SDSM&T BUILDING USAGE DATABASE TO MEET FACILITIES

INVENTORY AND CLASSIFICATION MANUAL (FICM) SPECIFICATIONS

Project Sponsor / Client: Research Affairs / Office of Sponsored Programs

Client Contact Information:
Eric James
Research Affairs / Office of Sponsored Programs
MI 233 / Spons Prgms
South Dakota School of Mines & Technology
Rapid City, SD 57701
605-394-1205 (o)
Eric.James@sdsmt.edu

Project Term: Fall 2011 – Spring 2012

SDSM&T Project Program: Computer Science

SDSM&T Project Instructor:
Dr. Jeffrey McGough
Associate Professor
Mathematics and Computer Science Dept.
South Dakota School of Mines & Technology
501 E. St. Patrick Street
Rapid City SD 57701
(605) 355 – 3455

Project Overview:

The SDSM&T is required by federal regulation to maintain a space utilization database for campus. Presently, Facilities uses an antiquated system provided by the State for tracking space that does not use the federal space codes or accurately retain information needed to perform complex analysis needed from the database. Research Affairs is looking to obtain the following deliverables:

- A database to interface with the facilities system to meet the needs of the State as well as the needs of the research regulations that is maintainable over time, and…
- An analysis of the data and the design of predictive models for future decision making.

To analyze building usage they are looking to categorize rooms by a predetermined catalog and ascertain the sizes of such rooms in each building on campus. Once the database is created and verifiable data is available, this data will be combined with data related to grants, departments, enrollment, and budget information to determine if there are causal or correlative relationships between space use and other factors as well as whether any regressive models can be developed to use

for the allocation of future space on campus. This database has to be easily configured and maintained for legacy users that are non CSC students.

Student project team members will work with the current OSP staff for report and model development, help document the database fields and data collection and verification processes, and work with the other team members and stake holders as necessary to verify operations.

Project Background:

To analyze building usage they are looking to categorize rooms by a predetermined catalog and attain the sizes of such rooms in each building on campus. Once the database is created and verifiable data is available, this data will be combined with data related to grants, departments, enrollment, and budget information to determine if there are causal or correlative relationships between space use and other factors as well as whether any regressive models can be developed to use for the allocation of future space on campus. This database has to be easily configured and maintained for legacy users that are non CSC students.

Project Team Requirements and Deliverables Description:

This project will require a team of approximately four senior design students. Software to document the processes will be selected by the student team, and may include MS Excel, Access or Visio.

Student project team members will work with the current OSP staff for report and model development, help document the database fields and data collection and verification processes, and work with the other team members and stake holders as necessary to verify operations.

The following deliverable items are expected for this project:

Access Database – identifying the personnel, data and spaces necessary for the OSP to report space utilization as the federal requirements currently dictate.

Data Collection Process Documentation – designing and documenting an effective and efficient process for collecting the information required for the database according to the federal reporting schedule, and developing additional work instructions for report production.

Internal Audit Planning – using the developed database, identify and develop plans for collecting verifying the correct operation of the computer programs and database processes. Verify the performance of these audit plans by assisting with the initial implementation.

Develop Predictive Models – working with OSP staff, develop models correlate space use and productive output that may be used to predict the results of allocation decisions.

With the possible exception of the predictive models, these items are expected within the time frames and along with the other deliverables described in the Industrial Engineering and Engineering Management Senior Design Projects document. That document provides a more complete description of the process, deliverables, and timing of SDSM&T IEEM Senior Design Projects.