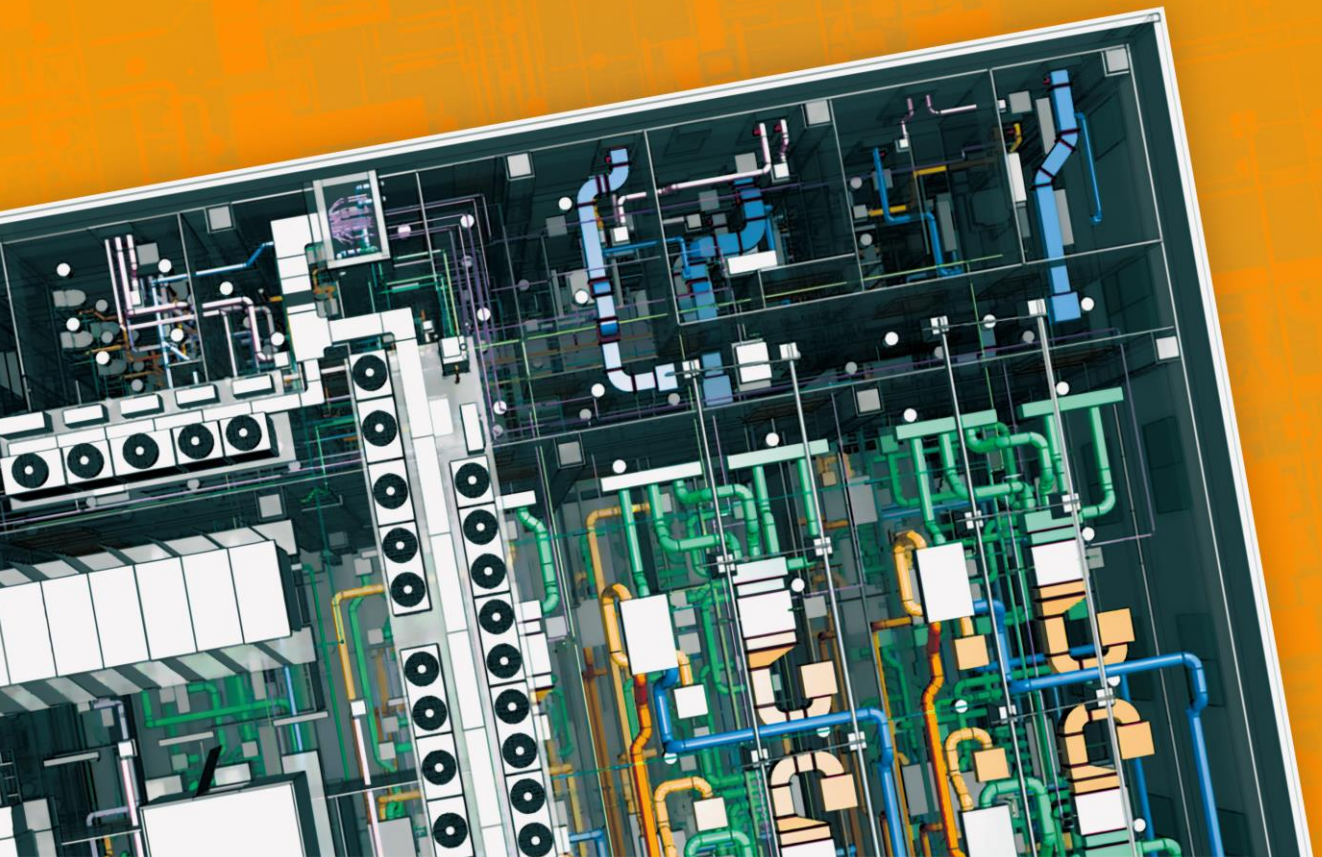


FUJITSU Construction Industry Solution

Building Facilities CAD CADEWA Smart V2.0 English Edition

Full 3D CAD with “smartness” to solve problems in the building industry



 CADEWA Smart

shaping tomorrow with you

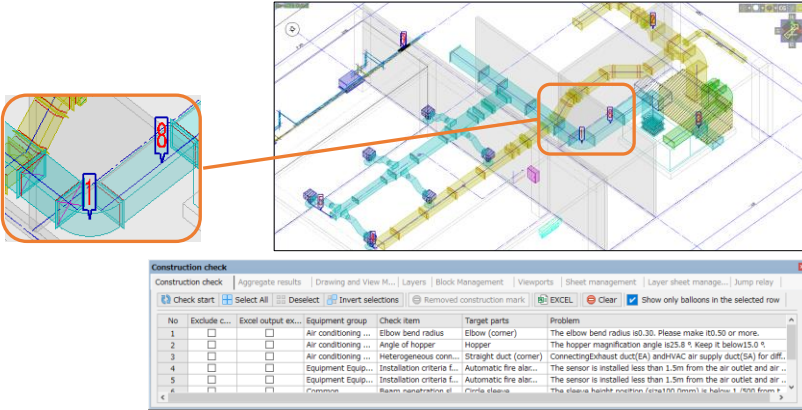
社会とお客様の豊かな未来のために

Smart, Fast, Easy!

Smart to find risks

Construction check

It checks if the construction way is preferable*.
It enables you to draw high quality drawing.



■ Introduction of Construction check example

- Duct aspect ratio
- Duct elbow curvature
- Hopper angle
- Different uses
- Different types of pipes
- Torii piping
- Piping gradient
- Beam penetration sleep
- Number of speakers installed
- Piping penetration of electrical room / EPS
- Sprinkler diffusion radius
- Installation of indoor and outdoor fire hydrants
- Mounting position of sprinkler head
- FD placement of fire protection compartment penetration duct
- Walking distance

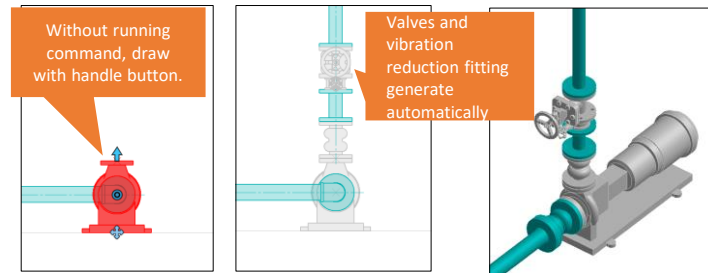
62
items
total

(fire extinguisher installation, smoke exhaust port, detector, transmitter, Emergency alarm equipment, evacuation exit guide lights, passage guide lights)

*based on Japanese standard

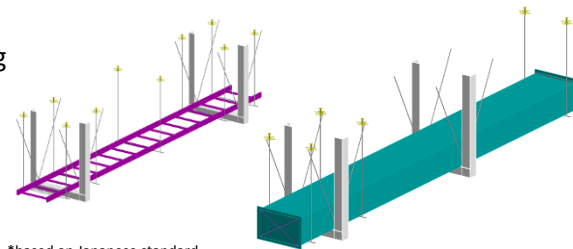
Automatic Generation of required parts

It can generate required parts for pumping.
It helps you draw fast and also
prevents from forgetting to draw required parts.



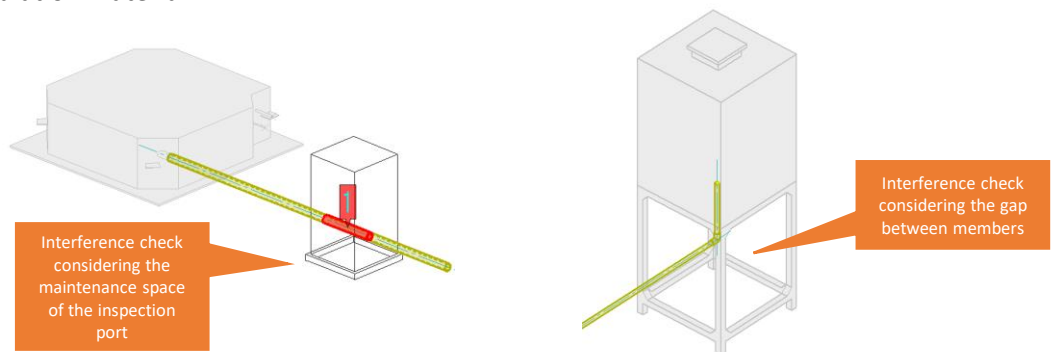
Automatic Generation of Anti vibration steel

At the same time as the insert drawing, you can draw the hanging parts that meets the earthquake resistance standards*.



High-precision interference check

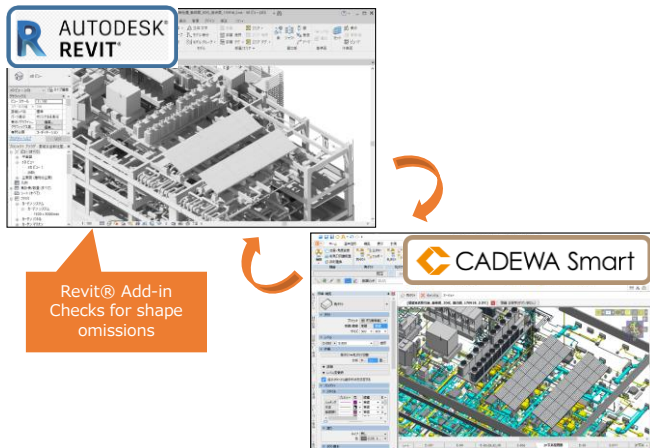
High-precision interference check judging by the open/close area and open space of the objects. Also, alerts nearby objects and piping regarding of heat insulation material.



Fast to save your time

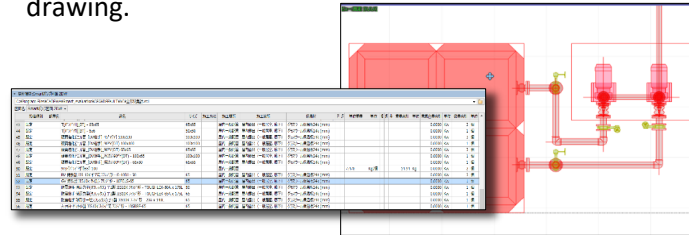
Compatible with Revit®

Reads / outputs Autodesk® Revit® * native files (.rvt) directly without using intermediate data. Revit® and Smart allow you to check for mutual interference for drawing and integrated adjustment. In addition, a check function (Revit® add-in) is provided that allows you to check for missing shapes that occur during data compatibility on an object-by-object basis. Therefore, it contributes to shortening the time by highly accurate integrated adjustment.



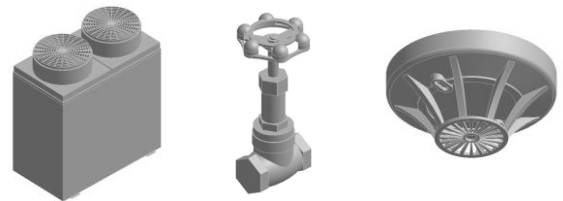
Real-time material counting

The number of parts can be grasped in real time from the drawn and edited drawings. Not only the number but also weight and capacity can be aggregated. The object selected in the list will be highlighted in the drawing.



High-speed processing of Large capacity data

Despite the high-precision depiction of objects, you can handle it smoothly.



Easy for everyone

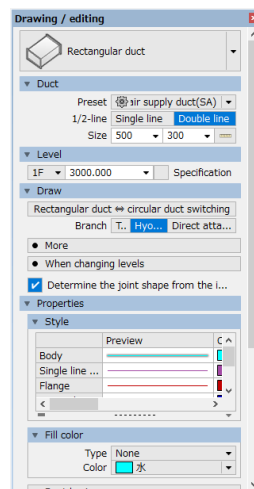
Properties

Information is aggregated in the property.

Information such as material, style, level, etc.

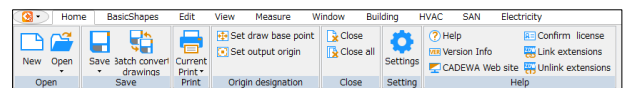
- Materials for pipes and fittings
- Types of valves and dampers
- Change the pipe size from the pipe flow rate
- Duct size change from duct air volume and more.

can be changed directly. Immediately reflect on objects on the drawing.



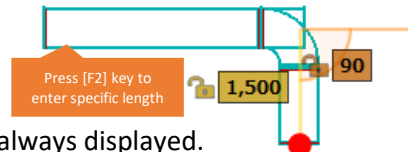
Ribbon UI

By integrating commands into Ribbon UI, it allows you to select command more intuitively than previous series.



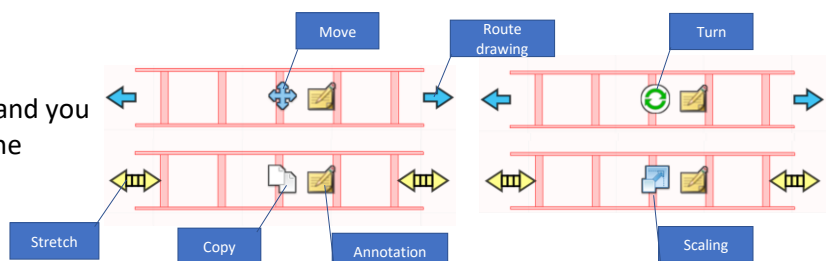
Snap function

When drawing a route, guides such as length and angle are always displayed. You can also set specific length and angle by entering numbers.



Handle operation

You can draw and edit directly from handle buttons. There are many types of handles, and you can switch the type of handle by pressing the [Space] key.



CADEWA Smart screen

1 Quick Access Toolbar

Always displays frequently used function icons

2 Selection Panel

You can filter your selection so that you can select specific object quickly.

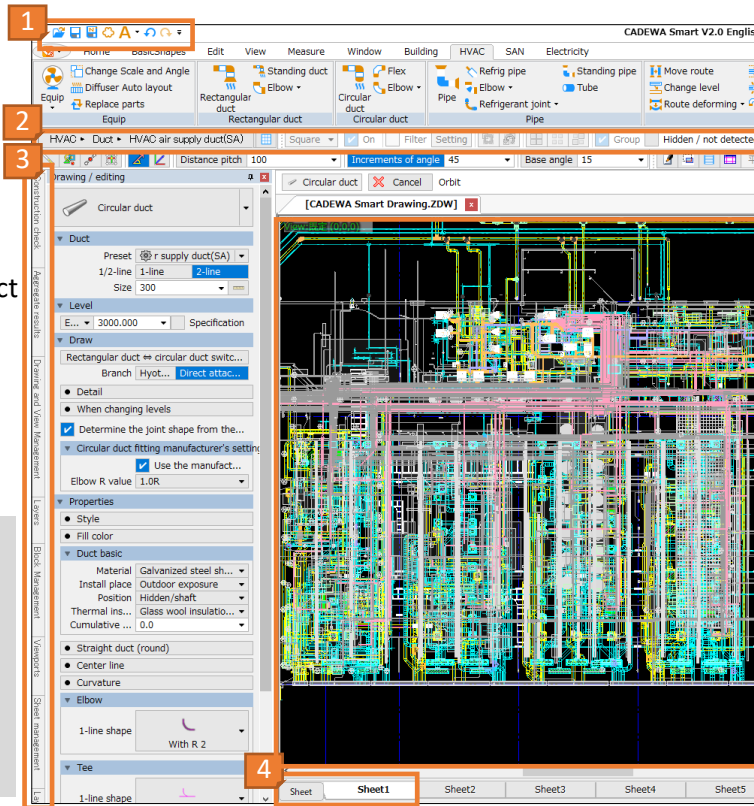
Filtering example: function, color, layer etc.

3 Various Panels

You can layout these panels as you like.

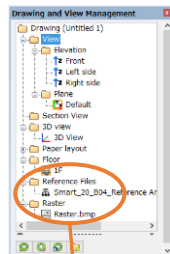
There are various functions to assist you.

- Construction check: Check if any problem has occurred.
- Aggregation results: Display aggregation result of specified area.
- Drawing and view management: Make floor view, section view, paper layout, reference other file of drawing, raster and etc.
- Layer: manage layer (checking and changing layers)
- Block management : Create / edit block
- Viewport management: Create / edit viewport
- Sheet management: Create / edit sheets
- Jump relay: Select the items to copy when "jump"



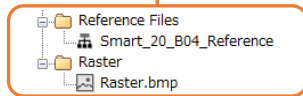
Drawing and view management panel

It can manage definition of view, floor info, paper layout, reference drawing, raster(pdf/image data) for one drawing here.



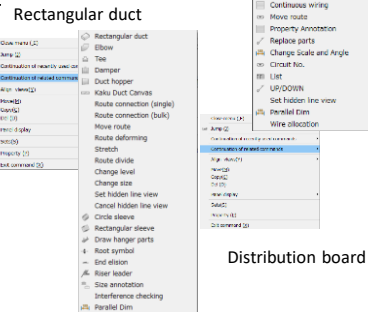
Reference drawing and raster

Reference drawing and raster can be placed easily in the view.



Context menu (right click)

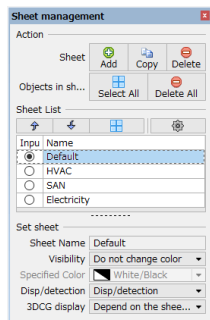
by right clicking on drawn objects, lately used commands/ related command will be shown. User can select commands intuitively.



Distribution board

Paper layout

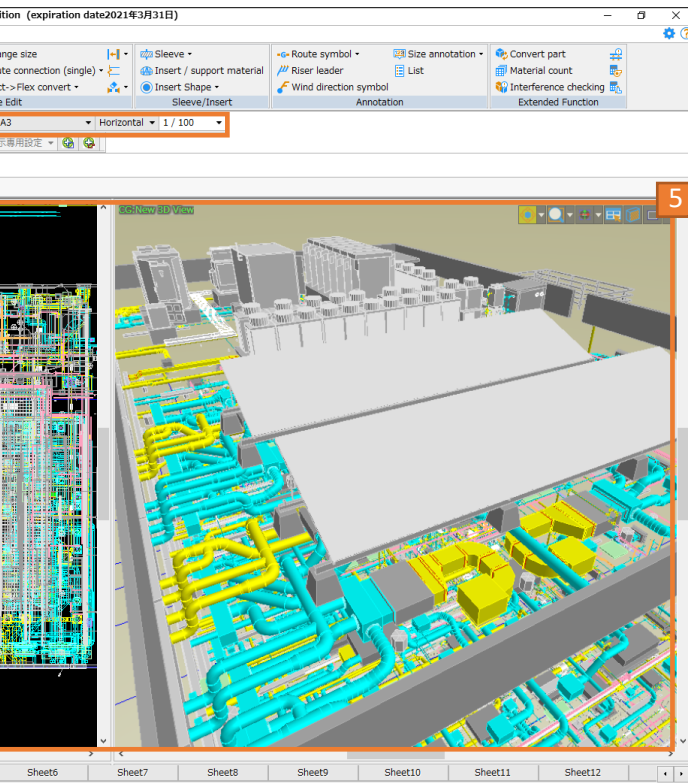
User can cut out multiple layouts for printing from drawing. By cutting out area as viewport, if user changes the view, it reflects the change to paper layout at the same time.



Free layout (multi display)

Views and panels can pop-up. Using dual display can make drawing area wider.

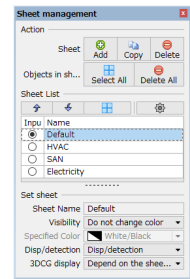




4

Sheet

You can draw in different sheets according to use and division. You can set display/detection setting and 3D display setting for each sheet. You can also assign the display / non-display status for each layer to the sheet.

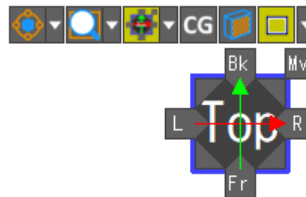


5

View

In addition to ground plan, elevation surface and side view, you can set as many views as they like and can draw or edit in any view.

By pressing "CG" button, view can be shifted between normal view and 3DCG view.



-you can set operation way of display and view direction with this tool bar.

-with this box you can change views easily.

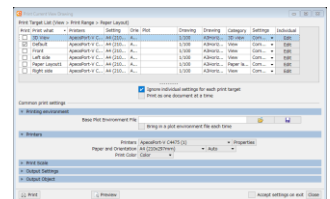
Jump

Right click on the placed objects/elements. Then select "Jump". It automatically activates the commands same as the objects/elements setting the same conditions. It enables faster drawing.

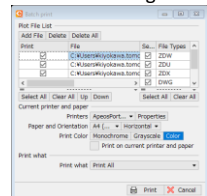


Printing / Batch print

Multiple views including ground plan, section, CG view paper layout can be printed. User can set line type / line width depending on colors. The setting can be saved as printing setting. Multiple files can be printed out in one go with selected paper size.



Printing

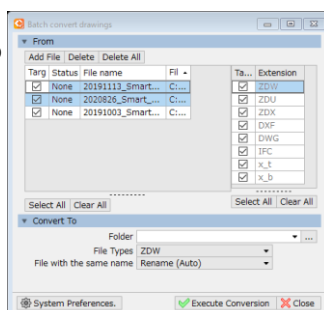


Batch print

Batch convert drawings

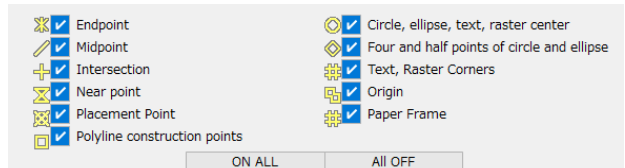
It can convert multiple data to different format of CAD data at once.

It helps to speed up exchanging files with related companies.



Auto snap

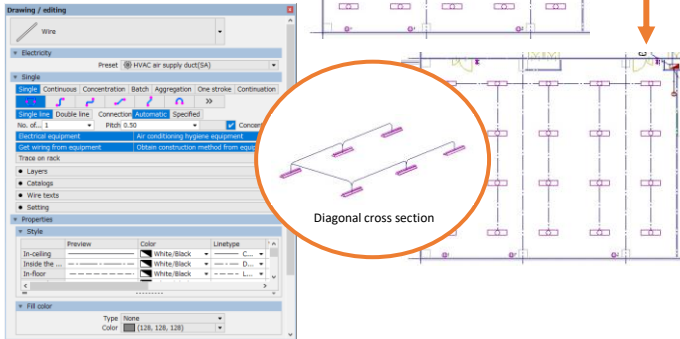
Detecting elements' origin point, midpoint, end point and intersection and showing it with marks can help user to draw quickly.



Electrical Equipment

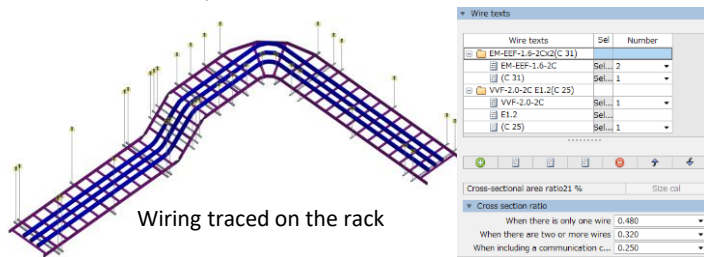
Wiring drawing

We offer a variety of wiring drawings such as single drawing, batch wiring, and one-stroke writing mode.



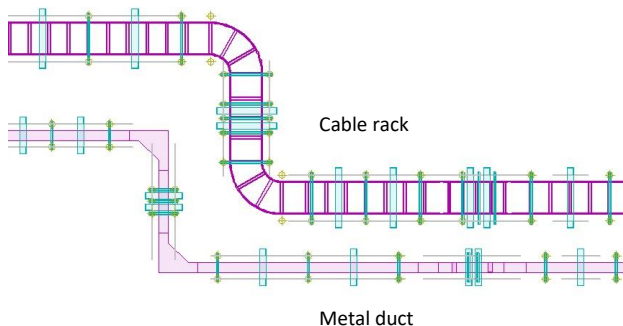
- Pattern wiring with R, automatic hiding line, elision symbol drawing.
- Drawing appropriate wiring type construction methods judging from the objects.
- Level of wiring can be set for each construction methods in advance.

In addition, a function to set multiple wiring information for one wiring and a trace function to easily draw wiring on a cable rack are provided.



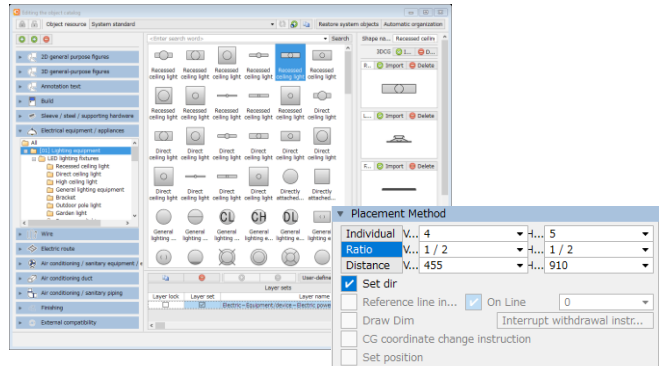
Double line route drawing

You can draw various electric double line routes such as cable racks, raceways, bus ducts, metal ducts, writing ducts, and metal moldings. It can also be split into lengths specified by user. Along with the insert, hanging materials that meets seismic standard can also be drawn at once.

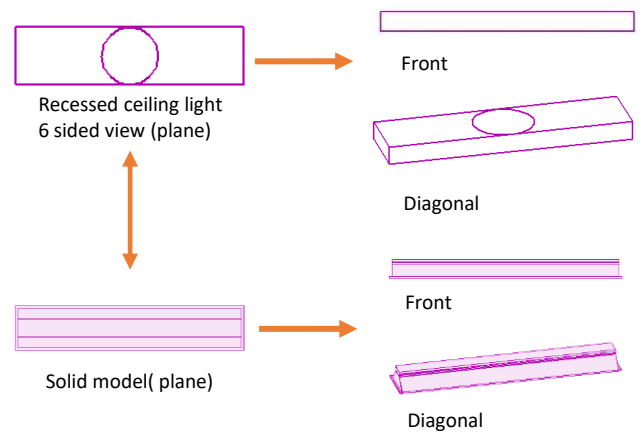


Equipment

Japan Electrical Construction Association "JECA Symbol" are prepared in the object catalog as standard installation. It also supports batch placement of multiple equipment. You can also draw dimensions at the same time as arranging the equipment.



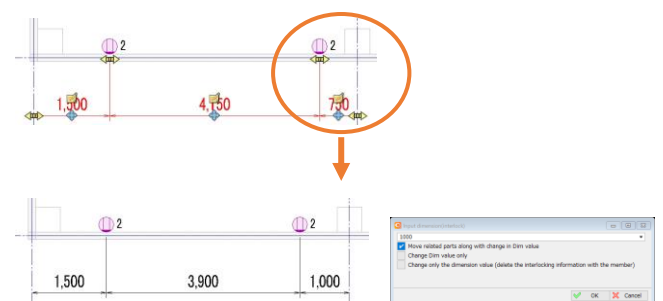
Each symbol has 6 sided view and full-3D solid models.



Editing

Various editing can be done: Equipment magnification, angle. Material replacement, move route, level change, number of cable core, elision symbol, end cover, hidden line and etc.

Dimension can be drawn by batch. If the drawn dimension is changed, the object also moves to the right position according to the dimension.



Converts electrical drawings drawn with general-purpose CAD into electrical members without redrawing.



electrical equipment table

wiring note table

Aggregate results

Counting method: **Routen aggregated results** real time

Target to estimate: Selection Display Drawing Multiple Drawings Start counting

Aggregation result:

C:\Program Files\CADWAT\Smart_V2_Eng\KCFG\DEFAULT\KACK\Total of all parts.sc1

Drawing name:

Drawing General capacity Project ID Facility TP Room name Product name Size Duct list

Other Settings

Electricity

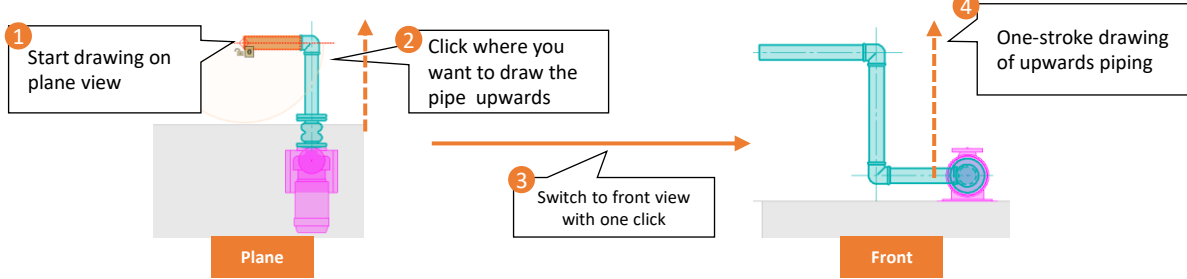
- How to pick up the wiring length
- Output name of wiring member
- Number of digits after the decimal point of the quantity
- HVA/SAN
- Steel part
- Rock wool material
- Common

CSV file name: Output username: kiyokawa.tomomi

Save the total result as a separate file

Piping / duct drawing

For piping and duct routing, you can set size level presets (layers, colors, line widths, etc.) in the properties, and draw complicated up-down routes with a single stroke while switching between plane and front view. If you change the size during drawing, joints such as hoppers will be automatically generated and drawn.

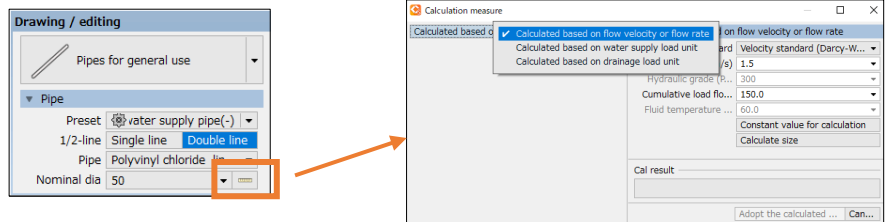


It is also possible to determine the size of pipes and ducts from various calculation results and draw routes.

❖ Piping

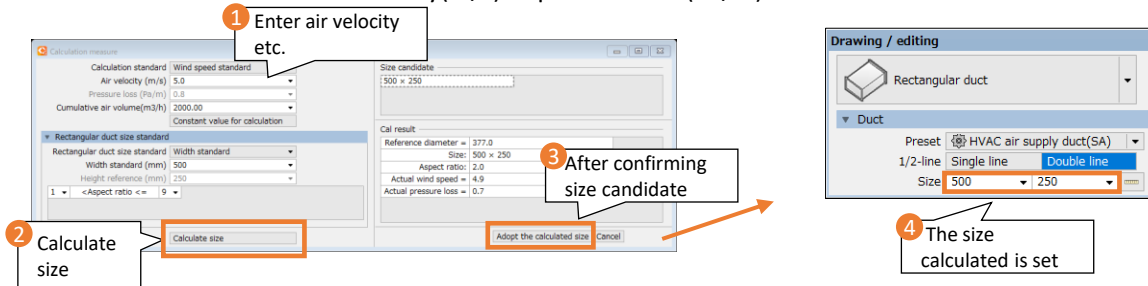
Size calculation based on

- flow velocity or flow rate
- water supply load unit
- drainage load unit
- cumulative load flow volume



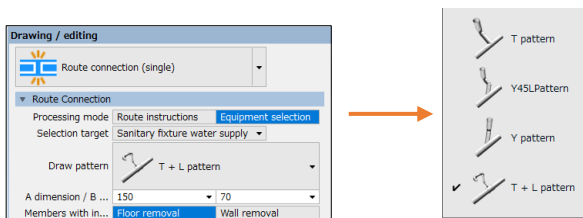
❖ Duct

Size calculation based on Air velocity(m/s) or pressure loss(Pa/m)

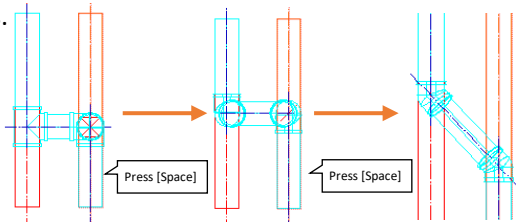


Route connection

Various connection patterns for piping and ducts are available. You can easily draw by switching the pattern candidates by pressing the [Space] key.



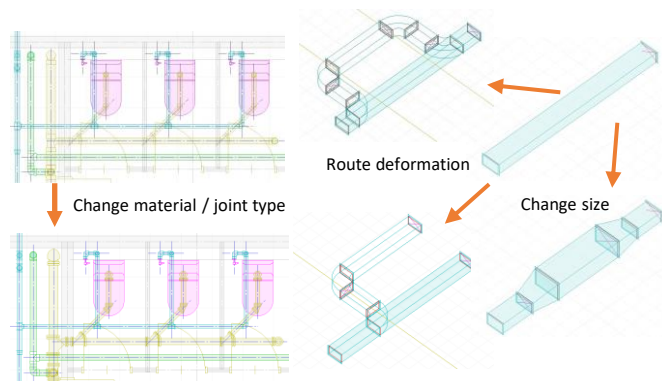
You can easily connect pipes by pressing the [Space] key while switching between multiple connection pattern candidates.



Route editing

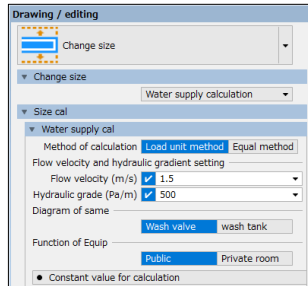
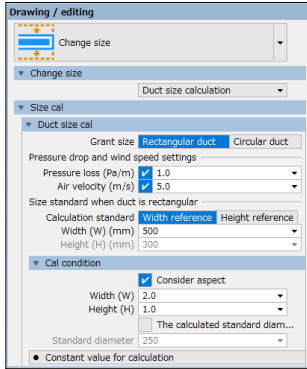
There are abundant editing functions for already drawn routes.

- Move route
- Stretch route
- Change joints
- Change level
- Material change
- Route deformation
- Change size
- Change function



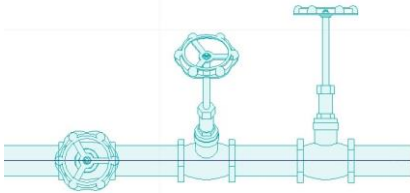
Change the size of piping and ducts

You can obtain load units and air volumes from multiple appliances to calculate the appropriate size and to resize pipes and ducts.



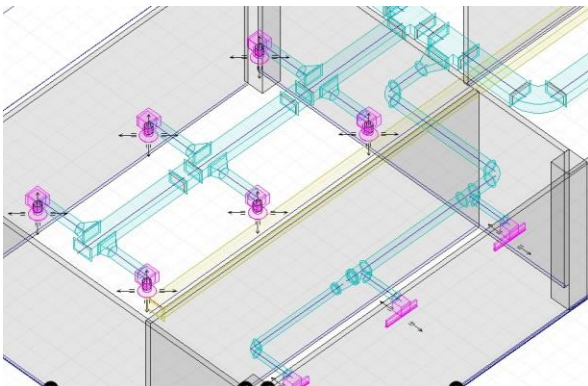
Joint placement / change joint direction

If the joint is placed independently as a member, route drawing is possible after determining the joint position. In addition, you can easily change the flow direction of valves and strainers, and the direction of the handle.



Automatic placement of air control port

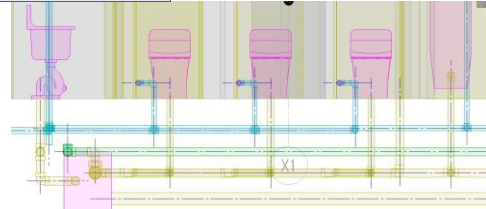
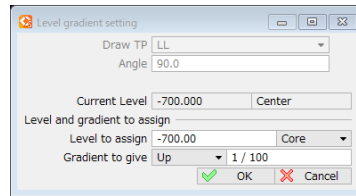
Use the room information setting command to acquire the room name, area, and ceiling height, calculate the simple air volume, and place the air control port (anemo line).



Gradient

Gradient can be entered for the entire route.

You can easily move the route even after adding the gradient.



List

It can detect the equipment drawn in the drawing and automatically draw the sanitary equipment list and air control port list.

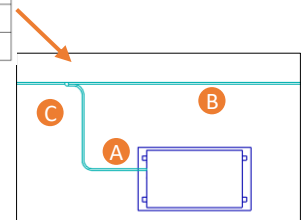
toilet		
Equipment name		Count
Washlet integrated toilet tankless CES9788CR		2
Automatic cleaning urinal wall-mounted UFS900JS		3
Wall-mounted washbasin LSF135CC		2
Cleaning sink SK322		1
Clean Dry TYC320W		1

Office					
Function	Equipment name	Air volume	BOX size	Inside the BOX	Count
HVAC air supply duct(SA) Air outlet C2 # 20		500 CMH	BOX 400W x 400H x 300L	Inside the BOX GW sheet 24K-25	6
HVAC air supply duct(SA) Air outlet KLS-1 1000W x 46H		500 CMH	BOX 1200W x 200H x 300L	Inside the BOX GW sheet 24K-25	3

Refrigerant size table

It is possible to draw a refrigerant size table and add the size information of the table to the drawn refrigerant piping.

Size symbol	Liquid size	Inhaled gas
A	6.35	12.70
B	9.52	15.88
C	12.70	25.40



Material count

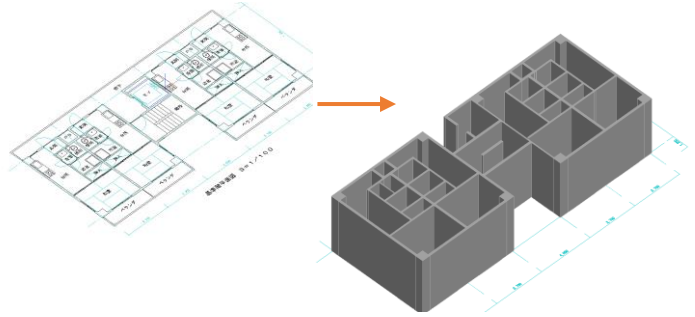
It aggregates the number of appliances, the material and length of piping, the area of each duct thickness, and etc. It aggregates by each heat insulating materials or construction place, and by the number of flexible pieces. You can also make a rationale list.

Architecture

3D building data creation from general-purpose architectural drawings

It is possible to efficiently convert a 2D architectural drawing read from data such as DXF into 3D by "Convert parts".

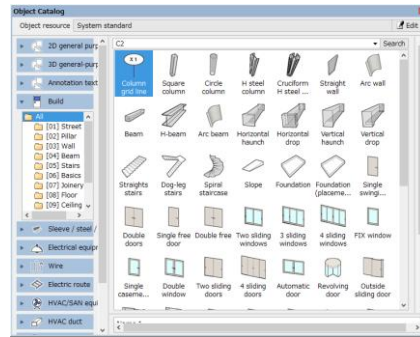
It is also possible to easily create 3D architectural data by tracing the architectural drawing as a sketch.



Architectural drawing / editing

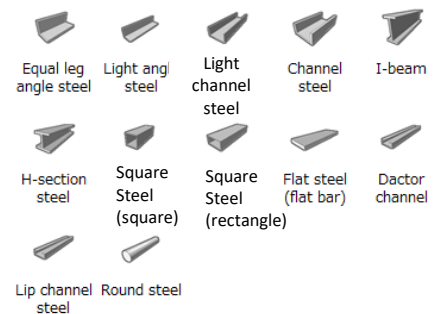
We also have a wide variety of materials necessary for drawing new architectural drawings with CADEWA.

- Drawing of Column grid line
- Batch drawing of columns
- Wall drawing and trimming
- Simultaneous drawing of framework notation
- Beam drawing
- (H beam, haunch, drop, etc.)
- Stairs
- Drawing of foundation, floor, ceiling, roof
- Drawing room / zone information
- Drawing of fittings
- (Double doors, sliding windows, etc.)



Support steels

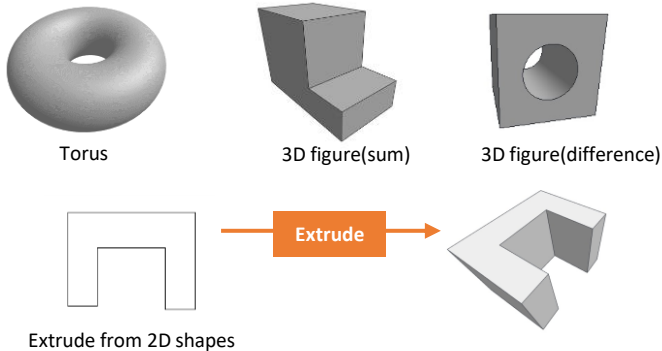
You can draw and edit support steel materials and combination steel materials.



3D

Support steels

You can easily create general-purpose 3D figures. "Extrude" to turn 2D elements into 3D figures. Various figures can be drawn by combining "3D shapes" (sum, difference, product). The created 3D figure can also be used when registering user parts (symbol registration).



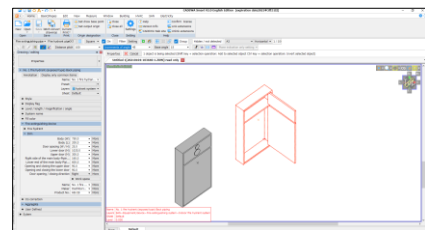
3D-PDF

You can output 3D data as 3D-PDF. Since it can be viewed on tablets such as Android devices and iOS devices, it is useful for meetings on-site or on the go.



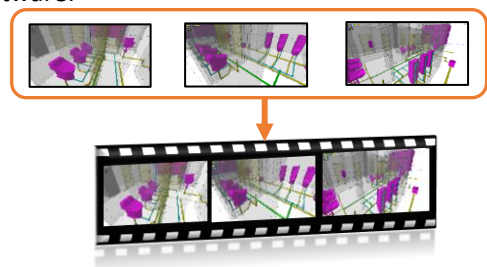
Opening and closing of inspection doors and doors

Doors can be opened and closed for inspection ports and fire hydrants. By looking at the open / closed state of the object on the drawing, you can check whether it can be handled and the maintenance space.



Scene panel / Save as movie

Register the viewpoint (scene) you want to see from the scene panel. It is possible to save the registration of multiple scenes in the WMV file format. Those who do not have this product can also play it with video playback software.



Data compatibility

Readable data		Exportable data	
CADEWA Smart	*.ZDW	CADEWA Smart	*.ZDW
CADEWA Real 2015-2017	*.ZDU	AutoCAD®	*.DWG (AutoCAD® R14-2021)
CADEWA Real 2013	*.ZDX	AutoCAD®'s DXF	*.DXF (AutoCAD® R14-2021)
AutoCAD®	*.DWG (AutoCAD® R14-2021)	IFC Equipment IFC data usage standard V1.3	*.IFC(2 × 3)
AutoCAD®'s DXF	*.DXF (AutoCAD® R14-2021)	Parasolid data	*.x_t, *.x_b
IFC	*.IFC(2 × 3)	PDF 3D-PDF	*.PDF
Parasolid data	*.x_t, *.x_b *xmt_txt *xmt_bin	Revit®	*.rvt, *.rfa (only Revit® 2020)
Revit®	*.rvt, *.rfa (Revit® 2017-2020)	STL	*.stl

Note

- *.ZDX can only be read for shapes. (No member conversion)
- Revit® compatible (input / output) is not compatible with the family. Compatible as a general-purpose 3D model.
- The consistency check tool works only with Revit® 2020 currently.

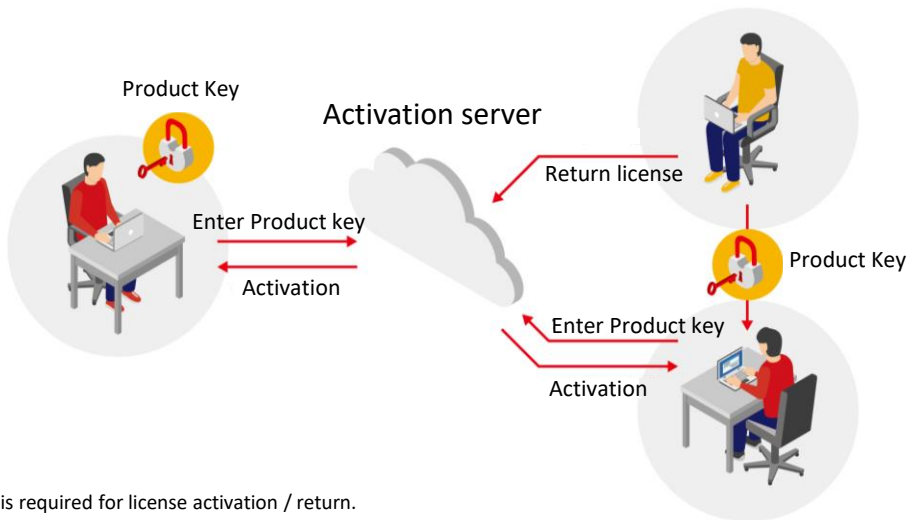
License

You can obtain a license by online authentication method using a product key. After obtaining the license, it can be operated online (up to 30 days after authentication).

When you do not use the license, you can "return" the license. If you do not use the license, you can return the license. Then, you can activate the license on another PC.

Activation image

After returning the license, the authentication image for another PC



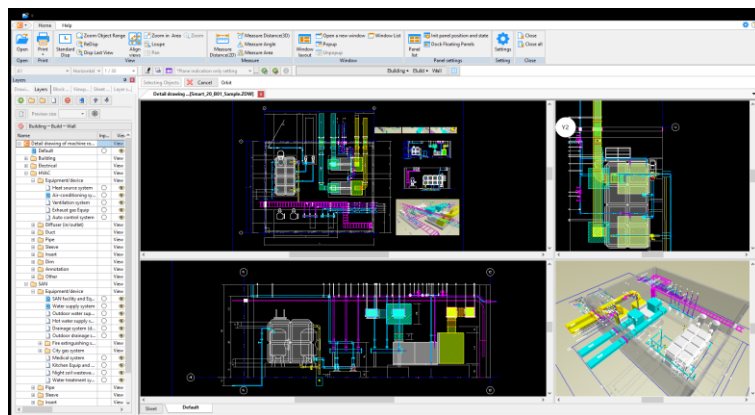
*Internet environment is required for license activation / return.

Operating environment

Recommended operating environment		
OS	Windows 10 64bit、Windows 8.1 64bit	
CPU	Core i7, Core i9~ (CPU Core4~/High frequency recommended)	
Memory	More than 16GB	
Free hard disk space	More than 10G(M.2 SSD(NVMe connection)is recommended for the system drive	
Display	Resolution	Full HD(1920×1080)
	Number of colors	Full color support
	Touch panel	Not necessary
Graphic	Supported versions of OpenGL	OpenGL 4.0~
	Compatible version of DirectX	DirectX 11~
	Performance	OpenGL dedicated compatible card recommended (example: Nvidia Quadro series)
Others	Mouse with wheel, keyboard, DVD-R drive, Internet connection environment (at the time of Web authentication)	

Viewer

You can download it for free. Anyone can view and print the drawings of CADEWA Smart.



View drawings

Supports 360-degree omnidirectional display

3D-CG display / cross section cut

Drawing printing / continuous printing

Distance measurement

Layer ON / OFF

Paper layout display

Fujitsu Shikoku Infortec Ltd.

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Developer

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