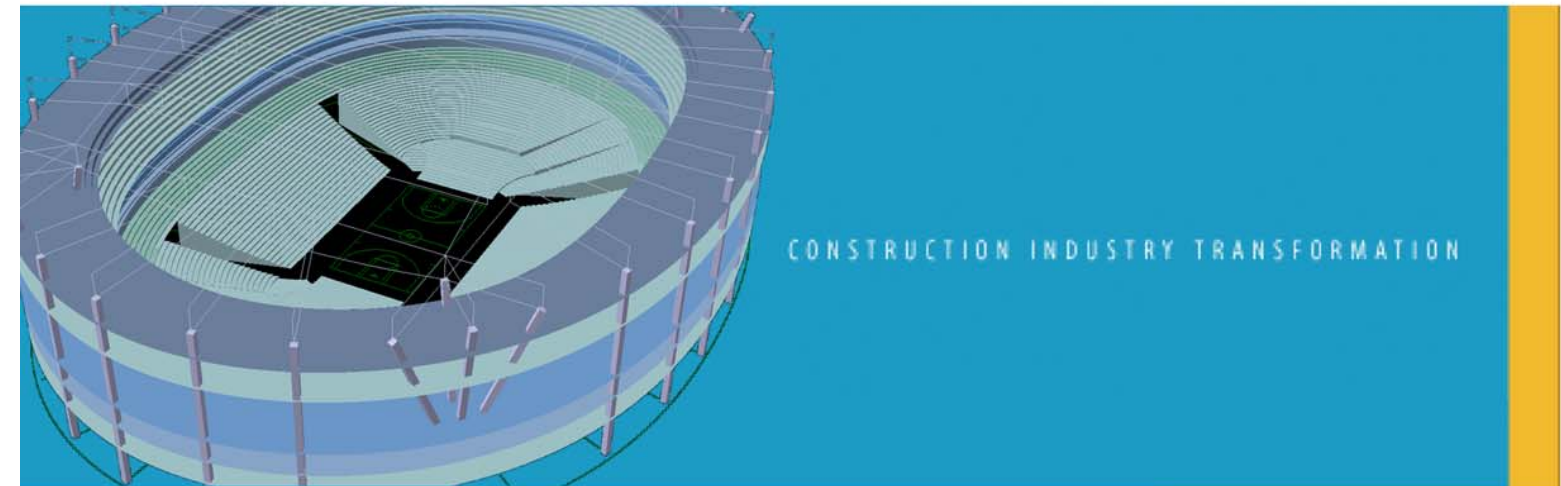




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CONSTRUCTION INDUSTRY TRANSFORMATION

**Digital Project™**

Powered by CATIA V5

High Performance Technology for 21<sup>st</sup> Century Building Teams

*Building projects are increasingly complex undertakings. Tougher building codes and performance requirements, tighter schedules, distributed teams, and the possibility of new architectural forms, all add up to a building design and construction process whose demands exceed the capabilities of 2D CAD and paper based delivery processes. Additional complexity in the design phase has created downstream problems in construction where poor data coordination translates directly into an average of 20% cost overruns during construction. The result of this trend is that, while over the last 20 years technology applications have resulted in productivity gains in virtually every industry, AEC has actually experienced productivity losses over the same time period.*

*Today's construction environment demands the best technologies to develop and manage project data. Digital Project delivers the tools required to bring 21<sup>st</sup> century practices to the building design and construction industry.*

**Digital Project™** is a new software platform for building teams to realize ambitious building projects working through digital technologies. Digital Project products support the lifecycle of construction projects in a common digital environment, from design and engineering to fabrication, construction project management and on site construction activities. Built on high performance technologies that have revolutionized the aerospace, automotive and manufacturing industries, Digital Project brings the best available digital technologies to distributed project teams collaborating on tough building design and construction projects.

Digital Project™ supports the development of a comprehensive project database in a contractually controlled fashion, allows teams to realize the full benefits of building information modeling including:

- Greatly facilitated visibility by project leadership into the project status, information developed by the extended building team,
- Cost estimating with accuracy and confidence,
- Integration of financial and other project management data with project geometry,
- Dramatic reduction of errors, omissions, and rework in the field,
- Up to date coordination and delivery of project data team-wide,
- Integration between AE documentation and fabrication or construction activities,
- Reduced "transaction costs" (e.g. paper printing and re-work).

Behind Digital Project is the advanced **CATIA V5** geometry and information management engine provided by Dassault Systèmes, that has revolutionized the automotive, aerospace and product manufacturing industries. The V5 product family includes 300 products developed by Dassault Systèmes and 3<sup>rd</sup> party partners. Digital Project products are specifically targeted toward building design, engineering and construction professionals. The broader V5 product families extend the capabilities available to project teams working on V5, and include products targeted toward data management, fabrication control, and plant and facilities management. Digital Project is natively compatible with all products in the V5 software family.

## Hardware Requirements

**System Unit:** Intel Pentium III or Pentium 4 based workstations running Microsoft Windows2000 Professional Edition, or Windows XP Professional Edition

**Graphic Adapter:** a graphic adapter requires 3D OpenGL acceleration with:

- 24 bits, true color, double buffered visual
- 24 bits Z-buffer
- Stencil buffer

Minimum recommended resolution is 1024x768; 1280x1024 or higher preferred. Hardware texturing capability is strongly recommended

**Network Adapter:** an active LAN adapter (Ethernet or Token Ring, installed and configured) is required for licensing purposes.

**Disk drive:** Minimum recommended size: 4 GB, for program executables, program data, usage environment and paging space.

- Digital Project executables: 1 GB
- Executables + help files: 2 GB

**Memory:** 512 MB of RAM is the minimum recommended amount of memory for all applications. 1 GB or higher is recommended for large project files.

**Internal/External Drives:** CD-ROM drive is required for program installation.

**Display:** A graphic color display compatible with the selected platform-specific graphic adapter. The minimum recommended size for usability reasons is 17 inches.

Minimum resolution: 1024x768.

Minimum recommended size: 17".

**Keyboard:** a specific keyboard compatible with selected installation locale may be required for national language support.

**Pointing device:** 3-button mouse preferred.

**Optional components:** SpaceBall or SpaceMouse

## About Digital Project

**Digital Project™** is a new software platform for building teams to realize ambitious building projects working through digital technologies. Built on Dassault Systèmes' high performance **V5** technologies that have revolutionized the aerospace, automotive and manufacturing industries. The product line is configured as a suite of applications designed to support the lifecycle of construction projects in a common digital environment, from design and engineering to fabrication, construction and project management. Digital Project allows teams to realize the full potential of building information modeling by supporting the integration and re-application of project information across the design team in a controlled environment. Digital Project brings the best available digital technologies to distributed project teams collaborating on tough building design and construction projects.

## Gehry Technologies

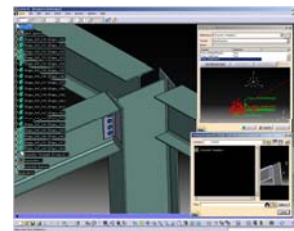
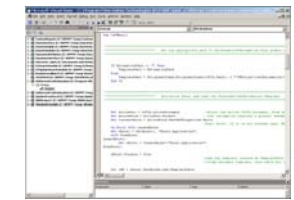
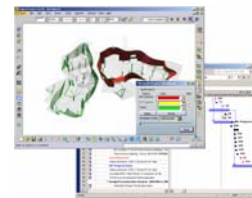
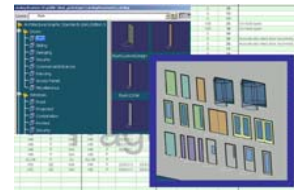
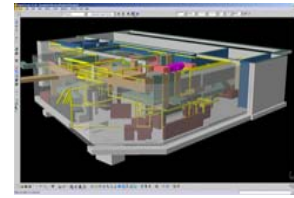
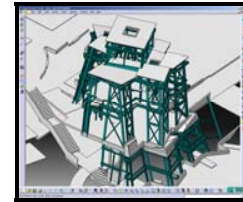
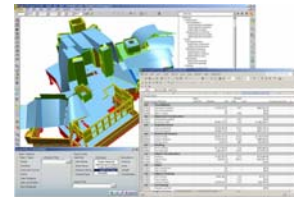
Gehry Technologies is a building design and construction technology company providing integrated, digitally driven construction practices to companies and their projects. We bring fifteen years' experience applying advanced digital technologies to complex building projects. Our clients and partners are firms and building teams interested in moving beyond the limits of paper driven project management and into 21<sup>st</sup> century, digitally enabled design and construction practices.



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|       |  |                    |
|-------|--|--------------------|
| ● ● ● | <b>DATA EXTRACTION</b><br>Digital Project includes many utilities for extracting project information to spreadsheets, reports and schedules. Automatically generate architectural schedules of parametric building components, develop project estimates from specification attributes, extract quantities, piece counts and attribute data to spreadsheet formats.  |                    |
| ● ● ● | <b>STRUCTURAL MODELING</b><br>Model linear and planar structural steel systems in full three dimensions. GT Structures provides international industry standard libraries of structural sections. Develop full reports of structural steel quantities, import and export to 3 <sup>rd</sup> party FEA and detailing applications using SDNF and CIS/2 translators. Extend included libraries with <i>KNOWLEDGE TEMPLATE</i> and <i>KNOWLEDGE ADVISOR</i> . | STRUCTURAL STEEL   |
| ● ● ● | <b>MEP MODELING</b><br>Model routable systems including HVAC ducts, piping and electrical conduits. MEP comes with libraries of standard equipment types that can be extended by the user. Routed elements may be quality controlled with clash and interference checking against other building systems.  | SYSTEMS ROUTING    |
| ● ● ● | <b>ARCHITECTURAL BUILDING COMPONENTS</b><br>Digital Project DESIGNER provides libraries of building components, with integrated extraction of architectural schedules. Component libraries may be customized and extended using Knowledge Template.  |                    |
| ● ●   | <b>CONSTRUCTING SCHEDULING</b><br>Digital Project provides attribute schema to support construction scheduling information, along with bi-directional integration with Microsoft Project. Edit construction schedules in MS Project, then tie geometric elements in the Digital Project environment to project schedule items and events. Query project data based on schedule item, and visualize construction sequencing in Digital Project.             |                    |
| ● ● ● | <b>VISUAL BASIC SCRIPTING</b><br>Enhance the functionality of Digital Project through easy to use Visual Basic scripting capabilities. VB Scripts can be used to extend attribute extraction capabilities and be automatically run on geometry changes using <i>KNOWLEDGE ADVISOR</i> .  |                    |
| ●     | <b>RULES AND CHECKS</b><br>Develop sophisticated quality control capabilities using Knowledge Advisor. Rules and checks on project geometry can be scripted using Visual Basic or Knowledge Language. Knowledge rules can be automatically run during geometry editing to assure adherence to company standards or building codes.   | KNOWLEDGE TEMPLATE |
| ●     | <b>PARAMETRIC COMPONENT DEVELOPMENT</b><br>Develop libraries of parametrically defined building components to increase productivity and encode company standards. Parametric components can be defined on the basis of variable input geometry, and can self configure to address localized conditions of object instantiation.  | KNOWLEDGE ADVISOR  |



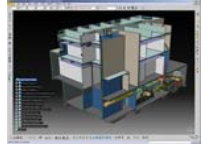
## Product Line

The Digital Project product line is packaged as a scaled set of base **products** with levels of functionality appropriate to different players on a construction team. **Add-on workbenches** tailor the installation to specific team members' needs.

### Products

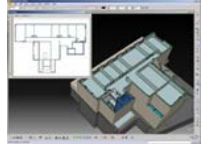
#### VIEWER

Project portal for reviewers. Allows review access to geometry, attribute editing, measuring and takeoffs. Appropriate for project managers, estimators and on site construction personnel.



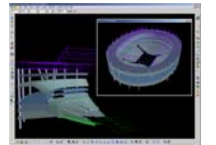
#### FOUNDATION

Coordination and production configuration. Appropriate for architectural production staff doing light geometric modeling, attribute modeling, information extraction, drawing production and data coordination. A solid base product for engineers with the addition of *STRUCTURES* or *SYSTEMS ROUTING*.



#### DESIGNER

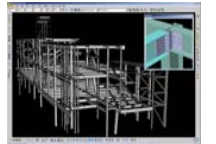
Full functionality geometry and knowledge modeling capabilities for advanced architects and engineers. Provides advanced solids, features, surfacing and wireframe geometry. Includes component instantiation capabilities and libraries of architectural objects.



### Engineering Workbenches

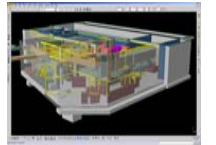
#### STRUCTURAL STEEL

Add on structures libraries and translators to support structural engineering modeling and drawing generation, integration with 3<sup>rd</sup> party solvers and detailing software through SDNF and CIS/2 formats. Detail component libraries may be extended with *KNOWLEDGE TEMPLATE*.



#### SYSTEMS ROUTING

Routable systems modeling for schematic design of HVAC, piping and electrical systems. Compatible with systems engineering and detailing products from the *CATIA* product line.

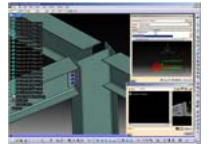


### Standards Development

Advanced authoring tools for developing standards libraries of intelligent components.

#### KNOWLEDGE TEMPLATE

Provides utilities to develop libraries of intelligent design templates for standardizing corporate practices. Knowledge templates can be instantiated with the *DESIGNER* product.



#### KNOWLEDGE ADVISOR

Provides real time rules and checks that can be built into intelligent component libraries developed with *KNOWLEDGE TEMPLATE*. Rule sets can be automatically fired in the *DESIGNER* product.



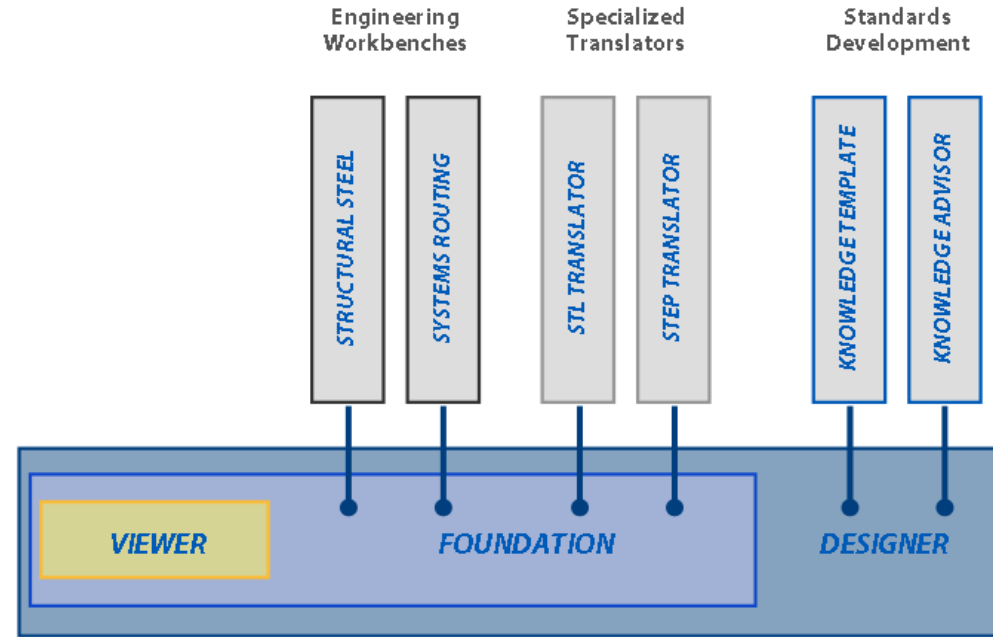
### Specialized Translators

#### STEP TRANSLATOR

Provides interoperability with 3<sup>rd</sup> party products through the STEP AP214 and STEP AP203 data formats.

#### STL TRANSLATOR

Creates STL (stereo-lithography format) files in a fast and accurate way by tessellation of CAD data. Allows import of existing STL files, the display of meshes and quality analysis.



### Recommended Configurations

Suggested products for building team members

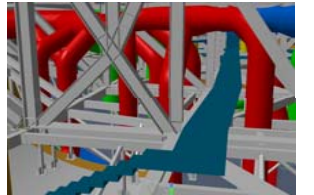
|                                     | PRODUCTS |            |          | ADD-ONS          |                 |                   |                  |                 |                |                    | SMARTTEAM |
|-------------------------------------|----------|------------|----------|------------------|-----------------|-------------------|------------------|-----------------|----------------|--------------------|-----------|
|                                     | VIEWER   | FOUNDATION | DESIGNER | STRUCTURAL STEEL | SYSTEMS ROUTING | KNOWLEDGETEMPLATE | KNOWLEDGEADVISOR | STEP TRANSLATOR | STL TRANSLATOR | CATIA Product Line |           |
| <b>Owner / Project Management</b>   |          |            |          |                  |                 |                   |                  |                 |                |                    |           |
| Data Manager                        |          | ○          |          |                  |                 |                   |                  |                 |                |                    | ○         |
| Project Manager                     | ○        |            |          |                  |                 |                   |                  |                 |                |                    | ○         |
| <b>Design Team</b>                  |          |            |          |                  |                 |                   |                  |                 |                |                    |           |
| <b>Architect</b>                    |          |            |          |                  |                 |                   |                  |                 |                |                    |           |
| CAD Manager                         |          |            | ○        | ○                | ○               | ○                 |                  |                 |                |                    | ○         |
| 3D Architect                        |          |            | ○        | ○                | ○               |                   |                  |                 |                |                    | ○         |
| Production architect                |          | ○          |          |                  |                 |                   |                  |                 |                |                    | ○         |
| Project Manager                     | ○        |            |          |                  |                 |                   |                  |                 |                |                    | ○         |
| <b>Structural Engineer</b>          |          |            |          |                  |                 |                   |                  |                 |                |                    |           |
| CAD Manager                         |          |            | ○        | ○                |                 | ○                 | ○                |                 |                |                    | ○         |
| 3D Engineer                         |          | ○          |          | ○                |                 |                   |                  |                 |                |                    | ○         |
| Project Manager                     | ○        |            |          |                  |                 |                   |                  |                 |                |                    | ○         |
| <b>MEP Engineer</b>                 |          |            |          |                  |                 |                   |                  |                 |                |                    |           |
| 3D Engineer                         |          | ○          |          |                  | ○               |                   |                  |                 |                |                    | ○         |
| Project Manager                     | ○        |            |          |                  | ○               |                   |                  |                 |                |                    | ○         |
| <b>Consulting Engineers - other</b> |          |            |          |                  |                 |                   |                  |                 |                |                    |           |
| CAD Manager                         |          |            | ○        |                  |                 |                   |                  |                 |                |                    | ○         |
| 3D Engineer                         |          | ○          |          |                  |                 |                   |                  |                 |                |                    | ○         |
| Project Manager                     | ○        |            |          |                  |                 |                   |                  |                 |                |                    | ○         |
| <b>Construction Team</b>            |          |            |          |                  |                 |                   |                  |                 |                |                    |           |
| <b>General Contractor</b>           |          |            |          |                  |                 |                   |                  |                 |                |                    |           |
| Coordination / Production Staff     |          | ○          |          |                  |                 |                   |                  |                 |                |                    | ○         |
| Project Manager                     | ○        |            |          |                  |                 |                   |                  |                 |                |                    | ○         |
| Estimator                           | ○        |            |          |                  |                 |                   |                  |                 |                |                    | ○         |
| Surveyor                            | ○        |            |          |                  |                 |                   |                  |                 |                |                    | ○         |
| <b>Fabricators</b>                  |          |            |          |                  |                 |                   |                  |                 |                |                    |           |
| Engineering                         |          |            | ○        |                  |                 |                   |                  |                 |                |                    | ○         |
| Project Management                  | ○        |            |          |                  |                 |                   |                  |                 |                |                    | ○         |

### Software Features

|                                     | DESIGNER | FOUNDATION | VIEWER | ADD-ON |
|-------------------------------------|----------|------------|--------|--------|
| IMMERSIVE MODELING ENVIRONMENT      | ○        | ○          | ○      | ○      |
| MODEL ORGANIZATION AND COORDINATION | ○        | ○          | ○      |        |
| PARAMETRIC GEOMETRY                 | ○        | ○          | ○      | ○      |
| ATTRIBUTE MODELING                  | ○        | ○          | ○      |        |
| DRAWING EXTRACTION                  | ○        | ○          | ○      |        |
| SPACE ANALYSIS                      | ○        | ○          | ○      |        |
| CLASH AND CLEARANCE DETECTION       | ○        | ○          |        |        |

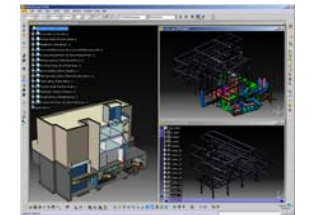
#### IMMERSIVE MODELING ENVIRONMENT

Digital Project provides an immersive 3D modeling environment for all design interactions. Work in fully shaded 3D, wireframe or hidden line modes, or apply one of many analytical visualization modes to quality control project geometry and other data while you work.



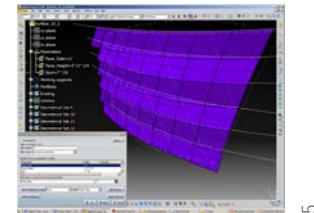
#### MODEL ORGANIZATION AND COORDINATION

Digital Project provides powerful tools for integrating and organizing project data into hierarchically sorted project organizations. Work with geometry either in the 3D environment or in a nested specification tree. Models can be assembled into multiple project organizations. Manage both native V5 data and 3rd party formats directly in the Digital Project environment.



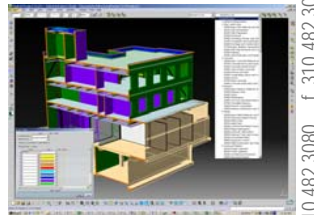
#### PARAMETRIC GEOMETRY

Parametric modeling technology is an integral part of all Digital Project operations. Build geometry through persistent geometric relationships that can be updated to address project changes, drive geometry by parameters and dimensions, build intelligent building components and re-use in alternative geometric contexts.



#### ATTRIBUTE MODELING

Digital Project provides a unique attribute modeling functionality for tying construction information to project geometry. 3D data can be provided additional information from a variety of preset and user defined attribute classes including specification and cost estimating information, quality control data, and fire and life safety information. Users can extend the attribute families through XML data files.



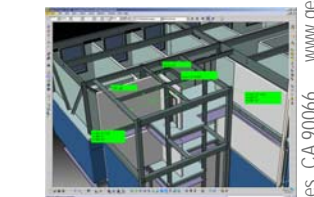
#### DRAWING EXTRACTION

2D drawings are automatically generated from 3D geometry, reducing possible mis-coordination of drawings. Attribute and geometry information may be used to drive layer and line work qualities, through a set of user modifiable information querying specifications. Drawing specifications remain persistent in the 3D data set, allowing automatic regeneration of 2D information on revisions of the 3D geometry.



#### SPACE ANALYSIS

Digital Project provides easy to use capabilities for review of project geometry through interactive measuring of project geometry and relative distances.



#### CLASH AND CLEARANCE DETECTION

Ensure quality of systems engineering, and reduce the possibility of conflicts in construction, using clash detection search and management. Issue checks to identify situations where building systems penetrate one another, or define and verify required offsets between building systems.

