



Water Tank Analysis, Design & Detailing Software

### ESRGSR Advantage

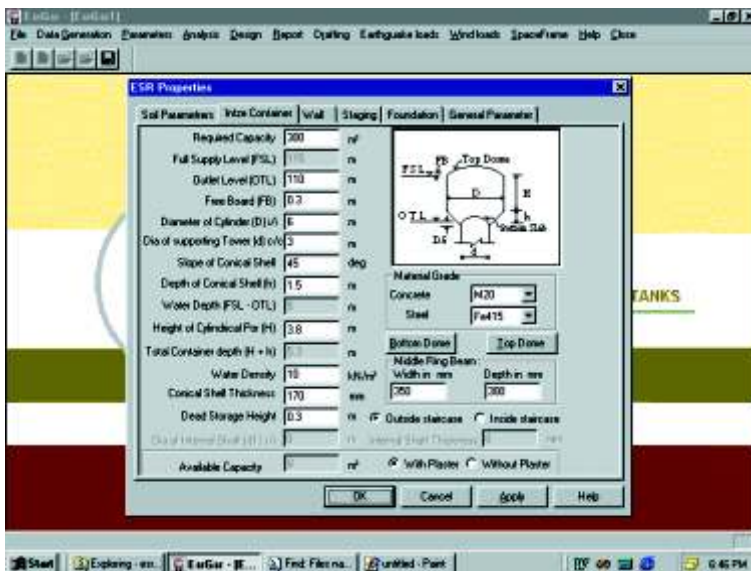
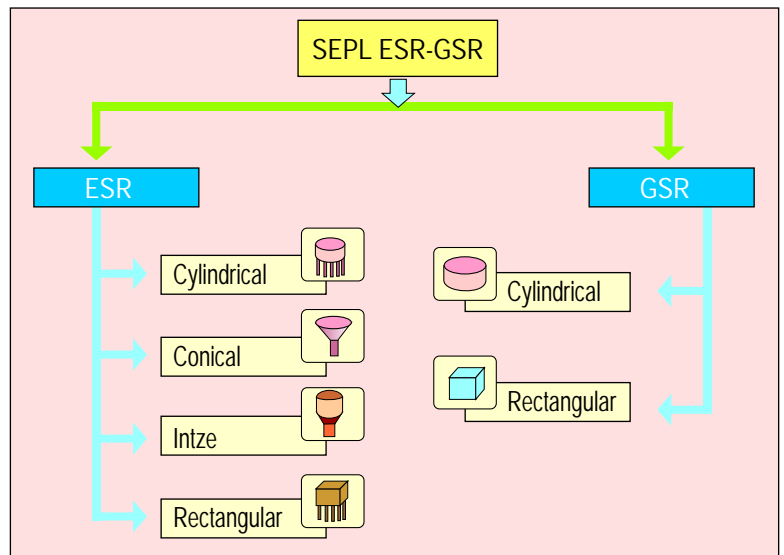
- ▶ Easy single window input
- ▶ Adheres to all relevant design codes
- ▶ Step by step calculation reports for analysis
- ▶ Detail design reports for all components
- ▶ Automatic generation of high quality detail drawings
- ▶ Quantity computation from design results



**SEPL ESR-GSR** is a unique software for structural analysis, design & detailing of underground & overhead water tanks.

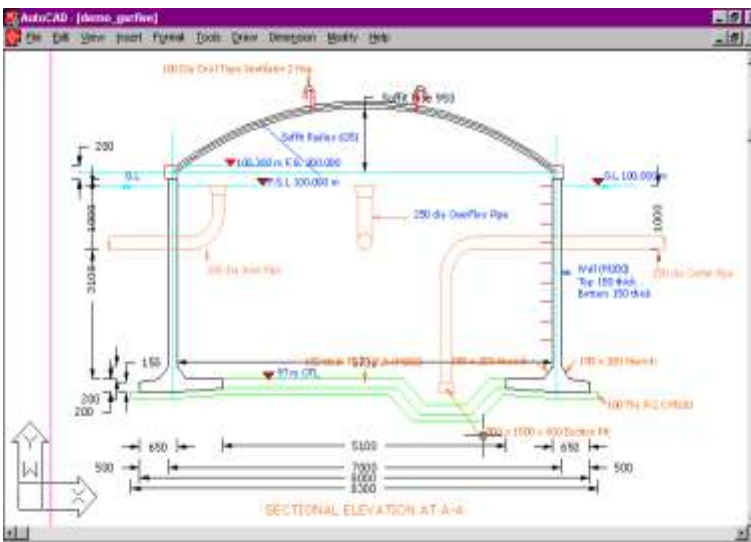
### SALIENT FEATURES

- Integrated modelling, analysis, design, drafting & estimation environment.
- Hydrodynamic analysis & Continuity Analysis
- Completely automated Seismic and Wind load analysis & design
- Automatic generation of detailed drawings as CAD files.



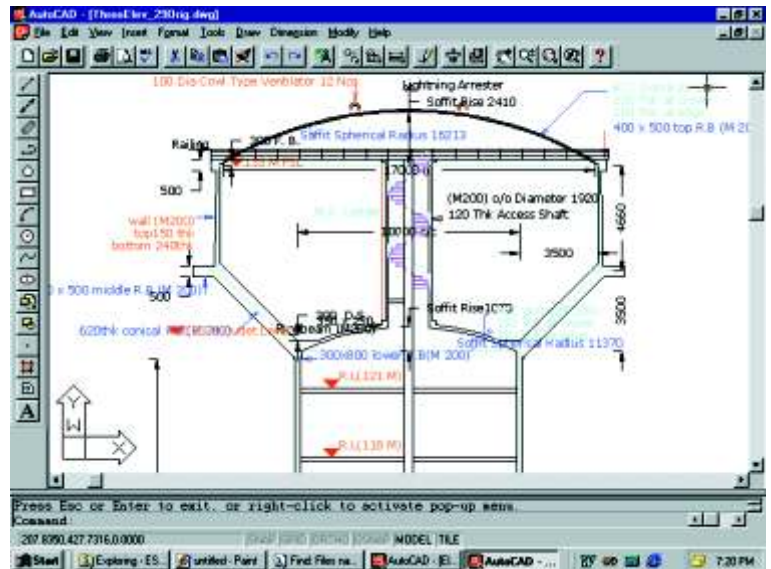
### GROUND SERVICE RESERVOIRS

- Cylindrical & Rectangular shapes
- Slab-Beam or Flat Slab roof for Rectangular GSR
- For Cylindrical GSR combinations of Top Dome, Top Circular Slab, Top dome+slab beam, slab beam grid or Flat Slab can be considered.
- The soil on which the Tank will be supported can be defined in various layers with various depth for the purpose of quantity computations
- Once the user puts the required volume for the tank, the software automatically suggests a dimension for the tank.
- We can also specify the Haunch dimension and the interior plaster for the software to consider while calculating the volume .If there are interior columns they are also accounted for while calculating the volume of the Tank
- The Design of container can be done by Working Stress method whereas the staging system can be designed by Working Stress or Limit State method
- The most suitable top support and the bottom support condition of the wall can be selected by the designer from many options
- Different boundary conditions as stipulated in IS:3370-Part IV can be considered for analysing walls of Rectangular & Cylindrical tanks
- Walls for Rectangular tank can be supported by counterfort outside or inside tank
- Various types of footings available for the above reservoirs
- Tanks are also designed for uplift forces



## ELEVATED SERVICE RESERVOIRS

- Rectangular, Cylindrical, Conical & Intz types
- The top and bottom of the container could be from the combination of Dome, Circular or Rectangular Slab-beam system or flat slabs
- Supporting structure could be shaft or column braced trestle with multiple staging levels of same or varying staging heights
- Columns can be either rectangular or circular
- Staircase can be located either inside or out side of supporting system
- Foundation types : Isolated Footings, Pile Foundations, Annular Raft and Solid Raft
- Effect of Hydrodynamic forces considered
- The components of the structures could be designed by using Working Stress method or Limit State Method

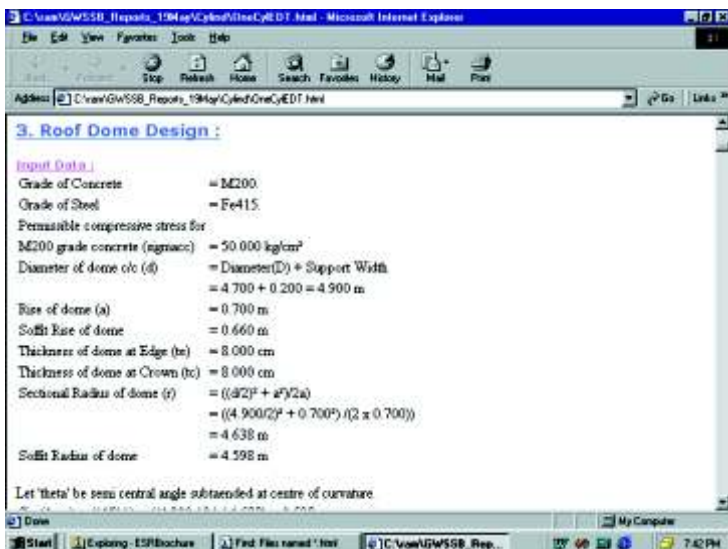


## ANALYSIS

- 3-Dimensional static and dynamic analysis of staging using Stiffness Matrix Method
- Automatic 3-D frame generation from the data given in interactive dialogs
- Response spectrum method for seismic analysis
- Automatic computation of earthquake & wind loads

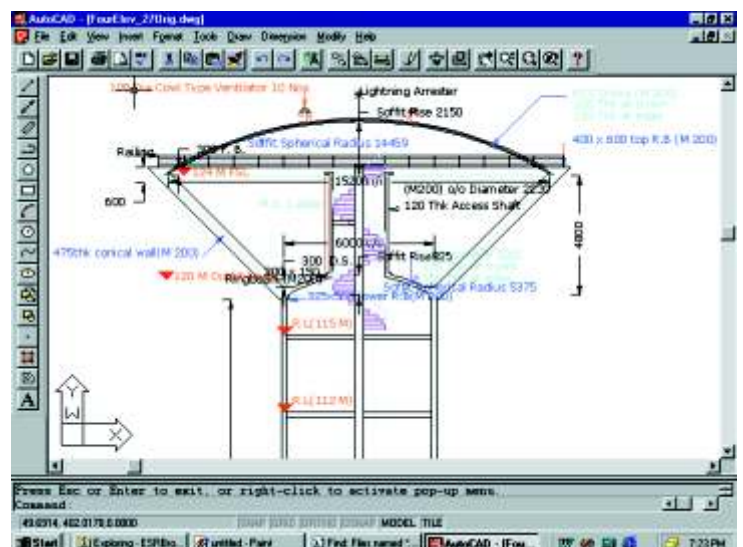
## DESIGN

- The design is highly interactive & designer can overwrite any results produced by the software
- The design strictly confirms to relevant design codes of IS: 3370, IS:456, IS:1893, IS:875, IS:13920, IS:11089
- Design can be produced for worst Load combination or any specific load combination selected by the user



## REPORTS

- Analysis reports for any load case or Load combination
- Detail Report with step by step calculations are generated for :
  - Input Data
  - Project Information
  - Capacity calculation
- Detail Design reports of all the tank components like Roof, Container Walls, Domes, Slabs, Beams at various stagings, Columns & Footings
- An abstract report for the various civil items of the Tank, their corresponding quantity, rate & the total cost is produced
- Wind Load computation report
- Seismic load computation report

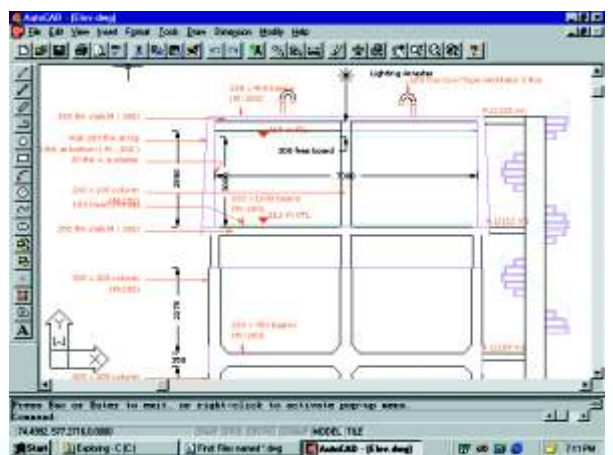
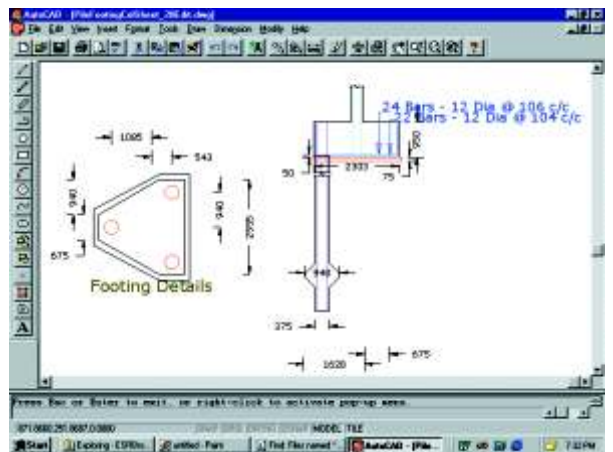
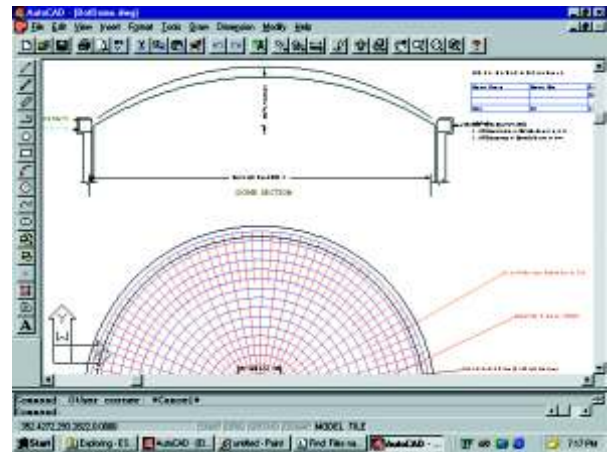


## DRAFTING & ESTIMATION

- Automatic generation of final design sheets is one of the most powerful features of SEPL-ESR/GSR.
- The design sketches are detailed to a very high precision. The drawings are exported to AutoCAD® - R14 and AutoCAD®- 2000 in the layered form & can be edited for fine tuning the requirements. *(All drawings shown here are actual drawings produced by this software)*
- The complete quantity estimation of water tower components & GSR is produced.



Software includes installable CD, Hardware Key, User Manual & Original License Certificate



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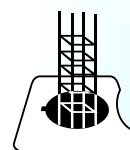
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