1950s. For most of Lowell's textile corporations, however, the 1920s were the decade of the general collapse. In 1920, the Lowell historian Frederick Coburn could still optimistically write in his History of Lowell:

There were those who in 1890 foresaw a shrunken village where once spindles had been counted by the hundreds of thousands. Such catastrophes rarely befall, and Lowell has shown the energy and adaptability characteristic of American municipalities. It has stood up under competition; it has yielded to no "fell clutch of circumstance."

Ten years later, the city was not "a shrunken village," but its population had fallen by a full 12,000 to just over 100,000, and its major corporations were dissolved, or operating at a reduced scale. The Hamilton Company halted production in the early 1920s, and by 1930 the millyard was owned by Marden and Murphy, "Industrial Liquidators." They demolished the last of the Hamilton boarding houses in 1934 and razed the Print Works in 1935-36. The Appleton, Massachusetts, and Tremont millyards had all ceased production by 1929 and sold their equipment, and in the 1930s Merrimack Manufacturing bought the Tremont millyard and razed its buildings. Saco-Lowell Shops closed the Machine Shop yard in the late 1920s, and most of it was razed in the 1930s (Figure 3-38).

The Lawrence Company was purchased in 1926, and much of the millyard was then sold off piecemeal between 1927 and 1939. The Suffolk millyard continued to operate under new ownership into the 1930s, then it too was closed in 1936. The Middlesex Company, which had not produced textiles since the 1910s, finally was liquidated in 1946, and the remaining mill buildings were demolished in 1956. The Merrimack Company operated in reduced fashion and with reduced buildings until a reorganization in 1952, then closed

shortly thereafter. Much of its millyard and housing survived into the 1960s (Figures 3-39 to 3-41), then were demolished.

The Boott Mills remained in operation through the 1940s, with as many as 1,200 operatives employed, up from a Depression low of 725. Cotton manufacturing continued until 1956, when the millyard began to be rented to a variety of smaller manufacturing concerns.

The smaller textile mills suffered fates similar to the major establishments. The Faulkner Mills were producing until about 1932, then were demolished in 1937. Stirling Mills ceased textile production in the mid-1930s, and has rented space to manufacturers since that time. Belvidere's two millyards were separated by a reorganization in 1914, and neither of the two yards produced textiles through the 1920s.

The little new construction that occurred within the District in the 1930s was government-sponsored. A new Post Office was built on East Merrimack Street in 1930-31, a Neo-Classical design of gray granite, with an entablature and balustrade of matching gray terra cotta. It stands between the Concord River and the Eastern Canal, on land formerly occupied by a Massachusetts Manufacturing building. An annex to the Trade High School was built in 1939 at the corner of John and French Streets (Figure 3-42). The architect was Harry Prescott Groves, who had designed the original Trade High School next door in 1900.

Perhaps the most significant of the Depression-era building campaigns was the construction of the North Common Housing Project in 1939 and 1940. Much of the northern part of the Acre was razed for this project, portions of which are within the LHPD Boundaries.

The city's population increased by about 1,000 between 1930 and 1940, reaching just over 101,000. A decline of about 4,000 was recorded by the 1950 census, and by 1960 the population had dipped to 92,000, almost 3,000 below the 1900 figure. By 1960, some of the decline must be attributed to increased ownership of automobiles, and the accompanying trend toward suburbanization.

Figure 3-39
Merrimack Manufacturing
Company's "New Block"
boardinghouse row on
Dutton Street, built
ca. 1845, photographed
1960.

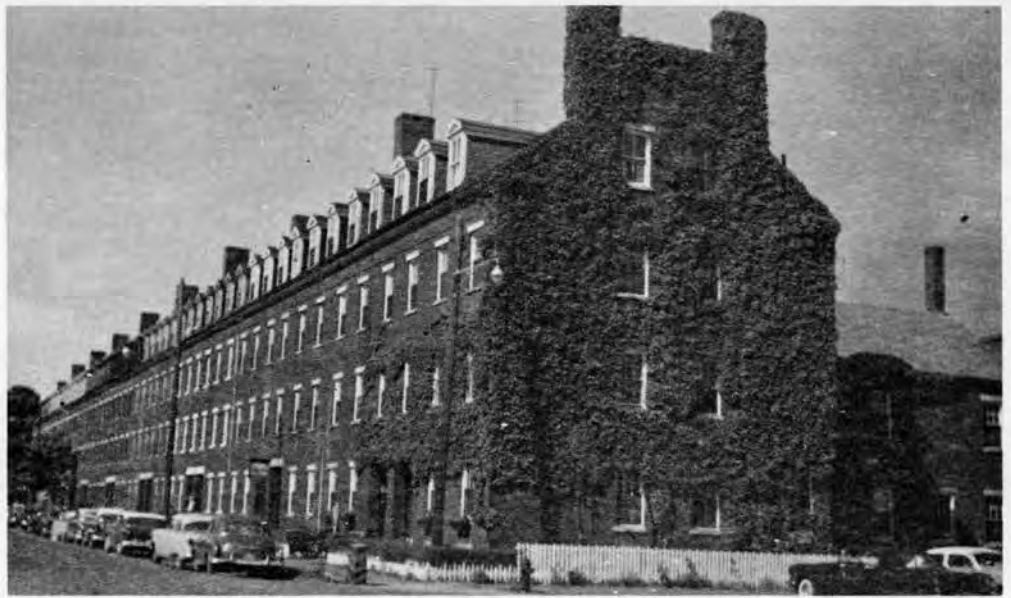


Figure 3-40
Merrimack Manufacturing
Company boardinghouse
on Dutton Street, built
ca. 1822, photographed
1960.

Figure 3-41
Proprietors of Locks and
Canals "Grist Mill" on
French Street at the foot
of Anne Street, built in
1883, photographed 1960.



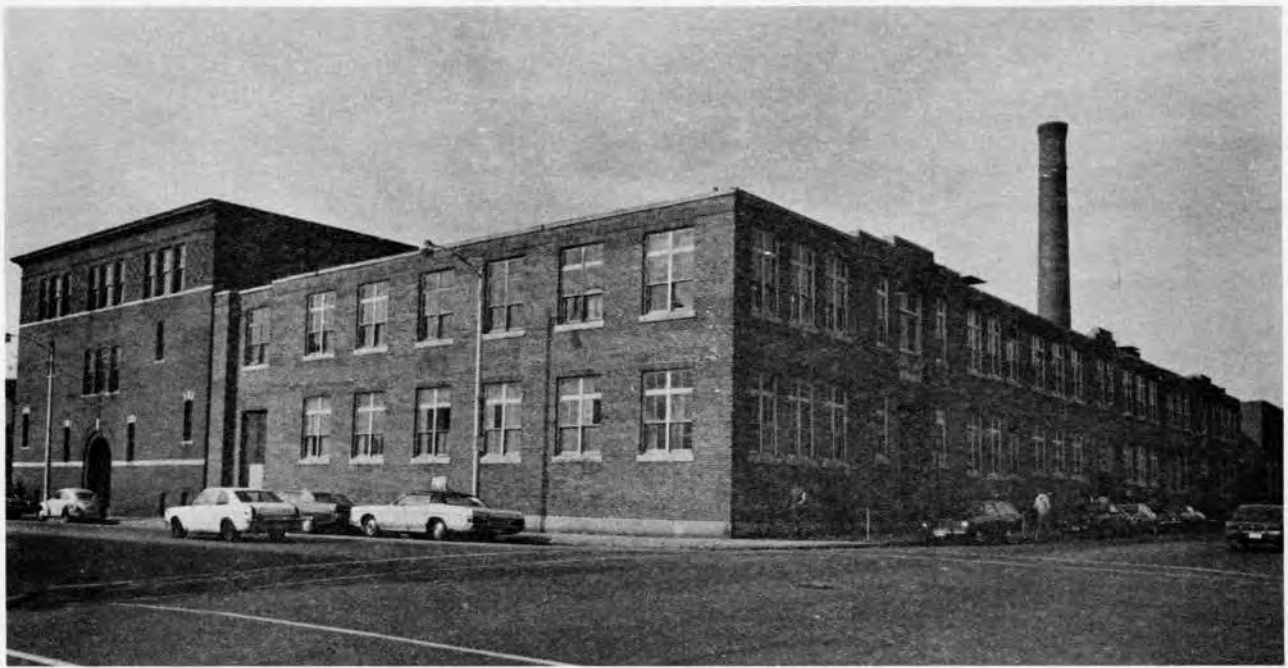


Figure 3-42 Lowell High School Annex, John and French Streets, built in 1939, and the old Trade High School (left) built in 1900. Photographed 1979.



Figure 3-43 View from John Street of the Cherry and Webb store, remodeled in 1953, photographed 1979.

Lowell's development in the 1924-1969 period is symbolized not by buildings, but by parking lots from which buildings were removed. Within the business district, new construction was rare, although projects involving remodeling, refacing, or adding and subtracting stories were (and are to the present day) fairly common. The Cherry and Webb Store at the corner of Merrimack and John Streets incorporates portions of at least three early buildings behind its 1953 metal facade, including whatever remnants of the "Marble Bank" that had survived earlier remodelings (Figures 3-43 and 3-27). No matter what the external appearance of a building in the central Lowell area, it is wise to suspect the existence of older building fabric within.

If the characteristic legacy of the 1924-1969 period in Lowell is the parking lot, a corresponding debt must be acknowledged for the preservation of the vast quantity of historic resources that did survive. The canal system, seven of the eleven major millyards, whole neighborhoods of nineteenth century houses, a central business district rich and varied with historic buildings, and countless other irreplaceable historic resources were not demolished. On these resources and on the "energy and adaptability" of Lowell's citizens described by Coburn in 1920, the revitalization of Lowell will be based.

REVITALIZATION OF LOWELL: 1970 to present

The demolition of the Merrimack Company millyard and boarding houses in the early 1960s confirmed a local conviction that Lowell was on a wrong course, that the city was destroying those features that make Lowell a special place. By the early 1970s, initial planning and demonstration projects based on Lowell's unique historic resources were underway, supported by the Model Cities Program and other agencies and foundations. In 1971, the non-profit Human Services Corporation was established in support of the goals of using the city as an educational resource, enhancing its environment, and pursuing economic revitalization through the preservation and presentation of Lowell's historic resources. Also toward these ends, legislation was introduced in Congress in 1972 and 1973 to create an Urban National Cultural Park in Lowell. Also in 1972, the City Council passed a resolution designating the cultural park concept as the basis of local planning efforts. A tangible result was the commitment of substantial funds to park-oriented revitalization efforts, totalling \$12 million between 1975 and 1978.

In 1973, the state authorized the City Hall Historic District Commission. It was empowered to review all exterior changes to buildings within the designated District.

The publication in 1973-4 of Lowell Urban Park, a product of the Human Services Corporation, helped crystalize the planning effort. The Commonwealth of Massachusetts authorized the Lowell Heritage State Park in 1974, with goals of preserving Lowell's historic resources and fostering their appreciation and enjoyment by the public. In 1975 Congress established the Lowell Historic Canal District Commission and charged it with preparing a plan for the preservation and interpretation of Lowell's historic resources. Published in 1977, the report of this commission, together with the cooperative efforts of the National Park Service, the Department of the Interior, and Paul Tsongas (first as Congressman from the Lowell district, then as a Senator) produced the legislation that Congress approved in 1978 and President Carter signed into law. Designated Public Law 95-290, "An Act to provide for the establishment of the Lowell



Figure 3-44 View of the Lowell National Historical Park office on Merrimack Street in the Welles Block, 1979.

National Historic Preservation District. Both of these entities took active form in Lowell during 1979. (Figure 3-44).

These public efforts have had a private counterpart in restoration and rehabilitation projects, particularly in the central business district. In some cases aided by a facade improvement grant from a fund established by local businesses, owner-occupants as well as developers have rehabilitated many structures in recent years, and work is underway on several others in 1979.

Lowell has survived, and has found in its past the means to prosper again. The challenge it faces lies in maintaining a strong local voice in the discussions of the city's future.