Retraction

Retraction: Refined Design of Prefabricated Buildings under the Background of Big Data (J. Phys.: Conf. Ser. 2037 012010)

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The authors of the article have been given opportunity to present evidence that they were the original and genuine creators of the work, however at the time of publication of this notice, IOP Publishing has not received any response. IOP Publishing has analysed the article and agrees there are enough indicators to cause serious doubts over the legitimacy of the work and agree this article should be retracted. The authors are encouraged to contact IOP Publishing Limited if they have any comments on this retraction.

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Refined Design of Prefabricated Buildings under the Background of Big Data

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Abstract. In the rapid development of the information age, BDT (big data technology) has been a very big development and a very wide range of applications, how to use BDT to collect information, and process and analyze the information, so as to quickly obtain the information content we want, this is the problem that many industries and fields have to face and solve. Since China's construction industry entered the new century, its development speed has been greatly accelerated, and the whole construction industry has achieved rapid development, which also promotes the development of derivative industries, such as prefabricated construction industry. In order to explore how the prefabricated construction industry will develop and change under the background of BDT, we take two factories a and B of the prefabricated construction industry as the experimental research objects. Factory a applies BDT in its prefabricated construction, while factory B still operates according to the original method. Then, the experimental data show that the total net profit of a factory is 7.334 million yuan, the highest efficiency is 97%; while the total net profit of B factory is 5.686 million yuan, the highest efficiency is 82%.

Keywords: Big Data Background, Prefabricated Architecture, Refined Design, Innovative Research

1. Introduction
In this era of highly developed Internet, the amount of information and data we need to contact and process is increasing, while the traditional methods of processing and analyzing data are inefficient and have a high error rate. It is no longer suitable for the development requirements of the current era, so we need to use BDT to help us analyze data and process information [1-2]. And this practice is no longer limited to which line or which field, now the application of big data can be said to be very extensive, even in the prefabricated construction industry can not help but see its shadow [3-4]. Nowadays, in the prefabricated construction industry, in theory, we can use BDT to help quickly process and analyze data, find out the regularity of things, so as to help us make the right choice in the development direction. The purpose of this paper is to explore what effect the combination of the two will bring [5].
Because of its many outstanding characteristics, prefabricated building has gradually become the future development direction of China's construction industry, and it is applied more and more in the construction industry, accounting for an increasing proportion, which can be said to play a decisive role in China's construction industry [6-7]. Energy saving and environmental protection, fast construction speed, batch production and controllable cost are the advantages of prefabricated building. Because of this, now prefabricated building has become the first choice in the construction industry of our country. Nowadays, China's social and economic development is very fast, and the role of the construction industry can not be underestimated. Therefore, we should pay attention to the development of the construction industry and help the construction industry adjust the operation methods in real time according to the changes of the times. Relevant professionals should keep pace with the times, adopt new technology and methods, and adapt to the changes of the current new situation. Now the idea of combining BDT with prefabricated construction industry provides new development ideas and direction for the future development of prefabricated construction industry [8-9].

In a word, the future development prospect of prefabricated construction industry is very broad, but we can't be careless and ignore its technology upgrading and improvement. In today's big data era, we should make good use of BDT, and try our best to make the BDT and PD better in-depth integration, so as to create greater value for the whole society [10].

2. Method

2.1 Significance of Big Data
Big data is meaningless in itself. Its value lies in that people can use it to deal with massive data and information, filter out unnecessary information, dig out information that ordinary people are difficult to find, and help people use information that is difficult to use before, so as to improve the utilization rate of information. The definition of big data is relatively vague, because it involves a wide range and the boundary is not well defined. At present, people generally regard it as a data set, which can not be captured and analyzed in a certain period of time by conventional software tools because of its large amount and complexity. The significance of big data is that it has massive capacity, that is, it can include a very large amount of data, and analyze and process these data information, which is equivalent to processing these information data, so as to make these data valuable and useful. It can be said that using BDT, we can make some seemingly useless data valuable.

2.2 Prefabricated Buildings
Prefabricated building simply means "moving the construction site into the factory". That is to transfer a large number of on-site routine operations to the factory. Then, these engineering operations are carried out in the factory. Finally, these parts and structures produced and processed in the factory are transported to the construction site. Then, these parts and structures are connected and assembled in the construction site through solid and reliable connection materials and methods, so as to form a complete building. These buildings are the buildings we see in our daily life. They can be the ground Boards, balconies or stairs, etc. The fine design of prefabricated building includes the design of concrete components, modern wood structure, steel structure and so on. Modern industrial production mode has begun to tend to intelligent, standardized. The construction, manufacturing and construction completion of many factories, information management and other production modes are becoming more and more mature and perfect, which is a good development phenomenon, and can also be regarded as the epitome of a modern industrial production mode.

2.3 Application of Big Data Technology
Big data really exists in our daily life. In fact, as long as we pay attention, we can see it everywhere. For example, the operation data in our mobile phones and computers can be called big data, and the sum of all data in the network is also big data. These huge data resources are difficult to process,
analyze and extract valuable core information, but there are a lot of data information in these data, which is very important. If they can be extracted, it will make a great contribution to the reform and development of all areas of society. This means that the managers and operators of companies and units, when using BDT for analysis and decision-making, can slowly change from extensive management to improved management, significantly improve work efficiency, provide service information recommendation for customers, so as to improve customer satisfaction and service quality. If we use big data analysis to make decisions, we can make decisions according to the characteristics of each customer's interests, needs and preferences. Using BDT for analysis and decision-making can optimize and reform all aspects of production, significantly improve workflow efficiency, save unnecessary costs in the production process and increase turnover, so as to improve the competitiveness of enterprises.

2.4 Advantages of Prefabricated Buildings

Through standardized design, prefabricated building can complete the differentiated mass production of factory components, and the whole production process will not be affected by bad weather, and the precision engineering degree of prefabricated building is also relatively high, so that the production quality and progress of products can be guaranteed, and the efficiency of the whole work can also be qualitatively improved. The installation system of prefabricated building has a relatively high degree of mechanization, and the number of wet operation on site has been greatly reduced. Compared with the past, the whole construction site is orderly, which also reduces the potential safety hazards to a certain extent. In the whole process of prefabricated construction operation, relevant operators can record the geometry and material information of all parts at any time with the help of big data and other information technology. In this way, compared with the traditional cast-in-place construction, it can accurately identify all the connection information from production, storage, logistics to installation and maintenance, which greatly improves the labor productivity. Most of the wet operations in PD(prefabricated buildings) are replaced by dry operations. Scaffolding and wood construction are prohibited. Wood recycling and steel recycling are used. Water for road maintenance can make full use of resources, reduce energy consumption, reduce dust, noise and construction waste emissions, and minimize the impact on the environment. It is of great significance to protect the ecology and create a green environment.

2.5 Algorithm Formula Involved in Statistics and Calculation of Experimental Data

In order to ensure the objectivity and accuracy of the experiment, we often use some formulas when calculating the data in the experiment, such as conditional probability formula and mathematical expectation formula:

\[ P(B | A) = \frac{P(AB)}{P(A)} \]  

\[ E(X) = \sum_{k=1}^{\infty} x \cdot p_k \]  

\[ E(X) = \int_{-\infty}^{\infty} x f(x) dx \]

3. Experiment

3.1 Research Objects

In order to explore the application effect of BDT in the fine design of PD, we selected two factories a and B as the research objects of this experiment. Factory a applied BDT in its PD, and then we investigated the net profit and work efficiency of these two factories in this year.
3.2 Selection of Experimental Research Indexes
We select the net profit of two factories in one year as the measurement index, and then track and investigate these data indexes in this year, and record them one by one respectively. Then we make statistics and calculation on the work efficiency of the two factories, and finally arrange the data results in the chart, so that we can see the experimental data results more clearly and intuitively.

4. Discussion

4.1 One Year Order Volume and Net Profit of the Two Factories
We divide the annual net profit of the two factories into four groups according to the quarter, namely group 1, group 2, group 3 and group 4, and record the data in detail in the chart according to the group category:

|                | Net profit (ten thousand yuan) |
|----------------|-------------------------------|
|                | Factory A | Factory B |
| Group one      | 155.8     | 132.6     |
| Group two      | 172.3     | 145.3     |
| Group three    | 189.6     | 130.5     |
| Group four     | 215.7     | 160.2     |

Figure 1. One year net profit of the two factories

We can see from Table 1 and Figure 1 above that the net profit of factory a in this year is not only higher than that of factory B as a whole, but also higher than that of factory B in terms of quarterly comparison. By observing the above chart, we can also know the specific profit of factories a and B in the past year. For example, we can know that the net profit of factory a in the first quarter was 1.558 million yuan, the net profit in the second quarter was 1.723 million yuan, the net profit in the third quarter was 1.896 million yuan, and the net profit in the fourth quarter reached the highest in the whole year, 2.157 million yuan. We can see that the net profit of factory a in this year is not only relatively high, but also keeps a growing trend. In the end, the total net profit of the whole year is 7.334 million yuan. The net profit of factory B was 1.326 million yuan in the first quarter, 1.453 million yuan in the second quarter, 1.305 million yuan in the third quarter and 1.602 million yuan in the fourth quarter. We can not only understand from the data, but also see from the figure that the net profit of factory B has not been growing all the time, and even its net profit in the third quarter has declined. Moreover, the total net profit of the whole year is 5.686 million yuan, which is 1.648 million yuan less than that of factory a.
4.2 Assembly Efficiency of Two Factories
We also took the quarter as a record unit, and then recorded the four groups of work efficiency of the two factories in this year. The assembly work efficiency obtained is shown in the following chart:

| Group   | Factory A | Factory B |
|---------|-----------|-----------|
| One     | 87%       | 75%       |
| Two     | 92%       | 82%       |
| Three   | 95%       | 73%       |
| Four    | 97%       | 80%       |

Figure 2. Assembly efficiency of two factories
From the above chart, we can first see the trend of work efficiency of the two factories. We can see that the assembly efficiency of factory A has been improving over time, and the assembly efficiency of each quarter is higher than that of the previous quarter. As shown in the chart above, the working efficiency of group 1, group 2, group 3 and group 4 in factory A is 87%, 92%, 95% and 97%, respectively. This working efficiency has been gradually increasing and approaching 100%. The working efficiency of the four groups in factory B was 75%, 82%, 73% and 80% respectively. From Figure 2, we can also clearly see that the assembly efficiency of factory B is fluctuating, and its efficiency line can also be seen clearly from the figure that it has always been below the efficiency line of factory A, which shows that the assembly efficiency of factory B has always been lower than that of factory A, and the gap between the two is quite large.

5. Conclusions
Big data technology has been quite mature. Many industries and fields have skillfully applied it in their own work industry, and all kinds of signs also show that BDT has brought new changes and development to all walks of life, and this change is very positive. And from the experiment in this paper, we can see that the application of BDT to the fine design of PD can create more profits and bring higher assembly efficiency to the industry, which shows that big data has a very positive impact on the fine design of PD, and plays a great role in it. Therefore, we also expect that BDT can better integrate with the fine design of PD in the future, so as to help the industry design more and better products to meet our various needs and bring us better services.

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