



# G.O. DRAINAGE SERVICES LTD



53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

## PHOTOS

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

DATE: 06/09/21

JOB: CV.02173





# G.O. DRAINAGE SERVICES LTD



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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 01         | 06/09/21 | COMBINED  | 910mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH    |
|----------------------------------|-----------|
| ST. MANHOLE No. 01 CONNECTION- 1 | FH. GULLY |



| CHAINAGE | CODE | OBSERVATION                            |
|----------|------|--|
| 000.0    | ST   | START OF SURVEY                        |
| 000.0    | WL   | WATER LEVEL 05%                        |
| 000.3    | LL   | LINE OF DRAIN DEVIATES LEFT ( SLIGHT ) |
| 000.6    | LD   | LINE OF DRAIN DEVIATES DOWN ( SHARP )  |
| 000.6    | FH   | FINISH OF SURVEY ( GULLY )             |

**END OF RUN NO.01**

GULLY



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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 02         | 06/09/21 | COMBINED  | 910mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

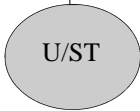
START FINISH  
 ST. MANHOLE No. 01 CONNECTION- 2 FH. UPSTREAM

| CHAINAGE | CODE | OBSERVATION |
|----------|------|-------------|
|----------|------|-------------|



|       |    |  |
|-------|----|--|
| 000.0 | ST | START OF SURVEY                        |
| 000.0 | WL | WATER LEVEL 05%                        |
| 000.3 | LL | LINE OF DRAIN DEVIATES LEFT ( SLIGHT ) |
| 002.9 | LU | LINE OF DRAIN DEVIATES UP ( SHARP )    |
| 002.9 | FH | FINISH OF SURVEY                       |

**END OF RUN NO.02**





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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 03         | 06/09/21 | COMBINED  | 910mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

START FINISH  
 ST. MANHOLE No. 01 CONNECTION- 3 FH. UPSTREAM



| CHAINAGE | CODE | OBSERVATION                            |
|----------|------|--|
| 000.0    | ST   | START OF SURVEY                        |
| 000.0    | WL   | WATER LEVEL 05%                        |
| 000.3    | LL   | LINE OF DRAIN DEVIATES LEFT ( SLIGHT ) |
| 003.2    | LU   | LINE OF DRAIN DEVIATES UP ( SHARP )    |
| 003.2    | FH   | FINISH OF SURVEY                       |

**END OF RUN NO.03**

U/ST



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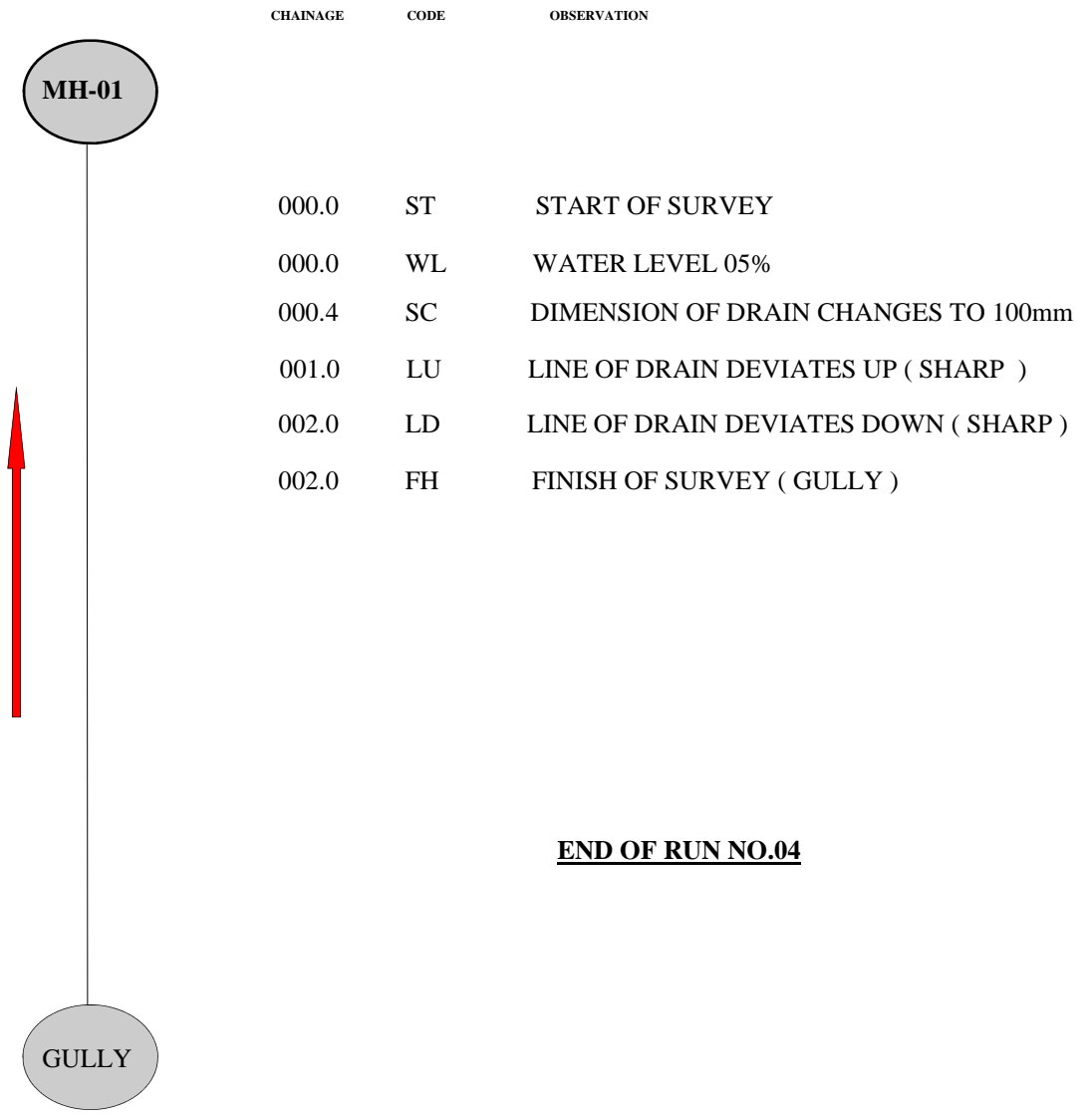
53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 04         | 06/09/21 | COMBINED  | 960mm | UPSTREAM  | 150mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH    |
|----------------------------------|-----------|
| ST. MANHOLE No. 01 CONNECTION- 4 | FH. GULLY |



**END OF RUN NO.04**



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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 05         | 06/09/21 | COMBINED  | 910mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH             |
|----------------------------------|--------------------|
| ST. MANHOLE No. 01 CONNECTION- 5 | FH. SOIL VENT PIPE |

| CHAINAGE | CODE | OBSERVATION |
|----------|------|-------------|
|----------|------|-------------|



|       |    |                                     |
|-------|----|-------------------------------------|
| 000.0 | ST | START OF SURVEY                     |
| 000.0 | WL | WATER LEVEL 05%                     |
| 000.3 | LU | LINE OF DRAIN DEVIATES UP ( SHARP ) |
| 000.3 | FH | FINISH OF SURVEY ( SOIL VENT PIPE ) |

**END OF RUN NO.05**

SVP



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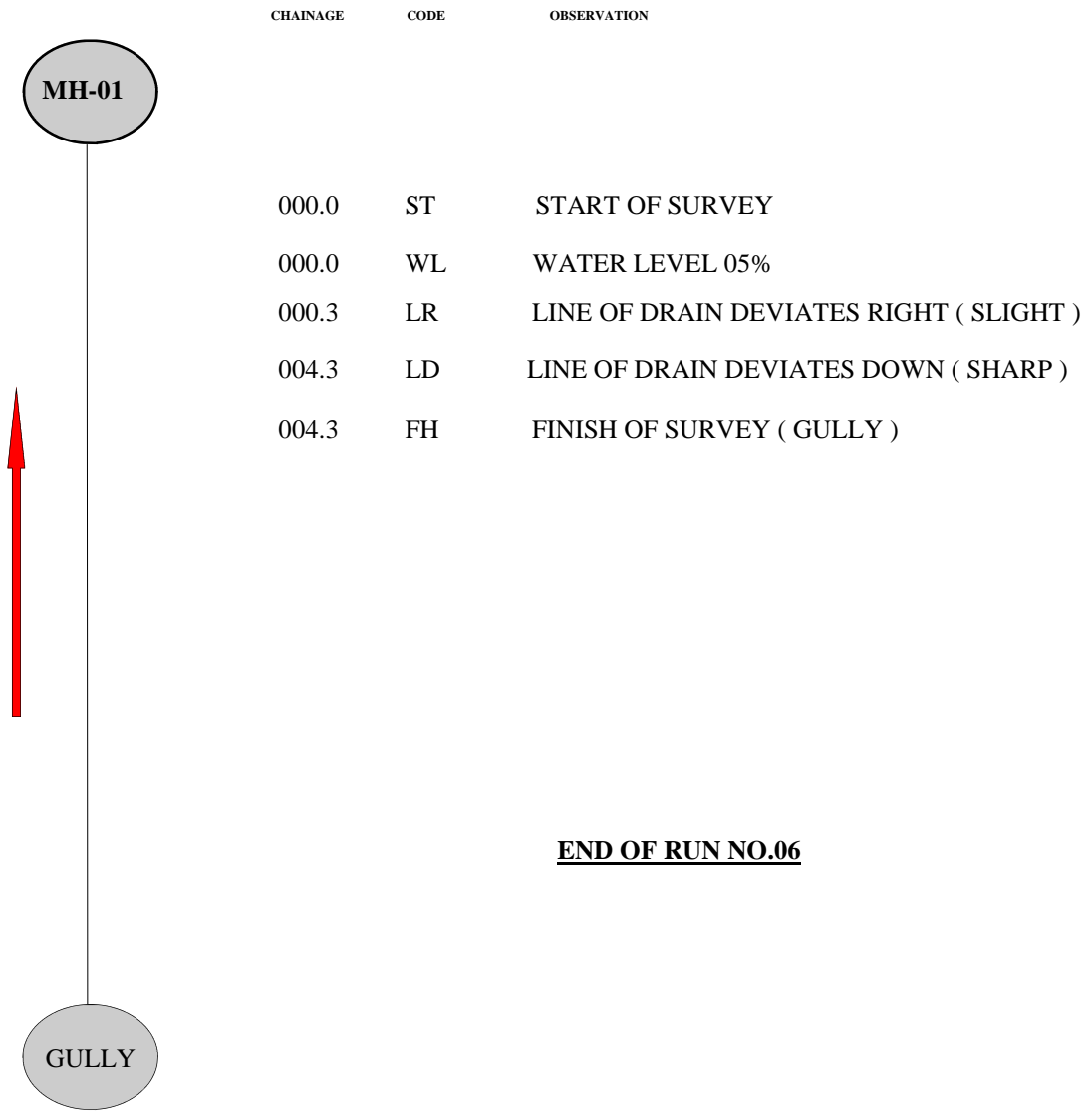
53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 06         | 06/09/21 | COMBINED  | 910mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH    |
|----------------------------------|-----------|
| ST. MANHOLE No. 01 CONNECTION- 6 | FH. GULLY |



**END OF RUN NO.06**



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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 07         | 06/09/21 | COMBINED  | 910mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH             |
|----------------------------------|--------------------|
| ST. MANHOLE No. 01 CONNECTION- 7 | FH. SOIL VENT PIPE |



| CHAINAGE | CODE | OBSERVATION                             |
|----------|------|---|
| 000.0    | ST   | START OF SURVEY                         |
| 000.0    | WL   | WATER LEVEL 05%                         |
| 000.3    | LR   | LINE OF DRAIN DEVIATES RIGHT ( SLIGHT ) |
| 003.2    | LU   | LINE OF DRAIN DEVIATES UP ( SHARP )     |
| 003.2    | FH   | FINISH OF SURVEY ( SOIL VENT PIPE )     |

**END OF RUN NO.07**

SVP





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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION  | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|------------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 08         | 06/09/21 | COMBINED  | 960mm | DOWNSTREAM | 150mm     | CAST IRON | DRY     | NO      | GO       | 1    |

START FINISH  
 ST. MANHOLE No. 01 CONNECTION- X FH. MANHOLE NO.03



| CHAINAGE | CODE | OBSERVATION                           |
|----------|------|---------------------------------------|
| 000.0    | ST   | START OF SURVEY                       |
| 000.0    | WL   | WATER LEVEL 05%                       |
| 002.7    | JN   | JUNCTION AT 02 O'CLOCK,DIAMETER 100mm |
| 012.4    | MH   | MANHOLE NO.03                         |
| 012.4    | FH   | FINISH OF SURVEY                      |

**END OF RUN NO.08**





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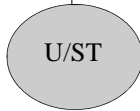
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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 09         | 06/09/21 | COMBINED  | N/A   | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

START FINISH  
 ST. GULLY No. 1 CONNECTION- 1 FH. UPSTREAM



| CHAINAGE | CODE | OBSERVATION                         |
|----------|------|-------------------------------------|
| 000.0    | ST   | START OF SURVEY                     |
| 000.0    | WL   | WATER LEVEL 05%                     |
| 002.4    | LU   | LINE OF DRAIN DEVIATES UP ( SHARP ) |
| 002.4    | FH   | FINISH OF SURVEY                    |

**END OF RUN NO.09**



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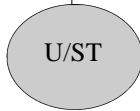
53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 10         | 06/09/21 | COMBINED  | N/A   | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

START FINISH  
 ST. GULLY No. 1 CONNECTION- 1 FH. UPSTREAM



| CHAINAGE | CODE | OBSERVATION   |
|----------|------|---|
| 000.0    | ST   | START OF SURVEY   |
| 000.0    | WL   | WATER LEVEL 05%   |
| 001.2    | DEE  | ATTACHED DEPOSITS, ENCRUSTATION FROM 09 TO 03 O'CLOCK 30% |
| 001.2    | SA   | SURVEY ABANDONED DUE TO ABOVE                             |

**END OF RUN NO.10**



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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 11         | 06/09/21 | COMBINED  | 810mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH    |
|----------------------------------|-----------|
| ST. MANHOLE No. 02 CONNECTION- 1 | FH. GULLY |

| CHAINAGE | CODE | OBSERVATION |
|----------|------|-------------|
|----------|------|-------------|



|       |    |                                     |
|-------|----|-------------------------------------|
| 000.0 | ST | START OF SURVEY                     |
| 000.0 | WL | WATER LEVEL 05%                     |
| 000.3 | LU | LINE OF DRAIN DEVIATES UP ( SHARP ) |
| 000.3 | FH | FINISH OF SURVEY ( GULLY )          |

**END OF RUN NO.11**





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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 12         | 06/09/21 | COMBINED  | 850mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH |
|----------------------------------|--------|
| ST. MANHOLE No. 02 CONNECTION- 2 | FH. WC |



| CHAINAGE | CODE | OBSERVATION                            |
|----------|------|--|
| 000.0    | ST   | START OF SURVEY                        |
| 000.0    | WL   | WATER LEVEL 05%                        |
| 001.0    | LL   | LINE OF DRAIN DEVIATES LEFT ( SLIGHT ) |
| 001.6    | JN   | JUNCTION AT O'CLOCK,DIAMETER 100mm     |
| 001.9    | JN   | JUNCTION AT O'CLOCK,DIAMETER 100mm     |
| 002.6    | LL   | LINE OF DRAIN DEVIATES LEFT ( SLIGHT ) |
| 003.8    | LU   | LINE OF DRAIN DEVIATES UP ( SHARP )    |
| 003.8    | FH   | FINISH OF SURVEY ( WC )                |

**END OF RUN NO.12**

WC



# G.O. DRAINAGE SERVICES LTD



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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 13         | 06/09/21 | COMBINED  | 810mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

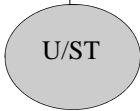
| START                            | FINISH       |
|----------------------------------|--------------|
| ST. MANHOLE No. 02 CONNECTION- 3 | FH. UPSTREAM |

| CHAINAGE | CODE | OBSERVATION |
|----------|------|-------------|
|----------|------|-------------|



|       |    |  |
|-------|----|--|
| 000.0 | ST | START OF SURVEY                        |
| 000.0 | WL | WATER LEVEL 05%                        |
| 000.3 | LL | LINE OF DRAIN DEVIATES LEFT ( SLIGHT ) |
| 000.3 | FH | FINISH OF SURVEY ( UNABLE TO PASS )    |

**END OF RUN NO.13**





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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 14         | 06/09/21 | COMBINED  | 810mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

START FINISH  
 ST. MANHOLE No. 02 CONNECTION- 4 FH. SOIL VENT PIPE

| CHAINAGE | CODE | OBSERVATION |
|----------|------|-------------|
|----------|------|-------------|



|       |    |   |
|-------|----|---|
| 000.0 | ST | START OF SURVEY                         |
| 000.0 | WL | WATER LEVEL 05%                         |
| 000.3 | LR | LINE OF DRAIN DEVIATES RIGHT ( SLIGHT ) |
| 003.1 | LU | LINE OF DRAIN DEVIATES UP ( SHARP )     |
| 003.1 | FH | FINISH OF SURVEY ( SOIL VENT PIPE )     |

**END OF RUN NO.14**





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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH | DIRECTION  | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|-------|------------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 15         | 06/09/21 | COMBINED  | 860mm | DOWNSTREAM | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

START FINISH  
 ST. MANHOLE No. 02 CONNECTION- X FH. MANHOLE NO.04



| CHAINAGE | CODE | OBSERVATION                         |
|----------|------|-------------------------------------|
| 000.0    | ST   | START OF SURVEY                     |
| 000.0    | WL   | WATER LEVEL 05%                     |
| 012.9    | SC   | DIMENSION OF DRAIN CHANGES TO 150mm |
| 013.7    | MH   | MANHOLE NO.04                       |
| 013.7    | FH   | FINISH OF SURVEY                    |

**END OF RUN NO.15**





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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH  | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|--------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 16         | 06/09/21 | COMBINED  | 1710mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH    |
|----------------------------------|-----------|
| ST. MANHOLE No. 03 CONNECTION- 3 | FH. GULLY |

| CHAINAGE | CODE | OBSERVATION |
|----------|------|-------------|
|----------|------|-------------|



|       |    |                                     |
|-------|----|-------------------------------------|
| 000.0 | ST | START OF SURVEY                     |
| 000.0 | WL | WATER LEVEL 05%                     |
| 001.5 | LU | LINE OF DRAIN DEVIATES UP ( SHARP ) |
| 001.5 | FH | FINISH OF SURVEY ( GULLY )          |

**END OF RUN NO.16**





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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH  | DIRECTION  | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|--------|------------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 17         | 06/09/21 | COMBINED  | 1720mm | DOWNSTREAM | 150mm     | CAST IRON | DRY     | NO      | GO       | 1    |

START FINISH  
 ST. MANHOLE No. 03 CONNECTION- X FH. MANHOLE NO.04



| CHAINAGE | CODE | OBSERVATION      |
|----------|------|------------------|
| 000.0    | ST   | START OF SURVEY  |
| 000.0    | WL   | WATER LEVEL 05%  |
| 007.3    | MH   | MANHOLE NO.04    |
| 007.3    | FH   | FINISH OF SURVEY |

**END OF RUN NO.17**





# G.O. DRAINAGE SERVICES LTD



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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH  | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|--------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 18         | 06/09/21 | COMBINED  | 1800mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH    |
|----------------------------------|-----------|
| ST. MANHOLE No. 04 CONNECTION- 1 | FH. GULLY |



| CHAINAGE | CODE | OBSERVATION                             |
|----------|------|---|
| 000.0    | ST   | START OF SURVEY                         |
| 000.0    | WL   | WATER LEVEL 05%                         |
| 002.6    | LR   | LINE OF DRAIN DEVIATES RIGHT ( SLIGHT ) |
| 002.6    | LU   | LINE OF DRAIN DEVIATES UP ( SHARP )     |
| 003.0    | LD   | LINE OF DRAIN DEVIATES DOWN ( SHARP )   |
| 003.0    | FH   | FINISH OF SURVEY ( GULLY )              |

**END OF RUN NO.18**





# G.O. DRAINAGE SERVICES LTD



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## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH  | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|--------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 19         | 06/09/21 | COMBINED  | 1800mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH       |
|----------------------------------|--------------|
| ST. MANHOLE No. 04 CONNECTION- 2 | FH. UPSTREAM |



| CHAINAGE | CODE | OBSERVATION                             |
|----------|------|---|
| 000.0    | ST   | START OF SURVEY                         |
| 000.0    | WL   | WATER LEVEL 05%                         |
| 000.3    | DES  | SETTLED DEPOSITS FINE 10%               |
| 003.4    | LR   | LINE OF DRAIN DEVIATES RIGHT ( SLIGHT ) |
| 004.8    | JN   | JUNCTION AT 09 O'CLOCK, DIAMETER 100mm  |
| 004.9    | FH   | FINISH OF SURVEY ( BLOCKED OFF )        |

**END OF RUN NO.19**

U/ST



# G.O. DRAINAGE SERVICES LTD



53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

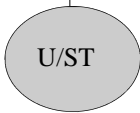
| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH  | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|--------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 20         | 06/09/21 | COMBINED  | 1800mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

| START                            | FINISH       |
|----------------------------------|--------------|
| ST. MANHOLE No. 04 CONNECTION- 3 | FH. UPSTREAM |



| CHAINAGE | CODE | OBSERVATION                             |
|----------|------|---|
| 000.0    | ST   | START OF SURVEY                         |
| 000.0    | WL   | WATER LEVEL 05%                         |
| 000.3    | DES  | SETTLED DEPOSITS FINE 10%               |
| 003.3    | LR   | LINE OF DRAIN DEVIATES RIGHT ( SLIGHT ) |
| 003.9    | JN   | JUNCTION AT 09 O'CLOCK,DIAMETER 100mm   |
| 004.0    | FH   | FINISH OF SURVEY ( BLOCKED OFF )        |

**END OF RUN NO.20**





# G.O. DRAINAGE SERVICES LTD



53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD

LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH  | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|--------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 21         | 06/09/21 | COMBINED  | 1800mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

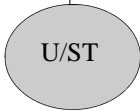
START FINISH  
 ST. MANHOLE No.04 CONNECTION- 5 FH. UPSTREAM

| CHAINAGE | CODE | OBSERVATION |
|----------|------|-------------|
|----------|------|-------------|



|       |    |                                     |
|-------|----|-------------------------------------|
| 000.0 | ST | START OF SURVEY                     |
| 000.0 | WL | WATER LEVEL 05%                     |
| 001.2 | LU | LINE OF DRAIN DEVIATES UP ( SHARP ) |
| 001.2 | FH | FINISH OF SURVEY                    |

**END OF RUN NO.21**





# G.O. DRAINAGE SERVICES LTD



53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH  | DIRECTION | PIPE SIZE | MATERIAL  | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|--------|-----------|-----------|-----------|---------|---------|----------|------|
| CV.2173 | 22         | 06/09/21 | COMBINED  | 1800mm | UPSTREAM  | 100mm     | CAST IRON | DRY     | NO      | GO       | 1    |

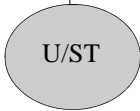
START FINISH  
 ST. MANHOLE No. 04 CONNECTION- 6 FH. UPSTREAM

| CHAINAGE | CODE | OBSERVATION |
|----------|------|-------------|
|----------|------|-------------|



|       |    |                                     |
|-------|----|-------------------------------------|
| 000.0 | ST | START OF SURVEY                     |
| 000.0 | WL | WATER LEVEL 05%                     |
| 000.3 | LU | LINE OF DRAIN DEVIATES UP ( SHARP ) |
| 000.3 | FH | FINISH OF SURVEY                    |

**END OF RUN NO.22**





# G.O. DRAINAGE SERVICES LTD



53 PREMIER AVENUE GRAYS RM16 2SJ TEL:01375 373302 MOB:07792 815977 E-MAIL: godrainage@aol.com

## INSPECTION REPORT

CLIENT: ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD LOCATION: 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA

| JOB NO. | RUN NUMBER | DATE     | SEWER USE | DEPTH  | DIRECTION  | PIPE SIZE | MATERIAL | WEATHER | CLEANED | OPERATOR | PAGE |
|---------|------------|----------|-----------|--------|------------|-----------|----------|---------|---------|----------|------|
| CV.2173 | 23         | 06/09/21 | COMBINED  | 1990mm | DOWNSTREAM | 100mm     | V/CLAY   | DRY     | NO      | GO       | 1    |

| START                            | FINISH         |
|----------------------------------|----------------|
| ST. MANHOLE No. 04 CONNECTION- X | FH. MAIN SEWER |



| CHAINAGE | CODE | OBSERVATION                            |
|----------|------|--|
| 000.0    | ST   | START OF SURVEY                        |
| 000.0    | WL   | WATER LEVEL 05%                        |
| 000.4    | JN   | JUNCTION AT 06 O'CLOCK, DIAMETER 225mm |
| 000.4    | SC   | DIMENSION OF DRAIN CHANGES TO 225mm    |
| 009.2    | FH   | FINISH OF SURVEY ( MAIN SEWER )        |

**END OF RUN NO.23**

MAIN SEWER





## SUMMARY AND RECOMMENDATIONS

|  |   |
|--|---|
| CLIENT. ELLIOTTWOOD 241 THE BROADWAY LONDON SW19 1SD | LOCATION. 1-6 TRAVISTOCK SQUARE LONDON WC1H 9NA |
| DATE 06/09/21  | JOB. CV.02173                                   |

- RUN NO.01 NO WORK NEEDED**
- RUN NO.02 NO WORK NEEDED**
- RUN NO.03 NO WORK NEEDED**
- RUN NO.04 NO WORK NEEDED**
- RUN NO.05 NO WORK NEEDED**
- RUN NO.06 NO WORK NEEDED**
- RUN NO.07 NO WORK NEEDED**
- RUN NO.08 NO WORK NEEDED**
- RUN NO.09 NO WORK NEEDED**
- RUN NO.10 NO WORK NEEDED**
- RUN NO.11 NO WORK NEEDED**
- RUN NO.12 NO WORK NEEDED**
- RUN NO.13 NO WORK NEEDED**
- RUN NO.14 NO WORK NEEDED**
- RUN NO.15 NO WORK NEEDED**
- RUN NO.16 NO WORK NEEDED**
- RUN NO.17 NO WORK NEEDED**
- RUN NO.18 NO WORK NEEDED**
- RUN NO.19 NO WORK NEEDED**
- RUN NO.20 NO WORK NEEDED**
- RUN NO.21 NO WORK NEEDED**
- RUN NO.22 NO WORK NEEDED**
- RUN NO.23 NO WORK NEEDED**

**DRAIN & PIPEWORK CCTV  
SURVEYS**

-

**DRAINS  
PIPEWORK  
CULVERTS**

**DUCTS**

**CHUTES**

**CHIMNEY FLUES**

**TANKS**

**HIGH PRESSURE  
WATER JETTING**

-

**SEWER & DRAIN BLOCKAGES**

**DESCALING**

**SILT REMOVAL**

**ROOT CUTTING**

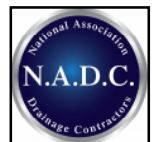
**GREASE REMOVAL**

**REMEDIAL WORKS**

-



**G.O. DRAINAGE SERVICES LTD**



**Appendix D– Existing Run-Off Calculations**

**Modified Ration Method for Brownfield Runoff**

**Project Number:** 2200531  
**Project Name:** Tavis House  
**Date:** 07/02/2022

Area (Ha) 0.145

$$Q = 2.78 * C_v * C_r * I * A$$

Q = flow rate (l/s)  
 C<sub>v</sub> = Volumetric Runoff Coefficient  
 C<sub>r</sub> = Routing Coefficient  
 I - Rainfall intensity  
 A = Area (Ha)

| Storm Return Period | Existing Discharge (L/S) |
|---------------------|--------------------------|
| 1yr                 | 12.5                     |
| 30yr                | 31.4                     |
| 100yr               | 40.0                     |
| 100yr+40%           | 56.1                     |

Under summer rainfall conditions C<sub>v</sub> ranges from 0.6 - 0.9, for fully impermeable areas value of 0.75 should be used.

The routing coefficient varies between 1 and 2 and accounts for the effect of rainfall characteristics and catchment shape on the peak runoff magnitude.  
 The SuDS manual recommends a fixed value for C<sub>r</sub> of 1.3 for design.

Rainfall intensity is calculated following Walling Procedure Volume 4 and is as follows:

**Determination of M5-60 min and r**

60 minute, 5 year storm (M5-60) has a rainfall depth M5-60 20.000  
 Ratio r 0.4

**Determination of M5-D**

M5-D = Z1 (M5-60min)  
 Z1 is taken from A3.a or A.3b for values between 0.12 and 0.45 and for durations between 5 minutes and 48 hours read to 0.01.

Assuming 1yr 15min, 30yr 15 min, 100yr 15min

Z1 0.64  
 M5-15= 12.8 mm

**Determination of MT-D**

MT-D is obtained from the relationship:  
 MT-D = Z2(M5-D)

|   |  |   |
|---|--|---|
| Taken from Table A1 for 1yr return period 15min storm | Taken from Table A1 for 30yr return period 15min storm | Taken from Table A1 for 100yr return period 15min storm |
| Z2 = 0.62   | Z2= 1.56   | Z2= 1.99  |
| M1-15= 7.9  | M30-15= 20.0   | M100-15= 25.5   |

**Determination of point rainfall intensities**

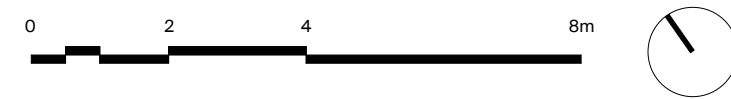
|                 |                 |                  |
|-----------------|-----------------|------------------|
| i= 31.744 mm/hr | i= 79.872 mm/hr | i= 101.888 mm/hr |
|-----------------|-----------------|------------------|

**Application of areal reduction factor**

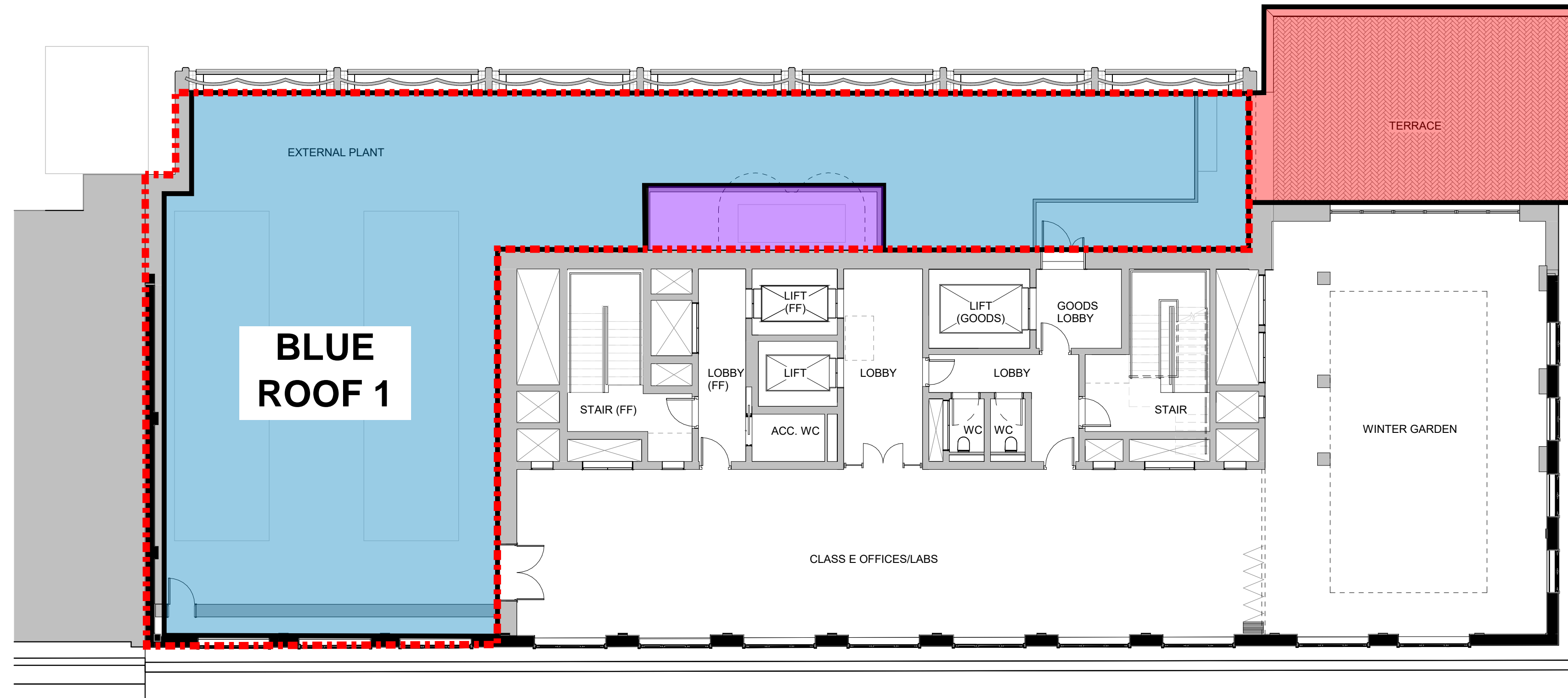
From chart A4 where area is greater than 1km<sup>2</sup>  
 ARF= 1

|                               |                                |                                  |                                      |
|-------------------------------|--------------------------------|----------------------------------|--------------------------------------|
| Average 1yr intensity<br>31.7 | Average 30yr intensity<br>79.9 | Average 100yr intensity<br>101.9 | Average 100yr+40% intensity<br>142.6 |
|-------------------------------|--------------------------------|----------------------------------|--------------------------------------|

**Appendix E – Proposed Drainage Drawings**



### 8th Floor



#### 8th Floor Calculations

##### Blue Roof 1

Blue Roof coverage = 280m<sup>2</sup>  
Blue Roof catchment = 310m<sup>2</sup>

In the existing scenario 310m<sup>2</sup> would have generated the following surface water run-off rates:

- 1 in 1 year storm = 2.7 l/s
- 1 in 30 year storm = 6.7 l/s
- 1 in 100 year storm = 8.6 l/s
- 1 in 100 year+40% cc = 12.0 l/s

In the proposed scenario 310m<sup>2</sup> can be attenuated with a blue roof and run-off from this area discharged to:

- 1 in 100 year+40% cc = 0.84 l/s

Via 2 number flow restricted outlets 97mm deep system

#### 9th Floor & Above Calculations

##### Blue Roof 2

Blue Roof coverage = 100m<sup>2</sup>  
Blue Roof catchment = 137m<sup>2</sup>

In the existing scenario 137m<sup>2</sup> would have generated the following surface water run-off rates:

- 1 in 1 year storm = 1.2 l/s
- 1 in 30 year storm = 3.0 l/s
- 1 in 100 year storm = 3.8 l/s
- 1 in 100 year+40% cc = 5.3 l/s

In the proposed scenario 137m<sup>2</sup> can be attenuated with a blue roof and run-off from this area discharged to:

- 1 in 100 year+40% cc = 0.37 l/s

Via 2 number flow restricted outlets 97mm deep system

##### Blue Roof 3

Blue Roof coverage = 72m<sup>2</sup>  
Blue Roof catchment = 98m<sup>2</sup>

In the existing scenario 98m<sup>2</sup> would have generated the following surface water run-off rates:

- 1 in 1 year storm = 0.8 l/s
- 1 in 30 year storm = 2.1 l/s
- 1 in 100 year storm = 2.7 l/s
- 1 in 100 year+40% cc = 3.8 l/s

In the proposed scenario 98m<sup>2</sup> can be attenuated with a blue roof and run-off from this area discharged to:

- 1 in 100 year+40% cc = 0.26 l/s

Via 2 number flow restricted outlets 97mm deep system

##### Blue Roof 4

Blue Roof coverage = 136m<sup>2</sup>  
Blue Roof catchment = 195m<sup>2</sup>

In the existing scenario 136m<sup>2</sup> would have generated the following surface water run-off rates:

- 1 in 1 year storm = 1.7 l/s
- 1 in 30 year storm = 4.2 l/s
- 1 in 100 year storm = 5.4 l/s
- 1 in 100 year+40% cc = 7.5 l/s

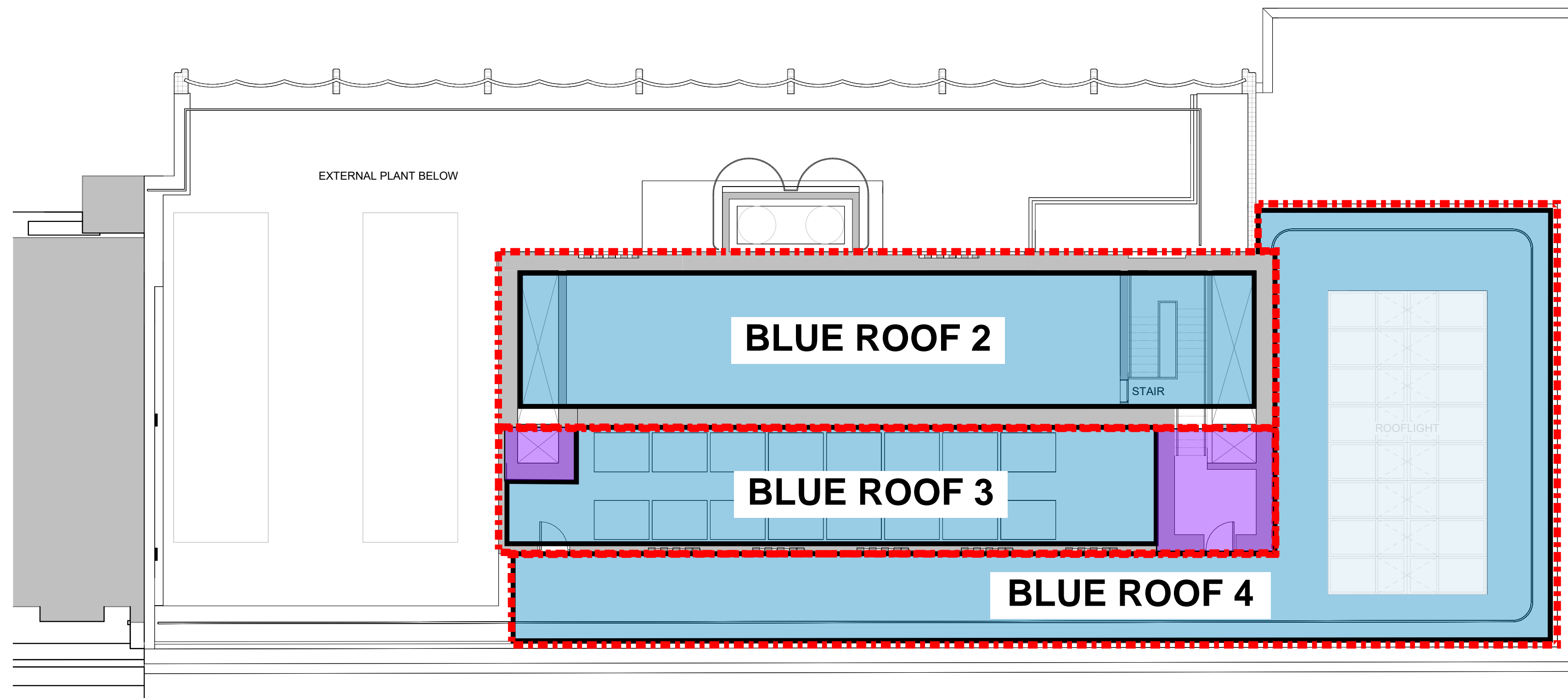
In the proposed scenario 136m<sup>2</sup> can be attenuated with a blue roof and run-off from this area discharged to:

- 1 in 100 year+40% cc = 0.53 l/s

Via 2 number flow restricted outlets 97mm deep system

**Total Blue Roof Coverage = 588m<sup>2</sup>**

### 9th Floor & Above



This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

Do not scale from this drawing.

#### Legend

- Extent of Blue Roof System
- Higher Roof to Cascade Down Into Blue Roof Below
- Blue Roof Catchments
- Blue Roof Not Proposed

Drawing title  
Proposed Blue Roof Extent

scale (s) 1:50@ A1; 1:100@A3  
date March 2024  
drawn KTR



Elliott Wood Partnership Ltd  
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Consulting Structural and Civil Engineers  
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Project  
Tavis House,  
1-6 Tavistock Square, London,  
WC1H 9NA

Drawing status Preliminary Status Revision S2 P1

Project no. 2200531-EWP-ZZ-00-DR-C-5000  
Originator Zone Level Type Role drg no.

rev date by chk description  
P1 15/03/24 KTR PDA Preliminary

**Appendix F- Blue Roof Calculations**



**Project Title**  
1-6 Tavistock Square

**Design Number**

**Notes / Reference**  
Blue Roof 1

|   |              |
|---|--------------|
| Design Storm Event                              | 1:100        |
| Climate Change                                  | 40 %         |
| Runoff Coefficient                              | 1.00         |
| Location  | WC1          |
| Roof Area m <sup>2</sup>                        | 310.0        |
| Additional Contributing Areas (m <sup>2</sup> ) |              |
| <b>Total Catchment Area (m<sup>2</sup>)</b>     | <b>310.0</b> |
| Net Roof Area (m <sup>2</sup> )                 | 280.0        |
| Permitted Outflow (l/s)                         | 0.840        |
| Blue or Blue/Green Roof                         | Unknown      |
| If B/G, Green Roof Type                         | Extensive    |
| a. Permanent reservoir above or in storage void | None         |
| b. Required Reservoir Depth (mm)                |              |

|   |        |
|---|--------|
| Required Net Storm Storage Volume (m <sup>3</sup> ) | 15.63  |
| Actual Depth (mm)                                   | 62     |
| Porosity  | 90 %   |
| Selected depth of storage tank (mm)                 | 85     |
| Provided Storage Volume (m <sup>3</sup> )           | 21.42  |
| Utilisation   | 73.0 % |

**Structural Load Calculations**

| Item                            | kN/m <sup>2</sup> |
|---------------------------------|-------------------|
| Weight of Product (Tank / Cell) | 0.116             |
| Weight of Product (Tray)        | 0.000             |
| Geotextile                      | 0.005             |
| Weight of Permanent Storage     | 0.000             |
| Weight of Stormwater Storage    | 0.788             |

R: 0.41 l/s

M5-60: 20.60 mm/h

| DURATION (mins) | INTENSITY (mm/h) | REQUIRED STORAGE VOLUME (m <sup>3</sup> ) |
|-----------------|------------------|---|
| 5 mins          | 216.82           | 5.35                                      |
| 10 mins         | 177.12           | 8.65                                      |
| 15 mins         | 142.89           | 10.32                                     |
| 30 mins         | 93.64            | 13.00                                     |
| 1 hour          | 58.55            | 15.13                                     |
| <b>2 hours</b>  | <b>34.96</b>     | <b>15.63</b>                              |
| 4 hours         | 20.36            | 13.15                                     |
| 6 hours         | 14.77            | 9.33                                      |
| 10 hours        | 9.96             | 0.65                                      |
| 24 hours        | 4.96             | 0.00                                      |
| 48 hours        | 2.79             | 0.00                                      |

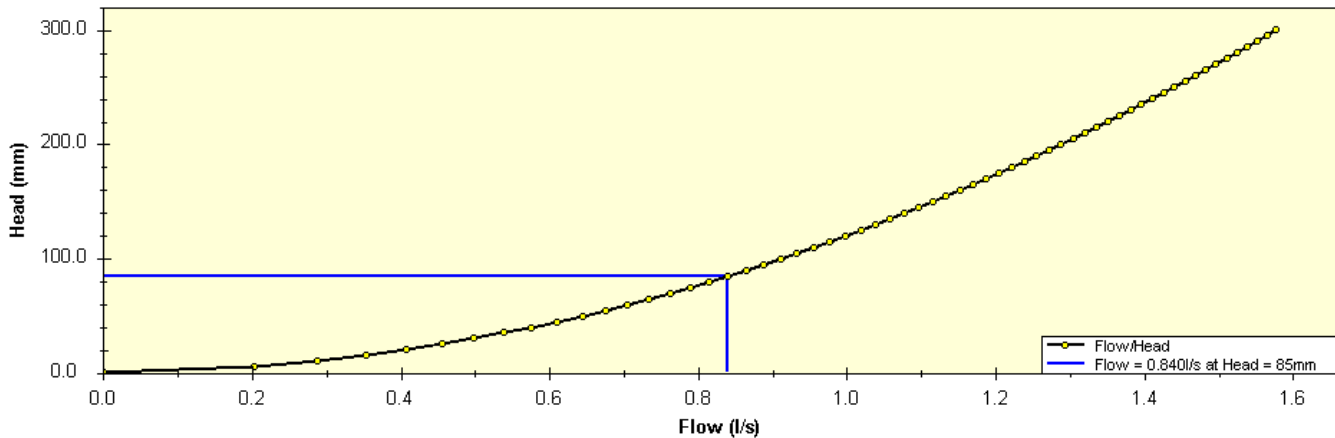
Required aperture / outlet plate size: 36 mm

Half Empty Time: 176 mins

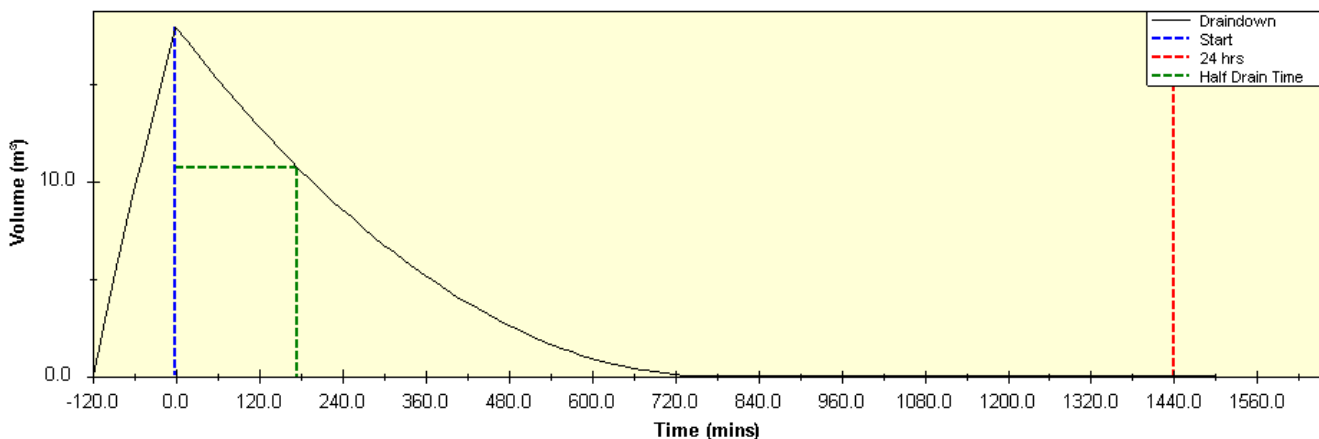
**Project Status: PASS**

**Level & Draindown Graphs**

**Flow / Head**



**Draindown**







Project Title: 1-6 Tavistock Square Design Number: [ ]

Notes / Reference: Blue Roof 2

|   |              |
|---|--------------|
| Design Storm Event                              | 1:100        |
| Climate Change                                  | 40 %         |
| Runoff Coefficient                              | 1.00         |
| Location  | WC1          |
| Roof Area m <sup>2</sup>                        | 137.0        |
| Additional Contributing Areas (m <sup>2</sup> ) |              |
| <b>Total Catchment Area (m<sup>2</sup>)</b>     | <b>137.0</b> |
| Net Roof Area (m <sup>2</sup> )                 | 100.0        |
| Permitted Outflow (l/s)                         | 0.370        |
| Blue or Blue/Green Roof                         | Unknown      |
| If B/G, Green Roof Type                         | Extensive    |
| a. Permanent reservoir above or in storage void | None         |
| b. Required Reservoir Depth (mm)                |              |

|   |        |
|---|--------|
| Required Net Storm Storage Volume (m <sup>3</sup> ) | 6.91   |
| Actual Depth (mm)                                   | 77     |
| Porosity  | 90 %   |
| Selected depth of storage tank (mm)                 | 85     |
| Provided Storage Volume (m <sup>3</sup> )           | 7.65   |
| Utilisation   | 90.4 % |

| Item                            | kN/m <sup>2</sup> |
|---------------------------------|-------------------|
| Weight of Product (Tank / Cell) | 0.116             |
| Weight of Product (Tray)        | 0.000             |
| Geotextile                      | 0.005             |
| Weight of Permanent Storage     | 0.000             |
| Weight of Stormwater Storage    | 0.788             |

R: 0.41 l/s  
M5-60: 20.60 mm/h

| DURATION (mins) | INTENSITY (mm/h) | REQUIRED STORAGE VOLUME (m <sup>3</sup> ) |
|-----------------|------------------|---|
| 5 mins          | 216.82           | 2.36                                      |
| 10 mins         | 177.12           | 3.82                                      |
| 15 mins         | 142.89           | 4.56                                      |
| 30 mins         | 93.64            | 5.75                                      |
| 1 hour          | 58.55            | 6.69                                      |
| <b>2 hours</b>  | <b>34.96</b>     | <b>6.91</b>                               |
| 4 hours         | 20.36            | 5.83                                      |
| 6 hours         | 14.77            | 4.15                                      |
| 10 hours        | 9.96             | 0.33                                      |
| 24 hours        | 4.96             | 0.00                                      |
| 48 hours        | 2.79             | 0.00                                      |

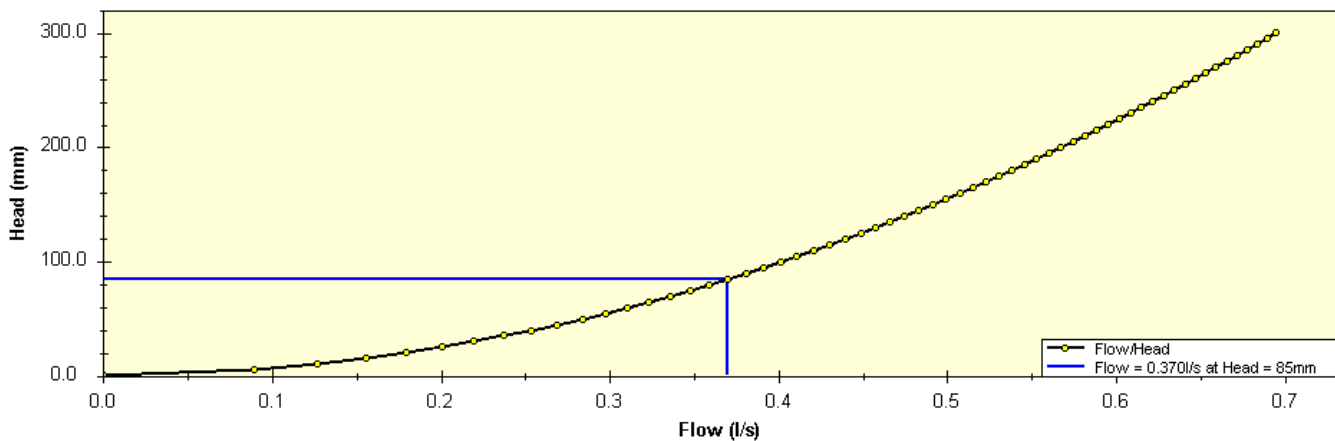
Required aperture / outlet plate size: 24 mm

Half Empty Time: 206 mins

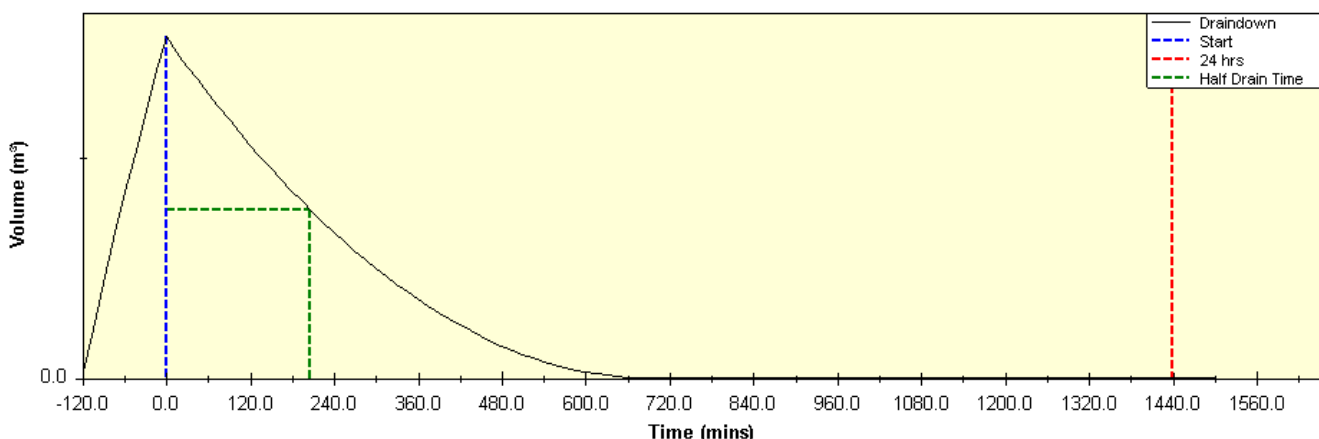
Project Status: **PASS**

### Level & Draindown Graphs

Flow / Head



Draindown





**Project Title**  
1-6 Tavistock Square

**Design Number**

**Notes / Reference**  
Blue Roof 3

|   |             |
|---|-------------|
| Design Storm Event                              | 1:100       |
| Climate Change                                  | 40 %        |
| Runoff Coefficient                              | 1.00        |
| Location  | WC1         |
| Roof Area m <sup>2</sup>                        | 98.0        |
| Additional Contributing Areas (m <sup>2</sup> ) |             |
| <b>Total Catchment Area (m<sup>2</sup>)</b>     | <b>98.0</b> |
| Net Roof Area (m <sup>2</sup> )                 | 72.0        |
| Permitted Outflow (l/s)                         | 0.260       |
| Blue or Blue/Green Roof                         | Unknown     |
| If B/G, Green Roof Type                         | Extensive   |
| a. Permanent reservoir above or in storage void | None        |
| b. Required Reservoir Depth (mm)                |             |

|   |        |
|---|--------|
| Required Net Storm Storage Volume (m <sup>3</sup> ) | 4.98   |
| Actual Depth (mm)                                   | 77     |
| Porosity  | 90 %   |
| Selected depth of storage tank (mm)                 | 85     |
| Provided Storage Volume (m <sup>3</sup> )           | 5.51   |
| Utilisation   | 90.4 % |

**Structural Load Calculations**

| Item                            | kN/m <sup>2</sup> |
|---------------------------------|-------------------|
| Weight of Product (Tank / Cell) | 0.116             |
| Weight of Product (Tray)        | 0.000             |
| Geotextile                      | 0.005             |
| Weight of Permanent Storage     | 0.000             |
| Weight of Stormwater Storage    | 0.788             |

R:  l/s

M5-60:  mm/h

| DURATION (mins) | INTENSITY (mm/h) | REQUIRED STORAGE VOLUME (m <sup>3</sup> ) |
|-----------------|------------------|---|
| 5 mins          | 216.82           | 1.69                                      |
| 10 mins         | 177.12           | 2.74                                      |
| 15 mins         | 142.89           | 3.27                                      |
| 30 mins         | 93.64            | 4.12                                      |
| 1 hour          | 58.55            | 4.80                                      |
| <b>2 hours</b>  | <b>34.96</b>     | <b>4.98</b>                               |
| 4 hours         | 20.36            | 4.24                                      |
| 6 hours         | 14.77            | 3.07                                      |
| 10 hours        | 9.96             | 0.40                                      |
| 24 hours        | 4.96             | 0.00                                      |
| 48 hours        | 2.79             | 0.00                                      |

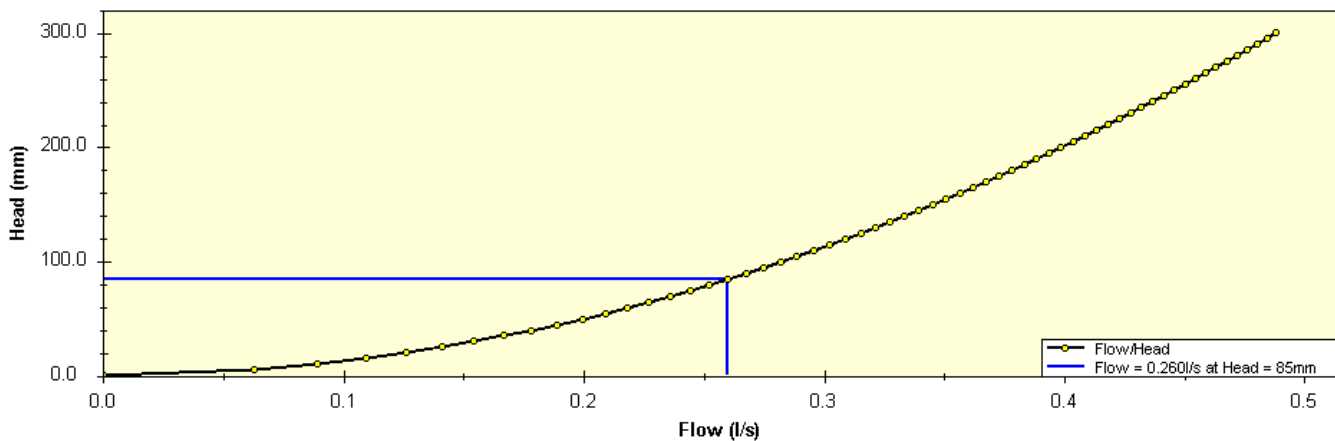
Required aperture / outlet plate size: 21 mm

Half Empty Time: 210 mins

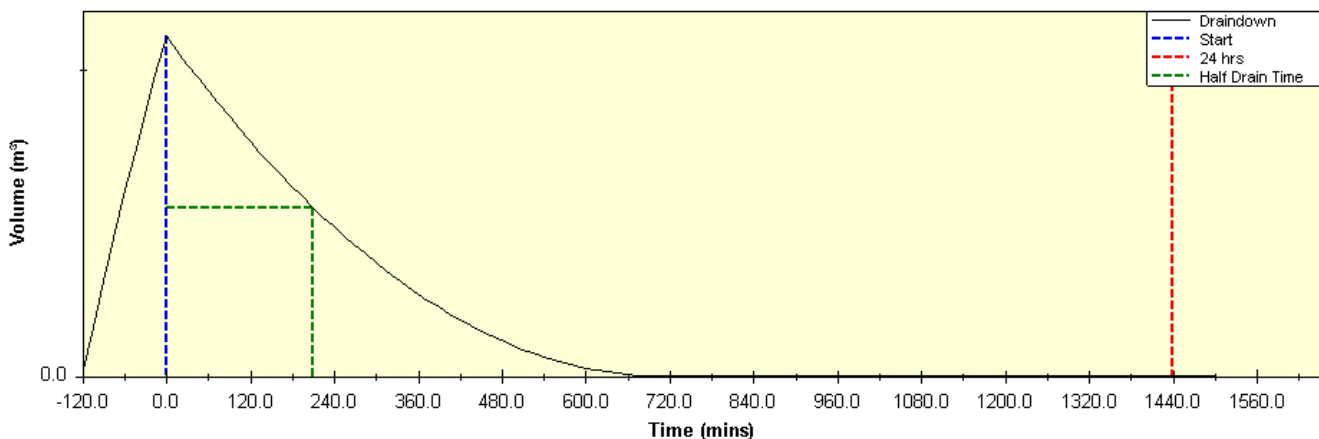
**Project Status: PASS**

**Level & Draindown Graphs**

**Flow / Head**



**Draindown**





**Project Title**  
1-6 Tavistock Square

**Design Number**

**Notes / Reference**  
Blue Roof 4

|   |              |
|---|--------------|
| Design Storm Event                              | 1:100        |
| Climate Change                                  | 40 %         |
| Runoff Coefficient                              | 1.00         |
| Location  | WC1          |
| Roof Area m <sup>2</sup>                        | 195.0        |
| Additional Contributing Areas (m <sup>2</sup> ) |              |
| <b>Total Catchment Area (m<sup>2</sup>)</b>     | <b>195.0</b> |
| Net Roof Area (m <sup>2</sup> )                 | 136.0        |
| Permitted Outflow (l/s)                         | 0.530        |
| Blue or Blue/Green Roof                         | Unknown      |
| If B/G, Green Roof Type                         | Extensive    |
| a. Permanent reservoir above or in storage void | None         |
| b. Required Reservoir Depth (mm)                |              |

|   |        |
|---|--------|
| Required Net Storm Storage Volume (m <sup>3</sup> ) | 9.82   |
| Actual Depth (mm)                                   | 80     |
| Porosity  | 90 %   |
| Selected depth of storage tank (mm)                 | 85     |
| Provided Storage Volume (m <sup>3</sup> )           | 10.40  |
| Utilisation   | 94.4 % |

**Structural Load Calculations**

| Item                            | kN/m <sup>2</sup> |
|---------------------------------|-------------------|
| Weight of Product (Tank / Cell) | 0.116             |
| Weight of Product (Tray)        | 0.000             |
| Geotextile                      | 0.005             |
| Weight of Permanent Storage     | 0.000             |
| Weight of Stormwater Storage    | 0.788             |

R: 0.41 l/s

M5-60: 20.60 mm/h

| DURATION (mins) | INTENSITY (mm/h) | REQUIRED STORAGE VOLUME (m <sup>3</sup> ) |
|-----------------|------------------|---|
| 5 mins          | 216.82           | 3.36                                      |
| 10 mins         | 177.12           | 5.44                                      |
| 15 mins         | 142.89           | 6.49                                      |
| 30 mins         | 93.64            | 8.18                                      |
| 1 hour          | 58.55            | 9.51                                      |
| <b>2 hours</b>  | <b>34.96</b>     | <b>9.82</b>                               |
| 4 hours         | 20.36            | 8.25                                      |
| 6 hours         | 14.77            | 5.84                                      |
| 10 hours        | 9.96             | 0.35                                      |
| 24 hours        | 4.96             | 0.00                                      |
| 48 hours        | 2.79             | 0.00                                      |

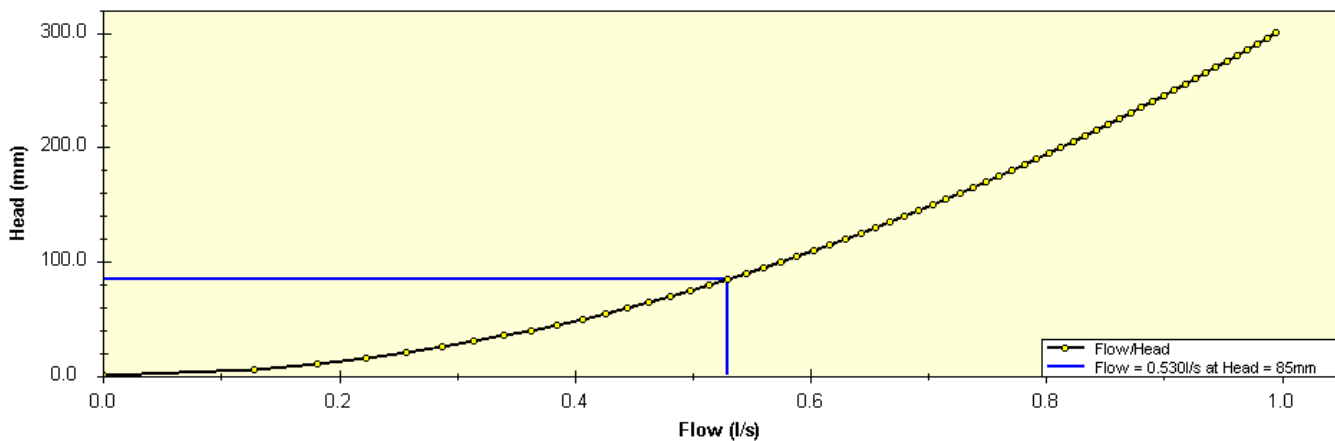
Required aperture / outlet plate size: 29 mm

Half Empty Time: 209 mins

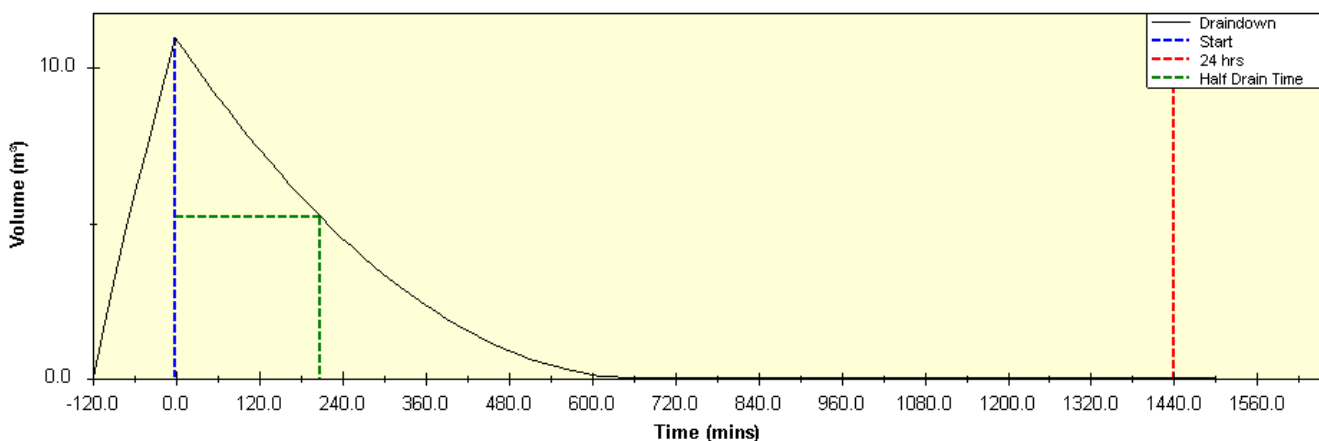
**Project Status: PASS**

**Level & Draindown Graphs**

**Flow / Head**



**Draindown**



**Appendix G – Pro Formas**



|                           |   |  |
|---------------------------|---|--|
| 1. Project & Site Details | Project / Site Name (including sub-catchment / stage / phase where appropriate)                 | Tavis House  |
|                           | Address & post code   | Tavis House, 1-6 Tavistock Square, London, WC1H 9NA  |
|                           | OS Grid ref. (Easting, Northing)  | E 529973   |
|                           |   | N E: 182345  |
|                           | LPA reference (if applicable)   | 2021/6105/P  |
|                           | Brief description of proposed work  | Refurbishment and extension of the existing building to provide new entrances, a new roof top pavilion, roof top plant equipment and enclosures, rear extension and cycle parking associated with Class E. |
|                           | Total site Area   | 1450 m <sup>2</sup>  |
|                           | Total existing impervious area  | 1450 m <sup>2</sup>  |
|                           | Total proposed impervious area  | 1450 m <sup>2</sup>  |
|                           | Is the site in a surface water flood risk catchment (ref. local Surface Water Management Plan)? | Yes  |
|                           | Existing drainage connection type and location  | Site connects to combined Thames Water sewer beneath Tavistock Square.   |
|                           | Designer Name   | Keri Trimmer   |
|                           | Designer Position   | Associate Civil Engineer   |

|  |  |                          |                       |
|--|--|--------------------------|-----------------------|
| 2. Proposed Discharge Arrangements                     | <b>2a. Infiltration Feasibility</b>  |                          |                       |
|  | Superficial geology classification   | Lynch Hill Gravel Member |                       |
|  | Bedrock geology classification   | London Clay Formation    |                       |
|  | Site infiltration rate   | N/A                      | m/s                   |
|  | Depth to groundwater level   | 5.2                      | m below ground level  |
|  | Is infiltration feasible?  | No                       |                       |
|  | <b>2b. Drainage Hierarchy</b>  |                          |                       |
|  |  | <i>Feasible (Y/N)</i>    | <i>Proposed (Y/N)</i> |
|  | 1 store rainwater for later use  | N                        | N                     |
|  | 2 use infiltration techniques, such as porous surfaces in non-clay areas               | N                        | N                     |
|  | 3 attenuate rainwater in ponds or open water features for gradual release              | N                        | N                     |
|  | 4 attenuate rainwater by storing in tanks or sealed water features for gradual release | Y                        | Y                     |
|  | 5 discharge rainwater direct to a watercourse  | N                        | N                     |
|  | 6 discharge rainwater to a surface water sewer/drain                                   | N                        | N                     |
|  | 7 discharge rainwater to the combined sewer.   | Y                        | Y                     |
| <b>2c. Proposed Discharge Details</b>                  |  |                          |                       |
| Proposed discharge location                            | Retain existing sewer connection.  |                          |                       |
| Has the owner/regulator of the discharge location been | Yes  |                          |                       |

| 3a. Discharge Rates & Required Storage |                                   |  |  |                               |
|--|-----------------------------------|--|--|-------------------------------|
|  | Greenfield (GF) runoff rate (l/s) | Existing discharge rate (l/s)                    | Required storage for GF rate (m <sup>3</sup> ) | Proposed discharge rate (l/s) |
| Q <sub>bar</sub>                       | N/A                               | <del>          </del>                            | <del>          </del>                          | <del>          </del>         |
| 1 in 1                                 | N/A                               | 12.5   | N/A  | 8.1                           |
| 1 in 30                                | N/A                               | 31.4   | N/A  | 17.4                          |
| 1 in 100                               | N/A                               | 40   | N/A  | 21.6                          |
| 1 in 100 + CC                          | <del>          </del>             | <del>          </del>                            |  | 29.5                          |
| Climate change allowance used          |                                   | 40%  |  |                               |
| 3b. Principal Method of Flow Control   |                                   | Blue Roof over 8th / 9th floor terraces and roof |  |                               |
| 3c. Proposed SuDS Measures             |                                   |  |  |                               |
|  | Catchment area (m <sup>2</sup> )  | Plan area (m <sup>2</sup> )                      | Storage vol. (m <sup>3</sup> )                 |                               |
| Rainwater harvesting                   | 0                                 | <del>          </del>                            | 0  |                               |
| Infiltration systems                   | 0                                 | <del>          </del>                            | 0  |                               |
| Green roofs                            | 0                                 | 0  | 0  |                               |
| Blue roofs                             | 740                               | 588  | 57   |                               |
| Filter strips                          | 0                                 | 0  | 0  |                               |
| Filter drains                          | 0                                 | 0  | 0  |                               |
| Bioretention / tree pits               | 0                                 | 0  | 0  |                               |
| Pervious pavements                     | 0                                 | 0  | 0  |                               |
| Swales                                 | 0                                 | 0  | 0  |                               |
| Basins/ponds                           | 0                                 | 0  | 0  |                               |
| Attenuation tanks                      | 0                                 | <del>          </del>                            | 0  |                               |
| <b>Total</b>                           | <b>740</b>                        | <b>588</b>                                       | <b>57</b>                                      |                               |

| 4a. Discharge & Drainage Strategy   | Page/section of drainage report |
|---|---------------------------------|
| Infiltration feasibility (2a) – geotechnical factual and interpretive reports, including infiltration results         | 1.5                             |
| Drainage hierarchy (2b)   | N/A                             |
| Proposed discharge details (2c) – utility plans, correspondence / approval from owner/regulator of discharge location | Appendix B                      |
| Discharge rates & storage (3a) – detailed hydrologic and hydraulic calculations                                       | Appendix D / Appenidx F         |
| Proposed SuDS measures & specifications (3b)  | 1.10.                           |
| 4b. Other Supporting Details  | Page/section of drainage report |
| Detailed Development Layout   | Appendix D                      |
| Detailed drainage design drawings, including exceedance flow routes   | Appendix E                      |
| Detailed landscaping plans  | Refer to Architects Drawings    |
| Maintenance strategy  | 1.11                            |
| Demonstration of how the proposed SuDS measures improve:  | N/A                             |
| a) water quality of the runoff?   |                                 |
| b) biodiversity?  |                                 |
| c) amenity?   |                                 |