



A · R · C · H · I · T · E · C · T · S

August 24, 2006

Director
Facilities Management
State Capitol Complex
1900 Washington Street East
Charleston, West Virginia 25311

**Re: Building 13 Parking Facility
Condition Assessment and Maintenance Plan**

650 076403

Dear Director:

N Visions Architects and Desman Associates are pleased to provide for your consideration our experience and qualifications to provide architectural and engineering services for this project. We look forward to personally discussing how we can assist you in bringing this project to a successful conclusion.

Sincerely,

N Visions, Inc.

A handwritten signature in cursive script, appearing to read 'Lloyd W. Miller'.

Lloyd W. Miller, AIA

LWM:bc

**Expression of Interest
to provide
Professional Architectural
and Engineering Services
to the**

**West Virginia
Department of Administration
General Services
for the
Building 13 Parking Garage
Condition Survey,
Repair/Refurbishment
Specifications and
Contract Management**

August 28, 2006



**Parking Facility Specialist
and
Structural Engineers**

1

Evaluation Criteria

2

Project Team

3

N Visions Architects

4

Desman Associates

5

Additional Information



INTRODUCTION:

N Visions Architects and our consultant, Desman Associates will collaboratively provide the professional services required for this project. N Visions, located in South Charleston, West Virginia will provide the construction management and architectural services. They will be the primary client contact. Desman Associates will provide the technical services required for the project.

N Visions Architects, with the assistance of Desman Associates, has designed several new parking facilities; designed and administered the contract for the Huntington 3rd Avenue garage, and was the Criteria Developer on three Design/Build parking facilities throughout West Virginia. Our understanding of all aspects of parking structures will assist you in successfully resolving the issue for Building 13. Please contact the following owner's representatives as references.

Rick Atkinson, Yeager Airport (304) 344-8033
Ann Conageski, City of Parkersburg (304) 424-4818
Larry Lawrence, FSU (304) 367-4295

DESCRIPTION OF THE FACILITY:

Building 13 Parking Garage is a freestanding four level structured parking facility. It is about seven years old and is constructed of precast pre-topped double tees, spanning approximately 60'. The exterior elevations consist of precast concrete spandrels. The facility will accommodate approximately 788 cars on the structured areas and ground area. There is two-way traffic and 90° parking throughout. The facility is three bays wide with the center bay deck sloped to provide vertical circulation.

SUGGESTED SCOPE OF SERVICES:

PHASE I – CONDITION ASSESSMENT AND REPORT

- Task I-1 N Visions will review information regarding the operating/maintenance issues related to the garage facility. The specific work program tasks and field survey schedule will also be reviewed and discussed with the Client. Also N Visions will review all previous plans/documents related to the garage facility. N Visions will require the loan of the plans/documents for the duration of the study.
- Task I-2 Background plans of the garage slabs will be prepared for all garages. These plans will be used during the field survey to note items/issues of concern. (It should be noted that for the elevated slabs two (2) plan sheets will be prepared; one (1) for the top surface of slab and one (1) for the bottom surface of the slab.)
- Task I-3 A field survey of the garage facility will be made using plans prepared in Task I-2 to record our observations.
 - 1. Observation of visible cracks;
 - (I) Structural and/or non-structural cracks.
 - (ii) Leaking and/or non-leaking cracks.
 - 2. Observation of visible spalling indicating deteriorated concrete and corroding reinforcing.
 - 3. Observation of the condition of the ground floor ramp surface.
 - 4. Observation of exposed reinforcing and precast connections for corrosion and deterioration.



5. Observation of the condition of construction joints, joint seals and waterproof coating.
6. Observation of the condition of floor drains and if water ponding is observed.
7. Observation of exterior façade elements, roof enclosures, railings, stair and stair towers.
8. Observation of any miscellaneous items.

Task I-4 Field and laboratory test methods will be conducted to determine the condition of the existing concrete deck slabs. The testing to be conducted includes:

1. A total of approximately 8 concrete powder samples will be taken throughout the elevated garage levels with the sample locations patched after drilling. The powder samples will be shipped for laboratory testing with approximately 16 chloride tests conducts. Two chloride tests will be conducted at each location, one test from 1/4" to 1" of depth from the floor surface, and one from 1" to 2" of depth.
2. One pachometer survey will be conducted on each elevated level to determine the concrete cover over embedded reinforcing.
3. Sounding for delaminations (a chain drag technique) will be performed over selected areas of the elevated deck floor surfaces. This sounding technique detects horizontal cracks in the slabs (delaminations) at the level of top reinforcement due to corrosion. These cracks (delaminations) are not visually detectable.

Task I-5 A draft report will be prepared to present the technical approach, appraisal process and a summary of the findings. Any conditions that are discovered during the survey which require immediate attention will be brought to the attention of the Client for appropriate action. Budgetary construction cost estimates will be developed for the recommended program. Copies of the draft report will be submitted for review.

Task I-6 If necessary, any comments obtained a the Task I-5 review would be incorporated into a final report for distribution.

PHASE II - DEVELOP TEN YEAR MAINTENANCE PROGRAM

Task II-1 Based on the approved Phase I report, an outline of a recommended structural maintenance program for a ten year period will be developed. The replacement schedule and the associated annual maintenance costs will be developed based on exposure conditions and the life expectancies of existing and recommended systems. Budgetary construction cost estimates will be developed for each year of the recommended program. Structural maintenance guidelines, maintenance time line schedule and maintenance check lists will be provided. Copies of the draft maintenance program will be submitted for review.

Task II-2 If necessary, any comments obtained at the Task II-1 review would be incorporated into a final ten-year program plan for distribution.



PHASE III – PREPARATION OF CONSTRUCTION SPECIFICATIONS AND PLANS.

- Task III-1 Based on the approved maintenance program, N Visions will coordinate and attend a meeting to establish the initial program scope of the maintenance program and to obtain any additional information required.
- Task III-2 Based upon the repair and maintenance program selected for the parking facility, the required plans and specifications will be prepared for restoration and maintenance of the facility. It is intended for these documents to be used during the subsequent contractor bid process. It is our understanding that the work will take place at one time under one construction contract and schedule.
- Task III-3 N Visions will submit documents prepared in Task III-2 at the 90% completion mark for Client review.
- Task III-4 Based on Task III-3 review, any comments would be incorporated and the construction documents would be completed for bid.

PHASE IV – BIDDING SERVICES

- Task IV-1 N Visions will assist in the identification of qualified contractors and prepare a bid request or review a bid request developed by the Client.
- Task IV-2 The bid documents will be prepared for bidding and sent to the Client for release to the pre-qualified contractors, or if instructed to do so, N Visions will release the bid documents directly to the pre-qualified contractors.
- Task IV-3 N Visions will conduct and document an on-site pre-bid meeting to answer questions from the pre-qualified contractors and will issue an addendum as necessary based on pre-bid meeting information.
- Task IV-4 N Visions will issue addenda as necessary to clarify/answer contractor questions.
- Task IV-5 N Visions will review and analyze the bids obtained and assist in the selection of the successful contractor.

PHASE V – CONSTRUCTION MONITORING

- Task V-1 N Visions will provide assistance in negotiations with the successful contractor and assist in preparing the contract between the Client and the successful contractor.
- Task V-2 N Visions will attend a pre-construction meeting and review the project schedule and phasing plan submitted by the selected contractor.

EVALUATION CRITERIA



- Task V-3 During the repair/construction phase, N Visions will review shop drawings and other required contractor submittals.
- Task V-4 N Visions will make periodic observations of the contractor's work at critical stages of the repair and at other times in an effort to ensure compliance with the contract documents and to review repair quantities. (Site visits will be conducted on the average of one per week throughout the construction phase.)
- Task V-5 N Visions will attend regularly scheduled construction progress meetings once every two weeks.
- Task V-6 N Visions will provide assistance in contract administration and review contractor pay requests.
- Task V-7 Once the work is completed, N Visions will conduct a final punch list visit. A report documenting the punch list findings will be submitted for contractor action. Up to two (2) follow up visits will be conducted for punch list work.

West Virginia
Department of Administration
General Services Division

N Visions Architects

Project Management
Project Coordinator
Architectural Services

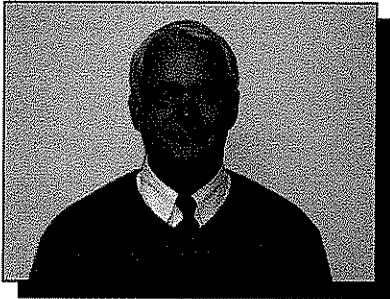
Lloyd Miller,
Principal-in-Charge
George Soltis,
Project Manager
Tom Cloer,
Intern Architect

Desman Associates

Condition Survey
Maintenance Plan
Technical Expertise

Jerome Swantner, P.E.,
Quality Control
Giri Chhabra, P.E.,
Corporate Advisor
Ghassan Bishara, P.E.,
Project Manager
Shannon Bentaz, E.I.T.,
Project Engineer
Rakesh Bhatt, P. E.,
Construction Engineer
Scott Wolter, P.G.,
American Petrographic Services

LLOYD W. MILLER, AIA, NCARB, CSI, CCS, IBC, NFPA
Principal/President



Responsibility
Principal-in-Charge/Administration

Education
Bachelor of Architecture
Carnegie-Mellon University – 1974
Pittsburgh, Pennsylvania

Registration
N.C.A.R.B. No. 23, 724
Active: West Virginia, Kentucky, Ohio, Virginia
Inactive: Indiana, Pennsylvania, Maryland, North Carolina, Tennessee

Professional Associations
West Virginia Boards of Architects - Member 2007
AIA/WV West Virginia – Past President, etc.
AIA American Institute of Architects
AIA State Government Network
AIA/CAWV Design/Build Committee
CSI, CCS Construction Specification Institute, Certified Construction Specifier
ICC International Code Council
NFPA National Fire Protection Association

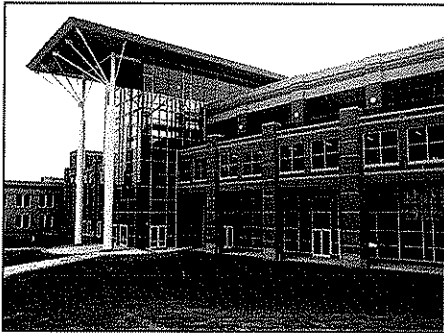
Kanawha County Schools Blue Ribbon Committee,
1994-1996 Co-Chairman
United Way of Kanawha Valley – Architect/engineer
Fund Drive chairman 1991 and 1992
Kanawha County School Bond Initiative Chairman 1997

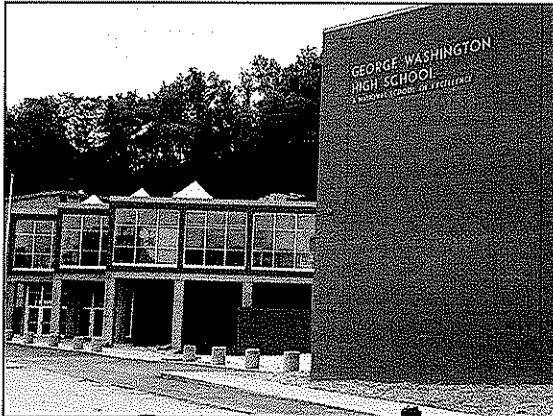
Religious Organizations
Architectural Review Committee, Episcopal Diocese of West Virginia
Senior Warden, Episcopal Church of the Good Shepherd
Junior Warden, Episcopal Church of the Good Shepherd
Youth Group Advisor, Episcopal Church of the Good Shepherd
Kanawha Episcopal Quadralateral

Lloyd is one of the founding partners, and currently is a principal of N Visions Architects. His years of experience with N Visions and previous experience with other local architectural firms and businesses has provided Lloyd with design and technical knowledge capable of responding to the cost, program and aesthetic demands of building owners.

Direct client contact and personal involvement of all aspects of project development provides the owner with solutions that are responsive to the project requirements. Lloyd's direct and personal involvement sets the standards for N Visions' professional approach to project management.

The various disciplines, staff, project phases, and components are coordinated by Lloyd. As principal-in-charge, project responsibilities are delegated and coordinated to respond to the project requirements.





GEORGE M. SOLTIS, AIA
Principal/Vice President

Education

Bachelor of Architecture with Distinction
University of Kentucky - 1977

Registration

N.C.A.R.B.
West Virginia – 1982, Virginia, Tennessee – 2003

Professional Associations

AIA/WV
AIA American Institute of Architects

Civic Organizations

Scout Master, Troop 195, Boy Scouts of America
Health Appeals Board, City of South Charleston

Historic Architect

Restoration of West Virginia Governor's Mansion Porch – Charleston, WV
Criel Mound Park Master Plan – South Charleston, WV
Restoration/Renovation of Criel Mound – South Charleston, WV
Westvaco Research Building Renovation Restoration Studies
South Charleston Museum Foundation
Locomotive Shelter, Chief Logan State Park – Logan, WV
Listed with West Virginia Culture and History as a Historic Architect
meeting NPS 36CFR61.9 WV

A principal of the firm, George has utilized his substantial design and Management talent to complete many N Visions projects, since becoming a member of the firm in 1992. Some of the projects included in his vast experience are:

Public/Government

New United States Postal Facilities—
Hurricane, WV
Martinsburg, WV
Bluefield, WV
Princeton, WV
Beckley, WV

Health Care

Holzer Clinic Addition – Jackson, Ohio
IRC Rehabilitation Clinic – South Charleston, WV

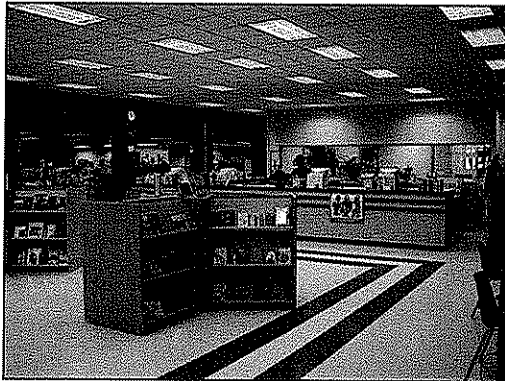
Institutional

WV Graduate College Administration Building – South Charleston, WV
Herbert Hoover High School Addition/Renovations – Clendenin, WV
Sissonville Branch, Kanawha County Library – Sissonville, WV
George Washington High School Addition/Renovations – Charleston, WV
South Charleston High School Additions/Renovations – South Charleston, WV
Elkview Middle School Additions/Renovations – Elkview, WV
Sissonville Middle School – Sissonville, WV
South Charleston Public Library Renovations – South Charleston, WV

Commercial

Tri-State Gaming Center – Nitro, WV
Summers Square Office Building – Charleston, WV
One Kenton Drive/Northgate Office Building – Charleston, WV
Capitol City Building/Renovation/Restoration – Charleston, WV

W. THOMAS CLOER, III



Responsibility
Intern Architect

Education
Bachelor of Architecture
The University of Tennessee
Knoxville, Tennessee

Registration
Intern Development Program completed
N.C.A.R.B. registration in progress

Professional Associations
AIA - American Institute of Architects - Associate

Professional Experience
N Visions Architects
May 2001 – Present

Since joining the N Visions team as an intern architect in May 2001, Tom has been actively involved in the various phases of several N Visions projects.

RCCR Housing - Construction Documents, Construction Administration

Chesterfield Village Apartments - Consulting Services, Construction Administration

George Washington High School - Construction Administration

Elkview Middle School - Construction Documents, Bidding & Negotiating, Construction Administration

Fairmont State College - Feasibility Study

Tri-State Racetrack & Gaming Center - Construction Documents

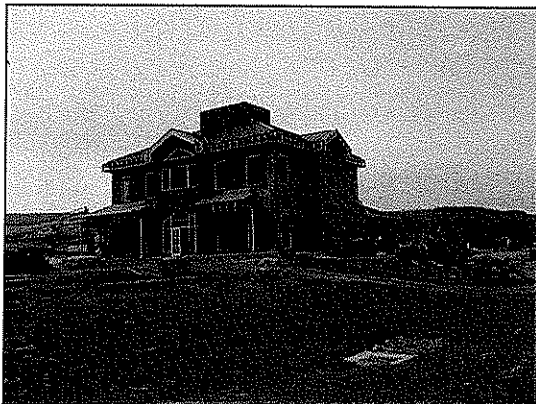
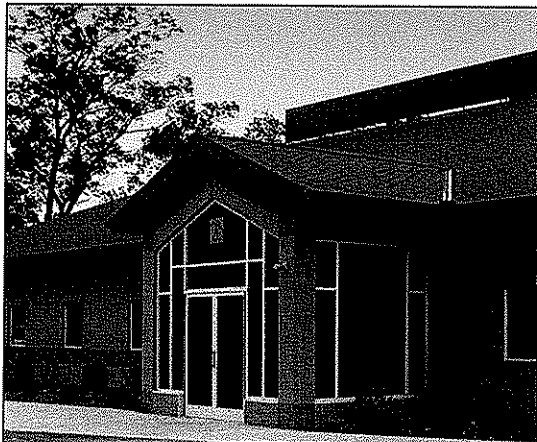
Cabin Creek Health Center - Feasibility Study/Schematic Design

South Charleston Public Library - Feasibility Study - Schematic Design, Construction Documents, Construction Administration

West Virginia State Governor's Mansion - Construction Administration

Stickler Medical Office Building - Construction Documents, Construction Administration

Ream Interests - Construction Documents, Construction Administration



Total Years of Experience

24

Years with Desman

14

Education

Pennsylvania State University
University Park, PA
B.S. Architectural Engineering

Previous Experience

CAD-CON Inc. – Senior Structural
Engineer and Project Manager
FDE LTD. Consulting Engineers –
Structural Engineer
Leo A. Daly Company, Architects
and Engineers – Structural Engineer

Active Registrations

Mississippi
South Carolina
Vermont
Virginia
Maryland
Arkansas
Kentucky
Kansas
Wisconsin
North Carolina

Affiliations

Community Associations Institute
American Concrete Institute
Washington Parking Association
Mid-Atlantic Parking Association
International Parking Institute

Project Assignment

Principal-in-Charge

Experience & Qualifications

Mr. Swantner has been with DESMAN since 1991 and has extensive experience in the repair, restoration, and waterproofing protection of building facades and the historic renovation/restoration of building structures from initial evaluation through construction. He has served as project manager on a variety of investigation and restoration projects for building facades and plazas and is licensed in nine states in addition to the State of Maryland.

Since joining Desman, Mr. Swantner has successfully overseen the investigation, testing and restoration design of numerous assignments including:

- Flour Mill Condominium Exterior Envelope – Washington, DC
- Washington Hilton Façade – Washington, DC
- 700 14th Street Building Historic Façade – Washington, DC
- Park Place Condominium Façade – Alexandria, VA
- Hunters Woods Fellowship Hall Façade – Reston, VA
- Torpedo Factory Arts Center Historic Façade – Alexandria, VA
- Meadows One Building Façade – Washington, DC
- Pavilion on the Park Condominium Façade – Alexandria, VA
- Foundry Building Façade – Washington, DC
- 2 North Charles Street Historic Façade – Baltimore, MD
- Mercantile Bank Building Façade – Baltimore, MD

Total Years of Experience

Years with Desman
15

Education
The American University of
Beirut, Lebanon
Bachelor of Science, Civil
Engineering
Master of Science, Civil
Engineering

Affiliations
Lebanese Association of
Engineers

Project Assignment

Experience & Qualifications

Mr. Bishara has had extensive experience in a variety of engineering projects including concrete buildings, bridges, railways, steel structures, precast concrete and rehabilitation of damaged structures. His experience also includes the preparation of specifications, schedules, cost estimates, performance of general construction support and the review of technical submittals for many projects. Since joining DESMAN in 1990, Mr. Bishara has been involved with field investigation, testing and restoration of deteriorated parking and plaza structures, development of life cycle analysis, multi-year period maintenance and capital outlay plans for several parking facilities. He has also performed temporary and construction shoring design for several restoration projects. Some recent projects he has managed include:

Concrete Structure Restoration Projects

- 2000 L Street Garage Restoration, Washington, DC
- Market Square Plaza & Garage, City of Alexandria, VA
- Courthouse Parking Garage, City of Alexandria, VA
- Rockledge Executive Plaza Parking Garage, Bethesda, MD
- Freemason Street Garage, Norfolk, VA
- Bute Street Garage Norfolk, VA
- International Square Garages, Washington, DC
- 1700, 1730, 1747, & 1775 Pennsylvania Avenue Parking Garages, Washington, D.C
- Woodlake Towers Garage and Plaza, Fairfax, VA
- 5252 Wisconsin Avenue Driveway, Washington, DC
- 8555 16th Street, Silver Spring, MD
- Raleigh Durham Airport Authority Garage, Raleigh-Durham, NC
- Physician's Office Building Garage, Washington, DC
- Brandywine Parking Garage, Wilmington, DE
- U.M.A.B. Pratt Street Precast Panels Repair, Baltimore, MD

- Washington Hilton Parking Garage, Washington, DC
- Prince Georges County Hospital Parking, Cheverly, MD
- Watergate at Landmark Roadway Deck, Alexandria, VA
- 656 Quince Orchard Road Parking Garage, Gaithersburg, MD
- 1800 K Street Parking Garage, Washington, D.C.
- Park Place Condominium Parking Garage, Alexandria, VA
- International Monetary Fund Headquarters Building Garage, Washington, D.C.

Life Cycle Analysis, Multi-year Maintenance & Capital Outlay Plans for Garage Projects

- Baltimore County Revenue Authority Parking Garages, Towson, MD
- Five Underground Parking Garages for CarrAmerica, Washington, D.C.
- Tysons Corner Center Parking Garages, McLean, VA

Temporary & Construction Shoring Design for Restoration Projects

- 1400 North Uhle Street Parking Garage, Arlington, VA
- US Postal Service Parking Garage, Baltimore, MD
- GAO Parking Facility, Washington, DC
- National Institute of Health Parking Garage, Bethesda, MD
- Bethesda Metro Station Garage, Bethesda, MD
- 1401 K Street Vault Space, Washington, DC

KEY PERSONNEL & STAFFING PLAN

The key DESMAN staff proposed for this project has completed numerous parking facility assessment, life cycle analysis, replacement scheduling and restoration work for public, private, and institutional clients in the mid-Atlantic region. Our proposed staff has extensive experience throughout the area for the condition assessment, repair design, system life expectancies, cost estimating and phasing for cost effective rehabilitation and ongoing maintenance of a variety of parking structures, building facades, and plazas. As such, we believe we are thoroughly familiar with the issues to be addressed to conduct a condition assessment and prepare a maintenance program for the State of West Virginia Parking Facility.

DESMAN received the *Award of Excellence* from both the *American Concrete Institute* and the *International Concrete Repair Institute* for our work on the repair and maintenance of the 2000 L Street building parking garage in Washington, D.C. The same DESMAN project team members that worked on the award winning 2000 L Street garage project will be assigned to this project.

This DESMAN project team has also recently completed similar assignments for the parking facility systems listed below. Each assignment's scope includes condition assessment, repair design and restoration work.

Baltimore County Revenue Authority	4 garages	3,495 cars
Johns Hopkins Medical Institutions	4 garages	4,500 cars
University of Maryland, College Park	2 garages	2,100 cars
Prince George's County Revenue Authority	2 garages	1,750 cars
City of Frederick	2 garages	1,000 cars

Our constantly updated knowledge of the latest concrete repair and maintenance methods/techniques and current material technology will provide the City with the most cost-effective and durable solutions and preventive maintenance measures. DESMAN Associates performs nearly 100 garage condition assessments annually and manages dozens of complete repair programs in the same period. As a consequence, DESMAN Associates has access to the latest prices and constructability issues. Cost estimates will be developed using current repair and maintenance costs in the local areas.

DESMAN's principals have over 30 years of experience in the planning, design, preventive maintenance, restoration, life cycle analysis and funding options for parking facilities. Our project managers have on average over 12 years of experience in the same regard. Our firm represents the most comprehensive staff of experts for the restoration and on-going preventive maintenance planning and programming for parking facilities.

Mr. Jerome Swantner, P.E., Vice President of our Vienna, Virginia office will serve as Principal in Charge for this project and will provide Quality Assurance on this assignment. Mr. Swantner has over twenty-four years of experience in the investigation, testing, options analysis, design, restoration, and life cycle analysis of numerous parking facilities. Through this experience, Mr. Swantner has developed an in depth knowledge of current restoration construction methods, materials and costs, and keeps in constant contact with restoration contractors and material suppliers on the latest restoration technology. He will ensure appropriate personnel are assigned to the project, and that the project schedule is maintained.

Mr. Ghassan Bishara, P.E., will serve as Project Manager on this assignment. Mr. Bishara will act as the main point of contact for the City on all task assignments and will oversee and

coordinate Team efforts to assure completion of assignments on schedule and within budget. Additionally, Mr. Bishara will develop and select appropriate restoration and maintenance options, repair and protection materials, construction methods, and special repair techniques in developing the repair program and maintenance analysis. He will also lead the field appraisal work, material testing, data analysis, and cost estimation and will consult with Mr. Swantner and Mr. Chhabra in developing viable restoration and maintenance options, recommendations, cost estimates, and funding options. Mr. Bishara has over fifteen years of experience in the analysis and load rating of deteriorated parking structures, preparation of material specifications, and project oversight during the installation of repair and maintenance measures. Mr. Bishara brings his practical field experience to this project in knowing what materials and techniques work in the field and stand the test of time. Over the past twelve years, Mr. Bishara has served as Project Manager on numerous parking facility restoration projects.

Mr. Giri Chhabra, P.E., President of DESMAN Associates, will serve as Corporate Advisor for this assignment. Mr. Chhabra will review survey findings and consult in the development of maintenance items, restoration methods, cost estimates, life cycle analysis and funding options. Mr. Chhabra is a licensed engineer in over twenty states and is a recognized expert in the restoration and maintenance of parking facilities. With over 40 years of experience, Mr. Chhabra brings a wealth of knowledge and expertise to this assignment.

Ms. Shannon Bentz, E.I.T., will serve as the Project Engineer for this assignment assisting Mr. Swantner and Mr. Bishara in the field appraisal work, material testing, data analysis and development of restoration/maintenance recommendations. Ms. Bentz has over four years experience in structural design, existing facility inspections and investigations, preparation of repair plans and technical specifications, and project oversight during the installation of repairs and maintenance measures. Ms. Bentz has also prepared numerous technical reports and cost estimates detailing existing conditions and recommended repairs for both public and private sectors.

Mr. Rakesh Bhatt, P.E., a DESMAN construction specialist, will serve as the Construction Engineer for this project assisting Mr. Bishara in the administration of the construction contract, conducting field visits, performing submittal review, monitoring material testing, and verifying repair quantities in the field. Additionally, Mr. Bhatt will assist in the field observations of the garage, relying on his thirty-five year career in structural engineering. Mr. Bhatt also has over fifteen years of experience in monitoring garage restoration projects in the Mid-Atlantic region and brings his field experience to the project in knowing the deficiencies and structural issues to look for during the field observation.

Mr. Scott Wolter, P.G., is a certified professional geologist and a Principal of American Petrographic Services. He has over twenty years experience in the assessment, evaluation, and diagnosis of materials which have or in the process of undergoing failure. Mr. Wolter will be responsible for laboratory testing and analysis of concrete samples. Material testing is performed in strict accordance with the American Society of Testing Materials (ASTM) instructions. American Petrographic Services is a specialty organization dedicated to forensic identification and restoration of material deficiencies through petrographic and related methodologies.

DESMAN Associates provides a full complement of technical and administrative support staff in the Baltimore and Northern Virginia offices, including architects, planners, technicians, and CAD operators, who will also be committed to the successful execution of this assignment.

Giri Chhabra, P.E.

Corporate Advisor

Total Years of Experience
41

Years with Desman
28

Education
University of California
Berkeley, CA
M.S. Structural Engineering

India Institute of Technology
Kharagpur, India
Bachelor of Technology

Active Registrations
Over 20 States
Including NY, NJ & CT

Affiliations
American Concrete Institute (ACI)
Member Committee 362 – Garages
Prestressed Concrete Institute (PCI)
National Society of Prof. Engineers
National Parking Association
International Parking Institute

Project Assignment
Corporate Advisor

Experience & Qualifications

Mr. Chhabra has over 40 years experience in the structural design, analysis, testing and repair of concrete, steel, masonry and timber structures. These include high-rise buildings, building facades, plazas, roofs, parking structures, bridges, water structures and industrial facilities. Other specialized expertise includes:

- Representing Owners and Contractors as an expert witness
- Condition assessment, repair and restoration of deficient and deteriorated structures
- Preparation of Specifications and Contract Documents for new design, renovation and rehabilitation work
- Investigation of structural problems and failures
- Non-destructive load testing of bridges and buildings

Mr. Chhabra studied and worked with Professor T.Y. Lin, renowned as the leading world authority on design and construction of prestressed concrete structures. Early in his career, Mr. Chhabra designed a forty-story reinforced concrete building in California and then became the Construction Manager for that same building. He has designed and administered the construction of over two hundred major structures during his career including buildings, bridges, water towers, water/waste-water treatment plants, industrial plants and high-rise buildings.

Mr. Chhabra's previous positions have included that of Chief Engineer with a national consulting firm. He was Resident Engineer for a multi-million dollar chemical plant project, in charge of a design office in an international firm for the design of bridges and water treatment plants and worked as Plant Engineer and Construction Manager for another national firm. For over three decades he has specialized in the design and construction of reinforced and prestressed concrete structures and is eminently qualified in all aspects of building construction techniques.

Total Years of Experience
5

Years With Desman
4

Education
Pennsylvania State University
University Park, PA
B.A.E Structural Engineering

Active Registrations

Affiliations
International Concrete
Repair Institute

Project Assignment

Experience & Qualifications

Ms. Bentz has had structural engineering experience in the Mid-Atlantic region. Her engineering knowledge has been ascertained on a wide variety of projects including parking structures, buildings and bridges.

Her extensive experience includes the inspection, evaluation, program development, design review, estimating, contract document preparation and construction phase services for both public and private sector clients. Some of her relevant projects include:

Washington Street Garage, Baltimore, MD

Performed the inspection, evaluation and program development for the restoration of the 18 year old facility. Developed Construction Documents and was responsible for the construction-phase services for the repair of this 1415- space facility.

Wheaton Plaza Parking Deck, Wheaton, MD

Performed the inspection of the 15 year old garage.

700 13th Street Building Garage, Washington, DC

Developed Construction Documents. Responsible for construction-phase services for the repair of the 750-space below grade parking facility.

Raleigh-Durham International Airport, RDU Airport, NC

Performed evaluations of the Enplane Roadway Deck, Flyover Bridge, and three Pedestrian Bridges. Developed repair programs, cost estimates and service life extension programs.

Hecht's Parking Deck Failure, Bethesda, MD

Performed a forensic evaluation and repair report for the bridge, which experienced high load failure.

Prince George Street Parking Deck, Williamsburg, VA

Performed the design for the three-story parking facility

Construction Engineer/Manager

Experience & Qualifications

Total Years of Experience
35

Years with Desman
14

Education
University of Baroda, India
Bachelor of Science, Civil
Engineering

Active Registrations
Maryland, Virginia

Affiliations
American Society of Civil
Engineers

Project Assignment
Construction Engineer

Mr. Bhatt has over thirty-five years of experience in structural and civil engineering design, preparing contract documents and construction management of diverse types of projects. He oversees the construction management and administration of projects designed and/or managed by DESMAN's Maryland/Virginia offices. While with DESMAN, his notable completed projects include:

Parking Facility Construction Management Projects

- Mercy Medical Center Garage, Baltimore, MD
- Silver Spring Garage 1A, Silver Spring, MD
- Shady Grove Metro Station Parking Facility, Shady Grove, MD
- Penn Street Parking Garage, Baltimore, MD
- City Hall Avenue Parking Garage, Norfolk, VA
- Gotts Court Parking Facility, Annapolis, MD

Concrete Structure Restoration Projects

- Four Garages for CarrAmerica on Pennsylvania Avenue, Washington, DC
- International Monetary Fund Headquarters Building Parking Garage, Washington, DC
- Raleigh-Durham International Airport Parking Deck II, Morrisville, NC
- 2000 Pennsylvania Avenue Parking Garage, Washington, DC
- Two Parking Garages for Community Management Corporation, Alexandria, VA
- Anne Arundel Medical Center Parking Garage, Annapolis, MD
- Prince George's County Medical Center Garage, Cheverly, MD
- Washington Hilton and Towers Garage, Plaza and Facade, Washington, DC

Concrete Structure Restoration Projects (continued)

- Four Garages for Baltimore County Revenue Authority, Towson, MD
- AARP Headquarters Building (601 E Street) Parking Garage, Washington, DC
- 700 13th Street Building Parking Garage, Washington, DC
- 1800 M Street Building Parking Garage, Washington, DC
- 2000 L Street Garage Restoration, Washington, DC
- 1600 Wilson Boulevard Parking Garage and Plaza, Arlington, VA
- Woodlake Towers Parking Garage & Plaza, Falls Church, VA
- Pavilion on the Park Condominium Balconies and Facade, Alexandria, VA
- 1990 M Street Garage and Building Facade, Washington, DC
- 1120 19th Street Garage and Building Facade, Washington, DC
- Upper County Government Headquarters, Germantown, MD
- Senior Center, Library and Day Care Buildings, Damascus, MD

American Petrographic Services

American Petrographic Services, Inc.(APS) is an employee owned Minnesota corporation specializing in the consulting and forensic evaluation of aggregates, concrete, masonry, stone and related construction materials. With its corporate office in St. Paul, Minnesota, APS has grown in size and reputation through solving problems for a large national and international client base. APS, an affiliate company of American Engineering Testing, Inc., was incorporated in 1990 and represents the vision of its founders to establish a speciality organization dedicated to forensic identification and resolution of material deficiencies through petrographic and related methodologies. This vision was realized when APS was requested to assist in the damage evaluation of the Pentagon reinforced concrete frame after the terrorist air-strike of September 11, 2001.

Scott Wolter- President and Gerard Moulzolf and Richard Stehly-Vice Presidents recognized a market need for a firm with unique expertise to rapidly assess, evaluate and diagnose materials which have or are in the process of undergoing failure. The strength of APS is the expertise of its staff and the ability to properly and quickly identify material deficiencies. Structures or materials in failure mode(s) mandate timely problem identification and assessment. Once a problem is identified, professional geologists and engineers can suggest repair strategies for corrective action.

It has been said that “A picture is worth a thousand words” and this is especially true with respect to the APS work product. To complement our staff’s expertise, APS has assembled state-of-the-art diagnostic tools including binocular and polarized light microscopes, x-ray diffractometers, and scanning electron microscopy. The optical microscopes include photographic and video capability to capture magnified views of distress or causative features within the subject material. The digital photographs assist the client, owner, designer, suppliers or legal parties in better understanding issues involved with a failure.

For reliable study outcomes and client confidence, APS is the only non-governmental petrographic firm with national accreditation to the standards of ISO 17025 “General Requirements for the Competence of Testing and Calibration Laboratories.” The ISO standard not only addresses work procedures, but measures the competence of the technical staff performing the work.

Scott F. Wolter, PG.

President - American Petrographic Services, Inc.

Education

Bachelor Degree - Geology - University of Minnesota-Duluth, 1982
Honorary Masters - Geology - University of Minnesota-Duluth, 1987

Registrations/Certifications

Professional Geologist (PG), MN Registration #30024
Certified Professional Geologist (CPG), Certification #8260

Employment

AMERICAN PETROGRAPHIC SERVICES, INC. -President, 1990-present
Started and responsible for operation of independent petrographic analysis testing laboratory.

Paleotile, Inc. - President, 1999 - 2001
Started and responsible for operation of fossil collecting, preparation and sales business. Products includes both scientific and decorator specimens as well as table tops, solid surfaces and tile.

Twin City Testing Corporation, 1985-1990

Publications

Wolter, Scott F., "The Lake Superior Agate, Minneapolis, Minnesota," Lake Superior Agate Inc., 1986
Wolter, Scott F., "The Lake Superior Agate - 2nd Edition," Burgess Publishing, 1994
Wolter, Scott F., "The Lake Superior Agate - 3rd Edition," Burgess Publishing, 1997
Wolter, Scott F., "Ettringite," Burgess Publishing, 1997
Wolter, Scott F., "The Lake Superior Agate - One Man's Journey," Outernet Publishing, 2001
Wolter, Scott F., "Structural Condition Assessment Handbook - Chapter 16: Concrete," John Wiley & Sons, Inc., 2005

Professional Memberships

American Institute of Professional Geologists - President - 1996, MN Section
American Society for Testing and Materials (ASTM:C09.65 Qualification of Petrographers and Technicians)
American Concrete Institute (Committee 364, Rehabilitation)

Awards

1992 Consulting Engineers Council Grand Award. "Deicer Distress Investigation" for MNDOT and WisDOT.
2005 American Council of Engineering Companies of Minnesota Grand Award for "Homicide Materials Investigation" for Las Vegas Metropolitan Police Dept. - Homicide Division
2005 MN Society of Professional Engineers Seven Wonders of Engineering Award for "Homicide Materials Investigation" for Las Vegas Metropolitan Police Dept. - Homicide Division

Presentations

Dozens to ACI/MNDOT certification classes. Audiences include contractors, field inspectors, consulting engineers, and material suppliers.

Project Experience

Principal petrographer in over 5,000 separate investigations throughout the United States, Canada, and Puerto Rico including evaluation of fire damaged concrete at the Pentagon after the terrorist attacks on September 11.

Testified as expert witness in two dozen litigation cases.



1-800-972-6364
www.amengtest.com



HISTORY

N Visions Architects was incorporated on July 1, 1987, to provide the value of professional architectural services to public and private building projects. Since our incorporation, we have designed and administered the construction of over 50 million dollars worth of construction value within West Virginia. These projects have varied in scope from a Cancer Treatment Center to small office renovations, and from a 750-car parking facility to a College Administration Center. Both public and private clients have increased the value of the bottom line by professional services N Visions Architects provides.

MISSION

N Visions Architects provides professional services, which like a good investment, will bring peace of mind and ongoing rewards.

QUALITY ASSURANCE

N Visions Architects has in-house quality control procedures that are used throughout the design process. Our system called "Redi-Check" enables us to effectively coordinate all disciplines of the design team.

COST CONTROLS

N Visions Architects monitors the costs of the proposed solution throughout the design process. Alternatives are developed for bidding purposes to allow the best possible project within the allowable budget. Our track record of cost control is admirable.

PROJECT SCHEDULING

A plan of projected milestones and anticipated time allowances, for each task of the design and construction process, is generated at the beginning of the project. Monitoring of the schedule and adjustments to the projects are continually implemented to face the client's objectives.



COMMUNICATION

Records and minutes of all meetings are documented and dispersed to all members of the design team. Thorough understanding of all decisions is our goal in the pursuit of successful project solutions.

ARCHITECTURAL

Design is essential to the success of a project. It is important to provide the proper aesthetics for the client's needs and to be a good neighbor in the community. Buildings have a longterm impact on their surroundings, and quality design helps make our communities good places in which to live and work.

CONSTRUCTION ADMINISTRATION

Clear communications and honest exercise of the construction documents allows the construction phase to proceed uninhibited. Quick response to those problems that do arise is in the best interest of the participants. N Visions provides the leadership to expedite the Construction Administration phase.



FACILITIES PLANNING AND PROGRAMMING

Determining the actual needs of the client and how to fit them to the available environment is essential for a successful project. Trained in the technique of Facilities Planning & Programming, N Visions can assist in defining the special, functional, and workflow needs of the project prior to the design of the physical structure.

SITE EVALUATION

N Visions Architects can provide studies of probable construction sites for evaluation by the Owner. Characteristics concerning political, geotechnical, utility, environmental, and usage of available properties can be evaluated to assist the Owner in making site selection decisions.

EXISTING FACILITIES EVALUATION

Use of existing facilities requires an educated understanding of potential opportunities and risks that may be encountered. N Visions will assist the Owner in determining how to best enhance the potential and reduce the risks to maximize the goals.

CODE COMPLIANCE

The West Virginia state fire marshal and other agencies have specific requirements that must be addressed in all building projects. N Visions has worked with these agencies on all our projects, and is familiar with their personnel and regulations. N Visions has a positive working relationship with these agencies, which translates into benefits to the Owner.

WVSA Honor Awards

**Commercial Insurance Services, Charleston, WV
Trans Allegheny Books, Charleston, WV**

WVSA - Honorable Mention

McCabe-Henley Properties, Inc. Charleston, WV

Charleston Renaissance Corporation – Best Development

**Capitol City Building, Charleston, WV
Trans Allegheny Books, Charleston, WV
200 Hale Street, Charleston, WV
The Gates Building, Charleston, WV
210 Hale Street, Charleston, WV**

WV Home Building Association - Best Multi-Family Developer

**Governor's Court Apartment, Charleston, WV
Woodbridge Condominiums, Teays Valley, WV**

City of Charleston - Distinguished Design Development

Summers Square, Charleston, WV

HUD – Project of the Year 2000

YWCA Transitional Housing, Charleston, WV

**Associated Builders and Contractors, Inc.
2005 Excellence in Construction**

YWCA Senior Housing

PARKING FACILITIES

**Kanawha County Parking Facility
Charleston, West Virginia**

Size

37,500 sf
Four elevated levels of precast concrete
472 spaces

Construction Cost

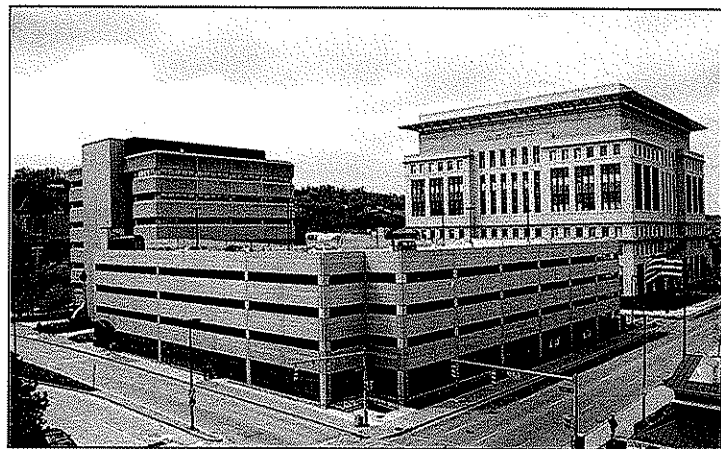
\$ 3,600,000

Completion

1997

Owner

Kanawha County Commission
P. O. Box 3627
Charleston, WV 25336



Contact

Kent Carper, 304-357-0101

PARKING FACILITIES

**Summers Street Parking
Charleston, West Virginia**

Size

204,000 sf
Seven elevated levels of precast concrete
708 spaces

Construction Cost

\$ 4,625,000

Completion

1995

Owner

City of Charleston

Contact

City Manager's Office
304-348-8014



PARKING FACILITIES

**Shanklin Parking
Charleston, WV**

Size
121,000 s.f.
Four elevated levels of precast concrete
525 spaces

Construction Cost

\$ 3,964,000

Completion

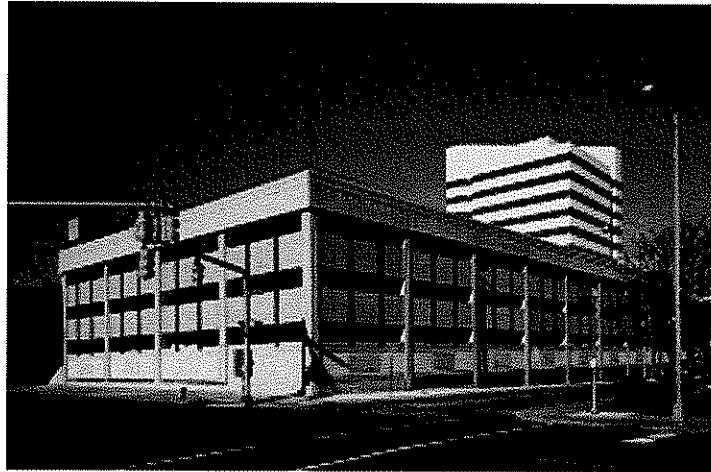
1995

Owner

City of Charleston

Contact

City Manager's Office
304-348-8014



PARKING FACILITIES

**Yeager Airport Parking
Charleston, West Virginia**

Size

52,400 s.f. per floor
Two elevated levels of precast concrete
456 spaces

Construction Cost

\$2,000,000

Completion

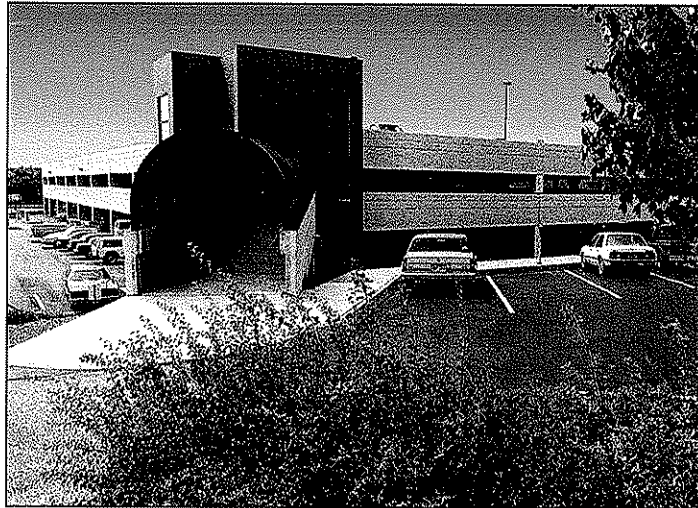
1991

Owner

Central WV Regional Airport Authority
100 Airport Road, Suite 175
Charleston, WV 25311

Contact

Rick Atkinson, 304-344-8033



DESIGN-BUILD

**Yeager Airport Parking
Facility II
Charleston, West Virginia**

Design-Build

Size

706 parking spaces

Construction Cost

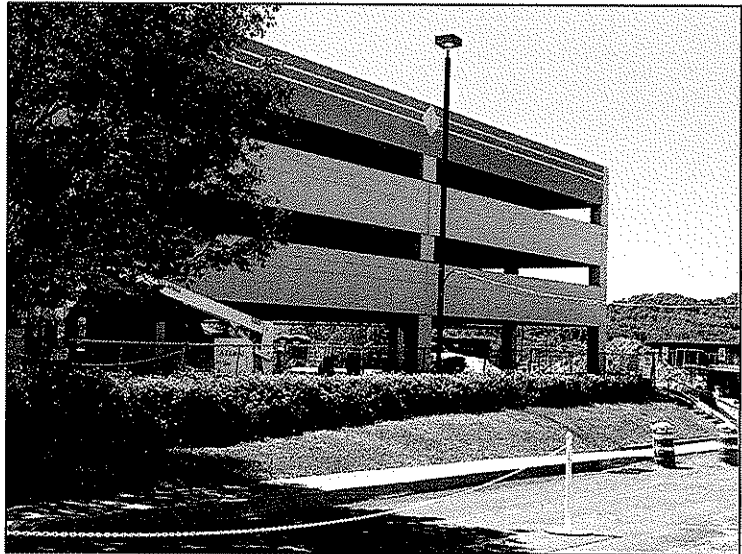
\$ 6,750,000

Completion

2005

Owner

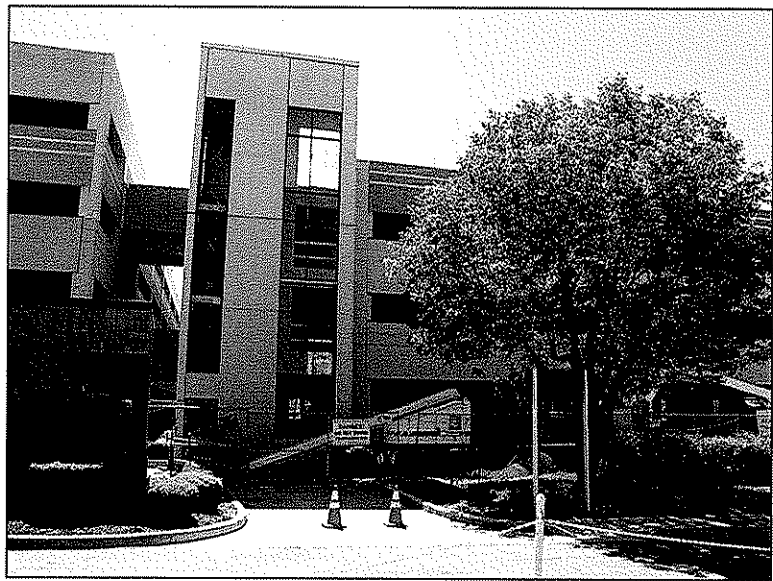
Central WV Regional Airport Authority
100 Airport Road, Suite 175
Charleston, WV 25311



Contact

Rick Atkinson, 304-344-8033

The project consists of a new multi level parking facility constructed adjacent to, and south of the pre-existing parking facility. It resembles in appearance the pre-existing facility. There are 706 parking spaces in an open-air, multi-level structure. Two new tollbooths replaced the pre-existing booths, with one booth containing an ADA accessible employee lounge and toilet. There is a metal canopy covered walk from the northwest stair/elevator tower of the new parking facility to the northwest stair/elevator tower of the pre-existing parking building.



DESIGN-BUILD

**Fairmont State University
1201 Locust Avenue
Fairmont, WV 26554**

**Design-Build
Student Parking**

Size

6-Levels, 923 spaces

Construction Cost

\$9,400,000

Completion

2004

Owner

**Board of Governors
Fairmont State University
1201 Locust Avenue
Fairmont, WV 26554**

Contact

Larry Lawrence, 304-367-45295



DESIGN BUILD

**Parkersburg Intermodal Parking Facility
Juliana Street
Parkersburg, WV 26101**

Design Build

Construction Cost: \$ 5,088,000

Completion: 2003

**Owner: Mid Ohio Valley
Transportation Authority
Parkersburg, WV 26101**

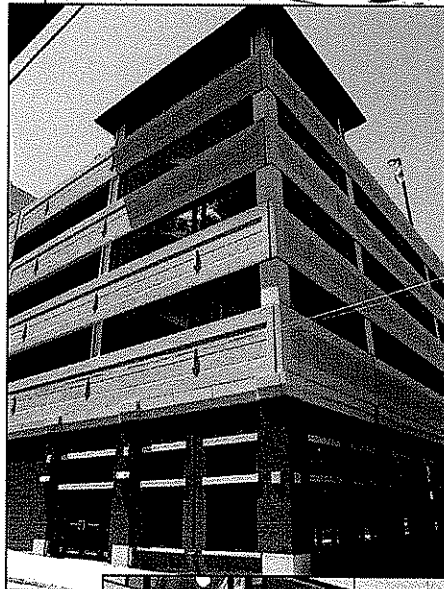
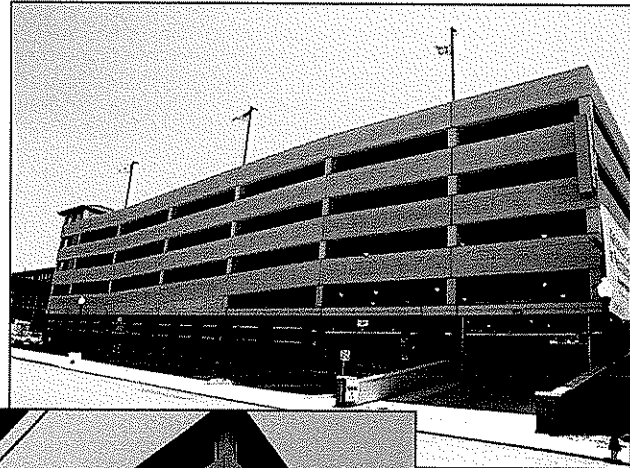
**City of Parkersburg
One Government Square
Parkersburg, WV 26101**

**Contact: Ann Conageski,
City of Parkersburg
304-424-8418**

Parking Garage with approximately 400 parking spaces on five elevated levels. The project is designed to accommodate a sixth level at some future date. There is a covered walk from the garage to the Dils center, stairs, elevators, elevator machine rooms, ancillary spaces for the operation of the garage, and vehicle and pedestrian entry and exits.

Included is a transit station with spaces for seven city buses, an enclosed and conditioned passenger waiting area for a minimum of 30 passengers with hoseable handicap accessible toilets for each sex, vending area, bus loading and unloading area, bus and pedestrian entry and exit.

Building houses approximately 8,000 s. f. of office space which includes, in addition to offices, a onference room, and a drivers lounge for five drivers, with handicap accessible unisex toilet and kitchenette.



RENOVATIONS

**3rd Avenue Municipal Parking
701 Third Avenue
Huntington, West Virginia**

Renovations

Construction Cost

\$ 750,000

Completion

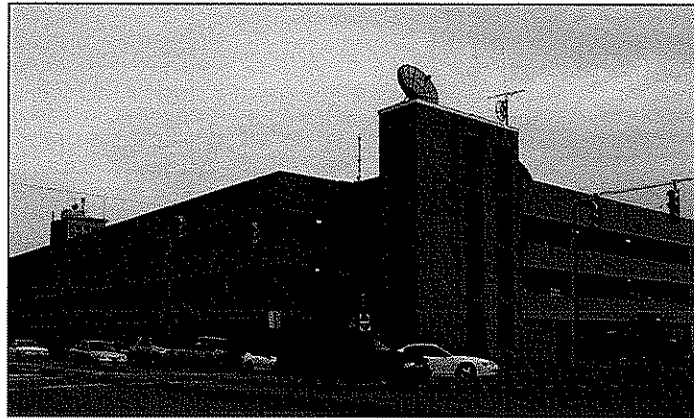
2001

Owner

City of Huntington

Contact

**Yvonne Ball
Huntington Municipal Parking Board
P. O. Box 1659
Huntington, WV 25718
304-696-5909**



Before



After



**Rick Atkinson, Central West Virginia Regional Airport Authority,
100 Airport Road, Suite 175, Charleston, WV, 304-344-8033**

Yeager Airport Parking Facility

Larry Lawrence, Fairmont State College, 1201 Locust Avenue, Fairmont, WV, 304-367-4295

Fairmont State College – Parking Facility

Ann Conageski, City of Parkersburg, One Government Square, Parkersburg, WV, 304-424-8418

Parkersburg Intermodal Transit Facility

Yvonne Ball, Huntington Municipal Parking Board, P. O. Box 1659, Huntington, WV, 304-696-5909

Third Avenue Municipal Parking Garage - Renovations

GENERAL EXPERIENCE

DESMAN Associates is a leading national specialist in the planning, design and construction administration of functionally efficient, attractive and cost effective parking access solutions and facilities. Since the firm's inception in 1973, DESMAN has served public, private and institutional Clients and Owners throughout the U.S. and abroad. The firm has provided planning, design, and restoration services for over 1,000 parking projects, employing a total staff of over 100 people, operating from one of the following principal office locations:

- *Cleveland, OH*
- *Boston, MA*
- *New York, NY**
- *Hartford, CT*
- *Chicago, IL*
- *Washington, DC*

** Indicates Corporate Office*

The principals of the firm have an average of over 30 years of experience in the planning, design, investigation, materials testing and restoration of all types of parking facilities and buildings. DESMAN offers a complete scope of services as parking/transportation facility specialists. Parking related services include:

- *Needs Assessment (Supply/Demand)*
- *Site Evaluation/Assessment for Structured Parking Alternatives*
- *Financial Feasibility (Pro Forma) Analysis*
- *Functional Design*
- *Architecture*
- *Structural Engineering*
- *Traffic/Transportation Engineering*
- *Restoration Engineering/Materials Engineering*
- *Design/Build Project Delivery Methods*
- *Owner's Agent/Program Management*
- *Operations Consulting*
- *Revenue Control Consulting*
- *Development Consulting*

The firm has provided unique and innovative parking design solutions for sites having challenging constraints or characteristics. As structural engineers, DESMAN has designed parking garages constructed with a variety of structural framing systems and materials. We understand the applicability, construction market and long-term durability advantages/disadvantages for each type of structural system given the project location. We are also very active in the restoration of parking structures and building facades.

DESMAN Principals are active members of numerous parking and construction-related industry organizations that make it their business to increase the base of knowledge on structural durability criteria for garages. These include such organizations as the National Parking Association (NP A), International Parking Institute (IPI), American Concrete Institute (ACI), etc. DESMAN's many years of experience as specialists in the planning, design and construction administration of parking structures has given members of the firm a unique depth of experience and knowledge in each of the following areas:

- *Experience on virtually hundreds of preliminary parking analysis to determine parking facility site location, appropriate land area/site dimensions, traffic impact and*

pedestrian concerns. In addition, several clients have applied extensive aesthetic criteria to specific facilities in order to blend with historic surroundings.

- *Knowledge of the many possible layout configurations for a parking facility and the limitation of each, in terms of traffic flow capacity.* DESMAN has developed and pioneered many of the layout techniques being used today for facilitating traffic movement through economical sloping floor configuration.
- *Inclusion of ground level commercial space or air rights development has been incorporated in many DESMAN design projects.* Generally, these components provide supplementary revenue to ensure the facility will be self-sufficient.
- *Understanding of parking standards (the combination of stall width, bay width and parking angle) and their relationship to economy and level of convenience.*
- *Knowledge of parking operations and parking equipment.* The amount of revenue involved, the level of convenience to be provided, the parking customer and the traffic situation on adjacent streets are some of the factors to be considered in determining the method of operation and type of equipment to be used; all of which must be taken into account in the design of the facility.
- *Thorough knowledge of the make-up of a parking facility enables the firm to know and provide the extensive amount of detailing required.* Thoroughness of DESMAN plans and specifications has been credited by many contractors as the reason they were able to provide a very competitive bid.
- *Knowledge of structural systems and their effects on economy, appearance, usability and maintenance characteristics of a parking facility.* The most economical system may not be acceptable in terms of meeting an Owner's requirements relating to other criteria, and through an unbiased position, DESMAN is able to help the Owner in this evaluation.
- *Knowledge of security techniques.* Not only must a parking facility provide security for its patrons, but also it must have an overall feeling of safety to be successful.

DESMAN's many years of experience as specialists in the condition assessment, design and construction administration of structural repairs has given members of the firm vast experience and knowledge in each of the following areas:

- *Understanding of causes of deterioration in parking structures and thorough knowledge of effective preventive maintenance measures.* A parking facility is a specialty-use structure, subjected to harsh climatic exposure (moisture, temperature extremes, etc.) opposed to building frames with climate controlled environments. DESMAN has years of experience in the prudent and cost effective application/use of numerous long-term durability design features and materials.
- *Experience observing building facades composed of brick, stone, terra-cotta, concrete and curtain wall construction for building types that include high and low rise office and residential buildings, schools, hospitals, correctional facilities, commercial building, etc.*
- *Knowledge of structural systems and building cladding systems based upon years of hands on observation to determine the causes of building envelope failures.*

- *Experience with building Owners and management companies developing cost effective phased construction schedules for long term repair or maintenance programs.*

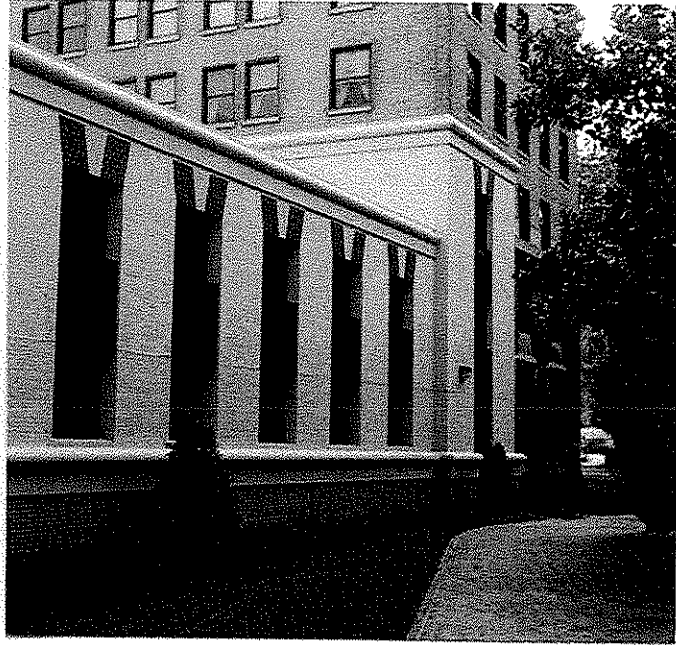
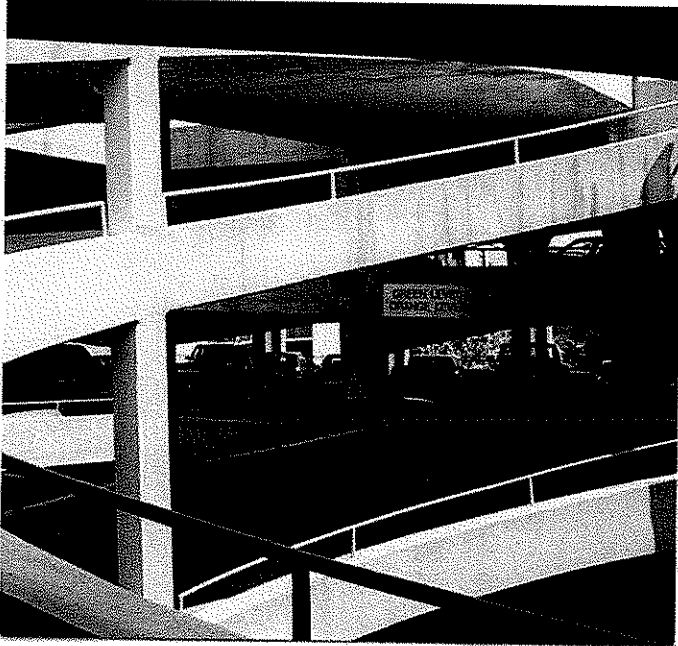
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SIMILAR PREVIOUS EXPERIENCE & REFERENCES

The following section highlights DESMAN'S project experience and lists our client references.



Client: Commonwealth of Virginia
DGS/BFM
Richmond, Virginia

Features:

Various: conventionally reinforced, poured in place concrete one way slab and beam. Post-tensioned, poured in places concrete one way slab and beam. Steel frame and concrete slab. Pre-cast double tees. Free standing, above-grade, and under building structures.

Completion

Date: September 1992
(Condition Assessments)

Cost: N/A – (Condition Assessments)

Summary:

- 7th and Marshall Street Parking Deck
- Supreme Court Building Garage
- Madison Building Garage
- Monroe Building Garage
- Bank Street Parking Deck
- Tyler Building Garage

As a first step in the state legislative budgeting process, Desman Associates conducted visual walk through assessments of six parking facilities owned and operated by the Commonwealth of Virginia in Richmond, Virginia. The purpose of the assessments was to identify and prioritize deficiencies that require repair and make recommendations for protection and maintenance measures so that budget requests could be submitted to the legislature for approval. Each garage was categorized into one of three established priority levels so that repair and protection measures could be budgeted effectively. Highest priority items would be submitted for the next fiscal year with lower priority items submitted in subsequent years. Desman then prepared a preplanning study for restoration and maintenance of the two highest priority facilities, 7th & Marshall Streets Parking Deck and the Supreme Court building Garage, as the next step in the budgeting process. Funds for emergency repairs were approved for the next fiscal year with the remainder of the programs to be implemented in subsequent years.



Client: City of Alexandria
Department of General Services
Alexandria, Virginia

Features: Market Square Plaza Garage
Courthouse Garage
Torpedo Factor Art Center
Public Safety Center
Various Other City Structures

**Completion
Date:** 2004

**Construction
Cost:** \$1,850,000
(Market Square & Plaza)

Summary:

Desman Associates was selected by the City of Alexandria as their consultant of choice to perform engineering services for assessment, restoration and maintenance of parking garages and other structures owned and maintained by the City. The term of the assignment runs for five years with two one-year discretionary extensions.

The initial assignment involved the assessment of the Market Square Plaza and garage on front of the City Hall as well as assessment of the Courthouse Garage. After the assessments were complete, programs for the restoration and long term maintenance of the facilities were developed and prioritized for the work to be phased in over a number of years. Additional assignments include the assessment of the historic exterior of the Torpedo Factory Art Center building and the assessment of the floor slabs in the Public Safety Building.

Desman is the Prime Consultant for all the maintenance and restoration project including condition assessment and testing, recommendation for protection, maintenance and renovation, cost estimating, construction documents, bidding, and construction administration.



Client: Parking Authority of Baltimore
City
Baltimore, Maryland

- Facilities:**
- Market Center Garage – 10 levels, 606 cars
 - Marriott Garage – 8 levels, 610 cars
 - Arena Garage – 6 levels, 888 cars
 - Marina Garage – 2 levels, 214 cars
 - Harbor Park Garage – 7 levels, 750 cars

Completion
Date: January 1992 (Condition
Assessments)

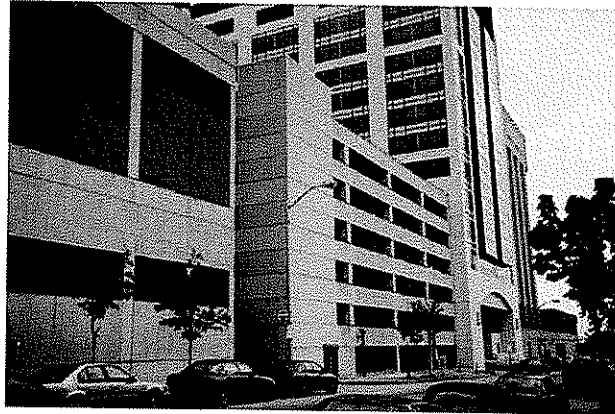
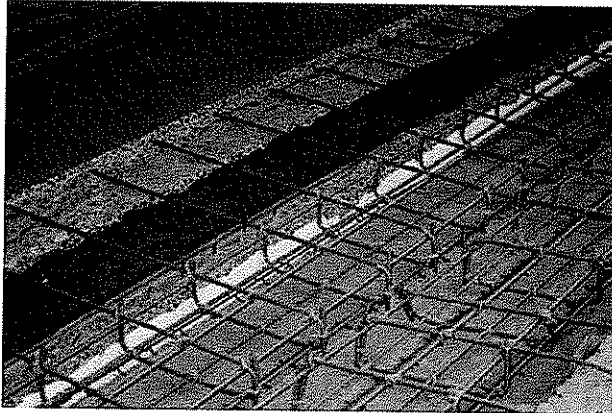
Summary:

DESMAN Associates conducted condition assessments of five parking facilities owned by the City of Baltimore. The garages are operated by independent contract operators. The purpose of the assessments was to identify and prioritize deficiencies that require repair and make recommendations for protection and maintenance measures.

DESMAN prepared a report for each facility with all noted deficiencies and recommended maintenance items prioritized into categories per city requirements so that necessary action could be taken by the City or the garage operator as appropriate. The categories included: Priority 1 work to take place within the next 12 months; Priority 2 work to take place within the next 24 month; Observe on an annual basis for changed conditions; Perform as part of ongoing normal maintenance.

RUTLAND STREET GARAGE

Baltimore, Maryland



Client: The Johns Hopkins
Medical Institutions
Baltimore, Maryland

Features: 729-car, pre-cast concrete double tees with
cast-in-place topping. Seven-level
freestanding garage connected to adjacent
clinical center and office buildings in
Baltimore.

**Completion
Date:** November 2001

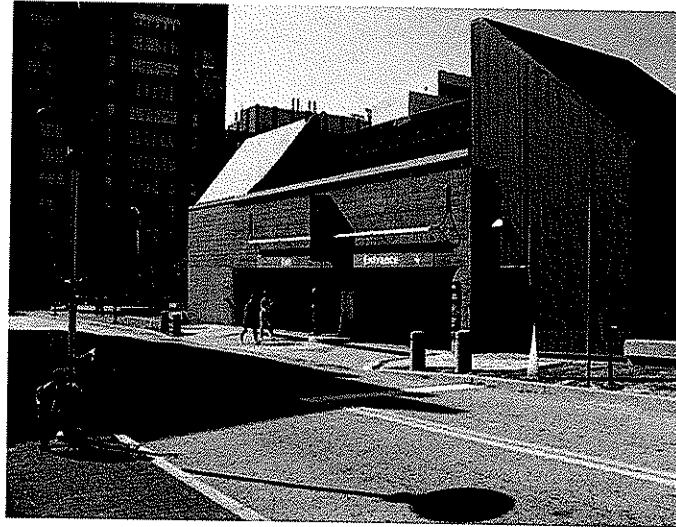
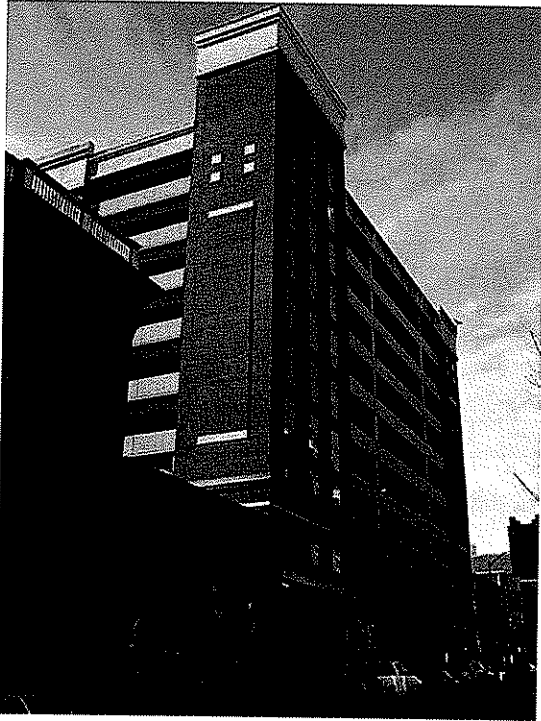
**Construction
Cost:** \$1,400,000

Summary:

This parking garage is a critical pedestrian and utility hub in addition to being the most centrally located facility on the JHMI campus. Following acceptance of Desman's October 2000 Parking Facilities Structural Maintenance Evaluation Report, this garage was selected as the first priority of the campus-wide Capital Outlay Plan. Desman conducted an assessment of the facility to determine its condition and to develop a cost effective repair program. Structural analysis of observed conditions concluded that much of the structural deterioration observed was due to a building length greater than that recommended by the Pre-cast Concrete Institute without providing for thermal expansion.

Desman Associates was the Prime A/E for all phases of this restoration project including condition survey and testing, construction documents, cost estimating, bidding, and on-site construction observation. Construction documents covered retrofitting a perimeter structural diaphragm and mid-building expansion joint, removal and replacement of deteriorated concrete topping, bearing pad replacement, joint and crack sealant installation and application of floor slab waterproofing. Work was conducted on an aggressive schedule during summer months to minimize impacts on campus parking and on other occupied spaces located within and adjacent to the garage.

SIX PARKING STRUCTURES
UNIVERSITY OF MARYLAND, BALTIMORE
Baltimore, Maryland



Client: University of Maryland, Baltimore
Baltimore, Maryland

- Features:**
- Baltimore Grand Garage – 11 levels, 987 cars
 - Plaza Garage – 6 levels, 552 cars
 - Pratt Garage – 13 levels, 1,052 cars
 - Lexington Garage – 9 levels, 811 cars
 - Pearl Garage – 7 levels, 740 cars
 - Penn Garage – 10 levels, 976 cars

Completion
Date: April 2004

Construction
Cost: \$5,598,912 (Estimated Maintenance)

Summary:

DESMAN Associates was contracted by the University of Maryland, Baltimore to conduct a condition assessment of six parking structures maintained by the University. The purpose of the assessment was to determine the present physical condition of the garage's and prioritize the "near term" or "out year" repairs.

Through on-site meetings, reviews of existing documentation, and visual inspections, DESMAN developed a final report outlining the existing conditions of each garage and recommending repairs. Following the report and appropriate discussions with the University, DESMAN recommended a maintenance plan with projected yearly costs for the plan.



Client: City of Frederick
Frederick, Maryland

Features: 400-car, four-level free standing parking garage. Pre-cast concrete double tees with cast-in-place topping.

Completion Date: July 2002 (anticipated)

Construction Cost: \$800,000 (estimated)

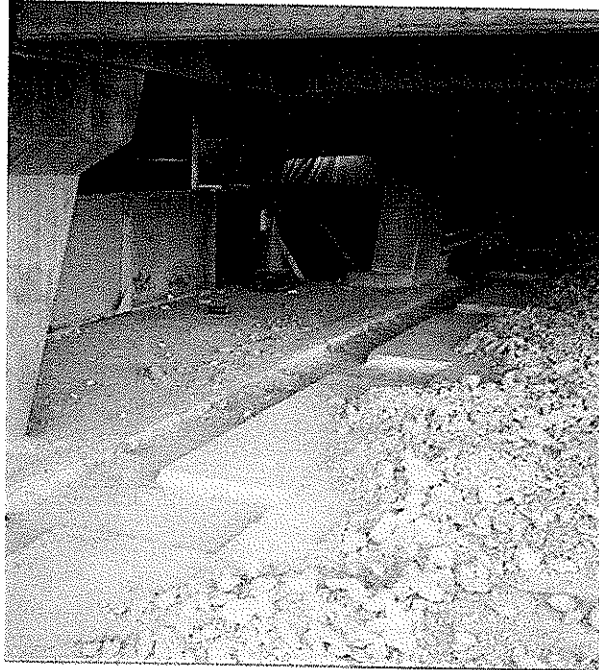
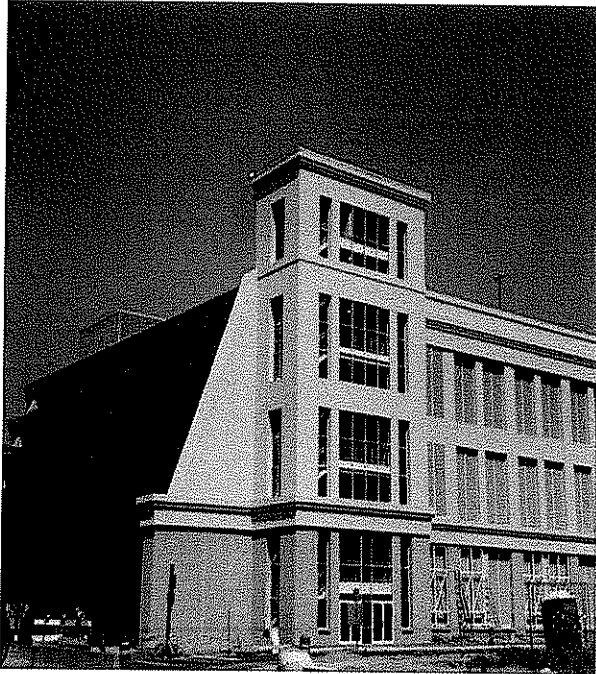
Summary:

Originally designed by a predecessor company of Desman, this facility was constructed in 1975. The garage functions as a one-way double-helix with crossovers at most levels. Desman was selected on a quality-based process by the City to perform an evaluation of the facility and to develop alternate restoration programs. The Condition Survey Report was accepted by the City in February 2001, and construction repairs are planned to commence in March 2002.

In the condition survey, Desman presented four repair programs of varying life-extension qualities. Following a review of presented programs in light of other City-sponsored parking projects, the City directed Desman to prepare construction documents for the limited repair and preventive maintenance of the garage. Construction documents covered removal and replacement of deteriorated topping, pre-cast haunch and bearing reconstruction, joint and crack sealant installation, and waterproofing installation. Desman Associates was the Prime A/E for all phases of this restoration project including condition survey and testing, construction documents, cost-estimating, bidding, and construction administration.

FREEMASON STREET PARKING GARAGE

Norfolk, Virginia



Client: City of Norfolk
Department of Public Works
Norfolk, Virginia

Features: Pre-cast single tee, seven-level parking structure for 1,500 cars, functions as double threaded helix.

Completion Date: June 1995 (Northern Restoration)
April 1997 (Southern Demolition)
September 1998 (Southern Façade)

Construction Cost: \$3,020,000 (Northern Restoration)
\$1,260,000 (Southern Demolition)
\$1,670,000 (Southern Façade)

Summary:

The facility is a 22 year old seven level precast single tee parking structure. The facility is configured with adjacent two-bay wide independent double-threaded helix structures separated by an expansion joint (total 4 bays, 1,500 cars). DESMAN Associates performed complete condition assessment, testing, cost estimating, bidding, and repair construction documents on a fast-track basis. DESMAN also performed construction observation throughout the construction phase. The project consisted of complete structural and architectural restoration to convert the two north bays to a stand alone two-bay wide parking structure eight two way traffic as a prelude to demolition and removal of the two south bays. These bays were removed so that the Freemason Street right-of-way could be converted to street traffic as part of the City MacArthur Center Mall infrastructure improvements. Following extensive architectural reviews and value engineering studies, the new street facade incorporating new elevator and stair cores were designed and constructed. The architecture of the new southern facade reflects the existing adjacent garage facades, as well as the MacArthur Center aesthetic and the exteriors of adjacent buildings.

**NAVY FEDERAL CREDIT UNION
PARKING STRUCTURE**

Vienna, Virginia



Client: Navy Federal Credit Union
Merrifield, Virginia

Features: 1,300-car space, five level freestanding structure approximately six years old. Three levels are partially below grade.

Completion

Date: October 2001

Construction

Cost: \$180,000

Summary:

This five level garage is located on the campus of the Navy Federal Credit Union in Vienna, Virginia. The garage structure consists of pre-topped 10' wide pre-cast concrete double tees spanning 55'. Approximately six years old, this is the only garage facility constructed by NFCU on their campus. Charged with maintaining this facility for the long term, the Facilities Management Group at NFCU contacted DESMAN to help them prepare a repair/maintenance program and budget. Desman conducted an assessment of the facility to determine the condition of the garage structure and developed a preventive maintenance plan for the immediate structural restoration and long-term protection of the facility.

Desman Associates was the Prime A/E for all phases of the restoration project including condition survey and testing, construction documents, cost estimating, bidding, and on-site construction observation. Construction documents covered work for the first year of the repair/maintenance program which included repairing cracked pre-cast tee flanges, failing concrete pour strips, failed shear connector repair, recaulking pre-cast tee joints, repairing cracks and waterproofing the concrete floor slabs. Desman developed a traffic flow plan and construction approach to maintain full daytime garage operations during construction, and monitored contractor progress to ensure conformance with the project bid documents.

ADDITIONAL INFORMATION

Restoration Engineering

Why should the State of West Virginia select DESMAN Associates to provide restoration engineering services for the State of West Virginia Parking Facility? We believe there is a number of reasons that make us uniquely qualified for this assignment and sets us apart from the general engineering consultant or architect. These reasons translate into benefits to Kanawha County. Listed below are several, which we believe are appropriate for this project.

- **Depth of Experience** - DESMAN is a national specialist in every aspect of parking, including functional planning, design, restoration engineering, and consulting for maintenance, operations and revenue control. DESMAN knows by experience that every garage condition survey and restoration project will ultimately touch on issues relating to each of these areas. We have planned and designed over 500 garages and provided the condition assessment and restoration engineering for over 400 garages, including most imaginable structural systems including precast concrete, cast-in-place mild reinforced concrete, cast-in-place post-tensioned concrete, and structural steel framing systems. DESMAN has experience in consulting with many parking structure Owners and Operators throughout the country by developing ongoing maintenance programs for their parking structures in order to minimize future repair costs.
- **Long-Term Durability Specialists** - Demonstrated success in the assessment and repair of garages since the late 1970's and the design of new garages for over 30 years has provided members of DESMAN's staff with the opportunity to gain the expertise to evaluate and specify the use of the latest proven products, materials and construction techniques in the restoration of existing parking garages. As an example, our specifications include only those materials which meet the most stringent and applicable testing standards in the parking industry and are adapted to locations where environmental and/or VOC requirements are stipulated. In addition, DESMAN is an active member in a number of parking and construction-related industry organizations who make it their business to increase the base of knowledge on structural durability criteria for garages. These include such organizations as the National Parking Association (NPA), International Parking Institute (IPI), American Concrete Institute (ACI), Prestressed Concrete Institute (PCI), etc. The City of Cumberland deserves and should expect the latest thinking and technology to effectively increase the durability performance of its garages. Desman will provide it.
- **Parking Operations Expertise** - Parking garage repair projects usually bring disruption to the Owner's parking operations, especially during the construction process. These include noise, dust, loss of parking revenue, interruption of pedestrian and vehicular traffic flow, space constraints, general inconvenience to parking users, etc. DESMAN has been faced with one or more of these issues on every repair project. We have learned through experience how to successfully alleviate these conditions by developing special construction phasing methods and techniques, thereby minimizing impact to users and the Owner while maximizing daily parking revenues. As an example, during the condition survey phase of a project, DESMAN typically conducts the field work during nighttime hours or on weekends to save the Owner parking revenue and potential disruptions with users. This unique level of parking/construction logistics expertise is available through DESMAN.

- **Value Engineering Expertise** - Desman incorporates value engineering methods for each project component, throughout the condition assessment and repair document preparation process. Senior DESMAN personnel bring years of experience to garage restoration projects in terms of Life Cycle Costs, Maintenance Costs, and Systems Options in a focused effort to control project costs. Because of our many years of experience in repair work, we have a sound understanding of each and every product that has been tried and proven for parking deck repairs including respective cost/benefit ratios and long-term durability characteristics of those products. Products included such items as concrete add mixtures, sealers, sealants, protective coatings, MEP equipment and systems, etc.

- **Fast-Track Construction Expertise** - DESMAN has been involved in over 100 parking facility projects built under a fast-track design/build delivery method with a number of major General Contracting/Construction Management firms.

- **Budget and Schedule Control** - DESMAN has an enviable record of engineering and administrating the restoration of parking garages so that the projects are completed within the Owner's budget and schedule. This is particularly noteworthy, due to the inherent nature of restoration work with regards to a Consultant's ability to accurately estimate probable repair quantities and construction costs, given the typical unforeseen, underlying conditions.

To control costs, DESMAN 's specifications call for regularly scheduled progress meetings to be conducted. The Contractor will be required to update his schedule for each meeting and present a current schedule of planned activities for the ensuing period. Should the Contractor appear to fall behind schedule, the specifications will outline procedures which should be followed, including, but not limited to, use of added personnel, extended working hours or other means as applicable to the project. The project team and the Contractor will work together to maintain project cost control.

DESMAN Associates believes that the following items are most important in assuring that the project will meet its intended schedule.

- *Clear and thorough description of the scope of work.*
- *A realistic project schedule, based on the consultant's knowledge of construction productivity, the scope of work and the constraints of working in an existing facility which may likely remain partially open during repairs.*
- *Use of qualified contractors.*
- *A liquidated damages provision.*

Due to the work to be performed is in an existing facility, the Owner, Project Team and Contractor will all play an active part in assuring that the schedule is met.

To expand on this proposal's presentation of DESMAN's experience in all aspects of parking restoration and consulting, we have taken the liberty of including copies of our Restoration Engineering and Corporate brochures.

DESIGN STANDARDS

All of DES MAN's production work on projects is accomplished on computers. To this end all DESMAN staff utilizes and conform to DESMAN's "Project Production Standards and Procedures" Ver. 2.06 last updated June 2002. The purpose of the manual is to standardize drawing practices company wide so that no matter who opens a project drawing file to work on it, it can be opened, edited and printed with little or no effort and thereby producing the same end result as all other products. Of course should Clients dictate the use of their own CAD standards on their projects, this requirement is most certainly accommodated as has been done successfully many times.

DESMAN follows an industry standard so that we can be compatible with our industry peers. The "AIA CAD Layer Guidelines" is the basis for the DESMAN Project Production Manual. Wherever possible the Manual is AIA compliant in regards to layering and file naming.

DESMAN currently uses AutoCAD 2002 with Architectural Desktop R3 (ADT3) under the Windows 2000/XP operating system. The CAD standards, library files, and menu tools are integrated to facilitate the creation and editing of accurate and visually consistent project graphics. The standards are set to create a consistent level of quality and produce a database of details and project building blocks to maintain this level of consistency.

Drawings are organized for maximum "edit-ability". This includes standardization of:

- Accommodation of future changes
- X-refs and blocks
- Common drawing elements
- Dimension settings
- Text styles and fonts
- Layer naming
- Element layering
- Colors

Sub-consultants are presented with and encouraged to follow the DESMAN standards to the extent possible. This is made feasible by electronic data transfer between offices which actually makes the work of the sub-consultant easier. AutoCAD functionality is utilized to convert existing non-compliant files to DESMAN standards.

All plans for this assignment will be completed in AutoCAD 2002 format. Additionally, all text documents for this project, including the specifications, will be completed and saved in MS Word 2002 for Windows format. All spreadsheets including cost estimates tabulation will be completed and saved in MS Excel 2002 for Windows format.

All materials to be used for the scheduled repairs will be in strict accordance with ASTM standards and per the manufacturer recommended applications. When and where possible, the construction and material specifications and construction details, shall be those of the Maryland State Highway Administration (MD SHA), unless otherwise specified or with prior approval by the City Engineer.

DESMAN as the Prime Consultant and Team Leader, first creates a background reference plan for the project following DESMAN standards. This is electronically shared and each consultants builds on top of this reference plan. DESMAN uses state of the art technology including uploading and downloading files

consultants enabling almost real time sharing of files to keep up to date on current project status. Through the use of reference files DESMAN can initiate project changes, share them electronically, easily allowing any sub-consultant to visually detect and coordinate issues with their system designs. During project coordination by the DESMAN project manager, sub-consultants electronically share their coordination changes for review and verification.

Following are some samples of DESMAN CADD production on similar projects.

REPAIR AND PREVENTIVE MAINTENANCE FOR COURT STREET GARAGE FREDERICK, MARYLAND

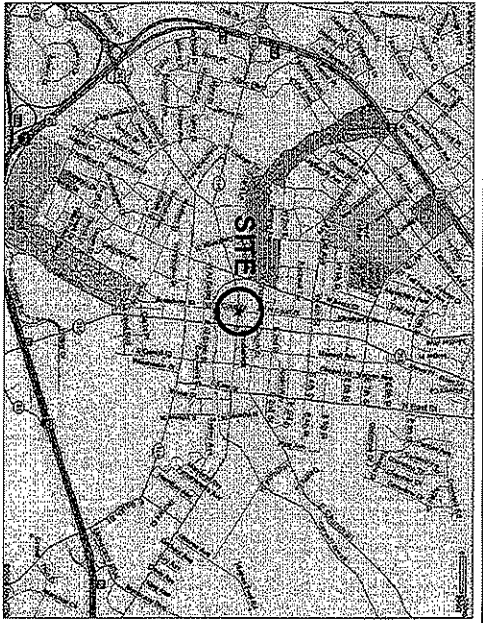
SCOPE OF WORK (SUMMARY ONLY)

- PATCH PARTIAL/WHOLE DEPTH CONCRETE REPAIRS
- PATCH DAMAGE TO THE LIFT ANCHOR BEAMS
- REPAIR AND REPLACEMENT
- SORTING/OVERHAUL & VERTICAL SURFACE REPAIRS
- REPAIRS EXPOSED REINFORCING OF CRACKS
- REPAIR CONCRETE REPAIRS
- REPAIRS TO CONSTRUCTION REPAIRS/REPLACEMENT
- REPAIRS TO CRACKS & JOISTS THE JOISTS
- REPAIR AND REPLACEMENT
- APPLICATION OF PENETRATING SEALERS
- REPAIR AND REPLACE TRAFFIC BEARING MEMBRANE
- DEMOLISH IMPROVEMENTS
- INSTALLATION OF FURNITURE CORE JOISTS
- INSTALL NEW VERTICAL REINFORCING JOIST
- REPAIRS TO EXISTING PLUMBING AND DRAINAGE SYSTEMS

SHEET INDEX

T-1	TITLE SHEET	R-15	REPAIR DETAILS
R-1	FIRST LEVEL FLOOR PLAN	R-16	REPAIR DETAILS
R-2	SECOND LEVEL FLOOR PLAN	R-17	REPAIR DETAILS
R-3	THIRD LEVEL FLOOR PLAN	R-18	REPAIR DETAILS
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R-5	FIFTH LEVEL FLOOR PLAN	R-20	REPAIR DETAILS
R-6	SIXTH LEVEL FLOOR PLAN		
R-7	SEVENTH LEVEL FLOOR PLAN		
R-8	EIGHTH LEVEL FLOOR PLAN		
R-9	NINTH LEVEL FLOOR PLAN		
R-10	TENTH LEVEL FLOOR PLAN		
R-11	ELEVENTH LEVEL FLOOR PLAN		
R-12	REPAIR DETAILS - COURT STREET		
R-13	REPAIR DETAILS - COURT STREET		
R-14	TYPICAL REPAIR DETAILS		

SITE LOCATION MAP



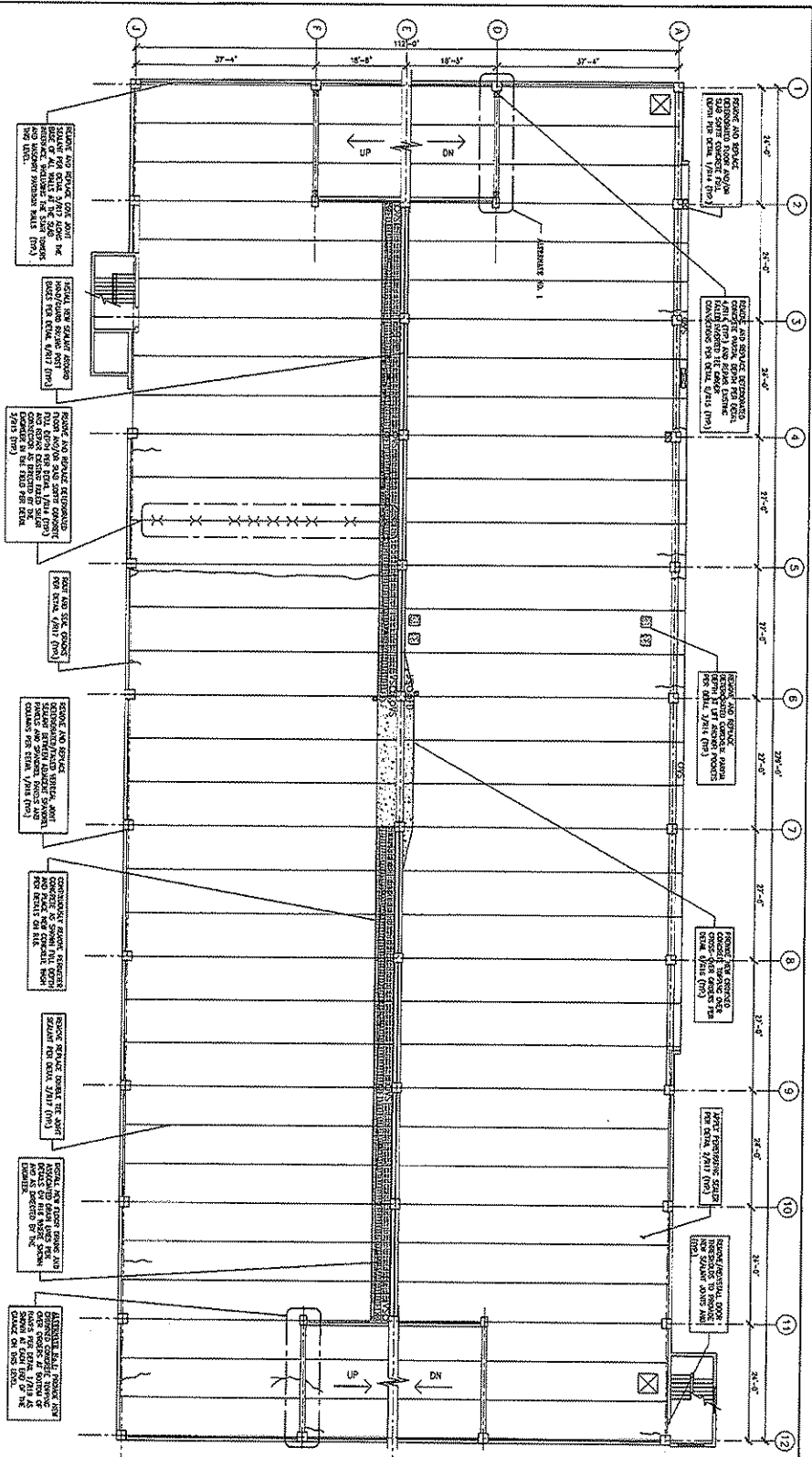
GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPLICABLE AGENCIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPLICABLE AGENCIES.
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REPAIR AND PREVENTIVE MAINTENANCE OF THE COURT STREET GARAGE FREDERICK, MARYLAND



DATE	BY
REVISION	DESCRIPTION
NO.	DATE



1 THIRD LEVEL PLAN
SCALE: 1/8" = 1'-0"

- LEGEND:**
- : EXISTING STRUCTURAL MEMBER
 - : FULL DEPTH CONCRETE REPAIR
 - : PATCHED REPAIR CONCRETE REPAIR
 - : BITUMEN FLOOR FINISH
 - : REINFORCING BAR CONNECTIONS DETAIL
- NOTES:**
- 1. REPAIRS AND REINFORCEMENT
 - 2. REPAIRS TO BE MADE IN ACCORDANCE WITH THE FOLLOWING NOTES:
 - 3. REPAIRS TO BE MADE IN ACCORDANCE WITH THE FOLLOWING NOTES:
 - 4. REPAIRS TO BE MADE IN ACCORDANCE WITH THE FOLLOWING NOTES:
 - 5. REPAIRS TO BE MADE IN ACCORDANCE WITH THE FOLLOWING NOTES:
 - 6. REPAIRS TO BE MADE IN ACCORDANCE WITH THE FOLLOWING NOTES:
 - 7. ALL REPAIRS TO BE MADE IN ACCORDANCE WITH THE FOLLOWING NOTES:

- GENERAL NOTES:**
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 3. REPAIRS TO BE MADE IN ACCORDANCE WITH THE FOLLOWING NOTES:
 4. REPAIRS TO BE MADE IN ACCORDANCE WITH THE FOLLOWING NOTES:
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 6. REPAIRS TO BE MADE IN ACCORDANCE WITH THE FOLLOWING NOTES:
 7. ALL REPAIRS TO BE MADE IN ACCORDANCE WITH THE FOLLOWING NOTES:

CONSTRUCTION NOTES:

1. THE GENERAL CONTRACTOR SHALL APPLY AT ALL TIMES SUFFICIENT LABOR AND MATERIALS FOR PROTECTING THE SEVERAL CLASSES OF SPECIFICATION AND THE REPAIR DETAILS SHOWN ON THE DRAWINGS.
2. THE GENERAL CONTRACTOR SHALL COMMENCE ON-SITE OPERATIONS WITHIN SEVEN CALENDAR DAYS AFTER THE DATE OF THE WRITTEN CONSTRUCTION ORDER. THE GENERAL CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION AREA PROTECTED FROM ALL DAMAGE DURING THE CONSTRUCTION PERIOD.
3. THE CONTRACTOR SHALL DISCONNECT AND REMOVE OR PROTECT EXISTING LIGHT FIXTURES, AT WORK AREA PRIOR TO DEMOLITION. HE SHALL MAINTAIN THE EXISTING SYSTEMS AND ASSOCIATED WIRING.
4. IN EACH PHASE THE CONTRACTOR SHALL PROVIDE ACCESS AT ALL TIMES FOR THE BUILDING MAINTENANCE PERSONNEL, TO ALL AVAIL. ALSO INSTALL DUST PROOF PARTITIONS AROUND THE WORK AREAS AND PROTECT THESE LOCATIONS FROM ANY DAMAGE DURING THE CONSTRUCTION PERIOD.
5. THE CONTRACTOR SHALL SUBMIT THE PROPOSED CONSTRUCTION SCHEDULE AND THE PROPOSED PHASING PLAN TO OBTAIN THE OWNER'S APPROVAL. THE CONTRACTOR SHALL STRICTLY FOLLOW THE SCHEDULE AND PHASING PLAN APPROVED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES, IN COORDINATION WITH THE OWNER AND THE ENGINEER.
6. THE CONTRACTOR SHALL PROVIDE/INSTALL ALL TEMPORARY SIGNS AND BARRIERS NECESSARY TO CONTROL TRAFFIC FLOW FOR THE ENTIRE PERIOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE PARKING ADMINISTRATION PRIOR TO OPERATIONS TO TRAFFIC.
7. DURING THE ENTIRE PERIOD OF PARTIAL GARAGE OCCUPANCY, THE AREAS WITHIN THE GARAGE SHALL BE MAINTAINED TO MAINTAIN THE TRAFFIC FLOW PRIOR TO THE INSTALLATION OF ANY TEMPORARY BARRIERS.
8. PRIOR TO CONCRETE POURING, THE CONTRACTOR SHALL SETBACK FLOOR ELEVATIONS AS NECESSARY FOR THE PLACEMENT OF NEW CONCRETE TO THE EXISTING ELEVATIONS.
9. THE CONTRACTOR SHALL PROVIDE PROPER LEANS SUBJECT TO ENGINEER'S APPROVAL FOR THE DISPOSAL OF WASTE AND WASTE A LOCATION TO BE DETERMINED WITH THE OWNER OR HIS/HER REPRESENTATIVE.
10. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO PREVENT REINFORCING STEEL, INCLUDING POST-TENSIONING CABLES AND TENDONS, FROM BEING DAMAGED OR INJURED. IN ADDITION TO A LINE LOG FOR 50 SQUARE FEET PER SQUARE FOOT (FS.FT.) IN ADDITION TO THE OPERATION WEAR OF EQUIPMENT.
11. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR THE PROTECTION AND MAINTENANCE OF ALL EXISTING UTILITIES, INCLUDING WATER, GAS, AND TELEPHONE LINES. THE CONTRACTOR SHALL MAINTAIN THE EXISTING UTILITIES AT ALL TIMES. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE TO THE OWNER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.
12. DURING THE ENTIRE PERIOD OF GARAGE REPAIR, THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES, INCLUDING WATER, GAS, AND TELEPHONE LINES. THE CONTRACTOR SHALL MAINTAIN THE EXISTING UTILITIES AT ALL TIMES. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE TO THE OWNER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.
13. DURING THE ENTIRE PERIOD OF GARAGE REPAIR, THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES, INCLUDING WATER, GAS, AND TELEPHONE LINES. THE CONTRACTOR SHALL MAINTAIN THE EXISTING UTILITIES AT ALL TIMES. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE TO THE OWNER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.
14. THE CONTRACTOR SHALL INSTALL THE NECESSARY FORM WORK FORBARS AND BRACES TO SUPPORT THE CONCRETE. THE CONTRACTOR SHALL MAINTAIN THE EXISTING UTILITIES AT ALL TIMES. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE TO THE OWNER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.
15. THE CONTRACTOR HAS AGREED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AND AFTER FOUR DAYS (MIN) FROM THE DATE OF CONCRETE POURING.

PHASING

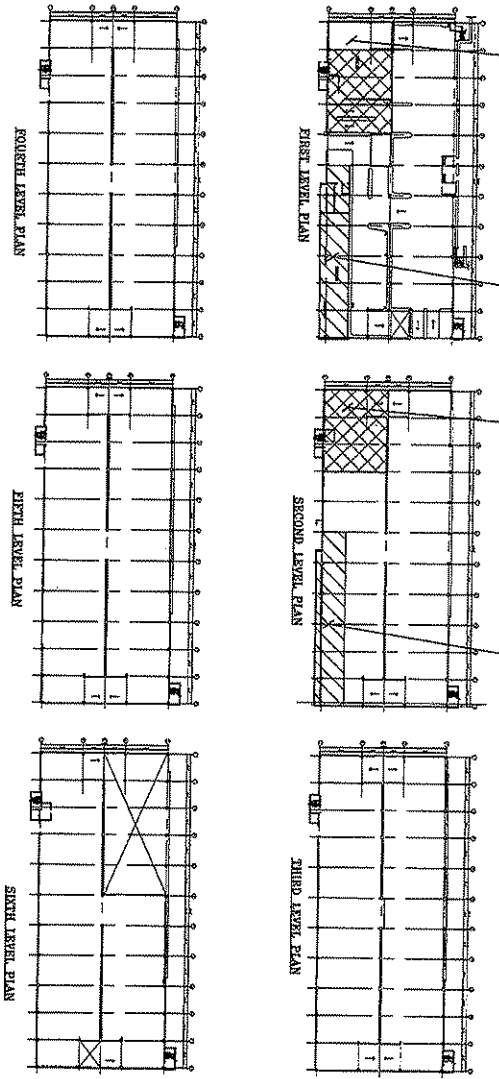
- NOTES:**
1. ANTICIPATED PROJECT COMMENCEMENT IS JULY 2006 WITH PARTIAL GARAGE OCCUPANCY.
 2. DURING PARTIAL GARAGE OCCUPANCY, THE CONTRACTOR MAY USE UP TO 50% OF THE TOTAL GARAGE AREA AT ONE TIME TO CONDUCT THE REPAIRS FROM AN AREA NECESSARY SHORING, FOR MATERIAL STORAGE AND TO MAINTAIN POSITIVE THERMATIC CIRCULATION.
 3. FULL GARAGE CLOSURE IS ANTICIPATED IN AUGUST 2006. SUBSTANTIAL PROJECT COMPLETION MUST BE ACHIEVED BY NOVEMBER 3, 2006.
 4. ALL NIGHT WORK IS TO BE COORDINATED WITH THE OWNER.
 5. ALL WORK INSIDE & ABOVE THE OCCUPIED SPACES ARE TO BE COORDINATED WITH THE OWNER.

DAY WORK PERMITTED ONLY. ACCESS TO THE OCCUPIED SPACE, CONSTRUCTION SCHEDULE AND WORK FOR THIS AREA TO BE COORDINATED WITH THE OWNER.

NIGHT WORK PERMITTED ONLY. ACCESS TO THE OCCUPIED SPACE, CONSTRUCTION SCHEDULE AND WORK FOR THIS AREA TO BE COORDINATED WITH THE OWNER.

DAY WORK PERMITTED ONLY. ACCESS TO THE OCCUPIED SPACE, CONSTRUCTION SCHEDULE AND WORK FOR THIS AREA TO BE COORDINATED WITH THE OWNER.

NIGHT WORK PERMITTED ONLY. ACCESS TO THE OCCUPIED SPACE, CONSTRUCTION SCHEDULE AND WORK FOR THIS AREA TO BE COORDINATED WITH THE OWNER.



FIRST LEVEL PLAN

SECOND LEVEL PLAN

THIRD LEVEL PLAN

REPAIR AND PREVENTIVE MAINTENANCE OF THE COURT STREET GARAGE
FREDERICK, MARYLAND

DESMAN ASSOCIATES

R-20

NO.	DATE	BY	REVISION
1	07/20/06	JL	ISSUED FOR PERMIT
2	07/20/06	JL	ISSUED FOR PERMIT
3	07/20/06	JL	ISSUED FOR PERMIT
4	07/20/06	JL	ISSUED FOR PERMIT
5	07/20/06	JL	ISSUED FOR PERMIT