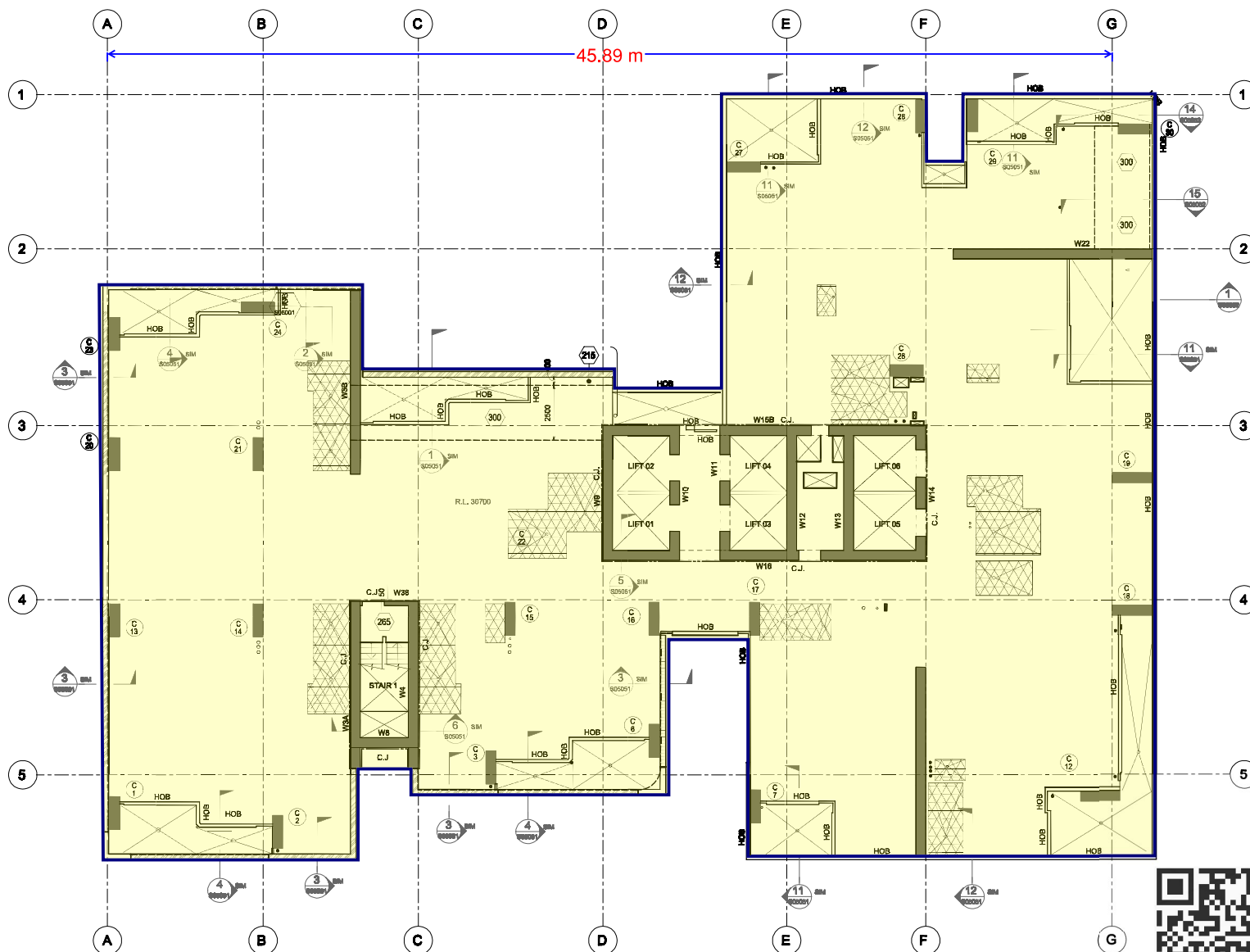




Sample Structure

In this example we will do:

- 1- Column rundown using TribKALC graphical method.
- 2- Size up all of the columns using TribKALC optimisation tool
- 3- Generate calculation report on optimisation
- 4- Export the TribKALC plan to FEAkalc 3D to compare reactions and loads.





Plan Preparation

Add 1 big dimension
on the pdf (calibrated)

Screenshot the plan
to blank A4/A3
sheet to fill in the entire page

Modeling

Import the PDF plan
into TribKALC

Calibrate the plan
in TribKALC

Trace:
1-Slabs
2- Columns
3-Walls
4- Cores

Insert all up load
and number of
storeys

Export Plan
to FEAKalc to compare
FEA analysis with Voronoi

Analyse and
review loads

Review any column using
RKALC column design
tool

Optimise or Size
up Columns

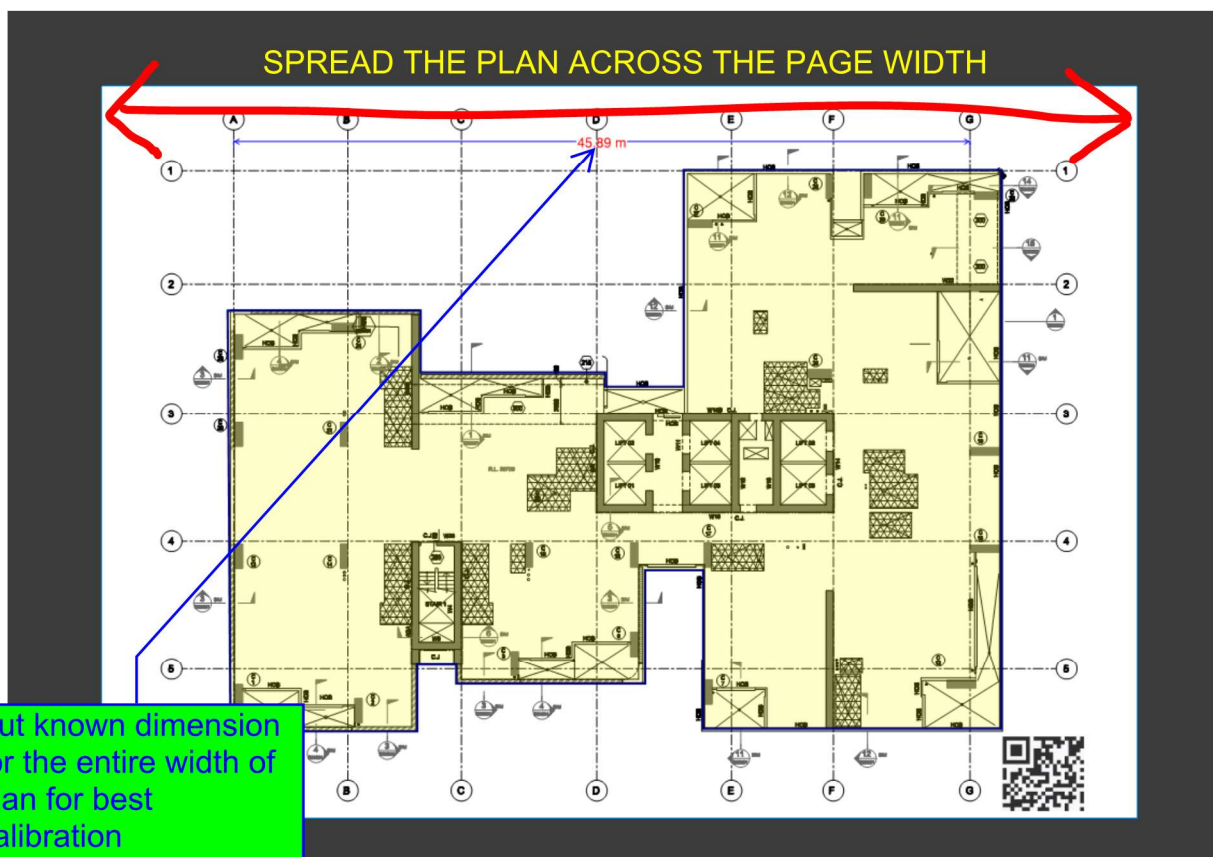
Print Report

END

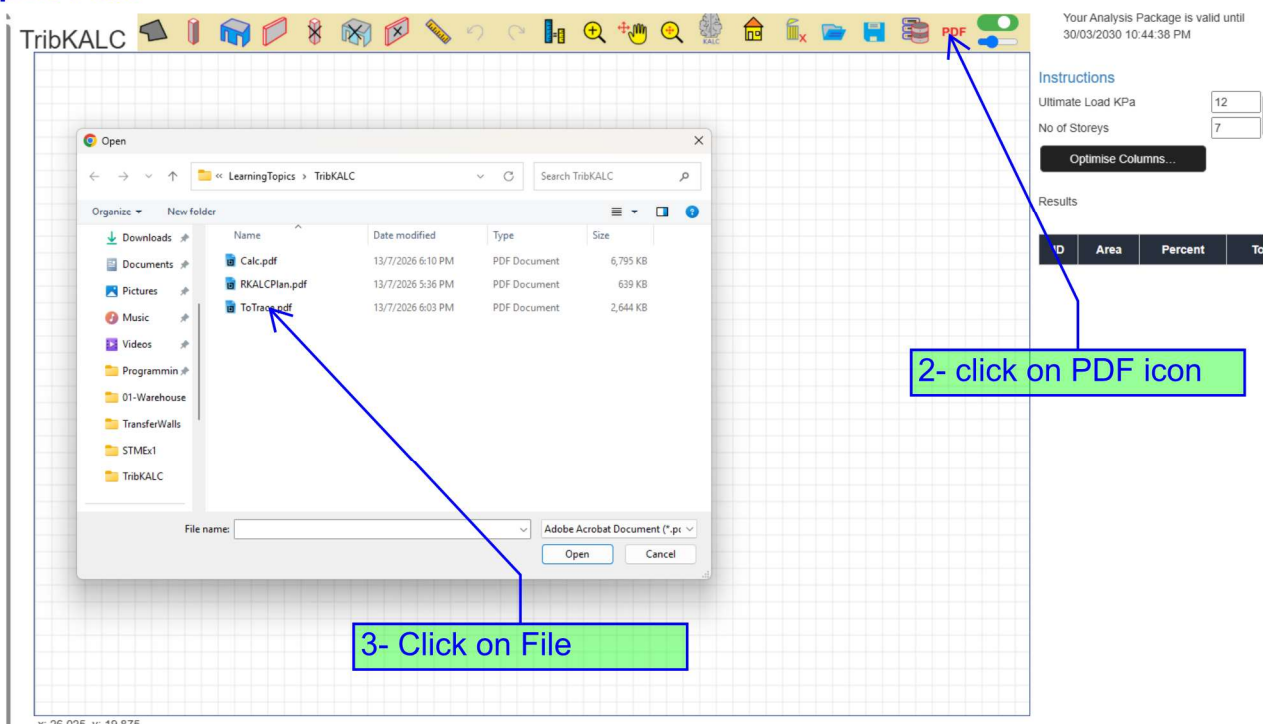
**Typical
Workflow**



Prepare the Plan

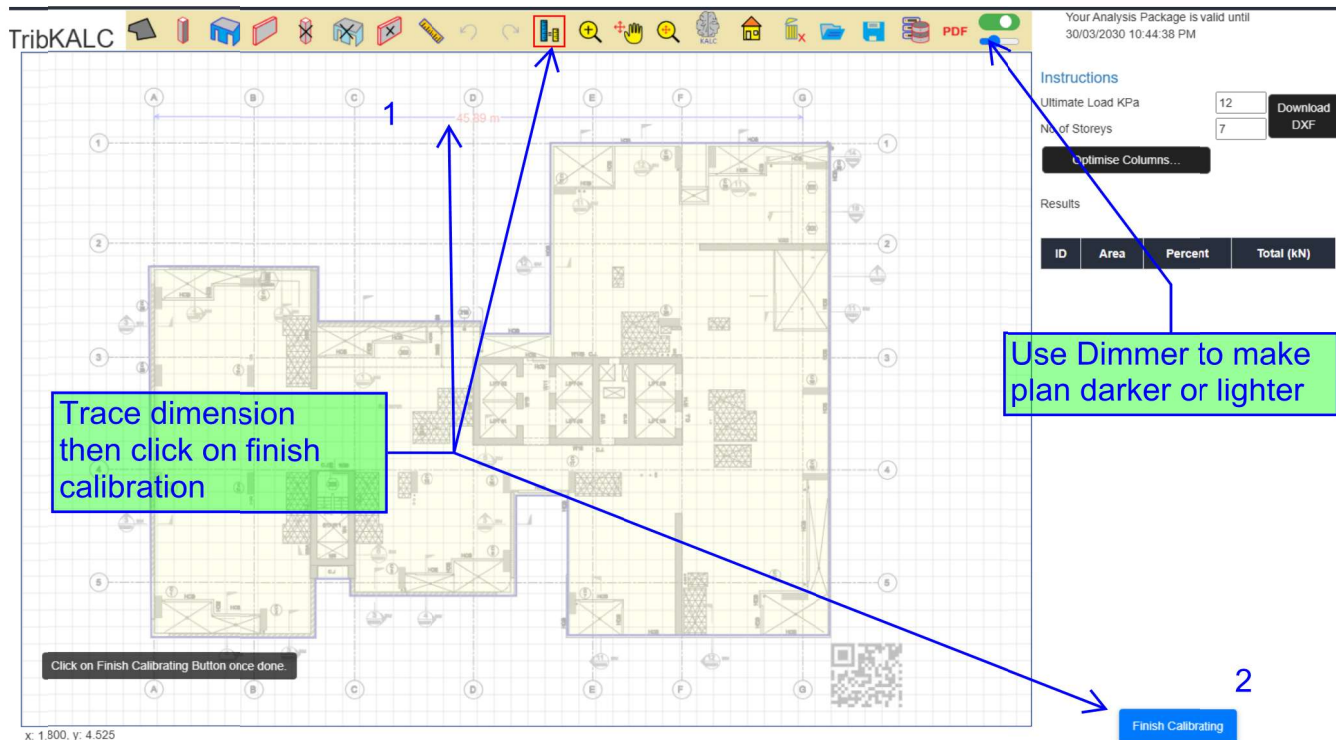


Import Plan





Trace Plan



TribKALC

Your Analysis Package is valid until 30/03/2030 10:44:38 PM

Instructions

Ultimate Load KPa

No. of Storeys

Results

ID	Area	Percent	Total (kN)
----	------	---------	------------

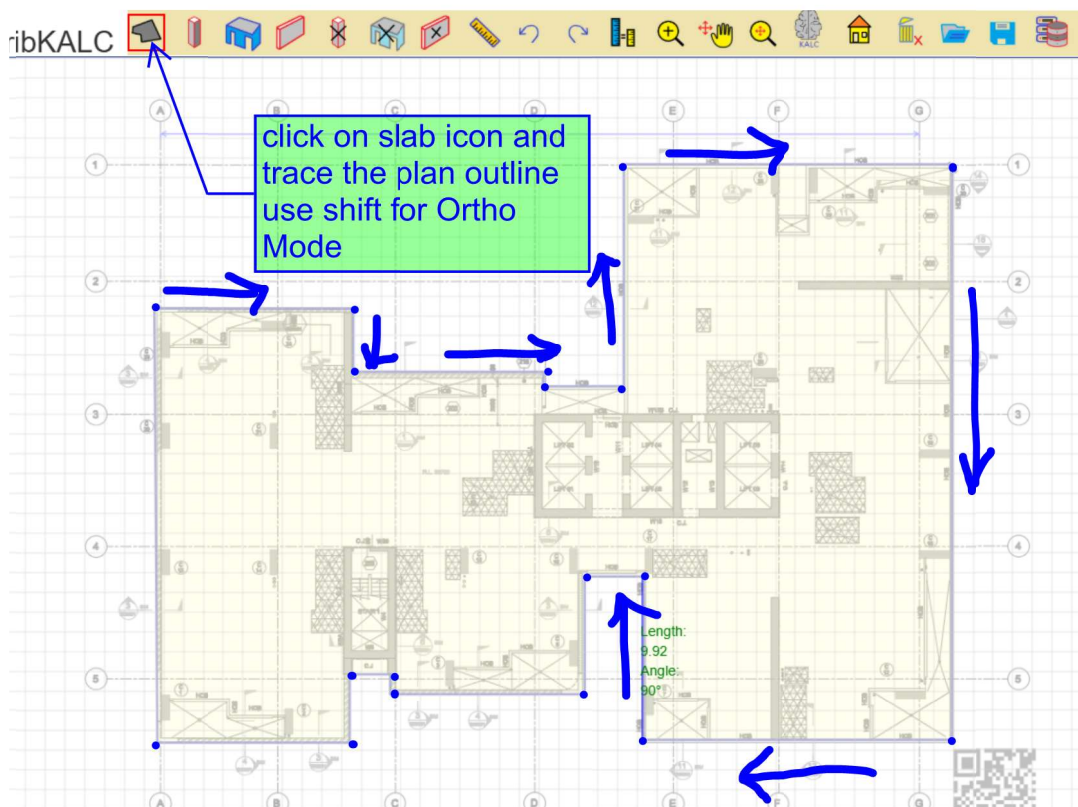
Trace dimension then click on finish calibration

Use Dimmer to make plan darker or lighter

Click on Finish Calibrating Button once done.

Finish Calibrating

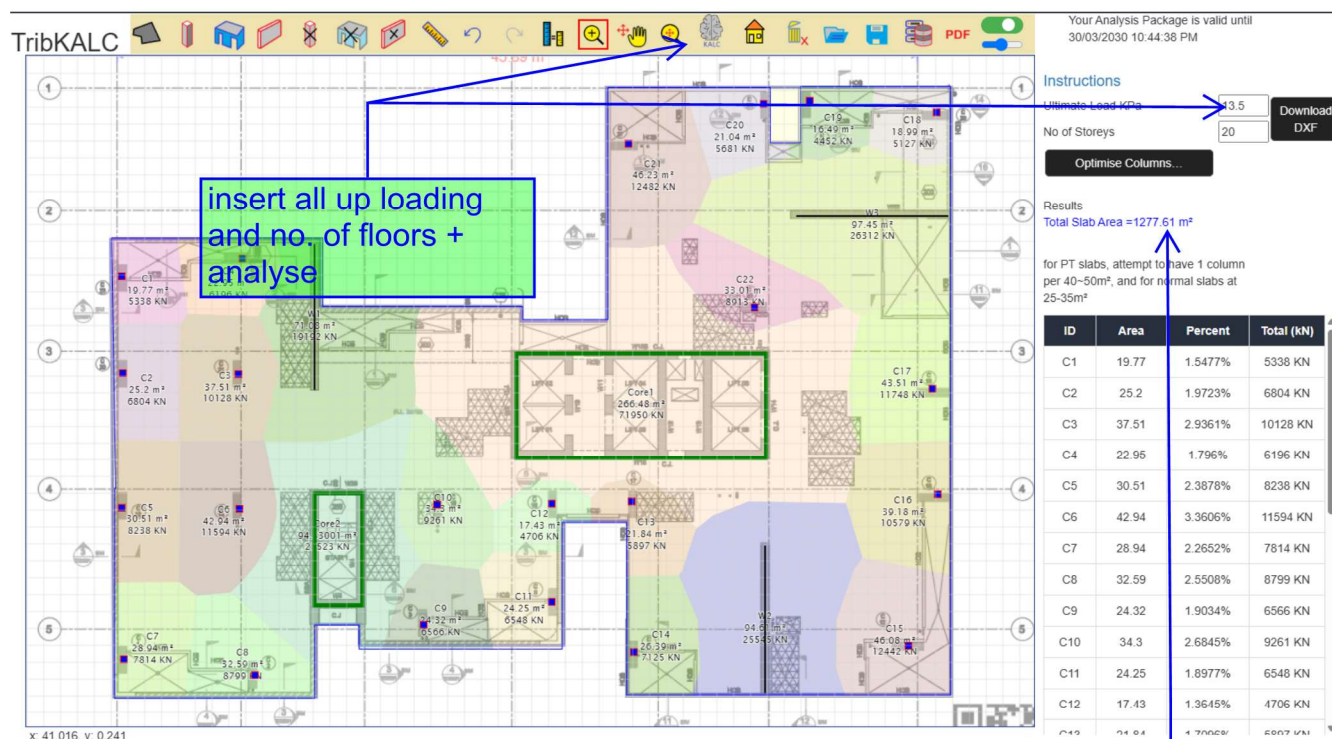
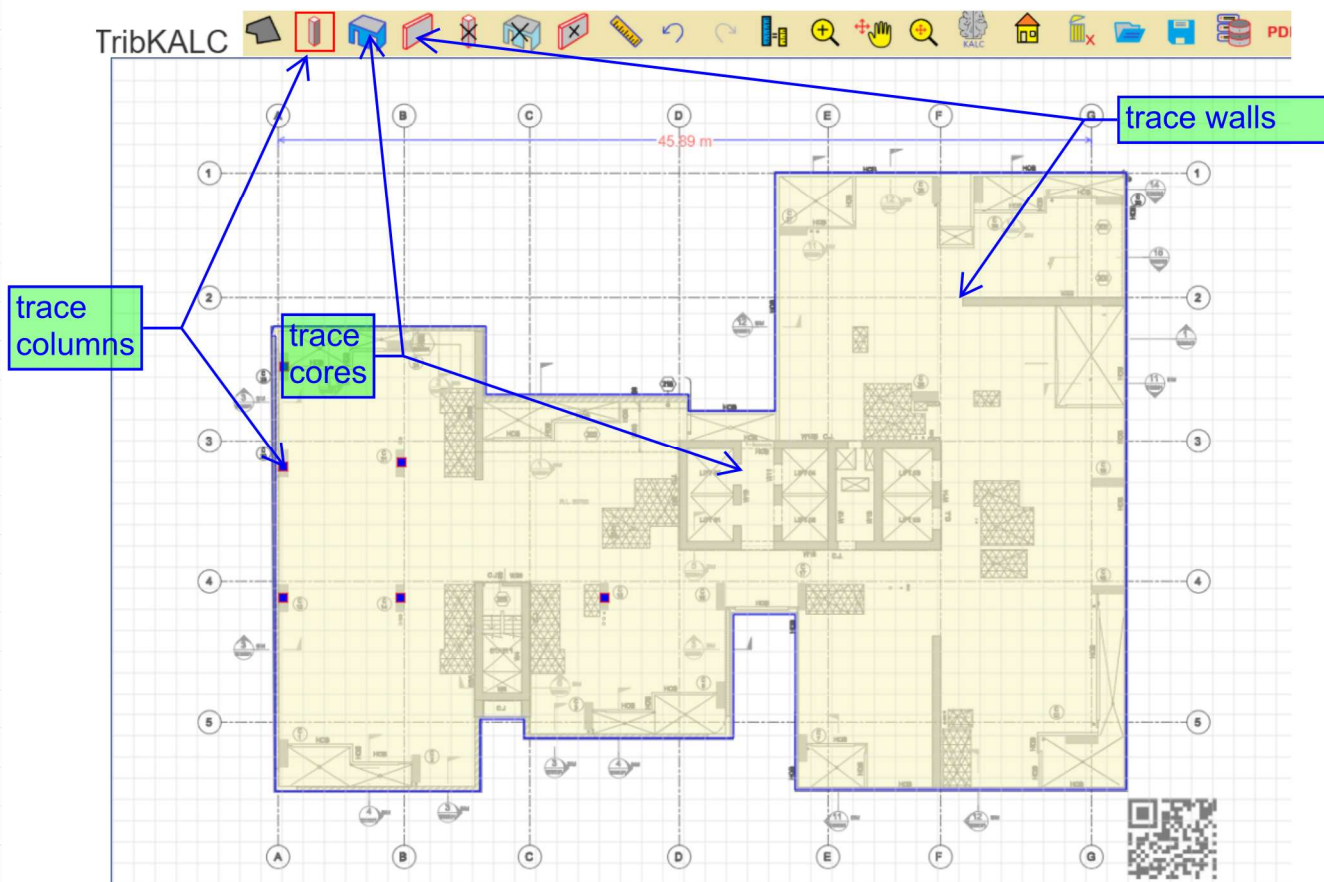
x: 1.900, y: 4.525



tribKALC

click on slab icon and trace the plan outline use shift for Ortho Mode

Length: 9.92
Angle: 90°



Ensure floor area is correct, re-calibrate if required



1- click on
optimiser

2- Nominate
MPa, storey
height, column
type and target
reo %

3-select desired
minimum width
of
column and
click Run

4- Apply and
redraw

5- Generate
Report (next
page)

6- Click on any
column to review
design

Column Optimiser : AS3600-2018

F_c (MPa) 65 Effective Height (mm) 3000 Target reo (%) 1.0

Apply Type To All Rectangular Apply Min Width To All (mm)

Tag	ULS	Type	Min Width	Required Length	Required Dia
C1	5338	Rectangular	300	875	
C2	6804	Rectangular	300	1125	
C3	10128	Rectangular	300	1675	
C4	6196	Rectangular	300	1000	
C5	8238	Rectangular	300	1350	
C6	11594	Rectangular	350	1500	
C7	7814	Rectangular	300	1300	
C8	8799	Rectangular	300	1450	
C9	6566	Rectangular	300	1075	
C10	9261	Rectangular	300	1325	
C11	6548	Rectangular	300	1075	

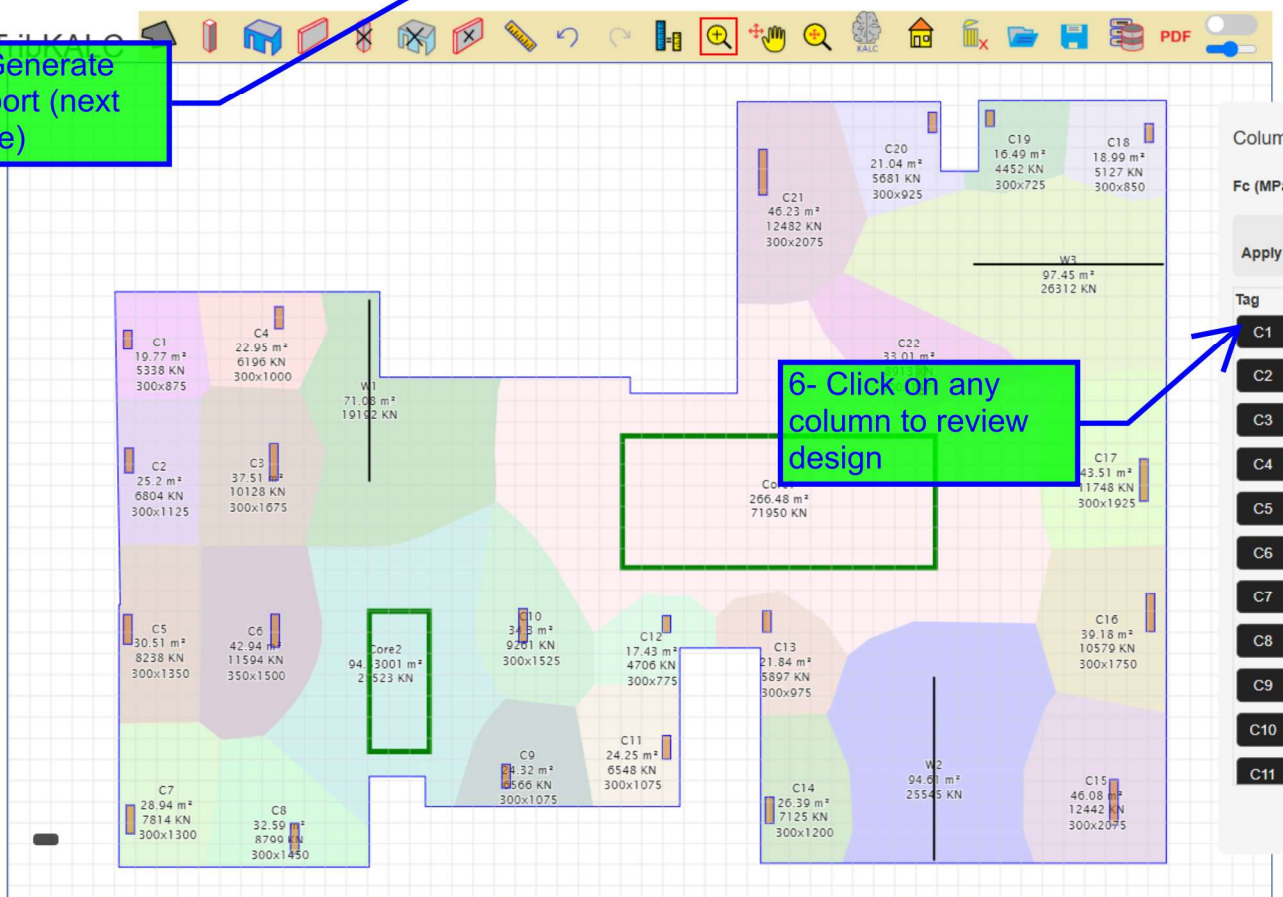
Run optimiser Apply + redraw Print Close

Optimised other dimension

Instructions
Ultimate Load kPa
No of Storeys
Optimise Columns...

Results
Total Slab Area = 1277.61 m²
for PT slabs, attempt to have 1 cr per 40-50m², and for normal slat 25-35m²

ID	Area	Perc
C1	19.77	1.547
C2	25.2	1.972
C3	37.51	2.936
C4	22.95	1.796
C5	30.51	2.387
C6	42.94	3.360
C7	28.94	2.265
C8	32.59	2.550
C9	24.32	1.903
C10	34.3	2.684
C11	24.25	1.897
C12	17.43	1.364
C13	21.84	1.706
C14	26.39	2.065
C15	46.08	3.599
C16	39.18	3.067
C17	43.51	3.399
C18	18.99	1.486
C19	16.49	1.289
C20	21.04	1.646
C21	46.23	3.599
C22	33.01	2.583





C8

8799

by clicking on any
column you will get
column calculation
form

RC Column Interaction Diagrams Tabulated Values Fire Check Confinement Preview Calculations My Columns

Column Calculator is free- Subscribe for the full RKALC Design Pack at [subscription page](#).

Inputs	Weak Axis	Strong Axis	Biaxial
Materials	Key Values	Key Values	Design Loads
f_c (N/mm ²)	Φ Mub 65	Φ Mub 2586	M* Weak = 334
f_y (N/mm ²)	Φ Nub 547	Φ Nub 4430	Φ Muo Weak = 533
f_{ys} (N/mm ²)	Nc 14543	Nc 390142	M* Strong = 653
Geometry (mm)	Φ Mu 258	Φ Mu 1343	Φ Muo Strong = 2495
Column Type	Φ Nuo 14872	Φ Nuo 14872	
Short Dimension	Km 1	Km 1	
Long Dimension	δ b 2.53	δ b 1.02	
Cover to Centre	Φ Nt 1923	Φ Nt 1869	
Effective Height			
Rebar Dia (mm)			
No. Of Bars - Short Dir. (192 mm)			
No. Of Bars - Long Dir. (71 mm)			
Total Reo 40N12 1.04 %			
Design Loads			
M*	334	M*	652
M/BD ²	2.56	M/BD ²	2.58
Utilisation = 84 %		Utilisation = 69 %	
Loads (kN, m)			
DL	5983	DL	5983
LL	1080	LL	1080
Ultimate N*	8799	Ultimate N*	8799
Weak Dir. Moments		Strong Dir. Moments	
Top Moment	132	Top Moment	638
Bot. Moment	-132	Bot. Moment	-638
Calculate	To Cloud	ShareKALC	
RKALC AI	Batch Optimiser		

Adjust reo rebar if
required, but maintain
1% (or whatever %
decided in TribKALC)

RC Column Interaction Diagrams Tabulated Values Fire Check Confinement Preview Calculations My Columns

Column Calculator is free- Subscribe for the full RKALC Design Pack at [subscription page](#).

Inputs	Weak Axis	Strong Axis	Biaxial
Materials	Key Values	Key Values	Design Loads
f_c (N/mm ²)	Φ Mub 65	Φ Mub 2637	M* Weak = 337
f_y (N/mm ²)	Φ Nub 544	Φ Nub 4554	Φ Muo Weak = 531
f_{ys} (N/mm ²)	Nc 14465	Nc 397760	M* Strong = 652
Geometry (mm)	Φ Mu 257	Φ Mu 1330	Φ Muo Strong = 2531
Column Type	Φ Nuo 14838	Φ Nuo 14838	
Short Dimension	Km 1	Km 1	
Long Dimension	δ b 2.55	δ b 1.02	
Cover to Centre	Φ Nt 1869	Φ Nt 1869	
Effective Height			
Rebar Dia (mm)			
No. Of Bars - Short Dir. (192 mm)			
No. Of Bars - Long Dir. (224 mm)			
Total Reo 14N20 1.01 %			
Design Loads			
M*	337	M*	652
M/BD ²	2.58	M/BD ²	2.58
Utilisation = 84 %		Utilisation = 69 %	
Loads (kN, m)			
DL	5983	DL	5983
LL	1080	LL	1080
Ultimate N*	8799	Ultimate N*	8799
Weak Dir. Moments		Strong Dir. Moments	
Top Moment	132	Top Moment	638
Bot. Moment	-132	Bot. Moment	-638
Calculate	To Cloud	ShareKALC	
RKALC AI	Batch Optimiser		

Software will try to put
smallest rebar dia, this can

be changed while maintaining
the reo %

RKALC Software Solutions

TribKALC Column Optimisation Report

Generated: 13/07/2026, 06:06:39 pm

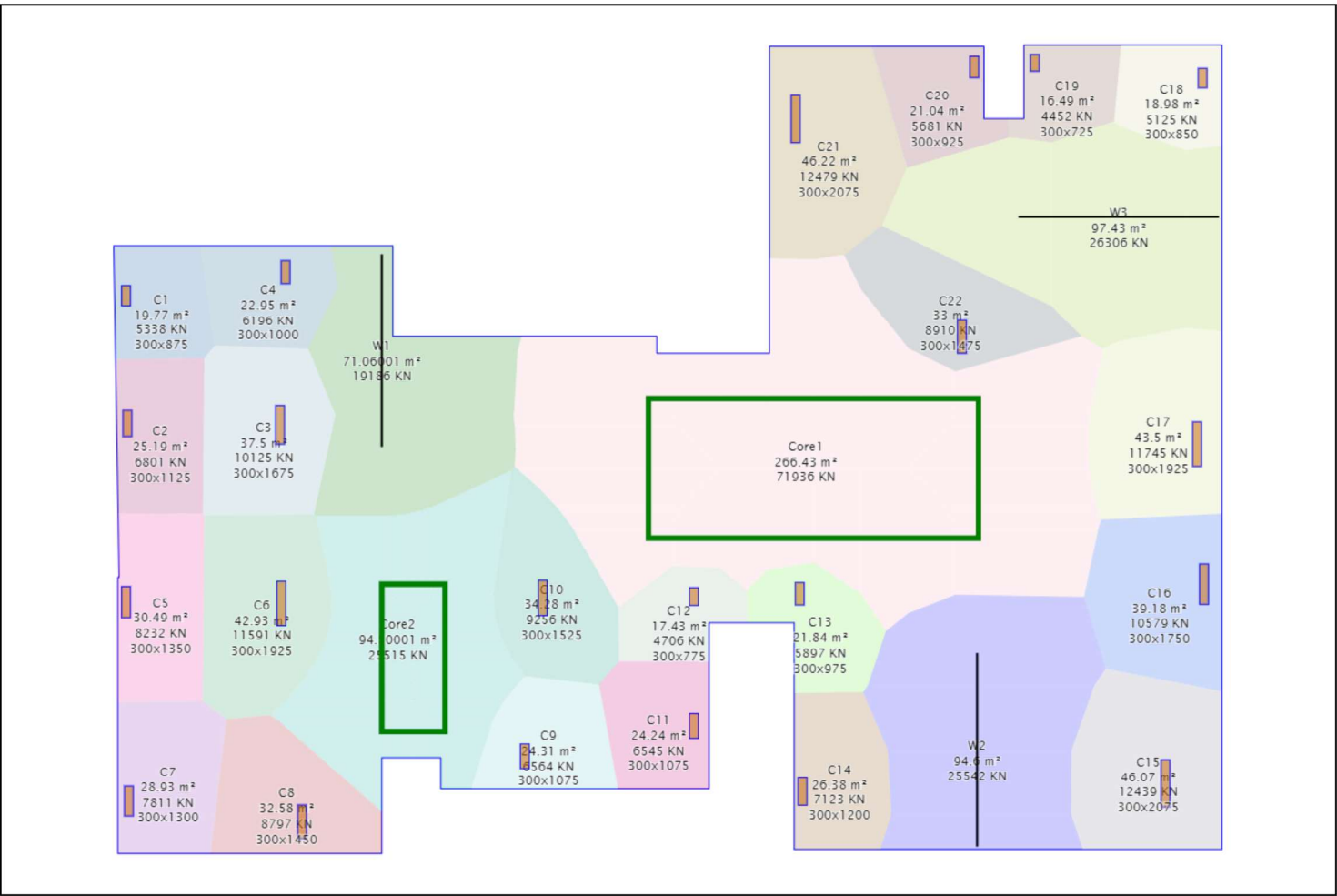
Design Parameters

Concrete Strength (f_c): **65 MPa**
Effective Column Height: **3000 mm**
Target Reinforcement Ratio: **1.0%**
Design Code: **AS3600-2018**
Iteration Strategy: Sections adjusted to achieve approx. **85–90% utilisation** under ULS loading.

Assumptions

- Reinforcement grade: 500 MPa
- Nominal cover: 54 mm
- Minimum eccentricity = 5% of section dimension
- Section sizes rounded to nearest 25 mm increment
- ULS combination: 1.2G + 1.5Q (or governing)
- Biaxial interaction check per AS3600 Clause 10.6

Plan Output



Optimised Columns

Tag	ULS	Type	Min Width	Required Length	Required Dia
C1	5338	Rectangular	300	875	

Tag	ULS	Type	Min Width	Required Length	Required Dia
C2	6801	Rectangular	300	1125	
C3	10125	Rectangular	300	1675	
C4	6196	Rectangular	300	1000	
C5	8232	Rectangular	300	1350	
C6	11591	Rectangular	300	1925	
C7	7811	Rectangular	300	1300	
C8	8797	Rectangular	300	1450	
C9	6564	Rectangular	300	1075	
C10	9256	Rectangular	300	1525	
C11	6545	Rectangular	300	1075	
C12	4706	Rectangular	300	775	
C13	5897	Rectangular	300	975	
C14	7123	Rectangular	300	1200	
C15	12439	Rectangular	300	2075	
C16	10579	Rectangular	300	1750	
C17	11745	Rectangular	300	1925	
C18	5125	Rectangular	300	850	
C19	4452	Rectangular	300	725	
C20	5681	Rectangular	300	925	
C21	12479	Rectangular	300	2075	
C22	8910	Rectangular	300	1475	

This optimisation is generated automatically by TribKALC.
Final engineering judgement and detailing remain the responsibility of the design engineer.
Click on column tag buttons to verify column design under RKALC Concrete Calculator.

Report generated by: admin@rkalc.com

