

Application of
Field Interaction
Design in the Metaverse

元宇宙下的場域
互動設計應用



CONTENTS



01



About

About RIGEL & IFA

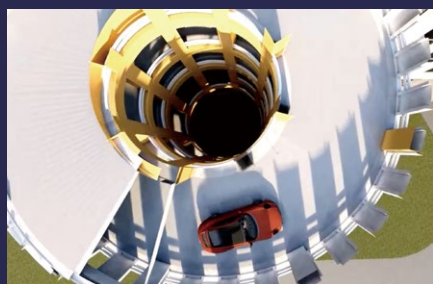
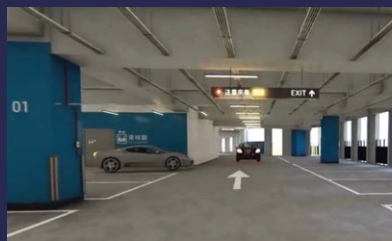
RIGEL closely collaborates with the INFANE Visual Integration Design Consulting Team (IFA). Leveraging IFA's extensive experience in interactive environments, which is grounded in user needs, they are dedicated to creating an integrated platform that is humane, creative, and internationally-oriented. By combining RIGEL's innovative design solutions, we actively drive the application of metaverse technology to align design projects more closely with human needs.

Through this collaboration, this book provides an in-depth analysis and introduction to the practical applications of technologies like AR and VR in design proposals, as well as cases that continue to generate more economic benefits after project completion.

About 01



Taipei 101
Observatory



Chang Gung A8
Transfer Station



Office Tenant
Experience APP



CTBC
Financial Park

More field interactive design and planning cases

02



Applications

Preface

In recent years, the metaverse has become a trend in technological development, representing virtual worlds established by digital technology that can be applied across various domains, including entertainment, finance, shopping, dining, public services, education, healthcare, and culture.

This has prompted us to consider whether metaverse technology can play a more significant role in design proposals, optimizing processes, reducing costs, while simultaneously working towards net-zero emissions objectives, delivering more creative solutions, and continuing to generate greater economic benefits after project completion.

Objectives

Through the concept of the metaverse, we have established three key objectives for each project: **“brand image enhancement”**, **“optimization of spatial experiences”**, and **“cross-domain integration mechanisms”**. This helps various stakeholders, including graphic and interface designers, spatial designers, architects, entrepreneurs, and more, collectively address the numerous challenges and obstacles associated with environmental and information content interaction.

Explore

The design applications in the metaverse



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Create interactive experiences by integrating virtual elements into the real world. Applied devices could be smartphones, tablets, smart glasses, and more.

Utilize 3D simulations to create a virtual world, that feels like being in another realm. Applied devices are typically wearable displays

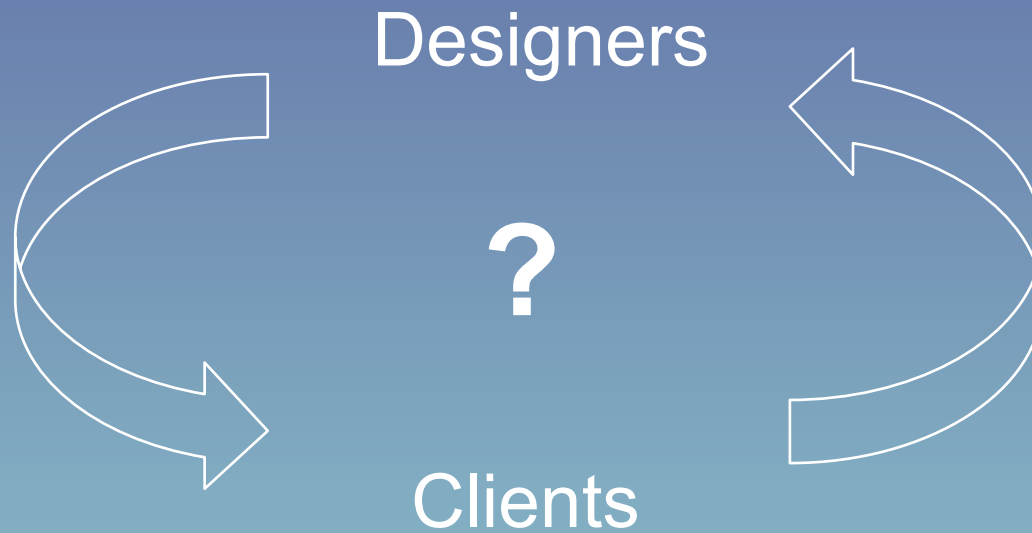
The combination of virtual elements with the real world allows users to engage in a mixed experience, interacting between the virtual and real environments.



Encompass all technologies that involve the integration of virtual and real-world experiences, including AR, VR, and MR.

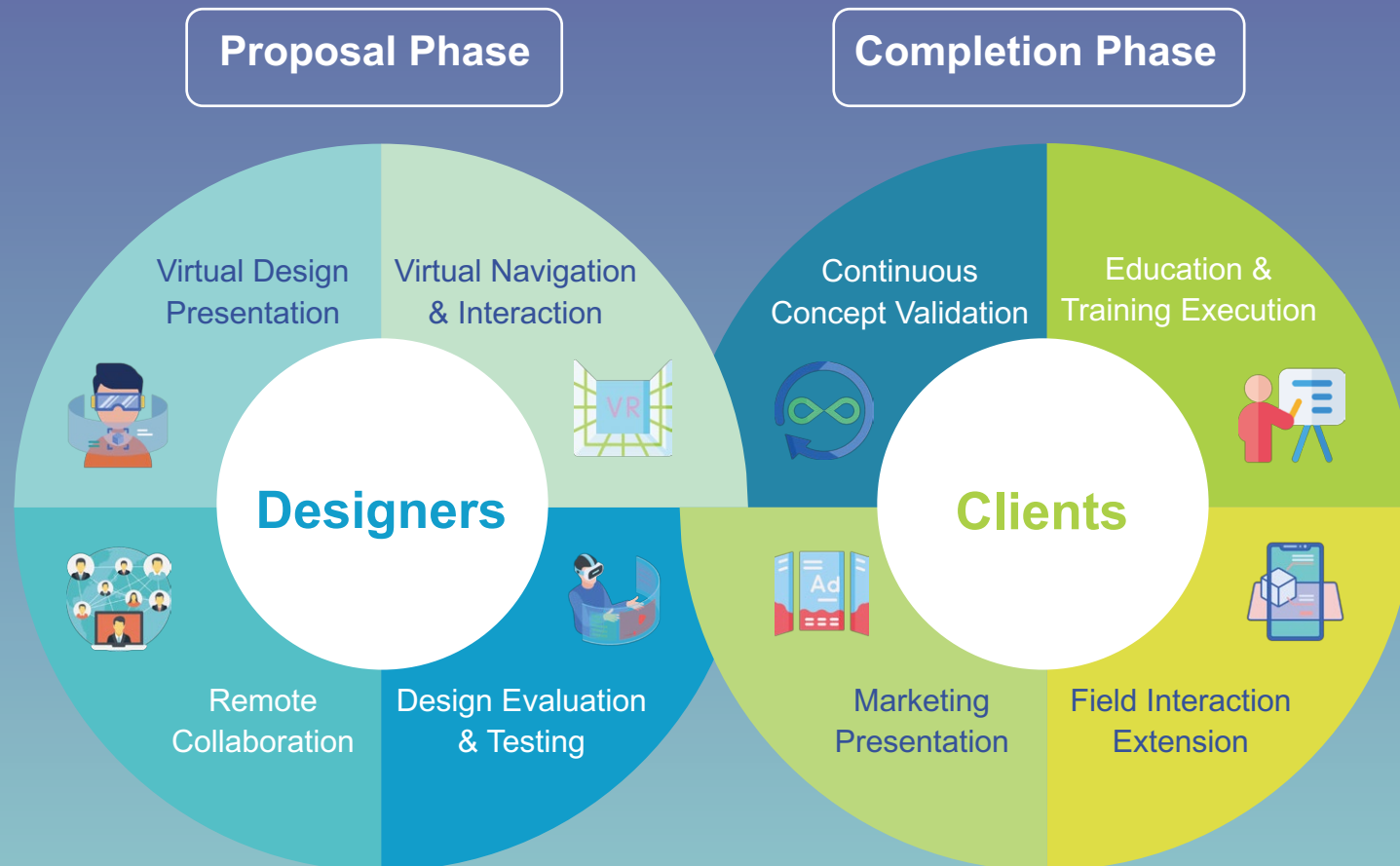
Explore

What are the benefits of XR technology for designers & clients?



Analyze

What are the benefits of XR technology for designers & clients?



The benefits of XR technology during the design proposal phase



Continuous Concept Validation

Use virtual reality (VR) technology, designers can build virtual design models and present them to clients. This allows customers to better understand the design concepts and participate in interactions in advance, thus saving time and resources.



Virtual Navigation & Interaction

Create a virtual space or environment where designers and clients can freely navigate and interact. This can be applied across various design fields and helps ensure alignment with requirements.



Remote Collaboration

Designers and clients can work together in a virtual environment without face-to-face meetings. This enhances efficiency, reduces travel costs, and allows for greater participation.



Design Evaluation & Testing

Use virtual environments to simulate the effects of different design options, allowing designers to evaluate and optimize designs before actual production. This helps reduce errors and saves the cost of later revisions.

Analyze

Clients

The benefits of XR technology after design completion



Virtual Design Presentation

Allowing clients to continue reviewing and validating design concepts after project completion. Different elements such as spatial arrangements, material selection and lighting effects can be further evaluated to ensure the design meets their needs and expectations.



Education & Training Execution

Clients can use virtual environments to train staff and simulate actual workplace scenarios, further improving efficiency and safety.



Marketing Presentation

Clients can use VR and AR technology to present their projects to potential customers, partners or investors, which can help improve marketing effectiveness and business growth.



Field Interaction Extension

Clients can extend the creation of virtual interactive experiences, such as exhibitions, displays, or educational events, to engage and pique the interest of more participants, enabling effective interactive experiences to be initiated in advance.

Conclusion

XR technology not only helps designers and clients communicate during the design proposal phase, but can also be continuously applied after the project is completed, bringing benefits such as brand enhancement, field experience and cross-domain integration. These are also the three key goals of RIGEL.



Brand Image Enhancement

Enhance brand image to make it more attractive and recognizable. This enhancement lasts after completion, helping the brand stay competitive.



Optimization of Spatial Experiences

Provide a richer field experience that can continue to be applied after project completion, offering users with better interaction and experience.



Cross-domain Integration Mechanism

Facilitate integration between different domains to enhance the efficiency of multi-party collaboration. This mechanism can continue to function after project completion and enhance cross-domain cooperation.

03



Cases

2019~2020



Innovation as Experience

Taipei World Trade Center

2021~2022



Product as a Service

Taipei 101 Observatory

2022



Seeing is Believing

Chang Gung A8 Transfer Station

CASE 1

Innovation as Experience

Realizing the vision of remote rental

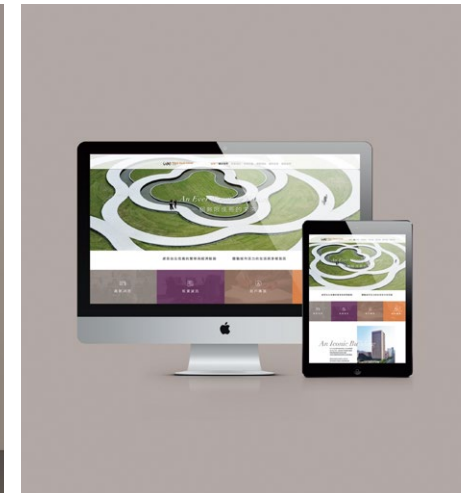
Taipei World Trade Center, 2020

APPLICATION OF FIELD INTERACTION DESIGN IN THE METAVERSE

Project Intro

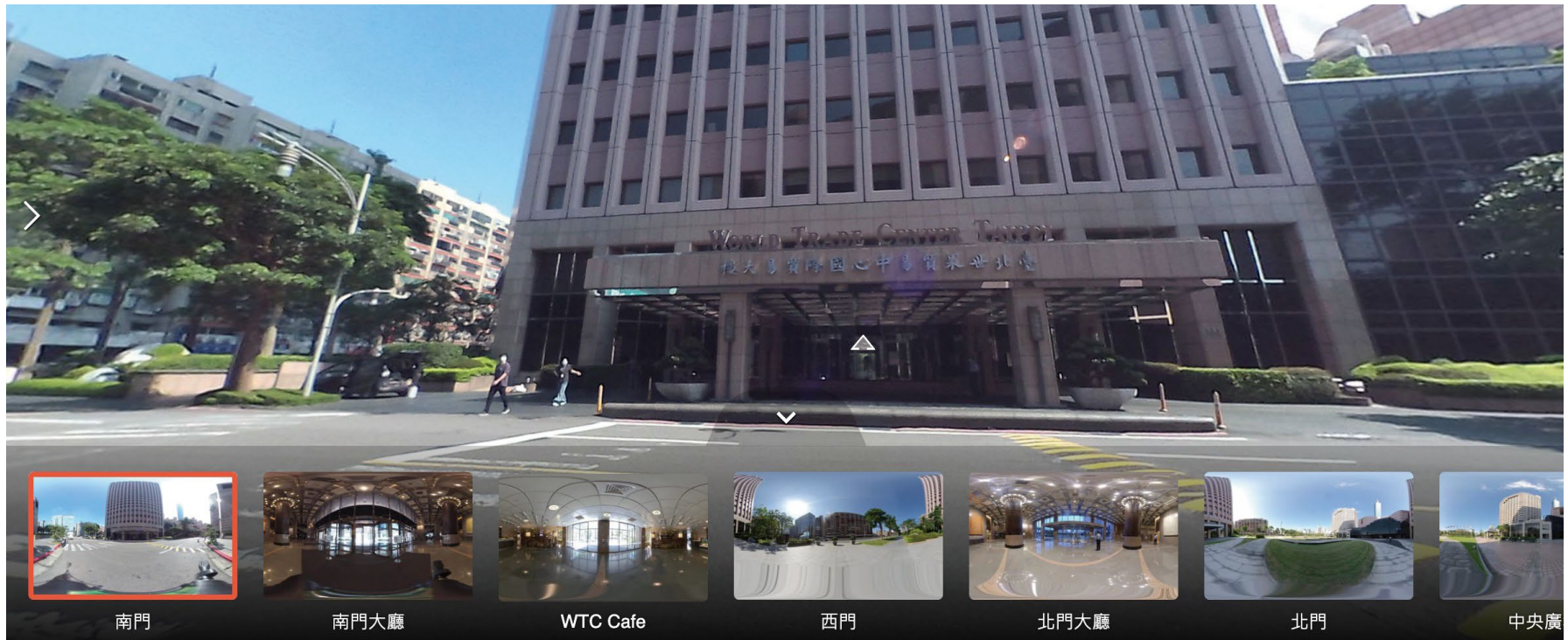
The Taipei World Trade Center (WTC) is one of Taiwan's top ten important constructions. However, in 2019, it faced its first transformation challenge. Situated in the prime location of Taipei's economic and trade center, the surrounding area saw a continuous influx of new office buildings, resulting in reduced attention from potential tenants and the loss of existing tenants. Initially, the owner planned to upgrade facilities and outdoor signage. However, our investigation revealed that the existing brand and website were outdated, making it difficult to attract potential tenants. Thus, we proposed a brand revitalization plan. With the outbreak of the pandemic in 2020, we immediately introduced the concept of online virtual building tours and provided a 360° panoramic display on the official website. This project aimed to inject the vision of “a future with infinite growth” into WTC.

Design Phase



Before developing a 360° virtual tour, we needed to carefully plan every detail, including branding, venue space, and website presentation. These aspects are intertwined and validate the fact that simple partial updates cannot achieve a greater economic impact.

Completion Phase



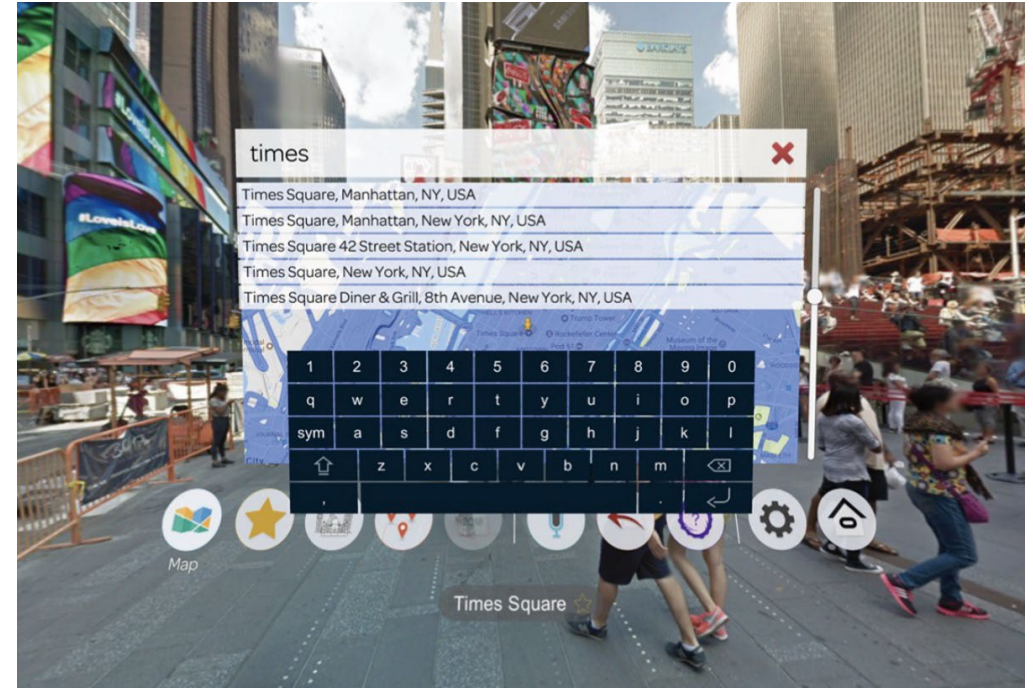
360° Virtual Tour

Upon completion of the project, the panoramic system will be implemented and displayed on the official website. During the pandemic, it exerted great benefits and realized the vision of remote space viewing.



Virtual Tour



Future Applications**Remote Rental**

In recent years, the extensive use of smart glasses has opened up more possibilities for WTC. The original panoramic scene, combined with smart glasses, allows remote tenants to get a more realistic sense of the on-site space. Customers can also explore the surrounding area and learn about nearby businesses and transportation. For potential tenants who don't have smart glasses, the owner can also partner with local companies to provide glasses rental services to help foreign customers realize remote surveys and increase rental rates. This type of cooperation makes it more convenient for both parties.

Cases

03

CASE 2

Product as a Service

Creating a metaverse center in the CBD

Taipei 101 Observatory, 2022

APPLICATION OF FIELD INTERACTION DESIGN IN THE METAVERSE

Project Intro

Due to the impact of uncertain factors such as politics, economics, and the pandemic, the operation of the Taipei 101 Observatory did not meet expectations. Therefore, in 2022, a renovation project was initiated. In the early stages of project execution, the client had uncertainties regarding the future needs of the space. The IFA team anticipated that this could lead to repeated design revisions. To address this, a multidisciplinary collaboration platform was established, incorporating expertise from fields such as branding, architecture, marketing, service, management, and technology. This was done to implement an innovative design operating model. Ultimately, RIGEL introduced virtual scene experiences, which provided clients with a better sense of the space. This helped confirm the project's design direction and facilitated the smooth completion of the project.

XR applications in design & completion phases



At the phase when the site was not yet complete, the design team utilized VR technology, together with smart glasses, to allow the clients to view and communicate the design, presenting an effect as if they were in the real scene. Compared to the past when 3D models could only be viewed on a flat surface, this approach provides a more intuitive presentation of the overall appearance. Through this method, it helps enhance project efficiency, reduce potential misjudgments in the future, and to some extent, save construction costs.



In the final phase, when the site is completed and there are modification requirements, it is recommended to incorporate AR applications. This can be achieved using devices such as smartphones, tablets, or smart glasses to provide users with AR interactive guidance and adjustments, thereby realizing an integrated online and offline experience.

Future Commercial Applications



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Virtual Interaction :

Extend the creation of virtual experiences, such as exhibitions or scavenger hunt events, to engage participants and provide enjoyable interactions.

Remote Tourism :

Utilize the constructed virtual reality to allow travelers from around the world to explore the Taipei 101 observatory by wearing devices.

Remote Rentals :

Customers can remotely explore and experience rented spaces, including virtual tours, detailed examination of site layouts, measurement, and assessment of relevant information, to make leasing decisions. This has practical applications for saving time and resources, especially in cases of renting spaces transnationally. Additionally, this technology can enhance the efficiency and precision of space rentals.

03

Creating a metaverse center in the CBD



Enjoy a different world to the fullest

AR - Smart Glasses



AR - Smart Phones



AR - Tablet



Existing Tour Guide Kiosk



VR - Smart Glasses

Early Design Phase



APPLICATION OF FIELD INTERACTION DESIGN IN THE METAVERSE

Applications of VR

RIGEL utilizes 3D modeling in conjunction with smart glasses to enhance the spatial experience, speeding up design decisions and anticipating potential issues.



Mid-Design Phase



Applications of VR

After confirming the design, if the clients want to discuss it further, we can use virtual 360° panoramic modeling to discuss the size, material, etc. of the design objects.



Virtual Video



Completion Phase

APPLICATION OF FIELD INTERACTION DESIGN IN THE METAVERSE



Applications of AR

Scan the QR code for online tour information, making it easy for visitors to gain comprehensive insights into the venue. Showcase both interior and exterior environments to enhance the interactive experience.



Future Applications



AR TAIPEI CITY



一種體驗和收集台北知名建築物的新方式。請下載101 Sky 應用程式在您的設備上。點選圖像掃描，在現場環境中放置、查看、拍攝3D城市模型，然後將您捕捉到的令人驚嘆的照片與家人和朋友們分享！



A new way to experience and collect Taipei's famous buildings. Download the 101 Sky app on your device, tap on their image scan, place, view, and photograph the 3D city model in the live environment, and then share the amazing photos you capture with your family and friends!



Applications of AR

Development of more virtual interactive experiences.

Future Applications



APPLICATION OF FIELD INTERACTION DESIGN IN THE METAVERSE

Applications of AR

Development of more virtual interactive experiences.

Cases

03

打造體驗式未來智慧場域

長庚A8轉運站, 2022

CASE 3

Seeing is Believing

Creating an experiential future smart field

Chang Gung A8 Transfer Station, 2022

APPLICATION OF FIELD INTERACTION DESIGN IN THE METAVERSE

Project Intro

This is a case where the Taoyuan City Government was trying to solve traffic problems caused by chaotic parking of buses around Linkou Chang Gung Memorial Hospital. The government aims to improve the overall traffic flow through comprehensive planning.

RIGEL utilizes VR scene to simulate the improved pedestrian and vehicular flow paths, presenting them to the client for a quick proposal approval.

XR applications in design proposal phase

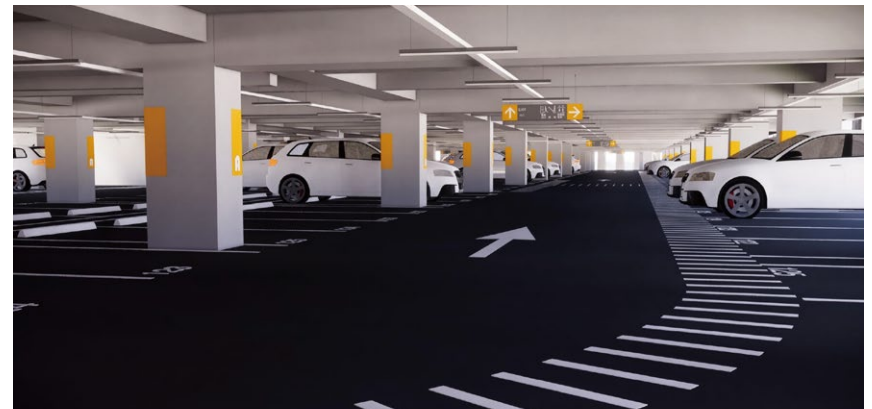
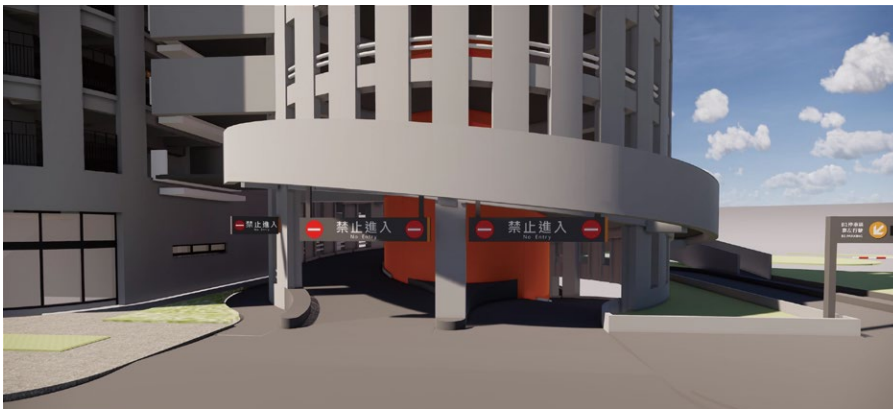


Through 3D imaging and smart glasses, it achieves an immersive experience, bridging the gap between design and reality, and simultaneously improving project efficiency. Traditional 2D methods cannot accurately depict the interaction between people, vehicles, and the environment. However, with VR glasses, savings in costs and time can be achieved even prior to the completion of a new construction site, bolstering overall efficiency. This technology can be applied across various fields such as construction and engineering.



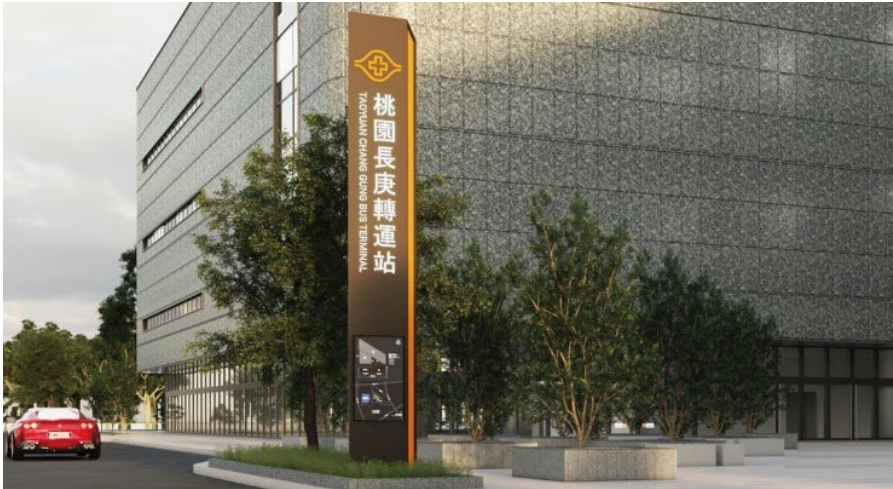
After the site is completed, we aim to use AR technology to virtually present the design project within the real environment for location, size, material, and other consistency checks.

Before Integration



Prior to integration, there was a lack of a comprehensive site workflow simulation, resulting in an unclear hierarchical structure of the site. The analysis by IFA revealed that the lack of coding systems, environmental visual integration, and identity were the major issues.

After Integration



Through indoor and outdoor integration, "orientation coding" was applied to the entrances for effective identification, extending to the elevator lobbies adjacent to the site, enhancing the consistency and efficiency of entry.

After Integration



APPLICATION OF FIELD INTERACTION DESIGN IN THE METAVERSE

Applications of VR

RIGEL utilizes 3D modeling along with smart glasses to enhance the field experience, accelerating design decisions and anticipating potential issues.



The Evolving Metaverse: A New Era of Innovation and Automation

As technology continues to evolve, the above cases are field interaction design and integration projects by RIGEL and IFA from 2020 to 2022. We are keeping pace with the times, using technology to create solutions that better align with user needs.

This year (2023) is known as the year of generative AI, with the emergence of ChatGPT and various generative image software, showcasing exceptional creativity and automation that is reshaping the operational rules of many industries. The way humans interact with artificial intelligence not only establishes a solid foundation for high-level business competition but also creates new opportunities. It will be a constantly evolving and challenging field.

In the future, metaverse-related technologies will become more and more sophisticated. We will continue to explore this field, viewing it as an efficiency tool, learning to collaborate with it, expand our design vision, innovate design thinking, and elevating our work to the next level.

Application of Field Interaction Design in the Metaverse

元宇宙下的場域互動設計應用

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We look forward to cross-industry collaboration with companies from diverse fields. Feel free to get in touch and create value together

Special thanks

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