

The Key Performance Indicator Evaluation Process (KPI Process)

Aims

- Continuous improvement
- Quantitative and qualitative consultant, contractor and supply chain evaluation
- Identification and commendation of exceptional performance
- Timely identification of issues and resolution during the project process
- Compliance with adopted 2010 audit recommendations

Introduction

The University and particularly Estates Services is committed to continuous improvement across its capital projects, project teams and supply chains. The present paper describes a formal Key Performance Indicator evaluation process which will further facilitate continuous improvement.

The KPI process is a whole life project process of evaluating project key performance indicators and team key performance indicators throughout, and following, the design and construction of new buildings or facilities, as well as the refurbishment of existing buildings and facilities.

There are a wide selection of project, contractor and consultant KPIs with the potential for measurement, however, any KPI used routinely within Estates Services capital project process needs to be consistent, unequivocal, realistically measurable, auditable, and of value. In particular the KPI should inform the reviewer, enabling action to be taken or decisions to be made.

The objective of the KPI evaluation process is to inform Project Sponsor Groups (PSGs) and Estates Services with regards to the achievement of agreed KPIs and project delivery team performance. On the basis of the indicators reported, the PSG or Estates Services may then take action to correct failings in the project delivery or note exceptional performance. The KPI process will also assist the University in the process of contractor or consultant selection and general supply chain management. Further, implementation of performance monitoring is an audit requirement stemming from the 2010 audit of the Estates Services.

Estates Services will routinely evaluate the performance of the following team members against the KPIs: Architect, Building Services (M&E) Engineer, Client Representative, Contractor, Planning Consultant, Project Manager, Quantity Surveyor/Cost Consultant, Structural/Civil Engineer and Sustainability Engineer.

Methodology

The KPI evaluation process has four key elements:

- Agreement of project Key Performance Indicator targets at project outset by the PSG
- In project Key Performance Indicator evaluation at project gateways
- Post project evaluation of Key Performance Indicators against agreed targets
- Quarterly Key Performance Indicator 360 degree evaluation of project team members

The Estates Services has selected a concise set of KPIs, referencing previous stakeholder consultation, and agreed a balanced scorecard approach with the following categories: Process, Finance, Environmental, Personnel and Client Satisfaction. The scorecard is weighted towards Process and Client Satisfaction in order for project teams to demonstrate consistent high quality and correct project delivery. The KPIs against which targets will be set at project initiation (end of RIBA Stage B) are:

Category	Key Performance Indicator
Client satisfaction	Average time taken to close out defects * Average Post Project Evaluation score Average Post Occupancy Evaluation score
Environmental	Energy consumption (MWh/m ² /year) (gas, electricity and heat) %, by weight, of construction waste sent for recycling
Finance	% of contingency utilized % variation between budget and predicted or actual final account
Personnel	Accident/incident rate per number of man hours worked Considerate Contractors score
Process	Progress against programme (days behind or ahead of schedule expressed as a %) % of required reports delivered on time Number of defects at 1 month post practical completion *

* Not adjusted for relevant scale of individual defects, caution required during interpretation

The KPI process commences at the completion of RIBA stage B with the setting of targets against the KPIs detailed above by the PSG, it is the Estates Services PSG representative who retains responsibility for ensuring that this action is undertaken.

Estates Services recognizes that while some of the KPIs are contractor - or consultant - specific (for example, % of required reports delivered on time) others are a measure of project team performance attributable to all team members whose role influences the indicator (for example, the progress against programme indicator). The balanced scorecard is shown in Appendix A, indication is made as to whether scores are team scores and therefore recorded against those team members with the ability to influence the measured parameter, or are individual scores.

Post Project KPI evaluation

The post project recording element of the KPI process is the recording of the final, as delivered, post project KPIs. The Project Manager will have responsibility for collating the data and entering it onto the online project specific balanced scorecard. The balanced scorecard will be presented to the PSG against a narrative provided by the Project Manager which will set out additional comment or explanation, including details of mitigating circumstances where required. The data will be reviewed by the PSG which will, taking into account all factors, agree a traffic light indicator of performance using the following scale: red – performed poorly; amber – performed below standard; green – performed well; blue – performed exceptionally well. Such information will be used to inform ongoing contractor or consultant selection and encourage project team, contractor or consultant improvement for future projects.

In Project KPI evaluation

To add value to the KPI process a further element is the on-going evaluation of KPIs during the project. Performance against the initial targets will be evaluated throughout the project at project gateways (plus one additional stage at the end of RIBA stage J). The process works as above, with the project manager compiling the Key Performance Indicators via the online scorecard for presentation to the PSG, who in turn will apply the colour coded system. This will allow rapid identification when a performance score falls below the acceptable level and the implementation of corrective measures is necessary. The process would also identify exceptional performance,

enabling the recognition of success in a timely manner. It is the Estates Services PSG representative's responsibility to ensure this is undertaken. Again, such information will be used to inform ongoing contractor or consultant selection and encourage project team, contractor or consultant improvement.

It is recognised that some of the twelve KPIs are not obtainable until practical completion, or indeed sometime after, and the availability of data evolves as the project progresses, contractors are appointed and the appropriate stages undertaken. It is possible at Gateway 2 to formally record just two KPIs, those of progress against programme and % of required reports delivered on time, while by Post Occupancy all twelve KPIs will be measurable. Accordingly a revised balanced score card is provided for the in-project process, as shown in Appendix B.

360 degree feedback model

The third element of the KPI evaluation process is the performance evaluation of the project team. It is recognized that many of the KPIs are dependent on the performance of the team, delivered as a result of the team effort and therefore a measure of the team. The processes described above are heavily weighted towards indicators of team performance, while audit requirements have significant interest in the evaluation of the performance of the Estates Services supply chain in the form of individual contractors and consultants. This will enable individual performance appraisal, enable timely resolution of problems, provide further opportunities for improvement and identify exceptional performance.

The third element is a qualitative analysis of team performance via analysis of peer group project team opinions and experiences, utilizing a 360 degree feedback model. The 360 degree evaluation is a common tool for evaluating performance, based on feedback from other team members. Each project team consists of the nine principal team members identified above. The proposed process involves each team member being required to rate the performance of the other team members using the criteria detailed in the online reporting tool (Appendix C) on a quarterly basis, beginning at the start of RIBA stage C.

Data collected is summarised in a composite report (Appendix D with explanatory text shown in Appendix E) which generates an automatic traffic light colour coding which quickly identifies a team member's performance ranging from red, indicating very poor, to blue, indicating excellent. The data is reviewed by the Project Manager prior to submission to the PSG in order that details of mitigating circumstances or other comment or explanation may be added. The data will be reviewed by the PSG which may take action or request the Project Manager to take action as necessary. The Estates Services representative on the PSG will be responsible for conveying concerns and/or commendations to the Director of Capital Projects & Property Management or the Head of Capital Projects to enable exceptional performance to be noted, or team performance issues addressed in a timely manner.

Output

Each evaluation will produce a data set, either in the form of the balanced score card or the 360 degree composite report, and will be entered on a database held within Estates Services. In addition the results will be deconstructed and the data entered into a supply chain database in order that contractors and consultants may be evaluated for performance across all projects in which they have participated. The database will be able to be interrogated to determine trends.

Consistent throughout the process is a continual review and improvement cycle, whereby the supply chain is continually reviewed against original aspirations and the team reviewed for performance in order that any unjustifiable deviations or problems may be addressed in a timely manner, ensuring quality is maintained and improved.

Anonymity

It is intended that the 360 degree feedback composite report will be anonymous although the University will recognise any legally justifiable requests for release of data. Information will be stored securely and held in accordance with the University's Data Protection policy:

<http://www.admin.ox.ac.uk/dataprotection/policy/>

Ownership

The Project Manager has responsibility for ensuring that data is gathered and the balanced score cards are completed on schedule and presented to the PSG. The Estates Services representative on the PSG has responsibility for ensuring that the results of the evaluations are reviewed by the PSG and graded where required. In addition the Estates Services representative has responsibility for conveying both performance concerns and commendations to the Director of Capital Projects & Property Management or the Head of Capital projects as appropriate.

Stages in Summary

- End of RIBA stage B – setting of KPI targets by PSG
- Project Gateways 2 to 6 plus additional stage at end of RIBA Stage J – In project KPI evaluation
- Quarterly following project initiation – 360 degree feedback model evaluation of project team
- End of RIBA Stage L – Post project KPI evaluation

The process is summarised in Appendix F.

Appendix A: Post Project Key Performance Indicators
Project Name - Archetype No.

Category	Key Performance Indicator	Target set by PSG	Architect	Building Services (M&E) Engineer	Client Representative	Contractor	Planning Consultant	Project Manager	Quantity Surveyor/Cost Consultant	Structural/Civil Engineer	Sustainability Engineer
Client Satisfaction	Average time taken to close out defects										
	Average Post Project Evaluation score										
	Average Post Occupancy Evaluation score										
Environmental	Energy consumption (MWh/m ² /year) (gas, electricity and heat)										
	%, by weight, of construction waste sent for recycling										
Finance	% of contingency utilized										
	% variation between budget and actual final account										
Personnel	Accident/incident rate per number of man hours worked										
	Considerate Contractors score										
Process	Progress against programme (days behind or ahead of schedule expressed as a %)										
	% of required reports delivered on time										
	Number of defects at 1 month post practical completion										
	PSG Flag										

-  = Not Scored
-  = Individual Score
-  = Team Score

Appendix B: In Project Key Performance Indicators

Project Name - Archetype No.

Stage

Category	Key Performance Indicator	Target set by PSG	Building Services (M&E)		Client	Contractor	Planning	Project Manager	Quantity	Structural/Civil	Sustainability
			Architect	Engineer	Representative		Consultant		Surveyor/Cost		
Environmental	% of construction waste sent for recycling										
Finance	% of contingency utilized										
	% variation between budget and predicted final account										
Personnel	Accident/incident rate per number of man hours worked										
	Considerate Contractors score										
Process	Progress against programme (days behind or ahead of schedule expressed as a %)										
	% of required reports delivered on time										
	PSG Flag										

 = Not Scored

 = Individual Score

 = Team Score

Appendix C: Example of Project Team 360° Feedback Online Survey

Project Team 360° Analysis



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Welcome

This online survey utilises a 360° feedback model to enable the project team to assess performance and the Project Sponsor Group to identify exceptional performance or address team performance issues in a timely manner. Each team member is required to rate the performance of the other team members using the criteria detailed in this online survey. Data collected will be summarised in an anonymous composite report and reviewed by the Project Manager prior to submission to the Project Steering Group.

To simplify processing, the single online survey will by default require each team member to rate themselves, such self rating data is however not subsequently processed and any number may be entered.

A guidance note detailing the Key Performance Indicator Evaluation Process is available at:

http://www.admin.ox.ac.uk/media/global/wwwadminox.ac.uk/local/sites/estatesdirector/documents/capitalprojectsforms/KPI_Process_Guidance_Note.pdf

Please therefore take a few minutes to complete the following survey. It should take a maximum of **ten minutes**.

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The information that you supply in response to this survey will be stored securely and treated in accordance with the University's Data Protection policy: <http://www.admin.ox.ac.uk/dataprotection/policy/>

Please note that if the survey is inactive for **30 minutes** the system may **time out** and **data will be lost**.

Aggregate data may be retained to benchmark future surveys.

Cookies, personal data stored by your Web browser, are not used in this survey.

Please click the **Continue** button to start completing the questionnaire and note that once you have clicked the **Continue** button at the bottom of each page you **cannot return** to review or amend that page.

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Please ensure you click 'Continue', at the **bottom** of this page, to save your answers. You cannot make changes after you leave this page.

1. Please indicate your role within the team:

- Architect
- Building Services (M&E) Engineer
- Client Representative
- Contractor
- Planning Consultant
- Project Manager
- Quantity Surveyor/Cost Consultant
- Structural/Civil Engineer
- Sustainability Engineer

2. Please enter your email address:

Please ensure you click 'Continue' to save your answers. You cannot make changes after you leave this page.

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14. Flexibility:

	1	2	3	4	5	n/a
a. Architect	<input type="radio"/>					
b. Building Services (M&E) Engineer	<input type="radio"/>					
c. Client Representative	<input type="radio"/>					
d. Contractor	<input type="radio"/>					
e. Planning Consultant	<input type="radio"/>					
f. Project Manager	<input type="radio"/>					
g. Quantity Surveyor/Cost Consultant	<input type="radio"/>					
h. Structural/Civil Engineer	<input type="radio"/>					
i. Sustainability Engineer	<input type="radio"/>					

15. Compliance with University procedures:

	1	2	3	4	5	n/a
a. Architect	<input type="radio"/>					
b. Building Services (M&E) Engineer	<input type="radio"/>					
c. Client Representative	<input type="radio"/>					
d. Contractor	<input type="radio"/>					
e. Planning Consultant	<input type="radio"/>					
f. Project Manager	<input type="radio"/>					
g. Quantity Surveyor/Cost Consultant	<input type="radio"/>					
h. Structural/Civil Engineer	<input type="radio"/>					
i. Sustainability Engineer	<input type="radio"/>					

16. Compliance with health and safety legislation:

	1	2	3	4	5	n/a
a. Architect	<input type="radio"/>					
b. Building Services (M&E) Engineer	<input type="radio"/>					
c. Client Representative	<input type="radio"/>					
d. Contractor	<input type="radio"/>					
e. Planning Consultant	<input type="radio"/>					
f. Project Manager	<input type="radio"/>					
g. Quantity Surveyor/Cost Consultant	<input type="radio"/>					
h. Structural/Civil Engineer	<input type="radio"/>					
i. Sustainability Engineer	<input type="radio"/>					

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Thank You

Thank you for your time. Your valued contribution to our survey has been recorded.

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Appendix D: KPI Performance Reporting to PSG

Project:

Architect

1.50 1.50 3.00 1.50 3.00 1.00 1.00 3.00 2.50 2.50 2.00 2.50 4.00 1.00

Building Services (M&E) Engineer

2.50 1.50 4.00 1.50 3.50 1.50 1.50 3.50 2.50 2.50 2.50 3.00 2.50 1.50

Client Representative

3.50 3.00 3.00 3.00 2.50 2.00 2.50 4.00 2.00 4.00 2.00 2.50 3.00 2.50

Contractor

3.33 2.67 3.33 3.33 2.00 3.67 2.67 2.67 2.33 2.67 3.00 3.33 3.67 2.33

Planning Consultant

3.67 3.00 2.33 2.67 2.33 3.33 2.00 2.33 3.33 3.33 3.33 4.33 4.33 4.00

Project Manager

2.67 1.67 1.33 3.33 2.67 4.67 2.00 2.33 3.67 2.33 4.00 4.00 2.33 3.67

Quantity Surveyor/Cost Consultant

3.00 2.00 2.67 3.00 2.33 5.00 2.00 2.00 3.67 2.33 4.33 3.67 2.67 4.00

Structural/Civil Engineer

2.33 3.00 2.67 2.67 2.33 3.67 2.00 2.00 2.33 2.33 4.33 3.00 3.00 3.00

Sustainability Engineer

2.33 3.33 3.00 2.33 3.67 3.33 2.67 1.33 3.33 2.33 4.33 2.33 4.00 2.67

Comments Project Manager:

Comments PSG:

Signature: _____

Date: _____

Appendix E: Project Team 360 Degree Feedback Summary Note.

All of the nine principal team members are required to rate the performance of each of the other team members in an online survey, using the criteria detailed below.

1. Overall service provided to date
2. Overall timely delivery of information provided to date
3. Overall accuracy of information provided to date
4. Overall completeness of information provided to date
5. Overall quality of information provided to date
6. Meeting of milestones on time
7. Availability and responsiveness of personnel
8. Commitment to team working
9. Commitment to project goals and aspirations
10. Competency of the team member(s) provided
11. Ability to apply ingenuity and solve problems
12. Flexibility
13. Compliance with University procedures
14. Compliance with health and safety legislation

Each team member is rated using the following scales:

Criteria 1 – 5:

1 = very satisfied, 2 = satisfied, 3 = neither satisfied nor dissatisfied, 4 = dissatisfied, 5 = very dissatisfied

Criteria 6 – 14:

1 = excellent, 2 = good, 3 = fair, 4 = disappointing, 5 = very poor

The collected data is summarised on the composite report, whereby every team member's average score for each of the above criterion is shown.

A traffic light system colours the performance scores within the ranges specified below, this highlights areas of excellence as well as areas of concern.

Blue	Excellent	1.0 - 1.5
Green	Good	1.51 - 2.5
Amber	Good to fair	2.51 - 3.9
Red	Poor to very poor	4.0 - 5.0

Appendix F: Supply Chain KPI Evaluation

