

# TestFit for Architects: How RBA Architects streamlined the feasibility phase

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## The project

Unsatisfied with not being able to explore multiple ideas during the feasibility stage, RBA Architects adopted TestFit in 2018. In this case study, we'll examine the challenges RBA Architects faced with the traditional feasibility study process, how that process changed with TestFit, and finally, examine 4 real-world projects and their unique challenges.



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## The Challenges

While working with real estate developer clients during the feasibility stage is important to secure work, it is a painstaking process requiring a lot of time and communication between RBA, engineers, GCs and clients.

## The traditional feasibility study process

- 1 Client shares a particular site or sites they are interested in for a specific project. They want to know the yield (how many units) they can fit on the site.
- 2 Client puts in contract with a due diligence of 90 days.
- 3 RBA begins due diligence on zoning, easements and other site limitations.
- 4 Bearing those site limitations in mind, RBA starts hand-sketching a few options.
- 5 Work begins in AutoCAD. With boxes representing units (some with layouts inside), the architect starts gluing them together in different combinations to see what works on the site.
- 6 RBA goes back and forth with a civil engineer, who shares design changes and adds parking. Calculate parking ratio, re-iterate design if needed.
- 7 Get feedback from GCs on hard costs; reiterate design changes as needed
- 8 Present to the client.
- 9 Make design changes as requested by the client.
- 10 Present with the client to the city and / or other stakeholders such as investors.
- 11 Make design changes as needed.
- 12 Client moves ahead with purchase or kills the deal, typically around 90 days.

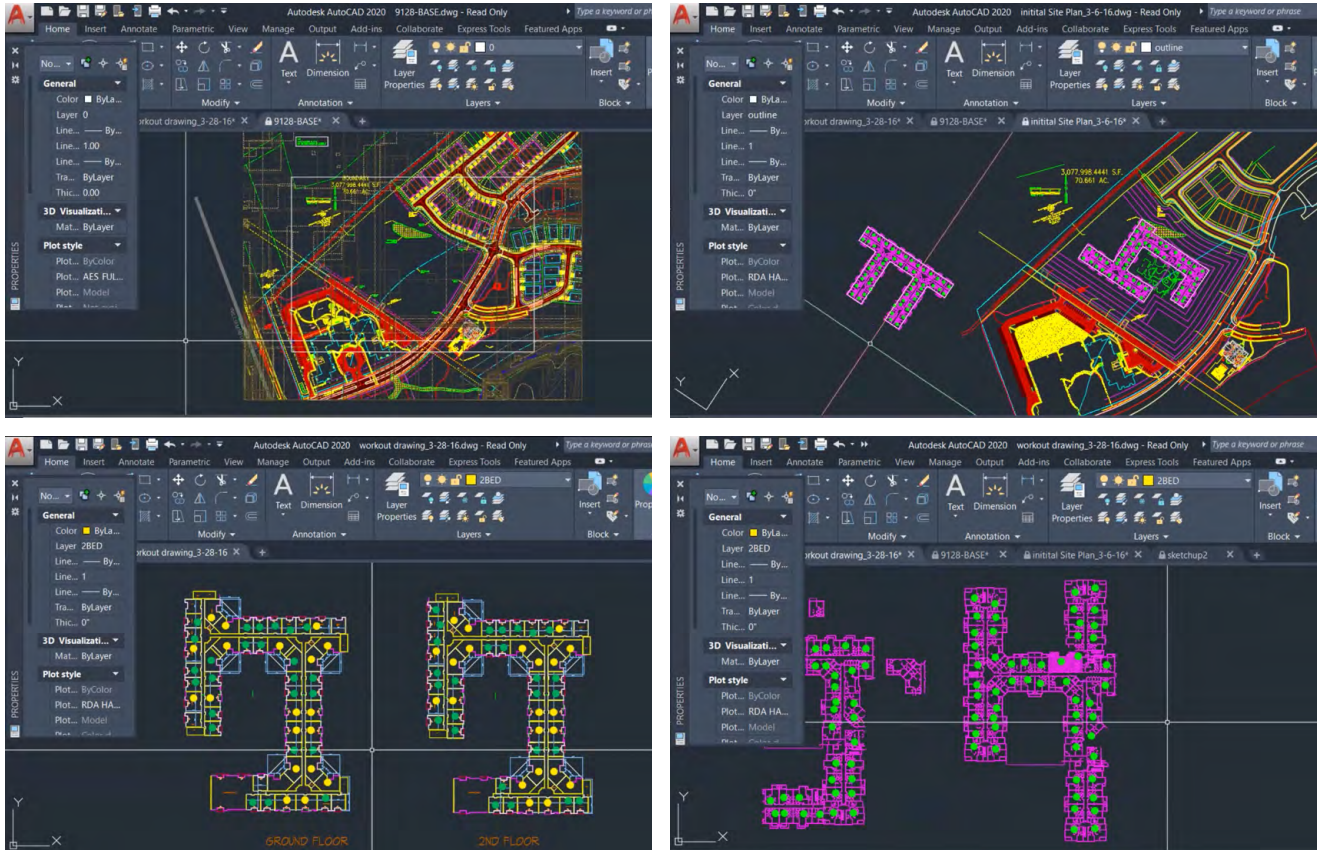


Figure 1.0 An example of AutoCAD being used as a presentation tool during the feasibility phase of a multifamily site.

## Downsides of the traditional approach



Have to manually count units / parking stalls etc and calculate net rentable, ensure parking ratios respected, etc.



Takes too long to make original designs and design changes. Any design changes immediately result in another 1-2 weeks process and delay.



Not necessarily providing the best option, but “an option”



Parking tabulated after units, often meaning lengthy design changes



Difficult to charge for the actual amount of work done.



# The Solution

RBA Architects is leveraging Testfit to streamline the feasibility phase for multifamily and mixed use developments. Since adopting TestFit, the following is RBA Architects, new workflow during the feasibility phase:

## Feasibility study process using TestFit

- 1

Client provides the site to test fit.

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- 2

As per the traditional process, RBA Architects do zoning research on the site, setbacks, lot coverage etc. as part of their due diligence.

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- 3

RBA Architects try out a few different concepts for the site layout directly in TestFit, including parking. For the unit plans, they might use a kit of parts from a client they have worked with before, or develop the TestFit drawings as an underlay in Revit.

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- 4

RBA Architects set up a video call with the developers, presenting a few possible options directly in TestFit. Get immediate feedback on yield, parking ratio etc. as all visible in TestFit as designs change.

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- 5

Civil engineers approve the concept of site designs, GC provides more accurate costing. Any design changes that need to happen can be done within minutes in TestFit.

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- 6

Export the TestFit file to Revit to develop the schematic drawings.

tabulation	development	schemes	errors				
<b>Multifamily</b>		<b>Financials</b>			<b>Metrics</b>		
Units	786	Revenue	\$17,802,831	Land Costs	\$15,000,000	Yield on Cost	6.30%
Average	930	Expenses	\$6,943,104	Soft Costs	\$32,899,500	Cap Rate	5.00%
Parking Ratio	0.00	NOI	\$10,859,727	Hard Costs	\$124,397,900	Value	\$217,194,545
				Total Costs	\$172,297,400		

Figure 2.0: Live breakdown of financials including yield on cost, net rentable and more.

# The Results

## Site #1

### The Gallery at Godwin site

For The Gallery at Godwin, TestFit was used to evaluate the site with numerous layouts and variations. The site was particularly challenging, as the client needed to yield a particular number of units plus parking and amenity space, while also accommodating HUD requirements. RBA Architects used Testfit to quickly evaluate the site and determine a layout that would satisfy the 258 unit requirement and work around any limitations. TestFit created a layout almost identical to the final site plan.

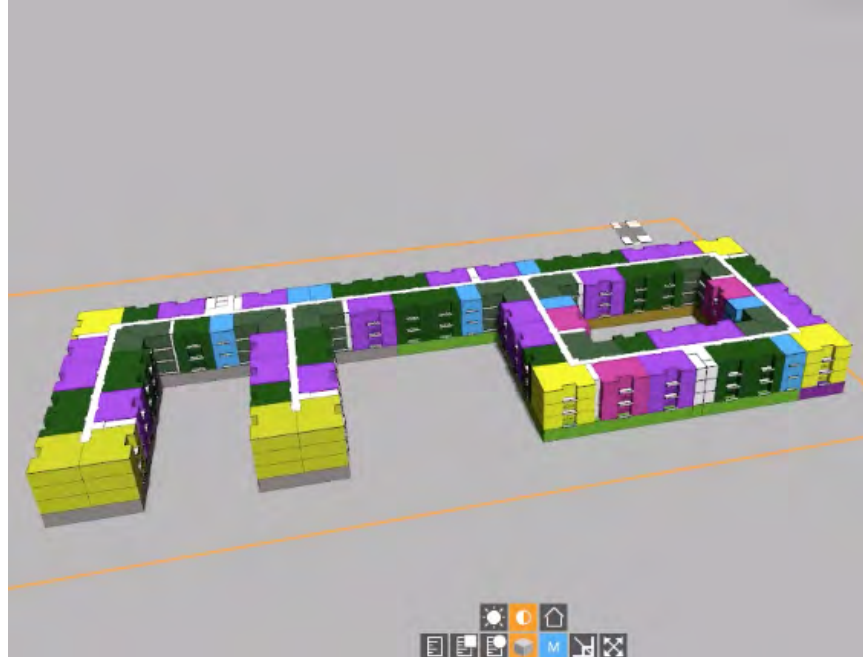


Figure 3.0 TestFit generated site plan for The Gallery at Goodwin

## Site #2

### Easley Site - Hampton, VA

RBA Architects partnered with a developer and Virginia Housing Authority to determine the feasibility of workforce housing on the Easley Site in Hampton. This project had a max building lot coverage of 227,000 sq. ft. TestFit was able to calculate lot coverage automatically, saving RBA time previously spent calculating this and other metrics manually. **TestFit yielded a site plan with 83% efficiency and lot coverage just below the maximum threshold.**



Figure 4.0 Easley site generated with TestFit showing context of the surrounding neighborhood.

## Site #3

### Scott's Edge, Richmond, Virginia

For the Scott's Edge Project, RBA Architects competed against 2 other firms to determine the viability of a pre-established design including residential, podium parking and amenity space. While the **other teams were only able to provide proposals to generate drawings**, RBA was able to use TestFit to also evaluate the efficiency of the design. Scott's Edge has an easement running through the middle of the site, adding an extra challenge in determining feasibility. TestFit enabled RBA Architects to **quickly determine an efficient 2-building design much more quickly than their competitors**.



Figure 5.0 Scott's Edge site plan showing easement running through the middle of the site.

## Site #4

### Virginia Beach Site, Virginia Beach, VA

TestFit allowed RBA Architects to quickly determine feasibility at the Beach site in Virginia Beach, VA. Their client decided not to move forward with the project as they were unable to fit the desired number of units into a small 1.89 acre site. **What previously would have taken weeks to determine, was evaluated using TestFit within an hour's time.**



Figure 6.0 Utilizing TestFit's parking automation to determine if the ideal unit count was possible with the required parking ratio on the Beach Site.



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## Benefits



**Hours, not weeks.** RBA Architects uses TestFit to evaluate sites far more quickly and thoroughly than ever before. What once took weeks of work in AutoCAD, can now be completed in just a matter of hours.

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As Tom Retnauer, President of RBA Architects, explains, “[In major cities], all the good sites are taken. TestFit allows us to **quickly evaluate the not-so-good sites.**”

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Even the most challenging projects can be **evaluated with developers in real-time**, yielding multiple solutions and in-depth site analysis.

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This creates a more inclusive and **efficient workflow between RBA Architects and it's clients.** When feedback is given, RBA can make desired changes in the moment and eliminate weeks of back and forth between them and their clients.

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The adoption of TestFit has made RBA Architects a stronger, more competitive firm. **Clients choose to work with RBA** over other design teams because of the capabilities that TestFit provides.

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The design process is more efficient, flexible and **ultimately less expensive for RBA** and it's clients. Determining feasibility through TestFit provides assurance that a site will comply with requirements while doing so in the most streamlined workflow possible.



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## About RBA Architects

RBA Architects is an award-winning Architectural Design, BIM and Visualization firm based in Chesapeake, VA. Utilizing a team of architects and designers, RBA offers an extensive range of professional services in different building types including but not limited to; residential, commercial, multi-family, government, and religious buildings. [rbapc.com](http://rbapc.com)



*“TestFit decreases the design time process, increases the number of potential solutions and allows RBA to be more competitive in making deals...We are able to use TestFit to help developers and city planning groups understand the future of site layouts.”*

- **Tom Retnauer**, President of RBA Architects, Chesapeake, VA

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## About TestFit

✉ [support@testfit.io](mailto:support@testfit.io)

🌐 [TestFit.io](http://TestFit.io)

TestFit's algorithms and co-creation tools help developers, architects, urban planners and more to solve site plans for hotel, parking or multifamily buildings in seconds. TestFit is The Ultimate Building Configurator. By leveraging the power of automation, TestFit allows users to solve site plans faster, validate assumptions in real-time, and eliminate wasted opportunity costs in real estate development, architecture, and general contracting.