

Greater Manchester Schools & SuDS

Potential, Interest, and Tools

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BUSINESS IN THE COMMUNITY THE PRINCE'S RESPONSIBLE BUSINESS NETWORK

Case Study: Burnage Academy for Boys
SuDS Audit – March 2016



Water Resilient Schools Ready-Reckoner

| Category | Value |
|-------------------|-------------|
| Current Charges | £ 84,315.00 |
| Payback Wanted | 3.0 |
| Estimated Payback | 1.8 |
| Shortfall Payback | £ 24,165.00 |

Background
Burnage Academy for Boys draws pupils from the Manchester Localities: Rusholme, Parkfield, Withington, Hulme and... The college was founded in 1933 and it has gained a status... The Academy has 953 pupils and over 145 teaching and... In 2010 a £17m redevelopment of the school under the G... undertaken which was the original 1950s and 1950s build... The remaining two modern buildings including the sports h... constructed where the other buildings had been demol... In the case of the school subject there is an elevated g... The school which was previously a community school ad... academy status on 1 April 2014 and was renamed Burnage

| Item | Area | Volume | Rate | Cost | Category | Notes |
|------|------|--------|------|--------|----------|---------|
| 1 | Roof | 1000 | 10 | 10000 | Roof | Asphalt |
| 2 | Roof | 2000 | 10 | 20000 | Roof | Asphalt |
| 3 | Roof | 3000 | 10 | 30000 | Roof | Asphalt |
| 4 | Roof | 4000 | 10 | 40000 | Roof | Asphalt |
| 5 | Roof | 5000 | 10 | 50000 | Roof | Asphalt |
| 6 | Roof | 6000 | 10 | 60000 | Roof | Asphalt |
| 7 | Roof | 7000 | 10 | 70000 | Roof | Asphalt |
| 8 | Roof | 8000 | 10 | 80000 | Roof | Asphalt |
| 9 | Roof | 9000 | 10 | 90000 | Roof | Asphalt |
| 10 | Roof | 10000 | 10 | 100000 | Roof | Asphalt |

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BUSINESS IN THE COMMUNITY THE PRINCE'S RESPONSIBLE BUSINESS NETWORK

Water Resilient Cities
Surface water management in schools -
Complete a SuDS Audit

Case Study: Chorlton High School
SuDS Audit – March 2016



Background
Chorlton High School (CHS) located in Chorlton south Manchester, which was originally for Boys was founded in September 1924. In 1952 it became a grammar school and during the 1960s returned to being a comprehensive. It was designated a Specialist Arts College in 2002. In May 2012, the school governors approved the decision to convert into an academy. The school became an academy on 1 January 2013. As a result of becoming a Specialist Arts College back in 2002, the school received extra funding for a £17 million project, which enabled the whole school to be together on one site for the first time in its history. Chorlton High School now boasts state-of-the-art facilities, used both by students and the local community, including specialist drama and music rooms, a 300 seater theatre, an all-weather pitch for sports and a gymnasium. The school is one of the biggest in Manchester holding nearly 1000 pupils.



CLASP. Environment Resilience Resources & Support
Supporting Local Authorities and the public sector

Why Schools?

There are currently:

- Over 1,300 schools in Greater Manchester.
- Paying over £7m in surface water drainage charges per year.
- Moving all down a charging band could save over £3.5m annually
- Great potential for educational, social and health benefits



Interest From Schools

- 82 school sites. (57 responded directly others nominated.)
- For all:
 - Current billing situation
 - Next lowest SW charging band
 - Threshold of the next band
 - Distance (m2) that the school is from that threshold
 - % change in surface area that that m2 represents for the school
 - Potential lower charge if the school was in the lower band
 - Potential annual £ saving
 - Saving £ per m2 over 5 years (which is also an indication of the maximum viable cost of SUDS per m2 for each school to obtain a payback within 5 years)

- British Geological Society mapping analysis of ground conditions

- Interviews with school staff

Water Resilient Schools: Building resilience and saving money through better surface water management

A pilot with Greater Manchester Schools

Background

- All Greater Manchester schools get their water and drainage services from United Utilities. For surface water drainage, schools are charged according to how much hard-standing type area they have, as an estimate of how much water goes into the drains. Each school is in 1 of 9 bands.
- In 2016 we worked with United Utilities, Defra and a couple of Manchester schools to test out the potential for schools to save money on their drainage costs. We found that if all Greater Manchester schools moved down 1 charging band then over £2m would be saved per year. The average saving per

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Kingsway Park High School, RochD

Infiltration SuDS Map results for: 390972, 412043

SuDS_EA_1, 10.03.2017

Infiltration constraints

| Layer | Short | Detailed | Advice |
|---------------------------------------|------------|----------|--------|
| Infiltration constraints summary | None found | | |
| Landfill constraints | None found | | |
| Moist ground constraints | None found | | |
| Shallow groundwater constraints | None found | | |
| Shallow mining (non-coal) constraints | None found | | |
| Soluble rock constraints | None found | | |

Drainage

| Layer | Short | Detailed | Advice | Minimum | Maximum |
|-----------------------------------|---|---|---|----------|---------|
| Drainage summary | Opportunities for bespoke infiltration SuDS | The subsurface is potentially variable for infiltration SuDS although the design will be influenced by the ground conditions. | Quantify infiltration rate via an infiltration/soakaway test and consider whether infiltration can be used as a SuDS technique alongside water storage (in ponds/basements) and re-use. | | |
| Depth to water table | < 3 m below ground surface | Groundwater is likely to be less than 3 m below the ground surface for at least part of the year. | Determine seasonal variations in groundwater level. | | |
| Superficial deposit thickness | > 3 m thick | The thickness of superficial deposits is > 3 m and hence the permeability of the superficial deposit is likely to determine the permeability of the ground. | Consider permeability of superficial deposits. | | |
| Superficial deposit permeability | Highly variable permeability | The superficial deposit permeability is spatially variable, but likely to permit moderate infiltration. | Quantify infiltration rate via an infiltration/soakaway test. | Low | High |
| Bedrock permeability | Free draining | Bedrock deposits are likely to be free-draining. | Quantify infiltration rate via an infiltration/soakaway test. | Moderate | High |
| Geological indicators of flooding | None found | | | | |

Ground stability

| Layer | Short | Detailed | Advice |
|--------------------------|------------|----------|--------|
| Ground stability summary | None found | | |

School Views on SUDS

- Low awareness of current billing regime
- Very low awareness and understanding of SUDS (especially by that name)
- Very few schools have any water re-use, conservation or SUDS on site
- Why interested?
 - Potential for financial savings
 - Some schools suffering from drainage issues on site
- Strong interest in additional benefits (educational, health, environmental) of SUDS on site



School Views on Funding for SUDS

- Understood “invest-to-save” model for SUDS, **but...**
- Great financial pressure - period of high uncertainty re future “Fair Funding”
- Lack of own capital for investment
- “Comfort-zone” is grant-funding
- Loans are not often an area of prior experience
- Wary of offer of interest-free loans (even from a government backed provider)



