A Better Workflow for Concrete Structures

ADAPT-BUILDER 2018 enables a new workflow using patented tributary load takedown technology combined with ADAPT’s trusted 3D Finite element solution. Our integrated column and wall design solution uniquely offers design of vertical elements for Tributary, FE, or enveloped loads. Coupled with the industry’s only single-model approach to combined global and single-level analysis and design, Builder helps you save time and effort.

- Quick and simple load takedown using tributaries
- Size structural elements
  - Columns
  - Slabs
  - Transfer elements
  - Foundations
  - Post-tensioning with optimizer
- Wind and seismic forces
- Fully integrated frame action
- Incorporates effects of post-tensioning
- Same model for gravity and lateral analysis, each with own stiffness profile
- Post-tensioned floor systems
- Mild reinforced floor systems
- Dramix® steel fiber design
- Foundations (mat or isolated)
- Beams
- Columns
- Walls

ADAPT-BUILDER is specifically designed for the rapid modeling of concrete structures and gives the option of adding prestressing or post-tensioning to any slab or beam member at any level. Directly import concrete building models from Tekla Structural Designer, ETABS, Revit, or CAD, or use your Builder model to generate a new Revit Structure model.

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Applications and Project Types:
- Conventionally reinforced and/or Post-tensioned slab systems
  - One-way slabs
  - Two-way flat plates and flat slabs
  - Irregular/hybrid systems
  - Waffle, pan joist, and skip joist systems
- Beams and beam frames (parking structures)
- Bonded (grouted) and unbonded post-tensioning
- Dramix® steel fiber reinforced slabs and foundations
- Shallow foundation systems including spread footings, strip footings, grade beams, combined footings, mats, and pier caps
- Investigations, new design, failure studies, and renovations

Key Modeling Capabilities:
- Complete concrete buildings
- Regular or irregular geometry, support configuration, and loading
- Post-tensioning and mild steel at any location within floor and foundation with any user-defined configuration of base reinforcement and steel fibers
- Drop caps, drop panels, slab steps at any location
- Multiple tendon profiles with customizable shape functions
- Revit Structure, CAD, ETABS, and Tekla Structural Designer integration
- Generic sections and/or materials

Key Analysis Features:
- Accurate 3D Finite Element Analysis
- Cracked deflection calculation
- Automatic combination of gravity and lateral loads in floor and foundation designs
- Inclusion of secondary (hyperstatic) effects from post-tensioning in global building response
- Integration of friction and elongation calculations
- Modeling of soil-supported structures
- Optional analysis of full building or individual levels one at a time
- Industry-leading automated meshing algorithm
- Automated load takedown (FEM and geometry-based Tributary loads) for vertical elements
- Wind and Seismic load wizards & user-defined story forces (e.g. wind tunnel loads)
- Column, beam, and wall forces that truly reflect the composite structural behavior of all vertical building and horizontal floor system members
- Integrated column and wall design option with partner software* for FEM loads, tributary loads, or envelope
- Temperature loading & Shrinkage strain loading

Industry-Leading Tendon Modeling
- Spline tendon curvature for more realistic layout and calculations that respect vertical and horizontal profiles
- Model horizontal swerve points at openings
- Editable cgs points, # tendons on plan
- Fixed angle options (90, 45, etc.) for tendon anchorage
- “Glued” tendons to slab edge

New Features in 2018:
- Ribbon-based User Interface
- Advanced wall and slab Meshing options
- Model and Analyze Wall openings
- Bekaert Dramix® Steel Fibers – Model steel fibers with out reinforcement and PT for slab-on-grade design, mat slabs, slab-on-piles and elevated slabs. Allows option to include benefits of nonlinear analysis for strength design. Improves one-way and two-way shear performance and eliminates and displaces need for conventional reinforcement. Controls crack growth and propagation.
- Revit 2018 & 2019 Integration now includes option to export reinforcement and p/t to Revit

Supported Design Codes:
- British-BS8110 (1997)
- Indian IS1343 (2004 reprint)
- Hong Kong CoP (2007, 2013)
- Chinese GB 50010 (2002)
- Brazilian NBR 6118 (2014)
- Singapore Annex to EC2

*ADAPT is a distributor of S-CONCRETE, sold separately