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28 April 2008

Surface Water Drainage Consultation
Defra
Ergon House
Area 2D
Horseferry Road
London SW1P 2AL

Dear Sir/Madam

Defra consultation – Improving Surface Water Drainage

1. I am writing to enclose the response of Interpave to the Defra consultation "Improving Surface Water Drainage".

2. Interpave is the Precast Concrete Paving and Kerb Association, promoting and developing concrete block paving, paving flags and kerbs - ranging from domestic uses to the most taxing heavy industrial applications. Interpave represents the UK's leading manufacturers and is a product association of the British Precast Concrete Federation Ltd (BPCF), operating from the Federation's Leicester offices.

3. Interpave is the driving force behind the development of concrete block permeable pavements (CBPP), with an extensive information resource available via **www.paving.org.uk**. Interpave continues to work directly with SUDSnet, CIRIA, Environment Agency and The Concrete Centre to ensure that CBPP is understood by all as an established technology with impressive, predictable performance characteristics. We would like to opportunity to work closely with Defra.

4. In addition to answering the relevant questions in the consultation document, which for our purposes are questions 19 to 40, we would also like to draw your attention in particular to the following key issues:

   a. Our comments relate to concrete block permeable pavements (CBPP) which include, for the purpose of this discussion:
      - Specially designed concrete paving blocks that incorporate enlarged joints or voids to allow surface water to pass into the strata below
      - Cellular concrete paving units where the voids are filled with gravel of turf, generally known as concrete grass pavers.

   b. A wide **definition** of permeable paving in respect of driveways;

   c. We wish to highlight the fact that concrete block permeable pavements (**CBPP) are a SUDS technique** as well as a stand-alone solution;

   d. In terms of adoption, **CBPP are fundamentally no different** from conventional impermeable pavements and drainage;

   e. Clarification is needed regarding the **`5m rule';** the requirement in Part H of the Building Regulations 2000 that infiltration drainage is not used within 5 metres of a building or road, or on areas of unstable land.

   f. We are keen to explore with you the cost-efficiency and other benefits of **combining CBPPs with conventional impermeable pavements** (see additional comments below).

In addition, we would like to make the following observations:

5. With reference to b) above, Chapter 5, section 22 of *Future Water* states that:

   "….. the Government will change householder's permitted development rights to allow them to pave over their front garden without planning permission only if the surface is porous, such as by using permeable paving or gravel"

   Other means of achieving the aims of section 22 are also available. We would therefore propose the following clarification:

   "A porous surface is defined as a surface that ensures that the surface water runoff is <u>not</u> allowed to drain directly into drainage system or into roads or adjacent areas outside the property boundary. This can be achieved either by CBPP or allowing the surface water to drain impervious areas into rain gardens or other suitable storage facilities, within the property boundary".

6. In respect of point c) and d) above, CBPP is a unique sustainable drainage system (SUDS) technique with important attenuation and pollution source control characteristics. While popular as part of a management train comprising various SUDS techniques, it can equally be used in isolation or as a stand-alone sustainable drainage technique.. This capability is useful in high density urban applications.

7. But in any event, CBPP merits a separate approach for adoption. Although most SUDS techniques fall outside the immediate highway area, CBPP simply provides a sustainable alternative to conventional paving with its piped drainage, but on the same footprint. So, at adoption it will itself become the highway and it is appropriate for it to be treated similarly to conventional highways and associated drainage with Highways Act 1980, Section 38 adoption agreements.

8. We have particular concerns about the possible interpretation of the 5 metre rule' (see (e) above). The aims of '*Future Water'* Chapter 5, section 22 could be seen as conflicting with guidance in Building Regulations Approved Document H (ADH) and confirmation of the following should be sought from CLG to remove this barrier. ADH Section 3.25 of H3 currently states that "Infiltration devices should not be built: within 5m of a building or road…"

   H3.23 states that: "*Infiltration devices include soakways, swales, infiltration basins and filter drains*." However, designers and Building Control Officers might also include CBPP within this definition, which would preclude the use of CBPP in many front gardens, if applied.

   However infiltrating CBPP (Systems A and B) may be used close to buildings as it allows dispersed infiltration similar to natural vegetation, rather than 'point' infiltration typical of soakways. If a concentrated outflow (such as a roof drainage outlet) is used within the CBPP, this should be at a sufficient distance away from the building to ensure the stability of the building is not affected. We believe this requirement was intended to apply to soakaways not CBPPs. There is some evidence from the market that this requirement (or rather the misinterpretation of it) is inhibiting the use of CBPPs near homes and on driveways. (This issue does not arise with non infiltration CBPPs (System C).)

   The Approved Document accompanying the Regulation is now 6 years old and would benefit from some updating to reflect the likelihood of climate change and perceptions of flood risk. (This issue does not arise with non infiltration CBPPs (System C).)

   Further to point f. above, there are two benefits when combining permeable and non permeable areas:

Potential Cost Saving

The design process for CBPPs requires the separate calculation of pavement thicknesses to accommodate the traffic loading and water storage capacity. From these calculations the greatest pavement thickness is selected as the CBPP design thickness. Generally the traffic loading pavement thickness required is greater than the water storage pavement thickness required, resulting in "spare" water storage capacity within the pavement.
Without exceeding the pavement depth determined for the traffic loading, it is possible to utilise the "spare" water storage capacity to drain roofs or other adjacent impermeable surfaces. This can result in cost savings.

Statutory Services – Minimising the Risk

Where statutory service runs are required to be placed within the pavement these can be located within areas of impermeable conventional pavements, whose run off can be accommodated by adjacent CBPP as (discussed in the answer to Q19.) With careful layout design, statutory services can be located within conventional impermeable areas, creating service corridors, avoiding the CBPP. This will negate the risk and need of excavating a CBPP for major maintenance of statutory services in the future. This has been a significant concern of many local authorities and is often cited as a reason for not wanting to adopt.

This approach can also form a key part of the overall visual impact, allowing designers to use their imaginations and realise the aspirations in "Manual for Streets". For example, a permeable central carriageway might be employed to contain the utility services, but be visually different from the CBPP parking bays.

We are grateful for the opportunity to respond to the consultation paper, and trust that these views can be taken into account on behalf of the precast concrete block permeable paving industry. We would like to be given the opportunity to explain our responses in more detail.

Yours faithfully

John Howe, BSc CEng MICE MIEAust
General Manager