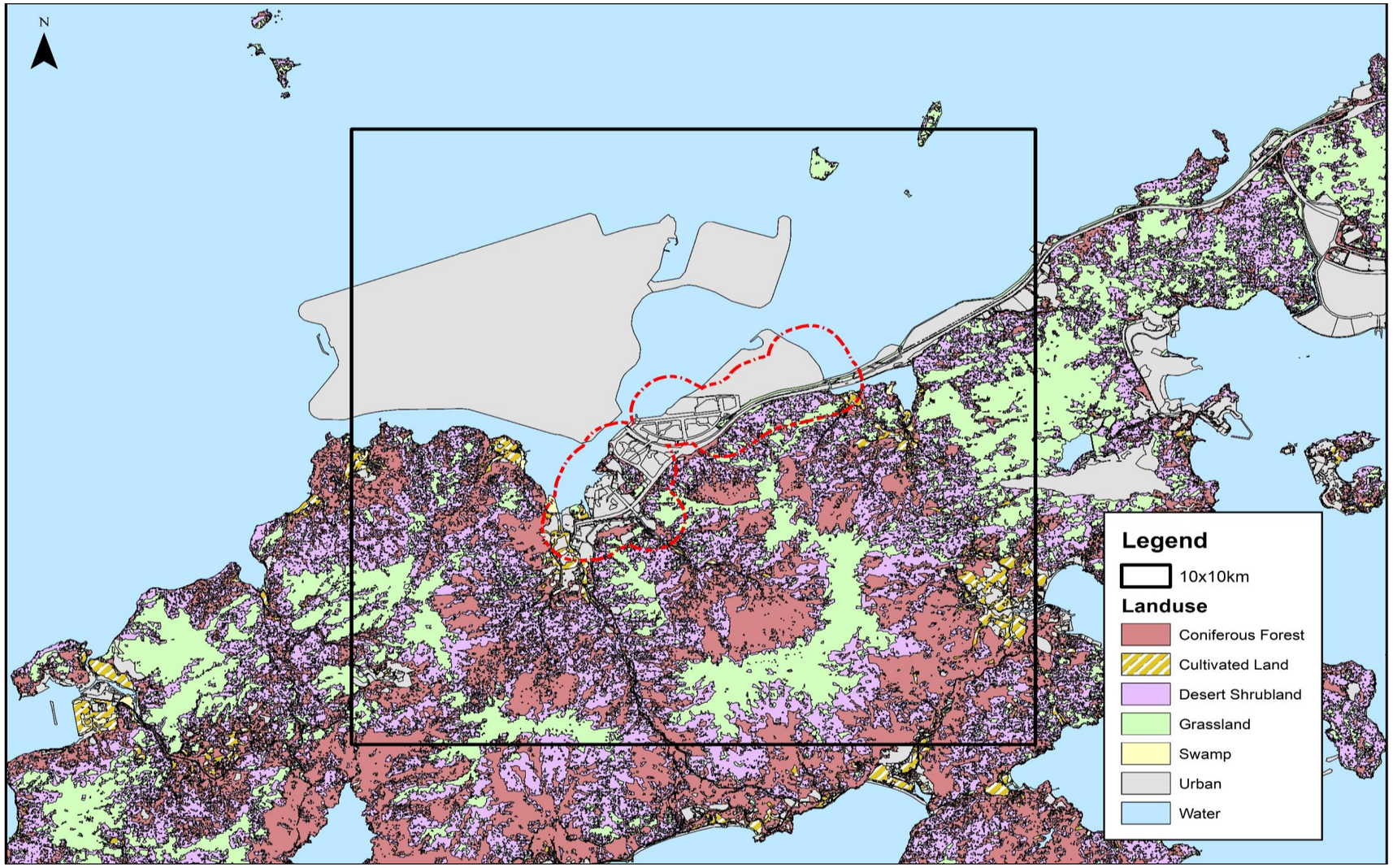
Land-use within 10km X 10km area of the Study Area



Albedo and Bowen Ratio within 10km x 10km Region

Landuse	Percentage	Albedo	Bowen Ratio
Water	29%	0.120	0.100
Coniferous Forest	15%	0.120	0.552
Cultivated Land	2%	0.173	0.472
Grassland	14%	0.187	0.684
Urban	20%	0.160	1.587
Desert Shrubland	20%	0.287	4.160
Total [1], [2]	100%	***0.172***	***0.639***

Notes:
[1] The calculation of Albedo is based on arithmetic mean.
[2] The calculation of Bowen Ratio is based on geometry mean.

Area weighting of each subsection

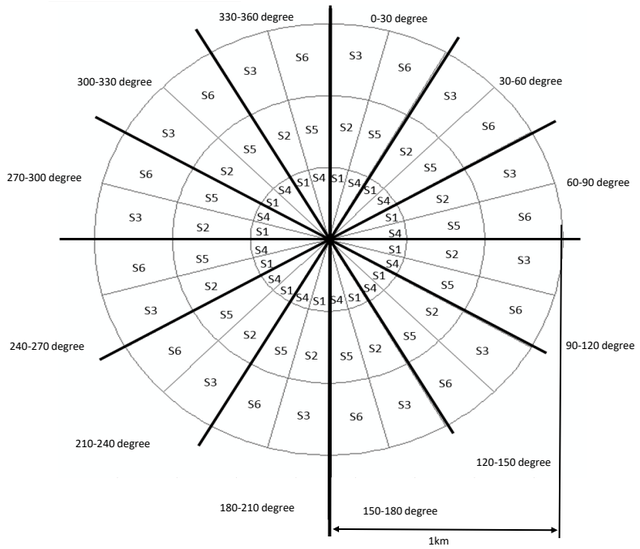
Subsection	Area (km^2)	Fraction of Total Area	Distance (km)	Weighting (Frac/Dist)
S1	0.035	0.056	0.222	0.251
S2	0.105	0.167	0.517	0.322
S3	0.175	0.278	0.842	0.330
S4	0.035	0.056	0.222	0.251
S5	0.105	0.167	0.517	0.322
S6	0.175	0.278	0.842	0.330

Surface Roughness of Different Landuse

Landuse	Surface Roughness
Water	0.000
Deciduous Forest	1.013
Coniferous Forest	1.300
Swamp	0.200
Cultivated Land	0.067
Grassland	0.037
Urban	1.000
Desert Shrubland	0.300

[1] Surface roughness is annual average values

Location Plan of Section and Subsection



Grid: 16_29

12 Sectors Landuse of Individual Grid

Subsection	Section											
	0-30 degree		30-60 degree		60-90 degree		90-120 degree		120-150 degree		150-180 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S2	Urban	1.0000	Urban	1.0000	Grassland	0.0368	Urban	1.0000	Urban	1.0000	Coniferous Forest	1.3000
S3	Desert Shrubland	0.3000	Urban	1.0000	Desert Shrubland	0.3000	Grassland	0.0368	Desert Shrubland	0.3000	Grassland	0.0368
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S5	Urban	1.0000	Grassland	0.0368	Urban	1.0000	Urban	1.0000	Coniferous Forest	1.3000	Coniferous Forest	1.3000
S6	Urban	1.0000	Urban	1.0000	Grassland	0.0368	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000
Total [1]		*0.8026*		*0.5547*		*0.2436*		*0.5472*		*0.6750*		*0.4822*

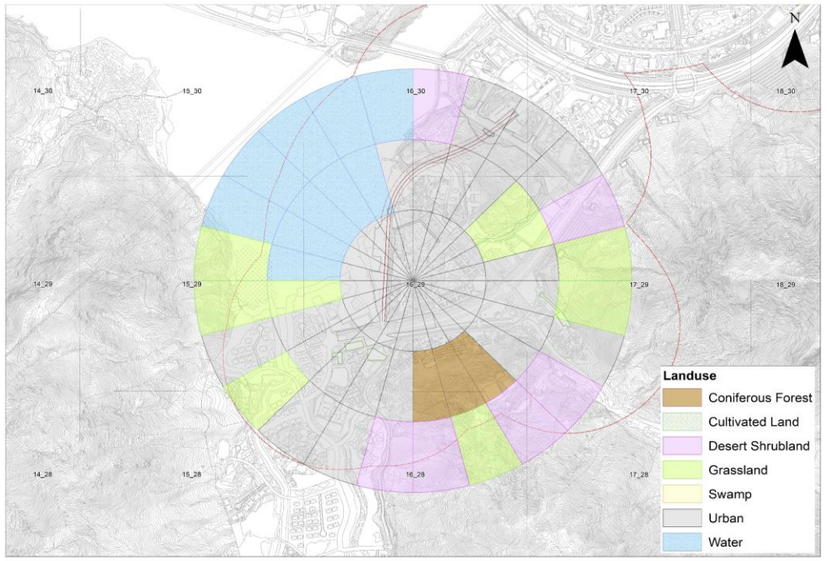
Subsection	Section											
	180-210 degree		210-240 degree		240-270 degree		270-300 degree		300-330 degree		330-360 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S2	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
S3	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Grassland	0.0368	Water	0.0001	Water	0.0001
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S5	Urban	1.0000	Urban	1.0000	Grassland	0.0368	Water	0.0001	Water	0.0001	Urban	1.0000
S6	Urban	1.0000	Grassland	0.0368	Grassland	0.0368	Water	0.0001	Water	0.0001	Water	0.0001
Total [1]		*0.8026*		*0.5472*		*0.3035*		*0.0038*		*0.0013*		*0.0067*

Notes:
[1] The calculation of the surface roughness is based on inverse distance weighting geometry mean and the information in the Table "Area weighting of each subsection"

12 Sectors Surface Roughness of Individual Grid

Direction		Surface Roughness
0	30	0.8026
30	60	0.5547
60	90	0.2436
90	120	0.5472
120	150	0.6750
150	180	0.4822
180	210	0.8026
210	240	0.5472
240	270	0.3035
270	300	0.0038
300	330	0.0013
330	360	0.0067

Notes:
[1] Refer to P.3-25 of the User's Guide For the AERMOD Meteorological Preprocessor (AERMET), the reference wind level should be between 7 x surface roughness and 100m.
[2] As the reference wind level in PATH-2016 is 9m, the surface roughness is capped at 1.28m.



Grid: 16_30

12 Sectors Landuse of Individual Grid

Subsection	Section											
	0-30 degree		30-60 degree		60-90 degree		90-120 degree		120-150 degree		150-180 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Water	0.0001	Water	0.0001	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001
S2	Coniferous Forest	1.3000	Water	0.0001	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S3	Urban	1.0000	Water	0.0001	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S4	Water	0.0001	Water	0.0001	Urban	1.0000	Urban	1.0000	Grassland	0.0368	Water	0.0001
S5	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Urban	1.0000
S6	Water	0.0001	Water	0.0001	Urban	1.0000	Urban	1.0000	Grassland	0.0368	Urban	1.0000
Total [1]		*0.0151*		*0.0005*		*1.0000*		*1.0000*		*0.2791*		*0.0775*

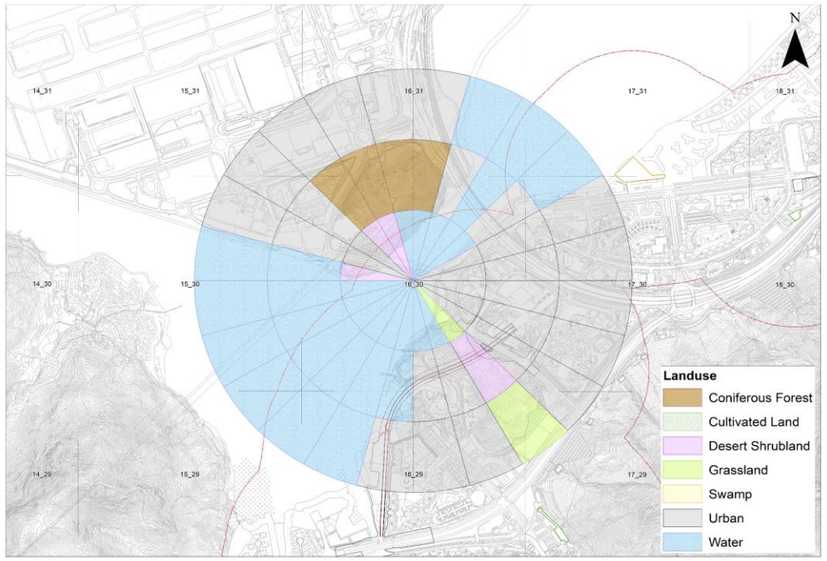
Subsection	Section											
	180-210 degree		210-240 degree		240-270 degree		270-300 degree		300-330 degree		330-360 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Water	0.0001	Water	0.0001	Water	0.0001	Desert Shrubland	0.3000	Urban	1.0000	Desert Shrubland	0.3000
S2	Water	0.0001	Water	0.0001	Water	0.0001	Water	0.0001	Urban	1.0000	Coniferous Forest	1.3000
S3	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001	Urban	1.0000	Urban	1.0000
S4	Water	0.0001	Water	0.0001	Water	0.0001	Urban	1.0000	Desert Shrubland	0.3000	Water	0.0001
S5	Water	0.0001	Water	0.0001	Water	0.0001	Urban	1.0000	Coniferous Forest	1.3000	Coniferous Forest	1.3000
S6	Water	0.0001	Water	0.0001	Water	0.0001	Urban	1.0000	Urban	1.0000	Urban	1.0000
Total [1]		*0.0005*		*0.0001*		*0.0001*		*0.0304*		*0.8866*		*0.2587*

Notes:
[1] The calculation of the surface roughness is based on inverse distance weighting geometry mean and the information in the Table "Area weighting of each subsection"

12 Sectors Surface Roughness of Individual Grid

Direction		Surface Roughness
0	30	0.0151
30	60	0.0005
60	90	1.0000
90	120	1.0000
120	150	0.2791
150	180	0.0775
180	210	0.0005
210	240	0.0001
240	270	0.0001
270	300	0.0304
300	330	0.8866
330	360	0.2587

Notes:
[1] Refer to P.3-25 of the User's Guide For the AERMOD Meteorological Preprocessor (AERMET), the reference wind level should be between 7 x surface roughness and 100m.
[2] As the reference wind level in PATH-2016 is 9m, the surface roughness is capped at 1.28m.



Grid: 17_29

12 Sectors Landuse of Individual Grid

Subsection	Section											
	0-30 degree		30-60 degree		60-90 degree		90-120 degree		120-150 degree		150-180 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Coniferous Forest	1.3000	Desert Shrubland	0.3000	Grassland	0.0368	Grassland	0.0368	Desert Shrubland	0.3000
S2	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Grassland	0.0368	Grassland	0.0368	Grassland	0.0368
S3	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Coniferous Forest	1.3000	Desert Shrubland	0.3000	Coniferous Forest	1.3000
S4	Urban	1.0000	Coniferous Forest	1.3000	Desert Shrubland	0.3000	Grassland	0.0368	Desert Shrubland	0.3000	Desert Shrubland	0.3000
S5	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Grassland	0.0368	Grassland	0.0368	Urban	1.0000
S6	Urban	1.0000	Desert Shrubland	0.3000	Coniferous Forest	1.3000	Grassland	0.0368	Desert Shrubland	0.3000	Desert Shrubland	0.3000
Total [1]		*1.0000*		*0.5616*		*0.3921*		*0.0706*		*0.1061*		*0.3344*

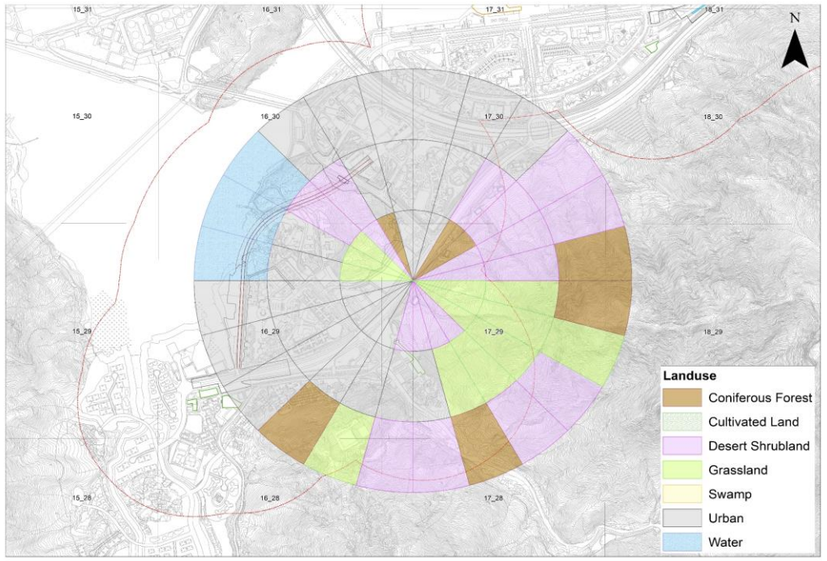
Subsection	Section											
	180-210 degree		210-240 degree		240-270 degree		270-300 degree		300-330 degree		330-360 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Grassland	0.0368	Grassland	0.0368	Coniferous Forest	1.3000
S2	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Urban	1.0000
S3	Desert Shrubland	0.3000	Coniferous Forest	1.3000	Urban	1.0000	Water	0.0001	Water	0.0001	Urban	1.0000
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Grassland	0.0368	Desert Shrubland	0.3000	Urban	1.0000
S5	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Urban	1.0000
S6	Grassland	0.0368	Urban	1.0000	Urban	1.0000	Water	0.0001	Urban	1.0000	Urban	1.0000
Total [1]		*0.3715*		*1.0491*		*1.0000*		*0.0138*		*0.0647*		*1.0371*

Notes:
[1] The calculation of the surface roughness is based on inverse distance weighting geometry mean and the information in the Table "Area weighting of each subsection"

12 Sectors Surface Roughness of Individual Grid

Direction		Surface Roughness
0	30	1.0000
30	60	0.5616
60	90	0.3921
90	120	0.0706
120	150	0.1061
150	180	0.3344
180	210	0.3715
210	240	1.0491
240	270	1.0000
270	300	0.0138
300	330	0.0647
330	360	1.0371

Notes:
[1] Refer to P.3-25 of the User's Guide For the AERMOD Meteorological Preprocessor (AERMET), the reference wind level should be between 7 x surface roughness and 100m.
[2] As the reference wind level in PATH-2016 is 9m, the surface roughness is capped at 1.28m.



Grid: 17_30

12 Sectors Landuse of Individual Grid

Subsection	Section											
	0-30 degree		30-60 degree		60-90 degree		90-120 degree		120-150 degree		150-180 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S2	Urban	1.0000	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Grassland	0.0368
S3	Water	0.0001	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Coniferous Forest	1.3000	Grassland	0.0368
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S5	Urban	1.0000	Urban	1.0000	Coniferous Forest	1.3000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Grassland	0.0368
S6	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Coniferous Forest	1.3000	Grassland	0.0368	Grassland	0.0368
Total [1]		*0.1859*		*1.0000*		*0.8411*		*0.5478*		*0.3735*		*0.0921*

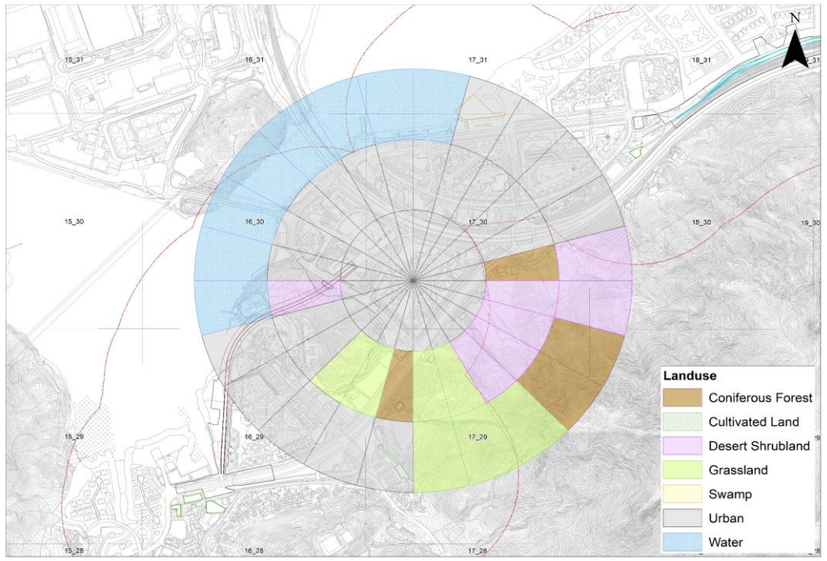
Subsection	Section											
	180-210 degree		210-240 degree		240-270 degree		270-300 degree		300-330 degree		330-360 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S2	Coniferous Forest	1.3000	Grassland	0.0368	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S3	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S5	Grassland	0.0368	Urban	1.0000	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S6	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001	Water	0.0001
Total [1]		*0.5813*		*0.5547*		*0.1500*		*0.0346*		*0.0346*		*0.0346*

Notes:
[1] The calculation of the surface roughness is based on inverse distance weighting geometry mean and the information in the Table "Area weighting of each subsection"

12 Sectors Surface Roughness of Individual Grid

Direction		Surface Roughness
0	30	0.1859
30	60	1.0000
60	90	0.8411
90	120	0.5478
120	150	0.3735
150	180	0.0921
180	210	0.5813
210	240	0.5547
240	270	0.1500
270	300	0.0346
300	330	0.0346
330	360	0.0346

Notes:
[1] Refer to P.3-25 of the User's Guide For the AERMOD Meteorological Preprocessor (AERMET), the reference wind level should be between 7 x surface roughness and 100m.
[2] As the reference wind level in PATH-2016 is 9m, the surface roughness is capped at 1.28m.



Grid: 17_31

12 Sectors Landuse of Individual Grid

Subsection	Section											
	0-30 degree		30-60 degree		60-90 degree		90-120 degree		120-150 degree		150-180 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Water	0.0001	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S2	Water	0.0001	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S3	Water	0.0001	Water	0.0001	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S5	Water	0.0001	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S6	Water	0.0001	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Desert Shrubland	0.3000
Total [1]		*0.0004*		*0.1859*		*1.0000*		*0.8026*		*0.6441*		*0.6441*

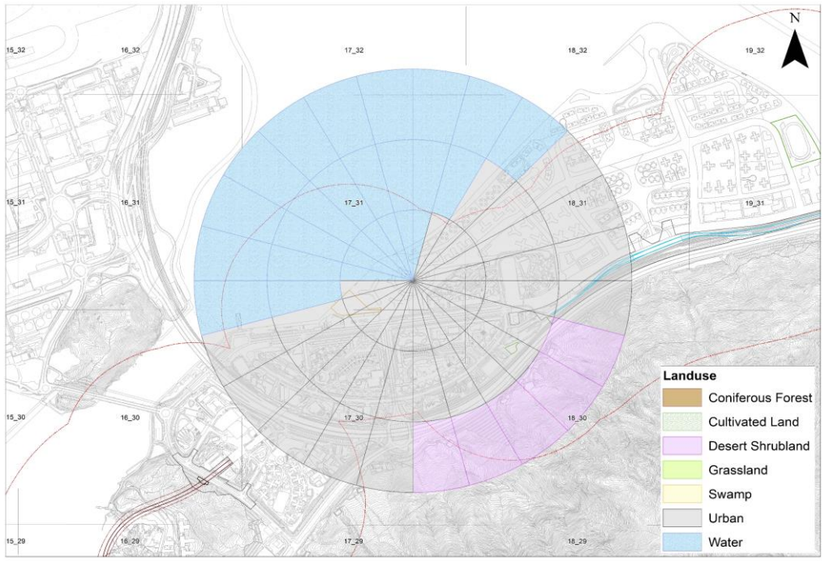
Subsection	Section											
	180-210 degree		210-240 degree		240-270 degree		270-300 degree		300-330 degree		330-360 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
S2	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
S3	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
S5	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001	Water	0.0001
S6	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001	Water	0.0001
Total [1]		*1.0000*		*1.0000*		*0.0359*		*0.0001*		*0.0001*		*0.0001*

Notes:
[1] The calculation of the surface roughness is based on inverse distance weighting geometry mean and the information in the Table "Area weighting of each subsection"

12 Sectors Surface Roughness of Individual Grid

Direction		Surface Roughness
0	30	0.0004
30	60	0.1859
60	90	1.0000
90	120	0.8026
120	150	0.6441
150	180	0.6441
180	210	1.0000
210	240	1.0000
240	270	0.0359
270	300	0.0001
300	330	0.0001
330	360	0.0001

Notes:
[1] Refer to P.3-25 of the User's Guide For the AERMOD Meteorological Preprocessor (AERMET), the reference wind level should be between 7 x surface roughness and 100m.
[2] As the reference wind level in PATH-2016 is 9m, the surface roughness is capped at 1.28m.



Grid: 18_30

12 Sectors Landuse of Individual Grid

Subsection	Section											
	0-30 degree		30-60 degree		60-90 degree		90-120 degree		120-150 degree		150-180 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000
S2	Urban	1.0000	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Grassland	0.0368
S3	Urban	1.0000	Urban	1.0000	Urban	1.0000	Grassland	0.0368	Desert Shrubland	0.3000	Desert Shrubland	0.3000
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Urban	1.0000
S5	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Desert Shrubland	0.3000
S6	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Grassland	0.0368	Desert Shrubland	0.3000	Desert Shrubland	0.3000
Total [1]		*1.0000*		*1.0000*		*0.6474*		*0.1648*		*0.3000*		*0.2439*

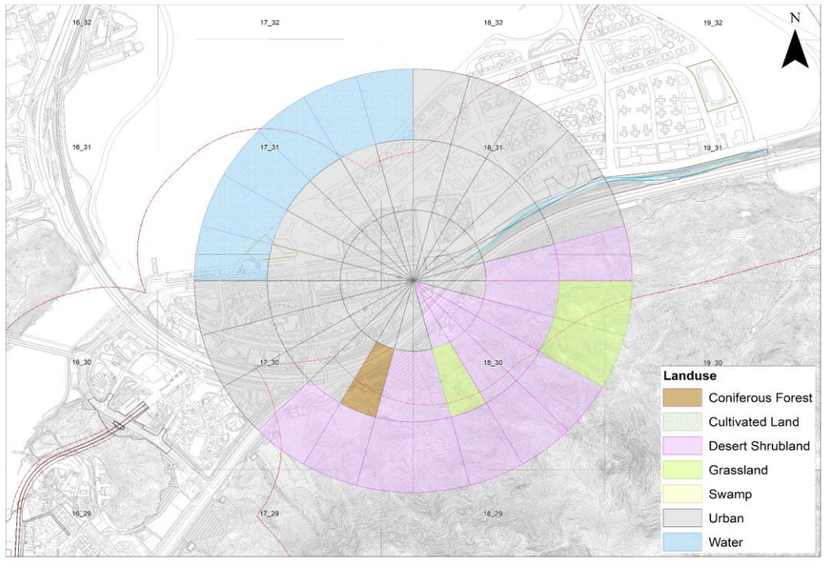
Subsection	Section											
	180-210 degree		210-240 degree		240-270 degree		270-300 degree		300-330 degree		330-360 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S2	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S3	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S5	Coniferous Forest	1.3000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S6	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
Total [1]		*0.5445*		*0.8026*		*1.0000*		*0.0346*		*0.0346*		*0.0346*

Notes:
[1] The calculation of the surface roughness is based on inverse distance weighting geometry mean and the information in the Table "Area weighting of each subsection"

12 Sectors Surface Roughness of Individual Grid

Direction		Surface Roughness
0	30	1.0000
30	60	1.0000
60	90	0.6474
90	120	0.1648
120	150	0.3000
150	180	0.2439
180	210	0.5445
210	240	0.8026
240	270	1.0000
270	300	0.0346
300	330	0.0346
330	360	0.0346

Notes:
[1] Refer to P.3-25 of the User's Guide For the AERMOD Meteorological Preprocessor (AERMET), the reference wind level should be between 7 x surface roughness and 100m.
[2] As the reference wind level in PATH-2016 is 9m, the surface roughness is capped at 1.28m.



Grid: 18_31

12 Sectors Landuse of Individual Grid

Subsection	Section											
	0-30 degree		30-60 degree		60-90 degree		90-120 degree		120-150 degree		150-180 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S2	Water	0.0001	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000
S3	Water	0.0001	Urban	1.0000	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S5	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Urban	1.0000
S6	Water	0.0001	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Desert Shrubland	0.3000
Total [1]		*0.0067*		*1.0000*		*1.0000*		*0.8026*		*0.5196*		*0.5196*

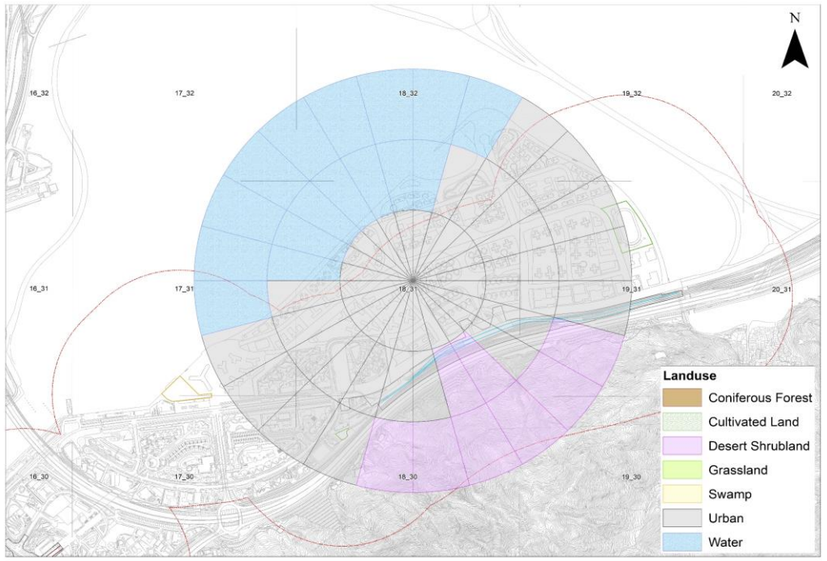
Subsection	Section											
	180-210 degree		210-240 degree		240-270 degree		270-300 degree		300-330 degree		330-360 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S2	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
S3	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
S4	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S5	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001
S6	Urban	1.0000	Urban	1.0000	Water	0.0001	Water	0.0001	Water	0.0001	Water	0.0001
Total [1]		*0.8026*		*1.0000*		*0.1859*		*0.0013*		*0.0013*		*0.0013*

Notes:
[1] The calculation of the surface roughness is based on inverse distance weighting geometry mean and the information in the Table "Area weighting of each subsection"

12 Sectors Surface Roughness of Individual Grid

Direction		Surface Roughness
0	30	0.0067
30	60	1.0000
60	90	1.0000
90	120	0.8026
120	150	0.5196
150	180	0.5196
180	210	0.8026
210	240	1.0000
240	270	0.1859
270	300	0.0013
300	330	0.0013
330	360	0.0013

Notes:
[1] Refer to P.3-25 of the User's Guide For the AERMOD Meteorological Preprocessor (AERMET), the reference wind level should be between 7 x surface roughness and 100m.
[2] As the reference wind level in PATH-2016 is 9m, the surface roughness is capped at 1.28m.



Grid: 19_31

12 Sectors Landuse of Individual Grid

Subsection	Section											
	0-30 degree		30-60 degree		60-90 degree		90-120 degree		120-150 degree		150-180 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Water	0.0001	Water	0.0001	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000
S2	Water	0.0001	Water	0.0001	Water	0.0001	Water	0.0001	Desert Shrubland	0.3000	Grassland	0.0368
S3	Water	0.0001	Water	0.0001	Water	0.0001	Desert Shrubland	0.3000	Coniferous Forest	1.3000	Desert Shrubland	0.3000
S4	Urban	1.0000	Water	0.0001	Urban	1.0000	Urban	1.0000	Desert Shrubland	0.3000	Desert Shrubland	0.3000
S5	Water	0.0001	Water	0.0001	Urban	1.0000	Water	0.0001	Grassland	0.0368	Grassland	0.0368
S6	Water	0.0001	Water	0.0001	Urban	1.0000	Cultivated Land	0.0669	Desert Shrubland	0.3000	Desert Shrubland	0.3000
Total [1]		*0.0013*		*0.0001*		*0.0100*		*0.0183*		*0.3188*		*0.1419*

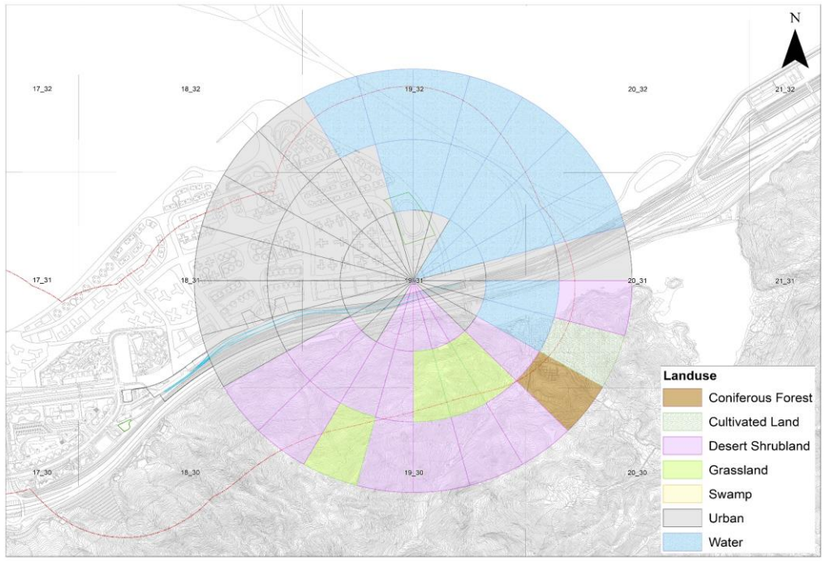
Subsection	Section											
	180-210 degree		210-240 degree		240-270 degree		270-300 degree		300-330 degree		330-360 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S2	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S3	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001
S4	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Urban	1.0000
S5	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001
S6	Grassland	0.0368	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Urban	1.0000	Water	0.0001
Total [1]		*0.2045*		*0.4191*		*1.0000*		*1.0000*		*1.0000*		*0.0067*

Notes:
[1] The calculation of the surface roughness is based on inverse distance weighting geometry mean and the information in the Table "Area weighting of each subsection"

12 Sectors Surface Roughness of Individual Grid

Direction		Surface Roughness
0	30	0.0013
30	60	0.0001
60	90	0.0100
90	120	0.0183
120	150	0.3188
150	180	0.1419
180	210	0.2045
210	240	0.4191
240	270	1.0000
270	300	1.0000
300	330	1.0000
330	360	0.0067

Notes:
[1] Refer to P.3-25 of the User's Guide For the AERMOD Meteorological Preprocessor (AERMET), the reference wind level should be between 7 x surface roughness and 100m.
[2] As the reference wind level in PATH-2016 is 9m, the surface roughness is capped at 1.28m.



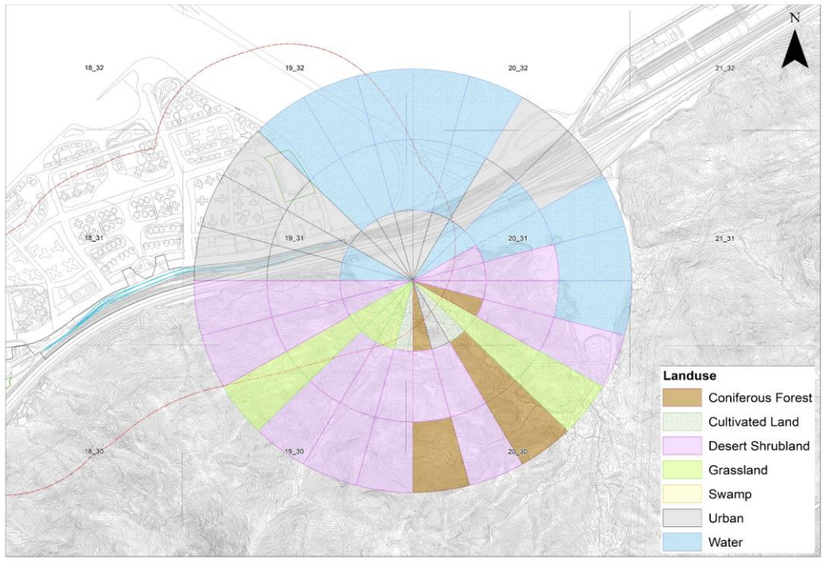
Grid: 20_31

12 Sectors Landuse of Individual Grid

Subsection	Section											
	0-30 degree		30-60 degree		60-90 degree		90-120 degree		120-150 degree		150-180 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Urban	1.0000	Water	0.0001	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Grassland	0.0368	Urban	1.0000
S2	Water	0.0001	Urban	1.0000	Water	0.0001	Desert Shrubland	0.3000	Grassland	0.0368	Desert Shrubland	0.3000
S3	Water	0.0001	Urban	1.0000	Water	0.0001	Water	0.0001	Grassland	0.0368	Desert Shrubland	0.3000
S4	Urban	1.0000	Water	0.0001	Desert Shrubland	0.3000	Coniferous Forest	1.3000	Cultivated Land	0.0669	Coniferous Forest	1.3000
S5	Water	0.0001	Water	0.0001	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Coniferous Forest	1.3000	Desert Shrubland	0.3000
S6	Water	0.0001	Urban	1.0000	Water	0.0001	Desert Shrubland	0.3000	Coniferous Forest	1.3000	Coniferous Forest	1.3000
Total [1]		*0.0013*		*0.0150*		*0.0039*		*0.0852*		*0.1450*		*0.5681*
Subsection	**Section**											
	180-210 degree		210-240 degree		240-270 degree		270-300 degree		300-330 degree		330-360 degree	
	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)	Landuses	Sz (m)
S1	Cultivated Land	0.0669	Grassland	0.0368	Desert Shrubland	0.3000	Water	0.0001	Urban	1.0000	Urban	1.0000
S2	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Water	0.0001
S3	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Desert Shrubland	0.3000	Urban	1.0000	Urban	1.0000	Water	0.0001
S4	Grassland	0.0368	Grassland	0.0368	Desert Shrubland	0.3000	Water	0.0001	Urban	1.0000	Urban	1.0000
S5	Desert Shrubland	0.3000	Grassland	0.0368	Desert Shrubland	0.3000	Urban	1.0000	Water	0.0001	Water	0.0001
S6	Desert Shrubland	0.3000	Grassland	0.0368	Desert Shrubland	0.3000	Urban	1.0000	Water	0.0001	Water	0.0001
Total [1]		*0.1821*		*0.0786*		*0.3000*		*0.0775*		*0.0359*		*0.0013*

Notes:
[1] The calculation of the surface roughness is based on inverse distance weighting geometry mean and the information in the Table "Area weighting of each subsection"

12 Sectors Surface Roughness of Individual Grid

Direction		Surface Roughness
0	30	0.0013
30	60	0.0150
60	90	0.0039
90	120	0.0852
120	150	0.1450
150	180	0.5681
180	210	0.1821
210	240	0.0786
240	270	0.3000
270	300	0.0775
300	330	0.0359
330	360	0.0013

Notes:
[1] Refer to P.3-25 of the User's Guide For the AERMOD Meteorological Preprocessor (AERMET), the reference wind level should be between 7 x surface roughness and 100m.
[2] As the reference wind level in PATH-2016 is 9m, the surface roughness is capped at 1.28m.