



FIELD GUIDE / 2026 EDITION

Choosing a **Render** Path That Survives

A working reference on production renderers against real-time engines: what each is good at, what the model must look like for each, and where a scene breaks in between.

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The honest answer is that it depends on the frame

Benchmark threads compare renderers on the same scene and declare a winner. Production does the opposite: the scene is built for the path, and the path is chosen from what the frame has to prove. Those are two different questions, and only the second one is ever on a deadline.

This reference names no product as best and publishes no numbers. It sets out what each path is genuinely good at, what the model has to look like for each, where a scene breaks when it is moved across, and what changes once animation is in the job.

A production renderer is good at

- Frames that have to hold up at print size and under scrutiny
- Interior light that arrives after several bounces
- Glass, liquid, metal, polished paint — anything whose look is refraction and accurate reflection
- Fine geometric detail: displacement, fabric, fine profiles, dense planting
- Render passes for a controlled post stack

A real-time engine is good at

- Motion — the cost per frame is what makes animation affordable
- Iteration in front of a client, with camera and light changed live
- Anything interactive: walkthroughs, configurators, VR
- Volume variants where the scene stays fixed and something small changes
- Exploring options before a look is locked

Neither path fixes any of these

A model built badly, materials without real-world scale, a camera in the wrong place, or a light rig chosen to hide a problem. Every argument about renderers that goes on for more than a page is usually an argument about one of those four.

STEP 01

What the model has to look like for each path

The choice is made in the model long before it is made at render time. These are the places where a scene built for one path is quietly wrong for the other.

IN THE SCENE	PRODUCTION RENDERER	REAL-TIME ENGINE
Geometry density	Tolerant. Subdivision and displacement at render time are normal.	Budgeted. Detail is baked into maps rather than carried as polygons.
Topology	Matters mainly where it deforms or catches a highlight.	Matters everywhere — triangulation, welded normals, no hidden interior faces.
UVs	Often avoidable on architecture with projected mapping.	Effectively mandatory, with sane texel density, for anything lit or baked.
Repeated objects	Proxies and instances; memory is the constraint.	Instancing is the constraint and the opportunity. Plan the repeats deliberately.
Materials	Layered, with real refraction, thin-film and dispersion available.	A tighter shading model. Complex layering must be approximated in maps.
Lighting	Physical lights and full global illumination, solved per frame.	A mixture of live and precomputed light. Moving a light may mean rebuilding it.
Glass and water	Genuine refraction through thickness.	Approximated. The place a real-time frame is most often caught out.
Vegetation	Dense geometry, rendered as it is.	Cards, imposters and level-of-detail. Beautiful in motion, weaker on a still close-up.

Read the table the practical way round: **the real-time column is stricter about the model, the production column is stricter about the render.** A model built to the real-time rules will render happily in either. The reverse is not true, which is why the direction of travel matters.

STEP 02

Where a scene breaks when it moves across

Transfers fail in the same places every time. None of them is exotic, and all of them are cheaper to plan for than to discover on the day the animation was due.

01 Materials do not translate, they get rebuilt

What crosses reliably is the map set — base colour, roughness, normal, metalness, opacity — not the shader graph. Assume every material is rebuilt on arrival, and keep your maps as separate files so the rebuild is quick rather than archaeological.

02 Light units and exposure

Intensities, falloff and camera exposure are described differently on each side. The first transferred frame almost always arrives too dark or blown out. That is normal and it is not a fault in the model.

03 Glass, water and anything refractive

The most visible loss in either direction. Decide early which frames depend on refraction and keep those on the path that handles it properly.

04 Displacement and subdivision

Render-time detail that does not exist as geometry simply disappears. Anything the frame genuinely needs has to be real geometry or baked into a map before it travels.

05 Proxies, instances and external references

Linked libraries are the classic broken-on-arrival item. Consolidate what the scene actually uses and send it with the file, textures included.

06 Scale, units and pivots

A scene at the wrong scale still renders; it just lights, blurs and reflects wrongly, and nobody can say why. Confirm units on both sides before anything else.

07 The post stack

Passes, denoising and grade rarely match across paths. If a look was built in post, carry the grade over deliberately rather than hoping the render matches.

Four rules that keep a project portable

Keep the model neutral and clean, and treat look development as per-path work rather than something to convert. · Name objects and materials by what they are. · Keep textures as linked files at real-world scale, in one folder. · Never solve a geometric problem with a path-specific trick if the scene is going to travel.

STEP 03

What changes the moment animation enters the job

A still is one frame. A minute of animation is well over a thousand. Every decision that was a matter of taste becomes a matter of arithmetic, and the arithmetic is the reason the industry moved.

The three things motion changes

- **Cost per frame stops being trivial.** Whatever a still costs to render, multiply it by the frame count before choosing anything.
- **Temporal stability starts to matter.** Flicker, crawling noise and popping vegetation are invisible in a still and unwatchable in a sequence.
- **Revisions become expensive in a new way.** A change after the sequence is rendered is not one frame of work.

How we split it, for what it is worth

We build and render the model in **3ds Max**, because for the frames that have to hold up it gives the better result. Real-time, in our case **D5**, carries the animation and its economics.

An animation that took roughly a week to render on the production path can come back in minutes on the real-time one. That is not a claim about quality. It is the reason motion is now affordable at all.

The model is built and rendered in 3ds Max because it gives the better result. D5 carries the animation and the economics. Both, deliberately — not one or the other.

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WHAT THE FRAME HAS TO PROVE	WHERE THE WEIGHT USUALLY SITS
This material, up close, at print size	Production path.
This space feels like this to walk through	Real-time path.
These forty variants are directly comparable	Real-time, from one fixed scene.
This is what the building will actually look like	Either — decided by the model, not the renderer.
We need to decide the look today, together	Real-time, then finish the hero frames elsewhere.



Maverick Frame production render.

WORKING WITH A STUDIO

Cost, and how to brief it

Two things people ask us before anything else. Both answers are short.

COMMISSIONED WORK	FREELANCER	STUDIO
Single exterior still	\$100 – 300	\$250 – 600
Single interior still	\$120 – 350	\$300 – 700
Package, 5–8 views	\$600 – 1,500	\$1,500 – 4,000
Animation, per minute	\$1,000 – 3,000	\$3,000 – 8,000

Market ranges we are willing to publish. Turnaround and revision-round figures are deliberately not in this table: ours vary too much by project type to state as a benchmark, and an invented number here would be worse than none.

How to brief it — shorter is better

This is the opposite of what most people assume. Four things:

- What you need — **how many images, and of what**
- The plans and elevations, as they are
- A few reference images for mood and light
- One clear line on what the images are *for*

Inflating a small job into a fifty-page specification backfires: taken literally it comes out ugly, and it misleads the people doing the work. Tell them the intent and let the team that does this daily handle the detail.

The mistake that costs the most

The biggest failure we see is not choosing the wrong vendor. It is **timing**. People start looking only after the first supplier has already failed and the deadline is on fire, then choose in a panic.

Line up and vet rendering partners **before** you need one. One, ideally a few, briefed and ready to take work. It costs an afternoon now and saves a project later.

10+

YEARS RENDERING
VISUAL STORYTELLING

350+

BRANDS & AGENCIES
EMPOWERED GLOBALLY

95%

CLIENT
SATISFACTION RATE

40%+

OF OUR COMMISSIONS NOW
INCLUDE MOTION OR 360



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When the image has to hold up, **talk to us**

We are a CGI studio: architectural and product rendering, 3D modelling, animation, 360 tours and VR. Ten years, 350+ brands and agencies, and the kind of work that still looks right when somebody counts the windows.

Send us the plans and a line on what the images are for. You get a scope and a price, and no obligation to use either.

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Maverick Frame production render. · Cost ranges are market ranges as of 2026 and are not a quotation.

