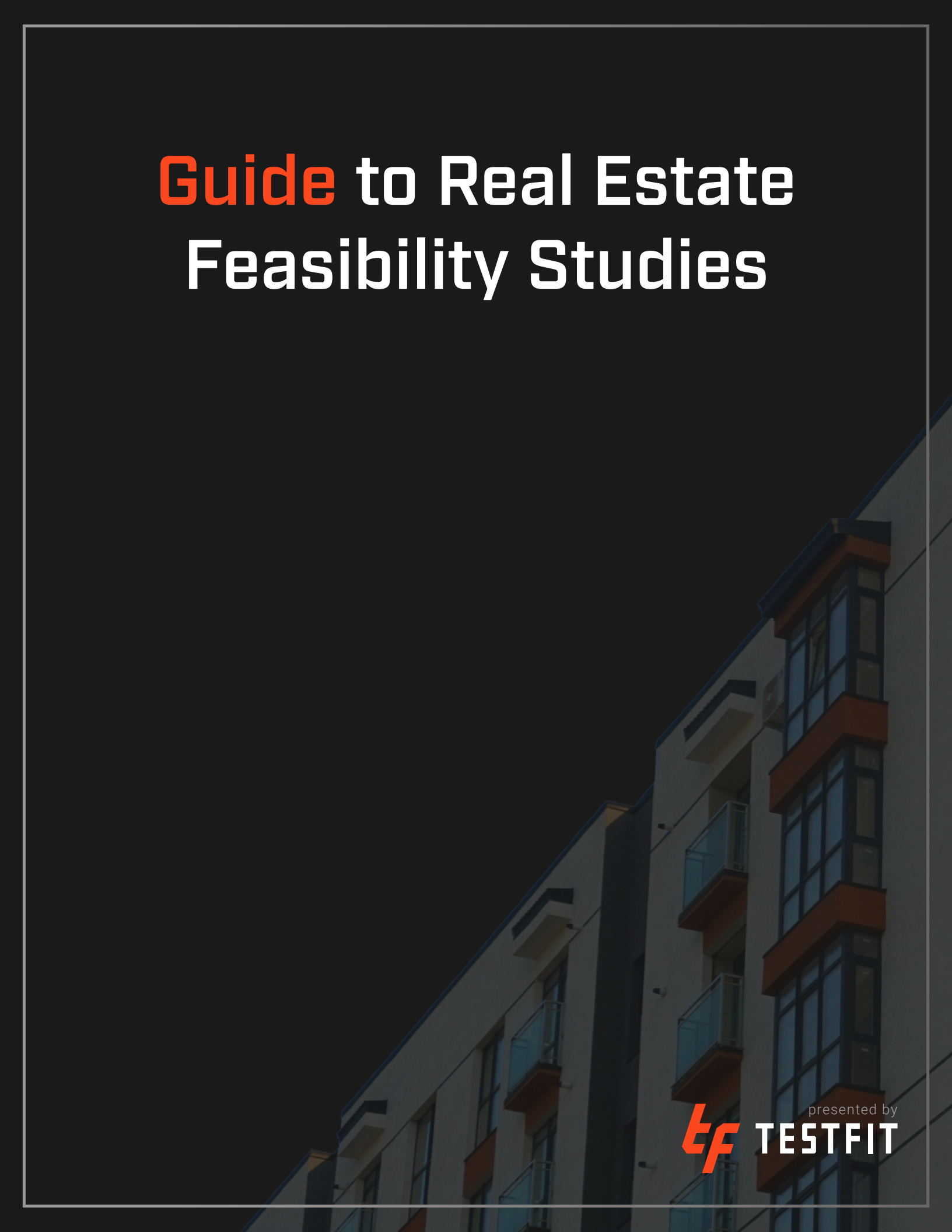
Guide to Real Estate Feasibility Studies



presented by TESTFIT

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Before you invest in a deal, conducting a real estate feasibility study is essential to assess the potential profitability of a project.

If you want to:

- Reduce risk on your investment
- Ensure the site is feasible for your project
- Validate your vision early on

Then this guide is for you.

1. The Importance of Feasibility Studies in Real Estate Development

Why do we need a feasibility study before embarking on a project? The answer lies in how complicated it is to create viable real estate deals.

Real estate development projects can be risky and involve significant financial investments. Conducting a real estate feasibility study is important for several reasons:

Assessing Profitability

A feasibility study helps investors and developers evaluate the potential profitability of a real estate project. By analyzing the site, assessing the design concept, and projecting revenue and expenses, you can identify potential costly challenges and opportunities early on and confirm whether a project is financially feasible.

Reducing Risks

Before a project is even started, we need to identify potential risks that could affect the success of a real estate project. These risks could be related to site constraints, construction costs, or code issues. By identifying these risks upfront in a feasibility study, you can take steps to reduce risk and increase the likelihood of success.

Making Informed Decisions

Most deals get dragged on for too long wasting everyone's time. A feasibility study can provide important information about its site constraints, design feasibility, and financial projections, so you can make informed decisions about whether to proceed with a deal, modify the plan, or kill the deal altogether.

2. What is a Real Estate Feasibility Study?

A **real estate feasibility study** is a comprehensive analysis of all aspects of a real estate development project, including site planning, concept iterations, and deal evaluation.

Within a real estate feasibility study, you're trying to determine the 5 components of a real estate deal:

CAPITAL - How is the deal structured?

LAND - Where is the building, and what shape of the land is it on?

ZONING - Does the design conform, or will it need additional entitlements?

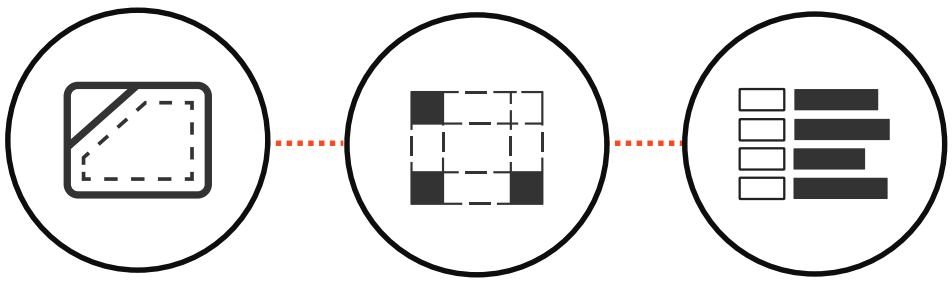
DESIGN - How is the product designed?

CONSTRUCTION - How will it be built, and what will it cost?

3. 3 Steps to Conduct a Real Estate Development Feasibility Study

To understand the feasibility of these 5 components fully, we need a **new real estate feasibility workflow.**

This includes:



Site Planning

The first step is to analyze the **land**, where the development will take place. Land and its fixtures* are static, unmoving, and permanent. The only asset class that is said to be "real" hence the term "real estate". Land gets a bit complicated with assemblages*, but in general, its analysis is limited to:

Site Selection | **Environmental Concerns** | **Code and Regulations**

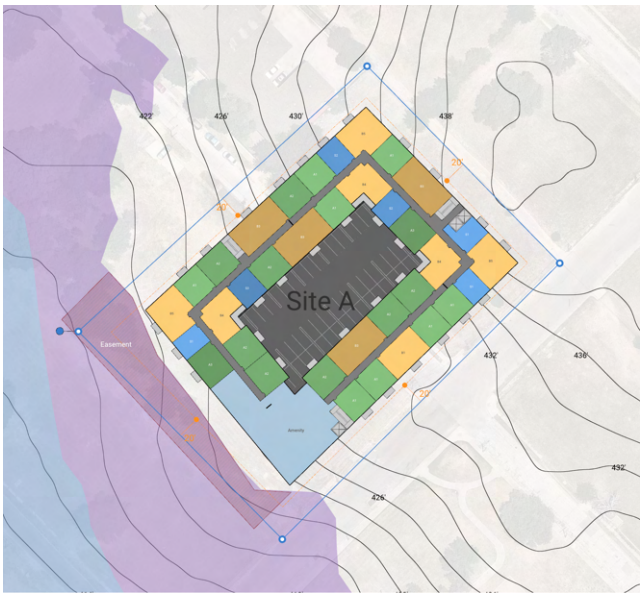
Let's go through each one by one in more detail.

Site Selection

First, you need to define the site. This is usually done with a survey that contains the metes and bounds of the land. But if you don't have a survey done yet, as you're still early in the process, TestFit has built-in parcel data within the U.S.



selecting a site from parcel data in TestFit



evaluating environmental constraints in TestFit

Environmental Concerns

Once the site is defined, it's time to look at some site constraints such as:

- **Topography**, slope, and drainage patterns present on the site.
- **Orientation**, particularly its orientation relative to the sun and wind.
- **Geotechnical issues** like soil capacity which can impact the type of structure and building placement on the site.
- **Access** to and from the site both for vehicles and users.
- **Special land conditions** like flood zones, wetlands and easement.

***Fixture:** anything attached to the land. If you have to hire someone to move or demolish it, it's a fixture.
***Assemblage:** putting together several parcels to make a new, more valuable parcel

⚠ Codes and Regulations

When you're site planning, you're probably looking at the local zoning code the most.

Zoning is generally known from the beginning, and operates under various land use controls like:

- **Dwelling units per Acre** (DU/AC)

  Dwelling units per Acre (DU/AC) = Total units / Total site acres

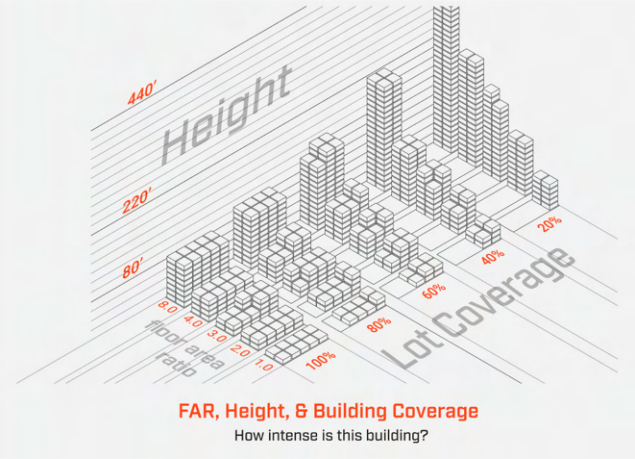
- **Floor area ratio** (FAR), the ratio of built floor area to the land it sits on

  Floor area ratio (FAR) = Gross conditioned area / site area

- **Building height**

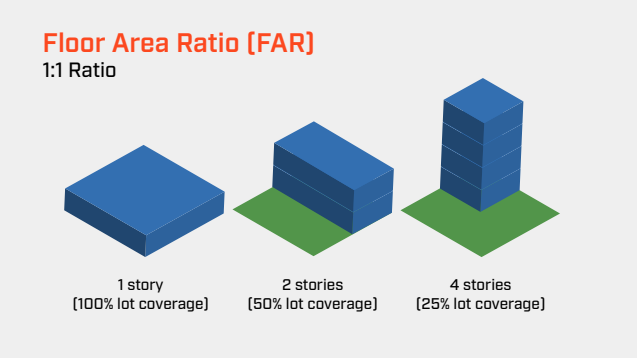
- **Lot (or Building) coverage**, the percentage of the lot covered by a building

  Lot coverage = Building footprint / site area

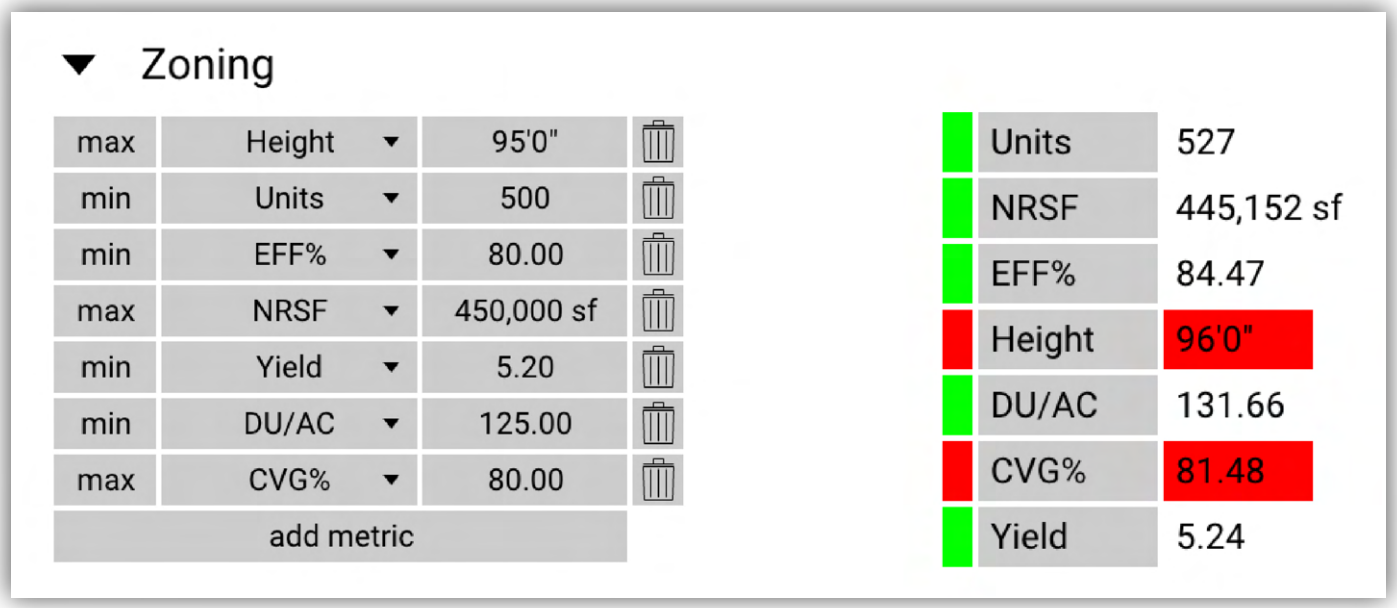


FAR, Height, & Building Coverage

How intense is this building?



Within TestFit, you can set a zoning profile based on your local zoning code. Once you input the metrics, TestFit will advise if the site passes or fails the calculated metric with green and red colors inside a zoning report.



zoning report in TestFit

Concept Iteration

Now into the meat and potatoes of what we are best at here at TestFit: concept iterations. The main problem with building design is that there are no “right” answers. The solution space is as large as the universe itself.

At TestFit, we simplify buildings down to **5 components** to constrain the solution space from infinity to only a few trillion possible solutions with our real-time AI configurator.

5 Components of a Housing Deal

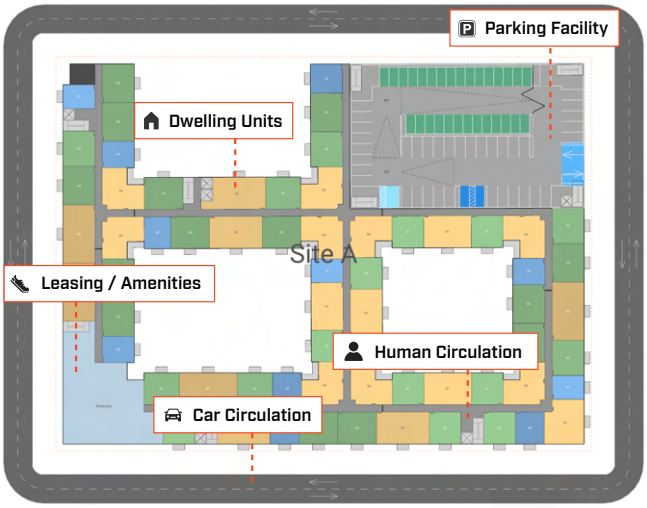
Dwelling units
Housing for people/families

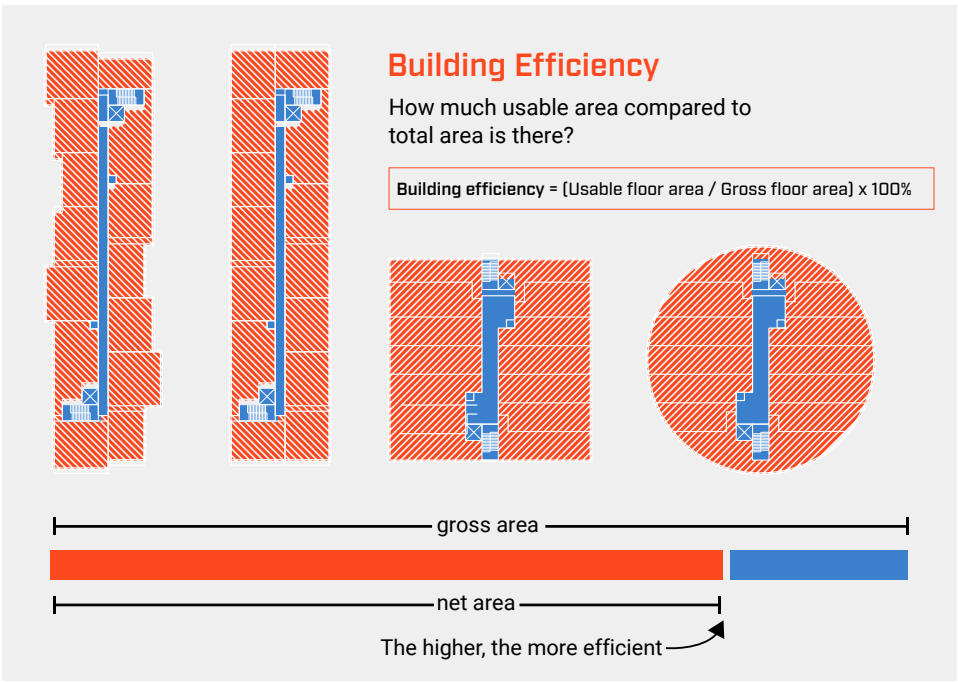
Parking facility
Housing for cars (we build a lot of this in the US)

Human circulation
Corridors, stairs and lifts for getting to units

Car circulation
Roads for moving cars around

Leasing and amenities
Space to convince people to rent





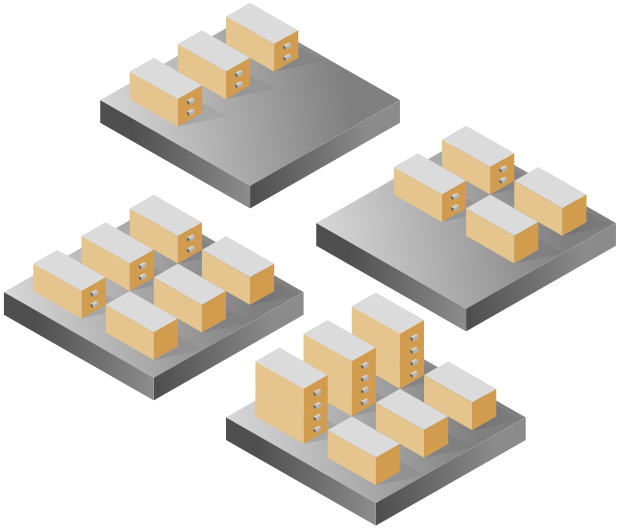
In a world where a **Yield on Cost (YoC) of 6.5%** is desired, increasing the area of units versus all other spaces becomes quite important. This is what we call: **Building efficiency**—the percentage of the building that is rentable (most often used without parking facility.)

Understand Housing Density

The cross product of sites (land) and building (design) working together lets us understand what density is possible.

Housing density = Number of Units / Total Lot Area (acre or square kilometer)

This is why you need a tool that gives you all the data in one place, so you're making informed decisions with real-time insights into **design, cost,** and **constructability** — the entire feasibility ecosystem of a real estate development project.





"Sometimes squeezing in 400 apartment units isn't the best solution. Everything is driven by results. TestFit gives us the possibility to see different schemes and choose the best one for the best financial results."

—Selma Rabelo, VP of Corporate Product, Compliance & Innovation

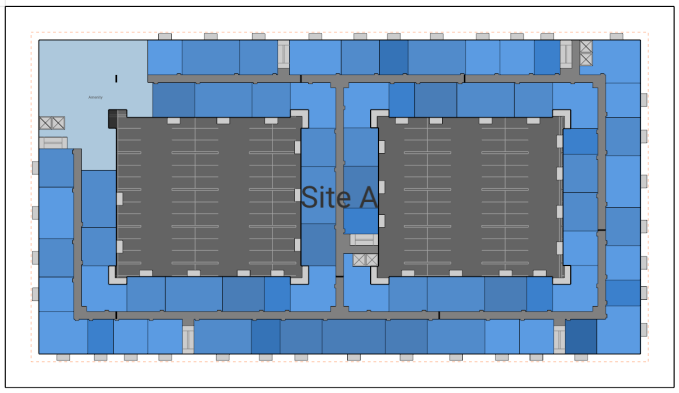
Read More: How Resia Gets Land Deals Done 4x Faster with TestFit

Compare Design Schemes

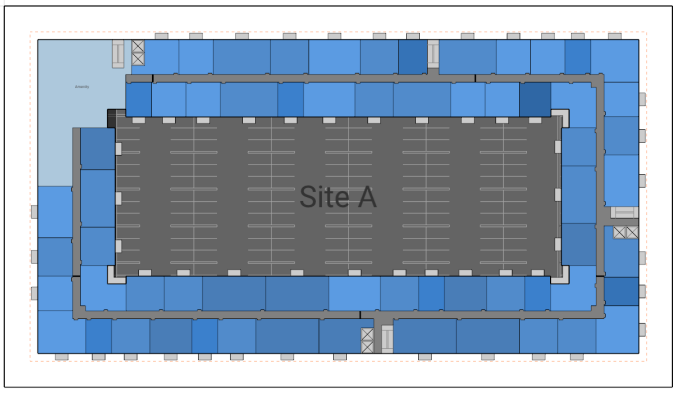
To identify the right deals, you have to compare all the options generated from the concept iteration process. This can easily be done in TestFit with the Schemes tab, which contains all the data we have talked about such as:

Unit count: Number of units in the building
AVG: Average unit NRSF
Ratio: Parking ratio (# of parking stalls / # of units)
NRSF: Net Rentable Square Feet
EFF%: Conditioned efficiency (area with air conditioning that is rented out)

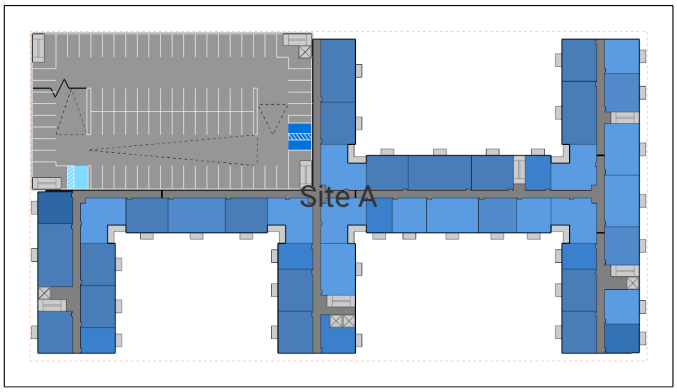
Height: Height of the building above ground
FAR: Floor Area Ratio (gross conditioned area / site area)
DU/AC: Dwelling units per acre (#units / site acreage)
CVG%: Lot coverage (building footprint / site area)
Yield: Yield on cost (net operating income /total cost)



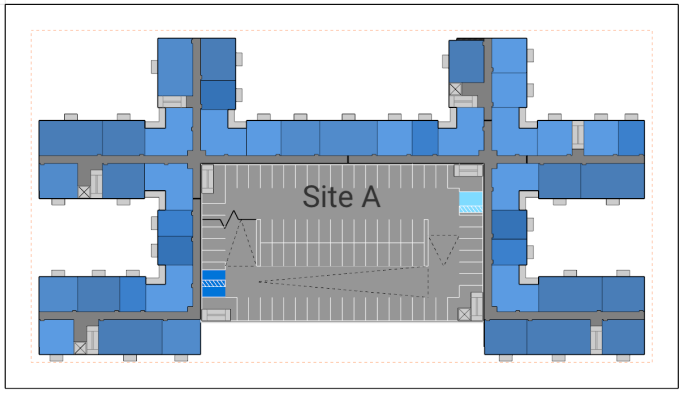
	Units	Avg	Ratio	NRSF	EFF%	Height	FAR	DU/AC	CVG%	Yield
current	449	869	1.30	390,267	84.09	96.00	3.04	127.91	74.12	2.52
max	449	887	1.00	390,266	84.00	96.00	3.00	127.00	74.00	2.00
min	208	869	1.00	183,504	76.00	61.00	1.00	59.00	46.00	2.00
	reset	reset	reset	reset	reset	reset	reset	reset	reset	reset



	Units	Avg	Ratio	NRSF	EFF%	Height	FAR	DU/AC	CVG%	Yield
current	408	882	1.41	359,654	85.08	96.00	2.76	116.23	74.12	2.49
max	449	887	1.00	390,266	85.00	96.00	3.00	127.00	74.00	2.00
min	208	869	1.00	183,504	76.00	61.00	1.00	59.00	46.00	2.00
	reset	reset	reset	reset	reset	reset	reset	reset	reset	reset



	Units	Avg	Ratio	NRSF	EFF%	Height	FAR	DU/AC	CVG%	Yield
current	250	888	1.40	221,910	78.48	73.00	1.85	71.22	46.77	2.42
max	449	887	1.00	390,266	85.00	96.00	3.00	127.00	74.00	2.00
min	208	869	1.00	183,504	76.00	61.00	1.00	59.00	46.00	2.00
	reset	reset	reset	reset	reset	reset	reset	reset	reset	reset



	Units	Avg	Ratio	NRSF	EFF%	Height	FAR	DU/AC	CVG%	Yield
current	208	882	1.69	183,504	76.76	61.50	1.56	59.25	47.04	2.26
max	449	887	1.00	390,266	85.00	96.00	3.00	127.00	74.00	2.00
min	208	869	1.00	183,504	76.00	61.00	1.00	59.00	46.00	2.00
	reset	reset	reset	reset	reset	reset	reset	reset	reset	reset

evaluating different design schemes in TestFit

Deal Evaluation

Now we're getting into capital to evaluate if this is the right deal or not. To start with, we need some baseline. limited partners* (LPs) and general partners* (GPs) usually want to achieve a solid yield on cost* (normally at 6.5%.).

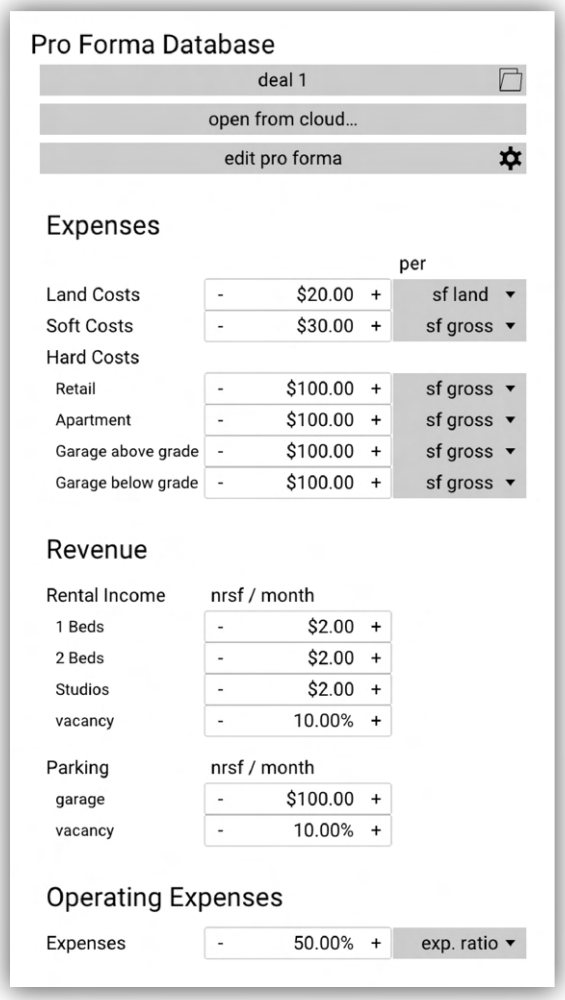
Yield on cost (YoC) = Net operating income / Total cost

Deal Models

Although a higher yield on cost is always desirable, this metric is best utilized in a comparative context. This is why you can create multiple deal models within the same site in TestFit, so you can efficiently compare them side by side and make a decision on where to kill the deal or proceed with them.

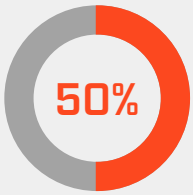
A feasibility study must include a detailed financial analysis of the project including:

- **Land cost:** the amount of money required to purchase or lease the land on which the building will be built.
- **Hard cost:** the expenses associated with the construction of the building such as materials, labor, equipment etc. This is usually determined by the General Contractors.
- **Soft cost:** the expenses that are not directly related to the construction of the building such as architect design fees, permits, taxes etc.
- **Projecting revenue:** estimates of the income that the building will likely generate over a specific period of time. This is usually expressed in rent per NRSF* per month.



Deal Database in TestFit

***Limited partners (LP):** often the equity component of a real estate deal
***General partners (GP):** normally referred to as "Developers" in the USA
***Yield on cost (YoC):** the ratio of money made in the first 12 months to total capital expenditure (Cap Ex: the money spent by companies on physical assets)
***Net rentable square feet (NRSF):** a measurement used to calculate the usable space in a building that can be rented out to tenants. It is the total area of a building minus any common areas such as hallways, lobbies, stairwells, or elevators, which are not rented out to tenants.

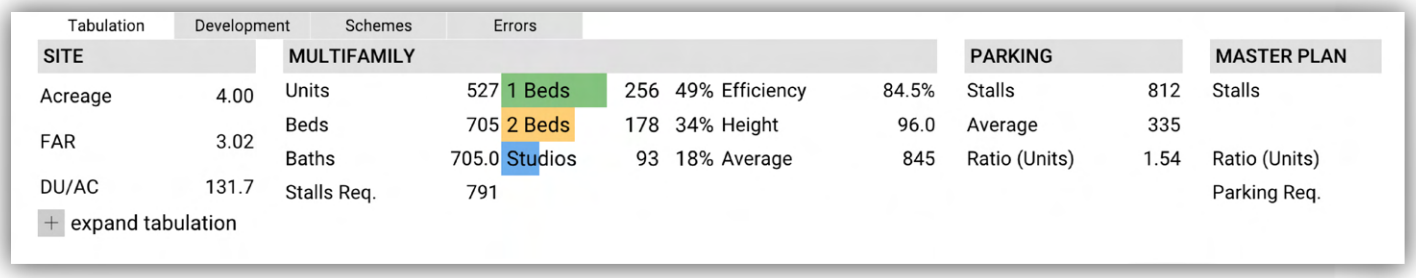


50% of contractors wait until the design development phase or construction document phase to get involved in **preconstruction.**

Quantity Takeoff

To get to accurate costing, we need accurate quantity takeoff. This is hard to do this early on in the design process, as nearly **50% of contractors** wait until the design development phase or construction document phase to get involved in preconstruction (according to FMI's The State of Global Preconstruction.)

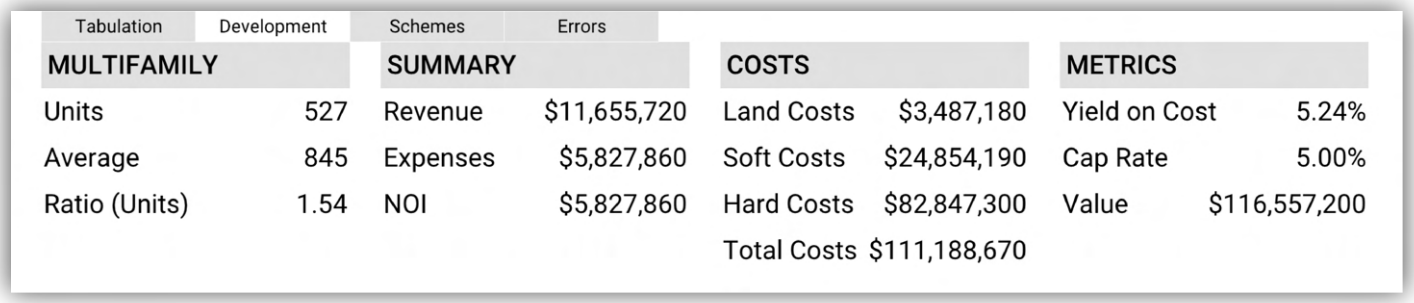
But to help reduce potential risk and assess the financial feasibility of a deal, we like to include this in the feasibility study phase. In TestFit, we have a tabulation panel that houses all the quantities for your project.



tabulation panel in TestFit

Pro Forma Validation

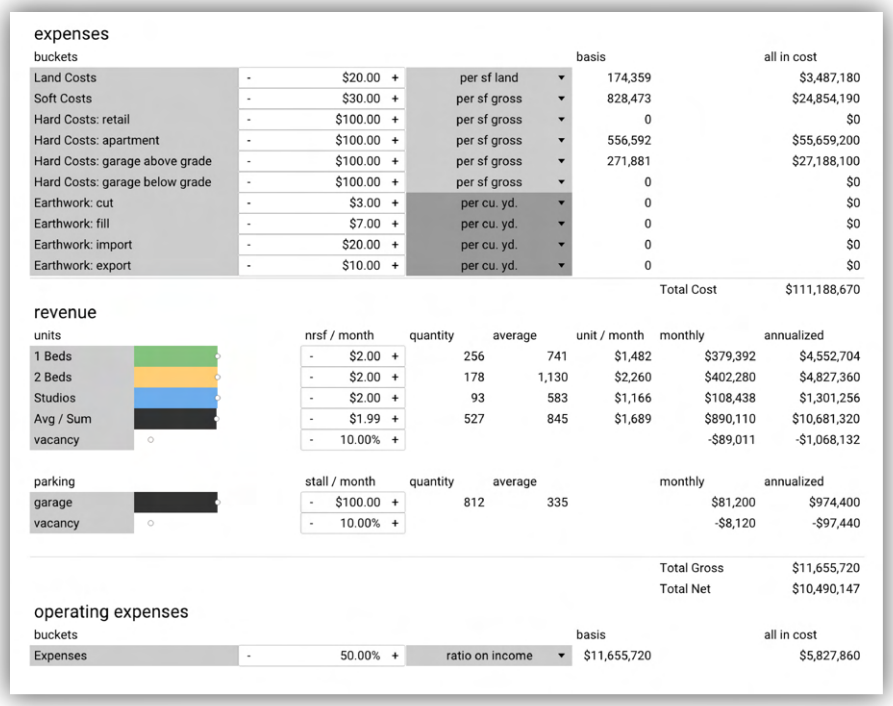
Next, you'll need to develop a detailed pro forma, or financial model, that outlines the project's expenses, revenue, and cash flow projections over time. TestFit offers a live-linked Pro Forma connected to its feasibility model.
The development-panel screenshot below illustrates the earlier workflow.



development panel in TestFit

From here, you can export the data into a CSV file and input it into your own financial model if needed.

Once you've completed all the steps of the feasibility study, it's time to draw conclusions about the project's viability. Based on the process of site planning, concept iterations, and deal evaluation, you should have a clear picture of the project's potential profitability and risks.



expenses

buckets			basis	all in cost
Land Costs	$20.00	per sf land	174,359	$3,487,180
Soft Costs	$30.00	per sf gross	828,473	$24,854,190
Hard Costs: retail	$100.00	per sf gross	0	$0
Hard Costs: apartment	$100.00	per sf gross	556,592	$55,659,200
Hard Costs: garage above grade	$100.00	per sf gross	271,881	$27,188,100
Hard Costs: garage below grade	$100.00	per sf gross	0	$0
Earthwork: cut	$3.00	per cu. yd.	0	$0
Earthwork: fill	$7.00	per cu. yd.	0	$0
Earthwork: import	$20.00	per cu. yd.	0	$0
Earthwork: export	$10.00	per cu. yd.	0	$0
			Total Cost	$111,188,670

revenue

units	nrsf / month	quantity	average	unit / month	monthly	annualized
1 Beds	$2.00	256	741	$1,482	$379,392	$4,552,704
2 Beds	$2.00	178	1,130	$2,260	$402,280	$4,827,360
Studios	$2.00	93	583	$1,166	$108,438	$1,301,256
Avg / Sum	$1.99	527	845	$1,689	$890,110	$10,681,320
vacancy	10.00%				-$89,011	-$1,068,132

parking	stall / month	quantity	average	monthly	annualized
garage	$100.00	812	335	$81,200	$974,400
vacancy	10.00%			-$8,120	-$97,440
			Total Gross	$11,655,720	
			Total Net	$10,490,147	

operating expenses

buckets			basis	all in cost
Expenses	50.00%	ratio on income	$11,655,720	$5,827,860

development settings in TestFit

4. What to Do After a Feasibility Study

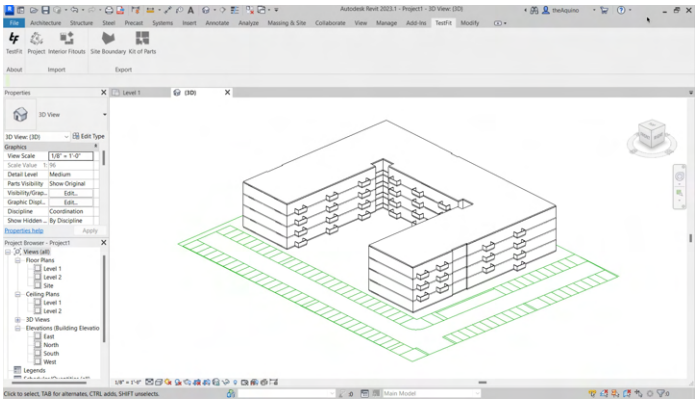
Now that you've completed the 3 steps of a real estate feasibility study, don't let it stop there. Once you have decided that you want to proceed with a project, you can move forward with developing a detailed business plan and securing financing.



TestFit site plan rendered with Enscape

- Export all the data you need from TestFit into a csv file.
- Create **Enscape** renderings for presentations to your investors and stakeholders.

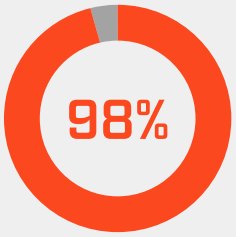
If all goes well and you're ready to move forward to design and documentation, your architects can also jump from TestFit into Revit with our direct Revit add-in.



TestFit site plan exported to Revit

5. How Long Does a Real Estate Feasibility Take?

Now that you've completed the 3 steps of a real estate feasibility study, don't let it stop there. Once you have decided that you want to proceed with a project, you can move forward with developing a detailed business plan and securing financing.



98% increase
in time saved on deals, using TestFit.

A real estate feasibility study typically takes about 2-3 months to complete. Sometimes even longer depending on how complicated your project is and how many options you have to weigh.

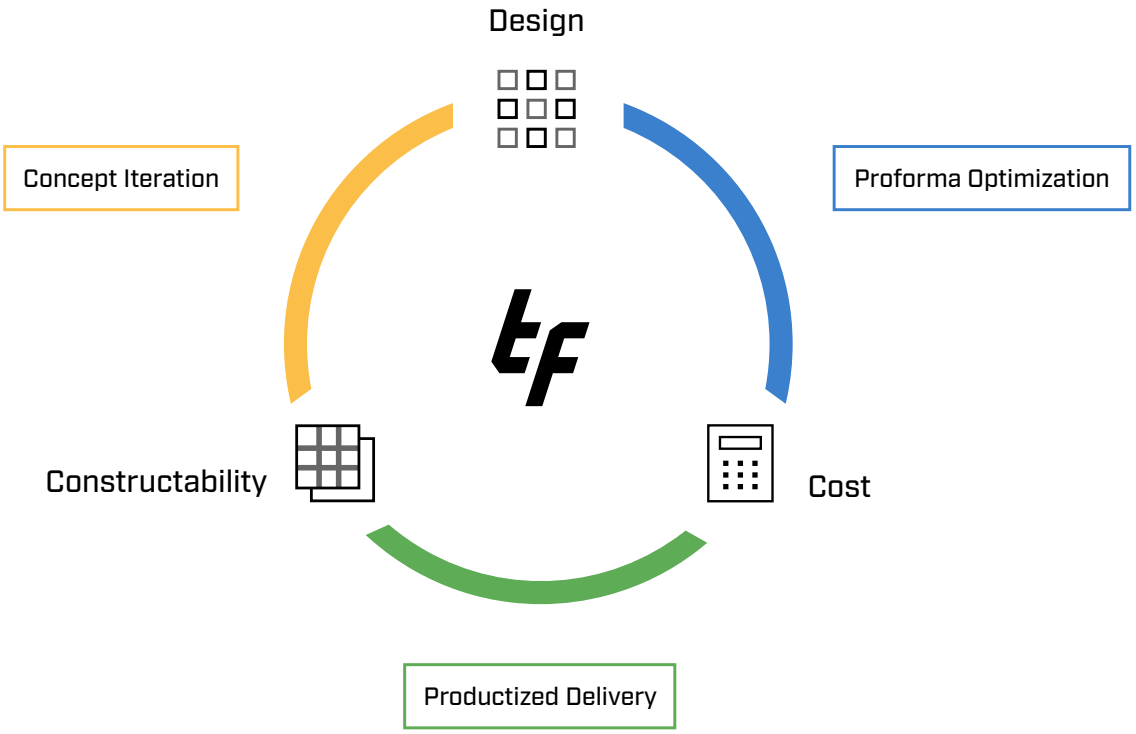
But with today's technology like our real-time AI configurators, we can streamline the process and optimize for the best design solution on your sites. Our customers are reporting a 98% increase in time saved on deals, so their teams can focus on the right deals that actually get built.

Get Your Real Estate Feasibility Study Done 4X Faster

A real estate feasibility study is a critical step in the development of any real estate project. By conducting a thorough analysis of site planning, concept iterations, and deal evaluation, you can make informed decisions while maximizing your site potential for every deal.

About TestFit

TestFit is the leading real estate feasibility platform for developers, architects, and contractors to realize the full potential of land through trusted automation. Over 650 deals are evaluated every week on the TestFit platform. Our AI configurators optimize for the best design solutions with real-time insights into design, constructability, and cost so the deal team can save time on site planning, reduce risk on acquiring deals, and increase site potential.



Discover how companies win more deals with TestFit.

See it in Action

PROLOGIS RESIA ARCO