

Bird & Bird  
Technology & Construction  
*Delivering Smart Buildings*



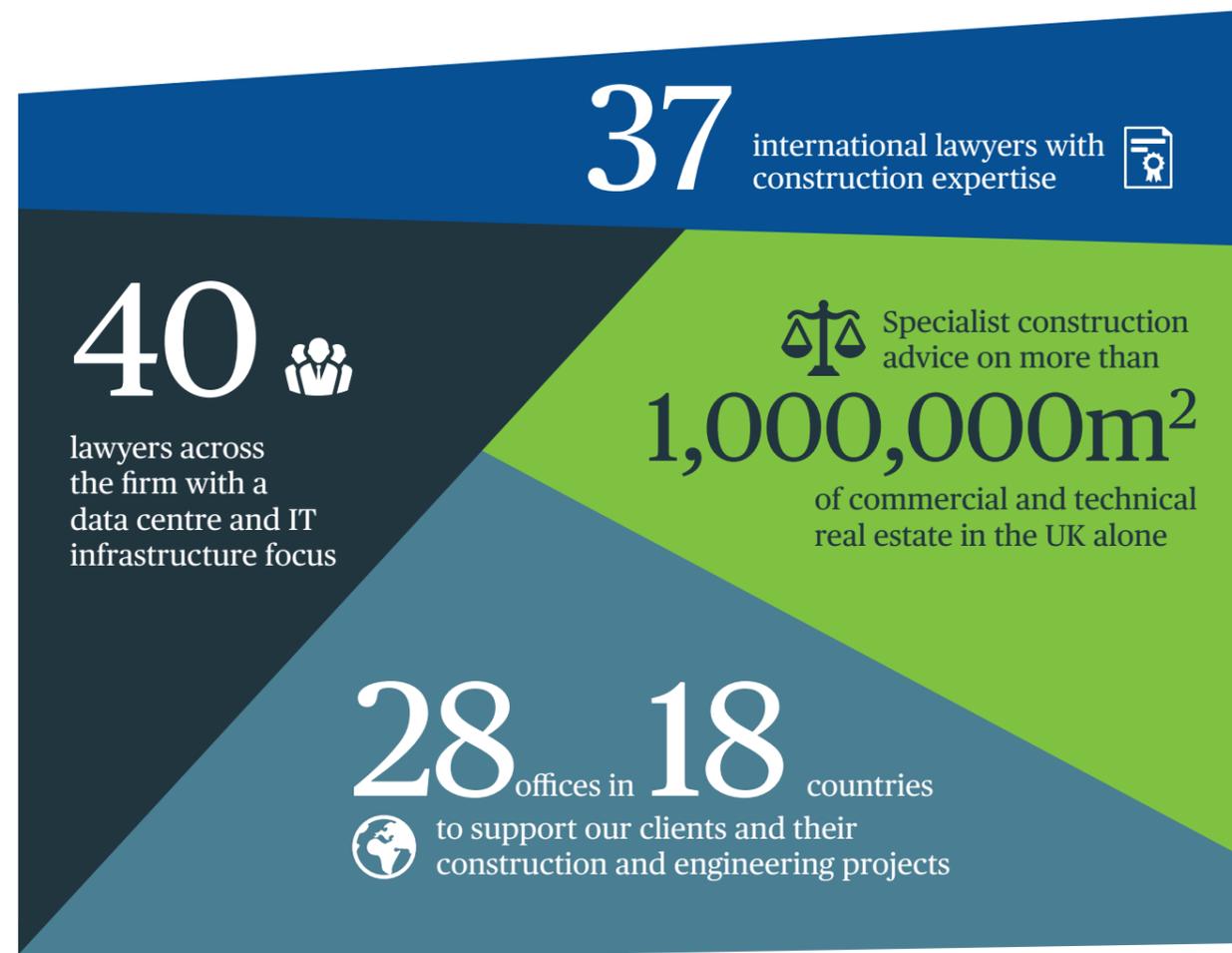


# Table of contents

Construction at Bird & Bird	01
Technological revolution	03
Smart Buildings in detail	05
Technical real estate specialists	
Data centres and smart logistics infrastructure	07
Energy & Utilities	08
Hospitals and care homes	08
Refurbishments and fit-out	09
Hotels	09
Smart cities and urban regeneration	10
Our firm	11

# Construction at Bird & Bird

At a glance...



Bird & Bird's construction lawyers are ideally positioned to address the challenges brought by the technological revolution in the built environment.

- For over ten years our construction lawyers have specialised in projects which are heavily characterised by the technology that sits at the heart of the physical asset such as data centre and energy projects. Our experience means that we understand the risk management issues and the potential for issues to arise as disruptive technologies are being adopted across the entire built environment.
- What sets us apart is our knowledge and experience of work on projects which are technologically complex or have innovative components.

*"Bird & Bird stands out 'where there is construction work with technology or IT issues involved... and has been active on behalf of a number of data centre, healthcare and renewable energy clients'."*

- Legal 500 UK 2015

## Day-to-day operational side of the business

- Our construction team drafts and negotiates construction contracts (including building contracts, professional team appointments, warranties, bonds and guarantees) for project sponsors, employers, contractors, suppliers, developers and funders.
- We are familiar with all forms of construction contracts including FIDIC, NEC3 and JCT.

Our advice to construction clients and those engaged in complex projects is provided against a background of a full-service, international law firm, meaning that our clients not only benefit from our specialism in the construction industry, but they can also rely on us for expertise in banking and finance, corporate, commercial, dispute resolution, EU and competition law, international HR services, intellectual property, restructuring and insolvency, privacy and data protection, tax, regulatory and administrative law and trade and customs.



**Marco Nicolai**  
UK Head of Construction  
Tel: +44 (0)20 7415 6153  
marco.nicolai@twobirds.com



RISING STARS 2013



# Technological revolution

*The technological revolution has already changed and is continuing to change the world of construction. All construction projects, from refurbishments and retrofits to the most advanced and innovative new build can now be considered a technical real estate, smart building project.*

## Three industries converge in the smart building market:

- Energy & Utilities
- Building Technologies
- ICT

The construction industry itself is facing unprecedented changes, including those that are enabled by modern manufacturing, digital technology, smart logistics and Unmanned Aerial Systems (UAS).

As a top ranked law firm for IP, IT, technology and regulated industry work, and with over 100 lawyers across our network advising on energy and utilities, we are able to take advantage of our ability to understand the technology aspect of the equation, as well as the real estate and construction side to help those sectors engage with one another.

Our extensive track record on delivering buildings which house complex and innovative technologies such as data centres, energy centres and IT infrastructure projects for a broad range of clients, puts us at the forefront of technical real estate projects.

## What differentiates us is central to the successful implementation of a smart building project. We provide:

- Detailed understanding of the underlying technology, regulation and commercial issues - in short what makes the smart building “smart”;
- Significant experience in working on buildings and development projects with complex technology and systems (e.g. data centres, hospitals, energy centres, major regeneration programmes and retrofits); and
- Strong track record in applying innovations between sectors and practices (e.g. smart grids).

This means that we offer pricing, contractual and project management structures and tools which have already helped to successfully deliver over £1 billion worth of complex technical real estate projects.

## Proven solutions for all innovations.



Who's Who Legal Award Winner 2016  
- Firm of the Year for Technology, Media and Telecommunications



FT Europe Innovative Lawyers Awards 2015: Top 10 Game-Changing Firm of the Past 10 years

# Smart buildings in detail

## Equipment-led projects

Purchase of equipment and components often represent the highest proportion of overall costs of a smart building project and protecting against risks associated with contractor insolvency is essential. These are typically installed at the end of the programme but the client must retain control of the suppliers, specifications and cost of such components.

Individual items of plant should be factory-acceptance tested to ensure there are no surprises when plant is incorporated into the overall system.

For completion, the works will need to be physically “practically complete” but also commissioning tests (commonly an Integrated Systems Test) will need to be passed. As far as possible, a detailed commissioning testing regime should be set out in the construction contract so that all parties know from the outset what goal they are seeking to achieve.

## Data protection

The increasing regulation of privacy and data protection present significant challenges for stakeholders in relation to smart buildings.

Collection of personal data by a smart building must be transparent. Individuals must be told about the activities of the smart building and in some cases their consent will be required. Individuals also have rights to access, correct, and in certain circumstances, object to their data being collected.

We can help you identify the roles of stakeholders i.e. data controllers, data processors, and the privacy issues posed by smart buildings so they can be addressed early through privacy by design. We can also assist with running privacy impact assessments before implementing machine to machine (M2M) network systems, and work to overcome the challenge of building in valid notice and consent to the data collection.

## Connected real estate and cybersecurity

As connected real estate, smart buildings increasingly have to be protected against cybersecurity risks.

There's nothing new about organisations taking steps to protect their information systems against hackers. However, recent years have seen exponential growth in the number and variety of cyber threats. Cybersecurity has become an issue for every boardroom that requires a highly integrated, international and proactive approach, particularly where clients are planning to upgrade their built environment with the latest technologies and connected systems.

Since 2010 our international cybersecurity group has supported our clients from prevention to the aftermath of cyber-attack. We have in-depth experience of major technology projects in the security field and have advised in relation to a number of highly sensitive security-focused programmes.

## When technology goes wrong

Smart buildings by definition incorporate the latest technical solutions which can give rise to complexities when it comes to assessing whether accepted industry standards exist or have been met. We do not believe that it is enough for a lawyer to simply understand his or her practice specialism: for example, the construction lawyer needs to understand the impact of a defective air handling unit so that the contractor's obligations to remedy the defect reflect the gravity of the situation.

Similarly, where a defect cannot be remedied or losses have already been incurred, a dispute resolution lawyer must understand how technical solutions have evolved over time in order to assess the applicable industry practices and whether they have been breached. They must also understand how integrated systems are connected as a defect in one part may require repair, variation or redesign to other areas.

## Technology and building integration

When software and technology integrate with building fabric and become the heart of the real estate what appear to be irreconcilable differences have to be resolved. These include:

- responsibility for design, installation and performance of the overall end product;
- short term software products life cycle against long term duration of buildings and structures; and
- control and co-ordination of technology upgrades against disruption to physical occupation

Lawyers, together with clients, designers, contractors and suppliers of technology, have to adopt the legal and technical solutions to ensure that:

- the initial investment is protected from new innovations and technological developments;
- success of the project is measurable by the inbuilt flexibility of the buildings and the systems; and
- adequate arrangements are made for the control of software and technology upgrades

## Building performance and partnerships

As buildings become more complex with multiple connected component parts, achieving clear lines of responsibility for the performance of the building is the ultimate objective for clients.

This is the most often missed objective in complex and technical real estate projects and an area where the construction industry is required to catch up with modern demands.

However, solutions are already available to satisfy this target, including through use of BIM strategies, partnership structures, partnering contract inspired arrangements and innovative payment structures.

## Funding

As a technical real estate, smart buildings are unlike many other traditional real estate assets because the initial establishment costs are comparatively higher. The income derived from operation services, either through the savings measures or higher rental income, make up a high proportion of overall income. Cash flow is important, as is having the financial flexibility to develop on a phased basis.

The banking and finance team regularly advise banks, funds and developers on innovative, on and off balance sheet financing structures, for the purposes of funding smart building construction and the retrofitting of technical solutions to existing buildings. Our lawyers have extensive experience of drafting covenant packages designed to ensure that all relevant regulatory requirements are complied with and that all measures required for the servicing of the project debt are complied with. We also advise on cutting-edge financing based on ‘saving regimes’ - such as the funding of the refit of over 66,000 LED lights at a number of NCP car parks.

## Energy management

Energy management is of central importance and is often the principal driver in plans to procure smart buildings or to retrofit existing buildings.

Energy consumers continue to take greater control of their energy needs including where they buy energy, the type of energy they buy and how they manage their energy consumption. We are a global team who push the boundaries of where the energy and utilities sector needs to go.

Looking ahead means you need to understand what has happened before. Our team have been doing this for a long time. Phrases like “green economy”, “renewables”, “energy efficiency”, “smart grids”, “smart homes”, “energy storage” and “carbon reduction” are not just buzz words for us. They have been at the core of our team for over 10 years as we help to create and shape new opportunities for our clients and engage with disruptive business models.

# Technical real estate specialists

*We have been sector-focused since 1998, far longer than almost all other law firms. We have a strong record of supporting on projects with complex technological requirements, particularly in the following sectors and specialisms:*

## Data Centres and Smart Logistics Infrastructure

Our extensive track record of advising on data centre and IT infrastructure projects for a broad range of clients puts us at the forefront of technical real estate projects. We are recognised industry leaders in providing legal services in the technology and communications sector, operating at the cutting edge of developments relating to the data centre community, including cloud computing, “big data” and energy efficiency. You will benefit from our ability to put our legal advice into a commercial context to meet your requirements.

We recognise the critical role that physical IT infrastructure has in the deployment of IT services to end-users. We are aware of the reliance placed upon such physical infrastructure, and the need to ensure that commercial and legal arrangements reflect that.

In the data centre sector, we do not believe that it is enough for a lawyer to simply understand his or her practice specialism: for example, the construction lawyer needs to understand the impact of a defective air handling unit on the service level agreements that his or her client is proposing to enter into so that the contractor’s obligations to remedy the defect reflect the gravity of the situation. Drafting, negotiating and advising on one part of the project must always be considered with the overall context in mind.

Our international Data Centre Interest Group, comprising more than 40 lawyers from various practice groups and across most offices in the firm, work together to share industry knowledge, best practice and new ideas. We believe that we are the only law firm to have such a team. Our lawyers routinely speak at data centre conferences and have a profound understanding of the environment in which our data centre clients operate. Our investment in the data centre sector will help us to provide you with legal services that have an added commercial dimension.



## Energy & Utilities

Our construction lawyers have a central role in Bird & Bird’s Energy and Utilities Sector Group and have worked on some of the most significant distributed generation, demand management and demand response projects in the UK. Incorporating, operating and managing energy efficient measures in the smart building are specialised activities and innovative contractual models are available to ensure the energy consumer receives the benefit of these measures. Whether incorporated into the main works or procured separately, the construction contract will need to implement the tailored approach preferred by the client and provide clarity on the parties’ roles and responsibilities in relation to energy management activities.

Our experience includes advising on:

- the installation, operation and maintenance of solar power, combined heat and power projects;
- strategy and implementation on the use of the NEC3 form in Nuclear New Build; and
- contractual arrangements for operational nuclear fleet management and life extension and maintenance.

Our team have also been involved in the development of offshore wind projects and we have significant experience in the water and waste sectors. We are involved in substantial dispute work in the energy sector (particularly involving coal and oil power stations).



## Hospitals and Care Homes

At Bird & Bird we have a thorough understanding of the dynamics and issues connected with the procurement of complex and technologically advanced healthcare facilities and equipment, including the design and construction of buildings and infrastructure. We have developed skills and expertise to deal with the issues clients will encounter in undertaking such projects. Our clients choose Bird & Bird for our expertise in the key technologies, processes and regulatory frameworks needed to deliver more intelligent healthcare in the 21st century.

Our healthcare projects team focuses on bringing complicated healthcare projects to life. Many of these projects are hugely complex with high stakes where the risks associated with failure are very damaging, in terms of monetary cost, negative publicity and denying service and benefit to end-users. Our broad experience helps our clients: we act for both public and private sector bodies, and so are skilled in identifying issues before agreements are forged and we use our experience to help deliver contracts which are pragmatic and operationally workable. We have seen the causes of failure and experienced the reasons for success.



## Refurbishments and Fit-out

We have seen unprecedented demand from clients to upgrade their built environment by the implementation of fit-out and refurbishment programmes, at national and international levels. Such programmes are being driven by the need to obtain greater space, become more energy efficient and incorporate up-to-date technological solutions. Our Bird & Bird headquarters in London has been the subject of such a relocation and fit-out programme and our construction team was responsible for the construction documentation throughout the process.

Bird & Bird's team of specialist construction lawyers work on a diverse range of high profile refurbishment projects such as renovations of landmark hotels, company headquarters, health care facilities, cinema auditoriums, fitness and spa centres and shopping centres and high-end luxury retailers. In the UK alone, our construction team has assisted on refurbishment and fit-out projects exceeding a value of £150m and are excellently placed to guide clients through the complicated political, legal and commercial aspects of these projects.

## Hotels

The hotel industry has always required a bespoke approach when it comes to construction.

Hotels have specific design requirements to allow the back of house operations to work efficiently alongside front of house activities and guest services. The hotel industry is being transformed further, principally through disruptive mobile technologies. There are industry pressures to construct buildings as consumers are increasingly demanding more convenience and enhanced leisure experiences from their stay which incorporate technology.

Consumers expect the world around them to interface with their smartphones and, increasingly, their smart, wearable technology. Hoteliers must now appeal to a different demographic, a generation that expects to be able to check in with their phones, access room service on their tablets, or stream high quality video content from their mobile devices.

Those in the industry investing at the construction phase undoubtedly want to see that these technologies improve the customer experience, but they also want to see that they are able to create a more efficient space and that their buildings are able to adapt to future developments in mobile technology.

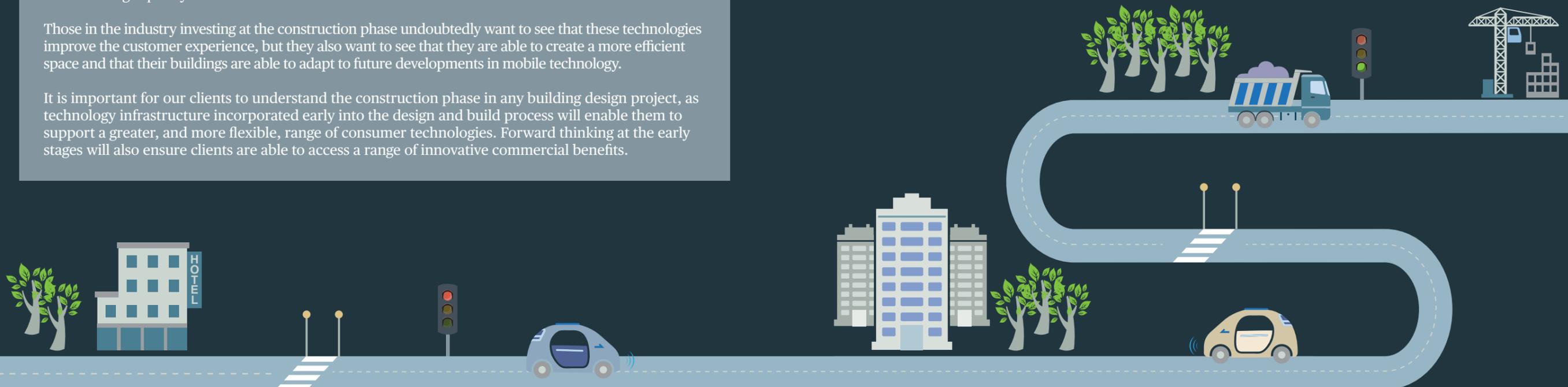
It is important for our clients to understand the construction phase in any building design project, as technology infrastructure incorporated early into the design and build process will enable them to support a greater, and more flexible, range of consumer technologies. Forward thinking at the early stages will also ensure clients are able to access a range of innovative commercial benefits.

## Smart Cities and Urban Regeneration

We are experienced in assisting clients to meet the challenges presented throughout the development and management of an urban renewal initiative. We advise on implementing and documenting the full cycle of such projects, whilst maintaining focus on the specific goals, such as socio-economic and planning considerations and the financial or corporate structuring.

The phenomenal growth in the use of technology within the built urban environment is particularly exciting and most obvious with the development of the "Internet of Things" and innovative tools such as Augmented Reality and Unmanned Aerial Systems. The accuracy and management of data collected by these technologies are critical to ensure the cost, quality and programme benefits are passed to all stakeholders. Combining our lawyers' experience in procurement and delivery of complex regeneration projects with our technology focus equips you with advisors who understand the strategic and cost requirements you may face in developing the built environment, which increasingly coincides with the fast-moving demands of the smart city.

Through our experience, we know that such projects require pro-active management, working with the whole project team. We have the skills, tools and intuition to deliver this. A complex project will involve a large number of stakeholders, and building positive relationships with them is a key to success. Negotiations will undoubtedly throw up challenges, and so creative problem solving will also be required. You will be able to draw upon our expertise, ensuring that you have the right people in the room when you need them. Our objective throughout is to deploy our skills and to deliver services to you which represent true value.





# There are law firms & there's Bird & Bird

*Bird & Bird is a truly international firm, organised around our clients. We match our passion and practical expertise to your vision to achieve real commercial advantage.*

The key to our success is our constantly evolving sector-focused approach. Our clients build their businesses on technology and intangible assets, and operate in regulated markets. To better meet their needs we have developed deep industry understanding of key sectors, including aviation & defence, energy & utilities, financial services, food & beverage, healthcare, life sciences, media and sport.

As our clients' businesses change, so does ours: the recent formation of our

dedicated technology & communications sector group was a direct result of client listening, and successfully pre-empting industry change.

### Deep industry knowledge

- Expertise in the legal and regulatory framework relating to each sector; and
- A more practical, commercial approach, supported by advisors with decades of experience working in the relevant industries.

### Excellence in client service

Bird & Bird operates as one truly international partnership: our goals, accounting and profit pool are all shared, as is our commitment to providing our clients advice from the right lawyers, in the right locations. Our open and flexible business culture allows us to configure ourselves to respond as quickly and effectively as possible to the commercial pressures faced by our clients. Our priority is providing excellent client service, however they themselves define excellence.

30 

International practice and sector groups at Bird & Bird



We work with over half of the Forbes listed top ten 'World's Most Innovative Companies'

43

of the Fortune Top 100 companies are our clients



more than

1,100

lawyers and legal practitioners across 28 offices across Europe, the Middle East and Asia-Pacific

67%

of our top 15 clients have been working with us for over

10 years 

## Key Contacts



**Marco Nicolai**  
*UK Head of Construction*  
Tel: +44 (0)20 7415 6153  
marco.nicolai@twobirds.com



**Kathryn Noble**  
*Senior Associate, Construction, United Kingdom*  
Tel: +44 (0)20 3017 6850  
kathryn.noble@twobirds.com

## Additional Contacts

**Lyle Abel**  
*Partner, Commercial, Australia*  
Tel: +61 2 9226 9812  
lyle.abel@twobirds.com

**Saladin Al-jurf**  
*Counsel, United Arab Emirates*  
Tel: +971 43093210  
saladin.al-jurf@twobirds.com

**Nimrod Badur**  
*Partner, Real Estate, Sweden*  
Tel: +46 (0)8 506 320 00  
nimrod.badur@twobirds.com

**Jonathan Baker**  
*Partner, Real Estate, United Kingdom*  
Tel: +44 (0)20 7415 6097  
jonathan.baker@twobirds.com

**Roger Bickerstaff**  
*Partner, Commercial, United Kingdom*  
Tel: +44 (0)20 7415 6160  
roger.bickerstaff@twobirds.com

**Simone Cadeddu**  
*Partner, Regulatory & Administrative, Italy*  
Tel: +39 (0)6 69 66 7007  
simone.cadeddu@twobirds.com

**Ken Cheung**  
*Partner, Corporate, Singapore*  
Tel: +65 6428 9893  
ken.cheung@twobirds.com

**Russell Dellar**  
*Partner, Real Estate, United Kingdom*  
Tel: +44 (0)20 7415 6129  
russell.dellar@twobirds.com

**James Durnall**  
*Senior Counsel, Corporate, Australia*  
Tel: +61 2 9226 9888  
james.durnall@twobirds.com

**Isabel Evans**  
*Partner, Finance, United Kingdom*  
Tel: +44 (0)20 7415 6040  
isabel.evans@twobirds.com

**Levent Gurdenli**  
*Associate, Commercial, United Kingdom*  
Tel: +44 (0)20 7415 6630  
levent.gurdenli@twobirds.com

**Gábor Helembai**  
*Associate, Corporate, Hungary*  
Tel: +36 1 799 2011  
gabor.helembai@twobirds.com

**Ronald Hendrikx**  
*Partner, Commercial, United Kingdom*  
Tel: +44 (0)20 7905 6228  
ronald.hendrikx@twobirds.com

**Jaakko Hietala**  
*Partner, Real Estate, Finland*  
Tel: +358 9 622 66731  
jaakko.hietala@twobirds.com

**Peter Knight**  
*Partner, Dispute Resolution, United Kingdom*  
Tel: +44 (0)20 7415 6630  
peter.knight@twobirds.com

**Osvaldo Lombardi**  
*Partner, Commercial, Italy*  
Tel: +39 (0)6 69 66 7002  
osvaldo.lombardi@twobirds.com#

**Richard Lucas**  
*Partner, Commercial, United Arab Emirates*  
Tel: +971 26108130  
richard.lucas@twobirds.com

**Graeme Payne**  
*Partner, Commercial, United Kingdom*  
Tel: +44 (0)20 7982 6474  
graeme.payne@twobirds.com

**Isidro del Moral**  
*Partner, Real Estate, Spain*  
Tel: +34 91 790 3242  
isidro.delmoral@twobirds.com

**Melissa Murray**  
*Partner, Commercial, United Arab Emirates*  
Tel: +971 26108104  
melissa.murray@twobirds.com

**Mikko Rajala**  
*Partner, Dispute Resolution, Finland*  
Tel: +358 9 622 66750  
mikko.rajala@twobirds.com

**Elizabeth Reid**  
*Partner, Commercial, United Kingdom*  
Tel: +44 (0)20 7905 6226  
elizabeth.reid@twobirds.com

**Andrew Renton**  
*Partner, Commercial, United Kingdom*  
Tel: +44 (0)20 7415 6780  
andrew.renton@twobirds.com

**Michael Rudd**  
*Partner, Commercial, United Kingdom*  
Tel: +44 (0)20 7415 6174  
michael.rudd@twobirds.com

**Sandra Seah**  
*Partner, Corporate, Singapore*  
Tel: +65 6428 9429  
sandra.seah@twobirds.com

**Simon Shooter**  
*Partner, Commercial, United Kingdom*  
Tel: +44 (0)20 7982 6456  
simon.shooter@twobirds.com

**Gabriel Voisin**  
*Partner, Commercial, United Kingdom*  
Tel: +44 (0)20 7905 6236  
gabriel.voisin@twobirds.com

twobirds.com

@twobirds

Bird & Bird

Aarhus & Abu Dhabi & Beijing & Bratislava & Brussels & Budapest & Copenhagen & Dubai & Düsseldorf & Frankfurt & The Hague & Hamburg & Helsinki & Hong Kong & London & Luxembourg & Lyon & Madrid & Milan & Munich & Paris & Prague & Rome & Shanghai & Singapore & Stockholm & Sydney & Warsaw

Bird & Bird is an international legal practice comprising Bird & Bird LLP and its affiliated and associated businesses. Bird & Bird LLP is a limited liability partnership, registered in England and Wales with registered number OC340318 and is authorised and regulated by the Solicitors Regulation Authority. Its registered office and principal place of business is at 12 New Fetter Lane, London EC4A 1JP. A list of members of Bird & Bird LLP and of any non-members who are designated as partners, and of their respective professional qualifications, is open to inspection at that address.

001731.01