



VRdirect User Guide

June 2021 | support@vrdirect.com

A. Preparation

- Concept
- Storyboard
- 360° Production List
- 360° Camera Guide
- Tips for 360° Production

B. Production

- Specifications & Formats
- Alternative Options for 360° Material
- Editing 360° Content
- 2D Media & Assets

C. Virtual Reality Creation

- Overview of the VRdirect Studio
- Creation Area
 - Scenes
 - Objects
 - Interactions & Time Events
 - Preview
- Publishing Area
 - Upload VR Project
 - Publish VR Project
- Distribution of the VR Project
 - Web Player
 - App
 - VR Headset

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Develop a good concept for the VR project!

- **What is the VR project about?**
 - What is the presented use case? (Training, onboarding, marketing etc.)
 - What should be achieved with the VR project? (More efficient processes, secure working conditions, ... etc.)
- **Determine the content of the VR Project**
 - What type of production is needed? (Professional? DIY?)
 - Which media types should be used? (Video, images, 3D objects, ...?)
 - How should the user be guided through the project? (Linear or open guidance?)
 - What design style should it have? (Professional, suitable for children, corporate CI, ... ?)
- **Definition of target group**
 - What is the target group? (Age range, VR-experienced, etc.)
 - Which devices are mainly used for consumption? (Web, mobile, VR glass)
 - How large is the audience? (Internal / external use? Marketing campaign?)
- **Selection of distribution channels**
 - VRdirect App (For mobile devices and VR devices)
 - Web Player (For the web browser on all devices, website integration?)

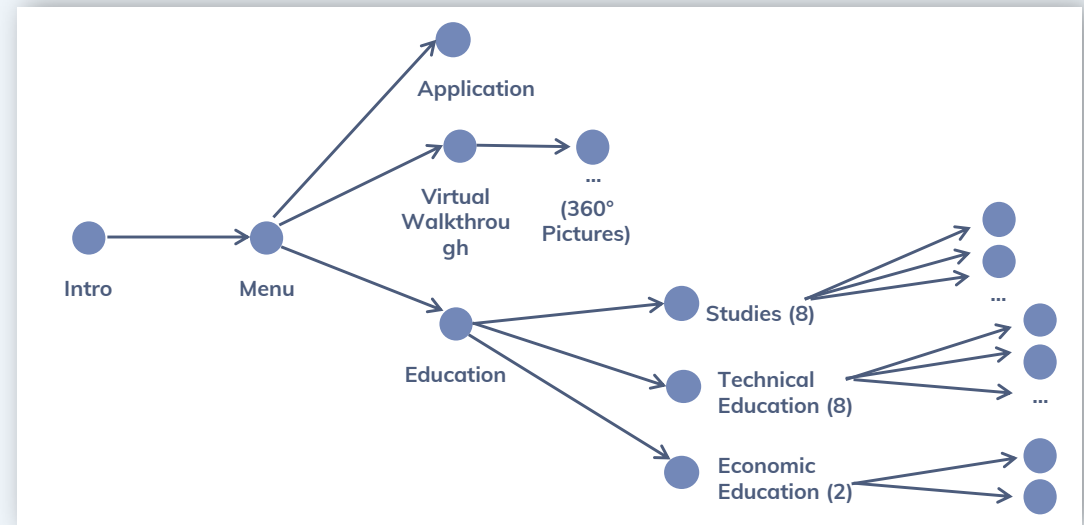


Figure 1: Example of project structure

Develop a good concept for the VR project!

- **Structure of VR project (see figure 1)**
 - Approximately how many scenes / chapters are needed?
 - How are these scenes connected to each other?
 - Is (external) help needed to realize the project?
- **Create a compelling story**
 - What story should the VR project tell?
 - How can your ideas be transferred to Virtual Reality?
- **Create a storyboard (see figure 2)**
 - Which scenes must be included?
 - The further the storyline is defined, the better.
- **Develop a detailed timetable for the production (see figure 3)**
 - When should production begin?
 - How long should the production take? (Consider pre- and post-production)
 - Is there enough time for feedback loops?



Figure 2: Example of storyboard

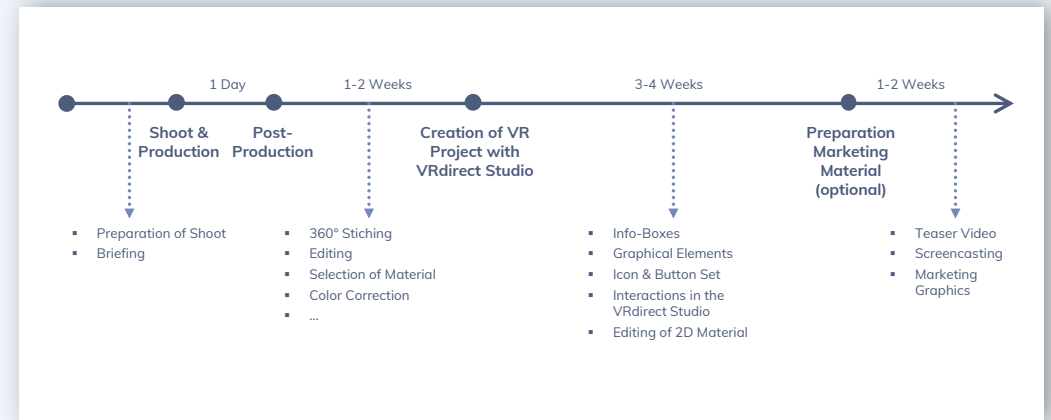


Figure 3: Example of timetable

Create a detailed production list for the project!

■ Purpose of a production list

- The production list results from the concept & storyboard planning and helps the coordination of the upcoming 360° production (camera shoot).
- The parameters must be clarified in advance as detailed as possible - especially if several people are involved in the production.
- It is recommended to visit the locations on-site in advance

■ Components

- General information about course of action
- Overview of all scenes
- Required 360° content in the scene (images or videos)
- Required staff / persons (actors, production team, ...)
- Required tools and equipment

Note: The tips apply to both - a professional production and a "do-it-yourself" production.

For virtual tours it is recommended to mark the stations / camera positions on a floor plan (see Fig. 5).

360° Production List		
Production days:	15 th February, 16 th February 2021	
Locations:	Company HQ: Companystreet 1, 81234 City Company Production Site: Examplestreet 3, 65473 City	
Persons:	John Doe (+49 XX XXX XX) Jane Doe (+49 XXX XXX XX)	
Time Schedule:	Tuesday: 9:00am – 12:00pm Office HQ 1:00pm – 5:00pm Cafeteria Wednesday: 9:30am – 11:30am Production Hall B 11:40am – 1:00pm Production Hall A	
Scenes	360° Content	Notes & Preparation
Scene 1 – Intro (Tuesday, 09:00 – 12:00)	360° Image of office room 32	Laptops must be locked, remove trash cans, windows clean
Scene 2 – Greeting (Tuesday, 09:00 – 12:00)	360° Video of manager greeting in office room 32	Same camera position, make sure that speech is prepared
...

Download template here:

[Link](#)

Figure 4: Template of a 360° production list

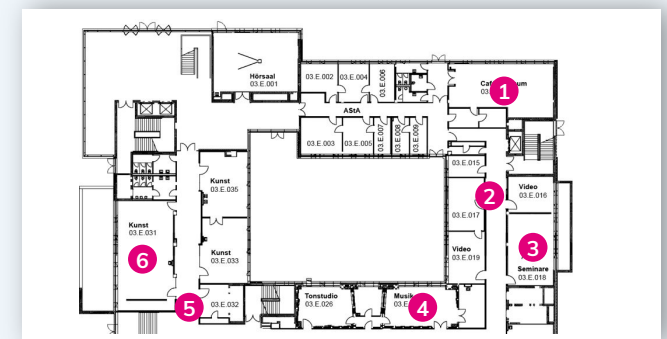


Figure 5: Position markers in floorplan

What to look for in a 360° camera

- **Special features in 360° cameras**
 - High 360° image and video resolution
 - Stabilization for moving images
 - Support for dark and night shots
 - Stitching options (automatic stitching or manual stitching?)
 - More lenses = higher quality of the image → but also more complicated handling
- **Cameras for beginners**
 - Insta360 One R (ca. 260 EUR)
 - Ricoh Theta V (ca. 350 EUR)
 - Insta360 One X2 (ca. 400 EUR)
- **Advanced / professional cameras**
 - Ricoh Theta Z1 (ca. 970 EUR)
 - GoPro Omni Rig (ca. 2500 EUR)
 - Insta 360 Pro 2 (c. 5000 EUR)



▪ General tips

- Use as much lighting as possible.
- Use a stable tripod to ensure the camera is centred and steady
- Set the camera at a person's average eye level (approx. 1,60 meters)
- Do not position the camera too far or too close to the subject / object of attention
- Clear the space around the camera and make sure that people in the background are not visible in the scene (or staged on purpose)

▪ 360° Images

- Ensure that you also take "neutral" 360° photos (e.g. for a menu or intro scene)
- Rather take too many photos than too few

▪ 360° Videos

- When taking a 360° video it is recommended to also take a 360° image in the same camera position (in case the video appears laggy or has poor quality)
- Please consider that most 360° cameras take better quality images than videos
- Only record video sequences that are worth showing, as some viewers may lose interest over time
- Make sure the 360° video is sharp, to the point and rather short
- Rather record too many videos than too few



Download info sheet here:

[Link](#)

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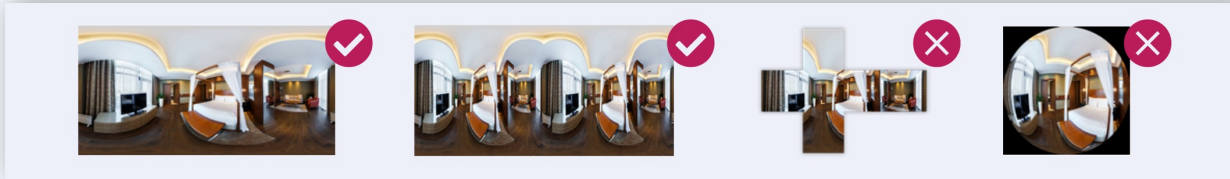
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Use these specifications and formats when importing content into the VRdirect Studio!



360° images

- Projection type: Equiangular monoscopic or stereoscopic
- Quality: 8K (recommended) = 8000 x 4000px JPG or PNG

360° videos

- Projection type: Equiangular monoscopic or stereoscopic (side-by-side)
- Quality: 4K (recommended) = 4096 x 2048px MP4 - H264 encoded, 30 fps, 12 mbps bitrate

2D images

- Format: JPG or PNG
- Stereo images: Stereoscopic side-by-side images, JPG or PNG
- Quality: HD (recommended) = 1920 x 1080px

2D videos

- Format: MP4 (transparency is not supported)
- Audio format: MP3 stereo mix
- Quality: HD (recommended) = 1920 x 1080px

Audio

- Format: MP3 stereo mix - Recommended: 128 Kbps
- 1,2,6 and 8 audio channels for AAC codec
- Spatial audio in TBE format (44.1 KHz)



VRdirect
STUDIO

[Download specification sheet](#)

[Link](#)

Existing 360° content from Stockfootage libraries

360° images and 360° videos

- Bigstock ([Link](#))
- Adobe Stock ([Link](#))
- Shutterstock ([Link](#))
- Pond5 ([Link](#))
royalty-free, also offers music

3D models

- Turbosquid ([Link](#))
- Sketchfab ([Link](#))
- cgtrader ([Link](#))

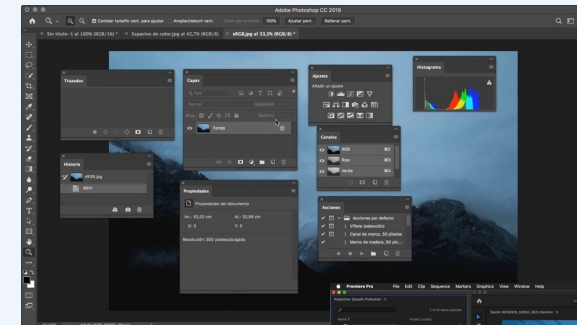
Note: When making use of a 3D model, the 360° content must be rendered in monoscopic format from the 3D model. This can be done in a 3D software (e.g. Blender, Cinema4D or Maya).



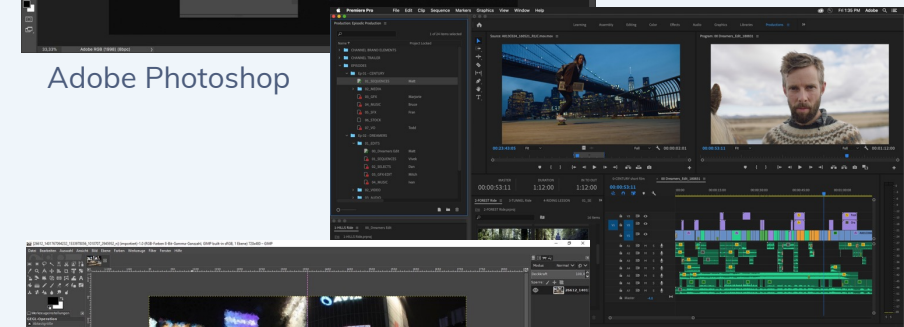
Edit 360° content for a professional touch!

Optional

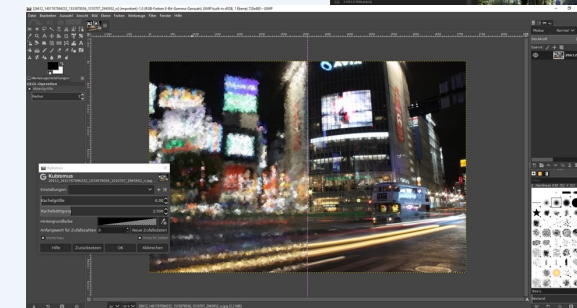
- **Stitching within the 360° camera**
 - The so-called “stitching” combines the individual shots from the camera lenses to create a 360° image or video
 - Most 360° cameras perform stitching automatically after an image or video has been captured
 - Look for this feature when choosing a 360° camera
 - Manual stitching can get very time-consuming and therefore only recommended for professionals
- **Tools for professional editing**
 - Use of professional design software for adjustments to brightness, contrast, color correction, video cutting ... etc.
 - Adobe Photoshop ([Link](#))
 - Adobe Premiere ([Link](#))
 - GIMP ([Link](#))



Adobe Photoshop



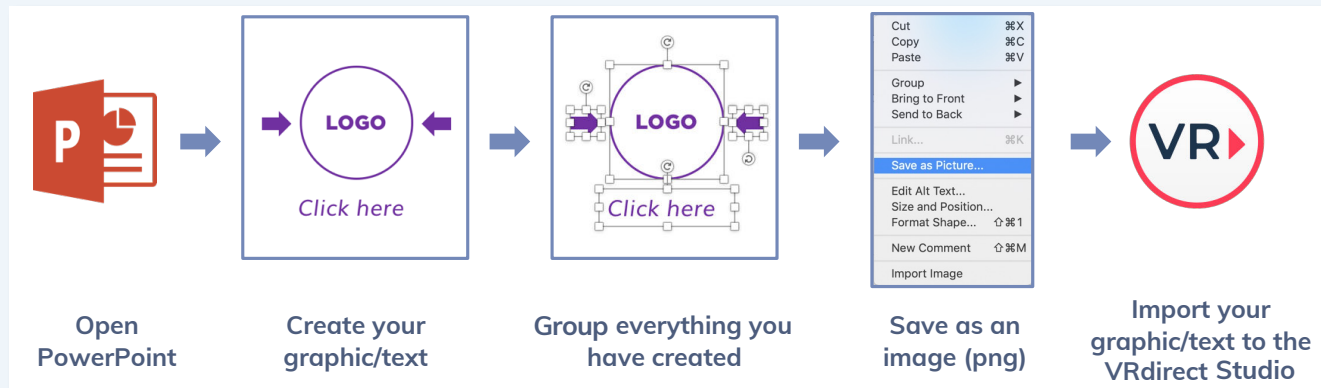
Adobe Premiere



GIMP

Enriching the VR project with media and graphics

- **Creation of graphics, buttons, icons, text boxes ...**
 - The creation of such 2D assets can be done via common software (e.g. PowerPoint) or other graphical design programs
 - In PowerPoint, you can export the 2D assets as a PNG image and then add them to the VR project



- **Other possibilities**
 - Find buttons, images, icons and more on the internet ([Flaticon](#), [Pixabay](#), ...)
 - Use the VRdirect icon library (see next slide)



UPSTAIRS



DOWNSTAIRS



NEXT



PREVIOUS



HERE



CLOSE



PLAY



ZOOM IN



ZOOM OUT



INFO



ADD



REMOVE



START



STOP



GO HERE

Download the VRdirect icon set:

[Link](#)

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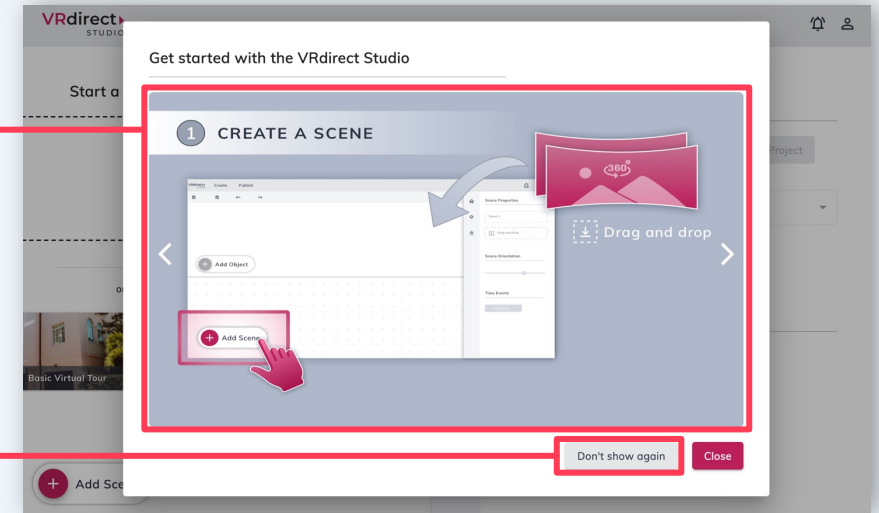
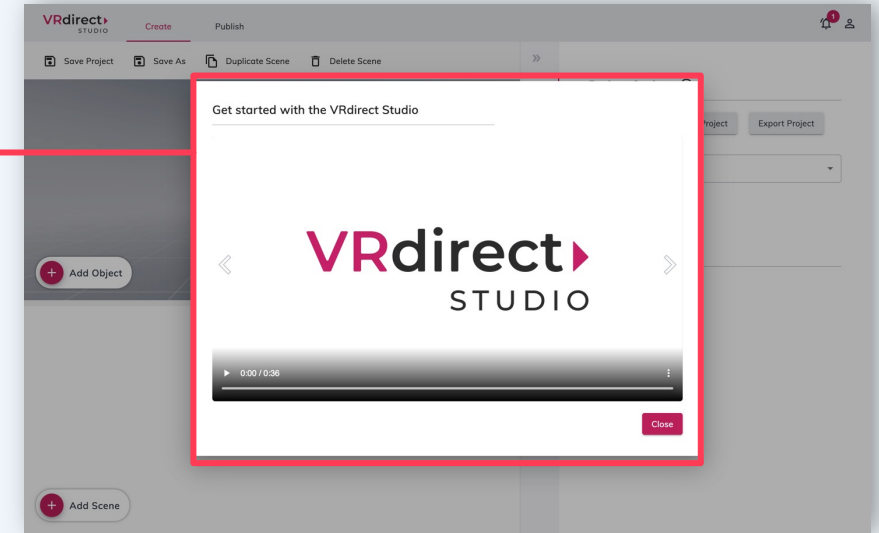
When the studio is opened for the first time, an instruction video provides the necessary all-round introduction and visualizes the process step by step.

In addition, five instruction graphics are displayed there. Those again visually describe how to start creating the project.

The window can be closed at any time by clicking the „Close“ or **„Don't show again“** button.

If this introduction slider needs to be looked at again at a later time, it can be found by clicking on the **„Need help?“** button in the Home tab of the sidebar.

Need help?



Toolbar:

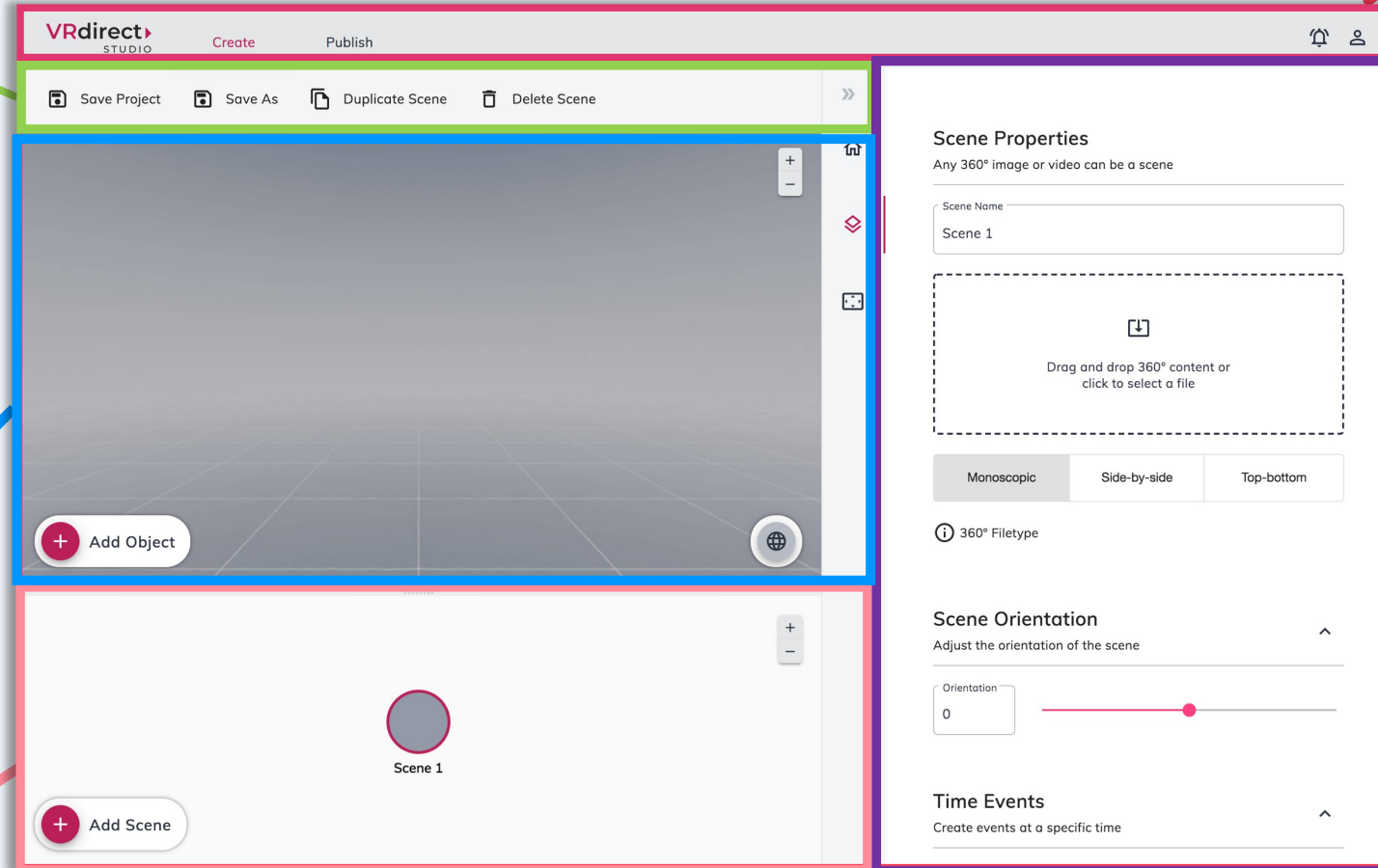
The toolbar is only displayed on the creation side of the Studio. Here you can save the project and delete or duplicate scenes and objects.

Scene View:

This window shows the inside of a scene. Here you can add objects and look around the scene (360° environment) by dragging your mouse left or right.

Storyboard View:

All scenes are displayed and arranged here. New scenes and connections can be added.



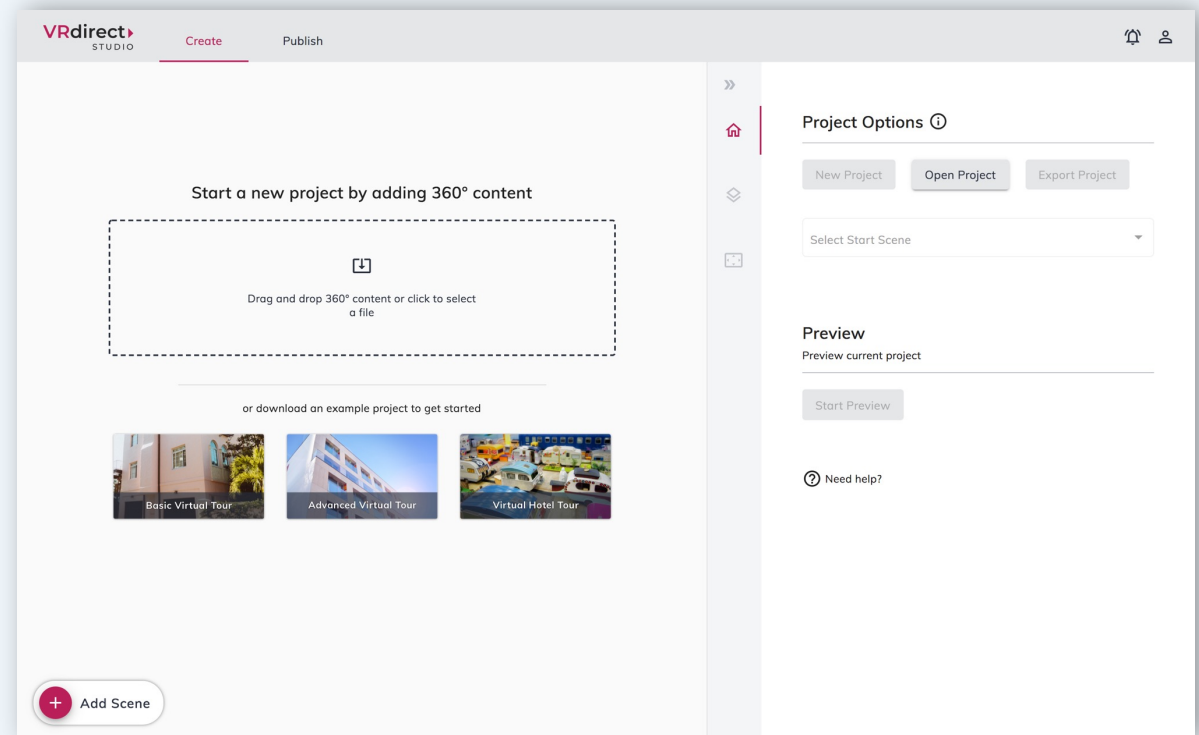
Tab bar:

Here you can switch between the tabs 'Create' and 'Publish'. Notifications and profile options are also located here.

Sidebar:

The sidebar shows the properties of the selected object or scene. As well as the general project options and the so-called background scene.

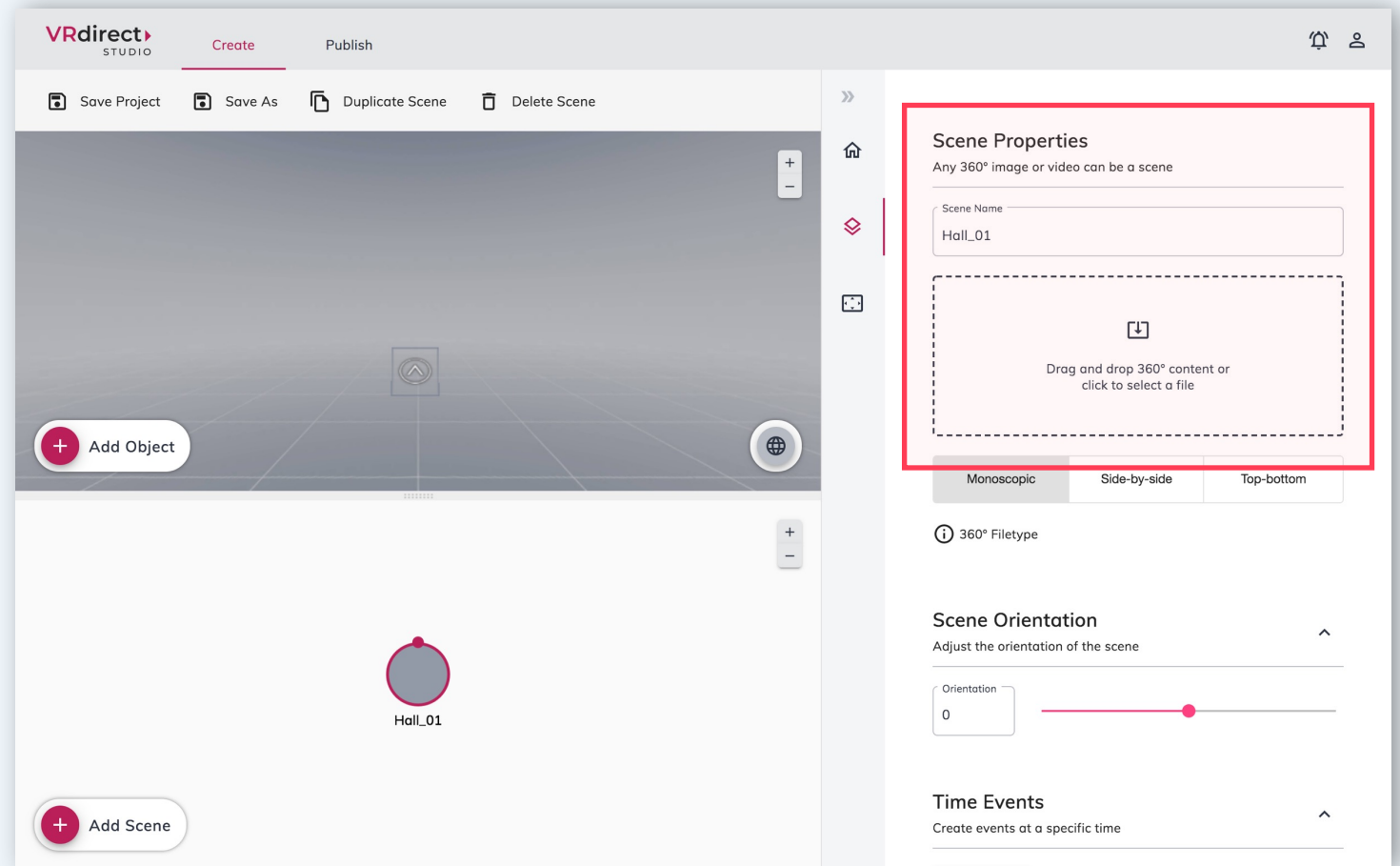
- When you open VRdirect Studio for the first time, you will see this screen after the instruction window.
- **Start a VR project** by adding 360° content - either by dragging and dropping it or by clicking into the large field in the middle of the screen.
- A 360° scene will be **automatically created** from the 360° content.
- Alternatively, you can click on the plus button "Add scene" (bottom left corner).



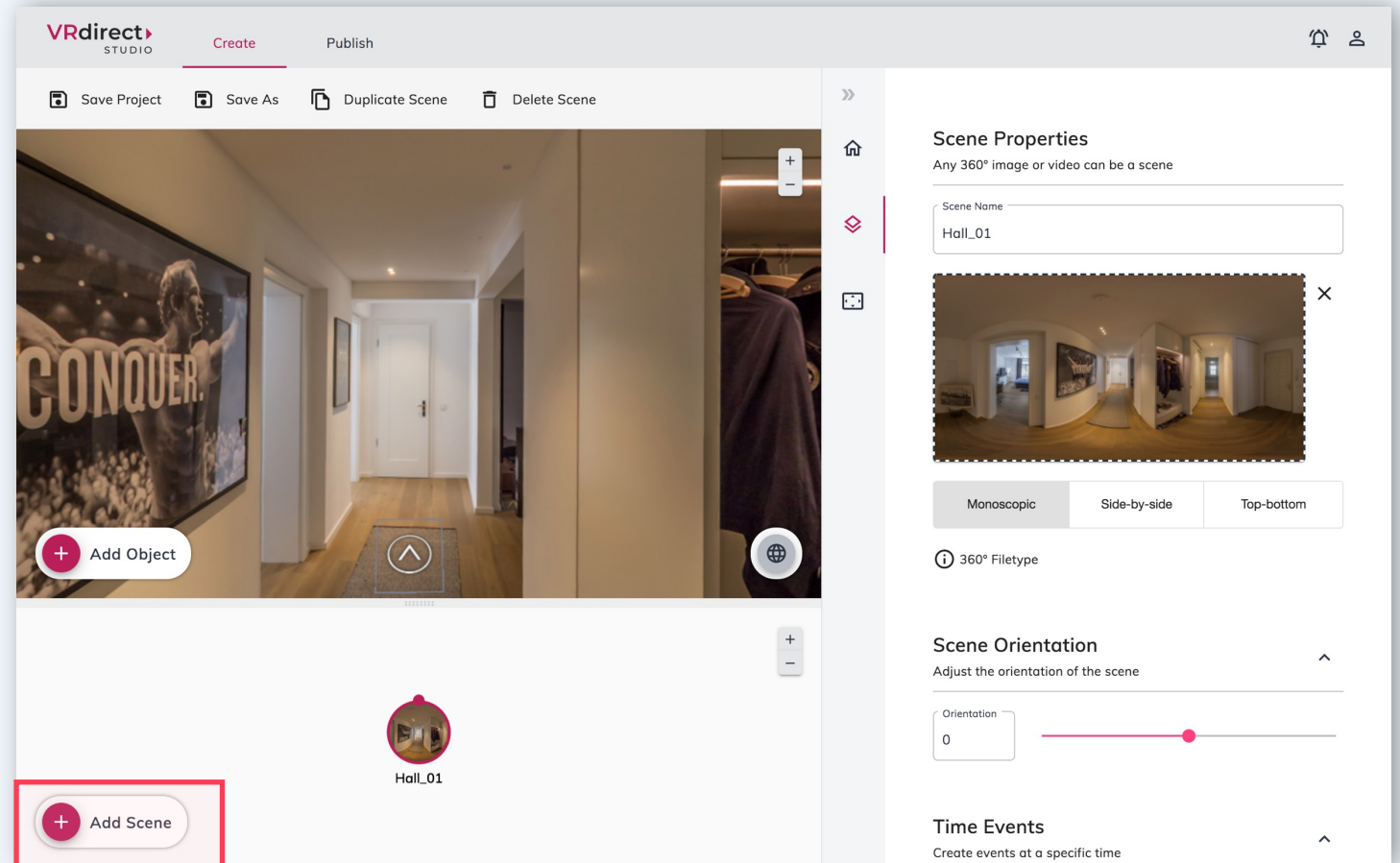
What is a scene?

A scene represents a 360° environment in which the user is standing in. Scenes are filled with 360° images or videos.

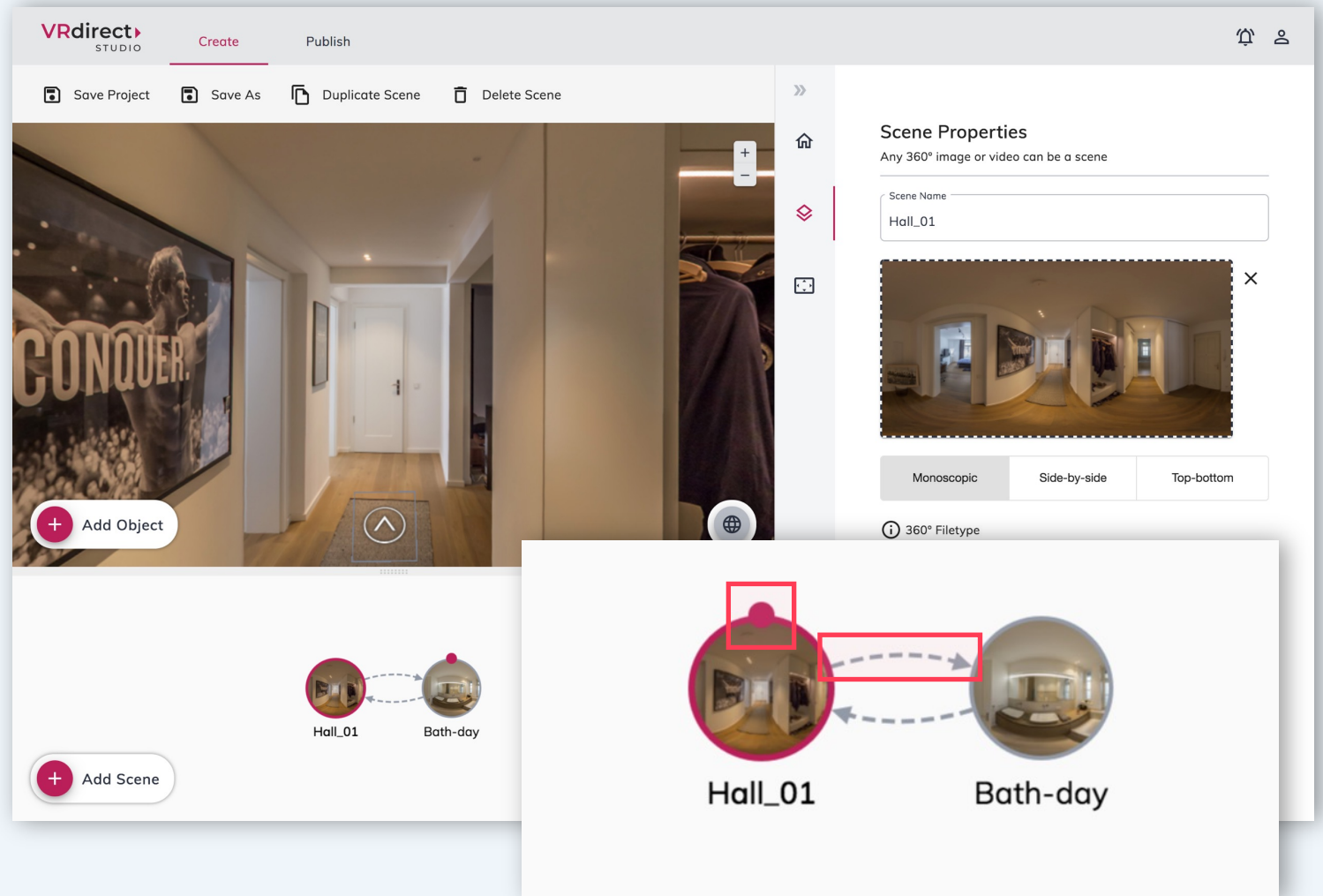
- As soon as a scene has been created (here in the example: via the **"Add Scene"** button), it can be edited in the scene properties in the right-hand sidebar.
- To keep the project organized, it is advisable to name the scenes in the **"Scene name"** field.
- 360° content (images or videos) can be directly dragged and dropped into the VRdirect Studio or chosen afterwards in the **scene properties** by clicking on the **large import field**.



- To expand the VR project, you can add more scenes.
- This can be done repeatedly by clicking on the plus button "Add scene".



- To move from room to room, as in this example, insert a **connection** between the scenes.
- Two scenes are connected **by clicking on the small upper circle** in the first scene and attaching the resulting **arrow** to the second scene (by dragging it out and releasing).
- A connection between two scenes is after creation only existing and not yet doing anything. It **must be actively triggered by an interaction** in order to bring the user from room to room. This interaction must **additionally** be created in the respective scene (see later chapter "**Interaction**").



- To trigger the interaction of a **scene connection** (e.g. jumping from room to room), you need an object that the user can click on - meaning a **trigger for the interaction**.
- Back in the first scene, a click on the **"Add object"** button adds a new object to the scene. This element can be placed freely in the room by dragging it with the mouse.
- In the **object properties** (sidebar on the right) you can set and adjust various **parameters of the object**.



What are objects?

Objects are elements within a 360° scene that can trigger an interaction (e.g. the connection to another scene, the fading in of a text/image, the playing of music/video etc.).



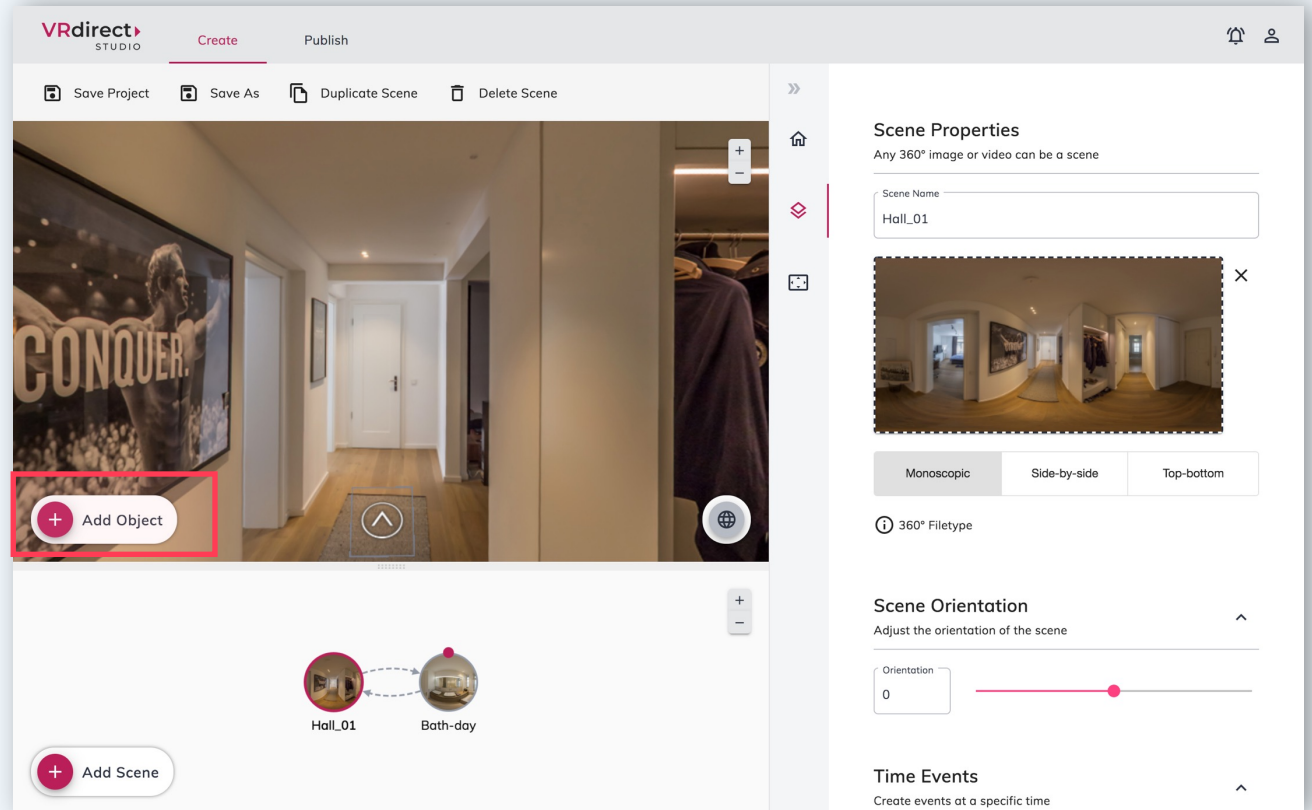
Music



Video

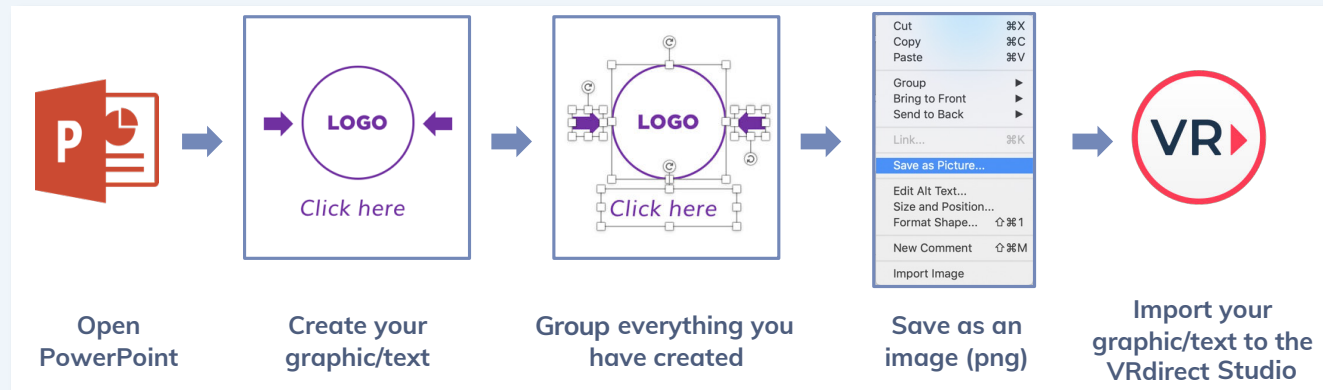


Image



Options for creating graphics (for objects)

- The graphics for objects serve as 2D assets (icons, buttons, graphics, etc.).
- The creation of such 2D assets can be done using common software (e.g. PowerPoint) or other graphical design programs (e.g. Photoshop).
- In PowerPoint, you can export the 2D assets as PNG and then add them to the VR project.



Alternative options:

- Use existing 2D content
- Find buttons, images, icons and more on the internet
- Download and use the standard VRdirect icon library:

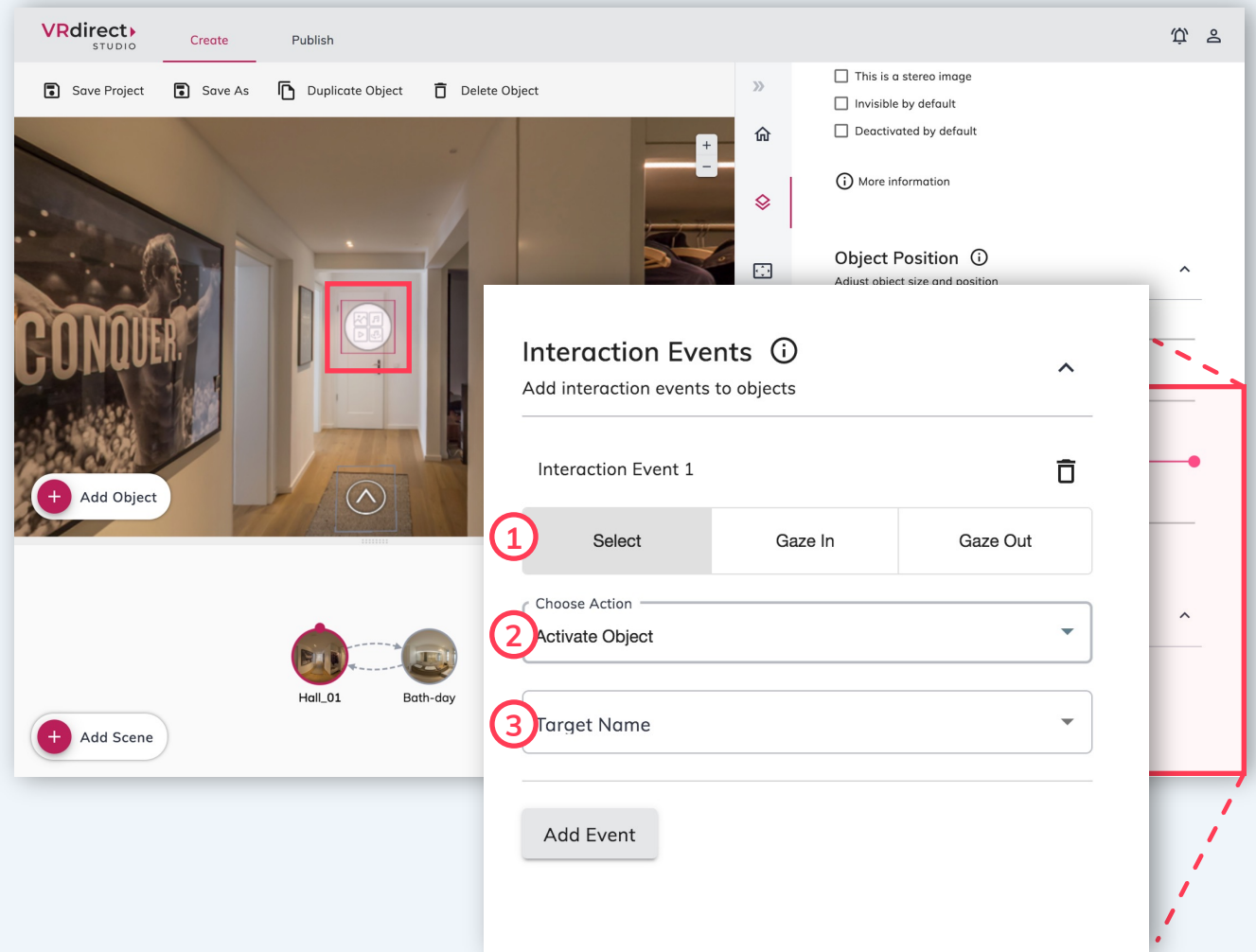
[Download](#)

- To **insert an interaction** (e.g. connecting two scenes) the object must be selected and then an interaction can be defined in the right-hand **sidebar** (scroll down to bottom).
- For an interaction, 3 parameters must be set:
 - ① The **trigger** (the way the **interaction** is **triggered** by the user on the object)
 - ② The **action** (the type of interaction that should happen - e.g. activate object)
 - ③ The **target object** (what does the interaction refer to - e.g. the target scene for a connection)



What are the types of triggers?

- **Select** = User clicks on the object
- **Gaze In** = User moves / hovers with mouse or view over the object
- **Gaze Out** = User moves / hovers away with mouse or view from the object

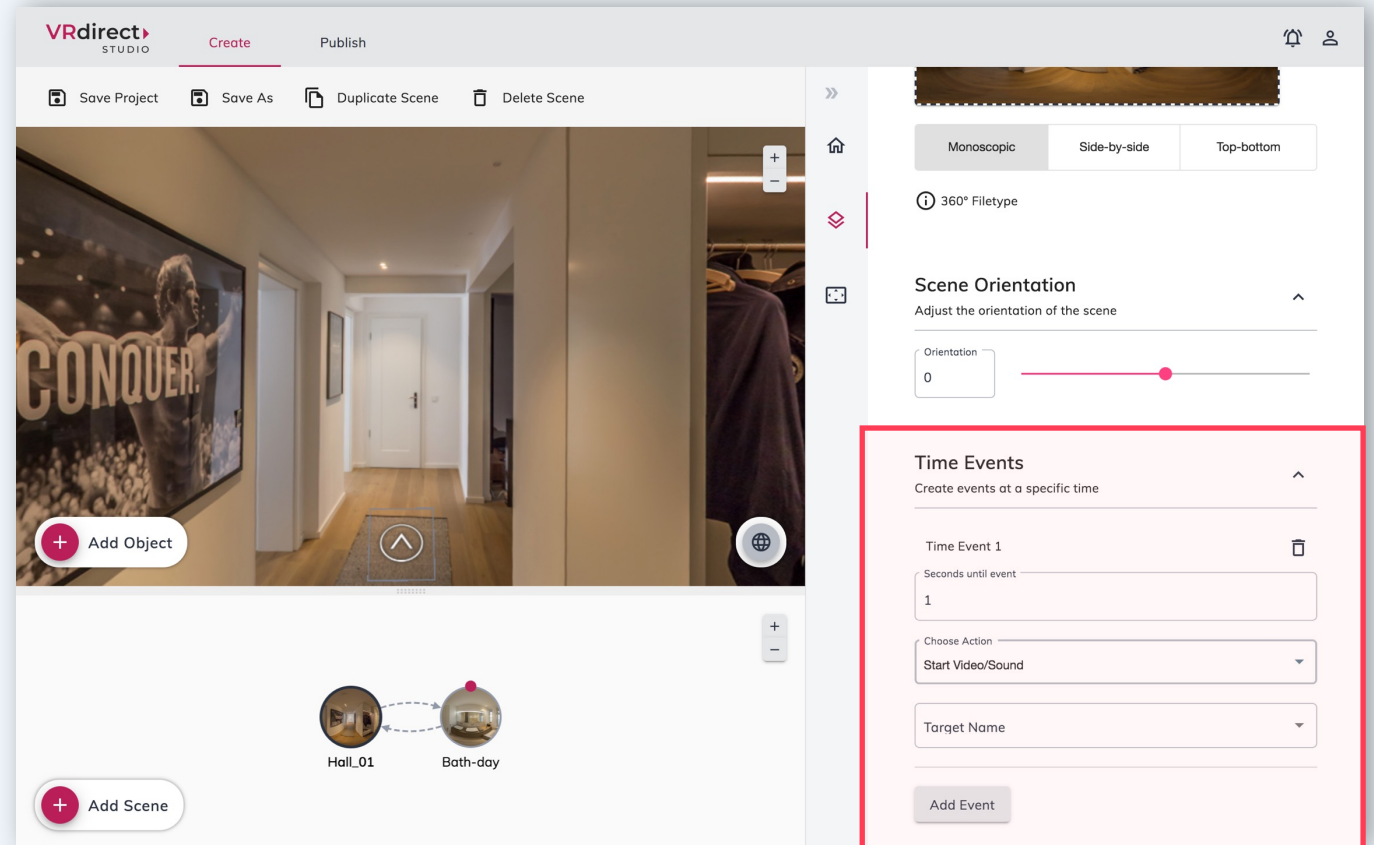


- So-called **"time events"** can be set in each scene to trigger a time-based interaction.
- To do this, simply **select the respective scene** and scroll all the way down in the scene properties (in the sidebar).
- Add a time event and set the timer in the first field to start the interaction - meaning the seconds until the event happens.
- Example: 3 seconds after the user has entered the scene, ... should happen.
- Then, as with interactions, an action must be selected and a target object to which the action refers to.



Which interactions are suitable for time events?

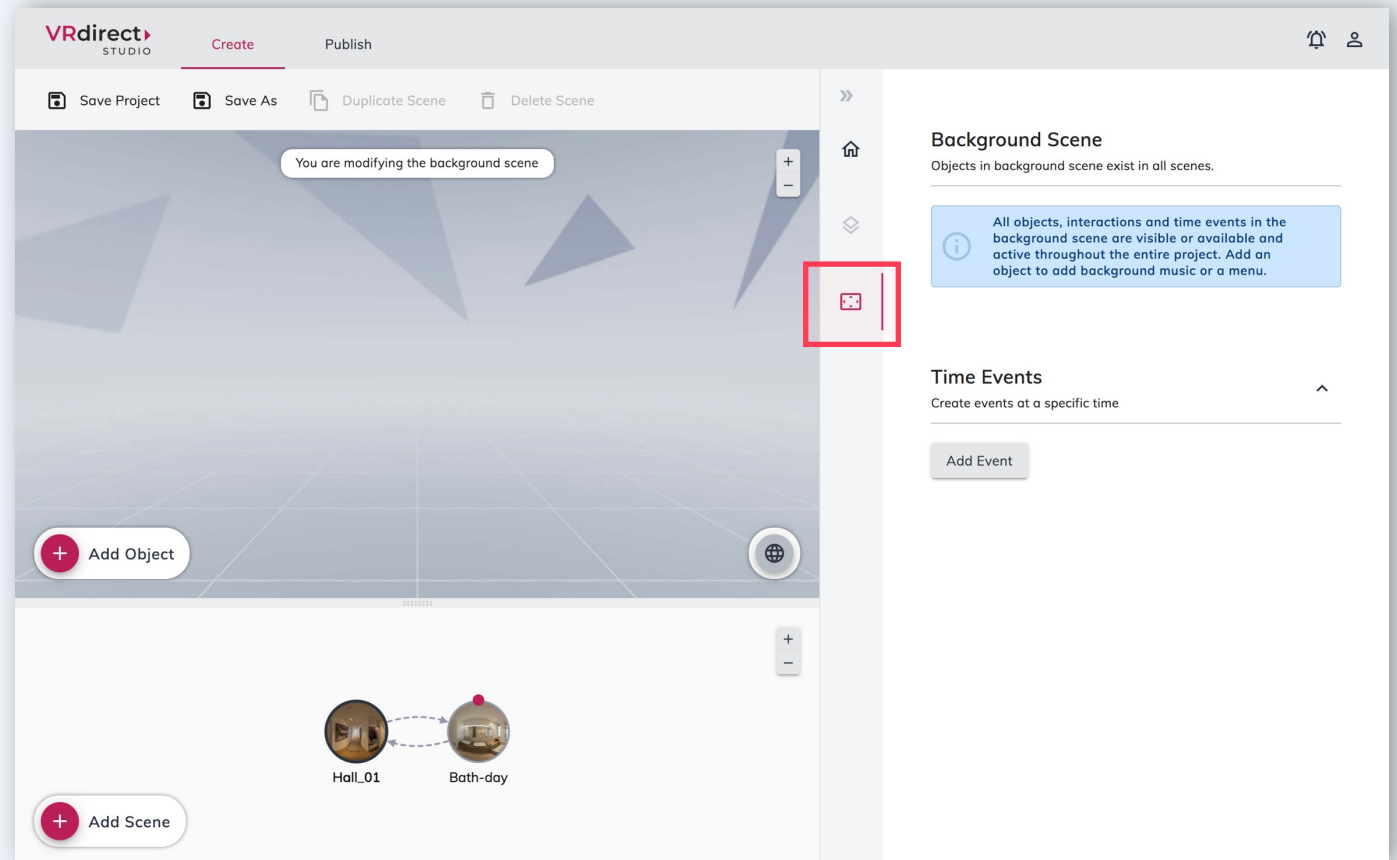
Time events are particularly suitable for guiding the user through a VR project like in an animated video (e.g. text fades into the scene as a speaker talks).



- The **background scene** is a scene that is **not visible** on the storyboard. It runs in the background of the project but can be edited like a normal scene.
- It is **located behind the third icon** in the sidebar.
- All objects, interactions and time events in the background scene are **visible and available throughout the entire project** (e.g. a music object in the background scene runs throughout the entire project and does not reload in every scene).



What is the background scene suitable for?
The background scene is helpful for integrating background music (which runs during the project) and menu graphics (which e.g. lie at the bottom of the users feet).

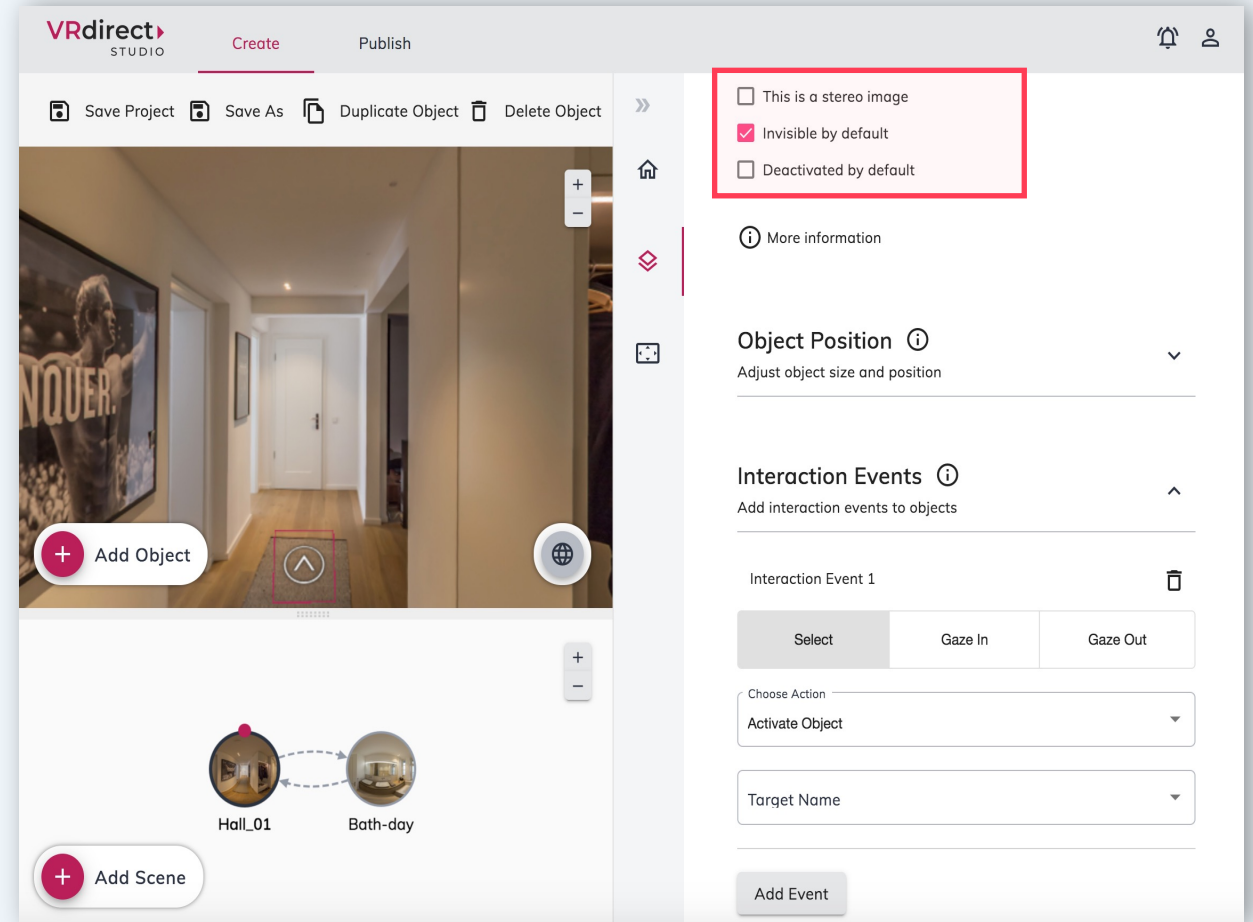


- To add an invisible object, first add a **new object** to the scene.
- Then click the checkbox **"Object is invisible by default"** in the object properties. This hides the object when entering the scene (it is not visible).
- To show the object again, a **corresponding interaction** is necessary - either via a second interaction on another object or via a time event.
- For this, the action **"Show object"** is necessary.



What are invisible objects suitable for?

An invisible object can be, for example, a video that is only displayed and played as soon as the user clicks on a "Play" button. In this case, the video object must first be invisible and will then appear once the user actively clicks on „Play“.



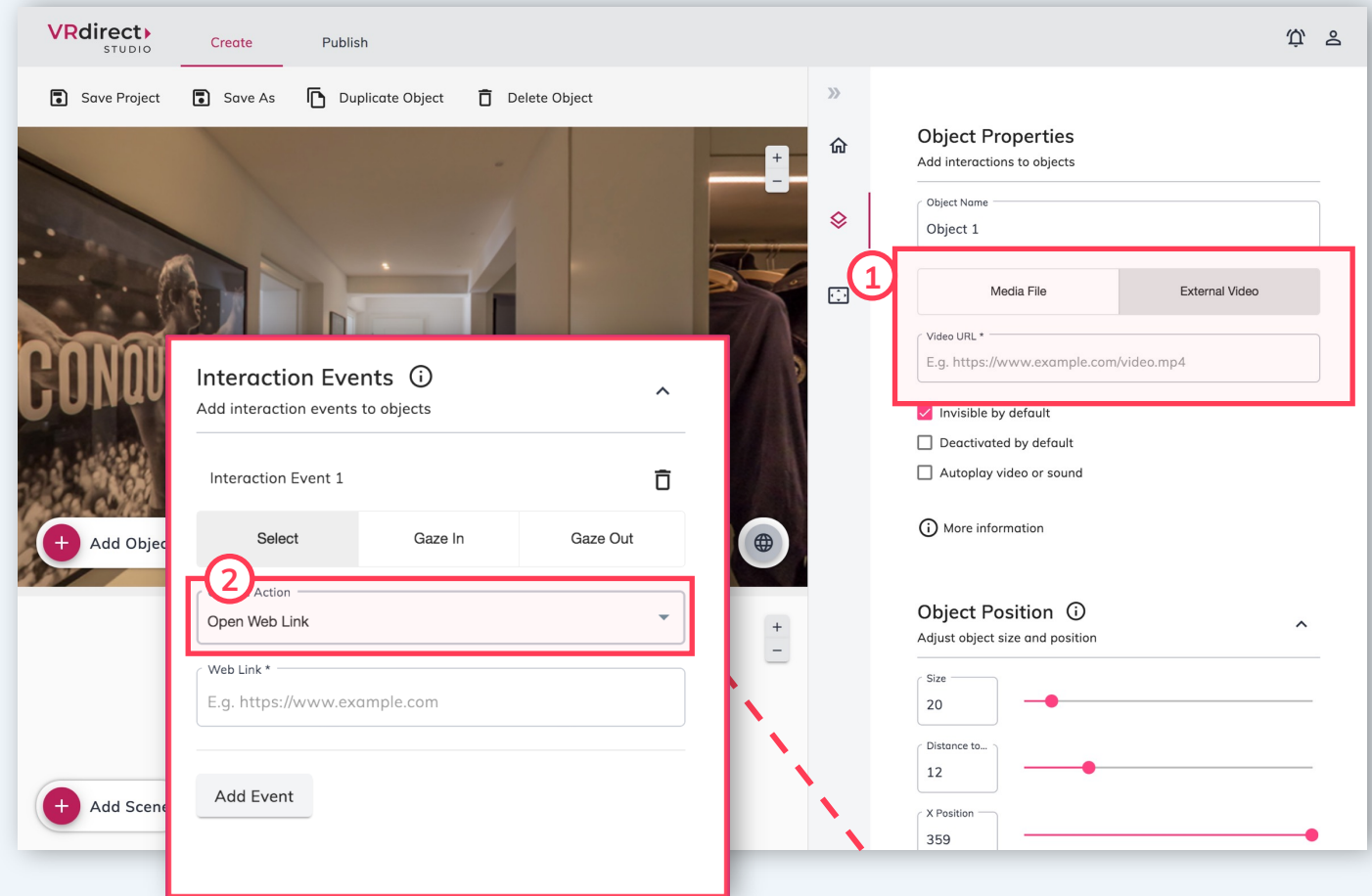
① When adding an object to a scene you have the possibility to either **upload a media file** or to **add an external video link** (for 2D videos).

The external video link then **pulls the video** from the internet source **via stream** and thus makes it possible to save the file size of the video file.

A **precise link format** must be integrated (more information on VRdirect support page or blog).

② The interaction "**Open Web Link**" allows you to open an external web link in a new web browser.

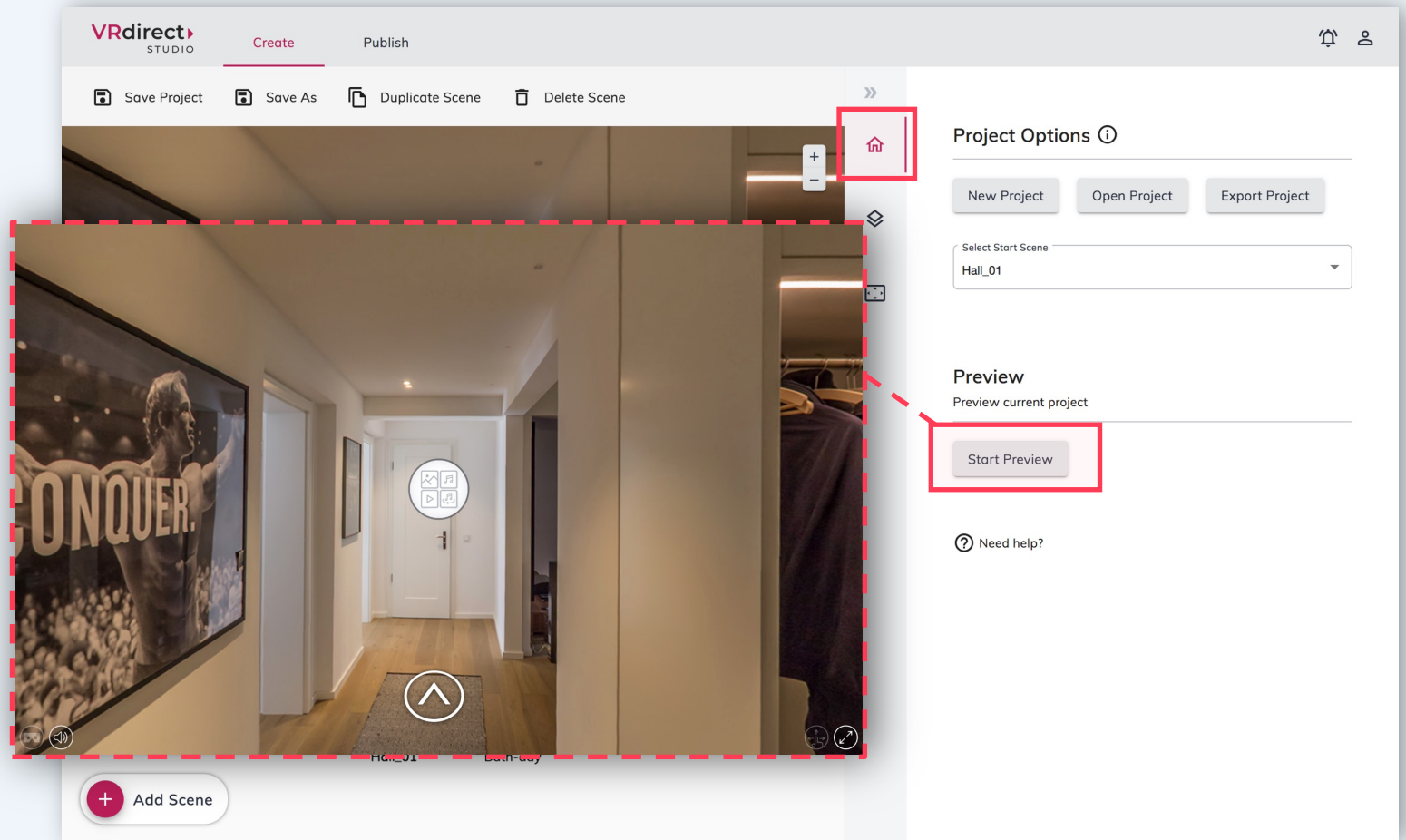
Such external links can, for example, **trigger the opening of websites**, chat windows or PDF downloads.



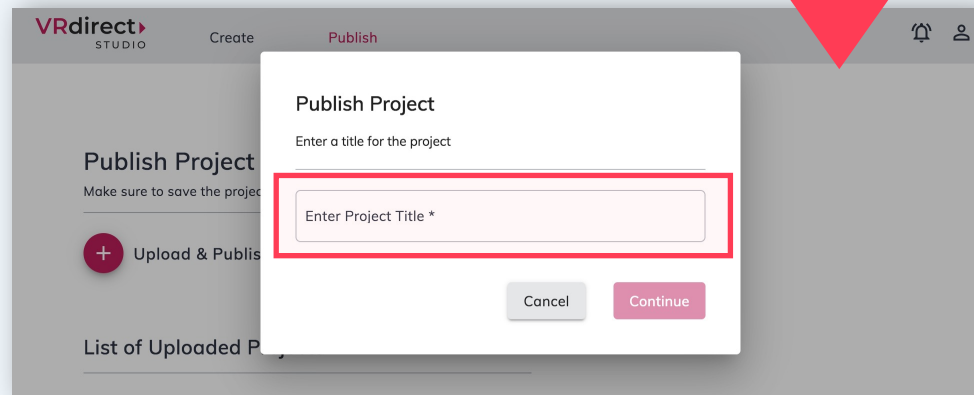
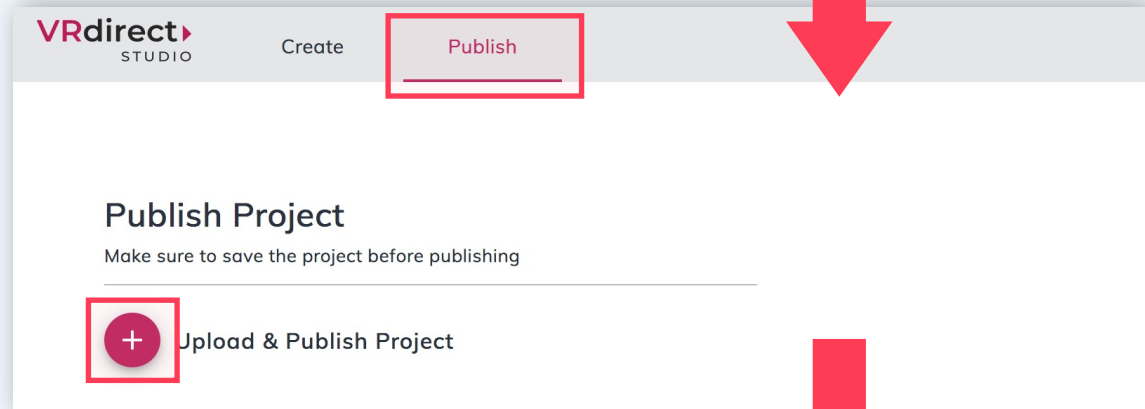
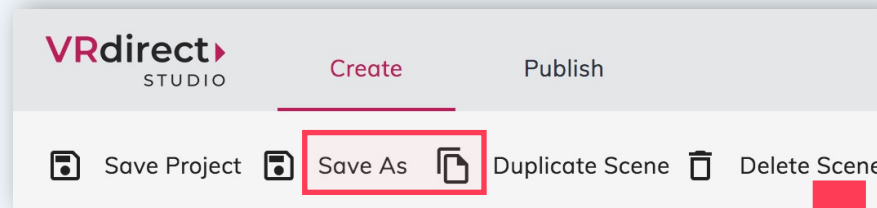
Please note:

For both features - "External Video Link" and "Open Web Link" - the end user must have a stable internet connection when viewing the VR project.

- A **preview** of the built VR project is possible at any time in order to test / check the project and all interactions while creating.
- To do this, click on **the first icon** in the right sidebar and select the button "**Start preview**".
- This opens a **new window** in which the VR project is displayed from a user's point of view. Here, you can see what your users will see once the project is published.



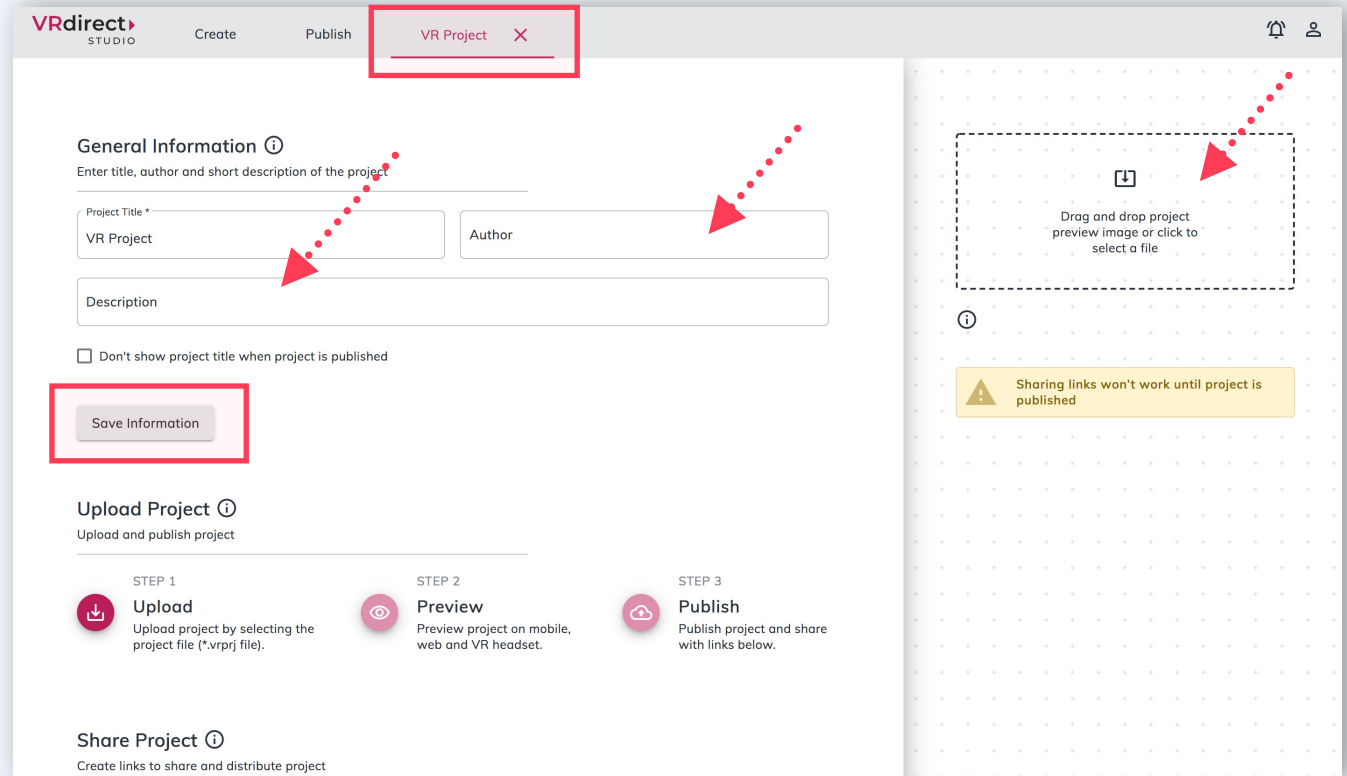
- Please **save** the VR project in the creation area first (via the **toolbar**). The project will locally be **saved** as a **.vrprj** file.
- Then switch to the second tab of the tab bar "Publish"
- Click on the big button "Upload & Publish Project" to create a new VR project entry that will later on be published. Please enter a **project title** to do so.



Please note:

In the publishing area, already existing projects can be edited or updated. They appear in a list after they have been created.

- After entering a project title, a new **tab** appears in the tab bar with the **new project entry**.
- Here you can add and edit additional information for the project (**meta data**), such as a **project author** and a **description**. Additionally, you can add a **preview image** for the project.
- All meta data in the upper area must be actively saved via the button "**Save Information**".



What does the yellow box on the right-hand side mean?

The boxes on the right side are so-called „**Status informations**“ and indicate whether a project is being processed, is ready for publication or has already been published.

- After the **information** and **preview image** have been added, the VR project can be **uploaded** in the next step.
- To do this, **select the locally saved project** (.vrprj file) via the **"Upload" button**. All media files and assets are uploaded into the VRdirect cloud in this step.
- After uploading, the data is being **processed** and made available for all devices.
- After the processing time, the project can be viewed again via the **"Preview" button** (also on the app or in the VR headset).
- Please note that the preview links are not suitable for distribution or sharing.

Upload Project ⓘ
Upload and publish project

STEP 1 **Upload**
Upload project by selecting the project file (*.vrprj file).

STEP 2 **Preview**
Preview project on mobile, web and VR headset.

STEP 3 **Publish**
Publish project and share with links below.

The project "vrproject.vrprj" is uploading ...

14% | 7.74 MB / 53.8 MB

Cancel Upload

Upload Details

Asset Name	Size	Status
empty_ie_hori...	16.72 KB	✓
outside_hq.jpg	2.43 MB	✓
icon_go-insid...	111.22 KB	✓
outside_outlin...	2.21 MB	✓
empty_ie_vert...	17.45 KB	✓
icon_go-ahed...	138.43 KB	✓
icon_go-outsi...	107.83 KB	✓
hall_01	1015.03	✓

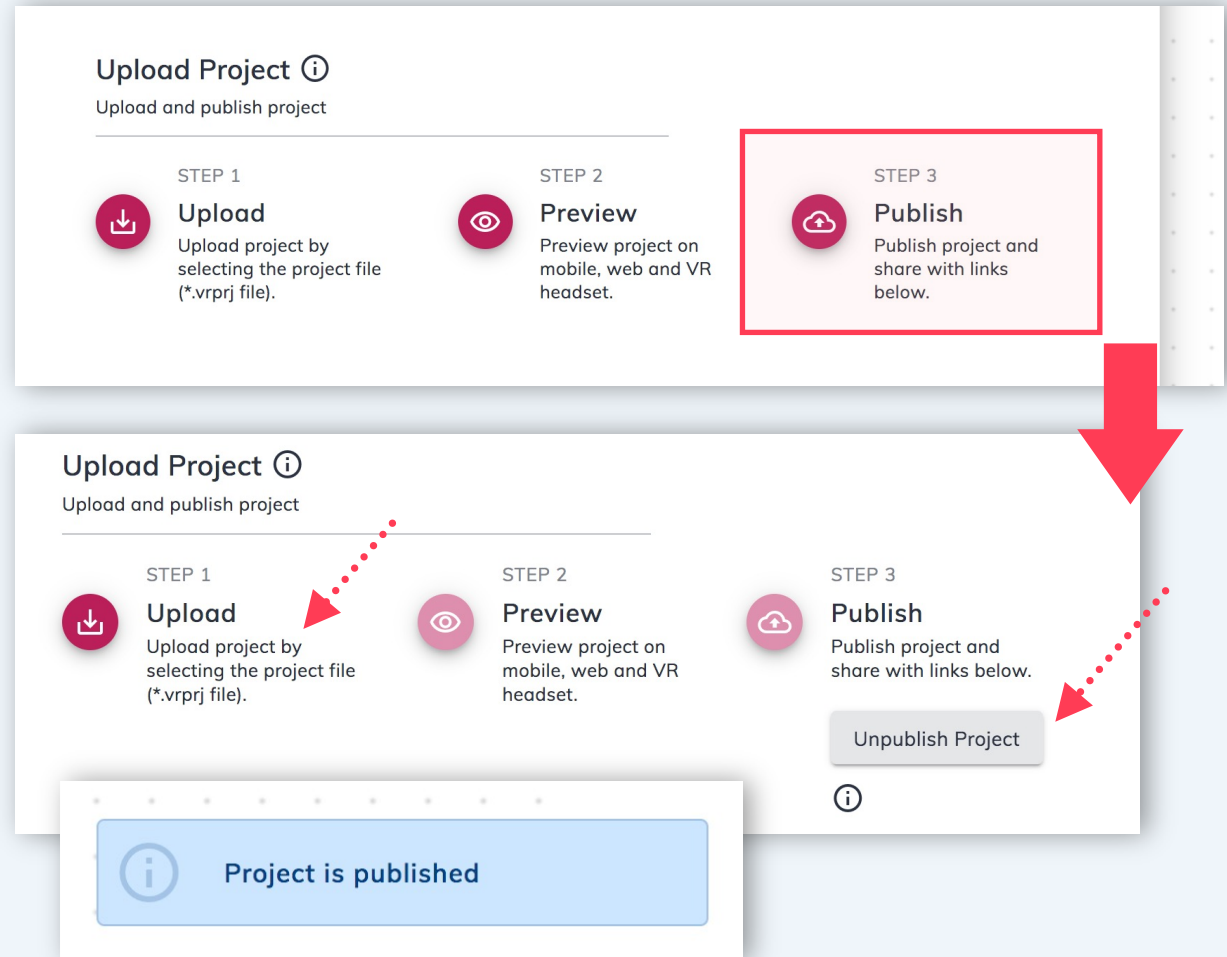
Upload Project ⓘ
Upload and publish project

STEP 1 **Upload**
Upload project by selecting the project file (*.vrprj file).

STEP 2 **Preview**
Preview project on mobile, web and VR headset.

STEP 3 **Publish**
Publish project and share with links below.

- In the third step, the VR project can be published via the **"Publish"** button.
- After a **successful publication**, the status of the project is changed, and one has the possibility to **"take back"** the project at any time (i.e., to cancel the publication).
- The **"Upload"** button is active again in the published state so that a new project version can be uploaded. In this case, the 3-step cycle starts again.
- The **published project** is now ready to be **shared** via the **distribution links** below.



- The **distribution links** make it possible to share the published project with your audience.

① The project code can be entered into the VRdirect App*. It leads the user directly to the VR project, which can then be downloaded and even consumed offline.

② The **URL (Web Player Link)** can simply be opened in a web browser and leads the user directly to the VR project. An internet connection must be available here. Please note that the web player works on all devices that have a web browser available (also mobile devices and VR headsets).

Share Project ⓘ
Create links to share and distribute project

① Project Code
uqnylg

Link to Project in App
https://apps.vrdirect.com/player/?cinex-token=uqnylg

Disable Project Code and Link to App

② Link to Project in Web Player
https://player.vrdirect.com/?cinex-token=oddwai

Disable Web Player Link

Generate New Links







* The VRdirect app can be downloaded from the [App Store](#) or the [Google Play Store](#)

- The VR project can be **integrated into any website**, just like a YouTube video, by embedding the project via the **"Embed Code"**.
- To do this, click on the **"Embed Code"** icon below the Web Player link.
- A new window opens with the embed code generator. It generates the so-called **HTML snippet (iframe)**, which must be inserted into the source code (HTML) of the desired website.
- Here you can also adjust additional parameters such as the size of the window or the full-screen mode.

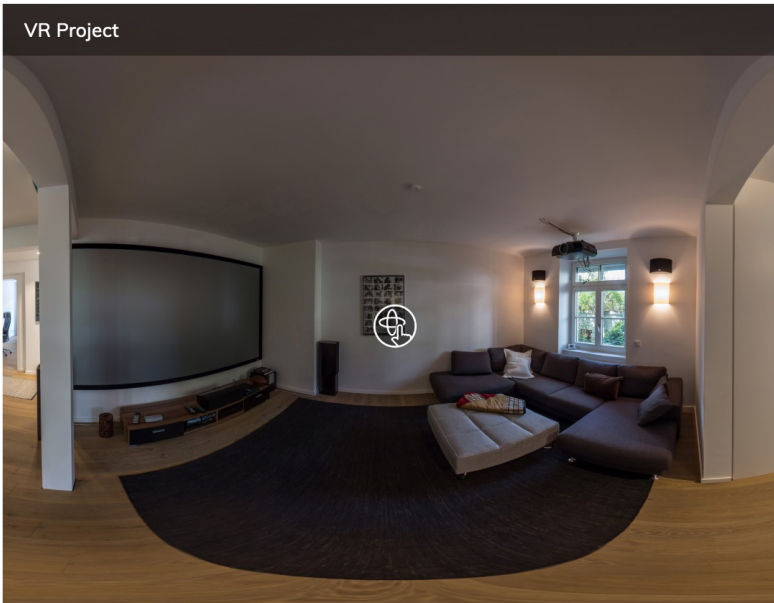
Link to Project in Web Player

<https://player.vrdirect.com/?cinex-token=oddwai>

Disable Web Player Link

<embed code>    

VR Project



Embed VR Project onto Website

Paste embed code (HTML snippet) into website code

Embed Code

```
<iframe title="VRdirect VR Web Player" width="600" height="330" src="https://player.vrdirect.com/?cinex-token=oddwai" allowfullscreen frameborder="0" allow="fullscreen; vr; gyroscope; accelerometer">
```

Enable fullscreen mode

Responsive dimensions

Width (px)

Height (px)

Distribution of the VR Project: 3 Channels for Distribution



1.



Web Player



2.



App

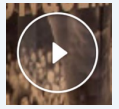


3.

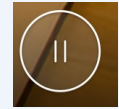
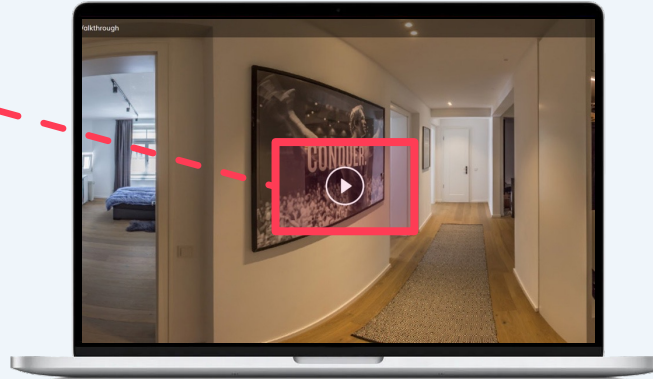


VR Headset

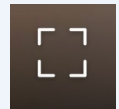
The published VR project can be consumed by the end user in various ways and via various channels



Start the VR project by pressing the play button in the middle.



Pause the VR project any time (bottom centre).



Activate the full screen mode in the lower right corner to see the VR project in full screen.



Switch to the Virtual Reality mode on a smartphone by clicking on the VR icon in the bottom left corner.

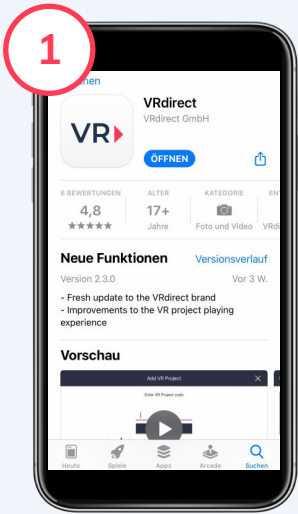


- Navigation within the VR project:
 - In the 360° environment, you can look around to the left and right by dragging the mouse (mouse drag).
 - In the 360° environment you can zoom in or out with the mouse.
- The small white arrow (at the bottom) can be used to display the controls (pause, full screen, VR, ...)

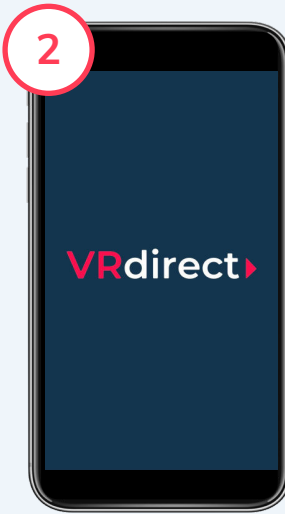


Please note:

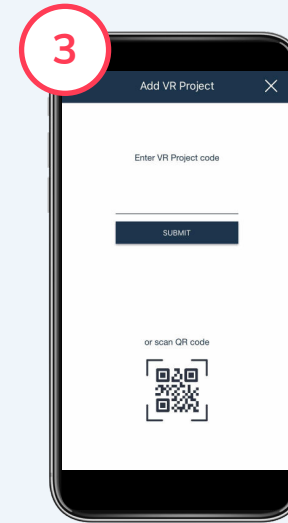
The Web Player also works on the smartphone, the tablet or in the VR glasses - everywhere where a web browser can be opened.



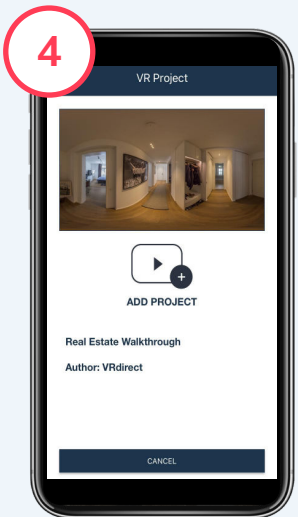
1 The app is available in the **Apple and Android Store** and can be downloaded for **free** on iOS and Android devices.



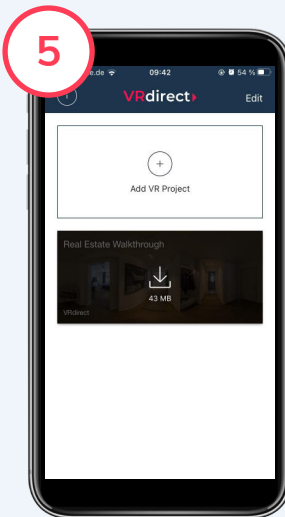
2 After installation, open the **VRdirect App**.



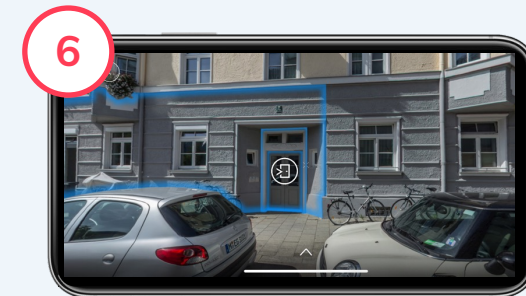
3 Click on **"Add Project"** (plus button). Then enter the **VR Project Code** or scan the **QR Code**.



4 As soon as the project is found, confirm the addition again via **"Add VR Project"**.



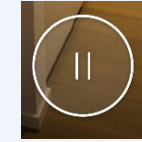
5 The project then appears in the app menu and can be downloaded via **the download button**.



6 Once the VR project has been downloaded, it can be viewed. For this purpose, it is recommended to turn the smartphone into **landscape mode**.



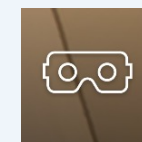
- After the project has opened, you can look around in all directions by **navigating left and right** in the 360° scene with your finger.
- You can **select an object** using the **cross** in the centre. It functions as a "mouse cursor" and selects an object after the circle is complete.
- Clicking on the **lower arrow** brings up further controls.
- The **"Back Button" (arrow)** at the top left of the screen leads back to the app menu with the overview of your added VR projects.



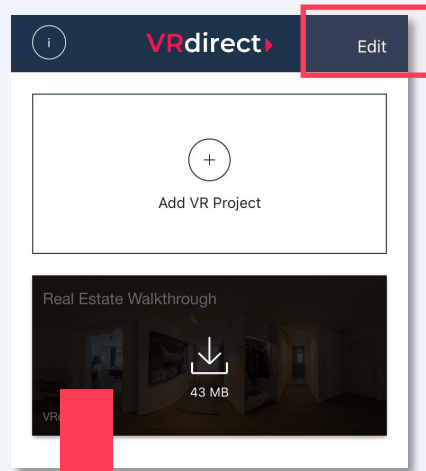
- The project can be paused via the **"Pause" icon**.



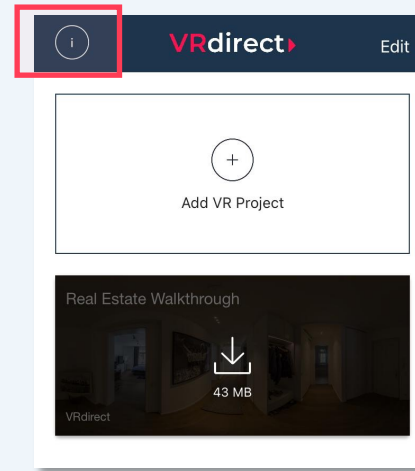
- A click on the **"Swipe" icon** switches to the **"Gyroscope Mode"**. There you can look around in the 360° environment to the left and right by moving and tilting the mobile device.



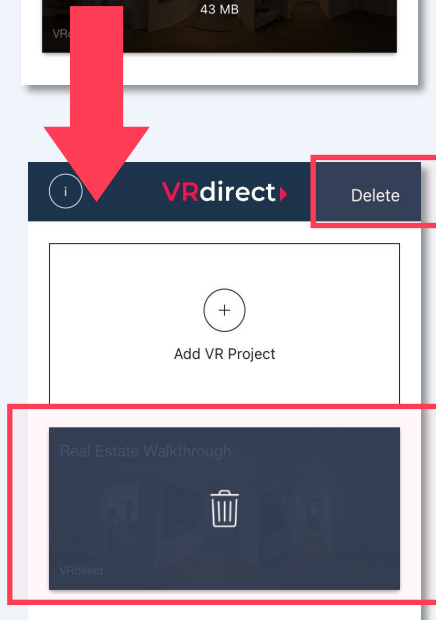
- Click on the **"VR glasses" icon** to switch into the **"Cardboard Mode"**.



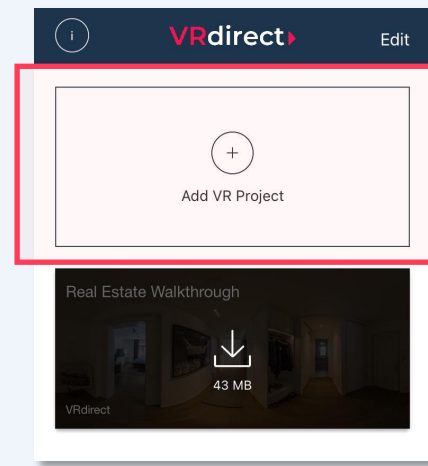
- At the top right is the **Edit button**, with which you can delete added projects.



- Behind the information icon in the upper left corner you will find **legal information** and the legal notice.



- Select the project that **should be removed** by clicking on it in the list.
- Then click on the **"Delete" button** and confirm the deletion.



- The **menu can be extended** at any time by adding new VR projects.

1 Cardboard mode for any mobile headset



- Download the VRdirect App via iOS or Android and then switch on the VR mode (Cardboard Mode)
→ VR button at the bottom left of the app

2 Oculus Quest / Oculus Quest 2



- Access to project via the **Oculus Browser**
- After entering **the Web Player** link, the project can be viewed via the VR headset in the Web Player

3 Oculus Go (Headset is no longer supported by Oculus)



- Download the VRdirect App via the **Oculus Go Store**.
- Note: Device is no longer supported by Oculus - therefore app updates are no longer possible.



Selecting objects via eye control (selection cross in the centre of view).
Within a VR project the use of a controller is not necessary.



Next steps?

**Get to know the advantages of Virtual Reality
and contact us!**

▶ contact@vrdirect.com