



Shadows from tall buildings Burgess Park West/Parkhouse Street

1. Parkhouse Street developments planned alongside Burgess Park

- 10-12 Parkhouse St Burgess Business Park – Two and five storey buildings
- 21-23 Parkhouse St – Southwark Council scheme - Seven to ten storeys
- 25-33 Parkhouse St (Babcock site) - N/K
- 35-39 Parkhouse St Dolphin Living (Hunnex site) – Nine to ten storeys

2. Tall buildings

The London Plan identifies buildings over 30m as tall buildings. A standard residential storey is about 3m, so 30m is about 10 storeys high.

Ten storeys are above the tree line and it will dominate the park which is particularly narrow at that section of the park.

3. Shadows from 30m buildings

Buildings along Parkhouse Street bordering the park will be north facing. The sun will be behind the buildings which will then cast shadows across the park in the morning. The shadows will be longer in the winter when the sun is lower in the sky.

Three critical distances have been selected to illustrate the extent of the shadowing into the park from 10 storey, 30m buildings: 100m illustrating winter shadows, 89m minimum winter shadows and 36m spring/autumn shadows. The shadows will be shortest in the summer either side of the summer solstice.

Indicative shadows area of coverage for 30m buildings along Parkhouse Street

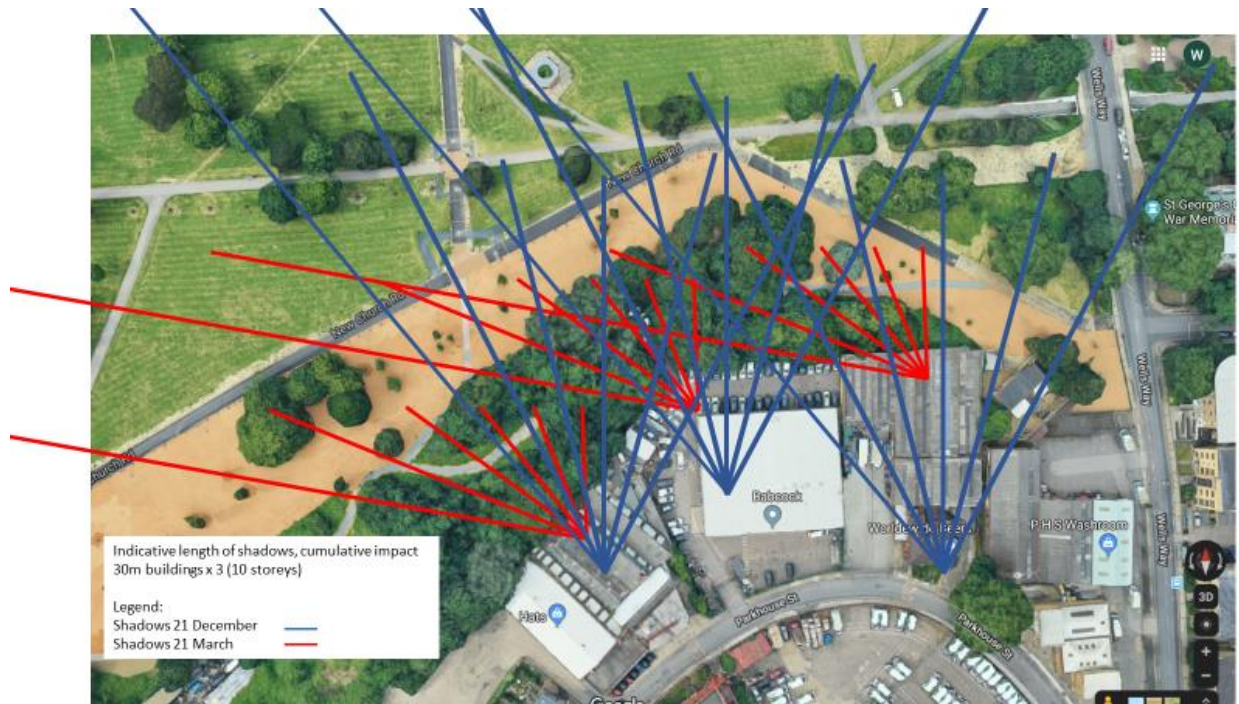


100m line from Burgess Park southern boundary:
100 metres is the AVERAGE shadow throughout the day,
from a 10 storey, 30 metre high building,
for 4 'winter' months of the year:
from 21st October until 21st February.

89 metres from Burgess Park southern boundary:
89 metres is the MINIMUM shadow for any time of the day,
from a 10 storey, 30 metre high building,
for 2 months of the year:
from 21st November until 21st January.

36m line from Burgess Park southern boundary:
36 metres is the MINIMUM shadow for any time of the day,
from a 10 storey, 30 metre high building,
for 6 months of the year:
from autumn equinox 21st September until spring equinox 21st March.

Indicative shadow lengths at hourly intervals of 30m buildings x 3



The diagram above illustrates the shadows length assuming 30m tall buildings on the three Parkhouse sites. The closer the building is to the boundary, the longer the shadows into the park.

- Red Line – shadows 21 March equinox from 7am to 12am. Between 10am and 12am shadow lengths will be 32m to 38m.
- Blue Line – shadows 21 December from 9am to 2pm. Between 10am to 2pm the shadows are over 100m.

Calculations Appendix 1.

4. The impact on the ground

21-23 Parkhouse St – Southwark Council scheme - Seven to ten storeys



36m
Goes across the nature area
100m
Reaches almost to the main Grand Surrey Canal path

25-33 Parkhouse St (Babcock site) - N/K but if 30m tall



36m

Goes beyond the path through the nature area

100m

Reaches just past the lime kiln

35-39 Parkhouse St Dolphin Living (Hunnex site) – Nine to ten storeys



36m

Reaches to the main path into the park from Wells Way

100m

Reaches to the underpass

5. Alternative designs

- Buildings set back from the park boundary
- Lower height eg 5 to 6 storeys
- Stepped back design with taller height at the back of the site
- Consideration of the heavy tree line along the park boundary – which is a bat flying route and a green corridor along the park across to St Georges Church
- North facing windows facing heavy tree line

Appendix 1 Calculations for the hourly shadow lengths

21st of March (Equinox) Shadows building height 30m

51 29' N 00 05' W

Hour	Sun Altitude (deg)	Sun Azimuth (deg E of N)	Shadow Length (m)
05:00	-10.4	76.5	-163.46
06:00	-1.1	88.4	-1562.42
07:00	8.3	100.2	205.64
08:00	17.2	112.6	96.91
09:00	25.4	126.1	63.18
10:00	32.1	141.4	47.82
11:00	36.8	158.7	40.10
12:00	38.7	177.6	37.45
13:00	37.6	196.6	38.96
14:00	33.6	214.4	45.15
15:00	27.3	230.3	58.12
16:00	19.5	244.2	84.72
17:00	10.8	256.8	157.27
18:00	1.7	268.7	1010.81
19:00	-7.9	280.6	-216.20

21st of December (Winter Solstice) Shadows building height 30m

51 29' N 00 05' W

Hour	Sun Altitude (deg)	Sun Azimuth (deg E of N)	Shadow Length (m)
05:00	0	0	#DIV/0!
06:00	0	0	#DIV/0!
07:00	-9.1	116.4	-187.30
08:00	-1.2	127.7	-1432.19
09:00	5.7	139.7	300.56
10:00	10.8	152.6	157.27
11:00	14.1	166.3	119.44
12:00	15.1	180.4	111.18
13:00	13.9	194.6	121.22
14:00	10.5	208.2	161.87
15:00	5.3	221	323.39
16:00	-1.7	233	-1010.81
17:00	-9.6	244.2	-177.37
18:00			#DIV/0!
19:00			#DIV/0!

Sources

Co-ordinates Google

Altitude and Azimuth, Astronomical Applications Dept. U.S. Naval Observatory

<https://aa.usno.navy.mil/data/docs/AltAz.php>