



# All About Architectural Site Analysis & Feasibility Study

We know that architecture is not *just* about drawing plans and designing spaces. There is a lot more that goes into every decision that is made, even before planning and beginning to design. Just like the preliminary site analysis and feasibility study, which is considered to be an essential stage before starting any 'real' work on the project.

### **What is site feasibility study and analysis?**

*Picture this: You are setting off on an unknown journey along a mountainous road with hairpin bends and don't know how long the journey will take, which paths are smooth and which areas are high-risk zones. You cannot plan your journey, there are bound to be unexpected turns, and you are constantly driving under a lot of stress.*

*Now, what if someone took a helicopter ride over the mountain before you embarked on that journey and informed you in advance about all the paths that are smooth and the bends that are really risky? You will not only be able to plan your journey better but also take it easy as you already know what to expect and can avoid the avoidable.*

That's what site feasibility study undertaken by architectural firms does for a client.

In other words, it is research undertaken by architects and architectural firms before beginning any design work, to determine 1.) The possibilities of building on a site 2.) Whether it is financially and practically viable.

Based on this analysis, architects make a site feasibility study report. The report includes data like site and surrounding area characteristics, soil nature, source of water and electricity, zoning details, land use development in compliance with local rules, technicalities of the structure, cost analysis and more factors. Feasibility reports play an extremely useful role for clients to decide whether or not to commission a design. Clients can look at the report and understand the best use of space, be aware of the inherent risks of building a project on that site and see if it is compliant to planning constraints laid down by regulatory bodies.

Feasibility studies for building projects help both architects and clients make key construction-stage decisions during the pre-concept stage. It also ensures that broad financial viability is assessed and [cost estimates](#) are made more accurately.

### **Who does site feasibility analysis?**

The onus is usually on architects and architectural firms to prepare site feasibility study reports with the help of other professionals like planners, MEP engineers, civil engineers, surveyors and project managers contributing to the overall study.

If required, architectural firms also hire the services of experts like sustainability specialists to analyse, say, aspects related to developing green belts of a site.

However, the architect remains the key stakeholder, collaborating with these other disciplines and incorporating their information into the final feasibility study report, while the land owner or developer is involved throughout the study.



## **Benefits of site analysis & feasibility studies**

### **#1 Maximises ROI for clients**

With architects analysing key aspects of a site beforehand, clients can check the viability of the project before investing any real amount in it. They can also address any constraints at the outset, which can avoid any issues later on, saving them huge expenses. What's more, cost estimates proposed in site feasibility reports help clients understand labour costs, material costs and more at the outset and agree upon an economically viable solution.

### **#2 Helps make informed decisions**

Architects create preliminary plans, projections and forecasts based on the findings of their analysis, which gives everyone involved an overview of the structure, discuss iterations in advance and finalise the finer details. It lets architects and clients make informed decisions and lock at details before any work for the building begins.

### **#3 Saves time**

Neither clients nor architects are mind readers, so converting clients' ideas into concrete plans requires in-depth planning and arriving upon mutual decisions. Based on the site analysis, architects make a proposed concept and recommend project components, which helps save time for everyone involved in visualising, while at the same time, considering practical aspects of the project.

### **#4 No legal implications**

When you create a site feasibility report, you take into account whether what the proposed plan is binding with local regulations. The planning authority can see the preliminary plans and designs and give feedback. It can keep the project and your client away from any legal entanglement later on.

### **#5 Tapping hidden opportunities**

Architectural site feasibility study can sometimes open up not-so-obvious design opportunities and new ways to maximise the space's possibilities, because you get to look at the project in an in-depth manner.

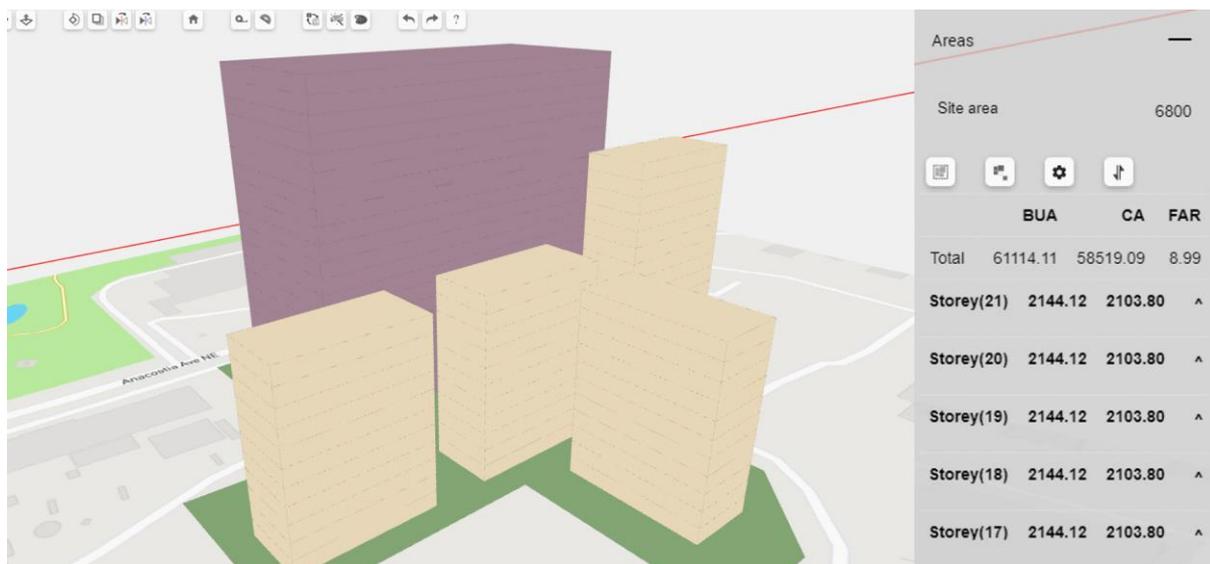
### **#6 Better productivity**

By freezing the finer details of the project at the beginning, all members of your architectural firm and external stakeholders can work with better focus, to achieve the same vision.

## Stages of site feasibility studies

Each architectural firm approaches site feasibility study in a different way, depending on the scale and scope of the project. Typically, the study consists of these broad stages and elements, which culminate in a site feasibility report:

- 1. Site Evaluation and Suitability:** Architectural firms start by understanding key parameters like site location, type of land, surface elevation, nature of soil, availability of water and power, electrical energy, climate conditions, connectivity by road, rail and air, approach roads, site neighbourhood, utility lines, telecommunication availability and social infrastructure in and around the site. This is done by primary research by land surveyors i.e. visiting the site, talking to local representatives as well as secondary research i.e. [using tools to understand the site topography, sun orientation](#) etc.
- 2. Market Analysis & Demographics:** Depending on the type of project, some architects also do an in-depth segmentation of the market and evaluate the demographic profile of the area or the city. For example, if an architectural firm has been given a project for development of the first recreation centre in a Tier-III town, it would help to understand the highlights of the town, the age-wise population, literacy rate, Socio Economic Classification and more, which can become a part of the site feasibility report.
- 3. Regulation Parameters:** It involves taking into consideration and understanding the local government's zoning guidelines, limitations set by the municipality, FSI rules and more at this stage. This helps architects plan as per the possibilities available within the legally permissible framework.



[Snaptrude](#) helps architectural site location feasibility study by auto calculating carpet area, built-up area and FAR or FSI.

- 4. Drawings and Master planning:** Based on the above elements, the site masterplan and building drawings are made at this stage. The plans typically show the building structure and layout, number of towers, number of floors, landscaping, circulation, amenities and more important design elements of the project. [2D and 3D diagrams can be made](#) at this stage to showcase the development potential.

Land use planning is done with a break-up of how the land will be utilized, for example - recreational purpose or for residing purpose. A typical land use break-up table in a site feasibility report below:

**Table-4.1 Details of Land Use Breakup**

NO.	PARTICULAR	AREA (SQ. M.)
1	Plot / Land Area	11,40,900
2	Built-up Area	1,12,160
3	FSI Area	5,13,405
4	Ground Coverage area	1,71,135
5	Common plot area	2,28,180
6	Green belt area	3,76,497

- 5. Financial Analysis:** Financial projections are made based on the area of the project, estimates of raw material requirement, labour requirement, operation costs, prevalent taxes, depreciation and allied costs.
- 6. Project Recommendations:** Meaningful inferences, projections and forecasts are made based on the findings of the research. A project schedule is proposed with suggested project components, and justification for the proposal.
- 7. Application & Approvals:** Once the site elements are finalised with the client at this stage, architectural firms apply for necessary approvals to different bodies, seek in-person appointments and create necessary drawings for the application.

Whether your client owns land and is unsure about how to develop it or already has an existing property built on the land and wants to redevelop it for increased ROI, a site feasibility study is an important step in the planning, design and construction process.

## Frequently Asked Questions (FAQs) about feasibility study

### a) **What is master planning in site feasibility and the importance of master planning in architecture?**

In architecture, a master plan is a blueprint or drawings created in the beginning of the project that work as a detailed, long-term guideline for the complete project. A master plan is made based on the findings of the feasibility studies. It defines the key components of the project, information about the surrounding areas, identifying different spaces within the project, the height of the building, the stakeholders involved and identifying opportunities and challenges in building the site. If your master plan is well thought-through, it can provide a direction to the project, optimize the space effectively and also save your client money. With a master plan, a lot of budgeting and cost estimation can also be done at the start of the project and can ensure quicker completion of the project.

### b) **How do I create a master plan for my site?**

Once you have done the feasibility study, understood the topography and environmental factors of the site, you can incorporate the distinct features of the location and translate it into [three-dimensional models](#), with calculation of carpet area, built-up area and floor area ratio (FAR).

### c) **Why are floor area ratio, built up area and coverage essential to master planning?**

It is important to understand the floor area ratio, built up area and building coverage ratio beforehand. Because, every city and area has a defined space assigned to it for construction by the governing authorities, and the construction needs to take place within the limit. A built-up area is required to calculate the Floor Area Ratio (FAR) also called Floor Space Index (FSI).

FSI is a key metric used to ensure that the given area is not exceeded, and is in compliance with the zoning regulations. Calculation of built-up area, FAR and building coverage ratio also help in cost estimation and land use planning.

Also, these calculations that are made by architects are a key marker to define rental or apartment selling rates, so it is important to be accurate in these measurements as any error could cost the client a lot of money.

### d) **How to calculate carpet area, floor area ratio, built up area and coverage?**

Carpet area, very simply put, is the usable area within your apartment, which excludes the thickness of the walls. If you were to spread a carpet from the inner wall to the inner wall in your apartment, you would get the carpet area. So, the areas outside the home, like lobbies and terraces are not counted in the carpet area.

Built up area is nothing but your carpet area plus the areas covered by internal and external walls, which is around 10-15% more than the carpet area. It includes balconies, terraces, lobbies etc.

Floor Area Ratio (FAR) is calculated by dividing the total covered area of all floors of a building by the total area of the plot. For example, if you have 1,000 square feet of land on which you want to build an apartment and the FSI in the area is 1.8, then you could build up to 1,800 sq.ft of covered structures on that land.

e) **How do you determine how many floors a building can have?**

Floor Area Ratio (FAR) is your key metric to decide how many floors a building can have as per the guidelines. Architects also need to take into consideration the minimum setback prescribed by governing bodies, and then plan the height and floors of the building.

f) **What is zoning analysis in architecture feasibility study?**

Every city or town is governed by zoning regulations by local bodies that define the permitted use of the space, say for residential, commercial or mixed use purposes. Size of the building, its height, FAR, permissible floors, setbacks are all included in the zoning laws. Basis the laws, architects make zoning calculations during site feasibility study, and decide what can be developed according to the applicable zoning codes. Architects need to do zoning analysis before proposing a plan.

g) **What is the architectural feasibility study cost?**

It is difficult to answer this question as the cost of architectural feasibility study varies basis the project scale, its complexity, timelines, experience of the architect and available information. Each project is different and the cost will largely vary based on different aspects associated with the project.

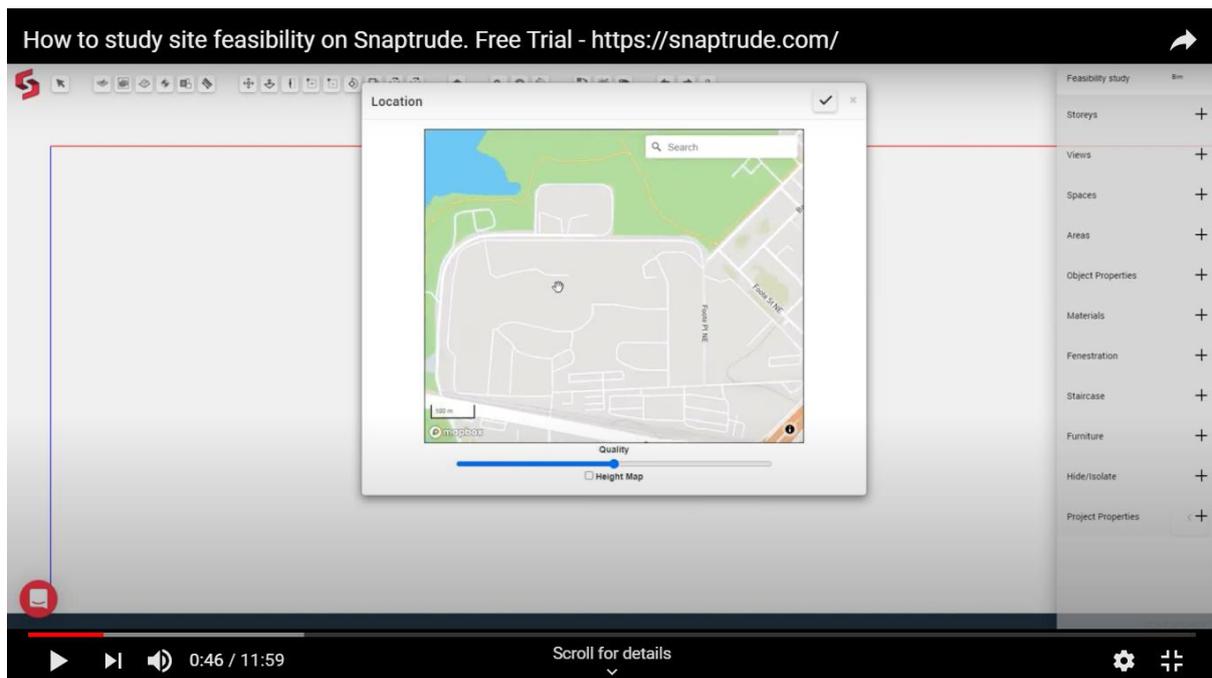
h) **How much time does it take to do site feasibility analysis?**

This again varies from project to project and from architect to architect, so it is difficult to put a number to it.

## Tools for automated feasibility studies

It is interesting to see how a number of advanced tools like *archistar.ai* are moving towards automating the site feasibility report generation process by checking compliance and generating building designs.

Intelligent Building Information Modelling (BIM) designing software can also help automate some aspects of site feasibility analysis and study. Take [Snaptrude](https://snaptrude.com/) for example. You can watch this video to better understand how to study site feasibility on Snaptrude.



Here are a few ways in which Snaptrude supports architectural feasibility study:

- With the Topographic map feature, Snaptrude lets you bring in any location in the world on your canvas, to study its elevation, neighbourhood etc.
- It helps the climate study part of your site feasibility analysis with its Sun and Shadow studies feature.
- You can create detailed master plans and zoning diagrams in massing mode, for analysis, recommendations and better management of the project.
- It also auto calculates carpet area, built-up area and floor area ratio (FAR) or FSI basis the plan, to help you design the whole project in adherence to local guidelines. So, you can sketch basic building footprint and quickly evaluate the possible built-up area over multiple floors and typology combinations.
- Instant, automated and accurate building design is generated in 3D from the plan view.
- [Automated Bill of Materials](#) gets generated to help you calculate costs during your feasibility study.
- Presentation-ready 3D BIM models help in the application to governing bodies for approvals.

**Also Read:** [Leverage the power of BIM during initial design stages](#)



## **In Conclusion**

Site feasibility study is a crucial phase of the architect's planning and designing journey. Once you get key approvals from all stakeholders on your feasibility report and are ready to start designing, it helps to work on design tools that have already been a part of your site feasibility study process, to save your architectural firm both time and money.



# About Snaptrude

Snaptrude combines the capabilities of a free form 3D-Modelling with the ease of pen & paper to ensure accurate, BIM enabled 3D-Models and plans that are 10X faster & easier.

[BOOK A DEMO](#)

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