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Thesis/Practicum Reports
Forest Products and Paper Science
2023

Title:	**Filipino Architects' and Engineers' Perceptions, Attitudes, and Interests in Engineered Wood Products for Construction**
Author:	**Asuncion, Gabriel Josiah Bautista**
Adviser:	**Torres, Alfie M.**
Stream:	**Production and Industrial Forestry**
Access:	**General Public**
Type:	**Thesis**
Abstract/Executive Summary:	Engineered Wood Products (EWPs) are an entire line of products consisting of peaces of wood, scrap wood, wood fibers, and sometimes sawdusts binded together using an adhesive. These are designed to have the appearance of wood without its flaws and improving on its durability and strength. With the built sector producing greenhouse gas emissions, alternative sources of materials are needed to address the rising demand for infrastructures and houses alike. With professionals, such as engineers and architects, needed to design such structures, their opinions on which material is ideal to use, under certain circumstances, is a necessary input on clients choosing the materials to use. 37 architects and engineers were surveyed on their attitudes, perceptions, and interests on three materials: concrete, steel, and wood. There were nine qualities: aesthetics, costs, durability, availability, supplier, installation, performance, pre-fabrication, and maintenance. Each qualities were scored one to five with five being the highest. Results showed that concrete won overall in the cost, durability, availability, supplier, and maintenance category. Wood was favored in terms of aesthetics and installation while steel was favored in terms of performance and pre-fabrication. There are many factors that affected the answers of the respondents aside

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	from the nature of the materials themselves. Price of crude oil, energy cost, cost of raw materials, cost of transportation, and high cost of labor altogether, affects the prices of these materials. Sawmills in the Philippines were found to be few, aging, and inefficient in producing EWPS. To aid the rise of usage of EWPs in the Philippines, the author recommends that a Wood Encouragement Policy (WEP) be implemented and that MSME construction companies take advantage of the Department of Science and Technology's Small Enterprise Technology Upgrading Program (DOST-SETUP).
Title:	**Assessment on the Development of Plant-Derived Biomass Energy in the Philippines**
Author:	**Coronel, Gerald G.**
Adviser:	**Devera, Edgar E.**
Stream:	**Production and Industrial Forestry**
Access:	**General Public**
Type:	**Thesis**
Abstract/Executive Summary:	There is an energy crisis looming in the Philippines as sources for oil, coal, and natural gas continue to deplete, coped with the increase of importation costs for imported non-renewable energy. To resolve the dependency for non-renewable energy, the Philippine government, headed by the Department of Energy (DOE), enacted Republic Act 9513 or also known as Renewable Energy Act of 2008 to promote the utilization of renewable energy. Specifically, biomass energy has been used as a source of energy and is popularly utilized by the household sector. As such, the purpose of the study is to assess the development of plant-derived biomass energy in the country. Secondary data obtained from DOE, publicly available reports and literature was used to determine the progress of plant- derived biomass energy. Descriptive, SWOT, and Broad Factors analyses were used in the study. Based on the results, there is a high utilization of biomass energy, particularly on materials such as fuelwood, charcoal, and bagasse. Findings also indicated that power generation from biomass is increasing due to the increasing biomass projects being built. However, the forecast shows that biomass energy will stagnate for the next

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	20 years due to the availability of modern fuels. Furthermore, SWOT analysis revealed that biomass energy is highly utilized among the rural communities yet is at a disadvantage due to investment uncertainties among financial investors. Opportunities that come with biomass energy are the fiscal and non-fiscal incentives while risks involve bureaucracy and political disputes among government agencies. Broad factors analysis showed the political, economic, social, and technological factors affecting the development of biomass energy. Finally, the study revealed that there are various reasons for the slow development of plant- derived biomass energy in the country. There is a need therefore for the government to prioritize research on finding more biomass energy sources and invest in local technology to help in alleviating the energy problems in the country.
Title:	**Analysis of the E-Bamboo Plank Production System of the Cardona Multi-Purpose Cooperative (CMPC) in Cardona, Rizal, Philippines**
Author:	**Tendencia, Iva Marian Antonano**
Adviser:	**Daracan, Vivian C.**
Stream:	**Production and Industrial Forestry**
Access:	**Restricted**
Type:	**Practicum Report**
Abstract/Executive Summary:	The trend to switch to environmentally sustainable alternatives is currently on the rise and the engineered bamboo industry is one of the frontrunning industries in this switch. The purpose of this study is to provide information about the production system in the e-bamboo production center of Cardona Multi-Purpose Cooperative (CMPC) and provide them with helpful information about utilization efficiency in their primary processing system. To deliver such results, the researcher conducted a five-week long practicum in the cooperative and production center, which involved collecting information on the processing system employed by the center and the wastes generated from each phase in the processing system to determine bamboo utilization efficiency. The results of the analysis showed that the bulk of the bamboo is not efficiently utilized to the full

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	potential in terms of the intended end-product. Thus, it is recommended that the cooperative invest in newer and more modern technology to counter this result.