ISO9001: 2015 experience
NSAI

20th September 2016

Radisson Blu hotel, Galway

Galway | Limerick | Dublin

Warrington

London | Brussels

Glasgow

kirby
engineering & construction

kirby
engineering & construction

kirby at a glance
engineering & construction

Established in 1964
50+ YEARS EXPERIENCE

€150 million turnover

OFFICES **7**

OVER 600 PEOPLE DIRECTLY EMPLOYED

Admin
Technical
Electrical
Mechanical
T&D T&D

- Employee Engagement
- Growth in Leadership Training
- Apprenticeship Programme
- Graduate Programme
- Professional Development
- Corporate Social Responsibility

REPUTATION BUILT ON TRUST

- Collaboration
- Early Engagement: ECI & IPD
- Sustainable Innovation
- Ownership & Accessibility
- Investment in Talent
- Solutions Driven

OUR KEY PROJECTS

- Confidential Client - E&I - €60m
- gsk — GSK - MEP - £25m
- TelecityGroup where content meets connectivity — Telecity - M&E - €16m
- zimmer — Zimmer Orthopedics - Turnkey - €16m
- SCOTTISHPOWER — Scottish Power - T&D - £6m per annum
- NESTE OIL — Neste Oil, Finland- E&I - €3m

OUR CORE SERVICES

- HVAC
- Mechanical Piping
- Electrical Transmission & Distribution
- Electrical & Instrumentation
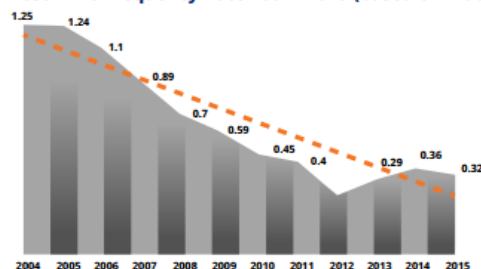- Turnkey Solutions
- Design & Engineering

QUALITY, ENVIRONMENTAL, HEALTH & SAFETY

AWARDS & ACCREDITATIONS
- RoSPA Gold Medal Award
- NISO Construction Building Service Award
- British Safety Council International Safety Award
- NISO Regional Award

CIRI
2015/2016
Quality Certified
HEALTH & SAFETY
GOLD MEDAL Award

Lost Time Frequency Rate 2004 - 2015 (based on Riddor)

Year	Rate
2004	1.25
2005	1.24
2006	1.1
2007	0.89
2008	0.7
2009	0.59
2010	0.45
2011	0.4
2012	0.29
2013	0.36
2015	0.32

IN 2015 OVER 1,800,000 MAN HOURS WORKED

WHAT OUR CLIENTS SAY

"Kirby has shown professional quality, especially in installation works and in HSE behaviour. Also good working spirit was present throughout the project execution."
NESTE OIL FINLAND

"...(We) felt that Kirby were just as interested in a successful outcome as Hollister were..."
HOLLISTER

"Kirby delivered a high level of performance across the key project indicators of EHS, Quality, Schedule, Commerical and Innovation."
M&W IRELAND

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ISO9001: 2015 Key areas of focus – Kirby

- Leadership (Clause 5.1)   Strategy & Innovation

- Interested Parties (4.2)   Stakeholders (Internal & External)

- Organisational Knowledge (7.1)   Innovation & SEOR cards, Standards Library

- Communications (7.4)   QEHS Alerts, Communications matrix

- Risk Management (6.1)   Business Impact & Project risks

- Planning (8.1)   Group Project pipeline tracking

- Processes (4.4)   Operational Process flowcharts

- Continuous Improvement (10.3)   PDCA cycle Register

- Measurement & Analysis (9.1)   Company, QEHS & Project KPIs

INTERNATIONAL STANDARD ISO 9001

Fifth edition 2015-09-15

Quality management systems — Requirements

Systèmes de management de la qualité — Exigences

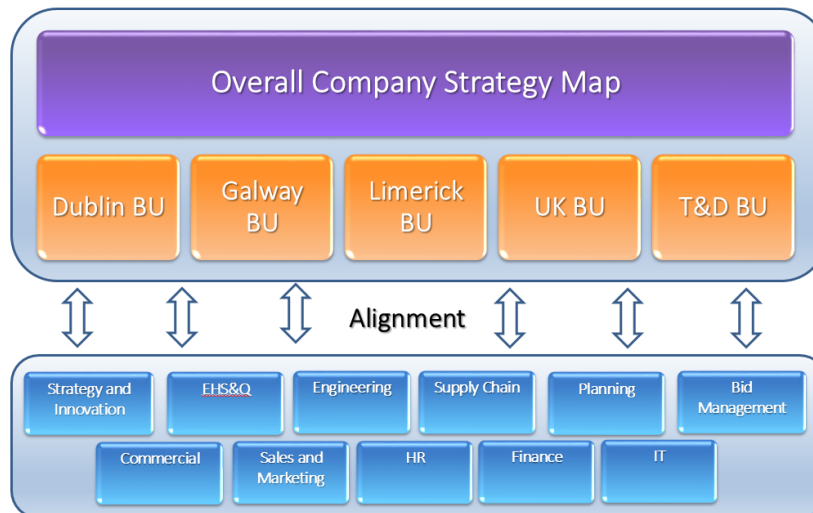**Positive Support from NSAI ➡**

Strategy & Innovation

1. Company Strategy Map (CSM) 2016

2. Regional Business Unit Maps

3. Functional Management Maps

4. Weekly, Monthly & Quarterly KPIs

Linking our vision, mission statement & goals
Cascaded down to Business Units
Supported by Functional Managers

Quarterly Corporate KPIs
Quarterly Management Reviews
Monthly QEHS KPIs
Weekly Project Dashboards

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Function Management Maps – 2016
Alignment with overall Strategy

Overall Company Strategy Map

Dublin BU | Galway BU | Limerick BU | UK BU | T&D BU

Alignment

Strategy and Innovation | EHS&Q | Engineering | Supply Chain | Planning | Bid Management
Commercial | Sales and Marketing | HR | Finance | IT

Collaborating internally

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Interested parties – Stakeholders

KIRBY STAKEHOLDERS 2016

STATUTORY AND REGULATORY

KIRBY STAKEHOLDERS 2016

CONSTRUCTION BODIES (GOVERNING)

KIRBY STAKEHOLDERS 2016

OTHER BODIES (NON-STATUTORY)

RGII – Regist
RECI (Safe E
Ireland – www
ETCI – Electr
BCA (BCMA)
and www.loca
BCAR 2014 -
2014 (S.I. 9)
made/en/pdf
DEHLG – De
Government -
PSA – Private
HPRA – The
www.hpra.ie

CIF – Constru
IEI – Institute
AECI – Assoc
www.aeci.ie
SCSI – Societ
www.scsi.ie
RIAI – Royal
IWEA – Irish
NSAI – Natior
www.nsai.ie
ESB – Electric
Institution of
Bord Gais –
INAB – Irish N
CER – Comm
IGBC – Irish
ECA – Electric
MEBSCA – M
Contractors A
meca.html
Irish Revenue
EIQA – Excell
www.eiqa.ie
AHPCI – Asso
Ireland - www

IRELAND	UK	EU	USA / OTHERS
DKM consultants - DKM Economic Consultants | Economic Research, Market Analysis - www.dkm.ie	**PASMA** – Prefabricated Access Suppliers' & Manufacturers' Association Ltd (PASMA) – www.pasma.co.uk	**AREI** (Belgium) - Algemeen Reglement op de Elektrische Installaties	**ISA** (USA) - International Society of Automation - www.isa.org
OPW - The Office of Public Works - www.opw.ie	**OCG** – The Office of Government Commerce (UK) - https:// www.gov.uk/government/publications/best-management-practice-portfolio/about-the-office-of-government-commerce	**REGI** (Belgium)	**ISPE** (pharma) (USA) - International Society for Pharmaceutical Engineering - www.ispe.org
FETAC - Further Education and Training Awards Council - www.qqi.ie		**AIB Vincotte** (Belgium) - Association des Industriels de Belgique - https://www.vincotte.com/home/	**RCDD** (USA) - Registered Communications Distribution Designer
QQI (NQF) - Quality and Qualifications Ireland - www.qqi.ie	**Asbestos Reg**. - http://www.hse.gov.uk/asbestos/faq.htm	Notified Bodies (**NOBOs**) – They conduct the conformity assessment against the relevant sections of the applicable Directive (MDD, AIMDD or IVDD).	**TIA/EIA** (USA) - Telecommunications Industry Association - www.tiaonline.org
HETAC - Higher Education and Training Awards Council – www.hetac.ie	**NARIC** - national agency for the recognition and comparison of international qualifications and skills - https:// www.naric.org.uk	**Bureau Veritas** - Testing, Inspection and Certification (TIC) - www.bureauveritas.com	**LCI** (Lean) (USA) - Lean Construction Institute - www.leanconstruction.org
National Universities & Regional Institutes of Technology – various	**NVQ** - National Vocational Qualification -		**FIDIC** - International Federation of Consulting Engineers - http://fidic.org/about-fidic
GCCC's - Contracts | Construction Procurement Reform - constructionprocurement.gov.ie/contracts/	**Universities** – various		
An Bord Pleanala - www.pleanala.ie	**JCT** - The Joint Contracts Tribunal - www.jctltd.co.uk		
Safety bodies (reference the Kirby EHS Dept. list)	**NEC** - benchmark for safe electrical design, installation, and inspection to protect people and property from electrical hazards.		
Enterprise Ireland - www.enterprise-ireland.com			
NISO – National Information Standards Organization- niso.ie	**CSCS** scheme - Construction Skills Certification Scheme - https://www.cscs.uk.com		
Eircom (Eir) - fixed, mobile and broadband telecommunications company - https://www.eir.ie/	**CCSNG** scheme – Client Contractor National Safety Group - http://www.ccnsg.com/		
FDA - US Food and Drug Administration - www.fda.gov	**JIB** – Join Industry Board - http://www.jib.org.uk		
Forfas - It was dissolved on 1 August 2014 when Forfas' policy functions were integrated with the Department of Jobs, Enterprise and Innovation - https://www.djei.ie/en/	**Select** (Scotland) - The Electrical Contractors' Association of Scotland - www.select.org.uk		
CiTA – Construction IT Alliance - www.cita.ie	**City & Guilds** (UK) - www.cityandguilds.com		
LCI - Lean Construction Institute - www.leanconstruction.org	**CN** Plus – Constructions News - www.constructionnews.co.uk		
	ROSPA - The Royal Society for the Prevention of		

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Customer requirements – Critical to Quality (CTQ)

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Interxion Data Centre Project - System Critical to Quality (CTQ) Matrix R0 - Mechanical

System No.	Test Pack Number	System Name	System Critical	Traceability Requirements	Material Jointing Method	Welding Type	Material Spec / Grade	Pipe/Tube Standard	Non Destructive Testing (NDT)	Surface Finish	Design Temp (°C) Max	Min	Design Pressure (Barg) Max	Min	Insulation / Cladding Insulation	Cladding	Heat Tracing	Testing Media	Test Pressure Barg	Test Type H=Hydraulic P=Pneumatic S=Service L= Leakage	Flushing, Water Treatment & Sampling	Comments
Mech 001	KG-B236-TP-M-001 Chilled Water System	Chilled Water System		3No. Weld Coupons NDT'd reqd. Register of Welder ID's (stamps/tags) and certifications reqd.	Butt Welded, Fillet Welded at Flanges, Threaded	BS 2640 Oxy-acetylene Welding, BS 2971 Class B Arc Welding of Carbon Steel	Black Mild Steel / Galvanised Mild Steel	Upto DN150= BS1387 (Medium grade). DN20 & DN40 to be heavy grade only. DN200-DN450 to be BS3601. >DN450 to be BS1602.	Ultrasonic Testing= 5% Total Welds for 6mm to 10mm Wall Thickness. 10% Total Welds for >10mm Wall Thickness. Radiographic Tested= 10% Total Welds.	2no. Phosphate/Oil Alkyd Primer Painted	12deg.C for ADC's. 26deg.C for Chillers	-5deg.C for ADC's. 20deg.C for Chillers	12bar	TBC	Insulated to BS 5422. Glass Fibre Foil wrapped. Pipework in concealed spaces to be Class "O" Armaflex.	For External Pipework and in Plantrooms.	For External Pipework	Water, (Air for Pre-Hydro Test)	x1.5 Working Pressure for 2Hrs.	H & P	Flushing is reqd. 20% Vol. of Glycol	All permanently concealed joints on pipework shall be welded. No socket weld fittings over DN80. Welded joints to be Primer painted immediately on completion of welds. Pre-Hydro test to be performed using Air @ 0.5bar.

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INTERXION - B251 System Critical to Quality (CTQ) Matrix R1 - Electrical

System Number	System	Distribution	System critical	Location	Main supply (Fed from)	Equipment Dimensions (L x W x H)	kVA (kW) size	Cable Specification(s)	Testing Requirements (standard)	Testing Qualifications Requirements	System Standards Requirements	Dead Tests	Live Tests	Phase Rotation	Polarity	Certification	Alex (CompEx) requirements	Comments / System Notes
E-001	MV SWITCHGEAR	SWITCHGEAR	CRITICAL	ESB / MV1.1	ESB	TBC	TBC	3*300SQ 12/24K &150SQ CPC	FAT / SAT / ET103:2015	ET103:2015 - SAFE QUALIFIED TESTER	ESB NETWORKS IEC62271	✓	✓	✓	✓	RECI	N/A	KEY INTERLOCK REQUIRED / SPARES PARTS REQUIRED - TBC / EARTH BARS TO BE FITTED EXTERNALLY AND SPAN WIDTH OF PANEL
E-003	CONTAINERISED GENERATORS	GENERATORS	CRITICAL	GENERATOR COMPOUND	TO RMU	TBC	TBC	3*150 12/24K & 120SQ CPC	FAT / SAT / ET103:2015	TBC	TBC	✓	✓	✓	✓	SPECIALIST COMMISSIONING CERTIFICATION	N/A	SHALL INTERFACE WITH THE BMS SYSTEM / CONTAINER TO BE 2HR FIRE RATED / CONTAINER TO BE NO LARGER THAN 3m (W) X 14m (L) X 11.8m (A COMBINED HEIGHT OF 3 GENERATORS) / GENERATOR SHALL OPERATE AT 40 DEGREES CELCIUS AMBIENT TEMPERATURE / EXPOSED CHARGING BATTERIES TO BE PROVIDED WITH COVERS / GEN SET CONTROL SYSTEM DESIGNED FOR 2 MODES OF PARALLELING
		FUEL TANKS	CRITICAL	GENERATOR COMPOUND	N/A	TBC	N/A	N/A	TBC	TBC	TBC		N/A			TBC	N/A	KIRBY MECHANICAL TO TEST ASSOCIATED FUEL TANK / PIPEWORK / ALL PIPEWORK TO BE PAINTED AND IDENTIFIED / FULL CONTENTS OF THE FUEL TANK POLISHING TO TAKE 4/5 HOURS EVERY 24HR PERIOD AUTOMATICALLY / POLISHING UNIT TO BE 3PHASE / ON 0 FILL OF FUEL REQUIRED AT COMPLETION / TANK CAPACITY TO RUN GENERATOR AT FULL LOAD FOR 4 HRS
E-001	TRANSFORMERS	TRANSFORMER	CRITICAL		RMUs	TBC	TBC	3*150 12/24K & 120SQ CPC	FAT / SAT / ET103:2015 / IEC 600726 / IEC 60270 / IEC 600763	IEC103:2015 - SAFE QUALIFIED TESTER	IEC60076 ESB NETWORKS	✓	✓	✓	✓	TBC	N/A	EARTHING TRANSFORMER AT MV1.3 WILL BE ACTIVE IN NORMAL OPERATION. MV1.2 IS IN RESERVE IN THE EVENT OF FAILURE OF MV1.3 / 8MVA DUAL TAPPED (20/10kV) / DELIVERY/LIFTING INTO FINAL POSITION - EHS TO ADVISE IN ADVANCE / LOAD LOSS SHALL NOT EXCEED 10% @ REFERENCE TEMPERATURE OF 75 DEGREES CELCIUS
E-002	LV DISTRIBUTION	MSBs	CRITICAL	ALL AREAS	TXs	TBC	TBC	BUSBAR TBC	FAT / SAT / ET101:2008	ET101:2008 - SAFE ELECTRIC QUALIFIED CERTIFIER	IS EN 60947	✓	✓	✓	✓	TBC	N/A	ALL INTERNAL CABLES TO BE LABELLED / FIRE ALARM TO BE FED FROM MDBs / ENERGY MONITORS WITH HIGH LEVEL INTERFACE REQUIRED / 2HR EMERGENCY CALL OUT WITH 2-4HR RESPONSE
		SDBs	NON-CRITICAL	ALL AREAS	MSB / UPS BACKED MSB	TBC	TBC	TBC	FAT / SAT / ET101:2008	ET101:2008 - SAFE ELECTRIC QUALIFIED CERTIFIER	IS EN 60947	✓	✓	✓	✓	TBC	N/A	ALL INTERNAL CABLES TO BE LABELLED
E-006	LIGHTING	LIGHTING	NON-CRITICAL	ALL AREAS	SDBs	N/A	N/A	2.5mm LSF	ET101:2008	ET101:2008 - SAFE ELECTRIC QUALIFIED CERTIFIER	IS EN 60598 ET101:2008	✓	✓	N/A	✓	RECI	N/A	10 FLUORESCENT LIGHTS PER CIRCUIT - ALL OTHERS TYPES (I.E. LED) AS PER MANUFACTURERS GUIDELINES (NOT EXCEEDING 75% OF CABLE CAPACITY) / LIGHT POSITIONS TO BE DETERMINED FROM THE ARCHITECTS REFLECTED CEILING PLAN / MULTI-GANG SWITCHES WITH MULTIPLE PHASES SHOULD HAVE SUITABLE PHASE BARRIER IN PLACE / ALL LUMINAIRES TO BE WIRED BY A HEAT RESISTANT FLEX. (KLICK TYPE ARRANGEMENT) / NO LUMINAIRES THAT USE THERMOPLASTIC MATERIAL CAN BE USED. / LED LAMP LIFE SHOULD BE NO LESS THAN L70 FIGURE (35,000HRS) / DALI SYSTEM TO BE UTILISED THROUGHOUT WITH ALL REQUIRED ACCESSORIES / DALI LOOMS TO BE WIRED IN 2 CORE 2.5mm2 AND CPC. / LIGHT FITTING COLOURS TO BE AGREED WITH THE ARCHITECT. LAMP COLOUR TO BE 840 THROUGHOUT
		EMERGENCY LIGHTING	NON-CRITICAL	ALL AREAS	SDBs	N/A	N/A	2.5mm LSF	ET101:2008	IS3217:2008 - EMERGENCY LIGHTING COMMISSIONER	IS 3217 ET101:2008	✓	✓	N/A	✓	NSAI	N/A	<50V EMERGENCY LIGHT CABLE CAN USE FIRE ALARM CONTAINMENT SUBJECT TO PRIOR APPROVAL / LIGHT POSITIONS TO BE DETERMINED FROM THE ARCHITECTS REFLECTED CEILING PLAN / LOG BOOK TO BE IN A HARD PLASTIC RING BINDER, LISTING EVERY EMERGENCY FITTING WITHIN IN THE BUILDING BY THEIR LOCATION AND NUMBER (AS PER THE DALI DESIGNATION), AND SUFFICIENT LOG BOOK PAGES FOR UPTO 5 YEARS OF TESTS. / EACH FITTING CAN BE TESTED INDIVIDUALLY AND RECORDED AS PER DALI REQUIREMENTS / EMERGENCY LIGHTS SHOULD BE TESTED IN STAGES - FIRST - ALTERNATE LIGHTS ARE INDIVIDUALLY TESTED, SECOND - 24HRS AFTER FIRST STAGE, THE REMAINING LIGHTS ARE INDIVIDUALLY TESTED.
E-007	SMALL POWER	GENERAL SERVICES / SMALL POWER	NON-CRITICAL	ALL AREAS	SDBs	N/A	N/A	3(5)*4.0mm LSF	ET101:2008	ET101:2008 - SAFE ELECTRIC QUALIFIED CERTIFIER	BS 5733 ET101:2008	✓	✓	N/A	✓	RECI	N/A	SMALL POWER MCBs TO BE 2 POLE / 1 ITEM PER CIRCUIT WHERE ITEM IS PERMANENTLY FIXED / ISOLATOR CIRCUIT CABLES AS FOLLOWS / 16-20A 4mm2 & 2.5mm2 CPC / 25A 6mm2 & 4mm2 CPC / 32A 10mm2 & 6mm2 CPC / 50-63A 16mm2 & 10mm2 CPC / TRACE HEATING SPUR TO BE ENGRAVED IN RED 'TRACE HEATING - DO NOT SWITCH OFF'
		GENERAL SERVICES	NON-CRITICAL	ALL AREAS	SDBs	N/A	N/A	3*4.0mm LSF	ET101:2008	ET101:2008 - SAFE ELECTRIC QUALIFIED CERTIFIER	BS 5733 ET101:2008	✓	✓	N/A	✓	RECI	N/A	5 SOCKETS PER CIRCUIT IN NON AIR-CONDITIONED AREAS / 10 SOCKETS PER CIRCUIT IN AIR CONDITIONED AREAS / 1 16A SOCKET PER CIRCUIT / 16A/32A SOCKETS TO BE MK COMANDO RANGE / 16A SOCKET 4mm2 & 2.5mm2 CPC / 32A SOCKET 6mm2 & 4mm2 CPC / EXTERNAL/DAMP AREA SOCKETS TO BE IP67
E-002	UPS	MSBs	CRITICAL	ALL AREAS	MSB	TBC	TBC	BUSBAR TBC	ET101:2008	ET101:2008 - SAFE ELECTRIC QUALIFIED CERTIFIER	IS EN 50091	✓	✓	✓	✓	RECI	N/A	UPS BY OTHERS / BUSDUCT, TERMS, TESTING ONLY

Communications

- **Matrix**:

  ➡ QEHS Alerts *(proactive)*
  ➡ QEHS Monthly communications
  ➡ Intranet (K-Net)
  ➡ Marketing updates
  ➡ Twitter feeds & LinkedIn updates
  ➡ Seminars, events
  ➡ Climate surveys
  ➡ Director communications, etc.

- **Company Intranet (K-Net)**:

  ➡ Home page
  ➡ EHS
  ➡ Finance
  ➡ HR
  ➡ IT
  ➡ Marketing
  ➡ Procurement
  ➡ Quality
  ➡ Projects (Live)
  ➡ Strategy & Innovation
  ➡ Engineering

Communications

Kirby Communications Map - 2016
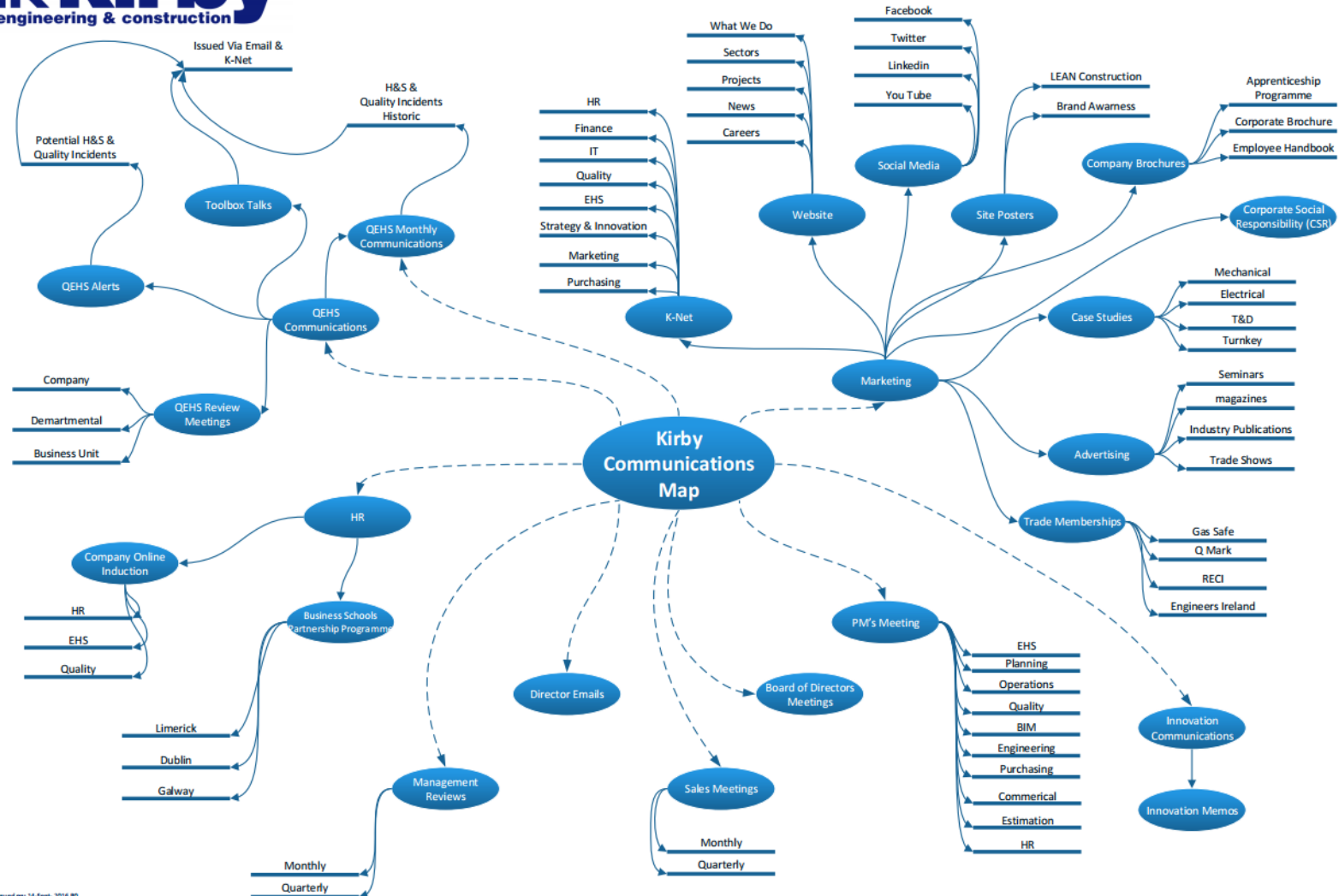
Risk Management – Business Impact Analysis

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BCMS - Business Impact Analysis (BIA) Risk Register 2016 R0

| Risk #	Category	Description (min. Business Continuity Objectives - MBCO's)	Imminence / Status	Risk Assessment Likelihood	Severity	Assessment	Impact tutory Authoritie	minal Investigati	Client	Negative PR	nly/Community	Cost Effect	Time Effect	Environment	Quality	Responsibility	Controls / Mitigation	Residual Risk	Action taken
20	Fatality / Major Injury	Any Major Injury or Fatality to an employee(s) at work, or to any visitor (s), contractor/member of public on or in connection with Kirby workplaces.	Current	3	5	15	y	y	y	y	y	y	y	n	n	QEHS Director EHS Manager Operations Team	Implementation of Kirby EHSMS (Plan, Do, Check, Act). Site Manger shall follow Kirby OP-028 Emergency Response - Securing the Scene and Notifying Emergency Services. Contact police if there is a fatality. Apply 30 minute reporting rule immediately. Ensure evidence is not tampered with. Arrange for counselling of affected employees and impacted families. Ensure all necessary arrangements are made for impacted families. EHS Manager to notify relevant statutory authorities. Crisis Leader to set up Crisis Team and Coordinate Site Team., arrange for legal representation at the impacted project. Se up PR communications strategy. Facilitate interviews, set up interview and	Prosecution and Criminal Investigation leading to significant fines, prison sentences, higher insurance premiums and loss of reputation. Negative Media reports. Poor internal and external communications. Loss of morale and production. Replacement and retraining. Orderly control of work resumption.	Training, advice, guidance and communications to relevant parties concerning legal and other requirements. Arrangement for EAP and Occupational Health assistance through Kirby external providers. Communication strategy to be developed and implemented with PR company. Return to Work planning by Crisis Team.
3	Fire / Chemical Explosion	Any fire and/or explosion which results in significant damage whereby the operation of the damaged facility cannot be restarted for >24hours..	Future	3	4	12	y	y	y	y	y	y	y	y	y	QEHS Director EHS Manager Operations Team	Notify Emergency Services and Implement Project Emergency Response Plan. Apply 30 minute reporting rule immediately. Secure scene and make evacuation arrangements to safest assembly point. Evaacuate further if necessary. Take account of all personnel and notify emergency services if persons are missing. Crisis Leader to set up Crisis Team and Coordinate Site Team.	Lack of Eemrgency Preparedness on site. Further damage due to falmmable / explosive atmospheres. Impact on local community.	Adhere to Emergency Evacuation procedures and notify Site Security on the dedicated lines and/or Emergency Services to aid in evacuation, rescue and control of hazardous areas. 6-monthly training provided to Crisis Control team, to stay fresh and operational ready, in the event of an incident arising. Simulation event to be run every 6 months, to mimic a real-life incident.
12	Random failure / Damage of Client Mission Critical systems	Loss of critical Systems / Services to Regional offices, projects or Client operations, inadvertently or unplanned, which impacts Operations & Handover.	Current	3	4	12	y	n	y	y	n	y	y	n	y	Operations Director Business Unit Manager. QA/QC Manager	Notify impacted client and/or personnel of expected downtime. Imternally liasie with impacted function managers and externall liaise with client and request permission to assess operatiornal or production impacts. Develop and implement recovery plan. Arrange for external assistance as required	Prolonged impact to critical Systems/Services. Loss of Reputation. Impacts on peronnel to perform tasks.	ESSW Procedure and control of energies. Arrange ongoing communications and briefings to staff and client. Implement arrangements for off site working.
4	Flood	Ingress of water causing interruption to Existing / Live Data Cabling. Damage to Regional offices / project sites. Documentation / records destroyed - Kirby owned facilities.	Future	3	3	9	n	n	n	n	y	y	y	y	n	Managing Director Project Manager Site Manager	Notify all personnel (Staff) of any Downtime. Secure area and allow emergency services to complete works. Request permission to re-enter and assess recoverable assets and damaged assets.	Impact to services - notify Emergency / Police services (as required), Company Security & Stakeholders / Client immediately.	Review regularly, Red, Amber, Orange Weathering Warnings issued & after prolonged Wet / Stormy weather period. Notify Emergency / Police services (as required), Company Security & Stakeholders / Client immediately, of impact(s). Communicate at Toolbox Talks and to key Stakeholders.
13	Security / Privacy breach / Data Protection	Breach or loss of secured Data relating to Kirby personnel records or business operations, including data that has not been encrypted. Security breach or Privacy breach of Kirby Regional / Project Offices or personnel's privacy in relation to their work activities and/or Job Roles & Responsibilities.	Current	3	3	9	y	y	n	n	y	n	y	n	n	Financial Director HR Manager	Regular IT System audits to be performed. Review Firewalls and Virus / Malware software in place. Revert to Disaster Recovery (DR) Plan and work closely with our ISP providers.	Impact to services - notify Group IT Dept. & affected Client immediately, if data breaches occur / arise. Notify the Data Protection Commissioners (Ireland and/or UK), where required by Law.	Notify the **Data Protection Commissioner**, where a data breach has occurred. IT Dept. to monitor / control activities and initiate remote / limited access to IT Systems and Software, as required and as per Disaster Recovery (DR) Plan.
5	Cyber Attack	Interruption to Existing IT Systems and / or IT Network Control room. (External or Internal attack)	Current	2	4	8	y	y	y	y	n	y	y	n	y	Financial Director IT Manager	Review Firewalls and Virus / Malware software in place. Revert to Disaster Recovery (DR) Plan and work closely with our ISP providers.	Impact to services - notify IT Dept. & affected Client immediately, if data breaches occur / arise. Notify the Data Protection Commissioners (Ireland and/or UK), where required by Law.	Notify the Data Protection Commissioner, where a data breach has occurred. IT Dept. to monitor / control activities and initiate remote / limited access to IT Systems and Software, as required and as per Disaster Recovery (DR)
14	Hurricane (or other major storm)	Major weather event / impact due to a pending or actual natural disaster.	Future	2	4	8	n	n	y	n	y	y	y	y	n	EHS Manager Operations Teams	Adhere to EHS preventative measures for 'closing down' active Kirby projects, in advance of severe Weather related events.	Limited time to put in full Preventative measures, in place before the severe weather event arises.	Review regularly, Red, Amber, Orange Weathering Warnings issued & after prolonged Wet / Stormy weather period.
17	Statutory Regulations -	Non-adherence to Company Law, Irish Standards, British Standards, ASTM standards and other Regulatory bodies i.e. RGII, RECI, CER, ETCI, NSAI, IEE (UK), NICEIC (UK), Gas Safe (UK),	Current	2	4	8	y	y	y	y	n	y	y	n	y	QEHS Director QA/QC Manager	External audits / site assessments performed on active Projects. Internal auditing undertaken (>200Nr. p.a.) Maintenance of Professional Body Membership by	Check that no gaps exist in protection of the Company, Staff and Employees, due to a compliance failure or regulatory breach.	Continual autonomous Internal auditing to be performed on business processes and active projects. External auditing to be continually undertaken by External / Notified bodies, to ensure compliance to current regulations. Any findings raised to be addressed immediately (with 1-4 weeks upon

Risk Management – Projects

Unique Risk Number	Type	Risk Description (Area of uncertainty)	Risk Consequence (Resultant effect)	Probability	Owner (one person)	Owners Organisation	Mitigation	Next Mitigation Review Date	Status	Comments
1	EHS	Ope Management, protection of opes	Fall from height, hand tools or material fall from height	High	Site Manager/ Foreman	HVAC	Protection of Ope's, continues monitoring of ope's		Open	High number of opes for ductwork to be managed
2	EHS	Working at heights, MEWP congestion etc. Lots of high level ducting/service install using MEWP's.	Risk of injury	Medium	Site Manager/ Foreman	HVAC	High level sequencing of works, Daily whiteboard meetings per area, correct MEWP to spotter ratio		Open	Lots of high level ducting/service install using MEWP's careful planning required.
3	EHS	Ducting storage available space	Housekeeping	High	Site Manager/ Foreman	HVAC	Agree duct laydown areas in each floor, use of barriers etc. JIT deliveries			
4	Co-ordination	Poor co-ordination of HVAC with other trades i.e. C/R drop rods, sprinkler etc.	Schedule, abortive work, cost & QA issues	Medium	HVAC Project Manager	HVAC	Early engagement with CMT, design freeze/IFC release/Model release		Open	Get access to model early and apply correct resources
5	Co-ordination	VAV/CAV orientation incorrect due to poor co-ordination	Schedule delay if new VAV/CAV needs to be ordered due to incorrect orientation	High	HVAC Project Manager/ CMT	HVAC	Ensure orientation of VAV/CAV's are checked from model prior to ordering, ensure orientation is maintained if duct changes are required		Open	
6	Co-ordination	HEPA final connection misalignment, can be difficult to position final connection to HEPA in exact location prior to WOC install	Abortive work/QA/Schedule	High	HVAC Project Manager/ CMT	HVAC	Use total station to accurately locate final drop to Hepa and mark floor so can laser up			
7	Quality	Dust ingress to ductwork or ductwork equipment	Contaminated ductwork = filter failure	High	HVAC Project Manager	HVAC	Follow QA procedures/white glove test correct protection & storage of ductwork. Protection only removed at bolt up		Open	
8	Quality	Dust ingress to ductwork from cleanroom return walls during floor prep/grinding in cleanroom	Contaminated ductwork = filter failure	High	HVAC Project Manager	HVAC/CMT	Install spade at spiggot to RA at WOC level only remove at commissioning stage.		Open	

kirby engineering & construction

Planning

- Generated when projects are secured – tracked by Planned Completion dates
- Used to update our K-Net Live Projects
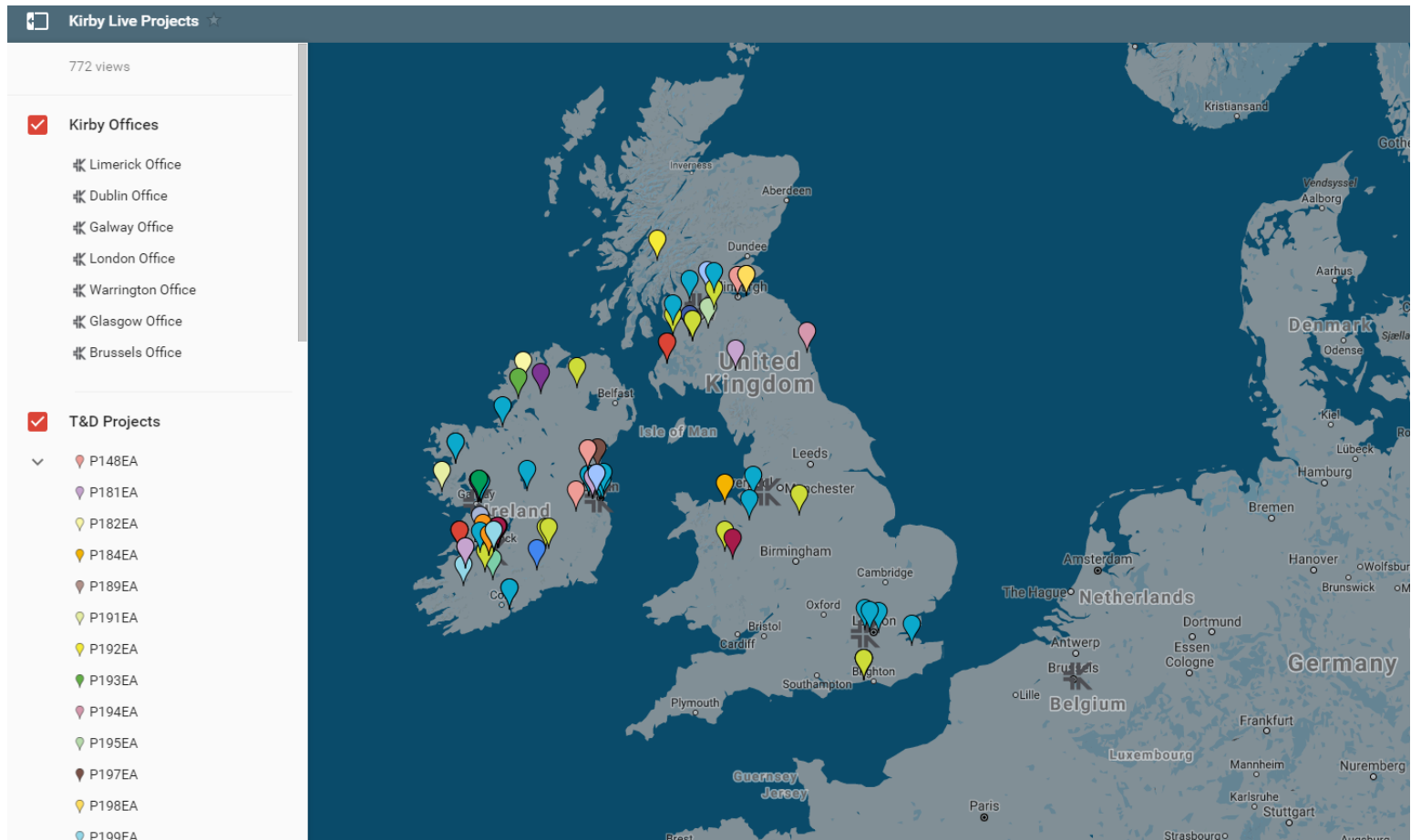
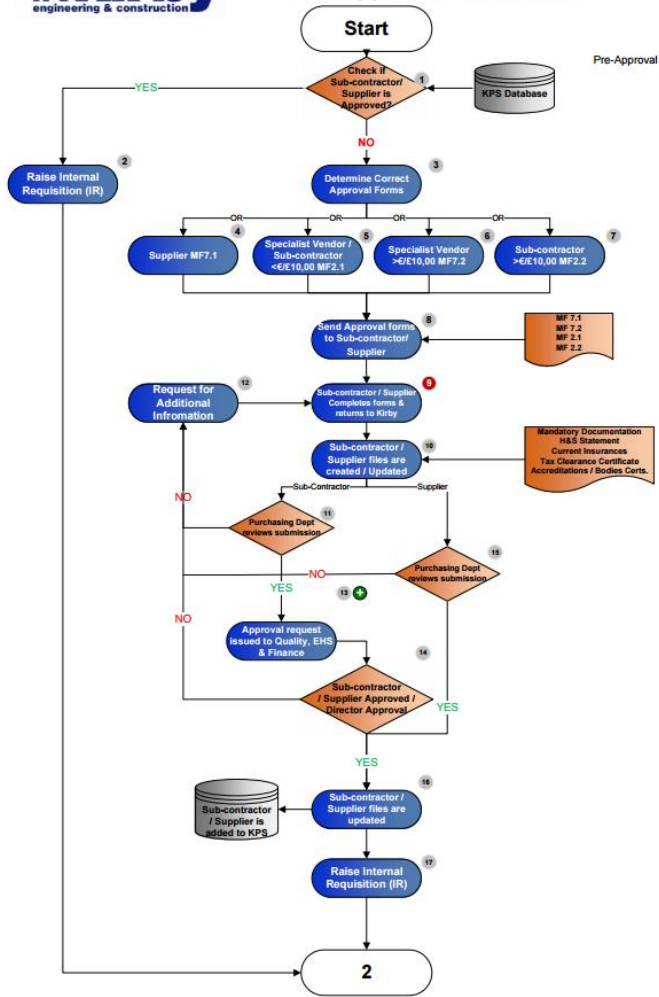# Operational Process flowcharts

MP2 - Sub-contractor/Supplier Pre-Approval - Flowchart

Pre-Approval

Start

- Check if Sub-contractor/ Supplier is Approved? — 1 — KPS Database
  - YES
  - NO
- Raise Internal Requisition (IR) — 2
- Determine Correct Approval Forms — 3
- Supplier MF7.1 — 4 — OR — Specialist Vendor / Sub-contractor <€/£10,00 MF2.1 — 5 — OR — Specialist Vendor >€/£10,00 MF7.2 — 6 — OR — Sub-contractor >€/£10,00 MF2.2 — 7
- Send Approval forms to Sub-contractor/ Supplier — 8 — MF 7.1 / MF 7.2 / MF 2.1 / MF 2.2
- Request for Additional Information — 12 — Sub-contractor / Supplier Completes forms & returns to Kirby — 9
- Sub-contractor / Supplier files are created / Updated — 10 — Mandatory Documentation H&S Statement Current Insurances Tax Clearance Certificate Accreditations / Bodies Certs.
  - Sub-Contractor — NO — Purchasing Dept reviews submission — 11
  - Supplier — Purchasing Dept reviews submission — 15
  - YES / NO / 13
- Approval request issued to Quality, EHS & Finance — 13
- Sub-contractor / Supplier Approved / Director Approval — 14 — YES
  - NO
  - YES
- Sub-contractor / Supplier files are updated — 16 — Sub-contractor / Supplier is added to KPS
- Raise Internal Requisition (IR) — 17
- 2

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PROCESS STEPS

1. The Requisitioner checks the Master Sub-contractor database to determine if the Sub-contractor / Supplier is Approved. YES – go to step 2, NO – go to step 3

2. The Requisitioner raises an Internal Requisition (IR) on the Kirby Procurement System (KPS)

3. Determine the correct Approval forms to be issued depending on the services being provided as described in steps 4 – 7.

4. Suppliers – Provide supply goods / Materials / Manufactured Equipment.

5. Specialist Vendors – Provide specialist services (e.g. Commissioning or Maintenance) with a value <€/£10,00. Sub-contractors – providers of labour and materials or labour only with a value <€/£10,00.

6. Specialist Vendors – Provide specialist services (e.g. Commissioning or Maintenance) with a value >€/£10,00.

7. Sub-contractors – providers of labour and materials or labour only with a value >€/£10,00.

8. The appropriate forms are sent to the Sub-contractor by Kirby.

9. The Sub-contractor / Supplier returns the completed form with all required supporting documentation to the relevant Kirby personnel.

10. Sub-contractor / Supplier files are either created or updated with the new documentation. Proceed to step 11 for Sub-contractor Approval Proceed to step 15 for Supplier Approval

11. Purchasing Department reviews **Sub-contractor** submission to determine if all required documentation has been received. YES – go to step 13, NO – go to step 12.

12. Additional documentation is requested from the Sub-contractor / Supplier.

13. An Approval request is sent to the Quality, Finance & EHS Managers or their advocates.

14. The Quality, Finance & EHS Managers or there advocates sign off the Sub-contractors Approval form. YES – go to step 16, NO – go to step 12.

15. Purchasing Department reviews **Supplier** submission to determine if all required documentation has been received. YES – go to step 16, NO – go to step 12.

16. Requisitioner is informed that the Sub-contractor / Supplier is Approved, files are updated and they are added to the KPS by the Purchasing Department.

17. The Requisitioner raises an IR on the KPS.

RESPONSIBLE PERSONS

- Operations Director
- Business Unit Manager
- Project Manager
- Site Supervisor
- Quality Manager
- Finance Manager
- EHS Manager
- Group Supply Chain Manager
- Sub-contractor representative
- Supplier representative
- Buyer
- Project Requisitioner

Responsibilities
The Operations Director is responsible for ensuring this procedure is adhered to.

Business Unit Manager is responsible for ensuring this procedure is adhered to.

Project Managers are responsible for Specialist Sub-contractor Appraisals.

Site Supervisor is responsible for ensuring that this standard operating procedure is adhered to.

The Group Supply Chain and Quality Managers are responsible for maintaining an approved list of Specialist Sub-contractors.

The Quality, Finance & EHS Managers are responsible for signing off the Sub-contractor approvals.

The Group Supply Chain Manager is responsible for signing off Supplier approvals.

The Sub-contractor & Supplier representatives are responsible for submitting accurate documentation in a timely manner.

The Project Requisitioner is responsible for raising the IR for the Sub-contractor / Supplier

The Buyer is responsible for Issuing out the PO.

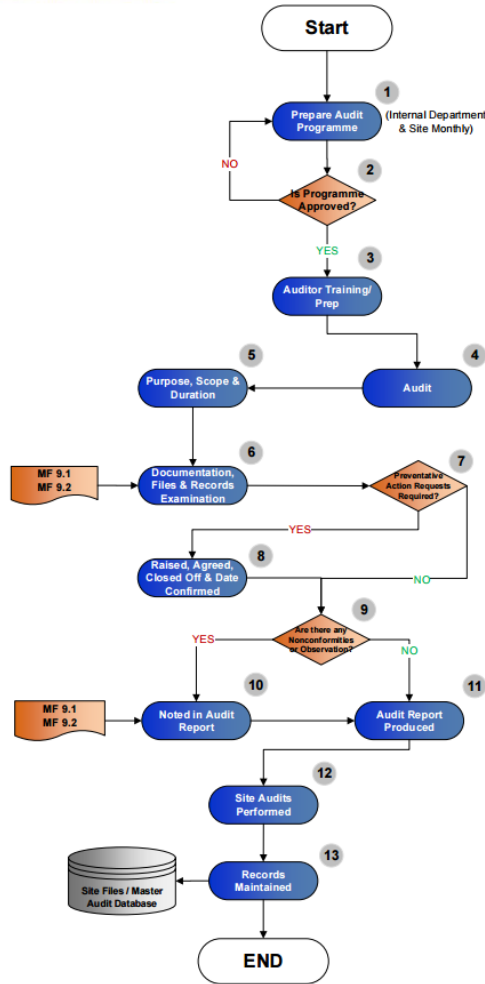All other responsibilities are defined within the procedure

REFERNCES

Related Standards
ISO 9001:2008
OHAS 18001:2007
ISO 14001:2004
Sub-contractor / Supplier specific Standards & Regulations

Related Procedures
MP2, Sub-Contractor Management procedure
MP6, Contract Management procedure
MP7, Purchasing procedure
SP7, Inspection procedure

Related Forms
MF2.1, Request for Specialist Sub-contractor Approval
MF2.2, Subcontractor Pre-Qualification Questionnaire (IRE & UK)
MF2.2a, Pre-Qualification Questionnaire (Europe)
MF2.5, Specialist Sub-contractor Performance Review
MF2.9, Specialist Subcontractor Dispensation Form
MF7.2, Vendor Pre-Qualification Questionnaire (IRE & UK)
MF7.2a, Vendor Pre-Qualification Questionnaire (Europe)

Legend

➕ EHS Step

⚪ Kirby Step

🔴 Sub-contractor / Supplier Step

Key Decision Point / Process Step

Take corrective action as appropriate for nonconforming product incomplete documentation etc.
Determine action to eliminate the causes of potential non-conformities.

Documents required in adjacent step.

Database involved.

Operational Process flowcharts

MP9 Internal Audit Process Flowchart

Start

1. **Prepare Audit Programme** (Internal Department & Site Monthly)

2. **Is Programme Approved?** — NO / YES

3. **Auditor Training/ Prep**

4. **Audit**

5. **Purpose, Scope & Duration**

6. **Documentation, Files & Records Examination** (MF 9.1, MF 9.2)

7. **Preventative Action Requests Required?** — YES / NO

8. **Raised, Agreed, Closed Off & Date Confirmed**

9. **Are there any Nonconformities or Observation?** — YES / NO

10. **Noted in Audit Report** (MF 9.1, MF 9.2)

11. **Audit Report Produced**

12. **Site Audits Performed**

13. **Records Maintained** — Site Files / Master Audit Database

END

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PROCESS STEPS

1. A scheduled programme of Management System audits is produced at the end of each calendar year for the following year for the office/functions and monthly for site/projects audits. The programme is prepared and approved, in accordance with the Management Review procedure, and issued to QES Director.

2. Is the programme approved?
YES – Go to Step 3
NO – Go to Step 1

3. The Quality/EHS Department ensures that auditors complete an internal ISO audit course of basic audit training. The Quality/EHS Department ensures that Auditors have the current edition of the Quality Manual/ EHS Statement along with all the necessary documents to carry out an audit.

4. Audit notified and performed in accordance with ISO 9001, Q-Mark and Quality Assurance plan requirements.

5. The Auditor opens the audit by discussing with the Auditee or appropriate Manager the purpose and scope of the audit, duration of the audit and clarifies the meaning of discrepancies.

6. The Auditor examines all relevant documentation, files and records using a pre- prepared audit checklist as a guide to ensure that there is compliance with and proper understanding of the procedures being audited.

7. Are Preventative Action Requests (Red, Amber, Green or Grey flags) required?
YES – Go to Step 8
NO – Go to Step 9

8. If the results of the Internal Audit require the issuing of Preventative Action Requests (flags), then these are raised, agreed, and closed off in accordance with the Preventative Action procedure by the Auditee.

9. Are there any Nonconformities or Observations? i.e. Red, Amber, or Green Flags
YES – Go to Step 10
NO – Go to Step 11

10. Non conformities or Observations of a minor nature may not result in the issuing of a CAR but will be noted in the Audit Report.

11. The Auditor produces an Audit Report and makes a note of the findings and matters discussed. The Audit Report and findings issued are then given to the Quality/EHS Department Managers and formally issued to the auditees. Copies are also issued to the QEHS & Operational Director and Regional BU Manager & Project / Function Manager.

12.
- Site Audits are carried out by the QEHS Department for all field personnel.
- Audits can also be carried out by independent consultants of field personnel and also Management & other Staff.
- Health & Safety / Environmental / Quality audit reports are filed per project / per Support function.
- Audit scopes are also recorded, per project in the Quality KPI's, per month.

13.
- Records and Document Review & Revision are maintained by the Department Managers in accordance with the Document Control Procedure, MP/1
- A summary of the internal audit findings is discussed at the next Management Review meeting, per Quarter

RESPONSIBLE PERSONS

- Operations Director
- Business Unit Managers
- QEHS Director
- Directors & Associate Directors
- Project Manager/Project Engineer
- Quality Manager
- EHS Manager
- Site Supervisor

Responsibilities

The QEHS Director is responsible for ensuring that this procedure is adhered to.

The Operations Director is responsible for ensuring that this procedure is adhered to.

The Quality / EHS Managers are responsible for planning Internal Quality / EHS Audits and for implementing the procedure.

The Project / Functional Manager is responsible for actioning any findings in the audit(s)

All other responsibilities are defined within the Procedure.

REFERENCES

Related Standards
ISO 19011
ISO 9001
OHAS 18001
ISO 14001
Project Specific Standards & Regulations
Q Mark Standard

Related Procedures
MP1, Document Control procedure
MP3, Management Review procedure
MP10, Preventative Action.

Related Forms
MF9.1, Audit checklist
MF9.2, Audit Report
MF9.3, Site Audit Checklist

Legend

⊕ EHS Step

⚪ Kirby Step

🔴 3rd Partry Step

Key Decision Point   Process Step

Take corrective action as appropriate for nonconforming product incomplete documentation etc.
Determine action to eliminate the causes of potential non-conformities.

Document required in adjacent step.

Databased involved.

Continuous Improvement

PDCA cycle Register:

- New ideas recorded and tracked, as they progress.

- Measured quarterly.

Kirby PDCA Continuous Improvement (CI) Register 2016

Opportunities for Improvement (OFIs)

#	C.I. Description Initiative	Date	Raised By	Project (if	Region	Procedure (if applicabl.	P - Plan	D - Do	C - Check	A - Act	Signed off	% Comple	Comments
1	Kirby Process Flows	15-Oct-15	Quality Team	N/A	All	Entire QMS	Convert the QMS Procedures to process flow charts. This is to assist in the training process of new starts and improve the knowledge & capabilities of	Create process flow charts for each QMS Procedure and communicate out to all users when complete	Discuss each process flow with the relevant Manager / Competent person to determine if the process flows are fit for purpose & reline if nessacry.	Update the flows to match the redlines provided. Communicate the process flows out to all users.	Martin Searson	95%	Redlined procedures are currently being updated. MP, SP, SPE, SPC, SPP have been reviewed are now available on K-Net.
2	Quality Poster Campaign	11-Dec-15	Martin Searson	N/A	All	N/A	Create a Quality Poster campaign promoting the Kirby Quality Culture.	Generate 12No. Quality posters promoting high level quality issues and load onto K-Net.	Highlight a different Poster for each month using the Quality Announcements tool on K-Net. Review in 12 months to determine if there has been traction with the poster campaign.	Posters have been made available on K-Net in the Quality section. PM's are encouraged to select which poster is relevant to their site each month and advertise it on the QEHS noticeboard.		80%	Posters created and need to be reviewed prior to release on K-Net.
3	Corporate Procedures (CPs)	17-Jun-13	Martin Searson	N/A	All	CP/1 - CP/21	Produce a suite od Corporate Procedures which outline from a high level how each area works	draft procedures are created	Draft procedures are reviewed and redlined by the relevant managers.	Rollout the CP's to the Functional Managers & Directors only. To be continually review as part of the Internally Departmental Audits.		80%	Remaining 4Nr. CP's to be finalised and signed off by the Functional Line Manager.
4	Quality Toolbox Talks (TBTs)	16-Jan-15	Martin Searson	All	All	CP/4	Draft a set of QTBT talks which provided additional information on areas where there have been Quality issues.	Load the QTBT onto K-Net and have the EHS Advisors deliver them on site.	Review the QTBT based on feedback from the site teams.	Encourage site teams to give QTBT's to the personal on site to encourage a positive Quality Culture.		95%	54Nr. Quality TBTs created in Word format - need to PDF and roll-out across the different Business Unit projects.
5	Q Mark Standard (CI Journey)	02-Feb-13	Martin Searson	N/A	All	CP/4	Complete the Q Mark Audit each year with EIQA.	Recommendations reviewed, updated and completed, where appropriate..	Q Mark Standard assessment completed over 3-Days on 29th, 30th & 31st March 2016.	Q Mark Standard Assessment report received on 8th April 2016.		81%	Scored 81% in 2016 and maintained the Q Mark Standard for 2016. Short-listed for fourth National Quality Award (30th Sept 2016).
6	CI / QA Support role	03-Feb-16	Ray Ryan	All	All	N/A	100 Day Plan created from 1st April 2016 until 4th July 2016 - to be tracked monthly.	100 Day plan to be implemented and reviewed as required	QA Support to be given until January 2017 to settle into role. In January 100 day plan to be reviewed against completed	create action plan from review in Jan,		100%	100 Day Plan initiated - commenced on Friday, 1st April 2016.
7	iQEHS Software (ETQ software)	01-Feb-16	Martin Searson	N/A	N/A	CP/4	Research and review iQEHS software for suitability with the Kirby processes and systems	Reviewed ETQ Software	Deemed not suitable	Put on hold as there is currently a business process mapping innitiave in the company. As an output of this process a QEHS Software will be recommended.	N/A	20%	Not proceeding with this solution at present.
8	K-Net updates	01-Feb-16	Eamonn Quirke	N/A	All	CP/4	regularly add new content to the Quality page on K-Net.	To date we have uploaded Process flows, quality posters and communicated key information to all users i.e. external audits.	Monthly K-Net review issued out from Marketing Department. This is analysis to determine which areas of the Quality page need to be reviewed and updated.	Implement any updates identified from the monthly reviews.		100%	On-going (monthly).
9	LCI seminars	13-Mar-15	Giedre Visockaite	N/A	N/A	N/A	Attend and track LCI Seminars	review findings from seminars and determine if it is applicable for application to Kirby	review the findings from the LCI Seminars and determine which are applicable to Kirby.	implement findings which are applicable to Kirby that are identified in the LCI Seminars		On-going	On-going (monthly).
10	LCI webinars	13-Mar-15	Giedre	N/A	N/A	N/A	Attend and track LCI webinars	review findings from webinars and	review the findings from the LCI	implement findings which are		On-going	On-going (monthly).

Measurement & Analysis

<u>Inputs and Outputs:</u>

- Internal Audits *(Projects and Functional Support)*

- External Audits

- Management Reviews

- Customer feedback / references

- Pareto Analysis *(punchlists)*

- Quality Trend Analysis

- Innovation ideas

- SEOR (Safety & Environmental Observations Report) cards

- Toolbox Talks / Town-hall Meetings

- Employee Surveys

- Leaders site tours

- Supply-chain alignment