



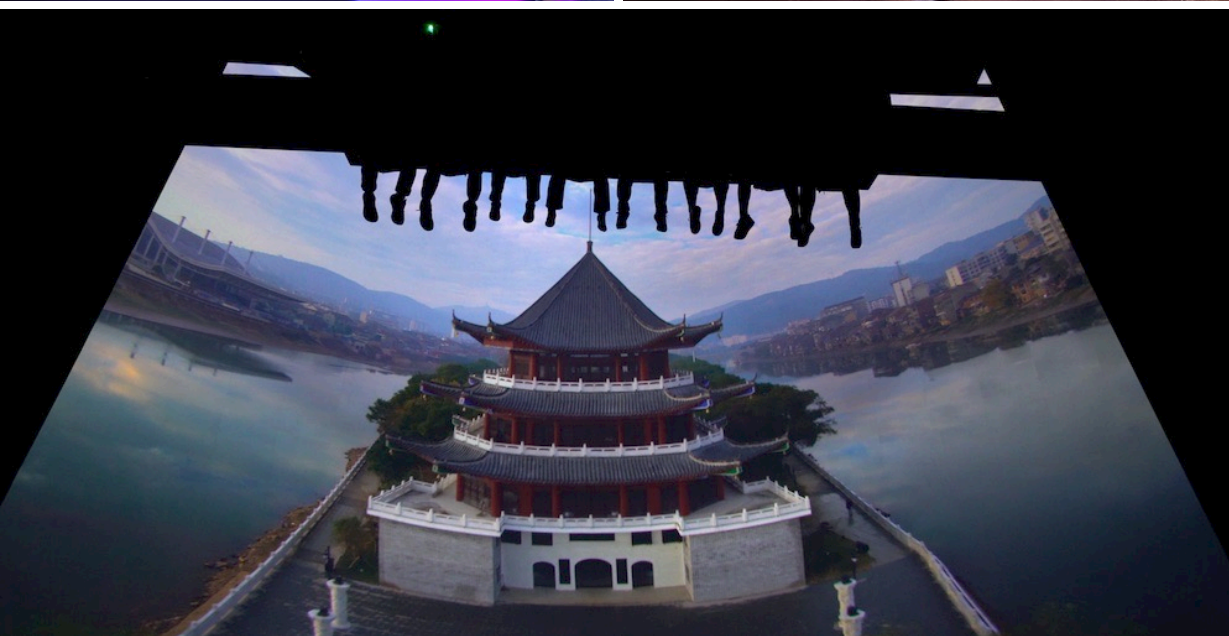
# INTERACTIVE VR MOTION BASE

Prepared For: C Creative Commons

August 10, 2021



[www.cavudw.com](http://www.cavudw.com)

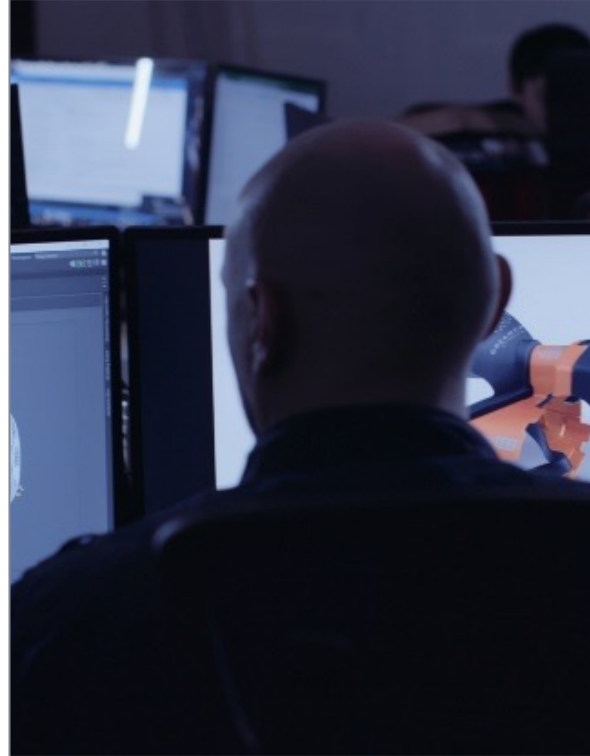


# CAVU Designwerks

is an end-to-end ride system developer. We are product innovators and integrators who take attractions to the next level through forward-thinking concept design and engineering.

The team at CAVU combined have over 100 years of experience in designing and building some of the most creative and ground-breaking experiences in the industry.

The company's original designs, engineering experience and cutting-edge fabrication, combined with uncompromising quality standards, allows CAVU to offer attractions that deliver an exceptional guest experience, ride performance and ROI.



# DREAMCRAFT ATTRACTIONS

specializes in building state-of-the-art attractions for global theme parks and clients seeking **real-time interactive experiences**.

DreamCraft utilizes Virtual Reality, Augmented Reality and projection mapping technologies together with motion base robotics, physical haptics, virtual embodiment and user agency to deeply immerse guests into completely unique narratives and environments. These experiences allow players to enter believable story universes with their friends and influence the final outcomes.

*Where Real Meets Surreal*



# A UNIQUE PARTNERSHIP

*Enter a universe where players control the story*

The partnership between DreamCraft Attractions and CAVU Designwerks is unique in the themed entertainment industry.

By combining DreamCraft's expertise in mixed reality, spatial computing, artificial intelligence and interactive storytelling with CAVU's experience in designing, fabricating and installing major ride systems, we are able to deliver a fully integrated, turnkey next generation multiplayer interactive attraction for high throughput theme parks, LBE and production houses.

We conceive asymmetric, one-of-a-kind, interactive adventures and also work with worldwide IP holders to provide solutions for specific technical and creative challenges.



# CAVU - THE INTEGRATOR

A CONTRACT WITH CAVU IS A CONTRACT WITH ATTRACTION EXPERTS. LET US MANAGE EVERY ASPECT YOUR WORLD-CLASS ATTRACTION.



## COMPLETE ATTRACTION DELIVERY

- ✓ Full attraction procurement from the queue to the exit
- ✓ Totally integrated system ensures seamless cohesion between ride and show systems



## WORLD-CLASS GLOBAL PARTNERS

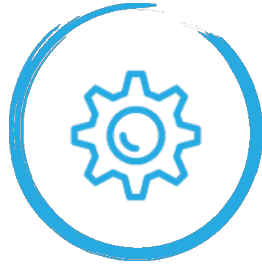
- ✓ Our worldwide partners span every facet of the attraction
- ✓ Top-quality Audio-Visual Packages
- ✓ Efficient and Creative Attraction Design
- ✓ State-of-the-Art Motion Systems
- ✓ Stunning and Captivating Media



## AFTER-SALES SERVICE

- ✓ CAVU Golden Care Services provides on-site personnel for 90 days after commissioning
- ✓ 2-year Spare Parts
- ✓ 24-month Warranty
- ✓ 3-years of annual inspection by factory engineer

# COMMITMENT TO QUALITY



## HIGHEST STANDARDS OF QUALITY

Our attractions are built using the best European and North American components and adhering to the most stringent standards by TÜV, ASTM, CSEI and EN.



## INDUSTRY LEADING PARTNERS

CAVU partners with the best in the industry for every aspect of the attraction, including media, technology and design.



## PREMIUM SERVICE & WARRANTY

After the attraction is installed, only CAVU provides support engineers for 90 days and a 2 year warranty & spare parts.

# INTERACTIVE VR MOTION BASE

PATENTED VR HEAD-MOUNTED  
DISPLAY TOGETHER WITH A MOTION BASE

Pat No. 9,933,624



DREAMCRAFT  
ATTRACTIONS



CUSTOM  
MOTION BASE

# INTERACTIVE VR

## VIRTUAL REALITY WITH MOTION BASE

DreamCraft Attractions and CAVU Designwerks combine Virtual Reality technology with a motion base ride system placing guests inside the experience.

This patented attraction incorporates proprietary software and programming developments, coupled with a dynamic Motion Base that brings real-time experience to the attractions world.

Guests can choose to follow different paths, follow different characters, and explore and interact with the environment allowing for a hyper-reality experience.

### Key Features:

- Custom motion base and simulator design
- Fully interactive Virtual Reality experience, all done in real time
- Full embodiment
- Real-time haptics, scents, force feedback, and audio
- Patented hygienic headsets
- Theme park level high throughput

CAVU  
EXPERIENCE INNOVATION



# DREAMSET™

## HYGIENIC HEADSET

DreamSet™ is our award-winning modular HMD, creating industry buzz when it received IAAPA's Brass Ring Award for Best New Product, Technology Applied to Amusements in 2018.

It is the world's premiere hygienic head-mounted display adaptation for VR with a durable, washable headset guests can pick up in the queue. The DreamSet™ is quickly and easily attached magnetically to a commercial VR HMD which stays safely tethered at the seat, ride vehicle or LBE arena. Headsets can be sanitized in a commercial dishwasher typical of 3D glasses or wiped by hand.

The DreamSet™ adjusts to fit both adults and children, comfortably accommodates eyeglasses and optionally provides a secure housing for a LEAP Motion sensor.

Patent No: US 9 778 467 B1

PROJECT  
Dream SET  
HYGIENIC SOLUTION



Pat No: US 9 778 467 B1



DREAMCRAFT  
ATTRactions



# MAGIC MERCHANDISE™

## ATTRACTION ENHANCEMENT

Breaking the mold from traditional attractions, guests are invited to peruse Magic Merchandise™ in the gift shop before getting on the attraction. We call this the "Pretail" experience.

Each Magic Merchandise™ contains a special code that is programmed to enhance guests' experience when they get on the ride.

The enhancements can be customized according to the storyline or IP. We can program certain merchandise to unlock special levels of the gameplay or bonus storyline. Merchandise can also be programmed to give the owner bonus points or special ability to help them win additional points or complete a task.

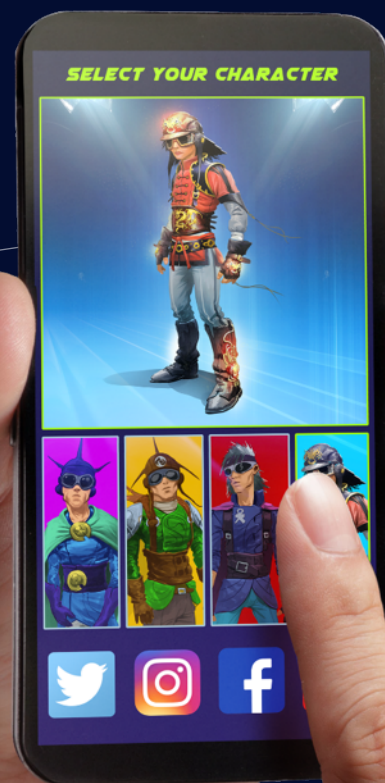
# PERSONALIZED CONTENT

## ATTRACTION ENHANCEMENT

Guests can select and customize their character via Companion Mobile App or Interactive Kiosk on-site.

By creating an account, we can keep track of each guest's ride history and progress and use that information to customize their next experience.

Guests can also opt to receive ride photos and videos and share those on social media.



# CASE STUDY

# MIDNIGHT RIDE





A PARTNERSHIP WITH DREAMCRAFT  
ATTRactions

# MIDNIGHT RIDE



PROJECT

Lionsgate Entertainment World  
at Novotown



LOCATION

Henquin Island, Zhuhai (China)



ATTRACTION

Hyper Reality VR Experience



OPENING DATE

July 2019



WINNER OF  
2020  
THEA AWARDS  
FOR OUTSTANDING  
ACHIEVEMENT:  
ATTRACTION

# MIDNIGHT RIDE



## 3 DOF Motion Base

Custom oriented base with pitch, roll and heave simulates realistic riding experience



## Seat Rumbler

Real-time actuation mimics the idling, acceleration, and sputtering of the engine



## Force Feedback Steering

Real-time LIM actuators grip the handlebars to provide unprecedented "road feel" that changes depending on which path you take



# MIDNIGHT RIDE



## Wind

Guests feel wind brushing against their face as they race through the experience, all synchronized to how fast they are going



## Scent

Real-time scent is delivered to each rider depending on whether they are in the pines or at the ocean's edge



## Heat

Built-in heat effect mimics heat generated from the working motorcycle's engine



A PARTNERSHIP WITH DREAMCRAFT  
ATTRACTIONS





# PROPOSED SOLUTION

# PRELIMINARY LAYOUT



Total Footprint: ~40,000 sqft

Number of Motion Bases: 32

Seats per Motion Base: 4

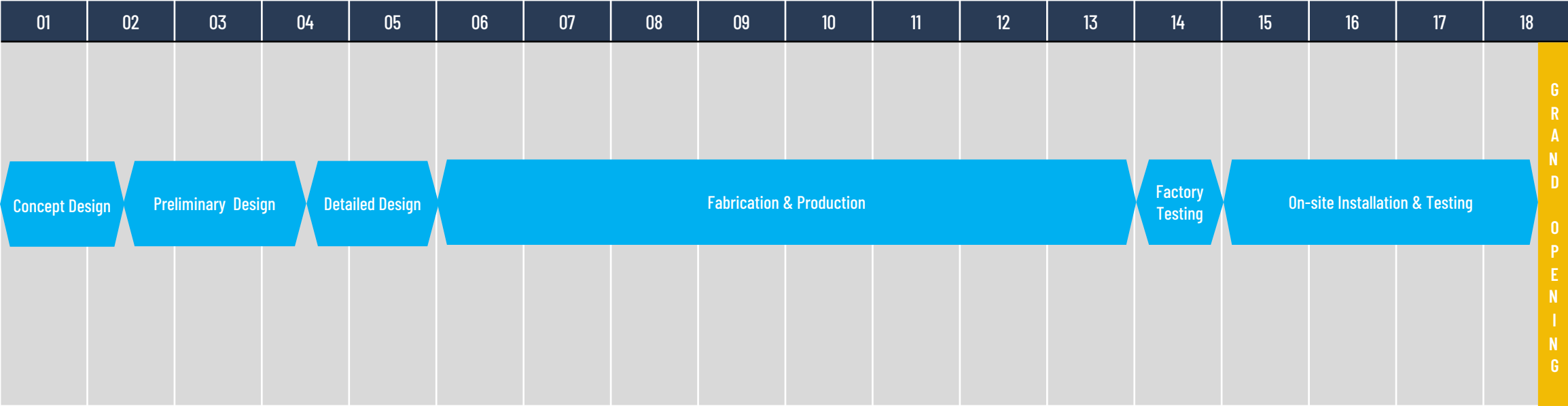
Max Guests per Cycle: 128

Cycle: 10 cycles per hour

Max Guests per Hour: 1280

Experience Length: 25-30+min

# PROPOSED SCHEDULE



# PROPOSED SCHEDULE

Stage	Milestones	Duration
1	Concept Design	1.5 Months
2	Preliminary Design	2 Months
3	Detailed Design	1.5 Months
4	Fabrication and Production	8 Months
5	Factory Testing	1 Month
6	On-Site Installation and Testing	3.5 Months

# CONCEPT DESIGN PROPOSAL

# STAGE 1: CONCEPT DESIGN

## Scope of Work

- One (1) high level concept of an indoor Stand-Alone Attraction with approximate size of 40,000 sqft
- High level analysis of the target demographics and capacity requirements
- Site visit to review facility and modifications necessary
- A written Guest Experience Narrative from arrival to departure
- A Conceptual Venue Layout that depicts guest circulation and the creative layout of each area including entrance and ticketing, preshow, queue/waiting area, main attraction, gift shops, food and beverage opportunities, and guest services areas
- One (1) flythrough video of the 3D Conceptual Layout
- Reference imagery, as needed, to convey creative intent for each proposed area
- Concept level drawings and sketches
- Preliminary Facility Input
- A high-level overall budget

# PRICING

ITEM	AMOUNT
Concept Design (1.5 months)	USD\$138,000

## Payment Schedule

MILESTONE	AMOUNT	DUE
Project Kick-off payment	USD\$69,000	At Start of Project
Final payment	USD\$69,000	At Completion of Work

The Validity of the enclosed Value and Terms is for a period not to exceed 60 days of the date of submission as listed within this document. Any additional requested changes that are outside of the Scope and terms outlined within this estimate may be subject to additional fees.

# ACCEPTANCE

Signing of this below constitutes acceptance of this proposal.

Sign: \_\_\_\_\_

Title: \_\_\_\_\_

Print: \_\_\_\_\_

Date: \_\_\_\_\_



# FUTURE PHASES

# STAGE 2: PRELIMINARY DESIGN

## Scope of Work

- Overall building floor plan locating facilities, ride system, and equipment
- Dimensioned interior elevations with materials indicated
- Interior elevations to show basic dimensions, materials, casework, finishes, trim, and colors
- Preliminary list of interior furniture, furnishings, and related equipment
- Renderings of key interior views
- Inputs for Structural, HVAC, Plumbing, Electrical
- Preliminary level dynamic and structural analysis of all ride vehicles and related mechanical equipment, seats, etc., all to be designed to support a minimum life of 10-years
- Preliminary design of electrical control system to safely operate the vehicle and vehicle launch and braking systems with adequate interface for overall attraction control
- Preliminary engineering drawings
- Final Budget

**ROM\*: USD\$264,000**

\*The above Rough Order of Magnitude (ROM) cost estimate is based on the information available during the preparation of this cost estimate. This ROM cost estimate was prepared to facilitate informal discussions in relation to this project and is not intended to create any contractual or other legal obligation.

# STAGE 3: DETAILED DESIGN

## Scope of Work

- Construction Documents in accordance with Architect's professional standard of care
- Narrative, drawings, and other appropriate information concerning site preparation work to be completed by General Contractor
- Written specifications
- Construction details
- Detail level dynamic and structural analysis of all ride vehicles and related mechanical equipment, seats, etc., all to be designed to support a minimum life of 10-years
- Detail design of electrical control system to safely operate the vehicle and vehicle launch and braking systems with adequate interface for overall attraction control
- Final engineering drawings and fabrication models
- Detailed specifications list, rider requirements, etc.
- Detailed Design and Budget Review
- Preliminary Maintenance, Operations Manuals, Final Installation Manual

**ROM\*: USD\$162,000**

\*The above Rough Order of Magnitude (ROM) cost estimate is based on the information available during the preparation of this cost estimate. This ROM cost estimate was prepared to facilitate informal discussions in relation to this project and is not intended to create any contractual or other legal obligation.

# STAGE 4 - 6

## Scope of Work

### RIDE SYSTEM

- Supply of 32 Ride Vehicles
- Procurement of all necessary components and parts
- Fabrication of all mechanical equipment
- Design and supply of electrical control system to safely operate the vehicles with adequate interface for overall attraction control
- Operator control panel(s) equipped with a touch-screen computer panel for displaying ride status, alarms, and operations
- Maintenance control panel equipped with maintenance control functions
- ASTM Compliancy
- Packing and Crating

### VR SYSTEM

- Hygienic 2-piece VR Headset solution
  - VR Display (HTC Vive Pro or higher)
  - Head Mounted Receiver
- Design and supply of all hardware and configuration for the VR headsets and computers
- Design and supply of all cabling and interface components required to drive the VR experience

# STAGE 4 - 6

## Scope of Work

### VR CONTENT & PROGRAMMING

- Detailed creative development
- Storyboard development
- Show direction, scripting and choreography
- Creation of the "Virtual World" based on client's storyline
- Design of integration of media assets to achieve the ride intent and interactions
- Real time visual assets and audio tracks
- Game engine programming

# STAGE 4 - 6

## Scope of Work

### INSTALLATION AND TRAINING

- Supervision during ride system installation
- Motion and media synchronization programming
- Ride System Test and Commissioning
- Operator and maintenance training
- Operating, Maintenance and Safety Manuals
- Two (2) years standard warranty

**ROM\*: USD\$8,000,000 – \$12,000,000**

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# OUT OF SCOPE

Services and Equipment Supplied by Client. This includes, but is not limited to the following:

- Facility modifications
- Local building or work permits and fees
- Notification of regulatory requirements that should be considered
- Appropriate three-phase AC power to locations required by the ride
- Main disconnect MCC with auxiliary contacts
- Conduit and wiring as required to connect the equipment within the facility
- Attraction supervisory controller (If necessary)
- General lighting
- Site survey and layout
- Structural engineering/analysis, design and fabrication of building
- Facility "as-built" information, if required
- Standard maintenance tools, lifting devices and infrastructure, except for those identified as being supplied by CAVU

# OUT OF SCOPE

- Suitable maintenance area for the attraction
- Clean site and dust free facility
- Equipment room for controllers and technical equipment (CAVU to specify)
- All air conditioning/cooling systems as required to maintain a stable operating environment for both the theatre, projectors and the PC cluster rack
- A dedicated high-speed internet connection (fixed IP) for all remote system diagnostics, testing & analysis under the support agreement (if option required)
- Fire detection and control system within the facility
- CCTV supervision for the theatre, if desired
- Facility signage, except for signage on ride vehicle
- Interior furniture, furnishings, and related equipment
- Supply of merchandise for retail and/or pretail
- Supply of Food & Beverage facilities
- General Labor for installation
- Shipping, Customs and duties
- Security, health, safety and environmental requirements for the site





LET'S START  
YOUR PROJECT

**CAVU**  
EXPERIENCE INNOVATION

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