

## Checklist for potential circular economy initiatives for civil construction projects

From 2018 to 2021, the Department for Infrastructure and Transport (DIT) delivered the Regency Road to Pym Street (R2P) project. A number of initiatives were implemented throughout the project to minimise whole-of-life emissions and optimise circular outcomes, minimising the project's environmental impact.

These initiatives informed the below checklist, which can be utilised by future civil infrastructure projects as a prompt for potential improved circular economy outcomes.

[Learn more about the project.](#)

No.	Suggested Initiative	Considerations	Viability for New Project [circle the correct word]
<b>Site Won Spoil</b>			
1	Reuse as much as possible of site won spoil on site.	<ul style="list-style-type: none"> <li>- Was the spoil tested for contaminants – what is the legal requirements for reuse of spoil or movement of spoil form one land parcel to the next?</li> <li>- If spoil is provided to third party landowners, are clear, signed agreements in place with a copy of soil contamination classification to indicate that the spoil provided is not contaminated?</li> </ul>	Yes / No / Potential
2	Determine if close by projects or third-party landowners are interested in spoil for reuse.		Yes / No / Potential
3	If the spoil is not reused on site or by third party landowners, consider reuse or recycling facilities instead of disposal.		Yes / No / Potential
<b>Asphalt and Pavement</b>			
4	Include recycled materials (e.g. recycled asphalt plannings, - plastic, -canola oil, -glass, -etc.) into the asphalt mix.	<ul style="list-style-type: none"> <li>- Are the additional recycled materials compliant to the road specifications?</li> <li>- Dispensation may be required from the client to use recycled content in asphalt</li> </ul>	Yes / No / Potential
5	Is recycled PM2/20 available locally instead of natural PM2/20?		Yes / No / Potential
6	Is there a PM2/20 product available with recycled glass content that can be used?		Yes / No / Potential
<b>Concrete</b>			
7	What is the specified SCM percentage content, and can it possibly be increased? Alternatively, are there any low or green carbon concrete alternatives available through the local market?	<ul style="list-style-type: none"> <li>- The SCM content may impact the curing time and workability of the concrete. It is advisable to conduct small scale trials to determine the impact of increased SCM percentages. The project program can potentially be adjusted to allow for increased curing timeframes.</li> <li>- Consult with recently completed or far progressed infrastructure projects to determine what SCM percentages were used for which concrete strength applications; and enquire</li> </ul>	Yes / No / Potential
8	Can recycled aggregate be used as a substitute to natural aggregate?		Yes / No / Potential
9	Can recycled content (e.g. recycled plastics) be added to the concrete mixture?		Yes / No / Potential

No.	Suggested Initiative	Considerations	Viability for New Project (circle the correct word)
		<p>about the use of recycled materials in the concrete mix.</p> <ul style="list-style-type: none"> <li>- Ensure that any additive (e.g. recycled plastic or other recycled materials) is approved by the client and compliant with technical specifications – dispensation may be required.</li> </ul>	

No.	Suggested Initiative	Considerations	Viability for New Project (circle the correct word)
<b>Steel</b>			
10	Can the steel required be manufactured from recycled steel?	<ul style="list-style-type: none"> <li>- Ensure that any alternative to steel is approved by the client and is compliant with technical specifications – dispensation may be required.</li> <li>- Ensure that the Environmental Declarations are approved by independent bodies to ensure that the content is verified</li> </ul>	Yes / No / Potential
11	Compare Environmental Product Declarations of various steel products to determine which product has the lowest environmental impact, which can then be used to influence decision making on which steel to be used		Yes / No / Potential
12	Use alternatives for steel where possible (e.g. e-mesh instead of reinforcing steel mesh).		Yes / No / Potential
<b>General</b>			
13	Second hand concrete barriers for road demarcation	<ul style="list-style-type: none"> <li>- Determine if secondhand concrete road barriers are available for use? Particularly evaluate the availability of concrete barriers from projects in close vicinity to the new project site, that are ramping down.</li> </ul>	Yes / No / Potential
14	Is there an alternative for hazardous waste other than disposal at landfill (e.g. treatment; or encapsulation on the same land parcel that it was found)?	<ul style="list-style-type: none"> <li>- The outcome must be legally compliant – consult with the EPA for clarity.</li> <li>- Obtain guidance from a soil contamination specialist if you have contaminated spoil on site.</li> <li>- Consult with local waste collection companies – they may have an alternative solution for treatment available.</li> </ul>	Yes / No / Potential
15	Can inert- and office waste (timber, plastic, solid dry non-hazardous waste, paper, cardboard) be separated on site to make recycling opportunities more viable?	<ul style="list-style-type: none"> <li>- Consult with local waste collection companies – they may have an alternative solution available such as treating the waste and using it as a fuel source, instead of disposal at landfill.</li> <li>- Availability of recycling facilities in proximity to the site in regional areas.</li> </ul>	Yes / No / Potential

No.	Suggested Initiative	Considerations	Viability for New Project (circle the correct word)
16	Can trees cut down on site be reused e.g. placement of stumps and trucks as habitat for fauna; cutting up trunks to suitable sizes and provide to parks and local schools for nature play; mulch vegetative material and provide to local Council or third-party landowners for reuse – it can even be reused on site as part of the final project landscaping?	<ul style="list-style-type: none"> <li>- Proximity of the construction site to potential third-party landowners, and cost involved in transportation of wood / mulch.</li> <li>- Time required for tree loppers to create specific trunk sizes for nature play comes at an extra cost.</li> </ul>	Yes / No / Potential

No.	Suggested Initiative	Considerations	Viability for New Project (circle the correct word)
17	Can existing Intelligent Transportation System (ITS) and road lighting equipment be reused, or potentially be refurbished and reused on site?	<ul style="list-style-type: none"> <li>- The ITS must comply with technical specifications.</li> </ul>	Yes / No / Potential
18	Can site compound offices and tanks for harvesting rainwater be sourced from another project and reused instead of purchasing new?	<ul style="list-style-type: none"> <li>- Consider the distance from the other project to the new project, and plan for transport costs.</li> </ul>	Yes / No / Potential