



◀ PARK

city of ames downtown parking study

Participants

City Representatives

Damion Pregitzer Public Works – Traffic
Steve Schainker City Manager
Steve Osguthorpe Director, Planning & Housing
Doug Houghton Ames Police Support Services

MSCD - Business Improvement Committee

Jayne McGuire MSCD – Director
Tim Coble MSCD – President
John Doyle MSCD – Business Improvement
Amber Kobler MSCD – Business Improvement
Tony Thrush MSCD – At Large

OPN Architects, Inc.

Richard S. Seely, AIA Assoc. Principal
Thomas A. Trapp Assoc. Architect
Ellen D. Huppenbauer Assoc. Architect
Eric R. Wirth Assoc. Architect

Consultants

Tim Monson, P.E. Shuck-Britson Inc.
Dave N. Moeller, P.E. Snyder & Associates, Inc.
Gerry Peters Stecker-Harmsen, Inc.

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Purpose

This conceptual design report has been prepared at the request of the City of Ames to evaluate the potential for a parking structure(s) that will serve the Central Business District by providing additional parking immediately adjacent to Main Street. The sites to be considered are currently designated Municipal Lot X and Y. These sites are located directly south of Main Street businesses between Clark and Kellogg Avenues, and bounded to the north by the Union Pacific tracks.

This document is to provide Design Concepts for preliminary evaluation of the designated sites to allow the City of Ames to make informed decisions on the potential for structured parking.

This study is not intended to suggest or provide the final parking structure design.

Goals

- Provide conceptual planning recommendations for structured parking options for Municipal Lots X and Y.
- Maximize the parking density on site with the construction of a single level deck.
- Consider methods for a phased expansion of a structured parking deck with a maximum of three levels.
- Consider options to allow for an open gathering space for community activities that will complement Tom Evan's park.
- Offer methods that will mitigate the visual impact of a parking structure on the Central Business District and consider the context of the existing built environment.
- Explore creative options for innovative design and sustainable strategies that may be applicable to the parking structure and site.
- Recommend the best method of construction for the proposed design concept.
- Provide estimate of probable costs for implementation of planning recommendations.

The analysis and conceptual design was developed based on a program that the City and Main Street Cultural District developed to meet the needs of the area, provide a conceptual design and cost estimate for a parking structure that maximizes the parking on the proposed sites.

Process

OPN Architects implemented a collaborative planning process that included input from community leaders, the Main Street Cultural District's Business Development Committee and representatives from the City of Ames Planning and Housing, Public Works, and Police Department. Interviews and meetings were conducted to gain an understanding of previous efforts and insight into the existing parking conditions.

On site observations and site investigation were conducted by the architectural and civil engineering team to capture relevant information that must be considered should development of the site proceed. Other design influences that included zoning ordinances, building code requirements, best practices for parking structure design, sustainable opportunities, and cost effective construction methods we considered by the design team as concepts were prepared for consideration. Preliminary options were prepared and reviewed by city and community representatives that allowed three concepts to be identified for inclusion in the study.

Concept Descriptions

Concept A

Full site parking structure extending from Clark Ave to Kellogg Ave across both Lots X & Y. For cost estimation purposes, construction was assumed to begin in 2010.

Concept B

Full site parking structure with phased construction. A parking structure built on Lot X, to be considered phase B-I, and followed by another structure built on Lot Y, considered phase B-II. For cost estimation purposes, construction of phase B-I was assumed to begin in 2010 with construction of B-II to beginning in 2012.

Concept C

Half site parking structure with two elevated decks constructed on Lot X only with Lot Y to remain as a surface parking lot. For cost estimation purposes, construction was assumed to begin in 2010.

Findings & Recommendations

While each concept has different merits, Concept A which offers the greatest increase in spaces at the lowest first cost, is OPN Architect's recommendation should the total initial project cost be feasible for the community. A summary of the results associated with each of the three Concepts is offered in the table below for your consideration.

Concept A includes a full site build out on Lots X and Y with a single level precast pre-stressed concrete parking deck. Concepts B and C may merit further consideration should any design assumptions or city priorities change.

The OPN Design Team is recommending that this structure be of precast concrete construction, rather than post-tensioned concrete construction. Historically, there have been three types of parking structures built in Iowa: 1.) Cast-in-place, post tensioned concrete 2.) Precast pre-stressed concrete and 3.) Steel beam with precast planks.

Each of the systems offer advantages to some of the unusual conditions associated with a parking structure. Due to the corrosive nature of the Iowa environment, a steel beam structure is not being considered for this project. The remaining systems, post tensioned concrete and precast pre-stressed concrete, both offer advantages and limitations for use in a parking structure.

The longevity of the structural system for these two systems is historically very similar in our Iowa climate. The overall life cycle structural system maintenance cost will be greater for the proposed precast structure but this cost can be offset by a lower initial construction cost when considered for a project of this size. The following factors favored a recommendation of a precast structure compared to that of a cast-in-place post-tensioned structure:

- limited capacity, or size of the structure
- lower initial construction cost
- faster construction schedule
- relative ease of expansion
- physical constraints of the site

Other recommendations we offer include seeking a variance to maximize the capacity of the proposed parking structure. Currently zoning ordinance requires that 75% of a structures street frontage be dedicated to commercial or retail space. This requirement would provide limited leasable space on Clark and Kellogg Avenues and has been deemed of limited value by members of the Main Street Cultural District's Business Development Committee. If a commercial or retail space is required, its area must be no less than 12,500 sq ft on each level and it will be required to have a 2 hour fire-rated separation from the parking structure or 1 hour fire-rated separation with a fire suppression system.

Finally, consideration was given to incorporating sustainable initiatives within your project. These efforts are becoming increasingly important to our environment and ultimately benefit our communities. A number of suggestions have been included for your consideration in this report and are described in more detail in the Civil chapter with costs offered in our estimates of probable cost for each concept. At OPN Architects we believe incorporating sustainable design in all projects whenever possible and we strongly encourage you to give these concepts due consideration.

COST BREAKDOWN SUMMARY	Existing	Concept A	Concept B Phase I	Concept B Phase II	Concept B complete	Concept C
Total Construction Cost Estimate	-	\$7,841,517	\$3,837,930	\$4,422,769	\$8,260,699	\$6,457,415
Total Construction Cost Estimate with Add/Alternate Items	-	\$8,158,967	\$4,020,430	\$4,591,769	\$8,612,199	\$6,683,415
Total Project Cost Estimate	-	\$9,224,768	\$4,575,107	\$5,217,006	\$9,792,113	\$7,567,050
Net Stalls Gained	-	182	89	93	182	128
Lot X [Existing]	123	123	123	NA	123	123
Lot Y [Existing]	95	95	NA	95	95	NA
Total Stalls*	218	400	212	188	400	346
Cost Per Stall**	-	\$20,397	\$18,964	\$24,424	\$21,530	\$19,316
Cost Per Net Stall***	-	\$44,829	\$45,173	\$49,374	\$47,320	\$52,214

*Total number of available spaces in any of the concept options assumes a variance to the commercial space requirement [ORD. NO. 3822, 3-8-05]

** Cost Per Stall = Total Construction Cost Estimate with add/alternate items / Total Stalls

*** Cost Per Net Stall = Total Construction Cost Estimate with add/alternate items / Net Stalls Gained