PR 3 – Posted by Dr. Tarek Hegazy, University of Waterloo, tarek@uwaterloo.ca

Description:

Congratulations. You have won a major bid and have officially been handed the site shown below. The site size is 450 ft x 450 ft. Using a grid of cells, each 30 ft x 30 ft, the site size becomes 15 x 15 cells. The building to be built and some restricted areas are shown on the site plan. Also, there exists on site a small storage area (Facility **2**) on a fixed location on the site.

We are now interested in placing three temporary facilities to facilitate the construction work: **1**=Batch Plant, **4** = Engineers' offices, and **3** = Workshop. Arbitrary locations for the facilities 1,4, and 4 are shown on the site plan but the project manager needs to re-arrange their locations according to the following preferences:

- Batch plant (**1**) needs to be very far from all other facilities;
- Workshop (**3**) needs to be very close to storage area (**2**); &
- Site offices (**4**) needs to be far from storage (**2**) & workshop (**3**).

Requirements:

Use the Layout.xls utility of EasyPlan and do the following (**no solution check available**):
   a) Determine the optimum (best) site layout.
   b) With the best layout, we need now to put a crane as close as possible to the center of the building and to all other facilities, except the site offices.

Facility with fixed location on site.

Facility to be placed on any location by writing its number in a desired cell.

Obstacle or unallocatable place on site.