

- 1. Install COLDNet Pole and open application
- 2. Select File>New
- 3. Give the file a name, e.g. ProfileExample.
- 4. The following screen below will appear. Select Parameter File Locations>Add Directory to navigate to the location where the Design Parameters/Libraries have been stored locally on the machine. Once selected Close Manage Directories window and double click on the desired parameter file from the list. For this example, select the Design Parameter file called NZ.

G COLDNet Pole Version: 1.0.0.3 Lice	enced to: Busck Prestressed Concrete Ltd						- 🗆 ×
File Designs Configuration	Reports Strength Factors Export	to DXF 3D View Job History	Print Settings Informati	on	Display Options - Draw	v Options Measure - Sag Conductor	Clearance to Ground Catenaries
Current Design:	Foundation			Job Description:	Plan Profile		10.07
Pole Details	So	il Type:			Tione		
Asset No:	Soil Passive		Use Non-Standard				
Group:	Resistance (	kPa/m):	Soil				
Length:	Setting Dep	th (m): 🗸	Use Non-Standard Setting Depth		_		
Strength:	Stabilised I	Backfill:					
Measured Strength	Width	h Below I (mm):					
(kN):		Pole Bases & Logs	Offset (m) Direction (°)				
	Pole Base:						
	Upper Log:	G Select Parameter - Double click	k mouse to select		– 🗆 🗙		
	Lower Log:	Parameter File Locations Lo	ad CATAN Design Set Cano	el Use highlighted file			
Add Profile		File Path					
Survey Data Simple Point Loads	Complex Point Loads Results Imag	C:\Users\Jacquie\Documents\CO	OLDNet\Libraries\EQCyclonic.	odc.xml			
Profile Data		C:\Users\Jacquie\Documents\CO	OLDNet\Libraries\EQNonCyclo	nic.cdc.xml			
Name	O Away Fro	C:\Users\Jacquie\Documents\C0	OLDNet\Libraries\NZ.cdc.xml				
Name:	O Towards						
Data Points							
Point Type	Point Number Data1						
•							
Conductors Crossarms Pole Plan	t Stays						
Add New Conductor	Remove Selected Conducto						
Conductor Group	Conductor Vo	Itage No. of Max Temp	Min Temp Everyda Temperati	y ire			
		wires (°C)	(°C) (°C)				
-							

- 5. The design criteria and libraries can be viewed by selecting **Configuration** from the top menu on the main screen.
- 6. The Blowout Conditions will also need to be set. Use Temperature of 35°C and Wind Pressure of 500Pa for this example.

Parameter File & Component Li	braries															
Cancel Changes Save Ch	anges															
Component Libraries Condu	ctors Voltages Poles	Pole Bases C	rossarms	Soil Types	Stays	Pole Plan	ıt									
Change Parameter File S	ave As New Parameter File	e														
													Calculation Methods			
				Chan	ge Locat	ion where t	the libraries are Stored						Tension Calculation Method:	RulingSpan ~		
Libraries													Pole Allowable Tipload			
Conductor Library:	C:\Users\Jacquie\Docur	ments\COLDNe	et\Libraries	WZDefault	COLDO	onductors					Change	File	Calculation Method:	PoleStrength V		
Voltage Library:	C:\Users\Jacquie\Docur	ments\COLDNa	et\Libraries	WZDefault	COLDV	ltageData					Change	file	Pole Tipload Bending above Stay Calculation Method:	PoleStrength ~		
Pole Library:	C:\Users\Jacquie\Docur	ments\COLDNe	et\Libraries	WZDefault	COLDPO	leGroups					Change	File				
Pole Base Library:	C:\Users\Jacquie\Docur	ments\COLDNe	et\Libraries	NZDefault	COLDPO	leBase					Change	File	Foundation Calculation Method: EmbedmentLength ~			
Crossarm Library:	C:\Users\Jacquie\Docur	ments\COLDNe	at\Libraries	NZDefault	COLDX	arms					Change	File	Calculation Ontions			
Soil Type Library:	C:\Users\Jacquie\Docur	ers/Jacquie/Documents/COLDNet/Libraries/WZDefault.COLDSoilData										File	Calculate Tiploads 🗹	Blowout Conditions		
Stay Library:	C:\Users\Jacquie\Docur	Vacquie/Documents/COLDNet/Libraries/VZDefault.COLDStayGroup										File	Calculate Foundations 🗹	Temperature (°C): 35		
Pole Plant Library:	C:\Users\Jacquie\Docur	ments\COLDNe	et\Libraries	WZDefault	COLDPO	lePlantGro	up				Change	File	Calculate Mid-Span separation 🗹	Wind Pressure (Pa): 500		
Tipload Cases Name Temp ( Kas. Wind Everyday *	erature Presser (C) (%) 10 1531 20 383	Radiel Thickness of Ice or Smort (mm) 0 0	Density of Ice or Snow (kg/m²) 0	A (Wn) (c	3 (G 00 1 00 0	2 D (FR) .25 1.25 .00 1.10	Live Load Vertical (X) 0.00 0.00 0.00 0.00	Live Load Horz. (N) 0.00 0.00	G 0.00	Use Span Reduction Reduction Winds	Use Span Reduction Network Winds		Calcide Stays G Calculate Crossams G Uplift Load Cases Name Temperature Wind (P • Uplift Load Cases (C) 900 • 0900 • 09000 • 09000 • 09000 • 09000 • 09000 • 09000 •	Default Spin Type: v		



- 7. If applicable, record the pole Asset No.
- 8. Select the Group, Length and Strength of the pole from the dropdown menus on the main form
- 9. Select Soil Type and Setting Depth from the dropdown menus
- 10. If applicable select Stabilised Backfill and enter the Width Below Ground
- 11. If required, select a **Pole Base** or **Log** from the dropdown provided

COLDNet Pole: C:\Users\Jacquie\Documents\COLDNet\T	estFiles\ProfileExample.COLDPole	
File Designs Configuration Reports Strength	Factors Export to DXF 3D View Job History Print Settings Information	1
Current Design: Design1	Foundation	Job Description:
Pole Details Asset No: 18795 Group: Busck Concrete  Length: B11  Strength: Single 22kN  Measured Strength	Soil Type: Very Firm  Soil Strength (kPa): 150 Use Non-Standard Soil Setting Depth (m): 1.80 Use Non-Standard Stabilised Backfill: 430 Ground (mm):	Pole replacement Stanley St Asset No.18795
Pole Angle (°): 0 Add Profile	Pole Bases & Logs         Offset (m)         Direction (°)           Pole Bases:         k: Pole Single Donut 460mm         0.00         0.00           Upper Log: <none>          0.00         0.00           Lower Log:         <none>          0.00         0.00</none></none>	

- 12. To add a new Profile select Add Profile and enter in the desired bearing
- 13. Select the desired **Data Type** and direction the survey data was collected (either **Away from Pole** or **Towards Pole**).
- 14. Enter in survey **Data Points** in the table provided. An example has been provided below.

Survey	Data Simple Point Loa	ds Complex Point	Loads Results I	mages				
120° 5	Stanley St							
Nam	e: Stanley St	Away	y From Pole	Modify E	earing	Data Type:	Relative Horizontal Distance & Height	
Data	Points	O Towa	ards Pole	Delete I	Profile			
	Point Type	Point Number	Horizontal Distance (m)	Vertical Distance (m)	Bearing (°)			Comments
•	Study Pole	1	0.00	0.00				
	Ground Point	2	20	.1				
	Ground Point	3	10	0		D/way		
	Ground Point	4	20	.4				
	Offline Point	5	3	6	60	Shed Roof		
	Remote Point	6		6		LV		
	Ground Point	7	20	3				
	End Span Pole	8	20	0		Pole Asset N	o:18794	

15. Add in another profile if required. An example of the second profile has been provided below.

Name: Barton Ave ata Points			Away	From Pole	Modify I	Modify Bearing		Relative Horizontal Distance & Height
		O Towa	rds Pole	Delete Profile		Dota ()por		
	Point Type	Point Number	Horizontal Distance (m)	Vertical Distance (m)	Bearing (°)			Comments
	Study Pole	1	0.00	0.00				
	Ground Point	9	20	5				
	Ground Point	10	20	5				
	Ground Point	11	20	2				
	End Span Pole	12	20	1		Pole Asset No	:18796	



- 16. The survey data can be visually seen in the **Plan** view tab and respective **Profile** tabs. This will update automatically as data is entered.
- 17. Once all the profiles have been added the Pole Angle can be changed if required (this can be changed at any time). For this example, select Edge Towards 120° Stanley St from the dropdown menu provided. Display Options for Point Numbers, Span Lengths and Comments will need to be selected to replicate the picture below.



18. Next, add the required conductors for the job be selecting the **Conductors** tab, followed by **Add New Conductor**. An example of this has been provided below.

Conductors	Crossarms	Pole Plant	Stays						
Ac	ld New Condu	uctor		Remove Selected	Conductor				
Cor	Conductor Group			Conductor	Voltage	No. of Wires	Max Temp (°C)	Min Temp (°C)	Everyday Temperature (°C)
Standard		I	odine		11kV	3	65	-5	10
Standard		к	utu		LV3	4	65	-5	10

19. Next, select the **Crossarms** tab and begin adding Circuits to each of the profiles by selecting **Add New Circuit** and then filling out the required circuit details. An example for each profile has been provided below. NOTE: A **Common Crossarm** will not be able to be selected until a circuit has been added for each of the two profiles.

C	onductors	Crossarms	Pole Plant Stays										
1	20° Stan	ley St 310° B	arton Ave										
	Pole C	rossarms	Add New	/ Circuit	Remove Selected Circuit						🗌 sh	ow Kingbolt Heigh	nt 🗌 Show
	Circuit	Comm	on Crossarm	Attachment Type	Conductor	Everyday Load (%CBL)	Crossarm Group	Crossarm	Locked POA	POA (m)	Crossarm Angle (°)	Span Length (m)	Ruling Span (m)
	1	<none></none>		Strain	11kV Iodine x 3	12.00	Busck Concrete	2M D. Arm S. Term LH 3W		9.120	215	90.00	90.00
	2	<none></none>		Strain	LV3 Kutu x 4	11.00	Busck Concrete	3M LV D TERM D		8.000	30	90.00	90.00
	End Cro	ossarms											
	Circuit			Attachment Type			Crossarm Group	Crossarm		POA (m)	Crossarm Angle (°)		
	1			Strain			Busck Concrete	2M D. Arm S. Term LH 3W		9.120	210		
	2			Strain			Busck Concrete	3M LV D TERM D		8.000	30		

Conductor	s Crossarms	Pole Plant Stays										
120° Sta	nley St 310°	Barton Ave										
Pole Crossarms Add New Circuit		v Circuit	Remove Selected Circuit						_ sh	ow Kingbolt Heigl	nt 🗌 Sho	
Circuit	Comn	ion Crossarm	Attachment Type	Conductor	Everyday Load (%CBL)	Crossarm Group	Crossarm	Locked POA	POA (m)	Crossarm Angle (°)	Span Length (m)	Ruling Span (m)
1	120° Stanley	St Circuit: 1 11kV	Strain	11kV Iodine x 3	12.00	Busck Concrete	2M D. Arm S. Term LH 3W		9.120	215	80.00	80.00
End Cr	ossarms											
Circuit			Attachment Type			Crossarm Group	Crossarm		POA (m)	Crossarm Angle (°)		
1			Strain			Busck Concrete	2M D. Arm S. Term LH 3W		9.0	30		

## **COLDNet Pole – Profile Example**



G COLDNet Pole: C:\Users\Jacquie\Documents\COLDN	et\TestFiles\ProfileExample.COLDPole										-	o ×
File Designs Configuration Reports Stree	gth Factors Export to DXF 3D View	ob History Print Settings Informatio	on		Dis	aplay Options + Dra	w Options Sag Co	nductor Clearand	e to Ground Ca	atenaries Print		
Current Design: Design1	Foundation		Job Description:		Play	120° Stanley	St 310º Barton A	V.				
Pole Details	Soil Type: Very Firm	~	Pole replacement Stanley St Ar	sset No.18795	^							
Asset No: 18795	Soil Strength (kPa):	Use Non-Standard										
Group: Busck Concrete V	150	Soil				9.120	9.120 Barton Ave 11kV					9.120
Levelte Dir	Setting Depth (m): 1.80	Use Non-Standard			~							
Length: BII	Chalifiered David Str. 12	- Setting Depth				8.000						8.000
Strength: Single 22kN V	Width Below 430											
Measured Strength Strong/Weak (kN):	Ground (mm):											
	Pole Bases & Log	S Offset (m) Direction (*)								X		
Pole Angle (*): 210	Pole Base: Busck: Pole Single Donu	1461 - 0.00 0.00										
Change Pole Angle -	Upper Log: <none></none>	×										
1110-0-	Lower Log: <nonc></nonc>				8							
Add Profile					·							
Survey Data Simple Point Loads Complex Point L	oads Results Images											
120° Stanley St 310° Barton Ave												
Name: Stanley St	Away From Pole	todify Bearing Data Ty	pe: Relative Horizontal Distance 8	k Height								
Data Points	O Towards Pole	Delete Profile										
Point Type Point Number	Horizontal Vertical Rearing	g (*)	Comments									
Clude Data	Distance (m) Distance (m)											
Ground Point 2	20.00 0.10							D/way		Χ		e Asse No:1879
Ground Point 3	10.00 0.00	D/way				- ×	×	×		4	7	8
Ground Point 4	20.00 0.40					<u> </u>						
Offline Point 5	3.00 6.00 60	Shed Roof			1.8							
Remote Point 6	6.00	LV										
Ground Point 7	20.00 -0.30											
End Span Pole 8	20.00 0.00	Pole Asset No:18794				dimensions in m						
					C	ainarest =10,10,6	levation: -2.18					
						anoge. 10.101						
Conductors Crossarms Pole Plant Stays												
120° Stanley St 310° Barton Ave												
Pole Crossarms Add New Circu	it Remove Selected Circ	it				st	ow Kingbolt Heigh	Show V	Vire Detail	Show Height of Wi	res	
		Everyday Load Crossarm	-			Crossarm	Span Length	Ruling Span			_	
Circuit Common Crossarm Atta	chment Type Conductor	(%CBL) Group	Crossarm	Locked POA	POA (m)	Angle (*)	(m)	(m)				
1 310 <sup>e</sup> Barton Ave Circuit: 1 11kV Strai	11kV Iodine x 3	12.00 Busck Concrete	2M D. Arm S. Term LH 3W		9.12	0 215	90.00	90.00				
2 <none> Strai</none>	n LV3 Kutu x 4	11.00 Busck Concrete	3M LV D TERM D	L	8.00	0 30	90.00	90.00				
End Crossarms												
		Crossarm				Crossarm		-	_			
Circuit Atta	chment Type	Group	Crossarm		POA (m)	Angle (°)						
1 Strai	1	Busck Concrete	2M D. Arm S. Term LH 3W V		9.12	210						
2 Strai	1	Busck Concrete	3M LV D TERM D		8.00	0 30						
L												

20. The circuits can now be visually seen through the **Profile View** drawings.

21. The conductor on the second circuit of the Stanley St Profile can now be sagged through our wire survey point (Point No. 5 "Reference Point"). Select Sag Conductor from the top tool strip menu to open the following window shown below.

Calculate Everyday Stri	ng for pr	ofile 120 S	tanley St		
Select C	Circuit	Circuit 1	: 11kV Iodine x3		~
Chainage (m)	Height	(m)	Point Comment		Sag Point
50.00		6.00	LV		
Conductor Tempera	iture (°C	:):		Calculate Stri	inging
Everyday Loa	d (%CBL	.):		Update Strin	iging
Everyday Ter	ision (kN	I):		Close	

22. All the reference points that were entered in the survey data for this profile will be displayed in the grid. Select the Circuit of interest and the Sag Points that are relevant to that circuit. Enter the Conductor Temperature at the time of survey followed by **Calculate Stringing**, as shown below.

Calculate Everyday String for profile 120 Stanley St										
Select C	Circuit	Circuit 2	2: LV3 Kutu x4		~					
Chainage (m)	Height (	m)	Point Comment		Sag Point					
50.00		6.00	LV							
Conductor Tempera	ature (°C)	):	25	Calcu	ulate Stringing					
Conductor Tempera Everyday Loa	ature (°C) d (%CBL)	):	25 11.69	Calcu Upd	ulate Stringing ate Stringing					



23. Select Update Stringing to commit the changes and string conductor. This will then be updated in the Profile Drawing.



24. A ground clearance line can be added by selecting Clearance to Ground. Select Add Clearance and enter in the desired clearances. An example is given below.



25. Select Save to commit changes. This will now be displayed on the Profile Drawing.

Dirolay Onti	inne - Draw Ontione San Conductor, Clearance to Ground, Catenarier, Brint	
Plan 120	Stanley St 310° Barton Ave	
9.120	9.120 9.120 9.120	
8.000	8.000	
	LV ×	
	6	
1.20	5.0	
6		
Ļ	D/way 4 Pole Asset No:18	79
Ť	2 3 7 8	
1.80		
_		
All dimensio	a su no s	
Chainage:	-9.22 Elevation: -0.52	



26. Navigate to the Plan tab and select the Display Options>Show Blowout. The blowout curve will now be displayed on the plan view screen. To measure the clearance distance between the conductor and the Shed Roof (Point No. 5 "Offline Point") select Cross-Sections>Create Cross-Section. Select Points 5 & 6 from the plan view screen. The following widow below will appear which displays the clearance distances between the Shed Roof and the circuits at their different loadcases.

lose Print Print 9	Settings										34
Cross Section Na	ame: Section A-A	Те	emperatu	re (°C): 35	Wind Pressure (Pa	a): 500		Recalculate			
Profile: 120 St	tanley St		Point Cor	mment: Shed Roof							
Circuit	Case	Temperature	Wind	Straight Line	Horizontal	Vertical	Horizontal	Vertical	Description		
11kV Iodine @12.0%	Maximum Temperature	(°C)	(Pa)	Distance (m)	Distance (m)	Distance (m)	Clearance (m)	Clearance (m)	Description		
	Minimum Temperature	-5	0	2.637	1.673	2.039					
	Blowout	35	500	1.999	0.087	1.997	2.1	3.7	C & B		
/3 Kutu @11.7%	Maximum Temperature	65	0	1.351	1.198	0.625					
	Minimum Temperature	-5	0	1.345	1.198	0.611					
	Blowout	35	500	1.320	0.847	1.013	1.5	2.7			
/3 Kutu	Closest			0.193	0.103	0.163					
_	-									1	
					(135,W (135,W950) Shed R	500) • (T • (T-\$,\v0 • (T-\$,\v0 • (T-\$,\v0 • (T65,\v0	5, w0) 15, w0) 10				
					(T35,W500) (T35,W500) Shee k	500) • (T • (T % 0 oof • (T35,WC • (T65,WC	5,w() 55,w() 55,w()				
					(135,W300) (T35,W300) Shed R	500) • (T • (T 5, WC • (T 5, WC • (T 65, WC	5, w0) 15, w0) 1, 1				

27. To add a pole plant select the Pole Plant tab followed by Add New Pole Plant. An example has been provided below.

Conductors Crossarms Pole Plant Stays										
Add New Pole Plant	Remove Selected Pole Plant									
Pole Plant Group	Pole Plant		Distance from Pole Top (m)	Offset Distance from Pole (m)	Direction (°)	Exclude from Calculations	Comment			
ETEL Transformers on 11m Busck	ETEL 3PH 100 kVA	$\sim$	2.24	0.10	300					

28. To add a stay select the Stays tab followed by Add New Stay. An example has been provided below where the stay has been placed on the Bisect Angle. Select Check Stays once all of the stay information has been added to the grid.

Conductors   Crossarms Pole Plant   Stays												
Add New Stay Remove Selected Stay Check Stays												
Stay Orientation	Direction (°) Locked Data Column			Distance from Top Height at Po of Pole (m) (m)		Angle With Ground (°)		Stay Spread (m)	Stay Group	Stay	Part Number	Comments
Resultant Angle of Maximum Load	215.00	Stay Spread	~	0.20	9.00		45	9.00	Softwood Gol	7/10 SC/GZ		
Bisect Angle												
Inline Stays												
Offset Inline Stays:												
Distance to Offset (m):												



29. The results for the various calculations can be viewed at any point during the design by selecting the **Results** tab followed by **Show All**, as show below. A more detailed report of the calculations, component information and terrain data can be found under the **Reports** section. These can be export to a CSV and Excel format if required.

