



Aspect Structure: The only structural analysis and design solution built for engineering excellence

Why leading engineering teams choose
Aspect Structure over other solutions

eBook

Contents

1	The academic foundation of Aspect Structure	04
2	A complete, non-fragmented structural ecosystem	06
3	Automated wind and roof load generation without workarounds	07
4	Continuous-span results without extra meshing	08
5	Seamless integration with Octave’s engineering ecosystem	09
6	Why Aspect Structure outperforms other market solutions	10

Introduction

For over four decades, Aspect Structure (formerly GT STRUDL) has been recognized as one of the most accurate, trusted and academically rigorous structural analysis and design solutions available to EPC teams and engineering professionals. From nuclear safety applications to offshore structures and major infrastructure projects, engineers globally rely on Aspect Structure for reliable results, deep analytical power and an ecosystem that eliminates the fragmentation common in competing platforms.

Aspect Structure combines academic-grade validation, a complete non-fragmented license model, industry-leading automation for wind and roof loading, continuous-span results without meshing workarounds and interoperability across Octave's design tools—representing unmatched value and confidence for structural engineering teams.

The academic foundation of Aspect Structure

A legacy rooted in engineering science

Aspect Structure's foundations are unique in the structural software market: the solution was originally developed in academic and research environments to meet the needs of engineers solving highly complex, safety-critical problems. This pedigree has shaped decades of mathematically rigorous solver development, quality assurance practices and a culture of verified accuracy trusted across nuclear, power, offshore, marine, civil and infrastructure sectors worldwide.

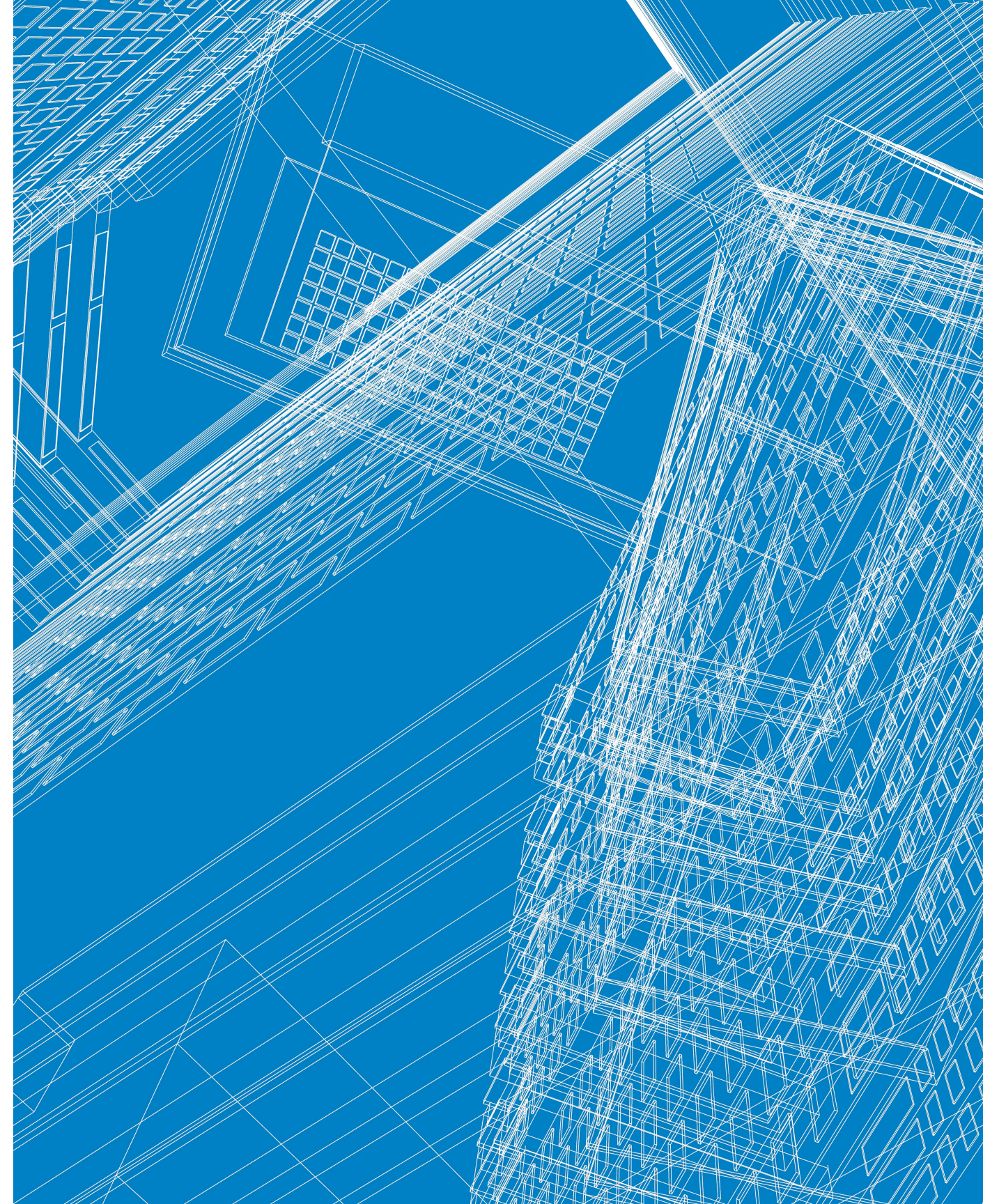
Aspect Structure's original name was **GT STRUDL** because...

GT > Georgia Tech

The university that originally developed the program

STRUDL > Structural Design Language

The programming language created by MIT in 1969 for structural analysis and used by the leading analysis tools.



Why academic prowess matters

EPCs and engineering teams responsible for life safety structures rely on tools that are not merely “feature-rich” but scientifically trustworthy. Aspect Structure’s analysis engines routinely serve environments governed by the strictest global codes and safety mandates—including U.S. NRC and ASME NQA-1 quality assurance standards.

This academic rigor ensures:

- Robust mathematical solvers for advanced static, dynamic and nonlinear analysis
- Verified repeatable results suitable for nuclear and regulatory applications
- High-confidence design decisions with minimized engineering risk

Trusted by experts across disciplines

For over 40 years, thousands of EPCs and organizations worldwide have adopted Aspect Structure for projects ranging from power plants to bridges to high-rise structures. Its long-term acceptance within universities, government agencies and engineering firms highlights its reliability and depth. Aspect Structure is even trusted by organizations to validate data coming from competing solutions, when those solutions provide results that can’t be trusted.



A complete, non-fragmented structural ecosystem

All codes included — no hidden costs

Unlike competing tools that charge separately for design codes, regional standards or specialized solver modules, Aspect Structure includes the latest global codes—such as AISC, ASCE, ASME and others—directly within the core product.

This eliminates:

- Additional license purchases
- Annual code-pack renewals
- Budget unpredictability across projects and departments

Integrated solver suite with no add-ons

Aspect Structure provides linear, nonlinear, static, dynamic, seismic, FEA and multimaterial beam analysis capabilities as part of a unified, out-of-the-box system.

This replaces the patchwork approach of many competitor ecosystems, where structural teams must purchase several independent modules to achieve the same functionality.

Predictable costs and simplified operations

The complete nature of Aspect Structure reduces administrative and budget overhead, making it easier for EPC teams to standardize processes, deploy seats and maintain compliance without worrying about fluctuating feature availability or modular pricing.



Automated wind and roof load generation **without workarounds**

Industry-leading automation not found in other tools

Many competing structural platforms require manual, error-prone calculations or custom workarounds to model wind and roof loading, especially for enclosed structures. Aspect Structure eliminates this challenge with highly automated load generation, reducing modeling time and increasing accuracy.

Automation helps ensure:

- Code-consistent load application
- Reduced risk of modeling mistakes
- Faster setup of complex structural systems

Engineers benefit from:

- Shorter modeling cycles
- Higher-quality, code-compliant load cases
- Less time spent correcting manual input errors



Continuous-span results without workarounds

Rich, continuous results across members

Some structural software requires engineers to insert dummy nodes or artificially refine mesh density to sample results at intermediate points on members. Aspect Structure provides continuous-span result sampling natively—no fake nodes, no mesh tricks, no workaround assumptions.

Valid intermediate forces and displacements

Engineers can trust intermediate section forces, moment envelopes and displacements without worrying that mesh approximations have skewed the results. This produces cleaner models and more accurate engineering decisions.

Comprehensive reporting without extra work

Aspect Structure streamlines report generation by maintaining full-resolution data along structural members, eliminating errors and saving hours of manual post-processing.



Seamless integration with Octave's engineering ecosystem

Built for connected engineering

Aspect Structure is interoperable with Octave's flagship design tools, including:

- Forte 3DWorx (formerly CADWorx)
- Forte 3D (Smart 3D)
- Octave's Aspect analysis solutions

This ecosystem allows engineering teams to move fluidly from design to analysis to documentation with minimal handoffs and maximum data integrity.

No added integration costs

Unlike other platforms that charge extra for interoperability modules, connectors or middleware, Aspect Structure delivers this interoperability out-of-the-box, reducing IT and software acquisition costs.

Unified digital workflows

A connected environment ensures:

- Consistent model fidelity
- Reduced data duplication
- Consistent data integrity
- Fewer opportunities for project errors
- A fully traceable digital thread across project phases



Why Aspect Structure outperforms other market solutions

The competitive difference

Aspect Structure stands out through:

- Academic-grade solver precision and verification
- All codes and standards included—no modular fees
- Automated wind and roof loading workflows (per internal product strengths)
- Continuous-span results without artificial meshing
- Cost-free integration across Octave's design suite

We don't just make claims... *We make it happen.*

Organizations like Southern Nuclear show dramatic reductions in time, rework and manual effort, validating Aspect Structure's productivity and reliability benefits.

Check out the stats and view the [full case study here](#).

The bottom-line

With Aspect Structure, engineering teams gain:

- Higher accuracy through academically verified solvers
- Lower total cost of ownership via all-inclusive licensing
- Greater efficiency from automated loading and continuous-span results
- Better interoperability enabling digital continuity
- Faster project delivery across complex structures

Next steps

Ready to get started with Aspect Structure?

Organizations can begin by:

- Scheduling a live demo
- Evaluating workflow interoperability
- Reviewing licensing options
- Planning a migration from existing tools

Contact Us

About Octave

eBook

Octave provides enterprise software that helps organizations design, build, operate and protect critical industrial and infrastructure assets. Octave supports decisions across the full asset lifecycle where performance, safety and reliability matter and failure is not an option. Octave connects engineering, operational and safety workflows, enabling customers to convert complex operational data into decisions that improve performance, resilience and incident response across real-world environments. Octave has more than 7,000 employees in 45 countries. Learn more at octave.com and follow us on [LinkedIn](#).

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