BIMWERX FEA offers GenFEA, SolidFEA, and Wind CFD. GenFEA is an AI-driven structural analysis and design solution, SolidFEA is a multiphysics solid finite element analysis tool, and Wind CFD is a CFD-powered wind analysis software.

GenFEA is an AI-driven structural analysis and design solution with powerful analysis capabilities and design functions for any design standard. It uses the OOFEM analysis engine.

SolidFEA provides sub-model volumetric analysis of detailed components and connections using a powerful multiphysics solver.

Wind CFD is used for detailed wind load calculation on structural elements using a virtual wind tunnel system. It supports IGS file formats for compatibility with most CAD and BIM software.

Licenses for GenFEA and SolidFEA can be purchased through BIMWERX's CumulusGate Licensing platform, which offers easy single-sign-on and bulk licensing configurations.

You can download and install GenFEA, SolidFEA, and Wind CFD without a credit card. A trial license is required, which can be activated through the CumulusGate cloud-based licensing platform.

GenFEA and SolidFEA each cost NZ$3000 per user per year. Combined, they are NZ$5000 per user per year. Wind CFD is free while in beta, and will be NZ$500 per user per year once officially released.

Bulk licensing discounts may be considered for more than three licenses. Contact us for more details.

BIMWERX FEA uses CumulusGate cloud-based licensing with single sign-on. Licenses are floating and are assigned to users, not devices, allowing use on any device but not simultaneously.

There are several tutorial pages available on the BIMWERX website that provide information on how to use GenFEA.

GenFEA uses the OOFEM analysis engine for its structural analysis capabilities.

Verification examples for GenFEA are available on the BIMWERX website.

Wind CFD offers automatic volumetric mesh generation, smart mesh refinement regions, customizable solver configurations, graphical model and results visualization, and tabular spreadsheet results output. It integrates with GenFEA for automated structural analysis and wind loading simulations.

GenFEA is the first structural analysis and design software to implement Artificial Intelligence. DesignMate, the AI assistant within GenFEA, retrieves and interprets analytical model inputs and results, along with localized design standards based on project location.

GenFEA supports various analysis capabilities including Linear Static, Linear Dynamic, Response Spectrum, Linear Modal, Buckling, Non-Linear Static, Non-Linear Dynamic, P-Delta, and Time-History.

GenFEA features a connected workflow for model development, analysis, design, and reporting in a single environment. It supports international standards and offers features like an

automatic quad mesh generator, combined output visualization, and a C# scripting engine for automation.

GenFEA uses an open XLSX file format for better understanding and control of structural models. It includes powerful 3D modeling tools, multiple file format import options, and a C# scripting engine for model automation.

GenFEA offers a comprehensive library of tutorials and training accessible through the software's Welcome Screen. The training includes videos and samples that are free to use and easy to follow.

Based in New Zealand, BIMWERX Limited has led the way in developing cutting-edge software and tools for the Architecture, Engineering, and Construction (AEC) industry since 2015.

At BIMWERX FEA, we proudly present our flagship Structural Analysis and Design software solutions:

GenFEA, SolidFEA and Wind CFD.

GenFEA, our versatile solution for Structural Analysis and Design, offers AI-enhanced design features, swift model creation capabilities, a C# scripting engine for custom functionality, seamless integration with other software via an open XLSX format, and sophisticated 3D modeling tools.

SolidFEA stands as a robust multiphysics solid finite element analysis tool, built upon the reliable Calculix engine. It democratizes access to what was once considered high-end analysis software, making it accessible and user-friendly, without sacrificing quality or depth, at an affordable price point.

Wind CFD is our powerful CFD-powered wind analysis software to help determine wind loads on structures using an automated process (integrates with GenFEA).

Licensing for GenFEA and SolidFEA is streamlined via BIMWERX's CumulusGate Licensing platform. This platform simplifies the process with easy single-sign-on (SSO) through user accounts, enhancing user convenience.

Additionally, we provide options for bulk licensing configurations, complemented by an administrator portal designed for intricate and flexible license management, including assignment and retrieval.Purchasing licenses is also facilitated directly through CumulusGate, offering a seamless transaction experience.

For any additional license enquiries, please do not hesitate to contact us (contact form below)

Download and install GenFEA, SolidFEA and Wind CFD now, no credit card required.

You will require a trial license through our cloud-based licensing platform, CumulusGate.

Follow the in-app instructions to activate your trial license.

GenFEA stands as a testament to our dedication and enthusiasm, born from years of meticulous development and research. This 'passion project' is now set to revolutionize the industry, thanks to its AI-enhanced features that bring state-of-the-art technological advancements to the global market. With GenFEA, we are poised to make a significant impact,

offering groundbreaking solutions that are ready to meet the challenges and demands of the international AEC landscape.

Structural engineering software has long been characterized by its steep price tags, steep learning curves, and a noticeable lag in integrating modern technological advancements.

These barriers not only restrict access for emerging professionals and firms but also stifle innovation by clinging to outdated methodologies and interfaces.

The cost of acquiring licenses often runs into hundreds of thousands of dollars, while mastering these complex tools can consume significant time and resources.

Furthermore, many existing solutions are slow to adopt the latest in AI and data analytics, leaving a gap between the potential of current technology and the practical tools available to Engineers.

GenFEA aims to disrupt this status quo. By leveraging the latest in artificial intelligence, offering an intuitive user experience, and ensuring affordability, GenFEA is dedicated to making advanced structural analysis and design tools accessible, user-friendly, and in step with the cutting-edge technologies that define our era.

DesignMate is your Structural Engineering assistant within GenFEA, capable of retrieving and interpreting analytical model inputs and results, along with localised design standards and requirements based on project location.

Experience a cutting edge technological breakthrough with GenFEA and how we implement Artificial Intelligence to help deliver better results, faster.

AI won't supplant Structural Engineers, much as Revit didn't supplant Architects. Instead, it will establish a divide in capabilities between those who embrace it and those who do not.

Experience the first AI-powered Structural Engineering Design software in the world!

DesignMate is capable of performing design calculations based on your relevant design standards.

Create unlimited Design templates, and design anything, anywhere.

GenFEA uses an open XLSX file format, making it easier to understand and control structural models. Powerful and efficient built-in 3D modelling tools, and multiple file format import options means faster and easier model development.

Our built-in C# scripting engine allows for direct GenFEA API access and model automation, even with custom UI capabilities to help improve your efficiency.

Ask DesignMate to generate GenFEA scripts for you.

GenFEA provides an impressive feature list, including: Spreadsheet (open) format for project- and database files, Powerful 3D modelling environment, Smart model definition tools for faster modelling, Dynamic ribbon menu items, Automatic quad mesh generator for shell elements, Automatic construction and deconstruction of discretized models, Export to Wind CFD for wind load calculations, C# scripting engine for automation, supporting custom input dialogs, Section properties calculator (any section shape), Comprehensive analysis capabilities, AI-driven

model generator support, AI-driven design workspace, Math script environment for manual design template development (integrated and linked to model and results), Report generator.

A comprehensive and ever-growing library of tutorials and training is directly accessible through the GenFEA software Welcome Screen. Our training videos and samples are free to use, and easy to follow.

GenFEA software also provides an in-application 'Assistant' to guide you through the GenFEA project setup, analysis, and design workflows.

SolidFEA is our innovative solid finite element analysis tool, designed to make advanced structural engineering design both accessible and affordable. Powered by the Calculix engine, it offers detailed sub-model analysis with lower cost and hardware requirements than competitors like Abaqus. Ideal for complex engineering challenges, including steel connections and bridge engineering, SolidFEA democratizes specialty software with ease of use and IFC file format compatibility, complementing our GenFEA software for comprehensive structural analysis.

SolidFEA marks a transformative step in structural engineering design, bridging the gap that has long existed due to the prohibitive costs, complex learning curves, and high-end computing requirements associated with solid finite element analysis (FEA).

Historically, these barriers have confined the use of detailed FEA to well-resourced firms, forcing smaller practices to rely on traditional hand calculations and simplified models. While essential for basic compliance and initial designs, these methods lack the comprehensive insights that come from detailed, real-world modeling.By leveraging the powerful Calculix engine, SolidFEA delivers advanced volumetric finite element analysis capabilities at a fraction of the cost and hardware requirements of leading competitors like Abaqus.

Designed for ease of use, it supports IFC file format imports, making it a seamless addition to engineering workflows. SolidFEA is specifically tailored to enhance our existing GenFEA suite, offering detailed insights into complex structural challenges such as steel connections, bridge engineering, moving loads, and contact elements.Our aim with SolidFEA is to democratize access to high-level structural analysis software, making it an indispensable tool for a broader range of engineering projects.

This initiative not only expands the scope of design exploration and optimization but also serves as an essential sanity check against traditional calculation methods. SolidFEA empowers engineers to achieve a deeper understanding of structural behaviors, making sophisticated analysis a standard practice accessible to all.

SolidFEA revolutionizes structural engineering by democratizing advanced finite element analysis, making it accessible, affordable, and indispensable for engineers seeking to push the boundaries of design and innovation. Capabilities include: Automatic volumetric mesh, generation, IFC format model import, Linear and Non-Linear geometry engine, Time-History Analysis, Amplitude Loading, Staged Loading, Steel Connectors (Welds and Bolts), Contact Elements, GenFEA shared material library.

Import IFC 3D model geometry directly from Autodesk Revit, Autodesk Advance Steel, or Tekla Structures.

Create welds and bolted connections between steel components and contact elements to simulate real-world scenarios.

Automated volumetric mesher with second order and mid-node meshing capabilities for faster and reliable output.

BIMWERX Wind CFD is our computational fuild dynamics modules, used to help determine resulting wind pressures on structures. Wind CFD can function as a stand-alone product, or integrated with GenFEA for bi-directional interoperability and automated wind load calculations.

Wind CFD is easy to use, and works with IGS file formats, making it widely compatible with most modern CAD & BIM software packages.

Introducing Wind CFD, the cutting-edge application designed to assist in structural engineering model development. Leveraging the robust capabilities of SU2 (CFD Engine), Wind CFD offers an innovative virtual wind tunnel and farfield sphere approach for accurate calculation of wind pressures on buildings. This tool supports model imports from IGS formats, ensuring seamless integration into your existing design workflow.

Wind CFD simplifies complex simulations with its automatic meshing feature, which includes customizable options for mesh refinement areas and size control, tailored to meet the specific needs of each project. With an array of adjustable parameters including wind velocity, altitude, and solver types, our software allows for in-depth customization of CFD settings to suit a variety of environmental conditions. Results are not only visualized through intuitive graphical outputs but are also available in detailed spreadsheets, thanks to our integrated spreadsheet components. For enhanced workflow automation, Wind CFD seamlessly integrates with our Structural FEA product, GenFEA, facilitating automated structural analysis and wind loading simulations. Discover the efficiency and precision Wind CFD brings to your projects, transforming theoretical models into actionable insights with ease and accuracy.

Wind CFD provides 2 approaches to wind simulation problems: Virtual Wind Tunnel and Spherical farfield setup.

Other features include: Automatic volumetric mesh generation, Smart mesh refinement regions, Custom solver configurations, Graphical model and results visualisation, Tabular spreadsheet results output, Integration with GenFEA.