

**Behavioral Health Complex  
Land Value Encumbrances - Preliminary Assessment**

	<b>Entire Complex</b>	<b>Consolidate*</b>
<b>Value Diminishing Factors</b>		
1. Building Demo **	\$8,241,000	\$3,205,000
2. Utility Work		
a. Sanitary Sewer	\$59,800	\$20,600
b. Storm Sewer	\$127,900	\$113,900
c. Water	\$31,500	\$17,500
d. Gas	\$3,500	\$3,500
e. Communications	\$42,300	\$1,000
f. Electrical	\$31,700	\$29,150
g. Steam Tunnels 300,000	\$3,575,000 ***	\$75,000
h. Chilled Water	\$3,000	\$2,000
3. Environmental	\$2,681,000	\$1,104,000
4. Other		
<b>Total Costs</b>	<b>\$14,796,700</b>	<b>\$4,571,650</b>

11,521,700

\* Assumes occupation of Building series D-16 (MHC);

\* Building series D-19 (Day Hospital) and D-20 (CATC) eliminated

\*\* The following are excluded from the cost of this estimate

1. Professional Fees
2. Testing Fees
3. Owner Contingencies/Scope Changes
4. Premium Time/Restriction on Contractor Working Hours
5. County Management Fees for Staff
6. Finance and Legal Charges
7. Contaminated Soil Removal
8. Backfilling of Basements

\*\*\* Add \$3.075 million if Steam Tunnels are re-routed using new tunnels instead of direct bury

\*\* 3,275,000 for direct bury

**Costs DO NOT include remodeling for consolidation**

Information from A&ES as of 11-1-07; Revised 2-14-08 ;

UPDATED

FOR FACILITY COMMITTEE

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**Costs DO NOT include remodeling for consolidation**

Behavioral Health Center - Preliminary Utility Demolition Costs - 10-18-07

Utility	Item	Estimated Quantity	Unit	Unit Price	Item Total
Sanitary Sewer	Abandon Sanitary Manhole	21.00	Ea.	\$2,800.00	\$58,800.00
	Bulkhead Pipe at Manhole	2.00	Ea.	\$500.00	\$1,000.00
Storm Sewer	Abandon Storm Manhole	38.00	Ea.	\$2,800.00	\$106,400.00
	Abandon Catch Basin	9.00	Ea.	\$2,000.00	\$18,000.00
	Bulkhead Pipe at Manhole	7.00	Ea.	\$500.00	\$3,500.00
Potable Water	Cap Water Line	9.00	Ea.	\$3,500.00	\$31,500.00
Gas	Cap Gas Line	1.00	Ea.	\$3,500.00	\$3,500.00
Communication	Re-route Communication Loop to the West	1300.00	Ln. Ft.	\$31.00	\$40,300.00
	Disconnect Communication	2.00	Ea.	\$1,000.00	\$2,000.00
Electrical	Disconnect Electrical	1.00	Ea.	\$1,000.00	\$1,000.00
	Remove Parking and Street Light Posts	60.00	Ea.	\$150.00	\$9,000.00
	Re-route Electrical	700.00	Ln. Ft.	\$31.00	\$21,700.00
Steam Tunnels	Re-route Steam Tunnel (Use New Tunnels)	2050.00	Ln. Ft.	\$3,000.00	\$6,150,000.00
	Demo Existing Steam Tunnel	2000.00	Ln. Ft.	\$250.00	\$500,000.00
Chilled Water	Disconnect Chilled Water	3.00	Ea.	\$1,000.00	\$3,000.00

**Total**

**\$6,949,700.00**

**DRAFT**

Please see following pages for detailed notes.

Behavioral Health Center - Preliminary Utility Demolition Costs - 10-17-07

Utility	Item	Estimated Quantity	Unit	Unit Price	Item Total
Sanitary Sewer	Abandon Sanitary Manhole	21.00	Ea.	\$2,800.00	\$58,800.00
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Communication	Re-route Communication Loop to the West	1300.00	Ln. Ft.	\$31.00	\$40,300.00
	Disconnect Communication	2.00	Ea.	\$1,000.00	\$2,000.00
Electrical	Disconnect Electrical	1.00	Ea.	\$1,000.00	\$1,000.00
	Remove Parking and Street Light Posts	60.00	Ea.	\$150.00	\$9,000.00
	Re-route Electrical	700.00	Ln. Ft.	\$31.00	\$21,700.00
Steam Tunnels	Re-route Steam Tunnel (use direct bury) ; N-S SEGMENT REMAINS	<del>-2050.00</del>	Ln. Ft.	<del>\$1,500.00</del>	<del>-\$3,075,000.00</del>
	Demo Existing Steam Tunnel ; N-S SEGMENT REMAINS	2000.00 LESS 40% 1200.00	Ln. Ft.	\$250.00	\$500,000.00- 300,000.00
Chilled Water	Disconnect Chilled Water	3.00	Ea.	\$1,000.00	\$3,000.00

Total

\$ 599,700.00  
~~-\$3,874,700.00~~

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Please see following pages for detailed notes.

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	Demo Existing Steam Tunnel	2000.00	Ln. Ft.	\$250.00	\$500,000.00
Chilled Water	Disconnect Chilled Water	3.00	Ea.	\$1,000.00	\$3,000.00

**Total**

**\$3,874,700.00**

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Please see following pages for detailed notes.

**Behavioral Health Utility Notes (Second Approach):****Sanitary, Storm, Water, & Gas:**

Unlike the first approach, we are now figuring demolishing as much of the existing utilities as possible. We did however decide to show a portion of the Storm left in place. Our reasoning is that even with the buildings gone, the site would have drainage problems without proper catch basins. See plans.

**Communication:**

I spoke with Ernest Wicks regarding the Communication plans. He stated that the main line, which runs north / south, as well as the perimeter loop are important and would need to be left in tact. If we decide to demolish the north / south run, which bisects the land in this study, we would need to do some re-routing in order to keep a supply to surrounding areas / buildings. See plan.

**Electrical:**

I met with Facilities Management to discuss County owned electrical lines. They stated it would be a good idea to leave the outside 4160V loop and the 13-12 feed in tact. Ameritech owns a cellular tower south of building D-16. If we decide to demolish the north / south run of the 4160V, which bisects the land in this study, we would need to do some re-routing in order to keep a power supply to surrounding areas / buildings. The rest of the electrical system could be abandoned as needed. See plan.

*I met with WE Energies on 9-20-2007. They stated the perimeter electric supply to the Power Plant must be left in tact (see plans). A major concern WE Energies brought up was the electrical supply. Current conditions have the existing electrical system very near capacity. Redevelopment of the existing site will most likely create additional demands. WE Energies discussed that they would most likely need to do extensive redesign work (construction, engineering, new substation, etc.) to handle the additional demands. They would like to be involved with the any planning in the early stages so they can get a jumpstart on the lengthy design work. See plan.*

**Steam Tunnels:**

WE Energies stated that the Main line which runs north and south needs to be left in tact as they contain pipes that feed buildings south of the area in question. If we decide to demolish the north / south run of the steam Tunnel, which bisects the land in this study, we would need to do some re-routing. The new pipes would most likely not be installed in a new tunnel; instead they would be direct buried. To cover all bases, a separate cost was calculated in the event a new steam tunnel would be used to reroute steam lines. As a side note, the existing tunnels contain asbestos. The pipes that branch out from building D-18 are encased and trenched. They can be abandoned as necessary. See plan.

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**Chilled Water:**

WE Energies stated that the Main line, which runs east / west and parallel to Watertown Plank Road, should be left in tact as it feeds buildings across I-45. Secondary lines can be abandoned as necessary. See plans.

**DRAFT**

Document by Mark Sifuentes, DTPW, City Campus



"Kuick, Roger G."  
<Roger.Kuick@zastudios.com  
>

03/20/2008 04:28 PM

To <GHigh@milwcnty.com>

cc "John J. Duggan" <jduggan@theconcordgroup.net>

bcc

Subject FW: MKE County - BH Complex Demo Estimate

Greg,

I am forwarding to you the demolition estimate for the Behavioral Health Complex. Please review. The person listed below, John Duggan, would be able to answer any questions, further explanations or deal with any follow up that may be required for your needs. Please contact him when and if you feel the need.

I will be out of town next week, but I expect to either work with you on a timeline for deliverable items upon my return. The safest thing to do is begin sending you more polished versions of what we outlined previously, in order to keep progressing toward the goal of getting this in proper position for your report to the committees.

**Roger Kuick, AIA**

Senior Associate | Project Architect

Phone: 414.918.1486 Fax: 414.302.3772 Mobile: 414.526.6391

Roger.Kuick@zastudios.com

**Zimmerman Architectural Studios, Inc.**

7707 Harwood Avenue

Milwaukee, WI 53213

**From:** John Duggan [mailto:jduggan@concordmilwaukee.com]

**Sent:** Thursday, March 20, 2008 3:27 PM

**To:** Kuick, Roger G.

**Subject:** MKE County - BH Complex Demo Estimate

Roger,

Please see attached.

Please call if you have any questions.

Regards,

John Duggan

Vice President

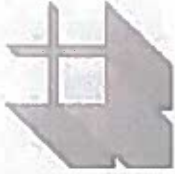
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[www.concordmilwaukee.com](http://www.concordmilwaukee.com)



Milwaukee Behavioral Health Complex Demolition 3-18-08.pdf



**The Concord Group**  
Construction Consultants

CONSULTANT

North Clark Street  
Suite 2050  
Chicago, IL 60601  
tel 312.424.0250  
fax 312.424.0252

# MILWAUKEE COUNTY BEHAVIORAL HEALTH COMPLEX DEMOLITION

Milwaukee, WI

ORDER OF MAGNITUDE COST ESTIMATE

Prepared For:  
**Zimmerman Architectural Studios**  
7707 Harwood Ave.  
Milwaukee, WI 53213

**DRAFT**

February 14, 2008



**NOTES REGARDING PREPARATION OF ESTIMATE**

This estimate was prepared based on the following documents provided by Zimmerman Architectural Studios:

1. Site Plans, showing overall building dimensions and volumes.

**BIDDING PROCESS - MARKET CONDITIONS**

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other work not covered in the drawings or specifications, as stated within this document. Unit rates have been obtained from historical records and/or discussion with contractors. The unit rates reflect current bid costs in the area. All unit rates relevant to subcontractor work include the subcontractors overhead and profit unless otherwise stated.

Pricing reflects probable construction costs obtainable in the Milwaukee, Wisconsin area on the bid date. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the construction work for all subcontractors with a minimum of 3 bidders for all items of subcontracted work and a with a minimum of 3 bidders for a general contractor. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since The Concord Group has no control over the cost of labor, material, equipment, or over the contractor's method of determining prices, or over the competitive bidding or market conditions at the time of bid, this statement of probable construction cost is based on industry practice, professional experience and qualifications, and represents The Concord Group's best judgment as professional construction cost consultants familiar with the construction industry. However, The Concord Group cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

**ASSUMED CONSTRUCTION PARAMETERS**

The pricing is based on the following project parameters:

1. A construction start date of Summer 2008.
2. The contract will be competitively bid to multiple general contractors.
3. All contractors will be required to pay prevailing wages.
4. There are no phasing requirements.
5. The general contractors will have full access to the site during normal working hours.

**G. DBE PARTICIPATION**

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**EXCLUSIONS**

The following are excluded from the cost of this estimate:

- 1. Professional Design Fees
- 2. Testing Fees
- 3. Owner Contingencies/Scope Changes
- 4. Premium Time / Restrictions on Contractor Working Hours
- 5. Utility Infrastructure Relocation
- 6. County Management Fees
- 7. Finance and Legal Charges
- 8. Environmental Costs
- 9. Contaminated Soil Removal
- 10. Backfilling of basements

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The Concord Group

Milwaukee County Behavioral Health Complex Demolition Building Demolition

Order of Magnitude March 18, 2008

Description	Quantity	Unit	Unit Cost	Subtotal	Total
<b>CATC BUILDING DEMOLITION</b>					
Building A - Demolish building and dispose off site	33,868	SF	6.25	\$210,425	
Building B - Demolish building and dispose off site	1,663	SF	5.75	\$9,562	
Building C - Demolish building and dispose off site	89,665	SF	7.50	\$672,488	
Building D - Demolish building and dispose off site	23,329	SF	6.25	\$145,806	
Building E - Demolish building and dispose off site	20,782	SF	6.25	\$129,888	
Building F - Demolish building and dispose off site	21,366	SF	6.25	\$133,538	
<b>TOTAL: CATC BUILDING DEMOLITION</b>					<b>\$1,301,705</b>
					<b>1,582,135</b>
<b>MHC BUILDING DEMOLITION</b>					
Building 1 - Demolish building and dispose off site	11,367	SF	5.75	\$65,360	
Building 2 - Demolish building and dispose off site	50,025	SF	8.75	\$437,719	
Building 3 - Demolish building and dispose off site	143,216	SF	7.25	\$1,038,316	
Building 4 - Demolish building and dispose off site	246,228	SF	7.25	\$1,785,153	
Building 5 - Demolish building and dispose off site	112,710	SF	7.25	\$817,148	
<b>TOTAL: MHC BUILDING DEMOLITION</b>					<b>\$4,143,696</b>
					<b>5,036,102</b>
<b>DAY HOSPITAL BUILDING DEMOLITION</b>					
A Wing - Demolish building and dispose off site	36,843	SF	7.25	\$267,112	
B Wing - Demolish building and dispose off site	40,784	SF	5.75	\$234,508	
C Wing - Demolish building and dispose off site	58,624	SF	7.25	\$425,024	
D Wing - Demolish building and dispose off site	21,027	SF	8.75	\$183,986	
D Buildings - Demolish building and dispose off site	6,897	SF	5.75	\$39,658	
E Wing - Demolish building and dispose off site	32,200	SF	5.75	\$185,150	
<b>TOTAL: MHC BUILDING DEMOLITION</b>					<b>\$1,335,438</b>
					<b>1,623,170</b>
<b>SUBTOTAL</b>					<b>\$6,780,839</b>
General Conditions/Bond/Insurance (6%)					\$406,850
Contractor's Fees (4%)					\$287,508
Design Contingency (5%)					\$373,760
<b>TOTAL ESTIMATED BID</b>					<b>\$7,848,957</b>
Construction Contingency (5%)					\$392,448
<b>TOTAL ESTIMATED CONSTRUCTION COSTS</b>					<b>\$8,241,405</b>

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**COUNTY OF MILWAUKEE**  
**INTER-OFFICE COMMUNICATION**

**CONFIDENTIAL**

**DATE** : October 18, 2007  
**TO** : Greg High, AE&ES, DTPW  
**FROM** : Kevin O'Brien, Environmental Services, DTPW *KOB*  
**SUBJECT** : Estimates of environmental costs

Attached is the estimate for the demolition and removal of the Behavioral Health Complex. The main cost component is the asbestos containing materials. These are primarily flooring throughout the facility and roofing at Building D-19.

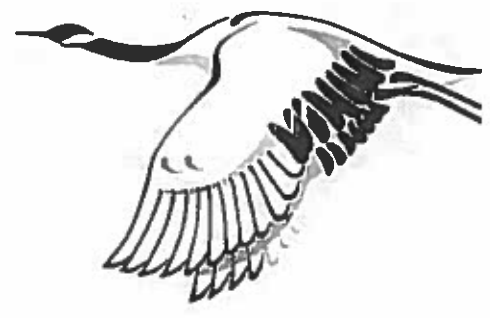
Tom Jackson of JMI, one of our consultants on annual contract, produced this estimate. The building was inspected, but limited invasive testing was conducted.

The removal costs are estimated to be \$2,681,000.00. This includes a 20% contingency amount for concealed materials.

**Cc:**  
Walter Wilson, DTPW  
Karl Stave, DTPW  
Stevan Keith, DTPW  
Craig Dillman, ED  
Gerald Baker, ED  
Tom Jackson, JMI

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**CONFIDENTIAL**



Hazardous materials removal estimates for the Behavior Health Complex

**BUILDING D-20 (CATC)**

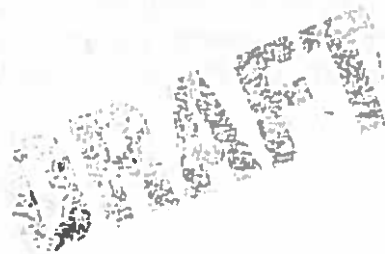
Floor Tile/ Mastics	88,000 sq. ft. at \$2.00/ sq. ft.	\$176,000.00
Vibration Isolators	Assumed ACM –Unknown Quantity	\$10,000.00*
Roofing	Non-ACM	N/C
Consultant Fees		\$20,000.00
Contingency Amount	20%	<u>\$41,000.00</u>
<b>Total</b>		<b>\$247, 000.00</b>

**BUILDING DAY HOSPITAL D-19 (DAY HOSPITAL)**

Pipe fittings/Elbows - Known	730 units @ \$25.00/ea	\$18,000.00**
Floor Tile/Mastics	35,270 sq. ft. @ \$2.00/ sq. ft.	\$71,000.00
Concealed Spline Ceiling Tile	56,405 sq. ft. @ \$2.00/ sq. ft.	\$113,000.00
Tank Insulation	40 sq. ft. @ \$10.00/ sq. ft.	\$1,000.00
Roofing – Transite	120,000 sq.ft.@ <u>\$2.25/sq. ft.</u>	\$270,000.00
Window/Door Caulk		\$72,000.00
Inaccessible Pipe Fittings	Estimated 1,500 units @ \$25.00/ea	\$38,000.00**
Consultant Fees		\$60,000.00
Contingency Amount	20% plus \$25,000.00 fitting contingency	<u>\$154,000.00**</u>
<b>Total</b>		<b>\$797,000.00</b>

**BUIDING D-16 (MENTAL HEALTH CENTER)**

Pipe Fittings/Elbows	994 units @ \$25.00/ea	\$25,000.00**
Floor Tile/Mastic	214,905 sq. ft. @ \$2.00/ sq. ft.	\$430,000.00
Tank insulation	250 sq. ft @ \$10.00/ sq. foot.	\$2,500.00
Off-white Duct Cover – Known	12,500 sq. ft at \$15.00/sq. ft.	\$187,500.00
Roofing	Non-ACM	N/C
Window/Door Caulk		\$168,000.00
Inaccessible Pipe Fittings	Estimated 3,500 units @\$25.00/ea	\$88,000.00**
Off-white Duct Cover – Inaccessible	Estimated 5,000 sq. ft.	\$75,000.00
Consultant fees		\$95,000.00
Contingency amount	20% plus \$25,000.00 fitting contingency	<u>\$240,000.00**</u>
<b>Total</b>		<b>\$1,311,000.00</b>



#2355000

## TUNNEL SYSTEM

20" OD of insulation Pipes	3,410 lineal ft. @\$40.00/ft.	\$136,000.00
14" OD of insulation Pipes	788 lineal ft. @\$20.00/ft.	\$16,000.00
8" OD of insulation Pipes	275 lineal ft. @\$15.00/ft.	\$4,000.00
Excavation/Access to non-accessible tunnels		\$45,000.00***
Consultant Fees		\$20,000.00
Contingency Amount	20%	<u>\$45,000.00</u>
Total		\$266,000.00

## MISCELLANEOUS

- Light ballasts containing potentially containing PCBs would be 1,000 @ \$8.00/each for a total cost of \$8,000.00.
- No mercury containing devices were discovered in the initial inspection.
- Investigation with an XRF revealed no lead based paint above action limits on any masonry or concrete painted surfaces within the complex.
- There are surplus pool chemicals in the basement of CATC that will need to be removed prior to demolition. If no other County department can use these, then a disposal cost will be incurred of \$2,000.00.
- Costs for abatement of Day Hospital Chiller Building D-29 at 800 sq. ft., is included in the contingency amount.
- There are air conditioners, chillers and other devices that contain CFC's, Halogens and other coolants throughout the complex. Costs of disposal are estimated at \$50,000.00.

Total miscellaneous costs

\$60,000.00

The total estimated cost of asbestos abatement and management services for the Behavioral Health complex is \$2,681,000.00. Keep in mind that these figures are based upon a relatively non-invasive inspection process and additional materials may exist that are as yet undiscovered. The Day Hospital cannot be explored in detail because of the asbestos containing ceiling tile. The Mental Health Center is also very difficult to assess because of the concealed spline ceiling system. Further invasive investigation must be undertaken prior to actual demolition. With these qualifications, these figures are reasonable for budgetary purposes.





**\*This amount would cover unknown vibration isolators in the entire complex, not just CATC.**

**\*\*The pipe issue is as follows:**

- 1. The accessible pipe elbows are quantified and listed.**
- 2. The inaccessible pipe elbows were quantified by applying a multiplier to the known amount of elbows. Visual checks of the few areas that were partially accessible produced the multiplier.**
- 3. The contingency includes an extra \$25,000 in each of the two buildings to cover the possible discovery of an additional 1,000 elbows in each.**

**\*\*\*One section of the tunnel network is not navigable. Excavation and removal of the tunnel top would be required to access the asbestos containing material for abatement.**

**Thomas R. Jackson, President of Jackson/MacCudce Inc., prepared this estimate. Licensed in Wisconsin as an Asbestos Inspector, Supervisor, Project Designer and Management Planner, WI-#572.**

**As of 10/18/07**

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# What Lies Beneath?

As urban redevelopment becomes more widespread, the problem of what to do with the existing foundations of remodeled or demolished buildings is becoming increasingly important. Reuse of existing foundations generates substantial savings, both financial and environmental, but at what risk?

By Bernard H. Hertlein, M.ASCE, and William H. Walton, P.E., S.E., M.ASCE

**T**he redevelopment of urban communities can revitalize neighborhoods, accommodate growing populations, and add vital cultural resources to cities. In seeking to reuse the foundations of previous structures on such sites, engineers can save money and time while also providing an environmentally responsible solution that minimizes the need for new construction.

But when little or no information about the types of foundations that exist is available, the challenge lies in determining the foundation types, locations, and bearing capacities. State-of-the-art nondestructive testing (NNT) methods are vital tools that can help solve these problems, but each has ideal applications and limitations.

There are many older structures in the United States—some of them of historical importance—ranging from buildings to bridges and from dams to wharves. In many cases, little or no documentation remains from the original construction, and the type of foundation system supporting these structures is often unknown and can only be divined from descriptions of typical local practices at the time.

When redeveloping a site, the goal is often to expand a structure in some way, thus increasing the load on the foundations.

To design a rehabilitation project safely and cost-effectively, engineers must determine the physical properties of the supporting soil, together with the type, dimensions, and condition of the existing foundation. The same is true when constructing a new structure atop foundations since used for a structure that has since been demolished.

Even if the developer does not at first plan to reuse the existing foundations, most foundations are too deep to be removed economically, and some will almost certainly conflict with the desired location of the new foundations. Therefore significant gains are made, in both financial and environmental terms, if the existing foundations can be incorporated into the new design. However, to do this, the designer must know the type and load-bearing capacity of the existing foundations and must be sure that they were not damaged, especially if structures above them have since been demolished.

We have worked on a number of projects in the past few years that have involved increasing the load on existing foundations or reusing the foundations for entirely new structures. Information about foundation type and depth has been gained from the use of specialized non-destructive tests. In many cases, we also had access to archival information that included soil borings in the vicinity to correlate with

the test data. We described the methodologies used in a paper written for the Transportation Research Board's annual conference in 2000 ("Assessment and Reuse of Old Foundations," in *Proceedings, Session 218: Foundation Analysis for Historic Structures and Construction Impacts* [Washington, D.C.: Transportation Research Board, 2000]), and our intent here is to update them.

Several NNT methods are available for the assessment of deep foundations. The two methods to be discussed here are the impulse response test and the parallel seismic test. Detailed descriptions of these tests may be found in the report *Nondestructive Test Methods for Evaluation of Concrete or Structural Components*, Report 228.2R, [Farmington Hills, Michigan: American Concrete Institute, 1999] and the book *Nondestructive Testing of Deep Foundations*, by Bernard H. Hertlein and Allen Davis (Wiley, 2006). Several companies in this country and abroad currently offer these testing services.

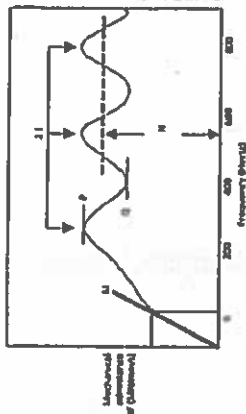
Although these and other NNT methods are extremely useful and provide valuable data, it is rarely appropriate to use NNT methods alone. In most cases, some additional exploration or testing is necessary to obtain all of the information that is required to render sound engineering decisions. Typically, the additional work might include soil borings, a review of available geotechnical records, or shallow test pits to expose the unknown foundation immediately beneath the foundation cap or grade beam.

**T**he impulse response test is also sometimes referred to as the sonic mobility method. In this method the foundation is instrumented with a geophonic velocity transducer. An impulse is generated by an impact from a small sledge hammer containing a load cell that measures the force input to the foundation.

The impulse generates a compression stress wave that travels down through the foundation and is partially or completely reflected back upward by changes in cross section or material quality, as well as by discontinuities, significant changes in soil conditions, or the base of the foundation. The geophone senses the reflected waves, and the hammer and geophone signals are recorded on a digital data acquisition system.

A frequency-based analysis of the impulse response data, when used under appropriate conditions, can determine the depth of the foundation, the presence of significant flaws or discontinuities, and the

Example of Impulse Response Test Result



quality of the material (see the figure above). The measurement of the dynamic stiffness of the foundation and soil system (denoted by  $N$  in the figure above) can be useful in detecting anomalous shafts in large groups of drilled shaft or driven pile foundations. Wave reflections from the base of the shaft or significant changes in conditions will cause a series of resonant peaks. The spacing between resonant peaks, measured in terms of frequency ( $\Delta f$ ), is used to calculate the length of the shaft,  $L$ , or the depth of the reflective by means of the formula  $L = V/2\Delta f$ ,  $V$  being the assumed velocity of the stress wave through the concrete. The degree of soil damping, measured from the peak-to-trough ( $P$  to  $Q$  in the figure above) amplitude of the resonant portion of the response graph, in conjunction with the position of the response peaks relative to the graph origin, can be useful in estimating the percentage of the shaft load carried in skin friction and the percentage carried by the end-bearing. For concrete foundation shafts, the mean amplitude of the response (denoted by  $N$  in the figure above) is a function of concrete density, modulus, and cross section. It is therefore a useful guide in assessing concrete quality and shaft regularity.

The data recorded by the impulse response test can also be analyzed by an impedance log, a computer modeling technique. In this method a computer model is generated to simulate an impulse response result. Shaft dimensions, concrete quality, and soil strength parameters are then adjusted repeatedly until a good match with the field data is



**Re: Fw: Follow-up to my earlier call about the \$20 million**  
**John Bunn to: Greg High**

05/24/2011 12:25 PM

Greg-

The Means Historical Index (attached) for 2008 costs to 2011 is as follows:

  
 2011Historical Index.PDF  
 2011----191.4  
 2008----176.3

If you multiple the 2008 cost by this factor it would approximate the 2011 cost (  $191.4/176.3 = "1.086"$  ) & Add 2-5% for a 2012 projection.

John  
 Greg High Does this transmittal look ok to you guys? ---- F... 05/24/2011 11:12:15 AM

From: Greg High/DPW/Milwaukee County  
 To: Craig Dillmann/DOA/Milwaukee County@milwco, Karl Stave/DPW/Milwaukee County@milwco, John Bunn/DPW/Milwaukee County@milwco  
 Date: 05/24/2011 11:12 AM  
 Subject: Fw: Follow-up to my earlier call about the \$20 million

Does this transmittal look ok to you guys?  
 ---- Forwarded by Greg High/DPW/Milwaukee County on 05/24/2011 11:08 AM ----

From: Greg High/DPW/Milwaukee County  
 To: Jennifer Collins/CtyBoard/Milwaukee County  
 Cc: Karl Stave/DPW/Milwaukee County, Craig Dillmann/DOA/Milwaukee County  
 Date: 05/24/2011 10:25 AM  
 Subject: Re: Fw: Follow-up to my earlier call about the \$20 million

Jennifer:

Attached is the most recent draft of the demolition/environmental remediation/utility relocation cost estimate.

  
 Scan001.PDF

Jennifer Collins Hi Greg, Do you have a report that details the \$2... 05/23/2011 01:38:13 PM



**Re: Fw: Follow-up to my earlier call about the \$20 million** 

Greg High to: Jennifer Collins

Cc: Karl Stave, Craig Dillmann, Jack Takerian

05/26/2011 03:44 PM

Jennifer:

Attached is the most recent draft summary (revised in 2008) of the demolition/environmental remediation/utility relocation cost estimate we prepared for DHHS during the St. Mike's proposal review. We have adjusted the numbers for inflation to the current year and provided a range for adjustment due to inflation to 2012.

As you can see from the summary sheet, what to do with the existing steam tunnel is a major cost issue on the site. The range in demolition cost for the entire site is \$12.5 to \$19.4 million. The low end cost is \$12.5 million assuming the north-south steam tunnel segment within the site can remain. A mid-range cost of \$16 million assumes the north-south steam tunnel must be relocated outside of the property using direct bury piping. The high end cost is \$19.4 million assuming the north-south steam tunnel must be relocated outside of the property using an underground tunnel similar to the existing steam tunnel.



Scan001.PDF

Jennifer Collins

Hi Greg, Do you have a report that details the \$2...

05/23/2011 01:38:13 PM

**From:** Jennifer Collins/CtyBoard/Milwaukee County  
**To:** Greg High/DPW/Milwaukee County@milwco  
**Date:** 05/23/2011 01:38 PM  
**Subject:** Fw: Follow-up to my earlier call about the \$20 million

Hi Greg,

Do you have a report that details the \$20 million estimate that you could email over so that I can share it with Facility Committee members (see message below from Sup. Sanfelippo)?

Jennifer Collins  
Research Analyst  
Milwaukee County Board of Supervisors  
(414) 278-5290  
jennifer.collins@milwcnty.com

----- Forwarded by Jennifer Collins/CtyBoard/Milwaukee County on 05/23/2011 01:32 PM -----

**From:** Joe Sanfelippo/CtyBoard/Milwaukee County  
**To:** Jennifer Collins/CtyBoard/Milwaukee County@MILWCO  
**Date:** 05/23/2011 01:31 PM  
**Subject:** Re: Fw: DRAFT BHD Facility Committee Final Report

\$20 million seems incredibly high for removing the building and preparing the site for sale. Can you have him send something over explaining the costs, I have a feeling some members will question this amount.

-----Jennifer Collins/CtyBoard/Milwaukee County wrote: -----  
**To:** Joe Sanfelippo/CtyBoard/Milwaukee County@MILWCO  
**From:** Jennifer Collins/CtyBoard/Milwaukee County  
**Date:** 05/23/2011 01:22PM

**Subject: Re: Fw: DRAFT BHD Facility Committee Final Report**

I followed up with Greg High. The \$20 million estimate does relate to just the land clearing/utility capping costs. The estimate is based on the County clearing/preparing the entire site for sale, and would be reduced if the County were to only sell a portion of the site.

There may be bonding debt associated with the property, but that would be above and beyond the \$20 million estimate. I have a call in to Pam to see if there is bond debt, and verify the amount of debt services associated with the property. I do know that the Board approved the release of \$1.8 million in bond financing from the WE033 Capital Account last year for the SOD repairs. That was issued as part of the 2009 ramped up Capital Budget to take advantage of the ARRA/Build America Bonds.

Jennifer Collins  
Research Analyst  
Milwaukee County Board of Supervisors  
(414) 278-5290  
jennifer.collins@milwcnty.com

Joe Sanfelippo—05/23/2011 10:26:43 AM—Please verify #2. I am pretty sure there is some bonding debt, is that in the \$20 million? —Jenn

From: Joe Sanfelippo/CtyBoard/Milwaukee County  
To: Jennifer Collins/CtyBoard/Milwaukee County@MILWCO  
Date: 05/23/2011 10:26 AM  
Subject: Re: Fw: DRAFT BHD Facility Committee Final Report

Please verify #2. I am pretty sure there is some bonding debt, is that in the \$20 million?

—Jennifer Collins/CtyBoard/Milwaukee County wrote: —  
To: Joe Sanfelippo/CtyBoard/Milwaukee County@MILWCO  
From: Jennifer Collins/CtyBoard/Milwaukee County  
Date: 05/23/2011 10:13AM  
Subject: Fw: DRAFT BHD Facility Committee Final Report

Sup. Sanfelippo:

Briefly, here are the changes I made to the draft report:

1. I underlined all of the statements that highlight the committee's recommendations so they don't get buried in the text of the report
2. I reworded the language surrounding the encumbrances on the current facility—my understanding is that they are associated with preparing the site for sale (completely clearing the land, getting rid of the steam tunnels beneath the facility, etc.)

Glenn is working on finding a map now, but I didn't want to delay getting this out.

Jennifer Collins  
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Milwaukee County Board of Supervisors  
(414) 278-5290  
jennifer.collins@milwcnty.com

— Forwarded by Jennifer Collins/CtyBoard/Milwaukee County on 05/23/2011 10:09 AM —

From: Jennifer Collins/CtyBoard/Milwaukee County

To: Joe Sanfelippo/CtyBoard/Milwaukee County@MILWCO, Lynne DeBruin/CtyBoard/Milwaukee County@milwco, James Schmitt/CtyBoard/Milwaukee County@milwco, Marina Dimitrijevic/CtyBoard/Milwaukee County@milwco, Peggy West/CtyBoard/Milwaukee County@milwco  
Cc: Geri Lyday/DHS/Milwaukee County@milwco, Paula Lucey/Mental Health/Milwaukee County@MILWCO  
Date: 05/23/2011 10:07 AM  
Subject: DRAFT BHD Facility Committee Final Report

Supervisors,

Sup. Sanfelippo asked that I distribute the attached DRAFT Facility Committee Final Report to committee members to review prior to tomorrow's meeting.

*(See attached file: DRAFT Facility Cmte Final Report.docx)*  
*(See attached file: Facility Committee Final Report\_Attachment 1.pdf)*  
*(See attached file: Facility Committee Meeting Summary\_Attachment 2.doc)*

I am working with Glenn to pull together Attachment 3 (a map of the County Grounds marking the 3 proposed sites) and am hoping to have that ready for tomorrow's meeting.

Jennifer Collins  
Research Analyst  
Milwaukee County Board of Supervisors  
(414) 278-5290  
jennifer.collins@milwcnty.com

[attachment "DRAFT Facility Cmte Final Report.docx" removed by Joe Sanfelippo/CtyBoard/Milwaukee County]

[attachment "Facility Committee Final Report\_Attachment 1.pdf" removed by Joe Sanfelippo/CtyBoard/Milwaukee County]

[attachment "Facility Committee Meeting Summary\_Attachment 2.doc" removed by Joe Sanfelippo/CtyBoard/Milwaukee County]

\*\*\*\*\*  
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