

**Quantities of main materials for the drainage scheme for Lawrences Lane
As described in Outline Sustainable Drainage Strategy, Issue 4, January 2023
Simon Pike, 8 March 2023**

Permeable Block Paving

Drained area = 3,100m² (paragraph 5.5)

Budgetary cost = 3,100m² X £20m⁻² = £62,000

Source: based on <https://www.marshalls.co.uk/gardens-and-driveways/product/driveline-priora-permeable-block-paving> at £30.27/m² inc VAT; supporting evidence of Marshalls Factory Outlet on Ebay

Drainage crates

Each plot will be served by an area of drainage crate 15m long, 5m wide and 0.8m deep. (paragraph 5.9)
Drainage crates are typically 1m X 0.5m X 0.4m high. Therefore, four crates are required per 1m² area of drainage crate.

Number of drainage crates required is: 7 plots X 15m X 5m X 4m⁻² = 2,100

Budgetary cost: £10,796.40 ÷ 30 ÷ 12 X 2,100 = £62,979

Source: 30 pallets of 12 crates cost £10,796.40;

https://skyplastics.co.uk/soakaway.html?gclid=Cj0KCQiAgaGgBhC8ARIsAAAYLfFgo5cCUTcjsfhh3j69_YnUczYTVz5QqAW4TgOMdHcM6vA_F-pogyAaAviKEALw_wcB

Permeable sub base

Area above crates = 15m X 5m X 7 = 525m²

Depth of sub base above crates = 0.35m (measured from Drawing number 003, pdf page 31)

Volume of sub base above crates = 525m² X 0.35m = 183.75m³

Area not above crates = 3,100m² - 525m² = 2,575m²

Depth of sub base not above crates = 0.25m (measured from Drawing number 003, pdf page 31)

Volume of sub base not above crates = 2,575m² X 0.25m = 643.75m³

Total volume of sub base required = 183.75m³ + 643.75m³ = 827.5m³ (ignoring the extra 'triangle' adjacent to the crates)

Weight of sub base = 1,655 ton

Using calculator for 4-20mm Sub Base Aggregate at:

<https://www.robinsonquarry.co.uk/quarry-stone-4-20mm-sub-base-aggregate.php>

Budgetary cost: £50 X 1,655 = £82,750

Price of one ton bag is around £80 (without delivery), so I assume £50 per ton in bulk in lorry delivery

Soil and hardcore to be removed

The Outline Drainage Strategy shows the top of the permeable paving to be level with the existing ground surface, so all of the drainage scheme must be excavated.

The depth of the permeable paving plus sand bed is likely to be 0.08m

Volume of soil and hardcore to be removed = (3,100 X 0.08) + (525 X (0.8 + 0.35)) + (2575 X 0.25) = 1,495m³

Density of clay soils is around 1.3 ton/m³

Therefore, around 2,000 tons of soil and hardcore would need to be removed.

Conclusion

The cost of the three main materials for construction of the drainage scheme (excluding the swale and attenuation pond) is around £200,000. Around 2,000 tons of soil and hardcore would need to be removed.