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ANALYSIS OF SMART CONSTRUCTION

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The Internet of Things (IoT) is a technology that allows you to connect various devices and sensors to the Internet in order to exchange data and manage them. Today's, IoT construction is used to improve efficiency and to optimize processes. In this article we will analyze some examples of the use of IoT technology in construction and their advantages.

The Internet of Things is one of the most important technologies that is changing the way we interact with the things in our lives. In construction, IoT can help to ensure efficient management of construction processes and it improves the construction quality. However, the use of Internet of Things presents the technological challenges that require solutions.

The Internet of Things can be used in construction for the effective management of construction processes and for improving the quality of construction.

First of all, information modeling of building information (BIM) should be used because it is a process of creating and managing digital representations of physical and functional characteristics of places. This method allows not only to create a three-dimensional model, but also to see how certain building materials can withstand time. This allows the user to see how the building will wear out and to select building materials in advance before ordering.

IoT systems can provide data collection from construction sites. Collection systems can include sensors that measure temperature, humidity, noise level, vibrations, and other parameters that can be left in the process of operating the building. Collecting data can help to identify problems with equipment. This allows to detect possible breakdowns in time and avoid long interruptions in work. IoT can also be used to collect energy optimization data systems. Besides this, it allows enterprises to save money and to optimize energy consumption. Security systems are improved with the help of IoT cameras and movement sensors for tracking the delivery and storage of construction materials and equipment, for criminal activities and security violations. Monitoring working hours can also use the Internet of Things to track working hours and log their entry and exit from the building. This helps businesses to avoid lost work time

and to increase productivity. IoT systems can be used for remote monitoring of the construction site from anywhere with Internet connection.

It is important to use “smart” building materials during construction with IoT systems. “Smart” materials contain built-in sensors that can measure various parameters, such as temperature, humidity and the level of material wear. This can help to monitor their condition, to detect problems with building materials and to prevent their destruction. Besides, you can see the dynamics of wear and tear. Also, during construction, pressure sensors should be used in concrete walls to ensure constant monitoring of important parameters. This can help to see what parts of the wall may need additional strengthening, or where stability problems may arise during the building's service life.

During the operation of a building, one obvious example of IoT usage is the monitoring of energy consumption and the control of heating, ventilation, humidity and air conditioning systems. Heating and air conditioning systems can be automatically adjusted according to weather conditions and the needs of the building with the help of temperature and humidity sensors connected to the Internet. This allows to reduce costs and to improve the comfort of building operation. IoT can also be used to control lighting in buildings. For example, the system can automatically turn on the light when a person appears in the room, adjust the intensity depending on the lighting and turn it off when the room is empty.

The Internet of Things (IoT) in construction can have great potential to improve efficiency, safety and sustainable practices. Thanks to the connection of various devices and systems to the Internet, it is possible to collect and to analyze a large amount of data, which makes it possible to make better decisions in terms of efficiency and saving resources.

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