

ver 06/2020

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## 2.Start of work

If we have CAD application- on the manufacturer's website  
<http://www.cadprofi.com/main/pl/support/support/requirements>  
we can check for which CAD programs CADprofi is available:

Current versions of CADprofi have 100% functionality and compatibility with:

- AutoCAD 2004-2023
- AutoCAD Architecture 2004-2023
- AutoCAD Mechanical 2004-2023
- AutoCad Eletrical 2004-2023
- BricsCAD V12-V22 Professional / Platinum / Ultimate
- BricsCAD V16-V22 BIM / Mechanical
- GstarCAD 2010-2023 (Std/Pro)\*
- ZWCAD 2009-2013, ZWCAD Classic
- ZWCAD+ Professional\*\*
- ZWCAD 2017-2023 Professional\*\*

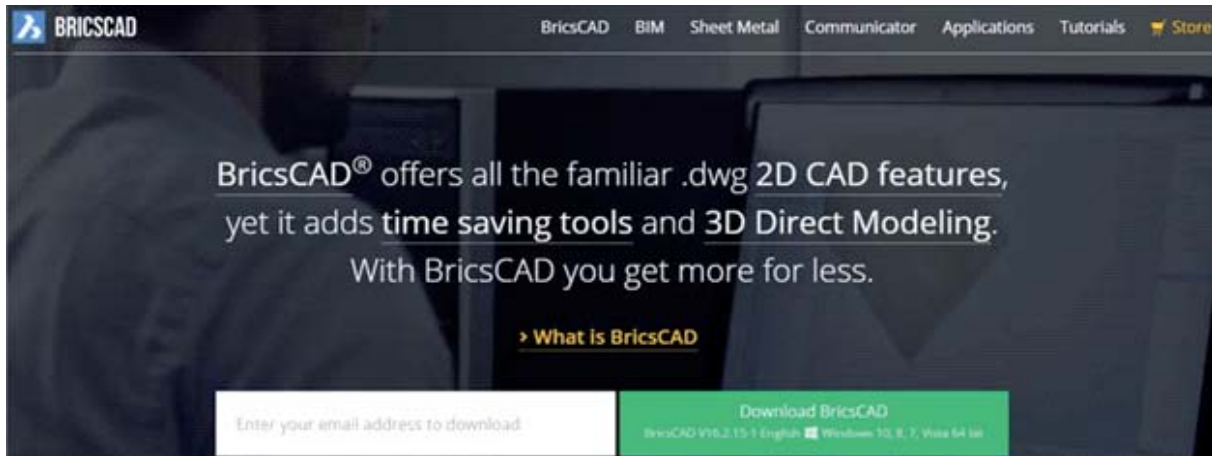
Additionally our programs work with:

progeCAD 2013- 2022  
4M CAD V16, V19, V21  
ActCAD 2020- 2022 (64bit)  
ATCADia 7.2 (32/64bit), 10 (B2/G4bit), 11 (S2/E4bit), 12/14 (G4bit)  
ARES Standard Edition 2019  
ARES Commander 2012- 2022  
AutoCAD LT 2004- 2019 (\*\*\*)  
AvICAD 2044- 2047, 2019, 2024- 2022  
BricsCAD V8- V21 Classic/Lite\*  
CADdirect 2022- 2023  
CADian 2012- 2017, 2020- 2022  
CADMATE 2015- 2016, 2018, 2020, 2022  
CADopia 19, 21-22  
CMS IntelliCAD 7.2, 84, 82x64, 8.3, 8.4, 9.0, 9.4, 9.2 (64bit), 10.1  
IBSCAD 2018- 2022  
IntelliCAD 5,6, 72 81  
IntoliiPlus 2013- 2014  
Intersoft InteliCAD 2009 (32bit), 5- 6 (22bit), 2019 (22/64bit), 2020- 2022 (64bit)\* NUVOCAD 2013\* SilicaCAD 2021- 2022\* TrueCAD 2022+ Other programs on request

Pomocne materiały – filmy <http://www.cadprofi.com/main/pl/support/video-tutorials/electrical>

## 3. BricsCAD Trial

On [https://www.bricsys.com/en\\_INTL/](https://www.bricsys.com/en_INTL/) You may download trial version of BricsCAD by entering the email address.



After installing the trial version it is working for 30 days.

## 4. CADprofi installation

First we have to download program from website: <http://www.cadprofi.com/main/en/> – “Download Now” – and install.

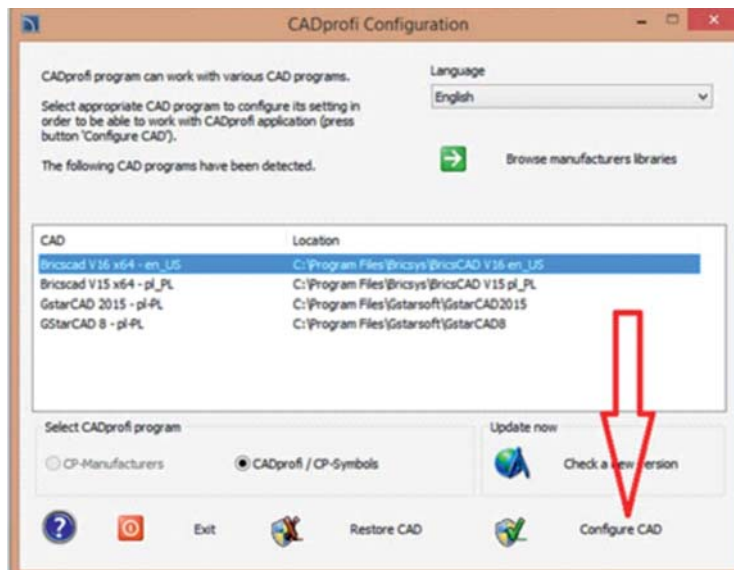


The best installation of CADprofi is on the system is drive c:\Cadprofi

The trial version is working for 30 days.

After installation, the program should be configured with CAD program.

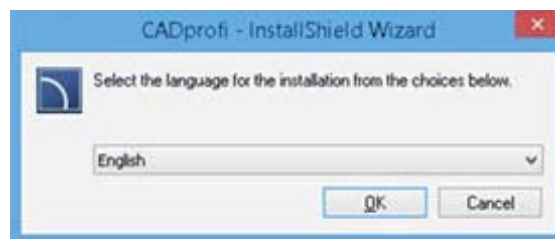




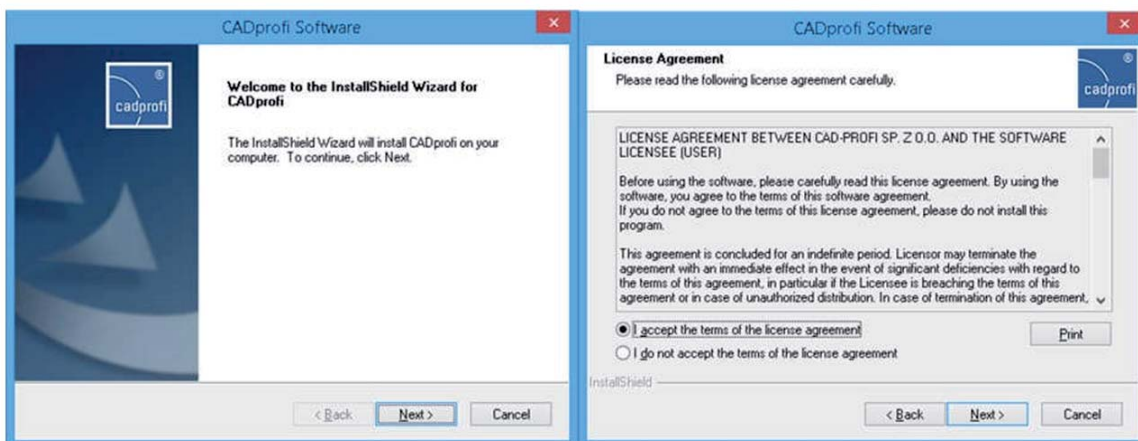
## 4.1 Installing BKT library – automatic way:

Start of the installation:

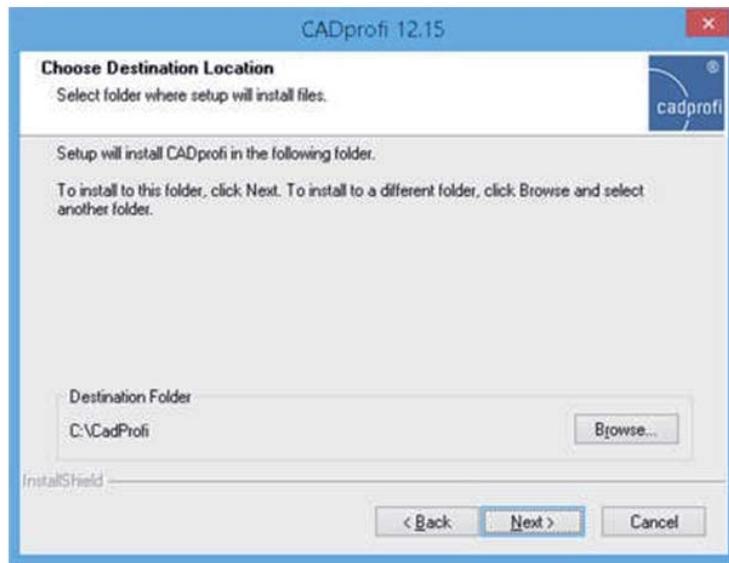
### 4.1.1 Language selection



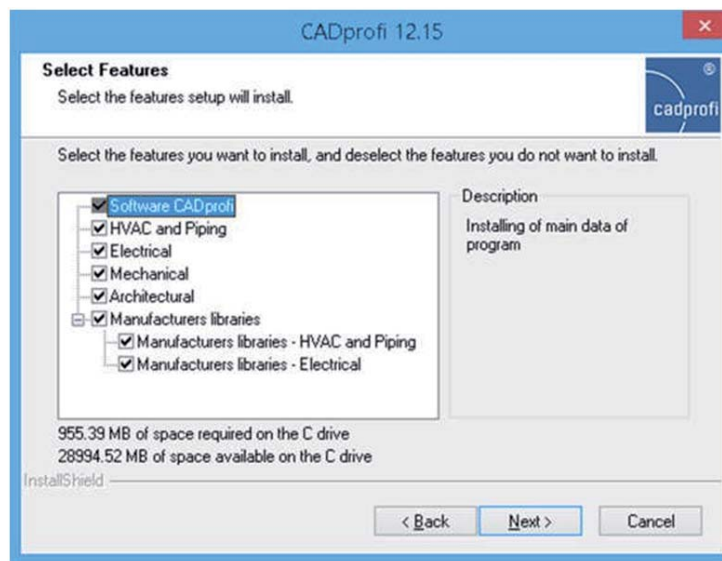
### 4.1.2 The installation wizard and license agreement (select accept)



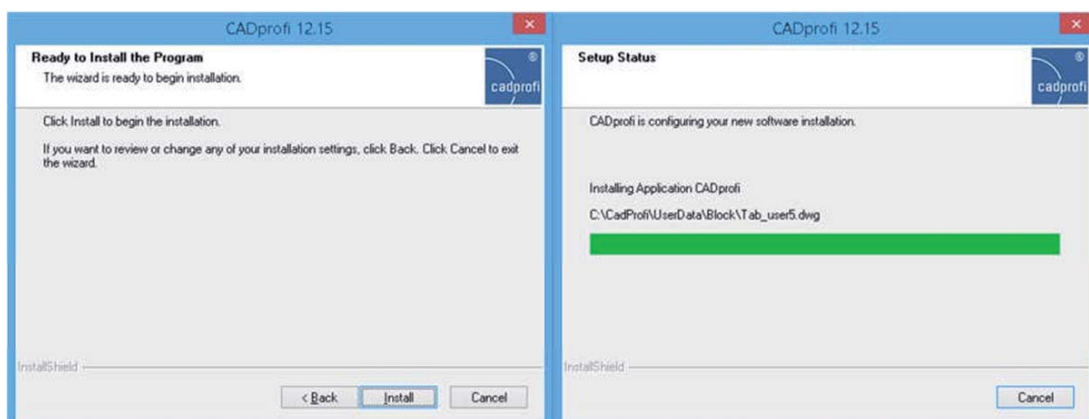
#### 4.1.3 Select installation site (choose own location or leave the default)

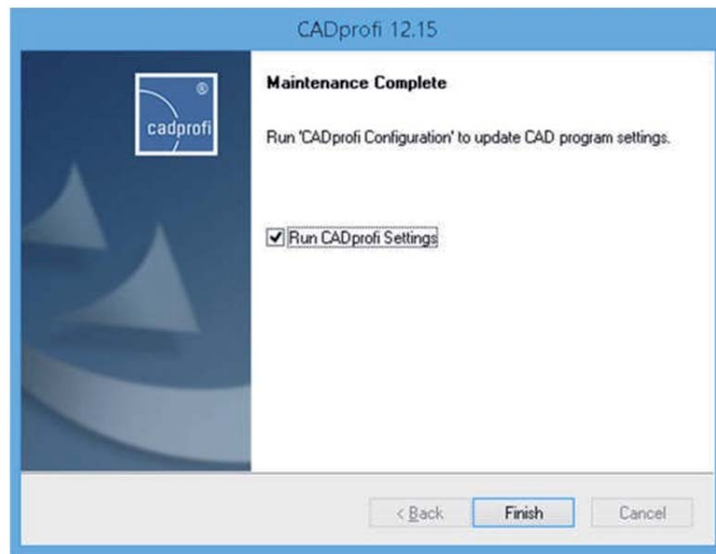


#### 4.1.4 Application components selection (electrical)

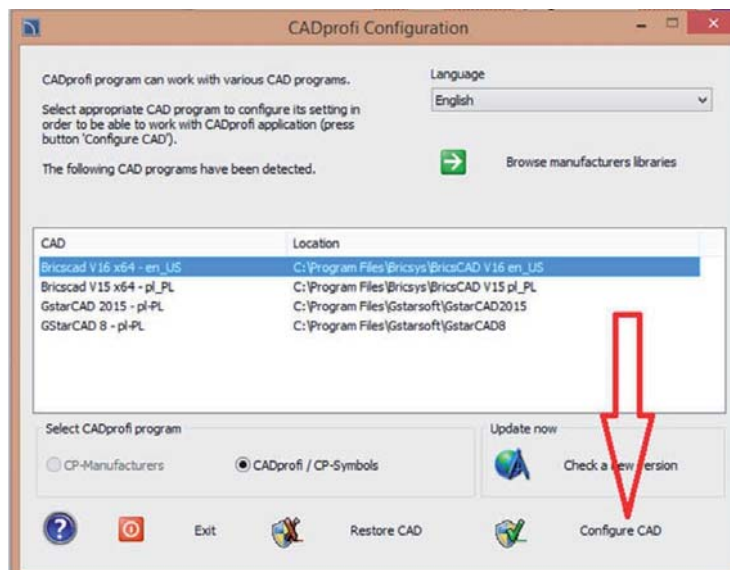


#### 4.1.5 Installation





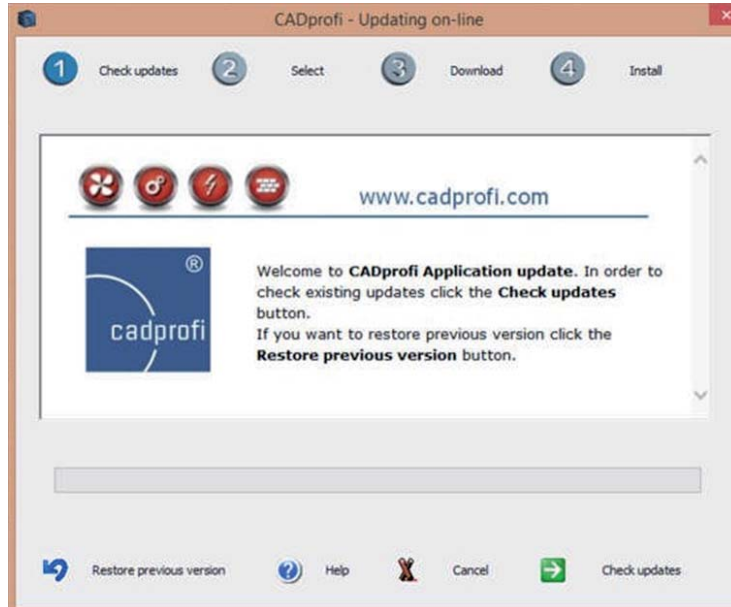
4.1.6 After installation, the program should be configured with CAD program



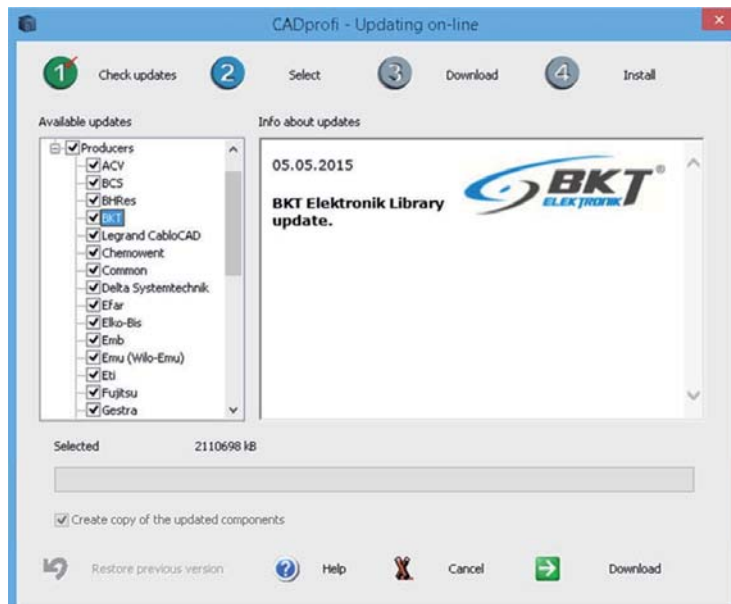
If you have multiple CAD applications, please indicate this to be configured with CADprofi

#### 4.1.7 CADprofi update

After installation you must upgrade the application.

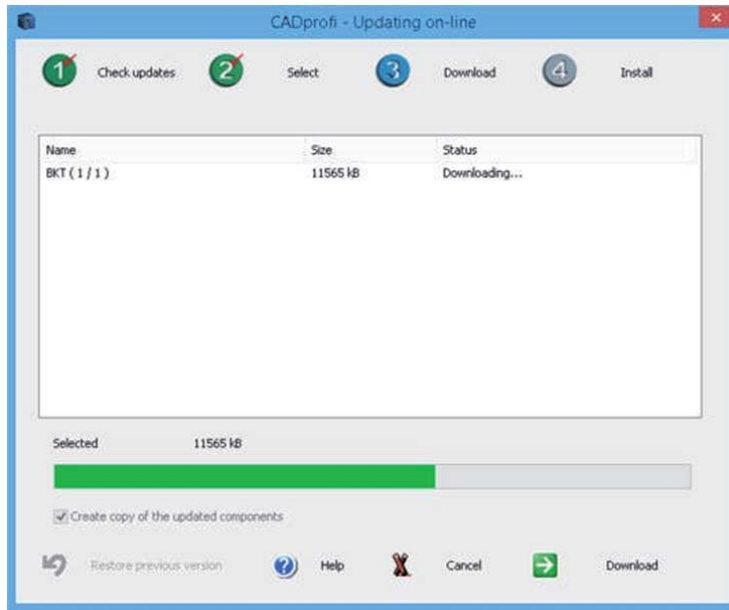


From updating menu- library manufacturers you have to choose BKT (the folder is empty). The application proposes to download the selected library

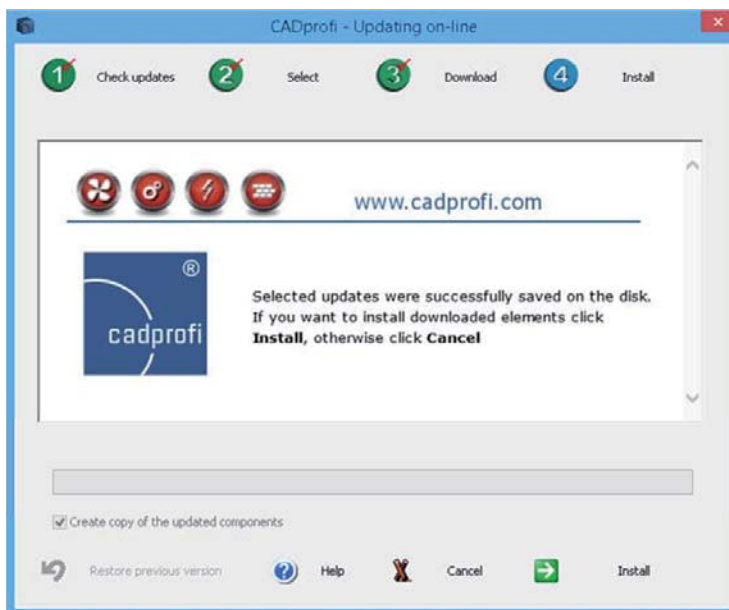


The "download" launches the update process.

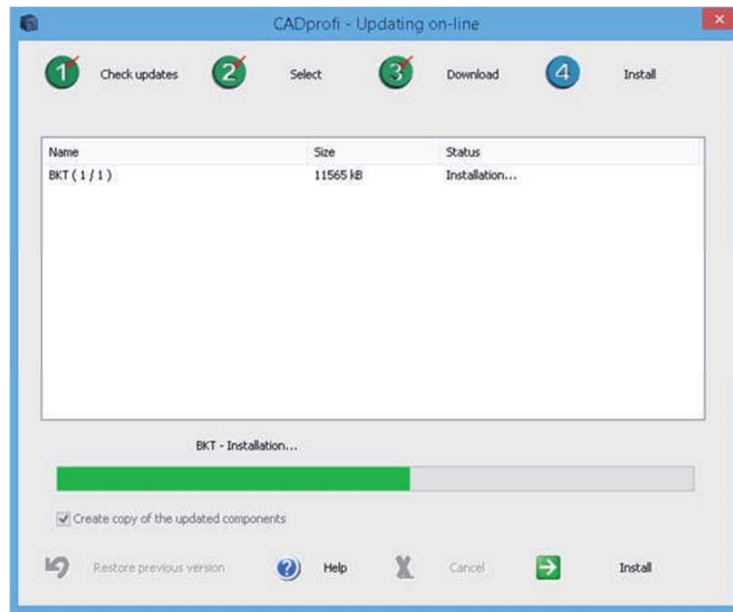




#### 4.1.8 Installing a downloaded CADprofi update



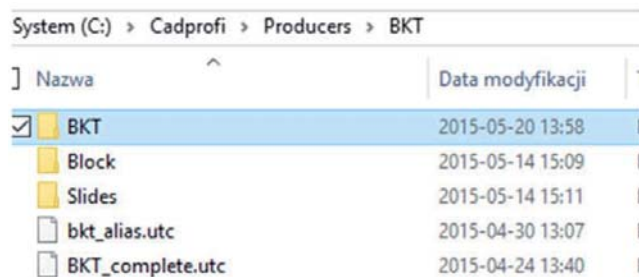
The "install" launches the CADprofi update process.



The application is ready for use, with a BKT library.

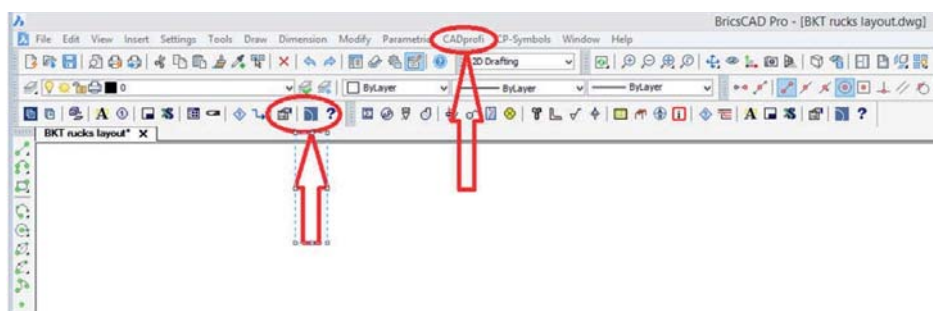
## 4.2 Installing BKT library – alternative / manual way

After installing the CADprofi application to the directory "C: \ CadProfi \ Producers" record library BKT. This is the manual method and the file should be obtained from the BKT Elektronik Projects Office (bkt.rar approximately 17MB).



## 4.3 Run CAD application

CADprofi application starts automatically and appears in the menu



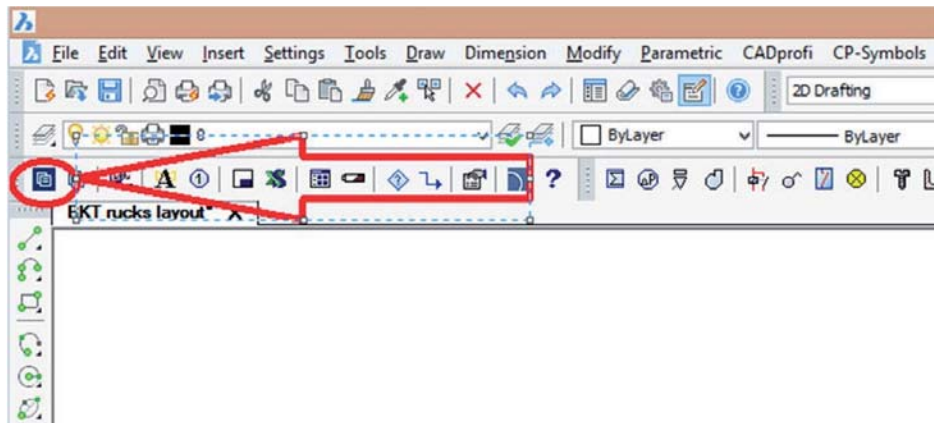
The program is ready to work with the BKT library

# 5. Work with the CAD application and CADprofi

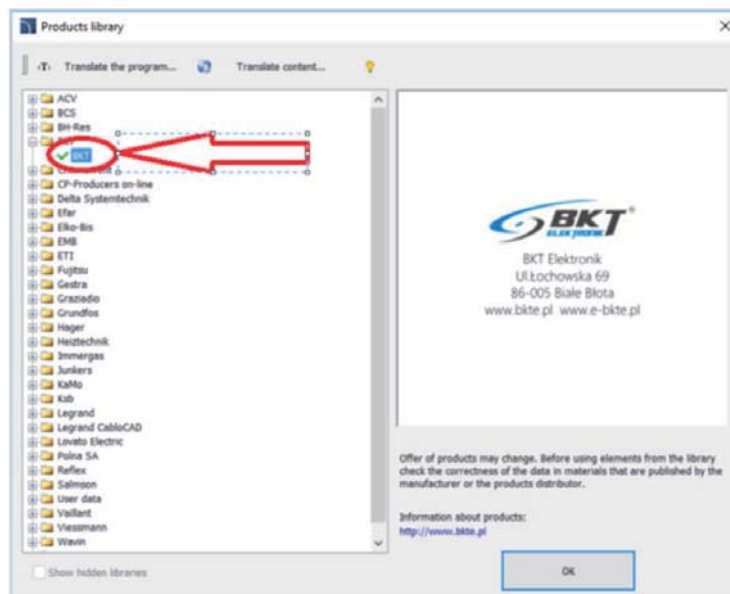
## 5.1 Drawing cabinet layout using BKT library

### 5.1.1 Structured cabling system cabinet

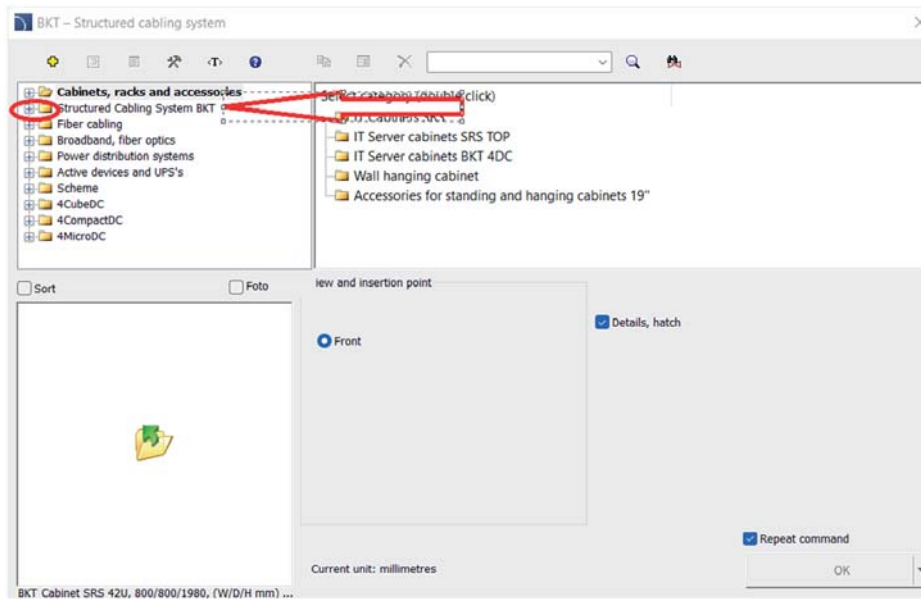
From "CADprofi" ribbon select the icon "Product library"



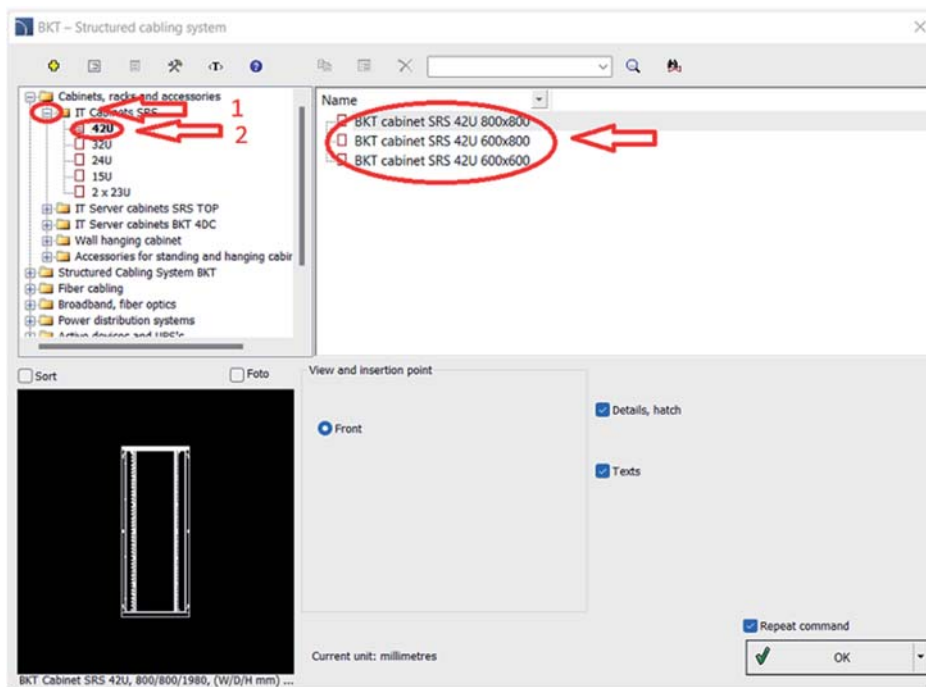
Select BKT library BKT"- appears menu divided into thematic sections, left click "+" symbol



Select "Cabinets, racks and accessories"



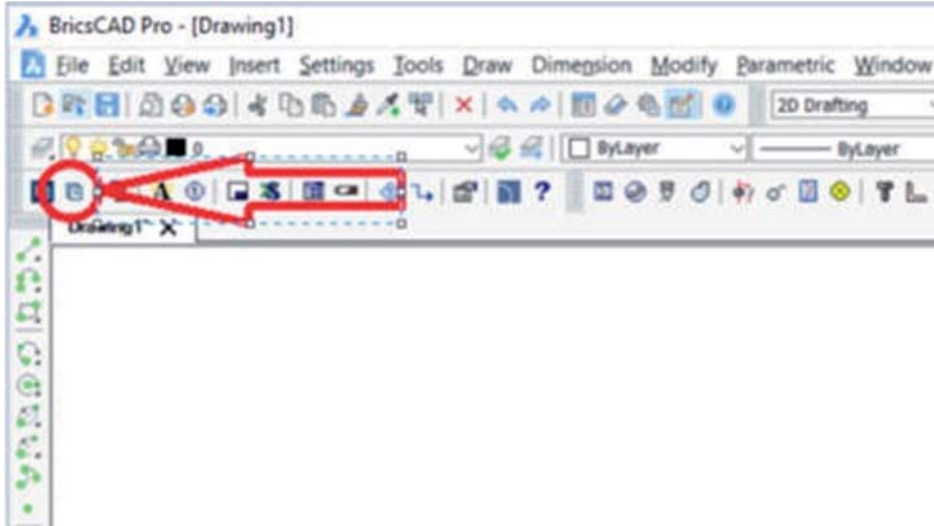
1. Then cabinet type "IT Cabinets SRS".
2. Select the appropriate height of the cabinet- the most common is the height 42U.
3. The width and depth- recommended dimensions are Wx800.



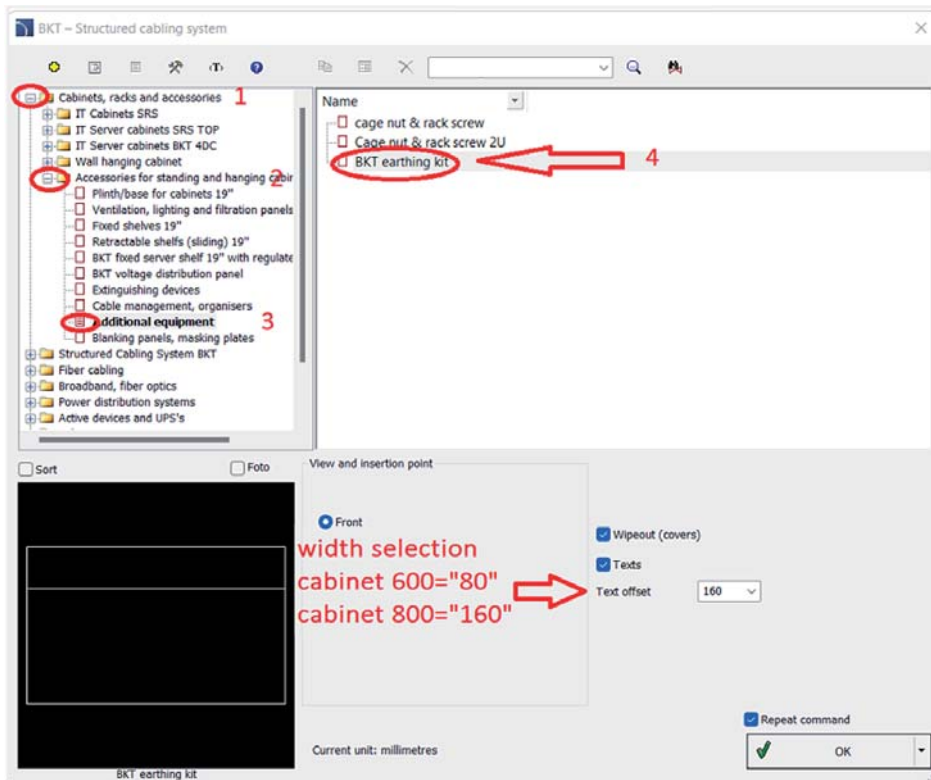
For each cabinet must be added BKT earthing kit...

### 5.1.2 BKT earthing kit

From "CADprofi" ribbon select the icon "Previous library"



1. Select "Cabinets, racks and accessories"
2. Then "Accessories for standing and hanging cabinets 19"
3. "Additional equipment"
4. "BKT earthing kit".





5. Additionally you have to set text offset: for cabinet width=600 it is "80", for cabinet width =800 it is "160".

In order to activate the "cover" you should tick the "Wipeout (covers)" box.

After this selection, we put "BKT earthing kit" in the lower right corner of the cabinet below "U" scale.

Additional accessories for cabinets like:

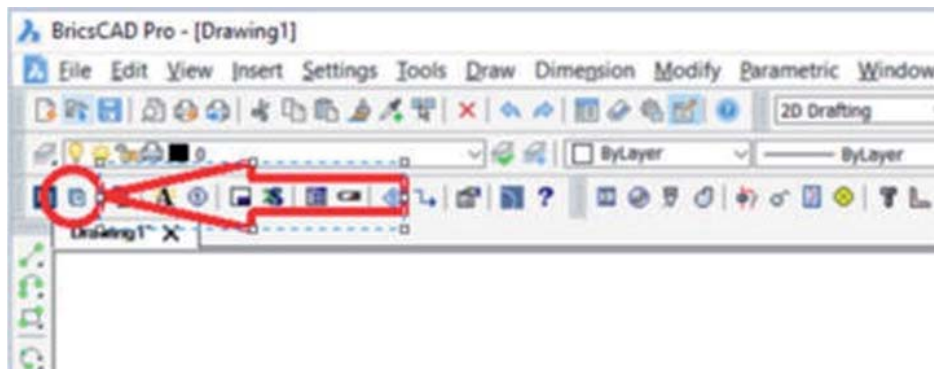
- Plinth/base for cabinets 19",
- ventilation, lighting and filtration panels, fixed shelves 19",
- retractable shelves (sliding) 19",
- BKT fixed server shelf 19" with regulated depth,
- BKT voltage distribution panel,
- Extinguishing devices
- cable management, organizers,
- additional equipment,
- blanking panels, masking panels

we can select from "Accessories for standing and hanging cabinets 19".

**Vertical – backbone connections in most cases are made by fiber optics cables which should be terminated in fiber optic patch panels.**

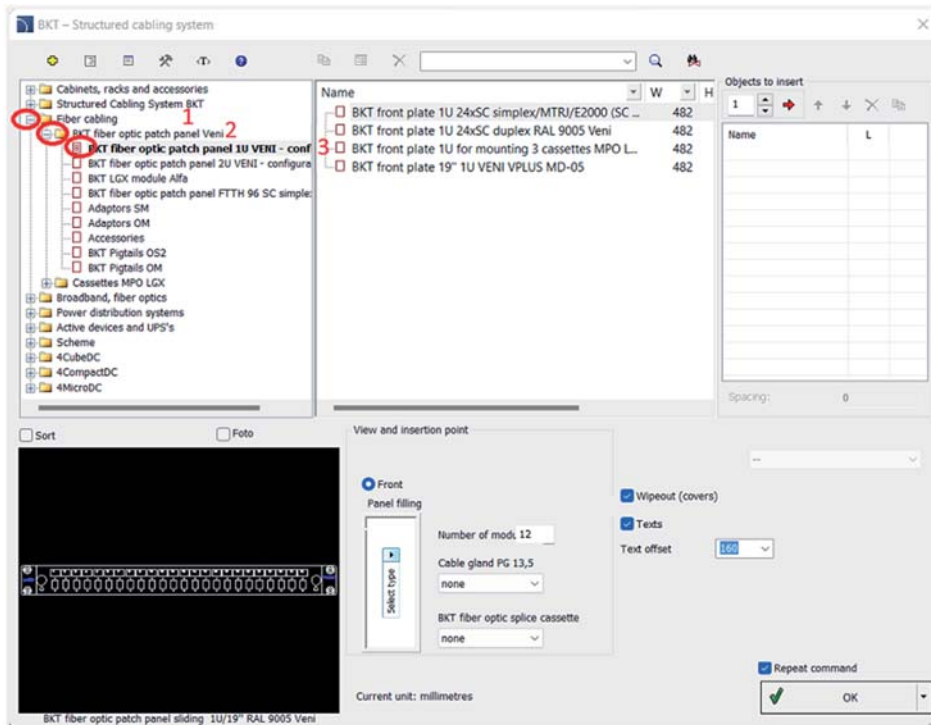
### 5.1.3 Fiber optic patch panel

From "CADprofi" ribbon select the icon "Previous library".



1. Select "Fiber Cabling",
2. Then "BKT fiber optic patch panel Veni",
3. And "BKT fiber optic patch panel 1U Veni – configurator", where we have four options:
  - BKT front plate 1U 24xSC simplex/MTRJ/E2000 (SC footprint) RAL 7021 (description label),
  - BKT front plate 1U 24xSC duplex RAL 7021,
  - BKT front plate 1U for mounting 3 cassettes MPO LGX
  - BKT front plate 1U for mounting 5 cassettes VENI VPLUS

The first two options and the last are used when we have to terminate universal, outdoor or indoor fiber cables. The next two options are for termination MPO cables.



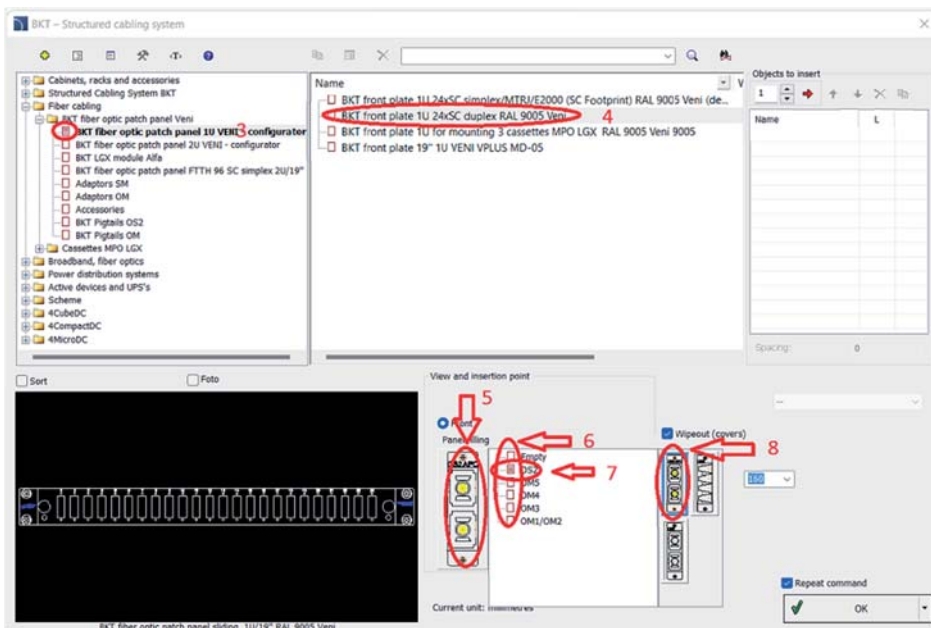
Configurator enable proper elements selection.

### 5.1.3.1 Example

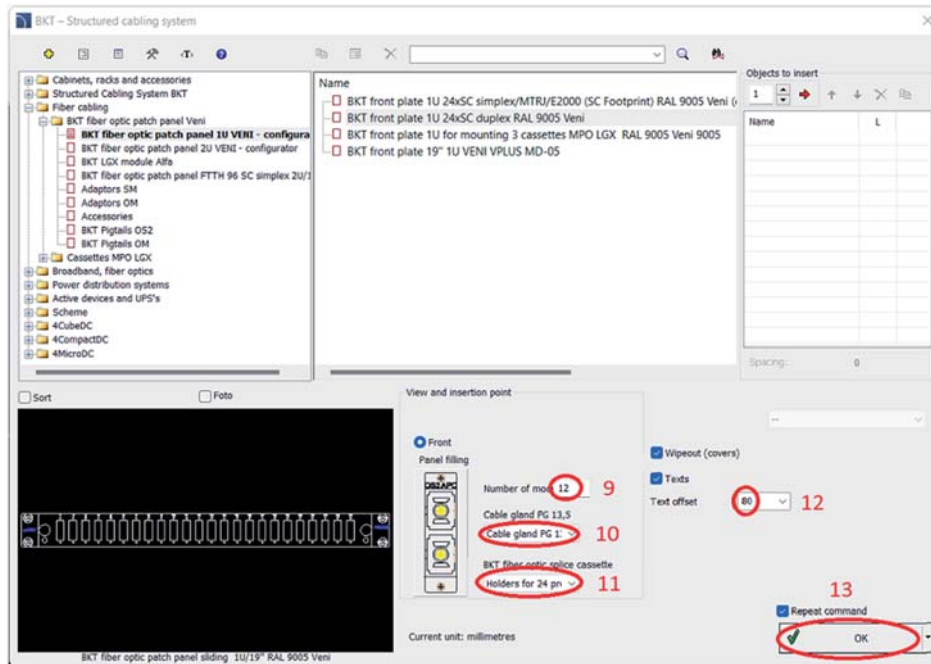
Steps 1, 2 and 3 as above.

1. Select "BKT front plate 1U 24xSC duplex RAL 7021" then:

5, 6 and 7 "2D Front Panel filling" here we select type of fiber (OS2, OM4, OM3 or OM2).



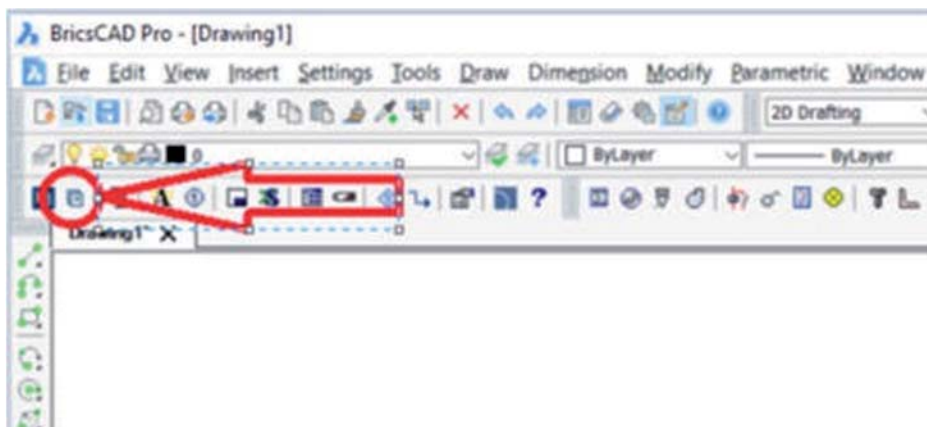
8. Then Type of adaptor: SC duplex or LC quad. For OS2 fiber there are UPC and APC version too.
9. Define (1-24) the number of adaptors (number of terminated fibers divided by 2- when SC duplex or by 4 when LCquad),
10. Define (1-4) the number of "Cable gland PG 13,5/PG 16",
11. And the number (1-4) of "BKT fiber optic splice cassette for 12/24 protectors",
12. Additionally you have to set text offset: for cabinet width=600 it is "80", for cabinet width =800 it is "160".
13. Confirm, insert so configured 1U Veni patch panel most often to the top of the cabinet according to the "U" scale height- note shortcut key F3 (ON/OFF) which enables proper location.



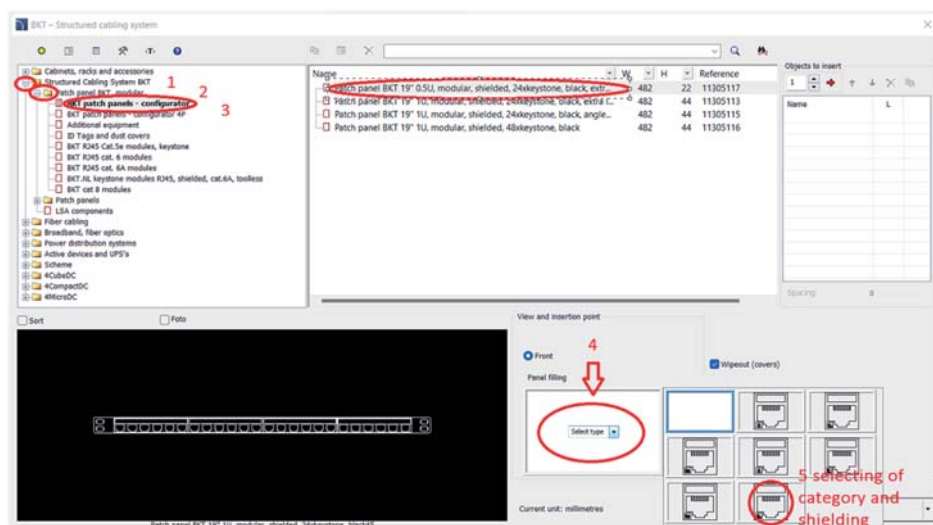
So configured Veni patch panel contains all the necessary elements for its proper installation.

#### 5.1.4 Modular crossing panels

From "CADprofi" ribbon select the icon "Previous library"



1. Then "Structured cabling system BKT",
2. "Patch panel BKT, modular",
3. "BKT patch panels – configurator" where we have five options :
  - Patch panel 19" BKT 0,5U, modular shielded, 24xkeystone, black, extra labels
  - Patch panel 19" BKT 1U, modular shielded, 24xkeystone, black, extra labels
  - Patch panel 19" BKT 1U, modular shielded, 24xkeystone, black, angled ports
  - Patch panel 19" BKT 0,5U, modular shielded, 48xkeystone, black.
4. After selecting the appropriate panel, select the panel filling module,
5. Appropriate category and shielding (descriptions appear when you hover the cursor over the element).



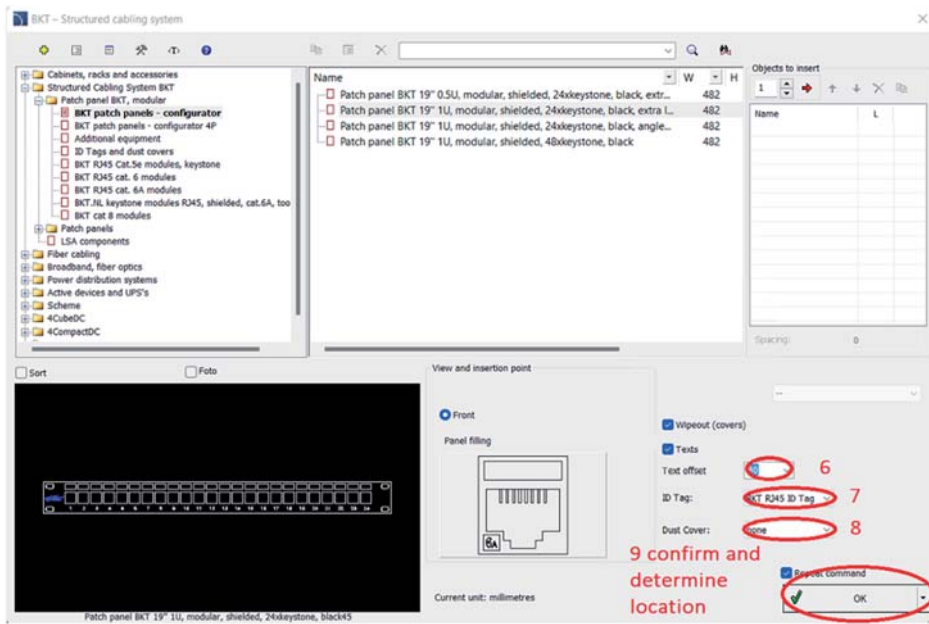
6. Additionally you have to set text offset: for cabinet width=600 it is "80", for cabinet width =800 it is "160".
7. It is possible to add colour ID Tags in panels.
8. It is possible to add colour Dust Covers in panels in 8 colors (white, gray, blue, red, yellow, black, green and orange) For organization management and connection color management.

For example, you can print identifiers and cross-over cables with patterns of statement patterns, such as:

- Gray color- installation of LAN structured cabling
- Blue color- connections to elements of the Wi-Fi wireless network
- Red color- CCTV monitoring installation
- Green color- connections to BMS elements of the BMS
- Yellow color- installation of the Access Control SystemKD



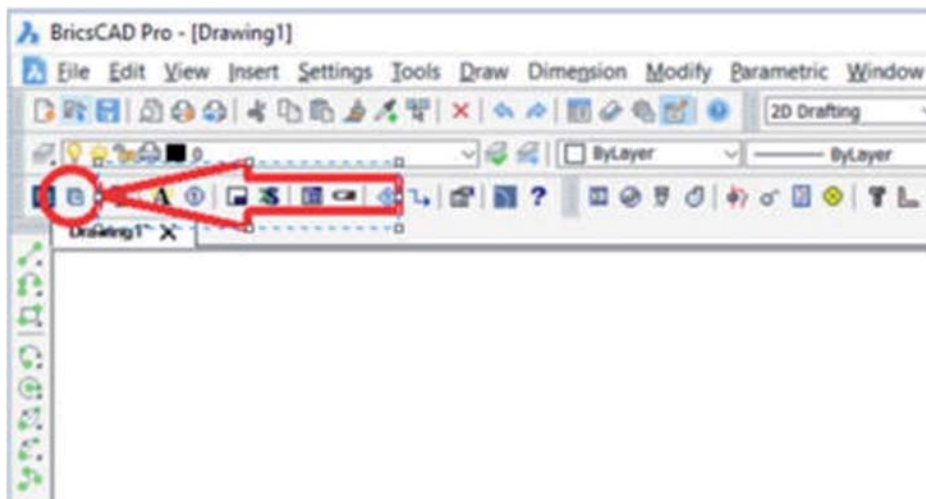
9. Confirm, insert so configured patch panel with modules in the cabinet according to the "U" scale height- note shortcut key F3 (ON/OFF) which enables proper location.



It is recommended to place organisers between crossing panels, for better organization of cross-over cables in the cabinet.

### 5.1.5 Organising elements

From "CADprofi" ribbon select the icon "Previous library"

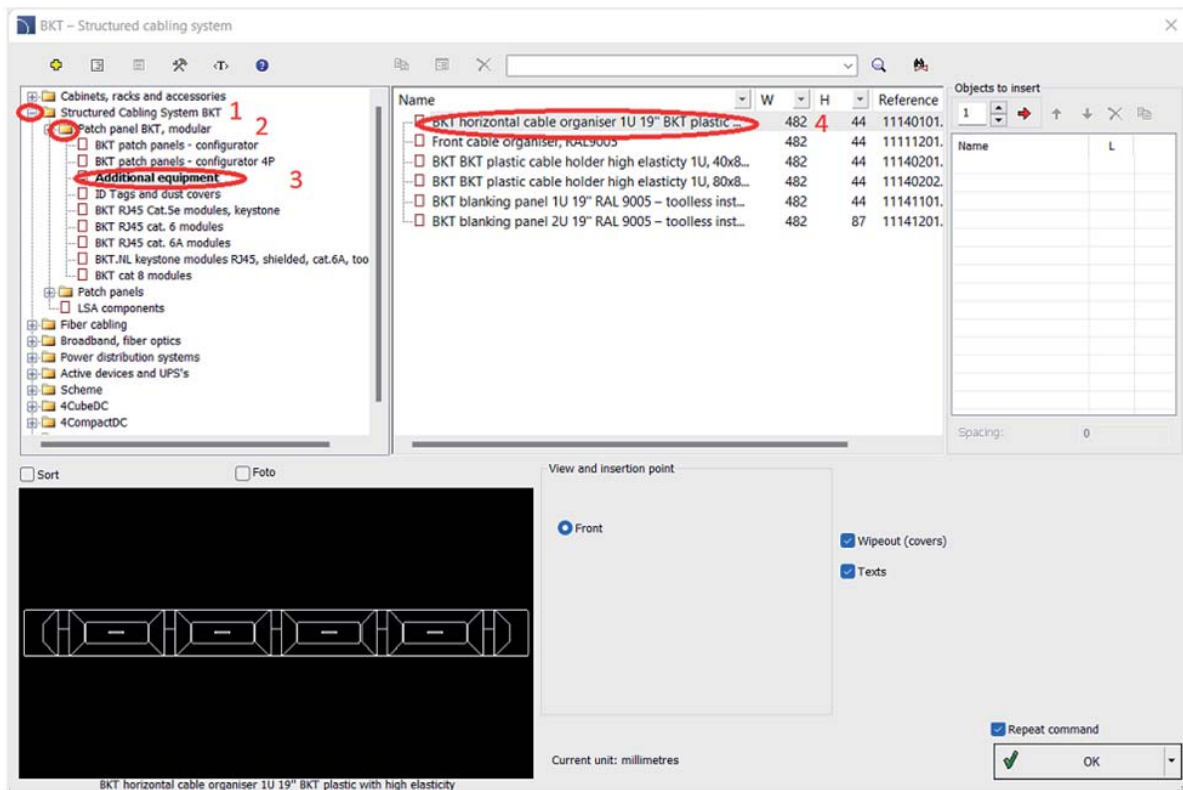




1. Then "Structured cabling system BKT"
2. "Patch panel BKT, modular",
3. Select "Additional equipment" where we have six options:

- BKT horizontal cable organiser 1U 19" BKT plastic with high elasticity
- Front cable organizer
- BKT plastic cable holder high elasticity 1U, 40x80mm
- BKT plastic cable holder high elasticity 1U, 80x80mm
- BKT blanking panel 1U 19" RAL 9005 – toolless installation – LOGO BKT
- BKT blanking panel 2U 19" RAL 9005 – toolless installation – LOGO BKT


4. After selecting the appropriate organising element for example : "BKT horizontal cable organiser 1U 19" BKT plastic with high elasticity" insert it in the cabinet according to the "U" scale height- note shortcut key F3 (ON/OFF) which enables proper location.

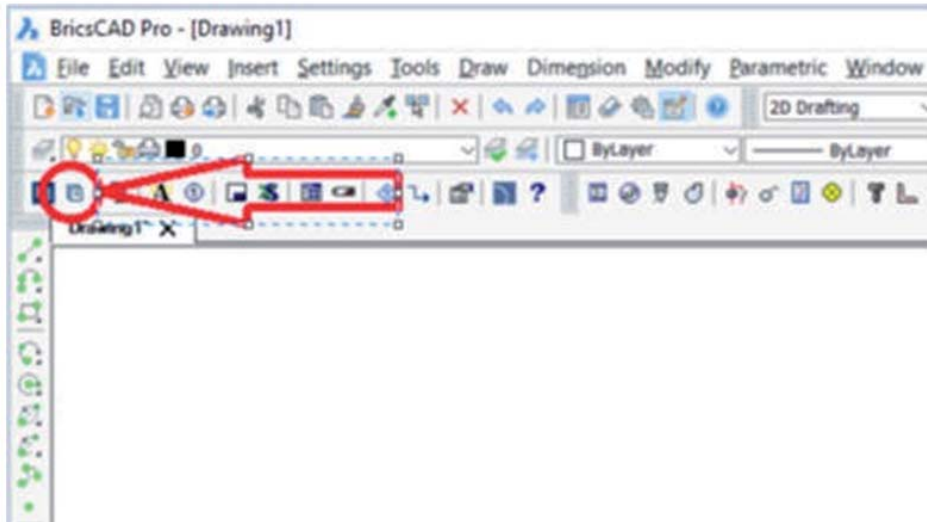


It is recommended to place organizers between crossing panels (each 48 ports), for better organization of cross-over cables in the cabinet.

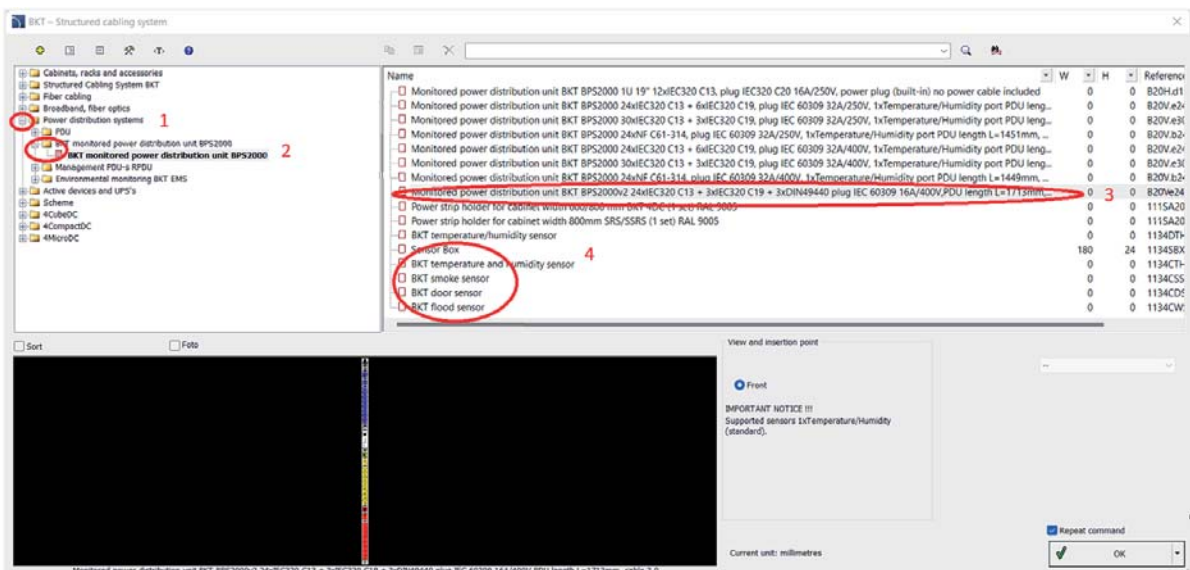
In each cabinet where will be installed active equipment (switches, servers, routers etc.) you must install the appropriate power distribution unit (PDU).

## 5.1.6 Power distribution unit (PDU)

From "CADprofi" ribbon select the icon "Previous library" 

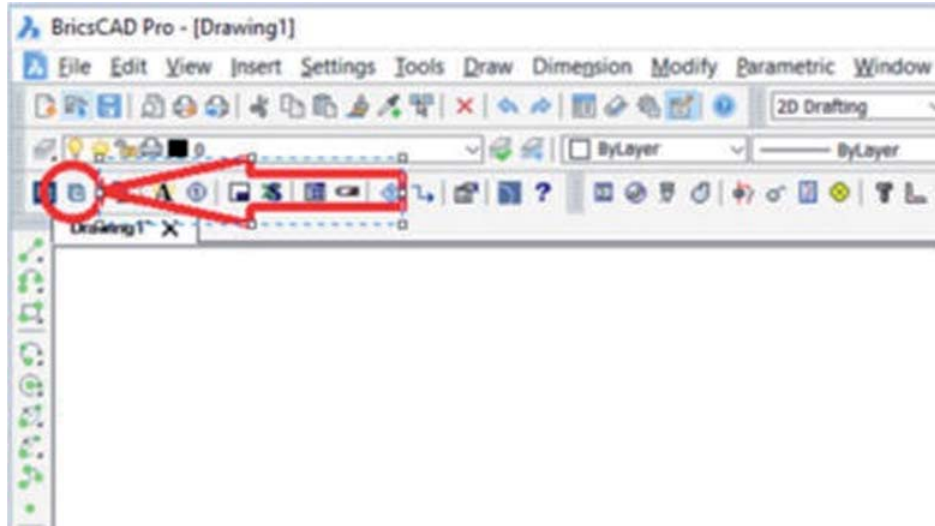


1. Then "Power distribution systems", where we have four options:
  - PDU (Power Distribution Unit – horizontal 19" and vertical options)
  - BKT monitored power distribution unit BPS2000 (horizontal 19" and vertical 1 and 3 phases monitored PDU with additional environmental monitoring module- sensor box possibilities),
  - Management PDU-s RPDU (horizontal 19" and vertical 1 and 3 phases monitored PDU with additional environmental monitoring module- sensor box possibilities),
  - Environmental Monitoring BKT EMS
2. Select " BKT monitored power distribution unit BPS2000 " where we have 19" and vertical units
3. When selecting you should pay attention to the description and other conditions that allow for their installation in cabinet with appropriate height and width.
4. If necessary, it is possible to connect the Sensor Box to the BPS2000 and RPDU, to which we can connect 2xTemp / Humidity, 2xOpen the door, 1x flood and 1x smoke

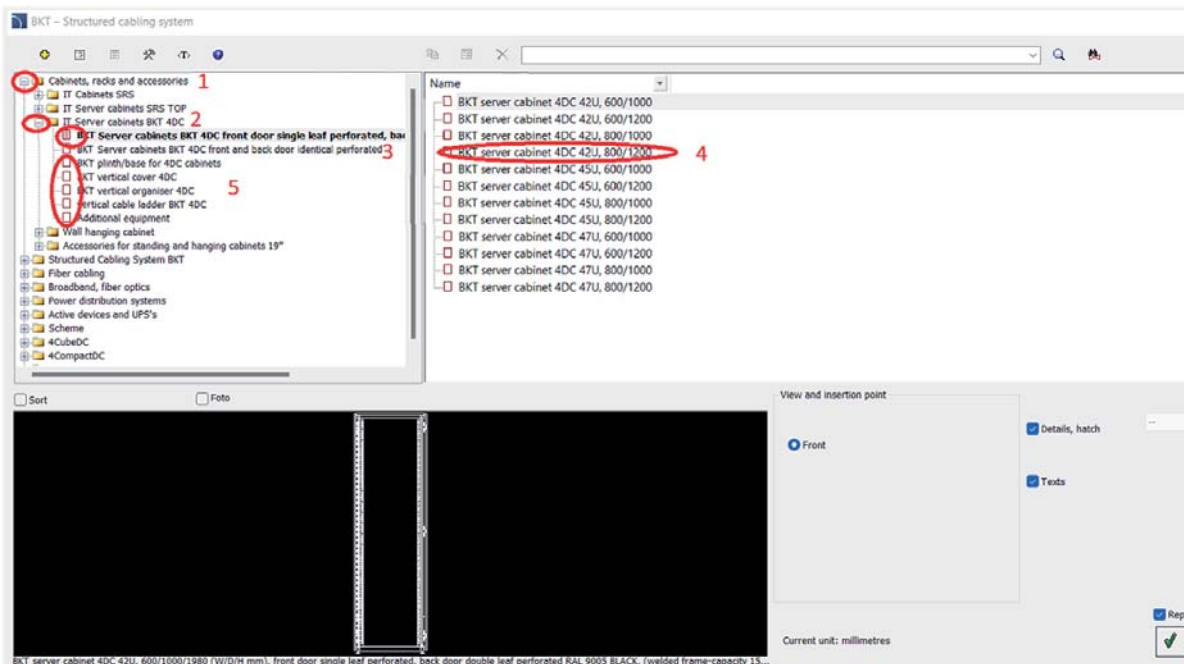


### 5.1.7 IT server cabinets BKT 4DC

From "CADprofi" ribbon select the icon "Previous library"



1. Then "Cabinets, racks and accessories" ,
2. Select "IT server cabinets BKT 4DC" where we have two types of cabinets: front door single leaf perforated, back door double leaf perforated and front and back door identical perforated,
3. And accessories like plinth/base, vertical cover, vertical organizer, vertical cable ladder and additional equipment.



### 5.1.7.1 Example

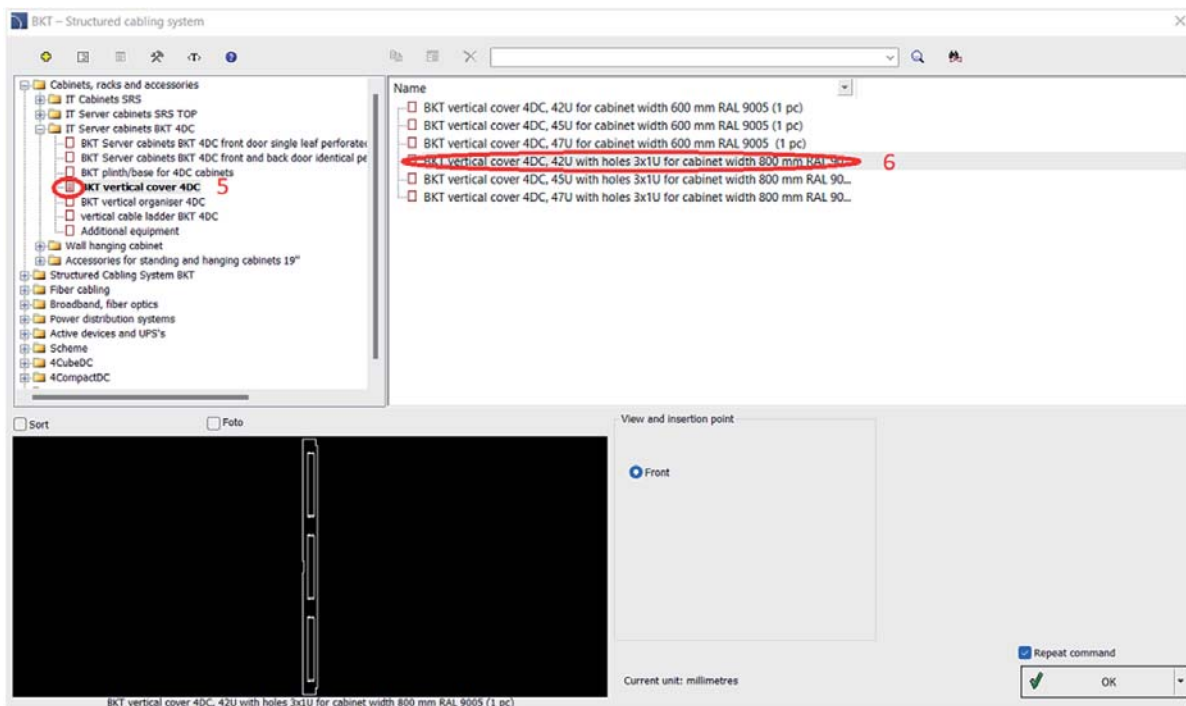
Steps 1 and 2 as above.


3. Select "BKT Server cabinets BKT 4DC front door single leaf perforated, back door double leaf perforated".
4. Proper dimension: height – here only 42U, 45U and 47U, width and depth (typical for server cabinet depth 1000 and 1200 mm). Example 42U 800x1200

Next:

Add "BKT earthing kit" as in 4.1.2,

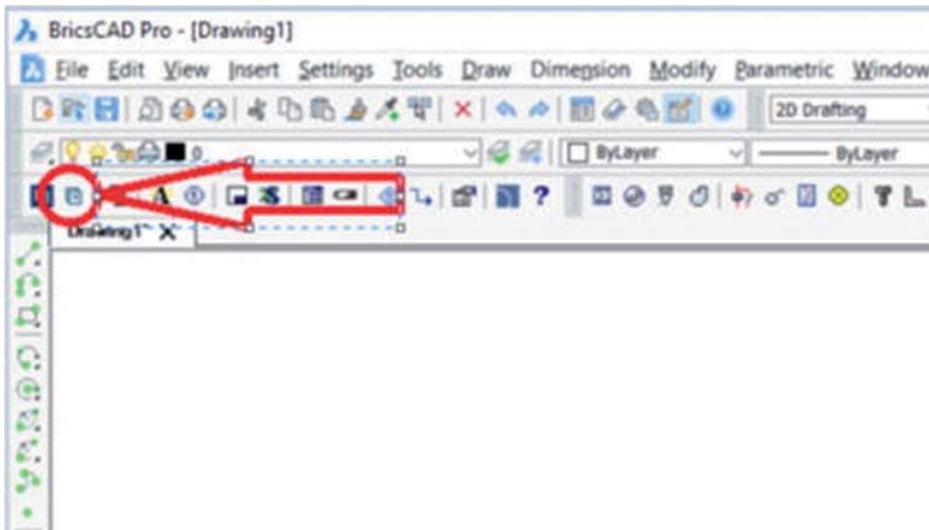
5. Organising elements for 4DC,
6. Vertical cover 3x1U for cabinet 42U width 800 mm RAL 9005". Insert it on the left side of the cabinet



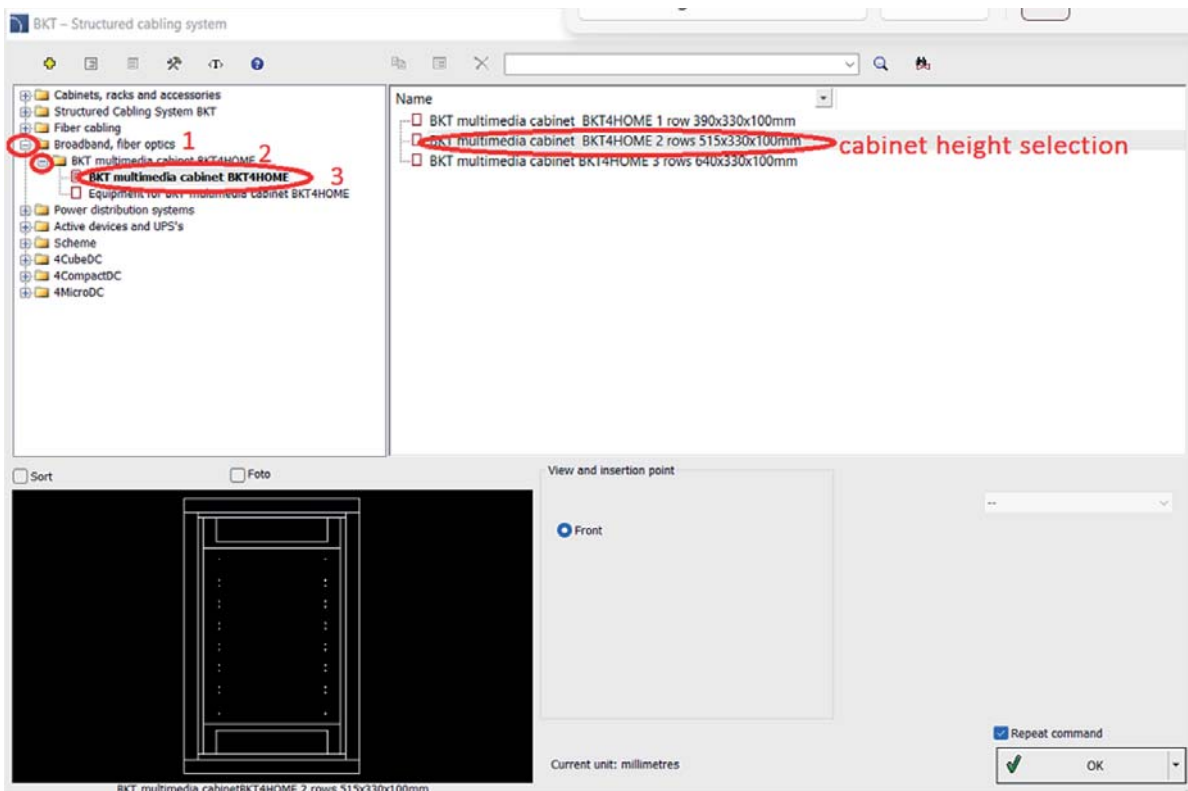
Using "2D mirror" CAD command  copy this element symmetrically on the right side of the cabinet. In Data Centers, which require a greater safety, are used one and very often two PDU's NPM horizontal or vertical for every cabinet.

### 5.1.8 Apartment buildings cabling, FTTX Broadband networks

From "CADprofi" ribbon select the icon "Previous library" 




1. Then "Broadband, fiber optics",
2. Select "BKT multimedia cabinet BKT4HOME",
3. Where from "BKT multimedia cabinet BKT4HOME" select the appropriate height cabinet- recommended min. 2 rows.

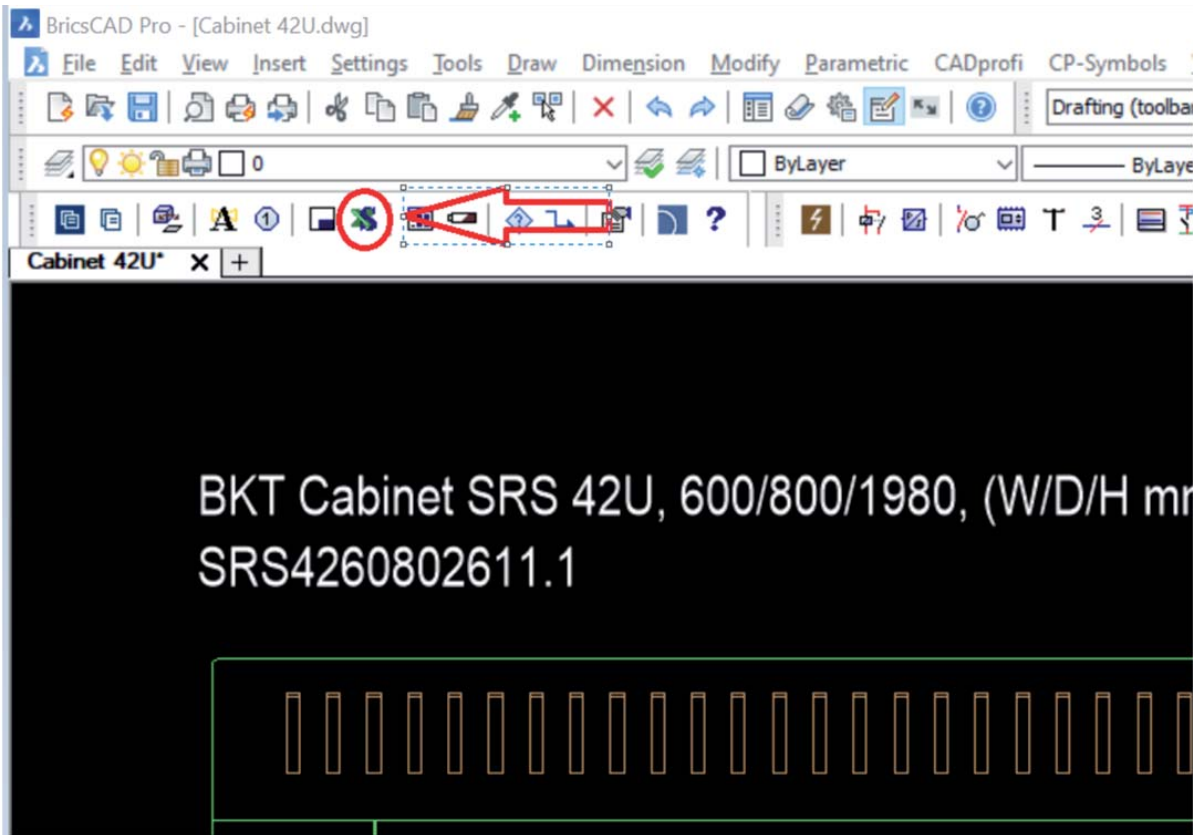


1. Additional elements to the multimedia cabinet you may insert from "Equipment for BKT multimedia cabinet BKT4HOME":
  - oblique handle for 10" crossing panel
  - BKT 10", 10xRJ crossing panel
  - BKT fiber optic subscriber panel FTTX wall mounted white 2xSC simplex

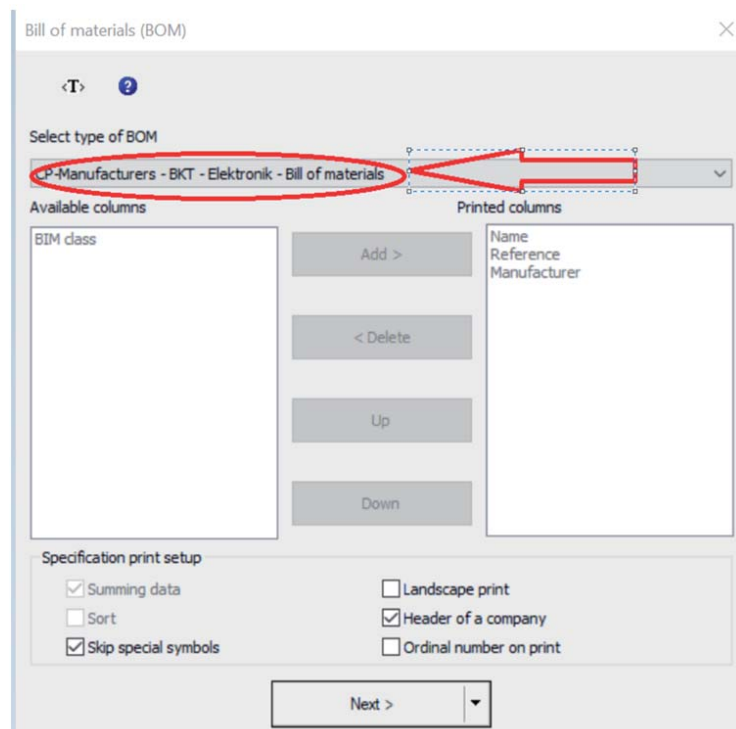


### 5.1.9 Generating bill of materials from the view of cabinet

From the "CADprofi" bar, select the material list icon 

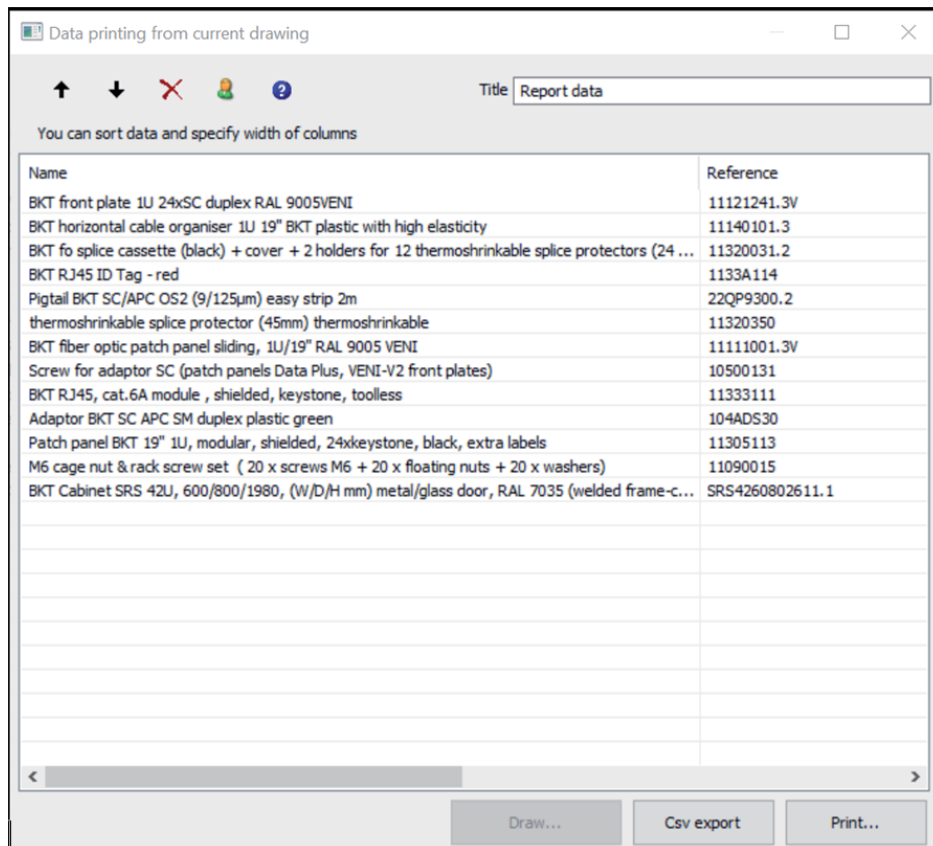


1. Then select "CP-Manufacturers- BKT - Elektronik – Bill of materials" from all types of,



- In order to obtain BoM in the form of the number of elements and their catalog numbers, select a given view of a cabinet or a set of cabinets- preferably from right to left. After selecting all elements, confirm the selection with the <ENTER> key or the right mouse button.

The list "Data printing from the current drawing" is generated- in the case of a larger number of elements it may take a while.



- The list can be saved in csv format and then exported to Price list file by copy and paste catalog numbers / reference numbers and quantities.

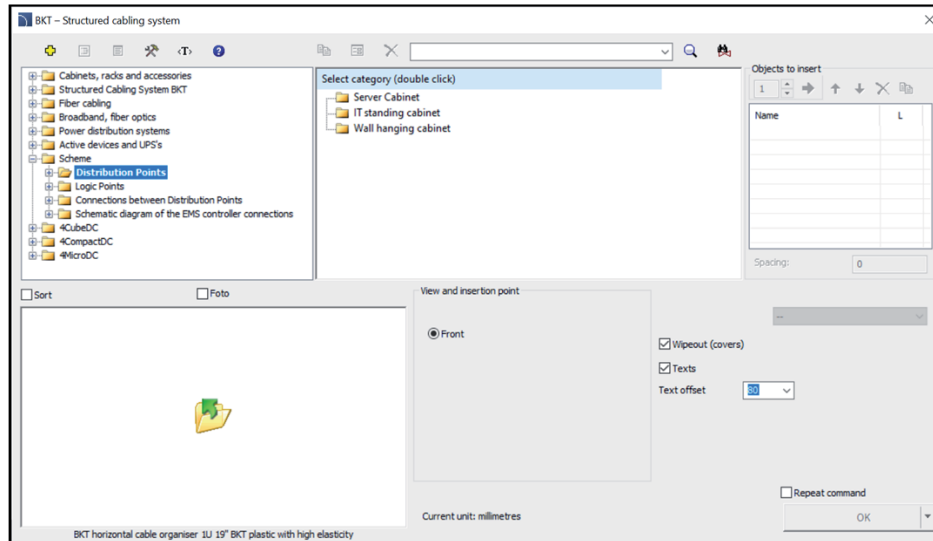
When exporting, due to different decimal point settings, errors "# N / A!" may appear- you should then replace the comma symbol with a dot.

There may be items not included in the standard price list but available on request.

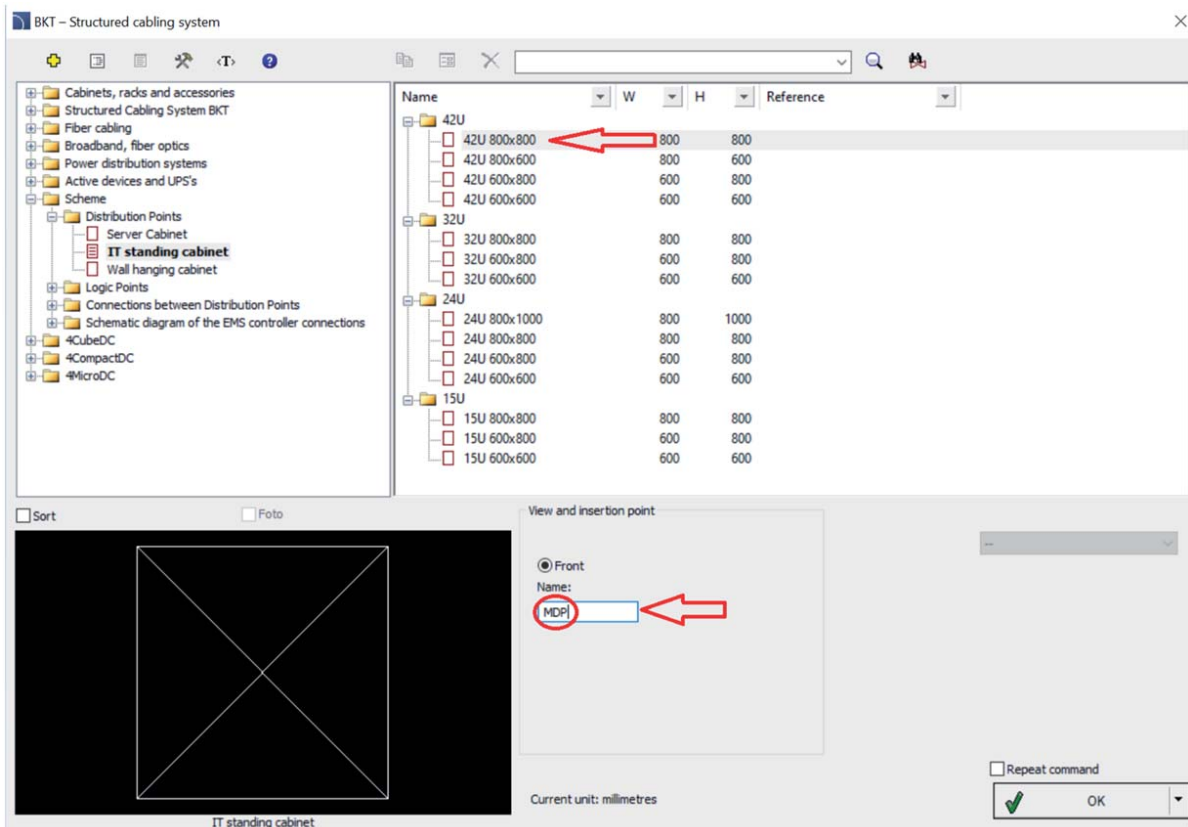
## 5.2 Drawing diagrams (Scheme)

### 5.2.1 Distribution Points

It is the best to start drawing diagrams by selecting the types of cabinets (server cabinet, standing ICT cabinet, hanging cabinet).



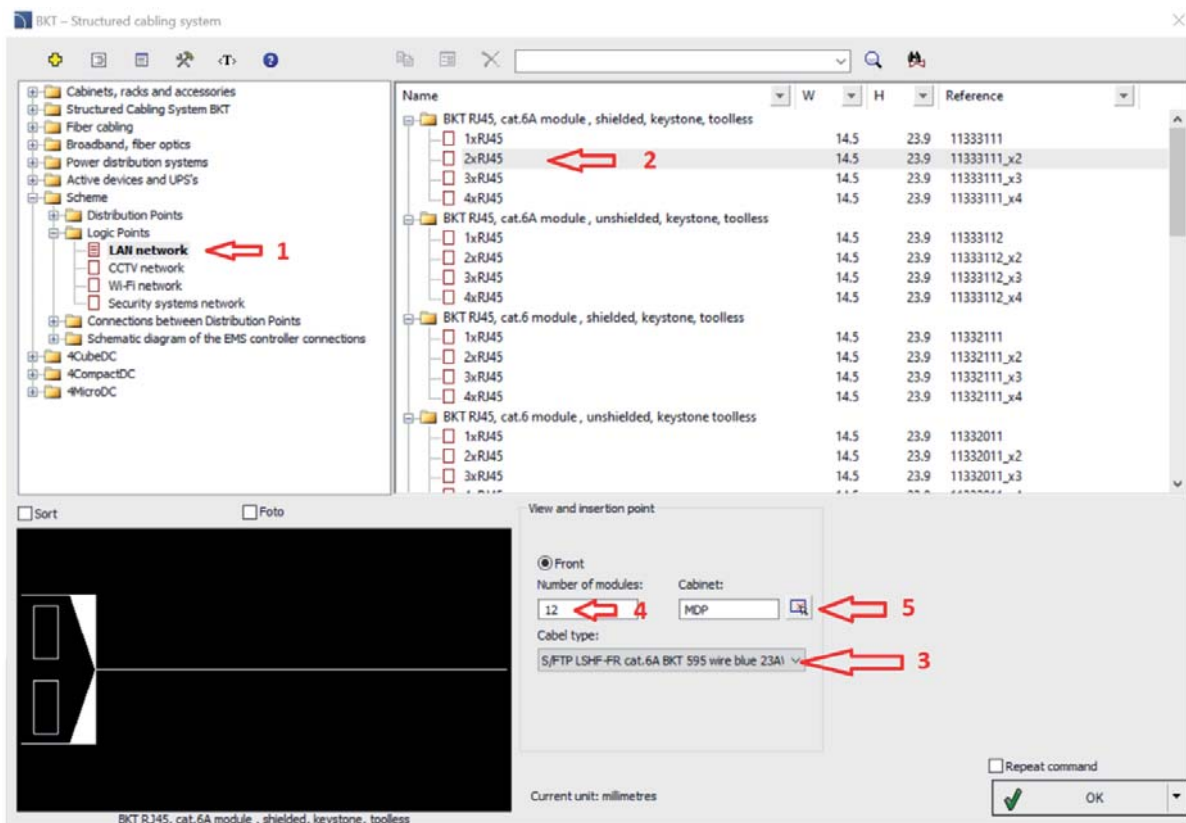
Then select the size of the cabinet from a given type, manually enter the wardrobe designation from the keyboard and insert the cabinet in the drawing.



## 5.2.2 Logical Points (Telecommunication Outlets)

1. After inserting the cabinet, go to the logic points. Here we have a selection of networks: LAN, CCTV, Wi-Fi and Security systems.
2. After selecting, for example, the LAN network- choose how the Logical Point (PL) is to be built- what the modules are to be built- which category and shielded or unshielded.
3. After selecting the PL- we verify with which cable the modules are to be connected (you can choose the appropriate cables of the selected category and higher in the appropriate CPRs !!!).
4. Enter the amount of PL.

Select the cabinet to which the PL will be connected- by selecting in the drawing- the selection icon, or by entering it manually.



We do so respectively in the above-described manner with all logical points for given types of networks (LAN, CCTV, Wi-Fi and Security systems) and distribution points.

Pay attention to which distribution points the logical points are assigned to- it will be reflected in the list of elements obtained at the end.

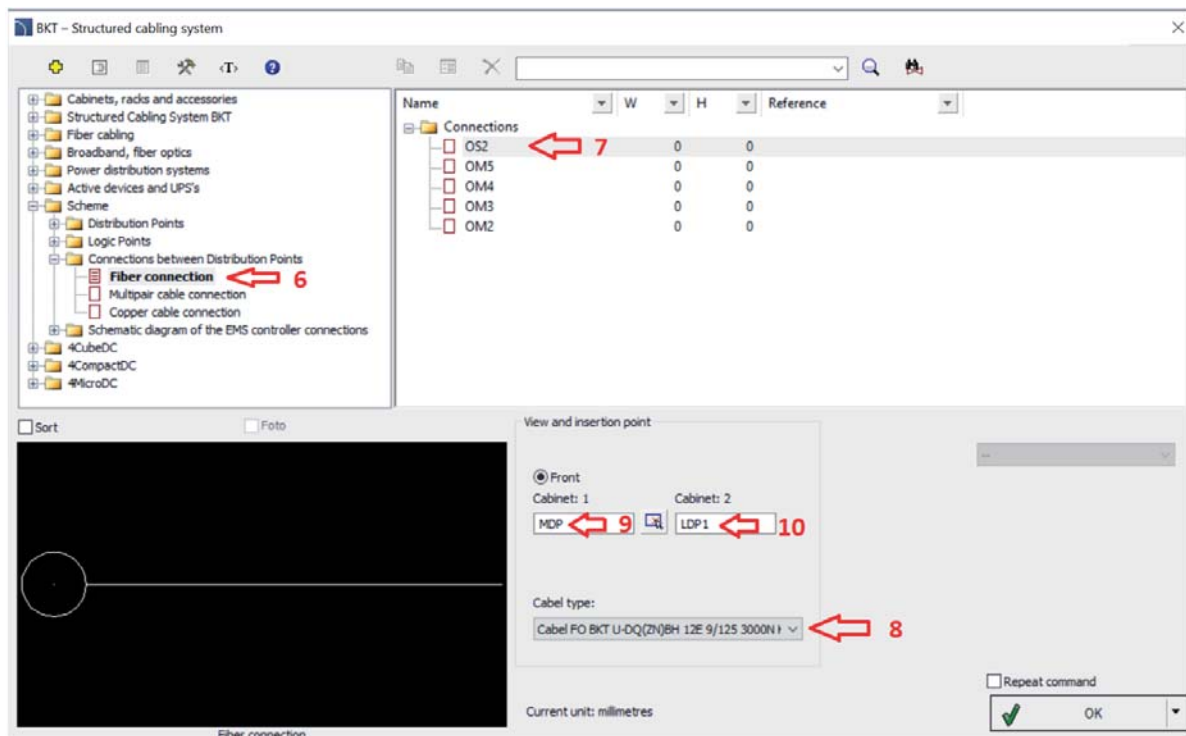
If there is a need to "add" a different type of network- eg tenant- use the existing type of network and then, by selecting a given point in the block reference, change the "TAG" parameter to the appropriate name- eg from "CCTV" to "Tenant".

All Logical Points belonging to the given distribution point should be connected to the given distribution point.

### 5.2.3 Connections between Distribution Points

1. To draw a connection between cabinets, select the type of connection (fiber optic cable, multi-pair cable or twisted-pair copper cable).
2. After selecting the fiber optic cable, determine what type of fiber it will have (OS2, OM5, OM4, OM3 and OM2) -the choice of fiber will reduce the choice of cable type only to those that will have the appropriate type of fiber.
3. Select the type of cable in the appropriate CPR.
4. Select the cabinet from which the connection will be made (select icon or enter manually).
5. Choose which cabinet (enter manually).

We "pin" the connection between the cabinets to one of the selected cabinets- draw a line between this connection and the selected second cabin



For connections with twisted-pair copper cable, we have a choice of cables from Cat 6 to Cat 8.1/8.2.

One should follow the principle that in the case of connections between cabinets, a higher category of 4-pair twisted-pair cables should be used compared to horizontal connections.

After the diagram is completed, a list of elements can be verified for verification, using the guidelines from point 5.1.9 with the use of " CP-Manufacturers- BKT- Elektronik – Logic diagram".

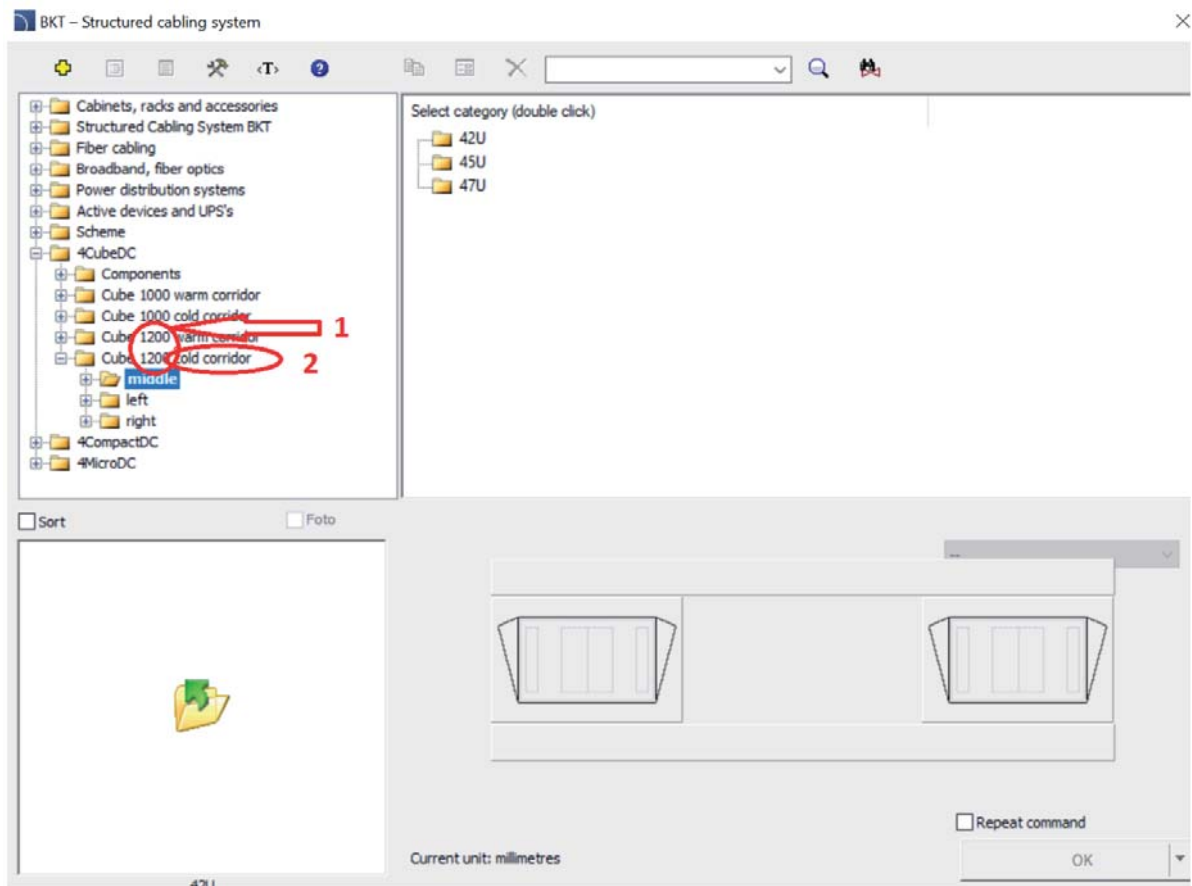


## 5.3 BKT 4Cube DC

### 5.3.1 Corridor (aisles aka “cubes”) types and widths

We start drawing BKT 4Cube DC from

1. Choice of width between cabinets
2. Choose the type of cold / warm corridor



The most common are cold corridors with a width of 1200 mm.

### 5.3.2 Selection of cabinets: height, width, depth, door type and power supply

The next step is to choose:

3. Construction of cube (middle- cabinets on both sides, left- cabinets on the left side of the wall, right- cabinets on the right side of the wall- options apart from the middle one only for corridor 1200 !!).
4. Heights of cabinets: 42U, 45U or 47U.
5. Type of power supply 230V- 1 phase or 400V- 3 phase.
6. The width and depth of the cabinet 1000x600, 1000x800, 1200x600 and 1200x800

Additionally, we can choose the type of door on the hot side.

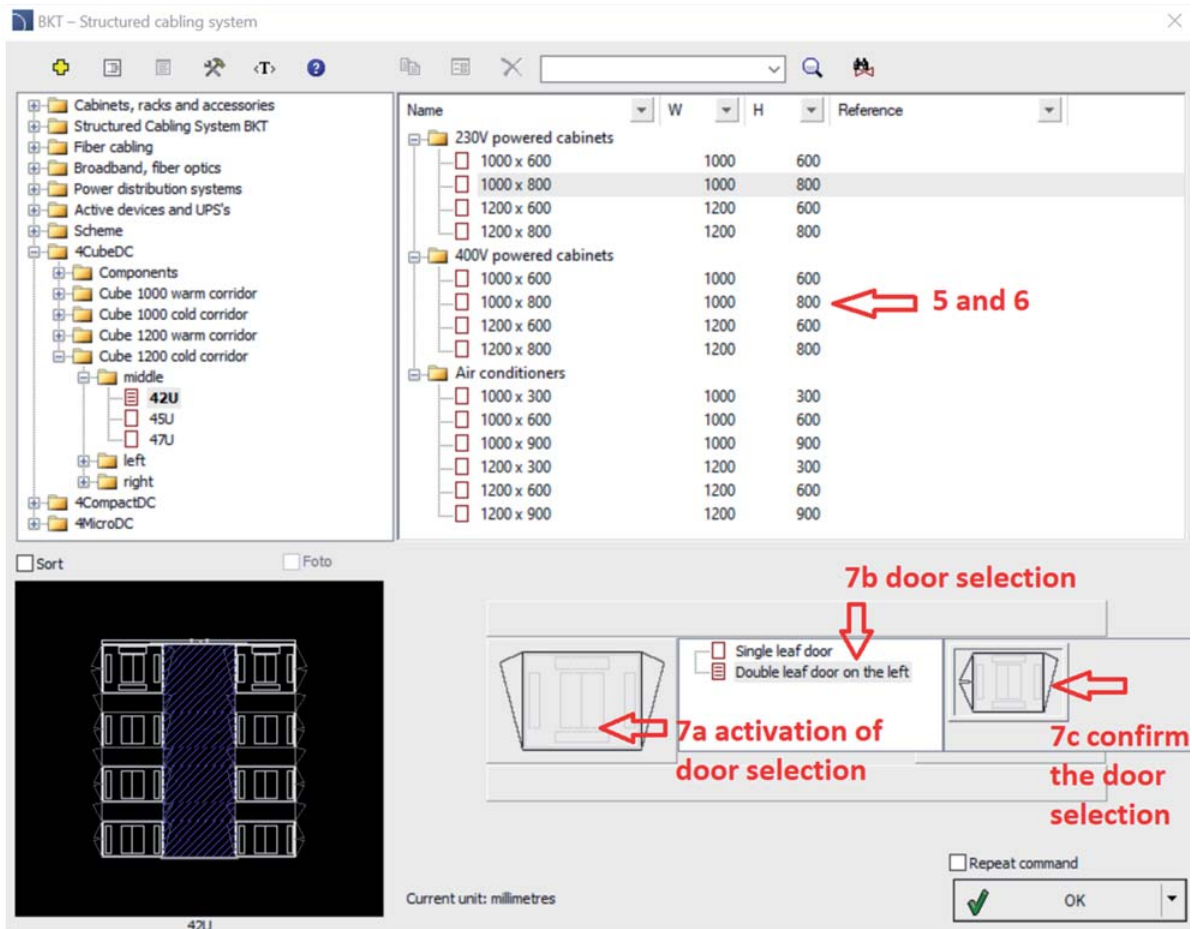
### 7. Choice of single or double leaf door.

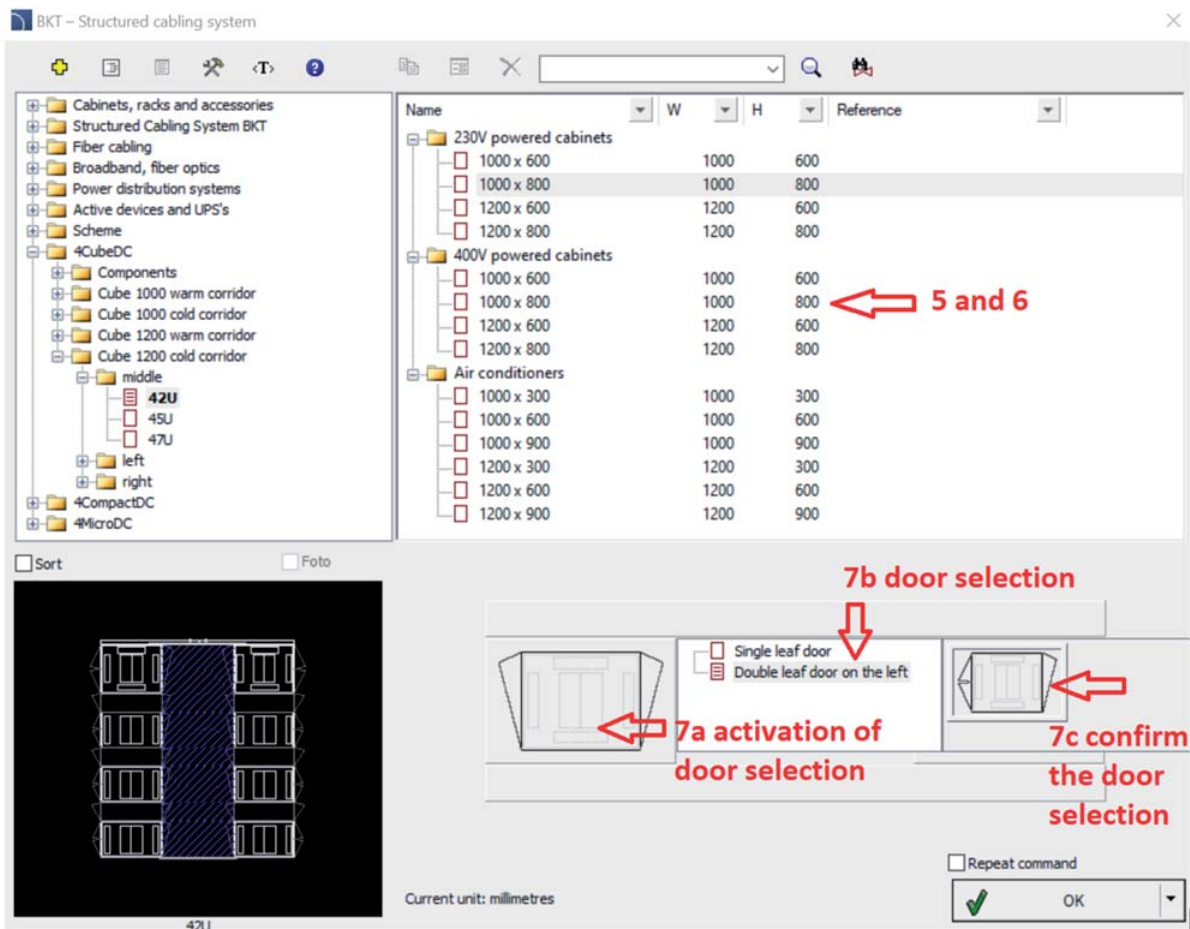
To change, activate the door selection- by selecting the cabinet symbol on the left side:

7a. You will then be able to choose between single or double leaf doors:

7b. select the required one and confirm your choice by clicking the selected cabinet on the right:

7c. In this way, we have configured one row of cabinets in 4CubeDC. We confirm the selection "OK".





### 5.3.3 Configuration of automatic / mechanical sliding doors and back wall to a row of cabinets

At the beginning and the end of the 4Cube corridor, we need to place a sliding door (we have a choice of automatic and mechanical) or a back wall.

In order to activate the selection we must:

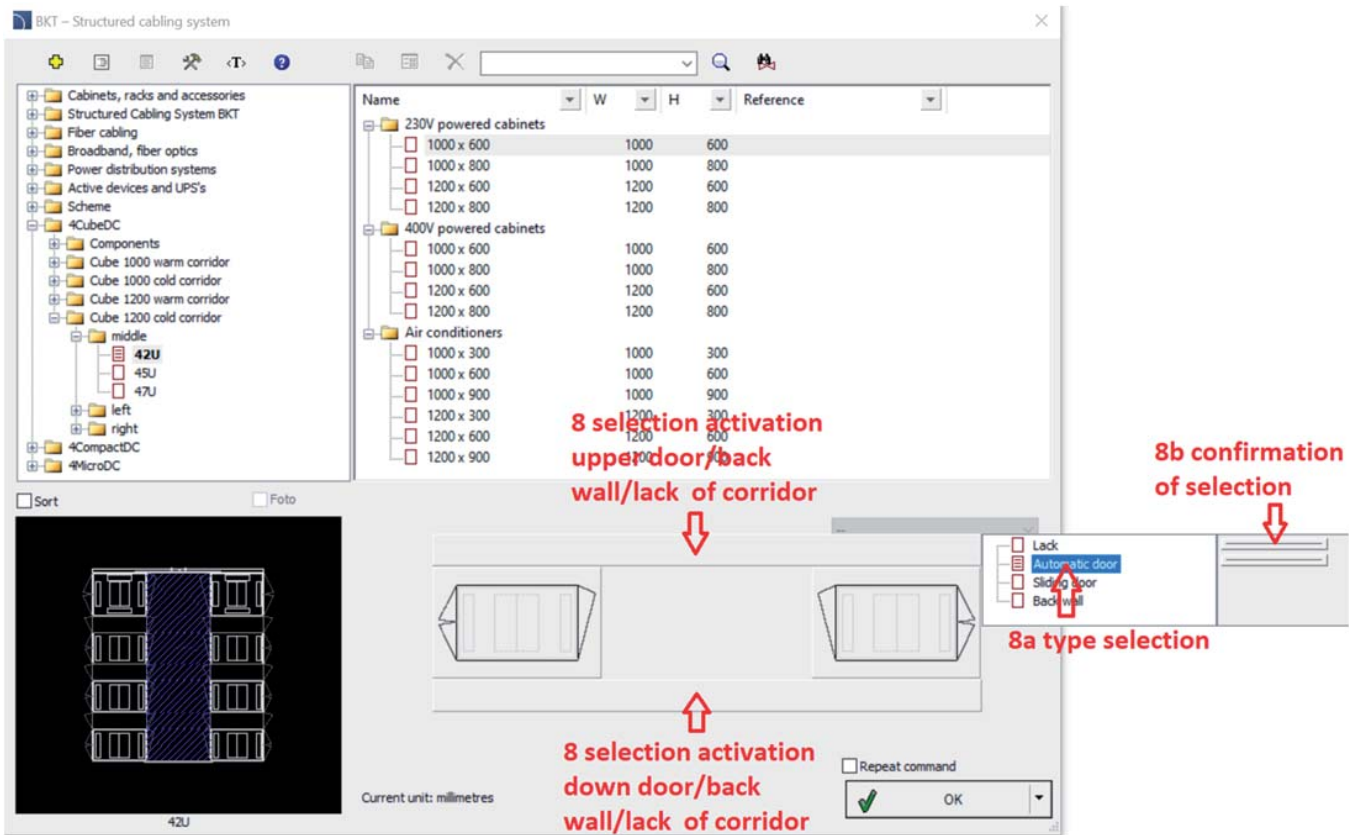
8. Move the cursor on the top or bottom bar above or below the cabinet symbols.

You will be able to choose type:

8a No door, automatic door, mechanical door or back wall. We choose the appropriate option

8b We confirm the selection- by clicking on the bar on the right

In the case of automatic doors, we can choose between automatic doors or automatic doors + extension / multimedia cover + monitor. After moving the cursor over the selection confirmation icon, the description text appears.



### 5.3.4 Air conditioners iRow (inRow) selection

After selecting the cabinets, especially their height and depth, appropriate row air conditioners should be selected.

- Air conditioners with cooling powers: 5.6kW, 7.6kW, 12kW, 17kW, 21kW, 25kW and 31kW are 300mm wide.
- Air conditioners with cooling capacities: 40.9kW, 51.2kW and 65.7kW are 600 mm wide.
- Air conditioners with the cooling capacity of 76.8 kW and 90.1 kW are 900 mm wide.

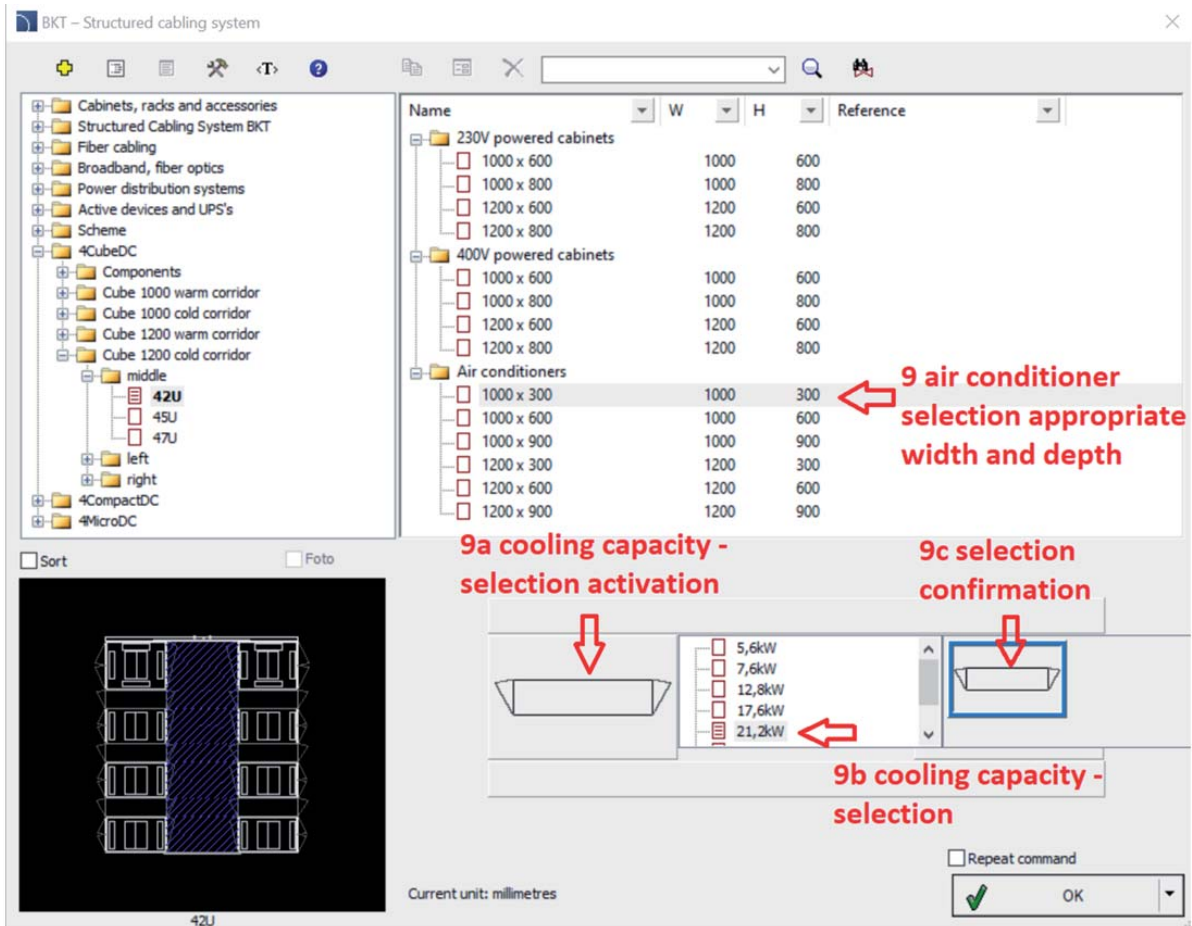
It is suggested to choose air conditioners with depths corresponding to the depth of the selected server cabinets.  
9. We select an air conditioner with a certain width (according to the ranges given above) and depth (according to the selected cabinets).

In order to select a specific value of the cooling capacity, please

- 9a. Activate the selection of the cooling capacity- by selecting and confirming (clicking) on the air conditioner symbol on the left.

The opportunity will appear

- 9b. Select from the list- select the appropriate value
- 9c. Confirm by clicking on the picture of the air conditioner on the right.



By confirming "OK" we insert the selected elements.

The insertion point of selected elements is always located in the upper left corner of the inserted element

For iRow row air conditioners, remember to use and select outdoor units, e.g. condensers for DX systems. Details:

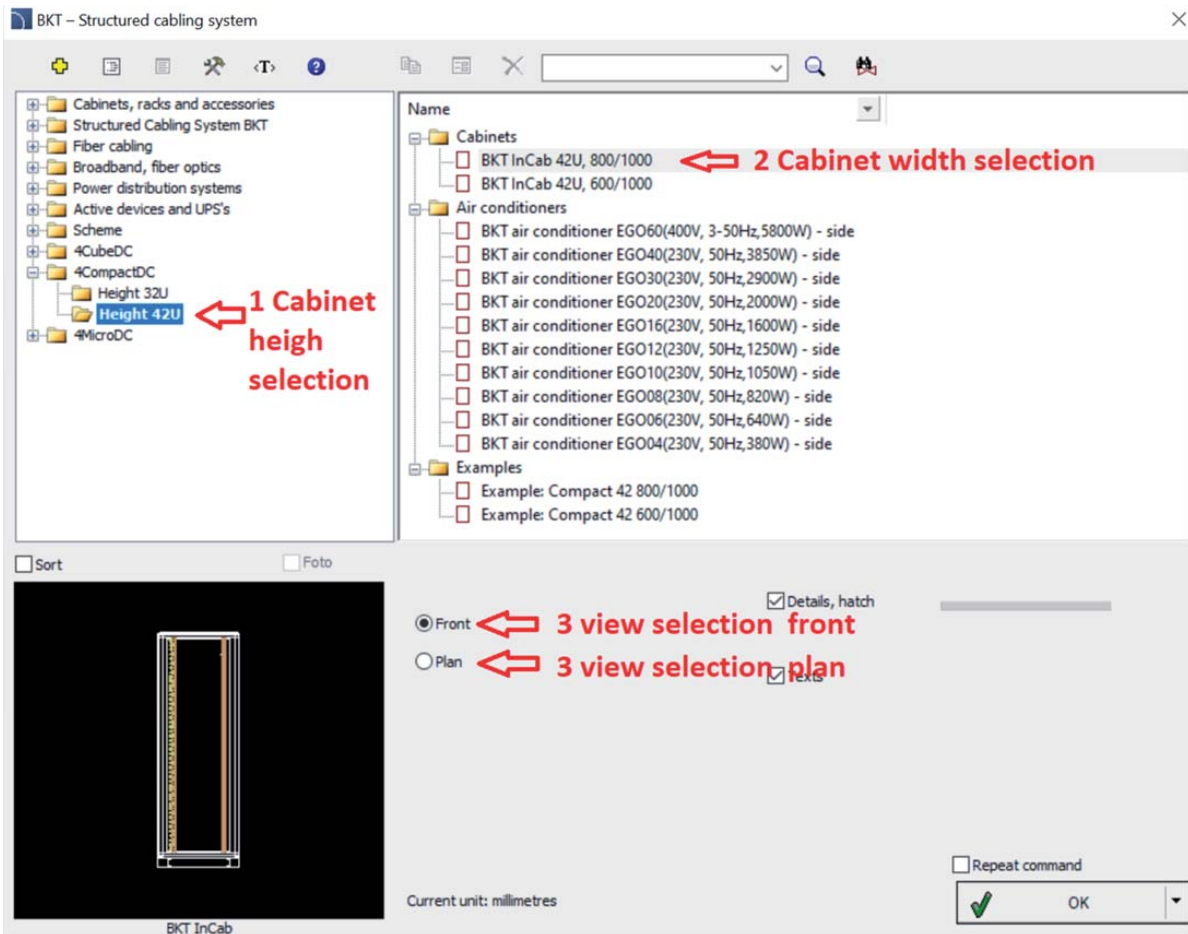
<https://www.bkte.pl/en/system-solutions/data-center/bkt-4data-center/bkt-4cubedc>

For more information please contact us.

## 5.4 Drawing diagrams (Scheme)

### 5.4.1 Selection of the cabinet height, width and power of the air conditioner.

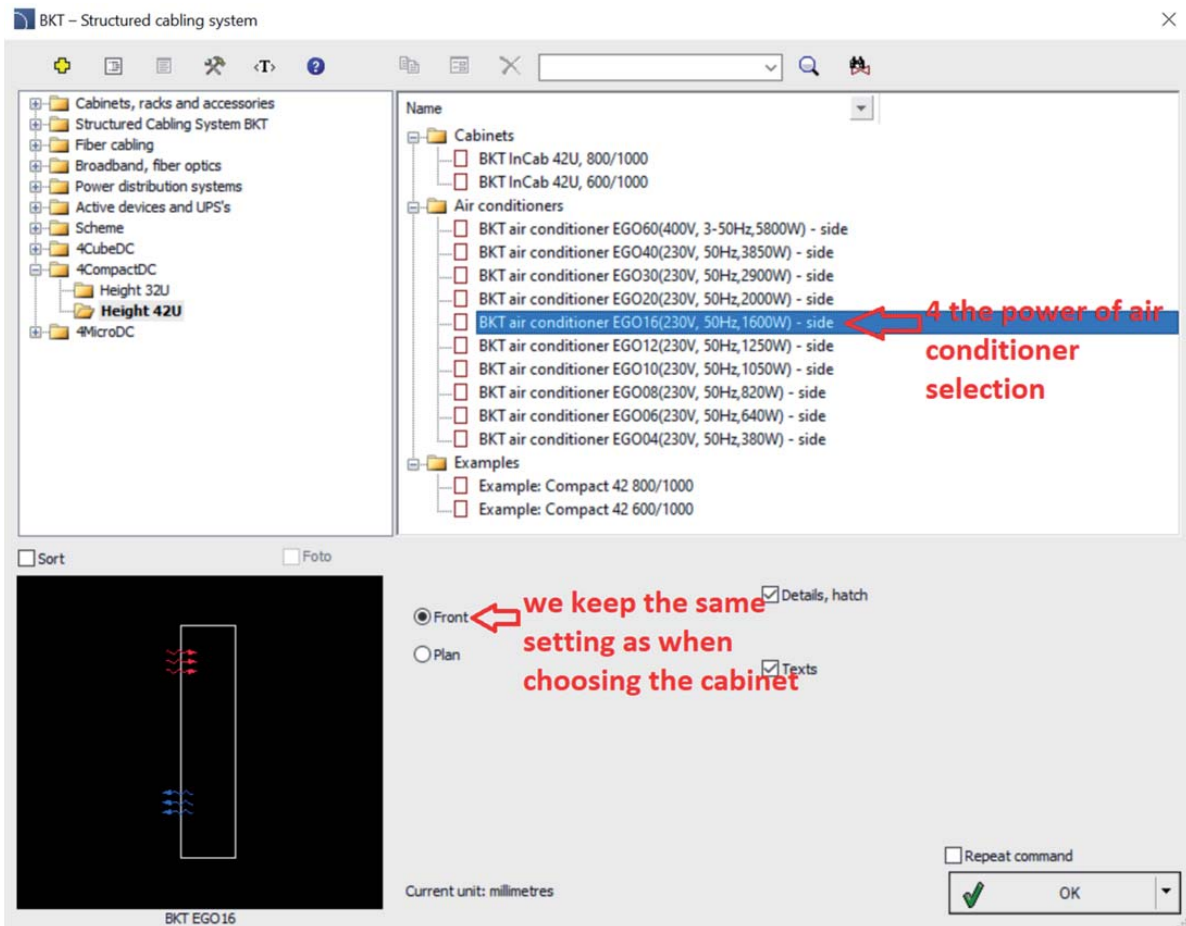
1. We choose the height of the 42U or 32U cabinet.
2. Choose the width of the cabinet.
3. Choose the view you want to draw: front or top view.





## 5.4.2 Selection of the cabinet height, width and power of the air conditioner.

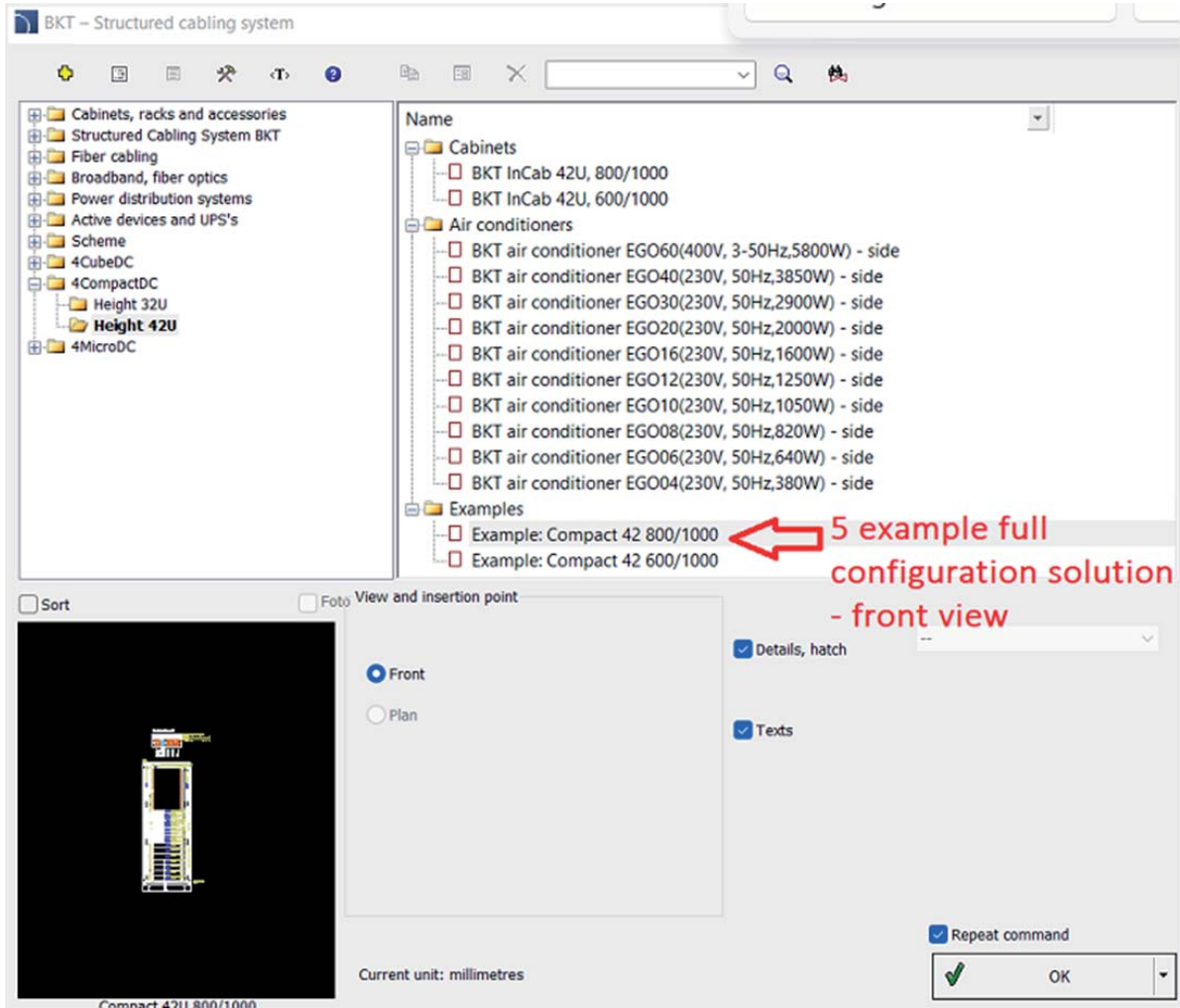
4. We choose the power of the air conditioner mounted on the side of the cabinet



If you want to draw a different view, proceed as in points 1-4 by selecting this view.

### 5.4.3 Example: full configuration solution with recommended equipment.

#### 5. Example full configuration solution



## 5.5 4Micro DC

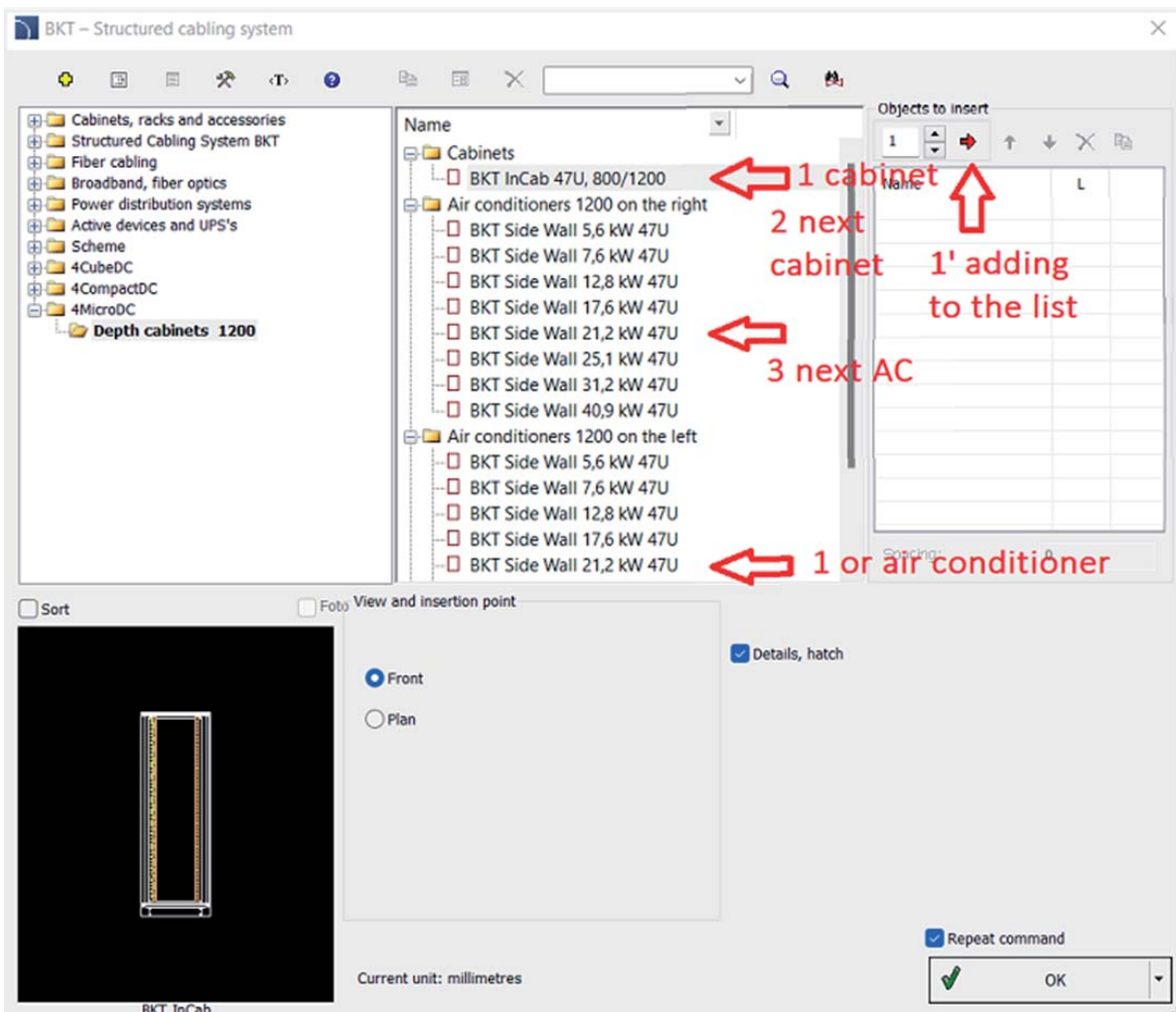
In this solution, we can choose only 47U 800x1200 cabinets. We can set the SideWall air conditioner on the right or left side. We can build multiple sets such as: air conditioner, cabinet, air conditioner, cabinet ...

All elements can be inserted individually by selecting the appropriate view we want, ie Front or Plan. Easier and more efficient is the method described below.

1. We choose a cabinet or an air conditioner if it is to be on the left.
- 1 'Each time after selecting, we insert an element into the list using the red arrow, remembering about the correct order of elements !!!
2. Choose the cabinet
3. Select the air conditioner on the right side of the cabinet (the rule is to choose air conditioners of the same power).

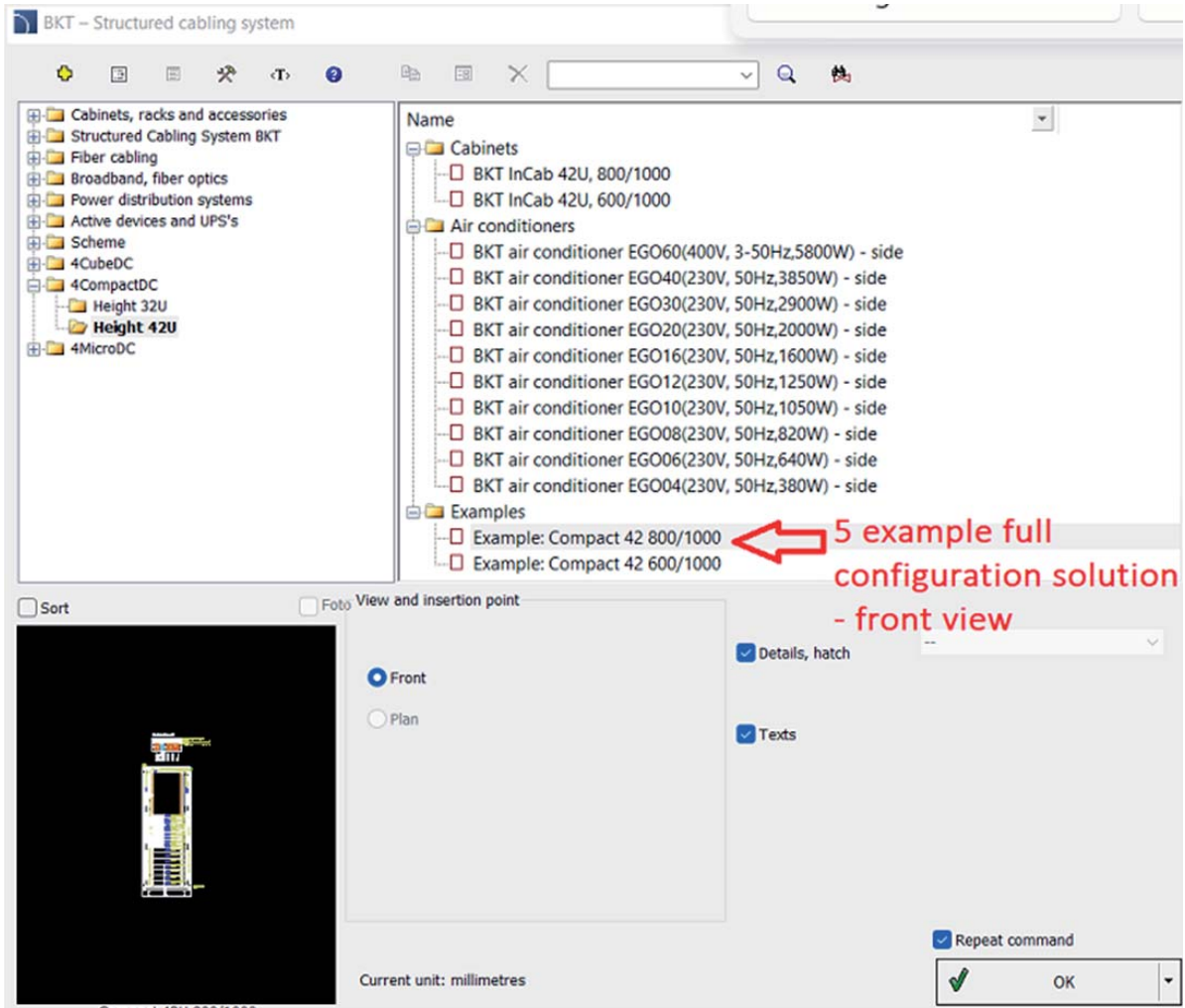
After obtaining the designed set of cabinets, in the tab "Objects to insert" (1"), confirm your choice with the OK button.

By configuring the layout in the manner described above, we get a drawing of both the top and front view.



### 5.5.1 Example: full configuration solution with recommended equipment

#### 5. Example full configuration solution



For any question please contact:

BKT ELEKTRONIK Design Office  
ul. Roździeńskiego 188c  
40-203 Katowice  
tel. +48 32 781 47 70 – 79  
e-mail: [project@e-bkte.pl](mailto:project@e-bkte.pl)



[www.bkte.pl](http://www.bkte.pl)

BKT Elektronik  
ul. Łochowska 69  
86-005 Białe Błota  
Tel. +48 52 36 36 371  
Fax. +48 52 36 36 370