



# LIBRECAD

Overview of Drawing Tools

(03.06)

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## ABOUT LIBRECAD

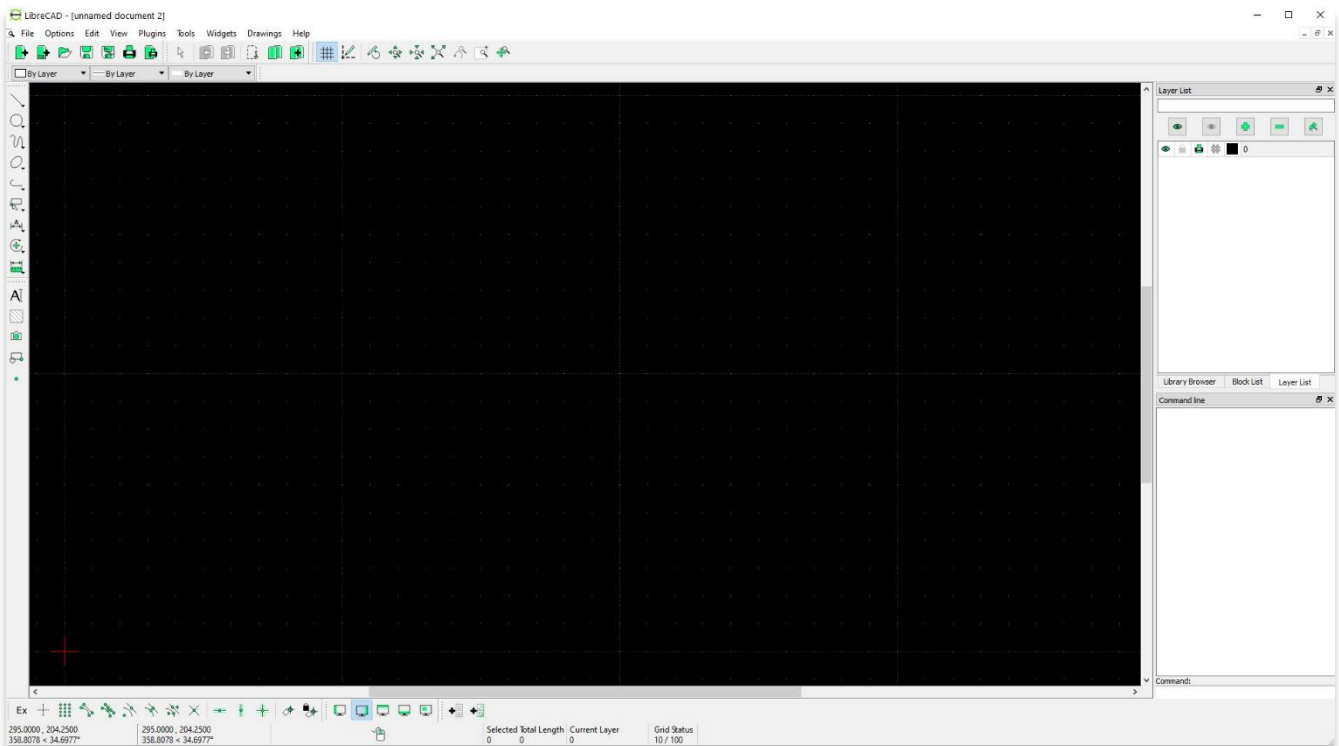
[LibreCAD](#) is a free Open Source computer-aided design (CAD) application for 2D design. LibreCAD works for Windows, Apple and Linux operating systems. Most of the interface and concepts are analogous to AutoCAD, making it easier to use for users with experience of this type of commercial CAD application. [Support and documentation](#) are free from a large, dedicated community of users, contributors and developers.

This **ASOR Tutorial (03.06)** will cover how to use drawing tools in LibreCAD. This tutorial focuses on workflows common in heritage preservation projects and is not fully comprehensive on LibreCAD's abilities in other professions and fields of study.

For more detailed documentation about LibreCAD, please consult the software's User Manual: <https://librecad.readthedocs.io/en/latest/>.

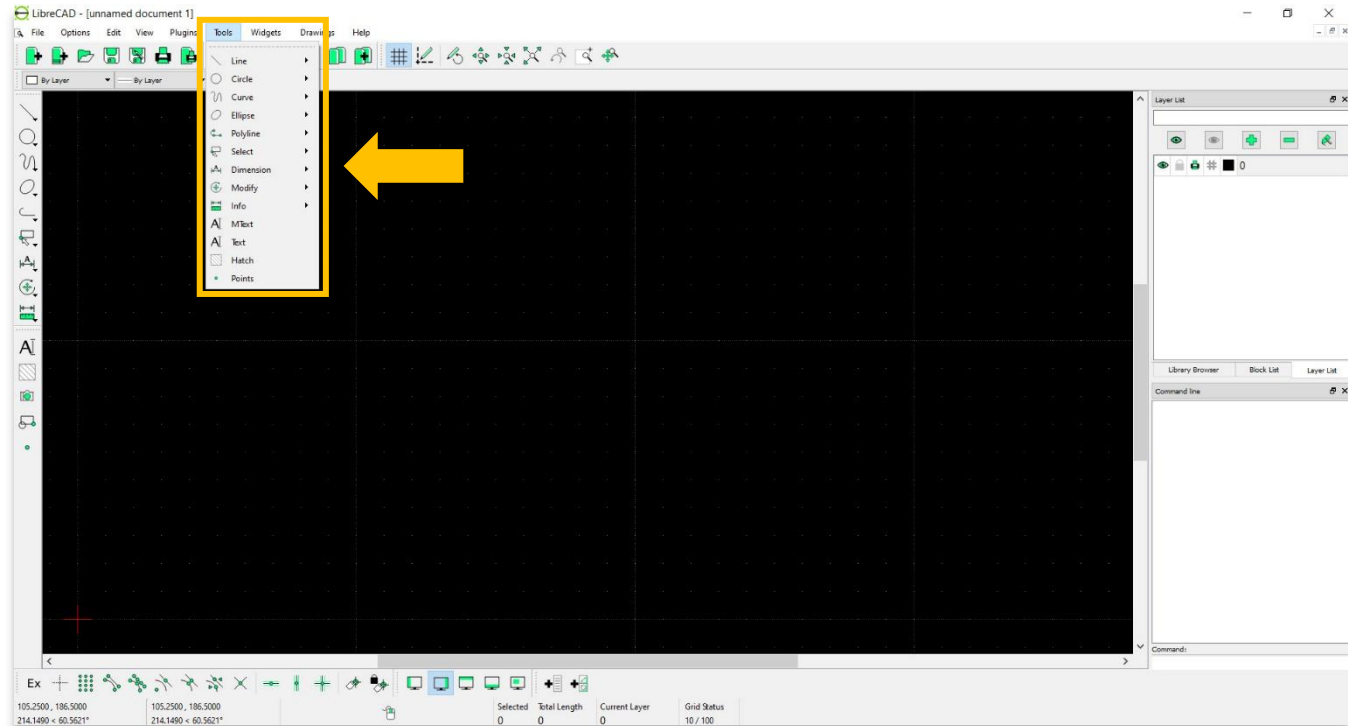
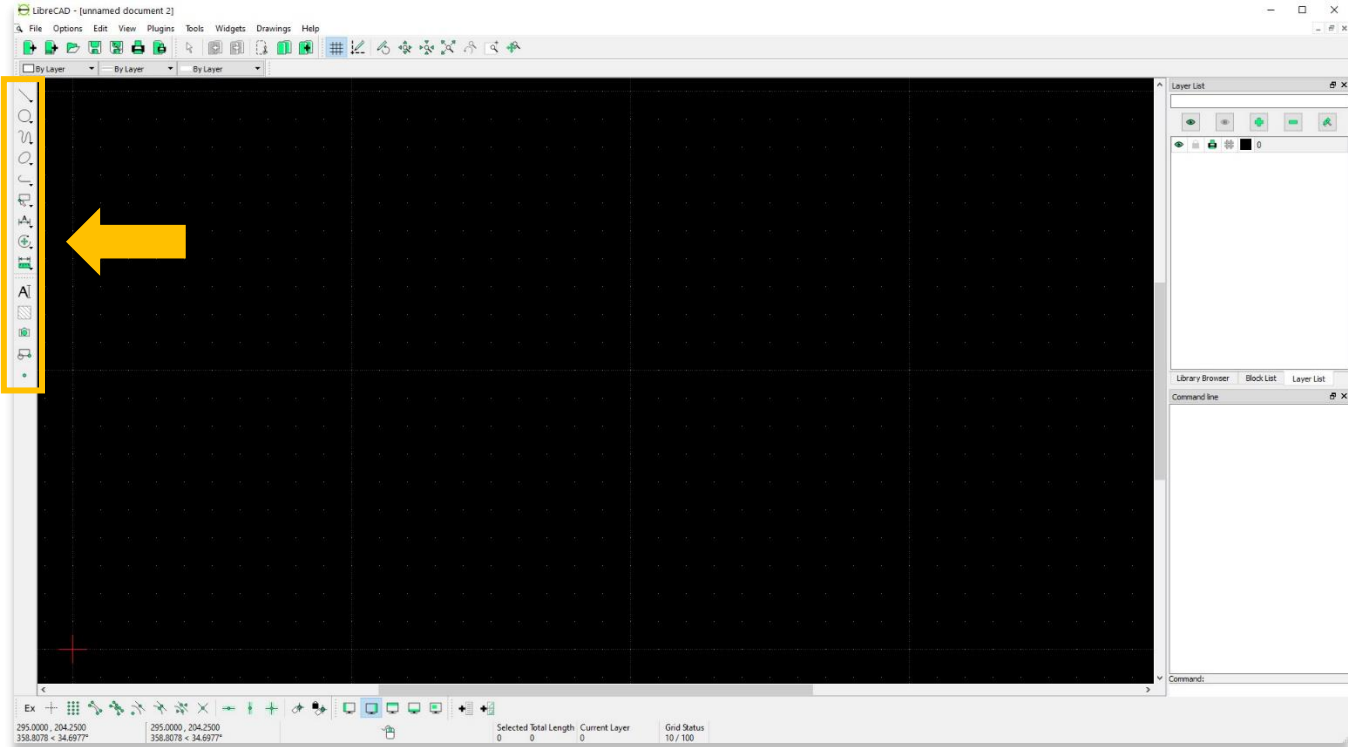
## OPENING LIBRECAD

1. To open LibreCAD, search for the program by typing in "LibreCAD" in your computer-wide search function (bottom left corner of your screen). Click on the LibreCAD application in your programs window to open.

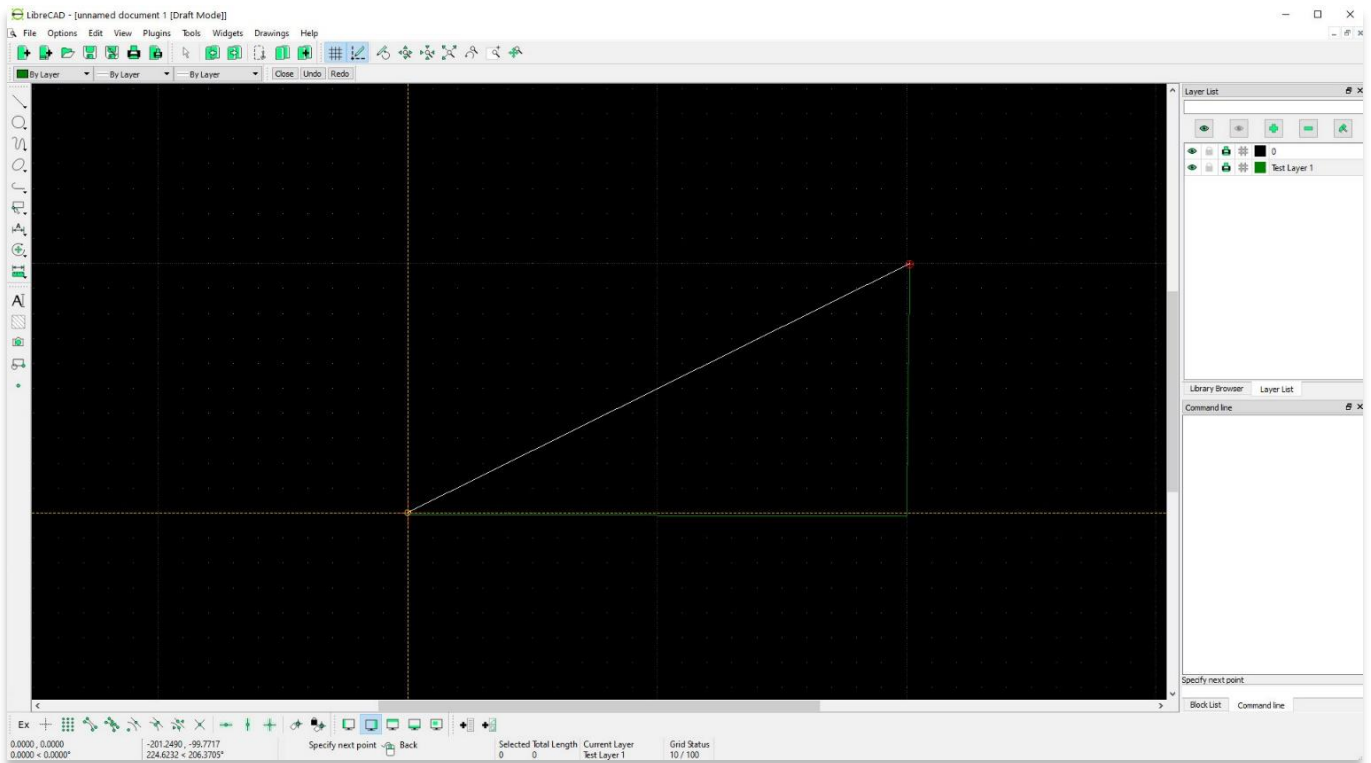
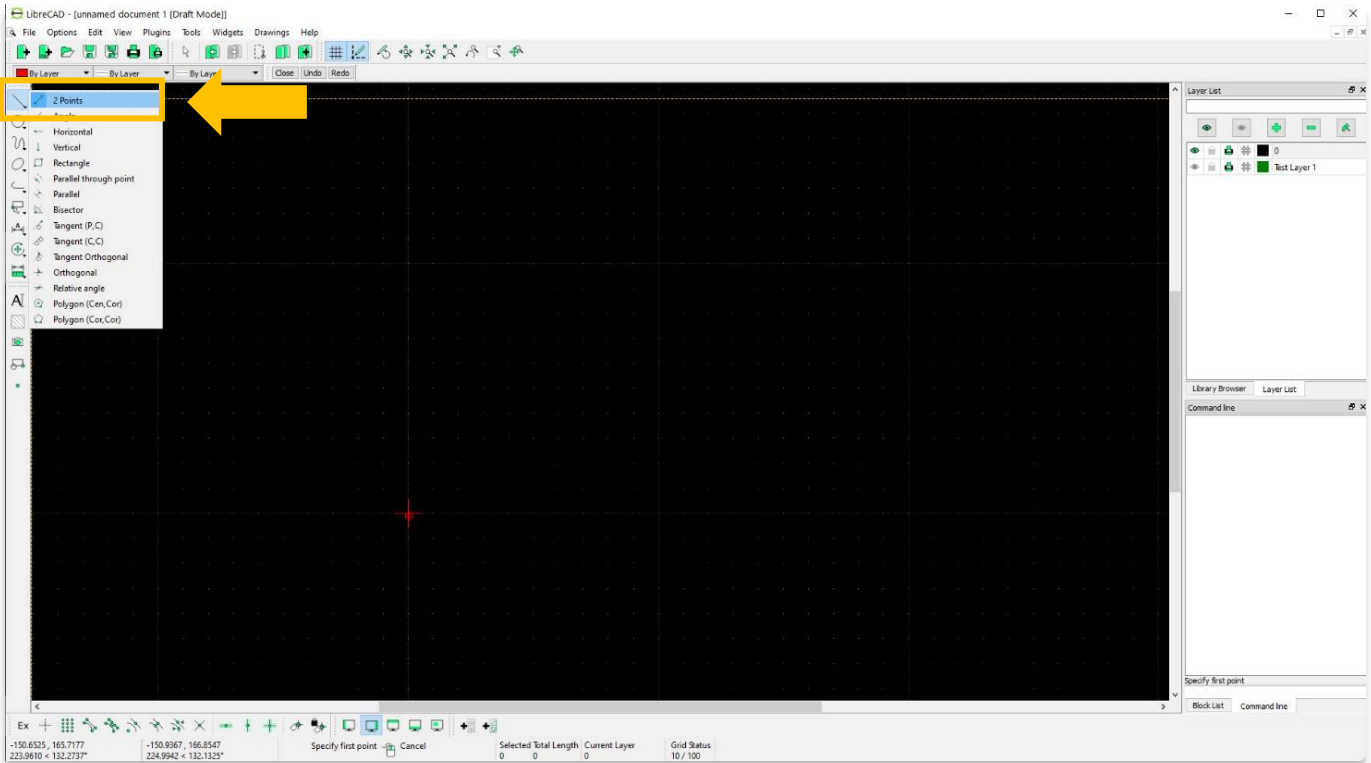


# DRAWING TOOLS

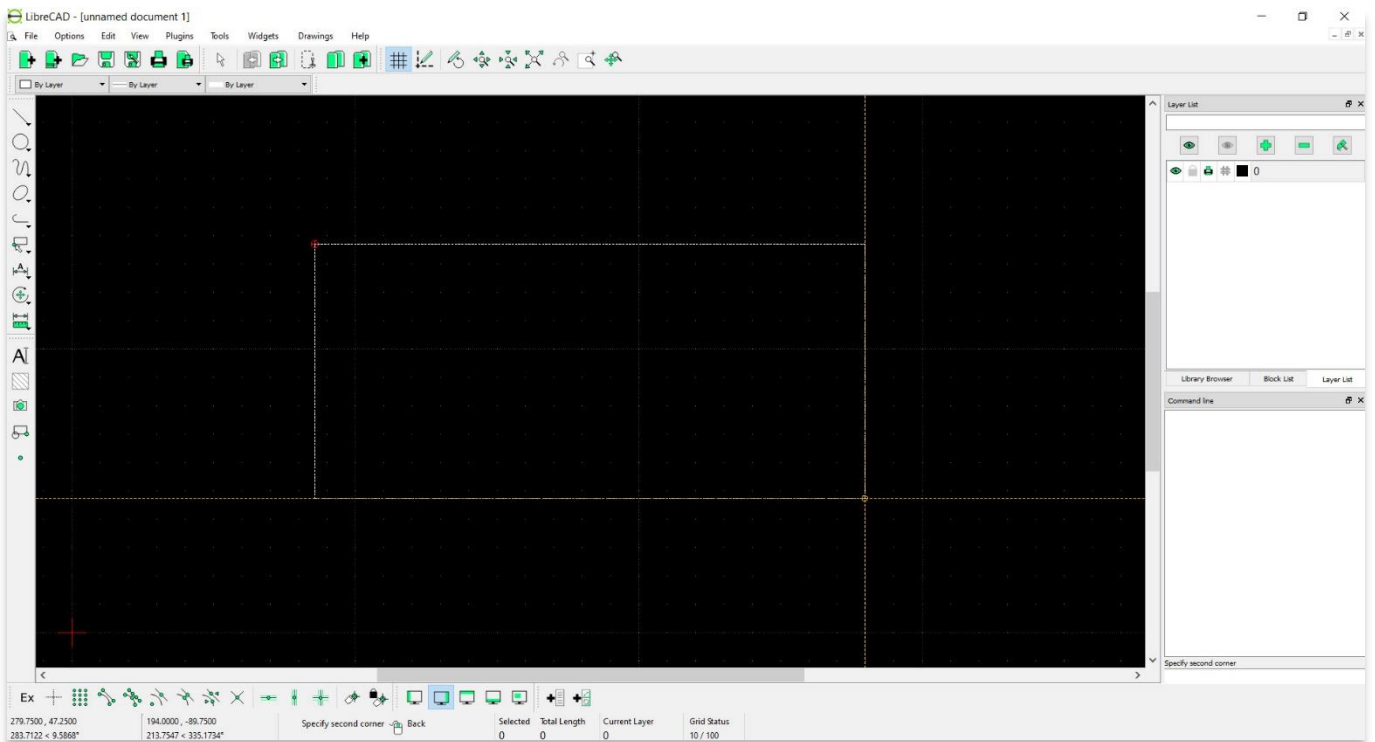
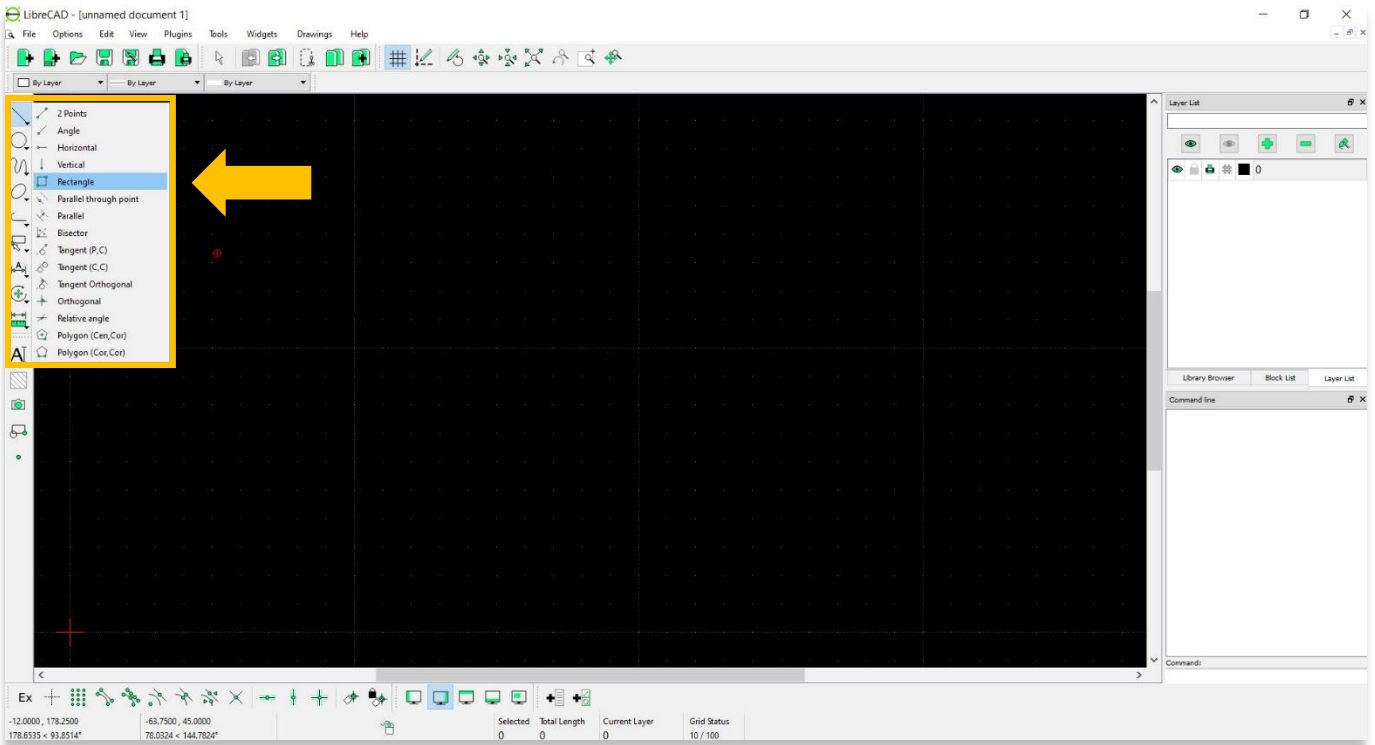
2. Drawing tools are located within the left toolbar of LibreCAD or under **Tools** in the top menu bar.



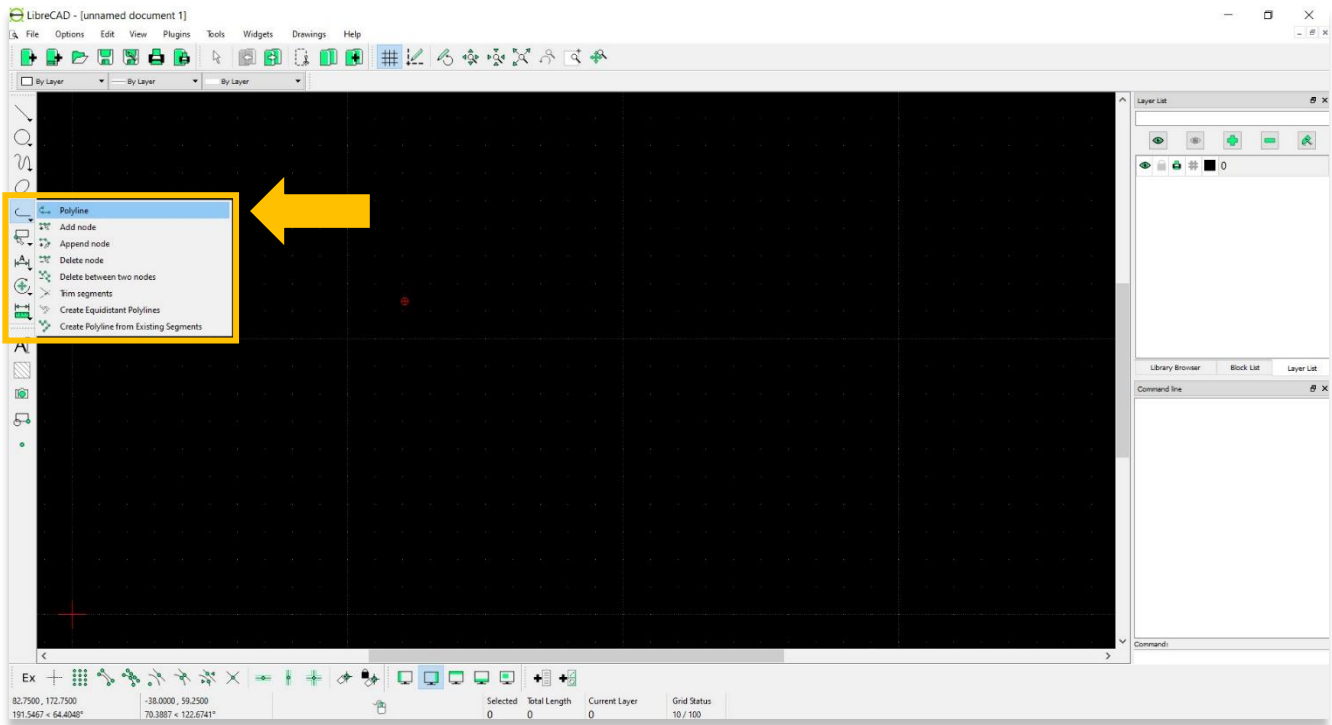
3. **Line Tool**—In ASOR Tutorial 03.05 (Understanding Layers), an example was provided for creating a triangle using the **2 Points Line** tool. After selecting the **2 Points** from the left toolbar, click on the Main Drawing Area to begin the drawing. This tool will connect two points with a line. Right click on your mouse to complete the drawing.



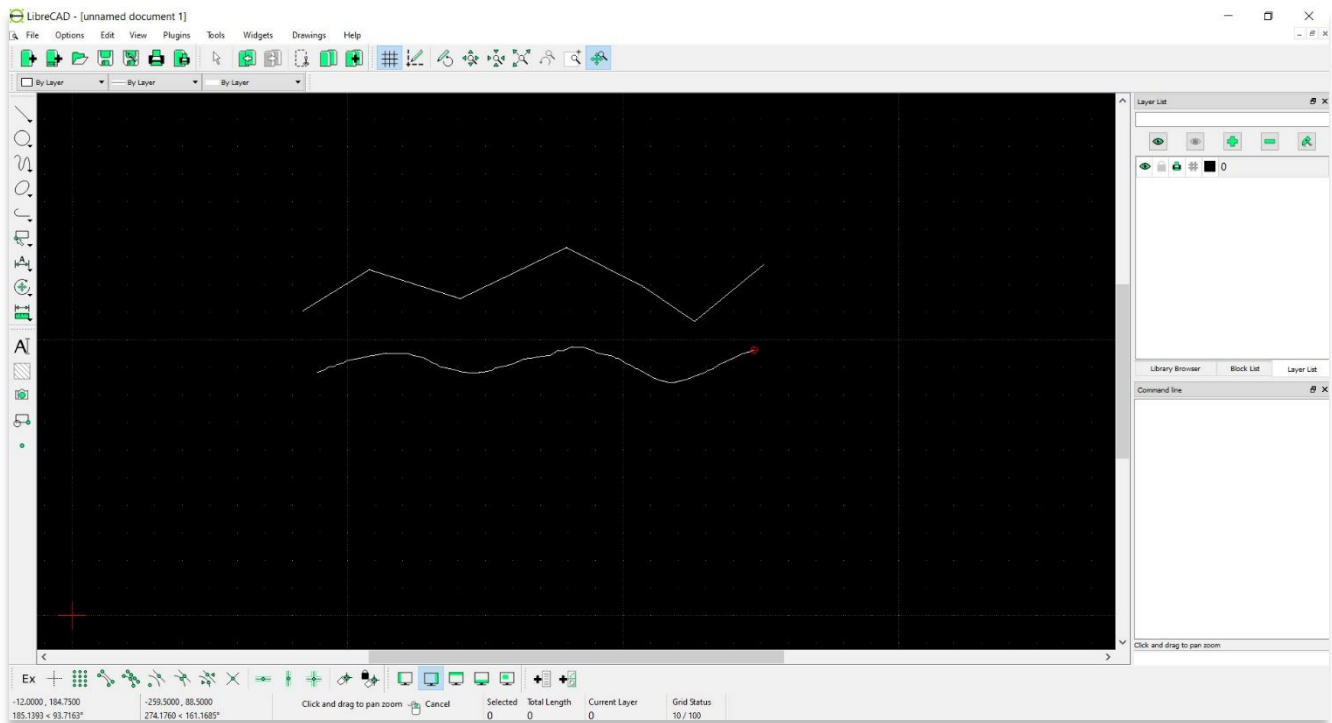
4. You can experiment with the other line tools by selecting them from the left toolbar and using them in the Main Drawing Area. For the purposes of this tutorial, the **Rectangle** drawing tool is another useful one to become familiar with.



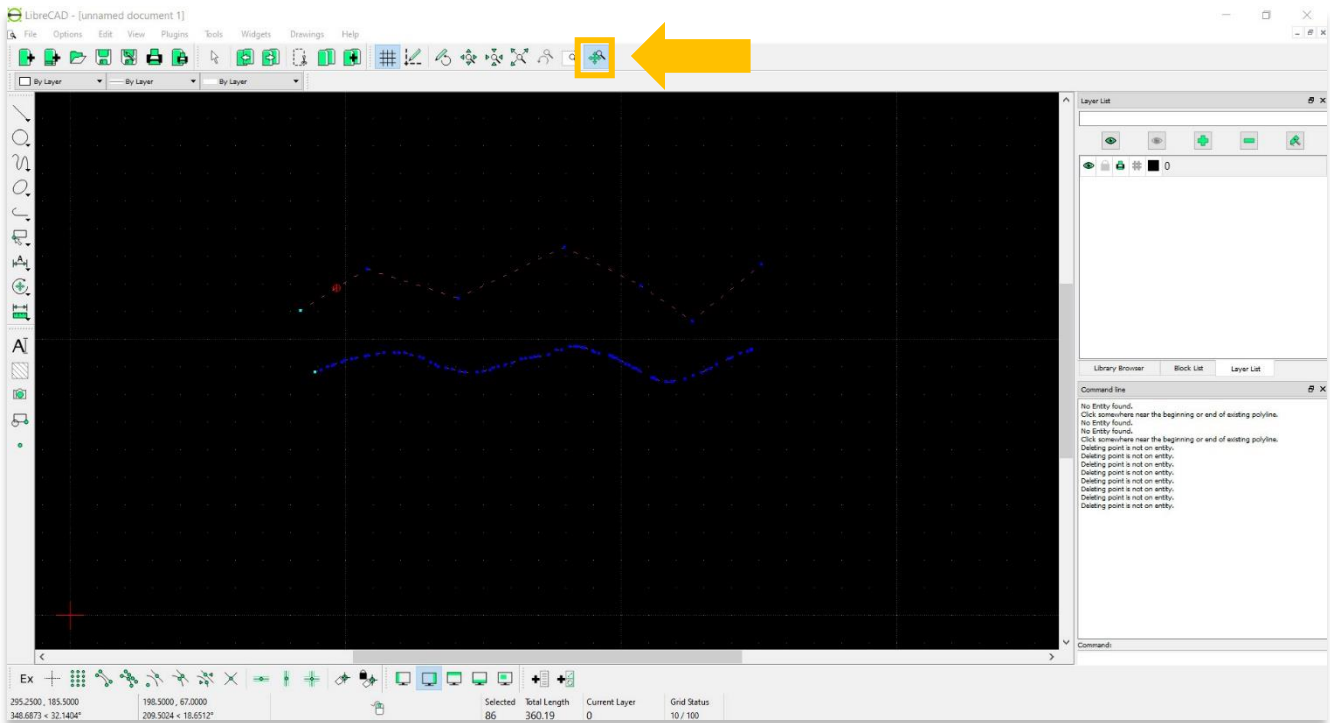
5. The most common tool you are likely to use in cultural heritage documentation is the **Polyline** drawing tool. This tool produces a curved line consisting of several line segments joined end to end.



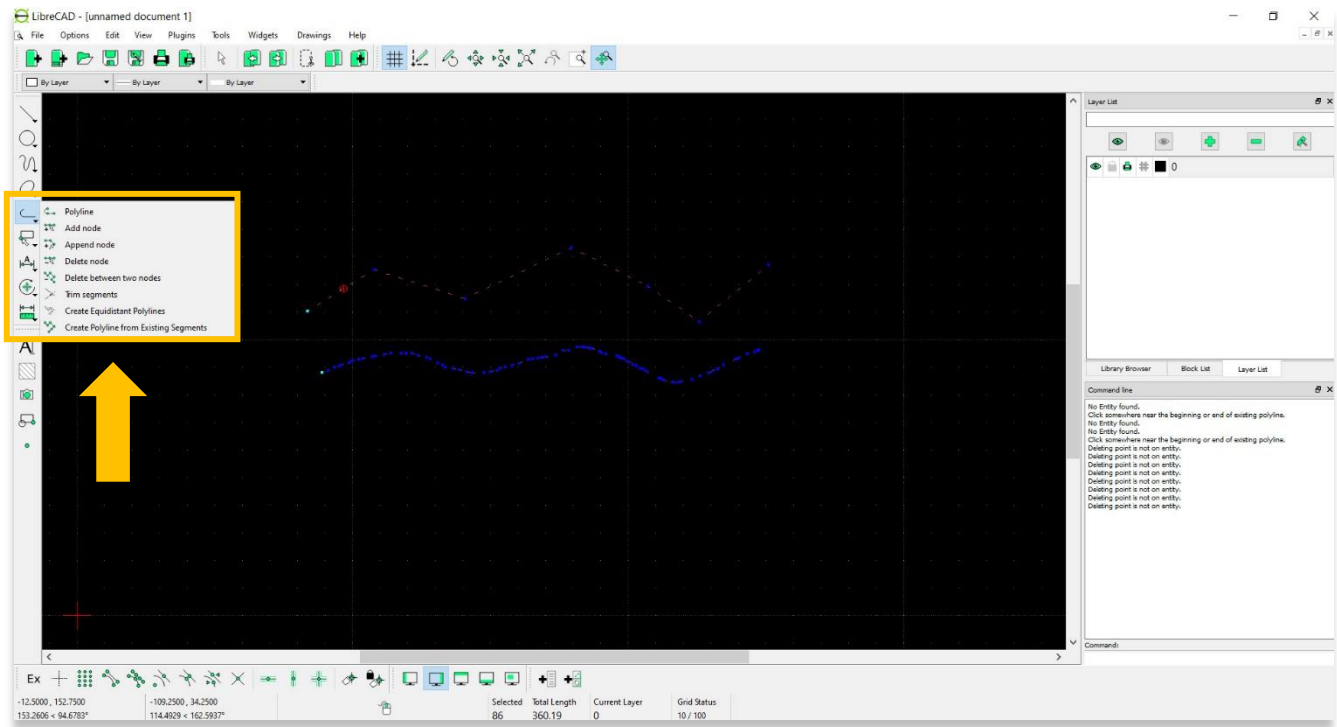
6. In the screenshot below, you can see that the top line has fewer points (or nodes) connecting each line segment compared to the line below it. Fewer points and line segments will give the appearance of a less smooth curve.



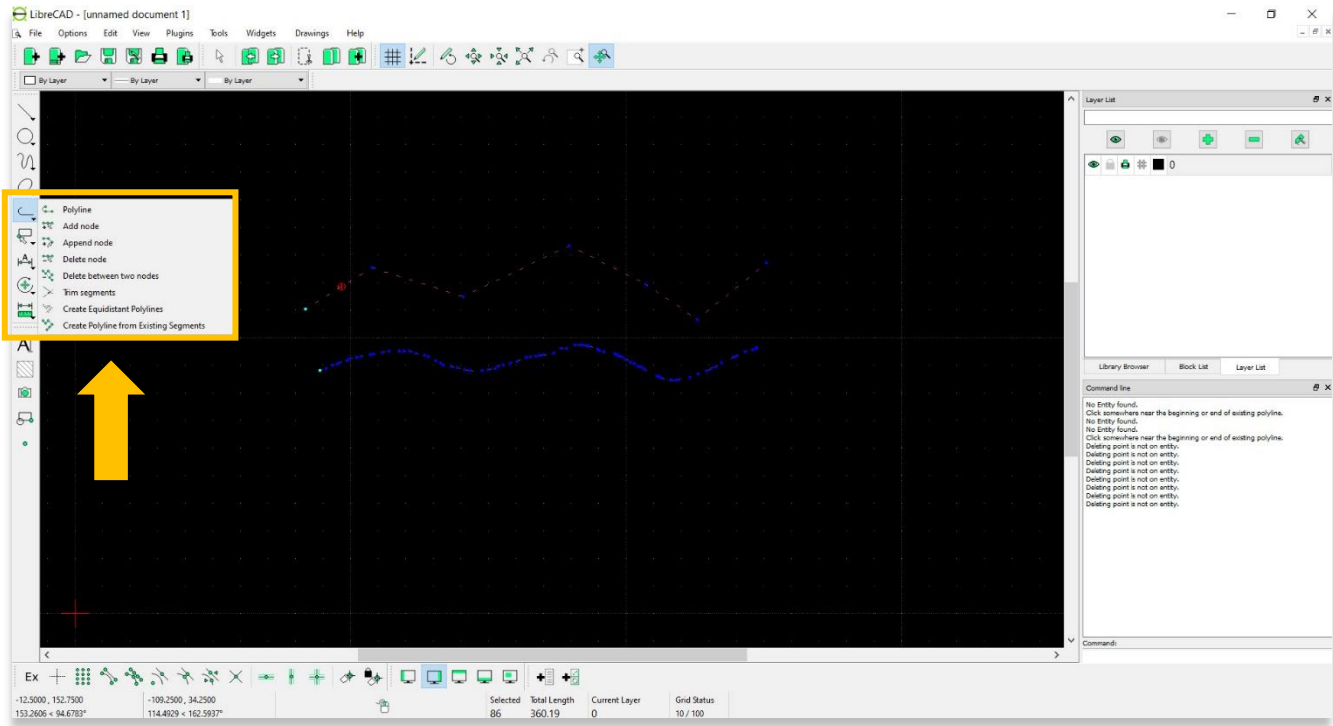
7. Users can edit or delete points and line segments of drawing elements as well. The first step is to select the drawing element you wish to edit. Click the **Selection Pointer**, then click on the element you wish to edit. For a polyline, you will see all of the nodes and line segments appear.



8. Choose from the **Polyline** options in the left toolbar for the type of edit you wish to make.

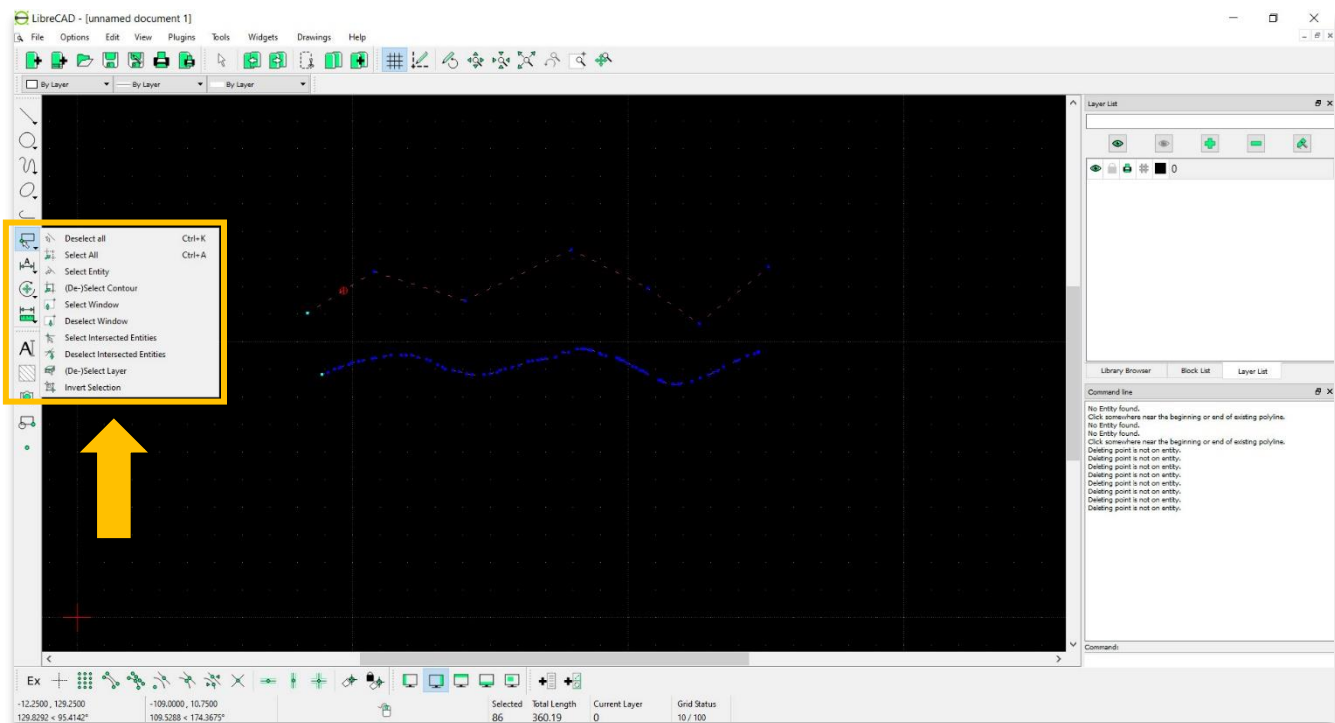


9. Here are some of the most common edits you might make to your polyline drawing:
- Add node:** Add node (point) to existing polyline.
  - Append node:** Add one or more (line) segments to an existing polyline by selecting polyline and adding new node endpoint.
  - Delete node:** Delete selected node of an existing polyline.
  - Delete between two nodes:** Delete one or more nodes (line segment) between selected nodes of an existing polyline.

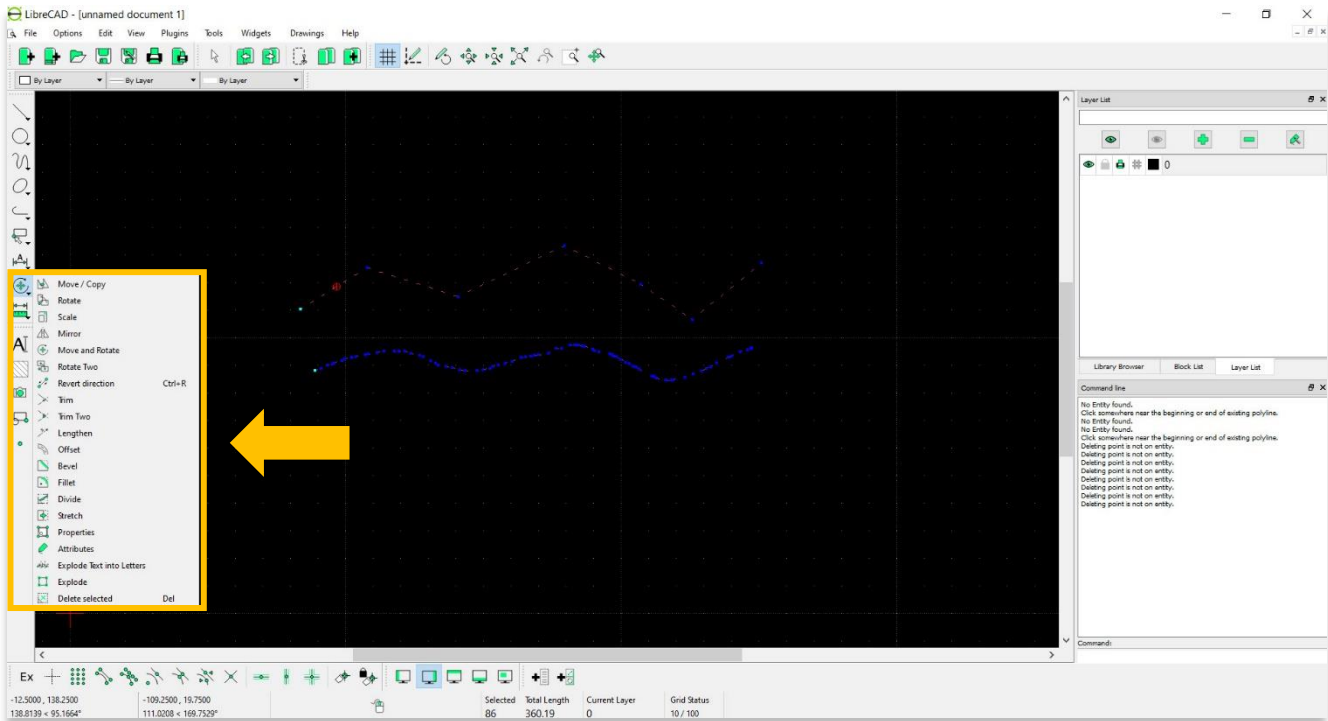




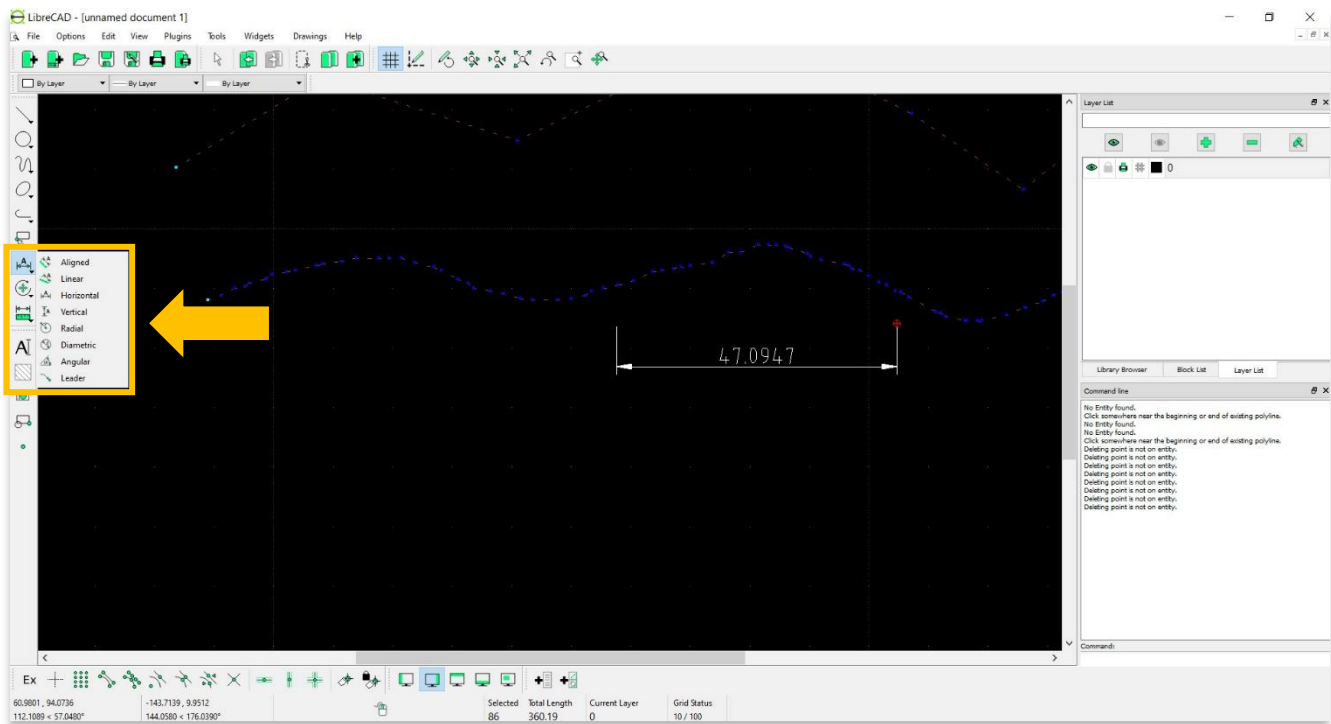
10. **Selector tools**—In addition to the **Selection Point** tool located in the top menu bar, users can select or deselect one or more elements of a drawing from the left toolbar.
- Deselect all:** Deselect all entities on visible layers ([Ctrl]-[K] or default [Esc] action).
  - Select all:** Select all entities on visible layers ([Ctrl]-[A]).
  - Select Entity:** Select, or deselect, one or more entities (default cursor action).
  - (De-)Select Contour:** Select or deselected entities connected by shared points.
  - Select Window:** Select one or more entities enclosed by selection window (L to R), or crossed by selection window (R to L) (default cursor “drag” action).
  - Deselect Window:** Deselect one or more entities enclosed by selection window (L to R), or crossed by selection window (R to L).
  - Select Intersected Entities:** Select one or more entities crossed by selection line.
  - Deselect Intersected Entities:** Deselect one or more entities crossed by selection line.
  - (De-)Select Layer:** Select or deselected all entities on the layer of the selected entity.
  - Invert Selection:** Select all un-selected entities will deselecting all selected entities.



11. **Modify tools**—Modify tools allow users to change the positioning of drawing elements. Some of the most common **Modify** tools are:
- Order:** Order entities within a layer. Selected entities can be moved to top, bottom, raised (moved forward) over another entity or lowered (moved backwards) behind an entity.
  - Move / Copy:** Move a selected entity by defining a reference point and a relative target point. Optionally keep the original entity (Copy), create multiple copies and / or alter attributes and layer.
  - Rotate:** Rotate a selected entity around a rotation point, moving the entity from a reference point to a target point. Optionally keep the original entity, create multiple copies and / or alter attributes and layer.
  - Scale:** Increase or decrease the size of a selected entity from a reference point by a defined factor for both axis. Optionally keep the original entity, create multiple copies and / or alter attributes and layer.



12. **Dimension tools**—Dimension tools are very useful for labeling the measurements of drawing elements in preparation for printing final products. Before creating a dimension graphic, it is important to have the drawing's scale set accurately. ASOR Tutorials 03.07 (Assigning Scale and Adjusting Paper Size) and 03.10 (Title Blocking and Printing) provide detailed steps for setting the scale and printing a finalized drawing.
- Aligned:** Apply dimension lines and text aligned to an existing entity by selecting start and end points on a line segment and placement point for the text.
  - Linear:** Apply dimension lines and text at an defined angle to an entity by selecting start and end points on a line segment and placement point for the text.
  - Horizontal:** Apply dimension lines and text aligned to an entity by selecting start and end points on a line segment and placement point for the text.
  - Vertical:** Apply dimension lines and text aligned to an entity by selecting start and end points on a line segment and placement point for the text.



For more detailed information on each drawing tool available in LibreCAD, please visit the Drawing Tools Documentation Page: <https://librecad.readthedocs.io/en/latest/ref/tools.html>



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