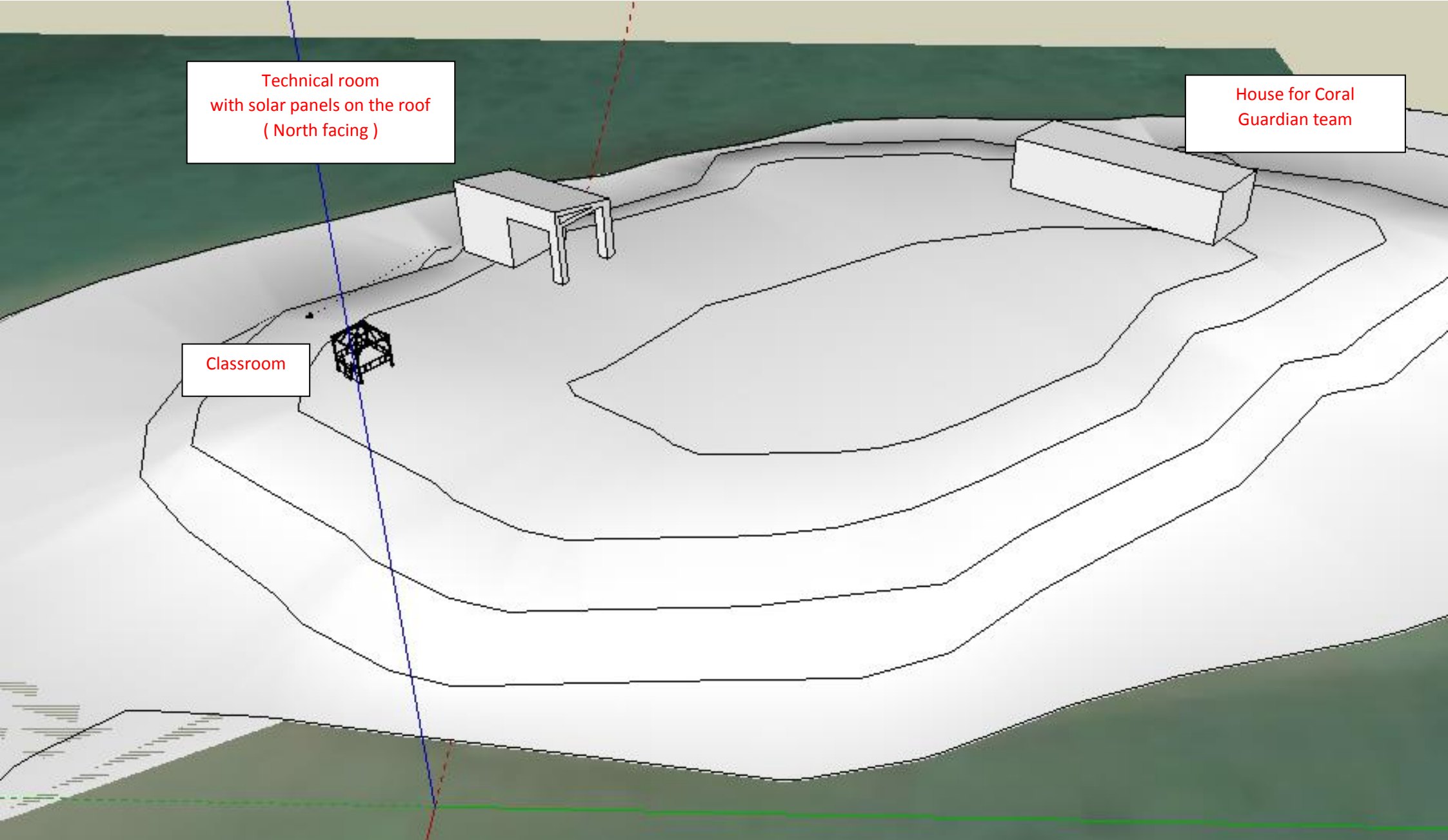


PULAU HATAMIN PROJECT :



Technical room
with solar panels on the roof
(North facing)

House for Coral
Guardian team

Classroom

STEPS OF THE BUILDING SITE :

- 1. Dig the trenches for the cable between each building. Put the cable inside and plug the hole. Let enough cable on the ground to join the cable to the future electrical box (approximately 5 meters).**
- 2. Build the different buildings.**
- 3. Hammer in the ground stakes close to the technical room. Cable this one to the ground separator and the electrical box of the technical room.**
- 4. Fix the solar panels on the roof of the technical room. Don't forget the cable of ground for each solar panel and cables of power like in the assembly guide.**
- 5. Fix other element of the grid (charge controller, inverter/charger, color control, electrical boxes...).**
- 6. Follow the assembly guide to install the electrical grid in the technical room.**

Important : Respect the safety rules ! Be careful, electricity is very dangerous !

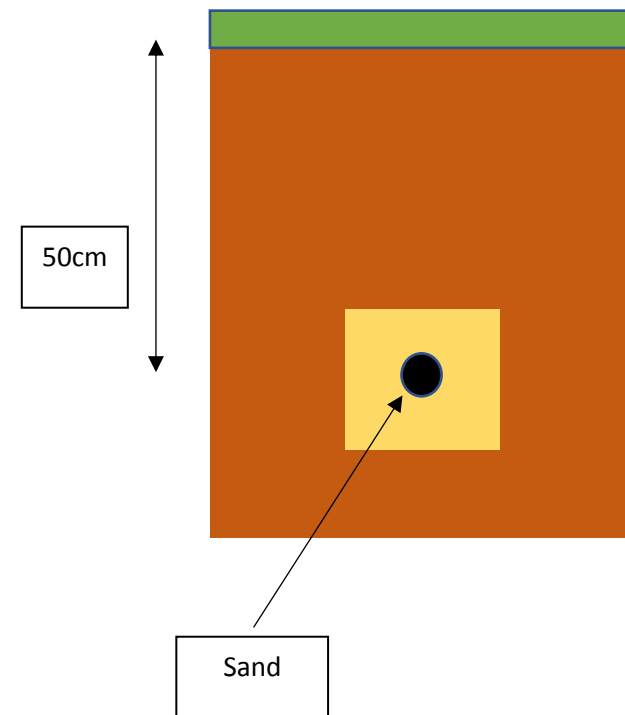
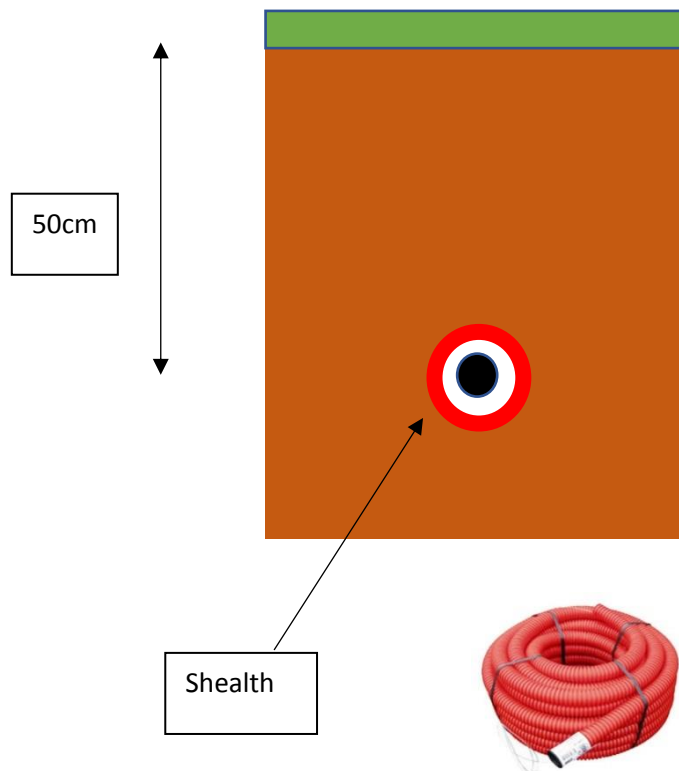
- 7. Cable the different electrical charges (electrical outlets, lightings etc..) in each electrical boxes.**

The output of the inverter mustn't be cable to the electrical box of the technical room during this step.

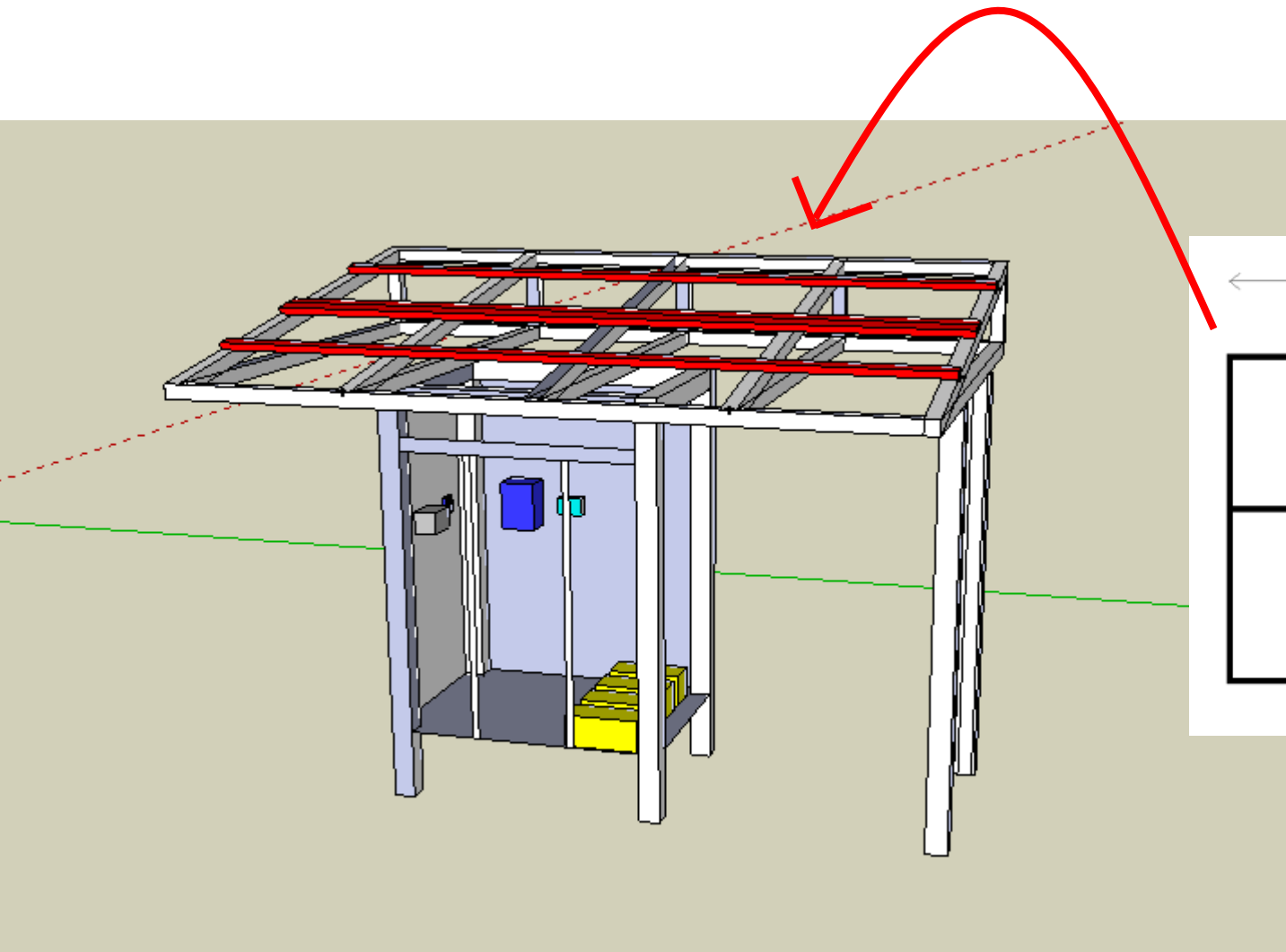
- 8. Cable the output of the inverter to the electrical box of the technical room. For that, every differential and circuit breaker should be on the position off.**
- 9. Change the position of all differentials and circuit breakers one by one with precaution.**

TRENCHES :

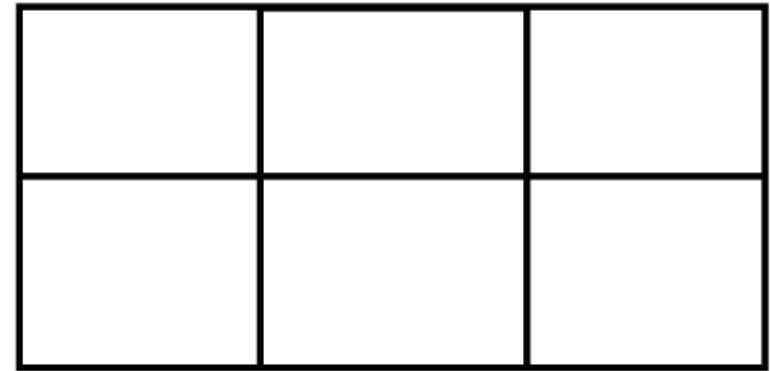
- In each building, there will be an electrical box.
- Between each building, a cable $3 \times 10 \text{mm}^2$ will be set. This cable must be put 50 centimeters under the ground. To protect the cable, you can use the sheath or put 10 centimeters of sands around the cable.



TECHNICAL ROOM :



← $3 \times 1.665 = 4.995\text{m}$ →

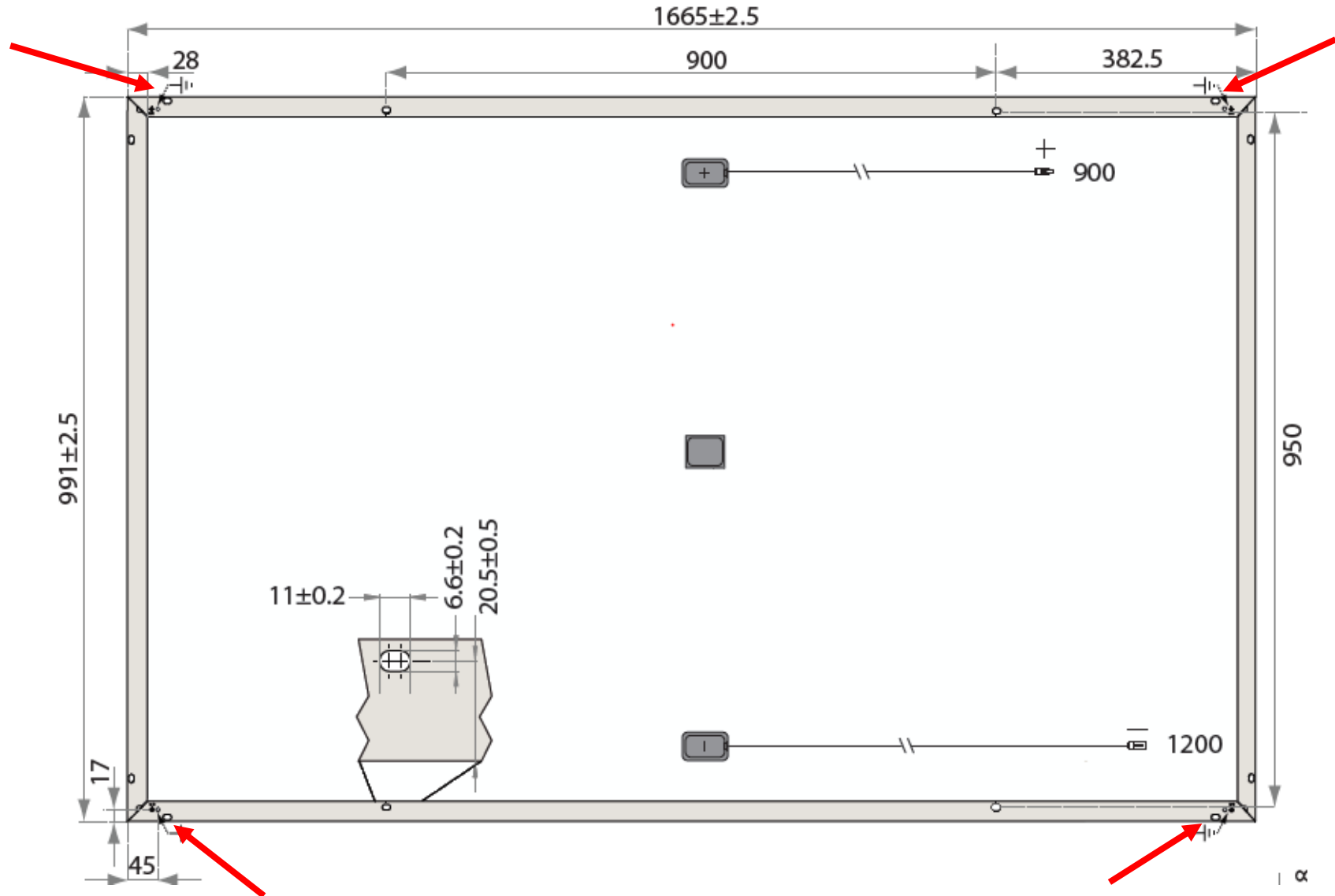


↑ $2 \times 0.95 = 1.982\text{m}$ ↓

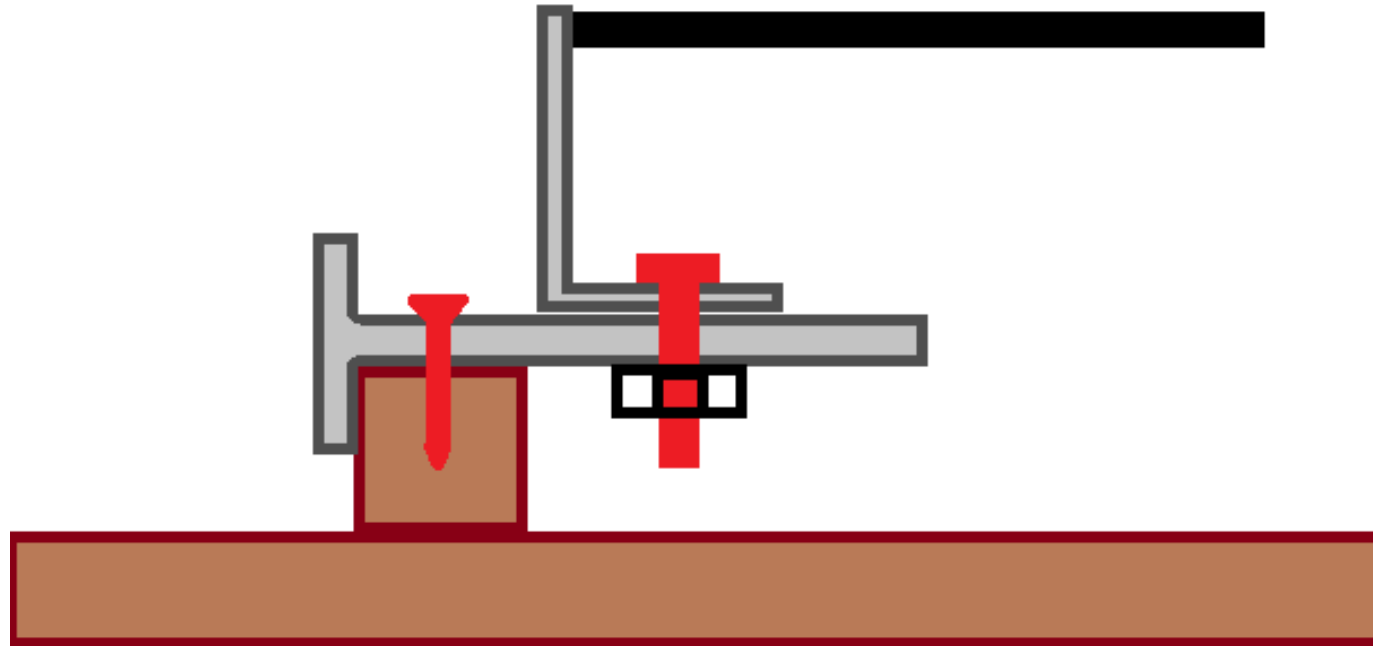
Solar panels

FIX THE SOLAR PANELS ON THE ROOF :

- In each corner, put an aluminium attachment between the solar panel and the wood bar.

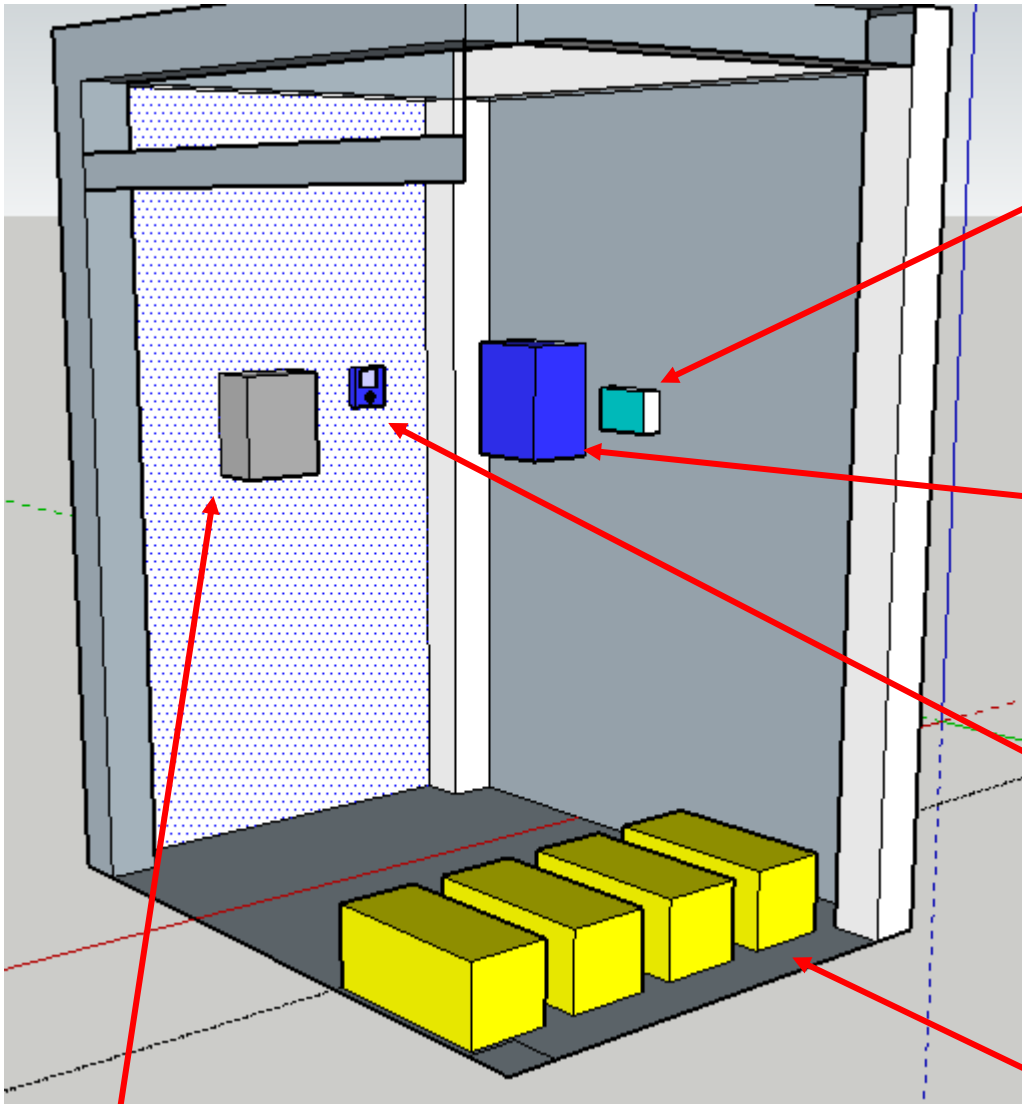


ALUMINIUM ATTACHMENT :



- Try to put the solar panel the closest possible to the wood.
- Cut the aluminium piece if it is too long.
- To fix the wood bar on the roof, drill the wood bar and use a screw.

EMPLACEMENT IN THE TECHNICAL ROOM :



Charge controller



Inverter - charger



Color control



Batteries



Electrical box



FIX THE CABLE :

- To fix the cable you can put it in an PVC pipe and fix the PVC pipe with clamps.



PVC pipes



Clamps

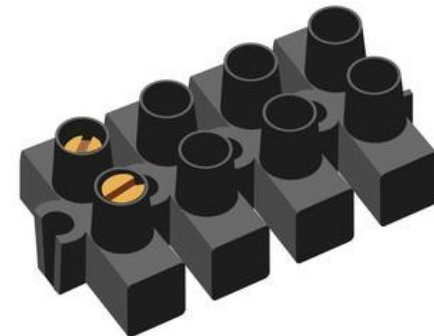
- You can use the junction boxes, wago and terminal cristin to cable several lightings or electrical outlets in derivation.



Junction box

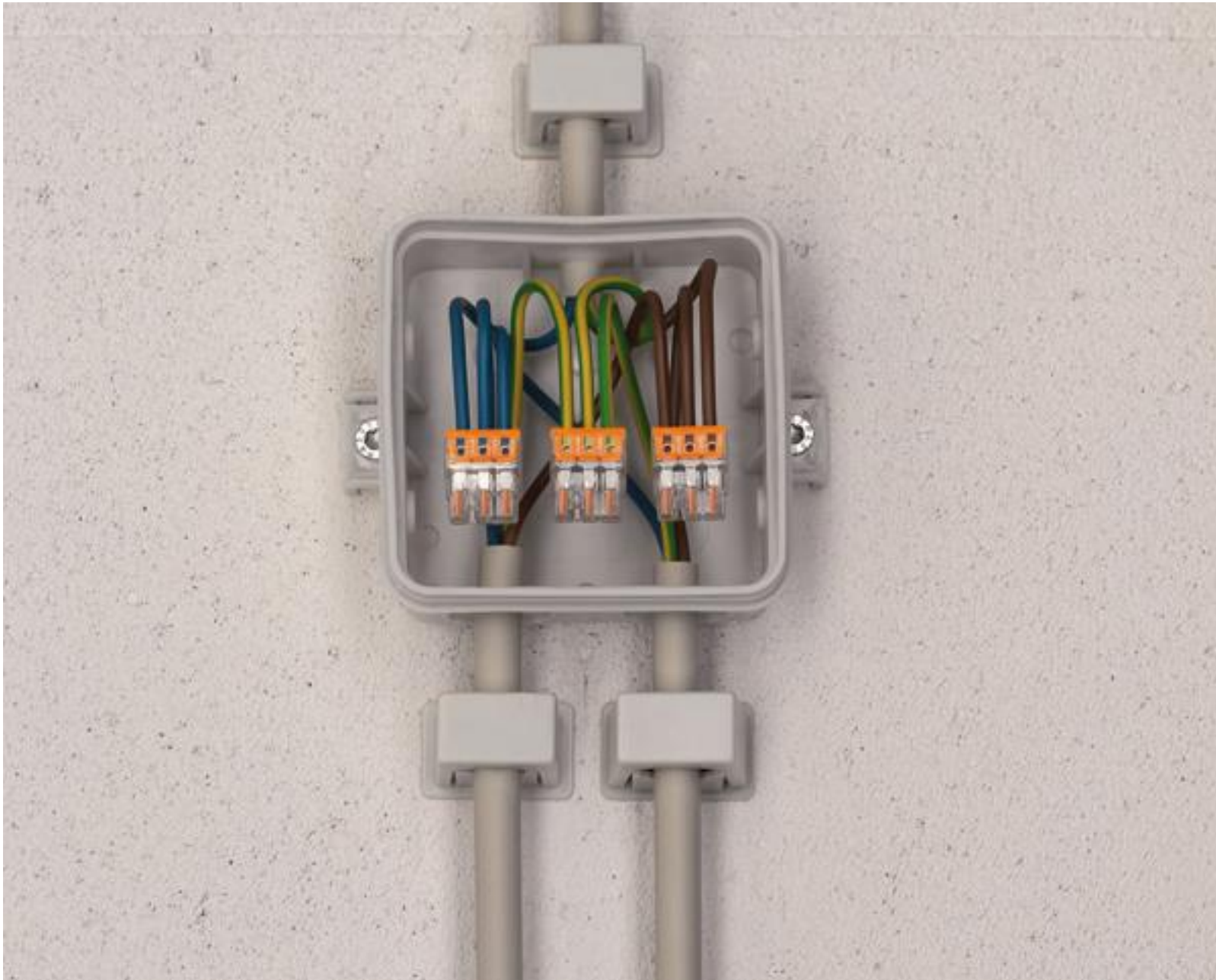


Wago



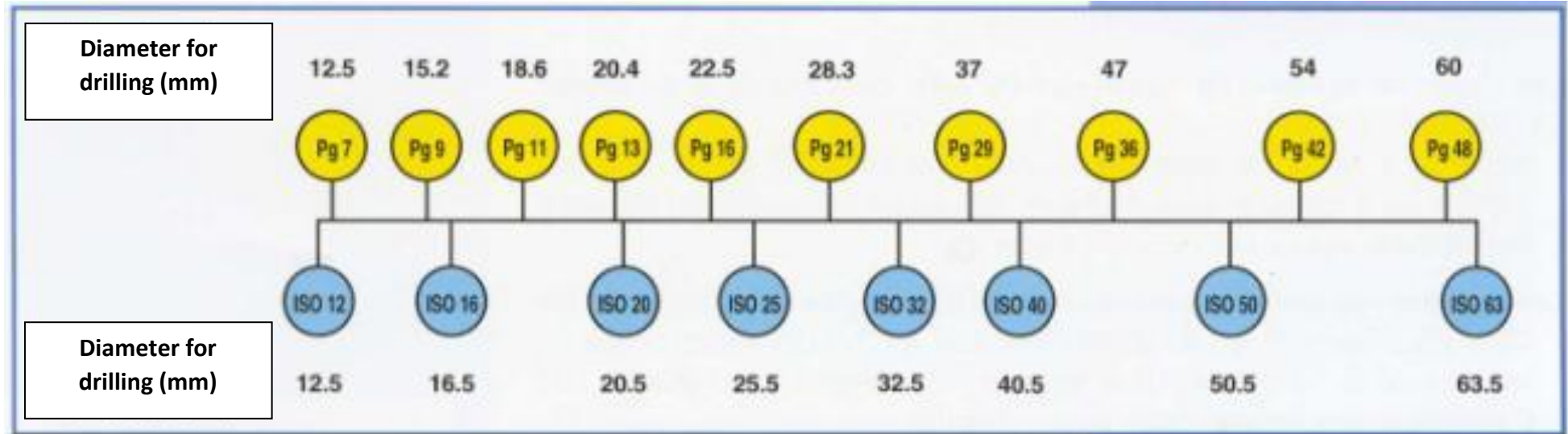
Terminal cristin

EXAMPLE :

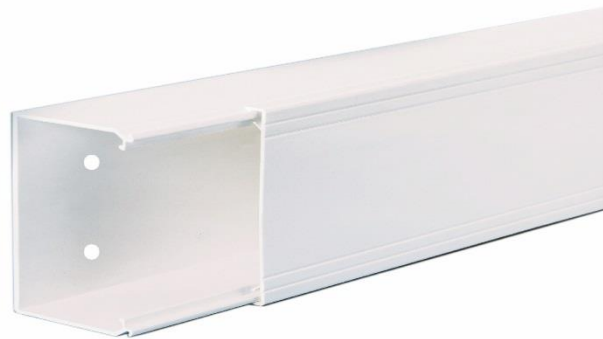


FIX THE CABLE IN ELECTRICAL BOX :

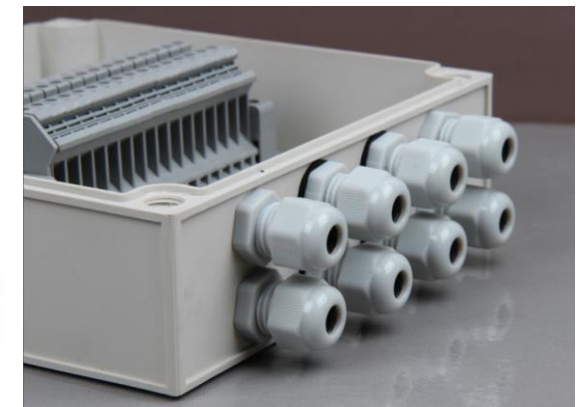
➤ You can use the cable gland to fix the cable into the electrical box. For that, you have to



➤ You can also use the PVC duck under the electrical box



PVC duck

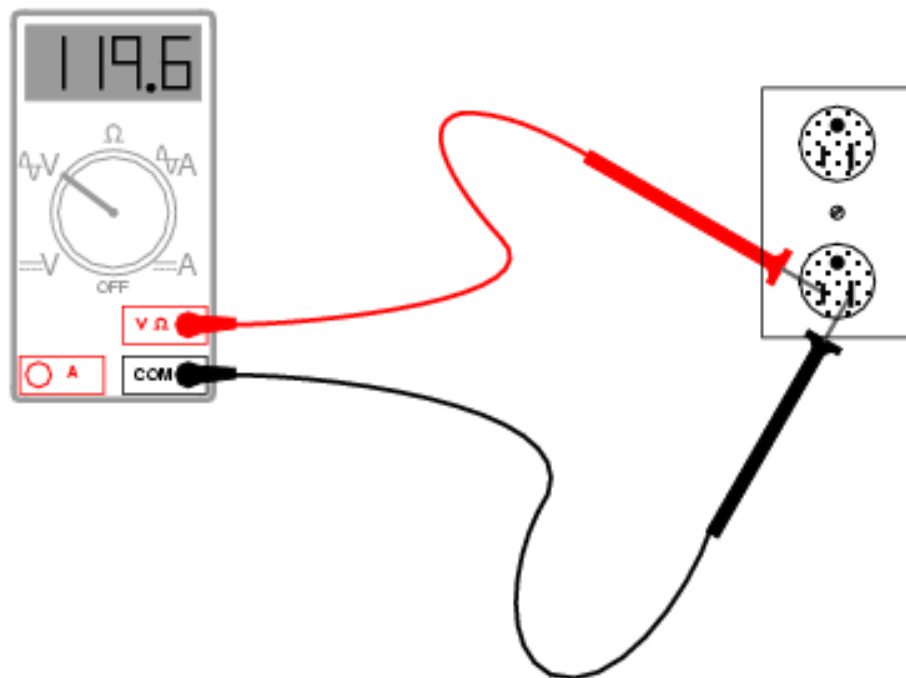


Cable gland

ELECTRICAL SAFETY RULES :

Before to work in your electrical box or on your electrical loads, you have to know each safety rules. Electricity is very dangerous and can cause the die of someone who don't respect these rules.

- If you want to cable an electrical load, you have to stop electrical current. For that, the differential of 30mA and the circuit breaker of this load must be in position OFF.
- Before cable, check with the multimeters the voltage between the phase (L) and the neutral (N) of the out of the circuit breaker affected. The multimeters must indicate **0V**. If it indicates **230V**, change the position of differential and circuit breaker.



Warning :

The multimeter must be on the position V-AC or 

The caliber must be bigger than 230.

- **If the voltage is 0, you can work safely.**
- **When the cabling is finished, you can change the differential and the circuit breaker in position ON.**
- **If there is a circuit short, the circuit breaker will put himself in position OFF. You can change the position of the circuit breaker in position ON once. If the circuit breaker put himself in position OFF, there is a serious problem. **Don't change the position several times in few minutes, it is dangerous!****
- **Often the circuit breaker cut the current because there is a load which has an important power. In this case, there isn't circuit short. You have just to unplug all electrical loads of the electrical outlets affected and change the position of the circuit breaker.**
- **If there is again the problem, there is a circuit short in the cable. Follow the cable too see if it is damaged somewhere and where the phase (L) touch the neutral (N).**

TERMINAL BLOCKS :

- For fixing the big cable (10mm²) or put several cables in derivation, we can use terminal block inside the electrical boxes.
- Below an example to understand how work these terminal blocks and how we represent it in the electrical boxes.

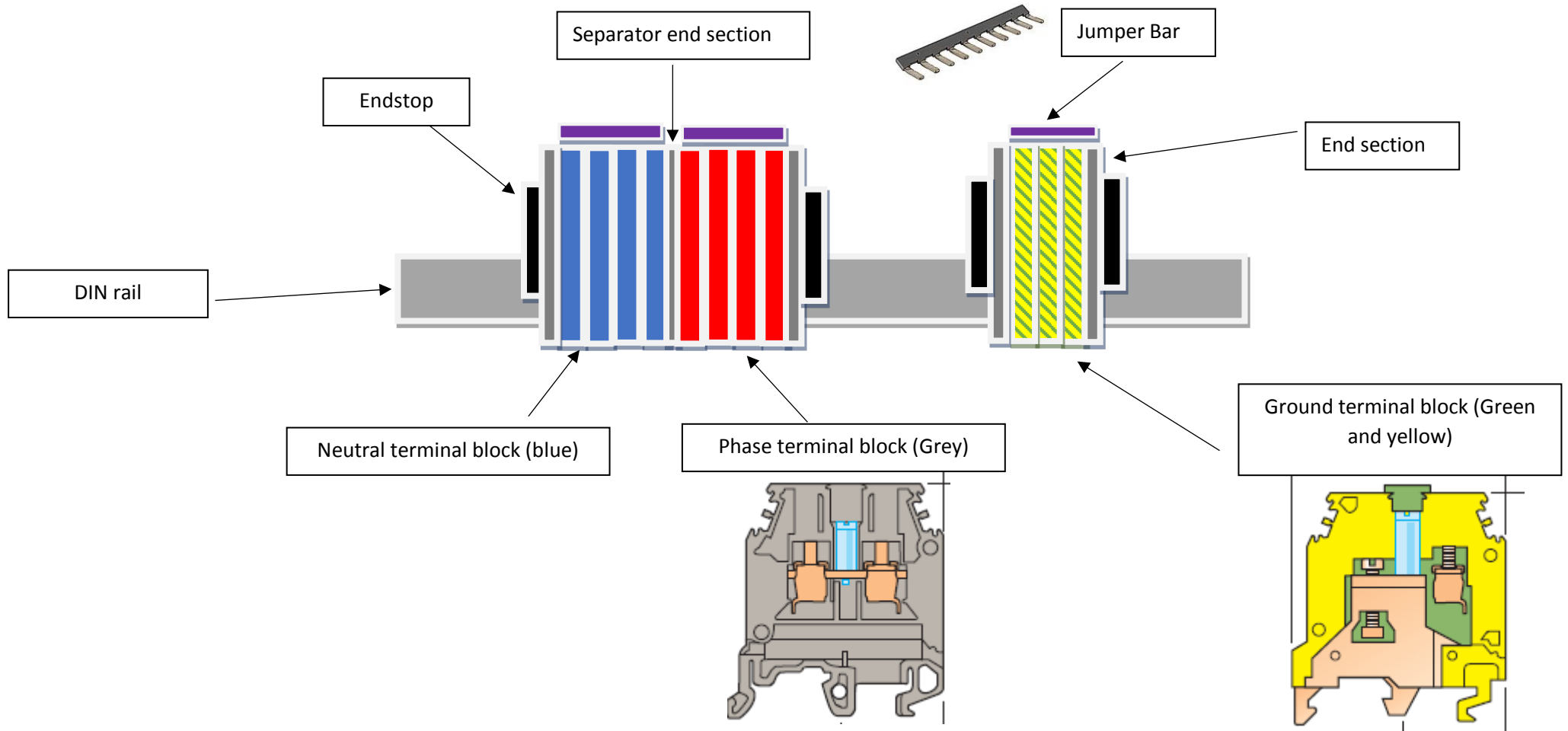
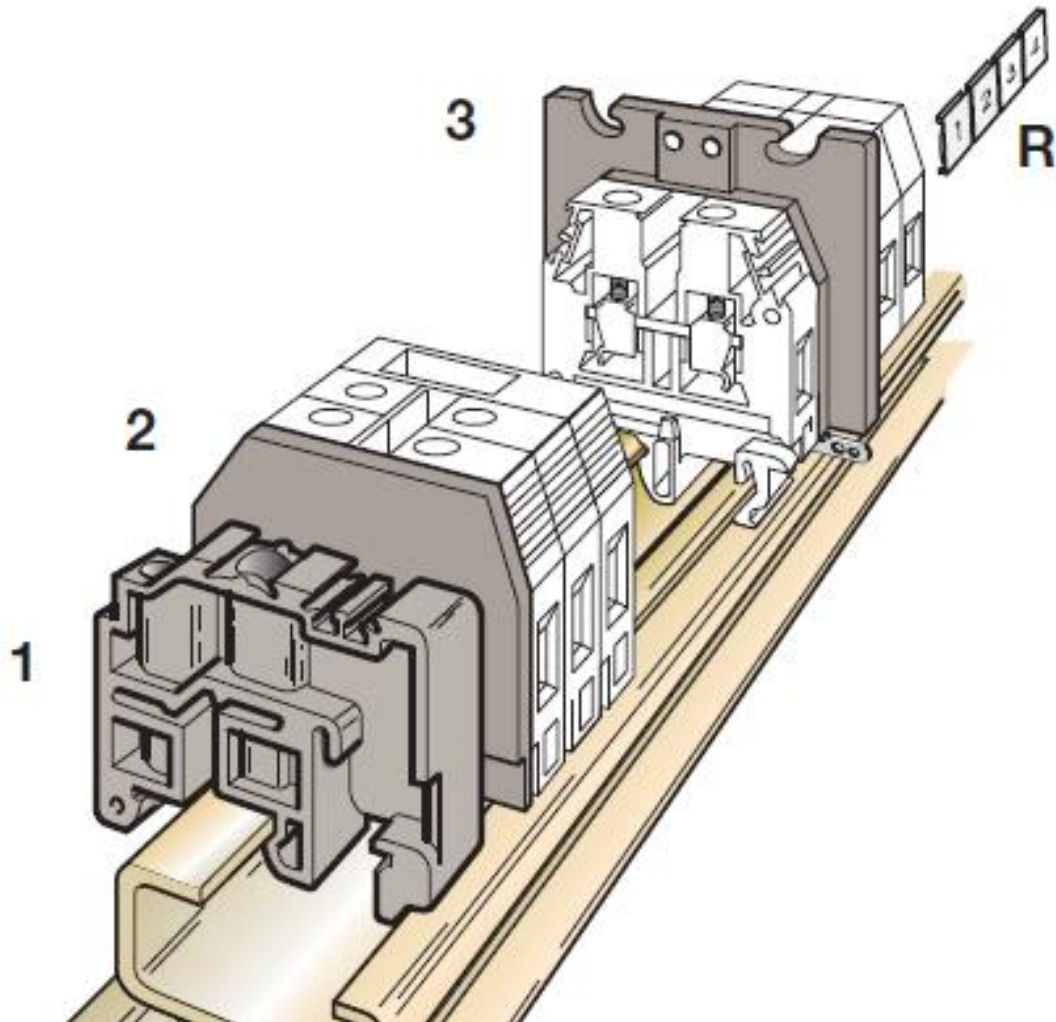
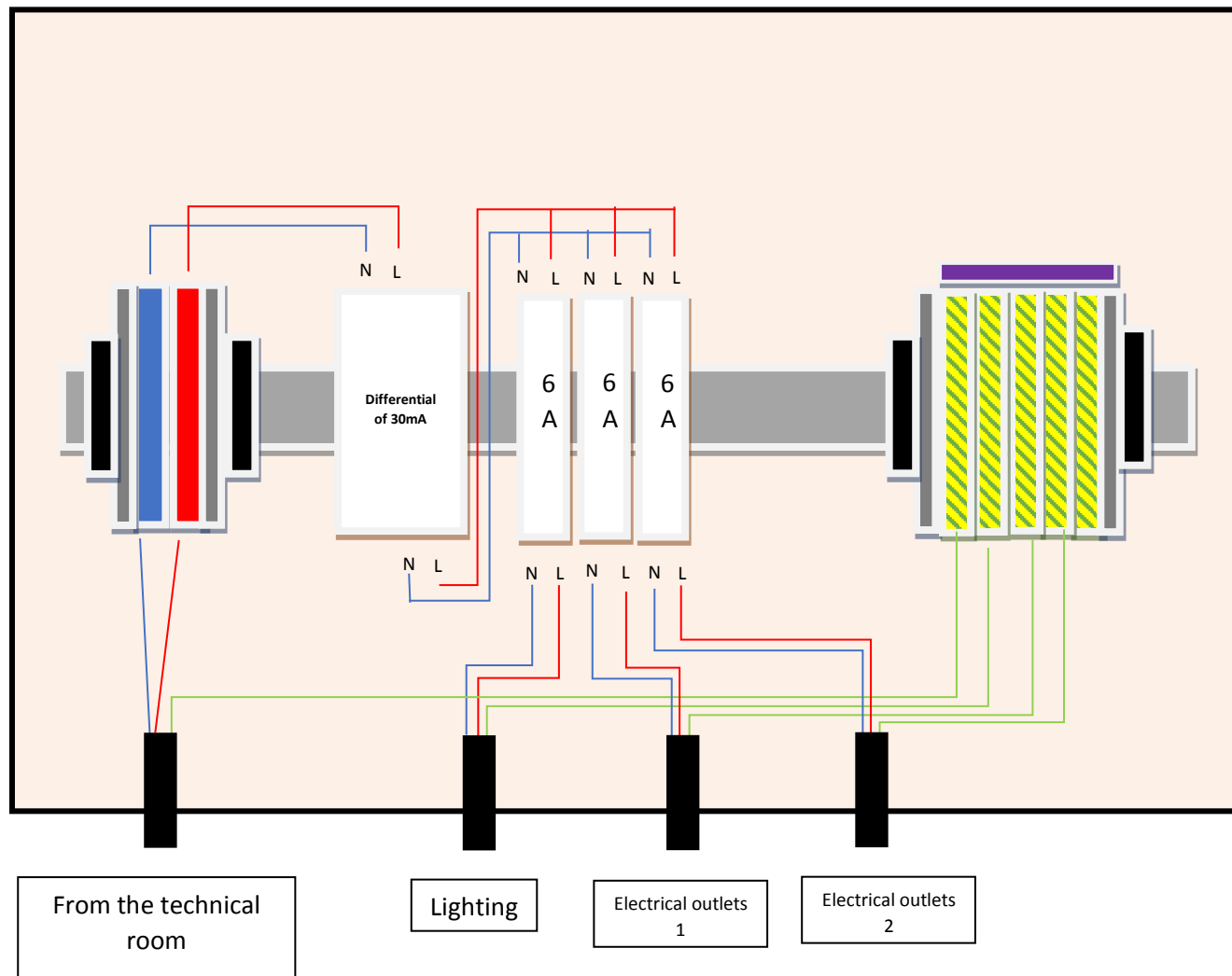


ILLUSTRATION WITH TERMINAL BLOCK :



1	End stop (all rails)	
2	End section	grey yellow
3	Separator end section	grey
R	See section on markers	marking method

EXAMPLE WITH ELECTRICAL OF THE CLASSROOM OR HOUSE :



EXAMPLE WITH ELECTRICAL BOX OF TECHNICAL ROOM :

