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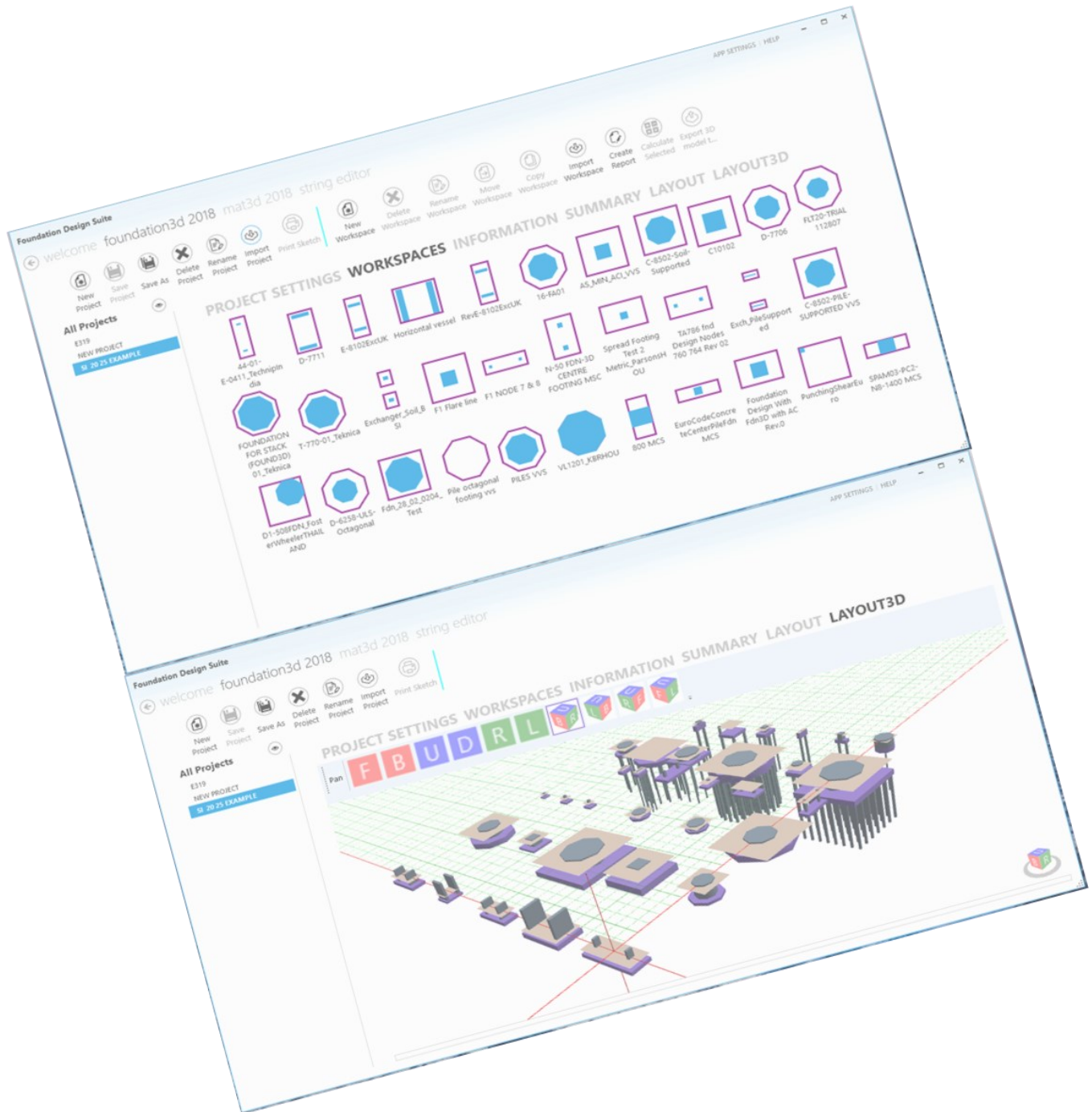
Software for engineers, by engineers

Foundation3D / Mat3D / Shaft3D
Enterprise-enabled Engineering solution

Dimensional Solutions, Inc.

20018 Chateau Bend Dr

Katy, TX 77450

Phone: 281-497-5991

Fax: 281-599-0099

E-mail: sales@dimsoln.com

Contact us today:

Sales: Sales@dimsoln.com

Support: Support@dimsoln.com

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New Features: User Interface

1. Experience Windows 10 & 11 look and feel with touch-screen capability

2. Resize windows to suit various monitor resolutions

3. *Customize* your design type environment *at initial launch* such as input and output units, concrete design code and more

4. *Switch between different products easily* since all products are integrated into one user interface

5. Work on multiple projects easily

6. Enter project technical specifications on the Summary page to quickly view design criteria

7. Group projects by user-defined criteria such as soil-supported vs pile-supported, onsite vs offsite etc.

8. Manage projects and workspaces (*A workspace is equivalent to one foundation*) easily with buttons such as copy, move, rename etc.

9. See *bird's eye view of all the foundations* in a project with foundation centerline coordinates graphically

10. View *foundation conflict warnings* when foundations overlap

11. *View 3D models* of all the workspaces in the selected project

12. Generate *AutoCAD 3D models* of all the workspaces in the selected project

13. Complete *multiple foundation designs with one click* by selecting multiple workspaces

14. Customize settings at various levels - Application, Project and Workspace

15. *Import multiple foundation inputs* all at once

16. Input just existing foundation geometry without completing the design to check its conflict with new foundations around

17. Select "My Projects" to work on from a list of "All Projects"

18. View and locate workspaces displayed as graphical icons in the selected project easily

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New Features: User Interface

19. Use **Workspace Wizard** to create new default workspaces or import data from other third party solutions to generate equipment or non-equipment foundation layouts

20. Design **Irregular–shaped footings** with or without cutouts or holes

21. Use your company specifications for creating workspaces with **default footing and pier geometries**

22**. Copy footing, pier, pile geometries from one source footing** to all other footings in a footing group workspace with one click

23. Manage backup and deleted projects and workspaces efficiently

24. **Create** an **irregular shaped footing** from a **regular shaped footing**

25. Check **anchor-rebar conflict** and avoid costly field rework

26. **Select footings from a group of footings** of a footing group workspace to complete calculations on and to generate reports of

27. Enter a **separation distance criteria** to automatically generate a spread, combined or a mat foundation using the node geometry created by a third-party solution

28. Use **Design Mode in Mat3D** to design a **single mat or a footing group** under a structure's columns. See Mat3D automatically generate spread, combined and mat foundations under a structure's columns with varying loads based on user-defined criteria

29. Create **Multiple Load Combination Sets** each with a specific "Use For" case such as Bearing, Stability, Sliding, Uplift, Concrete Design

30. Complete **Tank Ringwall Foundation Design**

31. Specify **Different Concrete and Reinforcing Steel Parameters** for footings and piers

32. Enter and view soil profile graphically and view all soil layers on one canvas

Note: Some features are product-specific

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New Features—Engineering

1. *Change input units* in a workspace on the fly

2. View foundation design results in different output units on the fly without recalculation

3. Select output display precision

4. Choose to complete design of only the Footing or both Piers and Footing

5. View completed designs of both fixed and sliding footings and piers

6. Perform *uplift calculations* for soil-supported foundations

7. Select piers for which concrete design is desired

8. Select *different rebar sizes for each pier*

9. Apply pile group reduction to tension and shear capacities

10. Perform *enhanced copy/paste operation from/to Microsoft Excel*

11. *Import support reactions* and combinations from other standard *third party software solutions* without any modification to import files

12. View equipment in 2D and 3D views

13. View ultimate bearing pressures and ultimate pile capacity outputs

14. *Define allowable load types* for each load combination so that a different set of allowable increase can be specified for each load combination

15. View *summarized view of the design results* as well as a log that lists failure messages

16. View sketches immediately on calculate

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New Features—Engineering

17. **Customize report** to include/exclude specific sections

18. View concrete design code section references in reports

19. Generate Excel reports of all successfully completed foundation designs with one click

20. Generate **AutoCAD 2D-CAD drawing** of the completed foundation design

21. **Use custom AutoCAD template** files to generate 3D models and 2D CAD drawings

22. **One-click calculate multiple workspaces** and view a summarized result of all pass/fail conditions of each foundation and the governing load combination

23. **Auto generate piers** or load elements in a rectangular pattern at desired spacing from a single pier location

24. Create default workspaces of exchanger, horizontal vessel, vertical vessel and mat foundations using user-specified minimum footing and pier geometry settings

25. Seamlessly **import GT STRUDL** created super structure **node geometry and reactions** via Workspace Wizard

26. Seamlessly **import PV Elite** created equipment geometry and loads via Workspace Wizard

27. Generate **Irregular-shaped footings** supporting piers and cutouts (holes) in a designer user interface easily and quickly and complete foundation design of these footings

28. Consider moment contribution to punching shear

29. Easily copy footing, pier and pile geometries from one source footing to other footings in a footing group workspace saving significant modification time

30. Create a **Consolidated Report** of all the workspaces in Microsoft Excel for easy result comparison

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New Features—Engineering

31. Based on a *user-specified separation distance to combine footings,* view *footings being automatically created as a spread, combined or mat foundation based on the node geometry* imported from third party solutions

32. **View critical load combination** with a count indicating the **number of times the critical load combination governs** among a group of footings in a footing group workspace so that the next course of action is an informed decision

33. Easily create an **irregular-shaped footing** from a **regular-shaped footing** to analyze / design an irregular footing

34. **Import reactions and node geometry** from third party solutions in an **irregular shaped footing workspace**

35. Specify **different concrete parameters for footing and pier** such as concrete compressive strength, unit weight of concrete

36. Specify **different reinforcing steel parameters for footing rebars, pier longitudinal rebars and pier tie rebars** such as yield strength, unit weight of steel and modulus of elasticity

37. Complete a **single mat design in Design Mode** (automatic determination of footing and pier sizes including reinforcement design)

38. Complete a **footing group design in Design Mode** (automatic determination of footing and pier dimensions of all the footings and piers of a structure)

39. Set user specified parameters to optimize footing and pier dimensions in Design Mode

40. **Automatically create spread, combined or mat foundations** under structure supports based on user specified separation distance criteria in Deign Mode

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New Features—Engineering

41. **Easily determine if a single mat is a better option than individual footings** under a structure's supports

42. Selectively **choose different set of load combinations** for Design Mode

43. Consider many what-if scenarios in determining the final foundation layout

44. Instantly switch from Design Mode to Analysis Mode to check if the design works for all load combinations

45. **Eliminate guesswork and labor-intensive effort** of determining initial trial sizes of foundations under each structure's support columns

46. Create **multiple "Load Combination Sets"** - Each with a specific "Use For" purpose such as Bearing, Stability, Sliding, Concrete Design

47. **Clone one or more load combination sets** from an existing load combination set

48. Clone selected load combinations from an existing load combination set to a new load combination set

49. **Complete Tank Ringwall Foundation design** for small and large storage tanks with many user defined parameters such as consider or not consider soil passive and friction resistance in resisting overturning, uplift, hoop tension etc.

50. Complete soil-supported and pile-supported **Strap foundation design**

51. Import support node geometry, reactions, load cases, load combinations, repeat loads from Bentley Systems **Staad anl** file

52. Let Mat3D automatically determine critical load combinations in completing footing design

And many more ...