What are the Environmental Issues?
Roads and footpaths impact on the environment in a variety of ways – raw material extraction, energy inputs during manufacturing and construction processes, maintenance and disposal at end of life.

A wide range of products are used in road construction including geotextiles, road base, concrete, asphalt, drainage, signage, landscaping and safety structures.

While there are opportunities to choose more sustainable products in all of these areas, this product brief focuses on the benefits of choosing recycled concrete, road base and asphalt products.

There are important sustainability benefits associated with the use of recycled materials. Recycling helps the environment by reducing resource extraction and the use of virgin materials, thereby reducing energy use, water and air emissions and helping reduce waste to landfill. Buying recycled products also demonstrates environmental leadership and in some cases can reduce costs.

Both hot and cold asphalt, as well as concrete in some applications can be manufactured using recycled materials. Typically these include:

- Waste asphalt from road reconstruction, which is crushed and re-screened to special sizes and reused in hot and cold asphalt.
- Foundry sand, which can be readily reused in asphalt mixes.
- Recycled and reprocessed crushed concrete aggregates, usually sourced from demolition sites.
- Recycled ground glass incorporated into concrete mixes.
- Shredded and crumbed rubber from tyres incorporated into asphalt mixes.

Rubber incorporated into asphalt has a range of benefits including:

- Reduced reflective cracking
- Reduced rutting
- Reduced maintenance costs
- Improved skid resistance
- Decreased noise levels

You can specify the use of recycled construction materials in tenders and contracts with subcontractors.

Recycled rubber and plastics are also increasingly being used in a range of construction applications including: recycled plastic signage, bollards, guideposts, traffic calming devices and rubber matting surfaces.

Using recycled concrete and asphalt

- Ensure design consultants specify recycled content as an alternative to virgin materials at the design stage.
- Use current specifications and the latest products available – not old, out-dated ones.
- Some recycled asphalt products may perform differently to virgin products, so advice should be sought from the supplier about requirements for storage, placement and construction.
- Ensure all materials comply with relevant RTA Specifications, including:
  - Specification R116 – Asphalt (Dense Graded and Open Graded)
  - Technical Direction OSD06 Increased Proportion of Reclaimed Asphalt in Dense Graded Asphalt
  - Materials 3051 – Unbound and Modified base and Sub-base Materials for Surfaced Road Pavements
  - Materials 3052 – Material to be Bound (MTBB) for Base and Sub-base Materials for Surfaced Road Pavements


Buying recycled concrete and asphalt

- Purchasers should demand a history of test results from suppliers.
Where ever possible choose materials that are recycled locally.

Comparing products
The most sustainable materials will have the following features as well as meeting all your operational requirements.

Environmental comparison
- The highest possible recycled content that will not compromise the engineering integrity of the structure
- Sourced locally
- Supplier demonstrates good environmental management

Economic comparison
- Cost is comparable to other products fit for the same purpose

Social comparison
- Supplier is committed to recycling
- Supplier is located near the place where the product is to be used
- Supplier demonstrates good corporate citizenship

Definitions
Recycled refers to material that has been reprocessed from recovered material and made, possibly by means of a manufacturing process, into a new product or component of a product.

Post-consumer refers to any material generated by households or businesses after it has been used for its intended purpose. This can include material returned from the distribution chain, such as over runs, discards or packaging.

Pre-consumer refers to material diverted from the waste stream during the manufacturing process. It does not include materials reabsorbed or reutilised in the normal manufacturing process such as regrind or scrap.

Recycled asphalt is a mix of bitumen and recycled aggregates (e.g. foundry sand or crushed aggregates). Available as hot mix (soft when hot, hardening as it cools) or cold mix (remains workable when cold for up to 2 weeks, often used for pot hole repairs, etc.).

Model Tender Clauses
[Council] is committed to purchasing environmentally sustainable products and services whenever possible.

[Council] is committed to the purchase of products that facilitate recycling and decrease resource consumption and waste generation.

[Council] has determined the following environmental considerations must be met when purchasing concrete and asphalt products.

Road and foot path construction must:
- Utilise recycled materials in concrete and asphalt products where ever possible
- Incorporate locally produced products where ever possible
- Utilise recycled content signage, safety equipment and related infrastructure where ever possible
- Comply with all state and Australian Standards

Ask the suppliers to:
- Provide details of how the product complies with relevant NSW RTA Specifications and Australian Standards.
- Specify the percentage of recycled content
- Identify the source of the recycled materials
- Specify what guarantees are provided with the product
- Supply test results for the product in accordance with RTA specifications
- Provide technical data to support the engineering capabilities of the products being offered
- Identify options for use of cold asphalt products instead of hot products
- Provide evidence of the storage life of the product, where relevant

For more information see the Sustainable Choice Website: http://lgnsw.org.au/member-services/sustainable-choice