**26\_Defining area sections**

You can define wall and slab sections from define menu then wall or slab sections or you can click directly on this shortcut

In slab or wall section definition window you can add new edit or delete these properties.

Let's add a new solid slab with 200mm thickness. You can put here S200 in name field and select material property for this slab. You can also put modifiers in the same way we did for frames.

We will come to this topic in next lectures and for the time being we will use default 1.0 values.

If the slab is one-way you can check this mark otherwise leave it unchecked.

Here you can put 200mm slab thickness.

From this list you can select type of slab, either it's a drop or a solid slab etc. If you click for example drop further options start appearing.

Here are number of options for example membrane shell or plate.

Membrane slab has further option for load transfer as one way or two way and shell has further option of thick plate.

Selection of appropriate modeling assumption is a very important topic often confusing for beginners. We have covered this detail in next courses.

For this course lets discuss its basics.

Membrane has in-plane stiffness only and plate has out-of-plane stiffness only. Whereas shell has both in and out-of-plane stiffnesses.

What that means at the very basic level is, that a membrane will transfer slab load to supporting beams. So if you are modeling a slab supported on beams for example one or two way slab, use membrane.

For membrane there is no need for meshing. We covered meshing of areas in last lecture in section on editing structural elements.

If you are modeling a slab supported directly on columns without beams, for example a flat plate or a flat slab system, you must use shell elements and mesh it properly.

We will explore this topic in much more detail in a3 course in lecture on "shells, plates and membranes".