

CLAIMS

I/We Claim:

1. A method for managing resources in a construction worksite, comprising:

capturing object data, by a data collection unit at the worksite, related to actual resources utilized for a selected construction activity in the worksite;

accessing, over a computer network connected to the data collection unit, a database comprising Building Information Modelling (BIM) files for the worksite, the BIM files comprising historic data about consumed resources for multiple construction activities in the worksite;

identifying, by a processing module of a server comprising one or more processors, one or more other construction activities similar to the selected construction activity based on a classification and categorization of BIM content from the BIM files;

estimating, by the processing module executing a prediction model, required resources for the selected construction activity by extrapolating the historic data related to the consumed resources associated with the one or more other construction activities;

calculating, by the processing module, a variance between the estimated required resources and the actual resources utilized for the selected construction activity;

refining, by the processing module, the prediction model based on the calculated variance;
and

storing the refined prediction model in the BIM files in the database.

2. The method of claim 1, wherein the object data is captured by feeding, using the data collection unit connected to the computer network, one or more parameters about the selected construction activity.

3. The method of claim 1, further comprising updating the BIM files by aggregating the captured object data related to the actual resources utilized for the selected construction activity into the BIM files.
4. The method of claim 1, wherein the refined prediction model is utilized to generate suggestions for procurement of resources for the construction activities in the worksite.
5. The method of claim 4, wherein the BIM files comprises historic data about time variation of: cost of resources, quality of resources, and availability of resources, and wherein the refined prediction model is utilized to generate suggestions for procurement of resources in consideration of one or more of the time variation of: cost of resources, quality of resources, and availability of resources.
6. The method of claim 1, wherein the updated BIM files are utilized to manage schedule for delivery of resources for the multiple construction activities in the worksite.
7. The method of claim 1, wherein an output based on the calculated variance is utilized to benchmark different BIM models available for the worksite.
8. The method of claim 2, wherein the one or more parameters comprises information about quality of resources utilized for the selected construction activity, and wherein the captured object data is utilized to benchmark vendors associated with the selected construction activity based on the available information about the quality of resources utilized.
9. A system for managing resources in a construction worksite, comprising:
 - a data collection unit, at the worksite, connected to a computer network and configured to capture object data related to actual resources utilized for a selected construction activity in the worksite; and
 - a central server comprising:

a database accessible over the computer network and comprising Building Information Modelling (BIM) files for the worksite, the BIM files comprising historic data about consumed resources for multiple construction activities in the worksite; and

a processing module comprising one or more processors configured to:

identify one or more other construction activities similar to the selected construction activity based on a classification and categorization of BIM content from the BIM files;

estimate, by executing a prediction model, required resources for the selected construction activity by extrapolating the historic data related to the consumed resources associated with the one or more other construction activities;

calculate a variance between the estimated required resources and the actual resources utilized for the selected construction activity;

refine the prediction model based on the calculated variance; and

store the refined prediction model in the BIM files in the database.

10. The system of claim 9, wherein the data collection unit provides an interface to allow a user at the worksite to feed one or more parameters about the selected construction activity.

11. The system of claim 9, wherein the processing module is further configured to update the BIM files by aggregating the captured object data related to the actual resources utilized for the selected construction activity into the BIM files.

12. The system of claim 9, wherein the processing module is further configured to utilize the refined prediction model to generate suggestions for procurement of resources for the construction activities in the worksite.

13. A computer-implemented method for managing resources in a construction worksite, the computer-implemented method performed by one or more processors configured by executing a code that cause the one or more processors to:

capture object data, at the worksite, related to actual resources utilized for a selected construction activity in the worksite;

access, over a computer network, a database comprising Building Information Modelling (BIM) files for the worksite, the BIM files comprising historic data about consumed resources for multiple construction activities in the worksite;

identify one or more other construction activities similar to the selected construction activity based on a classification and categorization of BIM content from the BIM files;

estimate, using a prediction model, required resources for the selected construction activity by extrapolating the historic data related to the consumed resources associated with the one or more other construction activities;

calculate a variance between the estimated required resources and the actual resources utilized for the selected construction activity;

refine the prediction model based on the calculated variance; and

store the refined prediction model in the BIM files in the database.