



PLAINWELL MILL REDEVELOPMENT

FEASIBILITY REPORT ON HISTORIC CAMPUS AND SURROUNDING SITE FOR THE CITY OF PLAINWELL, MICHIGAN

October 12, 2007



JJR landscape architecture
planning
urban design
civil engineering
environmental science

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DESIGN STUDIO

historic preservation &
communities by design

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EXECUTIVE SUMMARY

Scope of work

The JJR / HB Studio Team was hired to explore the feasibility of moving city hall into the historic mill building on the old Plainwell Paper company site and to adaptively reuse buildings 17, 19 and 20. This scope of services soon broadened to include a study and general assessment of all adjacent historic buildings, and to include an arts incubator in the program. The expanded scope allowed the team to look holistically at issues affecting the Mill campus and to ascertain the best possible balance of preservation, current needs and open space. Three meetings were scheduled with the Mill Committee to review findings, test ideas, and to discuss final options.

Decision making process

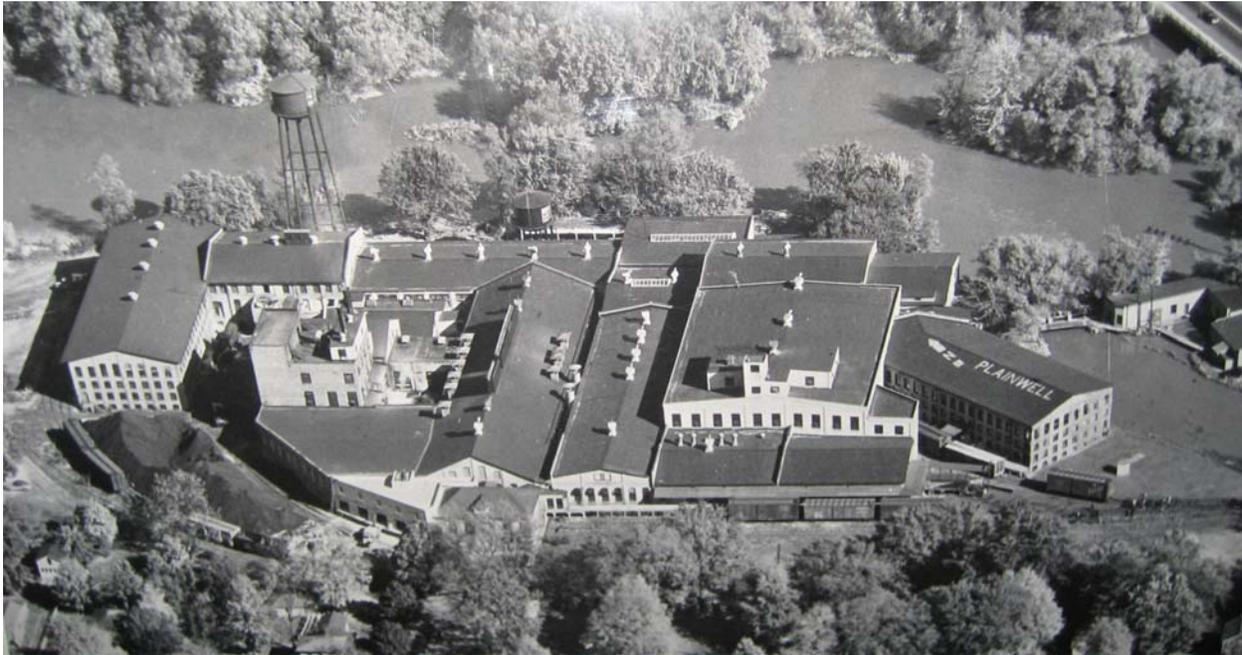
The conceptual land use plan approved by the mill committee (see Appendix A) identified the historic buildings that would potentially remain on site to form a new campus. The team performed an architectural and structural assessment of these buildings as well as studying the mechanical, electrical and plumbing systems. The assessment included an evaluation of adaptive reuse that took into consideration the Michigan Rehabilitation Code for Existing Buildings and ADA (Accessibility Requirements). The team interviewed the Mill Committee and selected stakeholders and created a proposed program for the needs of City Hall and an Arts Incubator and the criteria for future private and/or public development.



The next step was to take the general program and the criteria for future space and look at how it worked within the historic campus defined in the land use plan. After reviewing three options, the Mill Committee requested the team to develop a magnitude of cost for two of them. After review, the Mill Committee selected one option to proceed with. The team further developed the design of the site and historic campus and updated the magnitude of cost for this option. Finally, conceptual floor plans were developed locating City Hall in building 19, the Arts Incubator in building 12, identifying future development spaces, and incorporating Parking below.

EXISTING CONDITIONS DOCUMENTATION

The conceptual land use plan approved by the Mill Committee identified the historic buildings that would potentially remain on site to form a new campus. These buildings retain much of their original material and character and significantly contribute to the historic mill character of the site. These buildings generally have large undivided spaces, plenty of windows for natural light (or potential of new or reopened windows) and adequate to high ceiling heights.



Historic Photo of Mill showing complex before more modern additions

The team spent a day at the site walking through these buildings but focusing most of the effort on B18, B19 and B17 – the buildings most likely to house the known users of the site – city hall and an arts incubator. In addition, the team was asked to assess the buildings to determine what would minimally have to be done from a life safety and accessibility standpoint to allow city hall to move into the facility.

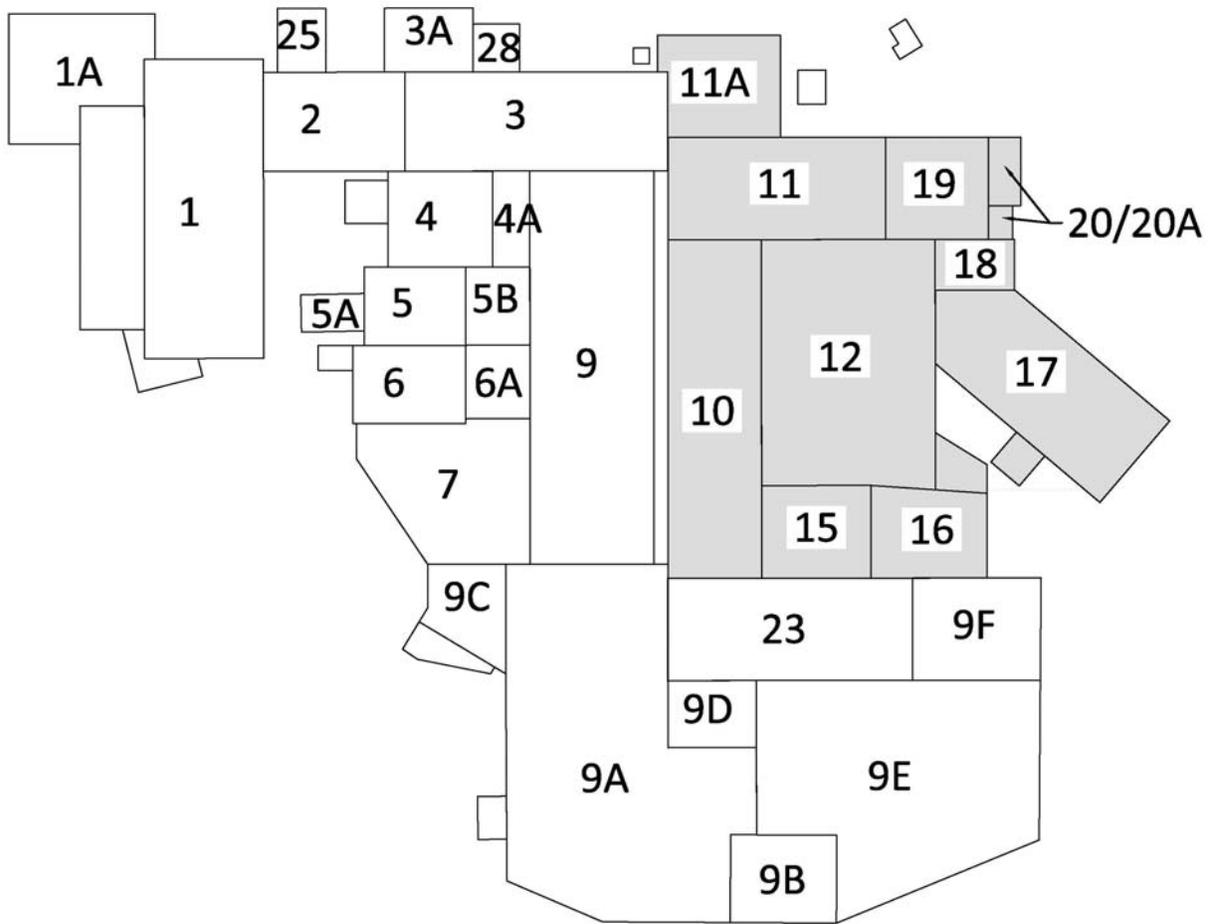
Structural

Major items from the structural assessment are included in the evaluation below. The complete Structural report can be found in Appendix B.

Mechanical/Electrical

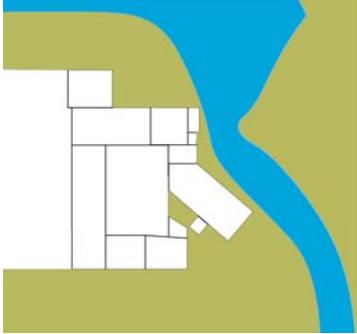
The complete Mechanical/Electrical report can be found in Appendix C.

MILL COMPLEX KEY PLAN FOR REFERENCE



Note: Buildings 1A, 25, 3A, 28, 3, 4, 4A, 5, 5A, 5B, 6, 6A, 7, 9, 9A-F, are being proposed for complete demolition.

Buildings focused on in this study are shown shaded.



SITE & ENTRY

Description

Located approximately $\frac{3}{4}$ of a mile east of exit 49 on Michigan Highway 131, the Plainwell Paper Mill historic campus and site is approximately 35 acres. Almost all of the significant structures and buildings are located in the easternmost 12 acres (the area east of Scott Street), adjacent to the mill race and adjacent to downtown area of Plainwell.

Having been almost entirely paved over during the last 100 years to serve the needs of industry, very few of the site's original natural features exist. The topography is essentially flat, with the exception of the riverbank which has an average drop of approximately 10 feet depending on the time of the year. The few mature trees and shrubs on site are located in 3 locations: next to the main visitor entrance to the Mill Complex, along the bank of the mill race; in areas adjacent to Cedar Street, and in a 4-acre secondary growth forest located between Fairlane Street and Michigan Avenue that consists primarily of small to mid size (2 inch to 12 inch) trees.



Paving over site



River frontage



3-part bridge



The Riverwalk

The site has almost a mile of frontage along the Kalamazoo River and an additional 850' along the mill race

Automobile access is exclusively off of the 1800' of frontage along Allegan via 6 curb cuts east of Warrant Street. An additional 325' of frontage along Allegan is located at the Prince Street intersection. The primary pedestrian / non-motorized entrance is via a 3-part bridge over the mill race that connects to Plainwell's Riverwalk and an adjacent civic parking lot. Allegan is a 4-lane artery that narrows to 2 lanes shortly after the Prince Street intersection. Currently, Allegan rates a level F of service for traffic circulation.

Surrounding uses are primarily single family residential neighborhoods with the exception of the downtown to the east, and municipal facilities / automobile related retail to the west. The site is highly visible from both Allegan Street, and the Main Street Bridge (crossing the Kalamazoo River) and it terminates the northern view from Church Street.



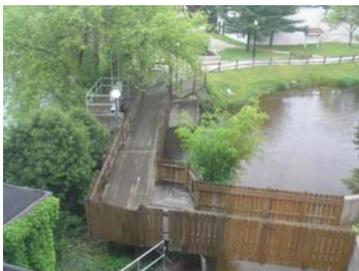
Water tower visible from afar



Current state of street frontage



Remnants of pedestrian system



Current mill race walkway



Industrial circulation remnants

Potential

Having served as an industrial site for almost 100 years, the Plainwell Paper Mill must overcome several access and circulation issues to become a user friendly and inviting space. To serve not only as a City Hall – the symbolic center of the community, but also as a market sensitive work/ live environment, the renovated Mill Campus must be easy to find, access, and park.

Wayfinding and Signage: Currently there are no signs indicating the location of the current Plainwell Paper Mill site. In addition to auto based signage at the highway interchange, along E. and W. Allegan Street, and N. and S. Main Streets, a comprehensive non-motorized signage system needs to alert visitors arriving by alternative methods. Once on site, a wayfinding plan will need to guide the visitor to their destinations, associated parking areas, and connecting pathways. The water tower should remain as a visual icon.

Interior site circulation: Currently there are only remnants of a pedestrian system that gave precedence to trucks and delivery more than workers and visitors. To meet current universal access / barrier free considerations, as well as effectively connect to the downtown, an entirely new non-motorized pathway needs to be designed and constructed. One prominent example is the Mill Race walkway – it currently has three areas of steps, is extremely narrow, and is not lighted. The proposed construction of a Riverwalk will greatly aid interior circulation by establishing a hierarchy of pathways (all roads and future pathways should intuitively connect to the Riverwalk) and offering an easy connection to the downtown.

Another interior site circulation issue is the lack of defined roads. Having no curbs, street lights, signage, or other standard cues, the only regulating force for cars and trucks are the existing buildings, changes in topography, and industrial remnants left throughout the site. A fully defined street network that connects at the appropriate locations (aligned with existing streets, with the potential for signalization) will need to be designed and built. Additional right of ways / easements may need to be built or set aside when in proposed open space areas to facilitate safe emergency access points to the Mill's less accessible areas.

As with the Riverwalk, the new road system needs to allow for future connections to the western portion of the site to ensure effective circulation and to minimize interaction with Allegan Street – already at service level F.



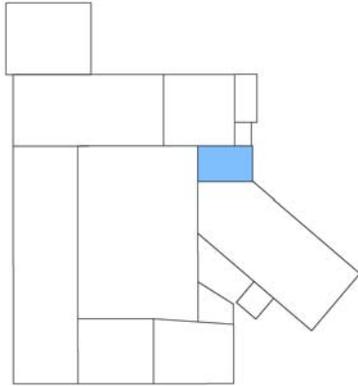
Parking & paths to City Hall



Current bridge over mill race

Parking: There are no clearly designated parking areas on site. Parking should be no more than 100-200' from a main entrance into the renovated campus. As this is an adaptive reuse project and parking will have to be sited in areas that do not compromise the Campus' historical character, this may lead to distances that are not normally encountered at a traditional City Hall. Parking should be lighted, account for snow removal and regular maintenance, and offer landscaping to both soften its appearance and help create shade on hot days. Additional thought should be given to the use of plant materials that promote positive storm water treatment – removal of particulates and overall cleansing of water - due to its adjacency to the Kalamazoo River.

Additional site issues that need to be explored in greater detail include the location and number of loading areas, refuse collection storage spaces, streetscape character, and drop off zones.



Building 18 - Location Diagram

BUILDING 18

Context in Site

Building 18 (B18) is located at the East side of the complex, adjacent to the Mill Race, and at the confluence of Buildings 12, 17, 19, 20 and 20A.

History

B18 was constructed in 1906 and remodeled in 1975. This building currently serves as the front door to the existing office areas and provides stair access to the various floor levels of the adjacent buildings.

Description

Building 18 has a main level of 1,250 square feet and a partial upper level of 300 square feet. There is no basement. The structure is brick masonry with a wood roof. The landing floors are wood and the main floor is slab on grade. There is a concrete structure which creates a lowered pit accessed off the landing level floor. The pit held a piece of equipment which has since been removed. There is evidence of several original openings in the brick walls which have been bricked up. There is a small raised portion of the roof above the raised corridor that gives access to the upper level of Building 19 and 12.

The building is entered at the main level through a small non-original entry vestibule adjacent to the mill race, directly into the remodeled stair enclosure. The stairs are narrow and wind to the partial upper level which serves as a large landing accessing stairs to the other buildings. The landing level is below either of the adjacent floors making the circulation between the adjacent buildings inefficient. The brick walls and wood ceiling are exposed keeping with the historic nature of the site. The more recent construction – stairs, landings and enclosures – is not flexible as to use and hides much of the building's historic nature. The building with its simple structure, high exposed ceiling construction, and multiple windows (all replaced) for natural light, is adaptable to new uses once the more recent construction is removed.



B18 exterior



B18 entry through vestibule to the left. A bricked up window is to the right.



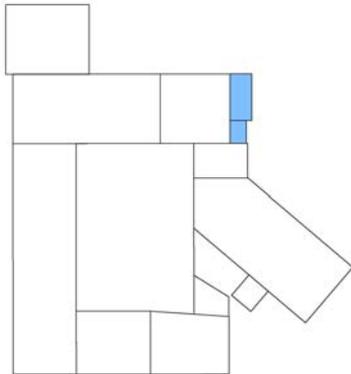
B18's partial upper level



B18's exposed wood ceilings



Area with raised roof



Bldg 20/20A - Location Diagram



View of B20 from the entry

Potential

With B18's location adjacent to the mill race, it makes sense to keep this building as the main entry to the complex. The existing non-original vestibule should be removed and replaced by a larger more spacious transitional or vestibule space.

By removing all enclosures and floors within the building (i.e. "gutting it"), the space can be used to create direct circulation between the buildings and efficient access between floors of differing elevations. Since B18 does not have a basement, an elevator should be located outside its perimeter within an adjacent building - all of which have basements. Some sort of bracing will have to be added to the walls once the landing structure has been removed. The northwest half of the existing roof will need to be removed and built at a higher elevation to create enough headroom to enter the higher levels of B19 and B12. Bricked in windows can be opened up and the brick walls left exposed so that this space – the front door and first impression – is representative of the historic character found in the restored and rehabilitated complex.

BUILDINGS 20/20A

Context in Site

Buildings 20 and 20A (B20/20A) are located to the east of B19, immediately adjacent to, and over part of, the mill race.

History

B20/20A were constructed in 1906. They provide circulation over the millrace to B19 and access to the turbine below.

Description

Buildings 20/20A are generally one story high, although at different levels. The buildings are approximately 1,175 square feet. Water flows into and beneath the building where a turbine once powered the operation of the mill. The buildings in the above grade portions of this bay are steel framed with masonry bearing walls and metal siding. The roof appears to be metal deck supported on steel beams. There is a long ramp inside the west half of this building that accesses the turbine room over the mill race and provides access to the main level of B19. The ramp is framed with steel and has a concrete surface. Inside this bay below the ramp level is the machine level and below that the turbine level with water flowing through. Windows have been infilled but openings are discernible.



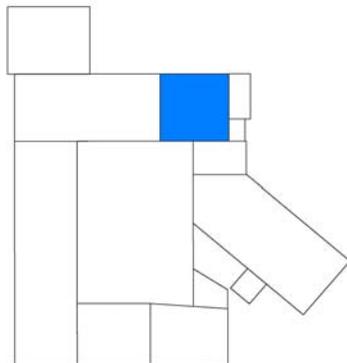
Trash rack where water flows beneath B20/20A



Interior of B20/20A



Gear for Turbine below



Building 19 - Location Diagram



B19 exterior



Ramp with bricked up windows leading to B19 on left

Potential

The current experience walking through these buildings is very dark and enclosed. There are bricked up windows on the B19 side of the ramp which could be opened up to create more openness and transparency. The partition between the ramp and the turbine room can be removed and the east wall toward the mill race opened up to bring light into the space. It would be interesting to create a display in this area on the history of the mill, and capitalize on its circulation function to the potential council chambers in B19. The water flowing under the building will require continual maintenance and some thought should be given to whether or not the trash rack needs to be kept in place if the turbine is not being used, and even as to whether the water should be allowed to continue running under the building.

BUILDING 19

Context in Site

Building 19 (B19) is located just to the north of B18, between buildings 20/20A and 11. It has a unique location in the complex with direct access from B18 and adjacent to the mill race and the river.

History

B19 was constructed in 1906 as the Store Room Crib. It was partially remodeled in 1975. The second level was remodeled in 1975 into offices accessed from B18 and B11.



View of B19 from the river



B19 exterior above B20/20A



B18 2nd level exposed wood clg



B18 Main Level
Future council chamber



B18 River Level structure

Description

Building 19 has a basement, main and second level of 4,700 square feet each. The structure is brick masonry perimeter bearing walls with reinforced concrete main floor structure. The second floor structure has concrete columns and main beams supporting timber secondary beams and floor deck. The second level has a timber roof structure. The reinforced concrete structure of the main floor originally consisted of four interior concrete columns supporting concrete beams and floor slab. The second floor level consists of concrete beams supporting secondary timber beams and a wood floor deck. This concrete structure has been reinforced by the addition of many additional columns, beams, and bearing walls that are non-original. The original concrete structural beams and column framing the main and second level floors have numerous cracks of a significant nature. The beams were constructed without shear reinforcing and rely upon the shear strength of the plain concrete only. This can be seen at numerous areas where the concrete has spalled, revealing some of the tensile reinforcing.

The basement is at grade access and reached by the northwest stairway or through the adjacent buildings. The large concrete columns are doubled on this level which, coupled with existing block wall partitions, somewhat limits its flexibility for future use. The main floor is currently entered via the ramp through buildings 20 and 20A, from the northwest stairwell, or through the adjacent buildings, and consists of mainly one large open room with a couple of small enclosures. The added wood columns mentioned above break the space into smaller bays. The second level is one open room with perimeter offices. It has high exposed ceiling construction and multiple windows (all replaced) for natural light.

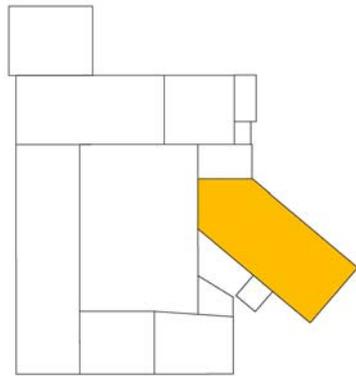
In general, the concrete column and beam structure on the lower two floors needs reinforcing, patching and repair. The timber roof framing members appear to be in good condition. The tongue and groove wood roof deck has been cleaned and stained on the underside. The condition of the bituminous roof membrane appeared to be very alligatored. The masonry walls are exposed throughout the building. They are generally quite thick and the brick is in serviceable condition. Numerous wall openings have been filled-in and some new openings added over the life of the building. General tuck pointing and repairs will be required, but no major defects were noted.



View of top of ramp in B20/20A



Bricked up window openings



Building 17 - Location Diagram



B17 south exterior



B17 loading dock and west elev.

Potential

The second floor of Building 19 is in very good shape but has a small and obscure connection to the main door. The south wall adjacent to B18 could be opened up for a more generous connection both physically and visually. The main floor would benefit from the opening up of the wall between B20/20A's ramp and the main space mentioned earlier. The cracked concrete beams and columns will likely require epoxy injection. The concrete beams should be reinforced and the wood columns removed to create a large unobstructed space which will have high adaptability and flexibility. The thought is to use this for the new city council chamber. The existing partitions should be removed as they are not original and would create unnecessary obstacles to future use of the space. The window openings should be opened up to create a bright space and allow views of the river.

BUILDING 17

Context in Site

Building 17 (B17) is located at a 45 degree angle just to the south of B18, paralleling the mill race.

History

B19 was constructed in 1906 as the Main Office and Storage. It was partially remodeled in 1975.

Description

Building 17 has a basement, main, mid and second level of 7,150 square feet each. The structure is brick walls, wood floors, wood interior structure and a timber roof structure cambered with steel rods. The basement has a high ceiling and small bays of 8 to 10 feet. All windows have been bricked up. The main and mid floors have an abundance of natural light but very small bays and low ceilings of 6'-8". The second floor has large open bays, high exposed ceiling construction and many windows for natural light. The building is generally in good condition and all windows have been replaced.



B17 east elev with steel plates



B17 2nd level exposed wood clg



B17 main and mid level bays

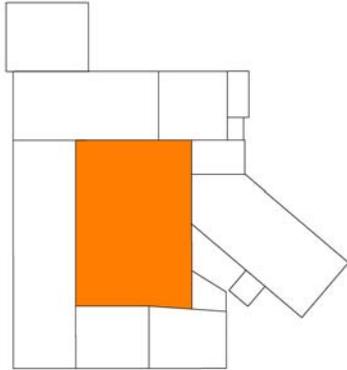


B17 main level window, bricked-up basement window below

At the underside of the second floor, the majority of the timber beams that bear into the exterior walls have been retrofitted with a pair of steel rods passing through the walls and through a steel plate added to the exterior of the wall. Numerous timber columns have been damaged due to collisions by mill equipment. Many columns and beams have been replaced with structural steel members. There are some isolated areas where the exterior masonry walls have badly deteriorated and will require repair. There is a concrete haunch supporting the end of a timber beam at the wall common with Building 12 that is severely cracked. This beam end should be shored up immediately and the shoring maintained until permanent repairs can be made. Any similarly cracked haunches that may be present should also have the beams shored. The concrete window sills are very porous and weathered in appearance.

Potential

The greatest two challenges to B17 are the small column bays of the basement, main and mid levels, and the low ceilings of the main and mid levels. To make this building more adaptable, two or three of the rows of columns could be removed to create larger more versatile bays. The middle floor could be removed (leaving the structure) either wholly or selectively to create a more open, spacious feel to the space. The main floor is approximately four feet above grade and could open out onto landings or docks on both of the long sides to create a potential for outdoor display and circulation at floor level. Alternatively, window wells could be created along the two long sides to expose the original window openings and replace the basement windows. The second floor is mainly open with perimeter offices. It has high exposed ceiling construction, multiple windows for natural light, and is adaptable to a new or the existing office use. The brick walls are exposed throughout the building.



Building 12 - Location Diagram



High south end of B12 over B16



Penthouse above roof



Interior of penthouse



B12 structural frame and high open bays

BUILDING 12

Context in Site

Building 12 (B12) is a large building located just to the south and west of B18 and is almost completely surrounded by other buildings. It is rectangular except for a small trapezoid shaped wing adjacent to Building 16 at the southeast corner.

History

B12 was constructed in 1940 as a Finishing Room.

Description

Building 12 has a basement, main, and second level of 16,280 square feet each. The structure is clay tile and brick walls, concrete floors, concrete and steel interior structure and a wood roof on steel beams. The basement is currently chopped up with block walls and double the rows of columns as above. Many of the steel columns are non-original and appear to have been added to accommodate depressions added to the floor above. Some columns and beams supporting the main level appear to be concrete, however they are actually steel sections encased in concrete. The main floor deck above is a mixture of wood planks supporting a concrete topping, steel deck supporting concrete topping, and poured-in-place concrete deck. The main floor is mostly open with large bays. The floor has multiple openings, thickened slabs and reinforcing steel for the now-removed mill equipment. The second floor is much taller than the neighboring buildings. A portion of the space has been used for offices, but the majority of the floor is open with large bays. The small trapezoidal projection is closed off from the rest of the building and used most recently as offices. The windows on the main level have been bricked in, but are still discernible.

Building 12 has a penthouse that sticks up above the roof. The penthouse floor is framed several feet below the level of the roof structure, which prohibits views out the windows except for the sky. It is through this penthouse that access is gained to the roof. The floor structure of the penthouse is framed-in at a lower elevation than roof framing. The roof membrane is roll roofing sealed with bituminous sealer between the various edges of the sheets.

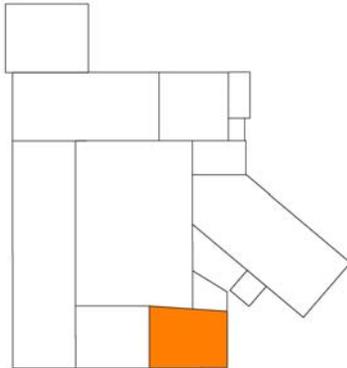
This building is very adaptable for reuse because of its openness and large bays. Natural light is almost non-existent on the basement and main levels because of its location in the middle of the site. The building is in good condition.



B12 Main Level, large open bays



B12 Basement Level



Building 16 - Location Diagram



East end B16 w/ missing pier



B16 interior looking toward B17

Potential

Building 12’s greatest potential is probably its large, high open bays and location at the center of the historic campus. Its greatest challenge is the current lack of natural light. If some of the less adaptable buildings around B12 are removed, natural light could be brought in at those locations. The basement level could be used for parking by removing the block walls and two of the rows of columns. The elevator could be located at the northeast corner of this building adjacent to B18 and barrier free parking located nearby for easy access to the building complex.

BUILDING 16

Context in Site

Building 16 (B16) is located just to the south of B12, is north of some of the newer buildings in the complex and is almost completely surrounded by other buildings.

History

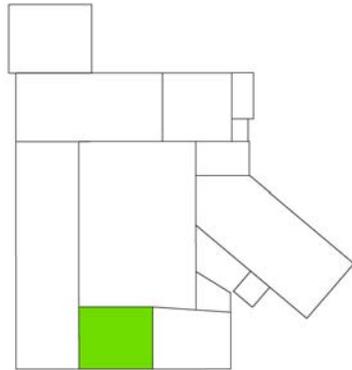
B16 was constructed in 1906 as a Finishing Room.

Description

Building 16 has a basement and main level of 3,800 square feet each. It has exterior masonry bearing walls and a heavy timber roof and floor structure. The roof is a gable roof and has a bituminous roof membrane that is old and heavily patched. In the lower level some timber columns have been replaced by steel wide flange columns. It appears there are two hydraulic lifts in the main floor of Building 16 that raise and lower rectangular floor panels. The main floor has a concrete surface, but wooden deck. Brick piers on the exterior face were partially removed. The basement is currently chopped up with columns. The main floor is very open with a single row of columns. Some window openings are bricked in but discernible and the wood roof structure is exposed. The building is in fair condition with some minor water infiltration. The roof may need a new membrane.



Roof of B16 in front, B15 in back



Building 15 - Location Diagram



B15 showing old roof line



B15 basement structure supports 1000#/square foot

Potential

This building is very adaptable for reuse because of its openness and tall windows. It has a direct connection with B12 and with removal of the newer buildings to the south, will be a prominent cornerstone to the historic campus. The basement level could be used for parking by removing some of the existing structure.

BUILDING 15

Context in Site

Building 15 (B15) is located just to the west of B16 and to the south of B12, is adjacent to some of the newer buildings in the complex and is completely surrounded by other buildings.

History

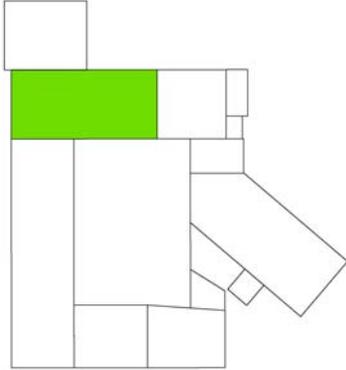
B15 was constructed in the 1940s and served as the Supercalender Room.

Description

Building 15 has a basement and main level of 4,000 square feet each. The structure is brick walls, concrete floor (installed in 1990), and steel roof trusses with a wood deck. The building has been modified as evidenced by the shadow of a former roof line. Minimal historic material remains. The floor capacity of the main level is 1000# per square foot and because of this; the basement is currently chopped up with columns and massive concrete piers. The main floor is completely open, but there are no windows because of the adjacent buildings.

Potential

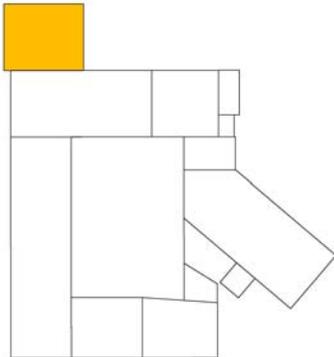
The upper portion of B15 is proposed to be removed both because of its lack of historic integrity and to allow more natural light into Building 12. The main floor and structure below could remain to create an outdoor plaza and the space below used for either parking or storage.



Building 11 - Location Diagram



North elevation of B11 showing 2nd floor addition and mech penthouse over B19 to the left



Building 11A - Location Diagram



B11A exterior view from river

BUILDING 11

Context in Site

Building 11 (B11) is located just to the west of B19 and to the north of B12.

History

B11 was constructed in 1906 and then added onto in 1960. It was the Beater Room.

Description

Building 11 has a basement, main and second level of 9,100 square feet each. The structure is brick walls, concrete floor and steel beam roof structure with wood ceiling. The basement and main level were built in 1906 and in 1960; a high second level was added contiguous with B12's second level. The addition has few windows and the brick does not match the original. The walls were built on top of the masonry brick walls.

Potential

The upper part of B11 is proposed to be removed because of its lack of historic integrity and to allow more natural light into Building 12. The main floor and structure below could remain to create an outdoor plaza and the space below used for either recreation or commercial/retail.

BUILDING 11A

Context in Site

Building 11A (B11A) is located just to the north of B11, facing the Kalamazoo River.

History

B11A was constructed in 1940 and used as the Maintenance Room.

Description

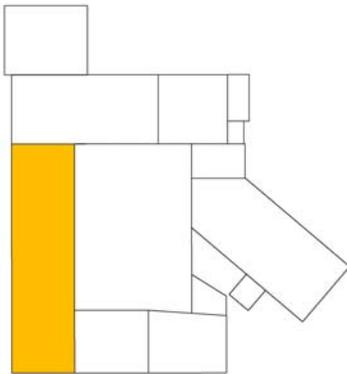
Building 11A has a basement and main level of 4,600 square feet each. The structure is brick walls, concrete floor, cast-in-place concrete foundations and structure at the basement level, and a steel truss roof structure with wood ceiling. The east wall is bowing outward. Several of the concrete columns have significant cracking where they join to the beams of the main floor level. There is cracking of the north exterior wall around the centrally located double wide door opening. The two concrete columns of the main floor with cracks at their joints with the supported beams are interior to and adjacent to this door opening.



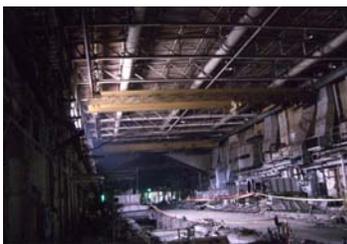
B16 east exterior elevation



B16 2nd level light-filled interior



Building 10 - Location Diagram



B10 main level interior



B10 basement level interior

The reason for the cracking must be found and the cracking repaired at the two cracked columns prior to putting the building back into service. The spaces at each level are open with many large steel windows overlooking the river. The space inside is open, has high ceilings, and has a high degree of historic integrity.

Potential

This building, with three sides unencumbered by adjacent buildings and located next to the river, has great potential for a public space such as a restaurant or brewpub. The main floor could be reached via the plaza created by B11 and the basement/river level via either the parking below Building 12 or from the Riverwalk.

BUILDING 10

Context in Site

Building 10 (B10) is located to the west of B12, completely surrounded by other buildings.

History

B10 was constructed in 1906 and used as the Machine Room.

Description

Building 10 has a basement and main level of 12,180 square feet each. The main floor is a reinforced concrete structural system with poured-in-place columns, beams, and slabs. There is one very large floor opening that appears to have been for a large piece of equipment. The roof is clear span steel gable trusses with a timber roof deck. At present this building has no walls exposed on the exterior, however if building 9 is demolished, the west wall will become exposed as an exterior wall. The walls have been highly modified with new and infilled openings. The space is completely open but currently with no natural light.

Potential

If the newer buildings to the south and west of this building were removed and B10 was to have access to natural light, this building, with its open high space, could be used for many potential uses.

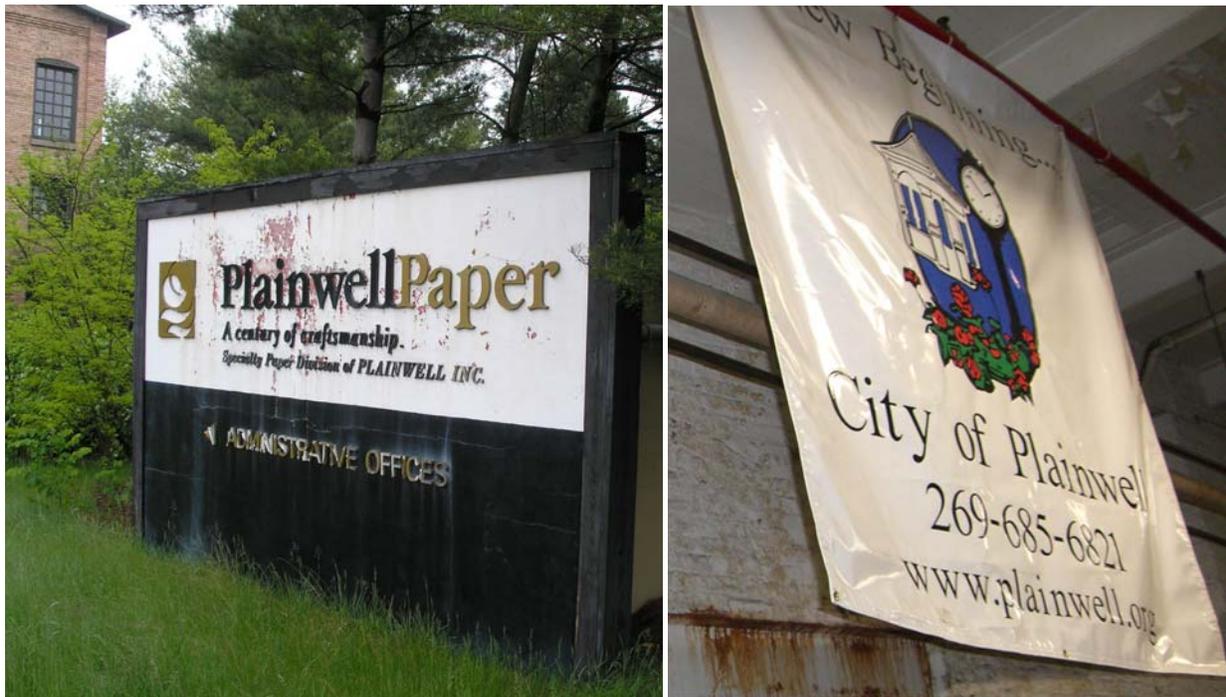
LIFE SAFETY AND ADA (ACCESSIBILITY) ASSESSMENT

The purpose of this code evaluation was to identify any major Life Safety and ADA (Accessibility) issues that will affect the conversion of the industrial building to an office, business or other occupancy.

Any one of three code routes can be utilized on this conversion:

- A. The Michigan Building Code (MBC) for new construction. This will require the entire building - existing portions and new portions - to comply with the Building Code.
- B. The Michigan Building Code point scoring compliance alternative provided under Section 3410. This route evaluates the existing portions plus proposed new work under 18 separate fire and life safety features. The object is to provide sufficient features to meet or exceed a mandatory safety point score. New work under this route requires compliance to the MBC for new construction, while allowing existing non-compliant items to remain.
- C. The third route is the Michigan Rehabilitation Code (MRC). This route, as with the other two routes, requires that new work comply with the building code for new construction where technically feasible. Based on the level of renovation and change of occupancy, the MRC sets out the minimum level of safety features which is typically less than the code for new construction. This route also puts some parameters onto the area to be upgraded based on the level of renovation and change of occupancy.

The third route is typically considered the most favorable requiring the least upgrades. The level of safety that needs to be obtained is spelled out and not left up to interpretation.



Conversion of the Plainwell Paper Mill site and buildings to a new occupancy, using the Michigan Rehabilitation Code

The following four areas were assessed generally: Occupancy, Fire Resistance, Means of Egress, and Accessibility.

Occupancy

The buildings have been occupied as a Paper Mill which is classified as a moderate hazard industrial "F-1" occupancy. Future use of the buildings is proposed to be a mixture of municipal, office, retail and housing; therefore, the proposed conversion will be classified as a change of occupancy under the building codes.

City Hall is classified as a business "B" occupancy and, depending on the proposed layout, large conference meeting rooms within the facility such as the city council chamber, will be classified as an Assembly "A-3" occupancy. Any parking within the building will be classified as a Storage "S-2" occupancy. A restaurant/bar will be classified as an Assembly "A-2" occupancy. Some of these are classified as higher hazard occupancies than the current occupancy. In general, when the new occupancy has a higher hazard, that portion of the building will need a fire separation from the other buildings and will have to be evaluated to a higher standard. If the hazard is the same or lower, the existing building is generally acceptable as is. The two main exceptions to this are the Means of Egress (Exiting) requirements and the interior finish of walls and ceilings, which must be per current code.

Fire Resistance

The existing facility is a mix of unprotected steel and wood frame structure with masonry exterior. The exterior building construction 17" - 19" thick brick (non-combustible, non-rated) construction, while the interior has a mix of materials both combustible and non-combustible. This construction type most nearly represents a Type III construction. There are area and height limitations based on the construction type which will have to be met if the use has a higher hazard. This construction type allows 19,000 square feet and four levels which is larger than the largest floor plate (Building 12 at 16,280 square feet). Automatic fire sprinklers diminish the impact of other requirements (i.e. automatic fire sprinklers are found in many exceptions to requirements of the code) allowing for greater flexibility in the adaptive reuse of the building.

Means of Egress

There are sufficient exits points from the buildings for most occupancies and with the removal of some of the buildings, there will be increased opportunity for exits if needed. Stairways have to be enclosed and directly access an exterior door. Ceiling heights of a means of egress shall not be less than 7'-0", however protrusions are allowed down to 6'-8" which means that although B17's ceilings are low on the main and mid levels, they DO meet code.

Accessibility

There is currently limited barrier free access to any of the mill buildings from the site and within the buildings. Most, if not all, portions of the buildings will have to be made accessible by elevators and/or ramps. Major items will be site access to building 18 and access from B18 to all levels of the adjacent buildings. The ramp in B20 is at a slope of approximately 1:15 which is well within the requirements for barrier free access and can be part of the accessible route required.

PROGRAM

The proposed program for the mill buildings includes the City Hall, an Arts Incubator and space for future private and/or public development.

City Hall

Offices

City Manager Office

City Clerk

Economic Manager

Human Resources Manager

Assessor

Two administrative assistants

Conference room for 12-15 people

Kitchenette/Break Room

Staff Toilet

Storage

Council Chamber

Council table for 7 people

Press table

Arts Incubator

Artist Studios – quantity to be determined

Office

Gallery/artist store

Expansion space for larger artist shows or seasonal art markets

Arts Education Center

Secure Storage for class materials

Future Space Criteria

Quality and Flexibility of space

Unprogrammed space in the building ideally should have large open bays, high or adequate ceilings, plenty of natural light, access to the main entry and elevators, and have exposed brick walls to take advantage of and celebrate the historic characteristic of the mill site. Spaces should be as unencumbered as possible so as not to limit the functions for which the space could be used. Smaller program requirements should be located to retain as much large open space as possible.

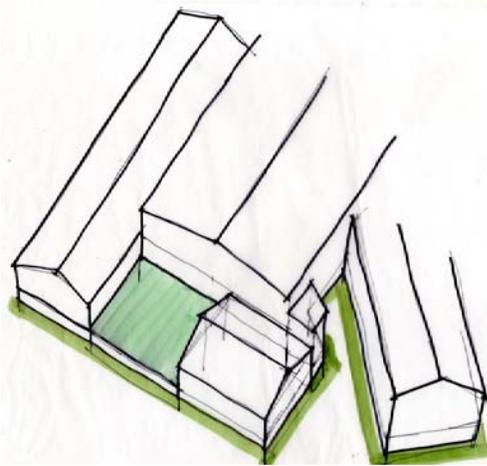
PROGRAM AND BUILDING USE OPTIONS

The next step in the process was to take the general program and the criteria for future space and look at how it worked within the historic campus defined in the land use plan - Buildings 10, 11, 11A, 12, 15, 16, 17, 18, 19, 20 and 20A – shown shaded on page 4 of this report. The team explored the pros and cons of removing various combinations of buildings studying how this changed access, light, circulation and massing. Three concepts were presented for the development of the historic campus within the site. The three options included the relocation of City Hall to building 19, location of an Arts Incubator (in building 17 or 12), and various building demolition scenarios.

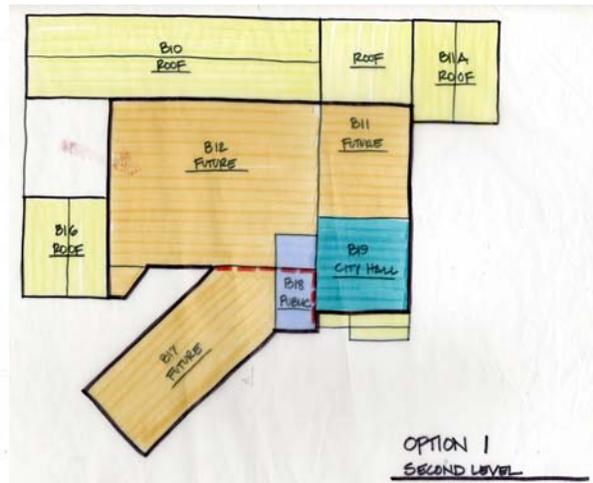


Aerial view of mill looking northwest. Area of focus for this study is at lower right (northeast) quadrant.

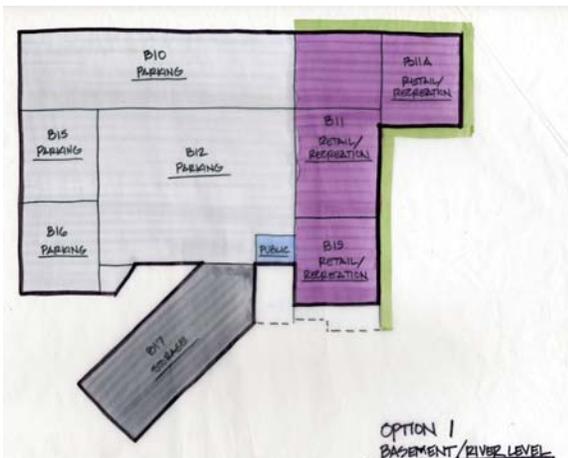
OPTION 1



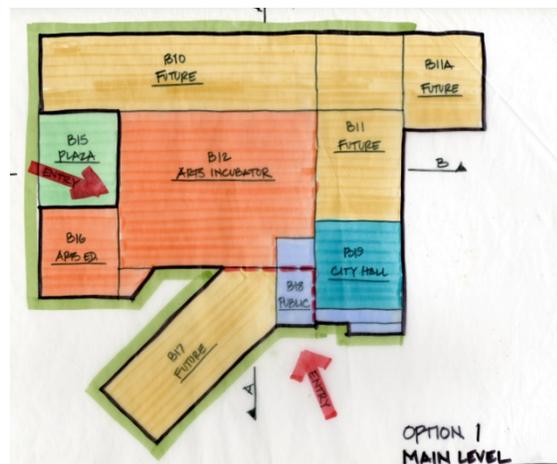
OPTION 1



OPTION 1
SECOND LEVEL



OPTION 1
BASEMENT/RIVER LEVEL



OPTION 1
MAIN LEVEL

Option 1 retained the most existing buildings, only removing part of Building 15 to create access and light to B12.

This option consisted of relocating City Hall into Building 19, council chamber on the main floor level with City offices located above on the second floor.

Building 18 would be used for vertical circulation, elevator and stairs.

Building 12 main floor would house the Arts Incubator.

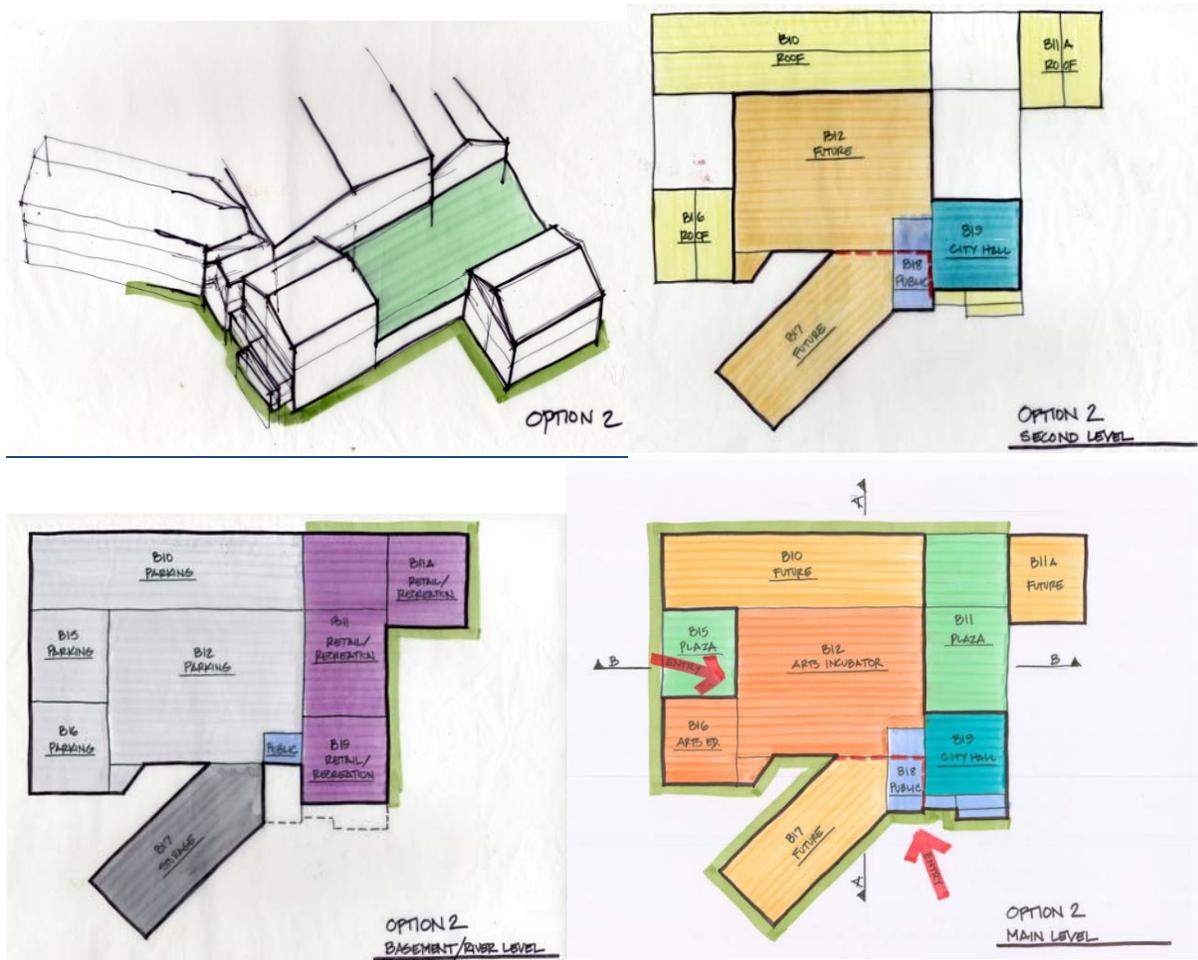
Building 15 would be removed from the main floor level up.

The basement/river level of Buildings 10, 12, 15, 16 would be used for parking.

The main (plaza) level at building 15 would be used as the entry to the Arts Incubator area.

The basement/river level of buildings 19, 11 and 11A would be used for recreational use such as a canoe livery or commercial such as a professional office.

OPTION 2



Option 2 consisted of relocating City Hall into Building 19, council chamber on the main floor level with City offices located above on the second floor.

Building 18 would be used for vertical circulation, elevator and stairs.

Building 12 main floor would house the Arts Incubator.

Buildings 15 and 11 would be removed from the main floor level up.

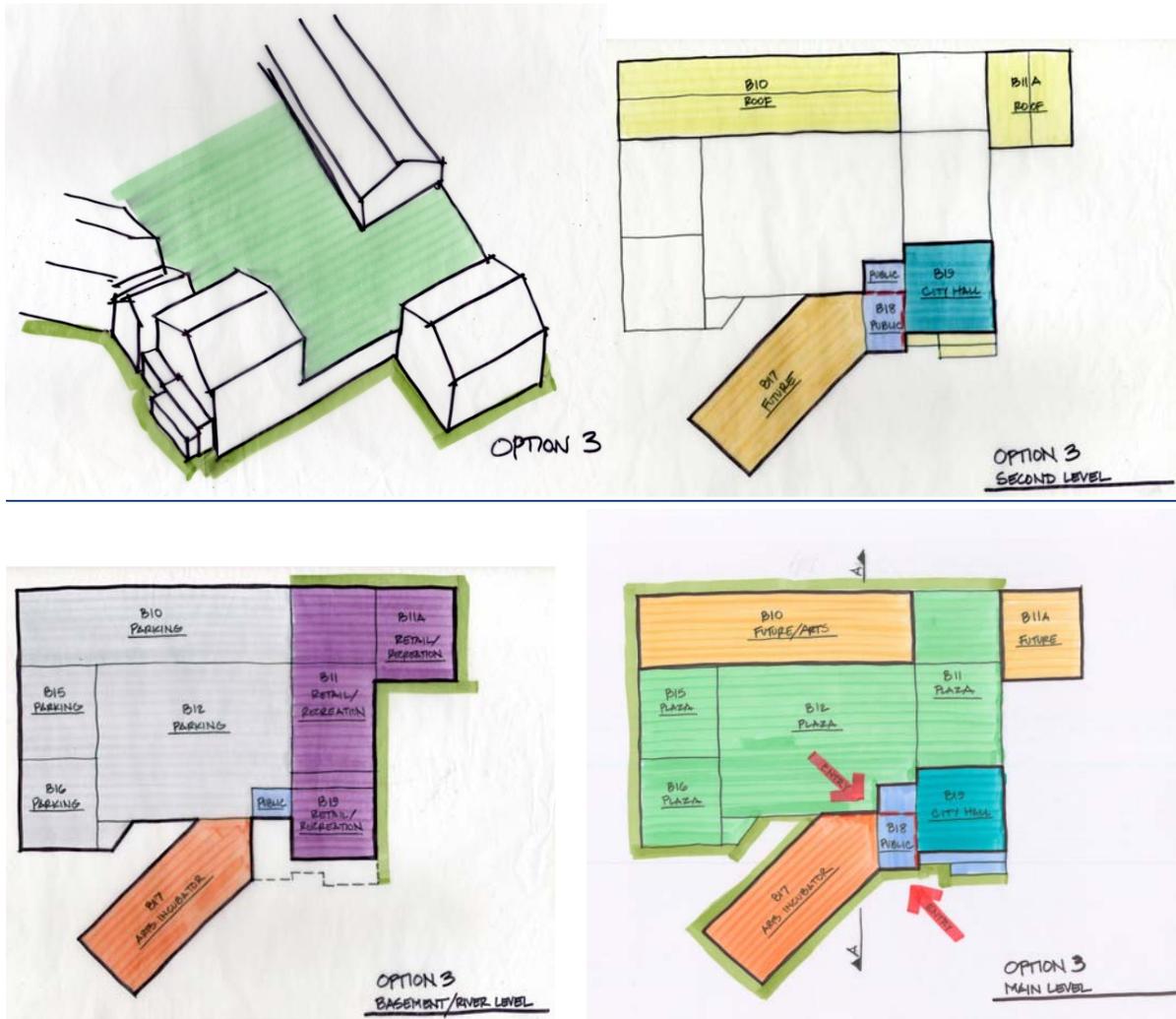
The basement/river level of Buildings 10, 12, 15, 16 would be used for parking.

The basement/river level of buildings 19, 11 and 11A would be used for recreational use such as a canoe livery or commercial such as a professional office.

The main (plaza) level at building 15 would be used as the entry to the Arts Incubator area.

The main (plaza) level at building 11 would be used as a plaza entertainment area overlooking the river and provide the connection from the Arts Incubator space and City Hall to the Restaurant and future development of the site to the west: "Central Park".

OPTION 3



Option 3 was the most open of the options – removing Buildings 11, 12, 15, and 16 and creating a large landscaped plaza ringed with the remaining historic buildings.

This option consisted of relocating City Hall into Building 19, council chamber on the main floor level with City offices located above on the second floor.

Building 18 would be used for vertical circulation, elevator and stairs.

Building 17, basement/river level and main floor, would house the Arts Incubator.

Buildings 11, 12, 15, and 16 would be removed and the main (plaza) level created would be used for parking, additional entrance to City Hall, and provide the connection from the Arts Incubator space to the Restaurant and future development of the site to the west: “Central Park”.

PRESENTATION OF TWO OPTIONS WITH COSTS

After reviewing the three options, the Mill Committee requested the team to continue the refinement and development of Options 2 & 3. This phase involved looking at the sequencing of the phases required for the project and a preliminary magnitude of cost for each option. The team added an alternative to Option 3 (Option 3A) which included parking on the basement/river level of buildings 12, 15 and 16, and recreation/retail on the basement/river level of buildings 11, 11A and 19.

The letters in the left column indicate the phase in the sequence of construction. The options are indicated across the top row. Costs are summarized for each phase and a running total is provided at each step to emphasize that the costs are based on the work proceeding in the sequence laid out and should not be looked at as isolated costs.

PLAINWELL MILL SITE REDEVELOPMENT

COMPARISON MATRIX

August 20, 2007

		OPTION 2	OPTION 3	OPTION 3 ALTERNATIVE
		B12-Parking Below	Demo B12-No Park'g Below	Demo B12-Parking Below
A	Site and Access	\$ 996,000	\$ 996,000	\$ 996,000
		B18	B18	B18
	Running Total	\$ 996,000	\$ 996,000	\$ 996,000
B	City Hall	\$ 731,250	\$ 731,250	\$ 731,250
		B19	B19	B19
	Running Total	\$ 1,727,250	\$ 1,727,250	\$ 1,727,250
C	Arts Incubator	\$ 1,429,620	\$ 1,302,840	\$ 1,302,840
		B12	B17	B17
	Running Total	\$ 3,156,870	\$ 3,030,090	\$ 3,030,090
D	South Bldgs Demo	\$ 1,359,783	\$ 1,359,783	\$ 1,359,783
		B9a-9f, B23	B9a-9f, B23	B9a-9f, B23
	Running Total	\$ 4,516,653	\$ 4,389,873	\$ 4,389,873
E	Historic Campus	\$ 679,000	\$ 1,565,050	\$ 1,574,800
	Plazas	B11 and B15	Slope grade to river	B11, B12, B15 and B16
		no drop off	drop off on surface	drop off on surface
	Running Total	\$ 5,195,653	\$ 5,954,923	\$ 5,964,673
F	Structured Parking	\$ 691,680	\$ -	\$ 691,680
	Deck Parking	50 covered spaces	no structured parking	50 covered spaces
	Running Total	\$ 5,887,333	\$ 5,954,923	\$ 6,656,353
G	Future Development	\$ 85,090	\$ 45,410	\$ 45,410
	SF Available	85,090	45,410	45,410
		B10,B11A,B11,B12,B17,B19	B10,B11A,B17,B19	B10,B11A,B17,B19
Total		\$ 5,972,423	\$ 6,000,333	\$ 6,701,763

	Surface Parking	50	50	50
	Temporary Parking	65	65	65
	Deck Parking	50		50
	Plaza Parking		20	20
	Total Parking	165	135	185
	Other Notes:	Operational Costs Higher	Less Future Space available	Less Future Space available

FINAL OPTION WITH CONCEPTUAL SITE DESIGN AND UPDATED COSTS

The mill Committee selected Option 2 to proceed with. The team further developed the design of the site and historic campus and updated the Magnitude of Cost for this option.



The proposed site plan is driven by the need to provide safe access, convenient parking, and making it easy to find entrances while preserving the historic character of the campus. The following organizing approaches seek to accomplish the goals as outlined above:

- Main site entrance aligned with Church Street – easy to find, near downtown
- Parking adjacent to main pedestrian access over Mill Race – easy to find, convenient
- Parking and drop off loop as close as possible to City Hall entrance
- Interior grid street system to define parking areas and access between main entrances
- Shape parking to follow railroad alignment – respect history of site
- Pedestrian connections via the Riverwalk and railroad alignment to provide comprehensive and safe non-motorized access

UPDATED MAGNITUDE OF CONSTRUCTION COSTS		
October 6, 2007		
		OPTION 2
		B12-Parking Below
A	Site and Access	\$ 1,028,400
		B18
	Running Total	\$ 1,028,400
B	City Hall	\$ 751,500
		B19
	Running Total	\$ 1,779,900
C	Arts Incubator	\$ 1,436,620
		B12
	Running Total	\$ 3,216,520
D	South Bldgs Demo	\$ 1,359,783
		B9a-9f, B23
	Running Total	\$ 4,576,303
E	Historic Campus	\$ 679,000
	Plazas	B11 and B15
		no drop off
	Running Total	\$ 5,255,303
F	Structured Parking	\$ 746,680
	Deck Parking	42 covered spaces
	Running Total	\$ 6,001,983
G	Future Development	\$ 85,090
	SF Available	85,090
		B10,B11A,B11,B12,B17,B19
Total		\$ 6,087,073
	Surface Parking	50
	Temporary Parking	65
	Deck Parking	42
	Plaza Parking	
	Total Parking	157

CITY HALL AND ARTS INCUBATOR DESIGN CONCEPTS

Finally, conceptual floor plans were developed locating City Hall in building 19 and the Arts Incubator in building 12. These conceptual plans make assumptions as to which buildings are used and what they would be used for. Below is a description of walking through these spaces, illustrated by the plans themselves.

Parking and Entry

Visitors arriving at the Plainwell Mill would park in the new parking lot created by the removal of the small parks building. They would be able to drop people off at the circle or continue on and park. Walking by the new fountain, turbine artwork, and gazebo, they would walk across a new bridge gently sloping up to the main entry across the mill race. The path they are on is part of the Riverwalk and as they head toward the front door they can see the Riverwalk continuing around the building to the right toward the Kalamazoo River.



Existing fountain, artwork and gazebo are incorporated into a new parking and entry design

Entry Hall

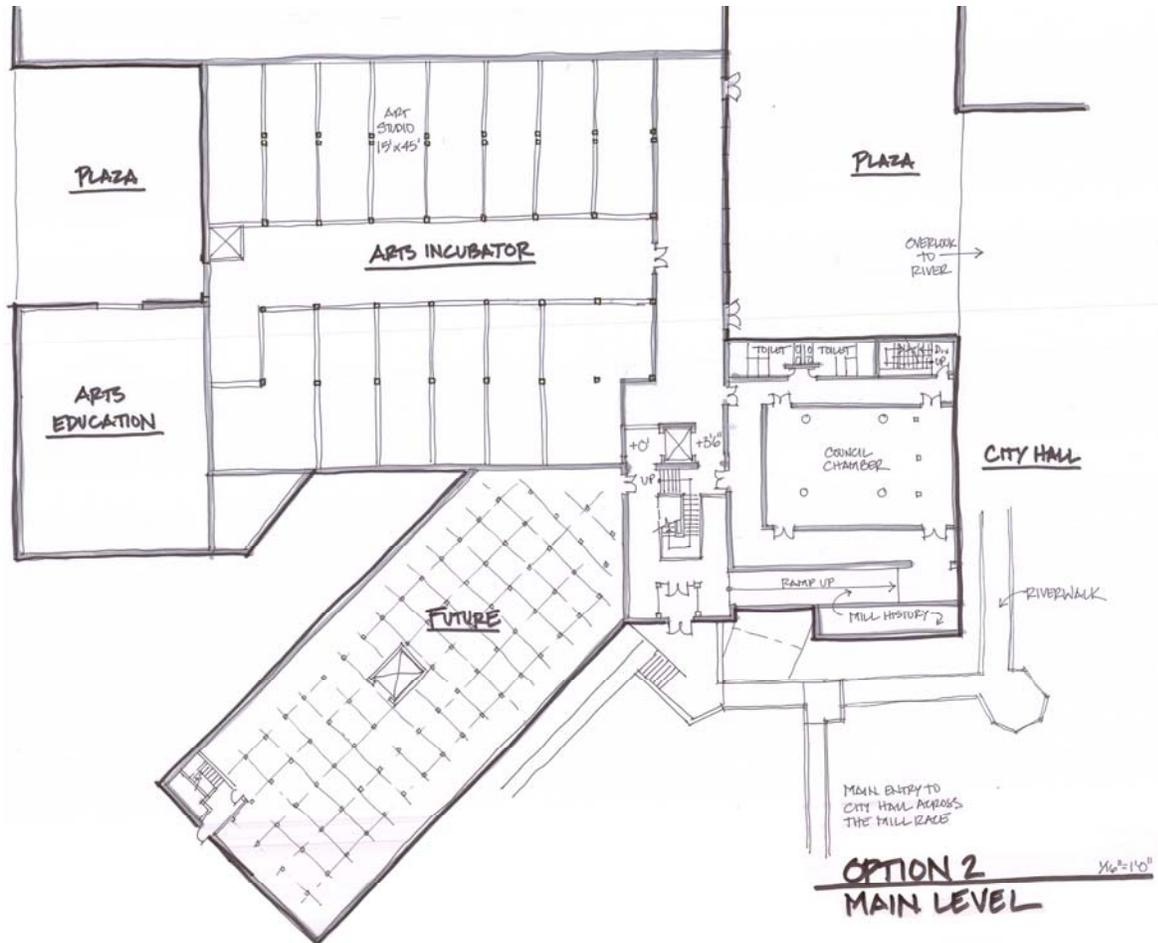
Walking through the front vestibule, visitors to the complex find themselves in a high, light filled space with a stairway floating in the center, providing access to the upper levels. The floors are a polished concrete and the brick walls are a beautiful warm red. This space is the “crossroads” providing views into the surrounding buildings allowing the visitor to get their bearings. It also provides physical access to all levels via stairs or elevator.

Mill History

From the vestibule, they can walk up a ramp to their right, reading displays as they go that describe the history of the mill through photos, written memories and artifacts. The walls have openings they can see through to the river on their right and to other displays on their left.

Council Chamber

They reach the outer shell of the council chamber and can walk in to join a council meeting or walk around to the toilet rooms on the far side. This space is not just corridor but works well as break out space and even overflow for large community meetings.



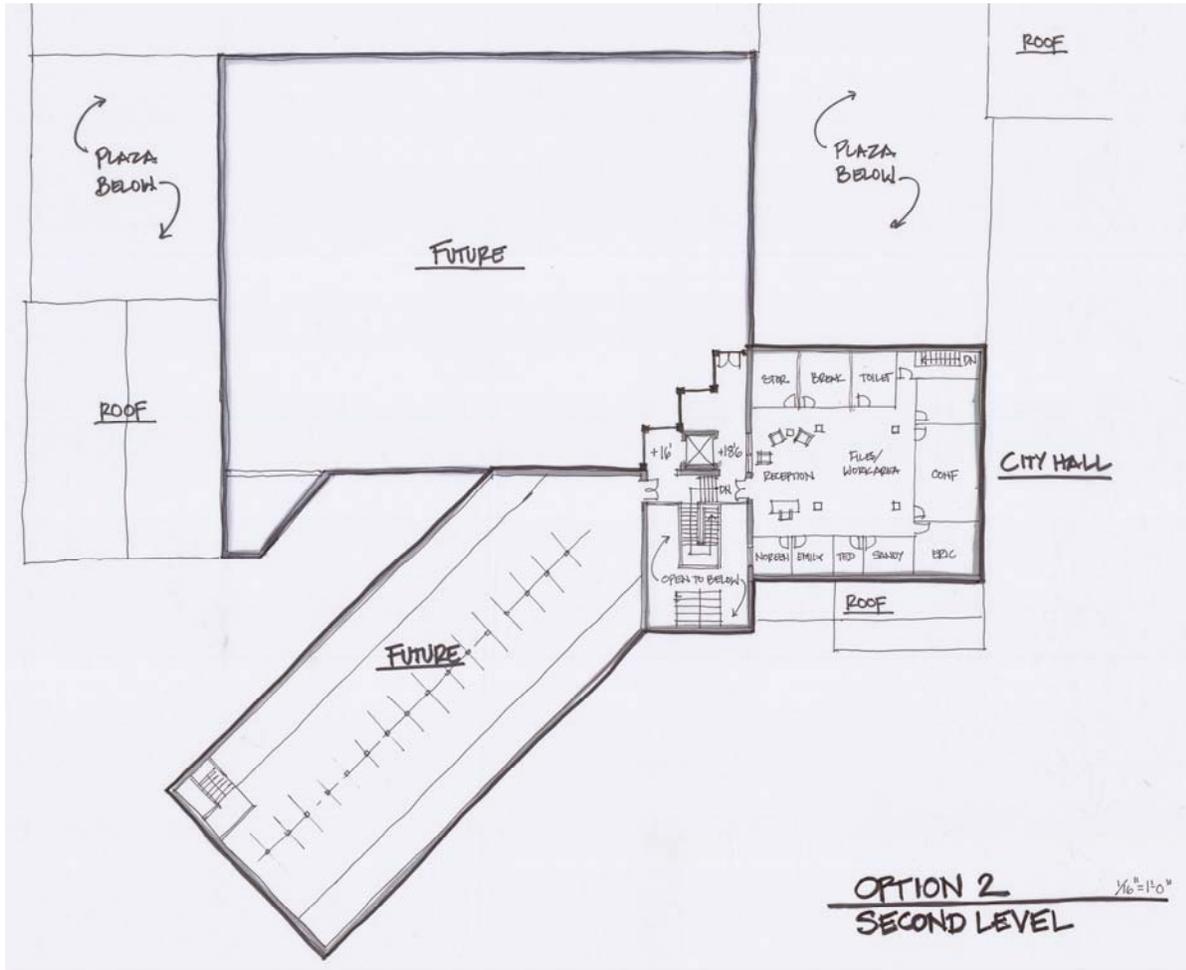
MAIN LEVEL PLAN

City Offices

If instead they choose to walk straight through the entry from the vestibule, they will walk up a short flight of steps. They look to their left beyond the elevator and see the long light-filled corridor that leads to the Arts Incubator, and at the far end, back outside to "Central Park" (a future development phase). They continue up the stairs to the second floor, and come to the City offices. The doors and adjacent walls are mostly glass providing a visual connection to the entry below and creating a very open welcoming feel to the city offices. Inside they see an open area with city staff in offices around the perimeter.

Future Development

Past the elevator, doors lead to space awaiting development on the second floor of building 12. All levels of Building 17 are also available for future development and the doors accessing the main and second levels are down a few steps and across the entry hall from the council chamber and the city offices respectively. There is also future development space in the basement/river level of building 19 (city hall), the basement/river level of building 11 (brew pub plaza) and the main level and basement/river level of building 10.



SECOND LEVEL PLAN

Plaza, Brew Pub and River

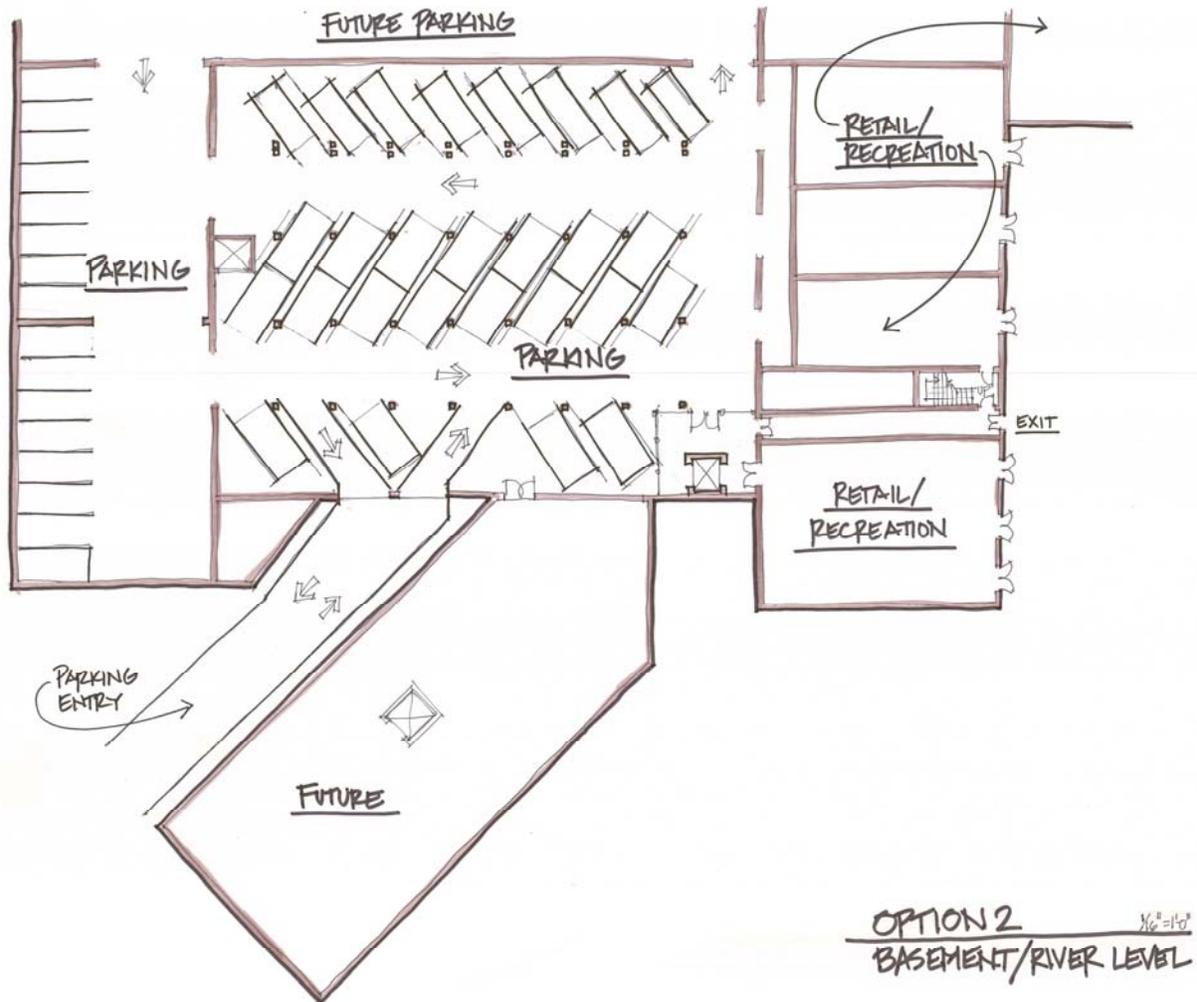
Back downstairs, they walk past the elevator and into the wide indoor “street” leading to “Central Park”. On their right they pass by tall windows looking out onto a plaza which overlooks the River. Canoes and kayakers can be seen setting out from the livery below. On the other side of the plaza they see table and umbrellas – the outdoor dining for the brewpub. Brewpub diners can also sit inside and enjoy the fantastic view of the Kalamazoo River through the large windows. While dining they can view the brewery equipment visible below through the opening in the floor.

Back inside they come to a long corridor opening up to their left. This is the Arts Incubator – a place where artists can rent space at below market rates so they can practice their art and continue to develop their talent. They can see down the corridor to a door which leads outside to another plaza – this one the main entry plaza on the south side of the campus. They walk down the corridor and as they walk, they look into artist’s studios on each side – wide open spaces with high ceilings. Each studio is different – customized by the artist, their medium and their creativity.

Continuing, they walk through a set of doors into a space divided up into classrooms. This is the Arts Education Center and the heart of the incubator. It has direct access off the plaza and to the large freight elevator which accesses the parking below.

Parking

The parking below the buildings allow easy access to the city offices, the brew pub, the livery, and other future development, by being directly adjacent to the elevator and stairs. It also allows delivery of any large and/or heavy materials to the Arts Incubator via the freight elevator.



BASEMENT/RIVER LEVEL PLAN

SUMMARY OF FINDINGS

The City of Plainwell has a wonderful opportunity for its community with the rehabilitation of the Plainwell Paper Mill complex.

This Feasibility Study should be thought of as a roadmap for use in making informed decisions in moving forward. The intent is that it minimizes risk to the city by providing an understanding of both the opportunities and the financial impact of the project and of future development potential.

The findings reflect the need to balance the site and building's public future with its significance as a piece of history. The findings also define the optimum future uses that recognize, respect and protect the site's past while providing a dynamic facility that is financially viable.

The Plainwell Paper Mill: a new chapter for the community!

APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D



A NEW CHAPTER FOR THE COMMUNITY

