

Building technology essay sample



INTRODUCTION

As time evolves Construction is slowly yet rapidly developed over the past few years once mankind progresses. Construction is the art and science in forming material or immaterial objects, system or organization. Mankind depend on construction for something has to be built, whether it may be house, bridge or for the development of the country. Due to the advance change of the heading construction, building construction is one of the most technical developments. Jamaica has one such enterprise, known as Jamaica Pre-mix Concrete Limited. This company started in 1959 over fifty years old, supplying Jamaican industry with the highest quality ready mixed concrete, which is a combination of natural materials (sand, gravel, cement and water. Jamaica Premix has over one hundred employees and is the largest concrete company in the Caribbean.

On a daily basis customers may contact the company by phone or email on their demand of products that can be provided to satisfy their needs. They will tell the company what they are going to do with the product, whether for building house, while some customers are unsure what product they need, but contractors may say what exactly they ordering. There are over one hundred different concrete standard products that customers may request, whether it may be specialize or customize product. There are two types of standards, the American and Britain, but Jamaica Pre-mix uses the Britain Standard. Construction Technology with specific guidelines from the CXC Council should be followed to ensure that buildings constructed should have optimum quality. This will lead to stronger buildings to withstand excessive climatic conditions of the Caribbean. This research is designed to give an

overview investigation of the code of regulations set out by the Occupational Health and Safety Organization. Below are some factors you will find in the project:

1. Career norm and regulation

2. Impact of technology on career

- a. Employment /Unemployment

- b. Processing

- c. Security

3. How ethical moral considerations are handled and addressed

- a. Legal polices on safety health and welfare

- b. Moral approach in handling safety, and welfare

Technical terms:

Pinnock- Is the consistency of the material product i. e. how thick or watery the product is. Retarder- is a chemical used to retard the setting time. The retarder changes one or more of the properties of the concrete. Slaptutizer- this chemical is used to help remove too much water from the concrete but gives it a slump, depending on how soft or tight the concrete is. Slump- the slump of the concrete is the cement ratio of the concrete. I hope the readers will find this research beneficial and productive to them.

ACKNOWLEDGEMENT

First I would like to thank Lord Jesus Christ for giving me the time and strength and knowledge to complete this project. Secondly, to my Construction teacher, that motivated me, Mr. Clement Morgan and the staff members at the Jamaica Pre-Mix Ltd, special thanks to the IT Manager Mr. Kevin Wallis (not sure), and the person in charge of the Power Control

Centre. I wish to express sincere gratitude to all those persons who have assisted me in making this project a tremendous success.

Thank You All!!!!

Approaches of data collection

Collecting information for this investigative tour, the researcher have decided to use the relevant primary and secondary sources which include; survey methods such as touring the organization plant(Jamaica Premix) with the relevant personnel from different department, where necessary audio recordings, pictures taken and important questions being asked, other information was taken from the internet. This tour was done on January 28, 2015. The process used was known as stratified sampling, where persons were properly interviewed on the Jamaica Premix grounds in a formal work ground in St. Andrew. Carrying out the interview of these persons was selected as one of the methods of collecting data because it has a number of advantages: It is appropriate, accurate and not time-consuming

It can be done at the convenience of the persons.

It is less costly than other methods.

The data can be easily measured and analyzed

The use of the internet makes the researcher more knowledgeable on the topic.

Approaches of Data Handling

With all the relevant information gathered from the site visit, the researchers regrouped and analyzed the collected data. The necessary information was

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taken which is used according to the topic of this research, whereby the irrelevant data was discarded. The researcher hopes the reader will find the information provided in this research beneficial to them.

Photograph showing student researchers obtaining data for their research project

CAREERS

On Jamaica Premix site there are a few career opportunities that are available under the broad spectrum of construction technology. These careers are as follows: 1. Information Technology Manager- This person is highly responsible for the information coming from customers on their order of their product. It is their responsibility to pass on the information on what the customer order, in order to meet the customers need. This person should have important skills in this field. These skills include team building, computer skills that enable him/her in processing programs and emails at a highly proficient level. There is one worker that is currently employed for this area. A Bachelor of Education in Information and Mechanical Technology is required for this management. 2. Batcher- Is the person responsible for the various ingredients combined to form concrete.

Some of these ingredients are sand, aggregate (rock, gravel etc.), water and cement. The skills that this person must possess are decision making and very effective organizational skill. A Bachelor of Education in Construction Technology. 3. Production Manager- Ensures that the correct quantity of each ingredient (the product is mix every single time) goes into each load of concrete. Analytic, problem solving, decision making and excellent

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interpersonal skills are of great importance in being a production manager. The qualification required is a Bachelor of Education in Industrial Technology.

4. Workmen- these persons are men who drive the tractor and truck. They ensure that they know what time to report to work so that work starts on time. The skills for these personnel are attention to details, time management, and effective verbal and listening communication. Tractor Operator- this person operates the tractor in loading and unloading the ingredients to be used in production of concrete. It could be tons of sand or gravel to be used in the mix.

The tractor operators must have a driver's license and few years of experience within this field. Driver- this person delivers the concrete product in good condition in the specification that the customer's order it, without any accidents on the road or turn over the truck. The driver is responsible to maintain the integrity of the product to its location. This is to keep the concrete in a form that it can be poured out of the truck. He is responsible to check the consistency of the product to make sure it is maintained. In doing so, he might add water but it is not encouraged, if too much water is added it changes the product to something else. He is also responsible to maintain communication with the Batchter by means of SUG phones.

5. Quality Control Manager- Takes the quality of the concrete. This person ensures that the accuracy of all equipment and material used in the quality control and assurance functions.

This help to meet the objective of satisfying the customer's needs from all cement produced in the industry under government requirements. High level of accuracy one such skill this person must possess. The qualification

required for this area is a Bachelor of Education in Construction. 6.

Administration Clerk- this person provides secretarial and administrative support in order to ensure effective and efficient office operations. Effective written communication, computer skills including the spreadsheet and word processing programs and stress management skill are of importance.

This person must have at least an Associate Degree in Business. 7.

Maintenance worker-with standardized directive from supervisor, this person is responsible to conduct routine building maintenance and services that are repetitive. These activities involve building operation inspections, maintain grounds and clean facilities for safety purposes and litter. These are a few unskilled persons but they must possess skills that adhere to the organizational policies in their daily function of the company.

Graph showing the distribution of resource personnel

Norms

The Norms of Jamaica Premix

The norms consist of the day to day operations of the company. This includes site inspection of work gears and work schedule for the day. A simple work day operation in production is as follows: 1. The start of the process is when the customer orders the concrete. 2. This information move to organizing the resource of the materials. 3. After which the product is produced.

4. Delivery of the product.

Photographs showing a customer's order form and the product produced.

Regulations

The Regulations include standards for construction as found in the National Building Code, Planning and Housing Development Regulations, and any provincial or municipal government regulations that covers the construction site under which this company helps to supply their products to.

Codes

Legal, financial, strategic codes employees must be aware of and adhere to, in working in this company along with other considerations. As an operating building it must remain in compliance with the fire code. The fire code is enforced by the local fire department. This ensures the building safety and of workers in case of a fire, which is also a building code. Usually a fire extinguisher is located at specific point on in the building or even a fire hydrant near the building operation.

Picture showing a sign for fire plan in case of a fire located on campus.

Employment/unemployment

This modern world is more advanced since the last hundred years or more. It is due to the significant development of technology. As a result, Building Industry and construction is modernized and is progressing daily. Production of concrete is a very diverse area with many components and it is very scientific. According to Kevin Wallis, the Information Technology Manager at Jamaica Pre-mix, as I quote “ Years ago a truck would park on a platform and workmen would cut cement bag and throw it in along with sand, gravel and water which is mixed to produce concrete. Now that process is computerized.” However, Kenneth Rogoff, a professor of Economics and <https://assignbuster.com/building-technology-essay-sample/>

Public Policy at Harvard University, was quoted on a university site saying, “ Since the dawn of the industrial age, a recurrent fear has been that technological change will spawn mass unemployment,” said Rogoff.

His reason for saying this is because of the breathtaking innovation, since this dawn which has produced rising living standards for ordinary people with sharply rising trend for unemployment. Neoclassical economists stated that this would not happen, because people would find other jobs after a long period of painful adjustment. These barriers can be overcome through the application of new information technology in the construction field, will have many benefits. Technology helps in speeding up construction and reduces labor cost. Technology will accelerate in massive upward shift in unemployment. “ Of course, some increases in unemployment as a result of more rapid technological change are certainly likely, but the rigidities inhibit smooth adjustment. People are moving up to the standard of living in this modern technological world.” In the processing of concrete at Jamaica Pre-mix construction site, the work that would normally be done by workmen would be replaced by one machine. Technology has affected employment in some positive ways

i. With the use of conveyer belts is now being used to load the trucks.

This equipment is easier to operate and the operator gets better

compensation than the laborer who does it manually. ii. With the use of

computer technology the production process is being computerized. This is

where production of the product is automated. The use of technology also

affects employment negatively.

i. With the use of the conveyer belts the need for manual labor are greatly reduce thus affecting the number of laborers employed to do most of these work.

Processing

The Production of the product is automated (computer produce the product). Computer interface with the computer and the batch plant throughout the production process. Years ago, there was a platform, where the truck drives underneath it, and some workers would get a bag of cement through it in the truck, with sand in a tractor load in the truck. Now through pneumatics and electrical connection, it can open, close and display what weight is on the scale and produce the concrete manually. All this process is now computerized. Theoretically, the batcher would bring and order up on the screen, select a truck, assign a load and press a button. The main advantage of this technology is consistency, to maintain a consistent product between each load. For example, of an order, one hundred (100) yard of one product, this product is produced individually until it reaches one hundred. The difference between the products when batching track one can't be different from number ten. So automating is to ensure that the product remains consistent throughout the whole order relatively the same.

Diagram showing two methods of processing using vertiform and gang short

Security

The setup of proper surveillance system.

i. This is where cameras are set up at different location around the site, been

monitored from one central location. The cameras help to show when the truck reverses, when it loads and if it has any spilling.

Pictures showing a method of security level

ii. Each delivery truck has a tracking device. These help the company to know when the concrete is discharge from the truck and to locate the truck from Premix to the customer. The use of proper identification.

i. To allow entry to only authorize personnel.

Pictures showing a notice to all persons entering premises

Method of securing the overall site activities

Environmental

In Jamaica Premix operation there are some environmental concerns. These are as follows: 1. The operation on the campus sometimes results in excessive dust polluting the environment. 2. Hearing loss is another environmental concern. This is due to high noise exposure during the operation process of the company.

Legal Polices on safety, health and welfare issues

Persons must follow legal policies of the company to ensure safety of their health. The company ensures and provides proper working environment for its workers. They try to enforce this practice by putting up warning signs in and around strategic locations. This helps to protect workers material for a comfortable working environment. The company does this by providing its workers proper safety equipment, such as helmets are worn to protect the head, harnesses and guardrails and procedures such as securing ladders and

inspecting scaffolding can curtail the risk of occupational injuries. The labeling and storage of hazardous materials are placed a safe area. The company provides ventilation and temperature in an office area for their workers. They enforces proper disposal of waste material so as to promote a clean and safe environment. Welfare

The company provides proper bathroom, changing and dining facilities for their employees. The company also provides potable drinking and insurance policies for the workers. In this working environment occupational fatality is more likely to happen, injuring workers on the job. Accidents do happen and when it does, the company is responsible for the employees' medical health.

Picture showing a typical dress code of an employee at Jamaica premix to maximize safety measures.

Moral Approach to Handle Safety, Health and Welfare

Moral Approach to Handle Welfare

SUMMARY

Limitations

The sample is small and the findings apply only to one informal community (Inverness Drive) in Clarendon, Jamaica and cannot be generalized to all communities across Jamaica since the dynamics of small communities would not be the same everywhere. Inverness Drive was used because it was a growing community and it was known to be a lawful community, not deeply involved in electricity theft. However, over a period of time, the problem became significant and caused other issues among the residents. Difficulty

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was experienced in the distribution and collection of the questionnaires given that residents were mostly to be found in the evenings when they had returned from work tired, or they would be carrying out household chores. Hence, the respondents took more time to answer and return the questionnaires. Another limitation is the validity of the information given from the respondents. Some persons may not have given accurate answers because they probably felt that they were informers and scared to say anything. This would also affect the validity of the results.

Major Findings

My research indicated that there are two main reasons why persons in informal community participate in electricity theft; this is due to unemployment and low wages. This supports Tomblin (2013) who contended that until the social and economic factors are addressed the problem will continued, an example of the economic factor is the high rate of unemployment. The residents may not have stolen electricity if they earned better wages and were employed. It is difficult to state that there is one cause for electricity theft; because of the social issues in the country it influences residents to take part in illegal electricity connection. Base on my research done the major negative impact of electricity theft are; electrical fire, damage to individuals equipment and loss in the company's equipments. Similar to my research Steadman (2009) posits that the main effect of electricity theft is electrical fire which is not safe for the community. When there is an overload of electricity it is more likely to cause a fire.

Furthermore, the company (JPS) has to provide the necessary equipment to restore electricity, which cost them. Also when their wires and other relevant

equipment are burnt in electrical fires; this leads to loss of their property. In addition, Hall (2009) reported that there is a high electricity cost on the customers. This is fact since the bill that the illegal consumer would have gotten is divided among the legitimate customers. With reference to Tomlin (2013) for the issue to be minimized there should be tighter legislation with harsher penalties for electricity theft. His statement is in contrast with my data, where respondents stated that the government should provide jobs for the residents. Yes the government could implement punishments, but if the residents cannot afford to pay the electricity bill what are they going to do, but more anti-social activities.

If government provides jobs, then the residents would have the money to pay their bills. My research slightly differs from Tomlin since hers is based on speculation and mine is based on the people's responses (questionnaires). In informal communities where the majority of the population is unemployed there is a high rate of electricity theft. Smith (2013) stated that their solution is a stand-alone meter and a pre-paid electricity programme, which was similar to the majority of the responses in my survey. This would work effectively since persons would be required to buy the amount of electricity they desire; therefore if persons do not buy then they won't have electricity. Hence, there would be no electricity theft in the community.

However, Keith reiterated that their current solution is sending JPS crew along with police into informal community to pull down the connections. This is not the most efficient method since this result in quarrels and unlawful actions by residents; after the crews are gone the connections are up again. In order to effectively reduce the problem in the community, JPS, the

customers and the government must play their part. The company and the government alone cannot prevent the problem, the customers, which are also affected, should report the persons they are aware of using illegal electricity. If all three parties are united to solve the problem, then it will in fact be solved.

Recommendations

In order to minimize the number of residents' pat-taking in electricity theft, the following recommendations were made: For the reason that majority of the persons committing the offence are unemployed, instead of imprisonment as a form of punishment, the company staff should counsel the residents about the effects of electricity theft. JPS company staff members could be recruited to have these counseling sessions. These sessions could be conducted twice a month for the entire day. Education of residents about the dangers of electricity theft through mass media such as television, Internet, radio, newspaper, posters, fliers and handouts. This information would reach a large number of persons since majority of the population if not all, uses the mass media. JPS staffs could distribute the fliers/pamphlets, and place posters at strategic points in the informal communities.

This would deter residents and further make them feel guilty of what they are doing. High fines for persons who can afford to pay the electricity bill but refuse to. After person are caught they can do a background check to find out the persons who work enough to pay the electricity bills, then charge them for the time they were using it for free. The company could campaign to convert illegal consumers into customers. This could be done by having a <https://assignbuster.com/building-technology-essay-sample/>

community outreach programme working in conjunction with the local political leaders. In particular they could visit specifically informal communities and offer assistance in regularizing person's electricity supply in exchange for a minimum number of residents changing to legitimate customers.