

dwg-lab icon pack - how to draw so the script understands

No AI. The script reads ONLY these blocks on these layers. Anything else is ignored and listed in the check report.

1. Start a new drawing from DWGLAB_ICONPACK.dwt (units mm). Or copy the blocks from DWGLAB_ICONPACK.dwg. Don't rename or explode them.

Faster: APPLOAD DWGLAB.lsp, then DL (picture menu) or DL_SOCKET, DL_SWITCH, DL_ROOM... Each block lands on its layer, facing the room.
2. Units: mm. A drawing in cm or m is an error (every number would print 10x / 1000x off).
3. One closed polyline per room on A-ROOM, and one ROOM_TAG inside it: NAME, CEIL (mm), FLOOR. No outline edge under 100 mm.
4. One PROJECT block per drawing: SLAB = floor-to-slab height in mm.
5. Wall points: the red insertion point ON the room outline (within 100 mm), symbol pointing INTO the room (rotation = which wall).
6. H in mm above the FINISHED floor, to: the box centre (sockets, switches, thermostat, wall light), the pipe axis (water, drains), the BOTTOM edge (radiator), the centre (panel, towel dryer, AC, vent, washer). Floor build-up (screed + finish) is entered on the portal, not in the drawing: the sheets then also print the height from the bare slab in brackets.
7. Lights and switches share a GROUP letter (a, b, c...). A SWITCH_2 controls two groups: 'a,b'.
8. RADIATOR: stretch along X to the real length. WINDOW: insertion at one end on the room side, runs along +X, stretch X to length.

DOOR: insertion at the hinge, the opening runs along the straight leaf line (+Y); scale uniformly to width/900. Mirroring is fine.

Door / window IDs D1, W1... (printed as ДB1 / OK1). Points are numbered by the portal (E1, W1...) and keep their numbers between versions.
9. A ceiling or floor that differs inside a room: closed polyline on C-CEILING / F-FLOOR + CEIL_TAG / FLOOR_TAG inside.
10. LED strips / track rails: polyline on E-LED / E-TRACK. Wall tiles: polyline on W-TILE along the wall face + TILE_TAG (MATERIAL, FROM, H = top).

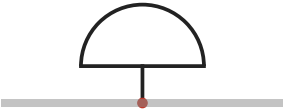
Underfloor heating: closed polyline on M-FLOORHEAT. Demolition / new walls: closed polylines on A-DEMO / A-NEW.
11. Blocks on frozen / off layers are skipped (old options). Pack blocks inside your own blocks are read (with a warning).
12. Warnings, not errors: socket under 150 (except 32A), switch outside 700-1400, water above 1300, a point within 100 mm of a door / window edge.
13. Before sending: DL_CHECK in AutoCAD, then upload to the portal. ERRORS must be zero. WARNINGS are worth a look.

What comes back (script only):

room sheets (area, perimeter, wall m2, heights) - electrical, lighting, plumbing, heating schedules - doors & windows
wall elevations with every point at its real height - floor / ceiling zones - LED and track metres - heated floor m2 - Excel of everything

Catalog 1/2 - Electrical, Lighting

Red dot = insertion point (goes on the wall face). Grey bar = the wall. Attributes show their default values.



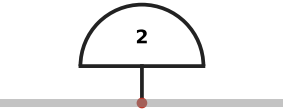
SOCKET

Socket, single

layer E-POWER

H=300 NOTE=...

H to the box centre



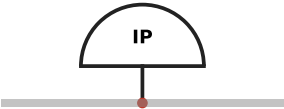
SOCKET_2

Socket, double

layer E-POWER

H=300 NOTE=...

H to the box centre



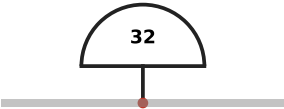
SOCKET_IP44

Socket, waterproof IP44

layer E-POWER

H=1100 NOTE=...

H to the box centre



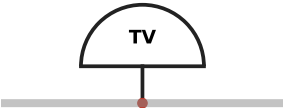
SOCKET_32A

Power socket (oven, hob) 32A

layer E-POWER

H=100 NOTE=...

H to the box centre



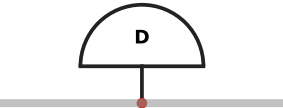
SOCKET_TV

TV socket

layer E-POWER

H=1100 NOTE=...

H to the box centre



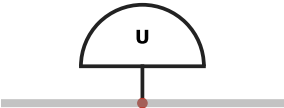
SOCKET_DATA

Data / internet socket

layer E-POWER

H=300 NOTE=...

H to the box centre



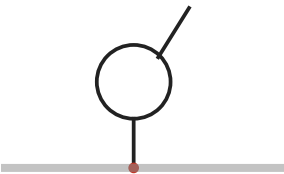
SOCKET_USB

Socket with USB

layer E-POWER

H=300 NOTE=...

H to the box centre



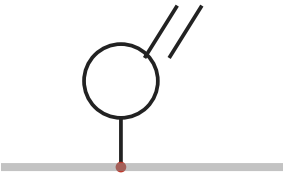
SWITCH_1

Switch, 1 key

layer E-POWER

H=900 GROUP=a

H to the box centre



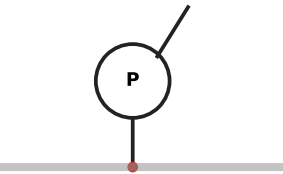
SWITCH_2

Switch, 2 keys

layer E-POWER

H=900 GROUP=a,b

H to the box centre



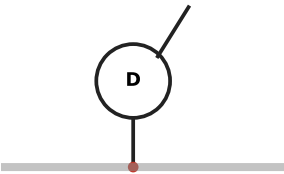
SWITCH_PASS

Two-way switch (pass-through)

layer E-POWER

H=900 GROUP=a

H to the box centre



DIMMER

Dimmer

layer E-POWER

H=900 GROUP=a

H to the box centre



PANEL

Electrical panel

layer E-POWER

H=1600 NOTE=...

H to the centre



THERMOSTAT

Thermostat (floor heating)

layer M-HEAT

H=900 NOTE=...

H to the box centre

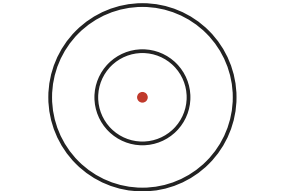


SPOT

Recessed spot

layer E-LIGHT

GROUP=a MODEL=...

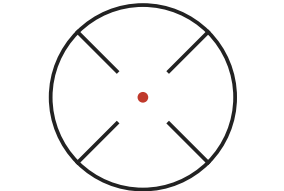


CEILING_LIGHT

Ceiling light

layer E-LIGHT

GROUP=a MODEL=...



PENDANT

Pendant

layer E-LIGHT

GROUP=a MODEL=... DROP=700



WALL_LIGHT

Wall light (sconce)

layer E-LIGHT

H=1800 GROUP=a MODEL=...

H to the box centre



TRACK_SPOT

Track head (on E-TRACK rail)

layer E-LIGHT

GROUP=a MODEL=...

Catalog 2/2 - Plumbing, Heating & air, Doors, windows, tags

Red dot = insertion point (goes on the wall face). Grey bar = the wall. Attributes show their default values.



WATER_COLD
Cold water point
layer P-WATER
H=550 FOR=...
H to the pipe axis



WATER_HOT
Hot water point
layer P-WATER
H=550 FOR=...
H to the pipe axis



DRAIN
Drain / sewer outlet
layer P-WATER
H=450 D=50
H to the pipe axis



WC_DRAIN
Toilet outlet 110
layer P-WATER
H=200 D=110
H to the pipe axis



FLOOR_DRAIN
Floor drain (trap)
layer P-WATER
D=50



WASHER
Washing machine point
layer P-WATER
H=600
H to the centre



RADIATOR
Radiator (stretch X to length)
layer M-HEAT
H=150 HEIGHT=600 MODEL=...
H to the bottom edge



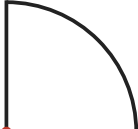
TOWEL_DRYER
Towel dryer
layer M-HEAT
H=900 HEIGHT=800
H to the centre



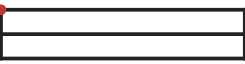
AC_INDOOR
AC indoor unit
layer M-HEAT
H=2400 MODEL=...
H to the centre



VENT
Exhaust vent
layer M-HEAT
H=2500 D=100
H to the centre



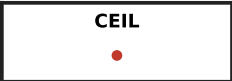
DOOR
Door (scale = width/900)
layer A-DOOR
ID=D1 H=2100 TYPE=...



WINDOW
Window (stretch X to length)
layer A-WINDOW
ID=W1 SILL=850 TOP=2350



ROOM_TAG
Room tag: name, ceiling, floor
layer A-ROOM
NAME=Room CEIL=2700 FLOOR=...



CEIL_TAG
Ceiling zone level
layer C-CEILING
LEVEL=2600



FLOOR_TAG
Floor zone material
layer F-FLOOR
MATERIAL=...



TILE_TAG
Wall tile: material, from / to height
layer W-TILE
MATERIAL=... FROM=0 H=2400



PROJECT
Project data, once per drawing
layer A-ROOM
SLAB=2850 CLIENT=... ADDRESS=... DESIGNER=...

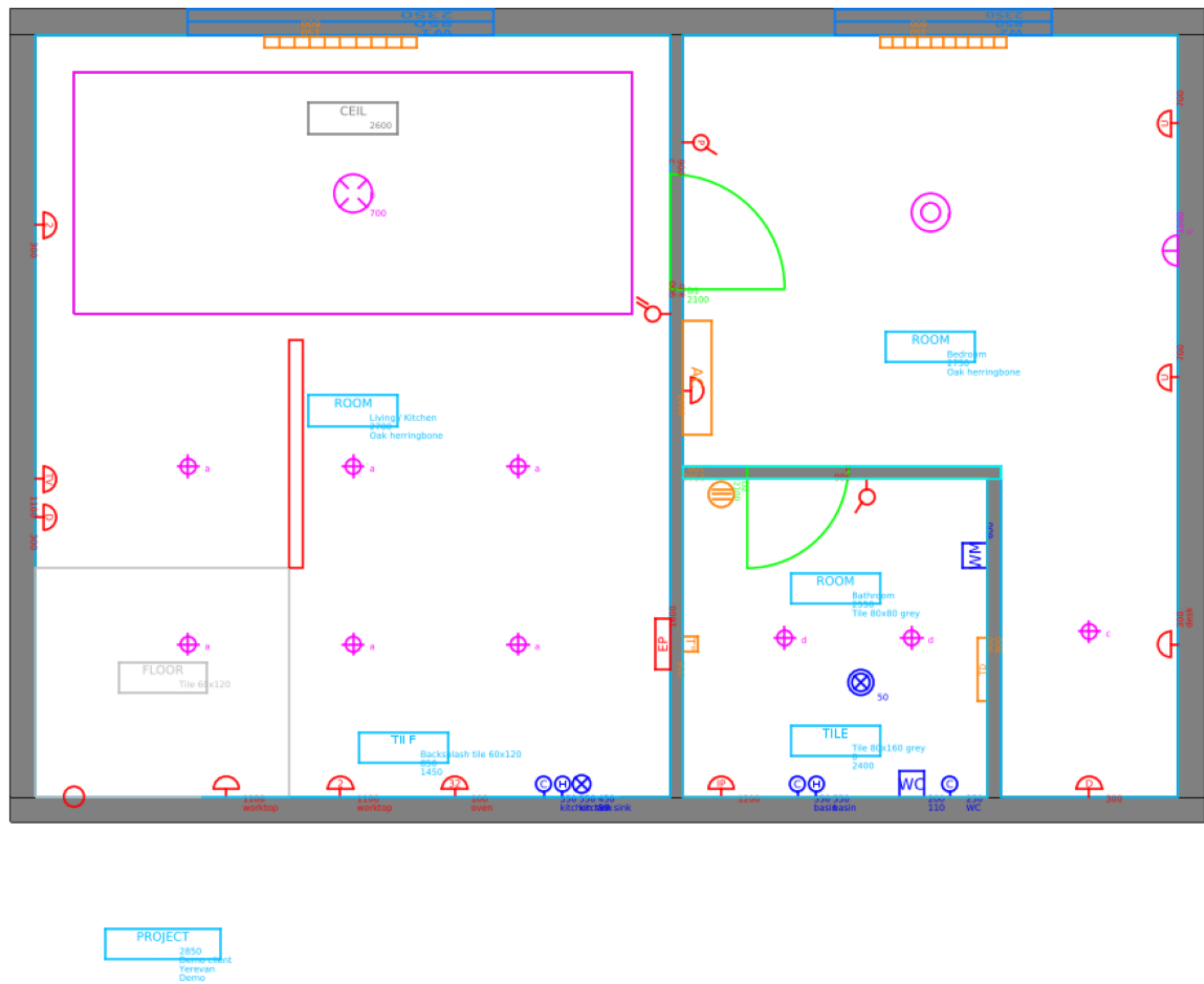
Layers

Create nothing else on these layers. Your own layers are fine for anything the script should ignore.

Layer	What goes there
A-WALL	Walls: closed polylines or hatch
A-ROOM	Room outline: one closed polyline per room + ROOM_TAG inside
A-DOOR	DOOR blocks
A-WINDOW	WINDOW blocks
A-DEMO	Walls to demolish (closed polylines)
A-NEW	New walls to build (closed polylines)
E-POWER	Sockets, switches, panel
E-LIGHT	Light fixtures
E-LED	LED strip: polyline along its real path
E-TRACK	Track rail: polyline along its real path
P-WATER	Water points and drains
M-HEAT	Radiators, AC, towel dryer, vent, thermostat
M-FLOORHEAT	Underfloor heating zone: closed polyline
C-CEILING	Ceiling zone: closed polyline + CEIL_TAG inside (only where it differs from the room)
F-FLOOR	Floor zone: closed polyline + FLOOR_TAG inside (only where it differs from the room)
W-TILE	Wall tile run: polyline along the wall face + TILE_TAG next to it (material, FROM height, H = top height)
F-FURN	Furniture: any blocks, not read except for clash check

Demo: a small flat drawn with the pack (demo_flat.dxf)

Input. Two mistakes are left in on purpose to show the check: a socket with no height, and a home-made 'MY_SOCKET' block.



What the script read from it (check.py)

Slab 2850 mm. Errors must be fixed; then the full book is generated.

ERROR Bedroom: SOCKET has no height (H is empty).

WARNING Living / Kitchen: 4 socket(s) still have the default height (SOCKET_2 x1 H=300, SOCKET_32A x1 H=100, SOCKET_DATA x1 H=300, SOCKET_TV x1 H=1100). Confirm that is right.

WARNING Bedroom: 2 socket(s) still have the default height (SOCKET x1 H=300, SOCKET_DATA x1 H=300). Confirm that is right.

WARNING Ignored 1 x block 'MY_SOCKET' on a pack layer: it is not in the icon pack.

Rooms

Room	m2	Perim. m	Ceil	Wall m2	Floor	Zones	Doors	Win	LED m	Heat m2
Living / Kitchen	30.0	22.0	2700	59.4	Oak herringbone	ceiling 2600 (8.4 m2); floor Tile 60x120 (3.6 m2)	1	1	12.6	0.0
Bedroom	16.9	19.8	2750	54.5	Oak herringbone	-	2	1	0.0	0.0
Bathroom	6.0	9.8	2550	25.0	Tile 80x80 grey	-	1	0	0.0	6.0

Counts

Group	Item	Qty
Electrical	Data / internet socket	2
Electrical	Electrical panel	1
Electrical	Power socket (oven, hob) 32A	1
Electrical	Socket with USB	2
Electrical	Socket, double	2
Electrical	Socket, single	3
Electrical	Socket, waterproof IP44	1
Electrical	Switch, 1 key	1
Electrical	Switch, 2 keys	1
Electrical	TV socket	1
Electrical	Thermostat (floor heating)	1
Electrical	Two-way switch (pass-through)	1
Heating & air	AC indoor unit	1

Group	Item	Qty
Heating & air	Exhaust vent	1
Heating & air	Radiator (stretch X to length)	2
Heating & air	Towel dryer	1
Lighting	Ceiling light	1
Lighting	Pendant	1
Lighting	Recessed spot	9
Lighting	Wall light (sconce)	1
Plumbing	Cold water point	3
Plumbing	Drain / sewer outlet	1
Plumbing	Floor drain (trap)	1
Plumbing	Hot water point	2
Plumbing	Toilet outlet 110	1
Plumbing	Washing machine point	1

Electrical & plumbing schedules - generated, not drawn

Every row comes from one block: room from the A-ROOM outline, wall from the rotation, height from H.

Electrical + lighting

#	Room	Item	Wall	H	Group	Note
1	Living / Kitchen	Socket, double	4 W	300		
2	Living / Kitchen	TV socket	4 W	1100		
3	Living / Kitchen	Data / internet socket	4 W	300		
4	Living / Kitchen	Socket, single	1 S	1100		worktop
5	Living / Kitchen	Socket, double	1 S	1100		worktop
6	Living / Kitchen	Power socket (oven, hob) 32A	1 S	100		oven
7	Living / Kitchen	Switch, 2 keys	2 E	900	a,b	
8	Living / Kitchen	Electrical panel	2 E	1600		
9	Living / Kitchen	Recessed spot	ceiling	-	a	
10	Living / Kitchen	Recessed spot	ceiling	-	a	
11	Living / Kitchen	Recessed spot	ceiling	-	a	
12	Living / Kitchen	Recessed spot	ceiling	-	a	
13	Living / Kitchen	Recessed spot	ceiling	-	a	
14	Living / Kitchen	Recessed spot	ceiling	-	a	
15	Living / Kitchen	Pendant	ceiling	-	b	
16	Bedroom	Socket, single	6 W	EMPTY		
17	Bedroom	Socket with USB	4 E	700		
18	Bedroom	Socket with USB	4 E	700		
19	Bedroom	Socket, single	4 E	300		desk
20	Bedroom	Data / internet socket	3 S	300		
21	Bedroom	Two-way switch (pass-through)	6 W	900	c	
22	Bedroom	Ceiling light	ceiling	-	c	
23	Bedroom	Recessed spot	ceiling	-	c	
24	Bedroom	Wall light (sconce)	4 E	1500	c	
25	Bathroom	Switch, 1 key	3 N	900	d	
26	Bathroom	Socket, waterproof IP44	1 S	1200		
27	Bathroom	Recessed spot	ceiling	-	d	
28	Bathroom	Recessed spot	ceiling	-	d	
29	Bathroom	Thermostat (floor heating)	4 W	900		

Plumbing + heating

#	Room	Item	Wall	H	For	Model
1	Living / Kitchen	Cold water point	1 S	550	kitchen sink	
2	Living / Kitchen	Hot water point	1 S	550	kitchen sink	
3	Living / Kitchen	Drain / sewer outlet	1 S	450		
4	Living / Kitchen	Radiator (stretch X to length)	3 N	150		
5	Bedroom	Radiator (stretch X to length)	5 N	150		
6	Bedroom	AC indoor unit	6 W	2400		
7	Bathroom	Cold water point	1 S	550	basin	
8	Bathroom	Hot water point	1 S	550	basin	
9	Bathroom	Toilet outlet 110	1 S	200		
10	Bathroom	Cold water point	1 S	250	WC	
11	Bathroom	Washing machine point	2 E	600		
12	Bathroom	Floor drain (trap)	floor	-		
13	Bathroom	Towel dryer	2 E	900		
14	Bathroom	Exhaust vent	3 N	2500		