



2012 Study Tour Key Topics

1. Long life pavements
 - o Experience, design systems, use, durability & performance
2. High performance asphalt & binders
 - o High modulus asphalt (EME, HiMA), modifiers
3. Sustainability
 - o RAP/WMA, bitumen substitutes, carbon calculators & energy analysis
climate change impacts, societal concerns
4. Health & Safety
 - o Construction of road works, health considerations for bitumen and asphalt products
5. Procurement Systems
 - o Proprietary products (Avis Technique, HAPAS, etc.), "green" procurement, REACH, responsible sourcing, PPP and contract models



2012 Study Tour - Recommendations

Long life pavements

1. Australia would benefit from consideration of **endurance strain levels** in the design of flexible pavements and this should be **further investigated** (as also recommended after the 2010 AAPA study tour and some initiatives taken).
2. Any local development should **not rely on a significant amount of information from Europe and the UK**, as it is unlikely that the ELLPAG group will soon produce specific LLP design procedures. However, progress in Europe and the UK should be monitored, with a specific **focus on work being done at the TRL and Delft University**.
3. The best source of information to **calibrate local models** would be the **performance of existing pavements**, especially ones which had been **rehabilitated** (for which information **on past traffic, pavement composition and failure mechanisms** should be available).

Position Paper: Performance Related Specifications for Bituminous Binders

2012 Study Tour - Recommendations

High performance asphalt & binders

1. Investigate the **use in Australia of EME**, being a dense graded with a high structural stiffness, superior permanent deformation resistance through the use of hard bitumens with a penetration value between 10 and 25, and good fatigue resistance through high binder contents.
2. Review the potential in Australia for an asphalt mix based upon **high density packing of aggregates**, using a binder with low content but modified with SBS, with the aggregate gradings altered to achieve a double gap grading.



2012 Study Tour - Recommendations

Sustainability

1. **Sustainable** development offers **opportunities** and is not a threat.
2. **Higher percentages of RAP** should be promoted.
3. **Waste** products added to asphalt should not reduce quality or the ability to recycle.
4. **Durability should be sought** through higher quality production and paving.



2012 Study Tour - Recommendations

Health & Safety

1. Review the Australian **risk management** guides on the use of bitumen
2. **Communicate** the hazard and exposure methodology in the safe use of bitumen
3. Promote the **reduction of temperature** in the use of bituminous products
4. Promote the **use of lane shifting and contra-flow** to improve quality, increase safety and reduce costs.



2012 Study Tour - Recommendations

Procurement Systems

1. Promote, and seek methods of establishing, a **national system to support innovation** in cost reducing road products and systems and their commercialization.
2. Support and motivate for the transfer to **functional specifications** and contracts.
3. Evaluate the Australian **greenhouse gas calculators in comparison** to the European tools to assess their value in comparing industry products and systems.



Metrobus System in Istanbul

- Time saving: 105 minutes/person
- Travel cost saving: 61 %
- Number of public transport out of service: 209 buses, 1,296 minibuses
- Accident reduction: 64 %
- Savings from fuel: 242,000 l/day
- Number of cars out of traffic: 80,000/day
- Decrease in CO2 emission: 623,000 kg
- Average number of passengers: 500,000/day

Asphalt, the sustainable road to success

AAPA 2012 Study Tour to Europe – Closing & recommendations v2 www.aapa.asn.au

2012 Study Tour - Recommendations

5th Eurobitume & Eurasphalt Congress

1. Treat the requirement for more **sustainable** practices and products as an **opportunity and not a threat**.
2. Improve sustainability through **more durable pavements**.
3. Improve sustainability by **using cost effective** products with lower CO₂ and energy footprints.
4. **Preserve non-renewable** natural materials by maximising their reuse and recycling.
5. Do not use asphalt or binders as a “dump” for undesirable materials.

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2012 Study Tour

Thanks for being here, read or scan the report, consider the recommendations!

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