

ADAS[®]

Windas

Work Station

WE BUILD YOUR IMAGINATION



- Total solution for Lightweight Structures
- Design and build Archi-Engineering firm
- Over 30 years experience with more than 650 projects worldwide
- Lightweight long span structure specialists
- Low risk with tested & proven design details

ADAS® Windas Workstation

WINDAS is a Finite Element Analysis (FEA) software used for designing and analysing structural members, surfaces, and solids in lightweight membrane systems. With its updated and intuitive interfaces, WINDAS has evolved into a powerful tool that significantly enhances the user experience for engineers.

This software can automatically generate 3D models of Spaceframe components, perform comprehensive analysis, form finding, and cutting pattern generation for tensile membranes, and support ETFE cushion inflation for form finding.

ADAS® Windas Workstation Features

User-friendly Interface

- Flexible Data Format

Easy Element Selection

- By Layer, Colour, and Properties

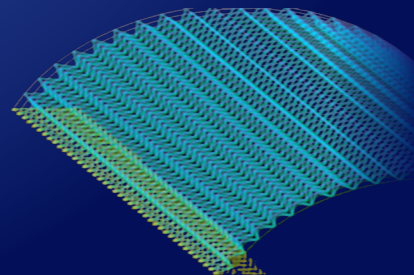
Various Section Profiles

- Designed to British, American, Indian standards and more.

High-speed Multiple Solver Option

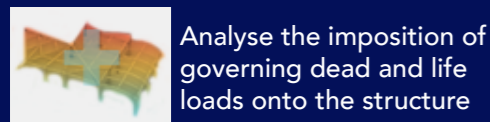
- Linear Elastic Solver, Second Order P-Delta, Mode Shape and Frequency, Buckling Load Factor, Non-Linear Solver

Membrane & ETFE Material Data				
	Membrane & ETFE Foil	E11	E22	G
1	<input type="checkbox"/> Skytop FGT600	1204.67	861.02	56.98
2	<input checked="" type="checkbox"/> Skytop FGT800	1157.18	943.40	65.31
3	<input type="checkbox"/> Skytop FGT1000	1274.96	737.46	96.70
4	<input type="checkbox"/> Skytop FGT600A	1676.94	690.39	56.88
5	<input type="checkbox"/> SkyTop FGT800A	1882.88	760.02	68.47
6	<input type="checkbox"/> Mehler FR700	715.00	470.00	10.00
7	<input type="checkbox"/> Mehler FR900	780.00	510.00	15.00
8	<input type="checkbox"/> Mehler FR1000	1400.00	1010.00	20.00
9	<input type="checkbox"/> Mehler FR1400	2000.00	1220.00	30.00
10	<input type="checkbox"/> Fenari 702	575.00	486.50	10.00
11	<input type="checkbox"/> Fenari 1002	751.00	636.20	15.00
12	<input type="checkbox"/> Fenari 1202	918.20	777.50	20.00



ADAS® Windas Finite Element Solvers

Unfactored Load Combination



Analyse the imposition of governing dead and live loads onto the structure

Linear Solver



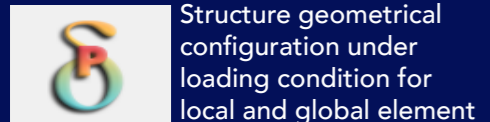
To solve the system of linear equation $[K] \{d\} = \{R\}$ under static loading

Factored Load Combination



Automatic member design with designated load multiplier

P - Delta



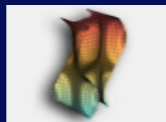
Structure geometrical configuration under loading condition for local and global element

Mode Shape



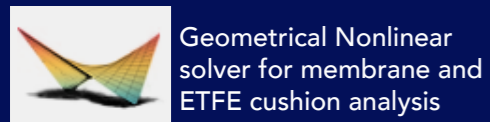
Eigen analysis to obtain natural frequencies and corresponding vibration mode shape

Load Buckling



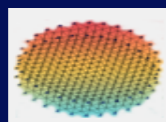
Eigen analysis to obtain buckling resistance and mode of structure.

Tensile Membrane



Geometrical Nonlinear solver for membrane and ETFE cushion analysis

Tensinet and Cablenet



Iterative incremental nonlinear analysis for catenary cable and struct supported structure

SemiLoof Shell



Advanced analyses for high performance curved and layered plate and shell elements

Why use ADAS® Windas Work Station?

Features:

- Advanced FEM Solver:
- Supports various 2D shell elements (e.g., Andes, MITC Shell).
- 3D FEM Element: Facilitates solid component analysis.

Applications:

- Enables detailed analysis to ensure structural integrity.
- Helps optimise materials for better performance.
- Contributes to innovative and reliable design solutions.
- Streamlines the analysis process, making it accessible and efficient for engineers.

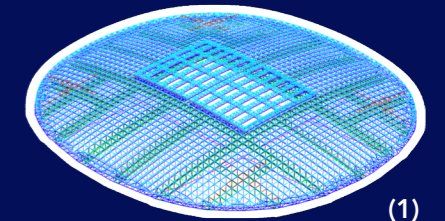
ADAS® Windas Work Station Products

- **WinSSDM** (1) : Spaceframe and Truss Design Analysis
- **WinFabric** (2) : Tensile Membrane Design Analysis
- **WinETFE** (3) : Pneumatic Membrane Design Analysis
- **WinTensinet** (4) : TensiNet System Design Analysis
- **WinGreen** (5) : Lightweight Greenhouse Design Analysis
- **WinRack** (6) : Racking System Design Analysis

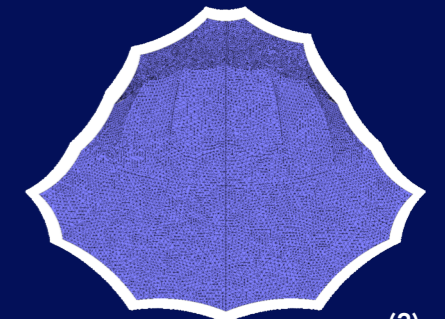
Features:

- Utilises Windas Finite Element Solvers
- Automatic Membrane and Structural Form Generation
- Advanced structural analysis for various loading conditions
- Utilises non-linear geometrical analysis to determine membrane stress loading.
- Automatic sizing of member and components
- Automatic production of fabrication and installation drawings.
- Pressure and Rigidity analysis for ETFE Cushion structures.

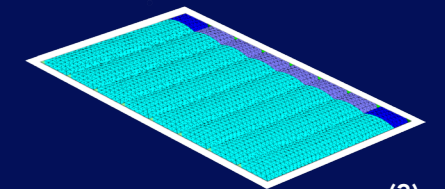
Design with Windas:



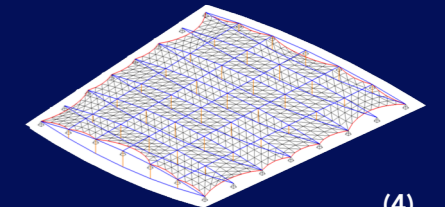
(1)



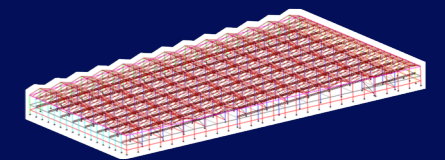
(2)



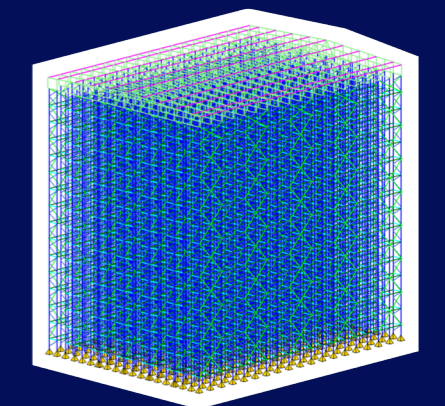
(3)



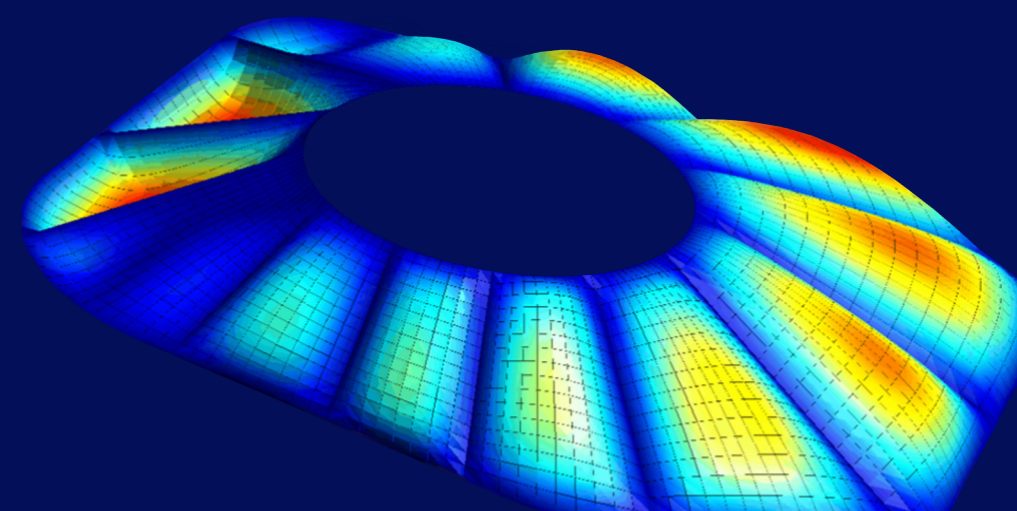
(4)



(5)



(6)



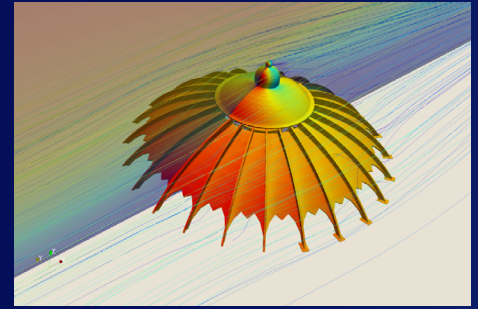
Add-ons for New Generation Windas

CFD Wind & Load Simulator

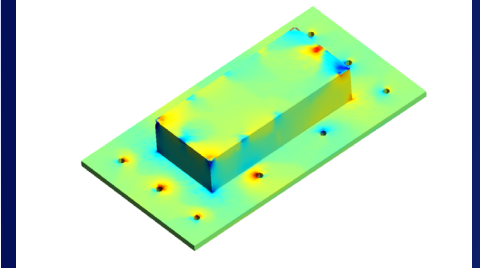
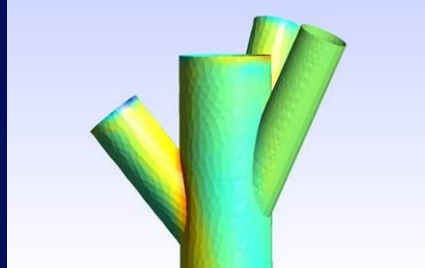
These new features are implemented with user friendly interface to ease daily work with FEA program efficient and intuitive

- Mass load
- Surface contact
- Design situations
- Imperfection cases
- Results visualisation
- Load transfer surface
- Cross section unit stress
- Wind Simulation integration
- Rhino & Grasshopper integration

Integrated with OpenFOAM toolbox to obtain net wind pressure distribution on the structure.



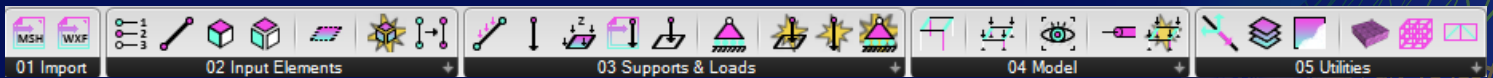
Connection Design



Windas features FEM connection design for 3D solid components, optimizing joint connections and baseplate design to reduce costs. It uses shell elements for connection branches and tetrahedral, hexahedral, and brick elements for steel connection analysis.

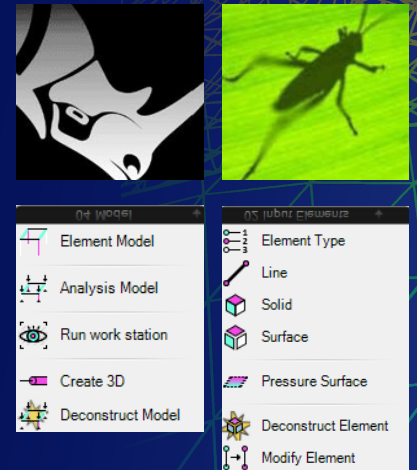
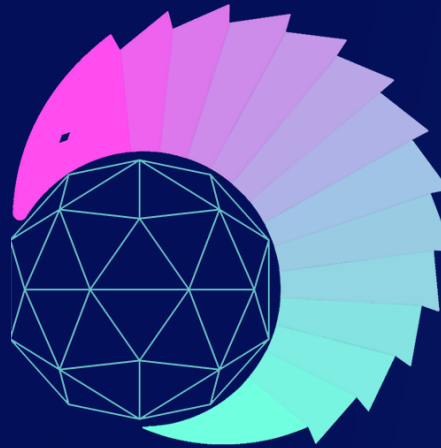
ADAS® Windas Rhino & Grasshopper Integration

Windas offers Phangolin, a Grasshopper Rhino plugin, for creating complex 3D models and performing analysis directly from CAD models. It features a fast solver, automatic member design, and manufacturing solutions for steel, tensile membranes, and tensinet in one compact software.



Phangolin

Phangolin is a parametric structural engineering tool that simplifies design and analysis. It supports spatial trusses, frames, and shells in complex geometries, allowing users to easily define boundary conditions and modify structure geometry within the Rhino-Grasshopper environment.



Singapore Office Multimedia Engineering Pte Ltd

50 Bukit Batok Street 23 #05-15,
Midview Building Singapore 659578.

Tel
(65) 6765 6288

Email
mepl@me.com.sg

Website
www.me.com.sg

Hong Kong Office

Tel (852) 9389 4747
Email sales@prestigetos.com

Malaysia Office

Tel (60) 13 439 7055
Email adas_hightex@live.com

USA Office

Tel (386) 668 0474
Email bernd@spstin.com

