INTERNATIONAL SUSTAINABLE PAVEMENTS WORKSHOP

BACKGROUND
The provision and maintenance of a reliable and sustainable infrastructure is a priority for all countries. Societal stability, sustainable growth, quality of life, and resilient response to natural and man-made disasters all rely extensively on efficient, well-maintained infrastructure networks (roads, water pipelines, electrical grids, etc.). In particular, the road infrastructure is of central importance and a critical lifeline in developed societies, with pavement structures consuming a large percentage of the resources (up to 60% according to some sources) allocated for the provision, and management of the road infrastructure. Because of this importance, because of their ubiquity and because of past and ongoing investment, this highway construction is one of the most important areas of infrastructure in which sustainability must be achieved.

SUSTAINABILITY IN THE US AND EUROPE
The addressing of sustainability objectives has only been a strong requirement in the US in recent years, whereas European countries have been pursuing such goals for many years. Thus the US needs to avail itself of the advances made outside its borders to rapidly catch-up in the field. Furthermore, the current strong drive in the US compared to the slower-grown and more mature development in Europe means that countries on either side of the Atlantic have taken somewhat different trajectories in research and practice, both of which have their respective strengths and approaches. In particular it is possible to detect differences of emphasis and states of development in the areas of:

♦ climate change,
♦ measurement of sustainability,
♦ environmental protection,
♦ available recycling and re-use technologies,
♦ materials innovation,
♦ noise management, reduction and attenuation, and
♦ scaling and localization.

Therefore it is now timely to establish an international workshop to bring together the leading researchers in this field from the US and Europe so as:

♦ to compare and contrast best practices in the US, Europe, and other countries,
♦ to explore the vital subject of sustainable pavements, and
♦ to identify a roadmap of future research needs.
OBJECTIVES

♦ To identify the main issues associated with the design, construction, and management of sustainable pavement systems from an international perspective,
♦ To report on the most recent research advances and current developments in pavement materials engineering and pavement construction that deliver environmental and sustainability benefits,
♦ To investigate means by which the level of sustainability of pavements and their constituent materials can be evaluated,
♦ To determine the future research efforts that are needed to deliver continuing and increasing sustainability in the sector,
♦ To establish a ‘roadmap’ for its delivery, defining short-, medium- and long-term research agendas for the development and implementation of more sustainable pavement engineering and management technologies and practices, and
♦ To determine the relative areas of strength and expertise in European and North America with a view to fostering international research collaboration that will benefit both regions.

TIMETABLE, PROGRAMME & VENUE

The workshop is to be held at the Airlie Center – a specialist conference centre about 45 minutes from Washington’s Dulles International Airport in Virginia, USA. This should make the workshop relatively easy to access. We have timed it to precede the annual Transportation Research Board meeting in January 2010. It will commence at 8:30am on Thursday 7th and end at 12 noon on Saturday 9th. The program will include plenary sessions, led discussions, breakout groups and an open forum.

PLENARY TECHNICAL SESSIONS

The draft list of three themed plenary sessions is as follows. Each is to be led by a nominated ‘champion’ who will be appointed to oversee the session, to draw out the key issues / hindrances to progress / directions / opportunities. He will work with the ‘rapporteur’ to format these for the “sandpit” sessions described below. The ‘rapporteur’s’ task will be to capture the discussions as an input to the reporting. The specific intent of these technical sessions is to share best practice and research expertise from Europe and the US. The three sessions, and the topics to be addressed, are as follows:

“Big picture” Issues

1. Climate change impact on pavement engineering
2. Sustainable (or “green”) roadways
3. Measures of pavement sustainability, including
   • Life cycle assessment of pavements systems and materials
   • Carbon footprinting
4. Sustainable constructions practices
5. Sustainable pavement/ infrastructure/asset management, including
   • Materials resource efficiency
**Pavement Materials**

6. Soil treatment with non-traditional stabilizers (e.g. enzymes),
7. Pavement recycling, including
   - In-place cold recycling
   - Use of high recycled content
   - Concrete recycling
8. Warm-asphalt technologies
9. Alternative binders (both hydraulic- and bio-binders)
10. Rubber recycling
11. Use of other secondary and recycled products in (flexible and rigid) pavements

**Pavement Systems**

12. “Quiet” pavements
13. Perpetual pavements
14. Innovative pavement systems, including those
   - providing Sustainable Drainage Systems – SuDS
   - factory made and instantly deployable
15. Interlocking concrete block paving
16. Special surfaces, including
   - Thin surfacings
   - High friction surfacings

**“SANDPIT” SESSIONS**

Three parallel breakout sessions in the theme areas of the preceding plenary sessions will be arranged. The task of the session, led by its ‘champion’, will be to:

- Identify the restraints to the provision of sustainable pavements, in particular those that appear amenable to change in the short, medium and long-term,
- Identify the technical and societal challenges that must be addressed to deliver such change and the responses required of the research community (researchers and funders),
- Identify “quick-win” research projects capable of delivering beneficial change in the near future,
- Identify longer-term strategic research goals and study areas that are necessary precursors of the desired step-change in pavement sustainability. This will include the identification of the likely research needed to deliver those fundamental tools, technologies and approaches that will provide the means by which lasting benefit can be achieved,
- Identify which international partners need to be brought together in research to bring about change (not exclusive to those attending the workshop), and
- Formulate a draft roadmap for such research.
FINAL PLENARY SESSIONS

On the basis of the previous sessions, the workshop will conclude with a final session that is expected to include

- Feedback from “Sandpits”,
- Panel discussion,
- Agreement of roadmap for future research in the area,
- Drafting of a publically available Agenda for Sustainable Pavements for dissemination after the workshop to research agencies, researchers, user authorities and funders.

ATTENDANCE & COMMITMENT

About 25-30 experts to be present. We are asking each expert to stay for the duration of the workshop as we believe that the most beneficial outputs will be engendered by a “retreat” approach with interaction in both the sessions and the social times. We are asking each invited attendee to prepare some initial thoughts on one, or more, of the 18 topics as indicated on the attached table.

PUBLICATION

All presentations will be placed on a web-site. We will investigate the possibility of publishing papers, based on the themes, together with the Agenda for Sustainable Pavements in a dedicated issue of (e.g.) ASCE Jnl. Transp. Eng., Int. Jnl. Pavement Eng., Road Materials & Pavement Design, etc.

SPONSORS

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