



OMEGA CENTRE CONSULTANTS

**Advisory Services and Capacity
Building in Strategic Infrastructure
Investment and Project Appraisal**

University College London



Consulting with experts

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WHO WE ARE

OMEGA Centre Consultants, based in University College London, provides specialist consultancy and advisory services through UCL Consultants Ltd (UCLC) in the strategic planning, appraisal, evaluation and risk assessment of major infrastructure investments across all principal sectors. Our clients include sponsors, operators and investors from the public, private and community sectors.

WHAT WE DO

Drawing from a portfolio of international consultancy and ground breaking applied research of the OMEGA Centre ([see \[www.omegacentre.bartlett.ucl.ac.uk\]\(http://www.omegacentre.bartlett.ucl.ac.uk\)](http://www.omegacentre.bartlett.ucl.ac.uk)) on mega projects and their impact we support clients in *better decision making* in strategic infrastructure investment by:

- ▶ **Applying** evidence-based research findings to address real world problems
- ▶ **Linking** policy and strategy to the management of programmes and projects
- ▶ **Appraising** the full benefits and risks inherent in projects for ALL stakeholders

We also seek to build client capability and capacity in our core competency areas through accredited executive programmes or bespoke client-in-house training.

We utilise a transparent and robust approach which meets growing demands for better governance and applies benchmarking, and monitoring against good practice.

HOW WE WORK



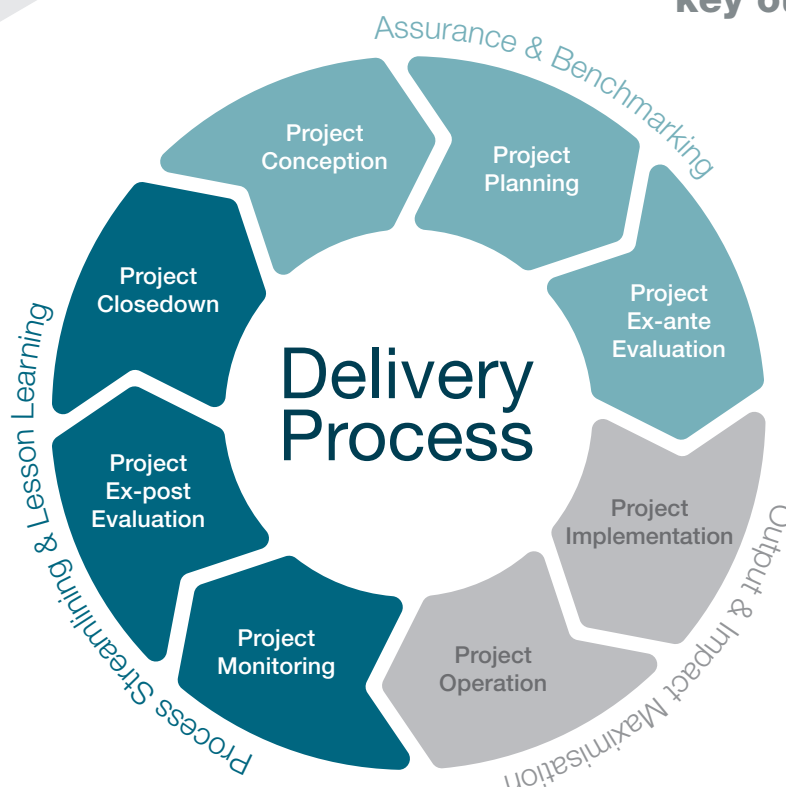
The OMEGA Centre Consultants team has experience on combining good practice and cutting edge research in infrastructure planning and development, investment appraisal and evaluation, property development and asset management, finance, risk assessment and mitigation, social and environmental appraisal, impact assessment of major events and infrastructure strategy.

To achieve better decision making outcomes we:

- | | |
|---|--|
| Lead, establish, and undertake at project or programme level, a process to capture all stakeholders objectives including both corporate and major project risks | ▶ Use established decision mapping and documentation tools to record decisions and processes in a transparent way |
| Help our clients understand the need for strategy and where necessary how strategy may need to be revisited | ▶ Train key staff to apply their own 'internal' version of our approach |
| Apply appropriate experience and research from academia and elsewhere | ▶ Develop and operate information monitoring systems |
| | ▶ Benchmark critical success factors from lessons learned on other projects to apply in a new project or organisation design |

WHAT WE PROVIDE

We operate at all phases of the project lifecycle to provide **key outputs that support:**



- ▶ Planning and appraisal processes that meet current international good practice and industry benchmarks in strategic decision making and risk management
- ▶ Maximisation of investment outcomes and impacts
- ▶ Effective business processes, streamlining and lesson learning

OUR EXPERIENCE

Recent examples of consultancy commissions and applied contract research work undertaken by the OMEGA Centre through UCLC include:

European Investment Bank (EIB)
Infrastructure UK and HM Treasury
Institute of Civil Engineers (ICE) and Actuarial Profession
Volvo Research and Education Foundations (VREF)
University College London (UCL)

CLIENT

European Investment Bank

Projects Directorate (PJ), Urban and Regional Development Division (REGU)

TITLE Development of a bespoke Multi Criteria Analysis (MCA) tool for the appraisal of urban and regional development projects for the European Investment Bank

SERVICE Consultancy Contract

DURATION 18 Months



DESCRIPTION

- ▶ Client required a new way to appraise urban projects where more conventional methodologies provided only partial answers and solutions.
- ▶ Working closely with REGU and other EIB staff, the OMEGA Consultancy Team identified the key tasks and challenges facing the division's project appraisal operations and proposed a methodology which offered a more holistic approach.
- ▶ An iterative process involving one-to-one fact finding discussions and team based workshops was adopted to develop and refine a bespoke appraisal framework to suit the appraisal operations of the division.
- ▶ Appraisal dimensions were built with consideration of both EIB policy frameworks and day-to-day practicalities facing REGU.

BENEFITS

- ▶ Development of user-friendly software which enabled REGU to produce more robust, transparent, holistic and defensible appraisals of the complex and multi-sector types of loan application with which it has to deal.
- ▶ The resultant policy-led MCA Framework and attendant processes are now being rolled out across REGU with other Divisions in the Bank also considering the possible application of this methodology.
- ▶ Deployment of the Framework has led to improved project reporting and enhanced risk identification and management capabilities.

Infrastructure UK and HM Treasury

TITLE Review and critical appraisal of the Interdependencies of Infrastructure in Project Appraisal

SERVICE Consultancy Contract

DURATION 12 Months



DESCRIPTION

Client required the development of a proof of concept framework to help capitalise on positive interdependencies between critical UK major infrastructure projects. The framework was to be validated against current UK megaprojects.

The methodology employed a suite of tools built around policy-led-multi-criteria analysis (PLMCA) developed by the OMEGA Centre, and an N2 matrix developed by Bristol University's Systems Centre.

Phase 1 comprised an assessment of a number of different critical infrastructure projects to understand current UK approaches to their planning, design, appraisal and implementation, and development of a preliminary Interdependency Planning and Management Framework (IP&MF) based on systems thinking and multi-criteria assessment principles. Phase 2 of the project developed the IP&MF (including aspects of PLMCA) through its application to current infrastructure projects taken from the UK National Infrastructure Pipeline, including: High Speed 2, the Northern Line Extension, the Lower Thames Crossing and the A14 Trunk Road Upgrade.

BENEFITS

The study identified opportunities to enhance: value-for-money, efficiency, effectiveness, sustainability and resilience qualities in the appraisal process.

Research directly informed HM Treasury's Green Book Supplementary Guidance entitled 'Valuing Infrastructure Spend'.

Institute of Civil Engineers and Actuarial Profession

TITLE How to Better Incorporate Social and Environmental Dimensions of Sustainability into the Appraisal of Major Infrastructure Projects

SERVICE Applied Research Contract

DURATION 2 Years



DESCRIPTION

Client required guidance on how to incorporate environmental and social dimensions of sustainable development into the business case for major infrastructure projects in order to inform the next edition of the RAMP (Risk Analysis and Management for Projects) handbook.

Environmental and social factors were seen to pose potentially serious risks for project management and project implementation for major infrastructure investments in light of the limited coverage of these areas by traditional planning and appraisal approaches.

Study reflected the belief in the engineering community that sustainable development has critical implications for the planning, appraisal and delivery of all major infrastructure projects.

BENEFITS

Traditional appraisal tools and techniques were examined, such as WebTAG and CBA, for their suitability with the project concluding that Multi Criteria Analysis (MCA) provides the most suitable framework for presenting and assessing the relevant factors of sustainable development in a transparent and systematic manner through different phases of the project lifecycle.

The two institutions incorporated the findings in the latest edition of the RAMP Handbook. The Handbook is referenced as good practice in HM Treasury's Green Book - *Appraisal and Evaluation in Central Government*.

Volvo Research and Education Foundations

TITLE Decision-Making in the Planning, Appraisal and Delivery of Mega Transport Projects: A International Study of Case studies in Europe, Australasia and North America

SERVICE Applied Research Contract

DURATION 6 Years



DESCRIPTION

Client sought to undertake original research into megaprojects with a view to evoking a sea change in their planning and appraisal.

The OMEGA Centre formed a global network of 10 renowned university research teams to evaluate of 30 mega transport project case studies in urban and metropolitan regions across Europe, Australasia and North America.

Involving more than 40 researchers and 600 interviews with key project stakeholders so as to provide important context-specific and generic insights and lessons concerning the critical question of 'what constitutes a successful mega transport project in the 21st Century.

BENEFITS

The study produced a series of key lessons for future mega project stakeholders (see <http://tinyurl.com/OMEGA-Executive-Summary>) which have been distributed widely to megaproject practitioners, having significant impact on policy and practice.

The study produced a number of capacity building outcomes, including professional short courses, a handbook for practitioners, and the Msc Programme 'Mega Infrastructure Planning, Appraisal and delivery' <http://tinyurl.com/MScMIPAD> accredited by the RTPI, RICs and JBM.

Volvo Research and Education Foundations

TITLE Treatment of Risk, Uncertainty and Complexity in Decision-Making for Complex Major Projects: An Interdisciplinary and Cross-Sectoral study

SERVICE Applied Research Contract

DURATION 18 Months



DESCRIPTION

Client sought a review of the treatment of risk, uncertainty and complexity in decision-making in planning major projects in a variety of disciplines and professions.

OMEGA centre undertook a synthesis of 15 commissioned papers from leading authorities in different disciplines and across varied sectors with a view identifying potential sources of lesson-learning and lesson-sharing for infrastructure project planning, appraisal and delivery.

Significantly, these contributions were drawn from fields in which the treatment of these aspects has long been seen as key component of decision-making as in the case of the military, banking, insurance, public health, agriculture and earthquake engineering sectors.

BENEFITS

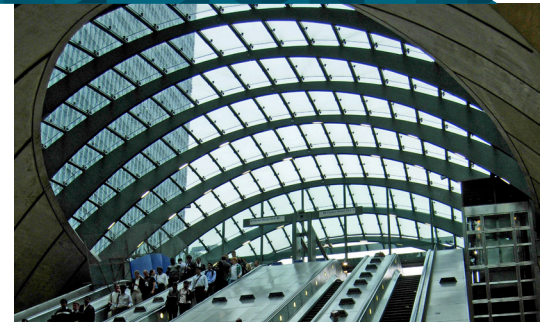
The very broad span of disciplines and professions examined by the study provided important insights that enabled the OMEGA Centre, in it's subsequent research and consultancy work, to synthesise a number of lessons seen as critical for mega infrastructure project planning, appraisal and delivery.

University College London

TITLE Development of CPD course in Mega Infrastructure Planning, Appraisal and Delivery

SERVICE Capacity Building

DURATION 12 Months



DESCRIPTION

Development of short courses in International Mega-Infrastructure Planning, Appraisal and Delivery, to be delivered in the UK and overseas by the OMEGA Centre at the Bartlett School of Planning, in collaboration with partner organisations and individuals both in the UK and overseas.

Course structure aimed to enhance the capacity and professional expertise of senior to mid-level practitioners and decision-makers who are involved in mega-infrastructure projects either as directors, managers, planners, designers, accountants, political representatives, academics or other stakeholders.

BENEFITS

- To provide understanding of mega-infrastructure theory and international practices, and an assessment of how 'fit for purpose' these are for the 21st Century challenges of sustainable development;
- To provide participants with knowledge, insights and skills to better plan, appraise and deliver future mega infrastructure developments in a manner that is especially sensitive to the risks, uncertainties and complexities of different contexts;
- To impart knowledge of the policies, processes and practices that will support the provision of truly sustainable mega-infrastructure for the 21st Century;
- To focus particularly on how sustainability within mega-infrastructure projects can be operationalized within the public and private sectors.

JASPERS (Joint Assistance to Support Projects in European Regions)

TITLE OMEGA Consultancy commission – 'Application of PLMCA to Urban Regeneration Appraisal'

SERVICE Consultancy Project

DURATION 6 Months



DESCRIPTION

Commissioned by Jaspers who were seeking to support the Maltese Government in demonstrating the wider benefits that a planned allocation of EU commission funding to urban regeneration could unlock.

Malta has several approved EU funded programmes and OMEGA Consultants were able to produce a methodology and undertake a collaborative exercise with Maltese Government officials to verify and illustrate the depth and breadth of the potential benefits that a planned regeneration programme could achieve.

Whilst the regeneration project had largely already been selected in this exercise the PLMCA approach was used to test the relative strength of key component packages in the regeneration programme towards the overall policy objectives.

BENEFITS

- The PLMCA tool acted as a strong communication tool and demonstrated how Maltese specific policy aligned with international best practice.
- We believe the risks and opportunity report will become key a programme management tool going forward - highlighting areas where alignment may be strengthened or where areas will require focus to ensure alignment is achieved.
- The methodology statement (or short form manual) provided a document for the Maltese to refer to or apply to other projects. Indeed, the wider PLMCA appraisal approach is already being considered in other programmes outside regeneration where project selection is required.

OUR CORE TEAM

The core team of OMEGA Centre Consultants consists of Principal Consultants with a wealth of international experience and proven expertise in the fields of: Strategy and Policy Development; Spatial and Sectoral Planning; Infrastructure Planning, Appraisal and Delivery in all sectors (especially, in transport, housing, and urban regeneration), Project Finance, Project and Programme Investment Risk Assessment; Social and Human Capital Development, Sustainability Appraisal: Environment Impact Analysis; and Real Estate Development.

THE PRINCIPALS



**Professor
Harry T. Dimitriou**
DipTP, MSc, PhD, MRTPI

A specialist in urban land-use/ transport planning, transport policy and sustainable development, mega infrastructure planning and appraisal, institution development and capacity building.

Professor Dimitriou is Bartlett Professor of Planning Studies at University College London and Director of the OMEGA Research Centre and the Bartlett School of Planning's Masters Programme on Mega Infrastructure Planning, Appraisal and Delivery. He has held numerous advisory and teaching posts including: a member of the Transport Working Group for the Inter-governmental Panel on Climate Change, member of the Foresight Built Environment and Transport Panel of the Office of Science and Technology of UK Government, Professorial appointments at the University of Hong Kong and Aalborg University in Denmark, consultant for Doxiadis Associates, Director and Equity Partner of Transport and Developments Consultants S.A. In these capacities he has worked in Europe, Africa, Asia and the Middle East, including for the: European Investment Bank, World Bank, United Nations, Harvard Institute for International Development, Hong Kong Government, Government of Indonesia, South East England and London Regional Development Agencies plus HM Treasury, UK Government. He has published several books and innumerable articles.



**Professor
Brian G. Field**
BSc, DipTP, MA, MPhil,
MRTPI, FRICS, CMILT

An economist, spatial planner and public policy analyst, specialising in urbanisation, regeneration and renewal, and related project appraisal and finance.

Professor Field was until recently Special Managerial Adviser on Urban Planning and Development at the European Investment Bank (EIB) and de facto, the Bank's leading urban specialist. His career has covered contemporary professional practice in both planning and infrastructure investment appraisal in Europe, Africa, Asia and the Middle East. Prior to joining the EIB, he held a number of senior appointments at executive manager, director and board levels in the public and private sectors including, for example, Head of Planning and Economics at WS Atkins International, and Director and Equity Partner of Hughes Economic Planning, UK, etc. He also pursued a successful academic career with professorial appointments at the National University of Singapore and as Head of the School of the Built Environment at De Montfort University in the UK. He is currently an Associate of the OMEGA Centre and Visiting Professor in the Bartlett School of Planning at UCL, and also teaches in the Geography Departments at both the University of Luxembourg and the Sorbonne at the University of Paris. He has published extensively on planning and related matters in books and scholarly papers, and is on the editorial board of several international peer reviewed journals.

An architect by training and a professionally qualified accountant who is a specialist in strategic business development in the property, tourism, infrastructure and financial sectors.

With considerable international management experience in asset management, construction, engineering, finance and property development, Keith Perry has worked as a senior board level executive for several major international companies including P&O Resorts, Bovis UK Ltd, and Lend Lease Europe. He is currently an Associate of the OMEGA Centre, UCL, a founding director of Metope Advisers Limited and also a partner in EC Harris LLP where he is Head of Capability for Investment and Finance and CEO of its Corporate Finance and Investment Management business. His main specialist areas of expertise lie in new community financing solutions, megaproject risk management and social capital management about which he has published extensively. Keith is also director of the Sheppard Trust, an Extra Care charity based in London. He has provided consultancy and advisory services in North America, the Middle East and Europe for projects that include: the Ebbsfleet (Bluewater) development in the Thames Gateway, the Q22 World Cup project, Greenwich Peninsula, Elephant and Castle and Cherwell new communities projects in the UK and is currently part of the public-private venture reviewing the Ministry of Defence Estate strategy in the UK.



Keith D. Perry
MA ICAEW

A civil engineer by training and a specialist in infrastructure planning and appraisal, the analysis and mitigation of infrastructure project risk, uncertainty and complexity in strategic decision-making and software/computer modelling.

John Ward has worked both for local government and in the private sector as a transportation and spatial analysis/GIS consultant. He is a Research Fellow of the OMEGA Centre, UCL and a Lecturer in Infrastructure Planning and Appraisal at the Bartlett School of Planning contributing to the School's Masters Programme in Mega Infrastructure Planning, Appraisal and Delivery. His research and consultancy interests lie in the fields of infrastructure planning and appraisal using both quantitative and qualitative tools/ techniques, in the analysis and mitigation of infrastructure project risk, and in strategic decision-making in addressing uncertainty and complexity in mega infrastructure developments. He has published extensively in these fields. He has contributed to OMEGA Centre consultancy assignments for the European Investment Bank, Infrastructure-UK of HM Treasury and the Institution of Civil Engineers and Actuary Profession in the UK.



E. John Ward
BEng, MEng, MSc,
DIC, PhD

SENIOR CONSULTANTS

The above core team of Principal Consultants is supported by an extensive network of similarly experienced and well-regarded Senior Consultants, including:

► **Professor John Adams:**

Risk Analyst and Transportation Specialist, Professor Emeritus, Department of Geography, UCL and Associate of OMEGA Centre, UCL.

► **Professor Mike J. Batty:**

Urban and Regional Planning and GIS Specialist, Sometime Director of Centre for Advanced Spatial Analysis, UCL and Associate of OMEGA Centre, UCL.

► **Robin Caven:**

Urban Regeneration, Housing and Infrastructure Investment Specialist with particular expertise in pension funds, sometime Head of Finance for UK's Homes and Communities Agency, and Associate of OMEGA Centre, UCL.

► **Professor Ulf Dahlsten:**

Public Administration and Infrastructure Privatisation Specialist, sometime Secretary of State in the Prime Minister's Office in Sweden and Associate of OMEGA Centre, UCL.

► **Doctor Martin Hurst:**

Environment, Housing and Water Specialist, sometime Commercial and Major Projects Director in DEFRA, and Senior Advisor to Prime Minister in 10 Downing Street, London, UK and Associate of OMEGA Centre, UCL.

► **Niall McNevin:**

Mega Events and Project Management Specialist, sometime Director of Planning and Sustainability, The London Olympic Legacy Development, UK and Associate of OMEGA Centre, UCL.

► **Professor Francesca R. Medda:**

Critical and Social Infrastructure Investment and Urban Finance Specialist, Director of the QASER Lab, Member of Centre for Transport Studies, UCL Faculty of Engineering, and Associate of OMEGA Centre, UCL.

► **Doctor Kalia Pediaditi:**

Environmental Appraisal Specialist, sometime advisor to Minister of the Environment, Greece and Associate of OMEGA Centre, UCL.

► **Robert Upton:**

Public Administration and Infrastructure Specialist, sometime Vice Chairman of Infrastructure Planning Commission, UK, Director of Planning, Hong Kong Government



UCL CONSULTANTS LTD

OMEGA Centre Consultants offer their advisory and consultancy services through UCL Consultants Ltd. UCLC was established by University College London (UCL) in 2003 as a wholly owned company of the College to administer the contractual and financial arrangements for consultancy services undertaken by UCL staff (see <http://www.ucl.ac.uk/consultants/homepage>). UCLC acts as the contracting party on behalf of the consultants (in this case, OMEGA Centre Consultants) and is responsible for all billing and payments for consultancy work. UCLC has to date contracted for over **2,000** projects worth over **£50 million** and has a turnover (for financial year 2014/15) in excess of **£10m**.

CONTACTS

If you are interested in commissioning OMEGA Consultants please contact:

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