



Prota Software Products

New Features by Product Versions

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Table of Contents

Welcome.....	4
New Features by Product Versions.....	5
General	5
Physical Modeling	5
Loading System	7
Automatic Analytical Modeling.....	7
Analysis Methods.....	8
Analysis Post-Processor	8
Seismic Analysis and Design.....	9
Existing Building Assessment and Retrofitting	9
Reinforced Concrete Design	10
Reinforced Concrete Detail Drawings	11
Steel Design	11
Steel Connections and Detail Drawings	12
Composite Design	13
Seismic Isolation	13
Component Design and Detailing Independent of Building.....	14
Analysis and Design of Foundations.....	14
Documentation.....	14
BIM Integration, Coordination and Collaboration	15
Loading and Wind Codes	15
Reinforced Concrete and Steel Design Codes.....	16
Composite Design Codes	16
Prestressed Design Codes.....	16
Seismic Codes	16
Thank You	17

Welcome

Thank you for choosing Prota as your technology partner.

ProtaStructure Suite is an engineering solution with high technical content, including powerful features that put you ahead of your competitors. ProtaStructure is actively developed, and new features are constantly introduced with each new version. Being able to follow these features is essential for you to get the most out of the new tools in the software. For this purpose, we have compiled this document comparing the new features between product versions.

This document contains only new features without focusing on all other features shared by all versions. In a sense, it also keeps a comparative history of the features added in each version.

We hope you find it helpful.

Sincerely,

Prota Software Team

New Features by Product Versions

General	2018	2019	2021	2022	2024
BIM coordination and communication with other disciplines using SAF Import and Export				+	+
Imperial unit system in modeling, analysis, design, and detail drawings				+	+
Seamless transition between unit systems without repeated analysis (except for A2 report)				+	+
64-bit Architecture and advanced new technology platform			+	+	+
Modern interface with smoother user experience: Ribbon and Floatable Windows			+	+	+
3-D Reinforcement Window			+	+	+
Command-Line and Command Search Features			+	+	+
Search functionality in the Structure Tree			+	+	+
Selection-sensitive and context-sensitive ribbon tabs			+	+	+
Customizable modern interface including dark and light color themes			+	+	+
Multi-language support in UI and design reports (Turkish, English, and other supported languages)			+	+	+
Easy learning with in-product detailed tips			+	+	+
Welcome page for instant access to training resources, news, and software updates			+	+	+
New settings system combined in one interface (with search feature)			+	+	+

Physical Modeling	2018	2019	2021	2022	2024
Fast group member modeling and editing with Frame Groups -2024-					+
Copying and Mirroring steel members -2024-					+
Generation of steel members to other storeys and improvements -2024-					+
More flexible modeling with New Frame Types -2024-					+
Practical slab relative elevation modeling without plane definitions -2024-					+
Merging of identical blocks in the same project with improved Save As function -2024-					+
New Linear View in 3D for easy connectivity and analysis wire review -2024-					+
Composite frame layouts with new Primary and Secondary Composite Beams -2024-					+
Modeling Composite Slabs on top of primary and secondary composite beams -2024-					+
Foundation Tie Beam modeling -2024-					+
Free modeling with linear , arc , and arch-shaped frame members				+	+
Modeling of parametric steel domes				+	+
New slab insertion method: Pick Slab Edge				+	+
Extended library for cold-formed and hot-rolled steel profiles				+	+
Splitting and joining beams and frame members				+	+
Dynamic Selection Filter for interactively narrowing active selection set				+	+
Showing/Hiding only the selected members				+	+
Reverting to previous selection set				+	+
New 2D/3D Measure tool (with enhanced snap options)				+	+
Continuous dynamic dimensioning of axes during modeling				+	+
Exploding truss members into free loose frames				+	+
Displaying frame analytical wire with the physical model				+	+
Assigning supports to beam and frame end and their visualization				+	+

Physical Modeling	2018	2019	2021	2022	2024
Assigning splice definitions to multiple selected frame members				+	+
Inserting new intermediate storey levels without shifting existing storeys				+	+
Automatic insertion of multiple frame members between two members				+	+
Steel profile and material information next to member labels in structure tree				+	+
Inserting Purlins and Claddings on frame members				+	+
Different purlin profiles at truss top and bottom chords				+	+
Ability to merge basement wall panels for a single section design.				+	+
Specifying shearwalls as supports to purlins				+	+
Improved Reference Drawing Manager			+	+	+
New axis-independent free frame members			+	+	+
Create and save custom trusses with Truss Editor (or import trusses from DXF files)			+	+	+
Convert free frame members to trusses			+	+	+
Ability to edit multiple trusses at the same time			+	+	+
New options to connect the truss bottom chord perpendicular to the supporting column			+	+	+
Defining the sloping truss top chords by specifying percentile slope value			+	+	+
Ability to invert trusses			+	+	+
Specify different heel heights for trusses with curved top chords			+	+	+
Ability to insert purlins on trusses with different numbers of joints			+	+	+
Ability to insert purlins on top or bottom chords of trusses			+	+	+
Ability to define a new truss type with inclined and parallel top and bottom chords			+	+	+
Automatic splitting of diagonal elements in trusses (for connection design)			+	+	+
Automatic deletion of the first and last verticals in the trusses			+	+	+
The new Cladding element for easy load application on purlin and girt systems			+	+	+
Easier modeling of transfer columns and shearwalls with automatic rigid links			+	+	+
Extension of column top ends to selected members			+	+	+
Adjustment of the section angle for steel beams and frame members			+	+	+
Automatic batch insertion of ribbed and waffle slabs in all enclosed regions			+	+	+
Automatic merging and splitting of individual shearwalls to create corewall assemblies			+	+	+
Creating 2D frame views from axes			+	+	+
Uninterrupted pass-through beams over columns and other beams			+	+	+
Inserting multiple openings in shearwalls			+	+	+
Inserting multiple openings in infill walls			+	+	+
Defining partial infill walls			+	+	+
Inserting infill walls with two points			+	+	+
Merging different models in a single project for common building analysis and design			+	+	+
Inserting multiple braces in one go between columns, beams, and trusses			+	+	+
Inserting multiple braces in top and bottom chords of trusses			+	+	+
Modeling steel trusses, purlins, girts, braces and sag rod members		+	+	+	+
Modeling of Wall Coupling Beams		+	+	+	+
Modeling of Basement Walls		+	+	+	+
Graphical display of columns spanning more than one story on mezzanine plans		+	+	+	+
Specifying column/beam section anchored edges		+	+	+	+

Physical Modeling	2018	2019	2021	2022	2024
Flexible modeling with Dynamic Input System		+	+	+	+
Polygonal slab openings		+	+	+	+
Rectangular, circular and polygonal slab drop members		+	+	+	+

Loading System	2018	2019	2021	2022	2024
Importing column/wall point loads from Excel -2024-					+
New and Flexible Load Editor for all element loadings				+	+
3-D visualization and examination of all loads applied to the elements in the physical model				+	+
Apply member loads in any local or global direction at any load case				+	+
Apply point and distributed loads on truss nodes or members				+	+
Apply loads on curved or linear frame members in any local or global direction at any load case				+	+
Create any number of user-defined horizontal and vertical load cases and assign loads to them				+	+
Consider Live Load Participation and Live Load Reduction in user-defined vertical load cases				+	+
Automatic static and dynamic soil loads on shearwalls (soil profile, water table, surcharge)				+	+
Flexible and selective copying of assigned loads between members				+	+
Ability to apply loads on polyline corewalls before or after merging				+	+
Calculation of detailed load profiles of brick wall loads				+	+
Automatic adjustment of brick wall heights to story height				+	+
Automatic transfer of ribbed/waffle slab loads at all times in the building analysis				+	+
Automatic calculation of snow loads (not automatically applied to members)				+	+
Snow, rain, and roof Live Load cases			+	+	+
New user interface for selecting wind loading codes			+	+	+
Automatic calculation of ASCE07 compliant wind loads and creation of load cases (at floor levels)			+	+	+
Automatic calculation and application of wind loads at floor levels (excluding roof wind loads)		+	+	+	+
Automated load decomposition by Yield Lines (Beam-Slab Systems Only)	+	+	+	+	+
Automated FE load decomposition (before or during building analysis)	+	+	+	+	+
Gradient and homogeneous temperature difference loading	+	+	+	+	+
Automated generation of load cases and combinations to selected design and seismic codes	+	+	+	+	+

Automatic Analytical Modeling	2018	2019	2021	2022	2024
Assigning elevation differences to slabs and considering them in analysis without the need for plane definitions -2024-					+
Ribbed/waffle slabs are always automatically included in the analysis model				+	+
Automated compatible FE meshing of beams completely inside slab boundaries				+	+
Automated compatible FE meshing of frame members and load decomposition onto them				+	+
Compatible mesh generation between shearwalls and beams at different stories having nonzero Del-Z values			+	+	+
Compatible mesh between shearwalls and other members connecting at the middle wall region			+	+	+
Compatible mesh between shearwalls spanning more than one story and other members at their middle			+	+	+
Automated use of shell model for corewalls			+	+	+

Automatic Analytical Modeling

	2018	2019	2021	2022	2024
Internal force diagrams for rectangular and polyline walls in analysis post-processor			+	+	+
Automated meshing slabs of with the entire building and considering them in the analysis for load decomposition and design		+	+	+	+
Semi-rigid (flexible) diaphragm options		+	+	+	+
Automated creation of a world-class, state-of-the-art analytical model	+	+	+	+	+
Automated rigid zones and asymmetrical end releases	+	+	+	+	+
FE Shell modeling of shearwalls	+	+	+	+	+
Mid-pier modeling of shearwalls for faster and memory-effective analysis	+	+	+	+	+
Automated cropping of column section outlines from the FE mesh for economical floor and raft foundation design	+	+	+	+	+

Analysis Methods

	2018	2019	2021	2022	2024
Soil-Structure Interaction in a single analytical run (Structural analysis on elastic foundation)				+	+
Simultaneous management of building and FE floor/foundation analyses by new Analysis Manager				+	+
Automated Section Cut (Group Sum) result collection for rectangular walls and corewalls			+	+	+
Vertical and lateral static analysis	+	+	+	+	+
Earthquake loads with Equivalent Static Load Analysis	+	+	+	+	+
Earthquake loads with Response Spectrum Analysis	+	+	+	+	+
Eigenvalue Analysis	+	+	+	+	+
Gradient and homogeneous temperature load analysis	+	+	+	+	+
Construction Stage Analysis	+	+	+	+	+
P-Delta analysis	+	+	+	+	+
Analysis of slabs with analytical methods	+	+	+	+	+
Finite element analysis of slabs under gravity-only or all combinations	+	+	+	+	+
FE Load chase-down using subframe floor analysis and merging results with building analysis results	+	+	+	+	+

Analysis Post-Processor

	2018	2019	2021	2022	2024
Out-of-plane shear contours (V13 and V23) -2024-					+
A single integrated post-processor developed for Building and FE Floor/Foundation Analysis Results				+	+
Visualization of slab strip diagrams and stations in 3-D analysis model				+	+
A unique display of internal force diagrams in plan view				+	+
View cube in the analysis post processor				+	+
Display the labels and results only for selected elements in the analysis post-processor			+	+	+
Display of analysis results on the solid physical model			+	+	+
An auxiliary tool that detects and displays connectivity issues between elements in analysis post-processor			+	+	+
Turn on/off model grids in the analytical model display			+	+	+

Seismic Analysis and Design

	2018	2019	2021	2022	2024
Raft foundations and basement storeys considered in overturning checks -2024-					+
Different behavior factors for two orthogonal directions in EQ analysis (Eurocode 8) -2024-					+
Automatic calculation of forces acting on non-structural members				+	+
Automatic calculation of Seismic Joint Spacing				+	+
Enhanced Strong Column - Weak Beam Checks report and visual interrogation				+	+
Enhanced Joint Shear Checks report and Visual Interrogation				+	+
Continuity options for eccentric beam-column joints on plan and elevation for Joint shear check				+	+
Strong Column - Weak Beam Check for steel moment frames				+	+
Strong column and joint shear check accessible during the design for a single column/beam				+	+
Automatic calculation of static and dynamic soil pressures on basement walls				+	+
Optional consideration of cantilever beam reinforcements in joint shear checks				+	+
In-plane integrity check of flexible diaphragm floors			+	+	+
Earthquake load transfer checks in slab-shearwall intersection planes			+	+	+
Overturning moment ratio check for shearwalls at the outer edges of the buildings			+	+	+
Ability to use absolute values or sign of dominant mode for response spectrum analysis (RSA) results			+	+	+
Different behavior factors for two orthogonal directions in EQ analysis			+	+	+
Automated interstorey drift check for columns spanning more than one story			+	+	+
Using cracked and uncracked section modifiers simultaneously in the same analysis run		+	+	+	+
Analysis of structures with basements using a Two-Stage Analysis Method		+	+	+	+
Automatic calculation of vertical earthquake effects		+	+	+	+
Overturning moment ratio checks for shearwall-frame interaction systems		+	+	+	+
Calculation of elastic and design spectra according to code parameters	+	+	+	+	+
Earthquake loads with Equivalent Static Load Analysis	+	+	+	+	+
Earthquake loads with Response Spectrum Analysis	+	+	+	+	+
Eigenvalue Analysis	+	+	+	+	+
Plan and elevation irregularity checks and automatic application of penalties	+	+	+	+	+
Design of ductile and non-ductile members	+	+	+	+	+
Building overturning checks	+	+	+	+	+
Necessity of second-order effects check	+	+	+	+	+
Relative interstorey drift check	+	+	+	+	+

Existing Building Assessment and Retrofitting

	2018	2019	2021	2022	2024
New infrastructure and UI for Existing Building Assessment -2024-					+
Running multiple assessment analyses with different parameters and keeping results simultaneously in the memory -2024-					+
Hierarchical Estimated Reinforcement System (Estimated reinforcements per member, for entire structure, automated usage of estimated reinforcement for members with no rebars, etc.) -2024-					+
Detailed settings for Fiber Section Analysis and OpenSees Integration -2024-					+
Retrofitting beams and columns using CFRP and their assessment				+	+
Review member damage regions by color codes on plan or 3D using the visual interrogation options				+	+
Review member risk status by color codes on plan or 3D using the visual interrogation options				+	+
CFRP quantity take-off for members retrofitted with CFRP wrapping				+	+

New Moment Capacity Reduction Factor for individual members (for insufficient lap splices, for example)				+	+
Single-mode static pushover analysis and assessment			+	+	+
Target displacement calculation for pushover analysis (Performance Point, TBDY2018, FEMA356, EC8)			+	+	+
Nonlinear time-history analysis and member assessment (using OpenSees)			+	+	+
Automatic scaling of selected ground motions to code spectrum			+	+	+
Automatic post-processing of Time-History Analysis results obtained for multiple ground motions			+	+	+
Calculation of nonlinear force-deformation relationship of members with fiber section analysis			+	+	+
Performance-based analyses using the OpenSees Integration			+	+	+
The new Retrofit Wall member type			+	+	+
Dowel design and detail drawings of retrofit walls			+	+	+
Linear elastic building assessment (TBDY 2018)		+	+	+	+
Building risk assessment (TBDY 2018)		+	+	+	+
Retrofitting RC columns with RC Jackets	+	+	+	+	+

Reinforced Concrete Design

	2018	2019	2021	2022	2024
Slab Patch Panels that allow more economical and practical design of raft foundations and flat slabs using Base Reinforcements + Additional Support Bars -2024-					+
Automated end zone and web rebar layout for complex-shaped corewalls -2024-					+
Automated rebar layout for simple and complex-shaped polyline columns -2024-					+
Rapid manual update of end zone and web rebars of corewalls during design -2024-					+
Manual bottom rebar definition in column drops -2024-					+
New enhanced rebar patterns for reinforced concrete beams				+	+
New beam design module and rebar editing interface				+	+
Use of different soil pressures under each column in mat foundation punching check				+	+
New user interface for the design of slabs				+	+
Check-Design option for manually edited column links				+	+
Hanger bars in main girders supporting secondary beams or transfer columns				+	+
Use of same link diameter and spacing in beam span and support region				+	+
Minimum Slab Thickness checks report				+	+
Improved diagrams for internal force and deflection of members		+	+	+	+
RC design of columns, walls and beams	+	+	+	+	+
Punching checks	+	+	+	+	+
Mesh reinforcement design in walls	+	+	+	+	+
Mesh reinforcement design in slabs	+	+	+	+	+
RC design of slab systems	+	+	+	+	+
RC beam design grouping	+	+	+	+	+

Reinforced Concrete Detail Drawings

	2018	2019	2021	2022	2024
Pad footing and pile cap rebar schedule -2024-					+
Display of slab strips on floor plan drawings -2024-					+
Dimensioning of shearwall end zones -2024-					+
Annotation of link labels on column application plan -2024-					+
Unlimited number of characters in rebar labels				+	+
Exporting rebar quantity take-off to Excel				+	+
Using Imperial grade rebar labels in a metric design and detailing workflow				+	+
Display of shearwall openings on floor plan drawings				+	+
Annotation of column labels in beam elevation drawings				+	+
Annotation of member labels in floor plan section drawings				+	+
Ability to preview the RC detail drawings in ProtaStructure before the final production in ProtaDetails			+	+	+
Improved sloping beam rebar elevation drawings			+	+	+
Automatic grouping and standardization of column elevations during detailing across stories			+	+	+
Automatic detail drawings of retrofit walls, including dowel layout (individually or across stories)			+	+	+
Curtailment options for horizontal web bars anchoring into shearwall end zones			+	+	+
Ability to sort beam rebar elevation drawings by axis or floor label			+	+	+
The lapping of column longitudinal reinforcements in the middle column region		+	+	+	+
Special detailing for transitioning the longitudinal bars of columns with different section widths		+	+	+	+
Special detailing for inclined shearwalls and shearwalls with openings		+	+	+	+
Reinforcement details for slanting columns		+	+	+	+
Unlimited UNDO/REDO steps (ProtaDetails)		+	+	+	+
Reinforcement details compliant with seismic codes (Column rebar laps, openings, crossties, sections, etc.)		+	+	+	+
Slab section views with reinforcements		+	+	+	+
Automated RC detail drawings of the building with ProtaDetails	+	+	+	+	+
Automated sheet and drawing management	+	+	+	+	+
Dynamic quantity take-off tables and revision management	+	+	+	+	+
Automated and manual rebar drafting using Intelligent Rebars and tools	+	+	+	+	+
Component design and detailing using Engineering Macro Library (Retaining walls, stairs, corbels, steel facade scaffolds, formworks, retrofit walls, piles etc.)	+	+	+	+	+

Steel Design

	2018	2019	2021	2022	2024
Filtering and multi-selection design in steel design window -2024-					+
Design of Steel Domes				+	+
Batch editing of steel design parameters				+	+
User-defined moment factor (C_b) in steel design				+	+
Automatic Vertical Deflection Checks and user-defined deflection limits in Steel Elements			+	+	+
Transfer of member loads to ProtaSteel by grouping (for standardized connection dimensions)		+	+	+	+
Design of steel columns and beams	+	+	+	+	+
Design of steel trusses, braces, purlins and girts	+	+	+	+	+
Automated design of steel connections	+	+	+	+	+

Steel Connections and Detail Drawings

	2018	2019	2021	2022	2024
New drawing module with Ribbon interface -2024-					+
Knee Connection -2024-					+
Welded Box Profile Connection -2024-					+
RC Column – Truss Seating Connection -2024-					+
Filtering parts with respect to their part prefixes and numbers -2024-					+
Tekla IO plugin compatible with TeklaStructures 2021 -2024-					+
Support for INP Profile Catalog -2024-					+
ProtaSteel: 64-bit Architecture ve modern Ribbon interface				+	+
Macro Gallery categorized for easy access to connection types				+	+
User-defined connection wizard				+	+
New user-defined connection placement option: On Object				+	+
Advanced Setting Systematics: Global, Company and Local Settings				+	+
Dynamic object grouping, filtering, and object selection				+	+
Smart Data Input Fields in connection macro interfaces				+	+
Model transfer to ProtaSteel without the need to analyze				+	+
End Plate Splice Connection				+	+
Shear Key Macro				+	+
Reverse Haunch Macro (In case the beam sits on the column continuously)				+	+
Base Plate Connection Macro for CHS and SHS hollow profiles			+	+	+
Insertion of chequered plates and gratings			+	+	+
Wind Column Connection Macro			+	+	+
Beam to Beam Fixed End Plate Connection			+	+	+
Castellated beams and web openings with stiffeners			+	+	+
2D Fitting Macro			+	+	+
Beam-to-column haunch connection design report			+	+	+
All bracing and truss connection design reports (Bolted and welded gusset plate connections)			+	+	+
Design reports for purlin and girt connections			+	+	+
Splice connection design reports			+	+	+
Apex-haunch connection design report			+	+	+
Quick insertion of stair treads with stringer holes macro			+	+	+
Handrails and handrail connections			+	+	+
New IntelliConnect scenarios (RC-Steel connections, truss-column connections, and simple base plate)			+	+	+
Automated connection detail grouping and annotation in general arrangement drawings			+	+	+
Improved representation of welds in 3D model			+	+	+
Intelligent macro presets that can be paired with different profile types			+	+	+
Auto-Save feature			+	+	+
Display of internal forces transferred from ProtaStructure on the member property dialog			+	+	+
Automatic dimensioning of axes in general arrangement drawings			+	+	+
Automatic annotation of connection details in general arrangement drawings			+	+	+
Annotation of member end releases in general arrangement drawings (Pinned – Fixed)			+	+	+
Automatic transfer of sag rods from ProtaStructure to ProtaSteel			+	+	+

Steel Connections and Detail Drawings

	2018	2019	2021	2022	2024
Ability to Zoom-Fit to Macros and Objects			+	+	+
Automatic label increment for detail objects and sections			+	+	+
Automatic grouping of anchor bolt labels in detail drawing			+	+	+
Insertion of shear studs by entering distance and spacing			+	+	+
Design reports for “Beam-to-beam End Plate”, “Stiffened End Plate”, and “Fin Plate” connections		+	+	+	+
Apex Haunch Connection		+	+	+	+
Apex Truss Connections		+	+	+	+
Truss Seating Connections		+	+	+	+
Embedded Steel Connections		+	+	+	+
Automatic insertion of handrails		+	+	+	+
Steel connection design reports		+	+	+	+
Automated design of bolted and welded connections and their design reports in ProtaSteel	+	+	+	+	+
Automated intelligent design of all connections in a constructable manner with IntelliConnect	+	+	+	+	+
User-Defined Connection creation and saving them in the library for similar joints	+	+	+	+	+
General arrangement drawings	+	+	+	+	+
Powerful clash checks and model auditing tools	+	+	+	+	+
Comprehensive options for part and assembly numbering and revision	+	+	+	+	+
Automated part and assembly drawings	+	+	+	+	+

Composite Design

	2018	2019	2021	2022	2024
Design of composite slabs for construction and final service stages -2024-					+
Detailed parametrical Shear Stud and Metal Deck library -2024-					+
Design of Uniform and Segmented shear stud layout -2024-					+
Construction Stage Analysis considering loads and section properties specific to construction -2024-					+
Service Stage Analysis including final loads and composite section properties -2024-					+
Composite Slab Design Report with step-by-step calculations, formulas and code clauses -2024-					+

Seismic Isolation

	2018	2019	2021	2022	2024
Definition of Friction Pendulum and Lead Rubber Bearing isolator types using the Seismic Isolator Library -2024-					+
Automatic calculation or manual entry of isolator nonlinear properties -2024-					+
Assigning isolators at any position on columns and walls -2024-					+
Using nonlinear properties of seismic isolators in a nonlinear time-history analysis and final design of isolated buildings -2024-					+
Visualization of nonlinear time-history analysis results for each isolator such as force and displacement response history, interstorey drifts, storey accelerations -2024-					+
Export isolator results to Excel with a detailed table -2024-					+
Linear elastic analysis using isolators’ linear elastic properties	+	+	+	+	+

Component Design and Detailing Independent of Building

	2018	2019	2021	2022	2024
Design, visualization and detail drawings of structural formworks and formwork scaffolds				+	+
Retaining walls with no heel base plate (ProtaDetails)				+	+
Improved retaining wall module with Eurocode, US, and TBDY2018 Support (ProtaDetails)			+	+	+
Design, visualization and detail drawings of steel facade scaffolds (ProtaDetails)		+	+	+	+
Hydraulic Calculations Macro (ProtaDetails)		+	+	+	+
Design and detailing of pools (ProtaDetails)		+	+	+	+
Working load calculations of individual piles and pile groups (ProtaDetails)		+	+	+	+
Lateral analysis of piles (ProtaDetails)		+	+	+	+
Automated detail drawings of retrofit walls (through storeys or separately)		+	+	+	+
Design and detailing of corbels (ProtaDetails)	+	+	+	+	+
Design and detailing of stairs (ProtaDetails)	+	+	+	+	+

Analysis and Design of Foundations

	2018	2019	2021	2022	2024
FE analysis and design of stepped foundations and elevator pits -2024-					+
Horizontal soil springs in FE analysis of raft foundations -2024-					+
Column drops at the bottom end of columns to increase punching resistance -2024-					+
Simultaneous management of building and FE floor/foundation analyses by new Analysis Manager				+	+
One integrated post-processor for building and FE Floor/Foundation analysis results				+	+
User-defined side reinforcement for strip footings				+	+
Strip footings equal to foundation beam width				+	+
New pad footing module			+	+	+
New user interface for the batch design of pad footing and pile caps			+	+	+
Insertion of pedestals in pad footings under steel columns			+	+	+
Optional use of top reinforcement in pad footings			+	+	+
Automatic design for thicknesses of pad footings (previously only plan dimensions were designed)			+	+	+
Pad footings, strip footings and strip footing grids	+	+	+	+	+
FE analysis of foundation systems	+	+	+	+	+
FE analysis of raft foundations with or without foundation beams	+	+	+	+	+
Grouping of columns for shared footing design	+	+	+	+	+
Merging different models for shared foundation design	+	+	+	+	+
Automated design of pile caps	+	+	+	+	+
Rapid pile lay out underneath raft foundations (or import from DXF)	+	+	+	+	+

Documentation

	2018	2019	2021	2022	2024
Detailed reports with step-by-step calculations , formulas and code references (pad footings, pile caps, anchorage length calculations, RC beams, steel design, composite design) -2024-					+
Improved strong column and joint shear check reports with intelligent notifications					+
New slab design report with visual tables and smart notifications				+	+
Integrated raft foundation design report combining all design checks and FE contours				+	+
Slab types and minimum slab thickness report				+	+
Detailed loads report listing all the loads applied on the members				+	+

Documentation	2018	2019	2021	2022	2024
Element property assignments report				+	+
Shearwall minimum thickness checks report				+	+
New base reactions report				+	+
Preliminary design summary report for geotechnical calculations			+	+	+
Report windows embedded in the model display			+	+	+
Integrated engineering design reports	+	+	+	+	+
Numbered and ordered report sets for project submission	+	+	+	+	+
Merging external reports with ProtaStructure reports	+	+	+	+	+
Automated table of contents, smart notifications, company logo, QR Code, and much more	+	+	+	+	+

BIM Integration, Coordination and Collaboration	2018	2019	2021	2022	2024
Enhanced IFC Import algorithm and element library -2024-					+
Coordination with other disciplines using SAF export and import				+	+
Export analysis results to Excel in CSV format				+	+
Export building analysis and FE floor/foundation models to SAP2000 simultaneously on the same UI				+	+
Export pad footings and pile caps to Revit				+	+
Export 'Section Cut' definitions of regular and irregular walls to SAP2000			+	+	+
Export 'PIER' definitions of regular and irregular walls to ETABS			+	+	+
Transfer additional diaphragm master joint and EQS story loads to ETABS (normally ETABS calculates itself)			+	+	+
Bi-directional bespoke BIM communication with Autodesk Revit (with Family Matching Feature)			+	+	+
Import Revit truss family instances into ProtaStructure			+	+	+
Import beams and slabs from 2D DXF Drawings			+	+	+
Import entire model from 3D DXF Files			+	+	+
Export model views as 3D PDF			+	+	+
Export model views as poster quality raster images			+	+	+
BIM coordination and collaboration with other disciplines using IFC files	+	+	+	+	+
Data communication and integration with leading BIM platforms	+	+	+	+	+
Import 2D and 3D DXF files and convert CAD objects to structural BIM objects	+	+	+	+	+
Communication of analysis model with other general analysis platforms (SAP2000, ETABS, etc.)	+	+	+	+	+
Communication of fabrication-ready fully connected 3D steel model to other industry-standard platforms	+	+	+	+	+
Export all detail drawings to DXF and DWG	+	+	+	+	+
Export all design reports to Office and PDF formats	+	+	+	+	+

Loading and Wind Codes	2018	2019	2021	2022	2024
IS 875-2015 (Wind Loads to Indian Loading Code) -2024-					+
TS498 - 2021 (Design Loads for Buildings – TR: September 2021 Revision)				+	+
Eurocode 1 (Actions on Structures - Romania, RO)				+	+
NSR-10 (Wind Loads to Colombian Seismic Code Title-B)				+	+
NTE.020 (Wind Loads to Peru Loading Code)				+	+

Eurocode 1 (Actions on Structures – Poland, PL)			+	+	+
DPT 1311-50 (Wind Loads - Thailand)			+	+	+
ASCE07 (Minimum Design Loads for Buildings and Other Structures)		+	+	+	+
MS 1553 (Wind Loads - Malaysia)		+	+	+	+
NSCP 2015 (Wind Loads - Philippines)		+	+	+	+

Reinforced Concrete and Steel Design Codes

	2018	2019	2021	2022	2024
Colombian RC Design Code, NSR10C -2024-					+
Indian RC Design Code, IS456-2000 -2024-					+
Indian Steel Design Code, IS800-2017 -2024-					+
Peru RC Design Code, NTE060 (RC Beams Only)				+	+
Indonesian RC Design Code, SNI (RC Beams Only)				+	+
Philippines RC Design Code, NSCP2015 (RC Beams Only)				+	+
Eurocode 2 (Design of Concrete Structures – Poland, PL)			+	+	+
Eurocode 3 (Design of Steel Structures – Poland, PL)			+	+	+
ACI 318-08 (Building Code Requirements for Structural Concrete)		+	+	+	+
ACI 318-11 (Building Code Requirements for Structural Concrete)		+	+	+	+
ACI 318-14 (Building Code Requirements for Structural Concrete)		+	+	+	+

Composite Design Codes

	2018	2019	2021	2022	2024
Eurocode 4 (Design of Composite Steel and Concrete Structures – Base Code) -2024-					+
AISC 360-16 (Specification for Structural Steel Buildings – US) -2024-					+
TSC 2016 (Turkish Steel Design Code) -2024-					+

Prestressed Design Codes

	2018	2019	2021	2022	2024
Eurocode 2 (Design of Concrete Structures – Base Code) -2024-					+
ACI318-18 and PCI Manual -2024-					+
TS 3233 (Building Code Requirements for Prestressed Concrete) -2024-					+

Seismic Codes

	2018	2019	2021	2022	2024
NSR-10 A (Colombian Seismic Code) -2024-					+
IS 1893-2016 (Indian Seismic Code) -2024-					+
Eurocode 8 EN1998 and P100 (Romania Seismic Code)				+	+
NTE.030 (Peru Seismic Code)				+	+
SNI1726-2019 (Indonesia Seismic Code: 2019 Revision)			+	+	+
DPT 1301/1302-61 (Thailand Seismic Code)			+	+	+
TEC2018 (Specifications for Buildings to be Built in Seismic Zones - TR)		+	+	+	+
UBC97 (Uniform Building Code)		+	+	+	+
IBC 2018 (International Building Code)		+	+	+	+

Thank You

Thank you for choosing the ProtaStructure Suite product family.

At Prota, it is our continual aim to provide you with user-friendly, industry-leading technology for building design and documentation.

Should you have any technical support requests or questions, please do not hesitate to contact us at all times through globalsupport@protasoftware.com or asiasupport@protasoftware.com (Asia Pacific)

Our dedicated online support center is available to help you get the most out of Prota's technology solutions with our responsive technical support team.

The Prota Team

