

SPACE PLANNING BASICS

From FIRST IN ARCHITECTURE



Space planning is a complex process with many factors to consider. The principles of space planning involve satisfying a defined criteria on a priority basis - as a result, space planning is frequently about compromise. That being said, there is often more than one solution to planning out the space requirements of a building.

In this post we look at some of the key processes to space planning, the questions you need to ask your client, and yourself, and how to develop this information into space planning diagrams.

Part 1 - Collect Information

The design of a building or space will have numerous requirements from the client or end user. It is important in the very early stages of design to carry out in depth research and consider as many aspects of the use of the spaces as possible. Some considerations can include:

- Do the spaces have specific functions or need to be particular shapes or forms?
- Do the spaces need to be flexible?
- Is it possible to create a sequence of spaces (offices, museums for example)?
- Do the spaces have different requirements in terms of light, ventilation, view, accessibility?
- Do the spaces need to have access to external spaces?
- Must any of the spaces have particular security or privacy?
- Is there any hierarchical requirements of the spaces?
- What relationships must each space have with one another, and the external environment?
- How should the spaces be connected?
- Which rooms need to be adjacent to one another and which rooms need to be apart?

An example of some questions to consider if you are designing a residential unit:

- What is the family size and structure
- Location of site
- Number of levels
- Family or individual interests and activities

The more information and data that can be collected in these earlier stages, the easier it will be to make the leap from data to diagrams and drawings as you proceed through the space planning process.

Part 2 - Interpret Requirements - build the brief

When we look at how to create spaces and accommodate humans in those spaces we can consider some universal concepts relating to how people interact with their environments.

Insider vs outsider

Individual vs community

Invitation vs rejection

Openness vs enclosure

Integration vs segregation

Combination vs dispersion

With these factors in mind we can start to develop a plan of requirements, extract from the data we have collected the necessary functions these spaces will be fulfilling.

In some cases it is suitable to develop a matrix/table that demonstrates the requirements of each room, in terms of privacy, daylight, access, equipment and so forth, along with writing out any additional requirements or special considerations for each room. This information will be a useful reference as you work through the spaces of each room and start to develop some sketch diagrams.

Part 3 - Consider Spaces and Spatial Relationships

Spatial Relationships

How can spaces be related to one another?

- Space within a space
- Interlocking spaces
- Spaces linked by a common space
- Adjacent spaces

Organising the space

You can consider a varying forms of spatial organisation, some of which are more naturally suited to particular uses than others:

- Centralised organisation
- Linear organisation
- Radial organisation
- Clustered organisation
- Grid organisation

Consider some of the following as you plan out your spaces:

- How does the envelope affect the internal spaces?
- How will the contents of the room be arranged?
- Do the rooms connect?
- What is the flow of the circulation?
- Are the proportions of the spaces comfortable?

Developing circulation

- How people move around the building from room to room is just as important as the destination.
- When developing a circulation structure we can look at a few basic principles.
- How efficient is the circulation in getting from point A to point B
- Is the circulation discrete?
- What is the fluidity of the circulation? Is there a smooth flowing route or a more direct route?
- Does the circulation route clash with furnishing requirements?

Part 4 - Create the Solution

Once the spaces have been considered and the requirements have been studied it is time to start sketching out relationship diagrams. The relationship diagram takes your design from data firstinarchitecture.co.uk

to a more visual look at physically planning out your space. It is abstract, and rough but enables you to develop your understanding of the requirements and visualise how the spaces will work together and how the circulation may flow between them.

At this stage the diagram does not need to represent the building size or space, more a look at how each room relates to one another, sizes and so on.

As your sketch diagrams develop you can begin to build a rough sketch plan of your spaces, this is sometimes known as bubble diagramming. The bubble diagram helps you make the connection between basic spatial requirements and a fully drafted floor plan. It is essentially a trial and error method of exploring the configuration options. If you are working within the constraints of an existing building you can print out the floor plan and work within that. However, if you are designing a new building the bubble diagram can often be connected with your concept and site analysis to develop the design. During this process it is important to keep referring back to the initial data collected and the relationship diagram to ensure you are considering all aspects of the design requirements.

This is an opportunity to try both safe and standard ideas along with more erratic options as you are carrying out fast sketchy ideas.

At this point it is often useful to have a general idea of size requirements of certain areas. For example, in a residential house, it is useful to know a rough size of a double bedroom, or an average living room size in order to start making sense of the spaces. Books like *The Metric Handbook Planning and Design Data* by Littlefield and Neufert Architects Data are a great reference and contain stacks of data that would start you off in the right direction. (See the end of this article for recommended reading).

You can almost build a small library of 'rule of thumb' plans that you can refer to in order to speed up your space planning time.

Try different options and configurations, sketch your ideas and how the spaces will connect to one another. As you work through the different options, make notes on each one as to any pros and cons, benefits etc, so that later you can easily disregard options that you don't think will work at a later point.

Part 5 - Review and Revise

Do you need to have a title bar? If so, consider a consistent title bar throughout your boards, giving a sense of professionalism, and orderliness. Don't forget to include your details - name, title of project etc and whatever else is applicable.

Once some solutions have been sketched out it is then possible to review these solutions and look for areas that require improvement. Things to consider when we look at a residential scheme:

How will the occupants move from room to room?

Does the circulation cut up the space?

Does guest traffic flow through private areas?

Are the doors and windows in suitable positions? Do they interfere or add to the overall spatial plan?

Does the plan orientate itself correctly with the site?

Do the rooms work well in relation to one another?

Once you have reviewed your initial sketches and ideas the plans can be developed further by adding more detail and refining your drawings. It is key to refer to any building regulations, codes and standards that will have an impact on your space planning to ensure that your design is compliant from an early stage.

There is so much more to space planning that what I have touched on in this post and there are some truly inspiring ways people are presenting their ideas and findings. I have set up a new Pinterest board that is full of space planning ideas and styles that will really help inspire. Please check it out and follow the board! Or better still, follow all my boards!

<https://uk.pinterest.com/1starchitecture/space-planning/>

If you would like further information, or would like to read into the subject in more depth I would highly recommend Space Planning Basics by Mark Karlen. You can check it out here:

<http://amzn.to/2tonBjL>

Other recommended reading:

Metric handbook

<http://amzn.to/2uRDRHX>

Neurfert Architects Data

<http://amzn.to/2uRmqY9>

Architecture: Form Space and Order

<http://amzn.to/2sNSorJ>

To read the full article follow the link below:

<http://www.firstinarchitecture.co.uk/space-planning-basics/>