DAVID MORGAN ASSOCIATES

LUMINAIRE DESIGN AND DEVELOPMENT CONSULTANTS

LONDON

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Better design for better business




Living with light

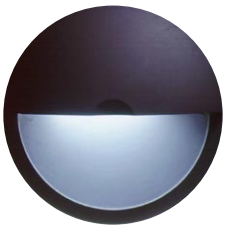
David Morgan Associates brings new lighting products to life for clients around the world.

With over 1,000 luminaire design programmes completed over a 30 year period DMA has the experience required to develop commercially successful lighting products for a wide variety of applications and markets.

The DMA product development system which blends creativity with technical and market testing rapidly produces profitable results for both small and large companies.

This brochure illustrates some of the successful lighting products DMA has designed and the well honed development process which we use to create these products.



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Research

We start all projects by gathering as much relevant information as possible.

This includes a review of existing products, brand identities, marketing, life style and technical data in addition to human factors and environmental requirements.

To obtain the best and the most current information we often work with specialist consumer and technical research companies.

In overseas markets DMA has built up a global network of research sources who help to provide this information.

Design

We then start a creative design process, often involving brainstorming and other techniques to produce original and appropriate design solutions to fulfill the brief and the research requirements.

The proposals are presented in the form of photorealistic 3D computer images and non working models. These models and images enable all members of the project team to fully review the designs as they progress.

Models are often used in further consumer research to ensure that the designs are optimised to meet consumer requirements and tastes.

Models, Prototypes and Evaluation

The DMA design system is based on continuous consumer and technical testing during the product development cycle.

Utilising our in house facilities we are able to rapidly and cost effectively develop, test & modify models and functional prototypes until we are confident that they work perfectly while complying with international safety standards.

This capability to continuously validate our designs significantly reduces the time required from initial project brief to full production.

Engineering Development

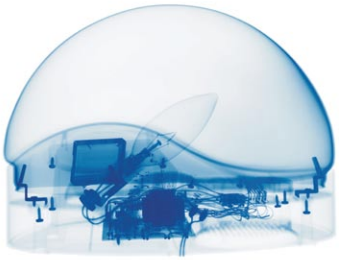
During this stage the design is progressed to a final production specification.

All parts are modeled in the appropriate 3D CAD system with reference 2D drawings to control tolerances.

Component and material specifications are finalised and bills of material prepared.

Production costing is finalised during this stage.

Final working prototypes are prepared at this point for pre tooling testing and evaluation.



Testing and Certification

During this stage DMA works with approved independent test houses to gain certification for the product.

Testing is often undertaken using the working prototypes while tooling is being prepared in order to reduce development timescales.

Material and component certification and suitability is finalised during this stage.

Project Management Sourcing

DMA has worked closely with factories in Asia, USA and Europe for many years and provides a project management service to clients.

This service includes tooling supervision, pre production testing and on-site liaison to finalise the production specification.

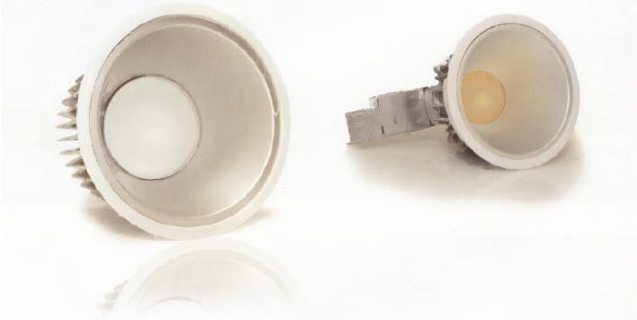
PLASMA LIGHTING

David Morgan looks at a technology that may become a viable energy efficient light source for the next ten years

Hidden away amongst the multitude of LED luminaires and LED light sources at this years Lightfair in New York there were a few exhibitors swimming against the tide, presenting the latest innovations in a lighting technology that has recently become a viable alternative; plasma lighting.
Luxim, Ceravision and Eden Park are some of the companies exploring the potential of this approach and developing luminaires and sources for a variety of lighting applications.
In essence plasma lighting consists of a discharge lamp without electrodes, where the power is transferred from outside the lamp enclosure via high frequency electromagnetic radiation. It is a lighting technique that has been around in different forms for many years. Nicholas Tesla patented one version in the late 19th Century and induction lamps are available from a number of manufacturers although they have not made much of a commercial impact. The very high output sulphur lamp from Fusion lighting with its rapidly rotating arc tube that was going to revolutionize the lighting industry as a remote light engine in the 1990s was perhaps the strangest variant of this technology. Surprisingly it is still in production and is available from Plasma International which appears to have a niche market in light pipes and other applications where high levels of light can be employed. It is only comparatively recently that point light sources based on plasmas have become technically and commercially viable.
The plasma technologies on show at Lightfair included high output point sources, panels and linear sources similar to CCFLs so there is a lot of activity in this area.
Currently the most successful approach for high power point sources is based on microwave excitation of an argon gas and metal halide mix to create a gas plasma. One version of this technology was presented in New York by the US company Luxim. The Luxim LIFI light engine has already been incorporated into a number of luminaires for the entertainment market including the Nemo Seachanger projector, which won an innovation award at Lightfair, and the Robe Plasma spot. Luxim are also now focusing on the architectural, commercial and street lighting markets.
The legal tussle about plasma lighting technology patents between Luxim and the UK company Ceravision has now been settled and both companies are now pursuing their own development paths.
The Ceravision team based at Bletchley Park have re-designed the concept behind plasma lighting with their own innovative and patented approach and will be launching a range of high bay lighting products in the next few months targeted at commercial and industrial lighting applications.
Ceravision will also supply their plasma light sources for incorporation in other manufacturers luminaires in due course.
The Ceravision system provides high efficiency, long life, high quality white light that can be dimmed down to 10% and can be restarted within a few seconds while hot – it sounds just what we have been looking for all these years.
System efficiency of over 100 lumens per Watt is claimed with a usable system life of up to 40,000 hours and low lumen depreciation during life. The system is scalable from 70 watts up to 5 kW, the lamp can be produced in mercury free versions and apparently can be easily recycled at the end of life.
The claimed CRI is in the 90 - 95 range and as it dims the colour remains white. As the lamp dims the CRI is said to remain constant. The colour consistency from lamp to lamp is also claimed to be very good but without seeing a whole row of pendants or floodlights using the source it is not possible to be sure about this yet. From the demonstrations that I have seen so far the light quality is very usable for general commercial, sports and industrial applications and large retail spaces.
The Ceravision power supplies will be

CRYSTAL CLARIFIED

David Morgan takes a look at NN Crystal's latest developments in quantum dot technology - the Qshift Coral and Qshift Lucid - on show at this year's Lightfair



Hidden away in the Renaissance Lighting booth at the recent Lightfair show in Las Vegas was an interesting combination of optical innovation and nanotechnology from two different companies collaborating to improve the efficiency and quality of white light from LED sources. The luminaire innovation came from Renaissance Lighting while the nanotechnology innovations were provided by NN Crystal.
Renaissance Lighting was formed to commercialise optical research work that had been inspired by research into laser-guided weapon countermeasures. The company was launched in 2005 and the key products are downlights incorporating their patented Constructive Occlusion technology. This is an indirect system whereby light from a number of LEDs is combined in a reflector mixing chamber to produce a low glare and consistent colour white or colour changing light source. Renaissance downlights also incorporate other patented design features to maintain light output over the life of the luminaire and to control colour temperature.
NN Crystal is a division of NN Labs founded by professor Xiangang Peng who was professor of chemistry at the university of Arkansas. The synthetic techniques used to make semiconductor nanocrystals that Dr. Peng pioneered are now the standard used by all quantum dot manufacturers worldwide.
One application for Colloidal nanocrystals (also known as quantum dots) that NN Crystal have developed is in LED lighting to convert blue or violet light from high power LEDs into good quality warm white light.
NN Crystal claim that this process will be up to 40 percent more efficient than using the current LED design approaches where blue light is converted into white light using yellow phosphors. Not only will the use of quantum dots be more efficient but it will also produce more stable colours than phosphors and will be less affected by high temperatures. Colour point stability in a fairly high temperature environment over a 50,000 hour life is one of the key issues with LED lighting and the remote phosphor approach incorporated in the Xicato, GE Vio and Philips Fortimo LED arrays is one solution. Quantum dots would appear to be another perhaps more effective solution to this problem of colour shift during life.
At Lightfair NN Crystal were showing two implementations of their technology; Qshift Coral and Qshift Lucid. With the ability to finely tune the light, Qshift Coral uses conventional colloidal nanocrystals (quantum dots) that allow the color of the light to be precisely controlled. Qshift Coral technology makes the lighting warmer and with improved light quality, while reducing its energy consumption for the same Lumen output compared with traditional phosphor-based warm white lighting.
Qshift Coral has already been incorporated into the Renaissance range of Solia downlights that were presented at Lightfair this year. Renaissance claim that the incorporation of this technique has increased Lumen output by over forty five percent with six percent better efficacy while maintaining a CRI of 80. Apparently in a side-by side

Head to head

White LEDs v Metal halide

We pit the latest high-power white LEDs against the new miniature CMH lamp in a virtual face-off. What's the best all round luminaire option?

The new miniature CMH lamps and the latest high power white LEDs are going head-to-head in a bid for a share of the market for exterior and amenity lighting. We pit these two very different light sources against each other from the point of view of luminaire design – assessing their cost, performance and other factors. Who will emerge victorious? By associate editor **David Morgan**.

In the red corner...
the upstart LED x 8 array

- Lamps from Luxeon or Lamina
- LED driver from Philips
- Lenses from Fraen
- Die-cast copper-free aluminium
- IP 65
- 8 x 1.5 or 2.5W LEDs – 14W
- Up to 65 lumens per watt at 350 mA – 750 lm
- 50,000 hour life – 70% lumen maintenance
- Ra 70 for warm white Luxeon

Taking over the world?

Experts now believe that LED dominance is not inevitable. Rather, as in this head-to-head, the technology will have to prove its worth in each application.

All design rights retained by David Morgan Associates. DMA is an international design consultancy based in London that specialises in luminaire design and development.
www.dmadesign.co.uk

In the blue corner...
the featherweight 20W CMH

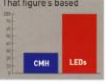
- Single source
- Lamp from GE
- Ballasts from Harvard
- Die-cast copper-free aluminium construction
- IP 65
- Asymmetric reflector
- 82 lumens per watt – 1,650 lumens
- Up to 15,000 hour life – horizontal burning
- Ra 80

Round One
Size matters

Both luminaires are about the same size, so no overall advantage emerges.
Round winner: Tie

Round Two
Initial cost

When it comes to initial cost, CMH is the clear winner. Lamp, gear and enclosure should set you back around £27 to £30.
LEDs are more pricey – around £80 for eight LEDs and their driver. That figure's based on Luxeon 3 LEDs, Lamina and probably the new Luxeon K2 LEDs will cost more.
Round winner: CMH



Round Three
Performance

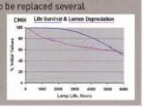
Oh dear, things are looking worse for LEDs. They are less efficient than CMH and their colour rendition is worse.
Not only that, the colour temperature varies between individual LEDs. LEDs, however, boast symmetric light output.
Round winner: CMH

Round Four
Construction

LEDs make a comeback here, with a simpler luminaire construction and a marginally lower enclosure cost. In a CMH luminaire, more complex and expensive construction is needed to separate and protect the ballast from lamp heat.
Round winner: LEDs

Round Five
Stamina

Now CMH is flagging. Over the 50,000-hour life of a typical LED fitting, CMH lamps would have to be replaced several times – with attendant labour and lamp costs.
Round winner: LEDs



lighting
Verdict

There's no knockout blow in this bout. For general architectural exterior accent lighting, the CMH fitting probably wins on points where the cost of lamp replacement would not be significant. It can also boast better energy efficiency and lumen output for the size of luminaire. For any applications where lamp replacement costs are high, the LED option would make a significant cost saving over the 50,000-hour quoted lamp life.

Louis Poulsen, Panasonic, Kreon, Thorn, Designplan, Holophane. All are world class companies. And a key factor they have in common is that they all have best-selling products designed by David Morgan.

Yet in many cases, his name is not linked to them – particularly in the case of UK companies – which is a state of affairs he has started to question: 'I do observe that in Italy and other European countries, companies boost the names of the designers they use to push the product up front, whether it's lighting, fabrics, or furniture. The designer is part of the uniqueness of a product.

'UK companies tend not to do this, it's not part of the way they do their marketing. Here you still have a lot of designers working away quietly in the background. So I suppose I do think it's time that British firms started to promote their designers and celebrate design talent.'

So a change of culture is called for? 'I just notice that in other countries you see that the designer's n marketing p In the are products. M his body of v striking Pant SPR 10 20 Both were l Building. An of what turn manufacture voltage linea complicated with no dark Morgan, 52 industrial de The Radi achievement system for developed c linear lightin

Pop Pack to pop art

David Morgan casts a luminaire designer's eye over the Hayward Gallery's recent retrospective of Dan Flavin's fluorescent-tube-centric art

The fluorescent batten fixture complete with tube – marketed in the UK by Thorn as the Pop Pack – has come a long way since it was introduced in the late 1950s.

They have become the near invisible workhorse of the lighting world – but lighting professionals must look afresh at these products when they are the building block of art installations such as those by Dan Flavin.

Luminaire design has a visual and tactile quality derived from sculpture and architecture. But in Dan Flavin's world of light, a standard off-the-shelf functional strip light did the job just as well or maybe better.

Flavin's art is about light and colour but it exists in the particular form of these batten fixtures and T12 lamps. Apparently he was keen that only standard off-the-shelf luminaires should be used in his light artworks.

Light as art or the luminaire as sculpture; is there a meeting point or do they occupy completely separate dimensions?

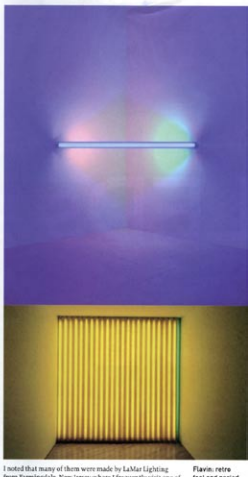
Retro feel

Perhaps only when they come together in a designed space – architectural or interior designed – do both the luminaire design and the lighting design need to relate to the demands of the building and space. Otherwise, the two seem to work well quite independently.

But for me, one of the attractions of Dan Flavin's pieces is the retro feel of the lamp size and the metalwork detailing. There are no accidents in art – every detail becomes part of the overall impression. Perhaps that is why they work so much better as art when seen as photographs where all extraneous details is removed.

Was I the only visitor to show to spend time investigating the quality of the American made luminaires?

David Morgan runs David Morgan Associates, a London-based international design consultancy specialising in luminaire design. E-mail him at david@dmadesign.co.uk, phone 020 8340 4009 or visit DMAdesign.co.uk



I noted that many of them were made by LuMar Lighting from Farmingdale, New Jersey where I frequently visit one of my US clients, and I wondered if they are still making these fixtures or sourcing them from China.

Ironically, to keep these light installations going, the coloured T12 lamps now need to be specially produced. So, despite Flavin's off-the-shelf ethos, the works are gradually becoming hand-crafted, sculptural pieces.

Is this a case of art imitating life – or perhaps ordinary life transforming into art as has been the case over the centuries with so many once ordinary artefacts?

Flavin: retro feel and period details add to the attraction

AJ Specification
July 2005

DESIGNER PROFILE / DAVID MORGAN

SOLVING THE TECHNICAL PROBLEMS IS VERY SATISFYING, AS IS SEEING ONE'S PRODUCTS IN USE AROUND THE WORLD

EDUCATION: London University, Royal College of Art

EMPLOYMENT HISTORY:
Designer, Thorn Lighting 1976-79

Designer, FM Design London 1979-81

Founded David Morgan Associates 1981

KEY DESIGNS:
- Thorn Sunfood for Thorn Lighting, 1979
- Holophane Wallpackette for Holophane Lighting, 1985
- Holophane Terralux for Holophane Lighting, 1987
- Burlington desk light for Panasonic, 1987
- Euclid system for Axis lighting, 1991
- Morph exterior spotlight for Louis Poulsen, 1995
- Calisto range for Designplan lighting, 1995
- Vertigo range for Designplan lighting, 1996
- PAR spotlight range for Panasonic, 1997
- Radiant xenon system for Belfer Lighting

Facing page, from left: David Morgan; the Calisto fitting for Designplan; Holophane's Teralux bollard. This page, clockwise from left: the SP14 for Louis Poulsen; from the Kreon Index series; the Biobrite Sunrise

AJ SPECIFICATION 06.05

商環況 INTERVIEW 61

ライティング・コンサルタント

デイヴィッド・モーガン

ロンドンを拠点に、総勢5名の小規模精鋭のスタッフを率い、各国の代表的な照明会社と協同。照明デザイナー、開発者、コンサルタントとして活動するデイヴィッド・モーガン氏。ヨーロッパ、アメリカ、カナダ、ロシア、日本など世界中にクライアントを持ち、数多くの製品を開発している。照明のプロダクト製作では、フォルムを決める重要な要素となる"熱と電気"を学んだ研究者の目と、RCAで学んだデザイナーの目とで、光とその効用を常に考える。建築的な特徴を際立たせる、LEDの可動式照明の新製品を前に、製品開発の話、実験心理学の成果を盛り込んだ照明計画やオフィスへの応用例を語ってくれた。

リサーチを重視

現在手掛けているプロジェクトや、照明コンサルティングの仕事の流れを教えてください。

私の会社では、細かなプロセスを積み重ねていくことがまなのですが、特にリサーチを重視しています。例えば、あるバーラウンジの計画では、まずミーティングとインタビューからスタートします。照明デザイナー、インテリアデザイナー、バーにかかわるすべての人たちの話を聞きます。どんな店舗を構想し、そこでどんな照明を望むかの関連項目を調査をします。デザインに入る前に、できるだけたくさんの情報を得る必要があり、クライアントの目的、特定の要素などを判断していく、リサーチが終わると、デザインコンセプトの段階です。

ここからは非常にクリエーティブな作業です。集めた情報をもとに提案をまとめ、コンセプトデザイン、パーティ、そして他との差別化を打ち出すような解を出さなくてはなりません。デザインパターンも決めます。なかなか困難ですが、創るやりがいがあるプロセスです。それを発展させ、プロトタイプ製作に進みます。ここからは、テクニカルな段階となり、製品の機能、テストや結果、コスト、予算など、すべてを考慮していきます。ここで不可となれば、前の段階に立ち戻ってやり直さなくてはなりません。これを繰返すると、ディテール検討の段階に移ります。各分野の製作の専門家たちに働いてもらい、サンプルをつくり、製品の安全性などテスト、アメリカとヨーロッパでは安全基準も異なりますので、そうした面にも配慮したものを最終的なパッケージとしてクライアントに提出します。

私の会社では、こうしたプロセスの全体を

Glowing round the bend

The linear LED system that twists and turns in two planes.

Text: Jill Entwistle

LEDs have always snapped at the heels of cold cathode as an alternative source for linear applications. Luminaire designers David Morgan Associates has now created two new highly flexible modular, linear LED systems for both exterior and interior applications. Developed for the Radiant division of US company Belfer Lighting, they can both be hand-bent on site to create very precise solutions.

Exterior system
Designed to be used in a wide variety of exterior architectural lighting applications, including building facade lighting and wall-grazing, the Radiant Serpentine LED Lighting System is the first system of its type to be hand-bendable on-site and to offer adjustment in both the axial and vertical planes.

The individual LED lighting modules can rotate through 30 degrees around the axis of the system and 30 degrees between the joints, allowing the system to be used to follow building profiles and architectural details. The system can actually be bent to 90 degrees in the horizontal plane although this will limit the tilt angle. The flexibility also allows for the light output to be aimed more precisely to give optimum grazing or feature lighting. Continuous runs up to 18 metres can be achieved.

A variety of high efficiency TIR lenses can also be fitted to the system enabling complete control of the light distribution. The aluminium die-cast modules house a constant current driver circuit running four high power white or RGB LEDs with a total power rating of up to 20 watts per module, depending on the type of LED.

Interior system
The Radiant Power Cove Interior LED Lighting System is designed for use in a variety of interior architectural and retail applications, including indirect, cove and cabinet lighting. The concept, says creator David Morgan, is 'to combine the long-life advantages of LEDs with the ability to fit any space, providing the effect

MARKET

David Morgan Associates

The exterior system can be rotated in both the axial and vertical planes.

of a bespoke installation while offering the convenience and value for money of an off-the-shelf system.'

Each section of the linear system can be joined together with an inline connector that is itself illuminated with matching LEDs. This enables the system to provide continuous lighting, without unlit gaps, up to a maximum length of 30 metres for the two-LED module and 12 metres for the four-LED module (or potentially longer, depending on the power of the LEDs and drive current specified).

The track can be cut to length on site and the modules simply fixed to it so that any length of cove can be fully lit. Although the system is not twistable like its exterior counterpart, the power rail can also be hand-bent on site, without any tools, to a 300 millimetre radius.

The modules are attached to a four-conductor, extruded aluminium power rail. This provides both power and data channels, for dimming and colour-change control, in addition to providing additional heat sinking for the LED system.

Light source: two LED or four-LED modules; the interior version has a maximum power of 8 watts per module (each module is 100 mm long); the exterior system has a maximum power per module of 20 watts, but each module is 200 mm long; both systems incorporate a constant current driver
Options: (both versions) a variety of high-efficiency TIR lenses can be fitted to the system to control light distribution
Adjustability: (exterior version) 30 degrees around the axis of the system and 30 degrees between the joints
Protective rating: (exterior version) IP 67

David Morgan Associates is a London-based international design consultancy specialising in luminaire design and development. The firm has designed more than 1000 luminaires during its 26 years in business, with clients including Designplan and Louis Poulsen. DMA has worked with the US-based Belfer Group for 10 years. It is acting as the Radiant UK office until Belfer Lighting (which operates from Farmingdale, New Jersey) sets up its own UK company in the near future.

www.dmadesign.co.uk

An inline connector which also has LEDs avoids the problem of dark gaps.

Louis Poulsen
Denmark

SP12 Projector Floodlight

Exterior Architectural lighting

Launched in 2003 the new SP range of surface projectors is designed to meet the requirements of architects and lighting designers for high performance exterior lighting.

DMA was responsible for the complete product development process including initial research with specifiers, production of design proposals, working and non working models, thermal testing, detail component design, prototyping and sourcing castings with suppliers.

The SP14 has a variable focus system to adjust the beam angle.

Louis Poulsen
Denmark

SP14 Projector Floodlight

Exterior Architectural lighting

The SP 14 projector is the larger of the SP range of floodlights and is designed to operate 70 and 150 Watt CDM metal halide lamps with integral electronic ballasts.

A range of high efficiency reflectors are offered as well as an innovative variable focus system which allows on site adjustment to fine tune any lighting instalation.

An accessory holder allows honeycombe louvres and colour filters to be combined and fitted within the product.

The neutral but distinctive appearance allows the range to be used in a wide variety of architectural lighting applications.

Panasonic
Osaka
Japan

PAR and Krypton spotlight ranges

David Morgan Associates was first introduced to Matsushita Electric Works over ten years ago after winning a design competition sponsored by MEW.

DMA was asked to produce proposals for various projects during the early 1990's and were successful in winning the opportunity to design the new PAR and Krypton spotlight ranges.

These new ranges for the largest lighting company in Japan were introduced in 1998.

DMA was responsible for producing design proposals, thermal testing, detail design, prototyping and costing castings with suppliers.

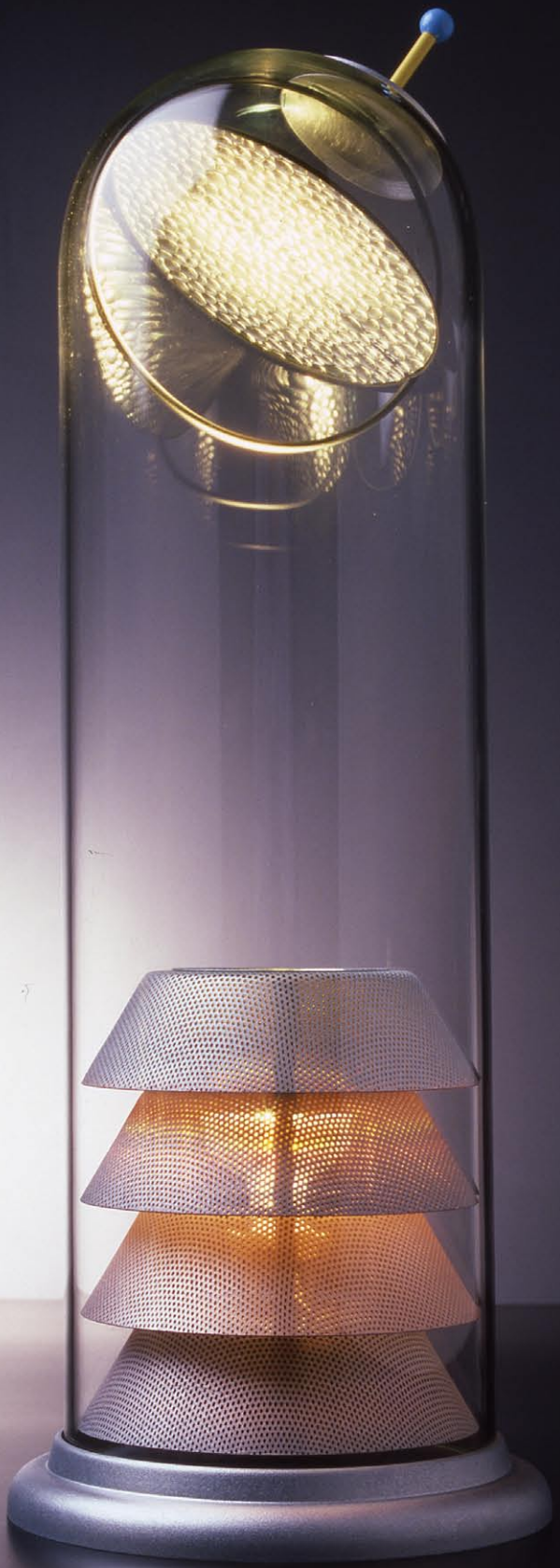
Burlington Desk Light

The Burlington desk light was winner of a design competition sponsored by Matshushita Electric Works and Seibu Department Store group which was organised by the UK based Design Council to promote contemporary British Design in Japan.

The Burlington desk light provides glare free task lighting with a distinctive glass bell jar enclosing a halogen light source and low glare mirror optical system.

The prize included a visit to Japan where David Morgan was introduced to the MEW design director and luminaire design team.

Following this introduction DMA were commissioned to design and develop several commercial spotlight ranges for Nashop, the MEW display lighting brand.



Kreon
Antwerp
Belgium

Index Series
Architectural wall lights

David Morgan Associates worked closely with Kreon's founder Jan Van Lierde to develop this range of minimal wall lights based on simple geometric forms.

Index is designed to articulate architectural spaces and to be used as an architectural element within the spaces.

DMA was responsible for developing the design proposals, photometric and thermal testing, detail design, prototyping and sourcing with suppliers.

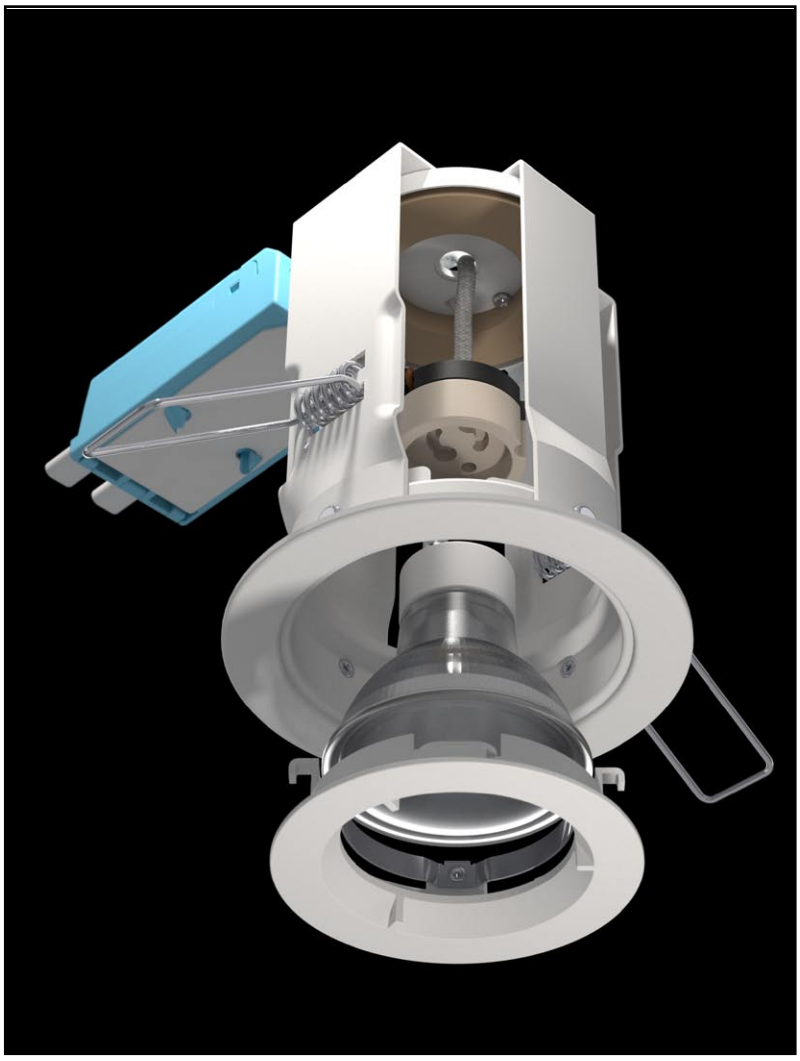
Ansell Lighting
Warrington
UK

I Cage Fire rated downlight range

DMA worked closely with Ansell and the intumescent material suppliers to create the new I Cage range of fire rated downlights. The range incorporates a patented, innovative luminaire configuration that allows the lamp compartment to be open, thus reducing lamp pinch temperatures and minimising short lamp life problems, while still meeting all the tests for fire rated downlights.

A wide variety of lamp types are accomodated in the range including halogen, CFL and LED sources.

DMA undertook the full design and development process for this range from concept through to production.



Whitecroft Lighting
Manchester
UK

Echo pendant range

DMA worked closely with Whitecroft Lighting to create the new Echo range of pendants. The range is designed for use in a variety of retail, commercial and architectural applications. Ease of installation and servicing were key design requirements for the new range. A variety of light sources including CFL, HID and LED are accomodated in the two sizes of housing.

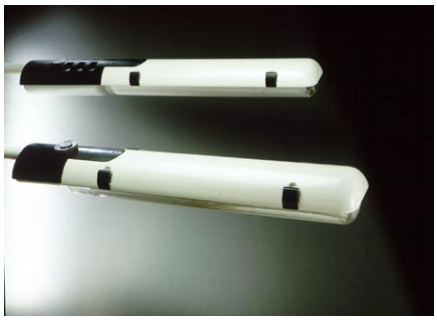
DMA undertook the full design and development process for this range from concept through to production.

Thorn Lighting
London
UK

Commercial luminaires and systems

David Morgan worked for Thorn Lighting as part of their design team and was personally responsible for the design of a variety of lighting products which were marketed for many years including the Thorn Sunflood.

DMA has also undertaken a number of projects for Thorn as consultants, working closely with the their marketing and technical teams to rapidly develop new lighting products.



Designplan
London UK
New Jersey USA

Exterior & Interior Architectural Lighting

Shown here are some products selected from a variety of exterior and interior architectural lighting products designed since 1994.

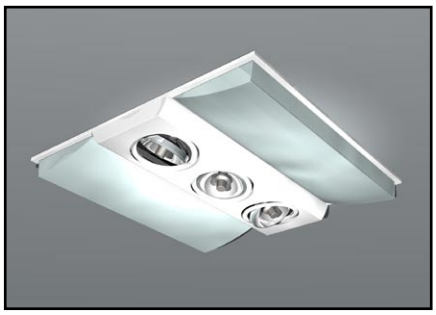
Based on a simple minimal geometric style combined with advanced light sources and good lighting control the luminaires meet the requirements of architects and lighting designers.

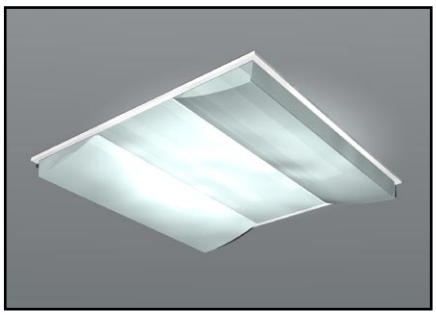
To ensure many years of problem free use the lumimaires incorporate complex cast components to ensure excellent heat management, water proofing and vandal resistance.

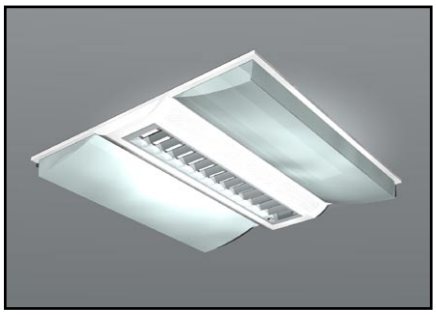
DMA was responsible for the complete product conception, design and development process through to production.

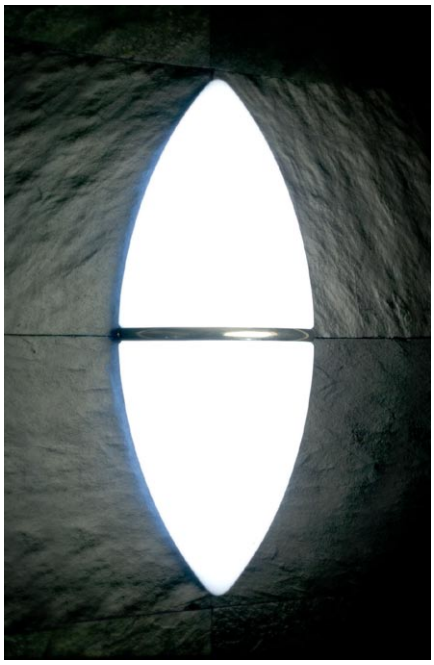
Designplan

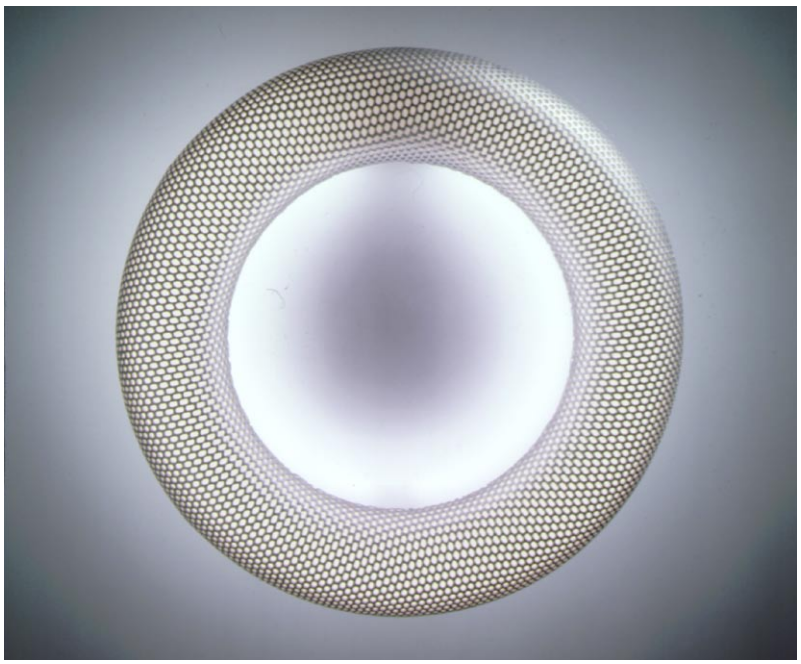
London UK
New Jersey USA











WAC Lighting
New York
USA

Precision Multiples system

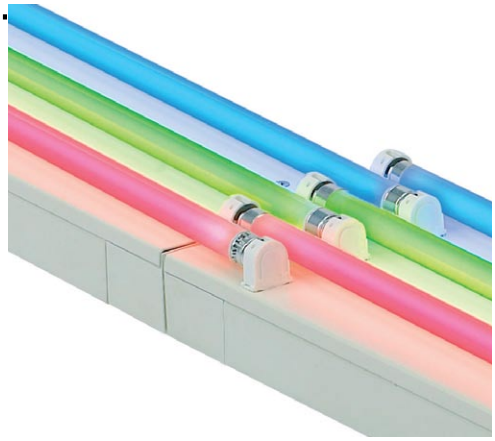
David Morgan Associates developed this new modular multiples stystem for the new W2 division of WAC lighting.

The system is based on the use of lighting modules, including control gear that can be mounted into housings in many combinations.

The lamp housings are mounted on extending arms so that all lighting angles can be achieved with every module.

Designed for use in a wide variety of retail and hospitality display lighting applications.

DMA designed and developed the complete system up to the point of production.



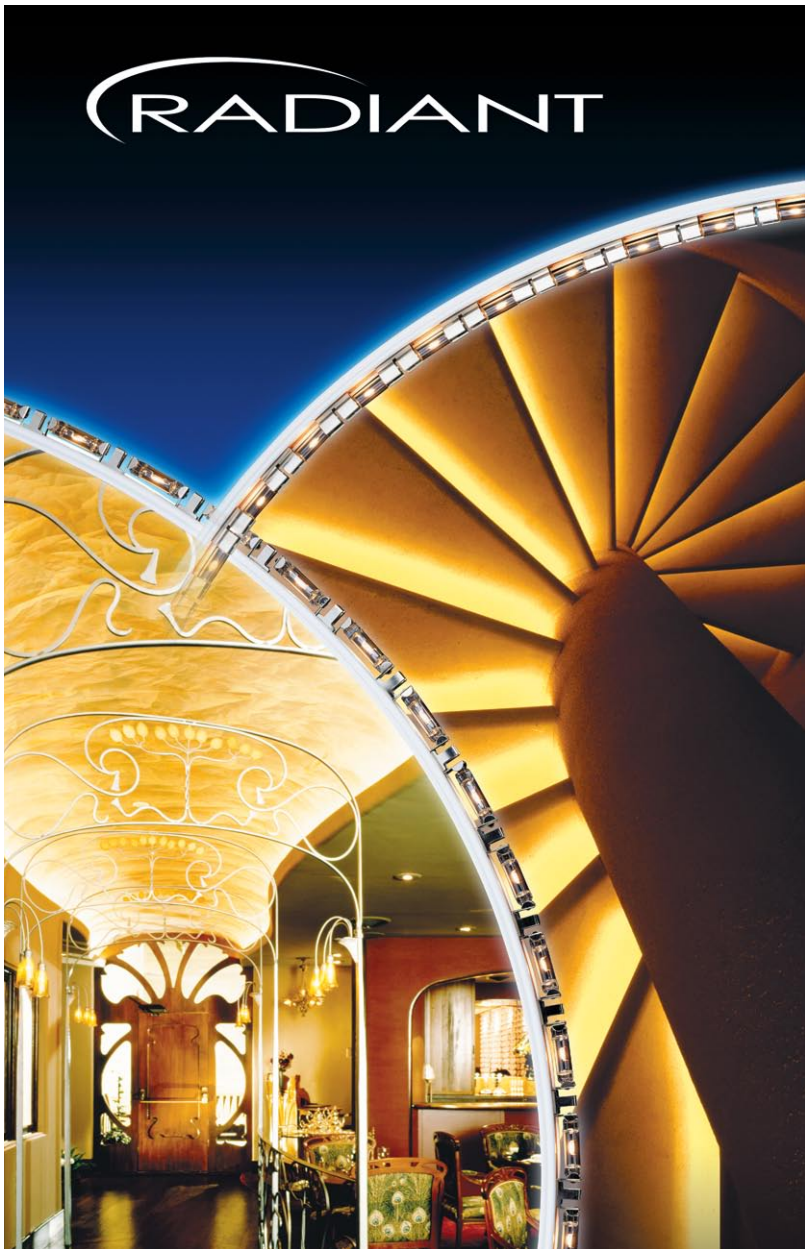
Belfer
Farmingdale NJ
USA

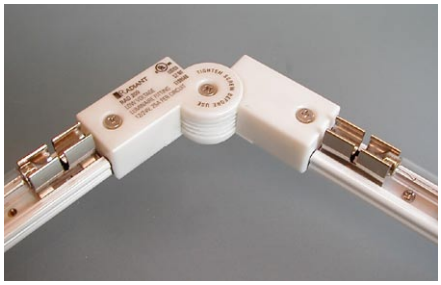
Radiant Low Voltage linear system

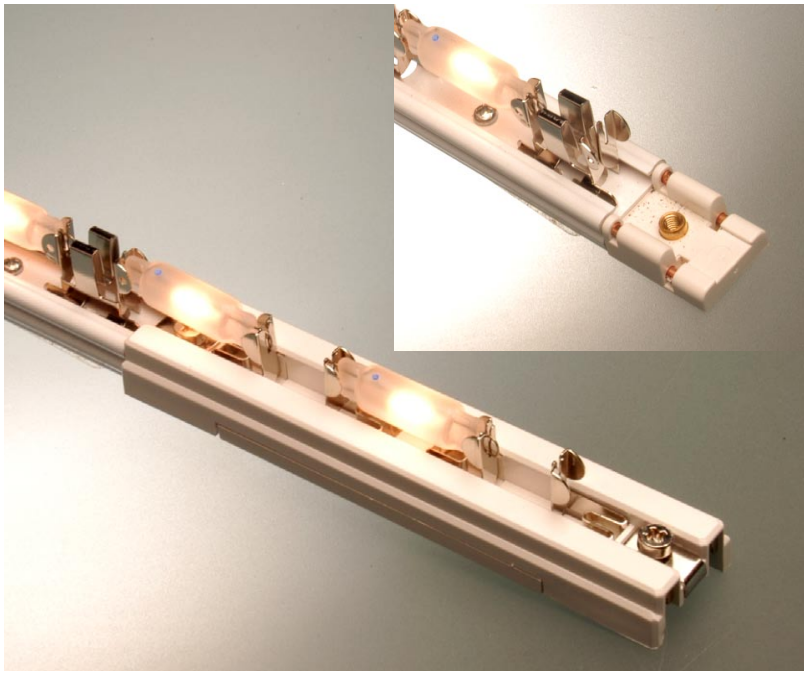
David Morgan Associates worked closely with Belfer to design and develop this innovative low voltage linear system.

The Radiant system is the first two circuit linear system for cove and showcase lighting. Specially developed connectors allow twice the length of linear lighting to be achieved from a single feed point than any existing system without any dark spots in the light distribution.

DMA was responsible for creating the design, thermal testing and development, detail component and system design, prototyping, testing and sourcing suppliers in the USA, Europe and in Asia.







Belfer
Farmingdale NJ
USA

Radiant LED micro track

David Morgan Associates worked closely with Radiant to design and develop this micro LED track system.

The Radiant LED micro track is one of the smallest track systems available in the market and the LED spotlights have been designed to be as miniature as possible while still dissipating maximum heat from the LED to ensure long life and maximum efficiency.

A constant current driver is incorporated into the spotlight head to ensure that the LEDs run at their specified power rating and achieve their long life expectancy.

Efficient lenses are incorporated into the design and can be changed easily on site to change the light distribution. Lenses are available in a variety of beam angles, distributions and frosted finishes.

Belfer
Farmingdale NJ
USA

Radiant LED linear system

David Morgan Associates worked closely with Radiant to design and develop this innovative LED linear lighting system.

The LED linear system is hand bendable, on site, to fit architectural profiles and being based on standard modules can fit any given space.

The LED modules incorporate 2 or 4 white, monocrome or RGB LEDs and can provide up to 8W of LED power with current LED technology.

RGB control is via DMX or DaLI with the apparopriate inteface.

DMA was responsible for creating the design, thermal testing and development, detail component and system design, prototyping, testing and project management with many suppliers in the USA, Europe and in Asia.

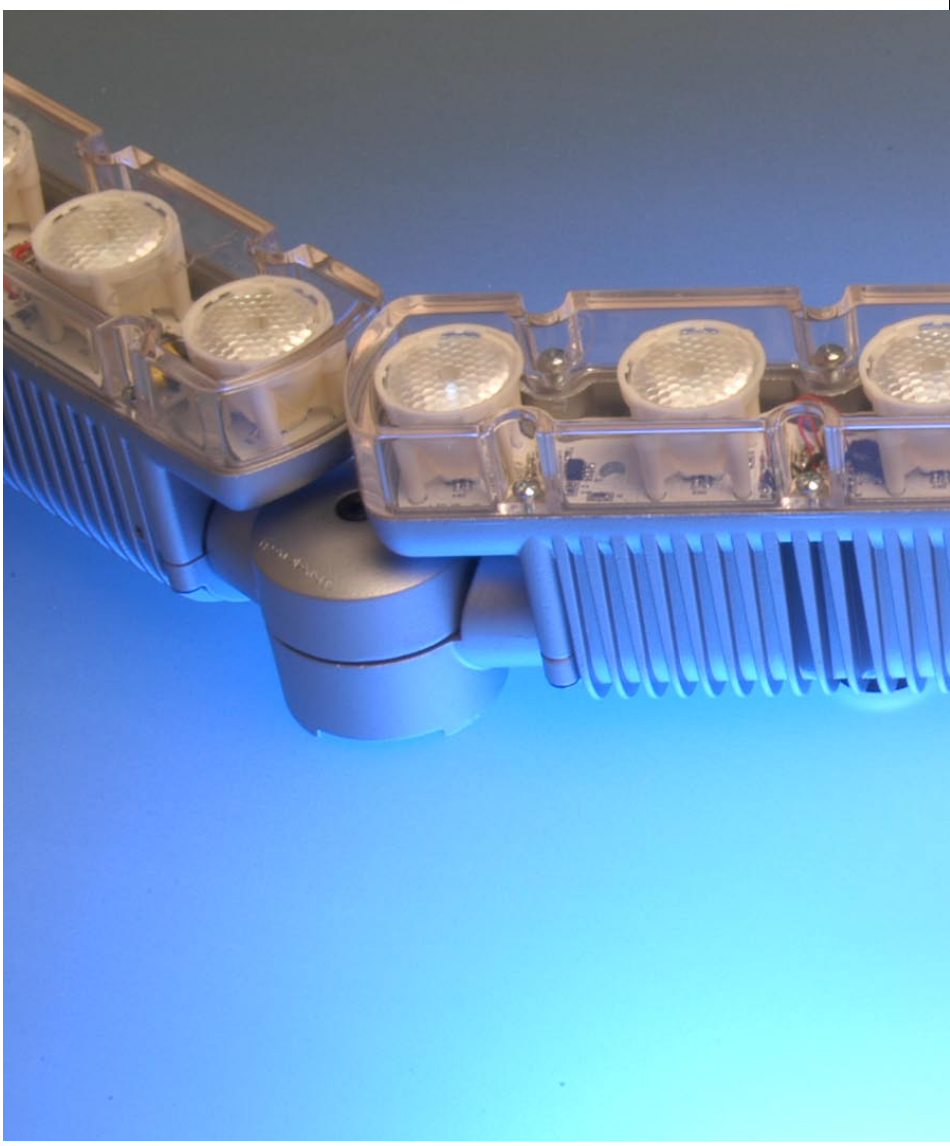
Belfer
Farmingdale NJ
USA

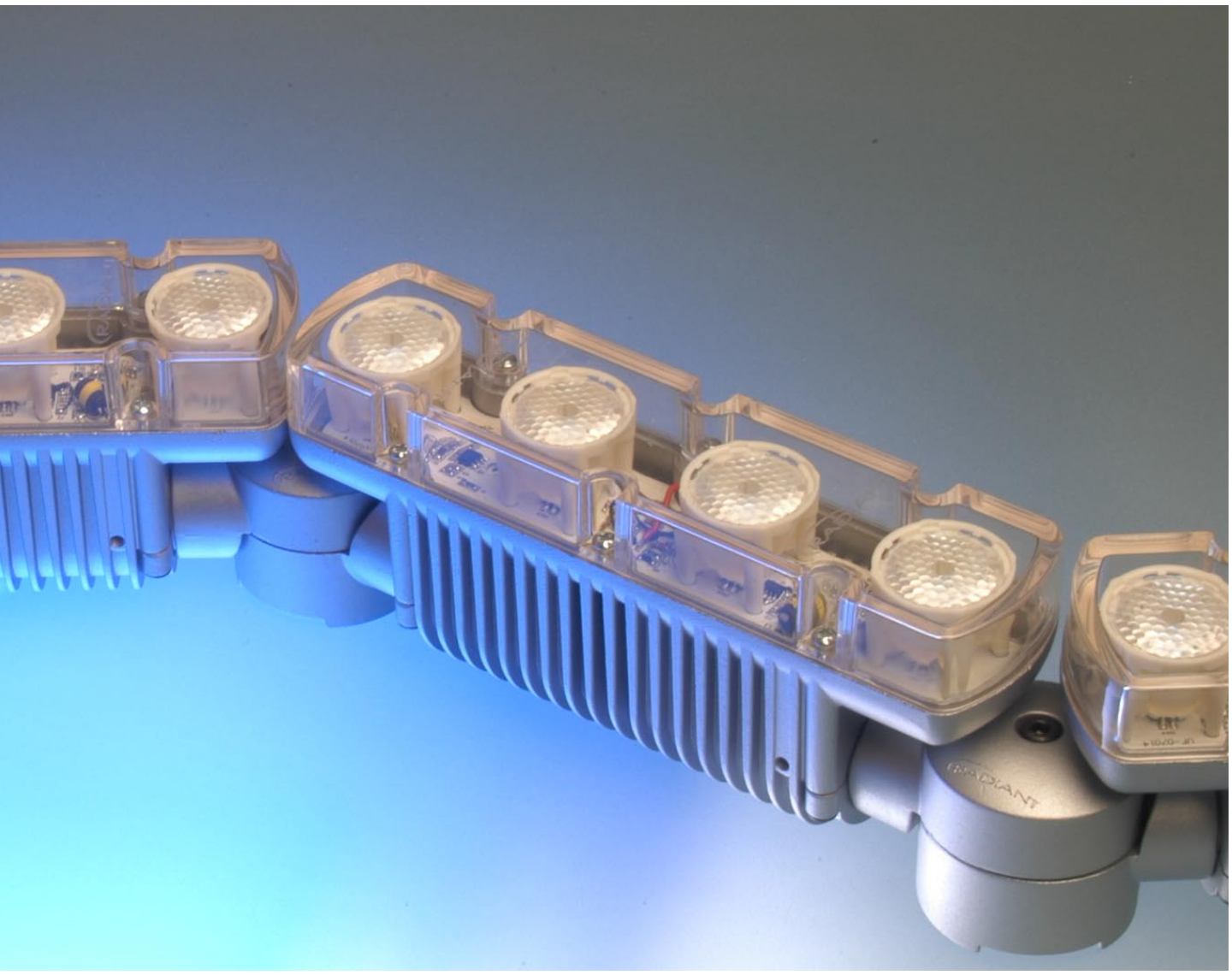
Radiant Serpentine LED linear system

The Radiant exterior LED is the first system of its type to be hand bendable, on-site, and to offer adjustment in both the axial and vertical planes.

Designed to be used in a wide variety of exterior building façade lighting, wall-grazing, landscape and other exterior architectural lighting applications.

The individual LED lighting modules can rotate through 30 degrees around the axis of the system and 30 degrees between the joints allowing the system to be curved to follow building profiles and architectural details and for the light output to be aimed to give optimum grazing or feature lighting.




RADIANT

Belfer
Farmingdale NJ
USA

Radiant Serpentine 8 LED linear system

The Radiant exterior LED is available in white and RGB colour changing versions.

The RGB version is controled by DMX and each module can be individually addressed.

Each LED has a field changable lens.
A variety of beam width and beam shapes including asymmetric distributions can be used in the Serpentine system.

Belfer
Farmingdale NJ
USA

Radiant Serpentine 12
LED linear system

The Radiant Serpentine 12 system is the larger version of the Serpentine 8 IP 65 exterior LED linear lighting system.

Incorporated into each module is a line voltage power supply as well as the integrated driver pcb with white or RGB colour changing LEDs.

This enables longer runs of linear lighting to be powered from a single feed point.

MBLD
Lighting Design
London UK

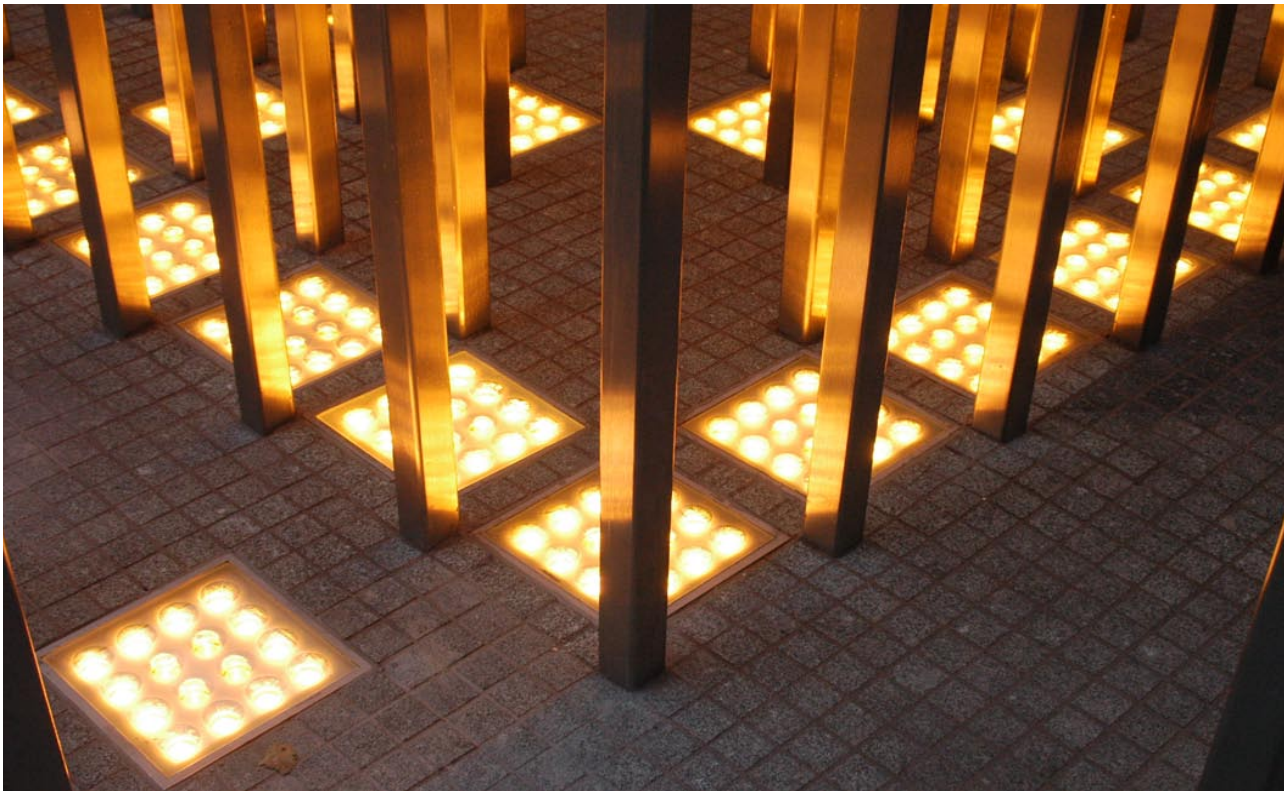
British Land
Osnabrook street pavillion project

DMA worked closely with leading lighting designers MBLD to create a custom buried LED uplight system for this public art project.

The luminaire design needed to fit into a complex stainless steel structure of tubing that created a sculptural pavilion.

The lighting effect was integral to the overall architectural design concept.

DMA was responsible for the complete product conception, design and development process through to production



Beta Calco
Toronto Canada

Xacara LED pendant

David Morgan Associates worked closely with Beta Calco to design and develop the new Xacara high power LED pendant series.

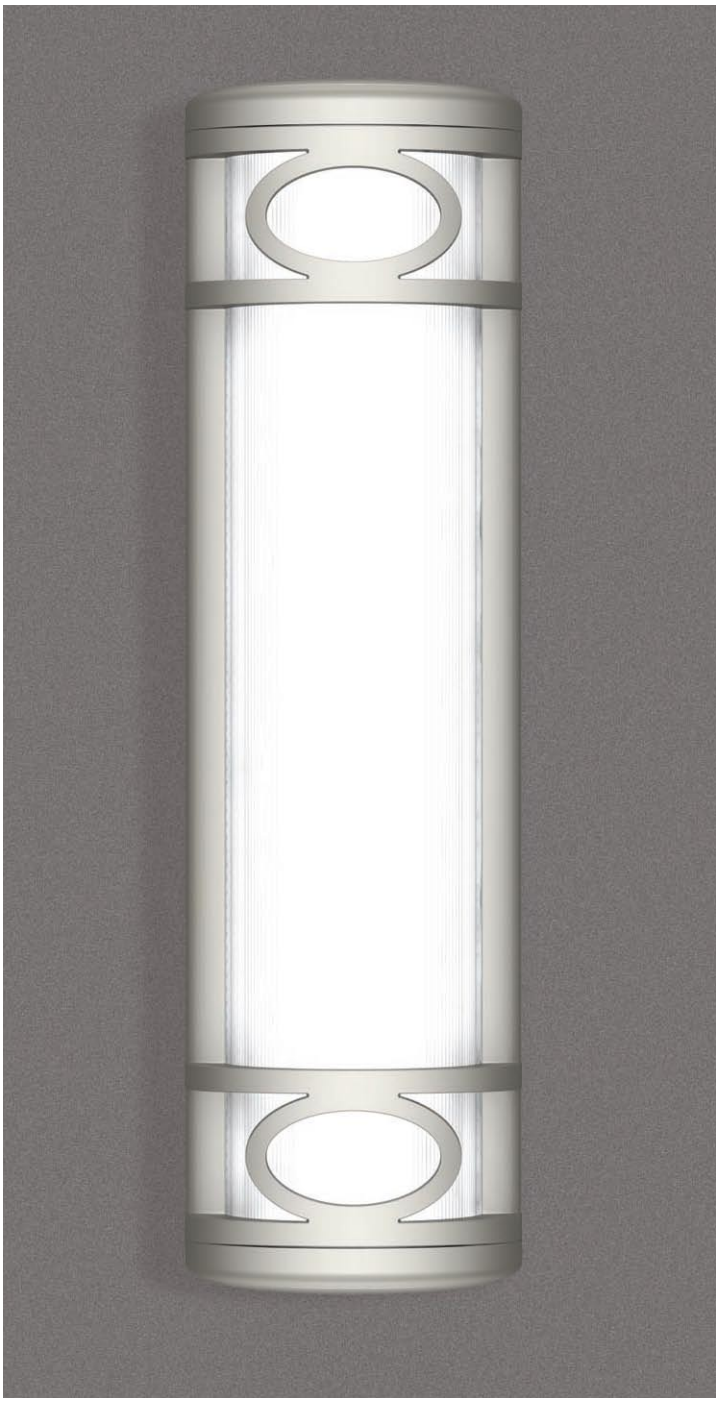
The Xacara produces a lumen output normally associated with CDM pendants and is designed for use in a wide variety of architectural lighting applications.

The massive, precision die cast aluminium heat sink ensures that the LED arrays work within their thermal limits to ensure 50,000 hours of life before the lumen output falls below 70% of initial lumens.

With the long working life of LED arrays the reduced maintainance costs during the life of the luminaire will make a signficant reduction to the cost of ownership.

DMA was responsible for creating the design, thermal testing and development, detail component and system design, prototyping, testing and sourcing suppliers in the USA, Europe and in Asia.

Beta Calco
Toronto Canada



Sentinel exterior wall light

David Morgan Associates worked closely with Beta Calco to design and develop this innovative extruded wall light series.

In addition to the main linear fluorescent ambient light source the range incorporates separate up and down, wall grazing LED accent lights with very narrow and asymmetric optical control.

The front diffuser assembly hinges and is latched along it's length by an integrated catch system. This reduces relamping time while offering a clean front appearance.

Fully gasketed the Sentinel meets an IP 65 water ingress specification.

DMA was responsible for creating the design, thermal testing and development, detail component and system design, prototyping, testing and sourcing suppliers in the USA, Europe and in Asia.

End cap without LED module.

End cap with LED module.

Holophane
Milton Keynes UK
Columbus Ohio USA

Teralux Bollard

Exterior Architectural lighting

DMA was responsible for creating a number of exterior lighting fixtures for Holophane Europe as part of a program to raise their design profile in the European architectural lighting market.

The products were designed to share a corporate product design identity which could be developed and incorporated in future products.

The Teralux bollard uses a complex prismatic controller to create a uniform square lighting distribution from a point light source.

DMA worked closely with the Holophane product engineering team to progress the design from research with specifiers, liaison with the Holophane optical design team, creation of initial design proposals through to working prototypes.

Lighting Technology
Moscow
Russia

Architectural / Commercial floodlight range

Lighting Technology is a new fast growing company based in Moscow.

Established in the mid 1990's the company now has a major share of the Russian lighting market.

DMA has designed and developed a range of IP 65 rated exterior floodlights. A range of 5 sizes designed to opperate both SON and Metal Halide lamps.

The range was launched at the Frankfurt lighting show in April 2008.

DMA was responsible for the complete design and development process including sourcing suppliers in Asia and Europe.


DAVID MORGAN ASSOCIATES