

## FACT SHEET FOR GTSTRUDL

1. Over 4,000 copies of GTSTRUDL are currently used by over 900 corporate enterprises, government agencies, and universities, in over 25 countries throughout the world.
2. GTSTRUDL quality assurance and quality control procedures are in full conformance to the applicable provisions of the United States Nuclear Regulatory Commission's 10CFR21 and 10CFR50 Quality Regulations, and the applicable provisions of the ISO 9000, Part 3 Software QA Guidelines.
3. GTSTRUDL is widely used in the following industries:

Public utilities (especially electric power generation and distribution)

Manufacturing industries (pulp and paper, petrochemical, machinery, equipment, and other manufacturing industries)

Civil works (dams, flood control, navigation channels, environmental facilities, water works, transportation facilities, etc.)

Heavy construction

Commercial and residential buildings

Offshore engineering

Ship design

A/E/C consulting firms

Government agencies

Engineering educational institutions

4. The following is a short list showing examples of current users of GTSTRUDL:
  - a. **Examples of power plant and utility company users:**

NW China Hydropower Design Institute, Xian  
China Light and Power, Hong Kong  
Korea Atomic Energy Research Institute, Korea  
Tennessee Valley Authority, U.S.A.  
Westinghouse Savannah River Co., U.S.A.  
Consolidated Edison, U.S.A.  
Gulf States Utilities, U.S.A.  
Duke Power Co., U.S.A.  
American Electric Power Co., U.S.A.  
Southern Company Services, U.S.A.  
Texas Utilities Co., U.S.A.  
Pacific Gas & Electric Co., U.S.A.  
Florida Power & Light Co., U.S.A.  
Arizona Public Services Co., U.S.A.  
Omaha Public Power, U.S.A.  
Baltimore Gas & Electric, U.S.A.  
Detroit Edison, U.S.A.

**b. Examples of general industrial/government users:**

Nippon Steel Corp., Tokyo, Japan  
Mitsubishi Heavy Industries Corp., Nagasaki, Japan  
Mitsui Engineering & Shipbuilding Corp., Ikeyama, Japan  
Ishikawajima Harima Heavy Industries Corp., Tokyo, Japan  
Samsung Engineering & Construction Co., Seoul, Korea  
Korea Heavy Industries Corp., Kyungnam, Korea  
Hyundai Construction Co., Seoul, Korea  
Hyundai Housing & Industrial Development Corp., Seoul, Korea  
Beijing Central Engineering Research Institute for Iron and Steel Industry, Beijing, China  
Housing Authority, Hong Kong  
Architectural Services Department of the Public Works Department, Hong Kong  
Wong and Ouyang, Hong Kong  
Siam Cement, Bangkok, Thailand  
Arun Chaiseri Consulting Engineers, Bangkok, Thailand  
Ocean Tower Co, Bangkok, Thailand  
Public Works Department, Kuala Lumpur, Malaysia  
Jurong Town Corporation, Singapore  
Public Works Department, Singapore  
RSP Architects, Singapore  
Central Mine Planning & Design Institute, Ranchi, India  
Frontier Works Organization, Islamabad, Pakistan  
Kvaerner Oil & Gas, London, UK  
Foster Wheeler, London, UK, Paris, France, Milan, Italy  
TPL, Rome, Italy  
SAE Sadelmi, Milan, Italy  
Ansaldo, Genova, Italy  
SNAM Progetti, Milan, Italy  
Dragados Construction, Madrid, Spain  
FCC Contractors, Madrid, Spain  
INITEC, Madrid, Spain  
EDP (Electricity of Portugal), Lisbon, Portugal  
Siemens KWU (Nuclear Power), Frankfurt, Germany  
Total Oil & Gas, Paris, France  
ETPM, Paris, France  
ABB Lummus, Den Haag, Holland  
Zamil Steel Buildings, Dhahran, Saudi Arabia  
PROMON Design and Construction, Rio de Janeiro and Sao Paulo, Brazil  
TECHINT Design and Construction, Buenos Aires, Argentina  
Bechtel Corporation, U.S.A.  
Stone & Webster Engineering Corporation, U.S.A.  
Avondale Shipyards, U.S.A.  
Air Products and Chemicals, U.S.A.  
Eastman Chemical Co., U.S.A.  
Fluor Daniel Corporation, U.S.A.  
Black & Veatch Engineers, U.S.A.

DeLeuw Cather Inc., U.S.A.  
Parsons Brinkerhoff, U.S.A.  
Sverdrup Technology, U.S.A.  
Severud Associates, U.S.A.  
Lockwood Greene, U.S.A.  
Lockheed Martin, U.S.A.  
ABB Environmental Engineering Services, U.S.A.  
California Transportation Department (CALTRANS), U.S.A.  
Illinois Department of Transportation, U.S.A.  
Florida Department of Transportation, U.S.A.  
Oklahoma Department of Transportation, U.S.A.  
Washington State Department of Transportation, U.S.A.  
Kansas Department of Transportation, U.S.A.  
Los Angeles Department of Water and Power, U.S.A.  
City of Los Angeles, Bureau of Engineering, U.S.A.  
Port Authority of New York & New Jersey, U.S.A.

c. **Examples of university users:**

Delft University of Technology, Netherlands  
Han Yang University, Seoul, Korea  
Seoul National University, Seoul, Korea  
National University of Singapore  
Nanyang Technological Institute, Singapore  
Shaanxi University of Technology, Xian, China  
Universiti Teknologi Malaysia, Jahor Bahru, Malaysia  
University of Windsor, Windsor, Ontario  
California State University at Long Beach  
Cooper Union, New York  
Georgia Institute of Technology  
George Washington University, Washington, D.C.  
Howard University, Washington, D.C.  
Louisiana State University, Baton Rouge  
Massachusetts Institute of Technology  
University of Michigan, Ann Arbor  
Rice Institute, Houston  
University of Connecticut, Storrs  
University of Louisville  
University of Missouri, Columbia and Rolla  
University of North Carolina, Charlotte  
University of Tennessee, Knoxville  
University of Texas, San Antonio  
University of Virginia, Charlottesville

5. The following is a very short list showing examples of typical structural engineering projects performed using GTSTRUDL for structural analysis and design:

**BUILDINGS:**

Daewoo Tower, Shanghai, China  
420 m (1,400 ft); 92-stories (under design)  
Fifth tallest building in the world  
Tallest building in China  
Seismic Zone 3

Tomorrow Square, Shanghai, China  
230 m (770 ft) plus a 50 m (170 ft) spire; 60-stories (under construction)  
Second tallest building in Shanghai  
Seismic Zone 3

Shanghai Center, Shanghai, China  
168 m (550 ft); 50-stories  
Seismic zone 3

Bund Financial Center, Shanghai, China  
189 m (630 ft); 46-stories under construction  
Seismic zone 3

Communications Center Hotel and Office Complex, Shanghai, China  
30-stories  
Seismic zone 3

Republic Plaza, Singapore  
68-stories  
One of the three tallest buildings in Singapore

Sampoerna Plaza Twin Towers, Jakarta, Indonesia  
130 m (430 ft); 36-stories under construction  
Third tallest building in Indonesia  
Seismic Zone 4

Numerous high-rise residential buildings per year, Hong Kong  
30 to 50 stories each  
Hong Kong Housing Authority

Renaissance Center Hotel  
Detroit, Michigan  
768 ft (234 m); 74-stories  
Tallest building in Detroit  
John Portman & Associates, Atlanta, Georgia

Two Prudential Plaza  
Chicago, Illinois  
920 ft (281 m); 64-stories + mechanical  
World's 2nd tallest reinforced concrete building; shear wall/moment frame  
CBM Engineers, Inc., Houston, Texas

First Interstate World Center  
Los Angeles, California  
1,018 ft (310 m); 73-stories + mechanical  
World's tallest building in a seismic zone 4 (most severe)  
CBM Engineers, Inc., Houston, Texas

One Peachtree Center  
Atlanta, Georgia  
842 ft (257 m); 60-stories  
Atlanta's tallest building  
John Portman & Associates, Atlanta, Georgia

AT&T Building  
Atlanta, Georgia

**BRIDGES:**

Oeresund Link Bridge  
Cable Stayed Bridge; Main bridge span of 10-mile bridge/tunnel project between Denmark and Sweden  
International Steel Consulting A/S and Gimsing & Madsen Consulting Engineers  
Copenhagen, Denmark

Golden Gate Bridge  
San Francisco, California  
4,200 ft (1,280 m) main span; Towers 720 ft (220 m) tall; reanalysis for seismic retrofit  
Imbsen & Associates, Inc., Sacramento, California

Cypress Freeway Replacement Bridge Structure  
San Francisco, California  
California Department of Transportation, Sacramento, California  
SC Solutions, Mountain View, California

University Avenue Overcrossing  
As-built structural analysis for seismic retrofit  
Boyle Engineering Co., Los Angeles, California

Tappan Zee Bridge Seismic Redesign  
New York State Thruway  
2,416 ft main span  
Frederick R. Harris, Inc.

**ELECTRIC POWER PLANTS:**

Niagara Cogeneration Project Plant Structures  
Niagara Falls, New York  
Southern Electric International, Inc., Atlanta, Georgia

Xihe Power Station  
China  
Plant and dam combined structure  
Shaanxi Institute of Mechanical Engineers

Tennessee Valley Authority Power Plant Expansion  
Numerous nuclear and fossil fuel plant structures  
TVA, Chattanooga, Tennessee

**SPECIAL STRUCTURES AND GENERAL INDUSTRIAL:**

Main Olympic Stadium, 1996 Olympics  
Atlanta, Georgia  
Rosser Fabrap, Atlanta, Georgia

Grasim Reactor Tower  
Bombay, India  
Chemical process plant expansion  
Davy McKee Corporation, Pittsburgh, Pennsylvania

Southeast Paper Manufacturing Co. Plant Expansion  
Dublin, Georgia  
Mill expansion. Paper machine support structure.  
CRS Sirrene Engineers, Inc., Greenville, South Carolina

**OFFSHORE PLATFORMS:**

BZ34-2AL Oil Drilling Platform Project  
Gulf of Chili, North Yellow Sea  
Owned by Japan-China Oil Development Co.  
Mitsubishi Heavy Industries, Tokyo, Japan

South-Pars Oil/Gas Field Project  
Persian Gulf  
Owned by the National Iranian Oil Corporation  
Technologi Progetti Lavori, Rome, Italy