

# CAPABILITY STATEMENT

SMART CITIES CONSORTIUM

---



# BACKGROUND INFORMATION, RESPONSIBILITIES AND SKILLSETS

---

## CONTENTS

|                                       |    |  |    |
|---------------------------------------|----|--|----|
| WHAT ARE SMART CITIES SOLUTIONS       | 3  | CONCEPT AV                                     | 11 |
| SMART CITIES CONSORTIUM               | 4  | MADE IN THE PILE                               | 12 |
| DESIGN AND IMPLEMENTATION METHODOLOGY | 5  | LIGHT APPLICATION                              | 13 |
| CONSORTIUM SKILL SETS                 | 6  | CMTG   | 14 |
| PARTNER SKILL SETS                    | 7  | PAST PROJECTS                                  | 15 |
| CONCEPT AV                            | 7  | MINDEERUP PIAZZA - CONNECT MENDS STREET        | 15 |
| MADE IN THE PILE                      | 8  | PERTH GLORY AR - STAR SNAPS                    | 16 |
| LIGHT APPLICATION P L                 | 9  | PARK REGIS CONVERGED AV/IT SYSTEMS AND NETWORK | 17 |
| CMTG                                  | 10 | OTHER PROJECTS                                 | 18 |
| KEY CONSORTIUM STAFF                  | 11 |  |    |

# WHAT ARE SMART CITIES SOLUTIONS

---

**The definitions of a Smart City often use generic terms to describe the how and the why:**

*"A Smart city is an urban area that uses different types of electronic Internet of Things (IoT) sensors to collect data and then use insights gained from that data to manage assets, resources and services efficiently"*

**Wikipedia Aug 2019**

*"A smart city uses information and communications technology (ICT) to enhance its liveability, workability and sustainability. First, a smart city collects information about itself through sensors, other devices and existing systems. Next, it communicates that data using wired or wireless networks. Third, it analyses that data to understand what's happening now and what's likely to happen next."*

**Smart Cities Council Australia and New Zealand**

We believe these generic descriptions cannot truly encapsulate the complexities and permutations of the overarching systems required to control, monitor and utilise the sub services of any Smart City. They also cannot adequately describe the efficiencies of true integration and utilisation of the sub services like Lighting, IT, environmental monitoring, traffic and pedestrian counting etc. In the past, these systems have been installed, but kept in silos, independent and not integrated mainly due to the complexity and risk of mismatched interfacing. True Smart City systems are now being deployed globally through the use of global open standards of communication, integration and monitoring and whilst this is a natural choice, many projects are still being designed without this "true integration" capability and demand for the realised benefits that a Smart City can bring.

Each City is different with its own set of unique needs and geographical circumstances. Efficient use of resources and services is unquestionably a good thing, but what are the sub services across the City? Which are new or existing? How can they be incorporated into the Cities secure IT infrastructure and then monitored, controlled, and the resulting data displayed and utilised? Who can assess the theoretical and practical implications of integrating these resources, and propose the efficiencies and insights a City needs to meet its unique circumstances?

We believe that Smart Cities descriptions are vague because of the sheer scale of the possible intent. So how do you design, deploy, service & maintain, and upgrade to a Smart Cities solution?

# SMART CITIES CONSORTIUM

---

**As the convergence of technology continues daily, the implementation of networking technology and equipment has spread beyond the IT realm. Companies in traditional markets sectors such as Electrical, Lighting & Audio Visual now speak the language of IT and networking. Whilst these sectors have worked historically together on large scale projects delivering integrated multi-faceted systems, buildings, and open spaces, in the main they have still been isolated from each other by the design process. Their individual skill sets have not been merged with one clear design focus.**

This need for design convergence and holistic integrated delivery has spawned a partnership of a select group of likeminded Perth based companies of “smart” centric projects. It has lead to collaborative workshops about the coordination of the design skillsets required, the efficient documentation and the successful delivery of such large intent options and how these companies could work collaboratively to functionally deliver the outcomes required. It became clear that existing relationships could be leveraged, and a consortium model developed for this. Gaps in required skill sets were identified and filled through existing partnerships, creating a true ‘networking’ model to the design and implementation of Smart Cities Solutions.

The major partners of the new consortium are:

**Concept AV, Made in the Pile, Light Application and CMTG**

**CONCEPT AV**  
CONNECT INFORM INSPIRE

MADE IN THE  
**PILE**

**Light**  
Application  
Control Enhance Discover

 **CMTG**

# DESIGN AND IMPLEMENTATION METHODOLOGY

---

Due to the complex nature and endless possibilities of Smart City systems, the consortium recommends early and detailed engagement at the design stage to ensure all aspects on the integration of systems is captured. Through experience we know the projects are more effectively delivered and to the customers' expectations when the consortium is embedded with the project team at the high level and detailed design stages based on a model of "Design and Implementation".

# CONSORTIUM SKILL SETS

---

**The Partners in the consortium bring a range of skill sets which complement each other when designing and deploying these Smart centric solutions. The consortium skills set and expertise cover all of the hardware requirements within a Smart system solution from Input device/sensors hardware specification and installation, to output devices such as displays/lighting and the network that is the “glue” of the solution. Underlining their designs, are the attributes of capability, longevity, flexibility and value for money in harmony with the absolute need to understand and deliver a solution that perfectly meets the client’s needs.**

System integration and custom programming to connect disparate systems is also covered, as well as content creation and delivering (including dashboards & AR). The other major component of any Smart centric solution is the data analytics and subsequent feedback into the overall system. As stated, the “intent” is crucial to this and is not easily defined. The consortium has identified & considered this component and believe that the analytics is best defined after the initial high level design stage and resourced from the consortium internally or from the most suitable partner in the marketplace from existing relationships with consortium members.

# PARTNER SKILL SETS

---

## CONCEPT AV

***Our Vision:* Concept AV will be recognized as the most inspired AV solutions professionals in Australia, whose reliability and quality of services are unmatched, considered as leaders in the industry, developing AV solutions that “Connect, Inform and Inspire” audiences and that exceed our clients expectations.**

Established in 1987, Concept AV has built its reputation on designing, installing, and integrating high quality AV/UC solutions across a wide variety of industry sectors. Just as our AV solutions are designed to ‘Connect, Inform and Inspire’ audiences, we adopt the same philosophy with our clients. Concept AV has an integrated management system that forms the basis of our ISO 9001 accreditation that not only ensures that we meet all regulatory requirements but provides assurance to our clients of the quality of our systems and implementations. Delivering projects in both WA and Australia wide and a proud panel member of the WALGA purchasing framework. Concept AV was also the first Western Australian company to earn the Certified Audio-Visual Solutions Provider (CAVSP) diamond seal InfoComm International certification.

**Concept AV will complement the Content Media/Lighting/IT integration skill set of the Consortium partners with capability in:**

- Design and construct of complex AV systems
- System Integration
- Networked AV distribution
- Control integration and Custom programming
- Space activation and user experience
- Hardware spatial location expertise
- Project Management and Coordination expertise
- Access to top tier vendor pricing

[conceptav.com.au](http://conceptav.com.au)

**CONCEPT AV**  
CONNECT INFORM INSPIRE

# MADE IN THE PILE

**'Made in the Pile' will complement the AV/Lighting/IT integration skill set of the Consortium partners with capability in:**

- Virtual/Augmented Reality
- Web-portal/Mobile Applications
- Data Visualisation
- Application UI/ UX design
- Visual Content Creation and Rendering

MITP is a creative digital marketing and content production agency, specialising in emerging technologies. Our team of 22 specialists comprises of software developers, strategists, designers (UX/UI/ 3D/ Graphic), videographers, software developers, and digital marketers, along with a dedicated account management cohort.

**Our broad array of talent allows us to end to end services across a range of areas:**

- Software Development
- Augmented and Virtual Reality
- UX/ UI Design
- 3D, Animation and Live Action Content
- Web and Mobile Application Development
- Interactive Outdoor Displays
- Social Media Campaigns
- Artificial Intelligence (chatbots)

**MITP have delivered award winning projects across WA and nationally for clients such as:**

- Australian Electoral Commission
- Venues West
- HBF Park
- Optus Stadium
- City of Joondalup
- City of Belmont
- Tourism WA
- Gage Roads Brewing Co
- Liquor Barons

[madeinthepile.com](http://madeinthepile.com)





# LIGHT APPLICATION P L

***Our Vision:* Light Application are recognized as industry leaders across Western Australia with a proven long-term track record of successfully designing, supplying, commissioning and maintaining Lighting and Lighting Control projects. Based in Perth, Light Application have in addition also delivered specialist projects across Australia, and in over 12 countries globally.**

Established in 1995, Light Application has within its DNA a level of expertise and technical excellence on staff that it believes is crucial for it to be able to successfully navigate the ever-changing technological spectrum. It's unquestioned reputation for high quality engineered solutions are based on a true understanding of the various systems, components, software and IT infrastructure that is now the basis of all smart systems. Having consulted and designed systems for almost all Electrical Consultancies in WA, Light Application are perfectly placed to evaluate, assess and create integrated solutions for a huge range of large and small projects. As a proud panel member of the WALGA purchasing framework. Light Application continue to be engaged by Local Government and State Government along with the private sector to design and supply lighting and lighting control solutions to meet their budgets and project requirements.

Light Application have been chosen due by several global manufacturers to distribute their Lighting and Lighting Control products across Australia based on their technical expertise and unparalleled customer service ethos.

**Light Application complement the Content Media/AV/IT integration skill set of the Consortium partners with capability in:**

- Design and construct of Lighting Control Systems
- Design and construct of Lighting schemes, Street lighting and Decorative lighting
- Smart City monitoring systems using wireless and wired systems such as NB-IoT, LoraWAN, Zigbee, Bluetooth, DALI, TCP-IP, restful AP, etc
- Cloud and On-Premise software integration solutions
- Project Management and Coordination expertise
- Access to top Global vendors

**[lightapplication.com.au](http://lightapplication.com.au)**



# **CMTG**

**CMTG is an IT infrastructure setup and support company with deep technical expertise and an enterprise-grade data centre in Perth. We believe in taking a holistic approach to IT services, from servers and network security to end user support. Our clients know, that whether it is with them or with us, their data is always safe and secure and they are getting the system performance they need.**

We work under the values of Client Focus, Teamwork, Integrity, Diligence and Technology Leadership. We empathise with our clients as we work swiftly to solve their problems, and implement long-term best practice solutions. We work to foster an enjoyable stimulating environment where driven, talented people can focus on attaining common goals. We behave safely, reliably, professionally and with integrity and in doing so, contribute to our client's businesses and each other.

We hold close relationships and certifications with industry vendors which ensures we have key contacts for escalation and competitive pricing.

## **Our services include:**

- Network Infrastructure and Security.
- Server and storage Infrastructure and Security
- Virtual CIO
- Software, including subscription licensing (Office 365).
- Business Continuity Services.
- Off-site Backup-as-a-Service
- Disaster Recovery-as-a-Service
- Workstations, laptops and peripherals.
- Internet and Fibre Services.
- Managed Services and Technical Support including Helpdesk
- Private cloud services



# KEY CONSORTIUM STAFF

---

The consortium partners bring several highly respected and experienced individuals to the implementation of all their projects. Renowned in their own fields, they combine to ensure all projects are delivered to the client satisfaction and specification.

## CONCEPT AV



### **David Cumber - Senior Account Manager**

With a trade apprenticeship in Electronics and over 18 years' experience in the AV/UC technology industry, David brings a wealth of Technical, Project, Service, Account Management & Commercial skill sets due to his varied roles across his career and over two continents.

*Key Skills:* Video & Audio over IP, AV Networking, System consultancy and design, Account Management



### **John Iannantuoni - AV Sales & Design**

Extensive experience in the commercial audio-visual industry over a 23-year period with various organisations that has seen John caring out several diverse roles. The roles include overseeing the local projects department for national audio-visual companies carrying out major rollouts within WA and across Australia.

*Key Skills:* Audio Visual system design, AV Networking, Consultancy, Operations Management



### **Amit Singh - Manager Strategic Sales**

With a thorough understanding of the IT/AV/Security industry and over 12 years of experience managing Enterprise Tier-1 customer at National and Regional level. Amit has a further 7 years of experience in Supply Chain Management, Channel Sales Management, Sales Strategy and Solution Development.

*Key Skills:* Stake Holder and Vendor Management, Supply chain Management, Key Account & Sales Management

# MADE IN THE PILE



## **Fraser Johnson Director - Creative Director**

With a background in Architecture, Fraser has served as both owner and Creative Director of MITP since 2014. Fraser's work spans from events, marketing and content production in both the public and private sectors. Under Fraser's guidance, the MITP creative team have been awarded multiple national accolades.



## **Alex Paioff - Managing Director**

After building one of Western Australia's biggest event businesses, Alex turned his attention to the creative marketing space with MITP. Growing the business from just 6 employees to over 20 in a few short years. With a focus on marketing strategy and software development, Alex has delivered a range of multi million dollar projects for key clients in a variety of industries.



## **Tristan Garner - Technical Developer, Multidisciplinary Tech / Creative and AR developer**

Tristan's background is in the Audio Technology and Event Visual space in the UK, taking his talent to Australia a decade ago. Tristan provided the major show piece for 2017's Kaleidoscope festival, 'Cast' a projection mapping piece. Judges choice in his category at the ARTTRA festival 2018. The past of 5 years have seen Tristan's focus turn to the Augmented Reality space, as that market has become more accessible to consumers.

In 2019 Tristan was selected as one of 100 of the world's foremost AR developers at Facebook's AR summit in Delhi India.



# LIGHT APPLICATION



## **David Sparrow - Managing Director**

With over 30 years of experience in Theatrical Electrotechnology, Stage Lighting and Design, David was the founder of Light Application in 1995. He has built a unique team of like-minded professionals in the specialist area of lighting and lighting control system over that time. David brings those years of experience of designing, deploying and maintaining custom lighting and lighting control solutions to the group.

*Key Skills:* Lighting Control Systems, Lighting Design, Project Management



## **Matthew Bancroft - Electrotechnology Designer**

With many years of Stage, Electrotechnology and Theatrical experience, Matthew brings an impressive hands-on experience to Light Applications systems designs. Working on a huge range of projects, all requiring exacting design, procurement, and technology use, Matt is highly trained in the latest in Wireless and IoT solutions. He has been pivotal in the ever-increasing portfolio of successful Light Application projects.

*Key Skills:* Electrotechnology system design, Networking, IoT systems, Lighting Control systems and Operations Management



## **Carl Filpo - Managing Director and Advisory Board Member**

Carl holds a Bachelor Degree in Computer Science from Curtin University and remains up to date with IT infrastructure product developments. Carl's role is very hands on and he keeps close relationships with our key client accounts and primary vendors including Microsoft, Citrix, Cisco, Veritas, VMware, Fortinet, Vocus and TPG. He also takes pride in continually looking at ways to develop our strong staff and leadership team.



## **Michael Ricaud - Technical Services Manager**

Michael is trained and certified in all of our mainstream products and is responsible for our technical service division. Michael has over 20 years IT experience and has been with us for over 12 years.



## **Scott Rose - Technical Manager**

Scott is trained and certified in all of our mainstream products and champion's assessment and proof of concept development for new products. Scott is a technical mentor and provides in-house technical training for the service team.

# PAST PROJECTS

---

**The consortium partners have a history of delivering complex projects, leveraging the varied skill sets to integrate disparate systems for innovative solutions:**

## **MINDEERUP PIAZZA – CONNECT MENDS STREET**

**[lightapplication.com.au/project/mindeerup-piazza-connect-mends-street](http://lightapplication.com.au/project/mindeerup-piazza-connect-mends-street)**

Lighting and control system programming by Light Application and Interactive Audio installation by Concept AV.

Mindeerup Piazza represents the pinnacle of technology in public open spaces, incorporating LED area lighting, RGBW feature lighting, interactivity and event sound all co-ordinated by Light Application's central control system.

The centrepiece of the piazza is the 'karl kep ngoornd-iny' (Fire and Water Dreaming) sound and light show, which co-ordinates projected dreamtime imagery and animated lighting effects with an immersive surround sound audio track. The sequence was designed by Yondee Shane Hansen with Art +, and shares ancient stories representing the cycles and rhythms of country from an Aboriginal perspective.

The central chandelier is built from suspended pureLED Flextube Addressable RGBW strip, and is capable of high quality white light and rich saturated colours all in keeping with the projected story and show timeline of effects. Subtle, sophisticated animations are displayed, breathing life into the area for visitors and local residents alike. An interactive audio installation provides natural ambience and animal sounds played back as pedestrians walk through the main thoroughfare between the ferry terminal and Mends St. Pedestrian presence is detected by infrared sensors adjacent to speakers concealed within the light poles. Other lighting around the site includes under bench lighting, street lights on South Perth Esplanade, street lights dotted throughout the pedestrian areas of the piazza and an animated feature emulating the movement of the 'engine order telegraph' from the old ferry steamer, "The Duchess".

Every light, sound and interactivity feature around the site is centrally co-ordinated by Light Application's 'Extend' system, which automatically directs scheduling, lighting levels, animated shows and coloured event themes across multiple brands, makes and models of equipment including Helvar, Pharos, pureLED and the site's public address system. Real-time reporting, monitoring, control and scheduling is managed by the City of South Perth from the comfort of their offices thanks to Extend's remote management capabilities. A Pharos touchscreen is also concealed behind a hidden door onsite to allow event staff to take control of the lighting and sound system at a moment's notice.





# PERTH GLORY AR - STAR SNAPS

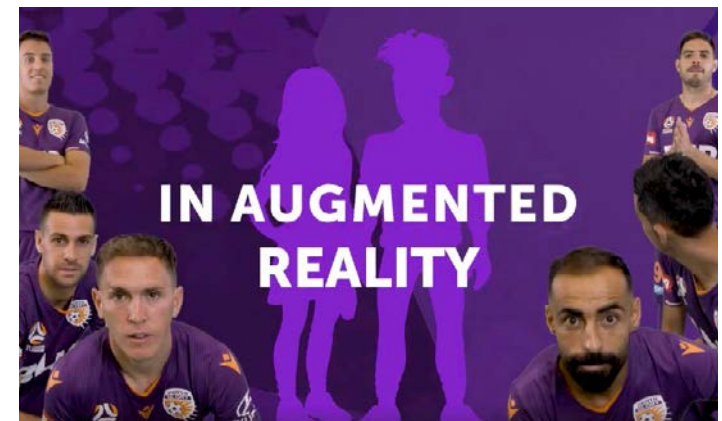
## [starsnaps.photos](https://starsnaps.photos)

AR, Media Content & Commissioning by Made in the Pile, AV hardware by David Cumber now of Concept AV.

**Brief:** Perth Glory FC and Venues West were looking to bring their fan engagement and brand experience into the 21st century with an innovative, exciting experience. Their aim was to add value to their fan's match-day experience with a physical activation that stays with the user beyond their stadium visit. With this in mind, we were tasked with conceptualising, producing and implementing an all-in-one solution to allow fans to share their experience online, encourages return visits, creates an interactive spectacle and provides VenuesWest with important user data.

**Solution:** Sports fans know no better feeling than sharing in the celebration after the game, but with the players' busy schedules the opportunities to snap a pic with their sporting heroes is only a dream for most. We created the 'Starsnaps' augmented reality photo booth to recreate the photo experience, breaking the barriers between fans and Glory FC stars. It's an easy to use, portable and interactive AR photo booth that allows users to select and pose with their favourite players for a team photo. The booth requires users to input email addresses to receive their personalised image, and can post user's photos directly to social media channels with the correct hashtags. We can take the data pools created through this process and add them to Perth Glory's existing databases, allowing us to target fans with post-match content as well as deliver targeted ads featuring specific player merchandise based on user's player selections.

**Results:** The first game with StarSnaps installed had a total of 4k impressions, which accounts for 60% of all visitors. Over 100 StarSnaps were taken, resulting in 50+ minutes of interacting with the experience. An email was submitted by each user, leading to a 98% email retention rate and one of the biggest single day boosts to their email database ever.





# **PARK REGIS CONVERGED AV/IT SYSTEMS AND NETWORK**

As part of the fit out of 500 Hay Street, CMTG delivered a converged network to support daily business IT requirements and the numerous AV systems also deployed within the building. The deployment included:

## **Network / Wi-Fi / Server Infrastructure / Desktop**

- Supply and install (Traditional) Network infrastructure to provide backbone for (Corporate Services, IPTV, Wi-Fi, CCTV, and BMS Functions) utilising Ruckus networking equipment
- Supply and install Wi-Fi for the corporate and guests clients
- Supply and install server infrastructure to host virtual machines for ancillary services (Network Services & Hotel Services (PMS))
- Localised backup using Veeam Backup and Replication
- Provide secure networking platform for multiple services via VLANs
- Supply Desktop infrastructure (Install by Client)
- Provide Spare Equipment onsite (Network & Wifi)
- Deployment of onsite Web Server to host Captive Portal
- Development of Wi-Fi Captive Portal

## **Telephony**

- Supply and install IP Telephony platform (Mitel) for Hotel operations & guests
- Supply and install IP Phone handsets to location staff and hotel rooms
- Provide SIP Base phone services from TPG with 20 SIP Channels
- 168 Guest Rooms / 25 Corporate Extensions
- Voice Mail Services (Corporate Only)
- Delivery of Voice services and SIP Gateway for external calls
- Delivery of Corporate Voice Services

## **UPS Equipment**

- Supply and Install UPS Equipment in Risers and Main Communications Room

## **Internet Connectivity (TPG)**

- Supply and install TPG Fibre 1000Mbit Service with SIP

## **POS**

- Ground Floor Café, Level 9 Bar, Restaurant, Kitchen

## **PMS - Room Master - Up to 200 rooms**

The AV systems consisted of a digital signage network, BGM for 9 Zones, 3 large conference rooms which could be used in single of combined mode & IPTV solution providing Free to Air and Foxtel services to 182 guest rooms TV displays.

CMTG worked collaboratively with the awarded AV contractor on this project, who was engaged directly with the client, to achieve a successfully delivered project.

Converged Network by CMTG, AV systems by John Iannantuoni now of Concept AV.

# **OTHER PROJECTS**

## **Other projects of note that Consortium key personnel have been involved in:**

- Curtin University CATS Project – Multimillion-dollar project
- Award winning and globally recognised Teaching and Learning space at UWA M-Block
- Technology One – Corporate office National AV infrastructure project
- King Square – HBF Relocation Project – AV Control and Switching
- Security System roll out at AUNZ for all Westfield and Vicinity Shopping centres
- QPS – Queensland Police Services State Security System roll out including Roma Street Head-Office and Sub-stations
- Smart City Project at City of Perth – Security System, Signage, Facial Recognition and other Analytics
- OK Tedi Copper and Gold Mine PNG – Analytics roll out
- Multimillion-dollar projects including upgrade to Perth District Courts and AV fit out of 31 floors of DMJC tower
- Perth Children's Hospital Digital signage and Room Booking roll out
- Optus Stadium Amphitheatre AV infrastructure and PA
- Iuka Resources corporate HQ fit out
- ATCO Gas national digital collaboration and UC roll out
- Bankwest retail store digital signage
- DoJ WA state-wide VC infrastructure upgrade and expansion
- IPTV and digital signage solution for HBF stadium
- Matagarup Pedestrian Bridge – Full networked lighting and control solution
- Elisabeth Quay - Sitewide networked lighting and control solution
- New Perth Museum - Sitewide networked lighting and control solution
- City of Perth – Street Lighting and control systems
- Fiona Stanley Hospital - Sitewide networked lighting control solution
- Northlink - MRWA Street lighting control and monitoring system
- Perth Children's Hospital - decorative Artworks lighting and control
- Yagan Square - Sitewide networked lighting and control solution
- Woodside Headquarters - 6star Greenstar Office Tower-networked lighting and control solution