Summary of Key Changes in other departments/cells within Operations:

Quality Enhancement:

1. Key Responsibilities:
    a. Quality Assurance of materials and processes related to Structure.
    b. Testing of materials related to Structure.
    c. Training of Const Mgmt team related to best practices in Structure and Non-Structure (Finishing & Landscape, MEP, Facade,) through site demonstration and best practices manual.
    d. Audit of project on Structure and Non-Structure and discussion of required rectification measures.
2. QE will NOT:
    a. Conduct checking for possession prior to FM takeover. CM will directly handover to FM.
    b. Testing of materials used for non-structure (though training will be provided to Stores and Const Mgmt for the same).

See Annexure A for details

Safety:

1. Key Responsibilities:
    a. Creating awareness of 'how to achieve safety' through various actions including:
        i. Safety manual (practical do's/dont's)
        ii. Safety Induction
        iii. Safety Oath
    b. Training of Const Mgmt team related to best practices in safety through site demonstration and best practices manual.
    c. Audit of project on Safety aspects and discussion of required rectification measures.
2. Safety will not:
    a. Be responsible for implementation of safety norms / work practices at site.

See Annexure B for details.

Design:

1. Integrated Design team for each project– no separate Engineering and Design team.
2. Creation of specialist MEP Design team, which will provide specialist advice to Project Design team.
3. Project engineers only on Large and Very Large projects. Engineering aspects to be handled by Project Designer (Architect) on small and medium projects.
4. Set of experts (1-2 nos.) in Structure and Facade, , which will provide specialist advice to Project Design team.
5. Implementation initiated – to be completed in phases by mid-May 2011.

See Annexure C for details.

Procurement:

1. Integrated Materials and Contracts team.
2. Package teams
    a. Civil (excluding RMC): Level 0 – Tikam Jain; Level 1 – Sandeep Mehta
    b. RMC (and RMC inputs): Level 0 – Jimmy Gandy; Level 1 – Sandeep Mehta
    c. Services (MEP + OEMS): Level 0 – Tikam Jain; Level 1 – Ajith Pai
    d. Finishing (including Facade): Level 0 – Jimmy Gandhy Level 1 – New Joinee (June 11)
    e. Foreign Sourcing: Level 0 – Jimmy Gandhy; Level 1 – new joinee (May 11) (Team in China: Vaibhav Jambekar + Navneet Khandelwal)
3. Project teams
    a. Focussed groups handling 1-3 projects, fully responsible for entire procurement of that project.
    b. One point contact for Const Mgmt / Stores.
4. Procurement shall be responsible for the quality / testing / certification of materials (other than those used for Structure) prior to these materials arriving at site. At site, very limited 'physical / visual' testing will be conducted for materials (other than those used for Structure).
5. Implementation initiated – full transition w.e.f 1.5.11.

See Annexure D for details.

Stores:

1. All materials which are in Lodha's scope will be received, stores safely and issued by Stores. Stores shall NOT handle any material which is not in Lodha's scope as per the terms of the contract.
2. Ensuring optimization of inventory levels, by coordinating with Const Mgmt and discussing optimized ordering of materials which may not be moving fast.
3. Ensuring appropriate material utilization by site to site transfer etc.
4. Conducting visual / physical tests for materials (other than those used for structure) at time of delivery.
5. Process all material bills and send to accounts (after checking for quantity and quality) – this can be done using data which is already being entered into SAP. All debits will be by mode of 'debit' note (not 'scribble' on challan / bill). Payment will be processed by accounts after checking for commercial terms. Cheques will be issued directly by Accounts to vendor. All query resolution of vendor will be done by Procurement (with help, as needed, from Stores).

Security:

1. There will be no specialized Security associate at site, except in Very Large sites. Security guards will be under supervision of HR/Admin associates at site.
2. Central Security team shall carry out training of guards and audit of the sites wrt Security issues and conduct discussions on improvement areas with Const Mgmt and Site HR/Admin.
3. Reduction in wasteful no. of security guards at site with improvement in quality of the guards.
4. Enhanced use of pre-planning eg. limited no. of exits/entrances, boundary wall being completed quickly within 3 months of start of construction, use of electronic security devices like cameras to record worker's movement.

Construction Management:

1. Full responsibility for all activities required to be done at site to ensure meeting of project goals wrt. Time, Quality, Safety and Cost.
2. Safety and Quality are responsibilities of each member of Construction Management team – nobody else is responsible.
3. Simple site structure with key cells being Construction Management, supported by Stores. Audit / training role for Quality Enhancement and Safety, with no implementation responsibilities.

4. Shuttering Design:
    a. Getting it done through self / consultant before $_1$st slab is cast, for projects which do not have FML civil contractor. Help from QE (Structure) may be taken as needed.
    b. Checking/verifying shuttering design submitted by FML civil contractor / specialized shuttering vendor in case of buildings which have FML civil contractor. This is to be done before $_1^{st}$ slab is cast. Help from QE (Structure) may be taken as needed.
5. Formal review of project design on completion of concept (by Level 2 and higher working on the project) to give suggestions wrt constructability, value engineering and site logistics. Concept will be presented by Design team.
6. Formal feedback to be taken by Procurement (from Level 2 and higher working on the project), prior to contract award, in case of Top 6 contracts for said projects (Civil, Electrical, Plumbing, Facade (including Windows / External Paint / Railing / Cladding), Flooring, Elevators).
7. Site logistics planning (with assistance from Planning team) and allocation of infrastructure resources to Contractors in planned fashion at site (Storage space for Contractor's for their own material, labour camp space, electricity and water supply, sanitation provisions, common equipment usage).
8. Simplify the site processes / controls to ensure productive use of manpower. Proposed (limited) increase in allowance of associates at Level 2C and 3, but Level 4 and 5 numbers shall follow current norms.
9. Give associates the ability to point out mistakes. Fix not just the immediate problem but the process which is causing the problem.
10. Coordinate execution of the above stated changes and fill gaps arising during their implementation process- make construction more effective.

Key additional areas to focus on for Const Mgmt for FY 11-12:

1. Quality of Works and functionality to end user.
2. Safety of the work site.
3. Greater technical knowledge and work ownership in CM team associates – make every member of the team productive (especially at levels 4 and 5).

The aforesaid is in addition to the focus on timely construction.

ANNEXURE A 15th

March 2011

Quality Control:

The responsibility for ensuring high levels of functional / aesthetic quality (as applicable / desirable) with low wastage and rework and appropriate supervisory costs lies with every members of the Construction Management cell. The head of the project from Const Mgmt (Level 2 or higher0 is personally responsible for developing appropriate quality control and adherence strategies / practices and ensuring that the work at the said site is carried out accordingly.

Quality Enhancement:

To aid the Const Mgmt cell to understand good implementation practices better and to conduct appraisal of the standard of work being actually performed, the company shall have a Quality Enhancement cell within the Const Mgmt dept, comprising of specialists in the following 3 areas:

1. Structure (civil, concrete etc.)
2. Finishing & landscape
3. MEP
4. Façade

The teams will comprise of a small no. of highly knowledgable, experienced and motivated individuals, interested in making a real difference. This team will take the lead in (general responsibilities):

- Learning from good implementation practice (within India or outside) and translating these practices into implementable guidelines in the Indian context.
- Providing technical expertise in developing guidelines / work procedures for any new type of 'work' / 'activity' being undertaken by the company.
- Training the Const Mgmt team in terms of good, practical implementation methods, do's/don't's and learnings by means of 'Practical Quality Enhancment manual' and continuous training through onsite demonstration and explanation.
- Specifying testing methods / procedures and training the Const Mgmt / Stores team to conduct the same, maintain records and take appropriate remedial / rejection action (if any). In case of structural input materials (eg. Concrete, concrete raw materials, bricks / blocks, steel), the testing role shall be dealt with by the Quality Enhancement team itself.

- Conducting quality audit of the sites on pre-specified intervals, with power to ask Const Mgmt to make changes (upto completely redoing the works, if the same are not satisfactory wrt the desired functional / aesthetic quality standards).
- Conducting Quality Induction / Oath for Construction Management department associates and creating high level of Quality awareness / culture in the Const Mgmt team on ongoing basis. Primary responsibility of Level 1 members of the Quality Enhancement team, with support from Level 2.

Group 1: **Quality Enhancement (Structure):**

Role: Ensuring highest level of structural soundess for the buildings constructed by the company by ensuring usage of appropriate quality material, ensuring appropriate proceedure / precautions / practice controls in usage of the material at site and conduting post usage testing to ensure compliance with functional quality goals. The key responsibilities (in addition to aforesaid general responsibilities) would include:

- Design mix for concrete.
- Formwork 1st design prior to typical slab (and before any major change in slab design) in cases where Civil Contracts is given to Labour contractor (viz. FLO basis or PML basis). Please note that implementation of the Formwork Design finalized by QE is to be monitored by Const Mgmt.
- Testing of raw materials primarily used in structures or those that are concrete based eg. Concrete, steel and related items (eg. Sand, aggregate, paver blocks etc.). A part of the Const Mgmt discretionary budget will be earmarked for the purposes of such testing (% thereof to be finalized by AML).
- Training of Const Mgmt in relation to Structure building practices, including development of 'Structure best practices and guidance manual', updated from time to time.
- Training/guidance to Const Mgmt in relation to records / checks & balances etc. to be followed while conducting structural works to ensure adherence to Quality Control norms (eg. QA cards w.e.f. 1.5.11 to be taken over by Const Mgmt).
- Conducting tests in relation to the poured / finished elements of the structure in relation to structural integrity / strength. Giving deshuttering clearance and conducting post-deshuttering defect audit for structural members.
- Detailed audit in relation to Structure building practices and controls, with minimum frequency of:
    - Once every 15 days for Large and Very Large sites.
    - One every month for Small and medium sites.

Results of this audit will be discussed with Site head-Const Mgmt, by level 2 or higher of Quality Enhancement (Structure) team. Subsequent audits will track compliance/lack thereof and report key issues not rectified since previous audit to Level 0/1 of Const Mgmt who oversees the said site and in case of lack of appropriate action in 15 days thereafter to COO.

Team:

- Very large Sites: 1 level 2 (this may be replaced by Level 1 at highly complex site eg. Lodha Place) + 2 level 3 + 3/4 Lab Technicians (Level 4/5)
- Large Sites: 1 level 3 + 2 Lab Technicians (Level 4/5)
- Medium Sites: 1 Level 3 + 1 Lab Technician (Level 4/5)
- Small: 1 Lab Technician (preferably level 4)
- Further, while Palava is counted as one 'Very Large' site, following additional associates shall be permitted for every 125 acres under construction, beyond 1st 125 acres:
    - 1 Level 3
    - 3 Lab Technicians (Level 4/5)
- In addition, at sites where there is large proportion of site mix concrete viz. Sites with majority of buildings < 30 m high, 1 or 2 lab technicians (level 4/5) may be added to the aforesaid limits.
- The reporting of the teams at the Large/Medium/Small sites shall be to the Level 2 incharge of the most proximate Very Large Site (currently Shreeniwas will control all Mumbai Island City sites, Wadala will control all Mumbai suburb + MBMC sites and Dombivali will control all sites in Thane-Dombivali-Pune. Hyderabad shall operate independently, reporting to HOC (Rajeev Ghosh)).

Other:

- Quality Enhancement (Structure) team will move from the site once RCC works are completed 95%.
- Major (advanced) QC labs shall be located on the Very Large sites only.
- Minor QC labs for purposes of measurement and cube testing (key equipment: weigh balance, sieves, oven, cube testing machine, slump cone, cube moulds, density pot, beakers and jars, vernier calliper) shall be located at the Large Sites.
- Small & Medium sites shall have limited equipment such as weigh balance, slump cones, cube moulds, density pot, beakers and jars & vernier calliper. No lab shall be located at this site.
- Definition of Structure shall include waterproofing and plaster.

Group 2: **Quality Enhancement (Non-Structure):**

Focus Areas:

- Finishing & Landscape
- Facade
- MEP

Role: Providing adequate level of guidance (best practices) and practical training to ensure that the desired functional / aesthetic quality standards are achieved by the Construction Management team. **This is a core team providing guidance and oversight – however, responsibility of implementing prescribed best practices and achieving desired quality outcomes shall be sole responsible for the Construction Management cell.**

The key responsibilities (in addition to aforesaid general responsibilities) would include:

- Creating awareness of need for achieving desired quality standards and providing guidelines and training on how to have a high quality end product.
- Providing hi quality, implementable, detailed Quality Enhancement (Non-Structure) guidelines and implementation procedures through 'Practical Quality Enhancement (Non-Structure) Manual'. This manual will also require the team to understand implementation best practices from across the globe and giving clear implementable guidelines as to how to implement the same in the Indian context. This shall primarily be the responsibility of the Level 1 members of the Quality Enhancement (Non-Structure) team.
- Exhibiting best practice by site demonstration:
    - Min once a week at every Large or Very Large site.
    - Min. once every 15 days at every Small or Medium site.

  This on-site exhibition of good Quality Enhancement (Non-Structure) practice and methods would be the key training and awareness tool. Demonstration/training should focus on the key work areas (from the aforesaid focus areas) which are likely to come up on the said site within next 3 months.

- Providing training to Const Mgmt / Stores team on the tests/checking procedure to be carried out wrt input materials (except those related to Structure) and guidance on how to maintain records and take appropriate remedial / rejection action (if any). (Testing/approval for all non-Structure material to be taken over by Stores / Const Mgmt w.e.f 1.5.11).

- Conducting Quality Enhancement (Non-Structure) audit and discussing improvement areas with Project Manager and assessing improvement made since previous audit:
    - Once every month for every Large or Very Large site.
    - Once every two months for every Small and Medium site.

Further, pre-possession audit shall also be carried out by this team, 2 months prior to scheduled date of FM handover for any wing/building. The list of identified issues will be given to Const Mgmt (for rectification) and to FM (to cross-check that these issues are resolved prior to FM takeover).

Team:

- 1 level 1
- 2-3 at Level 2 - 1 for MEP, 1 or 2 for Finishing & Landscape + Facade.
- 3-4 Level 4/5 (Trade Experts / Supervisors / Foreman) who can be used for on-site training, and to supervise key procedures at key projects.
- 2-3 Level 3/4/5 for supervising of key interior jobs (2 at any given time)

Other:

- Quality Enhancement (Non-Structure) team will start visiting site once 4th typical slab has been completed (Const Mgmt head on site to inform Level of QE (non-structure team)) and will continue visiting till FM handover.
- The team will be stationed at any one of the very large sites and operate from there (currently @ Shreeniwas).

ANNEXURE B

5.3.2011

Safety Cell – Way Forward Role of

Safety Team:

Construction sites related:

Creating awareness of need for safe construction and providing guidelines and training on how to have a high safety environment. **This is a core team providing guidance and oversight – however, responsibility of establishing and maintaining a safe working environment is with every member of the Construction Management team and they shall be solely responsible for the safety performance of the site.**

1. Providing hi quality, implementable, detailed safety guidelines and implementation procedures through 'Practical Safety Manual'. This shall primarily be the responsibility of the Level 1 members of the safety team. The said manual will be updated and revised as per best practice and new challenges being faced as company gets into more construction of more complex structures.
2. Exhibiting best practice by site demonstration:
    a. Min once a week at every Large or Very Large site.
    b. Min. once every 15 days at every Small or Medium site. This on-site exhibition of good safety practice and methods would be the key
    training and awareness tool. This shall be done by both Level 1 and Level 2.
    Demonstration/training should focus on the key safety areas which are likely to come up on the said site within next 3 months.

3. Conducting Safety Induction / Oath for Construction Management department associates and creating high level of safety awareness / culture in this team on ongoing basis. Primary responsibility of Level 1 members of the Safety team, with support from Level 2.
4. Conducting safety audit and discussing improvement areas with Project Manager and assessing improvement made since previous audit:
    a. Once every month for every Large or Very Large site.
    b. Once every two months for every Small and Medium site. The aforesaid audit report has to be finalized and discussed by a Level 1 member of
    the safety team. Level 2 members will be actively involved in the Audit process.

5. Finalizing vendors, with approval of Procurement team, for key repetitive safety activities. These vendors will be used by Const Mgmt team, as and when needed.
6. Conducting safety risk assessment of the site within 3 months of start of construction and informing Const Management team of any risk (beyond generally identified risks) for that particular site and steps to be taken to mitigate the said additional risks. Said risk assessment is

to be conducted every 12 months thereafter by Level 1 and outcomes discussed with Const Management.

In relation to premises occupied by the Company (eg. Sales offices, Corporate Office, Site Office):

1. Provide design inputs wrt Safety norms to Design Team at time of conceptualization to ensure premises which are designed taking reasonable safety requirements into mind. This shall primarily be the responsibility of the Level 1 members of the safety team.
2. Conducting annual audit of all such premises, in month of March each year, and providing audit report and improvement area feedback to the HRRM/Admin team managing those premises. This shall be the responsibility of the Level 1 and 2 members of the safety team.

Team Structure:

a. 2 Level 1
b. 1 Level 2 in each zone (Mumbai Island City, Mumbai Suburbs (including MBMC), Thane-Dombivali, Hyderabad; Pune will be handled under Thane-Dombivali)
c. 1 Stenographer for MIS/Report preparation etc.

The safety team will directly report to COO (or to person designated by COO, currently Mr. Vijay Chugh).

Annexure C

Design:

Design Team - Scope of Works

Project Design Team - Scope of Works:

Design, Engineering, Issue of finalized Drawings and Site execution overview of following areas:

- Architecture
- Façade
- Structure
- MEP
- Other Electro-Mechanical Services (OEMS) eg. HVAC, Vertical Transportation
- Landscape

- Interior Design (except 'non-Casa' main entrance lobby, clubhouse and other 'vital' common areas which will be handled by Interior Design Team).

Façade Team

- Provide specialist input in Engineering & Design of the façade to the Project Design Team.
- Co-ordinate the finalization of specifications and design elements upto DD with the consultant.
- Participate and provide technical guidance in procurement of major façade tenders (tender value> Rs. 10 cr.).
- Review Façade related VFC/Shop Drawings, prior to site issue, if so requested by Project Design team.

Note: Façade includes windows

Structure Team

- Provide specialist input, as and when sought, in relation to the structure design proposed by the consultants
- Conduct Peer review of the proposed design, as and when requested by Project Design Team.

MEP + Other Electormechanical Services Team (OEMS)

- Provide specialist input in Engineering & Design of the façade to the Project Design Team.
- Co-ordinate the finalization of specifications and design elements upto DD with the consultant.
- Participate and provide technical guidance in procurement of major MEP+OEMS tenders (tender value> Rs. 10 cr.).
- Review MEP+ OEMS related VFC/Shop Drawings, prior to site issue, if so requested by Project Design team.

Interior Design Team

Design, Engineering, Issue of finalized Drawings and Site execution overview of following areas: In all non-casa projects:

- Clubhouse
- Main entrance lobby
- Any other 'vital' public area
- Sample Flats
- Sales Offices

The immediate vicinity of the aforesaid structures (about 6-20 mtrs., as per appropriate cut-off) will also be addressed by the ID team.

In case of non-standalone structures (forming part of the larger building), Civil & MEP+OEMS design upto one point in the space shall be handled by the Project Design team and all internal distribution by the Interior Design Team.

Annexure D

3.2.11

Procurement Team roles:

Package Teams:

1. Aggregating procurement across projects
2. Empanelment of vendors
3. Rating of vendors
4. Benchmarking with market (price, terms etc.)
5. Management and relationship building with strategic partners
6. Preparation of RFQ (viz. Contract document / material specification & quantities) (all actions upto float)
7. Specifying preferred vendors for all procurement (contracts/materials)
8. Specifying Cost Ranges for all procurement (contracts/materials)
9. Specifying acceptable terms and variation thereto for all procurement (contracts/materials)
10. Specification Price (in case of categories as defined in *)

Project Teams:

1. Floating of contracts
2. Processing of orders (Contract / Material)
3. Negotiation and finalization of price (within range specified by package teams)
4. Negotiation and finalization of terms (within parameters specified by package teams)
5. Followup for order delivery / execution
6. Co-ordination with vendors based on project needs and status
7. Resolution of issues between project and vendor
8. Providing input to vendor rating
9. Meeting project schedule and cost targets

Centralized Order Placer:

1. Processing Orders
2. Followup for order delivery

Notes:

<u>* Categories where Package teams shall pre-define prices and project teams shall not conduct price negotiation:</u>

1. Category with large, branded players, having sufficient capacity to serve our needs; OR
2. Categories with very low variability (virtually standardized across all projects); OR
3. Categories with Centralized Order Placer; OR

In such cases, the Package team shall ensure:

a. Price finalization with min. of 3 players – relation procurement % can be specified
b. Price specification either for project or for a time period across company (or part thereof).

Materials which have large frequency of orders during a project lifecycle and are not highly customized / variable, shall have Centralized Order Placer. These Centralized Order Placer shall jointly report to the Zonal Project heads.