

# 6 DIMENSIONAL APPROACH TO CONSTRUCTION

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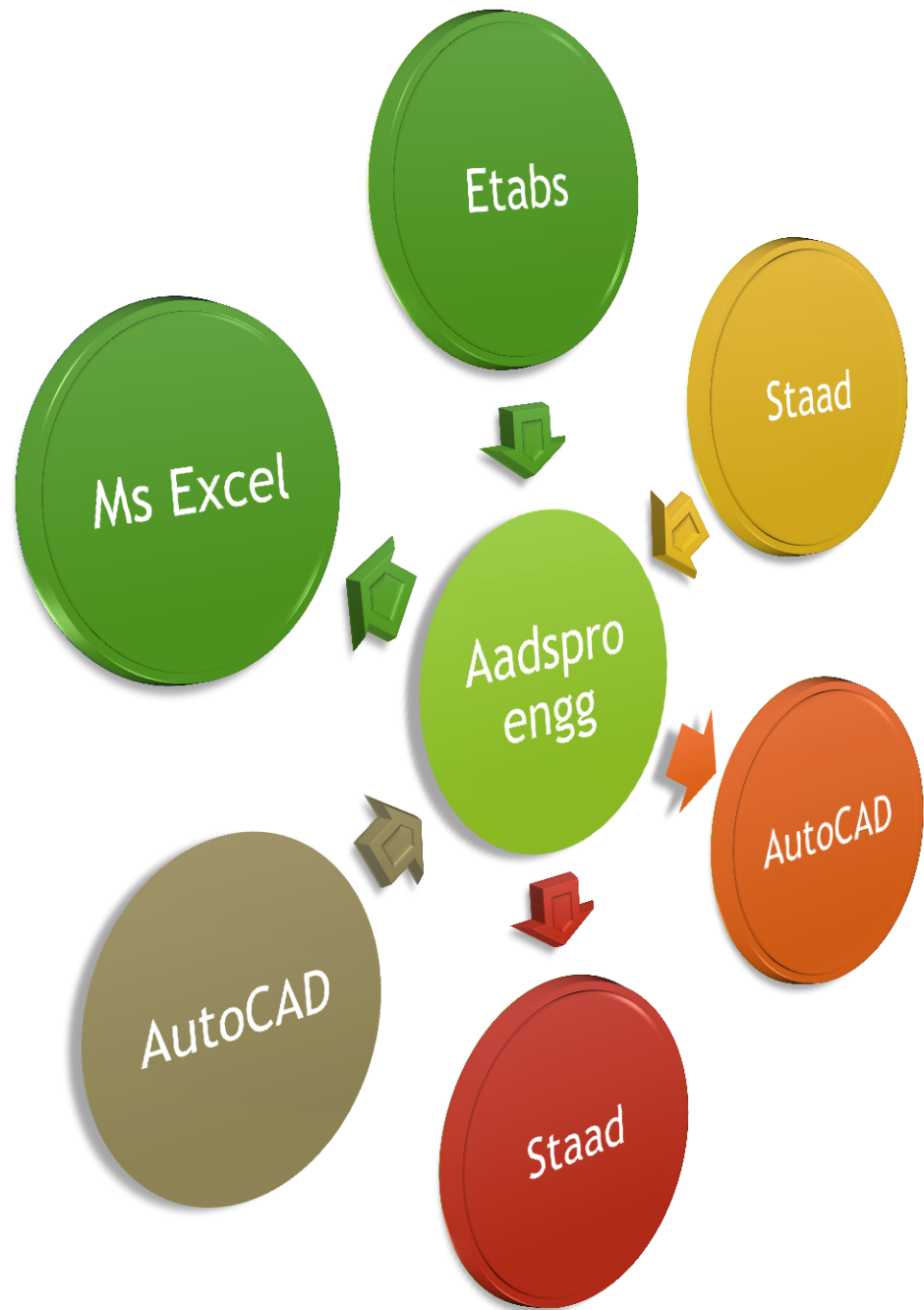
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# Aadspro ERP



# Engineering



# Slab design

Slab Design

Type  
 Slab     Circular- Simple  
 Cantilever     Circular Fixed

Slab Depth  
 Constant     As per Span

Deflection  
 Short Term     Long Term

Width of Support (cm)

Lx(Shorter side)(m)

Ly(m)

Width (mm)

Depth (mm)

Nominal Cover (mm)

Diameter (mm)

Load  +

Factored Load (KN/m<sup>2</sup>) 9.75

Fx (continuous)(KN) 17.94

Fx (Discontinuous)(KN) 11.77

F (y axis) (KN) 12.29

Mx (support) (KN-m) 8.579

Mx (midspan) (KN-m) 6.444

My (support) (KN-m) 5.375

My (midspan) (KN-m) 4.061

Forces  
 Calculate

Moment (KN-m)/m

Shear (KN)/m

Deflection  +  
(All values are as per meter width only)

Steel For Moments  
Eff. Depth (mm) 76

Mu lim (KN-m) 19.2052

(% Reinforcement) 0.389

Required Ast (mm<sup>2</sup>) 280.3040

Provided Ast (mm<sup>2</sup>) 295.679


Tensile Reinforcement  
Required Spacing (mm) 179.397

Spacing Provided (mm) 170

Shear  
Strength of the section(vc)(Mpa) 0.436

Capacity of section(Vc) (KN) 47.927

Continuous  
 DisContinuous



# Slab detailing

The screenshot displays the 'Slab Detailing' software interface. The main window contains a table with the following data:

Name	LX	LY	Depth (m)	Type of Pannel	Dia (mm)	Dead Load (KN/m <sup>2</sup> )	Live Load (KN/m <sup>2</sup> )
Slab - 1	3550	4598	0.13	TwoAdjecentEdge	8	6.75	
Slab - 2	1190	1830	0.11	InteriorPannel_1	8	6	
Slab - 3	1830	2370	0.11	OneShortEdgeCor	8	6	
Slab - 4	1390	1490	0.11	OneShortEdgeCor	8	6	
Slab - 5	1300	1490	0.11	TwoAdjecentEdge	8	6	
Slab - 6	1770	2680	0.11	OneShortEdgeCor	8	6	
Slab - 7	3250	3580	0.12	OneLongEdgeDis	8	6.38	
Slab - 8	2770	4560	0.11	OneLongEdgeDis	8	6	
Slab - 9	2790	3600	0.11	OneLongEdgeDis	8	6	
Slab - 10	4118	6300	0.13	InteriorPannel_1	8	6.75	
Slab - 11	1750	2770	0.11	OneShortEdgeCor	8	6	
Slab - 12	3550	5090	0.13	TwoAdjecentEdge	8	6.75	
Slab - 13	3550	3810	0.13	TwoAdjecentEdge	8	6.75	

On the right side of the interface, there are two configuration panels:

- Span and Depth:** A list of spans (LX(m)) with values 3, 4, 5, 6, and 7. The value 3 is currently selected.
- Tag and Depth:** A table mapping notations to depths:

Notation	Depth(mm)
S1	100
S2	110
S3	150
S4	150
S5	180

# Slab detailing

**SLAB DETAILING**

www.xpuildsoft.com

TOP BAR DETAILS

BOTTOM BAR DETAILS

- 1 #8 AT 200 C/C
- 2 #8 AT 200 C/C
- 3 #8 AT 200 C/C
- 4 #8 AT 200 C/C
- 5 #8 AT 200 C/C
- 6 #8 AT 200 C/C
- 7 #8 AT 200 C/C
- 8 #8 AT 200 C/C
- 9 #8 AT 200 C/C
- 10 #8 AT 200 C/C
- 11 #8 AT 200 C/C
- 12 #8 AT 200 C/C
- 13 #8 AT 200 C/C
- 14 #8 AT 200 C/C
- 15 #8 AT 190 C/C
- 16 #8 AT 190 C/C
- 17 #8 AT 200 C/C
- 18 #8 AT 200 C/C

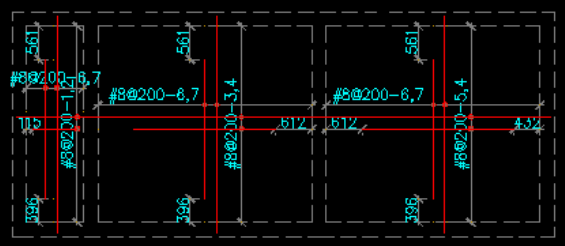
# Slab bbs

AutoCAD Classic AutoCAD 2013 SLAB BBS.dwg

File Edit View Insert Format Tools Draw Dimension Modify Parametric Window Help Express

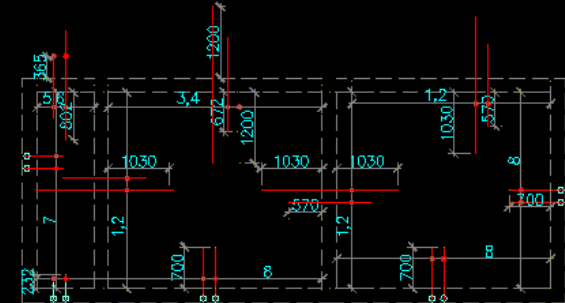
Green ByLayer ByLayer ByColor 0

AutoCAD Classic Standard Standard Standard Standard



Bar Banding Schedule

ID	Bar Number	Type	Size	Start No.	End No.	Horizontal Distance	Vertical Distance	Length	Quantity	Scale	A	B	C	D	E	F	R	S
1	1	#	8	1	9	1300	37	1090	0	0	0	0	0	0	0	0	0	1200
2	2	#	8	1	8	650	37	740	100	0	0	0	0	0	0	0	0	710
3	3	#	8	1	8	2100	37	2240	0	0	0	0	0	0	0	0	0	2300
4	4	#	8	1	14	18	2650	37	2610	0	0	0	0	0	0	0	0	2640
5	5	#	8	1	5	9	2078	37	2040	0	0	0	0	0	0	0	0	2060
6	6	#	8	1	23	23	2250	37	2210	0	0	0	0	0	0	0	0	2240
7	7	#	8	1	21	21	2892	37	2850	0	0	0	0	0	0	0	0	2860



Bar Banding Schedule

ID	Bar Number	Type	Size	Start No.	End No.	Horizontal Distance	Vertical Distance	Length	Quantity	Scale	A	B	C	D	E	F	R	S
1	1	#	8	1	27	27	1100	37	1060	0	0	0	0	0	0	0	0	1090
2	2	#	8	1	29	24	2290	37	2250	0	0	0	0	0	0	0	0	2300
3	3	#	8	1	5	8	1800	37	1760	0	0	0	0	0	0	0	0	1780
4	4	#	8	1	10	10	2050	37	2010	0	0	0	0	0	0	0	0	2040
5	5	#	8	1	3	3	1198	37	1160	100	0	0	0	0	0	0	0	1190
6	6	#	8	1	3	3	1800	37	1760	0	0	0	0	0	0	0	0	1780
7	7	#	8	1	17	17	700	37	660	100	0	0	0	0	0	0	0	670
8	8	#	8	1	21	21	870	37	830	100	0	0	0	0	0	0	0	870

www.xbuildsoft.com



# Beam design

**Beam Section Design**

Dimensions	
Width (section) (mm)	200
Depth (section) (mm)	500
Nominal Cover (mm)	30

Forces	
Moment (KN-m)	105
Torsion (KN-m)	0
Shear (KN)	150

Stirrup Details	
Shear Diameter (mm)	8
No of legs for stirrups	2

Compressive Reinforcement	
Diameter (mm)	12
No of bars provided	2

Tensile Reinforcement	
Diameter (mm)	16
Required nos	3.062
No of bars provided	4

Steel For moments		
Eff. Depth	454	mm
(Mu)	105	KN-m
(Mulim)	137.067	KN-m
Comp.steel (Ast1)	226.195	mm <sup>2</sup>
% Reinf	0.886	
Tensile (Ast)	615.624	mm <sup>2</sup>
Provided(Ast)	804.571	mm <sup>2</sup>

Shear		
Allowable shear stress of section(vc)	0.613	Mpa
Capacity of section in shear(vc)	55.702	KN
Shear resisted by additional Reinforcement	94.298	KN
Area of shear reinforcement required	0.575	mm <sup>2</sup> /mm
Maximum spacing allowed	174.751	mm
<b>Provide a spacing of 170 mm with 8 mm Bars</b>		

# Beam detailing

Beam detailing using Etabs design

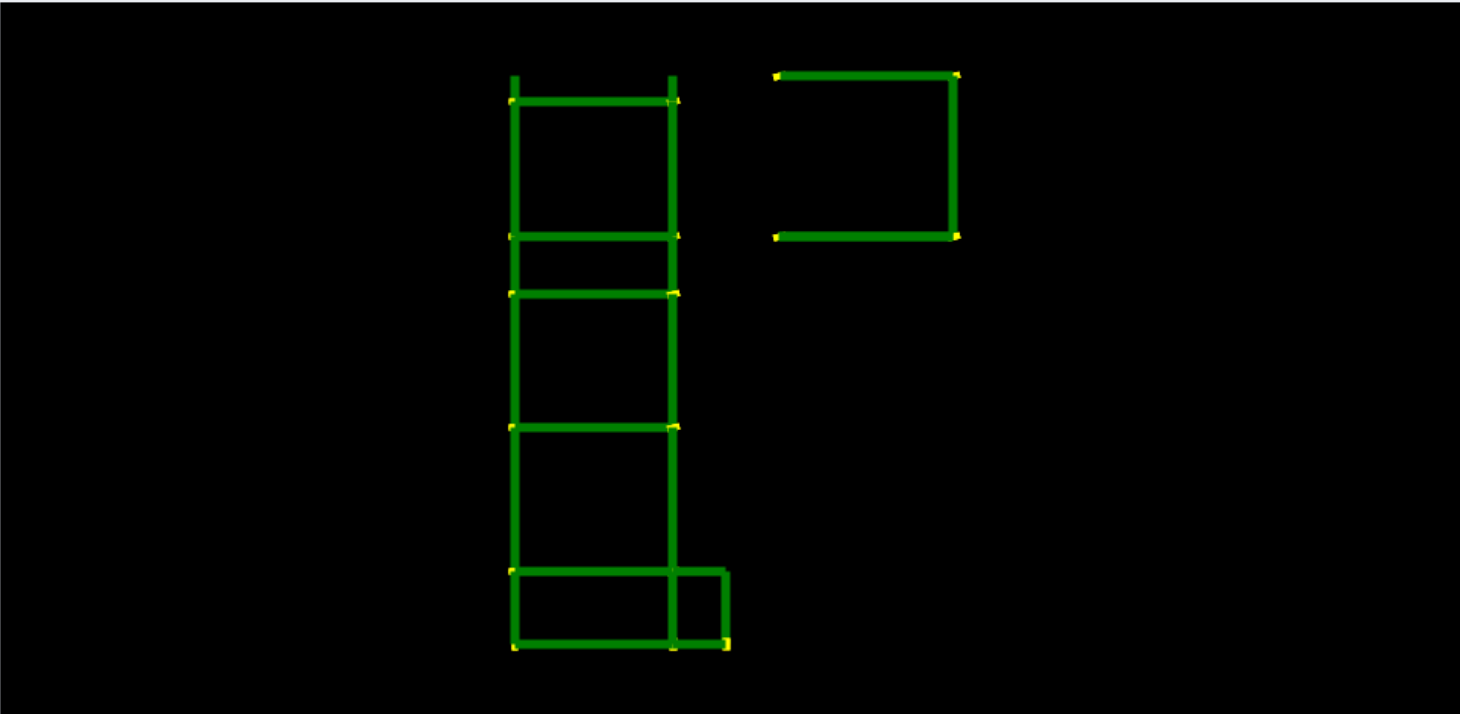
Inputs Details   Reinfo Distribution   Force Details

Stories

SL No	Stories
1	Story3
2	Story2
3	Story1

Beam Groups

SL No	Group Members
1	B3,B13,B12,B46,B3:
2	B25,B14,B15,B43,B:
3	B39
4	B30
5	B4
6	B1
7	B44
8	B6
9	B2,B37
10	B33,B34
11	B40
12	B11,B27



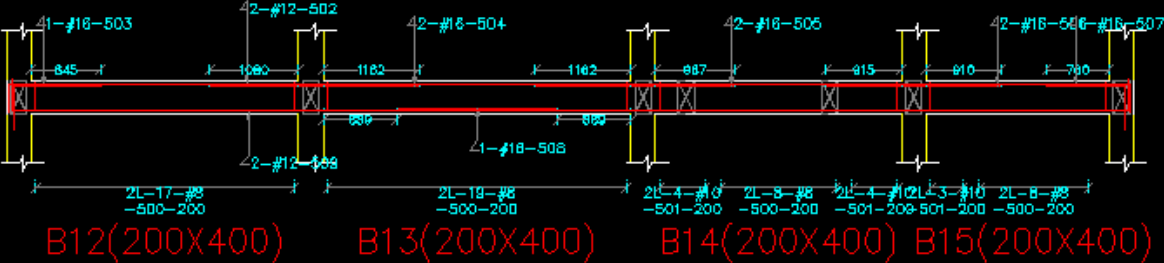
Beam Ends

SL No	Name	Start	End	Color
	B11	17	18	
	B27	18	17	

Beams Details

ID	Sup Width(L	Sup Width(L	Sup Width(Ri	Sup Width(Ri	Length	Depth	Width	Cum: Length

# Beam bbs



Bar Bending Schedule

ID	Bar Mark	Bar Type	Size	Warn No	Bar No	Total	Bar Total	Bar Length	Bar Qty	A	B	C	D	E	F	R	S
B12	500	#	8	1	52	52	1025	68	255	0	0	0	106	0			
B14	501	#	10	1	11	11	1050	88	320	0	0	0	120	0			
502	#	12	1	2	2	14028	38	13990	340	340	0	0	0	0			
503	#	14	1	1	1	1650	37	1645	530	0	0	0	0	0			
504	#	14	1	2	2	3360	20	2045	0	0	0	0	0	0			
505	#	14	1	2	2	3420	20	2420	0	0	0	0	0	0			
506	#	14	1	2	2	2124	20	2124	0	0	0	0	0	0			
507	#	14	1	1	1	1478	37	690	530	0	0	0	0	0			
508	#	14	1	1	1	1875	20	1825	0	0	0	0	0	0			
509	#	12	1	2	2	14028	38	13990	370	370	0	0	0	0			

## Advantage of BBS

- ▶ Scheduling and proper bending is strongly recommended for Fe 500. Fe 500 saves 10% compared to Fe 415 steel used presently.
- ▶ Cutting and bending in a cut and bend factory avoids the wastage completely (5-7 %). With BBS, bars can be cut with planning to reduce the wastage in a site with even the present setup.
- ▶ There is a general tendency to group slabs and beams in the usual design methods.

- ▶ Better quality control at site.
- ▶ Better estimation of steel.
- ▶ Real time estimation data, with the design.
- ▶ Better control on stock of steel actually required.
- ▶ Theft and pilferage of steel can be reduced.
- ▶ Economical order quantity for better project management
- ▶ Bench marking quantity and quality requirements.
- ▶ Optimize your design based on the quantity of steel.

- ▶ Steel bending and cutting can commence even before the form work is done.
- ▶ Steel bending can be done at a separate site, marked and then can be assembled at site, if there is space limitations.
- ▶ Project time can be reduced as the bars can be cut and bend before form work is done.
- ▶ What you see in the drawing is what you get at the site.

- ▶ With a quality data set, other management softwares can work on it.
- ▶ A paper less office concept in the construction industry and associated advantages.
- ▶ Total length of bars calculated using Engineering formula, leaves nothing to approximation.
- ▶ Mechanization of bending and cutting is possible. (Cut and bend systems) Reduces labour and time but increases the reliability.

# Column design

Column Design

Input Reinforcement Slender Eccentricity Biaxial Interaction Diagram Biaxial Interaction diagram

Axis

- Along Minor
- Along Major
- Equal

2

Type

- Circle
- Rectangle

Dimensions

Dia (mm) 500

Width (mm) 240

Cover (mm) 34

Length (m) 3.5

Forces

Moment Mux (KN-m) 106

Moment Muy (KN-m) 50

Axial Load Pu (KN) 800

Reinforcement

Dia (mm) 12

Nos 6

Stirrups

Dia (mm) 10

Spacing (mm) 192

The diagram is a Biaxial Interaction Diagram with the horizontal axis labeled  $M_x$  (KN-m) and the vertical axis labeled  $M_y$  (KN-m). Both axes range from -150 to 150 with major grid lines every 50 units. A red closed curve represents the interaction boundary. A blue cross is plotted at the coordinates (106, 50), which corresponds to the input values for  $M_{ux}$  and  $M_{uy}$ . The curve is roughly elliptical, elongated along the  $M_x$  axis.



# Column detailing

Column Layout [\\192.168.1.147\Riya\joyson\ETABS\ETB 17 11 2015 R6.mdb]

### Column Details

ID	Width (m)	Depth(m)	Dia (m)	R Face	Cover	Main Bar I	Corner Ba	Main Bar I	Tie Dia	Tie Spacin	Level	Name
C10-Story	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1
C1-Story2	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1
C12-Story	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1
C20-Story	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1
C15-Story	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1
C2-Story2	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1
C7-Story2	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1
C14-Story	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1
C16-Story	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1
C19-Story	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1
C11-Story	0.2	0.3	0	2	40	12	12	6	8	192	1.5	C1

### Column Groups

Sl No	ColumnName
1	C1

### Column Group Details

Bar Number Increment  
Number of bar to be incremented in Design Process

### Design Properties

- aadspro Design Properties**
  - Bar Number Increment: **2**
  - Diameters used in Design: **Int32[] Array**
  - Maximum Number of Bars: **10**
  - Minimum % of Steel in Col: 0.8
  - Minimum Number of Bars: **4**
  - Stirrup Diameter: **8**
- Misc**
  - Show Forces in Layout: **False**
- Model Properties**
  - Type of Design: ETABS
- Styles**
  - Layer of Beams: **SRC\_BEAM**
  - Layer of Columns: **SRC\_COL**
  - Layer of Reinforcements: **SRC\_REINFO**

# Footing design

Footing Design

Input Results

Load (Service) (kN)

Self Weight (Service) (kN)

Moment in x dn (Mx) (kN-m)

Moment in y dn (My) (kN-m)

Depth of footing (m)

Safe Bearing capacity (kN/mm<sup>2</sup>)

Tensile Reinforcement

Diameter (mm)

Spacing (mm)

Recalculate Dimensions

Footing Dimensions

Dimension of footing (A) (m)

Other dimension (B) (m)

Pedestal Dimension (C) (m)

Pedestal Dimension (D) (m)

Other Dimensions

Width of the section (mm)

Depth of the section (mm)

Min depth (mm)

Nominal Cover (mm)

145.21 145.21

145.21 145.21

# Footing detailing

Footing Detailing [\\192.168.1.147\riya\joyson\ETABS\ETB 17 11 2015 R6.mdb]

Footing Details							
No	Axial Load(KN)	Moment in X Dir(KNm)	Moment in Y Dir(KNm)	Col Depth (m)	Col Width(m)	X	Y
10	291.88	17.82	16.27	0.3	0.2	1826	1239
11	328.51	18.31	16.69	0.3	0.2	5636	1239
13	197.91	23.01	24.09	0.3	0.2	5636	358
17	186.81	19.15	23.6	0.3	0.2	5638	1.075
2	298	18.05	23.03	0.5	0	0005	3E-14
26	219.51	22.52	24.53	0.3	0.2	0006	-70.5
27	239.44	19.63	22.14	0.3	0.2	E-11	508
28	234.8	20.42	22.07	0.3	0.2	5636	508
3	252.63	19.84	23.53	0.3	0.2	0005	358
30	201.54	23.01	24.58	0.3	0.2	5636	-70.5
34	49.76	14.72	22.1	0.3	0.2	5636	431.1

Sl No	LX(m)>	LX(m)<=	Depth	Dia
1	.1	1.5	250	10
2	1.5	2.5	400	12
3	2.5	3.5	600	16
4	3.5	4.5	700	20
5	4.5	5.5	800	25
6	5.5	6.5	800	25
7				

Group Detail (Distributed)									
Mark	Dim (A)(m)	Dim (B)(m)	Col Width (m)	Col Depth (m)	Spacing	Depth	Reinf Dia	Col Reinf Dia	No
F5	1.50	2.00	0.3	0.2	200	250	10	10	10
F6	1.50	2.00	0.3	0.2	300	400	12	10	11
F3	1.50	1.50	0.3	0.2	250	250	10	10	13
F3	1.50	1.50	0.3	0.2	250	250	10	10	17
F2	1.25	2.00	0.5	0	150	250	10	10	2
F3	1.50	1.50	0.3	0.2	250	250	10	10	26
F3	1.50	1.50	0.3	0.2	250	250	10	10	27
F3	1.50	1.50	0.3	0.2	250	250	10	10	28
F5	1.50	2.00	0.3	0.2	200	250	10	10	3
F3	1.50	1.50	0.3	0.2	250	250	10	10	30

Group Details									
Mark	Dim (A)(m)	Dim (B)(m)	Col Width (m)	Col Depth (m)	Spacing	Depth	Reinf Dia	Col Reinf Dia	No
F1	1.25	1.5	0.3	0.2	300	250	10	10	
F2	1.25	2	0.5	0	150	250	10	10	
F3	1.5	1.5	0.3	0.2	250	250	10	10	
F4	1.5	1.5	0.3	0.2	300	250	10	10	
F5	1.5	2	0.3	0.2	200	250	10	10	
F6	1.5	2	0.3	0.2	300	400	10	10	
F7	1.75	2	0.3	0.2	300	400	12	10	

Levels and Load Combinations	
Level	Base
LoadCombination	Envelope
<b>Misc</b>	
CheckSteelAsper	AsperCode
Fck	25
Fy	500
MinimumReinfoSpacing	300
MinimumSteel	0.12
ReinfoDiameterIndicator	#
<b>Properties</b>	
Cover	40
Factor of safety provided	1.5
IncludeSpacinginGrouping	False
LX Rounding Factor	0.25
LY Rounding Factor	0.5
Minimum Depth	150
Minimum Edge Depth	150
Safe Bearing Capacity	150
Spacing Rounding Factor	50

CheckSteelAsper

# Pile detailing

Create Pile Layout

NO	Axial Load	Diameter	Nos	Pile ID	X	Y	Z
C3	292	40	1	PC1	-38	1239.00	.00
C4	329	40	1	PC1	416.56	1239.00	.00
C16	198	40	1	PC1	1156.56	358.00	.00
C15	187	40	1	PC1	416.56	1431.08	.00
C8	298	40	1	PC1	-.44	.00	.00
C19	220	40	1	PC1	699.06	-70.50	.00
C13	239	40	1	PC1	.00	508.00	.00
C12	235	40	1	PC1	416.56	508.00	.00
C2	253	40	1	PC1	-.44	358.00	.00
C20	202	40	1	PC1	1156.56	-70.50	.00
C11	50	40	1	PC1	556.56	1431.10	.00
C7	297	40	1	PC1	416.56	358.00	.00
C9	311	40	1	PC1	416.56	.00	.00
C1	155	40	1	PC1	-.44	1431.00	.00
C5	350	45	1	PC2	.00	858.00	.00
C6	347	45	1	PC2	416.56	858.00	.00
C14	253	40	1	PC1	696.56	358.00	.00

Capacity and Cost Details

ID	Diameter	Capacity	Reinfo C	Concrete	Driv
1	40	330	550	753	
2	45	412	890	1200	
3	50	495	1271	1700	

Levels and Load Combinations

Level	Story1
LoadCombination	Envelope

Misc

MaxNosOfPile	3
PileDefaultLength	5
PileDesignType	LoadOptimum
PileTOPileDistacceFact	2.5
PileToPileDistance	150
PileToPileDistanceType	UseConstantLength

Model Properties

Type of Design	Etab
----------------	------

Level  
Select a level to Draw in AutoCAD

# Load Data Methodology

Load Data Methodology Create | 🔍

Project Perfect Builders ▾ Date 2/18/2016 📅

Preliminary Details | Soil Capacity | Load | Coefficients | Cover Requirements

No. of stories

10

Building Type

Commercial

Total Build up Area(Sq. ft)

50000

Soil Investigation done by

abc

Material Parameters

Concrete Grade

30 ▾

Yield Strength of Steel(n/mm2)

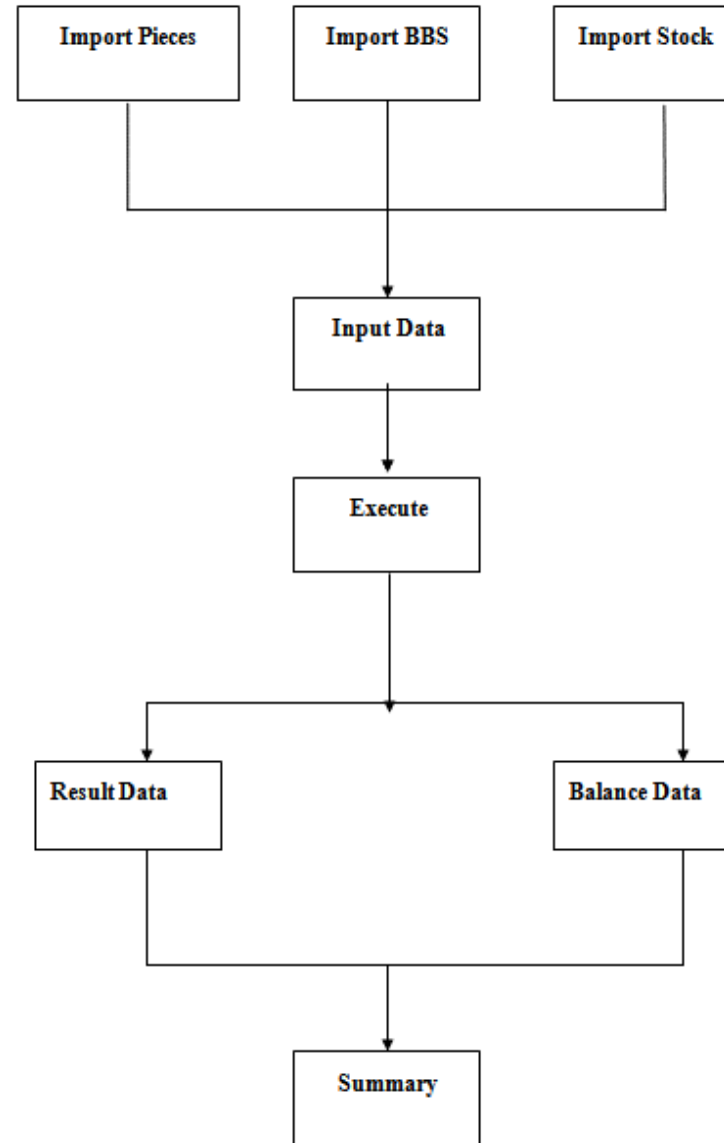
500 ▾

Software Used

#	Software	Use
1	ETABS	<input checked="" type="checkbox"/>
2	Staad	<input checked="" type="checkbox"/>
3	Estimax	<input checked="" type="checkbox"/>
4	Optimax	<input checked="" type="checkbox"/>
5	PCA Column	<input checked="" type="checkbox"/>
6	AADSPRO Design	<input checked="" type="checkbox"/>
7	AADSPRO BBS	<input checked="" type="checkbox"/>
8	AUTOCAD	<input checked="" type="checkbox"/>

# Optimax

## How does it work



# Import BBS data

The screenshot shows a software window titled "Import BBS Data" with a client name field set to "Basil varghese". The main area contains a table with the following columns: No, Bar Mark, Type, Size, Member No, Bar No, Total Bars, Length Of Bar (mm), Shape Code, A, B, C, D, E, F, R, S. The table lists 18 rows of data, each representing a different bar type and its dimensions.

No	Bar Mark	Type	Size	Member No	Bar No	Total Bars	Length Of Bar (mm)	Shape Code	A	B	C	D	E	F	R	S
1	T	8	1	49	49	1850	20	1850								
2	T	8	1	19	19	4000	20	4000								
3	T	8	1	28	28	2500	20	2500								
4	T	8	1	6	6	2550	20	2530								
5	T	8	1	4	4	2600	20	2600								
6	T	8	1	14	14	2550	37	2490	60							
7	T	8	1	19	19	3275	20	3270								
8	T	8	1	11	11	2000	20	2000								
9	T	8	1	15	15	3425	20	3420								
10	T	8	1	8	8	2100	20	2100								
11	T	8	1	18	18	3900	20	3900								
12	T	8	1	18	18	2350	20	2350								
13	T	8	1	7	7	2250	20	2250								
14	T	8	1	13	13	3575	20	3570								
15	T	8	1	13	13	2150	20	2150								
16	T	8	1	6	6	2900	20	2900								
17	T	8	1	13	13	1700	20	1700								
18	T	8	1	15	15	3675	20	3660								

# Client Details

The screenshot shows a window titled "Client Details" with a close button (X) in the top right corner. The window contains a form with the following fields:

- Client Name: Basil varghese
- Address: Test
- Phone: 150
- Fax: 100
- Email: 100

Below the form is a table with the following data:

ID	Client Name	Address	Phone	Fax
38	Basil varghese	Test		150

At the bottom of the window is a toolbar with the following buttons: New Entry, Save, Delete, and Close.



# Create Bar Sequences

Inputs

Job ID

Client Name

Dia

Grade of Steel

Mfgr

Margin

Use length  12000

Options

- Default
- Try for best Combination
- Use one length at a time
- Check all
- Select Random Lengths

Bars TO Cut

Length	Bar Mark	Total Bars
650	145	1
1250	1	12
1350	5	14
1400	3	12
2150	2	12
2650	6	14
2700	4	12

Stock Available

Diameter	Grade of Steel	Company	Stock Availabl	length of Bar
10	Fe415	Tata	14975	12000

Execute Refresh Close

# Output

Optimization No: 1

Bars To Cut			Cutting Patterns										
Sl No	Legth	Nos	No:	Length 1	Length 2	Length 3	Length 4	Length 5	Length 6	Length 7	Total Length	Wastage	Bar Legth
1	1400	9	1	2650	2700	2700	2700	1250			12000	0	12000
2	1350	13	2	2650	2700	2700	2700	1250			12000	0	12000
3	1250	7	3	2650	2700	2700	2700	1250			12000	0	12000
			4	2650	2700	2700	2700	1250			12000	0	12000
			5	2650	2650	2650	2650	1400			12000	0	12000
			6	2650	2650	2650	2650	1400			12000	0	12000
			7	2650	2650	2150	2150	2150			11750	250	12000
			8	2150	2150	2150	2150	2150	1250		12000	0	12000
			9	1350	2150	2150	2150	2150	1400	650	12000	0	12000

Save Close

Total Length Used = 107750 | Wastage = 250 | Wastage Percentage = 0.231

# Estimation- EstimaX



# EstimaX

Scan/Pick		Calculate		Quantity	
ID	Work Name	Unit	Quantity	Rate	Total
1	Site Clearing	10 sqm		.00	165.00
2	Staircase	cum		.00	12407.50
3	Earth Work and Excavation	cum		.00	357.50
4	Footing	cum		.00	12728.25
5	Footing PCC	cum		.00	6635.37
6	RR	cum		.00	3637.91
7	Steel	MT		.00	77000.00
8	Rectangular Columns	cum		.00	14119.80
9	Circular Columns	cum		.00	13794.20
10	Lintles	cum		.00	13435.00
11	Beams	cum		.00	13531.25
12	Sloped Slabs	cum		.00	12407.50
13	Sunshade	cum		.00	12005.00
14	Slab	cum		.00	11991.25
15	Drop Slab	cum		.00	12005.00
16	Sunshade(opening only)	cum		.00	12005.00
17	Panelled Doors	sqm		.00	4852.43
18	Brick work	cum		.00	6165.08
19	Panelled Windows	sqm		.00	5694.77
20	Panelled Ventilators	sqm		.00	7700.00
21	Outer Plastering	sqm		.00	391.81
22	Inner Plastering	sqm		.00	391.81
23	Ceiling Plastering	sqm		.00	1855.65
24	Sunshade bottom Plastering	sqm		.00	1855.65
25	Plastering for column	sqm		.00	1855.65
26	Flooring Ceramic Tile	sqm		.00	871.15
27	pcc	sqm		.00	796.18
28	Bathroom Flooring	sqm		.00	871.14
29	Outer Painting	sqm		.00	106.69
30	Inner Painting	sqm		.00	106.69
31	Applying white cement	sqm		.00	46.06
32	Ceiling Painting	sqm		.00	106.69
33	Door Painting	sqm		.00	98.70
34	Window Painting	sqm		.00	98.70
35	Column painting	sqm		.00	113.88
36					<b>.00</b>

# Rate Analysis

Rate Analysis

Types: CONCRETE AND ALLIED WORKS

Short Description: Vibrated RCC M25 mix for beams, intel beams and parapet walls etc

Description: Vibrated RCC M25 mix using 20mm and down grade hard broken granite stones machine mixed for beams, intel beams and parapet walls etc

**Conversion Factors**

MilliMeter	1E-09
CentiMeter Or Inch	1E-06
Meter	1

**Misc**

Rate Analysis ID	72
Analysis Type	CONCRETE AND ALLIED WORKS
Data Book Details	

**Rate**

Sundries	0
Total Cost	12150
Conveyance	0
Unit	cum
Water And Electricity	0
Water and Electricity Percentage	0
Machinery	0
Net Cost	12150
OH and CP Percentage	10
OH and CP Amount	1215
Rate	13365

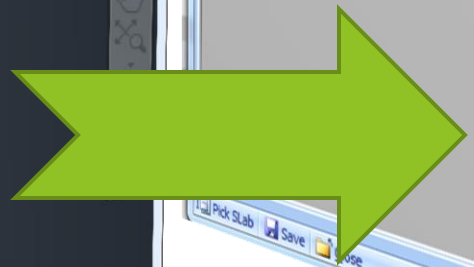
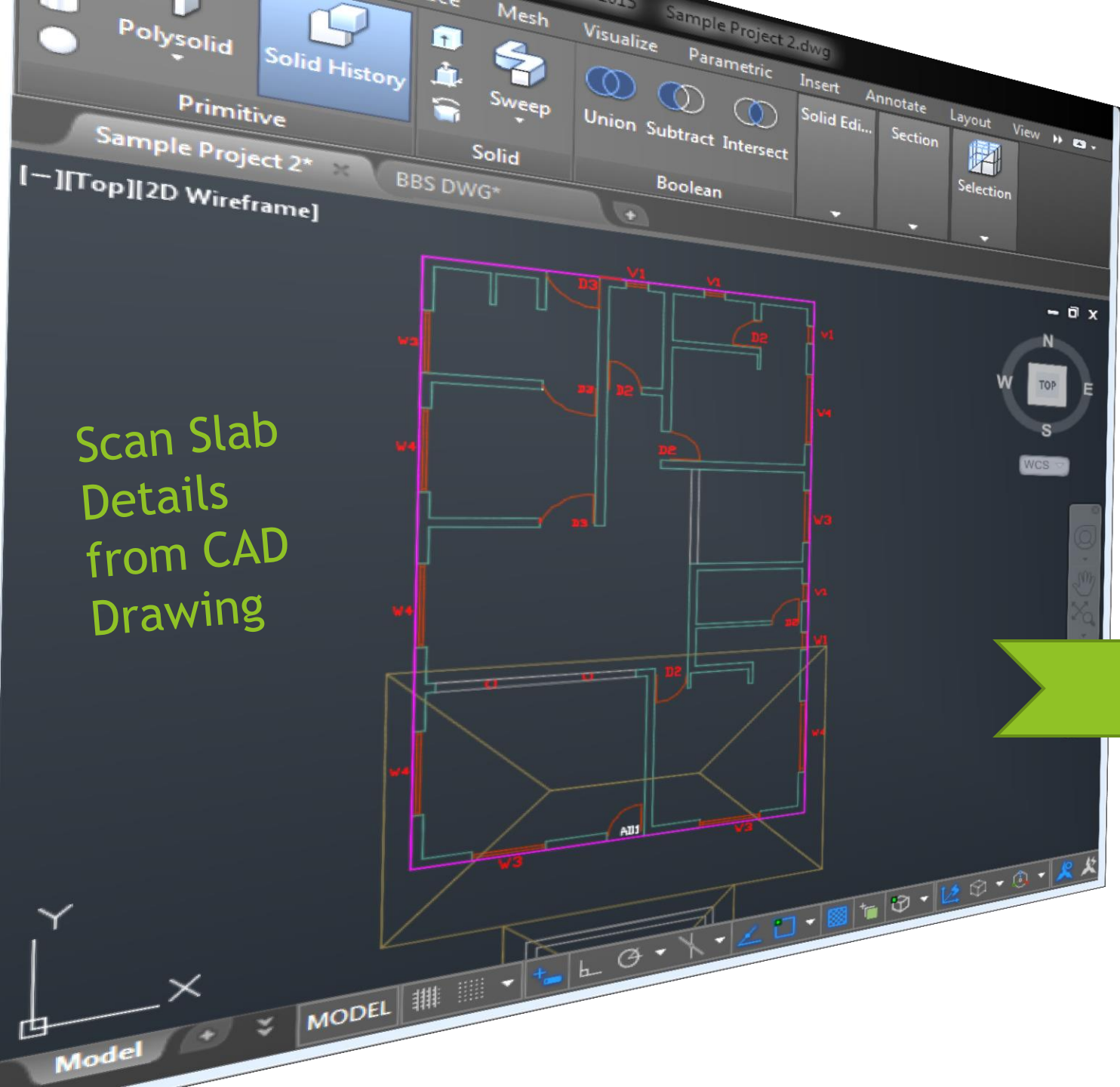
Rate Analysis ID

Rate Analysis ID

Description	Quantity	Unit	Rate	Cost	Conveyance	Type
1 20 mm broken st	.9000	m3	650.000	585.000	.000	Material
2 River sand	.4500	cum	3500.000	1575.000	.000	Material
3 Cement	350.0000	kg	7.400	2590.000	.000	Material
4 Labour & formwc	1.0000	m3	1400.000	1400.000	.000	LABOUR
5 execution of con	1.0000	miscellaneous	6000.000	6000.000	.000	miscellaneous
6						

New Save Delete Close

Scan Slab  
Details  
from CAD  
Drawing



### Slab Details

Slab Name	Area	Length	Depth	Type	Storey
Slab 1	1831391.58	5588.43	20.00	Slab	0
Sunshade 1	349705.98	6068.43	20.00	Sunshade	0
Outside Brick Work 1	.00	5588.43	.00	OursideBrick	0

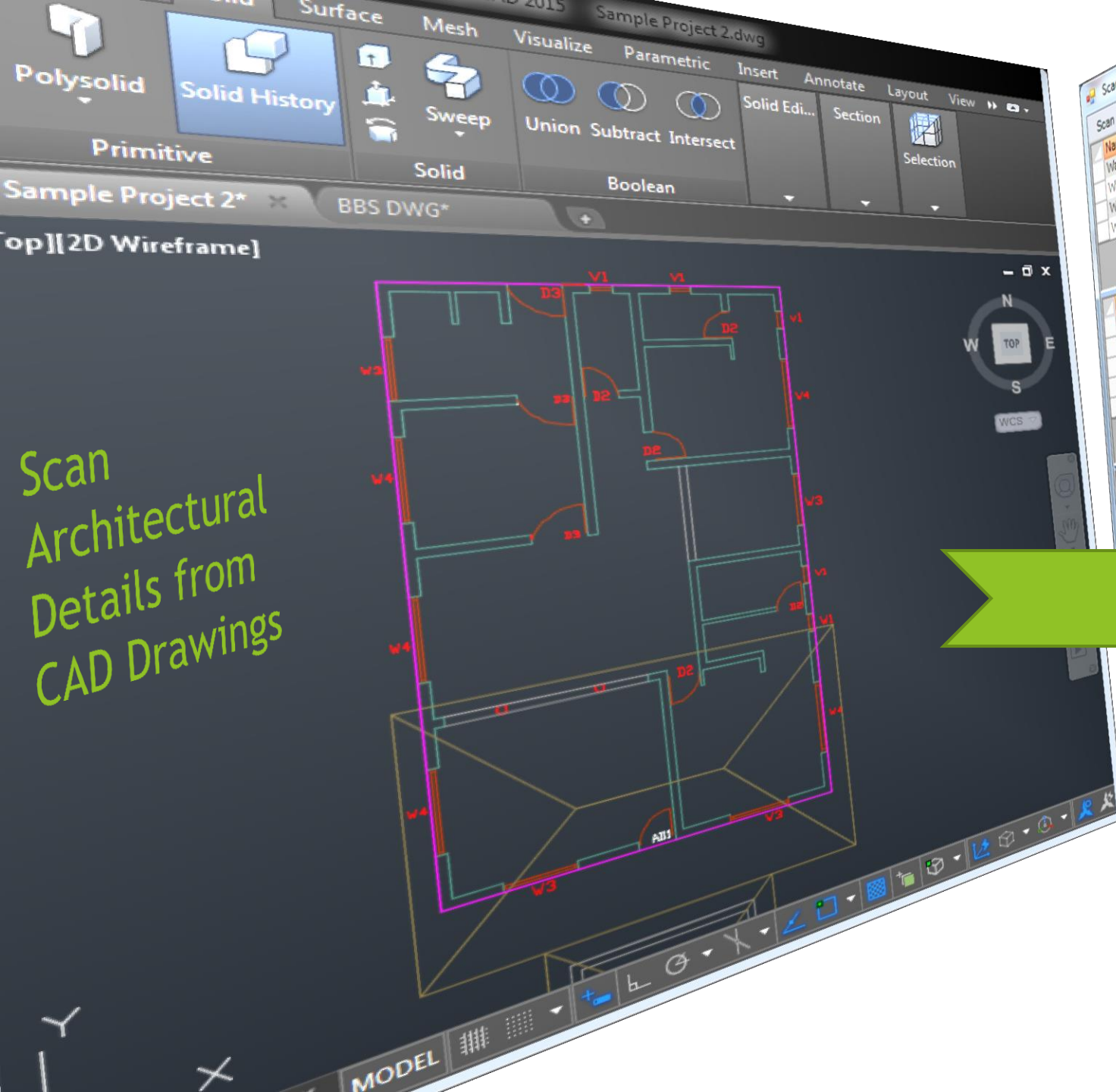
**Misc**

- Slab Area: True
- Slab Projection: 0
- Sunshade Depth: 20
- Slab Depth: 20
- Sloped Slab Area: False
- Sloped Slab Point height: 0
- Deduction Area: False
- PolyLine: True
- Outer Brick: True

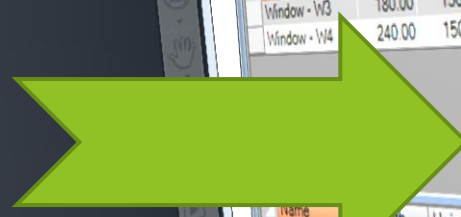
**Sunshade**

- Sunshade Support Width: 30
- SunShade Width: 60
- Sunshade: True

Slab Area  
Pick Area is Slab Area



Scan  
Architectural  
Details from  
CAD Drawings



Scan architectural Details

Scan	Details	Width	Depth	Total Length	Nos		
Wall - 24		24.00	275.00	2719.41	1	0	
Wall - 26		26.00	275.00	269.00	1	0	
Wall - 24		24.00	275.00	3950.52	1	0	
Wall - 12		12.00	275.00	511.47	1	0	

Name	Width	Height	Lintel Depth	Numbers	Storey	Outside
Door - D2	90.00	210.00	10.00	4	0	<input type="checkbox"/>
Door - D3	140.00	210.00	10.00	1	0	<input checked="" type="checkbox"/>
Door - D2	90.00	210.00	10.00	1	0	<input checked="" type="checkbox"/>
Door - D3	140.00	210.00	10.00	2	0	<input type="checkbox"/>
Door - D3	100.00	210.00	10.00	1	0	<input checked="" type="checkbox"/>
Door - AD1						

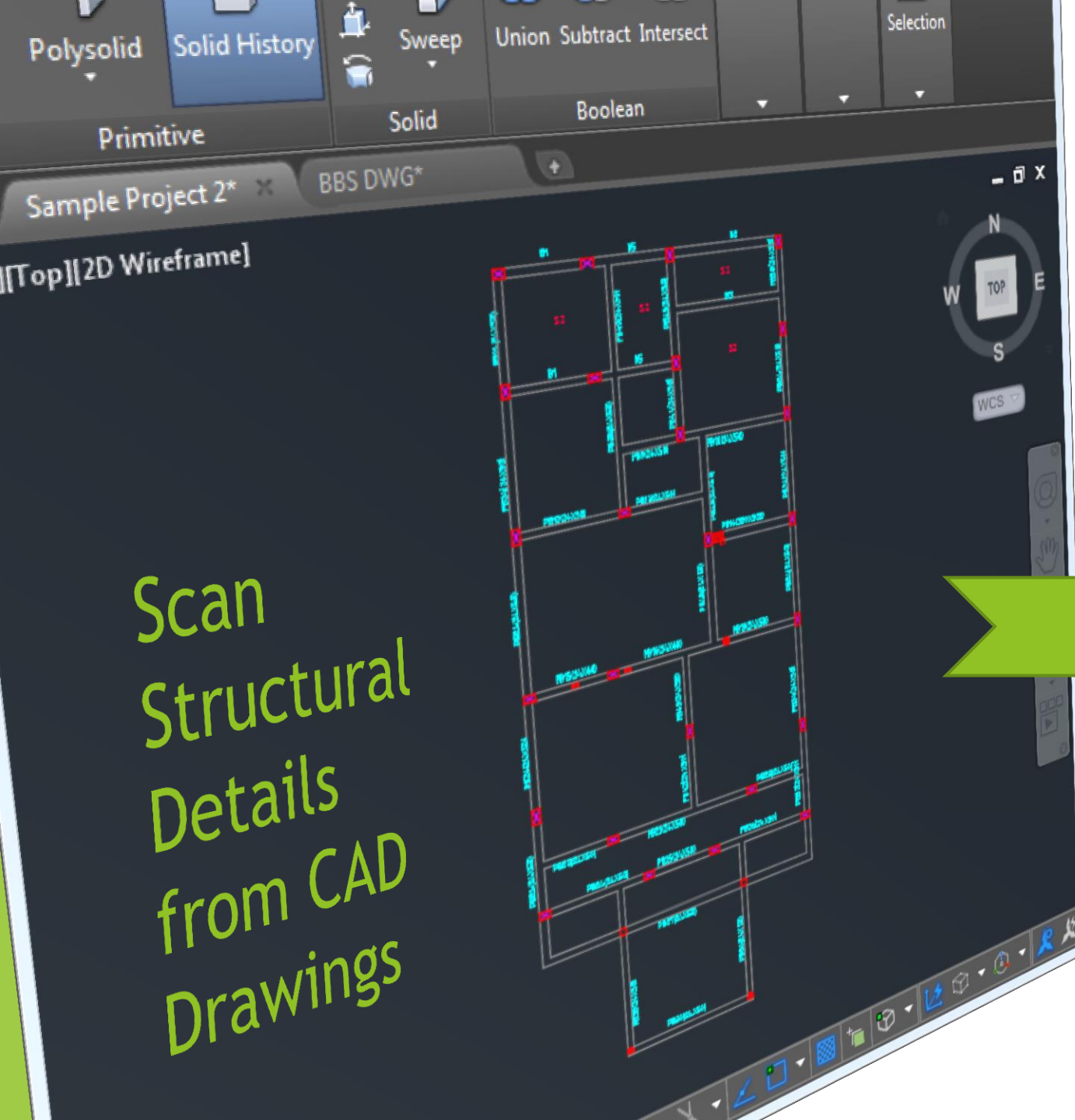
  

Name	Width	Height	Lintel Depth	Numbers	Storey	Outside
Window - W3	180.00	150.00	10.00	4	0	<input checked="" type="checkbox"/>
Window - W4	240.00	150.00	10.00	5	0	<input checked="" type="checkbox"/>

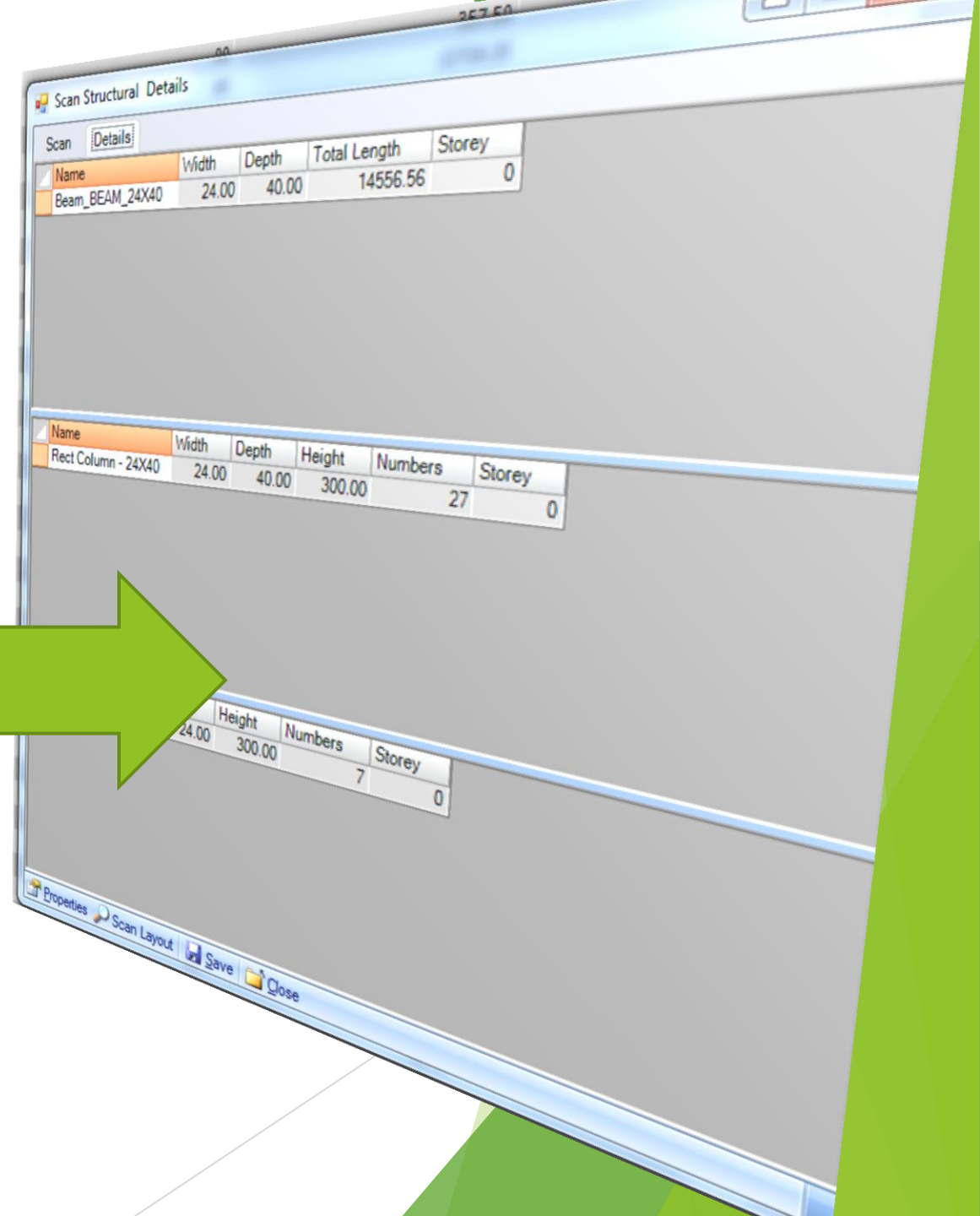
  

Name	Width	Height	Lintel Depth	Numbers	Storey	Outside
Ventilator - V1	60.00	90.00	10.00	4	0	<input checked="" type="checkbox"/>
Ventilator - V1	60.00	90.00	10.00	4	0	<input checked="" type="checkbox"/>

Properties Scan Layout Save Close



Scan  
Structural  
Details  
from CAD  
Drawings





ID	Work Name	Unit	Quantity	Rate	Total	
1	Site Clearing	10 sqm		.00	165.00	.00
2	Staircase	cum		.60	12407.50	7480.66
3	Earth Work and Excavation	cum		6.00	357.50	2145.00
4	Footing	cum		.76	12728.25	9705.29
5	Footing PCC	cum		.29	6635.37	1917.62
6	RR	cum		26.82	3637.91	97573.86
7	Steel	MT		.00	77000.00	.00
8	Rectangular Columns	cum		7.78	14119.80	109795.56
9	Circular Columns	cum		.95	13794.20	13103.10
10	Lintles	cum		2.60	13435.00	34906.13
11	Beams	cum		13.97	13531.25	189089.72
12	Sloped Slabs	cum		.00	12407.50	.00
13	Sunshade	cum		6.99	12005.00	83964.41
14	Slab	cum		32.44	11991.25	388942.70
15	Drop Slab	cum		3.03	12005.00	36425.77
16	Sunshade(opening only)	cum		1.88	12005.00	22559.80
17	Panelled Doors	sqm		20.37	4852.43	98844.00
18	Brick work	cum		47.63	6165.08	293659.62
19	Panelled Windows	sqm		28.80	5694.77	164009.23
20	Panelled Ventilators	sqm		4.32	7700.00	33264.00
21	Outer Plastering	sqm		82.18	391.81	32199.72
22	Inner Plastering	sqm		327.59	391.81	128354.70
23	Ceiling Plastering	sqm		317.21	1855.65	588624.67
24	Sunshade bottom Plastering	sqm		34.97	1855.65	64893.26
25	Plastering for column	sqm		108.72	1855.65	201746.49
26	Flooring Ceramic Tile	sqm		165.82	871.15	144452.49
27	pcc	sqm		165.82	796.18	132021.11
28	Bathroom Flooring	sqm		.00	871.14	.00
29	Outer Painting	sqm		82.18	106.69	8767.91
30	Inner Painting	sqm		327.59	106.69	34950.67
31	Applying white cement	sqm		409.77	46.06	18874.10
32	Ceiling Painting	sqm		317.21	106.69	33842.75
33	Door Painting	sqm		45.83	98.70	4523.67
34	Window Painting	sqm		64.80	98.70	6395.76
35	Column painting	sqm		108.72	113.88	12380.63
36						<b>2999414.38</b>

Export  
Estimation  
Quantities to  
MS Excel or  
import  
estimation file  
in aadspro erp

The screenshot shows an MS Excel spreadsheet titled 'Abstract of Estimate New Project'. The spreadsheet is organized into sections for different parts of a building: First Floor, Earthwork, and Foundation. Each section contains a list of items with their descriptions, units, quantities, rates, and total costs. The 'First Floor' section includes 'Miscellaneous' items like site clearing and staircase. The 'Earthwork' section includes 'Earth work excavation'. The 'Foundation' section includes 'Footings' and 'Footings PCC'. The spreadsheet is displayed in the 'Abstract Estimate' sheet, with other sheets like 'Details' and 'Sheet2' visible in the bottom tab bar.

SL No	Description Of Work	Unit	Quantity	Rate	Total
<b>First Floor</b>					
<b>1 Miscellaneous</b>					
1.1	Cleaning and leveling the site and uprooting of all type of vegetation including trees, removal of all types of rubbish and dumping it outside the site.				
	Site Clearing	10 sqm		165.00	0.00
1.2	Vibrated RCC M25 mix using 20mm and down grade hard brocken granite stones machine mixed for slopping slabs, staircase slabs				
	Staircase	cum	0.60	12407.50	7480.66
	<b>Total Miscellaneous</b>				<b>7480.66</b>
<b>2 Earthwork</b>					
2.1	Earth work excavation in ordinary or hard soil including bailing / pumping out water if necessary and depositing the excavated earth on the banks as per owner/ Architects direction with all leads and lifts.				
	Earth Work and Excavation	cum	6.00	357.50	2145.00
	<b>Total Earthwork</b>				<b>2145.00</b>
<b>3 Foundation</b>					
3.1	Vibrated RCC M25 mix with minimum cement content 400kg/m3 using 20mm and down grade hard brocken granite stones machine mixed for foundation for column footings				
	Footing	cum	0.76	12728.25	9705.29
3.2	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering				
	Footing PCC	cum	0.29	6635.37	1917.62
	<b>Total Foundation</b>				<b>11622.91</b>

# Planning

# *Project scheduling using aadspro erp*

# 1. Creating a new project

The screenshot displays the aadspro ERP web application interface. The browser address bar shows the URL `192.168.1.146/raj/Home/Home`. The application header includes the 'aadspro' logo, a navigation menu with 'Home', 'Masters', 'Entries', 'Reports', and 'Downloads', a search bar, and user information 'Messages' and 'Jith'. The left sidebar contains a list of navigation items: Dashboard, Activity, Late Tasks, Today finishing Tasks, UpComing Tasks, and User Locations. The 'Masters' menu is expanded, showing options like Company, Client Types, Client Details, Allowance, Units, HR, Work Flow, Tendering, Inventory, Accounts, Employee, and User Settings. The 'Work Flow' sub-menu is further expanded, highlighting 'Add/Edit Project' as the selected option. The main content area features four summary cards: 'New Messages!' (0), 'On Going Tasks!' (4), 'Task On Hold!' (33), and 'Finished Tasks!' (52). Below these is a 'Worked Time Details' bar chart showing time intervals from 2/1/2016 9:00 PM to 2/3/2016 5:00, with a 'Target 1' line at 8. A 'Show Details' link is visible at the bottom of the chart area.

From menu select - masters - work flow - add / edit project

# Adding project details

Project Details Create | 🔍

**Project Details**

Project #  Name  Stories

Client Name  Client Contact No  Client Mail

Area (SQFT)  Rate  Cost  Start  Duration

Billing Email  Status

**Architect Details**

Name  Phone  Mail

**Engg: Details**

Site Engg:  Site Engg: Phone  Site Engg: Email

# 2. Creating levels in project

The screenshot shows the aadspro ERP software interface. The browser address bar displays '192.168.1.146/raj/Home/Home'. The navigation menu includes 'Masters', 'Entries', 'Reports', and 'Downloads'. The 'Masters' menu is expanded, showing options like 'Company', 'Client Types', 'Client Details', 'Allowance', 'Units', 'HR', 'Work Flow', 'Tendering', 'Inventory', 'Accounts', 'Employee', and 'User Settings'. The 'Work Flow' option is selected, and its sub-menu is open, showing 'Add/Edit Project', 'Add/Edit Level', 'Add/Edit Task', 'Upload Estimax File', 'Add/Edit Project Incentives', 'Add/Edit Levels in Project', 'Add/Edit Tasks in Project', 'Task Documents', 'Add/Edit Project Resources', 'Schedule Activities in Gantt chart', and 'Rating'. The 'Add/Edit Level' option is highlighted. In the background, there are four dashboard cards: 'New Messages !' (0), 'On Going Tasks !' (4), 'Task On Hold !' (33), and 'Finished Tasks !' (52). A 'Worked Time Details' bar chart is also visible, showing a target of 1 and a bar for 2/2/2016 9:00 PM to 2/3/2016 5:00.

Time Period	Value	Target
2/1/2016 9:00 PM - 2/2/2016 5:00 AM	1	1
2/2/2016 1:00 PM - 2/2/2016 5:00 AM	0	1
2/2/2016 9:00 PM - 2/3/2016 5:00	1	1

From Menu select - Masters - Work Flow - Add / Edit Level

# Creating levels

Levels Create | 🔍

**Level Name**

Show on Home Page

---

Create

Add Level Name & Click Create



# 3. Creating tasks in project

The screenshot shows the aadspro ERP web application interface. The browser address bar displays the URL 192.168.1.146/raj/Home/Home. The application header includes the aadspro logo, navigation tabs (Home, Masters, Entries, Reports, Downloads), a search bar, and the user name Jith. The main dashboard features four summary cards: New Messages (0), On Going Tasks (4), Task On Hold (33), and Finished Tasks (52). A left sidebar contains various navigation options, with 'Masters' and 'Work Flow' highlighted. A dropdown menu is open under 'Work Flow', with 'Add/Edit Task' selected. A 'Worked Time Details' bar chart is visible, showing time intervals from 2/1/2016 9:00 PM to 2/3/2016 5:00 AM, with a 'Target 1' line at 8. The chart shows two bars: one at 1 unit from 2/1/2016 9:00 PM to 2/2/2016 5:00 AM, and another at 1.5 units from 2/2/2016 9:00 PM to 2/3/2016 5:00 AM.

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From Menu select - Masters - Work Flow - Add / Edit Task

# Creating tasks

The screenshot shows a web browser window with the URL `192.168.1.146/raj/TaskRegister/TASK_Master`. The browser's address bar and tabs are visible. Below the browser, the application's navigation menu includes 'Home', 'Masters', 'Entries', 'Reports', and 'Downloads'. A search bar and user profile 'Jith' are also present.

The main content area is titled 'Task Master Create' and contains the following form elements:

- Task Name:** A text input field containing 'Task Name'.
- Task Unit:** A dropdown menu currently set to '---Select---'.
- Specification:** A large text area for entering details.
- Resource Table:** A table with columns for '#', 'Resource Name', 'Type', 'Unit', 'Quantity', and 'Action'. The table is currently empty, with an 'Add Item' link in the first row.
- Create:** A green button at the bottom left of the form.

#	Resource Name	Type	Unit	Quantity	Action
Add Item					
			Man[0]	Material[0]	Machinery[0] Others[0]

Add Task Details & Click Create

# 4. Adding levels in project

The screenshot shows the Task Master web application interface. The browser address bar displays the URL: 192.168.1.146/raj/TaskRegister/TASK\_Master. The application header includes the 'aadspro' logo, navigation links for 'Home', 'Masters', 'Entries', 'Reports', and 'Downloads', a search bar, and the user name 'Jith'. The 'Masters' menu is expanded, showing options like 'Company', 'Client Types', 'Client Details', 'Allowance', 'Units', 'HR', 'Work Flow', 'Tendering', 'Inventory', 'Accounts', 'Employee', and 'User Settings'. The 'Work Flow' option is selected, opening a sub-menu with options: 'Add/Edit Project', 'Add/Edit Level', 'Add/Edit Task', 'Upload Estimax File', 'Add/Edit Project Incentives', 'Add/Edit Levels in Project', 'Add/Edit Tasks in Project', 'Task Documents', 'Add/Edit Project Resources', 'Schedule Activities in Gantt chart', and 'Rating'. The 'Add/Edit Levels in Project' option is highlighted. In the background, a table is visible with columns for 'Type', 'Unit', 'Quantity', and 'Action', and rows for 'Man[0]', 'Material[0]', 'Machinery[0]', and 'Others[0]'. Red circles and numbers 1, 2, and 3 indicate the steps: 1. Click on 'Masters', 2. Click on 'Work Flow', and 3. Click on 'Add/Edit Levels in Project'.

From Menu select - Masters - Work Flow - Add / Edit Levels in project

# Adding levels in project

The screenshot shows a web browser window with the URL `192.168.1.146/raj/ProjectLevel/ProjectLevels`. The page title is "Project Levels". The navigation menu includes "Home", "Masters", "Entries", "Reports", and "Downloads". A search bar is located in the top right corner. The main content area features a form with a "Project" dropdown menu (circled in red and labeled "1"), a text input field, and an "Add Level" button (circled in red and labeled "2"). Below the form is a table with columns: "#", "Level Name", "Start", "End", "Duration", "Gen Bill", and "Actions". At the bottom left of the form area, there is a "Create" button (circled in red and labeled "3").

Select Project - Click Add levels & Select Levels - Click Create

# 5. Adding tasks in project

The screenshot shows a web browser window with the URL `192.168.1.146/raj/ProjectTask/ProjectTasks`. The application header includes a navigation menu with items: Home, Masters, Entries, Reports, and Downloads. A search bar and user profile (Messages, Jith) are also visible. The main content area displays a table with columns: #, Task Name, Start, Dur\*, Qty, Cost%, Cost, and Actions. A green 'Add Tasks +' button is present. The 'Masters' menu is open, showing a list of options. The 'Work Flow' option is selected, and its sub-menu is open, showing 'Add/Edit Tasks in Project' as the selected option. Red circles and numbers 1, 2, and 3 highlight the 'Masters', 'Work Flow', and 'Add/Edit Tasks in Project' options respectively.

1 Masters

2 Work Flow

3 Add/Edit Tasks in Project

From Menu select - Masters - Work Flow - Add / Edit Tasks in project

# Adding tasks in project

The screenshot shows a web browser window with the URL `192.168.1.146/raj/ProjectTask/ProjectTasks`. The page title is "Project Tasks". The navigation bar includes "aadspro", "Home", "Masters", "Entries", "Reports", and "Downloads". A search bar and "Messages" link are also present. The main content area is titled "Project Tasks" and contains a form with two dropdown menus: "Project" (labeled 1) and "Levels" (labeled 2). An "Add Tasks +" button (labeled 3) is to the right of the "Levels" dropdown. Below the form is a table with columns: "#", "Task Name", "Start", "Dur\*", "Qty", "Cost%", "Cost", and "Actions". A "Save" button (labeled 4) is located below the table. A note "\*- in Days" is positioned above the table.

Select Project - Select Levels - Click Add tasks & Select Tasks - Click Save

# 6. Scheduling activities in Gantt chart

The screenshot displays the 'Project Tasks' application interface. The browser address bar shows the URL '192.168.1.146/raj/ProjectTask/ProjectTasks'. The application header includes the 'aadspro' logo, navigation tabs (Home, Masters, Entries, Reports, Downloads), a search bar, and a user profile 'Jith'. The 'Masters' menu is open, showing a list of options: Company, Client Types, Client Details, Allowance, Units, HR, Work Flow, Tendering, Inventory, Accounts, Employee, and User Settings. The 'Work Flow' option is selected, opening a sub-menu with the following items: Add/Edit Project, Add/Edit Level, Add/Edit Task, Upload Estimax File, Add/Edit Project Incentives, Add/Edit Levels in Project, Add/Edit Tasks in Project, Task Documents, Add/Edit Project Resources, Schedule Activities in Gantt chart, and Rating. The 'Schedule Activities in Gantt chart' option is highlighted with a red circle and the number '3'. The background shows a table with columns for Start, Dur\*, Qty, Cost%, Cost, and Actions, and a green 'Add Tasks +' button.

From Menu select - Masters - Work Flow - Schedule Activities in Gantt Chart

# Scheduling activities in Gantt chart

Project: SABINE HOSPITAL

	name	start	end	dur	dep.
1	SABINE HOSPITAL	01/01/2016	03/05/2016	124	
2	Second Floor	01/01/2016	04/04/2016	95	
11	First Floor	01/03/2016	03/05/2016	64	
12	1F Column (Front)	01/03/2016	04/03/2016	4	
13	1F Column (Back)	05/03/2016	08/03/2016	4	12
14	1F Roof slab, Beam Form & Rebar work (front)	10/03/2016	16/03/2016	7	12:5
15	1F Roof slab casting (front)	17/03/2016	17/03/2016	1	14
16	1F Roof slab, Beam Form & Rebar work (Back)	18/03/2016	24/03/2016	7	15,13
17	1F Roof slab casting (Back)	25/03/2016	25/03/2016	1	16
18	1F Deshuttering (Front)	28/03/2016	29/03/2016	2	15:10
19	1F Deshuttering (Back)	05/04/2016	06/04/2016	2	17:10

March 2016

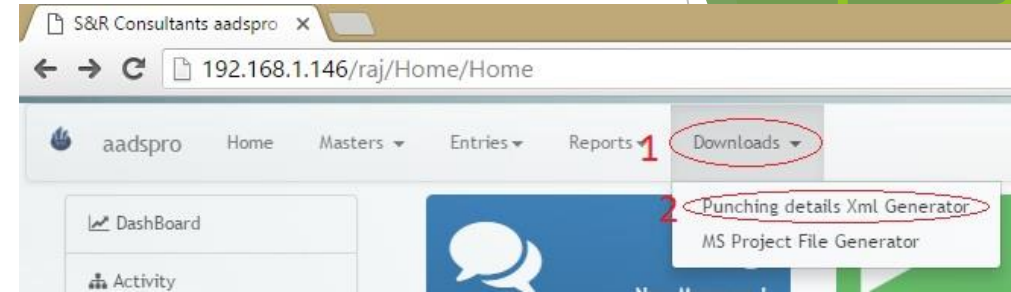
A - Project selection  
B - Activity Start Date  
C - Activity End Date  
D - Activity Duration  
E - Activity Dependency  
F - Save

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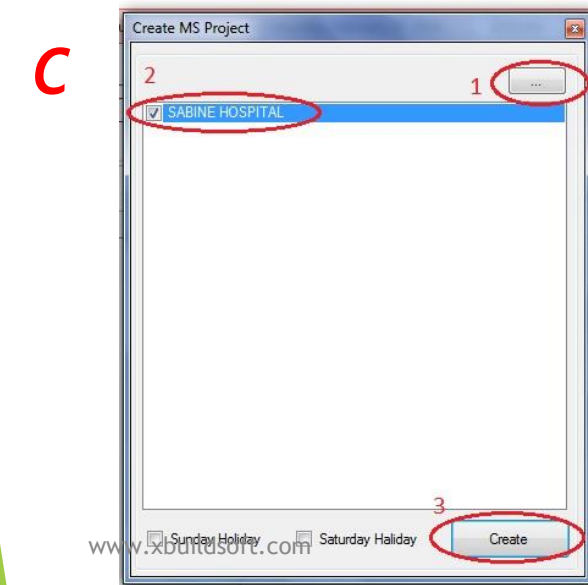


# 7. Exporting activities in Gantt chart to ms project

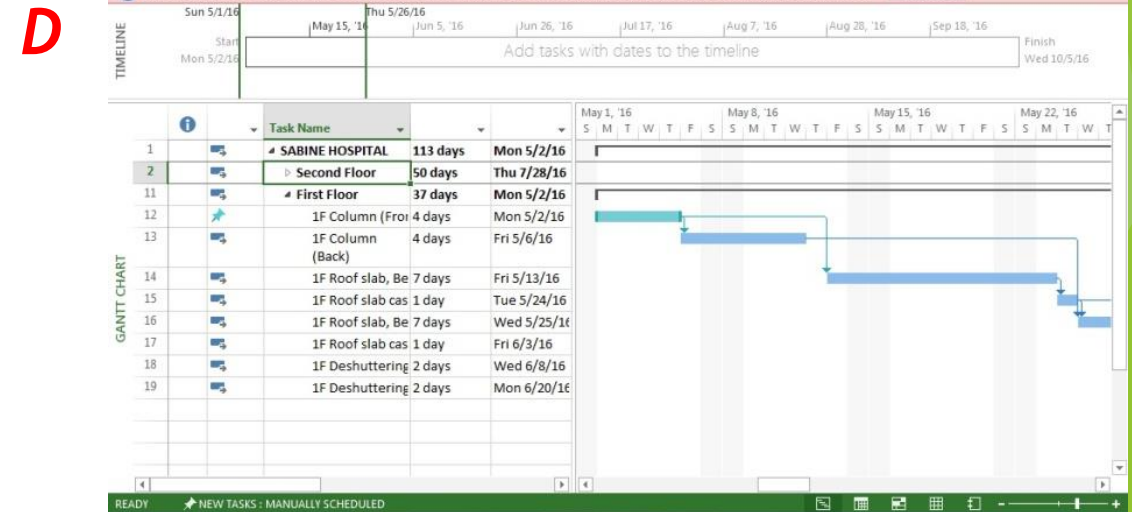
A. Download & install MS project File Generator from Menu - Downloads - MS project File Generator



B. Click Export Icon to download the Gantt chart



C. Use MS Project File generator to convert downloaded file to MS Project



D. MS Project file created

# 8. Importing activities and resources from Extimax (.estx) File

The screenshot shows a software interface with a navigation menu at the top. The 'Masters' menu is open, and 'Work Flow' is selected, which has opened a sub-menu. In this sub-menu, 'Upload Estimax File' is highlighted. The main area of the interface contains a table with columns for Level, Unit, Quantity, Rate, and Total. The table lists various construction items such as 'SECOND FLOOR' and 'THIRD FLOOR' with their respective units and costs.

Level	Unit	Quantity	Rate	Total
SECOND FLOOR	sqm	1405.49	113.71	159818.54
SECOND FLOOR	sqm	245.50	103.38	25380.11
SECOND FLOOR	sqm	58.32	103.38	6029.12
SECOND FLOOR	sqm	401.10	113.71	45609.08
THIRD FLOOR	cum	6.12	7172.25	43886.57
THIRD FLOOR	cum	124.05	3399.58	421714.76
THIRD FLOOR	cum	31.45	12952.35	407416.17
THIRD FLOOR	cum	15.63	13505.00	211092.87
THIRD FLOOR	cum	57.30	13601.25	779378.28
THIRD FLOOR	cum	13.00	12161.25	158076.87
THIRD FLOOR	cum	66.93	12161.25	813971.99
THIRD FLOOR	cum	9.15	12075.00	110446.06
THIRD FLOOR	cum	2.83	12161.25	34455.25

From Menu select - Masters - Work Flow - Upload Estimax File

# Inventory Module

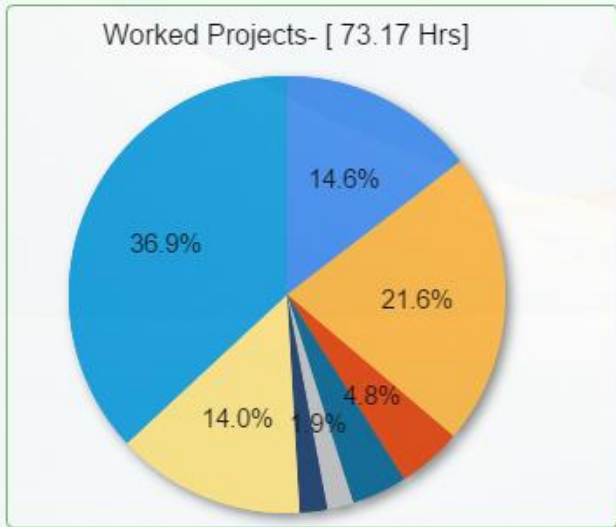
- Dashboard
- Activity
- Late Tasks
- Today finishing Tasks
- UpComing Tasks
- User Locations

**0**  
New Messages !  
View Details

**22**  
On Going Tasks !  
View Details

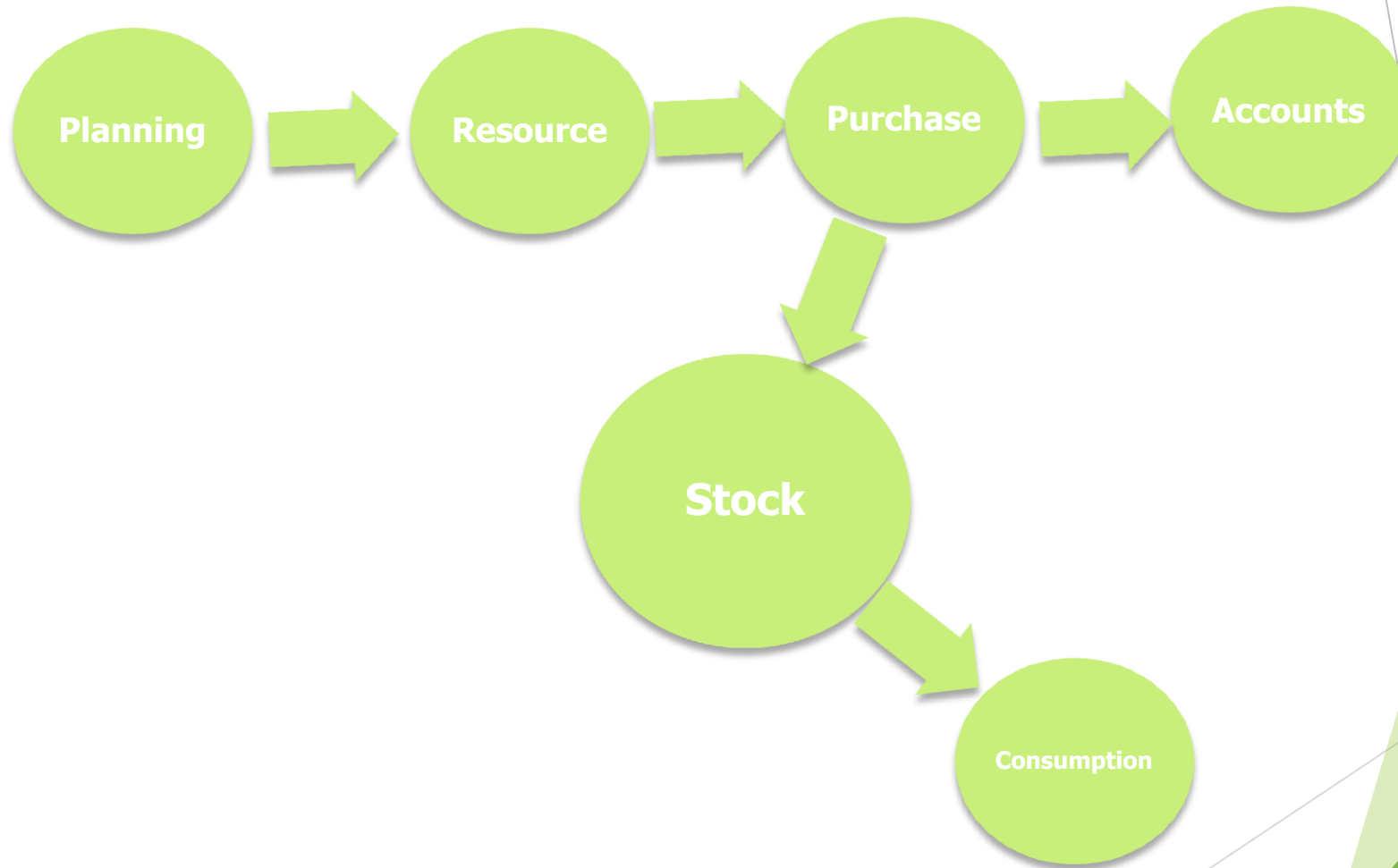
**10**  
Task On Hold !  
View Details

**127**  
Finished Tasks !  
View Details



Show Details

# Data Flow



# Resource Category

Log On x New Category x

localhost:3051/ResourceCategory

aadspro

New Category Create | 🔍

Category Code	c1
Category Name	Construction

Create

# Resource Location

Log On x New Location x

localhost:3051/MaterialLocation

aadspro Home Masters Entries Reports Downloads

New Location Create | 🔍

Code	<input type="text" value="l1"/>	Name	<input type="text" value="Kaloor"/>
Description	<input type="text"/>		

Create

# Resource Item

Resource Item x

localhost:3051/ResourceItem

aadpro Home Masters ▾ Entries ▾ Reports ▾ Downloads ▾

Search... Messages PREM KUMAR T M

### Resource Item Create | 🔍

Code		Name	brick	Resource Type	Material ▾	Resource Category	construction ▾
Default Location	kochi ▾	Supplier	JOY ALUKKAS ▾	Stock Level	200	Stock Order Level	100
Pricing Unit	Nos ▾	Usage Unit	Nos ▾	Rate	10	Tax	Tax Nil ▾

Description

Create

www.xbuildsoft.com



# Project Resources

To add resource details for each task in a project

The screenshot shows a web browser window with the URL `localhost:3051/ProjectResource`. The application interface includes a navigation menu with 'Home', 'Masters', 'Entries', 'Reports', and 'Downloads'. The main content area is titled 'Project Resources' and features a dropdown menu for 'Project' set to 'shari jayan'. Below this is a tree view of 'Project Details' for 'shari jayan', listing various tasks such as 'Basement', 'Ground Floor', 'First Floor', 'Second Floor', 'Third Floor', and '3F Column casting (front)'. The '3F Column casting (front)' task is selected, and its details are shown in a table under the 'Resource Details' tab. The table has columns for '#', 'Resource', 'Unit', 'Quantity', 'Rate', and 'Action'. Five resources are listed: Cement (8 bags, rate 400), Fine aggregate (15 cu ft, rate 40), course aggregate 20 mm (30 cu ft, rate 36), 8 mm rods (50 kg, rate 40), and 20 mm rods (135 kg, rate 40). Each row has a red 'X' icon in the 'Action' column. An 'Add' button is at the bottom right of the table, and a 'Save' button is below it.

Project Resources

Project: shari jayan

shari jayan / Third Floor / 3F Column casting (front)

Employee Details | Resource Details

#	Resource	Unit	Quantity	Rate	Action
1	Cement	Bags	8	400	✖
2	Fine aggregate	Cu ft	15	40	✖
3	course aggregate 20 mm	Cu ft	30	36	✖
4	8 mm rods	Kg	50	40	✖
5	20 mm rods	Kg	135	40	✖

Add

Save

# Physical Stock

To update stock of resources at specified location

Physical Stock Entry Create

Location: Kaloor

#	Resource Name	Rate	Quantity	Unit	Category	Type
13	10 mm rods	40.01	2120.00	Kg	Rebars	Material
14	10 mm rods	40.19	250.00	Kg	Rebars	Material
15	10 mm rods	41.26	0.00	Kg	Rebars	Material
16	10 mm rods	42.78	0.00	Kg	Rebars	Material
17	Mason	600.00	0.00	No	Labour resources	Man
18	Helper	450.00	0.00	No	Labour resources	Man

« < 1 2 3 4 5 ... > » Add

Save Print

# Resource Consumption

To provide consumed quantity of each resource for a task

Resource Consumption Entry Create | 🔍

Project: shari jayan | Level: Basement | Task: PCC FOR PILE CAPS | Date: 02-15-2016

#	Resource Name	Unit	Est Qty	Est Cost	Stock	Qty	Cost	Remarks
1	Cement	Bags	5.00	1975.00	Kaloor ▼	0	340.61	
2	Fine aggregate	Cu ft	15.00	600.00	Kaloor ▼	0	34.00	
3	course aggregate 20 mm	Cu ft	30.00	1080.00	Kaloor ▼	0	29.00	
Total				3655.00				

Save

# Stock Transfer

Transfer resources from one location to another location

Index x  
localhost:3051/StockTransfer

aadspro Home Masters Entries Reports Downloads Search... Jith

Stock Transfer | 🔍

Date 2/15/201 From Kaloor To ALUVA Get Resources

#	Resources	Unit	Rate	Cur.Stock	Quantity
1	Cement	Bags	340.61	68.00	<input type="text"/>
2	10 mm rods	Kg	39.25	103.00	<input type="text"/>
3	10 mm rods	Kg	40.01	2120.00	<input type="text"/>
4	Fine aggregate	Cu ft	34.00	235.00	<input type="text"/>
5	8 mm rods	Kg	34.76	2290.00	<input type="text"/>

Save Print

www.xbuildsoft.com

# Resource Requirement Schedule

- Get a list of task to be completed in a specified period
- Get resource data required for each task
- Create a purchase order based on requirements

# Resource Requirement Schedule

The screenshot shows a web browser window with the URL `localhost:3051/MaterialRequirement`. The application header includes navigation links for Home, Masters, Entries, Reports, and Downloads, along with a search bar and the user name 'Jith'. The main content area is titled 'Resource Requirement Schedule' and features a form with the following fields:

- Project: shari jayan
- Start Date: 01/0
- End Date: 02/17
- GetTasks button

Below the form is a table with the following data:

#	Resources	Unit	Quantity	Stock
<input checked="" type="checkbox"/> 1	16 mm rods	Kg	130.00	0.00
<input checked="" type="checkbox"/> 2	20 mm rods	Kg	3879.00	2150.00
<input checked="" type="checkbox"/> 3	8 mm rods	Kg	3109.00	2390.00
<input checked="" type="checkbox"/> 4	Admixture - Fosrock conplast	lr	112.00	0.00
<input checked="" type="checkbox"/> 5	aggregate 12mm	Cu ft	106.00	100.00
<input checked="" type="checkbox"/> 6	Cement	Bags	472.00	213.00

At the bottom of the table is a pagination control showing page 1 of 2. A 'Create Purchase Order' button is located at the bottom right of the table area.

# Purchase

Purchase Entry x

localhost:3051/Purchase

aadspro Home Masters ▾ Entries ▾ Reports ▾ Downloads ▾ Search...

Purchase Entry Create | 🔍

Order No: ---Sel ▾ Order Date: 02-15-2016 📅 Supplier: SHARI JAYAN ▾ Location: ALUVA ▾ [MoreDetails](#)

#	Product	Rate	Quantity	Amount	Unit	Tax	TaxAmt	NetAmt	Action
1	Cement	395.00	100.00	39500.00	Bags	Tax12.36	4882.20	44382.20	🗑️✖
2	Fine aggregate	34.00	300.00	10200.00	Cu ft	Tax12.36	1260.72	11460.72	🗑️✖
							6142.92	55842.92	+Add

Note:

P&F Amount: 0 Shipping Cost: 0 Discount(%): 0

Discount Amount: 0 Total Order Amount: 55842.92 [Create](#) [Print](#)

# Reports

- Resource Requirement Report
- Stork Register based on each location.
- Consumption.
- Purchase Reports
- Transfer
- And more .....

Stock Register

	Item Name	Date	Opening	Purchase	Consumption	Other	Curent Stock
1	<input type="checkbox"/> Cement [Bags]		0.00	1065.00	952.00	45.00	68.00
2	<input type="checkbox"/> 10 mm rods [Kg]		0.00	8443.00	6073.00		2370.00
3	<input type="checkbox"/> Mason [No]		0.00				0.00
4	<input type="checkbox"/> Helper [No]		0.00				0.00
5	<input type="checkbox"/> Fine aggregate [Cu ft]		0.00	3765.00	3487.00		278.00
6	<input type="checkbox"/> course aggregate 20 mm [Cu ft]		0.00	4155.00	3972.00		183.00
7	<input type="checkbox"/> Admixture - Fosrock conplast [lr]		0.00	60.00	60.00		0.00
8	<input type="checkbox"/> Shutter sheet [No]		0.00				0.00
9	<input type="checkbox"/> Wooden Runners [No]		0.00				0.00

Estimated Vs Actual Cost details

Project shari jayan

View export



## Resource Requirement Schedule

Date From : 12/1/2015 Date To : 2/18/2016

Task Name	Qty
<b>Project : shari jayan</b>	
<b>1 10 mm rods</b>	
Level : First Floor	
1 1F Roof slab, Beam Form & Rebar work (Back)	99.95 Kg
	<b>99.95 Kg</b>
Level : Ground Floor	
1 GF Roof slab, Beam Form & Rebar work (back)	99.95 Kg
	<b>99.95 Kg</b>
Level : Second Floor	
1 2F Roof slab, Beam Form & Rebar work (Back)	99.95 Kg
	<b>99.95 Kg</b>
	<b>299.86 Kg</b>
<b>2 12 mm rods</b>	
Level : First Floor	
1 1F Roof slab, Beam Form & Rebar work (Back)	1.62 Kg
2 1F Roof slab, Beam Form & Rebar work (front)	1.92 Kg
	<b>3.54 Kg</b>
Level : Second Floor	
1 2F Roof slab, Beam Form & Rebar work (Back)	1.62 Kg
2 2F Roof slab, Beam Form & Rebar work (front)	1.92 Kg
	<b>3.54 Kg</b>



# Quality Control

# Concrete Pre-Placement Inspection

Concrete Pre-Placement Inspection | 🔍

Engineer Name: PREM KUMAR T M | Project: A.NATARAJ CHETTIAR S | Level: Foundation | Task: Concreting

Inspection Date: 2/16/2016 | Location: Chennai | Construction start Date: 2/16/2016 | Contractor Name: Jose Kunju

Address: Sanjos Builders, Ernakulam

#	Check list	Requirement	Remark
1	Center line	As per drawing	Checked and found ok
2	Formwork and staging	As per drawing and in plumb	Checked
3	Construction joint location	As per drawing	
4	Steel reinforcement dia/spacing and coating	As per drawing	
5	Cover to reinforcement and overlap	As per drawing	Cover was sufficient
6	Shuttering	As per drawing and in plumb	Complaint
7	RLs and reference levels	As per drawing	Checked

« < 1 2 3 > »

Notes:

Save Print Add document

# Dewatering At Site

Dewatering At Site | Q

Engineer Name: PREM KUMAR T M  
Project: A.NATARAJ CHETTIAR S  
Level: Foundation  
Task: retaining wall  
Inspection Date: 2/18/2016  
Location: Chennai  
Construction start Date: 2/18/2016  
Contractor Name: Jos Kunju  
Address: Sanjos Builders, Ernakulam

#	Check list	Requirement	Remark
1	Receiving system where the project drains into	Compliant	
2	Methods adopted for dewatering	Compliant	Sump-pumping
3	Soil types and erosion potential for site	Compliant	Good Soil
4	Ratio of water inflow to outflow	Compliant	0.3
5	Technique to manage geotechnical stability issues	Compliant	
6	Wells provided for dewatering near the excavated areas	Compliant	0.3

Follow up/ Comments

Save Print Add document Download Form

# General Information on RCC Site Practice

General Information on RCC Site Practice | Q

Engineer Name: PREM KUMAR T M    Project: A.NATARAJ CHETTIAR S    Level: Foundation    Task: Pile cap

Inspection Date: 2/16/2016    Location: Chennai    Construction start Date: 2/16/2016    Contractor Name: Jose Kunju

Address: Sanjos Builders, Ernakulam    [Additional data](#)

Foundation    Columns    Beams    Slab    Walls    Retaining Walls

#	Element Inspected	Status	Comments
1	Foundation preparation	Compliant	
2	Foundation dimensions	Compliant	Dimension was corrupt
3	Reinforcement types/size	Compliant	
4	Reinforcement arrangements	Compliant	
5	Cover to reinforcement	Non-Compliant	Cover at some pointers are not sufficient
6	Reinforcement laps/continuity	Non-Compliant	Lap length are sufficient

Follow up

[Save](#)    [Print](#)    [Add document](#)    [Download Form](#)

# Pile-During Casting Report

Browser: localhost:3051/PileDuringCastingReport#

Inspector Name: PREM KUMAR T M | Project: A.NATARAJ CHETTIAR S | Level: Foundation | Task: Pile cap

Inspection Date: 2/16/2016 | Location: Chennai | Construction start Date: 02/12/2016 | Contractor Name: Jose Kunju

Address: Sanjos Builders, Ernakulam

#	Check list	Requirement	Remark
1	Diameter	As per specification	Checked
2	Casing Reinforcement(Main bar,Spirals)		Checked
3	Lapping Provided	As per specification	Lapping was sufficient
4	Cover	As per specification	Sufficient cover
5	Mix Design	As per specification	M25
6	Mix Ratio	As per mix	1:1:2
7	Location of pile from near by pile(x,y)	As per specification	No shift of pile

Notes:

Buttons: Save, Print, Add Document

# Post Formwork False work removal Checklist

Post Formwork/Falsework x

localhost:3051/FalseworkRemovalChecklist#

aadspro Home Masters ▾ Entries ▾ Reports ▾ Downloads ▾ Search... Messages PREM KUMAR T M

Post Formwork/Falsework removal Checklist | 🔍

Engineer Name PREM KUMAR T M Project JOY VALLUVASSERY Level First floor Task BEAM AND SLAB

Inspection Date 2/16/2016 Contractor Name Jos Kunju

#	Item	Y/N	Comments
1	Has concrete achieved the required strength?	Yes	Sufficient strength was achieved
2	Has all additional loadings been removed from the area?	Yes	Additional load was removed
3	Has the structural engineer approved the back propping strategy?	No	Provide more props evenly near stripping area
4	Are there sufficient props available for back propping?	Yes	Sufficient back props were available
5	Do the operatives know the relevant method statement risk assessments?	Yes	
6	Have operatives been informed as to the extent of the formwork and or falsework to be removed?	No	Operatives has to be informed

« < 1 2 > »

Save Print Add document

# Accounts

# Accounts Groups

localhost:3051/AccountsGroup/AccountGroup

Home Masters ▾ Entries ▾ Reports ▾ Downloads ▾ Search... Messages Basil

Account Groups

- ASSET
  - CURRENT ASSET
    - 1222
    - BANK A/C
    - CASH A/C
    - LOANS & ADVANCES
    - SUNDRY DEBTORS
  - FIXED ASSET
  - INVESTMENTS
- EXPENSE
  - DIRECT EXPENSE
    - PURCHASE OF RAW. OTHERS
    - PURCHASE OF RAW.MAIN
    - Test 2
  - expense
  - INDIRECT EXPENSE
  - MISC EXPENSES

Accounts Groups

Name: FIXED ASSET Parent: ASSET

New Update Delete

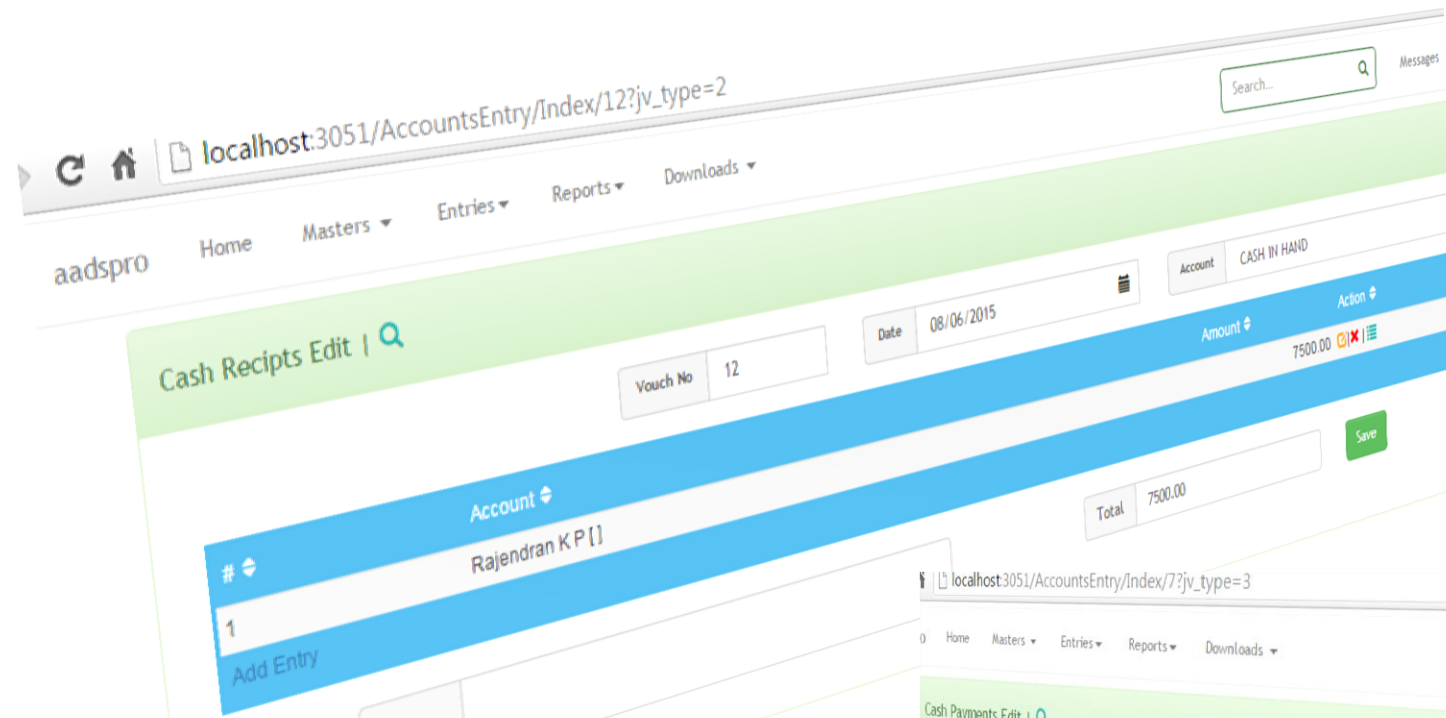


# Chart of Accounts

The screenshot shows a web application interface for managing a Chart of Accounts. The browser address bar indicates the URL is localhost:3051/ChartofAccounts/ChartofAccounts. The application has a navigation menu with 'Home', 'Masters', 'Entries', 'Reports', and 'Downloads'. A search bar is located in the top right corner.

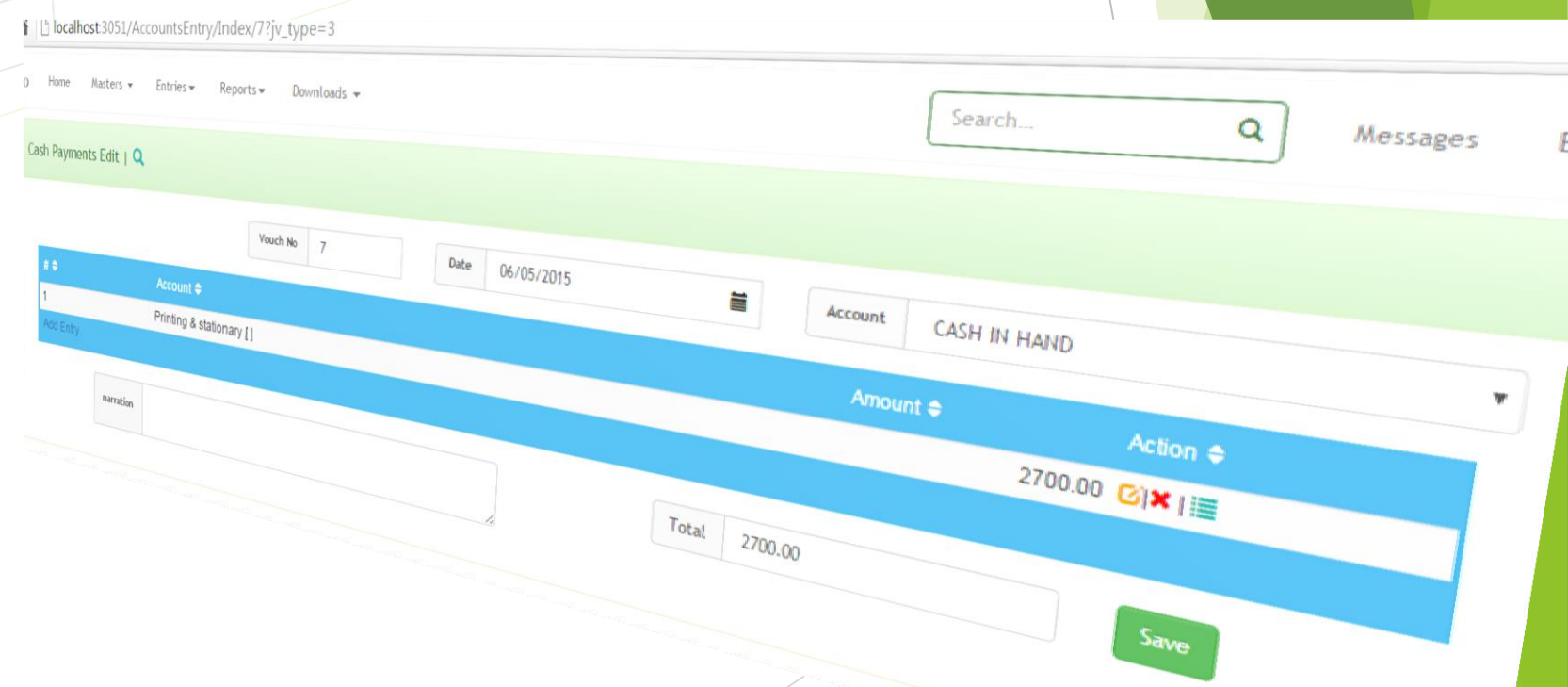
The main content area is divided into two sections:

- Chart of Accounts (Left Sidebar):** A tree view showing the hierarchy of accounts. The root is 'ASSET', which is expanded to show 'CURRENT ASSET'. Under 'CURRENT ASSET', there are several sub-accounts: '1222', 'BANK A/C', 'CASH A/C', 'CASH IN HAND', 'Petty cash', 'Income Tax Refund Recievable', 'LOANS & ADVANCES', 'Sales Tax Deposit', 'Security Deposit F D- Sales Tax', and 'SUNDRY DEBTORS'. The 'SUNDRY DEBTORS' account is expanded to show 'A.NATARAJ CHETTIAR SONS', 'JEWELLERY', 'Aashrami', 'Abacus Architects', and 'Abad Builders'.
- Chart of Accounts (Main Form):** A form for editing an account. The form fields are:
  - Code:** 2159
  - Name:** Aashrami
  - Parent:** SUNDRY DEBTORS (selected from a dropdown menu)
  - Started Date:** 04/01/2014 (with a calendar icon)
  - Op Bal (Cr):** 0
  - Op Bal (Dr):** 0At the bottom of the form, there are three buttons: 'New' (blue), 'Update' (green), and 'Delete' (red).



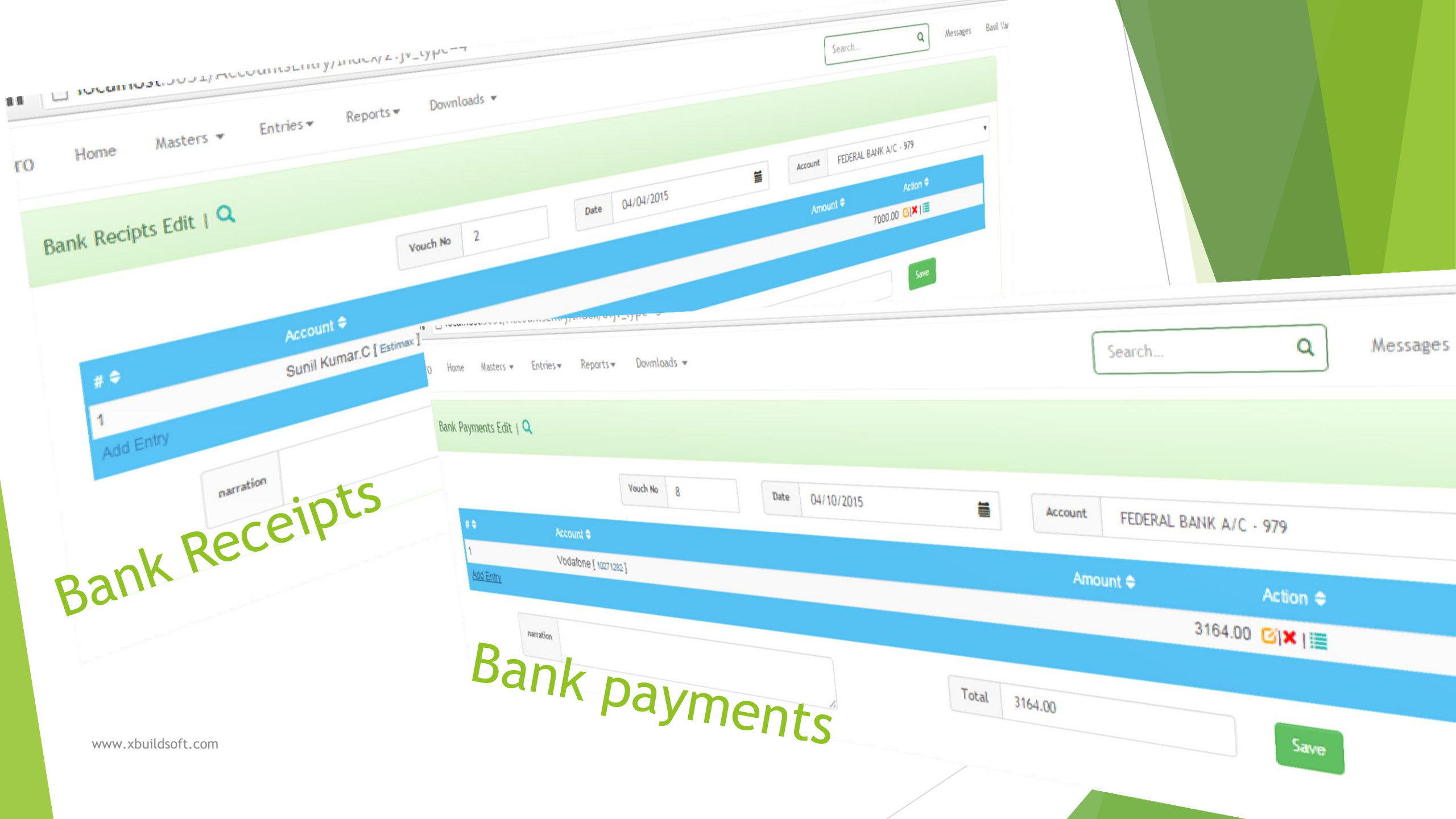
Cash Receipts

Cash payments



# Bank Receipts

# Bank payments



Bank Receipts Edit | Q

Vouch No 2

Date 04/04/2015

Account FEDERAL BANK A/C - 979

Amount 7000.00

Save

# 1  
Add Entry

narration

Account Sunil Kumar.C [ Estimax ]

Bank Payments Edit | Q

Vouch No 8

Date 04/10/2015

Account FEDERAL BANK A/C - 979

Amount

3164.00

Action

narration

Bank payments

Total 3164.00

Save

Search...

Messages

# Journal Entries

Journal Entries Edit | Q

Vouch No 4 Date 04/06/2015

#	Account	Dr	Cr	Action
1	BSNL []	0.00	246.00	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2	Service Tax Input @ 12.36% []	27.07	0.00	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
3	TELEPHONE CHARGES []	218.93	0.00	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Total		246.00	246.00	

narration

Save

localhost:3051/AccountsEntry/Index/9?jv\_type=9

Contra Entry Edit | Q

Vouch No 9 Date 04/24/2015

Account FEDERAL BANK A/C - 979

#	Account	Amount	Action
1	ICICI Bank []	1000.00	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

Total 1000.00

narration

Save

# Contra Entries

# Accounting Reports

- Cash book
- Bank book
- Day book
- Ledgers
- Cash Flow
- Trial Balance
- Profit and loss account

# HR Management

# Employee Details

Employees Edit | 🔍

### General Details

User Name	sharaf	Code	
Name	Sharafudheen m.s		
Residential Address	Mudavankattil house puthenchira,po kannikulangara Kannikulangara, Thrissur		
Permanent Address	Mudavankattil house puthenchira,po kannikulangara Kannikulangara, Thrissur		
Contact Number	0	Alternate Mobile	
Email ID		Gender	Male
Date of Birth	5/24/1993	Blood Group	AB +
Name of Father	Shajahan m.s	Name of Mother	Ramla

### Employment Details

Department	Marketing	Designation	Jn Engineer
Reporting Person	Reji Zachariah	Date of Joining	4/28/2014
Salary	7000	Overtime Amount	0
Working Hours	7.5	Earning Type	Salary
Date of Resignation	12/13/2014	<input checked="" type="checkbox"/> Resigned	

15-16 | aadsproERP

# Leave Management

localhost:3051/Leave#

Home Masters ▾ Entries ▾ Reports ▾ Downloads ▾

Search... Messages Basil Va

## Leave Create | 🔍

Leave Details	Leaves Allowed 24	Leave You Taken 2
Pending Leaves	0	0
Confirmed Leaves	0	0
Rejected Leaves	0	0

From Date

To Date

Leave Type

Remarks

Preview

Create



# Integrate with punching machines

The screenshot shows a web browser window with the URL `192.168.1.146/raj/UpLoadPuchingDetails`. The page title is "Upload Punching Details". The navigation menu includes "Home", "Masters", "Entries", "Reports", and "Downloads". A search bar is present with the text "Search...".

The main content area displays a table with the following data:

#	Employee	Project	Level	Task	Date	In	Out	Edit
1	Man Mohan Mandal - helper	shari jayan	Third Floor	3F Roof Slab casting	1/31/2016	7:54 AM	4:54 PM	[Icons]
2	Sanjay Das	shari jayan	Third Floor	3F Roof Slab casting	1/31/2016	7:54 AM	7:54 AM	[Icons]
3	Sanjay Das	shari jayan	Third Floor	3F Roof Slab casting	1/31/2016	5:08 PM	5:08 PM	[Icons]
4	Sanjay Das	shari jayan	Third Floor	3F Roof Slab casting	1/31/2016	5:08 PM	5:08 PM	[Icons]
5	Balaram Barmer	shari jayan	Third Floor	3F Roof Slab casting	1/31/2016	7:55 AM	4:54 PM	[Icons]
6	Ashananda Das	shari jayan	Third Floor	3F Roof Slab casting	1/31/2016	7:55 AM	5:19 PM	[Icons]
7	Ashananda Das	shari jayan	Third Floor	3F Roof Slab casting	1/31/2016	5:19 PM	12:00 AM	[Icons]
8	Subash Behera -Helper	shari jayan	Third Floor	3F Roof Slab casting	1/31/2016	7:56 AM	5:01 PM	[Icons]
9	Sudev Roy- Mason	shari jayan	Third Floor	3F Roof Slab casting	1/31/2016	7:57 AM	5:00 PM	[Icons]
10	Nibas Chandra Ray Helper	shari jayan	Third Floor	3F Roof Slab casting	1/31/2016	7:58 AM	5:06 PM	[Icons]

Below the table is a green "Save" button. The footer of the page shows "15-16 |" on the left and "aadsproERP" on the right.

# Salary and Wage Calculations

Salary Details Edit | 🔍

Month: January 201  Total Days: 31 Sundays: 5 Holidays: 1 Overtime%: 0 Get Data

#	Employee	Basic	Leaves	Hrs/Day	Target	Worked	Gross	OT	OT Amt	Advance	Allowance	Deductions	Net	Action
1	Chandni Babu	12500.00	2	7.5	172.5	83.67	28682.59	0.00	0.00	0.00	0.00	0.00	28682.59	  
2	Riya Joseph	10000.00	2	7.5	172.5	112	12484.08	0.00	0.00	0.00	0.00	0.00	12484.08	  
3	VYSHNA K M	11000.00	2	7.5	172.5	113.42	12308.45	0.00	0.00	0.00	0.00	0.00	12308.45	  
4	Liya Mathew	10000.00	1	7.5	180	133.08	9498.56	0.00	0.00	0.00	0.00	0.00	9498.56	  
5	Sreehari A.	14000.00	1	7.5	180	159.08	20411.98	0.00	0.00	0.00	0.00	0.00	20411.98	  
6	Veena T.G	9000.00	1	7.5	180	166.58	8329.17	0.00	0.00	0.00	0.00	0.00	8329.17	  
7	Arun Varghese Oommen	10000.00	1	7.5	180	144.92	8050.93	0.00	0.00	0.00	0.00	0.00	8050.93	  
8	clinton	8000.00	1	7.5	180	142.83	6341.18	0.00	0.00	0.00	0.00	0.00	6341.18	  
9	Rindu	7000.00	1	7.5	180	161.33	6274.07	0.00	0.00	0.00	0.00	0.00	6274.07	  
10	honey	7000.00	1	7.5	180	130.75	5084.72	0.00	0.00	0.00	0.00	0.00	5084.72	  

« < 1 2 > » 132609.99

Save

Print 

# Geotechnical

# Lateral Load

aadspro GeoTechnical mo x

192.168.1.146/geotech/Views/lateralload.aspx

aadspro Geotech Modules

Home Load Data Geotech Reports Footing Mix Design Stair Case Logout

Lateral Load

Site : Kottayam

Soil Investigation : Landec

Result

Bore hole no

1

dia of pile

0.5

Mix of concrete (fck)

25

Type of soil

Clay

Soil

Soft

# Reports

Site : Kottayam

Soil Investigation : Landec

Bore Hole NO : 1

## ANALYSIS OF LATERALLY LOADED PILE

As per ANNEX C IS 2911 (Part 1 / Sec 2) : 2010

Diameter of pile = 0.5 m

Stiffness factor for piles in preloaded clays

$$\text{Stiffness factor ,R in m} = (EI / KB)^{1/4}$$

$$\begin{aligned} E &= 4700 (F_{ck})^{1/2} \\ &= 4700 * 25^{1/2} \\ &= 23500 \text{ MPa} \end{aligned}$$

$$\begin{aligned} I &= 3.14 * (D^4) / 64 \\ &= 3.14 * (0.5)^4 / 64 \\ &= 0.00307 \text{ m}^4 \end{aligned}$$

$$\text{Soil modulus , K} = (k_1 / 1.5) * (0.3 / B)$$

$$\begin{aligned} k_1 &= \text{Modulus of subgrade reaction} \\ &= 9 \text{ MN/m}^3 \end{aligned}$$

$$\begin{aligned} B &= \text{Diameter of pile} \\ &= 0.5 \text{ m} \end{aligned}$$

$$\begin{aligned} K &= (9 / 1.5) * (0.3 / 0.5) \\ &= 3.6 \end{aligned}$$

$$\begin{aligned} \text{Stiffness factor,R} &= ((E*I) / (K*D))^{1/4} \\ &= ((23500 * 0.00307) / (3.6 * 0.5))^{1/4} \\ &= 2.52 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Embedded length, L} &= 8 * D \\ &= 8 * 0.5 \end{aligned}$$

# Axial Load

aadspro GeoTechnical mo. X  
192.168.1.146/geotech/Views/Axial%20load.aspx

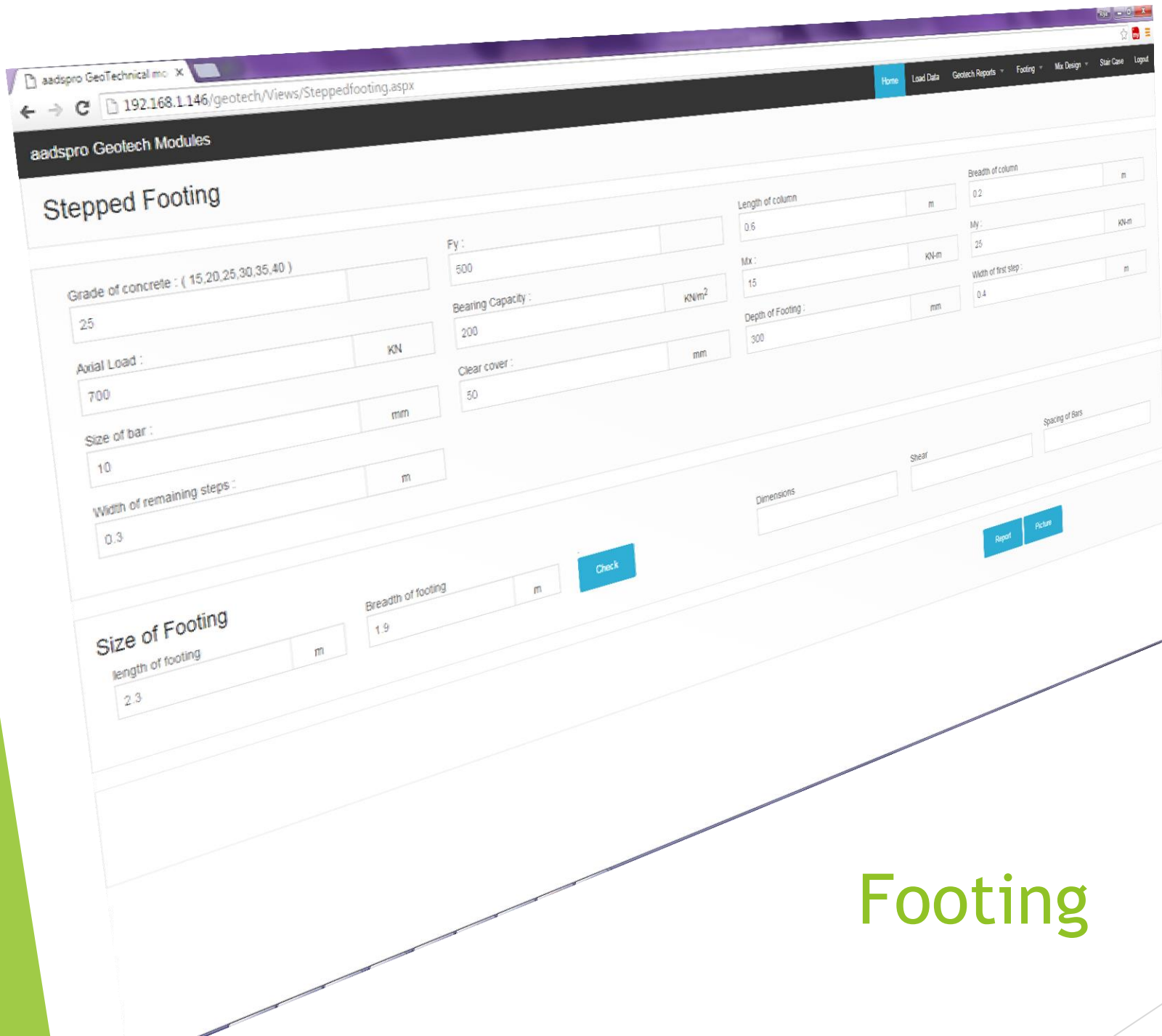
aadspro Geotech Modules [Home](#) [Load Data](#) [Geotech Reports](#) [Footing](#) [Mix Design](#) [Stair Case](#) [Logout](#)

## Axial load

Site:  Soil investigation:  Client:  Bore Hole NO:

End Bearing Type of soil:   Terzaghis bearing capacity equation Nq:  Diameter of pile in meter:

Type	Depth (m)	Angle of Friction	Cohesion (T/m2)	
<input type="text" value="sand"/>	<input type="text" value="5"/>	<input type="text" value="45"/>	<input type="text"/>	<input type="button" value="Add"/>



Design of a stepped footing of column size 0.6m x 0.2m. Axial load on the column is 700 kN. Safe bearing capacity of the soil is 200 kN/m<sup>2</sup>

- Length of column = 0.6m
- Breadth of column = 0.2 m
- Grade of concrete = M 25
- Grade of steel = Fe500
- Axial load = 700 kN
- Safe Bearing capacity = 200 kN/m<sup>2</sup>
- Approximate weight of footing = 42 kN
- Total load = 742 kN
- Area of foundation required = 3.71 m<sup>2</sup>

**Size of Footing**  
 Length of footing = 2.3 m  
 Breadth of footing = 1.9 m  
 Area of footing = 4.37 m<sup>2</sup>  
 Mx = 15 kN-m      My = 25 kN-m  
 $Z_x = (2.3 \times 1.9 \times 1.9) / 6 = 1.68 \text{ m}^3$   
 $Z_b = (1.9 \times 2.3 \times 2.3) / 6 = 1.38 \text{ m}^3$

$P/A = 700 / 4.37 = 160.18 \text{ kN/m}^2$   
 $M_x / Z_x = 15 / 1.68 = 8.93 \text{ kN/m}^2$   
 $M_y / Z_b = 25 / 1.38 = 18.12 \text{ kN/m}^2$   
 Maximum soil pressure =  $P/A + M_x/Z_x + M_y/Z_b = 160.18 + 8.93 + 18.12 = 187.23 \text{ kN/m}^2$   
 Minimum soil pressure =  $P/A - M_x/Z_x - M_y/Z_b = 160.18 - 8.93 - 18.12 = 133.13 \text{ kN/m}^2$

# Footing

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### Mix Design Calculation

Method of calculating the quantity for 1 cubic meter of **M20** grade concrete

As per IS - 456 , P.23 , Table 9 , for 50 kg cement 250 kg of coarse and fine aggregate & 30 liters of water

Coarse aggregate (CA) + Fine aggregate (FA) = 250

Proportion of FA to CA is in the ratio of ( 1 : 2 )

Quantity of FA =  $( 1 / 3 ) * 250$   
= **83.33 kg**

Quantity of CA =  $( 2 / 3 ) * 250$   
= **166.67 kg**

The proportion of [ Cement : FA : CA : Water ] - 50 : 83.33 : 166.67 : 30

By normalising we get - **1 : 1.67 : 3.33 : 0.6**

Weight of 1 m<sup>3</sup> concrete = 2400 kg

Therefor weight of 1 m<sup>3</sup> concrete = 1 \* 2400  
= **2400 kg**

Amount of cement required =  $2400 * 1 / 6.6$   
= **363.64 kg**

Amount of F.A required =  $2400 * 1.67 / 6.6$   
= **607.27 kg**

Amount of C.A required =  $2400 * 3.33 / 6.6$   
= **1210.91 kg**

Amount of water required =  $2400 * 0.6 / 6.6$   
= **218.18 liters**

**Therefor quantity for 1 m<sup>3</sup> concrete of M20 grade concrete requires**

Cement = **363.64 kg**

Fine Aggregate = **607.27 kg**

Coarse Aggregate = **1210.91 kg**

Water = **218.18 L**

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## Stair Case

- Tread of step = 0.25 m
- Rise of step = 0.172 m
- Span of the stair slab = 3.6 m
- Thickness of waist slab = 0.15 m
- Yield Strength of concrete = 500
- Mix of concrete = 30
- Dead load of waist slabs =  $0.15 \times 25 = 3.75 \text{ kN/m}^2$
- Thickness of finishes = 10 mm
- Ceiling finishes =  $10 \times 24 = 0.24 \text{ kN/m}^2$
- Dead load of steps =  $(0.172 / 2) \times 25 = 2.15 \text{ kN/m}^2$
- Floor finishes =  $10 \times 24 = 0.24 \text{ kN/m}^2$
- Live Load = 5 Kn/m<sup>2</sup>
- Total Load =  $3.75 + 0.24 + 2.15 + 0.24 + 5 = 11.38 \text{ Kn}$
- Factored load =  $11.38 \times 1.5 = 17.07 \text{ Kn}$
- Maximum Bending moment =  $17.07 \times 3.6 \times 3.6 / 10 = 22.12 \text{ Kn-m}$
- Effective depth =  $0.15 - 0.006 - 0.03 = 0.114 \text{ m}$
- Percentage of steel = 0.42 %
- Required Ast = 479 mm<sup>2</sup>
- Spacing =  $1000 \times 3.14 \times 12 \times 12 / (4 \times 479) = 235.99 \text{ mm}$
- Provide 12 mm dia bars @ 200 mm c/c**
- Provided Ast =  $1000 \times 3.14 \times 12 \times 12 / (4 \times 200) = 565.2 \text{ mm}^2$

The screenshot shows a web application for staircase design. The browser address bar displays '192.168.1.146/geotech/Views/Staircase.aspx'. The page title is 'Stair Case'. The navigation menu includes 'Home', 'Load Data', 'Geotech Reports', 'Footing', 'Mix Design', 'Stair Case', and 'Logout'. The main form contains the following input and output fields:

- Inputs:**
  - Fy: 500 N/mm<sup>2</sup>
  - Fck: 30 N/mm<sup>2</sup>
  - Span of the stair slab: 3.6 m
  - Thickness of waist slab: 0.15 m
  - Live load: 5 kN/m<sup>2</sup>
  - Dia of bars: 12 mm
  - Tread of Step: 0.25 m
  - Thickness of ceiling finishes: 10 mm
  - Clear cover: 30 mm
  - Rise of Step: 0.172 m
  - Thickness of floor finishes: 10 mm
- Outputs:**
  - Total Load: 11.38 Kn
  - Factored load: 17.07 Kn
  - Maximum Bending moment: 22.12 Kn-m
  - Effective depth: 0.114 m
  - Percentage of steel: 0.42 %
  - Required Ast: 479 mm<sup>2</sup>
  - Provided Ast: 565.2 mm<sup>2</sup>

Thank You

For more info  
Visit

[www.xbuildsoft.com](http://www.xbuildsoft.com)