

Building Site Surveying Set Out 1

Volume calculation from grid spot levels

(limited to a maximum of 32 grid points)

Grid points (Letter or Number)		Spot levels (RL's) at grid points	No of points on grid lines	Levels x No of corners
A	1	18.102	1	18.102
B	2	17.143	2	34.286
C	3	16.394	2	32.788
D	4	17.286	2	34.572
E	5	17.953	1	17.953
F	6	16.494	2	32.988
G	7	14.951	4	59.804
H	8	14.612	4	58.448
J	9	15.589	4	62.356
K	10	15.896	2	31.792
L	11	14.883	2	29.766
M	12	13.452	4	53.808
N	13	12.957	4	51.828
P	14	13.533	4	54.132
Q	15	14.532	2	29.064
R	16	14.256	2	28.512
S	17	13.430	4	53.720
T	18	10.015	4	40.060
U	19	12.802	4	51.208
V	20	14.148	2	28.296
W	21	15.982	2	31.964
X	22	14.185	4	56.740
Y	23	12.247	4	48.988
Z	24	13.726	4	54.904
AA	25	15.614	2	31.228
AB	26	17.667	1	17.667
AC	27	16.723	2	33.446
AD	28	15.384	2	30.768
AE	29	16.237	2	32.474
AF	30	17.428	1	17.428
AG	31			0.000
AH	32			0.000
S			80	1159.090

Area to be considered (Grid area)	Length m	Width m	Area m ²
A 1 (FGL 1)	50	40	2000.00
A 2 (FGL 2)	50	40	2000.00
A 3 (FGL 3)	50	40	2000.00

Single squares or rectangles should be of equal size. Then area of complete grid system can be used to calculate the required volume.

$$\text{Mean height} = \frac{\bullet \text{ of levels}}{\bullet \text{ of points}}$$

Input cells

Mean Height therefore is	14.488625
FGL 1 (highest level - all fill)	18.102
Height to calculate Volume	-3.61338
This Volume = fill + cut (RL's highest & lowest Level)	
Mean Height therefore is	14.488625
FGL 2 (lowest level - all cut)	10.015
Height to calculate Volume	4.47363

Mean Height therefore is	14.488625
FGL 3 (Building level-fill or cut)	16.300
Height to calculate Volume	-1.81138

MH < FGL = FILL (-ve figure)

MH > FGL = CUT (+ve figure)

MH = FGL then CUT = FILL

FGL	Total m ²	Height	Volume
FGL 1	2000.00	-3.613	-7226.750
FGL 2	2000.00	4.474	8947.250
FGL 3	2000.00	-1.811	-3622.750