# HIGHRISE ENGINEERING

PROJECT MANAGEMENT

Prerequisites

Before start the Engineering module, we need to follow some guidelines,

A.1   List of all *Materials* required along with their Unit of Estimation, Unit of Procurement, Rate, EOQ, Category as per ABC analysis, Category for Classification, Method of Stock Valuation.

A.2   List of all *Labors* required along with their Unit of Estimation, Labor Rate and Category for Classification.

A.3   List of all *Equipments* required along with their Unit of Estimation, Unit of Procurement, Hire Rate, Equipment Cost and Category for Classification.

A.4   List of all *Activities* (Task Library) along with their Unit of Estimation, Materials, Labor, and Equipment required per unit volume.

A.5   List of all *Activities* (Task Project) along with their volume of work for labor and material.

B. **Work Flow Diagram**
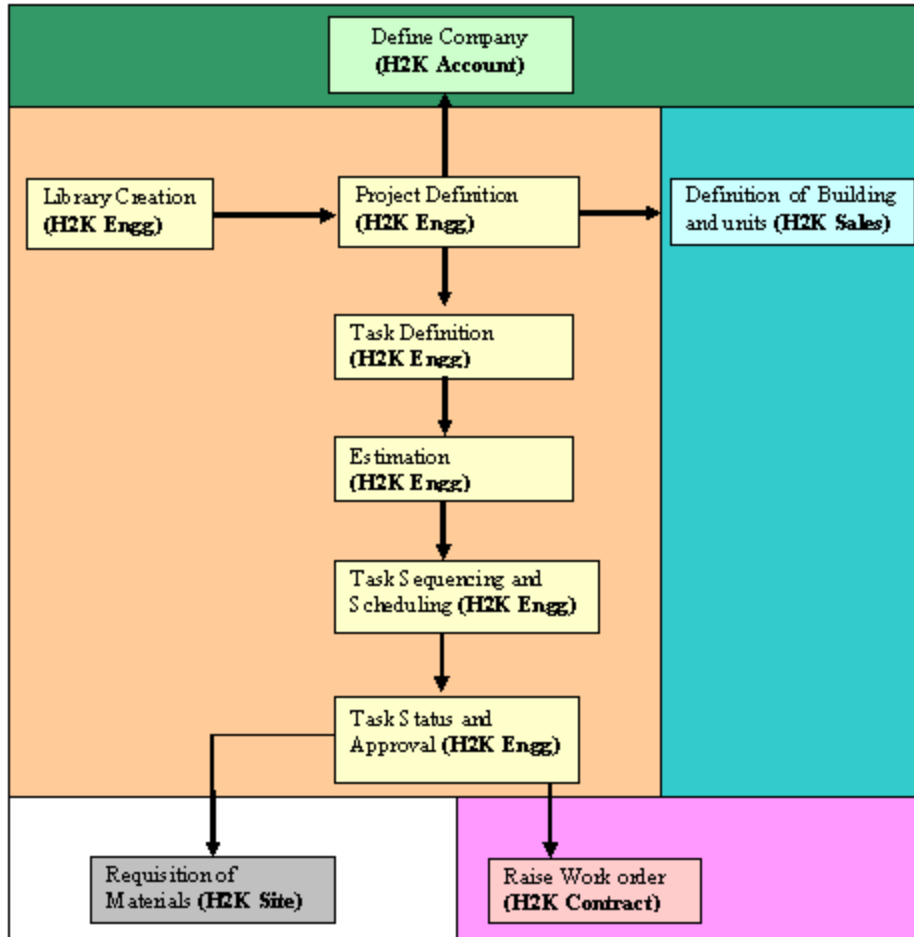
C. **External Modules Dependency**

Related Module	Related Function	Effected window in Engineering Module	Explanation
Account	Define Company	Define Project	Before defining any project create its company in Account module.

CHAPTER 1: DATA ENTRIES IN ENGINEERING

A. **Master Entries**

A.1 [#]**Library**

In Highrise Standard Construction activities, called as *'Tasks',* converted into libraries to facilitate fast & easy project definition and subsequent analysis. A Highrise library mainly consists of *Task Library, Material Library, Labour Library, Equipment Library* and *Unit Library*.

It is possible for us to maintain multiple libraries. For e.g. we might have a separate library for *Residential construction* and *Industrial construction*. Similarly rates of material vary dramatically with Geographical locations. In such cases it recommended to have Separate Libraries.

We associate a library to each project at the time of project definition. Once associated, the library is unable to change, you need to delete the project and define a fresh project with the desired library. One Sample Library supplied with project which can modify to tune to user requirements. To save time & efforts, user can copy and modify the existing library. Creating libraries is one time effort and such furnished libraries can be use in multiple projects; as users don't need to define a fresh library often. We can assign a library with multiple projects.

Recommend to have minimum libraries to minimize our efforts of maintaining them. For e.g. for Ten libraries with some new materials approved for usage, here we need to update Ten libraries.

A1.1 [#]**Material Library**

Material library is a collection of materials used in projects. Similar materials can grouped together under a category, which helps us searching materials fast and also assists in analysis. The Library holds the additional information of technical & commercial units, current prevailing price, Category, Unit, EOQ etc.

To Add New Material:

Step 1   Click on '*ADD Group'* Button *to* Add Material group & *'ADD'* Button to Add Material Button.

Step 2   Type material name/Material Group Name.

Step 3   Enter the Price per unit, Transport per Unit, Standard Credit, **EOQ,** Unit, Material Category

Step 4   Click **SAVE** Button to save the entered Data only in Material Library Master, & Click **SAVE All** to save both in Material master Library & Material Library.

To Remove Material:

Step 1   Click on the material to remove.

Step 2   Click on *DELETE* Button.

[#] IDH_LIBRARY
[#] IDH_MATERIALLIBRARYMASTER
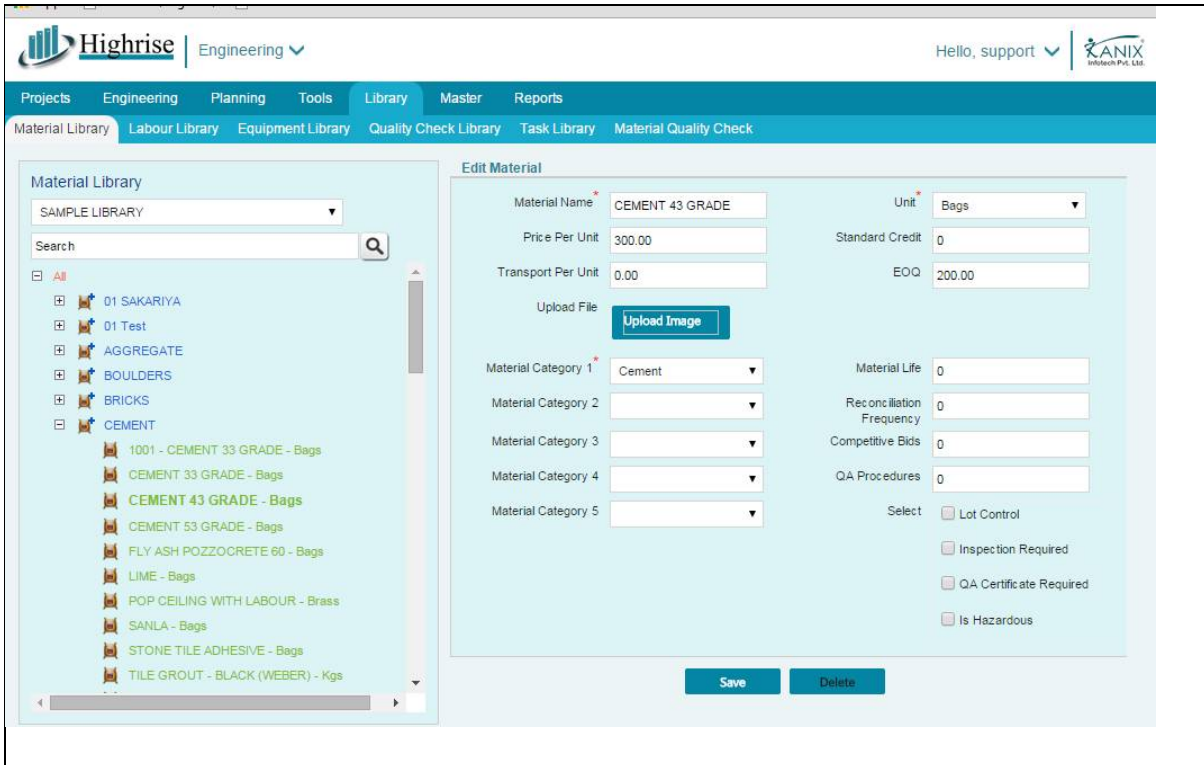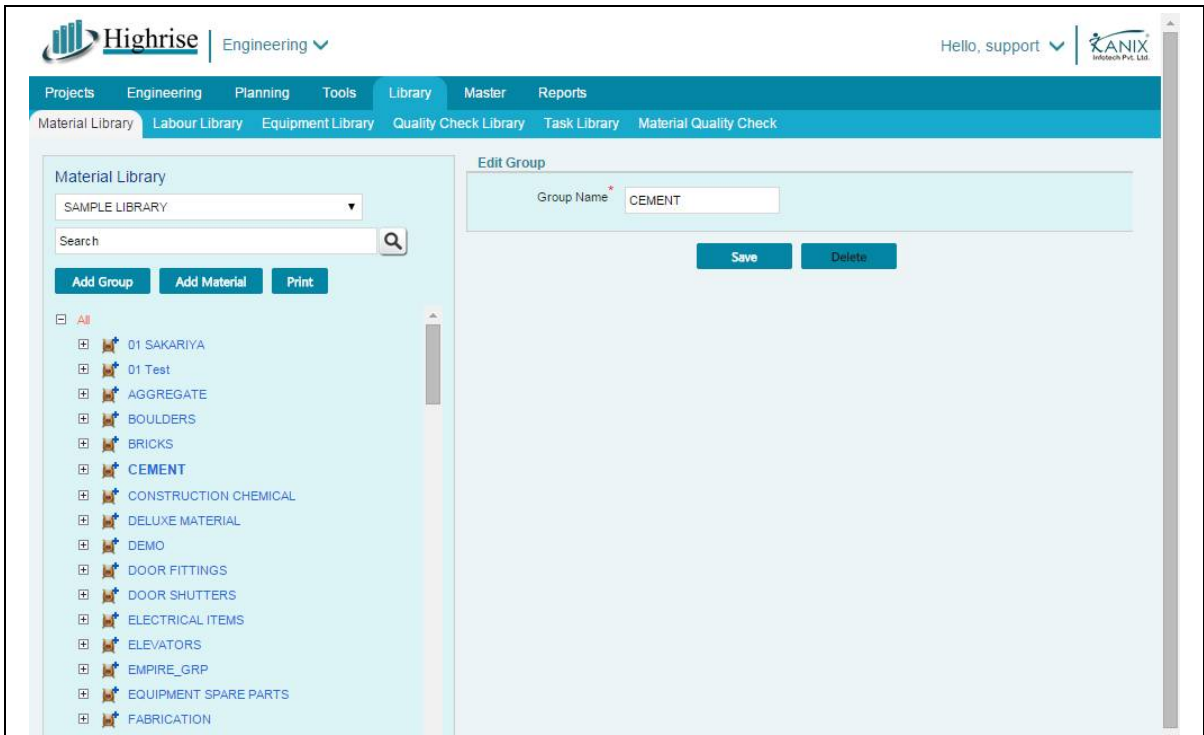
Path: H2K Engineering/ Library /Material Library
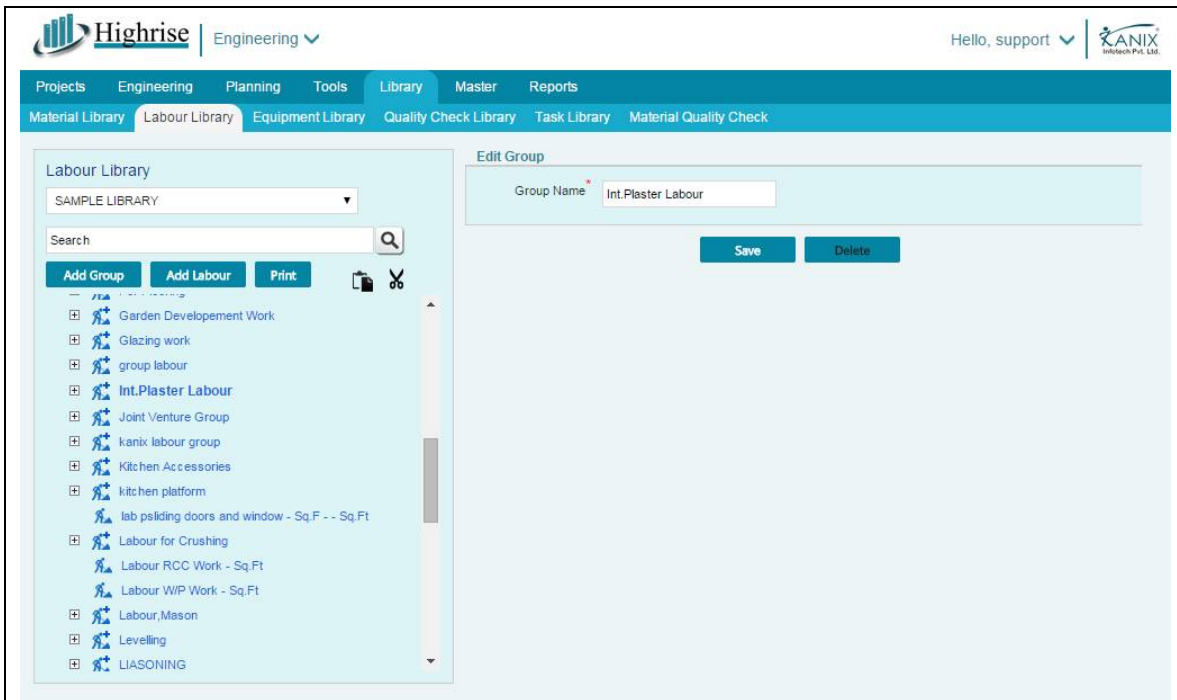
To Modify Material Information:
Step 1   Click on the material to modify.
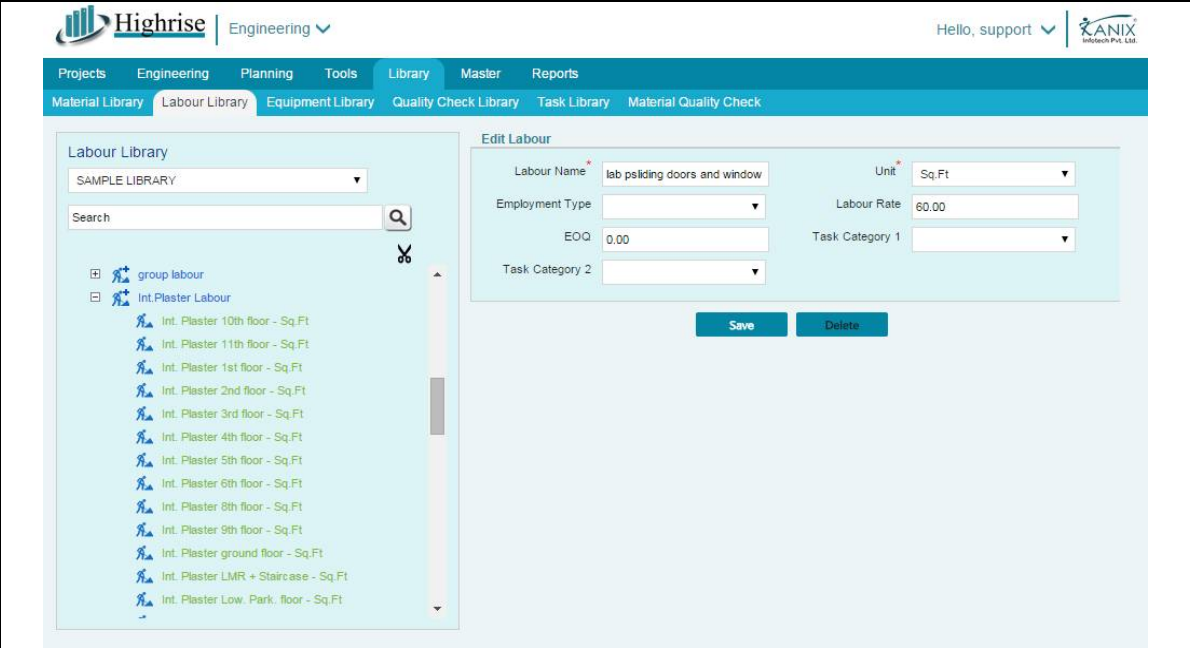Step 2   Edit the desired information. Click on *SAVE* Button.

A1.2# **Labour Library Master**

The Labour library is collection of the Labour activities (contracted) and departmental Labour used in projects. It holds the additional information of units, current prevailing price, category, type of employment etc.

To Add New Labour:

Step 1   Click on '*ADD Group'* Button *to* Add Labour group & *'ADD'* Button to Add Labour Button.

Step 2   Type Labour name/Labour Group Name

Step 3   Enter the Labour Rate, Employment Type**,** and Unit.

Step 4   Click on **SAVE** Button to save the entered Data in Labour Library Master.

Path: H2K Engineering/ Library /Labour Library

Add Remove Labour:
Step 1   Click on the Labour to remove.
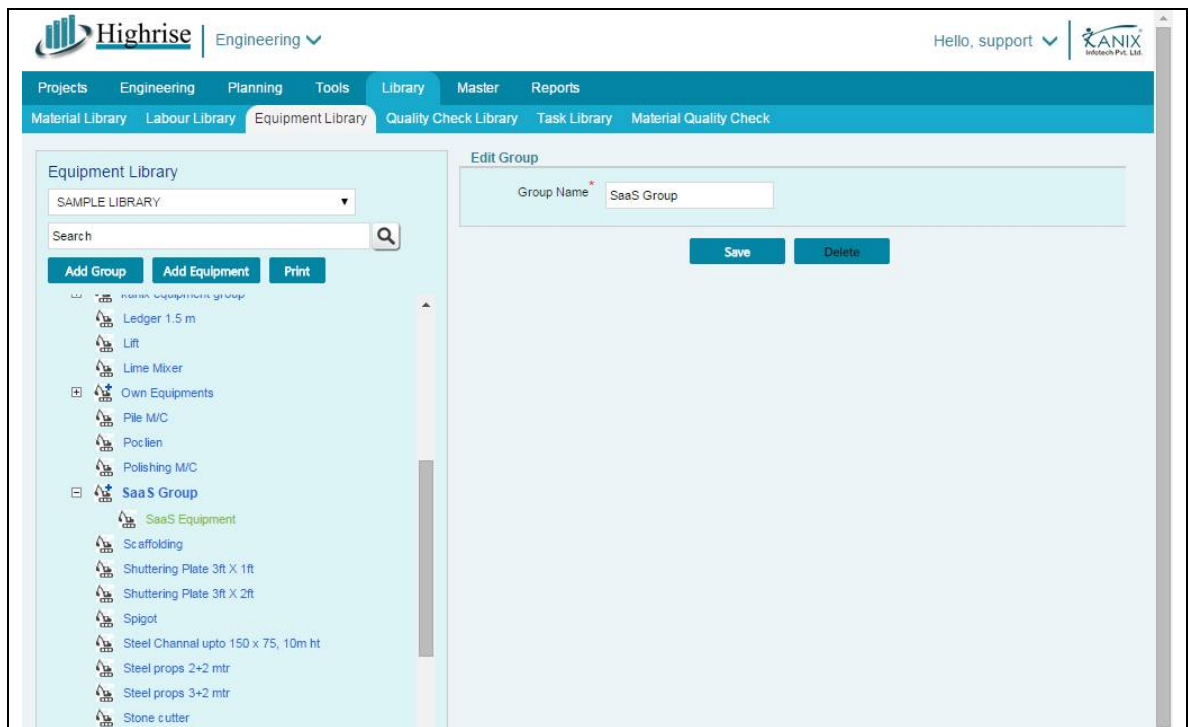Step 2   Click on *DELETE* Button.

To Add Modify Labour Information:
Step 3   Click on the Labour to modify.
Step 4   Edit the desired information.
Step 5   Click on *SAVE* Button.

A1.3. [#]**Equipment Library Master**

The Equipment library is a collection of Equipments used in projects. It holds additional information of units; current prevailing hiring cost, Running Cost (i.e. Petrol, diesel, operator etc.), Equipment Cost, Category, etc.

To Add New Equipment:

Step 1   Click on '***ADD Group***' Button to Add Equipment Group & '***ADD***' Button to Add Equipment.

Step 2   Type Equipment name/Equipment Group Name

Step 3   Enter the Hire Rate, Running Cost, & Unit.

Step 4   Click **SAVE** on Button to save the entered data in Equipment Library Master

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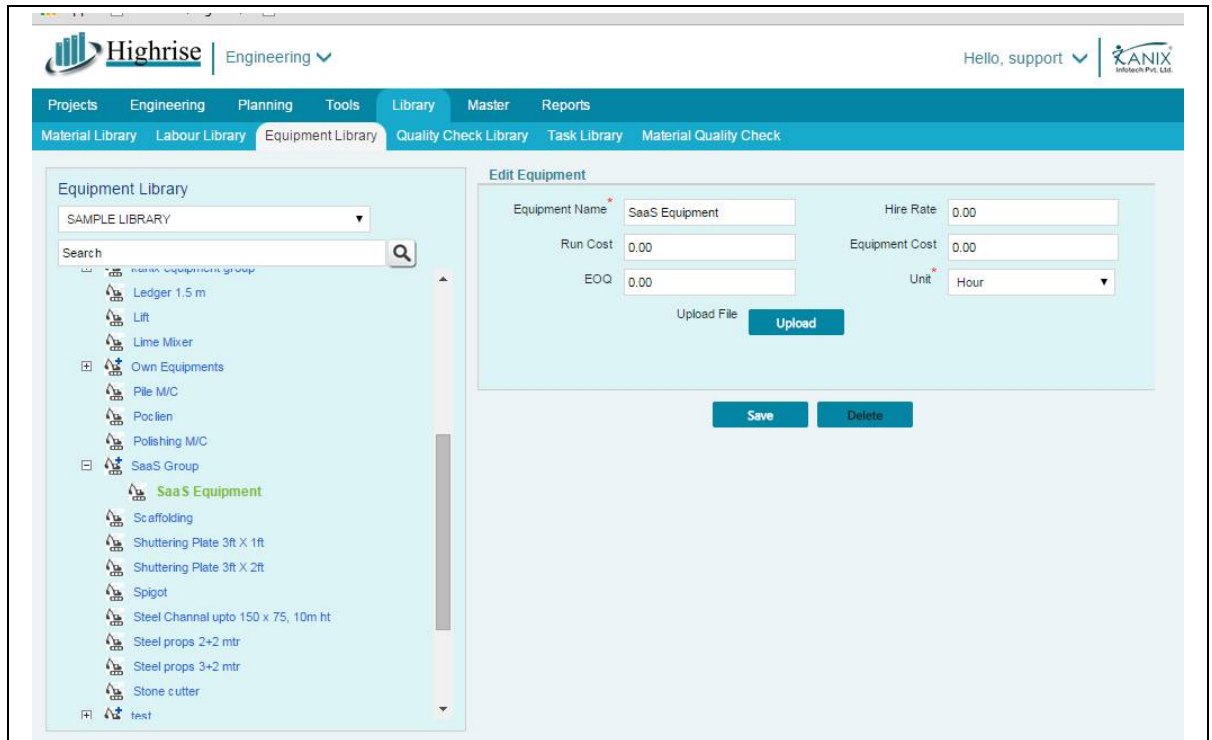
Path: H2K Engineering/ Library /Equipment Library

To Add Remove Equipment:
Step 1   Click on Equipments to remove.
Step 2   Click on *DELETE* Button.

To Add Modify Equipment Information:
Step 1   Click on Equipment to modify.
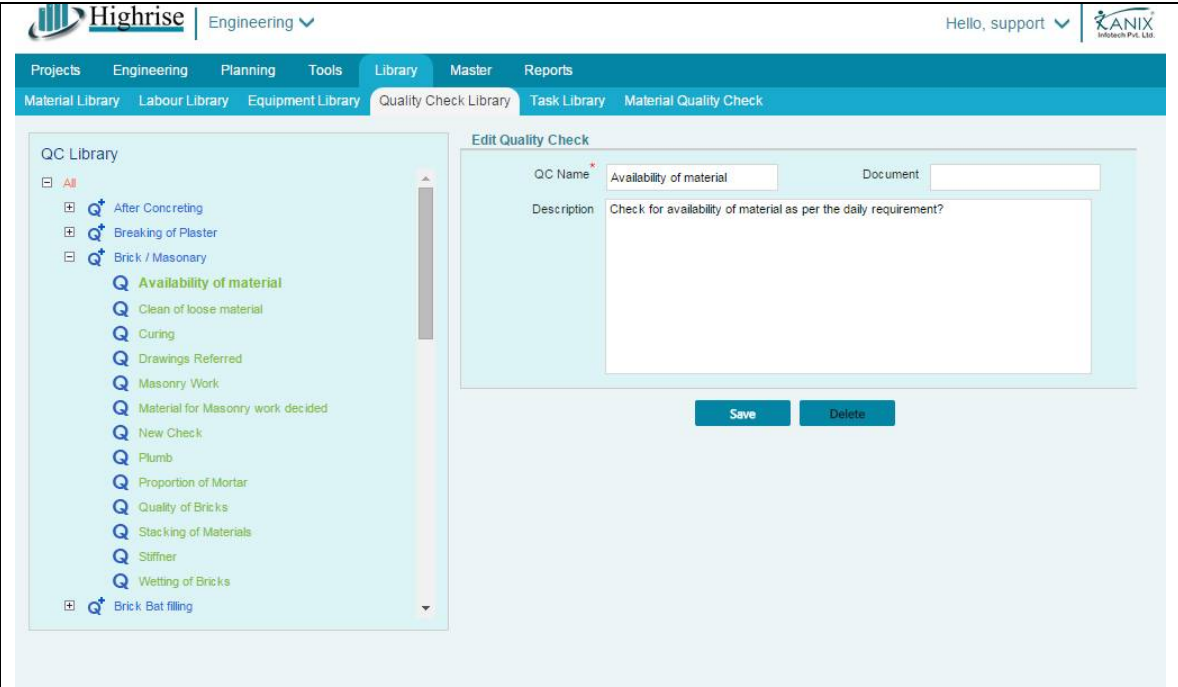Step 2   Edit the desired information.
Step 3   Click on *SAVE* Button.

A.1.4 # **Quality Check Library**
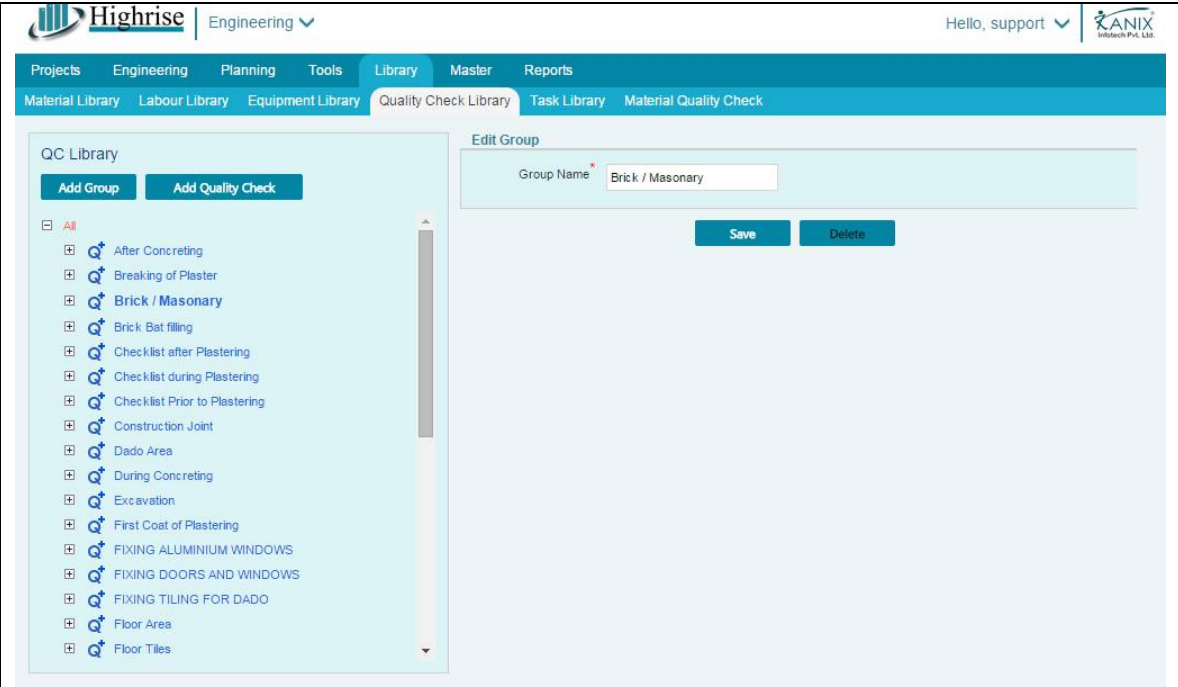
Path: H2K Engineering/ Library /Quality Check Library

IDH_QUALITYCHECKLIBRARY

A.1.5 #**Unit Library Master**

The Unit library is collection of all units of measurements used in projects. We can refer these units in other libraries and throughout the project.
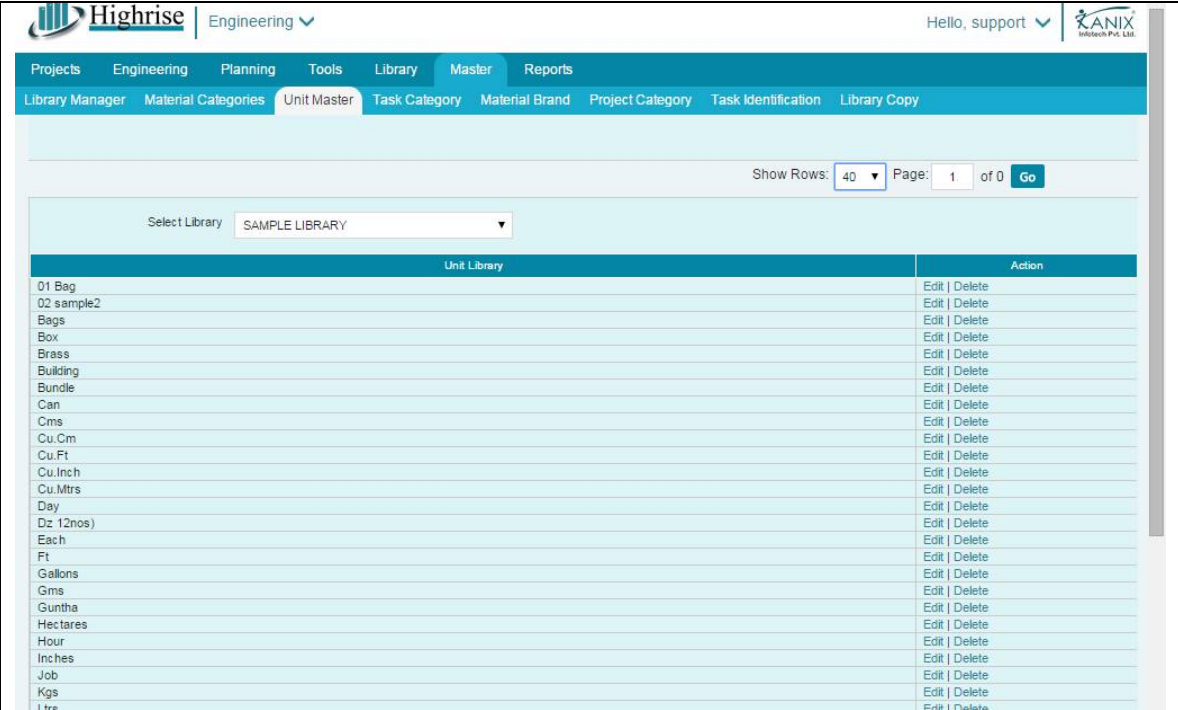
Path: H2K Engineering/ Master/Unit Master

To Add New Unit to library

Step 1   Type the Unit Name.
Step 2   Scroll Down and Click on 'Add'.

IDH_UNITLIBRARYMASTER

Technical Unit and Commercial Unit

The technical unit is the unit used for estimation, as against commercial unit is ordering unit. The multiplying factor is conversion between these units. If both units are same, put multiplying factor as 1.

E.g. Estimate Cement requirements in Kg. but order cement as 50Kg Bags. Keeping Technical unit and commercial unit, it is more advisable to minimize human and other errors.

Price per unit is the Rate of the material for the specified unit.

Transport per unit is the transport charges applicable per specified unit. These charges used for estimation only. Actual charges decide from time to time while raising purchase order.

Standard credit is the credit (in days) available in the market for the material under consideration. This is only used in predicted cash flow; actual credit is decided from time to time while raising purchase orders.

Unit is the technical unit used in estimation. If the ordering unit is different from technical unit, we can specify it while raising purchase orders.

Standard meanings of these fields seen in material library screen.

EOQ (Economic Order Quantity) –

EOQ define as the economic way to buy considering various factors like Material Price, Procurement Cost, Lead Time, Holding Cost, Material Life, Credit available, Quantity discount, Current requirement etc. Each material will have a different EOQ. Each company could have different EOQ for the same material depending on their priorities. EOQ can also differ from project to project. Users are recommending doing in-depth study for all materials to extract maximum advantage out of Highrise. Further information on EOQ could found in any materials management book.

A.2   Material Brands
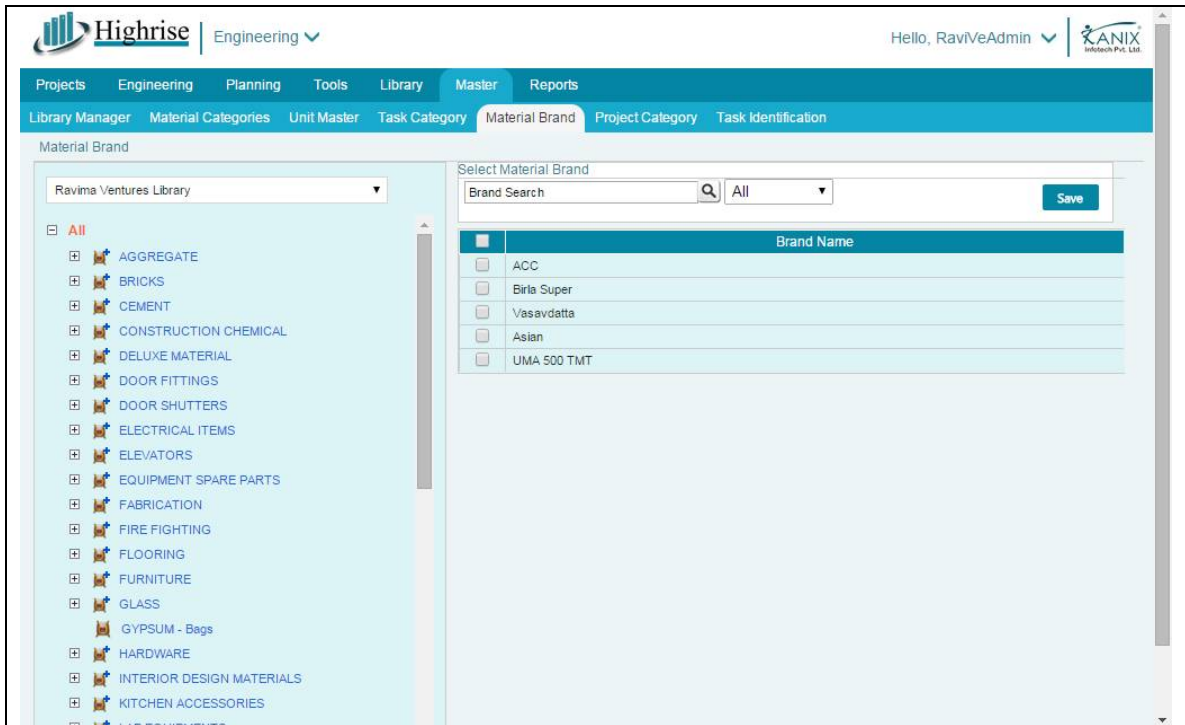
*Path: H2K Engineering/ Master/Material Brand*

On this window, one can assign the different brands to materials, in order to finalize which brands we are prefer from available list. The brand list, which is selected on this screen, will be available in site & purchase module.
To Assign the Brand:

Step 1   Click on the material name
Step 2   Click on check box against brand name
Step 3   Click the *SAVE* Button

A.3 #**Material Categories**
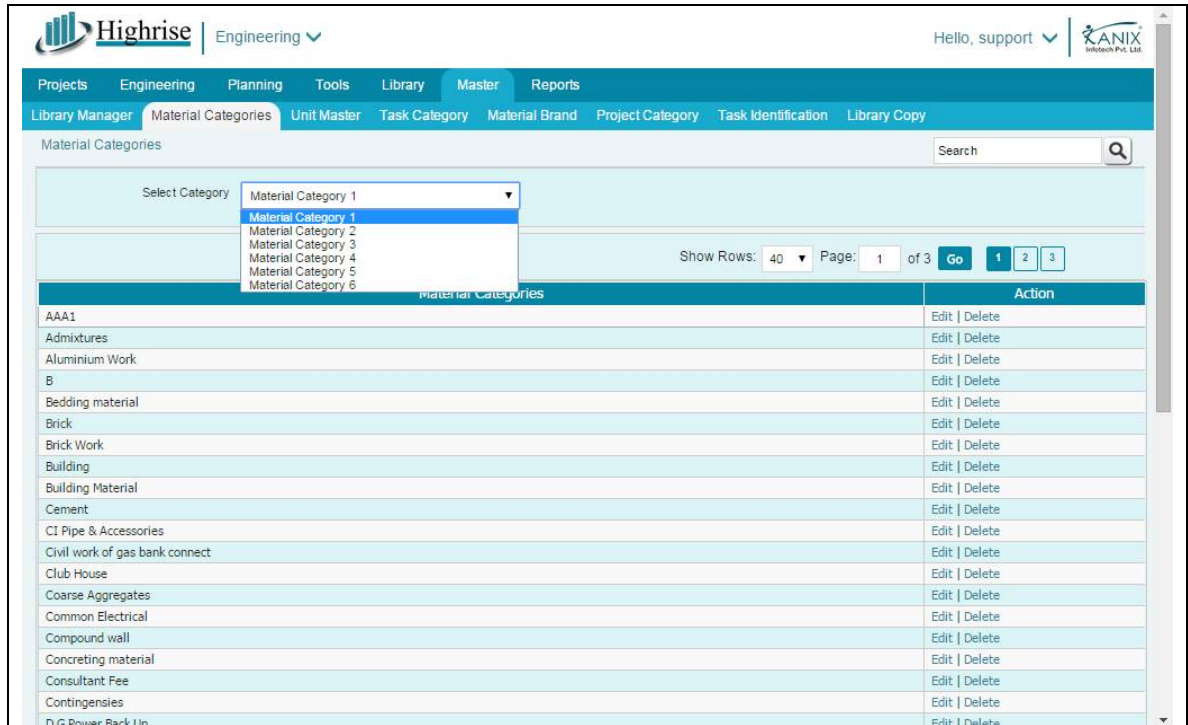
#**Material Category 1**
This is an additional provision of classifying materials. It recommends that, this Category used to classify materials in ABC analysis. User is free to use the category for any other classification. Further information on ABC Analysis could found in any materials management book.

Material Category 2
This is an additional provision of classifying materials. It recommends that, this Category used to classify materials according to the type of procurement control.
BOM (Bill of Material) – It is the material procured against estimates only. Generally A & B class materials can put in this category (Depending on company policy).
ROL (Re-Order Level) – It is the material requisition automatically raised by Highrise when the stock reaches specified level. Non estimated or C class materials can put in this category.
User should avoid using the category for any other classification. Further information on Reorder Levels and Inventory control mechanism could found in any materials management book.

Material Category 3
This is an additional provision of classifying materials. It recommends that this Category used to specify material status. **For e.g.,**

IDH_MATERIALCATEGORIES
IDH_MATERIALCATEGORIETYPES

On Trial – Material is under trial.
Incomplete Data – The data for the specified material not completely filled.
Obsolete - The material is Obsolete and no longer available.
Standard - The material is standard and locally available.
Imported – The material is imported.
User should avoid using the category for any other classification.

Material Category 4
This is an additional provision of classifying materials. It recommends that this Category used to classify materials according to the type of stock valuation methodology. These methods will have an Effect Cost Variance Analysis and Stock Valuations.
For e.g.
FIFO – First in first out.
LIFO – Last in first out.
FEFO – First expiry first out.
User must avoid using the category for any other classification. Further information on stock valuation mechanism could found in any materials management book.

Material Category 5
This is an additional provision of classifying materials. It recommends that this Category used to classify materials according to material type. For e.g. we estimate Steel Rods 6mm, 8 mm, 10 mm, and 12mm etc. for various tasks, but we might be interested in knowing the cost of steel or cement per Sq.Ft. In this scenario we classify materials as Steel, Cement, etc excluding their specifications.
User should avoid using the category for any other classification.
Material Life is the life of perishable materials (in days).
Competitive bids are the number of bids required before material purchase order to rise.
Re-conciliation frequency – Whenever material received, stock increases and when the material issued, stock decreases. When we record all the material receipts and issues in Highrise, the stock levels automatically changes. It might happen many times that the Physical stock can computer stock will not agree to each other for a variety of reasons and need to be reconciled periodically. This period could be different for different materials (important or costly materials need to be reconciled frequently). We can specify this period to Highrise using reconciliation frequency so Highrise can make the checking mandatory.

QA Procedures are the predefined procedures for quality check for each material. The field could hold procedure number or page number from QA manual for the company.

Lot Control to check for materials like Italian marble etc. where procurement in multiple lots could cause a shade difference. In these cases we have to override the EOQ.

QA Certificate required field to check for materials for which we require Quality Certificate from the manufacturer.

To Add New Material Category:
Step 4   Click on the *material category*
Step 5   Click on *NEW* Button
Step 6   Type Material Name, EOQ, Std. Credit etc.
Step 7   Click the *SAVE* Button

To Remove Material:
Step 1   Click on the *material* to be removed
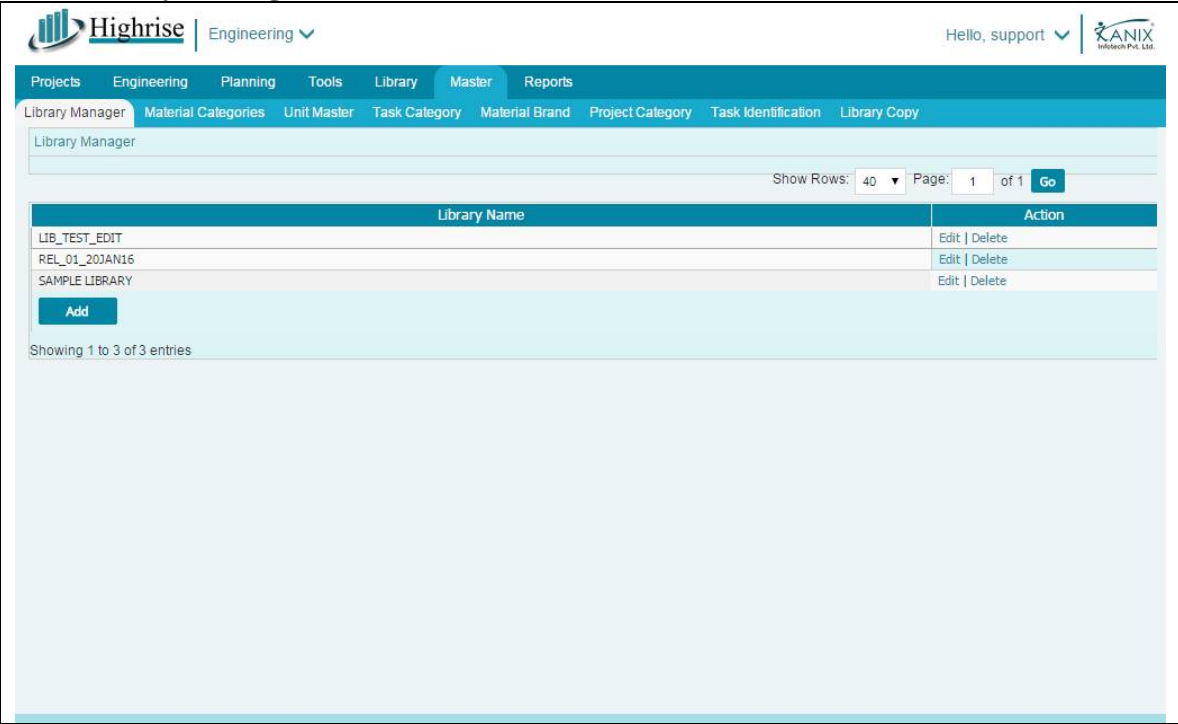Step 2   Click on *DELETE* Button

To Add Modify Material Information:
Step 1   Click on the *material* to be modified
Step 2   Edit the desired information
Step 3   Click on *SAVE* Button

#

IDH_LIBMANAGER

A.4 **Library Manager**

Path: H2K Engineering/Master/Library Manager

The Library Manager is collection of all libraries like Material, Labour, Equipment, Task etc. We can assign the Project type wise or Project location wise suitable library to the projects.

In order to create the new library user need to concern with 'Kanix Info-tech Pvt. Ltd.'.

A.5 #Task Category

Path: H2K Engineering/Master/Task Category

To Add New Task Category:
Step 1   Select Appropriate Library
Step 2   Scroll Down and Click on the Add Button.
Step 3   Type in new Task category and click on Save

To Remove Task Category 2:
Step 3   Click on the Category to be removed
Step 4   Click on *DELETE* Button

To Modify task Category 2:
Step 4   Click on Edit button for the *category* to be modified
Step 5   Edit the desired information
Step 6   Click on *Update* Button

IDH_TASKCATEGORY

B. #**Project Data Entries**
   B1. #**Task Library**

This library is collection of tasks (activities) encountered in projects. This screen not only allows you to define tasks but also gives details of which materials, Labours & equipment's are required to carry for specified task and the quantity required unit volume to be constructed. This seen as estimated item rate for the Task. The user can group similar task together under a Category or Task Group.
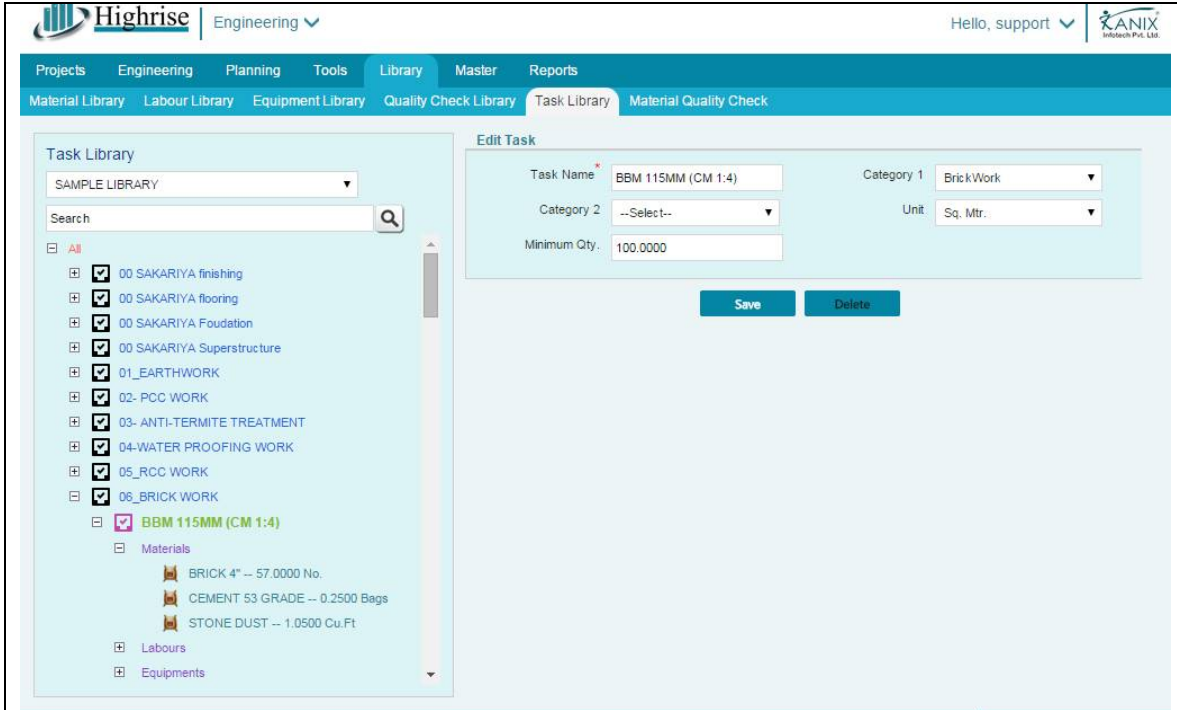
Path: H2K Engineering/Library/Task Library

To Add New Task Group to library
Step 3   Click the root of tree i.e. "All Task" Node.
Step 4   Click "Add Group" button. This will add a "new group" to the Tree.
Step 5   Edit the Caption "New Group" to the name you desire.
To Add New Task to library
Step 4   Click on the Group under which you wish to add Task.
Step 5   Click on "Add Task" button. This will add a "new Task" to the Tree.
Step 6   Edit the Caption "New Task" to the name you desire.
Step 7   Assign the Category 1 & Category 2.

IDH_PROJECTDATAENTRIES
IDH_TASKLIBRARY

To Add Material to Task in library

        Step 1   Click on the Task under which you wish to add Material.

        Step 2   Click on "+" button next to task name.

        Step 3   Click Materials. This will display a material Library Tree on the right.

        Step 4   Click on the material you wish to add.

        Step 5   Type the Quantity required for unit volume in the text box below.

        Step 6   Click on Add Button.

To Add Labour to Task in library

        Step 1   Click on the Task under which you wish to add Labour.

        Step 2   Click on "+" button next to task name.

        Step 3   Click Labours. This will display a Labour Library Tree on the right.

        Step 4   Click on the Labour you wish to add.

        Step 5   Type the Quantity required for unit volume in the text box below.

        Step 6   Click on Add Button.

To Add Equipment to Task in library

        Step 1   Click on the Task under which you wish to add Equipment.

        Step 2   Click on "+" button next to task name.

        Step 3   Click on 'Equipment'. This will display an Equipment Library Tree on the right.

        Step 4   Click on the Equipment you wish to add.

        Step 5   Type the Quantity required for unit volume in the text box below.

        Step 6   Click on Add Button.

CHAPTER 2: ENGINEERING PROCESS

A. [#]**Define Project**

Imagine if you given an activity to calculate population of India. It is difficult for you to understand where to start. For this, you have to break the activity as calculate population of independent states such as Maharashtra, Gujarat, Goa, etc. and subsequently add them to get result. The second step, you have to take is breaking each state into districts and adds them. In similar fashion, you would proceed down to a house level.

Essentially, what you have done is a work break down. If the above represents graphically it would look like a tree. Such a representation called WBS or Work Break down Structure.

We employ the same principle for our project definition. We first define a project (construction Project), second level we break in to say individual buildings, at the third level, we will break a single building into floors, and forth level we break each floor into flats and so on. Now the root or leaf element will be what we had defined as task in the libraries. These leaf elements will be associated with some actual work; all the levels above will just held some selected activities together under some logic. For e.g. when we talk of level of flat, it will hold together all the activities for a specified flat. Now issues as if total construction cost of the flat will be just are addition of construction cost of the elements below it.

In Highrise, the project definition is very simplified. We shall call the leaf activities as task and the above levels as groups. We have already made libraries in chapter one.

We start with the top down approach i.e. root first. So define project, then define buildings, then floors and so on till we define all the groups to the desired level. Then we move on to selecting task from libraries allocate them volume of work. The volume of work is to be calculated form the architectural drawings.

To assist use we have a short cut here. After defining a first floor, we can just copy first floor as second floor, first & second floor as third & fourth floor, Building A1 as Building A2 and so on. If the different volume of work is required after copying, we can simply edit them or we can add new task or delete task to get the desired effect.

[#] IDH_DEFINEPROJECT

Path: H2K Engineering/Projects/Add New Project

To Project Definition:

Step 1   Define Project. Click File | Project | New; Select Desired Library, Fill Other Information; Click Save.

Step 2   To view the project in the main Navigator click Ctrl + R i.e. Refresh

Step 3   Define WBS. Click All Task; Click Add Group and rename the caption if you desire to add groups. Complete the Groups framework for non-repeated Tasks. The frame on the right top is the Task Library. Click the task you wish to add to your project. In the Frame below, type the volume of Work material & volume of Work Labour. Click Add. Add all the activities you desire to complete WBS. When you are adding activities, your estimation is getting ready. You can view these estimates in the main Navigator or Edit Estimate screen. Remember to press Ctrl + R to refresh view. You can copy groups & task if they form a repeated set.

B. #**Task Definition**

When we select a task from library, allocate a volume and add it to our project, the Material, Labour & Equipment required for the specified volume of work automatically calculated inside. Our libraries also have the current prevailing prices for material, Labour and equipment so we have the costing component also ready with us.
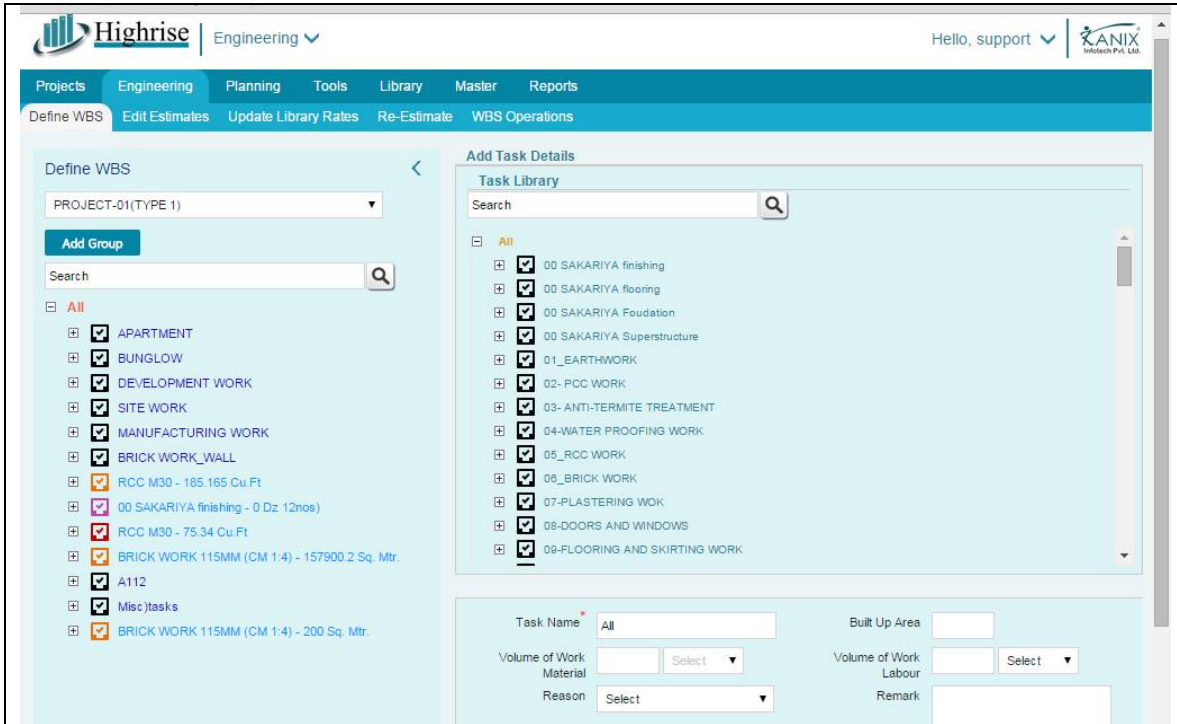
Path: H2K Engineering/Engineering/ Define WBS

Volume of work material & Volume of work labour

This screen helps us to add the quantity in terms of Measurements book. Same can be assigned to the task as an estimate.

To Add New Task Group to library

Step 1   Click the Add tab to add the row.
Step 2   Click on 'Remove' tab to delete the row.
Step 3   Click on 'back' tab once we finish the data entry.

IDH_TASKDEFINITION

#

C.#Scheduling

C.1 what is scheduling?

In simple words, scheduling is process of co-relating various activities in a project and putting in a period. Before we understand scheduling in detail, we need to understand two concepts. First is the '*time required to execute an activity*' and second '*How is a particular activity related to other activities*'. Let us take an example, a four-storied building. We will not require any intelligence to tell that we cannot cast the fourth floor slab on day one, for this activity to go ahead the third floor slab and forth floor columns should be at place. This means that the forth floor slab depends on forth floor columns and in turn the forth floor columns depends on third floor slab, so on. These called leads or dependencies. It is interesting to find here that the forth floor slab also depends on third floor slab, but we need not put it in our charts because it already linked through the columns. The dependency between forth floor slab & forth floor columns is critical, hence it is called critical dependency. You might link the forth floor slab with second floor brickwork, only to tell that I shall start the slab after I complete the second floor brickwork. However, this is not a critical dependency. If subsequently you decide to compress the project, then you may start the forth floor slab before second floor brickwork but you cannot start forth floor slab before forth floor columns.

The second point is the time required for execution of an activity. This is relative term. If we want dig out a 100' X 100' X 12' for my basement, we can do it in 60 days, say; By putting more Labour or equipment's it would be possible for us complete the same work in 30 days. The time required for an activity thus depends on the resources available, the site conditions and our urgency.

C.2. Why Schedule a Project?

Once we fix up all the dependencies and time required for each activity, we are ready with the total time required by the project. Given a start date, we would able to tell the completion date. With our libraries and project definition at hand we would also be able to tell material, Labour, equipment's and funds requirements for each month or any given time slab.

This opens an avenue for cash flow management for us. The schedule will also give us indication of targets to set for our sales & recoveries. A system of monthly review can be set up. We can review the completion of activities scheduled for last month and plan the activities, recoveries & sales for the next month.

[#] IDH_TASKATTACHMENT
[#] IDH_SCHEDULING

C.3. Scheduling in Highrise

Highrise can Import & Export data to Microsoft Project, which is a powerful graphical tool for scheduling. We can obtain a critical path, draw bar charts, review completion & progress of activities against the planned in graphical form in MSP. We export the project from Highrise to MS Project, schedule it there (i.e. Modify the start date and duration of activities, Modify dependencies) and import it back in Highrise to schedule other resources.

[#]Export Project

Step 1 Select Project | Select Task or Group |Select Format as XLS and |Click on Export

Step 2 In MS Project: Click File | Open | ODBC

Step 3 Select H2KMSP data source

Step 4 Select Open Using Map "Import From Highrise"
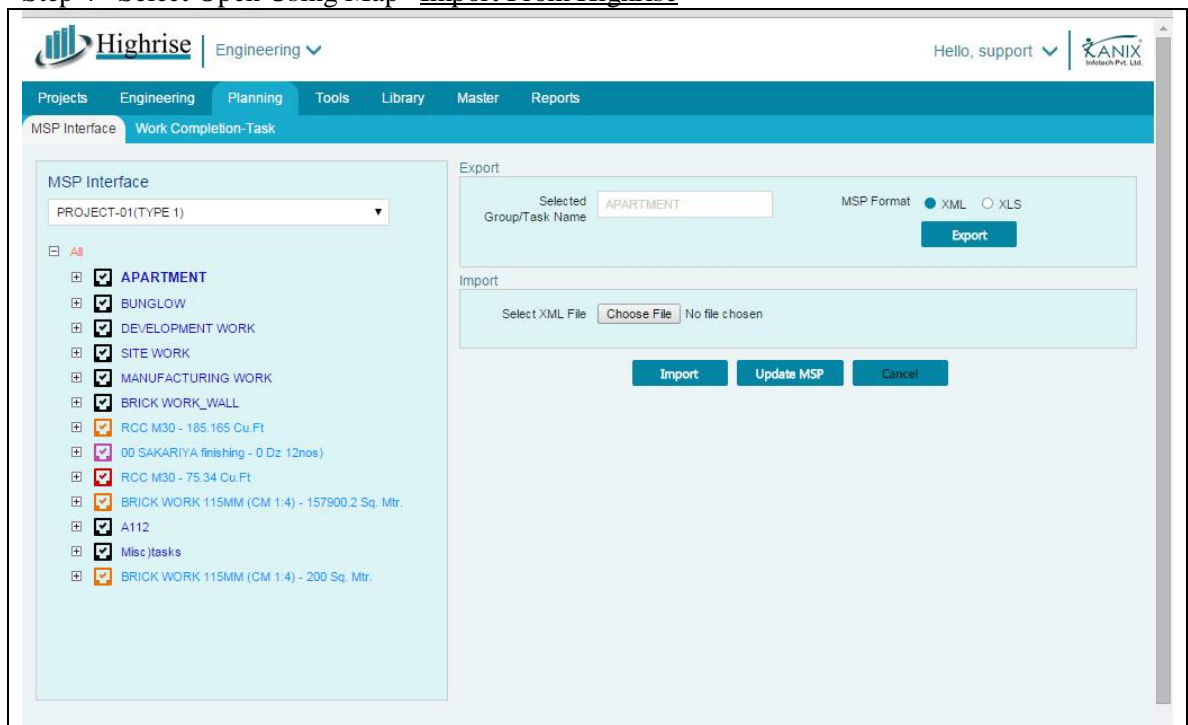
Path: H2K Engineering/Planning/MSP Interface

Import Project

Step 1 In MS Project: Click File | Save as | ODBC.

Step 2 Select H2KMSP data source

Step 3 Click Project | MSP Interface | Select Project | Select Task or Group | Import

Step 4 Highrise will Pickup Task Start Date, Task Finish Date, Duration, and Predecessor as set in MS Project.

[#] IDH_MSPINTERFACE

D.# **Work Completion - Task**

Intermediate progress of task can be maintained in *work completion – task.* We can give intermediate work completion with remark either in terms of percentage or in terms of quantity. Also can assign a tender Id or a user defined Id to tasks in WBS.
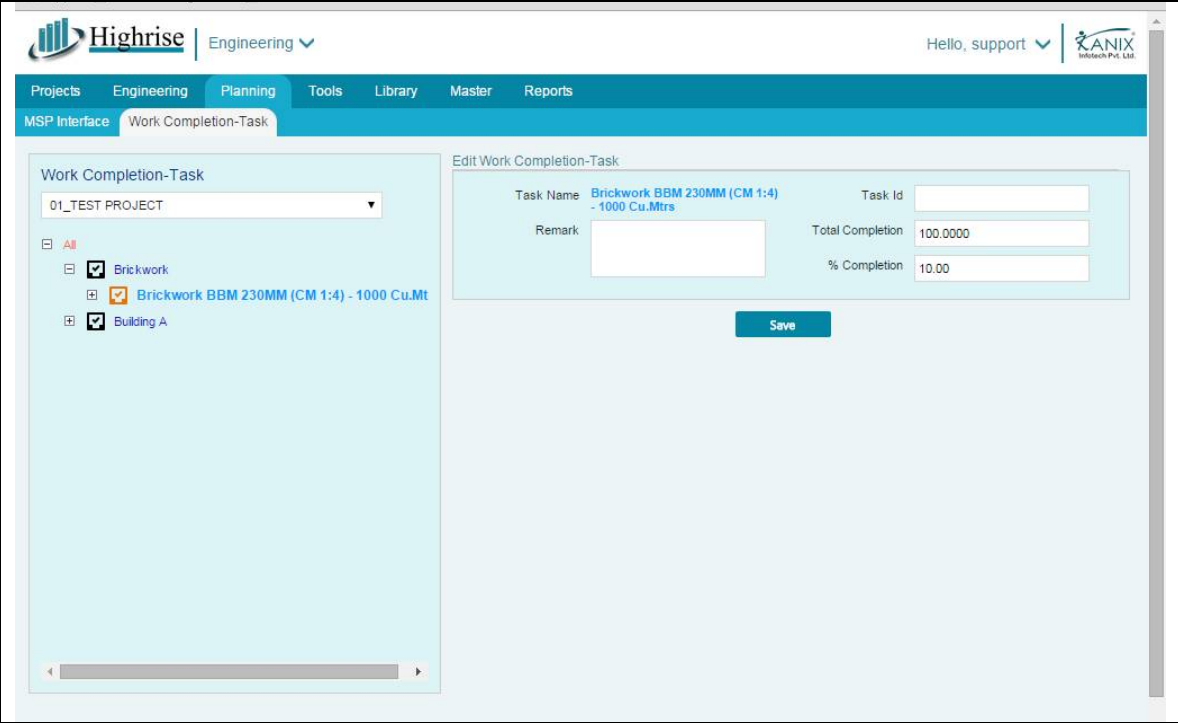
Path: H2K Engineering/Planning/Work Completion Task

IDH_WORKCOMPLETIONTASK

E. #**Tools**

To assist faster estimation we have a short cut here. After defining a first floor, we can just copy first floor as second floor, first & second floor as third & fourth floor, Building A1 as Building A2 and so on. If the different volume of work is required after copying, we can simply edit them or we can add new task or delete task to get the desired effect.

Step 1   Click Tools | Task Operations
Step 2   Select Project
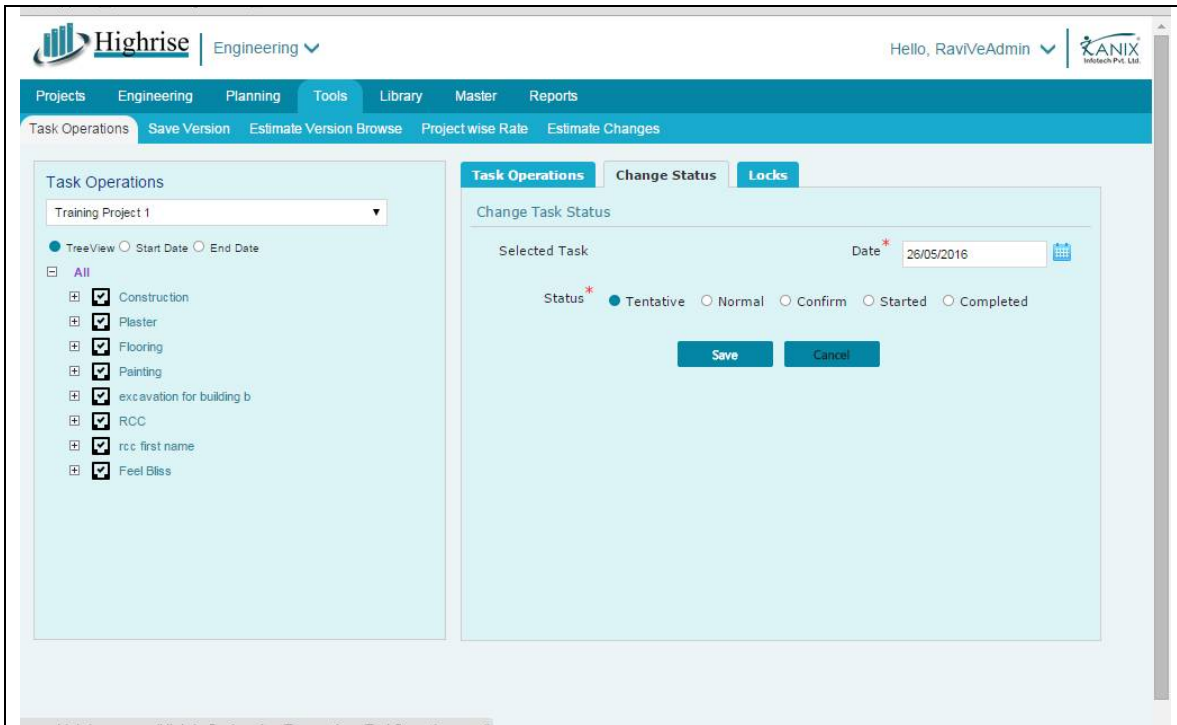

Path: H2K Engineering/Tools/Task Operations

Any freshly defined activity is always having a status as ***Tentative*** i.e. we are not sure about quantity or start date of the activity. After the quantity checked & approved, we mark the task status as ***Normal***, the start date of the activity (task) still might not confirmed. It found to be very difficult to schedule the entire project in detail so; generally, a tentative schedule is prepared. A confirm schedule for next 30, 60 or 90 can be prepared with good accuracy. Any activity falling under confirms schedule is marked as ***Confirm***. Scheduling in this fashion also helps for preparing procurement plans. Upon confirmation on one fine day, the activity will start and marked as ***Started***. Materials can only issue to activities, which have started and not completed. The activity is marked as ***Completed*** on completion.

Above described status are very handy in keeping overall control over the proceedings.

IDH_UTILITY

E.3. [#]**Re-estimate**

During our usage of Highrise we might come across situations where we realize that our the parameters for task in the libraries need to be changed *for e.g.* we might have said we require 4 nos. of Bricks 6" per sq. ft. but practically we realize that 5 nos. of Bricks 6" per sq. ft. are required. We might have used the Brickwork 6" task in number of our projects. Some of the Brickwork 6" activities may have been completed which will show a quantity variation. In such situation, re-estimate is the tool at hand. Here we can give remark for making Reestimate.

Re-estimation might need modification estimates for Materials/Labours/Equipment. Interesting to observe here is the prices we have considered at the time of original estimates copied in the project (these help generate cost variance). Re-estimate updates these prices also.
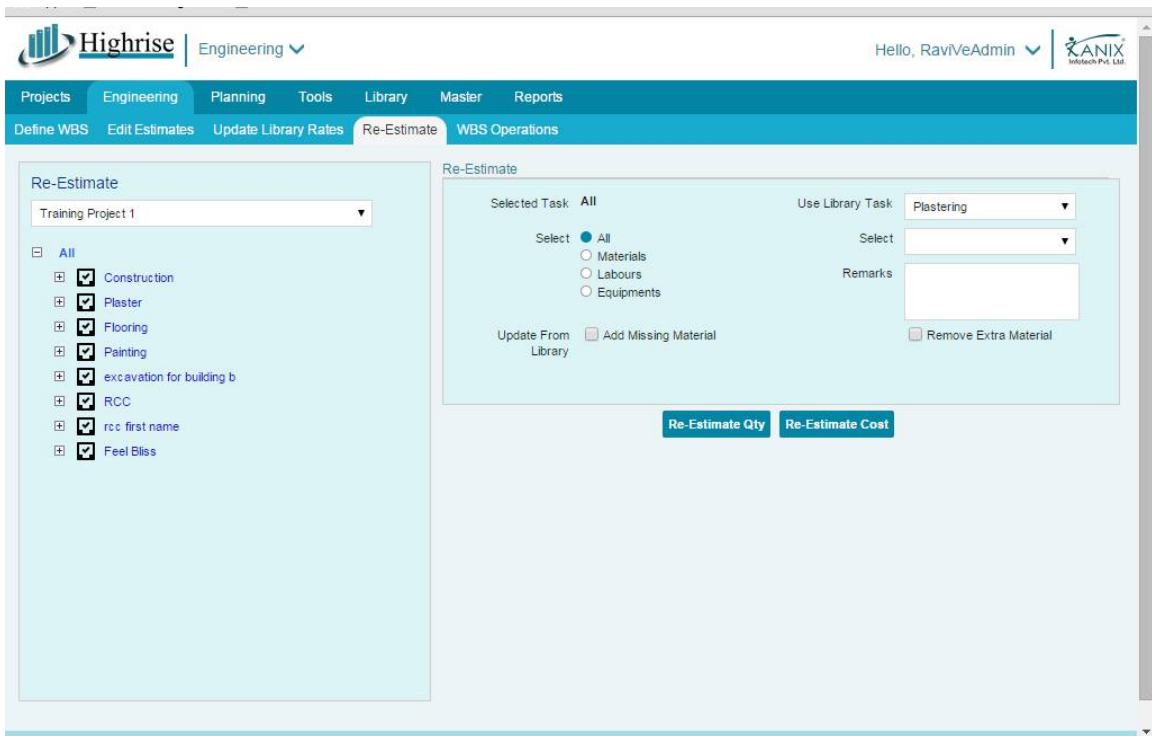
Path: H2K Engineering/Engineering/Re-Estimate

Highrise gives us provision of re-estimation for specific Material/Labour or Equipment, in addition to re-estimating all Materials/Labours or Equipment.

Highrise also allows us to re-estimate a specific group or task or entire project.

To Add Missing Materials or Remove Extra Materials check boxes can used to tell Highrise weather to undo the manually tuned estimate using edit estimate.

[#] IDH_REESTIMATE
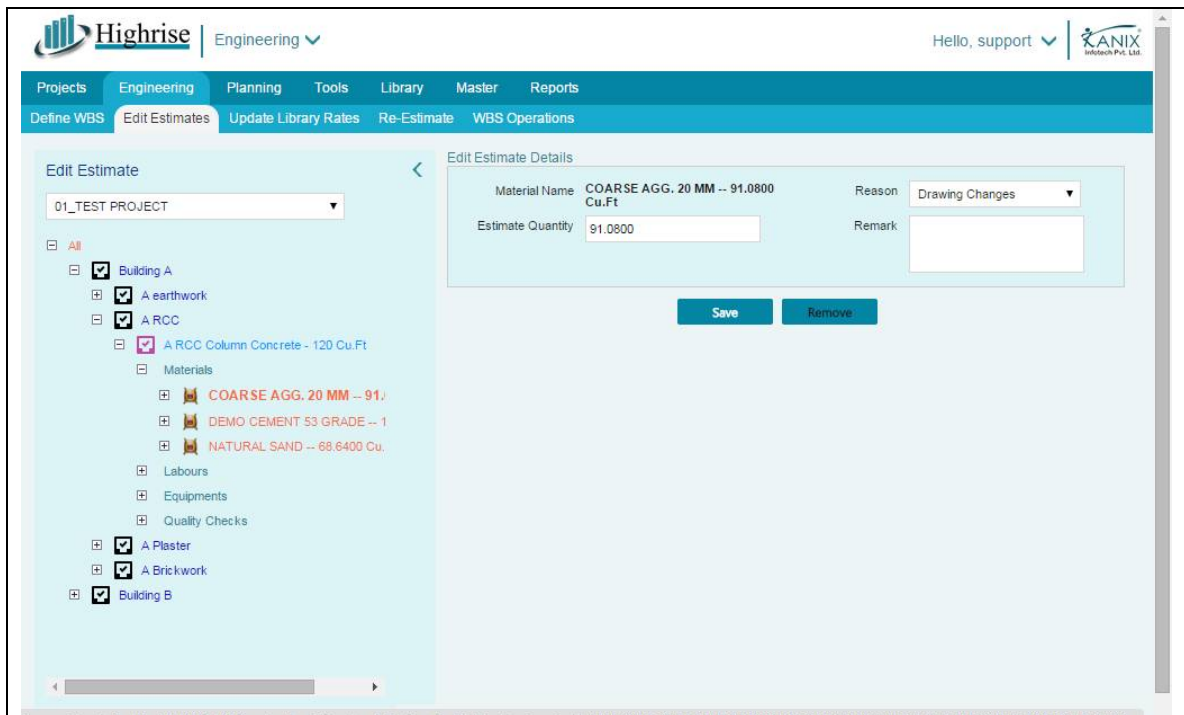
E.4 .#**Edit Estimates**

For a variety of reasons, we might need to edit the estimates, which automatically generated. Editing estimates could involve in editing quantity required or additional materials for a WBS activity or elimination (deletion) of some materials.

Edit Qty:
Step 1   Expand the WBS and reach to the task and material to edit. Click on the material.
Step 2   The text box 'Qty required' displays the current quantity. Type the desired quantity.
Step 3   Press Save.

Add additional material
Step 1   Expand the WBS and reach to the task to which additional material is to add. Expand the task and Click on the 'Materials'.
Step 2   On the right side, box you the material library. Expand the material tree and click on the material to add.
Step 3   Type the quantity required (estimated) in the text box 'Estimated Quantity'.
Step 4   Press Add.

Path: H2K Engineering/Engineering/Edit Estimates

Remove unwanted material
Step 1   Expand the WBS and reach to the task and material to remove. Click on the material. Press Remove.
Step 2   To Edit/ Add / Remove Labour & Equipment use similar method.
Step 3   While doing edit-estimate assign proper reason and remark.

IDH_EDITESTIMATES

E.5 #**Rearrange Work Sequence**

When we define a project, we go on adding tasks to the WBS. It is Possible that we might miss out some activities, which we would add subsequently. Highrise internally keeps a track of work seq. No. and used it while displaying WBS and printing reports. The newly added activities may look out of sequence in WBS and reports. To fix this problem you can change the work seq. no. using Rearrange Work Sequence.

Path: H2K Engineering/Tools/Task Operations

IDH_REARRANGEWORKSEQUENCE
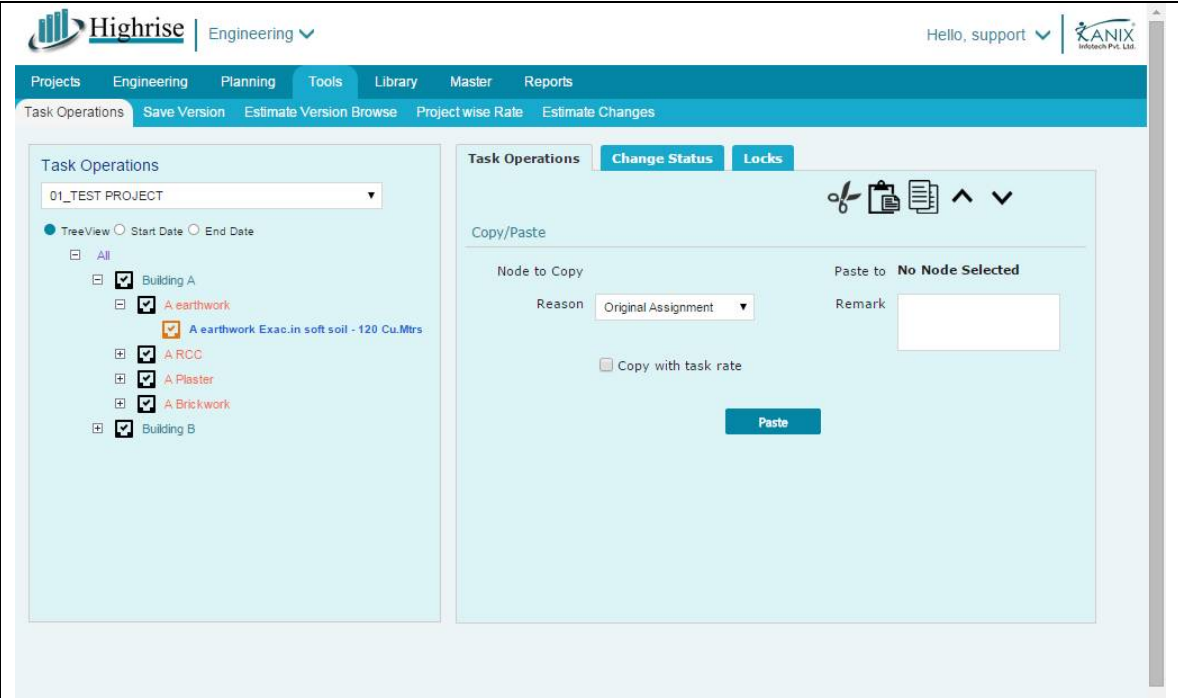
E.6 #**Update Library Rate**

When we define a project WBS, we use rates for material and labour from respective libraries. In a total course of project, these rates may vary to large extent. We require revisiting and reestimating project cost with new updated rates from library. We can update the library rates with respect to actual market rates based on different criteria.

With the help of update library rate tool, latest or lowest or highest market rates from selected period can be updated directly to selected library.

Update Library rate

Step 1   Select library.

Step 2   Select material group/material.

Step 3   Select date range and rate list from which rates to be taken.(Optional)

Step 4   Click Refresh.

Step 5   Select rates type that we want to update i.e. Latest/Lowest/Highest or we can enter our own rates in selected rate column to update it to library.

Step 6   Click update to update selected rates to library.

Step 7   By selecting radio button labour, we can update labour library rates with same process as above.
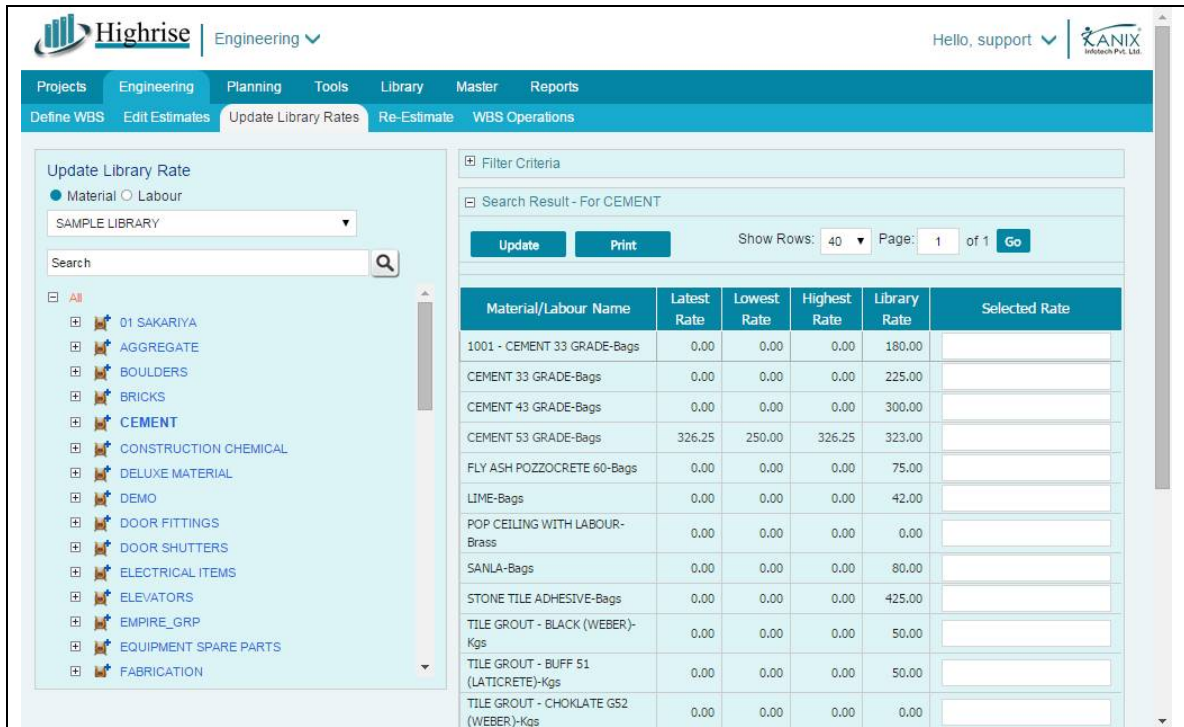
Path: H2K Engineering/Engineering/Update Library Rates

IDH_UPDATELIBRARYRATE

E.10. #Task Cut Paste

In task library, we may need to move task from one group to other. With this tool, we can cut task in task library from one group and can move it to other group.
While preparing task library same task with two different names may get created.
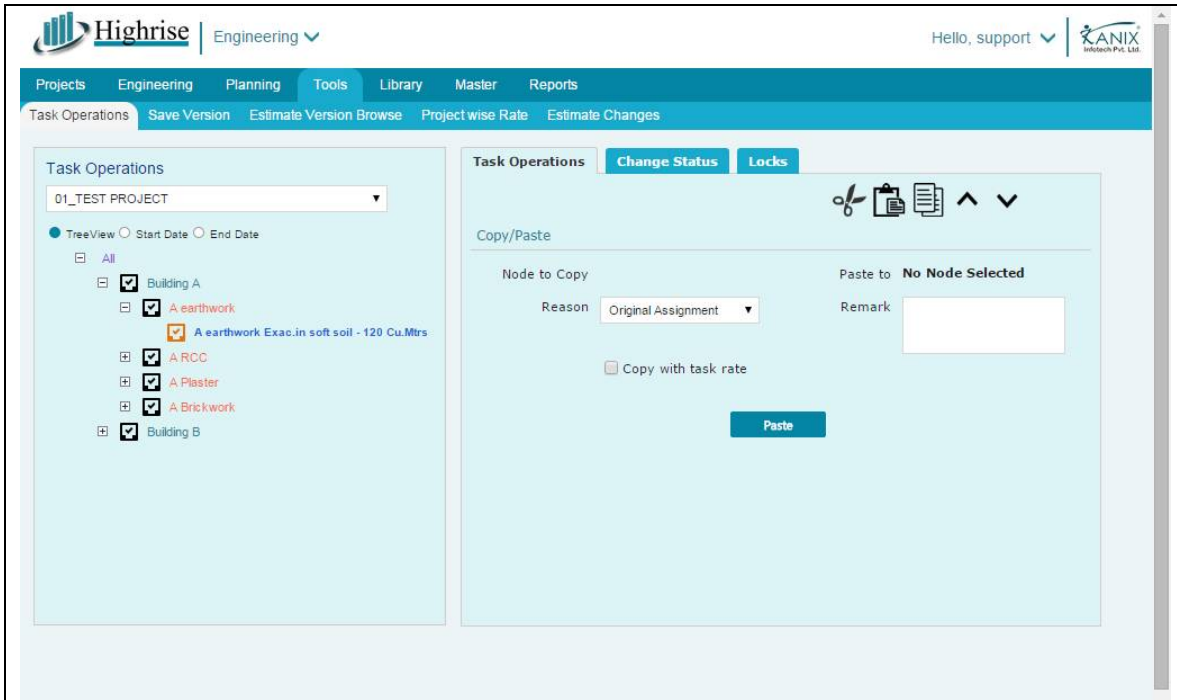We can merge such task with this tool.
NOTE: *The effect once done can't be reversed. Always ask your system administrator to take back up before merge.*

To Cut-paste Task
Step 1   Select Task to cut. , Click on cut.
Step 2   Select group under which task is to paste, Click on it and select paste.

Path: H2K Engineering/Tools/Task Operations

IDH_TASKCUTPASTEANDMERGE

E.12 # **Task Locks**

This window provides us to have group / task wise locking facility in order to control the part project. Following are the processes those we can control by Locking the group/task:

1) Add Task 2) Edit Estimate 3) Raise Requisition 4) Material Issue 5) Extra Issue 6) Non – estimated issue 7) Work Completion.
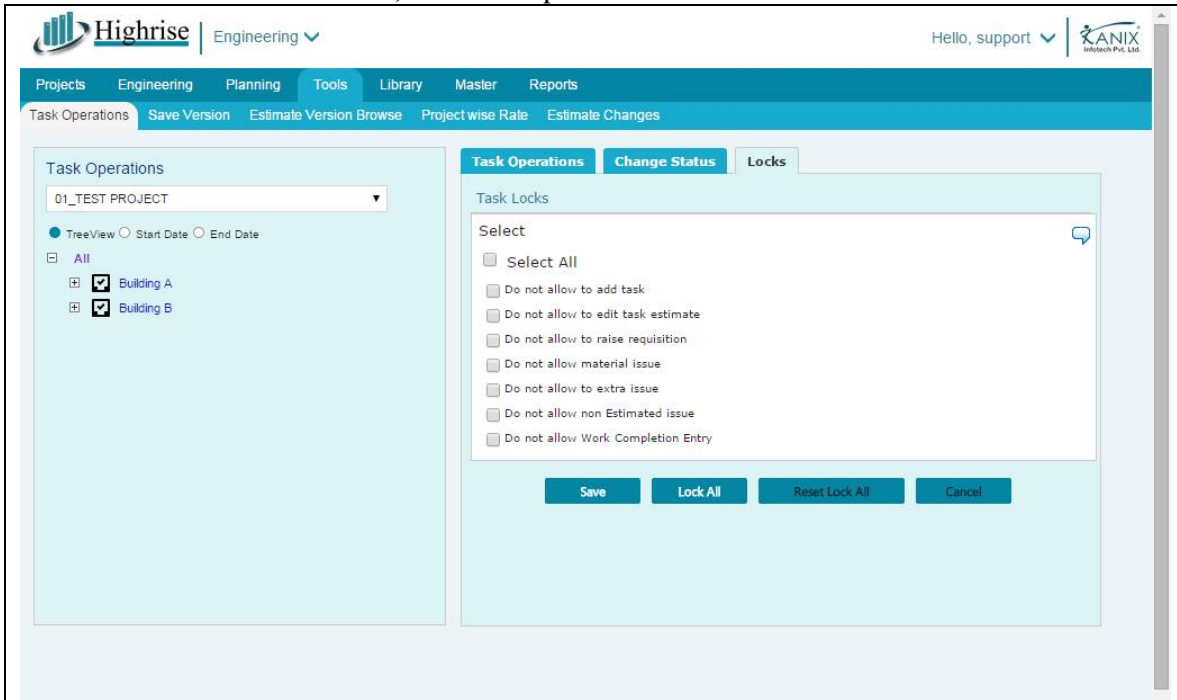
Path: H2K Engineering/F/Task Operations/Locks

These controls can assign to each project. There is facility to set different control for different project / part of Project.

To set Task Locks,
Step 1   Select the Project.
Step 2   Select particular group/task from WBS.
Step 3   Click the respective check box/s.
Step 4   Click 'Save' button to set the control to selected WBS.

IDH_TASKLOCK

#

E.15 **Budget WBS**

The new budget functionality in Highrise allows to assign budget as per WBS task group structure as compare to budget against categories. This type of budget assigning functionality give flexibility to create user defined heads and monitor them accordingly.

WBS BUDGET:

Step 1) Select Project, select WBS group and click on refresh to view the details of budgeted qty/rate/amount, baseline planned qty/rate/amount, etc. You can use selection filter of level for displaying level of WBS groups you wish to view.

Step 2) you can assign budgeted area/qty against the WBS group and use save to save the record. You need to assign area/qty against each WBS group separately. System will not calculate sum of child groups at parent level. Users having user right for saving budget can only save the budgeted cost.
Note: To get user rights go to admin tool – user rights -- Processes – assign rights to Budget edit process.

IDH_BUDGETWBS

Path: H2K Engineering/Projects/ Budget Entry

Path: H2K Engineering/ Projects/ WBS Budget

Step 3) You can mark estimate versions as baseline versions to diff. WBS groups from set base version section. As not all the WBS groups may have same baseline estimate versions saved in estimate version browse, from set base version section we can select and save the base versions for diff. WBS groups. The column baseline version number would show the baseline version number for selected task/task group.

Note: To save estimate versions for project go to estimate versions menu.

Step 4) The columns current estimate will show current qty/rate and amount. The Actual cost columns will show cost of RA bills and material issue based costs booked between the selected from and to date.

Step 5) Columns baseline schedule, planned schedule, actual would show the respective dates against selected task or task group. % Schedule completion would show the % entered in work completion-task window in engineering module.

Step 6) You can use filter column option to filter out the columns you want to view. Using print you can print the records from selected printer.

#CHAPTER 3: Estimate Version

Working drawings, estimate based on working drawings revision 1, etc. These stages of estimates are saved in Highrise as estimate versions.

A. #New Estimate Version
Step 1   Select project.
Step 2   Give remark for estimate version and save. Current date will be saved as date of estimate version.
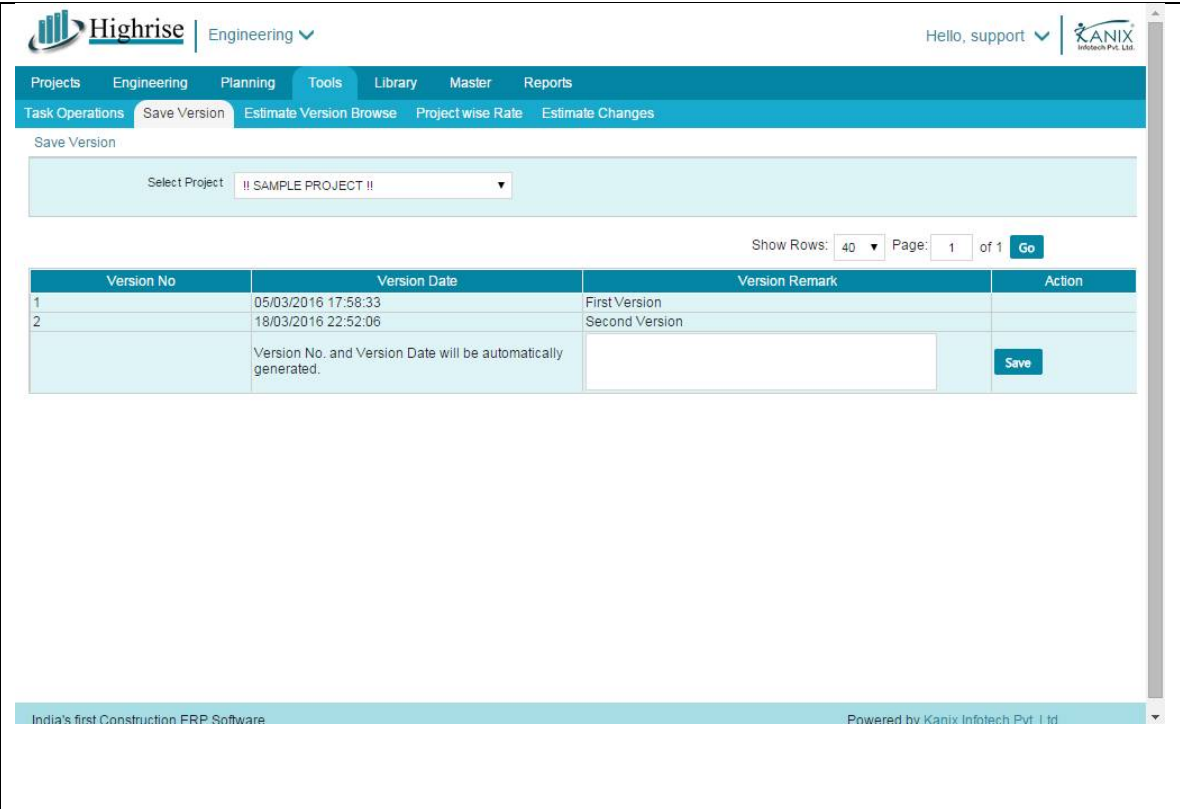
B.[#] Estimate Version Browse

This is used to browse details of changes in estimate across different versions. Here we can select any task group from project WBS and can view estimate changes among selected library task, material, labour or equipment and shedule.
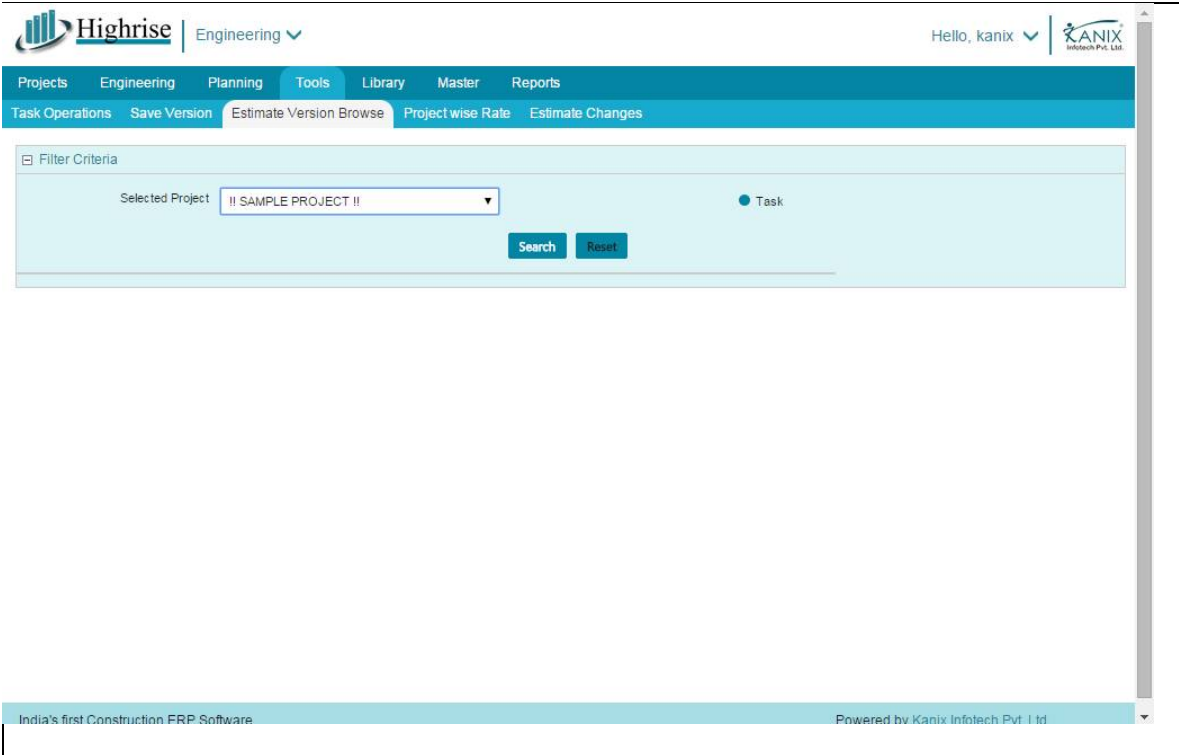
[#]C. Estimate Change Browse

[#] IDH_ESTIMATEVERSIONBROWSE

This is used to browse details of changes in estimate based on reason of estimate changes. For selected date range and selected task group we can get details of changes done in resources in terms of quantity or rates.
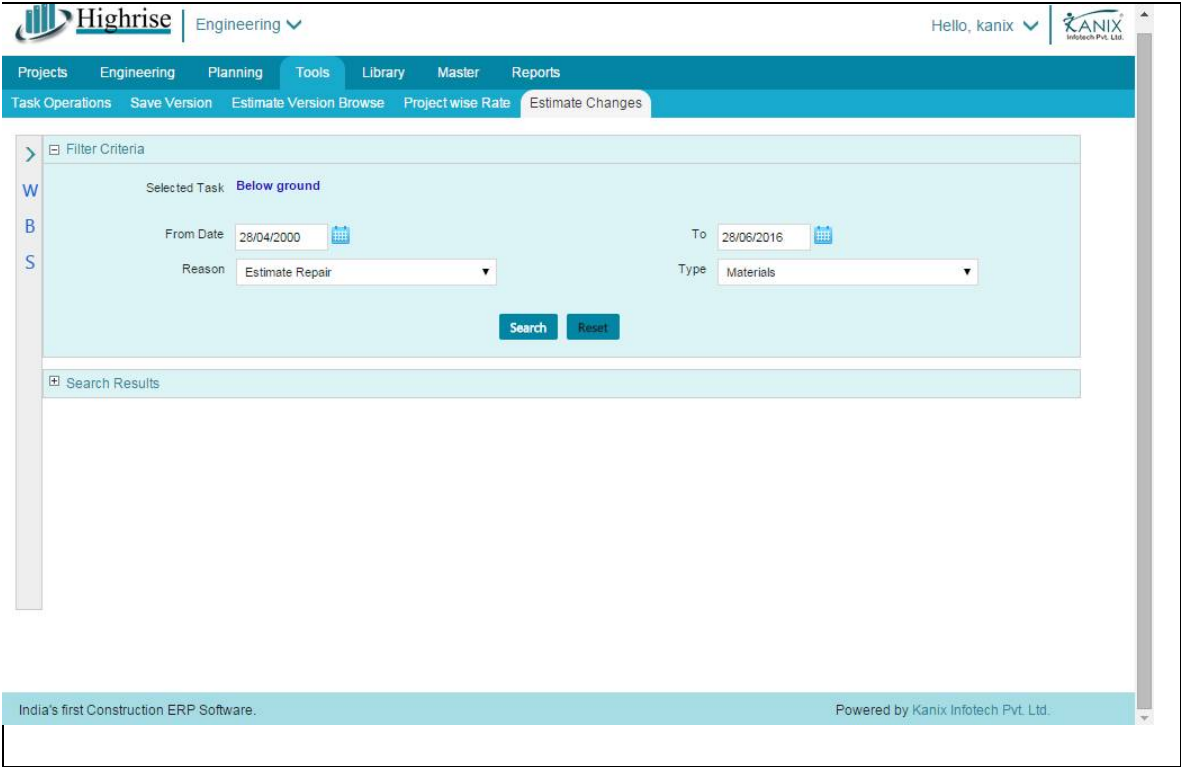
CHAPTER 4: REPORTS

A. #Engineering Reports
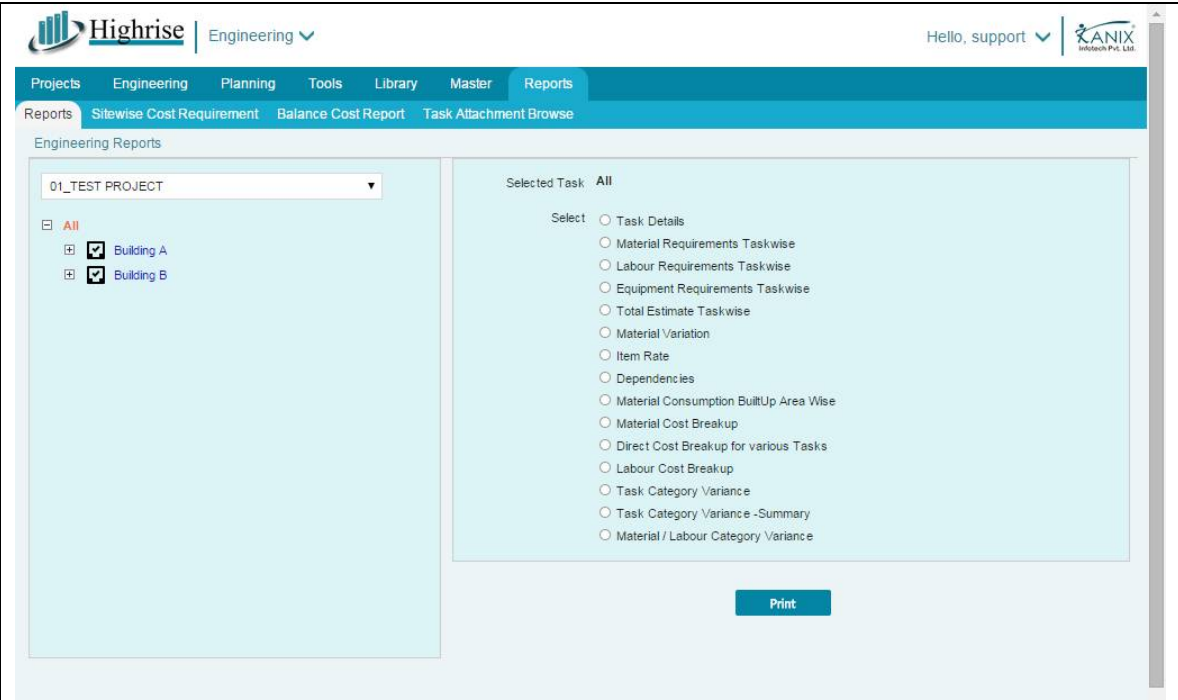
Path: H2K Engineering/Engineering/Reports

B.1   [#]**Task Details**

Step by step to access this report:
Step 1   Open 'Engineering Window' & select project.
Step 2   Select proper Task Group/Task of selected project.
Step 3   Click on proper type of report & click on 'Print'.

Information captured from this Report:
This report shows name all Task group/Task tree of selected of Task Group/Task along with its Start Date, Completion Date, Days Required, Volume of task, measuring unit of task.

[#] IDH_ TASKDETAILS

B.2 [#]**Material Requirement Task wise:**

Material Name	Estimated Qty	Unit	Estimated Price Per Unit
			Highrise
Material Requirements for Task			
Sample Project 1			
FOOTING (CEMENT + STEEL)	**142.45**	Cu.Mtrs	
Steel 10 mm	452.00	Kgs	17.00
Steel 12 mm	7,024.00	Kgs	17.00
CEMENT	19.00	Bags	130.00
Steel 20mm	1,140.00	Kgs	17.00
Steel 25mm	2,755.00	Kgs	17.00
Steel 6mm	329.00	Kgs	17.00
Steel 16mm	1,835.00	Kgs	17.00
Binding Wire	200.00	Kgs	22.00
Plastisizer	25,003.00	ml	0.06
Steel 8mm	740.00	Kgs	17.00
SITE DEVELOPMENT	**1.00**	No.	
OIL PAINT	92.00	Ltrs	88.76
TERPENTINE	55.00	Ltrs	24.00
EL TUBE STREET LIGHT/FITT	4.00	No.	180.00
NITOMORTER P E (epoxi gro	15.00	Pack	850.00
Primer	6.00	Ltrs	67.85
Siver Wood	4.40	Cu.Ft	250.00
PVC 1 1/4" PIPE SS	80.00	R.Ft	11.05
DRILL BIT 12mm(100 mm)	50.00	No.	1.00
PVC 1 1/4" ADOPTER	1.00	No.	14.00
GI Tee 1"	1.00	No.	19.81
PUMP 0.25HP	1.00	No.	1,900.00
PUMP 1 HP	1.00	No.	5,400.00
Nail Plumbing 11/2"	4.00	Kgs	30.00

Step by step to access this report:
Step 1: Open 'Engineering Window' & select project.
Step 2: Select proper Task Group/Task of selected project.
Step 3: Click on proper type of report & click on 'Print'.

Information captured from this Report:
This report shows all Material requirement of selected Task group/Task along with its Estimated Quantity, Unit, and Estimated Price per Unit.

[#] IDH_ MATERIALREQUIREMENTTASKWISE

B.3 [#]**Labour Requirement Task wise**

Labour Requirements for Task			Highrise
Sample Project 1			
Labour	Qty Required	Unit	Price expected
FIRST FLOOR M20 slab+beam			
LABOUR FOR SLAB FINISHING	339.40	Sq.Ft	1.75
SECOND FLOOR M20 slab+beam			
LABOUR FOR SLAB FINISHING	3,197.60	Sq.Ft	1.75
LABOUR FOR RCC			
LABOUR FOR RCC 3rd SLAB.	38,534.54	Sq.Ft	3.50
LABOUR FOR RCC 5th SLAB.	38,534.54	Sq.Ft	4.00
LABOUR FOR RCC 7th SLAB.	38,534.54	Sq.Ft	4.00
LABOUR FOR RCC 2nd SLAB	38,534.54	Sq.Ft	5.00
LABOUR FOR RCC 4th SLAB.	38,534.54	Sq.Ft	3.50
LABOUR FOR RCC 6th SLAB.	38,534.54	Sq.Ft	4.00
LABOUR FOR RCC 8th SLAB.	38,534.54	Sq.Ft	4.50
LABOUR FOR RCC 9th SLAB.	38,534.54	Sq.Ft	4.50
LABOUR FOR RCC 10th SLAB.	38,534.54	Sq.Ft	4.50
LABOUR FOR RCC ELEVATION FEATURES	38,534.54	Sq.Ft	4.00
LABOUR FOR/LOFT/LINTEL ETC	38,534.54	Sq.Ft	4.00
LABOUR FOR RCC MAIN TERRACE.	38,534.54	Sq.Ft	5.00
LABOUR FOR RCC 11th SLAB.	38,534.54	Sq.Ft	4.50
LABOUR FOR UPTO PLINTH WORK.	38,534.54	Sq.Ft	8.50
LABOUR FOR RCC 1st SLAB.	38,534.54	Sq.Ft	5.00
THIRD FLOOR M20 slab+beam			
LABOUR FOR SLAB FINISHING	3,211.00	Sq.Ft	1.75
FOURTH FLOOR M20 slab+beam			
LABOUR FOR SLAB FINISHING	3,192.00	Sq.Ft	1.75

Step by step to access this report:
Step 1: Open 'Engineering Window' & select project.
Step 2: Select proper Task Group/Task of selected project.
Step 3: Click on proper type of report & click on 'Print'.

Information captured from this Report:
This report shows all Labour requirement of selected Task group/Task along with its Estimated Quantity, Unit, and Expected Price.

[#] IDH_LABOURREQUIREMENTTASKEWISE

B.4 [#]**Equipment Requirement Task wise**

Equipment Requirements for Task						Highrise
Sample Project 1						
Equipment Name	Qty Required	Unit	Price Expected	PO NO	Qty Ordered	
GROUND FLOOR M30 COLUMN						
40t jcb	50.00	No.	0.00	0	0.00	
GROUND FLOOR STEEL						
40t jcb	10.00	No.	0.00	0	0.00	

Step by step to access this report:
Step 1: Open 'Engineering Window' & select project.
Step 2: Select proper Task Group/Task of selected project.
Step 3: Click on proper type of report & click on 'Print'.

Information captured from this Report:
This report shows all Equipment requirement of selected Task group/Task along with its Estimated Quantity, Unit, Expected Price, PO No, and PO Quantity.

[#] IDH_EQUIPMENTREQUIREMENTTASKWISE

B.5   #**Total Estimate Task wise**

Step by step to access this report:
Step 1: Open 'Engineering Window' & select project.
Step 2: Select proper Task Group/Task of selected project.
Step 3: Click on proper type of report & click on 'Print'.

Information captured from this Report:
This report shows Total cost (Labour + Material)of task for selected Task group/Task along with Estimated Qty , Estimated rate,& total cost of material & labour plus total labour + material cost of each of task.

IDH_TOTALESTIMATETASKWISE

B.6 [#]**Material Variation**
Step by step to access this report:
Step 1: Open 'Engineering Window' & select project.
Step 2: Select proper Task Group/Task of selected project.
Step 3: Click on proper type of report & click on 'Print'.

Material Name	ty Required	Unit	Price expected	Amount	Qty used	Amt used	Variation
Taskwise Material Consumption Report For Completed Tasks *Highrise* **Sample Project 1**							
FOOTING (CEMENT + STEEL)			Volume Of Work	142.45			
Binding Wire	200.00	Kgs	22.00	4,400.00	200.00	4,364.00	0.00
CEMENT	19.00	Bags	130.00	2,470.00	19.00	2,112.04	0.00
Plastisizer	25,003.00	ml	0.06	1,467.68	25,003.00	1,480.18	0.00
Steel 10 mm	452.00	Kgs	17.00	7,684.00	452.00	7,055.72	0.00
Steel 12 mm	7,024.00	Kgs	17.00	119,408.00	4,081.00	62,847.40	-41.90
Steel 16mm	1,835.00	Kgs	17.00	31,195.00	1,835.00	29,613.10	0.00
Steel 20mm	1,140.00	Kgs	17.00	19,380.00	1,140.00	17,487.60	0.00
Steel 25mm	2,755.00	Kgs	17.00	46,835.00	2,755.00	43,511.67	0.00
Steel 6mm	329.00	Kgs	17.00	5,593.00	329.00	5,033.70	0.00
Steel 8mm	740.00	Kgs	17.00	12,580.00	740.00	11,943.60	0.00
				251,012.68		**185,449.01**	
PLINTH BEAM (STEEL+ CONCRETE)			Volume Of Work	14.86			
Aggregate 3/4 Inch	12.48	Cu.Mtrs	400.00	4,992.96	12.48	4,832.49	-0.02
Binding Wire	25.00	Kgs	22.00	550.00	25.00	545.50	0.00
CEMENT	95.03	Bags	130.00	12,353.90	95.00	12,258.39	-0.03
Coarse Sand	9.51	Cu.Mtrs	494.70	4,704.79	9.51	3,705.68	0.00
Steel 10 mm	34.00	Kgs	17.00	578.00	34.00	530.74	0.00
Steel 12 mm	551.00	Kgs	17.00	9,367.00	583.00	8,978.20	5.81
Steel 16mm	131.00	Kgs	17.00	2,227.00	131.00	2,113.03	0.00
Steel 25mm	198.00	Kgs	17.00	3,366.00	198.00	2,659.14	0.00
Steel 6mm	299.00	Kgs	17.00	5,083.00	299.00	4,574.70	0.00
Steel 8mm	52.00	Kgs	17.00	884.00	52.00	839.80	0.00
				44,106.65		**41,037.67**	

Information captured from this Report:
This report shows Material consumption variation of task along with Estimated Quantity, Unit, Estimated price of material, Amount of each material, Actual consume quantity, Amount of consumed material, Variation in Qty estimated & Qty actually used.

[#] IDH_MATERIALVARIATION

B.7   #**Item Rate**

Item Rate					Highrise
Sample Project 1					
Task Name	**Total Qty**	**Unit**		**Total Cost**	**Item Rate**
Category PCC					
PCC (1:3:6)					
	56.87	Cu.Mtrs	Rs	67,562.68	1,188.02
		Category Cost	**Rs**	**67,562.68**	
Category RCC					
13 TH FLOOR (QC)					
	31.79	Cu.Mtrs	Rs	46,782.41	1,471.61
13 TH FLOOR (QC)STEEL					
	1.00	No.	Rs	50,899.00	50,899.00
M20 columns					
	87.32	Cu.Mtrs	Rs	128,501.05	1,471.61
M20 footing(o)					
	0.00	Cu.Mtrs	Rs	86,700.00	0.00
M20 Plinth Beams					
	14.86	Cu.Mtrs	Rs	44,106.65	2,968.15
M20 slab+beam					
	810.63	Cu.Mtrs	Rs	5,273,387.19	6,505.29
M25 columns					
	27.66	Cu.Mtrs	Rs	52,838.72	1,910.29
M30					
	6.35	Cu.Mtrs	Rs	62,122.85	9,783.13
M30 columns					
	194.92	Cu.Mtrs	Rs	335,854.84	1,723.04
RMC M25					
	161.10	Cu.Mtrs	Rs	378,585.00	2,350.00
		Category Cost	**Rs**	**6,459,777.71**	

Step by step to access this report:
Step 1: Open 'Engineering Window' & select project.
Step 2: Select proper Task Group/Task of selected project.
Step 3: Click on proper type of report & click on 'Show Report'.

Information captured from this Report:
This report shows Total cost of task from selected Task group, It's total quantity, Unit, Item rate of all task, Task category wise as that of assign during creation of 'Task Library' & Total Category cost.

IDH_ITEMRATE

#

B.8   Dependencies

Information captured from this Report:
This report shows dependencies of the tasks in the selected Project / WBS. It shows the main task and below that, the task on which it is dependent.

IDH_DEPENDENCY

D.1. [#]**Site wise material cost requirement:**

This report shows all material requirements for selected period along with details like material name, project name, Required Quantity, requirement date, unit rate & total cost.

Consolidated Material Requirement Report						*Highrise*
From Date 20/01/2006 To Date 20/07/2006						
Material	**Project**	**Qty**	**Req. Date**	**Total Qty**	**Rate**	**Total Cost**
Admixture-Sika						
	RMC CONCRETE					
		45,000.00	30/03/2006			
				45,000.00	2,180.00	**98,100,000.00**
Dambri Washer						
	RMC CONCRETE					
		25.00	30/03/2006			
				25.00	49.41	**1,235.25**
Diesel						
	RMC CONCRETE					
		6,500.00	30/03/2006			
				6,500.00	50.20	**326,300.00**
Foundation Bolt-(Nos)						
	RMC CONCRETE					
		195.00	30/03/2006			
				195.00	0.00	**0.00**
GI Sheet 10 Ft.(Kg)						
	RMC CONCRETE					
		1,950.00	30/03/2006			
				1,950.00	42.00	**81,900.00**
GI Sheet 12 Ft.(Kg)						
	RMC CONCRETE					
		5,775.00	30/03/2006			
				5,775.00	42.00	**242,550.00**

[#] IDH_SITEWISEMATERIALCOSTREQUIREMENT

D.2.
#

Site wise labour cost requirement:

This report shows Amount for labour requirement for selected time, period along with details like Name of contractor, project name, schedule start date, Total labour cost.

Consolidated Labour Report   *Highrise*

From Date   20/06/2005   To Date   20/07/2006

Contractor	Project	Date	Amount
BANWARILAL NAWALRAM VERMA			
	SAMPLE PROJECT2		
		27/06/2005	28,890.00
		08/04/2006	160,320.00
		14/08/2005	356,917.00
		06/10/2005	337,540.50
		23/10/2005	322,888.50
		23/11/2005	314,968.50
		01/12/2005	322,888.50
		02/01/2006	314,968.50
		06/02/2006	313,681.50
		09/03/2006	314,968.50
		21/04/2006	313,681.50
		27/06/2006	314,968.50
		19/03/2006	314,968.50
		08/04/2006	26,730.00
AMAR CONSTRUCTION			
	SAMPLE PROJECT2		
		25/07/2005	244,822.50
		27/08/2005	241,492.50
		29/09/2005	244,822.50
		19/10/2005	241,492.50
		02/12/2005	225,315.00
SHREE GANESH PAINT O BUILD PVT. LTD.			
	SAMPLE PROJECT2		
		08/04/2006	110,104.00
		08/04/2006	3,480.00
		08/04/2006	3,480.00
		08/04/2006	3,480.00
		08/04/2006	3,480.00
		08/04/2006	1,509.00
		08/04/2006	3,484.50

IDH_SITEWISELABOURCOSTREQUIREMENT

A.1   #**Material Consumption Built-up Area wise**
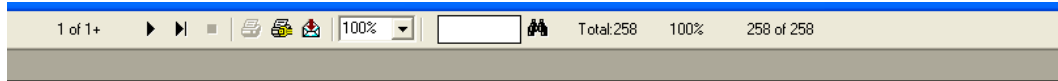
	Material Consumption On Built Up Area Basis			*Highrise*
	Built up area (A)	5,000.00		
Sr No	Material	Item Of Work	Total Quantity (B)	Quantity Per Sft.(C=B/A)
1	Aggregate 3/4 Inch			
		PCC	48.34	0.009668
		RCC	862.63	0.172525
		Total	910.97	
34	Coarse Sand			
		PCC	34.12	0.006824
		RCC	646.78	0.129355
		I.P.S	5.16	0.001031
		Total	686.06	
68	Steel 6mm			
		RCC	17,954.00	3.590800
		Total	17,954.00	
85	Steel 8mm			
		RCC	19,063.00	3.812600
		Total	19,063.00	
103	Steel 10 mm			
		RCC	20,311.00	4.062200
		Total	20,311.00	
121	Steel 12 mm			
		RCC	21,695.00	4.339000
		Total	21,695.00	
137	Steel 16mm			
		RCC	12,412.00	2.482400
		Total	12,412.00	

To access this report:

Step 1   Open 'Built up Report Window' & select the Project.

Step 2   Select the proper 'Task group/Task' for which you wish to see report, Material consumption Built up Area wise.

Step 3   Enter the Built up area of selected 'Task Group/Task'.

Step 4   Click on 'Material Consumption Built up Area wise' to see this details.

Step 5   Click on 'Show Report' to see the report.

Information captured from this Report:

Estimated material consumption of selected 'Task Group/Task' per Square Foot as per 'Task Category wise' that of assign to while creation of 'Task Library'.

IDH_ MATERIALCONSUMPTIONBUILTUPAREAWISE

\#

CHAPTER 5: PRACTICAL ASSIGNMENT

Practical Assignments

Ex 1: Open Highrise Engineering and go through each menu.

Ex 2: Create Material category having following details

Material Category No.	Classification
1	Cement, Sand, Metal
2	A,B,C
3	BOM, ROL
4	High, Low, Medium specification
5	Construction Material, Interior material
6	Commercial Building, Residential Building, Club house

Ex 3: Create Task Category
   1) RCC COLUMN ,RCC SLAB & BEAM ,RCC PARDI

Ex 4: Create materials having following details

Material name	Cement 43 grade	Crushed Sand	Aggregate ¾"	Aggregate ½":
Material Group	CEMENT	SAND	AGGREGATE	AGGREGATE
Price per unit	220.00	22.00	12.00	11.00
Transport per unit	2.50	0.50	0.50	0.50
Standard credit	10 days	30 days	30 days	30 days
E.O.Q.	400	200	250	250
Unit	Bag of 50 kg	Cum	Cum	Cum
Material Category 1	Cement	Sand	Metal	Metal
Material Category 2	A	B	B	B
Library Name	ABC Library	ABC Library	ABC Library	ABC Library

Ex 5: Create Labour having following details

Labour Group	RCC	RCC	RCC
Labour Name	Labour for RCC Columns	Labour for RCC Slab & Beams	Labour for RCC Paradi
Labour category1	RCC COLUMN	RCC SLAB & BEAM	RCC PARDI
Labour Rate	20 Rs	55 Rs	18 Rs
Employment Type	Work Wise	Work Wise	Work Wise
E O Q	1	1	1
Unit	RFT	SFT	SFT
Library Name	Sample Library	Sample Library	Sample Library

\# IDH_ASSIGNMENTS

Ex 6: Create task in 'Task Library' having following details

Task Group name	RCC	RCC	RCC
Name of Task	RCC Column M20	RCC Slab & Beam M20	RCC Pardi M20
Task category	RCC COLUMN	RCC SLAB & BEAM	RCC PARADI
Unit [for material calculation]	CUM	CUM	CUM
Min. Qty	0	0	0
Materials -	**Qty for Unit Volume**		
a)Cement 43 grade	8.06 bags	8.06 bags	8.06 bags
b)Crushed Sand	0.41 cum	0.41 cum	0.41 cum
c)Aggregate ¾"	0.498 cum	0.498 cum	0.498 cum
d)Aggregate1/2"	0.332 cum	0.332 cum	0.332 cum
Labour			
Name of labour	Labour for RCC Columns	Labour for RCC Slab & Beams	Labour for RCC Paradi
Qty for Unit Volume	1	1	1

Ex 7: Define (create new project) project having following detail
Name of Project = World Tread Center
Company name = Asia Construction company
Library name = 'ABC Library'
Address = S. No- 27A, 28A+B, Senapati Bapat road, Pune-41
Engineer In charge = A.B. KALE
Architect = Pentagon Architect & Designer Pvt.Ltd
Structural = Frame consultants
Legal Advisor = Mr. Havala
Start Date = 1 June 2006
Approved = yes

Ex 8: Create WBS for project 'World Tread Center' having following details:

Name of Task Group	Name of Task from Task Library	Volume of Work Material	Volume of Work Labour
Building A			
1. RCC			
1.a Below Ground	1.a.1 RCC Column M20	10 CuM	150 Rft
	1.a.2 RCC Pardi M 20	2 CuM	75 Sft
1.b 1st Slab	1.b.1 RCC Column M20	15 CuM	300 Rft
	1.b.2 RCC Pardi M20	3 CuM	100Sft
	1.b.3 Slab and Beam M20	75 CuM	1000Sft
1.c 2nd Slab	1.b.1 RCC Column M20	15 CuM	300 Rft
	1.b.2 RCC Pardi M20	3 CuM	100Sft
	1.b.3 Slab and Beam M20	75 CuM	1000Sft
1.d 3rd Slab	1.b.1 RCC Column M20	15 CuM	300 Rft
	1.b.2 RCC Pardi M20	3 CuM	100Sft
	1.b.3 Slab and Beam M20	75 CuM	1000Sft