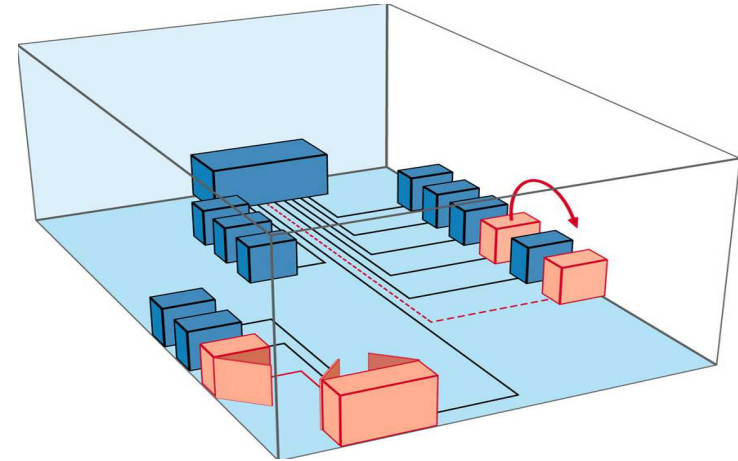
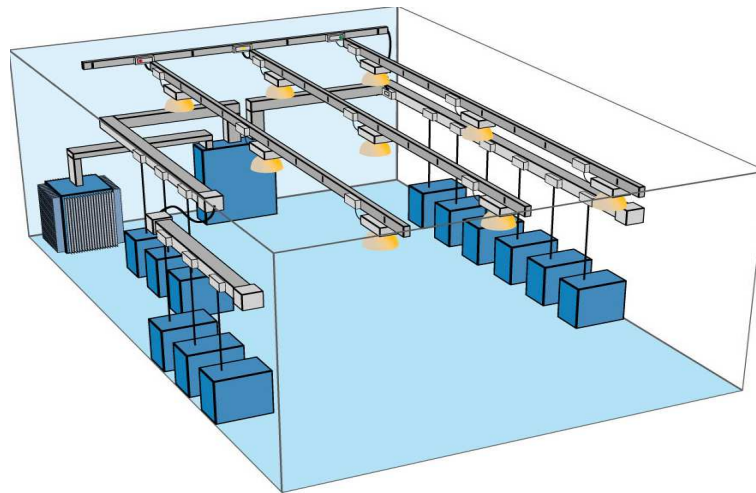


# Cables Vs Busway

# Centralized Vs Decentralized

## Wire way Management Concept

\* Traditional Power Distribution =  
**Centralized**



## Busway Concept

\* Modern Power Distribution =  
**Decentralized**

- Considerable flexibility
- Minimum Disruption
- Adaptable

# Drawbacks of conventional CABLE System

- Lack of **Flexibility**
- Lack of Proper Control in Installation quality, leading to possibility of poor workmanship
- Questionable **safety** and **reliability** in some of the installations



- Long time and much labour required in **installing** and **checking**
- **Burden of sizing**, selecting the right cables , trunkings, trays and accessories – it is too tedious and complicated to design

# Required – A Modular System that

- Has good **flexibility** ( reusability, easy addition or removal of loads)
- Compliance to International Standards ( IEC60439-2)
- Reduce the probability of **poor workmanship and are maintenance free**
- Improve **productivity** (both in installing and design), safe , reliable simple...



# Solution

- Busbar Trunking System (Busway ) : a **type – tested ASSEMBLY** in the form of a conductor system comprising **busbars** which are spaced and supported by **insulating material** in a duct, trough or similar enclosure.
  - The assembly may consist of units such as
    - Busbar trunking units with or without tap-off facilities;
    - Phase transposition, expansion, flexible, feeder and adapter units;
    - Tap-off units.

\*\* as per IEC 60439-1

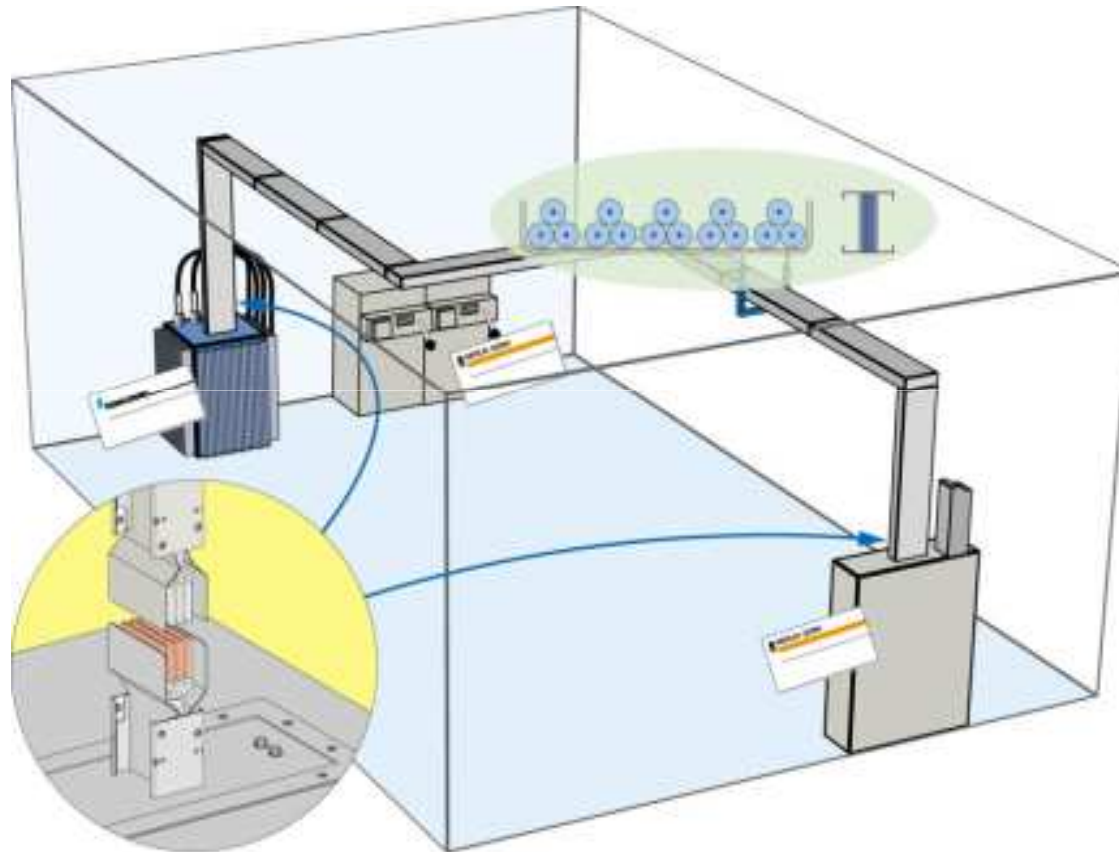
# Advantages Busway vs Cables

Twice as quick to Install:

- integrated electrical and mechanical functions
- jointing of 2 sections quick and simple

The Schneider package includes prefabricated extremities :

- 1/4 hour to connect or disconnect the transformer for maintenance



Reduced number of fixing points:

- Busway is around 40% lighter
- Busway is more rigid

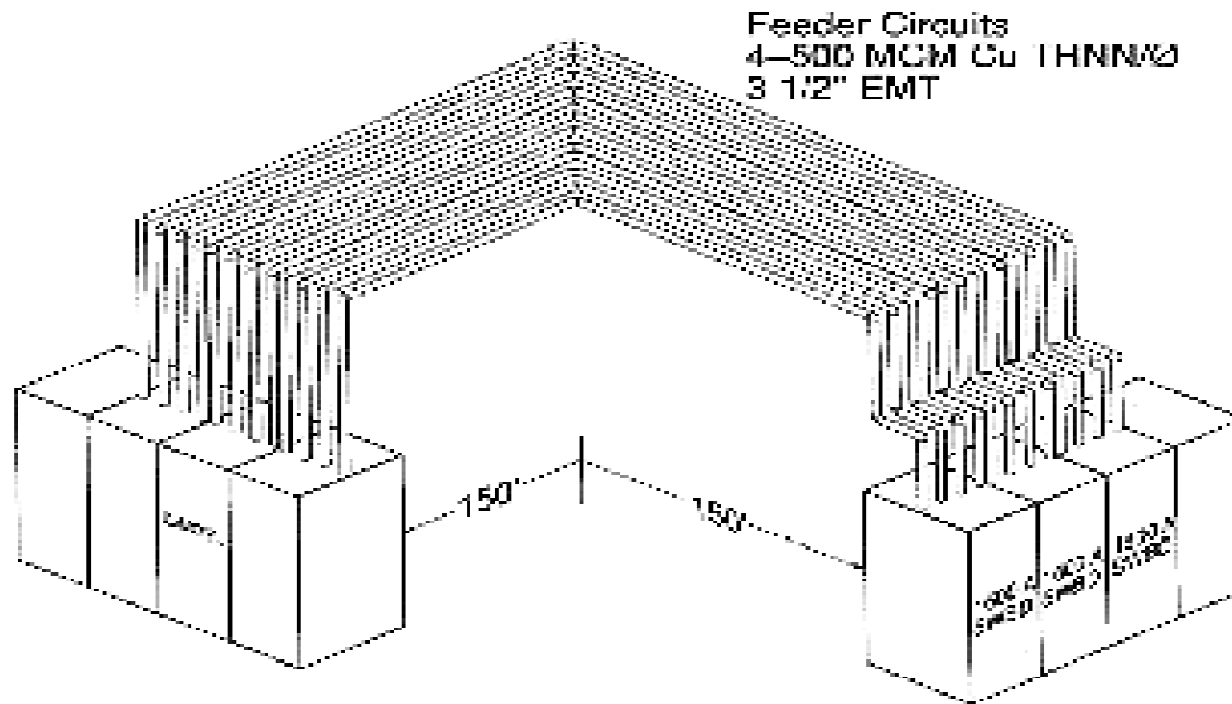
Reduced size:

- example 2000 A:  
Busway = 225 mm  
cables = 600 mm
- changes in direction are all at 90°

# When is Busway Cost effective vs Cable?

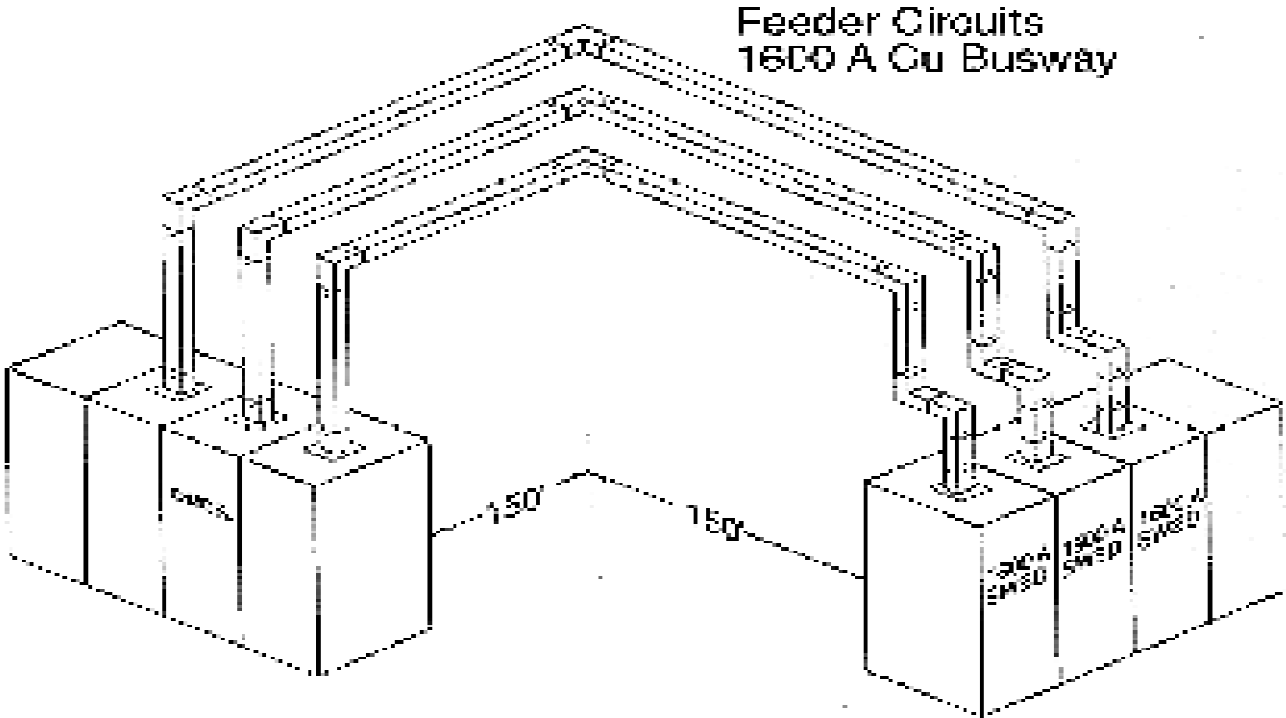
- The cost savings with busway over cables increases with
  - The greater the ampacity
  - Longer the circuit
  - More complex the circuit
  - Aluminum busway substituted for copper wire
  - Consolidation of multiple smaller circuits
  - Higher the installers' labour rate

# Feeder Circuit with Cable





# Feeder Circuit with Busway



# Busway Advantages

- Easy and quick installation
- Extensive choice of termination elements
- Wide adaptability of busway layout
- High Short Circuit Withstand & Low Voltage Drop
- Compact Dimensions
- 100% reusable standard elements
- Optimisation of space when using Busway ( no bending radii)
- Accessories like tap offs can be fit anywhere along the busbar hence reducing floor area usage
- Lower Down time in case of faults
- IEC60 364 chapter 5.523.6 stipulate usage of Busbar instead of paralleling 4 or more cables since this leads to
  - Abnormal temperature rise
  - Uneven distribution of current

# Busway Advantages - Continued

- The maximum **magnetic induction** of Busways is known in **advance**, It is
  - Assigned when busbar is made
  - Independent of the way of mounting
- The maximum magnetic induction for Cable installation depend on configurations
  - Single or multi core cables
  - Single core cables in trefoil groups or flat groups
  - Perforated or unperforated trays, with cover or without
  - Conductors arrangement when there are several single core cables by phase

# Cables Vs Busway - Summary

## CABLE



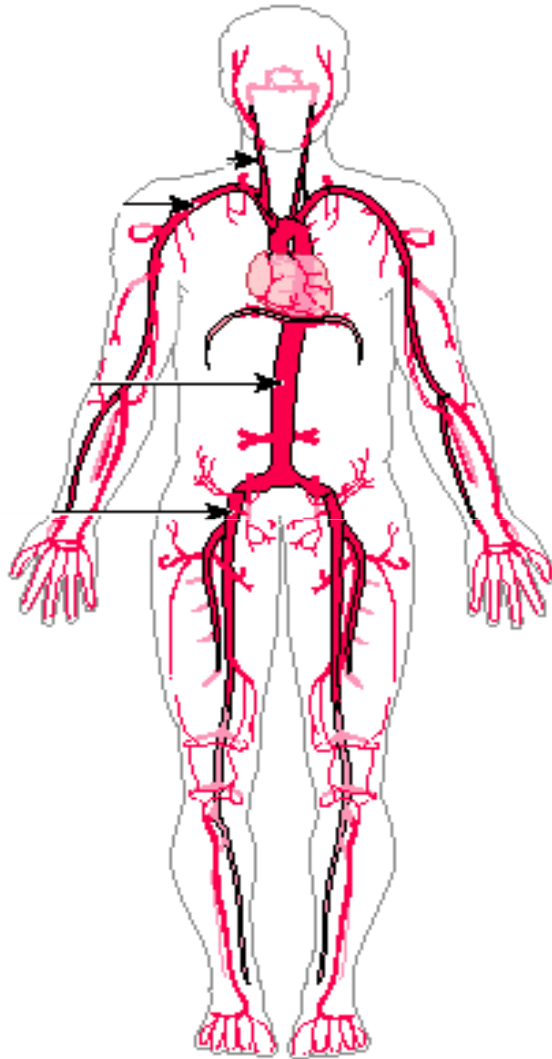
- Cheaper material cost
- Long time to install (High installation cost)
- Not very flexible (High cost to modify)
- High voltage drop, in case an equivalent drop rating is chosen – Increase in Cable size & hence expensive, difficult to install
- More space required for running cables in the building
- Termination is complicated and bulky

## BUSWAY

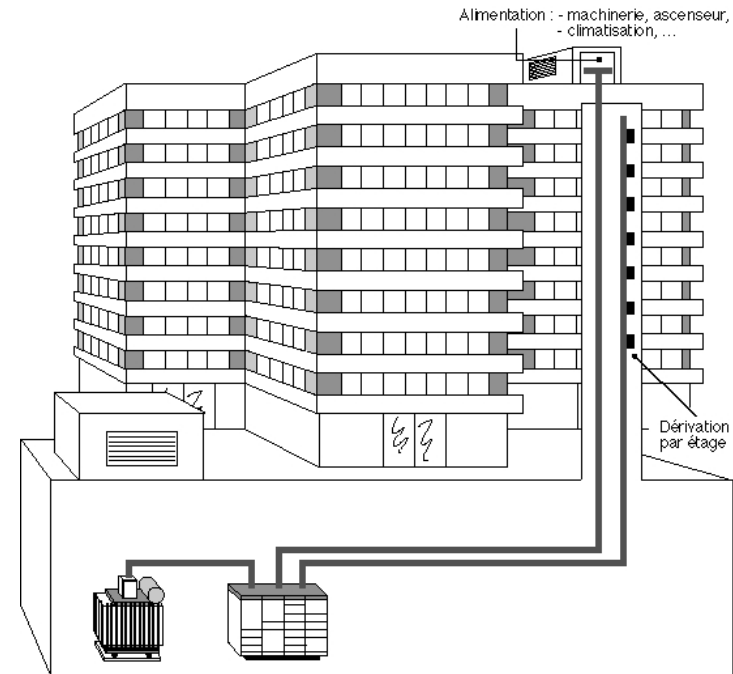


- Higher material cost
- Quick installation (Lower installation cost)
- Good flexibility (Easy to modify)
- Lower Voltage drop than cables
- Lesser space required, Busway is more compact
- Easy termination

# What is Busway... Importance of it?



**VS**



**Veins + Arteries = Busway**  
**Heart = Transformer + SWB**  
**Good quality of busway = Good health of veins and arteries!**