This walkthrough shows how to use the lidar data to set the wire heights at a pole. It is assumed that the lidar data has already been imported, and that default pole and circuits have been added to the job. This walkthrough used the file created in the walkthrough **Place Default Poles on a Lidar Based File** 

- 1. Open the file that you wish to use.
- 2. Go to the Profile view.

C Profile: Profile1																- @ X
File Design Design1	Profile     Profile1	Circuits	Conductors Place	Default Poles on F	rofile   Undo Add C	ircuit Clear Und	o List Tables 🛛 🛔	Print Options Plots Too	ols Reports	Close						
			Circuits & Cros	sarms Simple Poi	nt Loads Complex P	Point Loads Pole	Plant Bases & L	ogs Ground Stays Aerial	Stays Images							
Chainage (m): 0.000	Location Locked		Show Kin	bolt Data	now Wire Detail - Ioc	ulator Type		Construction Type		<ul> <li>Insulation Up</li> </ul>	orade	~				
Asset No:	Strength:	5 kN 🗸	Silow King		Loud decail this		× 1	Construction type	``````````````````````````````````````		groue -	1 March all	1	1	1	
	Measured		Profile Circu	t Attachment Type	Strain Pole	Load (%CBL)	Group			Crossarm Angle (°)	Kingbolt Height Locked	Kingbolt Height (m)	Height Locked	Unite Unite United Wire Wire Wire Wire Wire Wire Wire Wire	Comment	Brackets
Group: Wood	··· Strength (kN):		Profile1 1				Standard	Strain 3Ph 2400x150x100								Add Brackets
Length: 11 m	Part No.:															
			Profile1 2	Strain	LV SC/GZ 3/2.75 x	4 12.0	Standard	LV Strain 3Ph.	LVS3/51/GZ	157		7.700		7.850		Add Brackets
Foundation																
Setting Depth (m):	1.70 •	Non-Standard							_					_	_	
Stabilised Backfill:																
Width Below Ground (mm):								🖶 📃 Height Above Gr								
Soil Type	01				1						2		Defects b	v Pole Defect	ts by Type M	larkups
Suil type.	G000												D- Pole	1	a ay type H	
Soil Passive Resistance (kPa/m):	1800	Non-Standard		•			11 Flou	rine x3 @ 12.0%			/		D-Pole			
							LV SC/GZ	8/2.75 x4 @ 12.0%								
Pole Comments					W11 m/5 kN						W11 m/5 kN					
	^ III	^														
										- Aller						
										3.5.1						
Mid Sp	oan k Factor: 0.40															
Show Errors Only													Visuals	Pole Wire	r Stave	
		_														
Description	Result													Points		
Tipload Results														Point Nos.		
Loadcase	Utilisation (%)	Values (kN)												Comments		
Sustained	567.80	14.19 / 2.50												Chainages		
Foundation Utilisation														Conductor		
Loadcase	Utilisation (%)	Values (kN)												Wire Heigh		
Limit State	313.89	33.01 / 10.52												Kingbolt He	eight	
Sustained		14.19 / 2.98												Crossarm	Types	
Uplift (+ve is up)														Chow Allas	liner	
Loadcase														Show All V	mes	
Uplift Circuit 1								~~~~~.						Snow Mark		
Uplift Circuit 2							~~~~~		m	· · · · · · · · · · · · · · · · · · ·				Show Wate		
Horizontal Midspan Separation to next	pole				and the second s											
Circuit Circuit 1	Result (m)				M.											
Circuit 2	0.65 > 0.32 m															
Vertical Midspan Separation to next pol														🖌 Update Vie		ally
Circuits	Result (m)															
Circuit 1 to lower Circuit	1.38 > 0.51 m															
Crossarm Loads																
Circuit			~					67.97								
<		>	<										>			
Chainage: 85.387 RL: 29.629 What o	do I do?															

3. Right click the mouse close to the pole and a popup menu will be displayed as shown below.



4. Select the option **Set Attachment Point from Aerial Point.** Note that at the bottom of the screen there is an instruction telling you what you need to do next as shown below.



5. In this example the blue points are wire shots and the purple points are shots to the structure. Structure shots could be pole, crossarm, stay wires or pole top plant such as transformers. You should zoom in to get clear separation between aerial points.

Select a point and a new screen will be displayed as shown below.

a Attachment Heigr	ht from Aerial Point					
Cancel						
Select Point						
Select Point	Point No	Chainage (m)	Height above ground (m)	Distance from Pole (m)	Feature Code	Comment
	5605	0.287	7.822	-0.287	Wire / Conductor	
	5710	0.436	7.751	-0.436	Wire / Conductor	
	5550	0.587	7.413	-0.587	Pole and Pole Stru	
	5563	0.050	7.382	-0.050	Pole and Pole Stru	
Select CIrcuit						
Select Circuit	Circuit No.		Condu	ctor to Next Pole		Attachment Type
	1	Flourine @ 12.0	x 3			S
	2	SC/GZ 3/2.75 @	12.0 x 4			S
			- •			
Selected Point	is	] [ <sup>Select Cros</sup>	ss Arm			
Selected Point	is	Select Cros	ss Arm	150×100		
Selected Point	is est Wire	Select Cros	s Arm Strain 3Ph 2400x	150×100		
Selected Point	is est Wire 9 Bolt	Select Cros	s Arm ———————————————————————————————————	150×100		
Selected Point	is est Wire 9 Bolt	Select Cros	ss Arm	150×100		
Selected Point	is est Wire <b>Sa</b> 9 Bolt	Select Cros	s Arm Strain 3Ph 2400x	150×100		
Selected Point	is est Wire 9 Bolt	Select Cros	s Arm	150×100		

You must

- Select a point that is to be the attachment point. You can sort the points by any of the columns in the **Select Point** grid.
- Select which circuit you are modelling.
- Select whether the point is a wire shot or kingbolt height. For lidar data this would normally be the wire.
- Select the Crossarm, if there is more than one crossarm for that circuit.

### 6. Press Set Height

7. Do the same for the top circuit at the end pole of the span, and for the lower circuit. When modelling the lower circuit, don't forget to select Circuit 2 in the Select Circuit Grid.

# Fixing Attachment Points from LIDAR and Sagging Conductors

8. If all done correctly, the Profile view should look similar to the image below.



9. The next step is to model the conductors correctly. Select **Sag** as shown below.

C Profile: Profil	e1													
File Design	Design1	<ul> <li>Profile Pr</li> </ul>	ofile1	<ul> <li>Circuits</li> </ul>	Conductors	Place D	efault Poles on I	Profile   Undo Set Atta	achment Height F	Pole 2 Clear Und	o List Tables   Print Opti	ons Plots	Tools Report	s Close
					Circuits	& Crossa	arms Simple Po	int Loads Complex Po	int Loads Pole	Plant Bases & L	ogs Ground Stays Aerial	Stays Images	F I	
Chainage (m):		Lo	cation Locked		🗹 She	ow Kingb	olt Data 🔲 S	how Wire Detail Insu	lator Type	~	Construction Type	~	Insulation Up	grade
Asset No:	_		Strength:	5 kN -	Profile	Circuit	Attachment Type	Conductor to Next Strain Pole	Everyday Load (%CBL)	Crossarm Group	Crossarm	Part No.	Crossarm Angle (°)	Kingbolt Height Locked
Group:	Wood	• ··· Str	ength (kN):	WD11/5S/NE	Profile1	1	Strain	11 Flourine x 3		Standard	Strain 3Ph 2400x150x100			
Length:	11 m	•	Part No.:		Profile1	2	Strain	LV SC/GZ 3/2.75 x 4	12.0	Standard	LV Strain 3Ph.	LVS3/51/GZ	157	
Foundation				Use										
	Setting Depth (m):	1.70	·	Non-Standard	<	_								
	Stabilised Backfill:					_								
Width	Below Ground (mm):				Catenari	es	Clearance to G	round Sag	Ground Poi	nt Filter 1	🚊 📃 Height Above Gr	ound		
	Soil Type:	Good	-											
Soi	il Passive Resistance (kPa/m):	1800		Use Non-Standard						11 Flo	urine x3 @ 12.0%			

10. The sag from will be displayed. Click and hold the Title Bar on this form to move it to a better location if required. You can select points either singly or by window. Since in this case we have lidar data, we will select points by window.

Sag	Sag Conductor									
		🔵 Sele	ect Single Po	oint <b>O</b> Sel	lect by Window					
		Se	lect points fo	or sagging from the	profile window					
	Point No.	Chainage (m)	Height (m)	Feature Description	Calculated Stringing (%CBL)	Pole on Left of Span				
				Delete Current Ro						
		Ch	oose Condu	ctor to sag through	selected points					
		Conductor	temperatur	e for sagging (°C) :						
				Calculate Tension						
	-Result		Stringing	g (%CBL) :						
			Tension	(N):						
		pt Result & Up	late Everyd		Clear	Close				
	_									

11. Once you have chosen the selection mode, move the mouse to the Profile view and select the points

g Conduc	tor					
	🔵 Sele	ect Single Po	int O Sel	ect by Window		🗧 🗌 Height Abov
	Se	lect points fo	or sagging from the	profile window		
Point No.	Chainage (m)	Height (m)	Feature Description	Calculated Stringing (%CBL)	Pole on Left of Span	^ 11 Flourine x3 @ 12.0% .V SC/GZ 3/2.75 x4 @ 12.0%
26805	31.889	5.914	Wire / Conductor		o	
26988	32.136	5.816	Wire / Conductor		0	
27143	32.032	6.139	Wire / Conductor		0	
27836	33.371	6.059	Wire / Conductor		0	
28139	33.756	6.037	Wire / Conductor		0	
28527	33.869	6.108	Wire / Conductor		0	~
						────
						<b>T</b> 1 1 1
Leve	Chi 1 : Flourine :	oose Condu x3	ctor to sag through	selected points		
Leve	el 2 : SC/GZ 3,	/2.75 x4				a service and the service
	Conductor	temperature	e for sagging (°C) :			
– Result						
		Stringing	1 (%CBL) :			
		Tension	(N):			
		Tension				
		Tension				

The points will be highlighted in the Profile view and added to the table on the Sag form.

- 12. Select which conductor you are doing the calculation for. In this case it is the top circuit, Level 1.
- 13. You must enter a temperature that you want the calculation made at. In the absence of accurate data, we recommend ambient plus a few degrees. Press **Calculate Tension** when ready.

Sag	Conduc	tor					
		🔵 Sele	ct Single Po	oint 💽 Sel	ect by Window		
		Sel	ect points fo	or sagging from the	profile window		
	Point No.	Chainage (m)	Height (m)	Feature Description	Calculated Stringing (%CBL)	Pole on Left of Span	^
	26805	31.889	5.914	Wire / Conductor		0	
	26988	32.136	5.816	Wire / Conductor		0	
	27143	32.032	6.139	Wire / Conductor		0	
	27836	33.371	6.059	Wire / Conductor		0	
	28139	33.756	6.037	Wire / Conductor		0	
	28527	33.869	6.108	Wire / Conductor		0	×
	<mark>✓</mark> Leve	Cho 2 <b>1.1 : Flourine &gt;</b> 21 2 : SC/GZ 3/	oose Condu 3 /2.75 x4	ctor to sag through	selected points		
		Conductor	temperature	e for sagging (°C) : Calculate Tension			
	- Kesult	<u>.                                    </u>	Stringing Tension	g (%CBL) : (N) :			
		ot Result & Upc	late Everyda		Clear	Close	

14. The results will then be shown.

Select Single Point O Select by Window									
	Sel	ect points fo	or sagging from the	profile window					
Point No.	Chainage (m)	Height (m)	Feature Description	Calculated Stringing (%CBL)	Pole on Left of Span				
26805	31.889	5.914	Wire / Conductor	3.7	0				
26988	32.136	5.816	Wire / Conductor	3.6	0				
27143	32.032	6.139	Wire / Conductor	4.3	0				
27836	33.371	6.059	Wire / Conductor	4.0	0				
28139	33.756	6.037	Wire / Conductor	4.1	0				
28527	33.869	6.108	Wire / Conductor	4.2	0				
	Chi	oose Condu	Delete Current Rov	w selected points					
Leve	Cho al 1 : Flourine ; al 2 : SC/GZ 3,	oose Condu <3 /2.75 x4	Delete Current Roo	w selected points					
<mark>⊻ Lev</mark> e Leve	Chr al 1 : Flourine ; al 2 : SC/GZ 3,  Conductor	temperature	Delete Current Roo ctor to sag through a for sagging (°C) :	v selected points 12					
Leve	Chu al 1 : Flourine ; al 2 : SC/GZ 3; Conductor	temperature	Delete Current Roo ctor to sag through e for sagging (°C) : Calculate Tension	v selected points 12					
Result	Chu el 1 : Flourine ; el 2 : SC/GZ 3; Conductor s	temperature	Delete Current Roy ctor to sag through e for sagging (°C) : Calculate Tension	selected points					
Result	Cho el 1 : Flourine ; el 2 : SC/GZ 3; Conductor s	2.75 x4 temperature Stringing	Delete Current Roo ctor to sag through e for sagging (°C) : Calculate Tension g (%CBL) :	selected points					
Result	Chu al 1 : Flourine ; al 2 : SC/GZ 3, Conductor s	oose Condu k3 (2.75 x4 temperature Stringing Tension	Delete Current Roy ctor to sag through e for sagging (°C) : Calculate Tension g (%CBL) :	selected points					

## 15. Press the button Accept Result & Update Everyday Stringing

16. Repeat the process for the lower circuit. The Profile view will now look similar to the image below.



# Fixing Attachment Points from LIDAR and Sagging Conductors

17. Show the Clearance line. Select **Clearance to Ground** as highlighted below.

🕃 Profile: Prof	ile1										
File - Design	Design1	<ul> <li>Profile</li> <li>Profile1</li> </ul>	- Circuits -	Conductors	Place D	efault Poles on P	rofile   Undo Set Atta	chment Height P	ole 1 Clear Und	List Tables   Print Optio	ons Pla
				Circuits	& Crossa	arms Simple Poir	nt Loads Complex Poi	nt Loads Pole I	Plant Bases & Lo	gs Ground Stays Aerial S	Stays Ir
Chainage (m	): 0.000	Location Locke	d	🗹 Sh	ow Kingb	olt Data 🔲 Sh	ow Wire Detail Insul	ator Type	~	Construction Type	
Asset No		Strength:	5 kN -	Profile	Circuit	Attachment Type	Conductor to Next Strain Pole	Everyday Load (%CBL)	Crossarm Group	Crossarm	Part I
Group	Wood -	···· Strength (kN):	WD11/EC/NE	Profile1	1	Strain	11 Flourine x 3	3.9	Standard	Strain 3Ph 2400x150x100	1153/3/
Lengtr	1: 11 m 👻	Part No.:	WF11/33/NL	Profile1	2	Strain	LV SC/GZ 3/2.75 x 4	2.2	Standard	LV Strain 3Ph.	LVS3/51
Foundatio	on Setting Depth (m): [ Stabilised Backfill: ]	1.70 •	Use Non-Standard	٢							
Widt	h Below Ground (mm):			Catenar	es	Clearance to Gro	ound Sag	Ground Poir	nt Filter 1	🗧 🗌 Height Above Gro	ound
	Soil Type:	Good 🗸			1						

18. The following form will be displayed and press Add Clearance.

Ground Clearances Profile : Profile	1 ×								
Cancel	Save								
Add Clearance	Remove Clearance								
Show Ground Clearance									
Colour:									
Chainage (m)   Clearance (m									

19. Add the data shown below.

Ground Clearance	s Profile :Profile	1 ×								
Cancel		Save								
Add Clearance	e	Remove Clearance								
Show Ground Clearance										
Colour:										
Chainage (m)	Chainage (m) Clearance (m)									
0	5.5									

# Fixing Attachment Points from LIDAR and Sagging Conductors

20. Press **Save** and you will be returned to the Profile view which should now look similar to the one below.



21. You can show the minimum clearance in the span by selecting Catenaries.

🕒 Profile: Profile1									1
File - Design Desi	ign1 - Profile Profile1	- Circuits - Co	nductors Place D	efault Poles on Pr	rofile   Undo Set Atta	chment Height Pr	ole 1 Clear Undo	List Tables   Print Optio	ins - Pl
			Circuits & Cross	arms Simple Poir	nt Loads Complex Poi	int Loads Pole P	lant Bases & Lor	gs Ground Stays Aerial S	tays I
Chainage (m): 0.0	000 🗌 Location Locker	d	🔽 Show Kingb	oolt Data 🔳 Sh	ow Wire Detail Insul	ator Type	~	Construction Type	
Asset No:	Strength: Measured	: 5 kN 🔽	Profile Circuit	Attachment Type	Conductor to Next Strain Pole	Everyday Load (%CBL)	Crossarm Group	Crossarm	Part
Group: Wo	ood ···· Strength (kN):	WP11/5S/NE	Profile1 1	Strain	11 Flourine x 3	3.9	Standard	Strain 3Ph 2400x150x100	1153/3
	m v Part No.:	WF11,55/HC	Profile1 2	Strain	LV SC/GZ 3/2.75 x 4	2.2	Standard	LV Strain 3Ph.	LVS3/5
- Foundation	etting Depth (m): 1.70	Use Non-Standard	٢						
Width Belo	ow Ground (mm):		Catenaries	Clearance to Gro	ound Sag	Ground Poin	it Filter 1	Height Above Gro	und

22. The form below will be displayed. Select the **Circuit 2** tab and then check the box **Show Minimum Clearance in Span** as shown below.

Modif	y Catenary Display Profile: Profile1									×
Add	Curve Remove Curve									Close
Circui	t 1 Circuit 2									
	Description	Colour	Clearance Colour	Show Minimum Clearance in Span	Show Curve	Show Clearance Curve	Clearance (m)	Temperature (°C)	Radial Thickness Ice/Snow (mm)	Density Ice/Snow (kg/m³)
•	Max. Temperature									
	Min. Temperature									

23. Close the form and the Profile view will now display the minimum clearance in the span.



Now that the existing model has been built, you can now proceed to make changes to fix any defects.