January 5, 2009

Mr. Kelley Brandt
Real Estate Transactions Manager
University of Minnesota
424 Donhowe Building
319 – 15th Avenue Southeast
Minneapolis, Minnesota 55455

Re: Underground Feasibility Parking Study
2642 University Avenue West
St. Paul, Minnesota
Walker Project Number 21-3558.00

Dear Mr. Brandt:

Walker Parking Consultants is pleased to submit the evaluation of the feasibility of converting the current basement area of 2642 University Avenue West into underground parking for the University of Minnesota. The project is located in St. Paul, Minnesota in the block bound by University Avenue West to the north, and Ellis Avenue to the south. The 2642 building is a two story office building built in the 1930's and is under consideration to be sold and converted to a residential building with parking in the basement level. This initial work effort includes determining the maximum number of parking spaces, entry/exit location, estimated revenue generation possible, and the challenges to the conversion.

CONCLUSION

Based upon the information provided on the basement alteration drawings dated February 7, 1984, we believe you may be able to park approximately 26 vehicles in the basement level of the 2642 University Avenue West building as shown in the detailed drawing included within this report. The stalls would be at 45 degree angles to the drive lanes. The drive lanes would be about 13’-6” wide with one-way, clockwise circulation. To maximize parking, we would create an entry lane on the southwest corner of the building and the exit in the area where the current truck dock is.

Major challenges to convert the basement level to parking are:
- Rezone from industrial
- Relocation of the existing transformer at the southwest corner of the building
- Fire sprinklers and ventilation most likely required by code

We think it is reasonable to expect about $124.50/month per stall.
PROPOSED LAYOUT OF UNDERGROUND PARKING

The 2642 building is a very challenging building to add parking to the basement level. The short-span construction of the columns, with about 13'-6" clear space between them, makes the drive lanes and maneuvering very difficult for some vehicles. Some large vehicles may have to make three point turns to successfully maneuver throughout the structure.

We anticipate the structure could accommodate approximately 26 stalls. Generally, we would have 13'-6" drive lanes and 9'-6" wide stalls at 45 degrees.

We propose entering vehicles at the southwest corner of the building from Ellis Avenue. The vehicles would drive parallel to the south side of the building down a ramp to bring the vehicle to the basement level. Vehicles would enter the basement and drive north along the west side of the building. Vehicles would travel in a one-way, clockwise circulation and could park in stalls located between the existing columns at about 45 degrees. Vehicles would exit by turning east at the north end of the building. The vehicle would turn south near the east side of the building and drive south. A portion of the wall between the original building and truck dock will have to be removed to allow vehicles to enter the truck dock area and exit south. A ramp will have to be constructed in the truck dock area to bring vehicles to the elevation of the basement to grade at the exterior of the building. Because vehicles would utilize this area, the dock may have to be closed from the rest of the building.

To maximize parking, we propose utilizing tandem stalls and back-in only stalls. Tandem parking stalls are parking stalls that are two stalls deep. These spaces would be for tenants with two vehicles and would allow them to park both vehicles in the same area. Without tandem stalls, one parking stall in each pair would not be a usable parking stall. We recommend tandem stalls for parking stalls #7 and #8, #21 and #22, #23 and #24 as shown in the attached layout.

Back-in parking stalls are recommended in areas in which maneuvering in and out of the stall normally may require multiple 3-point turns. Back-in stalls require skill on the part of the driver but this may be acceptable since the use of the facility would be tenants accustomed to parking within the facility. Back-in stalls may be required in stalls #14, #25 and #26.

Compact parking stalls will be required along the north wall, stalls #10, 11, #12 and #13. This is required due to the vehicle projection of the cars parked in those stalls, and the turning radius of vehicles circulating within the basement. Parking stall #10 would need to particularly require a compact car to allow a three foot access isle to the stairway in the northwest corner of the building.

GEOMETRICS

The dimensions of parking stalls and aisles are generally referred to as parking geometrics. The convenience and comfort of parking stalls depends on two issues. The first is the width of the parking space and the convenience of leaving or entering the vehicle. The second is the ease of the turning movements required to park and "un-park" a vehicle. This is affected by the module width and parking angle as well as the width of the parking space itself.
All of our recommended dimensions assume that all vehicles in the facility are “design vehicles.” To adjust the design vehicle size, each year we evaluate annual vehicle sales, including cars, pickups, vans and sport utility vehicles in the US as reported by Automotive News. We then determine the 85th percentile vehicle in the range of smallest to largest. Since 1998, the design vehicle has been based on a late 1990's Ford Expedition (6'7" wide by 17'1" long).

In order to quantify how well a particular aspect of the design of a parking facility meets user needs, WPC has developed a “Level of Service” (LOS) approach to parking design. It is derived from the standard methodologies used by traffic engineers, with Levels of Service ranging from A to F. LOS A equates to a high level of wayfinding and/or comfort, generous parking dimensions, little or no delay, etc. LOS F equates to systems that do not work, dimensions that are too tight to function properly, traffic gridlock, etc.

The city of St. Paul zoning requires the following minimum dimensions:

- The minimum drive aisle width for 45 degree parking stalls is 12'. The drawings indicate an aisle width of approximately 13'-6". This meets the ordinance requirements and equates to a LOS B.
- The minimum stall width is 8'-6" for regular parking spaces. The drawings indicate a regular stall width of 9'-6", which equate to a LOS A.

The turning bay clearances (from one parking module to another at the ends of the deck) are approximately 17'-0" at the apex of the turning movement. The columns at the end of the stalls make the turning bays very tight with a LOS D at best. The turning bays will be the most difficult maneuvers throughout the parking area. Large vehicles will find this maneuver extremely difficult.

The Federal ADA Accessibility Guidelines (ADAAG 1991) as well as the 2003 International building code require 1 Accessible parking space. We anticipate the space to be located in the small surface parking lot at the northeast corner of the building.

**CHALLENGES TO PROJECT**

The following are challenges to parking in the basement level of the 2642 building:

- There is a 70 inch difference in elevation from the south side of the building and the finished floor of the basement.
- The front of the building is located off of a busy, one-way street; University Avenue West.
- Fire protection and ventilation are required for an enclosed parking structure.
- Building setback requirements will have to be confirmed.
- Short span construction does not provide efficient parking, and makes turns difficult for some vehicles due to the close proximity of columns.
- Relocation of existing transformer at the southwest corner of the building.
- Rezone from industrial.
REVENUE GENERATION

The monthly contract parking rate set by the University of Minnesota is approximately $124.50 /month. Therefore, we would recommend setting a rate consistent with the rest of the University of Minnesota.

We appreciate the opportunity to be of service to you and the University of Minnesota. If you have any questions or comments after reviewing the report, please do not hesitate to call.

Sincerely,

WALKER PARKING CONSULTANTS

Robert Dehler, P.E.
Project Manager