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Film School for Architects: Introduction to Filmmaking

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Learning Objectives

- Discover the basics of filmmaking and concepts applicable to the architectural profession
- Discover techniques used by professional filmmakers
- Learn how to apply filmmaking basics to create professional-looking animations
- Learn how to develop an approach to capture your audience's attention and sell your story

Description

Whether we realize it or not, all of our clients are film critics. As video and animation become more essential to the architectural design process, it's important that we have a basic understanding of filmmaking and cinematography. If a camera movement looks unnatural or the editing is slightly off, your client will notice and will be distracted, missing the key points you're trying to convey. This course will provide an overview of basic filmmaking concepts that you can use to improve the quality of your architectural animations. You'll discover the techniques and core concepts important to professional filmmakers, as well as how to apply them in the architectural profession. The class will cover the basics of filmmaking: framing, camera movement, music, and editing—all of which are critical to creating professional-looking films. Attendees will walk away with a basic knowledge of filmmaking concepts that will take their animations to the next level.

Speaker

John Bittinger is an architectural design professional, Design Technology Leader, and creator of several short films, both live action and animated, currently working at Perkins and Will. John is responsible for architectural design work, BIM management, as well as all things visualization. He has created video content for prominent clients such as Zac Brown's Camp Southern Ground, major US universities, as well as several large international clients. He has also received two research grants through the highly sought after internal Perkins and Will Innovation Incubator program: Architectural VFX (2016) and Architectural Filmmaking (2018). He has presented his work in both North America and overseas. John is also a Revit Architecture Certified Professional.

Types of Shots

When beginning the process of creating an architectural film, one of the first tasks is to plan out what shots you need to create. In order to tell a complete story, there needs to be a combination of different types of shots. These shots can be broken down into four main categories: Wide, Medium, Close, and Macro. Each shot type represents a different level of zooming in or out, wide showing an entire building and macro showing small details. All are necessary and convey different information and emotion to the audience.




Wide Shots

This is the “architectural rendering” shot. We are pulling the camera back to show an entire building, space, or even campus. The purpose with these types of shots is to orient the audience to what they are going to see. You are showing the context so when the camera zooms in to smaller spaces people are never lost because they can remember back to the wide shots and know where they are.

Story

Think of wide shots as your “establishing shots.” They are setting the stage for the rest of the film by telling the audience where they are. Typically used toward the beginning of a film, wide shots orient the viewer to what they are going to be looking at.

Movement

Because the camera is typically located far away from the subject, several camera moves are most logical but it is often a good idea to limit movement. Stationary shots are an easy go to. Also consider Aerial or large jib shots to reveal a space. These types of shots show a lot of information so excessive camera movement can be distracting.

Experience

Think of wide shots as the first time you will view a building or space. If you have never been to this building before, what is the most important view in order to quickly orient the audience?

Editing

Wide shots should largely be located toward the beginning of the film. Think of a progression from wide to macro. Start by showing the overall building, move into a specific space, focus on a smaller area within the space, then focus on details within that smaller area. Wide shots can also be used as the last shot in your film as a kind of recap. A sequence of wide shots in the middle of the film can also allow you to pull out of the details and start the progression again.

Medium Shots

This type of shot begins to zoom the camera in while still showing spaces rather than details. Medium shots no longer show an entire building. These might show an entry way or a courtyard rather than an entire building, or if it is an interior shot show a coffee shop within an atrium rather than an entire atrium. Medium shots give the audience an idea of what it is like to move through a space.

Story

Medium shots tend to be more spatial in nature. Their major role is to set the stage for more detail focused shots. A medium shot orients the viewer within the space so when you cut to a close or macro shot the viewer doesn't get lost.

Movement

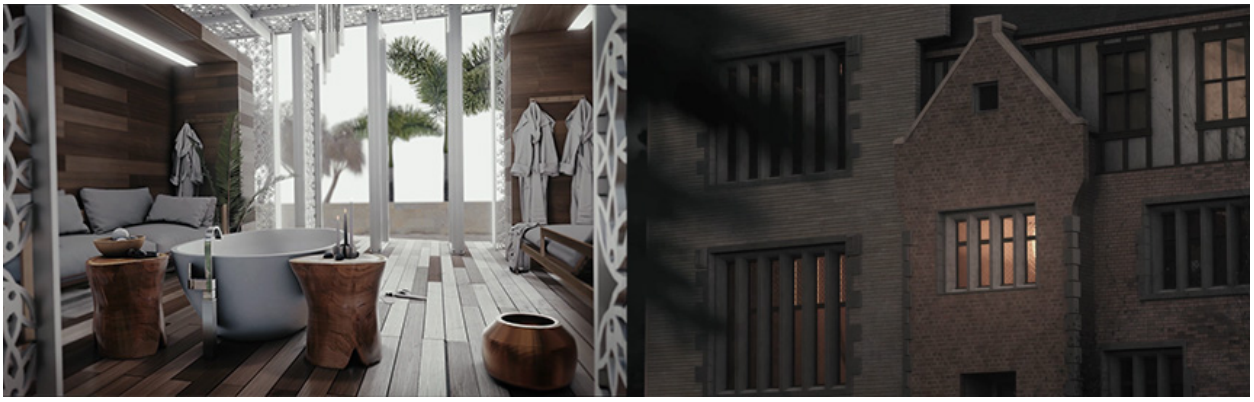
Medium shots provide the most opportunity for freedom of motion. While stationary shots work well here, feel free to experiment with dolly, slider, or jib shots. Think about how a person might move through this space.

Experience

A medium shot represents your initial experience of a space. When you walk into a room you tend to take in the overall space before keying in on details.

Editing

Medium shots set the stage for detail shots. A good starting point for editing would be to begin with a wide shot, one medium or a short sequence of medium shots, leading in to detail shots. Intersperse medium shots to break up detail shots and when you move from one area of the building to another to reorient the viewer.



Close Shots

For clients who may not be accustomed to looking at architectural images, close shots can be the most effective in helping them understand the space. These zoom in to smaller spaces and convey how it is used. This type of shot represents how we interact with our environment most of the time. Think about your office environment. Even though you are in a larger office space, the world you are interacting with most of the time is your workspace, your desk or your cubical. Close shots allow the audience to understand what it is like to inhabit the space.

Story

Use these shots to show how someone might use the space. Display areas, workspaces, furniture are all good candidates for a close shot.

Movement

It is also a good idea to limit camera movement with close shots. Tripod and handheld shots work well, but also consider subtle slider/dolly movements.

Experience

Close shots represent how we interact with the world much of the time (Working at our desks, having dinner at the kitchen table, brushing our teeth at the vanity). These zoomed in views help bring the viewer into the space.

Editing

Close and macro shots are very important to telling the story. Don't be afraid to allow 50% of your film to be zoomed in.

Macro Shots

Where wide shots are important to show the context, macro shots are important to show the details. These shots zoom in to the small details, materiality, and texture within your project. Where a close shot might highlight a reading area, a macro shot zooms into a book on the shelf, a coffee mug on the table, or the detailing of a piece of furniture. While macro shots can seem unnecessary for many architects, they are often some of the most effective in connecting with the audience.

Story

Use these shots to tell the audience who uses the space. Who lives/works here? What are their interests? What is there style? Those small character details help tell your story. If you are trying to sell a Manhattan penthouse, zooming into a pair of shoes on the floor or a magazine on the table says a lot about the potential buyers your client might be after.

Movement

When focusing on the fine details, it is often helpful to keep the camera movement to a minimum. Tripod or handheld shots work well for these. If you are looking at a painting on the wall, you are probably standing relatively still. Therefore, it makes sense that your camera should do the same.

Experience

Don't think that macro shots need to be used sparingly. They often can bring a space to life by adding a layer of personality. When someone gives you a tour of their home, you don't only look at each room as a whole. You take time to admire the pictures on the wall, the plant in the corner, and the vase on the table. Without both you don't get a full appreciation of the entire space.

Editing

Macro and close shots can bring your audience into a space in a way that wide and medium shots cannot. They can begin to see themselves using the space. Don't be shy about zooming in on the details.

Camera Movement

This can be one of the most daunting tasks when it comes to creating animated films. Even once you have you model ready, knowing how to move the camera isn't always clear. It is important then that we follow some basic rules of filmmaking and try to emulate how a camera operator on set would move a camera.

How Does a Camera Move?

The history of film dates back over one hundred years. Over that time, filmmakers have developed a language for how a camera should move. When creating architectural films, we don't need to reinvent the wheel. By following the conventions developed by the film industry we can create natural feeling camera movement that our audience is used to.

When creating camera movement in a digital environment, try to stay grounded in reality. Cameras have weight. They are cumbersome and often require special equipment to operate. Also remember that people aren't perfect. Camera movements always have flaws. Every movie was filmed with a person behind the camera. Even though the digital camera can move with perfect precision, adding in subtle imperfections can go a long way in removing the sterile and digital feel.

This section will go through the standard tools used to move a camera. We will learn what these tools are, how they move, when they should be used, and what feeling they convey to the audience.

Tripod

Tripod shots are the most basic shot. You place the camera in one location, and it doesn't move.

Story

Consider using a tripod for establishing shots where you are introducing the audience to the overall setting for your film.

Movement

Don't think that camera movement is always necessary. Sometimes the most effective option is to keep the camera stationary. Because the camera isn't moving, it is helpful to activate movement within the scene to prevent it from looking like a photograph. You can use people, cars, or even shadows to bring life to a tripod shot.

Experience

Tripod shots are great for medium and wide shots. Because the camera is stationary it allows the audience to absorb more information without the camera movement being distracting.

Tripod – Pan and Tilt

Pan/tilt shots place a camera on a tripod while rotating the view either horizontally (Pan) or vertically (Tilt).

Story

Pan/Tilt shots are great for establishing or revealing shots. Slowly bringing the subject into frame highlights its importance.

Movement

These types of movements should be slow and smooth. Make sure the movement starts slow, ramps up in the middle of the move, and slows to its final position. Consider holding on the final position for a few frames to resolve the shot.

Experience

The movement can either be motivated (camera following an action) or unmotivated (camera moving with no action in the scene). A motivated move gives the audience the sense that they are reacting to the scene at the same time as the camera operator. This gives the sense of

being in the space. An unmotivated move on the other hand creates the feeling of having a tour guide. The camera operator has something they want to show the audience, guiding their attention.

Dolly

A Dolly is a large piece of camera equipment on which a camera is mounted to a wheeled platform. This platform rides along a set of tracks allowing the camera operator to create perfectly smooth motion.

Story

Using a dolly shot is a great way to highlight importance. By placing the subject in the center of the frame and moving toward it you are able to draw attention to it. Remember that smaller movements have a greater impact. Even though a dolly allows the camera to move an almost infinite distance, most of the time moving only a foot or two will create a more cinematic effect.

Movement

Dolly shots are limited to movement in the horizontal plane, although they can be combined with a jib for a more unique shot. Dolly shots allow you to create very smooth movement with little to no imperfections by eliminating any camera shake created by the camera operator. The camera is free to follow a subject or rotate along the track, but the camera position typically moves in one consistent direction.

Experience

Using a dolly is a great way to move the audience through a space. These are great for medium shots where you can give the audience a little more context. Dolly shots are also effective for close or macro shots by pushing in on a subject.

Slider

A slider is similar to a dolly but on a much smaller scale. Where a dolly allows you to move the camera through an entire space, a slider is designed to move at most a few feet. Some of the most effective slider shots may only have the camera move six inches.

Story

Sliders are great for close or medium shots. Think about using the foreground to partially obstruct the subject. These are good for revealing shots as the foreground moves out of frame, highlighting the subject.

Movement

Where a dolly can move forward to back as well, slider shots are typically used for side to side movement. If the shot is bookended with stationary shots, consider slowly accelerating the movement at the beginning and slowing down toward the end. If the shot is cut together with other moving shots, you can maintain a consistent speed throughout.

Experience

The most important aspect of a slider shot is the foreground. Because the camera is moving such short distances, placing an object close to the camera can create a nice parallax effect as it moves across the screen. This foreground object should typically be out of focus to minimize distraction.

Jib/Crane

A jib is a large crane with the camera mounted on the end. A camera operator will raise or lower the crane to create a vertical motion.

Story

Jib shots are great for medium or even wide shots depending on the scale of the movement. Consider a jib shot when showing off a space as a secondary establishing shot.

Movement

A camera on a jib moves in a vertical arc about the pivot point at the center. While the camera moves vertically, it should stay oriented toward a single focal point. This separates the movement from a vertical dolly or tilt.

Experience

Jib shots give the feeling of the camera operator intentionally showing you something important. It is an unnatural movement from what we are used to therefore it creates a sense of extra importance. Consider adding subtle imperfections to a jib shot. In the real world, the camera operator isn't perfect. Adding a slight horizontal shake or subtly moving the focal point of the camera can add weight to the movement and make it feel more natural.

Handheld

Handheld shots are some of the most versatile options for filmmaking. They can be used at any scale and can either be stationary or moving, substituting for a tripod or dolly. When creating handheld shots, keep in mind the different tools used by real world filmmakers. For stationary handheld shots, camera operators will use a shoulder mount. Bracing the camera on the shoulder smooths out the footage by eliminating natural small movements of the hands while keeping some of the larger swaying back and forth.

When creating moving handheld shots, consider emulating a handheld gimbal. This eliminates the jarring camera shake due to footsteps. The movement is not as smooth as a dolly would be since the camera operator will naturally sway while walking.

Story

Handheld shots can feel the most natural to the viewer. The view of the camera becomes the eye of the audience. This means that they convey the feeling of standing in a space themselves.

Movement

The key to a handheld shot is emulating a real person holding a camera. Their hands might shake, and the focal point of the camera might not stay perfectly locked on the subject. Cameras have weight and simulating that will add a level of realism to your film. Adding in those subtle imperfections will really bring your shot to life.

Experience

The advantage to a handheld shot over a dolly or tripod is that it feels more natural. When viewing a digital image, perfect movements from the camera can make a film feel cold and robotic. The reason to add imperfections is to hide as much as possible the fact that the image is entirely computer generated.

Rack Focus

A rack focus involves changing the focus depth of a camera lens. Typically used with a shallow depth of field, they are used to highlight two objects in a scene. The camera operator will focus on one object and change the focus distance to blur out the original subject and bring into focus another.

Story

A rack focus is great for highlighting details within a space. Decorations, materials, fixtures are all good options for potential subjects.

Movement

The movement with a rack focus should be subtle, either with the camera handheld or mounted on a tripod. If the shot is handheld, consider adding a slight camera shake as the focus changes. This simulates the natural shake that would occur while trying to keep the camera steady while manipulating the lens. The change in focus should be relatively quick. If the change takes more than a few frames it can be uncomfortable to look at, as the image will be completely out of focus for too long.

Experience

Because a rack focus requires a shallow depth of field, they are more effective for close and macro shots. You could also use them on a wide shot if the distance between the first subject and the second are great enough.

Aerial

When creating aerial shots, it is important to consider the tools available to create them. For many years, helicopters were the only way to create grand aerial shots. Even now with the advent of drones it is important to remember how audiences are accustomed to seeing aerial images.

Story

Aerial shots are best used for establishing or reveal shots. Using them early in a film will help orient the audience to the location, providing the foundation to then zoom into much smaller scales. They can also be used as a revealing shot. You can build anticipation by showing a series of zoomed in views that end on an aerial shot of the entire building.

Movement

Aerial shots should be slow, smooth, and have a consistent movement. No abrupt changes in speed or direction. This movement can either be in a linear direction or orbiting around a subject. Rotating the camera to stay centered on the subject is often a good idea. But while the overall motion of the “helicopter” should be consistent, the camera operator probably won’t perfectly track the subject. This means that you can vary the orientation of the camera slightly to mimic the slight imperfections of the camera person.

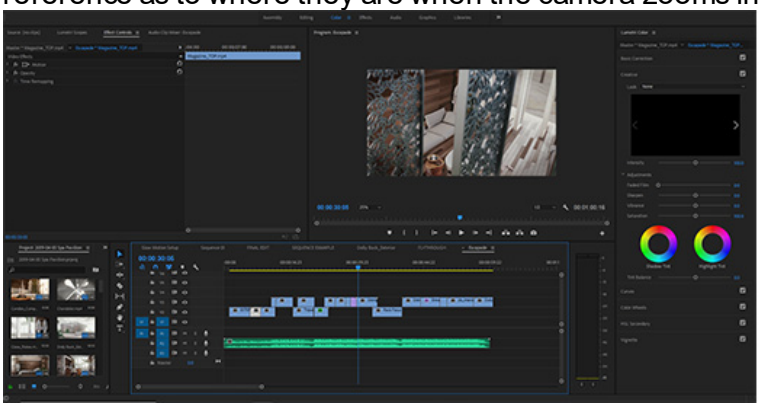
Experience

Because we view the world from the ground, aerial shots inherently feel a bit foreign. Therefore, it is important to keep them as simple as possible. Slow and steady is advised.

Editing

Putting the Pieces Together

Once you have rendered all your shots, it is time to start combining them into a complete whole. Ideally you will have a basic outline of the story you are trying to tell but often it won't quite come together how you envisioned. Therefore, you can follow a few basic rules to get you started. The first task when telling your story is orienting the audience to what they are going to see in the film. Tell them where they are and introduce them to the subject of the film. You want to set the contextual foundation so the audience is never lost. A great way to do this is to start with establishing shots. Typically wide shots, these pull the camera back and show as much context as possible to orient the viewer. By starting with establishing shots, the audience has a frame of reference as to where they are when the camera zooms in.



Sequences

One of the most important aspects of editing is creating sequences. A sequence is a series of related shots that help tell a story. For example, if you were to make a film about fishing one of the first sequences you might create is how you prepare for your first cast. You would start with a person tying on a hook. The next shot would be putting a bait on the hook, followed by the person casting the bait. This sequence could then be resolved by showing the person reeling in the line and maybe catching a fish. This sequence tells a smaller story within the greater whole. This concept applies equally to architectural and non-architectural films. Sequences are important to creating a compelling narrative that keeps the audience engaged. When editing, think about how you might use sequences to tell your story.

Varying Shot Types

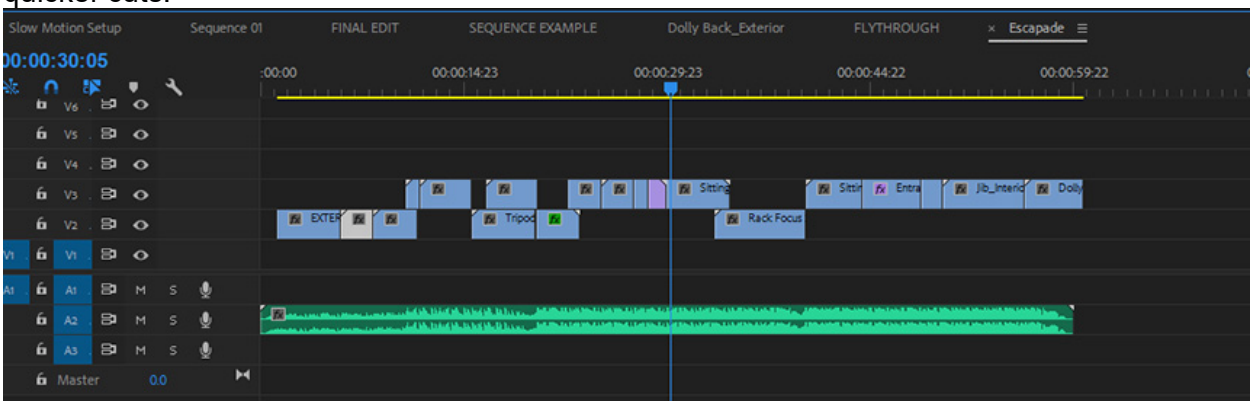
Another key when editing and planning a film is the necessity to jump between various scales. A film shouldn't be all wide shots, nor should it be all macro shots. Both are necessary to tell the whole story. As architects, we deal with spaces. Therefore, our tendency is to prioritize wider shots and a greater field of view. But when you look at professionally made films, you see that the emphasis much of the time is given to macro and close shots. When planning out the shots for your film remember that medium and wide shots establish the context and the macro and close shots fill in the missing pieces. Because of this, wider shots are used more sparingly. They set the stage for the closer shots to tell the rest of the story. The Candles on the table are just as important as the room they are in.




Pacing

When editing, try to vary the length of clips throughout the film. If each clip is the same length it can begin to feel boring the audience. Quickly cutting between several short clips less than two seconds each can speed up the pacing. A sequence of quick cuts can also be bookended with longer shots, using the quick cuts to stitch the two together.

Macro and close shots tend to lend themselves to shorter clips. You can quickly cut between several close and macro shots since they are typically focusing on one subject and the audience doesn't need as much time to process the image. Medium and wide shots tend to be slightly longer, giving the audience time to absorb the information as well as to rest from the quicker cuts.



Movement Between Shots

Consider how one clip leads into another. The goal is to create a smooth transition between clips and avoid anything that would feel unnatural to the audience. This does not however mean that clips must fade from one to the next. For example, if in one clip the camera is panning to the left, and the next has the camera moving to the right, that abrupt change in direction will feel jarring to the audience. The same applies to the speed of movement, such as a fast-moving camera next to a stationary camera. Try to maintain a constant direction between adjacent clips. When the direction or speed needs to change, find a logical place to do so and try to minimize the effects of that change as much as possible.

Music

The music you choose can make or break your film. It is important that you pick the soundtrack before you begin editing a film because the music should inform pacing. When cutting between shots, one easy rule is to follow the rhythm of the music. Quick cuts between clips can sync up to the quarter or half measure while longer clips can last a full or two measures. This blends the audio and video and creates a rule for switching between clips that isn't jarring for the audience.