

Demonstrate that you  
have looked  
construction essay



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The introduction should demonstrate that you have looked in detail at the relevant literature and that you can identify your research area in relation to it. Your introduction should lead the reader through to a clear statement of your aims and objectives and there should be no doubt about the focus of your research. Remember to keep your writing style simple and clear.

Introduction Aggregates are the most widely excavated and used building materials in the construction industry. The European Standards defines aggregates as granular materials used in building structures (EN12620: 2002, BGS, 2007). There are three sources of aggregates and each source is determined by its process of production. The naturally occurring aggregates are aggregates gotten from mineral sources that are subjected to nothing more than natural process before they can be extracted e. g. gravel, sand. The recycled aggregates are aggregates derived from recycling inorganic materials that have previously been used in construction e. g. construction and demolishing waste. The manufactured aggregates are aggregate produced from a combination of thermal and other processes on mineral aggregates through industrial process e. g. slag Aggregates can be used in the construction of architectural structures (residential or commercial) and roads in their natural or virgin form or in combination with other materials to form asphalt and concrete ( reffffffffffffffff) The availability of virgin aggregate in the near future is questionable as the annual European Union production of aggregates stands at 3 billion tonnes (EEA, 2008) and this might not be sufficient to meet the rising demand of aggregates for concrete production and construction needs. This increase in demand has been reflected in countries like the UK where the sand and gravel reserves have dropped from 869 million tonnes in 1997 to 616 million tonnes in 2005 <https://assignbuster.com/demonstrate-that-you-have-looked-construction-essay/>

(.....). With this projected rise in future, demand for aggregates strategies need to be put in place to curb the downward supply trend (Brown and Highley, 2006) as naturally occurring aggregates are important and valuable resources that are needed for the social and economic development of mankind , they must be used and produced in accordance with sustainable development principles (Blengini and Garbarino, 2010). Hence, the need to evaluate and appraise the environmental impact associated with their constituent makeup (Marinkovic et al., 2010). It has however important to take into consideration that with this increase in demand for aggregates come increase in the production of construction and demolition waste. In the European Union, 31% of the total annual waste generated (850 million tonnes) are from the construction and demolition industry (fisher and wedge, 2009). The associated environmental impacts of the production and use of aggregates has been linked to its effects on climate change, ozone depletion, toxicological stress in human health and greenhouse emissions (Ribertzer et al., 2003, Heed and Bellie 2012). The quantity of C&D waste deposited in landfills can be reduced by the incorporation of a C&D waste aggregate recycling process where aggregates produced can be used in both lower product application and concrete structural/architectural construction. The environmental benefit of this is a reduction in landfill waste and the conservation of the natural environment through the conservation of virgin aggregates (Blengini and Garbarino, 2010). The production of RAs from C&D waste follows a two phase process of screening to remove contaminants and large materials not suitable for the construction process and also a crushing process which serves to reduce waste size to particulate size needed for further construction. The end

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product RA quality is largely dependent on the quality of the C&D waste, the screening and the crushing process and any other processing criteria the material undergoes (Wrap 2010). The presence of mortar in RA has been perceived by researchers to be the contributory factor to the low quality of RA when compared to VA and this has invariably led to the use of RA in lower quality product/ construction application (Marinkovic et al., 2010). Recycled aggregates are mainly used as sub base for pavement construction (Al-Ali et al, 2001, 2002) and in sand lime brick construction (Al-Otaibi and El-Hawary, 2005 and Al-Otaibi 2007). The quality of RA is usually lower than that of natural aggregate (Marinkovic et al., 2010) and this is observed in the physical quality of recycled aggregates such as density & water absorption capability when compared to natural aggregates (De Juan & Gutierrez, 2009). A comparison of the physical attributes are represented as a decrease in the density of RA by about 10% when compared with that of NA (Hasen 1992, Poon et al., 2004 and De Juan and Gutierrez 2009); an RA abrasion decrease of about 70% when compared with NA (Poon et al., 2003, Poon et al., 2004 and Lopez-gayarre et al., 2009) and coarse RA water absorption that falls within a range of 3.5% (Rahal, 2007 and Lopez-Gayarre et al., 2009) to 9.2% (Xiao et al., 2009) as against that of NA which falls between a range of 0.5-5% (Qasrawi et al., 2012). On the other side, the comparison of recycled aggregates and natural aggregates on which management decisions are to be made is dependent on the availability of aggregates, the cost-effectiveness of making a choice and the environmental sustainability of that choice. The question to ask therefore is which of these criteria are met by the different aggregate sources on ground. Thus the aim of this

research is to

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## **Aims and objectives (~0.5 page)**

These have to emanate logically from the literature review tailed above in the introduction. The aims and objectives should be very clearly defined and ideally novel. Where you have multiple objectives number them accordingly so that you can refer to them specifically in later sections. The question is The main purpose of this project is to make a comparative analysis of virgin aggregates and recycled aggregates. To evaluate the environmental impacts and cost effectiveness of using recycled aggregates in the construction of architectural structures in comparison with the use of virgin aggregates. This study aims to help identify: The environmental impact associated with the use of recycled aggregates as against virgin aggregates. The transport cost associated with the transportation of recycled aggregate from source of origin to point of use as against that of virgin aggregates. The price of recycled aggregates compared to that of virgin aggregates;

## **Proposed methods/resources**

This section will focus on the proposed methodology. The actual methodology you are going to employ may be refined over the coming months, but it is important that it is clear from reading this proposal that you know how you are going to go about collecting and analysing the information needed to achieve your stated objectives above. You must also identify any significant resource requirements attached to the methodology at this stage. (Note: no costings are required).