BUILDING THE MACHINE:
A NEW STUDEBAKER NATIONAL MUSEUM

an architecture thesis prepared by bryan j. ziolkowski, © 2004
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"The man who designs in the spirit and with the sense of responsibility to the generation he lives in must be no coward, no denier, no bookworn, no dilettante. He must live of his life and for his life in the fullest, most consummate sense."

Louis Sullivan
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"The name ‘Studebaker’ is a household word. The broad principle upon which Studebaker business is conducted, and upon which it has prospered for seventy-two years, now grounded upon tradition, insure satisfaction to everybody who deals with the House of Studebaker."

Albert Erskine
President, Studebaker Corporation
March 5, 1924
acknowledgements.

I would like to take a moment to acknowledge and thank all of the people who have guided my maturity as a designer and provided the assistance to create the project that is presented within the following pages.

First and foremost, I want to thank my parents for all that they have done for me throughout my five years. They have been the emotional and supportive rock for all of those days when things didn't go the way they should have. They brought my spirits up when things were looking down. They believed in all that I was doing even when the didn't completely understand it. Now I have reached the culmination of my collegiate career (at least for now!) thanks in no small part to their dedication as parents.

Second, thanks goes to Robert 'Bob' A. Fisher for being my studio critic; for allowing our section to create real buildings! He has been a constructive critic, allowing me to challenge myself and my architectural ideals during the entire school year. He has allowed me to 'be the boss' and control the destiny of my project with results that varied at each review. He has the passion to see each of his students succeed; to reach their personal goals that they set at the beginning of the project. This has been much appreciated!

Third note of thanks goes to my advisor Lohren R. Deeg. Who ever thought that a professor could be serious and comical all within a five minute discussion? His passion for responsive architecture and urban design amazed me every week when I met with him at the Blue Bottle. An endless source of information, he has helped me out of my 'design complications' by referencing an architect and/or project that I have never heard of; but always sparked interest within my design. His dedication of helping his students succeed is worthy of praise.

Fourth, goes to my colleagues in Section 001 of Bob Fisher's Design Studio; in particular Andy, Beth, Jon, Julie, Travis and Zach for all the comical and emotional support that we all provided to each other. We couldn't have made it through without laughing to Eddie Murphy or Ron White (even if they were the same two CDs) - working in a office won't be same without you.

Fifth, goes to Tanner Underwood, RA, Principal, Underwood Architecture, P.C., Muncie, IN. Thank you for being a flexible employer during the school year! I have enjoyed the professional opportunities through the office; helping me to realize that my education has just started. Thank you for being a sounding board for everything related to my last year at CAP, it is much appreciated.

Lastly, I want to thank Jack Plehnert, RA, Principal, Architecture Design Group, South Bend, IN. He was the first professional that I talked to concerning architecture as he has professional balanced creativity with practicality within his own firm. Though I was only able to talk to Jack a few times about my thesis, he has been a constructive critic that has provided an invaluable perspective of reality to my project. His professional friendship has been much appreciated.
"Studebaker was really a member of the family -- a capricious and wayward member - but a member nonetheless. These people are thankful for what Studebaker was providing -- and if you can't say anything nice about the dead then say nothing."

C.T. Gallagher
(with regards to Studebaker's 1964 closing)
On December 9, 1964, South Bend, Indiana was forever changed. The Studebaker Corporation abruptly closed its doors after struggling in the ever-competitive automobile market. When Clem and Henry Studebaker began 115 years earlier, they would have never expected this to happen to their small carriage and wagon shop on the West Side of South Bend. This company prided itself in its design, craftsmanship and dedicated employees. Not even famed designer Raymond Loewy could change the fortunes of Studebaker. In 1965, the remnants of the Studebaker Corporation donated its personal vehicle collection to the City of South Bend with agreement that an appropriate facility would be designated for the collection. Since that time, the Studebaker National Museum has been located at the corner of Lafayette Blvd. and South St., in a former Studebaker dealership on the Southern edge of South Bend's downtown.

Studebaker was more the automobiles it was the character of South Bend. They were one of a handful of companies that created the spirit and history that established South Bend. The Studebaker family recruited people from numerous European origins to build their vehicles on South Bend's West Side. The employees had pride in their work, as did the company that employed them. The Studebaker Corporation supported its employees in numerous ways outside the working environment. Numerous sports teams, marching bands and orchestras were supported and encouraged by the corporation. The company created the community and the community reciprocating by dedicating themselves to the Studebaker's cause of a well-crafted vehicle.

The New Studebaker National Museum will balance the automobile and culture that made each possible. The building will tell a story to explain the culture of an organization that single-handedly built a city and then devastated it. There was a factory culture that captured and united numerous ethnicities together under one bond of a corporation. There are carriage and automobile details that can be captured as architectural elements that can further progress this story. This rejuvenated building has the potential to become an icon for the city's southern gateway; a statement of where the city started and where it may be going.
The Studebaker Corporation was the anchor for the South Bend community for 115 years, bringing economic growth to the city and sound jobs for tens of thousands of families. The community revolved around the actions of Studebaker Corporation. When the company abruptly closed its doors in 1964, it left a hole in the community and numerous employees still holding a grudge against the company that failed them. The heart of the thesis topic is conveying the history and spirit of the Studebaker Corporation. Through all the good and bad times of factory production, how is that to be documented? How will the museum capture 115 years of history within a predetermined building area? Furthermore, how will the museum visitors interact with the exhibits and at the same time avoid that 'Disney World' feeling? How will Studebaker's automobile design coincide with the history of the United States? This museum will be a statement to former employees and an icon for the redevelopment of South Bend's central core.

The interest in the Studebaker National Museum originates from the fact that I am a resident of South Bend. Since the museum board has continually talked about building a new museum, what would I do? How would I represent a Corporation that I never saw function? What would it say about me? What could it say about a city's lost corporation and a city that is looking towards the future at the same time?

The New Studebaker National Museum begins its development in its history. Without understanding Studebaker's short, but proud history, this museum would become just another unexpressive typology that exists in South Bend. The genealogy/history section of the main library has allowed a complete absorption of Studebaker. This history will help drive the structural rhythms, building materials and architectural details within the building. These architectural features will allow visitors the ability to understand what the entire Studebaker name stood for.

Capturing history involves understanding how the Studebaker's built their vehicles and buildings. There is an interest in thesis to explore how buildings go together. Can architectural details be as refined and elegant as that of an automobile design? It is the author's intent to use architectural details as another way to convey the history and spirit that was Studebaker. Details will help define physical space and at the same time provide visual relief from the automobile collection. They will establish the scale of the building in terms city, neighborhood and built space.

Lastly, these details and the history that follow them will have to meld together with the surrounding community. This building has the responsibility to become the nucleus of the redevelopment of South Bend's South Side gateway into the downtown area, as the Studebaker Corridor will disappear within the year. The museum must thread its destination statement into the fabric of the city.
Aerial photograph of thesis site.
Photo: terraserver-usa.com


site documentation
Site photography location plan.
All images: by author.
site analysis:

In order to accurately understand the present conditions of the site, which includes the present Studebaker Museum, the site was documented over the course of three ‘field trips’ to South Bend. Those trips were converted into printed documentation thanks to the Urban Design Handbook produced by Urban Design Associates, Pittsburgh, PA; which was a very big help during this phase of the thesis project.

The site in its current state does little to announce that you are entering the core of the city; but the potential exists to make this a destination point within the city. The number of empty buildings and parking lots (even during the day!) does little to help the cities image. There are parking lots that have changed little since Studebaker closed in 1964! Furthermore those vast expanses of parking lots have separated two neighborhoods that were once connected years ago. The presence of Union Station (now a banquet hall) and the TRANSPO bus station offers potential that is quickly negated by adult establishments with the area. Lastly, the unknown demolition or adaptive reuse of the remaining Studebaker complex buildings must be acknowledged within the redevelopement of the master plan.

There are four goals that the master plan intends to achieve during the rebuilding of South Bend’s south gateway: green connections, destinations point, removal of surface parking and mixed-use development (please refer to page 15 for master plan).

From the site documentation there is an obvious lack of tree lines, for whatever reason, along the streets of the South Bend. Besides the microclimatic benefits, the use of greenspace would help with the scale along the sidewalk as well as creating a buffer along the busy North/South streets. These linear parks would then proceed from the streets onto the non-vital alleys that would eventually extend out to the other neighborhoods of South Bend. The ultimate goal is to make alternative transporation easily accessible in Northern Indiana as weather permits.
Following pedestrian connections, simultaneously creating destination points is vital to the stability and renewal of the neighborhood. The Studebaker Museum is one of those points but the potential exists to add others that will attract a broad range of people. The use of Union Station as an Eastern terminus for the Chicago, South Bend and South Shore Railroad commuter service or for high speed rail service would be beneficial to all in the city. Converting the former Sears department store from its current state of an automobile dealership into an industrial museum that reflects on the lost industry that created South Bend would be another asset. The addition of a Visitor’s Center between Union Station and the TRANSPO bus terminal would encourage visitors and residents alike to explore what the city has to offer. Surrounding the Coveleski Regional Baseball Stadium, which has been a successful destination for ten years, with a variety of destinations that will complement the neighborhood’s redevelopment.

As this renewal begins the removal of surface parking will commence. There are currently too many empty spaces and lots that can be converted into commercial/mixed use development. The gradual removal of these lots will eventually lead to a solid urban fabric and walkable neighborhood. Some of the spaces lost will be replaced with three to four story parking garages located at points that allow for a fifteen-minute walk to all destination points. The removal of the car from everyday actions will recreate the neighborhood; creating interactions that currently do not occur.

The last objective of the master plan is building and/or renovating existing buildings into mixed-use developments. The lack of street life is caused mainly by South Bend residents not living close to the areas where they work; there is a lack of density within the downtown core. The building typology would be for a variety of two, three, and four story buildings to surround the Studebaker Museum site. The first and possibly the second floor would be used for commercial development; professional offices, light industry or food service oriented businesses. The subsequent floors would be configured for a variety of housing units and personal budgets. The objective is to create a diversified neighborhood that will truly work and live together.
urban plan programme.

Master Plan Program

1.0 New Studebaker National Museum 90,000 sq.ft.

2.0 Downtown Amtrak Station - Union Station Renovation 15,000 sq.ft.
   a. connection to Southside of viaduct to be determined
   b. connection to TRANSPO station to be determined
   c. parking lot at Coveleski Stadium for travelers

3.0 Infill Commercial Development 75,000 sq.ft.
   a. Main, Michigan and South St. are economic opportunities
   b. will be contextual with fabric that remains
   c. provide services that are not here, especially grocery and pharmacy services
   d. can be the fronts to residential units - family owned operations

4.0 Residential Apartments/Townhouses 100,000 sq.ft
   4.1 One bedroom apartments
   4.2 Townhouses
      a. replaces inadequate housing facilities
      b. provides living space for those working to improve their lives; space for persons transitioning from Homeless Shelter and Hope Rescue Mission
      c. allows residents to have pride in the community; the sense of ownership
      d. create interaction with the streetscape

5.0 The Studebaker Corporation Corridor 115 acres
   a. demolition of remaining buildings is targeted for 2005-2006
   b. provide alternatives to demolition by integrating commercial, light industry and residential units into the factory buildings
   c. those buildings already removed have been replaced with city service buildings

6.0 Streetscape Improvements
   a. create and define edges along the street
   b. reintroduce the tree canopy
   c. reduce visibility of remaining surface parking from sidewalk
   d. improve and add pedestrian circulation within the neighborhood

Note: The preliminary program is subject to change, but has been created from research and conversation with Rebecca Bonham, Director of the Studebaker National Museum.
building the machine.

How do you capture a story about an automobile made in South Bend, Indiana? What will make this a destination point for descendants of former employees, current residents and car enthusiasts? How will this 'brand' of car attain the notoriety as an automobile that was built by Tucker? How does the Studebaker Corporation fit into the history of the United States? How will it tell the story of South Bend? The course of direction to resolve the museum design was broken into three charrettes that focused on the master plan, the massing of the building and the building details that allowed it to become an interior story that melded with the urban fabric.

As the master plan of the neighborhood was already discussed, the building envelope was developed next. The massing of the new museum was critical in integrating within the neighborhood. At the same time the concerns of square footage, lighting and thermal comfort were met in order to ensure the integrity of the vehicle collection. Connections to the sidewalk, street, neighborhood and existing building were explored and determined as the building footprint expanded over the city block (see master plan). This was accomplished by determining an organizational chart of potential personal that would be working within the expanded facility. When this was resolved, a programme (page 18-19) was developed to understand the environmental conditions and physical connections within the building and site conditions. When this was completed a cost analysis was calculated to provide an estimated cost for building construction.

Once the building connections and massing were established, the focus of the building was set towards the details. The exterior details were first, with focus placed on the face brick, window and metal paneling systems. These were typical building materials in the factory buildings, but how could they be related to those details on a Studebaker automobile? There were certain automobile details that were interpreted as cornice line details, window fenestration, etc. that created the building. The research done provided suggestions for structural materials, grids and connections to make each space unique much like the Studebaker factory buildings.

The last feature of the museum was the display/exhibit design of the vehicle collection. This was not a static display like that of the Corvette Museum or a staged scene found at Disneyland. The galleries captured not just the automobile, but the behind scene activities that changed the design of the vehicle every year; the spirit of the designer that made it possible. The Studebaker collection captured the encompassing work that went into making President Lincoln's carriage to the subcompact Studebaker Lark. The vehicles began to represent the progress in materials, technologies and upper management through the years. The difficulty with this objective was that a variety of interest levels needed to be held. Exhibitions at the Senator John Heinz Regiona Center for History in Pittsburgh, PA were able to balance interpretation and interaction to create a unique experience. Layering the exhibit information allowed the visitor to easily recognize a Studebaker vehicle, the craftsmanship that went into making it, and the people that made it possible.
organizational chart.
programming the machine

1.0 Information Hall
   1.1 Lecture Hall (Seating for 100) 1550 sq. ft.
   1.2 Raised Platform 1000 sq. ft.
   1.3 Projection Room 200 sq. ft.
   1.4 50 sq. ft.

2.0 Atrium/Gathering Space
   a.) connected with Bonnie Doon's catering kitchen
   2.1 Kiosk (4 or 5) @ 100 sq. ft. ea. 1500 sq. ft.
   2.2 Information Desk (Counter Space) 500 sq. ft.
   2.3 Gathering Space (circulation + furnishings) 500 sq. ft.
   2.4 1000 sq. ft.

3.0 Coat Room (For 250 coats) 150 sq. ft.

4.0 Restaurant (Bonnie Doon's)
   Note: Bonnie Doon's was the name of a now defunct carhop in South Bend
   a.) connected to museum
   b.) separate entrance for 'street traffic'
   4.1 Table seating for 60 (Possibly some outdoor seating) 1200 sq. ft.
   4.2 Kitchen for Bonnie Doon's 450 sq. ft.
   4.3 Kitchen for Catering 450 sq. ft.
   4.4 Dry Storage 100 sq. ft.
   4.5 Food Mgr. Office 120 sq. ft.
   4.6 Car Hop Canopy/ Parking Spaces 300 sq. ft.

5.0 Gift Shop 775 sq. ft.
   5.1 Display/ Sales Floor 600 sq. ft.
   5.2 Mgrs. Office 100 sq. ft.
   5.3 Storage 75 sq. ft.

6.0 Gallery Spaces 40,350 sq. ft.
   6.1 Gallery - for Pre-Motorized Vehicles 20,000 sq. ft.
   6.2 Gallery for Motorized Vehicles 20,000 sq. ft.
   6.3 Repair Garage / Carriage Shop 4,000 sq. ft.
   6.4 Children Only Hands-on Shop 3,000 sq. ft.
   6.5 Automobile Lift 350 sq. ft.

7.0 Archive Storage Facility 8,700 sq. ft.
   a.) two-hour fire rating
   b.) HVAC isolation
   7.1 Director's Office 200 sq. ft.
   7.2 Flat File Storage — i.e. prints, photo negatives 4000 sq. ft.
   7.3 Large object storage - models, die cast, etc 4500 sq. ft.
8.0 Toilets, Drinking Fountains, Janitor Closets
   8.1 Men's toilet -- four facilities within bldg. at 150 sq. ft. 600 sq. ft.
   8.2 Women's toilet -- four facilities within bldg. at 200 sq. ft. 800 sq. ft.
   8.3 Janitor's Closet - four total at 20 sq. ft. 60 sq. ft.
   8.4 Drinking Fountains - alcove on wall 0 sq. ft.

9.0 Museum Administration Suite
   9.1 Museum Director's office 950 sq. ft.
   9.2 Conference Room for twelve 200 sq. ft.
   9.3 Secretarial and General Office 450 sq. ft.
   9.4 Two secretarial stations plus copying, fax, and storage areas. 250 sq. ft.
   9.5 Occupancy toilet 50 sq. ft.

10.0 Museum Employee Areas
    10.1 Employee locker Rooms: 2 @ 150 sq. ft. 600 sq. ft.
        Area for 12, 1'-6" x 1'-6" x 1'-0" lockers and two
        contiguous 25 sq. ft. occupancy toilets for each locker
        room. 300 sq. ft.
    10.2 Employee Break Room
        Concession area for five machines and table seating for ten. 300 sq. ft.

11.0 Storage Areas
    11.1 General Storage 600 sq. ft.

12.0 Service Area
    12.1 Receiving storage 600 sq. ft.
        Temporary storage of received items. Must be accessible
        from the dock. 400 sq. ft.
    12.2 Garbage/Trash Area 950 sq. ft.
        Temporary storage of outgoing trash and garbage.
        Must be accessible from the dock. 100 sq. ft.
    12.3 Dock 100 sq. ft.

13.0 Parking
    13.1 On site parking for 40 - 60 spaces (sub-surface?) 10,000 sq. ft.
    13.2 On street parking for coach buses 0 sq. ft.

Total Area of Museum

III. Net Area 68,405 sq. ft.
IV. Grossage 68,405 sq. ft. x 27% 18,469 sq. ft.
V. Mechanical Room(s) 18,469 sq. ft. x 5.5% 924 sq. ft.
VI. Total Area 68,405 sq. ft. + 18,469 sq. ft. + 924 sq. ft. 87,798 sq. ft.
cost analysis.

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*estimated cost in November 2003 dollars
The following pages show the physical process of model and drawings used to reach a complete building. The following paragraphs briefly describe the synthesis that is the New Studebaker National Museum.

The New Studebaker National Museum will remain at the current site of South St. and Lafayette Blvd. with the addition of new facilities East across Main Street up to Michigan Street (see master plan). The current museum of 25,000 +/- sq. ft. will be renovated as a new administration and archive facility for the museum. The new piece of the museum, roughly 55,000 sq.ft., will rejuvenate the block, community and city by reaching out from the original facility. The building's characteristics will honor the Studebaker Corporation and urban context while looking towards the future image of the city.

The entire facility will transport the visitor back to that last cold day in December of 1964. It will allow visitors to recall the days when Raymond Lowey's design team was in the studio and at the test track punishing the Silver Hawk or Avanti Coupe before production began. The entire facility will capture the physical characteristics of the factory buildings as the company grew and developed. This will allow visitors the ability to understand those very productive manufacturing days in South Bend. The museum will be a statement for the community; reenergizing it as an important gateway for the city. It will be a destination point that will change the public's perspective on eliminating history from South Bend's skyline; that modifying existing buildings can be assets to the community. It will ultimately carry on the history and spirit that former Studebaker employees are proud to remain a part of.
1A: East Elevation at Michigan Street

2A: South Elevation Between Lafayette Blvd. and Main Street

4A: East Elevation at Main Street

15: Section through Galleries and Repair Shop
presentation drawings

Across the street from Main Entry

Circulation Lobby Second Floor
"Architects and engineers are among the most fortunate of men since they build their own monuments with public consent, public approval and often public money."

John Prebble
Building the Machine: A New Studebaker National Museum was a project that provided me with numerous explorations from the start. I knew going into the thesis phase of fifth year that my topic of exploration would not be an easy one. Frankly, I have always felt that thesis should be a challenge that invokes your thoughts 24 hours a day until you make your final presentation to the jury. Indeed this project accomplished that! However, in the end, the work was worth it; that I am very proud of this project as I culminate my career at Ball State University.

Since this project is located in my hometown, I constantly felt a physical connection to the site and the people that worked for the Studebaker Corporation. I gave myself the responsibility of representing fellow citizens within a building that I was designing. It was honestly a little intimidating to create that responsibility but in the end in caused me to constantly check my goals to make sure that I was meeting them. As the project developed from master plan to design, I began to realize that this building was getting excessively large to appropriately handle within the given time. I never felt overwhelmed but even as I finish the thesis documentation, I still know of things that need a second look before I can personally call it complete. I am not at all complaining about the scope of the project that I created but just noting that it got more complex then I ever planned as the spring semester moved on.

Therefore, no project is ever done and this project is no exception. I would really like to explore more of the details that are within the building; specifically the structure and façade connections within the building. I would like to size some of the structural members within the building since I am probably pushing the limits of materials at this point in time. Furthermore, I would like to figure out how the façade makes transitions between brick and the metal paneling systems that I would like use on the new construction. I begun to explore those connections before final presentations but did not reach a satisfactory point to include those drawings. These drawings would show the technical competence that I gained through school and internships experiences and the fact that this building could be enclosed from the elements.

Once these additional explorations are completed, I can look back at this project with pride; that I met my personal challenge of creating a piece of architecture that represents the citizens and City of South Bend. I am glad that I was able to share my thought process with you.

Who would have thought that five years could go by so fast? I am grateful that I was selected and accepted into the College of Architecture and Planning; it was a wonderful experience that I would gladly repeat any time.

Ever Onwards!
"Because, in the end, a museum bears the burden to explore the new with respect to the past; to respond to the area of its urban environment while leading it forward, and to set as example for architects, artists, and the public in the decades and centuries to come."

David Levy
bibliography.


Sanborn Map Company, Fire Insurance Maps for South Bend, Indiana, 1924, 1934, 1945


Websites:
http://www.corvettemuseum.com/

http://www.pghhistory.org/

http://kepsire.tripod.com/sobend/studeplant.html

http://www.studebakermuseum.org/

http://terraserter-usa.com/