ForeCast
MANUAL

forecast

Welcome to Forecast BID, your new and powerful tool for quantity takeoff, budgeting, and project planning.
In this manual, you will learn everything the system has to offer in terms of features and results, including our modules for quantity takeoff, budgeting, planning, cost management, reports, and much more!
Note: For specific questions, you can also use our AI chat, available in the system's dashboard tab.

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SECTION 1

The Takeoff Module

1. Introduction: What is the Takeoff Module?

The Takeoff module is the starting point for your entire project within Forecast. Its primary purpose is to allow you to perform on-screen takeoffs, which means creating precise measurements of lengths, areas, and counts directly from a PDF or image file of your project plans.
These measurements form the quantitative basis of your project. Once created, they can be assigned costs from a composition database, which then automatically feeds into the Budget and Gantt modules.

Key Capabilities:

- Measure lines, polylines, areas, perimeters, circles, and arcs.
- Count objects and items.
- Work with multi-page PDF documents.
- Set accurate scales for precise measurements.
- Organize measurements into hierarchical steps (Work Breakdown Structure).
- Apply costs by searching and linking to a pre-loaded composition database.
- Perform advanced calculations like converting lines to areas/volumes or applying coatings.

2. Getting Started: Loading Your First Project File

Before you can measure anything, you need to load a project plan.

Step-by-Step Guide:

1. **Launch the Application:** When you first open the Takeoff module, you will be greeted by the "Start Your Takeoff" screen.

2. **Load Your File:** You have two options
   - **Drag and Drop (Recommended):** Simply drag your PDF or image file (.jpg, .png) from your computer and drop it anywhere inside the designated drop zone.
   - **Choose File:** Click the "Choose File" button to open your computer's file explorer and select the project plan you wish to load.

3. **File Processing:** The application will process your file. If it's a multi-page PDF, it will load the first page by default and generate thumbnails for easy navigation.

Once loaded, your plan will appear on the main canvas, ready for you to begin setting the scale and making measurements.

3. The Interface at a Glance

The Takeoff module is divided into four key areas:

1. **Top Toolbar:** Contains all your primary tools for file management, scaling, measurement, and data integration.
2. **Canvas:** The main area where your PDF or image is displayed and where you will draw your measurements.
3. **Log Panel (Right Sidebar):** This is where all your created measurements are listed. It's the command center for editing, organizing, and managing your takeoffs.
4. **Page Navigation & Thumbnails (Left Sidebar):** Appears when a multi-page PDF is loaded, allowing you to quickly switch between pages.

4. Core Workflow: Creating Measurements

This is the central activity of the module. All drawing tools share a common logic: select a tool, draw on the canvas, and finish the drawing to save it to the Log Panel.

4.1. CRITICAL FIRST STEP: Setting the Scale

Accurate measurements are impossible without a correct scale.

1. **Find a Known Dimension:** Locate an element on your drawing with a known length (e.g., a doorway, a scale bar, a wall with its dimension noted).

2. **Activate the Scale Tool:** Click the Adjust Scale button on the toolbar. The icon is a ruler.

3. **Draw a Reference Line:** Click on the start point of your known dimension and then click on the end point. A line will be drawn.

4. **Enter the Real Length:** A prompt will appear asking for the "Actual line length". Enter the real-world length of the line you just drew (e.g., 3.5 if the line represents 3.5 meters).

5. **Confirm:** The application will calculate the pixels-per-unit ratio for the current page and apply it. All subsequent measurements on that page will be accurate.

    - **Pro Tip:** If your multi-page document uses the same scale on all pages, the application will ask if you want to apply the new scale to all pages. This saves significant time.

4.2. Drawing Tools & Shortcuts

- **Shortcut (*L*): Polyline Tool**
    - **Use Case:** Measuring perimeters, walls, pipes, wiring—anything with multiple connected straight-line segments.
    - **How to Use:**
        1. Click the Polyline icon or press L.
        2. Click on the canvas to place the first point.
        3. Continue clicking to place subsequent points. A line will preview your next segment.
        4. To Finish: Right-click anywhere on the screen. The measurement will be saved.

- **Shortcut (*A*): Area Tool**
    - **Use Case:** Measuring the square footage or meterage of rooms, slabs, or any rectangular area.
    - **How to Use:**
        1. Click the Area icon or press *A*.
        2. Click and hold the mouse button at one corner of the rectangle.
        3. Drag the mouse to the opposite corner.
        4. Release the mouse button. The measurement is saved instantly.

- **Circle Tool**
    - **Use Case:** Measuring circular objects like columns, tanks, or circular slabs.
    - **How to Use:**
        1. Click the *Circle icon*.
        2. Click once on the center of the circle on your plan.
        3. Move the mouse outwards to define the radius and click a second time to set it.

- **Arc Tool**
    - **Use Case:** Measuring curved walls, pathways, or any arched element.
    - **How to Use:**
        1. Click the Arc icon.
        2. Click to define the **start point** of the arc.
        3. Click to define the **end point** of the arc.
        4. Move the mouse to define the curvature and click a third time to set the arc.

- **Count Tool**
    - **Use Case:** Counting discrete items like light fixtures, doors, windows, or structural columns.
    - **How to Use:**
        1. Click the Count icon.
        2. A prompt will ask for the "Name of item to be counted". Enter a descriptive name (*e.g., "Standard Door"*).
        3. Click on each item you want to count on the plan. A marker will be placed.
        4. **To Finish: Right-click anywhere.**

4.3. Drawing Aids: Ortho, Snap, and Negative Areas

- **Ortho Mode (Button):** When active, this forces your lines to be drawn perfectly horizontally or vertically. Incredibly useful for rectangular rooms and buildings.

- **Snap (Shortcut F3):** This is one of the most powerful features. Press F3 to toggle snapping ON or OFF. When ON, your cursor will automatically "snap" to the endpoints of existing measurements, ensuring your new lines connect perfectly without gaps.

- **Creating Cutouts / Negative Areas (Shortcut -):**
    1. First, create and **select** a main area or polygon measurement from the Log Panel.
    2. Press the - (minus) key. Your cursor will change.
    3. Draw a new area or polygon *inside* the selected shape.
    4. This new shape will be subtracted from the total area of the parent measurement. This is perfect for calculating the net area of a room with columns inside it.

5. Managing Measurements: The Log Panel

As you create measurements, they appear as a list in the Log Panel on the right. This is your primary interface for managing and organizing your takeoff.

- **Selecting a Measurement:** Simply click on any item in the list. It will become highlighted, and the corresponding drawing on the canvas will also be highlighted. This is now your "active" measurement.
- **Creating Steps/Folders:** Click the **Create Step** button to add a folder-like item (e.g., "First Floor Walls", "Electrical Fixtures"). You can then drag and drop measurements under these steps to organize your WBS (Work Breakdown Structure).
- **Editing a Measurement (✏️):** Select a measurement and click the pencil icon. You can change its name or, if applicable, its height.
- **Deleting a Measurement (🗑️):** Select a measurement and click the trash can icon.
- **Adding a Manual Measurement (➕):** If you have a quantity that doesn't need to be measured on the plan (e.g., a lump sum item), use this button to enter its name, value, and unit manually.

5.1. Advanced Conversions & Applications

These tools, located in the Log Panel, allow you to derive new measurements from existing ones. You must select a measurement first for these to work.

- **Convert to Area:** Select a closed group of polylines/arcs and click this. The tool will convert the enclosed perimeter into a single polygon area measurement.
- **Apply Coating:** Select a line or area measurement. This tool will ask for the number of faces (e.g., 2 for both sides of a wall) and a name for the coating. It creates a new measurement for the coating's surface area.
- **Convert to Volume:** Select an area measurement. The tool will prompt for a thickness/height and create a new measurement with the calculated volume.
- **Convert Perimeter × Height:** Select an area/polygon. The tool calculates the total perimeter, prompts for a height, and creates a new area measurement (e.g., for the wall surface area of a room).

6. Applying Costs: The Composition Search

This feature bridges the gap between quantity and cost.

1. **Open the Search:** Click the Composition Search button (magnifying glass) on the top toolbar.
2. **Select Database:** Use the dropdown to choose between the "Main Database" (pre-loaded) or "My Compositions" (created by you in the Compositions module).

3. **Search:** Type a keyword (e.g., "concrete", "drywall") to find relevant cost items.

4. **Apply to Measurement:**

- First, select a measurement from the Log Panel on the right.
- In the search results, click the checkmark icon (✓) next to the desired composition.
- The composition's code and cost data will be instantly applied to your selected measurement. You will see its name update in the log (e.g., "Wall 1 [12345]").

5. **Add Directly to Budget:**

- Alternatively, you can click the plus icon (+) to add the composition as a new line item directly to your budget without linking it to a drawn measurement.

7. Shortcuts & Pro Tips

- *L*: Activate Polyline tool.
- *A*: Activate Area tool.
- *F3*: Toggle Snap mode On/Off.
- -: Activate Negative Area (cutout) mode on a selected shape.
- *Escape*: Cancels the current drawing action or clears the current selection.
- **Right-Click:** Finishes Polyline and Count measurements.
- **Double-Click (on a Polyline):** Closes a polyline by drawing a segment from the last point back to the first, creating a closed polygon.
- **Ctrl + Z:** Undo the last action (drawing a point or creating a measurement).
- **Ctrl + Mouse Wheel:** Zoom in and out on the canvas.
- **Middle Mouse Button (Hold & Drag):** Pan across the canvas.

SECTION 2

The Budget Module

1. Introduction: What is the Budget Module?

The Budget module is the financial heart of your project in Forecast. It takes the quantitative data generated in the **Takeoff module** and transforms it into a detailed, interactive project budget.

Think of it as a powerful spreadsheet tailored for construction estimating. Here, you can review all your measured items, refine costs, add new line items that weren't measured on the plans (like administrative fees or permits), apply your company's profit margin (BDI), and generate professional reports. Every financial change you make here updates the "master" project file, ensuring the Gantt and Analysis modules use the most current cost data.

Key Capabilities:

- View all takeoff items in a structured table format.
- Edit quantities, unit costs, descriptions, and codes.
- Add new items manually or from the composition database.
- Organize the budget with "Etapa" (Step) rows that calculate automatic subtotals.
- Instantly see a cost breakdown of Material vs. Labor.
- Apply a project-wide profit margin (BDI) to all items.
- Generate a Bill of Materials (BOM).
- Export your final budget to professional-looking PDF or Excel files.

2. The Interface at a Glance

The Budget module is organized into three main sections for clarity and efficiency.

1. **Project Header:** The top section contains all the crucial information about your company, your client, and the project itself. This data is used when printing or exporting reports.
2. **Budget Table:** This is the central workspace. It's a detailed list of every cost item in your project, organized by steps. Every field is interactive.
3. **Cost Distribution Panel:** A side panel that provides a real-time breakdown of your budget into Material and Labor costs, helping you understand your cost structure at a glance.

3. Core Functionality: Managing Your Budget

All data from the Takeoff module automatically appears here. Your primary job in this module is to review, refine, and add to that data.

3.1. Understanding and Editing the Budget Table

The table is your main workspace. Here's what each column means:

- **Code:** The composition code linked from the Takeoff module. You can edit this to link to a different composition.
- **Description:** The name of the measurement or item. This is fully editable.

- **Unit:** The unit of measure (e.g., m², ft, unit).
- **QTY (Quantity):** The quantity of the item. This is editable. **Important:** If you edit the quantity of an item that was measured in the Takeoff, it becomes a "manual override". The original measured value is still stored but will be ignored in financial calculations.
- **Unit Value:** The total cost per unit (Material + Labor + BDI). You can directly edit this value.
- **Total Value**: The final calculated cost for the line item (QTY × Unit Value). This field is calculated automatically.

Editing Items: Simply click on any cell with an input field (Description, QTY, Unit Value, etc.) and start typing. Changes are saved automatically as you move to another cell.

Reverting Overrides: When you manually change a unit cost (*_valorUnitarioMaterial, _valorUnitarioMaoDeObra*) for an item that has a base value from the composition database, a revert icon (🔄) will appear next to its code.

- **To see a breakdown of the cost:** Hover over the "Unit Value" cell. A tooltip will show the original base value, the manually entered value, and the applied BDI.
- **To revert:** Click the revert icon (🔄) to discard your manual changes and restore the item's cost to the original value from the database.

Reordering Items (Drag and Drop): You can change the order of items within the budget.

1. Click and hold on any part of a measurement row (not a header row).
2. Drag the row up or down to its desired new position.
3. Release the mouse button to drop it in place. The entire budget will update.

Deleting an Item:

1. Click on the row you wish to delete to select it. The row will be highlighted.
2. Press the *Delete* key on your keyboard.
3. A confirmation prompt will appear. Confirm to permanently remove the item from the budget.

3.2. Adding New Items

You will often need to add items that weren't measured on the plans (e.g., permits, project management fees, equipment rental).

1. Click the + **Add New Item to Budget** button located just above the main table.
2. A modal window will appear with two tabs: "Manual Item" and "Database Item".

- **To Add a Manual Item:**

1. Stay on the "Manual Item" tab.
2. Fill in the **Description, Unit, Quantity**, and the unit values for **Material** and **Labor.**
3. Click **Save Item**. The new item will be added to the end of your budget

- **To Add an Item from the Database:**

1. Click the *"Database Item"* tab.
2. Use the dropdown to select "Main Database" or "My Compositions".
3. Start typing in the search bar. A list of matching compositions will appear.
4. Click on the desired composition from the list. Its name will populate the search bar.
5. Enter the desired **Quantity.**
6. Click **Save Item.**

4. Financial Management & Analysis

The toolbar at the very top of the page contains powerful tools for analysis and reporting.

- **Apply Profit (BDI) (Icon: %):**

  1. Click the profit icon.
  2. A prompt will ask for your profit margin/BDI in percent (e.g., 25 for 25%).
  3. Enter the value and confirm. The "Unit Value" and "Total Value" for **every item** in the budget will be recalculated to include this margin.

- **Generate Bill of Materials (BOM) (Icon: List):**

  1. Click the BOM icon.
  2. A new window will appear, showing a detailed breakdown of every single input (material, labor, equipment) required to execute the entire project, based on the compositions linked to your budget items.
  3. From this window, you can **Export to Excel or Save as PDF.**

- **The Cost Distribution Panel:** This panel on the right provides a live, item-by-item breakdown of costs. By default, it shows the Total Material and Labor cost for each line item.

  - **To change the view:** Right-click anywhere on the page and select "Change to Unit Values". The panel will now show the **Unit** Material and Labor cost for each item. Right-click again to switch back to totals.

  - **To hide the panel:** Click the × button at the top right of the panel. To bring it back, right-click and select "Show Distribution Column".

5. Exporting and Printing

- **Export to Excel (Icon: Excel logo):** Click this button to instantly download a .xlsx file of the main budget table, preserving the structure and values as they appear on screen.

- **Print / Save as PDF (Icon: Printer):** Clicking this will generate a clean, professional-looking PDF of your budget, complete with the project header information you filled out. This is perfect for sending to clients or for your records.

SECTION 3

The Gantt Chart Module (Planning & Scheduling)

1. Introduction: What is the Gantt Chart Module?

The Gantt Chart module is your central hub for project planning, scheduling, and tracking. It transforms the list of costed items from your Budget into a dynamic visual timeline. This allows you to sequence tasks, allocate resources (time), track progress, and monitor performance against your original plan.

This module is where your project comes to life. You define when each activity will happen, how they relate to each other, and then track their execution in real-time. The data generated here is crucial for the Dashboard and ABC Analysis modules.

Key Capabilities:

- Automatically create a task list from your budget items.
- Visually schedule tasks on an interactive timeline.
- Create dependencies between tasks (e.g., Task B can't start until Task A is finished).
- Group tasks into hierarchical stages ("Etapas") that can be collapsed and expanded.
- Track the progress of each task and automatically see the overall project completion.
- Set a **Baseline** to compare your current schedule against the original plan.
- Automatically calculate and visualize the project's **Critical Path.**
- Manage work calendars, including work regimes (e.g., Mon-Fri) and holidays.
- Undo/Redo any changes with *Ctrl+Z* and *Ctrl+Y*.

2. The Interface at a Glance

The Gantt module is a split-pane interface designed for maximum efficiency.

1. **Toolbar:** Located at the top, this bar contains all the high-level tools for managing your schedule, from adding tasks to setting a baseline and printing.

2. **Task Table (Left Pane):** A detailed spreadsheet view of your tasks. Here you can edit details like duration, dates, costs, and predecessors textually.

3. **Chart Area (Right Pane):** The visual representation of your schedule. It includes the timeline and the interactive task bars. Changes made here are instantly reflected in the Task Table, and vice-versa.

4. **Splitter:** The vertical bar between the two panes. You can click and drag it to give more space to either the table or the chart.

3. Getting Started: Your Initial Schedule

You don't start with a blank slate. The Gantt module automatically populates your task list from the items you created in the Takeoff and refined in the Budget module.

Your First Steps:

1. **Review the Task List:** Your initial list will have all tasks starting on the same day with a default duration. The "Etapa" (Step) rows from your budget are now collapsible groups.

2. **Set the Work Calendar:** Use the **Regime** dropdown on the toolbar to define your project's working days (e.g., Monday to Friday). This is critical for accurate duration calculations.

3. **Add Holidays:** Click the **Manage Holidays** button (calendar icon) to add national or custom holidays. The schedule will automatically skip these non-working days.

4. **Start Sequencing:** Begin by setting the duration for each task and creating dependencies.

4. Working with the Task Table (The Left Pane)

This area allows for precise, data-driven editing of your schedule.

4.1. Adding, Organizing, and Deleting Tasks

Adding a Group/Stage: Click the Add Group button in the toolbar. A new "Etapa" row will be added to the table.

Adding a Task: Select a Group row first, then click the Add Task button in the toolbar. The new task will be added under that group.

Organizing:

- **Reordering:** Click and hold anywhere on a task or group row and **drag it up** or down to a new position. The WBS codes will automatically recalculate.

- **Collapsing:** Click the − / + icon next to a group name to hide or show its sub-tasks. This helps in simplifying the view for large projects.

Deleting: Click the red trash can icon at the end of a row to delete a manually added task or group. Note: Items synced from the Takeoff module cannot be deleted here; they must be removed in the Takeoff or Budget module.

4.2. Editing Task Details

Simply click on any cell in the table to edit its value.

- **Duration:** The number of working days the task will take. The end date will adjust automatically.
- **Start / Finish:** You can manually set a start date, which will make the task independent (breaking its predecessor links). You can also edit the finish date, which will automatically recalculate the duration.
- **% (Progress):** Enter a value from 0 to 100 to reflect the task's completion.
- **Cost / Budgeted:** The Budgeted value is synced from the budget. The Cost field is where you can input the actual cost incurred for that task so far.
- **Predecessors:** This is one of the most important fields. See the dedicated section below.

5. Using the Interactive Chart (The Right Pane)

This area provides a visual and intuitive way to build your schedule.

- **Move a Task:** Click and drag a task bar horizontally to change its start date.
- **Change Duration:** Move your mouse to the right edge of a task bar. The cursor will change. Click and drag to lengthen or shorten the task's duration.
- **Update Progress:** Hover over a task bar. A small handle will appear on the progress fill. Drag this handle horizontally to visually update the task's completion percentage.

5.1. Creating Dependencies Visually

Dependencies are the logical links between tasks.

1. Hover your mouse over a task bar. Two circular handles will appear at the start and end of the bar.
2. Click and hold the handle on the **end** of the predecessor task (the one that comes first).
3. Drag your mouse to the **start** of the successor task (the one that comes after).
4. Release the mouse. A dependency line will be drawn, and the successor task will automatically shift its start date according to the dependency.
5. **To delete a dependency:** Double-click the circular handle at the start of the dependent task.

6. Core Scheduling Concepts Explained

- **Predecessors (The Logic of the Schedule):** This column in the table defines task relationships. The syntax is simple: *[Task ID][Type][+/-Lag]*.

  Example 1: 3FS
  - Means: "This task cannot start until task with ID 3 has Finished (Start)."

  Example 2: 4FS+5d
  - Means: "This task can start 5 working days *after* task 4 has Finished." The +5d is a **lag.**

  Example 3: 5FS-2d
  - Means: "This task can start 2 working days *before* task *5* finishes." The -2d is a **lead.** You can add multiple predecessors by separating them with a comma, e.g., *3FS, 4FS*.

- **Baselines (Your Original Plan):** A baseline is a snapshot of your schedule at a specific point in time. Once set, you can see how your current plan compares to the original.

  1. Arrange your schedule as you initially plan for it to be.
  2. Click the **Set Baseline** button (area chart icon) in the toolbar.
  3. A gray "shadow" bar will appear underneath each task bar on the chart. This gray bar is the baseline.
  4. As your project progresses and dates shift, the colored task bars will move, but the gray baseline bars will remain fixed. This instantly shows you which tasks are ahead or behind schedule. The "Desvio (d)" (Schedule Variance) column in the table will show the difference in working days.

- **The Critical Path (The Longest Road):** The critical path is the sequence of tasks that determines the project's total duration. Any delay in a task on the critical path will delay the entire project.
    - Click the **Critical Path** button (path icon) on the toolbar to toggle the view.
    - All tasks on the critical path will turn red, giving you an instant visual indicator of which activities you must monitor most closely to avoid project delays.

7. Advanced Tools & Features

- **Auto-Sequence:** If you have a list of tasks and want to create a simple, sequential "waterfall" schedule, click the **Auto-Sequence** button. This will automatically link every task to the one before it, creating one long chain of dependencies.

- **Automatic Duration Calculator:** Click the calculator icon to open a modal. Here, you can input your standard crew size (e.g., 2 workers, 1 helper) and work hours per day. The tool will then use the productivity coefficients from the composition database to automatically calculate and apply a realistic duration for every task in your schedule. This is a powerful tool for initial planning.

- **Print / Export to PDF:** Click the printer icon to generate a PDF of your entire Gantt chart, including both the table and the visual timeline, for sharing or reporting.

- **Undo / Redo (*Ctrl+Z / Ctrl+Y*):** Made a mistake? Don't worry. You can undo almost any action (moving a task, adding a dependency, changing a value) by pressing *Ctrl+Z*. If you undo too far, press *Ctrl+Y* to redo the action.

SECTION 4

The Composition Editor

1. Introduction: What is the Composition Editor?

The Composition Editor is your personal workshop for creating and managing custom cost compositions. While Forecast can come with a main database of cost items, your projects will often require unique tasks, custom material bundles, or specific crew makeups that don't exist in the standard list. This module allows you to build them from the ground up.

A **composition** is essentially a recipe for a task. It defines the task itself (e.g., "Install Interior Drywall, 1/2 inch") and lists all the necessary **inputs**—materials, labor, and equipment—along with their required quantities (coefficients) to complete one unit of that task (e.g., one square meter of drywall).

Compositions you create here are saved to your "My Compositions" database and become instantly searchable and usable in the **Takeoff** and **Budget modules.**

Key Capabilities:

- Create new, reusable cost compositions for any task.
- Add individual inputs (materials, labor, etc.) manually.
- Search the main database to pull existing items or entire compositions to use as templates or inputs.
- Define precise coefficients (productivity rates) for each input.
- Save your entire custom database to a .json file for backup or sharing.
- Undo/Redo any changes with *Ctrl+Z / Ctrl+Y*.

2. The Interface at a Glance

The editor is designed around a single, powerful table.

1. **Toolbar:** Contains the primary actions for building your list: adding a new composition title, adding an input, searching the database, and managing your composition files.
2. **Composition Table:** This is your main workspace. It displays all your custom compositions in a hierarchical list. "Title" rows represent the composition itself, and the indented "Input" rows below it are its components.

3. Creating Your First Custom Composition

Let's walk through creating a simple composition for "Basic Concrete Footing (per m^3)".

- **Step 1: Add the Composition Title**

  1. Click the Add Composition Title button on the toolbar.
  2. A new, bolded row will appear in the table. This is your main composition item.
  3. Fill out the details for the title row:
     - **Reference:** Can be left as "CPU" (Composição de Preço Unitário - Unit Price Composition).
     - **Description:** Enter the name of your composition (e.g., Basic Concrete Footing).
     - **Unit.:** Enter the unit of measure for the *final task* (e.g., m^3).

- **Step 2: Add the Inputs**

Now, we add the "ingredients" for one cubic meter of this footing.

- **Adding an Input Manually:**

1. Make sure your new Title row is selected.
2. Click the **Add Manual Input** button on the toolbar.
3. A new, standard row will appear indented under your title.
4. Fill out the details. For example, for cement:
    - **Reference:** "INS" (Insumo - Input).
    - **Code:** Leave blank or add your own internal code.
    - **Description:** Portland Cement.
    - **Unit.:** kg.
    - **Coef.:** 350 (meaning 350 kg of cement are needed for 1 m^3 of footing).
    - **Materials Coast:** The cost per kg of cement.
    - **Labor Coast:** 0 (it's a material).

- **Adding an Input Manually:**

1. Click the **Search Database** button (magnifying glass).
2. In the modal window, type "concrete laborer" and search.
3. In the results, find the appropriate laborer item.
4. Click the **Add as Input** button next to it.
5. The laborer will be added as a new input row under your title. Now you only need to adjust the **Coef.** (coefficient), which in this case represents the man-hours required to produce 1 m^3 of the footing.

- **Step 3: Repeat and Save**

Repeat Step 2 for all other inputs (sand, gravel, etc.). The application **saves automatically** to your browser's storage with every change. The "Valor Final" for the Title row will update in real-time, showing you the total unit cost of your new composition.

4. Managing Your Compositions

- **Reordering:** You can drag and drop any row (both titles and inputs) to change its position in the list or move an input from one composition to another.
- **Deleting:** Select the row you wish to remove (either a title or an input) and press the *Delete key*.
- **Undo/Redo:** Use **Ctrl+Z** to undo and **Ctrl+Y** to redo any action, from adding an item to changing a value.

4.1. Importing for Editing

The search function has a second, powerful feature. If you search for a composition from the main database (e.g., "Concrete Slab 15cm"), you can click the **Import for Editing** button. This will import not just the composition title but all of its underlying inputs directly into your editor, creating a perfect, editable copy for you to modify.

5. Saving and Loading Your Custom Database

While your work is saved automatically in your current browser, it's good practice to create backups or share your custom database with colleagues.

- **Saving to a File:**

1. Click the Save Compositions button on the toolbar.
2. A prompt will ask you to name the file (e.g., *my_company_compositions.json*).
3. A *.json* file containing all your custom compositions will be downloaded to your computer.

- **Loading from a File:**

1. Click the **Load Compositions from File** button.
2. Select a *.json* file that you previously saved.
3. **Warning:** A confirmation will appear, as loading a file will **overwrite** any compositions currently in the editor.
4. Confirm, and the compositions from the file will be loaded into your editor.

6. How it Integrates with Other Modules

This is the most important part. Once you've created and saved a composition here:

- When you use the **Composition Search** in the **Takeoff or Budget** modules, a dropdown menu will now appear, allowing you to search in either the "Main Database" or **"My Compositions"**.

- Selecting "My Compositions" will show you the custom items you built in this editor, ready to be applied to your measurements, instantly linking your custom costs to your project quantities.

SECTION 5
The Project Dashboard

1. Introduction: What is the Dashboard?

The Dashboard is your project's command center. It is a high-level, visual summary of your project's health, pulling real-time data from the **Budget and Gantt** modules to give you an instant "health check."

This is a read-only module; there is no data entry here. Its purpose is to aggregate all the detailed information you've entered elsewhere and present it through easy-to-understand charts and key performance indicators (KPIs). It helps you quickly answer critical questions: Are we on schedule? Are we on budget? Where are the biggest costs concentrated? What will our spending look like next month?

Key Capabilities:

- View the overall project completion percentage, weighted by cost.
- Instantly identify the current active stage and any schedule delays against your baseline.
- Visualize the budget distribution across the main stages of your project.
- See a month-by-month projection of planned costs.
- Analyze project performance with a professional S-Curve chart (Planned vs. Actual vs. Earned Value).

2. The Interface at a Glance

The Dashboard is composed of several "cards," each containing a specific chart or set of KPIs.

1. **Overall Project Status:** The top-left card provides the most critical, at-a-glance information about progress and schedule adherence.
2. **Budgeted Cost Distribution:** A doughnut chart that breaks down the project's total cost by its main stages ("steps").
3. **Month-to-Month Cost Projection:** A bar chart forecasting the planned spending for each month of the project's duration.
4. **S-Curve:** A powerful line chart for advanced performance analysis over time.

3. Understanding the Widgets (The Cards)

3.1. Overall Project Status

This card gives you the immediate pulse of your project.

- **Progress Bar:** This bar shows the total completion percentage of the project. **Crucially, it is weighted by the cost of each task.** This means that completing a high-cost task will advance the progress bar more than completing a low-cost one, giving a more accurate picture of the "value" of the work completed.
- **Current Stage:** This field tells you which main stage ("steps") of your project should be active according to today's date on the Gantt chart. It helps you focus on the current area of work.
- **Schedule Delay:** This KPI directly compares your current schedule to the Baseline you set in the Gantt module.

- 0 day(s): You are perfectly on schedule.
- **A positive value** (e.g., +5 day(s)) indicates you are behind schedule.
- **A negative value** (e.g., -3 day(s)) indicates you are ahead of schedule.
- If you have not set a baseline in the Gantt module, this will display "No Baseline".

3.2. Budgeted Cost Distribution

This doughnut chart provides a simple visual breakdown of where the money in your budget is allocated.

- Each slice represents a main stage ("steps") from your budget.
- The size of the slice is proportional to its total cost relative to the entire project budget.
- Hovering over any slice will show its name and exact budgeted value. This helps you quickly identify the most expensive parts of your project.

3.3. S-Curve (Planned vs. Actual vs. Earned Value)

This is the most advanced analytical tool in the Dashboard, used for tracking performance with the Earned Value Management (EVM) methodology.

- **What it Shows:** The chart plots three key lines over the project's timeline:

1. **Planned Value (PV - Blue Line):** This is your baseline. It shows how much value you *planned* to have completed at any given point in time. This is the "S-Curve" itself.
2. **Actual Cost (AC - Red Line):** This shows how much money you have *actually spent* to date. This data comes from the "Cost" column in your Gantt chart.

3. **Earned Value (EV - Green Line):** This is the value of the work that has *actually been completed*. It's calculated by multiplying the total budget of each task by its completion percentage (% column in the Gantt).

- **How to Interpret the Chart:**

  Schedule Performance: Compare the **Green Line (EV)** to the **Blue Line (PV).**

  - If EV is **below** PV, your project is **behind schedule.** You have completed less work than you planned to by this date.
  - If EV is **above** PV, you are ahead **of schedule.**

  Cost Performance: Compare the **Green Line (EV)** to the **Red Line (AC).**

  - If AC is **above** EV, you are **over budget.** You have spent more money than the value of the work you've completed.
  - If AC is **below** EV, you are **under budget.**

3.4. Month-to-Month Cost Projection

This bar chart helps with financial planning by showing the projected cash flow needed for the project over time.

- It analyzes the duration and cost of every task in your Gantt chart.
- It distributes each task's cost over the months it is scheduled to occur.
- The chart then aggregates these costs to show the total planned expenditure for each month, broken down into Material and Labor costs.

SECTION 6

ABC Analysis Module

1. Introduction: What is ABC Analysis?

The ABC Analysis module is a powerful cost management tool that helps you identify where your project's money is truly going. It is based on the Pareto Principle, often known as the 80/20 rule, which suggests that for many events, roughly 80% of the effects come from 20% of the causes.

In project management, this means a small number of high-cost items (the "vital few") typically account for the majority of your total project cost, while a large number of low-cost items (the "trivial many") account for a very small portion of the cost.

This module automatically analyzes your entire project budget from the Budget and Gantt modules and classifies every cost item into three categories:

- **Class A:** The most critical items. These are the top 20% of items that typically account for ~80% of the total project cost.
- **Class B:** Items of secondary importance, typically the next 30% of items accounting for ~15% of the cost.
- **Class C:** The least critical items, the remaining 50% of items that only account for ~5% of the total cost.

Key Capabilities:

- Automatically classify all project costs into A, B, and C categories.
- Analyze costs from three different perspectives: by high-level Stages, by individual Tasks, or by granular Inputs (materials/labor).
- Visualize the cost distribution with an interactive Pareto chart.
- View a detailed data table with exact cost figures and percentages.

2. The Interface at a Glance

The interface is clean and focused, designed to present the analysis in a clear and understandable way.

1. **View Toggle Buttons:** Located at the top, these three buttons — **By Steps, By Tasks, By Inputs** — allow you to switch between the different analysis perspectives.

2. **Pareto Chart: The main visual element.** This combined chart shows the individual cost of each item (bars) and the cumulative percentage of the total cost (line).

3. **Data Table:** Below the chart, this table provides the detailed numbers behind the visualization, showing the exact cost, percentage of total, cumulative percentage, and ABC class for each item.

3. Analyzing Your Project Costs (The Three Views)

The power of this module lies in its ability to analyze your budget at different levels of detail.

3.1. View by Steps

- **What it Shows:** This is the highest-level view. It analyzes the total cost of each main project stage or group ("Steps") as defined in your Gantt chart and Budget.
- **When to Use It:** Use this view at the beginning of your analysis to get a broad understanding of the project. It will immediately tell you which stages (e.g., "Foundations," "Superstructure," "Finishes") are the most expensive. This helps you understand the overall cost structure of your project.

3.2. View by Tasks

- **What it Shows:** This view breaks the analysis down one level further, showing the cost of each individual task from your Gantt chart.

- **When to Use It:** After identifying a high-cost stage in the "By Steps" view, switch to "By Tasks" to see which specific activities *within that stage* are the main cost drivers. For example, you might find that within the "Foundations" stage, the "Concrete Pouring" task is a Class A item, while "Excavation" is a Class B item.

3.3. View by Inputs

- **What it Shows:** This is the most detailed and powerful view. It computationally "explodes" every task in your project into its fundamental components based on the linked compositions. It then analyzes the total cost of each unique material, labor type, or piece of equipment across the *entire project*.

- **When to Use It:** This is the essential view for procurement, negotiation, and detailed cost control. It answers the question: "What are the single most expensive things I need to buy or pay for?" You might discover that while many tasks use concrete, the "Concrete 3000 PSI" input itself is the single biggest Class A item in your entire project.

4. How to Interpret and Use the Results

The ABC analysis is not just a report; it's a guide for action. Here's how to use the information it provides:

- **Focus Your Efforts on Class A Items:** These are your high-impact items.
  - **Negotiation:** Spend the majority of your time negotiating prices with suppliers for Class A materials. A 5% discount on a Class A item will save far more money than a 20% discount on a Class C item.
  - **Management:** Monitor the progress and costs of Class A tasks more closely. A delay or cost overrun here will have a significant impact on the project's bottom line and schedule.
  - **Value Engineering:** If you need to reduce costs, Class A items are the best place to look for alternative materials or methods.

- **Optimize Class B Items:** These items are moderately important.
  - Look for opportunities to standardize materials or make bulk orders to get better pricing.
  - Ensure you have a reliable primary supplier and a backup option.

- **Simplify Class C Items:** These are your low-impact items.
  - Don't spend excessive time negotiating prices for these items.
  - Focus on simplifying the procurement process. Can you use a single supplier for all Class C items? Can you keep a small inventory on-site to avoid frequent small orders?
  - The goal for Class C is to minimize the *administrative effort* and time spent managing them.

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Choose File


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Arc (3 points)


Count Objects


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Eraser


Ortho


Clear


Print Measurement


Export Excel


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Import Project


Composition Search


Budget Table


Close Modal


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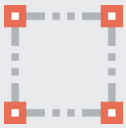
Convert Perimeter × Height


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Generate Bill of Materials


Apply Profit


Revert to Base Value


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