

添付資料

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添付資料-1 議事録

協議名	JICA ナイロビ事務所	日付・時間	2015/10/5	10:15~11:30
称	打合せ	場所	JICA ナイロビ事務所	
相手方出席者、役職、所属等				
次長、企画調査員 Infrastructure & Evaluation Advisor				
協議・ヒアリング内容/確認事項等				
【JICA コメント】				
<ul style="list-style-type: none"> ・モンバサ滞在時のセミナー（10月14日予定）の内容は、7月にJICAが安全管理について実施した内容と重複のないよう配慮されたい ・7月にモンバサを訪ねた際、コンサルタントの安全管理上の位置づけ、活動内容が明確でない印象を受けた。コンサル契約書上においても同様。モンバサ滞在中にこの点について調査されたい ・本来はKPA（発注者）と直接接するのは請負業者でなくコンサルタントであり、その役割は非常に重要 ・モンバサ港開発事業のPhase 2のD/Dは今後、現在はTORの内容充実、契約書、仕様書内容の検討段階。Safety Officerの配置も計画 ・日本の建設会社が事業参加し、安全面でよい結果を残してくれれば、それがケニアにとって良い実績となり、将来の入札や契約へモンバサ港事業の契約内容の反映も可能 ・当地では日本大使館の意向もあり、インフラの質の向上に注力中。日本政府による援助事業に限らず、日本の安全文化の普及に努めている 				
【調査団回答】				
<ul style="list-style-type: none"> ・セミナー構成は、7月のプレゼン内容を踏まえたうえで内容構成している。3者間での安全管理体制の仕組みに疑問があるが、“事故が少ない”という結果にfocusした根本原因分析を行う予定 ・調査団の取るアプローチは、文化的、倫理的な物事をできる限りシステムに置き換えること。文化は国により民族により異なるもので変えられない ・日本では安全管理の実現に最も寄与しているのは人の文化観や倫理観に勝って“法の存在”事故を起こすと罰則が科され、次の入札参加が半年間等制限される ・モンバサ港の現場で事故発生が少ないのも、日本の建設会社が国内の安全管理体制を持ち込んでいるからと想像する ・ODA事業は世界中で展開中だが、各国では異なる法が施行されているおり、個々の国の事業における“契約”（内容）や“仕様書”が重要 ・日本の安全文化は厳格な法の遵守に基づいている 				

協議名	ケニア労働省 労働衛生局	日付・時間	2015/10/5	14:40~16:40
称	ヒアリング	場所	労働省 労働衛生局 (DOSHS)	
相手方出席者、役職、所属等				
Deputy Director, DOSHS Deputy Director, DOSHS				
協議・ヒアリング内容/確認事項等				
<ul style="list-style-type: none"> ・DOSHSは労働省の一つの部局。社会保障およびサービスを提供する機関で、労働者の安全衛生向上について様々な活動を展開 ・労働災害や疾病、労働現場における作業環境の向上に関する研究所掌 ・主要な機能の一つは、作業現場のinspection。また、Occupational Safety and Health Act及びWork Injury Benefit Actの現場でのenforcementを促すこと ・ケニアの問題点は法の施行(enforcement)。価格を抑えて応札する業者は安全経費をまず除外する傾向がある。PPEに係る経費など ・環境と安全を並列で比較すると、ケニアでは環境の方の存在が大きく捉えられる。安全は個人単位への影響で、環境は事業全体や対象地域のcommunityに影響が及ぶものとのイメージ ・OSHAでは20名以上の労働者がいる作業場ではsafety and health committeeの設置、また年4回の会合の開催を義務付けている ・2007年立法の下記各法律は、憲法改正に合わせ随時改訂中。2012年法と内容は大きく異なる <ul style="list-style-type: none"> ①労働機関法 (Labor Institutions Act, 2007)、②国家社会保障基金法 (NSSF : National Social Security Fund Act, 2007)、③産業裁判法 (Industrial Court Act, 2007)、④産業訓練法 (Industrial Training Act, 2007)、⑤雇用法 (Employment Act, 2007)、⑥労働関係法 (Labor Relations Act, 2007)、⑦労働安全衛生法 (Occupational Safety and Health Act, 2007)、⑧労働災害保険法 (Work Injury Benefit Act, 2007) ・各法改訂に伴い、規則も順次改訂される。政府の予算問題で法や規則の改訂作業がスムーズに進まないのが課題 ・OSH関連の研修センターの建築は完了。JICAから専門家やOSH研修用のmodern equipmentを提供を望む ・センター機能充実にはコストが掛かる。モニタリング機器、材料検査機材等、機材研修のためのオペレーター等も必要 ・労働省の地方機関のoffice数は約30。Inspector数は50名強。各事務所には最低1名のofficerを配置しているが、事務所数は増えているがスタッフ数が変わらない(現場監査が困難になっている) ・人材不足問題は近い将来もっと大きな問題となるだろう ・OSH Advisorの数は現在は80名程度 ・労働災害、事故統計のデータ管理について、外部コンサルタント等への委託によりシステム整備中。事故や災害データは収集しているが、システム管理は今後の課題 				

協議名	ケニア国家建設局	日付・時間	2015/10/6	11:40~12:30
称	ヒアリング	場所	国家建設局 (NCA)	
相手方出席者、役職、所属等				
Senior Research Officer, NCA Registration Officer, NCA				
協議・ヒアリング内容/確認事項等				
<ul style="list-style-type: none"> ・ NCA は設置後まだ 2 年の機関 ・ NCA はプロジェクトを技術的（構造物の品質）な観点から、DOSHS は労働安全衛生の観点から観ている ・ NCA は建設全般を対象としているが、DOSHS から様々なアドバイスを受ける。作業場や労働者の安全確保等 ・ プロジェクトに関係する 3 者（発注者、コントラクター、コンサルタント）のうち、NCA はコントラクターに特に着目 ・ 公共事業等の実施機関は、事業の中でコントラクターに対し certificate を発行している。 ・ NCA は現場訪問の際、コントラクターに対して、County から発給を受けた certificate の提示を求め、コントラクターが正当な手続きを経て工事参加しているか否かについて確認する ・ 現場には事業の着手段階と最終段階で赴くことが多い ・ 設計レビュー／承認は、初期段階の paper 承認にしか過ぎない。現場が動き出すと着工段階の想定と異なる問題が多々発生するが、現時点では NCA に工事中断の判断を行える権威はない ・ プロジェクト形成～詳細設計～入札・調達～工事～維持管理の流れの中で NCA が関与するのは主に工事段階だが、調達段階にも関与する ・ 工事入札へ参加できる企業は NCA 登録済の企業 ・ 登録企業には NCA 1（評価高）～NCA 8（評価低）があり、NCA は、企業パフォーマンスにより、登録カテゴリーから downgrade する権限がある ・ 請負企業のパフォーマンス評価は可能、そのような仕組みもある。評価が悪いコントラクターに対しては downgrade の評価を下せる ・ コントラクターの評価は毎年実施 ・ 財務状況や安全面での管理状況、何人の職員に研修を受けさせたか、事業管理の際にどのような改善を行ったか等のパフォーマンス評価に基づき新たな評価と Certificate 付与を行っている ・ 図面は Registered Engineer が承認する仕組み。仮設設計も含め、全ての建設事業に係る行為は承認が必要 ・ モンバサ港事業の Phase 1 では KPA が The Engineer となり、PM が仮設設計のレビューも実施した。 ・ KPA が Objection を提起する際、請負企業設計の承認をコンサルとしての判断でなく KPA の判断として行ったが、契約書上には明確にその記載がなかったことがきっかけで DAB を設置 ・ 昨年 6 月以降に約 20,000 件の“工事”があり、多くは現在も進行中だが、監査関係をこなしてきている。国内に 10 の county に regional offices があり、各々の office へ配置している人材で対応中 				

協議名	ケニア港湾局 (KPA)	日付・時間	2015/10/8	10:35~12:10
称	ヒアリング	場所	KPA モンバサ港事務所	
相手方出席者、役職、所属等				
Head of Projects Development & Management Occupational Safety Officer Principal Safety Officer HMA Senior Project Engineer Assistant Accountant SPAPO				
協議・ヒアリング内容/確認事項等				
<ul style="list-style-type: none"> ・ KPA では ILO、IMO、IMDG Code 等の国際協定に準じている Safety Policy を有しており、現場の安全環境、衛生関連事項の規則として準用している ・ Safety Policy に基づき HSE Management System も作成。OSHA（労働安全衛生法を考慮） ・ 現場は抜き打ちのチェックも実施。安全協議で議論した点が現場で履行されていることの確認目的。例えば PPE の作業員への供給など ・ 安全関連のヒエラルキーは、① Statutory Requirement for Safety & Health (OHSA 等)、② KPA Safety Policy、③ Safety Management System の順 ・ Phase 2 の事業契約では、HSE Management System を契約図書として入れることを想定 ・ 請負企業が着工時に提出する Safety Policy や Safety Plan について、KPA は Safety Policy の KPA マニュアルとの整合を確認していない ・ 毎月、他工区のサブコンも交え Site Inspection を実施。改善点を正させるよう指示している ・ 海上工事に関する安全管理の取り決めも HSE Management System の中で規定 ・ 現場視察については、まず第一に Inspection を行い、事務所へ戻り観察事項の報告、改善事項の抽出を行い、現場へ指示する手順。改善の履行は Action Officer の現場確認により行う。この流れは記録に残している（←月単位の活動） ・ 請負企業からの施工計画書は月一回の月例会議時に受領。Employer's representative 経由で ・ 請負企業はサブコン雇用の際も、現場ルールの指導を徹底的に行い、PPE を提供していた ・ 事故が少なかった要因の一つは Safety Officer の十分な配置。Safety Officer と KPA の間で緊密な関係を構築し、現場管理を行っていた点 ・ 事故報告について、報告対象は KPA で報告を受けるのは Reportable accidents（死亡事故及び 3 日を超える休業を強いられ負傷、障害等）のみ ・ 事故報告について、報告は請負企業が SV 経由でと契約で規定している。具体的手続きは HSE Management System に記載。マニュアルは事故/災害発生時の報告、調査や Inspection に関する手続きについて提示している 				

協議名	日本港湾コンサルタント	日付・時間	2015/10/8	14:00~16:00
称	ヒアリング	場所	JPC モンバサ港開発工事事務所	
相手方出席者、役職、所属等				
モンバサ事務所長、ケニア事務所長（以上、JPC） Executive Director, BAC Environmental Expert, BAC				
協議・ヒアリング内容／確認事項等				
<ul style="list-style-type: none"> ・当現場では、請負企業（日本）による施工計画の提出 ⇒ 関係エンジニアで安全確保の手続きを供覧し、site inspector へ伝えて作業時の安全を確認するシステムを構築、運用してきた ・The Engineer（発注者内）は、コスト（変更）に係る事項、Representative Engineer（コンサル）は、技術／品質に係るチェックに係る事項に役割を担っている。これら以外は全てコンサルの責任 ・請負企業は日本の安全慣習を持ち込み管理を実施。日本並みの管理レベルが実現している ・作業員が育ったのは、日々の instruction（しつけ）やモニタリングの成果 ・請負企業は、現場監理、改善対応、打合せ、Correspondence（レター発信）含め、良好なシステムを築いたので重大災害がない ・現場で不安全活動が特定された場合、Inspector 側と対処法を検討し、協働改善する関係が築けている ・コンサルとしては、仮設工設計の提示を求め、気付きの点があればコメントする姿勢。基本的には no objection の態度 ・コンサルは独自の安全管理指針を有していない、請負企業の管理により現場体制が敷かれている ・発注者では 3 日以上の休業となる reportable な事故の報告の義務付け ・死亡事故が少なかった理由として、ニアミスの情報管理と改善指導の活動が大きい ・効果の大きい活動は朝礼。作業員から自らの仕事内容と安全の注力点を宣言させることが重要 ・JICA は Security に関する協議へのみ参加。安全管理関係での協議への参加はない ・Phase 2 向けの改善点として、仮設工設計のチェックをコンサルが行う等、契約図書への具体記述が考えられる ・安全管理の充実はコストが伴う。コンサルは安全に係る費用が工事費のどこに含まれているかよく判らない ・各 BOQ 項目の中に、安全に係る経費も含まれているとの認識はあるが、具体的な内容は理解していない ・栈橋工事開始当初は、Inspection の際、足場整備の不行き届きで改善するまで検査をしない、と何度か怒鳴りつけたことはあった ・Inspection を済ませれば作業は進められない仕組みだが、Safety net の張り込み等、危険要素があるうちは inspection しないという態度を採り、改善要求を繰り返し行った時期もあった 				

協議名	東洋建設ヒアリング	日付・時間	2015/10/9	9:15~11:00
称		場所	東洋建設モンバサ港開発工事事務所	
相手方出席者、役職、所属等				
モンバサ作業所 作業所長、副所長 A、副所長 B				
協議・ヒアリング内容／確認事項等				
<ul style="list-style-type: none"> ・現場は労働安全衛生と同レベルでセキュリティにも注力してきた。セキュリティと事故は切り離せない関係 ・民間警備会社の警備員数十名の雇用費用は当社負担 ・セキュリティ強化は第三者や不審者の侵入防止目的だが、実際には作業員の身辺防護や盗難防止に直結している。不審者侵入防護、危険物が持ち込まれない点が事故・災害が少ない一つの原因。海上側も海上警察が 24 時間体制で警備 ・3 か月に一度、County Commissioner が来場しセキュリティ会議を開催。発注者、警察当局、請負企業、大使館／JICA（オブザーバー）が来場して情報交換を行い、工事進捗に伴うセキュリティの動線の変更検討等を定期的実施 ・現場に関するセキュリティ関連協議は週に二度のペースで実施 ・セキュリティ担当は 12 時間勤務の交替制で、引き継ぎの際も情報共有の徹底を図っている。 ・セキュリティ強化について、今後の事業展開の際には、契約上でセキュリティ強化を謳う、または両国間の取り決めの中でセキュリティ強化合意のもとで事業に着手するなどが望ましい ・当現場ではピーク時に 2,000 名以上の作業員が稼働していたが新規入場者教育は徹底して実施した ・下請けに適切な企業がなかった事情もあり、派遣会社を通じ直営で多くの作業員を雇用。その管理のための日本人スタッフの増員、比国人スタッフも連れてきて管理した ・日本人スタッフは良く現場へ出ていた。所長自ら陣頭指揮を執ってきた ・仮設工は、荷出し用栈橋（鋼管杭）、コンクリートブロックを出す栈橋。その他は建築の支保工、足場程度 ・仮設設計は、当地で計算 ⇒ 本社確認 ⇒ コンサルレビュー（×承認）の手順 ・作業員の緊張感の維持の工夫は、一連の作業の流れを止めさせずに一気に作業を完了させるよう指導すること ・整理・整頓の繰り返しの指示を徹底することから始めた ・本社パトロールは年 1 回、加えて、各国の稼働中の現場を相互に往き来しての安全管理面での相互指摘をする機会をつくっている、これは年に 2~3 程度回程度実施している。また出張者による安全パトロールを都度実施している。 				

協議名	JICA ナイロビ事務所	日付・時間	2015/10/15	14:30～15:25
称	報告	場所	JICA ナイロビ事務所	
相手方出席者、役職、所属等				
所長、次長、駐在員				
協議・ヒアリング内容／確認事項等				
【調査団報告】				
<ul style="list-style-type: none"> ・労働省労働安全衛生局（DOSH）は、実行面で予算／人材が弱い。実質的に大きな工事に対して積極的な関与は困難との印象。予算も省から付くので Authority のように予算が自ら調達できず活動に制限がある ・国家建設局（NCA）は自ら予算調達の権利があるが、業界での認知度はまだ低い。法律上の権威はあるがまだ履行できていない。工事管理を行う機関であり、資格を発給する機関ではない ・モンバサ港開発事業では、KPA が自ら定める安全管理方針に基づき現場管理を実施 ・KPA はプロジェクトそのものに直接の関与をしていないという印象。Monthly Safety Meeting への参加により進捗は把握しているが、日々の活動の中で現場との距離感がある ・ケニアの労働安全衛生分野は、OSH 関連の法的枠組みはあるが施行面に課題がある。プロジェクトの中で安全管理の enforcement を如何に向上するかが課題。 ・MPDP のコンサルタントは、人数的な問題もあると思うが安全管理はコントラクターに一任、時折現場へ出て気づいた点を現場へ指示し出すのみという印象。契約内容による結果とも言える ・請負企業について、当初は下請け雇用を予定するも技術的に適切な業者がおらず、全て直庸での実施を早い段階で判断した ・その結果、付きっきりでの管理・指導のため日本人を増員した。 ・MPDP の安全成果は、①日本人（比国人）による付きっきりの管理、②セキュリティ重視のためエリア囲いをする事で日本の安全文化を浸透させた、という 2 点で整理される ・MPDP の Phase 2 や他事業の安全面で同じ効果を期待するのであれば、邦人スタッフを増員可能な契約条件としないと、請負企業側は工事運営の財政面で厳しい状況となる ・工事の安全確保は、施工段階のみへの着目だけでなく、上流段階で工事条件を整える段階から ・MPDP の請負企業は良い結果を出しているが、今後を考えると、他社で同様な方法（職員が現場へ出て教育、技術指導）で参加できる日本の建設会社はあまりないと思う。経営面を考慮すると企業としては最良の姿とも言えない ・今後の事業へ向けては、現場サイドは事業単位で契約図書をしっかり充実させること、一方で、上（ドナー、相手国関係省庁）は上で時間を掛けて法や規則等の枠組み整備、施行体制の充実に取り組むこと、双方を並行して進めてゆく必要がある ・安全確保は労働安全衛生面と技術的な安全面の 2 面の充実が不可欠 ・ケニアは英国や ILO の支援を受け、法的枠組みは整備されつつある国。現場の安全確保を実現するための中央政府への働きかけ、法令施行の充実のため関連機関を相手に安全確保のための指導を日本から行ってゆくモデルケースとするのにちょうど良い段階にある国 				
【JICA コメント】				
<ul style="list-style-type: none"> ・MPDP の建設会社のパフォーマンスは評価するが、KPA がオーナーシップを取って安全管理に積極的に関与していないという印象を受けた点に今後の課題が残りそう 				

<ul style="list-style-type: none"> ・実際の安全管理は契約当事者（発注者－請負企業）間のパフォーマンスに左右されるが、安全の質の向上のため、JICA としてもどのような関与をすればよいのか提案されたい ・JICA が直接的な関係にあるのは実施機関。コンサル／コントラクターは間接的。その意味で施主の強化に注力してゆく必要がある ・MPDP の建設会社が残してくれた“遺産”をどう他企業へ伝えてゆくか、日本政府もアフリカに益々注力してゆく方針の中で、企業に対してどのレベルの体制でアフリカの工事に臨まれる必要があるかなど情報提供差し上げる意味でも JICA としても情報を蓄積してゆきたい。
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添付資料-2

質問票

Safety and Quality Control System Checklist for the Employer

Notes 1: This questionnaire is to be answered by the Employer.
2: To confirm how to fill in the questionnaire, the attached sample checklist can be referred to.

Country: Kenya

Project Name: **Mombasa Port Development Project – Phase 1**

Filled by:

Items to Confirm	Items to be Confirmed	Confirmation Result
(1) Laws and various standards related to safety and quality control	Availability of laws and various standards related to safety and quality control, as well as the names of those laws and contents of related provisions (1) Names of laws (2) Contents of related provisions	(1) Occupational Safety and Health Act of 2007 Workman's Injury Benefit Act, 2007 KPA HSE Management System, 2007 (2) Attached
	Availability of safety and quality control manuals at the executing agency (Employer) (1) Names (2) Contents (examples of items to be described) ● Is the method of patrolling the sites (frequency of such patrols, etc.) indicated as reference? ● Is the frequency with which consultants and contractors are consulted indicated as reference? ● Are the rules and regulations (or manuals) governing safety and quality control included?	(1) KPA HSE Management System, 2007; and QMS ISO 9001:2008 for Safety Branch. (2) Attached <u>Yes</u> / <u>No</u> (Describe the method of patrolling the sites as needed) Joint Patrol; and Walk-the-Job. <u>Yes</u> / <u>No</u> <u>Yes</u> / <u>No</u> (If yes, describe the main contents)
(2) Assigned missions of departments in the executing	Identification of the safety and quality control department and number of staff members	● No. of total staff members at the executing agency (Employer): <u>7,000</u> persons

Items to Confirm	Items to be Confirmed	Confirmation Result
	effective utilization ● Training in accident prevention techniques ● Others	
	Information concerning past accidents in construction, etc. (1) Has the information concerning past accidents been accumulated? In addition, ascertain what the policy is for accumulating accident information (e.g., recording information on only accidents resulting in death in accordance with the organizational rules). (2) Components and contents of accident information (Reference) ● No. of accidents ● Situation in which accidents occur ● Scale of accident (amount, number of casualties, existence or nonexistence of third-party injuries) ● Emergency response ● Cause of accident ● Future prevention method ● Others (Describe specifically)	(1) Yes. (2) Attached data for past 3 years
(3) Assignment plan for staff in charge of safety control related to the Japanese ODA loan project	Assignment plan for staff in charge of safety control related to the Japanese ODA loan project (1) No. of staff members in charge of safety control (2) Is there any specific assignment plan, with a specific job description for each person?	● No. of the total staff members in the executing agency (Employer): <u>9</u> persons ● No. of construction management staff: <u>7 (PIT)</u> persons ● No. of staff members in charge of contractors: <u>6</u> persons

Items to Confirm	Items to be Confirmed	Confirmation Result
agency in charge of safety and quality control, and assigned tasks of the staffs		● Name of the safety and quality control department: Safety Branch (this is a section in Operations Division) ● No. of staff members in the department above: <u>14</u> persons.
	Details of the assigned missions of the department in charge of safety and quality control (1) Current status of implementation of site patrols (2) Availability of accident statistics related to all projects under jurisdiction of the executing agency (Employer) (Attach accident data for the past three years) (3) Guidance and instructions for consultants and contractors (4) Documents on the mandates of the department in charge of safety and quality control (Attach the document) (5) Others (Describe specifically)	(1) Monthly patrols are carried out on all projects. This is in line with OSHA 2007 and KPA HSE Management System. (2) Accident reports are available and are attached. (3) KPA HSE Management System, 2007 Chapter 10 (4) KPA HSE Management System – Responsibilities; and (5) Procedure for Safety Induction and monitoring of Contractors (KPA/OPS-SAF/QOP/004)
	Current conditions of implementation of training for staff in charge of safety and quality control (Reference) ● Training in the safety and quality management system ● Training in matters related to laws ● Training in developing awareness of the dangers of accidents ● Training in the role of safety and quality control in the executing agency (Employer) ● Training in construction method and method of safety and quality control ● Training in method of collecting accident statistics and their	Training: 4 out of 14 Safety Officers have undertaken professional safety training at British Safety Council. The rest have undergone on the job training and various Management Development programmes. None of the officers have any training specifically on construction safety. All the officers are competent in accident prevention techniques.

Items to Confirm	Items to be Confirmed	Confirmation Result
		Eng. Abudullahi Samatar Eng. Dan Amadi Eng. Kennedy Nyaga Eng. William Tenay Arch. James Rai Eng. Mathews Amuli
(4) Capacity and experience of staff in charge of safety and quality control	Projects in which the staff handled safety and quality control (1) Projects handled (2) Names of positions the staff held or their status therein (3) Details of the service performed	(1) All HSE staff handle all projects and rotate according to duty roster. (2) Mr Mwandembo, Mrs Ivy & Mr Hassan (Safety Officers) (3) Services performed: ● Advise on occupations HSE laws, rules, regs and procedures; ● Monitor and advise on the safety aspects of the design and operations of plant and equipment to ensure compliance; ● Advise on the safe handling of hazardous cargo; ● Advise on the handling of containerized and other cargo; ● Advise on the appropriate type and use of personal protective equipment/ clothing; ● Conduct Health and Safety Audits and Inspections in conformity with administrative and statutory requirements; ● Conduct risk assessment and recommend appropriate control measures; ● Develop and conduct hse training/ induction and sensitization programmes for employees and port users; ● Administration and maintenance of First Aid services;

Items to Confirm	Items to be Confirmed	Confirmation Result
		<ul style="list-style-type: none"> Develop and improve safety management systems to attain ISO certification; Advise on appropriate safety signage and ensure they are in place; and To ensure up to date records and statistics are kept and maintained.
(5) System of ensuring safety and quality control in the executing agency	Method of ensuring safety and quality control in the executing agency (Employer) <ol style="list-style-type: none"> Regular consultative meetings with construction managers and contractors Site patrol Others (Describe specifically) 	<ol style="list-style-type: none"> Monthly Safety Meeting with Contractor and Consultant Monthly Safety Patrol with Contractor and Consultant in accordance to KPA/OPS-SAF/QOP/001) Procedure for carrying out safety inspections Monthly Progress meetings.
(6) Preventive action procedure	Availability of preventive action procedure to prevent occurrence of an accident or an undesirable situation and current situation of implementation of such procedure	KPA Procedure for Conduction Risk Assessment (KPAOPC-SAF/QOP/002)
(7) Framework for emergency response system to accidents	Specific method of sharing information within the executing agency (Employer) when an accidents occurs * Briefly describe the framework for sharing information when an accident occurs. Attach a phone calling tree, relevant regulations, etc. as needed. <ol style="list-style-type: none"> The manual for responding to an accident Is the department to contact in the case of an accident described in the manual? 	<ol style="list-style-type: none"> QMS ISO 9001:2008 for Safety Branch. Yes, it is described in Procedure for Accident Reporting (KPAOPC-SAF/QOP/005)
	Method of keeping staff members in the executing agency (Employer)	<ul style="list-style-type: none"> Weekly meeting are held in the safety branch

Items to Confirm	Items to be Confirmed	Confirmation Result
	informed about the framework for responding to an accident <ul style="list-style-type: none"> Implementation status of holding a briefing session to inform all staff members about the manual and its contents. Submission of an accident report and holding of investigative commissions 	<ul style="list-style-type: none"> Adhoc meetings.
(8) Method adopted by the executing agency to confirm training programs in safety and quality control provided by contractors for workers	Method of confirmation adopted by the executing agency (Employer) <ul style="list-style-type: none"> Method of confirmation of the training schedule before construction (in-house education, qualification training) Method of confirmation of the training schedule during construction (safety conventions, consultative meetings to discuss safety, post accident response conference, etc.) 	Not fully developed.

Questionnaire for Safety & Quality Management for the Consultant

Notes 1: This questionnaire is to be answered by the Consultant.
2: The Consultant is expected to obtain the Employer's approval prior to submission of the answered questionnaire to the JICA study team.

Country: Kenya

Project Name: Mombasa Port Development Project – Phase I (Berth 20 & 21)

Items	Points to be Clarified	Answer
A. General		
A1. The Consultant overall project management	<ol style="list-style-type: none"> Project Management Plan as Attachment-A1 <u>Monthly Reports</u> Latest, for the months of peak time, accidents, right before accidents as Attachment-A2 	<ol style="list-style-type: none"> See Attachment A1 See Attachment A2 <i>(Monthly Report: Item 3-2 (3) Safety Construction Works)</i>
B. Occupational Safety & Health (OSH)		
B1. Provisions related to OSH in the Consultancy Contract with the Employer	1. Copy of the Contract to be attached as Attachment-B1	1. Safety of the Consultant is the responsibility of the Employer
B2. The Consultant OSH management plan submitted to the Employer, if any	1. Copy to be attached as Attachment-B2	1. Not a requirement for Consultancy Contract
B3. Staffs in charge of OSH management in the consultant organization	<ol style="list-style-type: none"> Names and job title of the staffs in charge of OSH management Job description of the above staffs and power or authority delegated to them including qualifications required Copy of the Consultant overall organization charts (Initial & Peak time/Latest) to be attached as Attachment-B3 	<ol style="list-style-type: none"> Manabu Sakaguchi & Michael Okumu. Environmental Experts & H&S Representatives. Environmental Management and H&S Supervision of the Contractor. Attendance of Safety patrol. Evaluation of H&S requirements for each works. Meetings with Contractor on H&S issues. Organization Chart attached-B3

B4. OSH-related procedure & documentation which the Consultant to implement before commencement of construction of each part of work	<ol style="list-style-type: none"> <u>Procedure</u> <u>Documents to be submitted by the contractor to the consultant</u> 	<ol style="list-style-type: none"> All method statements are checked by H&S Rep and include H&S protocol for every works. Method Statements, Request for Approvals & Requests for Inspection.
B5. OSH-related site inspection conducted by the Consultant	<ol style="list-style-type: none"> <u>Inspection procedure</u> Timing of Inspection, qualification of an inspector, how to carry out inspection, how to cope with defects detected 	<ol style="list-style-type: none"> Inspection carried out daily by Engineers in Charge and Inspectors. If hazard or nonconformity identified it is informed to the Contractor. Monthly Safety patrol
B6. OSH Meeting structure organized/managed by the Consultant	<ol style="list-style-type: none"> <u>Meeting Structure</u> Name, timing/frequency, participants, protocol 	<ol style="list-style-type: none"> Monthly safety patrol participated by all stakeholders (Toyo, KPA and JPC). Site Patrol followed by meeting to discuss observations.
C. Safety of Works / Quality		
C1. Provisions related to Quality Control/Management in the Consultancy Contract with the Employer	1. Copy of the Contract to be attached as Attachment-C1	1. Quality Control/ Management requirement is contained in the TOR
C2. The Consultant Quality Plan submitted to the Employer, if any	1. Copy to be attached as Attachment-C2	1. None submitted to the Employer. But report daily supervision on the Monthly Report.
C3. Staffs in charge of Quality Control/Management in Organization of the Consultant	<ol style="list-style-type: none"> Names and job title of the staffs in charge of Quality Control/Management Job description of the above staffs and power or authority delegated to them including qualifications required 	<ol style="list-style-type: none"> Takeshi Miyagawa - Project Manager/ Chief Engineer. General coordination with the Employer and supervision of all the Consulting Services and the Consulting Team. Direct responsibility for day to day consulting activities and represent the Consultant Team in all matters. Discussion and confirmation with the Employer on the basic directions, requirements and conditions

		<p>related to fields survey, planning, design, and bidding of the Project.</p> <p>Overall responsibility in the field surveys, port planning, construction planning, cost estimate, preparation of bidding documents, and environmental considerations of the Project.</p> <p>Overall responsibility in preparation and presentation of all the reports to the Employer.</p> <p>Overall management of the Project as the Engineer</p> <p>Supervision of construction supervision works and environmental monitoring.</p> <p>Control of activities of the Consultant Team.</p> <p>Coordination of Training and Technology Transfer to GOK, KPA and related local institutions.</p> <p>Defect monitoring during Defect Notification Period and preparation of Defects Notification Completion Report.</p>
C4. Review of permanent works design	<p>(Before Construction)</p> <p>1. <u>Review Procedure of Consultant/Independent Design Checker</u></p> <p>Timing of internal review, qualification of reviewer, process for approval etc.</p> <p>(During Construction, including in case of design change)</p> <p>2. <u>Review Procedure of Consultant/Independent Design Checker</u></p> <p>Timing of internal review, qualification of reviewer, process for approval etc.</p>	<p>(Before Construction)</p> <p>1. Design Completed by the Design Engineer Checked by Co-project manager (Chief Engineer) Approved by Project Manager.</p> <p>(During Construction, including in case of design change)</p> <p>2. Contractor issues Shop Drawings based in tender drawings Drawings checked by Engineer in Charge Approved by Chief Engineer Project Manager issue instruction letter</p>
C5. Role of the Consultant at the review of construction drawings, design of temporary works, and shop drawings	<p>1. <u>Review Procedure & Documentation</u></p> <p>Timing of review, qualification of reviewer, preparation of comments, review of comment reply,</p>	<p>1. Contractor issues Construction drawings and Shop Drawings based in tender drawings Drawings checked by Engineer in Charge</p>

Documents to be attached:

- A1: Project Management Plan
- A2: Monthly Reports - Latest, for the months of peak time, accidents, right before accidents
- B1: Provisions related to Occupational Safety & Health (OSH) in the Consultancy Contract
- B2: The Consultant OSH management plan (or Safety Plan, etc.)
- B3: The Consultant overall organization charts (initial), highlighting staffs in charge of OSH management
The Consultant overall organization charts (peak time/latest), highlighting staffs in charge of OSH management
- C1: Provisions related to quality control/management in the Consultancy Contract
- C2: The Consultant Quality Plan
- D1: The Consultant Risk Management Plan
- E1: Accident Reports
- E2: Near Miss Reports (Hiyari-Hatto Reports)

	<p>process for approval etc.</p> <p>2. <u>Responsibilities of Independent Design Checker, if specified</u></p>	<p>Approved by Chief Engineer Project Manager issue instruction letter</p> <p>2. Temporary Works are NOT reviewed, only submitted for information purpose</p>
C6. Review of method statements	<p>1. <u>Requirements for Method Statement contents</u></p> <p>2. <u>Review Procedure & Documentation</u></p> <p>Timing of review, qualification of reviewer, preparation of comments, review of comment reply, process for approval etc.</p>	<p>1. Contractor submits Method Statement for approval Checked by Engineer in Charge Checked by H&S Representative Approved by Chief Engineer Project Manager issue instruction letter</p>
C7. Quality-related site inspection by the Consultant	<p>1. <u>Inspection procedure</u></p> <p>Timing of Inspection, qualification of an inspector, how to carry out inspection, how to cope with defects detected</p>	<p>1. Contractor submits Daily Inspection schedule Inspection done daily/regularly for on-going works by Engineer in charge or Inspector who reports back to the Engineer in charge.</p>
C8. Design/Quality-related Meeting structure organized/managed by the Consultant	<p>1. <u>Meeting Structure</u></p> <p>Name, timing/frequency, participants, protocol</p>	<p>1. If necessary organized by the Project Manager</p>
D. Risk Management		
D1. The Consultant Risk Management Plan submitted to the Employer, if any	<p>1. <u>Risk Management Plan</u> Copy to be attached as Attachment-D1</p> <p>2. <u>Procedure & Documentation</u></p>	<p>1. None required to be submitted</p>
E. Accidents		
E1. Information on accident & near misses (including unofficial information)	<p>1. <u>Accident Reports</u> Copy to be attached as Attachment-E1</p> <p>2. <u>Near Miss Reports (Hiyari-Hatto Reports)</u> Copy to be attached as Attachment-E2</p>	<p>1. No Accidents</p>

Questionnaire for Safety & Quality Management for the Contractor

Notes 1: This questionnaire is to be answered by the Contractor.
2: The Contractor is expected to obtain the Consultant's approval prior to submission of the answered questionnaire to the JICA study team.

Country:
Project Name:

Items	Points to be Clarified	Answer
A. General		
A1. The Contractor overall project management	1. Project Management Plan as Attachment-A1 2. <u>Monthly Reports</u> Latest, for the months of peak time, accidents, right before accidents as Attachment-A2	1. 入札書のため提示不可 2. 最新(Aug 2015)および発注期(Aug 2014)の Monthly Progress Report を参照
B. Occupational Safety & Health (OSH)		
B1. Provisions related to OSH in the Construction Contract with the Employer	1. Copy of the Contract to be attached as Attachment-B1	新付契約書参照
B2. The Contractor OSH management plan submitted to the Employer	1. Copy to be attached as Attachment-B2	"Safety Policy" 資料参照
B3. Staffs in charge of OSH management in the contractor organization	1. Names and job title of the staffs in charge of OSH management 2. Job description of the above staffs and power or authority delegated to them including qualifications required 3. Copy of the Contractor overall organization charts (Initial & Peak time/Latest) to be attached as Attachment-B3	<ul style="list-style-type: none"> • Safety Officer "Safety Policy" Page10~12 参照 • Safety Supervisor "Safety Policy" Page12~13 参照 • Organization Chart Initial Jul 2012 Peak time, Latest Aug 2014 Latest Aug 2015

		<p>出席者：施工担当者打合わせ(日本人、ローカル、フィリピン人職員) 頻度：毎日 12:20 実施内容：翌日の作業内容打合わせ(工程・使用機械調整、搬入材料報告、安全・衛生指示、その他連絡事項) 所内打ち合わせ 出席者：日本人全員 頻度：毎週土曜 実施内容：事務・工事に関する連絡、報告とともに治安、安全、衛生の通知、報告をおこなう。 工事打合わせ 出席者：工事担当日本人全員 頻度：毎週火・金 実施内容：進捗状況、作業予定報告、安全事項および現場問題を協議する。 Site Safety Committee Meeting 実施者：SSC 組織図参照 頻度：月 1 回 出席者：KPA、コンサルタント、東洋、監力会社 実施内容：現場パトロールを実施。その後、各現場の不安全行為、設備等の指摘事項をリストアップし、是正方法を協議・指示する。 次回の SSC Meeting 時、是正の有無を確認する。</p>
C. Safety of Works / Quality		
C1. Provisions related to Quality Control/Management in the Construction Contract with the Employer	1. Copy of the Contract to be attached as Attachment-C1	新付契約書参照

B4. OSH-related procedure & documentation which the Contractor to implement before commencement of construction of each part of work	1. <u>Procedure</u> 2. <u>Documents to be submitted by the contractor to the consultant</u>	<p>施工計画書 海上工事運行管理表 海上工事安全フォー 重機計画書 交通管理計画書</p>
B5. OSH-related site inspection conducted by the Contractor internally, including HQ's safety patrol	1. <u>Inspection procedure</u> Timing of inspection, qualification of an inspector, how to carry out inspection, how to cope with defects detected	<p>Daily Patrol 実施者：現場所長 頻度：日 1 回/5 日 実施方法：現場パトロールを実施。危険行為、箇所をチェックし、各担当者に通知し改善を指示する。各担当者は、是正したものを報告する。また、翌日改善されているかチェックする。 Safety Patrol 本社安全パトロール 実施者：本社安全環境部 頻度：年 1 回 実施内容：PM、各担当者と現場パトロールを実施。指導、改善：各場所での是正箇所を指定し、各担当者が指摘箇所を是正したものを報告する。 国際支店パトロール 実施者：国際支店 頻度：年 1 回、米所時 実施内容：PM、各担当者と現場パトロールを実施。指導、改善：各場所での是正箇所を指定し、各担当者が指摘箇所を是正したものを報告する。</p>
B6. OSH Meeting structure organized/managed by the Contractor internally, including in HQ	1. <u>Meeting Structure</u> Name, timing/frequency, participants, protocol	<p>Internal Meeting 作業所内打ち合わせ</p>

C2. The Contractor Quality Plan submitted to the Consultant	1. Copy to be attached as Attachment-C2	入札書のため提示不可
C3. Staffs in charge of Quality Control/Management in Organization of the Contractor	1. Names and job title of the staffs in charge of Quality Control/Management 2. Job description of the above staffs and power or authority delegated to them including qualifications required	<p>1. 組織表参照 2. Quality Control Engineer a. 材料が契約図書に要求されているものに合格するか判断し、選別する。 b. 材料調達先および搬入材料を確認し、要求されている品質に合格しているか判断する。 c. 各下請けの品質管理方法を確立し、継続的に管理をおこなう。 d. 必要な試験、調査をコンサルタントの QC と実施する。 e. 新規工種が開発される前に必要な材料、品質管理方法をコンサルタントと協議し、確立する。 f. 試験室の運営、管理をおこなう。 g. Defect が発生した場合は、直ちに搬入を止め、発生原因を説明する。</p>
C4. Review of permanent works design	<p>(Before Construction) 1. <u>Review Procedure of Contractor/ Independent Design Checker</u> Timing of internal review, qualification of reviewer, process for approval etc. (During Construction, including in case of design change) 2. <u>Review Procedure of Contractor/ Independent Design Checker</u></p>	<p>設計図書 ・契約上、永久構造物の設計、設計変更時の照会義務はない。 新築にのみ</p>

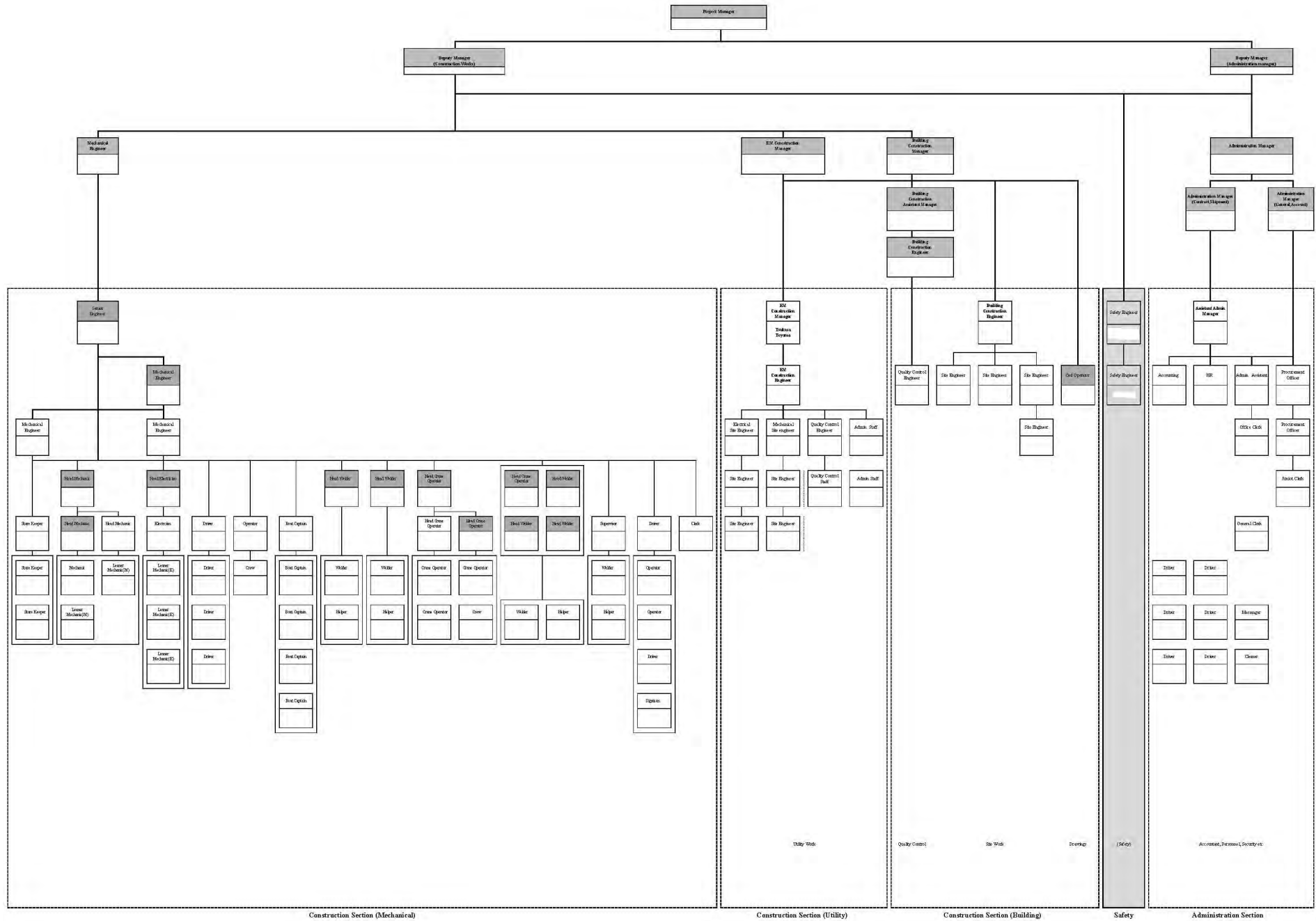
	Timing of internal review, qualification of reviewer, process for approval etc.	
C5. Preparation of construction drawings, design of temporary works, and shop drawings	<p>1. <u>Preparation Procedure & Documentation</u> Timing of preparation, qualification of engineers in charge, process of internal review, etc.</p> <p>2. <u>Responsibilities of Independent Design Checker, if specified</u></p>	<p>1-1. <u>Construction Drawing</u> 時期：施工前 実施者：各工種担当者 実施内容：事前にコンサルタントと現場を確認しながら打ち合わせをおこない、Shop Drawingを作成。 副所長、所長に回覧をおこない承認後コンサルタントに提出。</p> <p>1-2. <u>Design of Temporary works</u> 時期：材料調達前または施工前 実施者：現場設計担当者 実施内容：土質条件、設計条件、調達可能な機械・材料などを考慮して仮設構造物を検討、設計、検討途中で所内監査を実施し、問題がないか確認する。 計算、図面は、支店設計部で確認してもらい、必要であれば本社設計部に原査依頼をおこなう。 2. 契約書に特記なし</p>
C6. Preparation of method statements	<p>1. <u>Standard format of Method Statement</u></p> <p>2. <u>Preparation Procedure & Documentation</u> Timing of preparation, qualification of engineers in charge, process of internal review, etc.</p>	<p>施工計画書 時期：新規工種着工前、または施工方法を変更する場合 作成者：各施工担当者、工事課長、工事課長、協力会社 実施内容：施工計画を作成後、副所長、所長を含めて施工方法を確認し、修正、変更点を協議したのち提出する。</p>

		協議する。
D. Risk Management		
D1. The Contractor Risk Management Plan submitted to the Consultant, if any	<p>1. <u>Risk Management Plan</u> Copy to be attached as Attachment-D1</p> <p>2. <u>Procedure & Documentation</u></p>	社内書類のため提示不可
E. Accidents		
E1. Information on accident & near misses (including unofficial information)	<p>1. <u>Accident Reports</u> Copy to be attached as Attachment-E1</p> <p>2. <u>Near Miss Reports (Hiyari-Hatto Reports)</u> Copy to be attached as Attachment-E2</p>	<p>1. 重大事故、死亡事故は発生しておりません。</p> <p>2. ヒヤリ・ハットの記録を取っていないため、報告することができません。</p>
Documents to be attached:		
A1:	Project Management Plan	
A2:	Monthly Reports - Latest, for the months of peak time, accidents, right before accidents	
B1:	Provisions related to Occupational Safety & Health (OSH) in the Construction Contract	
B2:	The Contractor OSH management plan (or Safety Plan, etc.)	
B3:	The Contractor overall organization charts (initial), highlighting staffs in charge of OSH management The Contractor overall organization charts (peak time/latest), highlighting staffs in charge of OSH management	
C1:	Provisions related to quality control/management in the Construction Contract	
C2:	The Contractor Quality Plan	
D1:	The Contractor Risk Management Plan	
E1:	Accident Reports	
E2:	Near Miss Reports (Hiyari-Hatto Reports)	

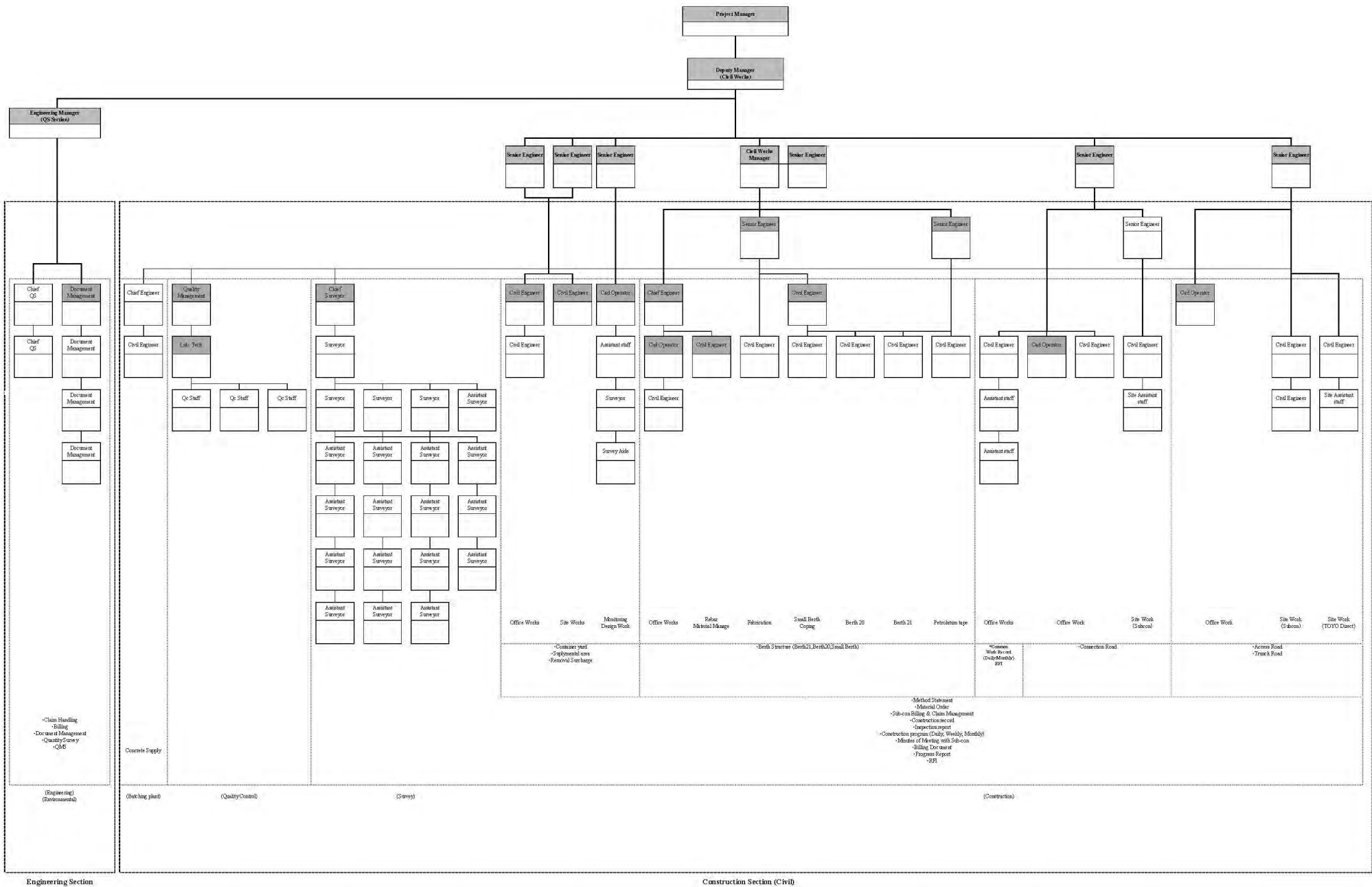
C7. Quality-related site inspection by the Contractor internally	<p>1. <u>Inspection procedure</u> Timing of inspection, qualification of an inspector, how to carry out inspection, how to cope with defects detected</p>	<p>QC inspection 時期：購入前、材料受領時および日々の施工品質管理時 実施者：QC Engineer 実施内容： ・試料を現地で採取し、試験室で仕様に合致しているかを確認する。 ・試験結果、ミルシート、サンプル等をチェックして、仕様に合致しているか確認する。</p> <p>Nonconformance: 1. QCより各施工担当者に通知し、施工を中断 2. 不良箇所の特定 3. 不良箇所をQCよりPMに報告 4. 所内にて対策を検討 5. コンサルタントに報告し、対応策の承認を受ける 6. 対応策を実施 7. 再検査を実施し、問題が解決されたか確認</p>
C8. Design/Quality-related Meeting structure organized/managed by the Contractor internally	<p>1. <u>Meeting Structure</u> Name, timing/frequency, participants, protocol</p>	<p>設計 - 品質打ち合わせ 出席者：所長、副所長、QC担当者、工事担当者 時期：随時 実施者：QC担当者 実施内容： 1. 材料発注前に単価、品質の良し悪し、運搬能力、仕様書との対比の説明をQC担当者がおこない、購入先を決定する。 2. 品質に問題が発生した時、原因、改善方法、対策を</p>

添付資料-3 現場組織図

Site Management Organization Chart
Peak (As of August 2014)



Site Management Organization Chart
Peak (As of August 2014)



添付資料-4 セミナー資料

**Safety Review Study of
On-Going ODA Loan Project
in Kenya**

<Mombasa Port Development Project>



14 October 2015

Kenya Ports Authority
Japan International Cooperation Agency
Landtec Japan Inc.
Infrastructure Development Institute

Section 1

Safety Management Framework at the National Level and in ODA Projects

<Seminar Programme>

9:30 – 10:00:	Registration	
10:00 – 10:10:	Opening Address	KPA
10:10 – 11:50:	Seminar	JICA Study Team (Mr. Toshio Takebayashi / Mr. Fujio Ito)

Introduction

Section 1: Safety Management Framework - at the National Level and in ODA Projects
Occupational Safety and Health Framework in Kenya and Japan
Occupational Safety and Health Framework in ODA Projects

<Q&A (brief)>

Section 2: Safety Management Methodology in Mombasa Port Development Project

<Q&A (brief)>

Section 3: Root Cause Analysis for the Issues of Mombasa Port Development Project

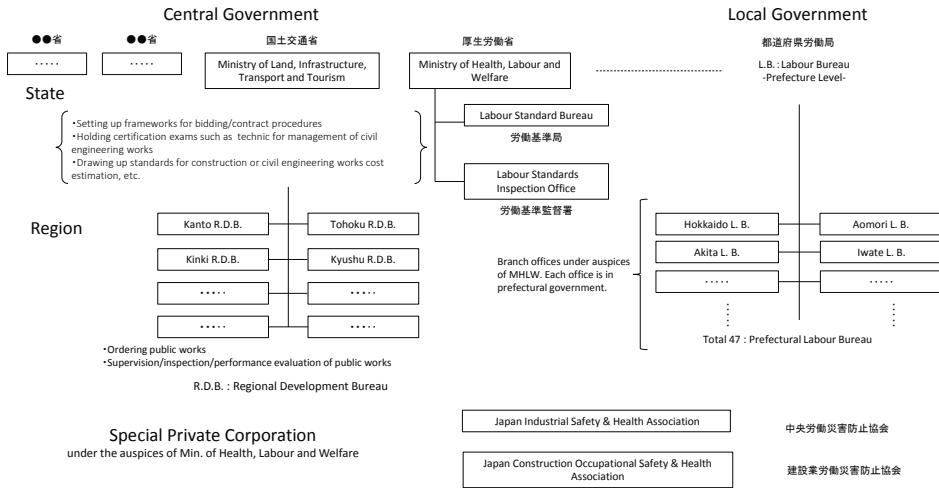
<Q&A>

11:50 – 12:00:	Closing Remarks	KPA
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1.1 Occupational Safety and Health Framework in Japan

Occupational Safety & Health Services in Japan

① Administrative System



Occupational Safety & Health Services in Japan

② OSH Relevant Act Framework

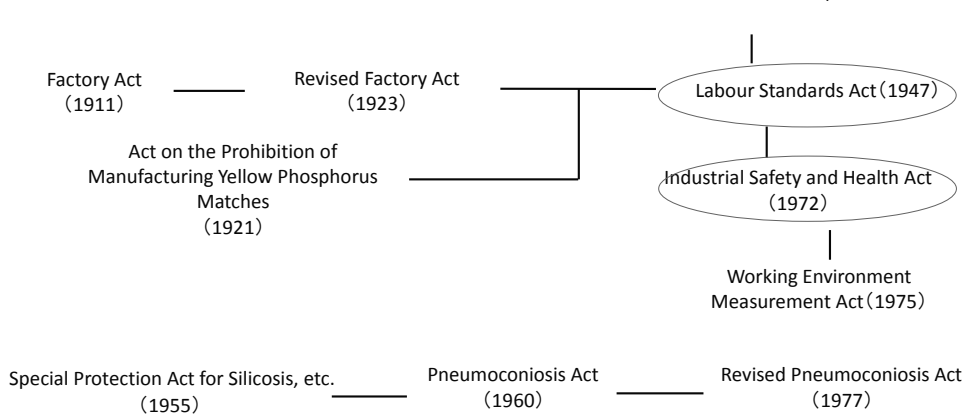
Features of Industrial Safety and Health Act of Japan

- Purpose : To secure the safety and health for workers
- Executor : Employer/Project Operator
- Protection Target : Worker
- Contents of the Act :
Compulsory enforcement of **measures for the prevention of dangers or health impairment** as minimum standards through implementation of penalty
- Compliance Structure :
Enforcement by the Labor Standards Inspector authorized with judicial and police powers

Occupational Safety & Health Services in Japan

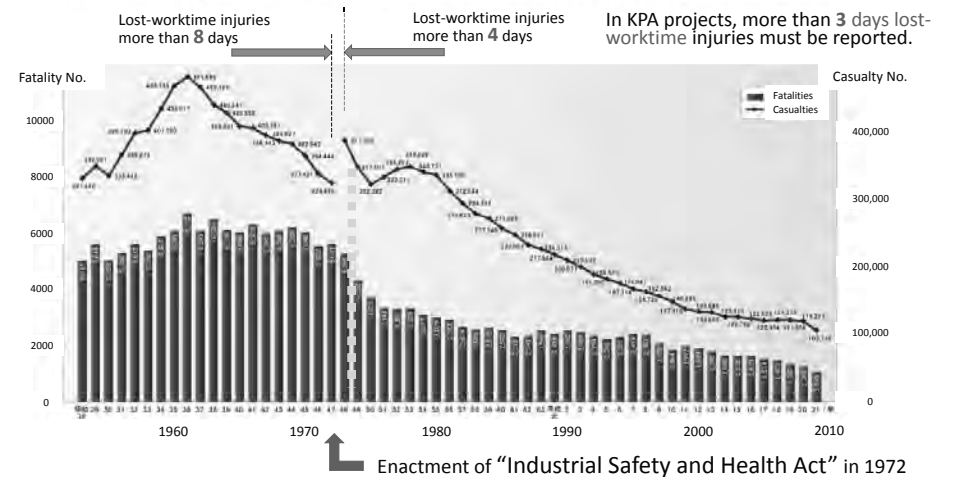
② OSH Relevant Act Framework

The Constitution of Japan

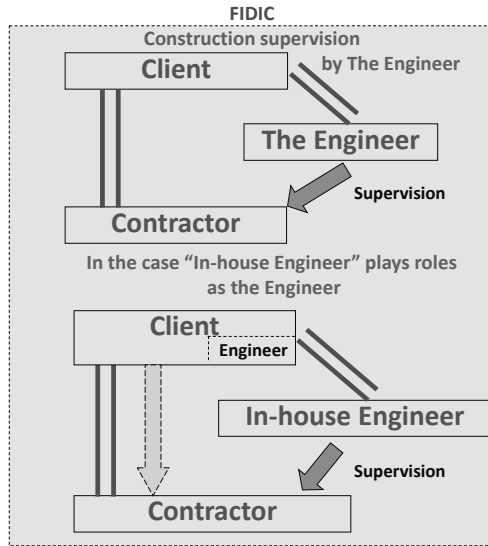
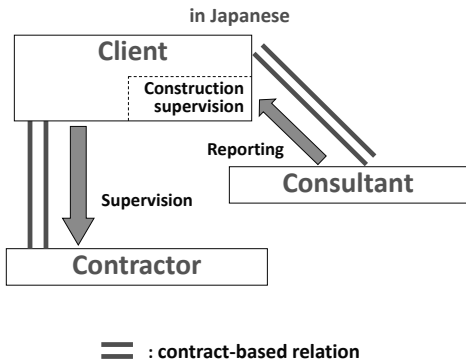


Occupational Safety & Health Services in Japan

Transition of the Numbers on Fatalities/Casualties at Workplaces, Japan

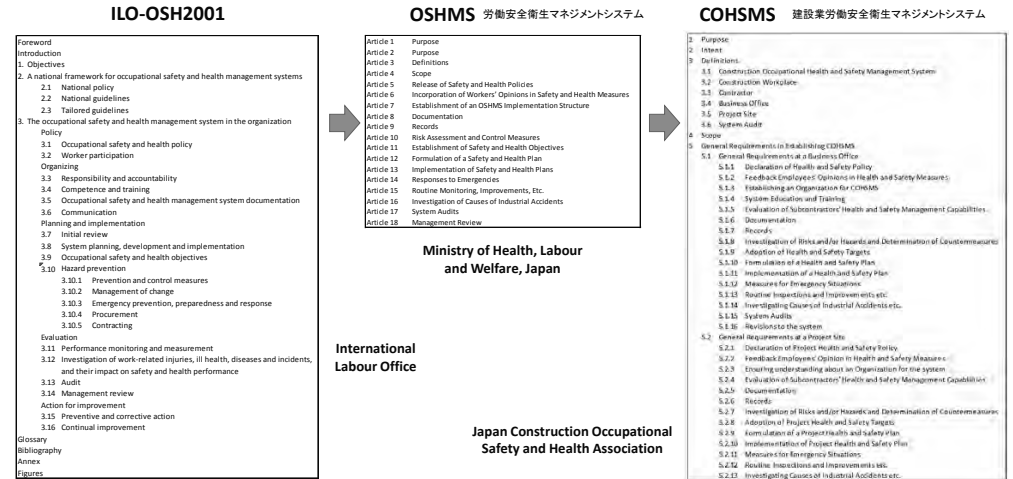


Comparison of Contract System in Japan and in the FIDIC world



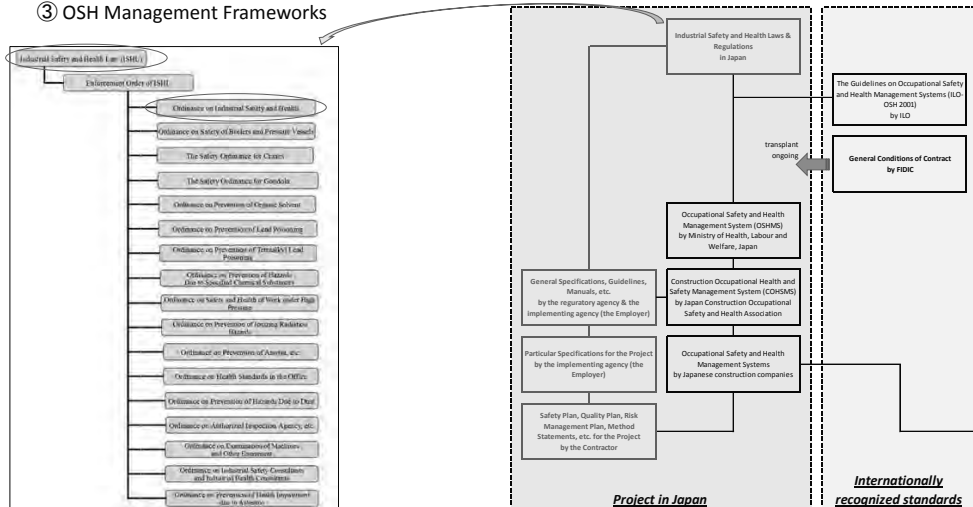
Occupational Safety & Health Services in Japan

④ Guidelines for OSH Management Systems



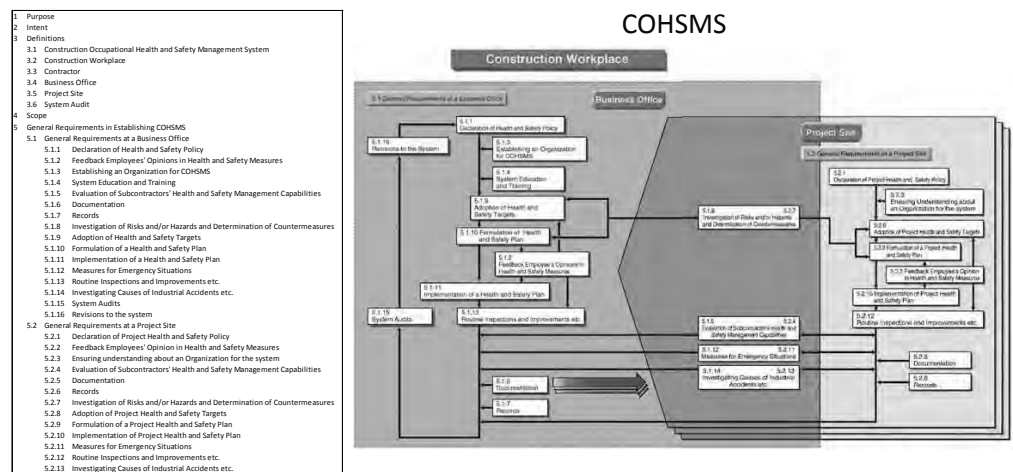
Occupational Safety & Health Services in Japan

③ OSH Management Frameworks



Occupational Safety & Health Services in Japan

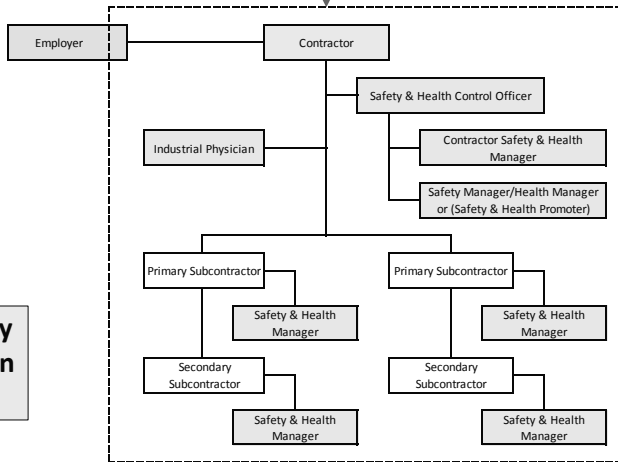
⑤ Construction Occupational Health and Safety Management System (COHSMS)



Laws and Regulations on Occupational Safety and Health in Construction Works

Labour Standards Inspection Office
(Labour Standards Inspector)

(judicial police officials)



Typical Framework for Safety Management in Construction Projects in Japan



SAFETY AND HEALTH MANUAL IN CONSTRUCTION

Chubu Regional Development Bureau
Ministry of Land, Infrastructure, Transport and Tourism
Japan

Features of Safety Management Framework in JAPAN

- Industrial Safety and Health Act; **Law**
Very strict law with detailed enforcement regulations, rules.
- Strict Monitoring System for Workplaces; **Monitoring**
by the Labour Standards Inspectors authorized with judicial and police powers
- Suspension of Bidding Qualification for Contractors; **Penalty**
Restriction for next bidding opportunity if one contractor caused a fatal accident/serious accident. -Up to several months.

SAFETY AND HEALTH MANUAL IN CONSTRUCTION

Table of Contents

Foreword

I. INTRODUCTION OF MANUAL

1. How to use the manual
2. Terminologies

II. INDUSTRIAL SAFETY AND HEALTH LAW AND SAFETY MANAGEMENT

1. Outline of safety/health regulations
2. Rights and obligations of the Employer and the Contractor
3. General confirmation on safety
 - (1) Overall safety management system
 - (2) Daily safety managements and safety education
 - (3) Working wear and protective equipment
 - (4) Keeping things tidy and in order
 - (5) Walkways et al
 - (6) Indoor workshops
 - (7) First-aid toilet
 - (8) Signs for hazards
 - (9) Inspection
 - (10) Restrictions on employment
 - (11) Application for construction permit
 - (12) Accident report
 - (13) Signs
 - (14) Others

III. SAFETY MANAGEMENT AGAINST VARIOUS TYPES OF ACCIDENTS

1. Prevention of Falling
 - * (1) Scaffolding
 - (2) Platform
 - * (3) Dismantling section
 - (4) Safety belt
 - (5) Ascent and Descent
 - * (6) Safety walkway
2. Prevention of danger caused by falling/littering
 - (1) Facilities to prevent littering
 - (2) Chute
3. Prevention of danger caused by collapse/rolling
 - (1) Assembling/Disassembling Supports
 - (2) Retaining Wall Works
 - (3) Excavation of natural ground
4. Prevention of danger caused by general construction equipment
 - * (1) Leveling, Hauling, Loading machines
 - (2) Excavation machine
 - (3) Foundation Works Machines
 - (4) Compaction machine
 - (5) Compacting machine
 - (6) Breaking machine
5. Prevention of danger caused by crane
 - * (1) Mobile crane
 - (2) Slings work
 - (3) Slings work - Detailed Check points
6. Prevention of danger caused by electricity
 - (1) Electric substation facilities
 - (2) Distribution board, earth leakage breaker
 - (3) Temporary electric cables
 - (4) Lighting
 - (5) Welding
 - (6) Operations on near a live cable
7. Prevention of machine, equipment
 - (1) Electric circular saw (hand tool type)
 - (2) Grinder
 - (3) Winch
 - (4) Compressor (Engine and motor type)
8. Prevention of traffic accident
 - (1) Hauling
9. Prevention of danger to public
 - (1) Signs of keep out
 - (2) Vibration, Noise
 - (3) Works near buried objects
10. Prevention of danger caused by fire and explosion
 - (1) Fire extinguishing
 - (2) Handling hazardous materials
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 - (1) Rock falling, Ground collapse
 - (2) Explosion, Fire
 - (3) Evacuation
 - (4) Steel supports
 - (5) Rescue
 - (6) Walkways in tunnels and working environment
 - (7) Quarrying
12. Prevention of danger caused by offshore operation
 - (1) Pump type dredger
 - * (2) Grab dredger
 - (3) Ground improvement ship
 - (4) Piling ship
13. Prevention of health disorder of workers
 - (1) Creeping deficiency
 - (2) Dust
 - (3) Vibration, Noise

APPENDIX

1. Works requiring license
2. Safety check list
3. Format of Occupational Safety and Health Card

Items with * are illustrated hereinafter

1. 足場転倒防止

1) 足場 シアール足場

● 足場のポイント (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100)

EXAMPLE - 1

(1) Scaffolding (pipe scaffolding)

Pipe scaffolding is composed of vertical pipes, horizontal pipes, planks, cramps, joints, metal bases and so on.

Check Points (* denotes important item)

①	Are metal fittings to well used at the appropriate intervals?	OISH Article 570
②	Is maximum loading capacity of scaffolding indicated?	OISH Article 562
③*	Are metal bases for pipes used with base plates to avoid settlement?	OISH Article 570
④	Are horizontal pipes near metal base installed?	OISH Article 570
⑤	Are vertical pipes located at the appropriate intervals (1.85m max. x W1.5m max.)?	OISH Article 571
⑥	Is the elevation of first platform less than 2m?	OISH Article 571
⑦	Is the platform width more than 40cm and fixed with the gap less than 3cm?	OISH Article 563
⑧	Are cross bracings used to reinforce the scaffolding?	OISH Article 570
⑨*	Are handrails installed in a full length?	OISH Article 563
⑩	Are horizontal bracings installed at the top layer and less than every 5 layers?	OISH Article 571
⑪	Are the pipes made double installed beyond 31m from the top?	OISH Article 571

OISH: Ordinance on Industrial Safety and Health

Article 570 (Text Form Scaffolding)

(1) The employer shall, in regard to steel pipe scaffolding, see to it that they conform to the following provisions:

(a) For the top of scaffolding (including movable scaffolding with wheels), to use members such as projecting bridge, before of top girth with labor fittings, and planks, square timbers, etc., in order to prevent the scaffolding from sliding or falling.

(b) For movable scaffolding with casters, to take measures such as securing the casters with a device, or using brakes, pad, etc. to prevent a part of it to be slipping on the ground, in order to prevent scaffolding from moving or sliding.

(c) To take measures to prevent the passage of persons or objects from the gaps between the members of the scaffolding.

(d) To reinforce the scaffolding with bracing.

(e) To secure the scaffolding, to provide side or end rails corresponding to the type of steel pipe scaffolding, based on the table below.

Type of steel pipe scaffolding	Interval (m)	
	Vertical direction	Horizontal direction
Open and coupled scaffolding	1.8	1.8
Particulate scaffolding (excluding those having height of less than 5 m)	1.8	1.8
Other scaffolding (excluding those having height of less than 5 m)	1.8	1.8

(2) When the scaffolding is reinforced with diagonal bracing, the interval between the members of the scaffolding shall be not more than 1.8 m.

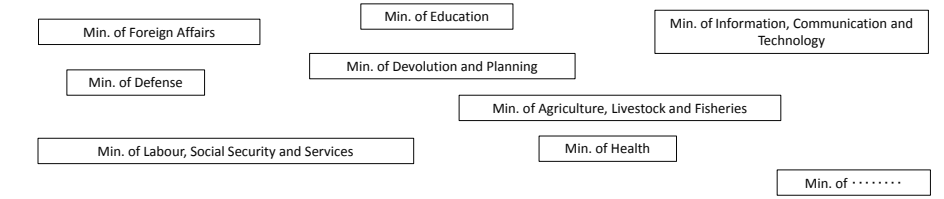
(3) When a scaffolding is reinforced with diagonal bracing, the interval between the members of the scaffolding shall be not more than 1.8 m.

(4) The interval between the members of the scaffolding shall be not more than 1.8 m.

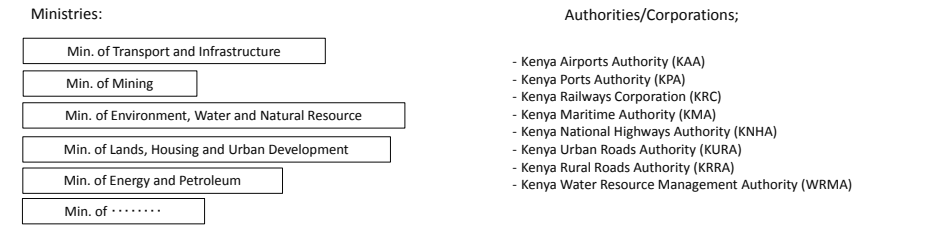
(5) The interval between the members of the scaffolding shall be not more than 1.8 m.

Occupational Safety & Health Services in Kenya

① Government Organizations

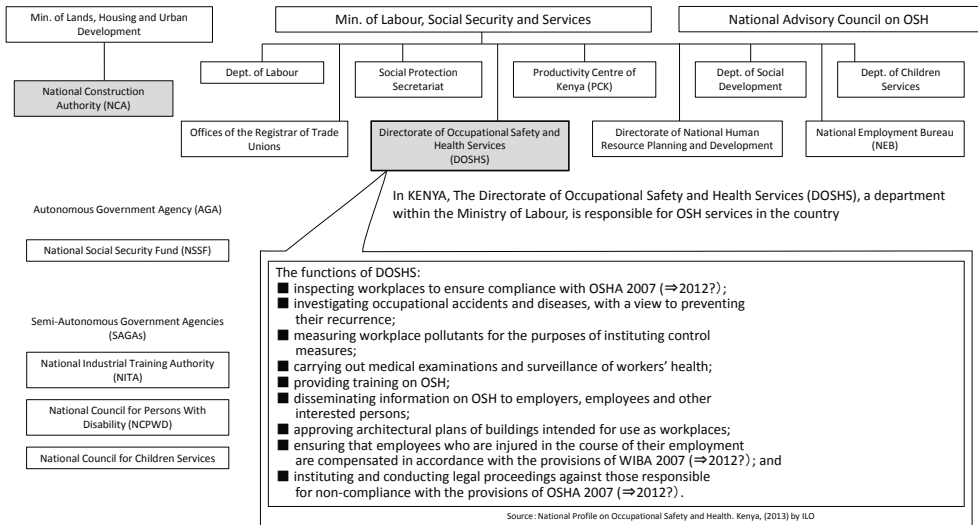


Who could be implementing agencies of civil works?



1.2 Occupational Safety and Health Framework in Kenya

Principal Organization for OSH Services in KENYA



Occupational Safety & Health Services in Kenya

② OSH Acts/Rules in Kenya

DOSHS enforces the Occupational Safety and Health Act (OSHA) and the Work Injury Benefits Act (WIBA) were enacted in 2007, and are now the principal laws that govern OSH in the country. There are other laws that touch on OSH, but they are managed by other government ministries and corporations.

Acts

-Occupational Safety and Health Act, 2007 (revised in 2012)
To secure the safety, health and welfare of people at work, and to protect those not at work from risks to their safety and health arising from, or in connection with, the activities of people at work.

-Work Injury Benefit Act, 2007 (revised in 2012)
To provide compensation to employees for work-related injuries and diseases contracted in the course of their employment, and for connected purposes.

- Labor Institutions Act, 2007 (revised in 2013)
- National Social Security Fund Act, 2007 (revised in 2013)
- Industrial Court Act, 2007 (revised in 2011)
- Industrial Training Act, 1983 (revised in 2012)
- Employment Act, 2007 (revised in 2014)
- Labor Relations Act, 2007 (revised in 2012)

Rules

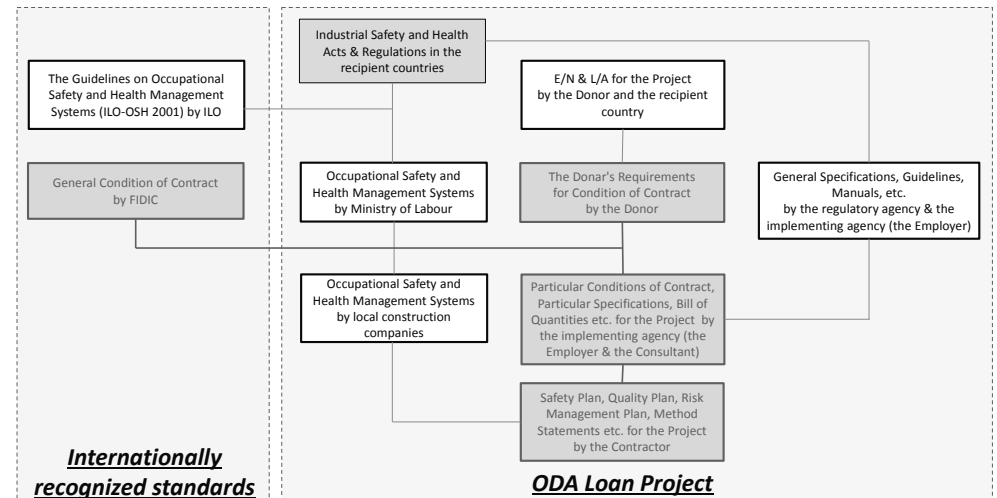
For the factories and other places of work;

- Safety and Health Committees Rules, 2004
- Medical Examination Rules, 2005
- Noise Prevention and Control Rules, 2005
- Fire Risk Reduction Rules, 2007
- Hazardous Substances Rules, 2007

For the factories;

- Woodworking Machinery Rules, 1959
- Docks Rules, 1962
- Cellulose Solution Rules, 1964
- First Aid Rules, 1977
- Eye Protection Rules, 1978
- Electric Power Special Rules, 1979
- Building Operations and Works of Engineering Construction Rules, 1984

Framework of Construction Safety and Health in ODA Loan Project



1.3 Occupational Safety & Health Framework in ODA Projects

Guidance for The Management of Safety for Construction Works in Japanese ODA Projects

Chapter 1: General Rules

1.1 Purpose

The Guidance contains the basic policies for safety management, and technical guidance on specific methods for safe execution of works in order to prevent occupational accidents and public accidents on ODA construction projects for public and other facilities.

By fully understanding the Guidance and complying with the regulation therein, Project Stakeholders will be in a position to respect the basic human rights of all parties involved in ODA construction projects. This will help prevent the occurrence of occupational and public accidents by creating a culture of safety, and help realize social development in the recipient country. This is the purpose of the Guidance.

1.2 Scope of Application

The Guidance applies to works for public and other facilities to be constructed with ODA support (including both grants and loans) (hereinafter "ODA Projects").

1.3 Plans for Safety Management

Two plans for the safety management for construction work sites shall be prepared and implemented by the Contractor, namely the "Safety Plan" and "Method Statements on Safety."

1.4 Roles and Responsibilities of Project Stakeholders

The roles and responsibilities of Project Stakeholders (i.e. Employer, Engineer, Contractor, Subcontractor, Workers) specified.

Chapter 1: General Rules (Plans for Safety Management)



	Safety Plan	Method Statements on Safety
When	At the pre-construction stage	At the construction stage
Prepared by	Contractor	Contractor
Role	Basic Plan (basic policies on the general safety management and operation for the entire works at site)	Detailed Plan (specifics for the safe execution of works and safety measures for each type of work)
Items to be incorporated	(1) Basic Policies for Safety Management (2) Internal Organizational Structure for Safety Management (3) Promotion of the PDCA Cycle (4) Monitoring (5) Safety Education and Training (6) Voluntary Safety Management Activities (7) Sharing Information (8) Response to Emergencies and Unforeseen Circumstances	(1) Construction plant and machinery (2) Equipment and tools (3) Materials (4) Necessary qualifications and licenses (5) The order of command for the works (6) Work items (7) Procedure for the execution of the works (8) Foreseeable risks (9) Precautionary measures
Timing of Submission	<ul style="list-style-type: none"> at the time specified in the tender/the contract documents no later than seven (7) days prior to the commencement of the relevant works 	<ul style="list-style-type: none"> prior to commencement of the relevant works according to the execution plans Date specified in the contract documents
Reviewed by	Employer, Engineer	Employer, Engineer

Chapter 2: Basic Policies for Safety Management

- 2.1 Basic Principles of Safety Management
- 2.2 Compliance with Relevant Laws and Regulations
- 2.3 PDCA for Safety Management

Chapter 3: Contents of the "Safety Plan"

- 3.1 Composition of the "Safety Plan"
- 3.2 Basic Policies for Safety Management
- 3.3 Internal Organizational Structure for Safety Management
- 3.4 Promotion of the PDCA Cycle
- 3.5 Monitoring
- 3.6 Education and Training for Ensuring Safety
- 3.7 Voluntary Basis Safety Management Activities
- 3.8 Sharing Information
- 3.9 Response to Emergencies and unforeseen Circumstances

Chapter 4: Contents of the "Method Statement on Safety"

- 4.1 Composition of the "Method Statements on Safety"
 - 4.1.1 Items for inclusion in a "Method Statements on Safety"
 - 4.1.2 Method Statements on Safety – Template
- 4.2 Applicable Standards for the "Technical Guidance for Safe Execution of Works"
 - 4.2.1 Technical Guidance for Safe Execution of Works
 - 4.2.2 Applicable Standards for the Method Statements on Safety
 - 4.2.4 Applicable Standards for the Technical Guidance for Safe Execution (by the Type of Work)

Chapter 5: Technical Guidance for Safe Execution (by the Type of Work)

- 5.1 Excavation Work
- 5.2 Pile Foundation Work
- 5.3 Formwork and Form Shoring System Work
- 5.4 Reinforcing Bar Work
- 5.5 Concrete Work
- 5.6 Work over Water
- 5.7 Demolition Work
- 5.8 Work where there is danger of oxygen deficiency
- 5.9 Slings Work

Chapter 6: Technical Guidance for Safe Execution (by the Type of Accident)

- 6.1 Measures for Prevention of Fall Accidents
- 6.2 Measures for Prevention of Accidents Involving Flying or Falling Objects
- 6.3 Measures for Prevention of Accidents Involving Collapse of Structures
- 6.4 Measures for Prevention of Accidents Involving Construction Machinery
- 6.5 Measures for Prevention of Explosion Accidents
- 6.6 Measures for Fire Prevention
- 6.7 Measures for Prevention of Public Accidents
- 6.8 Measures for Prevention of Traffic Accidents
- 6.9 Protective Gear

Q & A for the Guidance

1. Is English version of the Guidance available?

- YES

2. When will the application of the Guidance commence ?

Grant projects: already started

*Yen Loan projects: will judge/decide at the project formation stage
will judge/decide on a project-by-project basis*

3. In case the Guidance is used as a part of tender documents, what is the priority of each document?

*- It is not envisaged to use the Guidance as a part of tender documents,
but to assume the borrower to prepare the tender documents taking account of the local laws
and regulations as well as respecting the spirit of the guidance.*

4. If the guidance is not directly used as a part of the tender and/or contract documents, how/where the safety control-related information is incorporated in the documents; SCC, Specification, Employer's requirements or Safety Plan?

*- It is assumed the safety control requirements are incorporated in the specification.
The significance of the safety plan will remain unchanged.*

5. How to state the safety guidance requirements in the minutes of discussions signed by JICA and the borrower at the loan preparation stage?

Template for the TOR for DD/CS consultant regarding the safety guidance?

Standard method as to how to deal with the guidance in tender/ contract documents?

How to reconcile with local safety & health laws/regulations and/or criminal laws in the borrower's country?

Any influence on the contractor's all risk insurance and/or the DD/CS consultant's professional indemnity insurance?

- *JICA will build consensus with the borrower on the following points:*

- To include safety requirements with reference to the borrower's local laws/standards and the safety control guidance, and, as necessary, international safety standards such as international organizations' safety guidelines.*
- To confirm, at the consultant's review stage, the above requirements are met in the tender documents.*

6. Are there any differences between STEP and ordinary Yen loan projects in terms of the Guidance?

- *There are no particular differences.*

7. Any influence to payments to the contractor regarding the Guidance?

- *Whether or not conforming with the guidance may not affect payments to the contractor.*

8. Will incorporation of the guidance requirements into BOQ be obliged?

- *It is expected that the expenditures related to the safety control requirements set out by the Employer and the Consultant in other parts of tender/contract documents will be included in BOQ.
The guidance itself will not be incorporated directly.*

9. Are there any differences between STEP and ordinary Yen loan projects in terms of the guidance?

- *There are no particular differences between two loan schemes.
Dissemination of the guidance will be conducted through safety control seminars by JICA or loan negotiation with the borrower on new projects.
In principle, we hope the safety control guidance will be applied to all Yen loan projects.*

Section 2

Safety Management Methodology in Mombasa Port Development Project

Mombasa Port Development Project - Site Photos (09/Oct/15) (2 of 3)



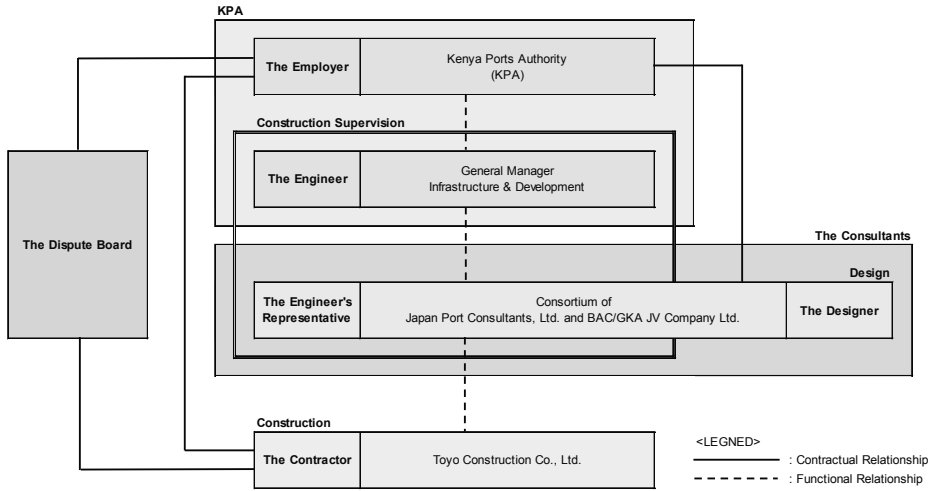
Mombasa Port Development Project - Site Photos (09/Oct/15) (1 of 3)



Mombasa Port Development Project - Site Photos (09/Oct/15) (3 of 3)



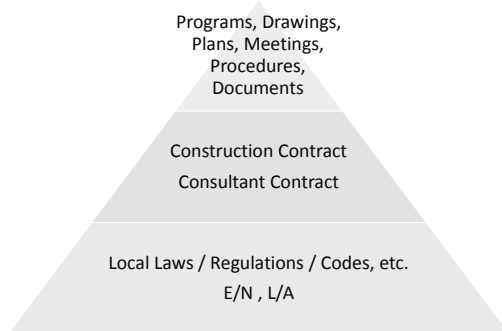
Mombasa Port Development Project - Project Organization



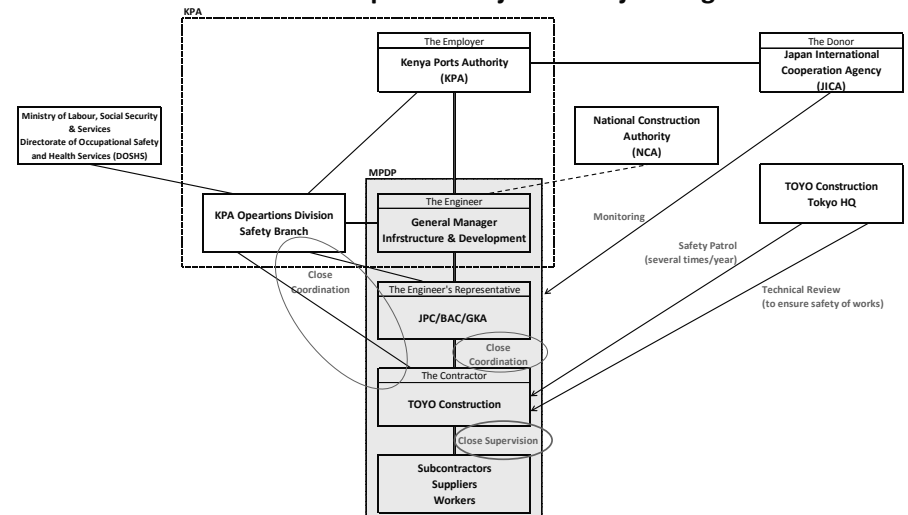
Mombasa Port Development Project - Project Targets & Safety

Project Targets		Relevant Organizations			
		Project Agencies/ Donors		Regulatory Agencies in Kenya	
		KPA	JICA	DOSHS	NCA
Safety	Occupational Safety & Health → Workers	✓✓	✓	✓	
	Safety of Works (technical) → Structures	✓✓	✓	✓	✓
Quality		✓✓	✓		✓
Schedule		✓✓	✓		
Cost		✓✓	✓		

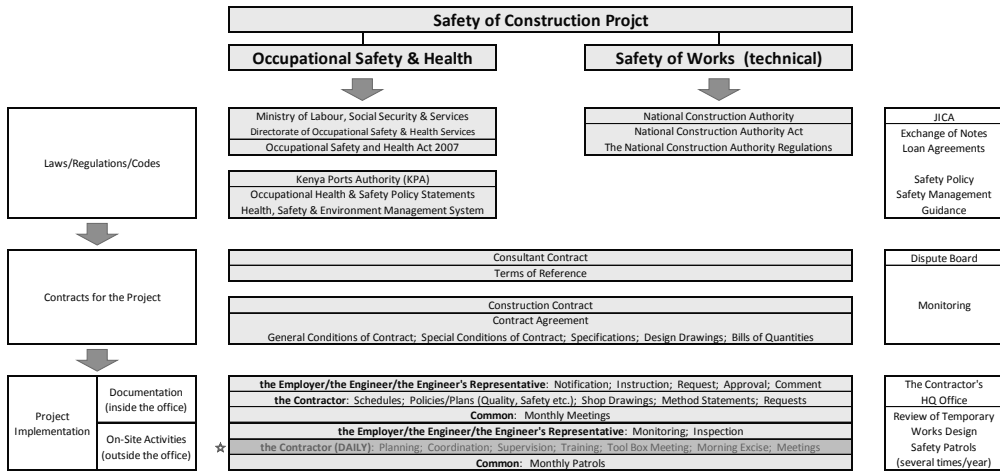
Mombasa Port Development Project - Management Framework



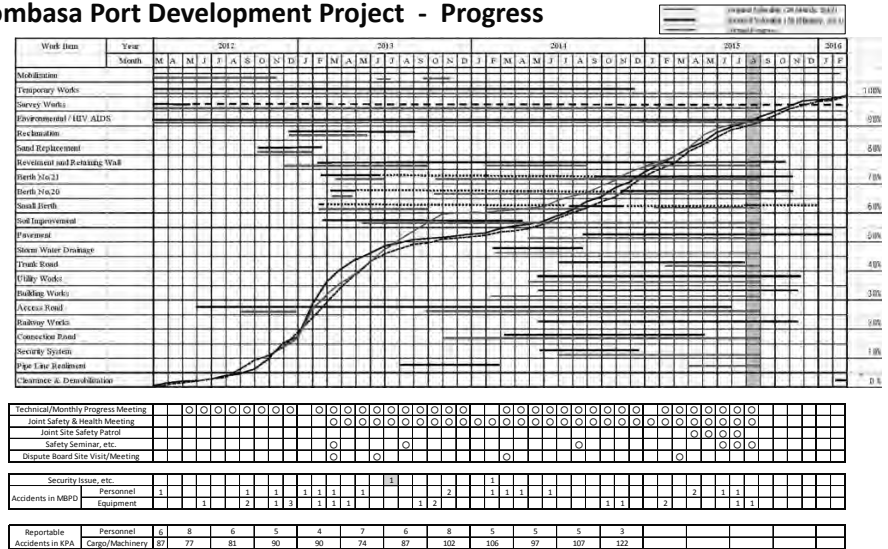
Mombasa Port Development Project - Project Organization



Mombasa Port Development Project - Safety Management Framework



Mombasa Port Development Project - Progress



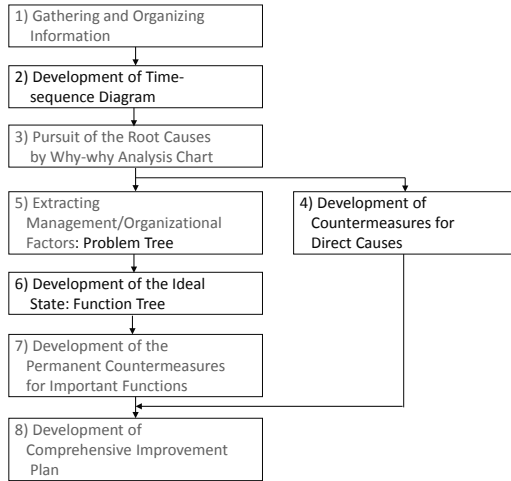
Mombasa Port Development Project - Compliance with JICA Safety Guidance

Mombasa Port Development Project The Contractor's Project Safety Policy		1. Introduction	2. Safety Policy	3. Health and Safety Organization	4. Health and Safety Training	5. Safety Rules and Regulations	6. Safety Committees	7. Safety and Health Inspection	8. Job Hazard Analysis	9. Management of the Place of Work	10. Management of Trucks and Cranes	11. Management of Equipment	12. Management of Materials and Incident Investigation	13. Emergency Preparedness and Response	14. Safety Standardization Program	(Each Method Statement)	
Chapter 1: General Rules	1.1 Purpose																
	1.2 Scope of Application																
	1.3 Plans for Safety Management																
	1.4 Roles and Responsibilities of Project Shareholders																
Chapter 2: Basic Policies for Safety Management	2.1 Basic Principles of Safety Management																
	2.2 Compliance with Japanese Laws and Regulations																
Chapter 3: Contents of the "Safety Plan"	3.1 Composition of the Safety Plan																
	3.2 Basic Policies for Safety Management																
	3.3 Internal Organizational Structure for Safety Management																
	3.4 Promotion of the PDCA Cycle																
	3.5 Monitoring																
	3.6 Safety Education and Training																
	3.7 Voluntary Safety Management Activities																
	3.8 Sharing Information																
	3.9 Response to Emergencies and Unforeseen Circumstances																
Chapter 4: Contents of the "Method Statements on Safety"	4.1 Composition of the "Method Statements on Safety"																
	4.2 Applicable Standards for the "Technical Guidance for Safe Execution of Works"																
Chapter 5: Technical Guidance for Safety Execution (By the Type of Work)	5.1 Excavation Works																
	5.2 Pile Foundation Works																
	5.3 Formwork and Form Shoring System Work																
	5.4 Reinforcing Bar Work																
	5.5 Concrete Work																
	5.6 Work over Water																
	5.7 Demolition Work																
	5.8 Work where there is danger of oxygen deficiency																
	5.9 Scaffolding Work																
Chapter 6: Technical Guidance for Safety Execution (By the Type of Accident)	6.1 Measures for Prevention of Fall Accidents																
	6.2 Measures for Prevention of Accidents Involving Flying or Falling Objects																
	6.3 Measures for Prevention of Accidents Involving Collapse of Structures																
	6.4 Measures for Prevention of Accidents Involving Construction Machinery																
	6.5 Measures for Prevention of Explosion Accidents																
	6.6 Measures for Fire Prevention																
	6.7 Measures for Prevention of Public Accidents																
	6.8 Measures for Prevention of Traffic Accidents																
	6.9 Protective Gear																

Though not stated expressly in the plans/documents, PDCA activities are being conducted daily on site by Japanese/Filipino engineers

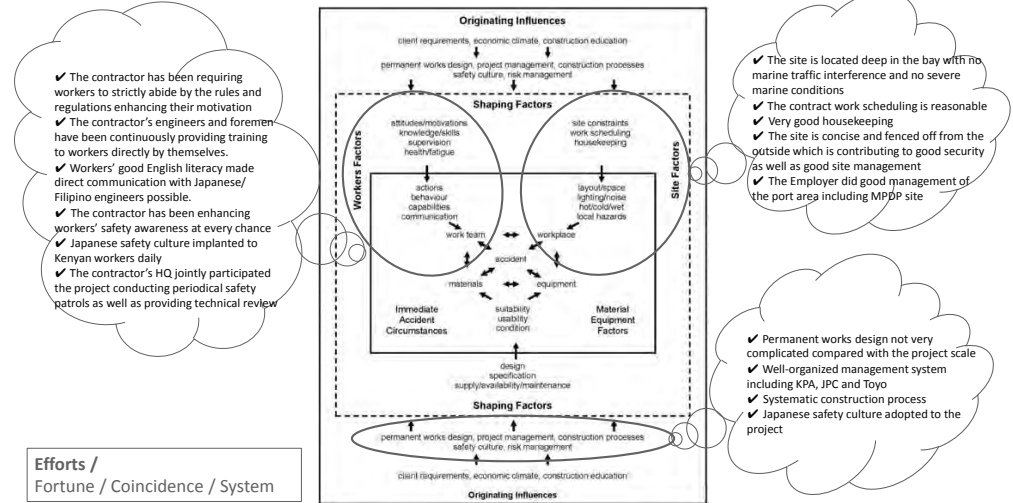
Section 3 Root Cause Analysis for the Issues of Mombasa Port Development Project

Procedure of Root Cause Analysis

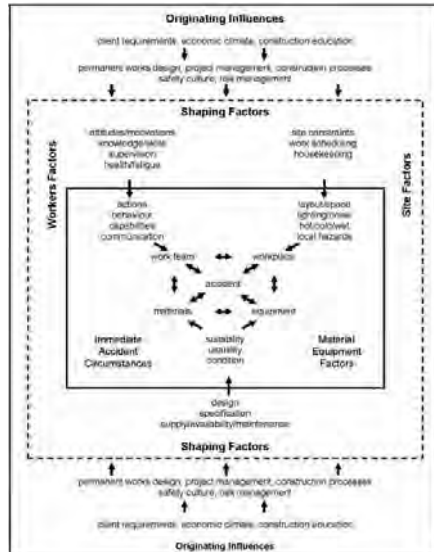


Study Flow of Root Cause Analysis and Countermeasures

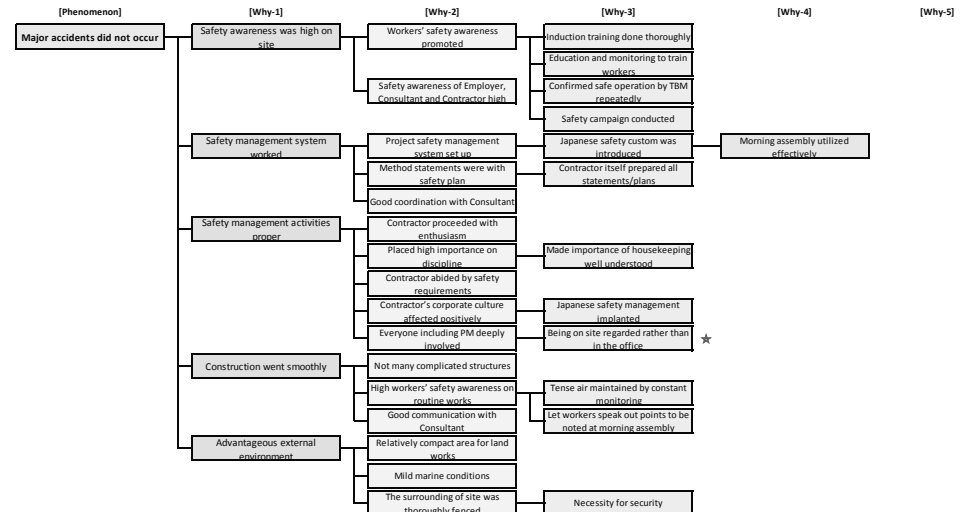
Mombasa Port Development Project - External Environmental Factors



External Environmental Factors attributing to Construction Accidents



Mombasa Port Development Project - Why-Why Analysis of SUCCESS





Recommendations

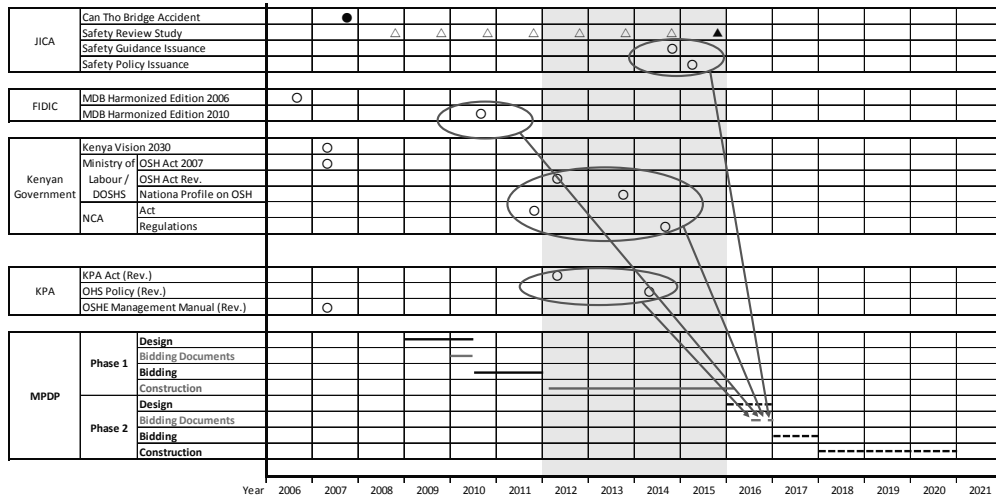
Mombasa Port Development Project - Organizational/Management Issues

Item	Recommendations
1. Awareness of Safety	<ol style="list-style-type: none"> 1) The top management (the Contractor, the Owner and the Consultant) exercises a strong leadership in enhancing safety awareness, and took initiative in acting to materialize the principle; "Safety First". 2) Promote education and enlightenment program which agree with the present situation of education and safety awareness level of the local workers' to ensure the safety works. 3) Establish a structure for the supervisory personnel (foremen and supervisors) who are either foreign or local can gain professional knowledge from Japanese safety experts in order to improve their ability of foreseeing danger. 4) Considering absolutely most of accidents are caused by human errors (the lack of coordination and communication is one of the human errors), enhance understanding of the human errors and work on preventing accidents based on it.
2. Organization for Safety Management	<ol style="list-style-type: none"> 1) The safety management-section must be under the direct control of the Project Director. Give the section strong authority to instruct other sections for safety improvement. 2) Clarify the roles and authority of the Safety Manager and Safety Officers to pursue parallel execution of the project and safety of the works. 3) The Owner clarifies the principle of safety of the Project. The Consultant establishes the organization for safety management and the system to cooperate with the Contractor's safety management organization to materialize the effective safety activities.
3. Safety Plan and Execution	<ol style="list-style-type: none"> 1) Make a concrete and detailed safety plan which agrees with the present situation that many workers are unskilled when studying the Method Statement. In addition, establish the structure in which inspections by the Consultant prior to the start of the work includes inspection of safety measures, and perform inspection as determined. 2) In future STEP projects, the above shall be clearly stipulated in the contract document. 3) In the study of the above safety plan, involve not only the engineer in charge for the section/work but also foremen to make the plan suitable to the actual work conditions. In addition, this is an effective way to enhance the sense of responsibilities of foremen in their roles. 4) Establish the system of executing and confirming the safety measures as planned. The present Safety Plan is merely a general content, and not a plan to guarantee the safety of a specific work in the specific construction site.

Mombasa Port Development Project - Organizational/Management Issues

Item	Recommendations
4. Safety Management Activities	<ol style="list-style-type: none"> 1) Share the idea that the one of the major purpose of daily site patrol is safety management among all staff and personnel. 2) Give the priority to safety measures even if it may causes delay of the work in order to establish "Safety First" and practice it in the site. 3) In order to improve the effectiveness of the safety patrol by the Consultant, strengthen coordination and cooperation between the Consultant and the Contractor. 4) Improve daily safety activities such as the morning meeting and the tool box meeting. 5) Spend half minutes or less for the silent prayer at the end of the meeting exempld above for the safety of the day.
5. Education and Enlightenment of Safety	<ol style="list-style-type: none"> 1) Make much of the education specifically for foremen considering the status of the local work force, perform it systematically. 2) Give the workers an education for basic matters of safety. Make foremen always instruct them through the site work about safety repeatedly. (Usage of safety gears and avoiding unsafe acts, etc.)
6. Hiring and Management of Labor Force	<ol style="list-style-type: none"> 1) Due to the situation that subcontractors in this country have not grown enough yet, the direct hiring of work force is inevitable. However, the Contractor has to exercise any necessary management such as the working time of workers to prevent accidents due to excessive fatigue. 2) Considering the situation of the local workers that there are many unskilled or unqualified workers, provide fundamental/practical education agreeing with their skill levels, work environment and work methods.
7. Others	<ol style="list-style-type: none"> 1) Make all personnel and workers understand that sorting and clearing up are the fundamental factors to ensure the safety. Promote the movement of sorting and clearing up the site. 2) Eliminate defective equipment from the site by evaluate the status of the equipment especially brought in by supplier based on the evaluation standard.

Mombasa Port Development Project - Timeline

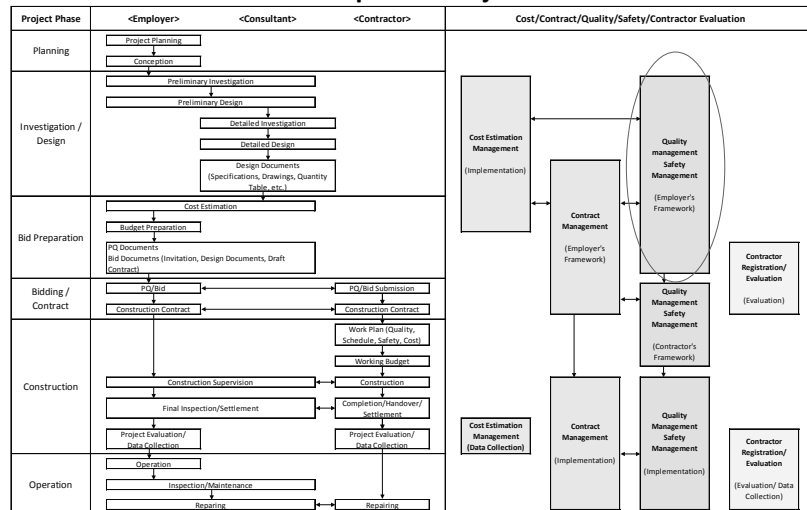


Mombasa Port Development Project - Toward Phase 2

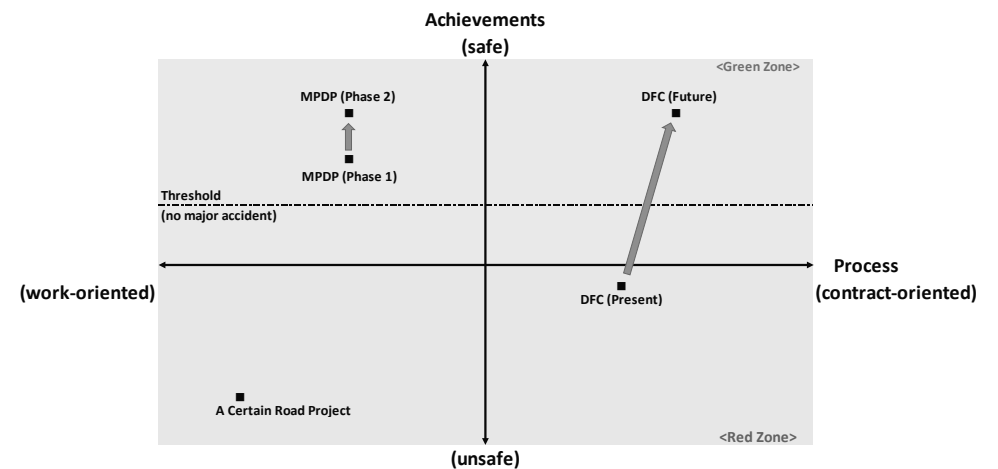
Laws / Regulations / Contracts / Project Implementation		Phase 2 (2016-2020)									
Directorate of Occupational Safety & Health Services	Occupational Safety and Health Act 2007	-									
National Construction Authority	National Construction Authority Act The National Construction Authority Regulations	-									
Kenya Ports Authority	Occupational Health & Safety Policy Statements Health, Safety & Environment Management System	-									
Consultant Contract	Terms of Reference	↗									
Construction Contract	Contract Agreement	-									
	General Conditions of Contract	-									
	Special Conditions of Contract	↗									
	Specifications	↗									
	Design Drawings	↗									
Project Implementation	Documentation (inside the office)	<table border="1"> <tr> <td>the Employer/the Engineer/the Engineer's Representative</td> <td>Notification; Instruction; Request; Approval; Comment</td> <td>→</td> </tr> <tr> <td>the Contractor</td> <td>Schedules; Policies/Plans (Quality, Safety etc.); Shop Drawings; Method Statements; Requests</td> <td>→</td> </tr> <tr> <td>Common</td> <td>Monthly Meetings</td> <td>→</td> </tr> </table>	the Employer/the Engineer/the Engineer's Representative	Notification; Instruction; Request; Approval; Comment	→	the Contractor	Schedules; Policies/Plans (Quality, Safety etc.); Shop Drawings; Method Statements; Requests	→	Common	Monthly Meetings	→
	the Employer/the Engineer/the Engineer's Representative	Notification; Instruction; Request; Approval; Comment	→								
the Contractor	Schedules; Policies/Plans (Quality, Safety etc.); Shop Drawings; Method Statements; Requests	→									
Common	Monthly Meetings	→									
On-Site Activities (outside the office)	<table border="1"> <tr> <td>the Employer/the Engineer/the Engineer's Representative</td> <td>Monitoring; Inspection</td> <td>→</td> </tr> <tr> <td>the Contractor (DAILY)</td> <td>Planning; Coordination; Supervision; Training; Tool Box Meeting; Morning Excise; Meetings</td> <td>→</td> </tr> <tr> <td>Common</td> <td>Monthly Patrols</td> <td>→</td> </tr> </table>	the Employer/the Engineer/the Engineer's Representative	Monitoring; Inspection	→	the Contractor (DAILY)	Planning; Coordination; Supervision; Training; Tool Box Meeting; Morning Excise; Meetings	→	Common	Monthly Patrols	→	
the Employer/the Engineer/the Engineer's Representative	Monitoring; Inspection	→									
the Contractor (DAILY)	Planning; Coordination; Supervision; Training; Tool Box Meeting; Morning Excise; Meetings	→									
Common	Monthly Patrols	→									

Legend:
 ↗ : To be improved in Phase 2
 → : To be maintained in Phase 2
 - : Not in a position to suggest

Mombasa Port Development Project - Toward Phase 2



Mombasa Port Development Project - Improvement





Safety First



Safety Pays

