ΑΤΕΙ ΚΡΗΤΗΣ

ΤΜΗΜΑ ΜΗΧΑΝΟΛΟΓΙΑΣ

ΠΤΥΧΙΑΚΗ ΕΡΓΑΣΙΑ
ΤΙΤΛΟΣ:

ΜΕΛΕΤΗ ΑΕΙΦΟΡΙΑΣ ΤΟΥ ΚΤΙΡΙΑΚΟΥ ΣΥΓΚΡΟΤΗΜΑΤΟΣ ΕΜΜΤΥ ΣΤΟ ΤΕΙ ΚΡΗΤΗΣ ΜΕ ΤΗΝ ΜΕΘΟΔΟ OPEN HOUSE

ΣΠΟΥΔΑΣΤΗΣ:ΠΑΤΣΩΝΑΚΗΣ ΕΜΜΑΝΟΥΗΛ
ΑΜ:4010
ΕΠΙΒΛΕΠΩΝ ΚΑΘΗΓΗΤΗΣ: ΣΑΚΚΑΣ ΝΙΚΟΣ

ΗΡΑΚΛΕΙΟ 2014

ΕΥΧΑΡΙΣΤΗΡΙΑ

Θέλω να ευχαριστήσω τον κ. Νίκο Σακκά για την ευκαιρία που μου έδωσε να ολοκληρώσω τις σπουδές μου με την εργασία αυτή και τις μετρήσεις με τα δεδομένα που με τροφοδότησε για την ολοκλήρωση της.

Τέλος θέλω να ευχαριστήσω τους γονείς μου και την γυναίκα μου για την στήριξη τους προς το πρόσωπο μου.

Περιεχόμενα

1. ΕΙΣΑΓΩΓΗ

Η εργασία αυτή έχει ως στόχο την περιγραφή της διαδικασίας OPEN HOUSE για την αξιολόγηση του κτιρίου του EMMTU.
Η ανάπτυξη της βασικής γραμμής OPEN HOUSE είναι ένα ανοικτό πρόγραμμα που αφορά την ευαισθητοποίηση και μεθοδολογία για τη βιώσιμη οικοδομή, την αξιολόγηση και τον ορισμό των βασικών γραμμών, των εργασιών και την ανάπτυξη της βασικής γραμμής αξιολόγησης OPEN HOUSE.

Αυτή η εργασία είναι σχετική με τη δημιουργία κοινής αντίληψης για ένα μοντέλο βιωσιμότητας, η οποία αναπτύχθηκε σε προηγούμενες εργασίες και μπορεί να θεωρηθεί ως το θεμέλιο της μεθόδου OPEN HOUSE.

Το πλαίσιο της μεθοδολογίας OPEN HOUSE περιλαμβάνει τα όρια του συστήματος, ενσωματώνει δείκτες και υπο-δείκτες, βαθμολόγηση και αξιολόγηση συστημάτων, στάθμιση παραγόντων, τεκμηρίωση κατευθυντήριων γραμμών και αναφορών καθώς επίσης και τους στόχους.

Η μέθοδος OPEN HOUSE καλύπτει 56 ποιοτικούς και ποσοτικούς δείκτες, από τις υφιστάμενες διεθνείς και ευρωπαϊκές αξιολογήσεις μεθοδολογιών και συστημάτων. Οι δείκτες αυτοί αναγράφονται σε 6 κατηγορίες και συνδέονται με όλα τα στάδια ζωής ενός κτιρίου:
1) Στάδιο προϊόν
2) Στάδιο διαδικασία κατασκευής
3) Στάδιο χρήσης και
4) Στάδιο του τέλος του κύκλου ζωής (αποδόμησης).

Η μεθοδολογία OPEN HOUSE είναι διαθέσιμο σε δύο βήματα: ως **«βασική και γρήγορη εκτίμηση βιωσιμότητας»** και όπως μια **«ολοκληρωμένη αξιολόγηση».**

Η **«βασική και γρήγορη αξιολόγηση βιωσιμότητας»** μπορεί να ολοκληρωθεί σε αρκετές ημέρες. Τα αποτελέσματα θα δώσει μια πρώτη ιδέα για το επίπεδο της αειφορίας του κτιρίου και θα προτείνει δράσεις για τη βελτίωση του επιπέδου. Η αξιολόγηση αυτή εφαρμόζεται καλύτερα νωρίς στην φάση σχεδιασμού και βασίζεται κυρίως σε εκτιμήσεις, καθώς και τους στόχους του σχεδιασμού. Είναι βασισμένο στο πλήρες σύστημα OPEN HOUSE με 56 δείκτες.

Η **«ολοκληρωμένη αξιολόγηση βιωσιμότητας»** μπορεί να γίνει, όταν το κτίριο έχει ολοκληρωθεί. Βασίζεται σε υπολογισμούς και ακριβή κατασκευαστικά δεδομένα. Μετά την αξιολόγηση όλων των δεικτών, ένας βαθμός μπορεί να απονεμηθεί. Η **«ολοκληρωμένη αξιολόγηση βιωσιμότητας»** είναι βασισμένη στον πυρήνα του συστήματος OPEN HOUSE και στο πλήρες σύστημα OPEN HOUSE.

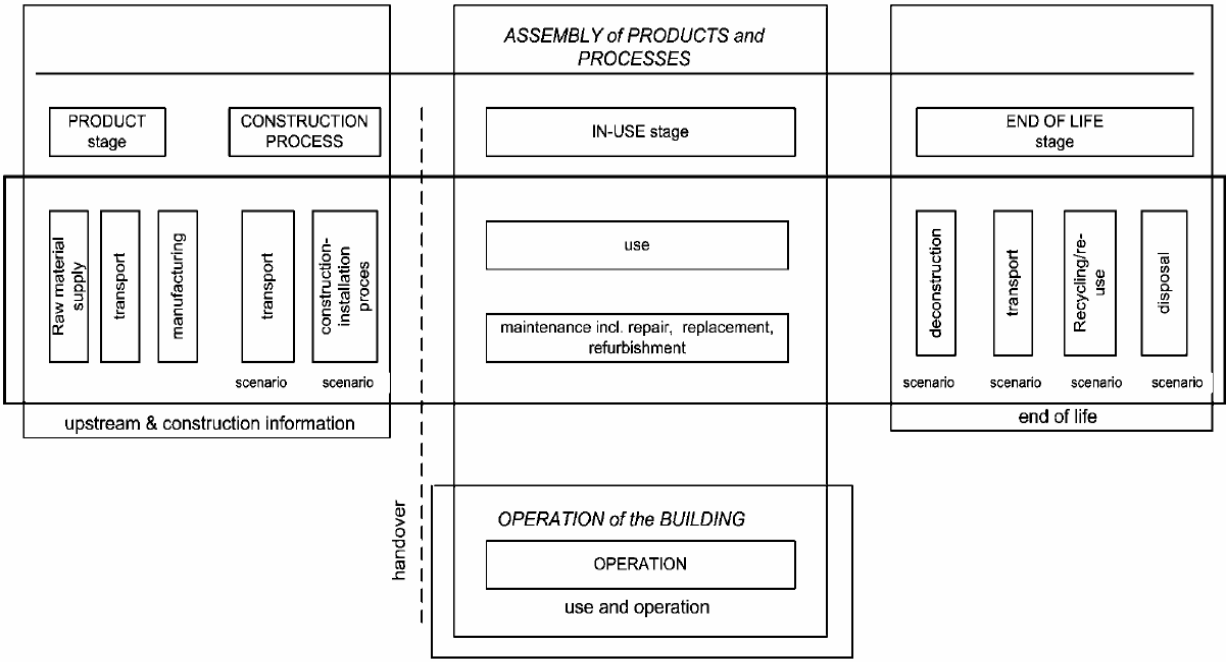
Η εργασία αυτή έγινε για την επίδειξη της **ολοκληρωμένη αξιολόγηση βιωσιμότητας»** OPEN HOUSE. Στοιχεία που χρειαζόταν για την εργασία αυτή ήταν ελλειπή με αποτέλεσμα αρκετοί δείκτες να μην είναι αντιπροσωπευτικοί.

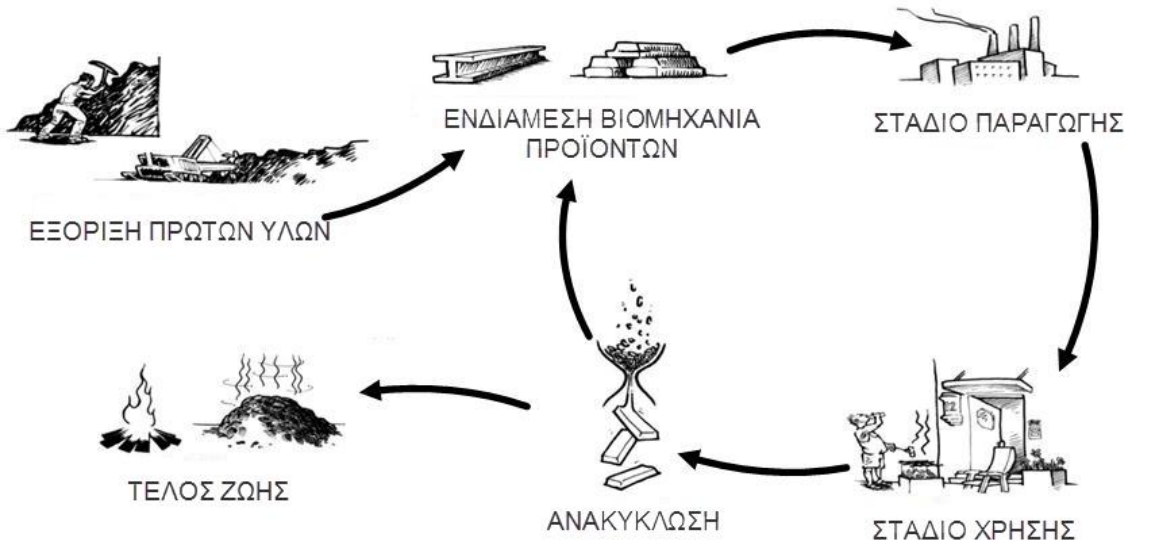
2. OPEN HOUSE περιγραφή μεθοδολογίας

Η μέθοδος OPEN HOUSE έχει αναπτυχθεί μετά τις αναλύσεις των υπαρχόντων μεθοδολογιών στην Ευρώπη και Διεθνώς που έχουν ήδη θεσπισθεί από τα ISO TC 59/SC 17, καθώς και CEN/TC 350. Επίσης έχουν χρησιμοποιηθεί Εγχώρια πρότυπα (ΚΕΝΑΚ) και αποτελέσματα από μελέτες όπως SuPerBuildings.

2.1 OPEN HOUSE μεθοδολογία και τη δομή

Η μέθοδος OPEN HOUSE αξιολογεί τον ολόκληρο κύκλο ζωής ενός κτιρίου: προϊόν, διαδικασία κατασκευής, χρήση και τέλος του κύκλου ζωής. Παρακάτω ακολουθεί ένας πίνακας με τα στάδια:





Πίνακας 1. Στάδια του κύκλου ζωής ενός κτιρίου σύμφωνα με ISO 21931-1: 2008

Η μεθοδολογία του OPEN HOUSE χωρίζεται σε δύο ομάδες δεικτών: "OPEN HOUSE πλήρες σύστημα " και "OPEN HOUSE πυρήνας συστήματος". Με βάση αυτούς τους δείκτες, μπορεί να πραγματοποιηθεί μια "βασική και γρήγορη αξιολόγηση βιωσιμότητας "και μια" πλήρης αξιολόγηση".

2.1.1 Κατηγορίες

Η μέθοδος OPEN HOUSE είναι διαφοροποιημένη σε έξι κατηγορίες:

Πίνακας 2. OPEN HOUSE κατηγορίες

Στις κατηγορίες Ποιότητας Περιβάλλοντος, Κοινωνική / Λειτουργική Ποιότητα, Οικονομική Ποιότητα, Τεχνικά Χαρακτηριστικά και Διαδικασίες Ποιότητας το πεδίο εφαρμογής της αξιολόγησης είναι το κτίριο εντός των ορίων του συστήματος.
Οι τρεις πυλώνες της αειφορίας **Ποιότητα Περιβάλλοντος, Κοινωνική / Λειτουργική Ποιότητα** και η **Οικονομική Ποιότητα** συνθέτουν την κύρια αξιολόγηση με την ίδια βαρύτητα μεταξύ τους.
Τεχνικά Χαρακτηριστικά και **Διαδικασίες Ποιότητας** είναι ενότητες, οι οποίες αξιολογούνται χωριστά.
Στην κατηγορία **Η τοποθεσία**, η περιοχή αξιολογείται ως μια επιπλέον ενότητα, διότι είναι έξω από τα όρια του συστήματος και δεν μπορεί να επηρεάζεται από το σχεδιασμό του σχεδίου.

2.1.2 Πλήρες σύστημα

Το OPEN HOUSE πλήρες σύστημα περιλαμβάνει έναν κατάλογο 56 δεικτών που έχουν προσδιοριστεί μέσα από τα αποτελέσματα προηγούμενης μελέτης, με την σύγκριση των Διεθνή και Ευρωπαϊκών μεθοδολογιών αξιολόγησης και συστημάτων και ανάλυση των υφιστάμενων προτύπων σχετικά με το αειφόρα δομημένο περιβάλλον.

Ποιότητας Περιβάλλοντος	1.1	Δυνητική Θέρμανσης του πλανήτη (GWP)
	1.2	Δυνητική Καταστροφής του Όζοντος (ODP)
	1.3	Δυνητική αύξηση της οξύτητας (AP)
	1.4	Δυνητικός Ευτροφισμός (EP)
	1.5	Δυνητική Φωτοχημική Δημιουργία Όζοντος (POCP)
	1.6	Κίνδυνοι από Υλικά
	1.7	Βιοποικιλότητα και Μείωση των Οικοτόπων
	1.8	Φωτορύπανση
	1.9	Ζήτηση πρωτογενούς ενέργειας μη ανανεώσιμων πηγών (PEne)
	1.10	Σύνολο Πρωτεύων Ενεργειακών Απαιτήσεων και Ποσοστό των Πρωτεύων Ανανεώσιμων Πηγών Ενέργειας
	1.11	Νερό και Απόβλητα
	1.12	Χρήση Γής
	1.13	Απόβλητα
	1.14	Ενεργειακή Απόδοση του Εξοπλισμού του Κτιρίου (Ανελκυστήρας, Κυλιόμενες Σκάλες)
Κοινωνική / Λειτουργική Ποιότητα	2.1	Ανεμπόδιστη Προσβασιμότητα
	2.2	Προσωπική Προστασία και Ασφάλεια των Χρηστών
	2.3	Θερμική Άνεση
	2.4	Εσωτερική Ποιότητα Αέρα
	2.5	Ποιότητα Νερού
	2.6	Ακουστική Άνεση
	2.7	Οπτική Άνεση
	2.8	Άνεση Λειτουργίας
	2.9	Ποιότητα Υπηρεσιών
	2.10	Ηλεκτρομαγνητική Ρύπανση
	2.11	Δημόσια Πρόσβαση
	2.12	Θόρυβος από το Κτίριο και την Τοποθεσία
	2.13	Ποιότητα Σχεδιασμού και Αστικής Ανάπτυξης του Κτιρίου και του Οικοπέδου
	2.14	Αποδοτικότητα της Περιοχής
	2.15	Επιτυχία Μετατροπής (Χώρου)
	2.16	Άνεση Ποδηλάτων
	2.17	Υπεύθυνη Προμήθεια Υλικών
	2.18	Τοπικά Υλικά
Οικονομική Ποιότητα	3.1	Κτίριο που Σχετίζονται με το Κόστος Κύκλου Ζωής (LCC)
	3.2	Τιμή Σταθερότητας
Τεχνικά Χαρακτηριστικά	4.1	Πυροπροστασία
	4.2	Ανθεκτικότητα της Δομής του Κτιρίου και Δύναμη(Ευρωστία)
	4.3	Καθαρισμός και συντήρηση

	4.4	Αντίσταση στο Χαλάζι, σε Καταιγίδα και σε Σεισμό
	4.5	Προστασία Θορύβου
	4.6	Ποιότητα του Κελύφους του Κτιρίου
	4.7	Ευκολία Αποδόμησης, Ανακύκλωσης, και Αποξήλωσης
Διαδικασίες Ποιότητας	5.1	Ποιότητα της Προετοιμασίας του Έργου
	5.2	Ολοκληρωμένος Σχεδιασμό
	5.3	Βελτιστοποίηση και Πολυπλοκότητα από την Προσέγγιση του Σχεδιασμού
	5.4	Αποδεικτικά στοιχεία της Αειφορίας Κατά την Διάρκεια της Πρόσκλησης Πλειοδότησης και Απονομής
	5.5	Επιπτώσεις Εργοταξίου/Διαδικασίες Κατασκευής
	5.6	Ποιότητα Εκτέλεσης Εργολαβιών/Προεπιλογής
	5.7	Διασφάλισης Ποιότητας της Εκτέλεσης Κατασκευής
	5.8	Ανάθεση
	5.9	Παρακολούθηση, Χρήση και Λειτουργία
Η Τοποθεσία	6.1	Κίνδυνοι Στην Τοποθεσία
	6.2	Συνθήκες Στην Τοποθεσία
	6.3	Επιλογές για Μεταφορές
	6.4	Εικόνα και Κατάσταση της Τοποθεσίας και της Γειτονίας
	6.5	Παροχές στην Γύρω Περιοχή
	6.6	Παρακείμενα Μέσα, Υποδομές, Ανάπτυξη

Πίνακας 3. Πλήρες σύστημα OPEN HOUSE

2.1.3 Πυρήνας συστήματος

Ο πυρήνας του συστήματος OPEN HOUSE είναι ένα σύνολο δεικτών που έχουν επιλεγεί με βάση το πλήρες σύστημα OPEN HOUSE. Είναι οι θεμελιώδης δείκτες για την αξιολόγηση.
Όπως φαίνεται στον Πίνακα 4 ξεχωρίζουμε τους δείκτες του πυρήνα του OPEN HOUSE.

Ποιότητας Περιβάλλοντος	1.1	Δυνητική Θέρμανσης του πλανήτη (GWP)
	1.2	Δυνητική Καταστροφής του Όζοντος (ODP)
	1.3	Δυνητική αύξηση της οξύτητας (AP)
	1.4	Δυνητικός Ευτροφισμός (EP)
	1.5	Δυνητική Φωτοχημική Δημιουργία Όζοντος (POCP)
	1.9	Ζήτηση πρωτογενούς ενέργειας μη ανανεώσιμων πηγών (PEne)

	1.10	Σύνολο Πρωτεύων Ενεργειακών Απαιτήσεων και Ποσοστό των Πρωτεύων Ανανεώσιμων Πηγών Ενέργειας
	1.11	Νερό και Απόβλητα
	1.12	Χρήση Γής
	1.13	Απόβλητα
Κοινωνική / Λειτουργική Ποιότητα	2.1	Ανεμπόδιστη Προσβασιμότητα
	2.3	Θερμική Άνεση
	2.4	Εσωτερική Ποιότητα Αέρα
	2.6	Ακουστική Άνεση
	2.7	Οπτική Άνεση
	2.8	Άνεση Λειτουργίας
	2.10	Ηλεκτρομαγνητική Ρύπανση
	2.11	Δημόσια Πρόσβαση
	2.15	Επιτυχία Μετατροπής (Χώρου)
	2.16	Άνεση Ποδηλάτων
	2.17	Υπεύθυνη Προμήθεια Υλικών
	2.18	Τοπικά Υλικά
Οικονομική Ποιότητα	3.1	Κτίριο που Σχετίζονται με το Κόστος Κύκλου Ζωής (LCC)
Τεχνικά Χαρακτηριστικά	4.6	Ποιότητα του Κελύφους του Κτιρίου
	4.7	Ευκολία Αποδόμησης, Ανακύκλωσης, και Αποξήλωσης
Διαδικασίες Ποιότητας	5.1	Ποιότητα της Προετοιμασίας του Έργου
	5.5	Επιπτώσεις Εργοταξίου/Διαδικασίες Κατασκευής
	5.8	Ανάθεση
Η Τοποθεσία	6.1	Κίνδυνοι Στην Τοποθεσία
	6.3	Επιλογές για Μεταφορές

Πίνακας 4. OPEN HOUSE βασικό σύστημα

2.1.4 Δείκτες

Κάθε δείκτη της μεθόδου OPEN HOUSE έχει αναπτυχθεί με Ευρωπαϊκά και Διεθνή πρότυπα.
Τα ακόλουθα θέματα έχουν καταρτιθεί :

1. Στόχοι
Σύντομη περιγραφή του σκοπός, στόχος και ευρωπαϊκή σημασία του δείκτη (π.χ. Ευρωπαϊκή στρατηγική για την αειφόρο ανάπτυξη, Ατζέντα 21 κλπ.)

2. Μεθοδολογία αξιολόγησης
Σύντομη περιγραφή του πώς μπορεί να μετρηθεί ο δείκτης (μεθοδολογία, επισκόπηση).

3. Υπολογισμός και βαθμολογία

Πλήρης περιγραφή του πώς μπορεί να μετρηθεί ο δείκτης (μεθοδολογία, επισκόπηση κ.λπ.).
Λίστα των υπο-δεικτών και μεγάλη περιγραφή του κάθε υπο-δείκτη:

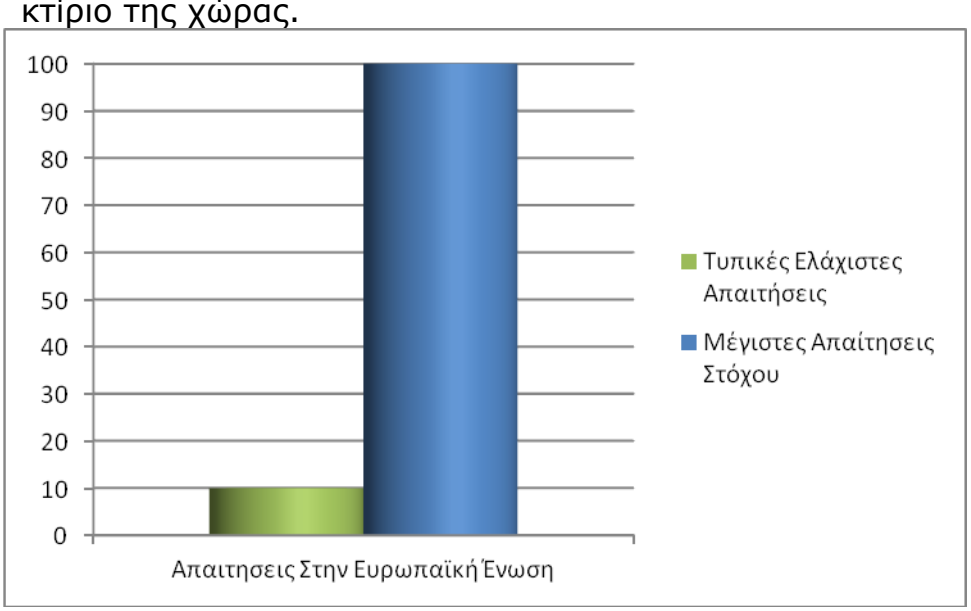
· Περιγραφή του υπο-δείκτη (ποιοτική / ποσοτική) και μέτρησή του (από κείμενο, πίνακες, προγράμματα υπολογιστικά, κλπ.)

· Βαθμολόγησης του κάθε υπο-δείκτη θα οριστεί σε αυτό το σημείο (όλοι οι υπο-δείκτες σε τιμές: 100 βαθμοί)

· Ορισμός της τιμής-στόχου (100 βαθμοί): καλύτερη τεχνική κατασκευή (π.χ. ΕΕ βιωσιμότητα στόχων της στρατηγικής 2020/50)

· Ορισμός της μέσης αξίας (π.χ. 50 βαθμοί): καλύτερα από ό, τι το πραγματικό πρότυπο κτίριο (π.χ. στόχων της ΕΕ βιωσιμότητα στρατηγική 2020)

· Ορισμός των πρότυπων απαιτήσεων (10 μονάδες): πραγματικό πρότυπο κτίριο της χώρας.



Πίνακας 5. Βάση για την εκτίμηση των δεικτών

4. Τεκμηρίωση κατευθυντήριων γραμμών.

Κατάλογος και σύντομη περιγραφή των εγγράφων που θα απαιτηθούν για τη μέτρηση του δείκτη / υπο-δείκτες για:
· OPEN HOUSE βασική και γρήγορη αξιολόγηση αειφορίας
· OPEN HOUSE ολοκληρωμένη αξιολόγηση

5. Σχέση με άλλους δείκτες
Κατάλογος από άλλους συναφείς δείκτες του OPEN HOUSE.

6. Πόροι
Λίστα με όλες τις Διεθνή, Ευρωπαϊκές ή άλλες πηγές που έχουν χρησιμοποιηθεί για ανάπτυξη των δεικτών και της μεθοδολογίας εκτίμησης: Διαδικτυακές πηγές, νόμοι, έγγραφα, πρότυπα, κατευθυντήριες γραμμές, λογισμικό κλπ.

7. Συνημμένα
Λίστα με όλα τα συνημμένα (κείμενα, εικόνες, κ.λπ.) που πρέπει να χρησιμοποιούνται για την εκτίμηση των Δεικτών.

2.1.5 Τύποι κτιρίων

Αυτή η έκδοση της μεθόδου OPEN HOUSE αξιολογεί το είδος του κτιρίου **«Κτίρια γραφείων».** Για άλλους τύπους κτίριο η μεθοδολογία πρέπει να προσαρμοστεί στα περαιτέρω έργα.

2.2 OPEN HOUSE Βαθμολογία και Στάθμιση

2.2.1 Βασική και Γρήγορη Εκτίμηση της Βιωσιμότητας

Η «βασικές και γρήγορη αξιολόγηση της βιωσιμότητας» θα δώσει μια πρώτη ιδέα του επίπεδου βιωσιμότητας του κτιρίου και θα προτείνει δράσεις για τη βελτίωση αυτού του επιπέδου:
· με βάση το "OPEN HOUSE-πλήρες σύστημα"
· για τη φάση του σχεδιασμού και υφιστάμενα κτίρια
· δίνει πρώτη ιδέα για το επίπεδο της αειφορίας
· προτείνει δράσεις για τη βελτίωση του επιπέδου
· δεν απαιτούνται αυστηρή τεκμηρίωση, προχωράμε με βάση τις εκτιμήσεις, αλλά πρέπει να είναι λογικές
· η εκτίμηση είναι δυνατή σε πολλές ημέρες και θα πρέπει να γίνει σε ένα εργαστήριο αξιολόγησης

2.2.2 Ολοκληρωμένη αξιολόγηση

Για την πλήρη αξιολόγηση είναι αποδεκτές τις ακόλουθες αρχές:
· πλήρης τεκμηρίωση απαιτείται για το "OPEN HOUSE-κεντρικοί δείκτες"
· και «βασικές και γρήγορη βιωσιμότητας "για το υπόλοιπο των δεικτών από το "OPEN HOUSE-πλήρες σύστημα"
· για λειτουργικά κτίρια και υφιστάμενα κτίρια

· ευρέως αποδεκτή ευρωπαϊκή ετικέτα βιωσιμότητας
· η εκτίμηση λαμβάνει αρκετές εβδομάδες (εργαστήριο αξιολόγησης και τεκμηρίωση)

2.2.3 Όρια Συστήματος

Ο στόχος της αξιολόγησης είναι, λαμβάνοντας υπόψη το συνολικό κύκλο ζωής:
· το όλο οικοδόμημα (χωρίς αποκλεισμούς θεμελίων)
· την έκταση του κτιρίου και τον καλλωπισμό στην περιοχή
· τη θέση και στο του κτιρίου

2.2.4 Κατευθυντήρια γραμμή αξιολόγησης

Μια ολοκληρωμένη "κατευθυντήρια γραμμή αξιολόγησης» με την περιγραφή των 56 δεικτών έχει αναπτυχθεί. Επίσης άλλες εργασίες όπως η Fraunhofer IBP αυτή τη στιγμή εργάζεται πάνω σε μια "Τεκμηρίωση Κατευθυντήριας γραμμής ". Και τα δύο έγγραφα θα επιτρέψουν στο χρήστη της μεθοδολογίας OPEN HOUSE να αναδείξει μια οριστική αξιολόγηση του εξεταζόμενου κτιρίου.

2.2.5 Στάθμιση

Η στάθμιση του συστήματος ρυθμίζεται με δύο τρόπους:

Στάθμιση των δεικτών.

Οι δείκτες μπορεί να σταθμίζονται μέσα στις κατηγορίες από [1-5]. Η εν λόγω στάθμιση εξαρτάται από το κλίμα, τις κοινωνικές και πολιτιστικές συνθήκες των χωρών της ΕΕ και είναι ευέλικτη. Για την εργασία μας επιλέγουμε συντελεστές στάθμισης "1". Συντελεστής στάθμισης συγκεκριμένα θα καθοριστεί μετά την ερμηνεία των αποτελεσμάτων από τις περιπτωσιολογικές μελέτες.

Στάθμιση των κατηγοριών.

Οι κατηγορίες μπορούν να σταθμιστούν σε σχέση με άλλες κατηγορίες %. Σε αυτήν την εργασία οι τρεις κατηγορίες Ποιότητα Περιβάλλοντος, Κοινωνική-Λειτουργική Ποιότητα και Οικονομική ποιότητα είναι επιβαρυμένες με 33,33% μεταξύ τους.
Οι κατηγορίες Τεχνικά Χαρακτηριστικά, Διαδικασία Ποιότητας και Η Τοποθεσία θα εμφανίζονται ως επιπλέον σημείωση και δεν είναι μέρος της κύριας αξιολόγησης σε αυτήν την φάση.

ΒΑΣΙΚΗ ΠΟΙΟΤΗΤΑ		OPEN HOUSE ΔΕΙΚΤΕΣ ΠΛΗΡΟΥΣ ΣΥΣΤΗΜΑΤΟΣ	ΠΟΝΤΟΙ ΔΕΙΚΤΩΝ	ΜΕΓΙΣΤΟΙ ΠΟΝΤΟΙ	ΒΑΘΜΟΣ ΕΠΙΔΟΣΗΣ ΔΕΙΚΤΩΝ	ΒΑΡΥΤΗΤΑ ΔΕΙΚΤΩΝ	ΒΑΘΜΟΛΟΓΙΑ ΚΑΤΗΓΟΡΙΩΝ	ΣΥΝΟΛΙΚΟΣ ΒΑΘΜΟΣ ΕΠΙΔΟΣΗΣ
Ποιότητας Περιβάλλοντος	1.1	Δυνητική Θέρμανση του πλανήτη (GWP)	0	100	0%	1	8%	
	1.2	Δυνητική Καταστροφής του Όζοντος (ODP)	0	100	0%	1		
	1.3	Δυνητική αύξηση της οξύτητας (AP)	0	100	0%	1		
	1.4	Δυνητικός Ευτροφισμός (EP)	0	100	0%	1		
	1.5	Δυνητική Φωτοχημική Δημιουργία Όζοντος	0	100	0%	1		
	1.6	Κίνδυνοι από Υλικά	0	100	0%	1		
	1.7	Βιοποικιλότητα και Μείωση των Οικότοπων	30	100	30%	1		
	1.8	Φωτορύπανση	26,6	100	26,6%	1		
	1.9	Ζήτηση πρωτογενούς ενέργειας μη ανανεώσιμων πηγών (PEne)	0	100	0%	1		
	1.10	Σύνολο Πρωτεύων Ενεργειακών Απαιτήσεων και Ποσοστό των Πρωτεύων Ανανεώσιμων Πηνών Ενέργειας	0	100	0%	1		
	1.11	Νερό και Απόβλυτα	10	100	10%	1		
	1.12	Χρήση Γής	50	100	50%	1		
	1.13	Απόβλητα	0	100	0%	1		
	1.14	Ενεργειακή Απόδοση του Εξοπλισμού του Κτιρίου (Ανελκυστήρας, Κυλιόμενες Σκάλες)	0	100	0%	1		
Κοινωνική / Λειτουργική Ποιότητα	2.1	Ανεμπόδιστη Προσβασιμότητα	50	100	50%	1	48,5%	29,78%
	2.2	Προσωπική Προστασία και Ασφάλεια Χρηστών	58,3	100	58,3%	1		
	2.3	Θερμική Άνεση	27,5	100	27,5%	1		
	2.4	Εσωτερική Ποιότητα Αέρα	0	100	0%	1		
	2.5	Ποιότητα Νερού	80	100	80%	1		
	2.6	Ακουστική Άνεση	100	100	100%	1		
	2.7	Οπτική Άνεση	17	100	17%	1		
	2.8	Άνεση Λειτουργίας	57	100	57%	1		
	2.9	Ποιότητα Υπηρεσιών	5	100	5%	1		
	2.10	Ηλεκτρομαγνητική Ρύπανση	50	100	50%	1		
	2.11	Δημόσια Πρόσβαση	40	100	40%	1		
	2.12	Θόρυβος από το Κτίριο και την Τοποθεσία	100	100	100%	1		
	2.13	Ποιότητα Σχεδιασμού και Αστικής Ανάπτυξης του Κτιρίου και του Οικοπέδου	60	100	60%	1		
	2.14	Αποδοτικότητα της Περιοχής	100	100	100%	1		
	2.15	Επιτυχία Μετατροπής (Χώρου)	62	100	62%	1		
	2.16	Άνεση Ποδηλάτων	66	100	66%	1		
	2.17	Υπεύθυνη Προμήθεια Υλικών	0	100	0%	1		
	2.18	Τοπικά Υλικά	0	100	0%	1		
Οικονομική Ποιότητα	3.1	Κτίριο που Σχετίζονται με το Κόστος Κύκλου Ζωής (LCC)	6,5	100	6,5%	1	30,8%	
	3.2	Τιμή Σταθερότητας	55	100	55%	1		
Τεχνικά Χαρακτηριστικά	4.1	Πυροπροστασία	0	100	0%	1		35,00%
	4.2	Ανθεκτικότητα της Δομής του Κτιρίου και Δύναμη(Ευρωστία)	30	100	30%	1		
	4.3	Καθαρισμός και συντήρηση	41,7	100	41,7%	1		
	4.4	Αντίσταση στο Χαλάζι, σε Καταιγίδα και σε Σεισμό	0	100	0%	1		
	4.5	Προστασία Θορύβου	100	100	100%	1		
	4.6	Ποιότητα του Κελύφους του Κτιρίου	0	100	0%	1		
	4.7	Ευκολία Αποδόμησης, Ανακύκλωσης, και Αποξήλωσης	3,3	100	3,3%	1		
Διαδικασίες Ποιότητας	5.1	Ποιότητα της Προετοιμασίας του Έργου	25	100	25%	1		35,11%
	5.2	Ολοκληρωμένος Σχεδιασμό	70	100	70%	1		
	5.3	Βελτιστοποίηση και Πολυπλοκότητα από την Προσέγγιση του Σχεδιασμού	16	100	16%	1		
	5.4	Αποδεικτικά στοιχεία της Αεικφορίας Κατά την Διάρκεια της Πρόσκλησης Πλειοδότησης και Απονομής	0	100	0%	1		
	5.5	Επιπτώσεις Εργοταξίου/Διαδικασίες Κατασκευής	15	100	15%	1		
	5.6	Ποιότητα Εκτέλεσης Εργολαβιών/Προεπιλογής	50	100	50%	1		
	5.7	Διασφάλισης Ποιότητας της Εκτέλεσης Κατασκευής	37,5	100	37,5%	1		
	5.8	Εκτέλεση	75	100	75%	1		
	5.9	Παρακολούθηση, Χρήση και Λειτουργία	27,5	100	27,5%	1		
Η Τοποθεσία	6.1	Κίνδυνοι Στην Τοποθεσία	65	100	65%	1		60,22%
	6.2	Συνθήκες Στην Τοποθεσία	88	100	88%	1		
	6.3	Επιλογές για Μεταφορές	37,5	100	37,5%	1		
	6.4	Εικόνα και Κατάσταση της Τοποθεσίας και της Γειτονίας	83,3	100	83,3%	1		
	6.5	Παροχές στην Γύρω Περιοχή	50	100	50%	1		
	6.6	Παρακείμενα Μέσα, Υποδομές, Ανάπτυξη	37,5	100	37,5%	1		

Πίνακας 6. OPEN HOUSE στάθμισης

2.2.6 Σύγκριση των αποτελεσμάτων

Λόγω των διαφορετικών πρότυπων, τις απαιτήσεις για κατασκευή, τις κατευθυντήριες γραμμές, τους παράγοντες στάθμιση, τις ζώνες κλίματος κλπ. - που αποτελούν τη βάση για την αξιολόγηση σε κάθε χώρας της ΕΕ, τα αποτελέσματα της μεθόδου OPEN HOUSE δεν μπορούν να συγκριθούν άμεσα.
Τα διαφορετικά αποτελέσματα μπορούν να συγκριθούν μόνο ως ο βαθμός απόδοσης σε σχέση με τα πρότυπα των χωρών της ΕΕ. Με τον τρόπο αυτό είναι δυνατόν οι χώρες με ένα χαμηλότερο κτιριακό πρότυπο να επιτύχει υψηλότερη επίδοση σε σχέση με άλλη με υψηλότερα στάνταρ.

3. Το OPEN HOUSE στην μελέτη του κτιριακού συγκροτήματος ΕΜΜΤU

3.1. Ποιότητα Περιβάλλοντος

Η πρώτη κατηγορία είναι η Ποιότητα Περιβάλλοντος και αφορά τους δείκτες όπως βλέπουμε παρακάτω:

ΒΑΣΙΚΗ ΠΟΙΟΤΗΤΑ		OPEN HOUSE ΔΕΙΚΤΕΣ ΠΛΗΡΟΥΣ ΣΥΣΤΗΜΑΤΟΣ	ΠΟΝΤΟΙ ΔΕΙΚΤΩΝ	ΜΕΓΙΣΤΟΙ ΠΟΝΤΟΙ	ΒΑΘΜΟΣ ΕΠΙΔΟΣΗΣ ΔΕΙΚΤΩΝ	ΒΑΡΥΤΗΤΑ ΔΕΙΚΤΩΝ	ΒΑΘΜΟΛΟΓΙΑ ΚΑΤΗΓΟΡΙΩΝ
Ποιότητας Περιβάλλοντος	1.1	Δυνητική Θέρμανση του πλανήτη (GWP)	0	100	0%	1	10%
	1.2	Δυνητική Καταστροφής του Όζοντος (ODP)	0	100	0%	1	
	1.3	Δυνητική αύξηση της οξύτητας (AP)	0	100	0%	1	
	1.4	Δυνητικός Ευτροφισμός (EP)	0	100	0%	1	
	1.5	Δυνητική Φωτοχημική Δημιουργία Όζοντος	0	100	0%	1	
	1.6	Κίνδυνοι από Υλικά	0	100	0%	1	
	1.7	Βιοποικιλότητα και Μείωση των Οικότοπων	30	100	30%	1	
	1.8	Φωτορύπανση	26,6	100	26,6%	1	
	1.9	Ζήτηση πρωτογενούς ενέργειας μη ανανεώσιμων πηγών (PEne)	0	100	0%	1	
	1.10	Σύνολο Πρωτεύων Ενεργειακών Απαιτήσεων και Ποσοστό των Πρωτεύων Ανανεώσιμων Πηγών Ενέργειας	0	100	0%	1	
	1.11	Νερό και Απόβλυτα	10	100	10%	1	
	1.12	Χρήση Γής	50	100	50%	1	
	1.13	Απόβλητα	25	100	25%	1	
	1.14	Ενεργειακή Απόδοση του Εξοπλισμού του Κτιρίου (Ανελκυστήρας, Κυλιόμενες Σκάλες)	0	100	0%	1	

1. Στόχοι:

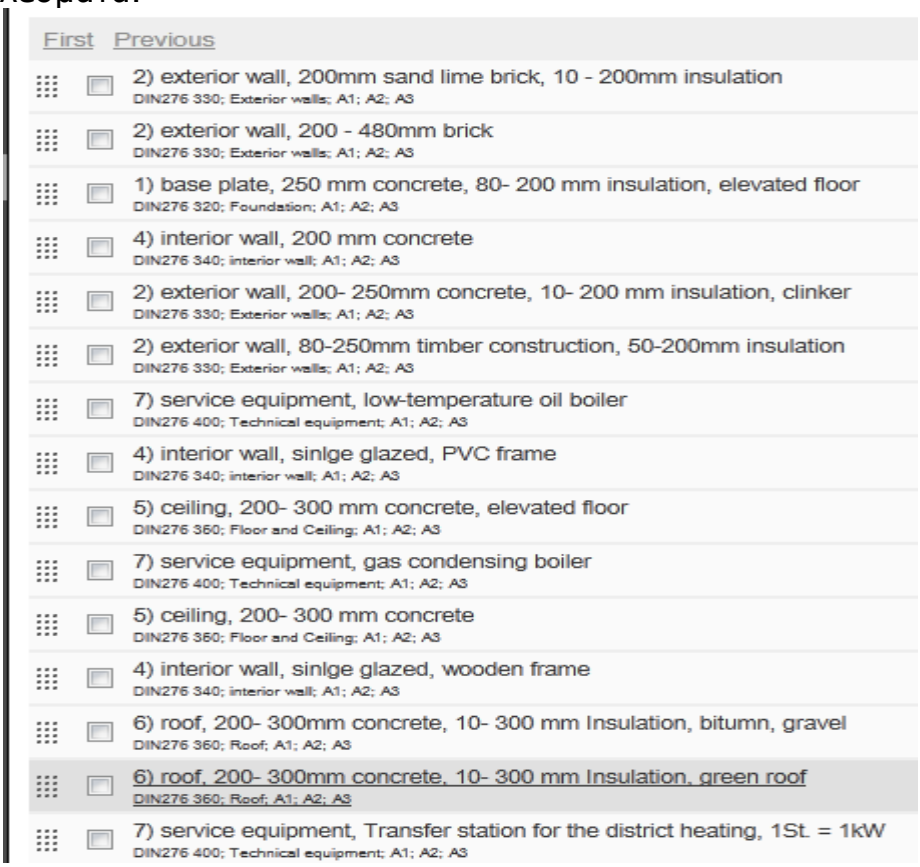
1.1 Δυναμικό θέρμανσης του πλανήτη: μείωση της "υπερθέρμανσης του πλανήτη"
1.2 Δυναμικό Καταστροφής του Όζοντος: μείωση της "τρύπα του όζοντος"
1.3 Δυναμικό αύξησης της οξύτητας: μείωση της "όξινη βροχή"
1.4 Δυναμικό ευτροφισμού: μείωση της "Υπερβολική χρήση Λιπασμάτων"
1.5 Δυναμικό φωτοχημικής δημιουργίας όζοντος: μείωση της "Θερινή Αιθαλομίχλη"
1.6 Κίνδυνοι από Υλικά – Διαδικασία ανάπτυξης του δείκτη
1.7 Βιοποικιλότητα και Μείωση των Οικοτόπων: μείωση του αντίκτυπου του κτιρίου στο οικοσύστημα της γύρω περιοχής
1.8 Φωτορύπανση: Σωστή φωταγώγηση του εξωτερικού χώρου, χωρίς να επηρεάζει την υγεία ανθρώπων και ζώων και την μείωση του έντονου φωτισμού στον ουρανό.
1.9 Ζήτηση πρωτογενούς ενέργειας μη ανανεώσιμων πηγών: Η κατανάλωση των ορυκτών καυσίμων
1.10 Συνολική ζήτηση πρωτογενούς ενέργειας και Ποσοστό πρωτογενών Ανανεώσιμων Πηγών Ενέργειας : Συνολική κατανάλωση καυσίμων / ενέργειας
1.11 Νερό και Απόβλητα: Η κατανάλωση πόσιμου νερού και η παραγωγή λυμάτων θα μειωθούν
1.12 Χρήση Γής: Χρήση χώρων οριοθετημένων σαν οικισμό και αντισταθμιστικά έργα όπως κήπος στην ταράτσα.
1.13 Απόβλητα: Χρήση χώρων ανακύκλωσης και κομποστοποίησης.
1.14 Ενεργειακή Απόδοση του Εξοπλισμού του Κτιρίου (Ανελκυστήρας, Κυλιόμενες Σκάλες): μείωση της κατανάλωσης ενέργειας των συστημάτων μεταφορών

2. Μεθοδολογία αξιολόγησης, Υπολογισμός και βαθμολογία

Για τους δείκτες 1.1-1.5 και 1.9-1.10 οι υπολογισμοί γίνονται μέσω ενός προγράμματος (Sustainable Building Specifier (SBS)) στο οποίο περνάμε τα δεδομένα για:

- Εμβαδόν δαπέδου
- Εμβαδόν οροφής
- Εμβαδόν τοίχων εξωτερικών/εσωτερικών
- Εμβαδόν ανοιγμάτων
- Υλικά κατασκευής και ποσότητες αυτών
- Η/Μ εξοπλισμό του κτιρίου και την κατανάλωση σε ενέργεια

Στην συνέχεια το πρόγραμμα επεξεργάζεται τα δεδομένα και μας βγάζει τα αποτελέσματα.



Πίνακας 7 Πρόγραμμα Sustainable Building Specifier (SBS)

Για τους υπόλοιπους Δείκτες συμπληρώνουμε την φόρμα με τα δεδομένα μας και υπολογίζουμε την βαθμολογία μας.
Οι φόρμες με τις απαντήσεις συμπληρωμένες και την βαθμολογία ακολουθούν ανά δείκτη:

Δείκτες 1.1-1.5 & 1.9-1.10:

Environmental Quality

LCA Indicators

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The current assessment form is valid for all indicators basing on a Life Cycle Assessment (LCA):

- Indicator 1.1 Global Warming Potential
- Indicator 1.2 Ozone Depletion Potential
- Indicator 1.3 Acidification potential
- Indicator 1.4 Eutrophication Potential
- Indicator 1.5 Photochemical Ozone Creation Potential
- Indicator 1.9 Non-Renewable Primary Energy Demand
- Indicator 1.10 Total Primary Energy Demand and Percentage of Renewable Energy
-

For all the Indicators named, one common set of input data is required, which has to be inserted into the LCA calculation tool (Sustainable Building Specifier, SBS). Inside the SBS, the LCA results are calculated.

Benchmarks for the LCA indicators are to be developed based on the case study LCA results. So at the time of the assessment workshop, no rating for the LCA indicators is possible. As soon as respective benchmarks have been developed, the assessors will be informed and the case study buildings can be rated.

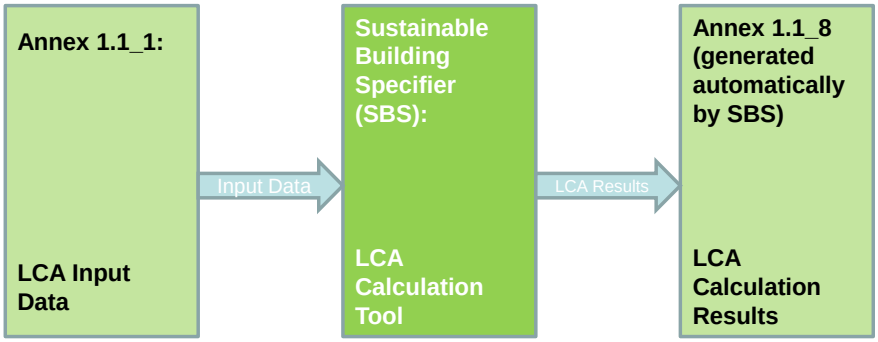
The same data requirements apply for the "Basic and quick" and for the "Complete" assessment, but for the "Complete" assessment, data has to be documented and verified whereas the "Basic and quick" assessment can be performed based on qualified estimations (cp. 3. Annexes). In addition, assessment teams dealing with a "complete" assessment are asked to provide further information for a future expansion of system boundaries (cp. Annex 1.1_7).

2. Evaluation

For the evaluation of the LCA indicators, the following steps are required (preferably before the Assessment Workshop):

- Completion of LCA Questionnaire (Annex 1.1_1) by the Building owners / planners / assessor

- LCA modelling: Input of data from questionnaire into SBS by assessor according to SBS User Manual.
- LCA calculation in SBS by assessor (SBS generates Annex 1.1_8: LCA Calculation results)
- Complete Assessment: Compilation of documentation by building owners / planners



3. Annexes

Quick & Basic Assessment

Filled LCA Questionnaire

- Annex 1.1_1

LCA Calculation Results: (generated automatically by Sustainable Building Specifier)

- Annex 1.1_8

Complete Assessment

Filled LCA Questionnaire:

- Annex 1.1_1

Verification of input data of Annex 1.1_1, especially:

- Detailed calculation of surface areas for all constructional parts of the building (e.g. exterior walls, foundation, interior walls, ceilings, roof….): **Annex 1.1_2**
- Verification of calculation for surface areas by design plans with respective dimensioning: **Annex 1.1_3**
- Detailed sectional drawings of cross-sections for all constructional parts indicating different materials, layers and thicknesses: **Annex 1.1_4**
- National energy calculation according to requirements of the EPBD, indicating building energy supply, applied technical appliances and energy carriers: **Annex 1.1_5**
- Information on elements of the building energy supply covered by the energy calculation: **Annex 1.1_6**

Filled Questionnaire Expansion of System Boundaries:

- Annex 1.1_7

LCA Calculation Results: (generated automatically by Sustainable Building Specifier)

- Annex 1.1_8

4. Indicator rating and score

Benchmarks for the LCA indicators are to be developed based on the case study LCA results. So at the time of the assessment workshop, no rating for the LCA indicators is possible. As soon as respective benchmarks have been developed, the assessors will be informed and the case study buildings can be rated using the OPEN HOUSE platform.

A. Additional information about national practices

This part of the form is not evaluated with points, but is considered as important as the previous part to test and improve the OPEN HOUSE methodology. Please fill in the text highlighted in red and in blue

A1. Implementation of EU standards/directives/ regulations

The following aspects are important for a comparable calculation of building LCAs in Europe

- EPBD Directive (DIRECTIVE 2010/31/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 May 2010 on the energy performance of buildings (recast)
- Regulations on the calculation of building surfaces
- Regulations on the service life time of construction products / components

Are such standards implemented / existing in GREECE?

- EPBD Directive : Yes/No
- Regulations on the calculation of building surfaces: Yes/No
- Regulations on the service life time of construction products / components: Yes/No

A2. National standards and/or regulations

Please specify the current EPBD implementation (regulation and standard) used in **GREECE** and specify if it is mandatory:

- Standard: name
- Regulation: name
- No common methodology used

- I don't know

To analyse the comparability of national Benchmarks basing on different national implementations of the Energy Performance of Buildings Directive (EPBD), please answer the following questions for your national implementations of the Energy Performance of Buildings Directive (EPBD).

- What is included in the calculation of the electricity demand?		
	Lighting	YES
	Cooling	YES
	Auxiliary energy for heating, Pumps etc.	YES
	Energy use for user equipment	NO
	Other	
- What is included in the calculation of the heating energy demand?		
	Heating energy	YES
	Hot water production	YES
	If hot water production is included, how is it calculated (fixed rate or other)?	
	Thermal energy for cold production	NO
	Other	NO
- General information to the regional energy calculation methodology		
	What is the average outdoor temperature used?	≈18.6 °C AVERAGE
	What is the indoor temperature used?	For offices the temperature that is suggested is 20°C (winter) and 26°C (summer). According to EN 15251:2007
	Are internal gains (people, equipment, etc.) considered?	YES
	Are external gains (irradiation) considered?	YES

	Is there a minimum air change rate required? If yes, please specify.	For offices air change rate that is suggested is 30m³/h/person or 3m³/h/m². According to EN 15251:2007
	Is there a factor which converts from usable energy to final energy (COP of the technical equipment, losses by reason of distribution,etc.)?	YES
	Is there a factor which converts from final energy to primary energy?	YES
	Is there a reference building? If there is, is it with a fix limit value or dynamic?	YES WITH DINAMIC LIMIT VALUES
	Is there a factor which describes the days of the year used for heating/ cooling?	DEGREE DAYS FOR BOTH
	Is energy produced on site taken into account?	NO
	What are the numbers for the different heat transfer coefficients?	Average building value varies with climatic zone and the ratio "total shell surface/volume" of the building. Specific components values vary with climatic zone and type of component.

Please specify the current regulation on the calculation of building surfaces used in **GREECE** and specify if it is mandatory:

- Standard: name
- Regulation: name
- No common methodology used
- I don't know
- Please enter the Net floor area of your case study building calculated according to your national regulation [m²]:xxy

To analyse the comparability of national Benchmarks basing on different national implementations of the calculation methodology of area, please answer the following questions for your national implementations of the calculation of the net floor area. For further information please take a look at [1].

- Is the floor area measured on the level of finished floor?		
- Are areas below/ above the ground measured separately?		
- Is the area of the corridor measured separately as "Circulation area"?		
- Is part of the corridor mixed with other areas (e.g. office space)?		
- Is the net floor area measured at the internal edge of all constructions?		
- Is the net floor area also consisting of usable area, service area, circulation area and residual area?		
- General information to the regional calculation methodology of area		
	What areas are included in the gross floor area?	
	What areas are included in the net floor area?	
	How are staircases measured?	

Please specify the current regulation on the service life time of construction products / components used in **GREECE** and specify if it is mandatory:

- Standard: name
- Regulation: name
- No common methodology used
- I don't know

A3. National basic and best practices

For the definition of the OPEN HOUSE rating system, the goal is to orient benchmarks on nationally applicable benchmarks.

Please specify the current benchmarks from your national guidelines or regulations implementing the EPBD directive, or, if this is not possible, corresponding to your practices experience from basic level to best performances in **GREECE**and for **EMMTU OFFICE** for Heating Energy Demand (end energy) [kWh/(m²Net Floor Area*a)] and for Electricity Demand (end energy) in [kWh/(m²Net Floor Area*a)].

☐ There are neither benchmarks nor examples of basic and best practices.

☐ There are the following examples of practices/benchmarks in use :

Heating Energy Demand [kWh/(m²Net Floor Area*a)]		
10	**Best practice (target)**	25,84 kWh/(m²Net Floor Area*a) (= 0,33x basic practice)
9		
8		
7		
6		
5	Example: my Building performance	49 kWh/(m²Net Floor Area*a) (=0.74x basic practice)

4		
3		
2		
1	**Basic practice (regulation)**	78,3 kWh/(m²Net Floor Area*a)
0	**No respect of regulation**	

Electricity Demand [kWh/(m²Net Floor Area*a)]		
10	**Best practice (target)**	66 kWh/(m²Net Floor Area*a) (= 0,33xbasic practice)
9		
8		
7		
6		
5	Example: my Building performance	157,3 kWh/(m²Net Floor Area*a) (=0.74x.basic practice)
4		
3		
2		
1	**Basic practice (regulation)**	200 kWh/(m²Net Floor Area*a)
0	**No respect of regulation**	

Please select in the table your building performance in your opinion, if you had to rate it without the OPEN HOUSE methodology benchmarks.

Use the scale from 1 to 10 (1 for a basic practice according to regulations in **GREECE**, 10 for a best practice corresponding to a target achievement in **GREECE**), and explain your choice in the "description field".

Annex 1.1_1 LCA Questionnaire

Short Building Description

The following information is needed to verify the LCA inputs and results

1) Type of Building (office,…)	**OFFICE**
2) % of different types of use [%]	**100%**
3) Please provide a small picture / drawing of the building	 
4) Number of storeys	**1**
5) Type of construction	**Concrete**
6) 6 most important materials for supporting structure, insulation, windows	**Concrete** **Reinforcing steel** **Glazed aluminium windows** **Insulation with extruded polystyrene (XPS)**

	Parquet flooring **Concrete roof**
7) Type of facade	**The painting of the outer walls was carried together with the exterior wall plaster and have been water proofed with water based nanomaterials**
8) Energy supply system (short description)	**Oil boiler**

Questions LCA

For all the following Building components, different LCA datasets have been predefined. Please choose the one appropriate for your building (mark by x in the first column).

Next, please specify respective surface areas and variables (in bold) to adapt the datasets to your conditions.

Basic information

9) Net Floor Area [m²][2]	**160**

Building component datasets (predefined)	**Layers included (variables are printed in bold)**
1) Foundation (KG 320)	

Please specify surface area of foundation [m²]	**10**
Please specify variable [mm]	**Concrete layer thickness**

Please mark applicable foundation dataset by x in first column

	Foundation	Reinforcing steel (9591,4kg) Ready-mix concrete C20-25 (51,9cu.m.)
	Ground slab, 200 mm concrete, not insulated	Cement screed (3818,42kg) Sand grit 0-2 mm (dried) (6163,52kg) Anhydride self-leveling screed (7273,5kg) PVC roofing membrane (227,043kg) Asphalt base course (157,1kg) Ready-mixed concrete C12-15(22215cu.m) Reinforcing steel (851,66kg) Ready-mix concrete C20-25 (14,4cu.m.) Gravel grit 2-32 mm (12054,8kg)

2) Exterior walls (KG 330)

Please specify surface area of exterior walls [m²]	**83**
Please specify variable [mm]	**Concrete**
Please specify variable [mm]	**Brick**

Please mark applicable exterior wall dataset by x in first column

	2) External wall, 260mm,	Gypsum-lime interior plaster (2257,568kg)

	bricks, insulation	Facade silicate emulsion paint primer (146,472kg) Facing bricks (22581,68kg) Interior dispersion paint, scrub-resistant (292,4kg)
	2) External wall, 330mm, concrete, insulation	Reinforcing steel (2185,3652kg) Ready-mix concrete C20-25 (14,2175cu.m.) Gypsum-lime interior plaster (2362,584kg) Facade silicate emulsion paint primer (76,218kg) Interior dispersion paint, scrub-resistant (151,436kg)

3) Windows (KG 330)	
Please specify surface area of windows [m²]	**8,8**
Please mark applicable window dataset by x in first column	
3) Window, single glazed, aluminium frame	Aluminium window frame profile (16,66m) Window glass, single pane (8,81qm) EPDM sealings for aluminium profile (thermally separated) (16,66m)

4) Interior walls (KG 340)

Please specify surface area of interior walls[m²]	**69.85**
Please specify variable [mm]	**Concrete**
Please specify variable [mm]	**Bricks**
Please specify variable [mm]	**Insulation**

Please mark applicable interior wall dataset by x in first column

	4) Interior wall, 310mm, concrete,no insulation (beams)	Reinforcing steel (605,126kg) Ready-mix concrete C20-25 (5,44cu.m.) Interior dispersion paint, scrub-resistant (61,88kg) Gypsum-lime interior plaster (950,912kg)
	4) Interior wall, 250mm, bricks, no insulation	Facing bricks (14790,96kg) Interior dispersion paint, scrub-resistant (181,2kg) Gypsum-lime interior plaster (2803,44kg)

5) Ceiling (KG 350)

Please specify surface area of ceilings [m²][1]	
Please specify variable [mm]	
Please specify variable [mm]	

Please mark applicable ceiling dataset by x in first column

6) Roof (KG 360)	
Please specify surface area of roof [m²]	**170**
Please specify variable [mm]	

Please mark applicable roof dataset by x in first column

	6)Roof, 200mm concrete, tiles, with thermal insulation,	PVC roofing membrane (14,4045kg) Gravel grit 2-32 mm (dried) (431,7kg) Anhydride self-leveling screed (689,92kg) Gypsum-lime interior plaster (310,44kg) Reinforcing steel (182,50kg) Ready-mix concrete C20-25 (8,458cu.m.) Interior dispersion paint, scrub-resistant (20,206 kg)

7) Service equipment (KG 400)

Please mark applicable dataset by x in first column

	7) Service equipment, circulating pump 80W	Circulating pump 50-250W
	7) Service equipment, oil tank steel	Oil tank steel/PEHD (double wall tank, 1000 l)

Operational Energy Use

Please provide energy demand calculation results for your building:

Heating Energy Demand (end energy) of your building calculated according to your national implementation of the Energy Performance of Buildings Directive (EPBD) in [kWh/*a]	**7526.92**
Electricity Demand (end energy) of your building calculated according to your national implementation of the Energy Performance of Buildings Directive (EPBD) in [kWh/*a]	**3712.12**

Annex 1.1_7 Questionnaire Expansion of System Boundaries

The following information is needed to expand the LCA system boundaries in the final refinement of the OPEN HOUSE methodology.

Module A4: Transport to construction site

Please give an average number.

1) Transport Distance of building materials from factory gate to construction site [km]	NO DATA

Module A5: Construction Processes

The following information is needed to estimate construction processes. Please fill in according to your building.

1) Total m³ concrete	200

2) Total m³ excavated soil material	
2a) m³ excavated humus	NO DATA
2b) Destination excavated humus	NO DATA
2c) Transport Distance excavated humus (if applicable)	NO DATA
2d) m³ excavated subsoil	NO DATA
2e) Destination excavated subsoil	NO DATA
2f) Transport Distance excavated subsoil (if applicable)	NO DATA
3) Total power consumption of construction site [kWh]	NO DATA
4) Total water consumption of construction site[3] [kg]	NO DATA

Module B2: Maintenance

Please give average numbers.

1) Power consumption for floor cleaning [kWh/(m²NFA*a)]	NO DATA
2) Detergent consumption for floor cleaning [kg/(m²NFA*a)]	NO DATA
3) Diesel consumption for hydraulic lift (window cleaning) [kg/(m²NFA*a)]	NO DATA
4) Detergent consumption for window cleaning [kg/(m²NFA*a)]	NO DATA

Module C1: Deconstruction Processes

Please describe a possible deconstruction scenario for your building.

1) Which machines are used for deconstruction?	NO DATA
2) Total m³ of mineral construction material (baring)	NO DATA

Module C2: Transport to End-of-Life

Please give an average number.

1) Transport Distance of construction materials to End-of-Life (Disposal or Recycling) [km]	NO DATA

Summary

Life cycle stages	Title	Quantity	Unit
All	Primary energy non-renewable	2.57E6	MJ
All	Primary energy renewable	179,451	MJ
All	Secondary fuels	40,716	MJ
All	water utilization	1.41E6	kg
All	Overburden and ore processing residues	-1.17E6	kg
All	Municipal waste	502.3	kg
All	Hazardous waste	401.5	kg
All	Abiotic Depletion Potential (ADP)	911.9	kg Sb-Equiv.
All	Global Warming Potential (GWP)	230,032	kg CO2-Equiv.
All	Acidification potential (AP)	309.8	kg SO2-Equiv.
All	Photochemical Ozone Creation Potential (POCP)	56.35	kg Ethene-Equiv.
All	Eutrification potential (EP)	53.03	kg Phosphate-Equiv.
All	Ozone Depletion Potential	0.01732	kg R11-Equiv.

Το πρόγραμμα έβγαλε τα παραπάνω αποτελέσματα για το κτίριο αλλά δεν υπάρχουν δεδομένα για να βγάλει ποσοστό % οπότε οι δείκτες δείχνουν 0.

Δείκτης 1.6 Κίνδυνοι από Υλικά:

Για τον δείκτη αυτό δεν υπάρχει ακόμα ερωτηματολόγιο και είναι σε διαδικασία ανάπτυξης.

Δείκτης 1.7 Βιοποικιλότητα και Μείωση των Οικότοπων:

Environmental Quality

Indicator 1.7 Biodiversity and Depletion of Habitats

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **1.7 Biodiversity and Depletion of Habitats** is evaluated with 1 sub-indicator:

1.7.1 Change in ecological value of the site.

2. Evaluation

Sub-indicator 1.7.1 Change in ecological value of the site

Requirements

Was a Suitably Qualified Ecologist (SQE) appointed to provide an Ecology Report with appropriate recommendations for protection and enhancement of the site's ecology?

Yes [ ] **No** [X]

1.7.1_1

Is the report based on a site visit/survey by the SQE prior to the commencement of initial site preparation works?

Yes [ ] **No** [X]

1.7.1_1

Have been or will be the general recommendations of the Ecology Report for enhancement and protection of site ecology implemented?

Yes [ ] **No** [X]

1.7.1_2

Change in ecological value

Change in ecological value calculated by the SQE:

[X]

1.7.1_1

If the change in ecological value could not be calculated, maximal points achievable are **10** when requirements are fulfilled.

3. Indicator rating and score

1.7 Biodiversity and Depletion of Habitats	Points
Requirements are satisfied and Change in ecological value ≥ 6	**100**
Requirements are satisfied and 5 ≤ Change in ecological value < 6	**90**
Requirements are satisfied and 4 ≤ Change in ecological value < 5	**80**
Requirements are satisfied and 3 ≤ Change in ecological value < 4	**70**
Requirements are satisfied and 2 ≤ Change in ecological value < 3	**60**
Requirements are satisfied and 1 ≤ Change in ecological value < 2	**50**
Requirements are satisfied and 0 ≤ Change in ecological value < 1	**40**
Requirements are satisfied and -2 ≤ Change in ecological value < 0	**30**
Requirements are satisfied and -3 ≤ Change in ecological value < -2	**20**
Requirements are satisfied and -9 ≤ Change in ecological value < -3	**10**
Requirements are not satisfied	**0**

Sub-indicator 1.7.1 Change in ecological value of the site: **30**

Indicator 1.7 Biodiversity and Depletion of Habitats: **30**

Δείκτης 1.8 Φωτορύπανση:

Environmental Quality

Indicator 1.8 Light Pollution

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **1.8 Light Pollution** is evaluated with 3 sub-indicators:

1.8.1 Lighting power densities.

1.8.2 Illuminance at the site boundary.

1.8.3 Angle of light emission.

2. Evaluation

Sub-indicator 1.8.1 Lighting power densities

Please indicate the value of the **lighting power densities** for each kind of spaces existing in your project:

(evidence can be found in **annex 1.8.1_1**)

Tradable surface		
	W/m² **W/m** **W/unit**	Limit value
Parking lots and drivers	**1**	1,6 W/m²
Walkways less than 3m wide	**1**	3,3 W/m
Walkways 3m wide		2,2 W/m²
Stairways	**0**	10,8 W/m²
Main entries	**50**	98 W/linear meter or door width
Other door		66 W/linear meter or door width

Canopies		13,5 W/m²
Open areas		5,4 W/m²
Street frontage for vehicle sales lots		5,4 W/m² of uncovered area
Non-Tradable surfaces		
Building facades		0,2 W/ft² for each illuminated wall or surface or 5.0 W/linear food for each illuminated wall or surface lenght
Automated teller machines and night depositories		270 W per location plus 90W per additional ATM
ATM	**75**	90 W/ATM
Entrances and gatehouse inspection stations at guarded facilities		5,4 W/m² of uncovered area
Drive-through windows at fast food restaurants		400 W/drive through
Parking near 24-hour retail entrances		800 W/main entry

Sub-indicator 1.8.2 Illuminance at the site boundary

Please specify the type of zone appropriate to your project

LZ1 (Intrinsically dark) ☐

LZ2 (Low district brightness) **X**

LZ3 (Medium district brightness) ☐

LZ4 (High district brightness) ☐

Please specify the maximal initial illuminance value:

Horizontal illuminance (lux) ☐ **lux**

Vertical illuminance (lux) **X** **lux**

At what distance (m) from the site boundary is the horizontal illuminance less than **0.1 lux**? [ ] **m**

1.8.2_2

Attenuation measure

Can all external lighting (except for safety and security lighting as well as illuminated advertisements) be automatically switched off between 23h and 7h?

Yes [ ] **No** [X]

1.8.2_3.

Please also indicate in **Annex 1.8.2_3** if other attenuation measures have been implemented/planned.

Sub-indicator 1.8.3 Angle of light emission

Are all designed fixtures lumens emitted at an angle lower than 90 degrees from nadir (straight down)?

Yes [ ] **No** [X]

If no, what is the percentage of the total initial designed fixture lumens that are emitted at an angle of 90 degrees or higher from nadir (straight down)? [30] **%**

1.8.3_1.

3. Indicator rating and score

1.8.1. Lighting power densities	**Points**
Lighting power densities **lower** than the ANSI/ASHRAE/IESNA Standards 90.1-2007 for the classified zone	**100**
Lighting power densities **higher** than the ANSI/ASHRAE/IESNA Standards 90.1-2007 for the classified zone	**0**
1.8.2. Illuminance at the site boundary	**Points**
Fulfilment of the requirement depending of the zone (Initial illuminance value < maximum)	**100**

Non-fulfilment of the requirement depending of the zone (Initial illuminance value > maximum) but **fulfilment of the attenuation measure**	**50**
Non-fulfilment of the requirement depending of the zone (Initial illuminance value > maximum) nor of the attenuation measure.	**0**
1.8.3. Angle of light emission	**Points**
All designed lumens fixture are emitted at an angle lower than 90 degrees from nadir	**100**
Fulfilment of the requirement depending on the zone	**90**
Percentage (of the total initial designed lumens fixture are emitted at an angle of 90 degrees or higher from nadir) close to the requirement (up to 1,5% higher)	**75**
Percentage higher than the requirement, up to 40 %	**30**
More than 40 % of the total initial designed lumens fixture are emitted at an angle of 90 degrees or higher from nadir	**0**

Sub-indicator 1.8.1 Lighting power densities:	**0**
Sub-indicator 1.8.2 Illuminance at the site boundary:	**50**
Sub-indicator 1.8.3 Angle of light emission:	**30**

Indicator 1.8 Light Pollution:	**26.6**

Δείκτης 1.11 Νερό και Απόβλητα:

Environmental Quality

Indicator 1.11 Water and Waste Water

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **1.11 Water and Waste Water** is evaluated with **1** sub-indicators:

1.11.1 Embodied water in building materials (not assessed in this version)
1.11.2 Embodied water in construction and deconstruction processes (not assessed in this version)
1.11.3 Operational Water Use and Waste Water

2. Evaluation

Sub-indicator 1.11.3 Operational Water Use and Waste Water

Was the Water Use Value W_{UV} successfully calculated:

Yes		No	X

If yes, please specify the correct statement::

W_{UV} < Target Value TV	
W_{UV} < Reference value R	
W_{UV} < Limit value L	
W_{UV} > Limit value L	

3. Indicator rating and score

1.11.3 Operational Water Use and Waste Water	Points

Calculation result for the calculation is available and the calculation result is lower than the dynamic target value: $W_{UV} < TV$	**100**
Calculation result for the calculation is available and the calculation result is lower than the dynamic limit value: $W_{UV} < R$	**50**
Calculation result for the calculation is available and the calculation result is lower than the dynamic limit value: $W_{UV} < L$	**10**
Calculation result for the calculation is available and the calculation result is greater than the dynamic limit value: $W_{UV} > L$	**1**
Calculation result for the calculation is not available	**0**

Sub-indicator 1.11.3 Operational Water Use and Waste Water	**0**
Indicator 1.11 Water and Waste Water:	**0**

Δείκτης 1.12 Χρήση Γής:

Environmental Quality

Indicator 1.12 Land use

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator 1.12 Land use is evaluated with 1 sub-indicator:

1.12.1 Land use change

2. Evaluation

Sub-indicator 1.12.1 Land use change

Please select the appropriate characteristics for the area where the project will be built:

The area for construction comes mostly from "brownfield redevelopment", especially by rehabilitation of **highly** contaminated industry and military locations.	
The area for construction comes mostly from "brownfield redevelopment", especially by rehabilitation of **low** contaminated industry and military locations.	
The area for construction was already designated as a "building area," "commercial area," or "traffic area" and/or was already primarily used as a building, industry, trade, or traffic area, but **without noteworthy contamination** from the previous type of use.	X
The area for construction was already designated to a traffic and residential area but had not yet been built on redensification.	
Previously undisturbed area: the area to be used for construction is used as a "building area" for the first time. Previously, it was designated to a forest, heath, or agricultural area.	

If the area was previously an undisturbed area (only if last box is checked):

Were there some additional recognized voluntary compensatory measures like green roofing implemented?

Yes ☐ **No** ☐

3. Indicator rating and score

1.12 Land use	Points
The area for construction comes mostly from "brownfield redevelopment", especially by rehabilitation of **highly** contaminated industry and military locations. OR Previously undisturbed area, but with additional implemented and recognized voluntary compensatory measures like green roofing.	**100**
The area for construction comes mostly from "brownfield redevelopment", especially by rehabilitation of **low** contaminated industry and military locations. OR Previously undisturbed area, but with additional implemented and recognized voluntary compensatory measures like green roofing.	**70**

The area for construction was already designated as a "building area," "commercial area," or "traffic area" and/or was already primarily used as a building, industry, trade, or traffic area, but **without noteworthy contamination** from the previous type of use. OR Previously undisturbed area, but with additional implemented and recognized voluntary compensatory measures like green roofing.	**50**
The area for construction was already designated to a traffic and residential area but had not yet been built on "redensification" OR Previously undisturbed area, but with additional implemented and recognized voluntary compensatory measures like green roofing.	**10**
Previously undisturbed area: the area to be used for construction is used as a "building area" for the first time without recognized compensatory measures. Previously, it was designated to a forest, heath, or agricultural area.	**0**

Sub-indicator 1.12.1 Land use change	**50**
Indicator 1.12 Land use	**50**

Δείκτης 1.13 Απόβλητα:

Environmental Quality

Indicator 1.13 Waste

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator 1.13 Waste is evaluated with 2 sub-indicators:

1.13.1 Recyclable Waste Storage

1.13.2 Composting

2. Evaluation

Sub-indicator 1.13.1 Recyclable Waste Storage

Is there a dedicated storage space to cater for recyclable materials generated by the building during occupation, compliant with the following:

a. Clearly labelled for recycling

b. Placed within accessible reach of the building

c. In a location with good vehicular access to facilitate collections.

Yes [X] **No** [ ]

What is the size of the space allocated to store the volume of recyclable materials generated by the building's operation?

Area: 8 **m²**

Building net floor area: 170 **m²**

Sub-indicator 1.13.2 Composting

If a composting strategy is implemented, is composting carried out:

Onsite ☐ **Offsite** ☐

- if **Onsite** is checked:

The following requirements are fulfilled:

1. A vessel is installed on site for composting suitable food waste resulting from the building's daily operation and use.

2. There is adequate space for storing segregated food waste and composted organic material.

3. At least one water outlet is provided for cleaning in and around the facility.

Yes ☐ **No** ☒ **X**

- if **Offsite** is checked:

The following requirements are fulfilled:

1. There is a dedicated segregated space for storing compostable food waste prior to collection and delivery to an alternative composting facility.

2. At least one water outlet is provided for cleaning in and around the facility.

Yes ☐ **No** ☒ **X**

3. Indicator rating and score

Requirements

The compliance with the following two **requirements** is evaluated:

1. A dedicated storage space to cater for recyclable materials generated by the building during occupation, compliant with the following:

a. Clearly labelled for recycling

b. Placed within accessible reach of the building

c. In a location with good vehicular access to facilitate collections.

2. The size of the space allocated must be adequate to store the likely volume of recyclable materials generated by the building's occupants/operation. The following must be complied with as a minimum:

a. At least 2 m^2 per 1000 m^2 of net floor area for buildings <5000 m^2

b. A minimum of 10 m^2 for buildings ≥5000 m^2

c. An additional 2 m^2 per 1000 m^2 of net floor area where catering is provided (with an additional

minimum of 10 m² for buildings ≥5000 m²).

1.13.1 Recyclable Waste Storage	Points
Compliance with both requirements	50
Compliance with one requirement	10
Not compliant	0

1.13.2 Composting	Points
Compliant with one of the options	50
Not compliant with any option	0

Sub-indicator 1.13.1 Recyclable Waste Storage:	50
Sub-indicator 1.13.2 Composting:	0
Indicator 1.13 Waste:	25

Δείκτης 1.14 Ενεργειακή Απόδοση του Εξοπλισμού του Κτιρίου (Ανελκυστήρας, Κυλιόμενες Σκάλες):

Environmental Quality

Indicator 1.14 Energy efficiency of building equipment (lifts, escalators and moving walkways)

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator 1.14 Energy efficiency of building equipment (lifts, escalators etc.) is evaluated with 4 sub-indicators:

1.14.1 Stairs and ramps planning

1.14.2 Lift design and efficiency

1.14.3 Escalator design and efficiency

1.14.4 Moving walkways design and efficiency

2. Evaluation

Sub-indicator 1.14.1 Stairs and ramps planning

Is there a clear signage indicating the location of the stairs/ramps?

Yes [ ] **No** [X]

Are stairs/ramps visible from building entrance or can they be seen before the lift?

Yes [X] **No** [ ]

Are stairs/ramps see-through or open throughout the occupied floors of the building?

Alternatively, if this is not possible (e.g. due to fire separation requirements), are they expressed in a way that they are easily identified and architecturally appealing to building users?

Yes [ ] **No** [X]

Is the travel distance from entrance to the stairs/ramps less than to the lifts?

Yes [X] **No** [ ]

Sub-indicator 1.14.2 Lift design and efficiency

Has an analysis of transport demand and patterns for the building been carried out by the design team to determine the optimum number and size of lifts and counterbalancing ratio (see **annex 1.14**)?

Yes [ ] **No** [X]

The energy consumption of the lifts in real time is metered and the information can be easily accessed by the building occupants (e.g. it is available through the network, the internet, or displayed in a visible location like the lift lobby or inside the lifts).

Yes [ ] **No** [X]

Was it possible to calculate the average energy efficiency class for all the lifts in the building as defined by VDI 4707?

Yes [ ] **No** [X]

If **yes,** please specify the average energy efficiency class for all the lifts

average energy efficiency class	**A**	**B**	**C**	**D**	**E**	**F**	**G**

If **no,** please specify which of the following requirements is/are achieved:

The total weight of the car (including frame, finishes and associated equipment) doesn't [ ]

exceed 60% of the rating of the lift (i.e. nominal load).

The lifts operate in a standby mode during off-peak and idle periods. For example, the power side of the lift controller and other auxiliary equipment such as lift car lighting and ventilation fan switch off when the lift is not in motion.

Lift motors use a drive controller capable of variable-speed, variable-voltage, variable-frequency control of the drive motor.

The lift car uses energy-efficient lighting and display lighting (>60 lumens/watt or fittings that consume less than 5W e.g. LEDs).

Where it is proved to be beneficial from the energy saving point of view, the lift has a regenerative unit so that energy generated by the lift (due to running up empty and down full) is returned back to the grid or used elsewhere on site.

The lift cars (or lift shafts) do not require air conditioning or heating.

Sub-indicator 1.14.3 Escalator design and efficiency

Has an analysis of transport demand and patterns for the building been carried out by the design team to determine the optimum number and size of escalators (see **annex 1.14**)?

Yes [ ] **No** [X]

Do escalators have handrail lighting?

Yes [ ] **No** [X]

Are the escalators fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive?

Yes [ ] **No** [X]

Are the escalators fitted with a passenger sensing device for automated operation, so the escalators operate in standby mode when there is no passenger demand?

Yes [ ] **No** [X]

1.14.3_1

Sub-indicator 1.14.4 Moving walkways design and efficiency

Has an analysis of transport demand and patterns for the building been carried out by the design team to determine the optimum number and size of moving walkways (see **annex 1.14**)?

Yes ☐ **No** ☒ **X**

Do moving walkways have handrail lighting?

Yes ☐ **No** ☒ **X**

Are the moving walkways fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive?

Yes ☐ **No** ☒ **X**

Are the moving walkways fitted with a passenger sensing device for automated operation, so the moving walkways operate in standby mode when there is no passenger demand?

Yes ☐ **No** ☒ **X**

1.14.3_1

3. Indicator rating and score

1.14.1 Stairs and ramps planning	**Points**
Both requirements are fulfilled, and there is clear signage indicating the location of the stairs/ramps	**100**
One of the two requirements if fulfilled, and there is clear signage indicating the location of the stairs/ramps	**55**
There is clear signage indicating the location of the stairs/ramps	**10**
There is no measure facilitating the use of stair/ramps	**0**
1.14.2 Lift design and efficiency	**Points**
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of	**100**

lifts and counterbalancing ratio. The energy consumption of the lifts in real time is metered and the information can be easily accessed by the building occupants (e.g. it is available through the network, the internet, or displayed in a visible location like the lift lobby or inside the lifts). The average energy efficiency class for all the lifts in the building as defined by VDI 4707 is **A** OR **All** requirements are achieved.	
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of lifts and counterbalancing ratio. The average energy efficiency class for all the lifts in the building as defined by VDI 4707 is **A** OR **All** requirements are achieved.	**90**
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of lifts and counterbalancing ratio. The average energy efficiency class for all the lifts in the building as defined by VDI 4707 is **B** OR **Five** of the six requirements are achieved.	**80**
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of lifts and counterbalancing ratio. The average energy efficiency class for all the lifts in the building as defined by VDI 4707 is **C** OR **Four** of the six requirements are achieved.	**70**
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of lifts and counterbalancing ratio. The average energy efficiency class for all the lifts in the building as defined by VDI 4707 is D OR **Three** of the six requirements are achieved.	**60**
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of lifts and counterbalancing ratio. The average energy efficiency class for all the lifts in the building as defined by VDI 4707 is **E** OR **Two** of the six requirements are achieved.	**50**

An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of lifts and counterbalancing ratio. The average energy efficiency class for all the lifts in the building as defined by VDI 4707 is **F** OR **One** of the six requirements is achieved.	**40**
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of lifts and counterbalancing ratio.	**20**
No analysis was carried.	**0**
1.14.3 Escalator design and efficiency	**Points**
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of escalators. The escalator is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive OR The escalator is fitted with a passenger sensing device for automated operation, so the escalator operates in standby mode when there is no passenger demand.	**100**
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of escalators.	**50**
The escalators do not have handrail lighting.	**10**
No analysis was carried.	**0**
1.14.4 Moving walkway design and efficiency	**Points**
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of moving walkways. The moving walkway is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive OR The moving walkway is fitted with a passenger sensing device for automated	**100**

operation, so it operates in standby mode when there is no passenger demand.	
An analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of moving walkways.	**50**
The moving walkways do not have handrail lighting	**10**
No analysis was carried.	**0**

Sub-indicator 1.14.1 Stairs and ramps planning:	**0**
Sub-indicator 1.14.2 Lift design and efficiency:	**0**
Sub-indicator 1.14.3 Escalator design and efficiency	**0**
Sub-indicator 1.14.3 Moving walkways design and efficiency	**0**

Indicator 1.14 Energy efficiency of building equipment	**0**

3.2. Κοινωνική / Λειτουργική Ποιότητα

Η δεύτερη κατηγορία είναι η **Κοινωνική / Λειτουργική Ποιότητα** και αφορά τους παρακάτω δείκτες:

Κοινωνική / Λειτουργική Ποιότητα	2.1 Ανεμπόδιστη Προσβασιμότητα	50	100	50%	1	48,5%
	2.2 Προσωπική Προστασία και Ασφάλεια Χρηστών	58,3	100	58,3%	1	
	2.3 Θερμική Άνεση	27,5	100	27,5%	1	
	2.4 Εσωτερική Ποιότητα Αέρα	0	100	0%	1	
	2.5 Ποιότητα Νερού	80	100	80%	1	
	2.6 Ακουστική Άνεση	100	100	100%	1	
	2.7 Οπτική Άνεση	17	100	17%	1	
	2.8 Άνεση Λειτουργίας	57	100	57%	1	
	2.9 Ποιότητα Υπηρεσιών	5	100	5%	1	
	2.10 Ηλεκτρομαγνητική Ρύπανση	50	100	50%	1	
	2.11 Δημόσια Πρόσβαση	40	100	40%	1	
	2.12 Θόρυβος από το Κτίριο και την Τοποθεσία	100	100	100%	1	
	2.13 Ποιότητα Σχεδιασμού και Αστικής Ανάπτυξης του Κτιρίου και του Οικοπέδου	60	100	60%	1	
	2.14 Αποδοτικότητα της Περιοχής	100	100	100%	1	
	2.15 Επιτυχία Μετατροπής (Χώρου)	62	100	62%	1	
	2.16 Άνεση Ποδηλάτων	66	100	66%	1	
	2.17 Υπεύθυνη Προμήθεια Υλικών	0	100	0%	1	
	2.18 Τοπικά Υλικά	0	100	0%	1	

1. Στόχοι:

2.1 Ανεμπόδιστη Προσβασιμότητα: σχεδιασμός και κατασκευή κτιρίων με τις καλύτερες δυνατές παροχές για άτομα με ειδικές ανάγκες.

2.2 Προσωπική Προστασία και Ασφάλεια των Χρηστών: αποφυγή των καταστάσεων κινδύνου και αύξηση της αίσθησης ασφαλείας

2.3 Θερμική Άνεση : η θερμική άνεση υποστηρίζει την ευημερία των χρηστών του κτιρίου και αυξάνει την παραγωγικότητα

2.4 Εσωτερική Ποιότητα Αέρα: Ο στόχος είναι να βεβαιωθεί η εσωτερική ατμοσφαιρική ποιότητα και να αποφευχθούν οι αρνητικές επιδράσεις στην υγεία των χρηστών.

2.5 Ποιότητα Νερού: για να προστατεύσει την υγεία των χρηστών του κτιρίου από τα δυσμενή αποτελέσματα οποιασδήποτε μόλυνσης με την εξασφάλιση ότι το νερό είναι θρεπτικό και καθαρό

2.6 Ακουστική Άνεση: εξασφάλιση της κατάλληλης ακουστικής ποιότητας για την προώθηση της άνεσης και την απόδοση των χρηστών του κτιρίου.

2.7 Οπτική Άνεση: ένας υψηλής - ποιότητας φωτισμός με χαμηλή ζήτηση ενέργειας για το φωτισμό και την σκίαση

2.8 Άνεση Λειτουργίας: οι δυνατότητες του χρήστη να ελέγξει ή να ασκήσει επίδραση στις παραμέτρους του εσωτερικού περιβάλλοντος
2.9 Ποιότητα Υπηρεσιών: παροχή λειτουργικής ποιότητας στις καθημερινές διαδικασίες ενός κτιρίου γραφείων
2.10 Ηλεκτρομαγνητική Ρύπανση: λαμβάνει υπόψη τις επιδράσεις της ηλεκτρομαγνητικής ρύπανσης στο κτίριο
2.11 Δημόσια Πρόσβαση: πρόσβαση με μέσα μεταφοράς
2.12 Θόρυβος από το Κτίριο και την Τοποθεσία: Η πιθανότητα του θορύβου από το νέο κτίριο να επηρεάζει γειτονικά κτίρια και εν γένει τον χώρο που βρίσκεται το κτίριο.
2.13 Ποιότητα Σχεδιασμού και Αστικής Ανάπτυξης του Κτιρίου και του Οικοπέδου: Επιδιώκει την καλύτερη λύση για τους αρχιτεκτονικούς και κατασκευαστικούς στόχους
2.14 Αποδοτικότητα της Περιοχής: Βαθμός αξιοποίησης της περιοχής
2.15 Επιτυχία Μετατροπής Χώρου: υψηλή αποδοτικότητα, ευελιξία και προσαρμοστικότητα του κτηρίου
2.16 Άνεση Ποδηλάτων: Παροχή υπηρεσιών (ενοικίασης -χώροι στάθμευσης ποδηλάτων) για ποδήλατα.
2.17 Υπεύθυνη Προμήθεια Υλικών: Χρήση πιστοποιημένων υλικών για την μη καταπόνηση στο περιβάλλον.
2.18 Τοπικά Υλικά: **Διαδικασία ανάπτυξης του δείκτη**

2. Μεθοδολογία αξιολόγησης, Υπολογισμός και βαθμολογία

Για τον Υπολογισμό των Δεικτών συμπληρώνουμε την φόρμα με τα δεδομένα μας και υπολογίζουμε την βαθμολογία μας.
Οι φόρμες με τις απαντήσεις συμπληρωμένες και την βαθμολογία ακολουθούν ανά δείκτη:

Δείκτης 2.1 Ανεμπόδιστη Προσβασιμότητα:

Social / Functional Quality

Indicator 2.1 Barrier-free accessibility

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.1 Barrier-free accessibility** is evaluated with **1** sub-indicator:

2.1.1 Barrier-free accessibility

2. Evaluation

Sub-indicator 2.1.1 Barrier-free accessibility

Are the **public areas** of the building fulfilling the building standards of the country or other applicable standards for barrier free accessibility?

Yes [X] **No** [ ]

Which share of the **working areas** of the building fulfils the building standards of the country or other applicable standards for barrier-free accessibility?

[50] % of net floor area

2.1.1_3

Which share of the **accessible parts of the outdoor facilities** -if existing- of the building fulfils the building standards of the country or other applicable standards for barrier-free accessibility?

[0] % of net floor area

3. Indicator rating and score

2.1.1 Barrier-free Accessibility	**Points**
The public areas of the building fulfil the building standards of the country or other applicable standards for barrier free accessibility. In addition at least 95% of the work areas (net floor area) and the accessible parts of the outdoor facilities -if existing- are handicapped accessible in compliance with applicable standards or the building standard of the country for barrier free accessibility.	**100**
The public areas of the building fulfil the building standards of the country or	**75**

other applicable standards for barrier free accessibility. In addition at least 75% of the work areas (net floor area) and at least 50% of the accessible parts of the outdoor facilities -if existing- are handicapped accessible in compliance with applicable standards or the building standard of the country for barrier free accessibility.	
The public areas of the building fulfil the building standards of the country or other applicable standards for barrier free accessibility. In addition at least 50% of the work areas (net floor area) are handicapped accessible in compliance with applicable standards or the building standard of the country for barrier free accessibility.	**50**
The public areas of the building fulfil the building standards of the country or other applicable standards for barrier free accessibility. In addition some work areas are handicapped accessible in compliance with applicable standards or the building standard of the country for barrier free accessibility.	**25**
The public areas of the building fulfil the building standards of the country or other applicable standards for barrier free accessibility. If there is no building standard for barrier free accessibility the building must be basically handicapped accessible.	**10**
The building is not barrier free accessible	**0**

Sub-indicator 2.1.1 Barrier-free accessibility	**50**

Indicator 2.1.1 Barrier-free accessibility:	**50**

Δείκτης 2.2 Προσωπική Προστασία και Ασφάλεια των Χρηστών:

Social / Functional Quality

Indicator 2.2 Personal Safety and Security of Users

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.2 Personal Safety and Security of Users** is evaluated with **3** sub-indicators:

2.2.1 Satisfaction of minimum health and safety requirements in the workplace

2.2.2 Reduction of damage if an accident should occur

2.2.3 Measures preventing building users from crime

2. Evaluation

Sub-indicator 2.2.1 The satisfaction of minimum health and safety requirements in the workplace

Compliance with Directive 89/654/EEC is evaluated with regard to the following main issues. Please check all requirements achieved in your project:

Main paths are clearly marked, visible, and well lit.	X
All paths are clearly marked, visible, and well lit.	X
- Technical safety equipment (emergency telephones, video surveillance, etc.) is present.	X
- Electrical installations is designed and constructed so as not to present danger in case of accidents.	
- The workplace and the equipment and devices are regularly cleaned to an adequate level of hygiene.	
Employees and/or their representatives are informed of all measures to be taken concerning safety and health at the workplace	X
- Emergency telephones are easily recognizable and accessible.	
- Women's parking lots are available, close to the building, and well lit.	

Sub-indicator 2.2.2 Reduction of damage if an accident should occur

Compliance with Directive 89/654/EEC is evaluated with regard to the following main issues.

Please check all requirements achieved in your project:

All legal requirements for fire protection and disaster control are fully met.	X
Operating instructions are available for ventilation systems in the case of contaminated air inside the building	X
- Evacuation plans for contaminated air inside the building are present.	X
- Construction materials that lead to caustic or corrosive fumes in the case of fire have not been used.	
People with physical limitations (impaired mobility, visually impaired, or hard of hearing) can use the escape routes and/or alternative escape routes are available for these groups	X

Sub-indicator 2.2.3 Measures preventing building users from crime

Please check all requirements achieved in your project:

An alarm system is in place	
Contact people (doorman, security) are available during working hours.	
Contact people (doorman, security) are available even during non-working hours	
Outdoor facilities are under video surveillance even during non-working hours by a person who is available at any time (doorman, security).	

3. Indicator rating and score

2.2.1 Satisfaction of minimum health and safety requirements at the workplace	Points
All paths are clearly marked, visible, and well lit. Technical safety equipment (emergency telephones, video surveillance, etc.) is present. Emergency telephones are easily recognizable and accessible. Women's parking lots are available, close to the building, and well lit. Employees and/or their representatives are informed of all measures to be taken concerning safety and health at the workplace. Electrical installations is designed and constructed so as not to present danger in case of accidents. The workplace and the equipment and devices are regularly cleaned to an adequate level of hygiene.	**100**
All paths are clearly marked, visible, and well lit. Technical safety equipment (emergency telephones, video surveillance, etc.) is present.	**75**

Employees and/or their representatives are informed of all measures to be taken concerning safety and health at the workplace. Electrical installations is designed and constructed so as not to present danger in case of accidents. The workplace and the equipment and devices are regularly cleaned to an adequate level of hygiene.	
Main paths are clearly marked, visible, and well lit. Technical safety equipment (emergency telephones, video surveillance, etc.) is present. Electrical installations is designed and constructed so as not to present danger in case of accidents. The workplace and the equipment and devices are regularly cleaned to an adequate level of hygiene.	**50**
Main paths are clearly marked, visible, and well lit.	**10**
Minimum health and safety requirements at the workplace are not satisfied	**0**
2.2.2 Reduction of damage if an accident should occur	**Points**
Evacuation plans for contaminated air inside the building are present. Construction materials that lead to caustic or corrosive fumes in the case of fire have not been used. People with physical limitations (impaired mobility, visually impaired, or hard of hearing) can use the escape routes and/or alternative escape routes are available for these groups.	**100**
Evacuation plans for contaminated air inside the building are present. Construction materials that lead to caustic or corrosive fumes in the case of fire have not been used.	**75**
Operating instructions are available for ventilation systems in the case of contaminated air inside the building	**50**
All legal requirements for fire protection and disaster control are fully met.	**10**
Legal requirements are not met	**0**

2.2.3 Measures preventing building users from crime	Points
Outdoor facilities are under video surveillance even during non-working hours by a person who is available at any time (doorman, security). An alarm system is in place with central monitoring.	100
Contact people (doorman, security) are available even during non-working hours. An alarm system is in place.	75
Contact people (doorman, security) are available during working hours. An alarm system is in place.	50
An alarm system is in place	10
No measure is taken.	0

Sub-indicator 2.2.1 Satisfaction of minimum health and safety requirements at the workplace	**75**
Sub-indicator 2.2.2 Reduction of damage if an accident should occur	**100**
Sub-indicator 2.2.3 Measures preventing building users from crime	**0**
Indicator 2.2 Personal Safety and Security of Users	**58,3**

Δείκτης 2.3 Θερμική Άνεση:

Social / Functional Quality

Indicator 2.3 Thermal Comfort

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.3 Thermal Comfort** is evaluated with **4** sub-indicators:

2.3.1 Operative temperature

2.3.2 Radiant temperature asymmetry and floor temperature

2.3.3 Draught, air velocity

2.3.4 Humidity in indoor air

2. Evaluation

Sub-indicator 2.3.1 Operative temperature

Please specify the evaluation method chosen:

1.Thermal building simulations	
2.Measurements according to EN ISO 7726	X
3.Heating load calculations according to EN 12831	

Winter requirements

If **1 or 2,** with which category defined in EN 15251/EN ISO 7730 is the building compliant?

Category	I	II	III	None

If **3,** with which minimum room temperature defined in EN 12831 is the building compliant?

Minimum room temperature	21°C	20°C	< 20°C

Is there compliance with the national standards?

Yes	X	No	

Summer requirements

With which category defined in EN 15251/EN ISO 7730 is the building compliant?

Category	I	II	III	None

Is there compliance with the national standards to avoid summerly overheat?

Yes [X] **No** [ ]

Sub-indicator 2.3.2 Radiant temperature asymmetry and floor temperature

With which category defined in EN ISO 7730 is the building compliant?

Category **I** **II** **III** **None**

Sub-indicator 2.3.3 Draught, air velocity

Does the building include a HVAC (Heating, Ventilating and Air Conditioning) system?

Yes [ ] **No** [X]

With which category defined in EN ISO 7730 is the building compliant?

Category **I** **II** **III** **None**

Sub-indicator 2.3.4 Humidity in indoor air

What is the value of the absolute humidity?

Absolute humidity [7] g of water per kg of dry air

3. Indicator rating and score

2.3.1.a Operative Temperature (Winter)	Points
Compliance with Category I of EN 15251/ EN ISO 7730 OR compliance with EN 12831 (minimum room temperature 21°C)	**50**
Compliance with Category II of EN 15251/ EN ISO 7730 OR compliance with EN 12831 (minimum room temperature 20°C)	**25**
Compliance with Category III of EN 15251/ EN ISO 7730 OR compliance with minimum national criteria, whatever is more restrictive	**5**

No compliance with minimum national criteria	**0**
2.3.1.b Operative Temperature (Summer)	**Points**
Compliance with Category I of EN 15251/ EN ISO 7730 AND Compliance with national standards to avoid summerly overheating	**50**
Compliance with Category III of EN 15251/ EN ISO 7730 AND compliance with national standards to avoid summerly overheating	**25**
Compliance with Category III of EN 15251/ EN ISO 7730 AND compliance with national standards to avoid summerly overheating	**15**
Compliance with national standards to avoid summerly overheating	**10**
No compliance with minimum national criteria	**0**
2.3.2 Radiant temperature asymmetry and floor temperature	**Points**
Values are compliant (EN 7730) Category I, II	**100**
Values are compliant (EN 7730) Category III	**50**
Values are not compliant (EN 7730)	**0**
2.3.3 Draught, air velocity	**Points**
Compliant with Category I, II EN ISO 7730, paragraph A4, Table A5	**100**
Compliant with Category III EN ISO 7730, paragraph A4, Table A5	**50**
Non-compliant with Category I, II, III EN ISO 7730, paragraph A4, Table A5	**0**
2.3.4 Humidity in indoor air	**Points**
Absolute humidity of 12 g of water per kg of dry air compliant	**100**
Absolute humidity of 12 g of water per kg of dry air non-compliant	**0**

2.3.1 Operative temperature	**10**
2.3.2 Radiant temperature asymmetry and floor temperature	**0**

2.3.3 Draught, air velocity	**0**
2.3.4 Humidity in indoor air	**100**
Indicator 2.3 Thermal Comfort:	**27.5**

Δείκτης 2.4 Εσωτερική Ποιότητα Αέρα:

Social / Functional Quality

Indicator 2.4 Indoor Air Quality

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.4 Indoor Air Quality** is evaluated with **4** sub-indicators:

2.4.1 Indoor air contamination with the most relevant indoor air pollutants (formaldehyde, naphtalene, toluene, xylene, styrene).

2.4.2 Contamination levels of non-specific allergenic, pathogenic or toxic fungal spores

2.4.3 Occupancy-based ventilation rates

2.4.4 CO2 concentration above outdoor level

2. Evaluation

Sub-indicator 2.4.1 Indoor air contamination with the most relevant indoor air pollutants (formaldehyde, naphthalene, toluene, xylene, styrene).

What is the concentration of formaldehyde in indoor air?

Formaldehyde [ ] μg/m³

What is the concentration of naphthalene in indoor air?

Naphthalene ☐ μg/m³

What is the concentration of toluene in indoor air?

Toluene ☐ μg/m³

What is the concentration of xylene in indoor air?

Xylene ☐ μg/m³

What is the concentration of styrene in indoor air?

Styrene ☐ μg/m³

Sub-indicator 2.4.2 Contamination levels of non-specific allergenic, pathogenic or toxic fungal spores

Are the indoor mould level or spore counts no more than 50% of the outdoor level during winter time?

Yes ☐ **No** **X**

If **yes**, evidence of the contamination level can be found in **Annex 2.4.2_1 and 2.4.2_2.**

If **no**: 0 points

What is the level of spore counts in indoor air?

Spore counts ☐ / m³

Sub-indicator 2.4.3 Occupancy-based ventilation rates

With which category defined in EN 15251 is the building compliant?

Category ☐ **I** ☐ **II** ☐ **III** ☐ **None**

Is the building compliant with national regulations?

Yes ☐ **No** **X**

Sub-indicator 2.4.4 CO2 concentration above outdoor level

How high is the concentration of CO_2 above the outdoor level?

CO_2 ☐ PPM above the outdoor air level

3. Indicator rating and score

2.4.1.a Indoor air contamination with the most relevant indoor air pollutants: Formaldehyde	**Points**
<10 μg/m³	**20**
<10-60 μg/m³	**15**
<60-100 μg/m³	**5**
>100 μg/m³	**0**
2.4.1.b Indoor air contamination with the most relevant indoor air pollutants: Naphthalene	**Points**
<2 μg/m³	**20**
<2-5 μg/m³	**15**
<5-10 μg/m³	**5**
>10 μg/m³	**0**
2.4.1.c Indoor air contamination with the most relevant indoor air pollutants: Toluene	**Points**
<5 μg/m³	**20**
<5-80 μg/m³	**15**
80-180 μg/m³	**10**
<180-250 μg/m³	**5**
>250 μg/m³	**0**
2.4.1.d Indoor air contamination with the most relevant indoor air pollutants: Styrene	**Points**
<2 μg/m³	**20**

<2-20 μg/m³	**15**
<20-30 μg/m³	**5**
>30 μg/m³	**0**
2.4.1.e Indoor air contamination with the most relevant indoor air pollutants: Xylenes	**Points**
<5 μg/m³	**20**
<5-30 μg/m³	**15**
<30-80 μg/m³	**10**
<80-150 μg/m³	**5**
>150 μg/m³	**0**
2.4.2. Microbiological situation (currently not activated)	**Points**
Indoor mould spore counts of < 50/m³	**100**
Indoor mould spore counts of < 200/m³	**50**
No more than 50% of the outdoor level during winter time	**10**
Indoor mould spore counts of < 10000/m³	**0**
2.4.3 Occupancy-based ventilation rates	**Points**
Category I	**100**
Category II	**75**
Category III or national regulations	**10**
Category IV	**0**
2.4.4 CO_2 concentration above outdoor level	**Points**

< 350 PPM above outdoor level	**100**
<400 PPM	**90**
<450 PPM	**80**
<500 PPM	**70**
<550 PPM	**60**
<600 PPM	**50**
<650 PPM	**40**
<700 PPM	**30**
<750 PPM	**20**
<800 PPM	**10**
>800 PPM above outdoor level	**0**

Sub-indicator 2.4.1 Indoor air contamination with the most relevant indoor air pollutants (formaldehyde, naphtalene, toluene, xylene, styrene).	**0**
Sub-indicator 2.4.2 Contamination levels of non-specific allergenic, pathogenic or toxic fungal spores	**0**
Sub-indicator 2.4.3 Occupancy-based ventilation rates	**0**
Sub-indicator 2.4.4 CO2 concentration above outdoor level	**0**

Indicator 2.4 Indoor Air Quality:	**0**

Δείκτης 2.5 Ποιότητα Νερού:

Social / Functional Quality

Indicator 2.5 Water Quality

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.5 Water Quality** is evaluated with **5** sub-indicators:

2.5.1 Presence of micro-organisms and parasites

2.5.2 Chemical, indicator and radioactivity parameters

2.5.3 Frequency of monitoring

2.5.4 Ensuring constant water supply through the day/year

2.5.5 Choosing ozonation instead of chlorination for water disinfection

2. Evaluation

Sub-indicator 2.5.1 Presence of micro-organisms and parasites

Is there compliance with DIRECTIVE 98/83/EC?

Yes [X] **No** [ ]

Sub-indicator 2.5.2 Chemical, indicator and radioactivity parameters

Is there compliance with DIRECTIVE 98/83/EC?

Yes [X] **No** [ ]

Sub-indicator 2.5.3 Frequency of monitoring

Is there compliance with DIRECTIVE 98/83/EC?

Yes [X] **No** [ ]

Sub-indicator 2.5.4 Ensuring constant water supply through the day/year

Is there constant water supply through the day and year?

Yes [X] **No** [ ]

Sub-indicator 2.5.5 Choosing ozonation instead of chlorination for water disinfection

Is ozonation used instead of chlorination for water disinfection?

Yes [ ] **No** [X]

3. Indicator rating and score

2.5.1 Presence of micro-organisms and parasites	Points
Compliance with DIRECTIVE 98/83/EC	100
Not compliance with DIRECTIVE 98/83/EC	0

2.5.2 Chemical, indicator and radioactivity parameters	Points
Compliance with DIRECTIVE 98/83/EC	100
Not compliance with DIRECTIVE 98/83/EC	0

2.5.3 Frequency of monitoring	Points
Compliance with DIRECTIVE 98/83/EC	100
Not compliance with DIRECTIVE 98/83/EC	0

2.5.4 Constant water supply through the day/year	Points
Constant water supply through the day/year	100
No constant water supply	0

2.5.5 Ozonation instead of chlorination for water disinfection	Points
Ozonation instead of chlorination for water disinfection	100
Not compliant	0

Sub-indicator 2.5.1 Presence of micro-organisms and parasites **100**

Sub-indicator 2.5.2 Chemical, indicator and radioactivity parameters	**100**
Sub-indicator 2.5.3 Frequency of monitoring	**100**
Sub-indicator 2.5.4 Ensuring constant water supply through the day/year	**100**
Sub-indicator 2.5.5 Choosing ozonation instead of chlorination for water disinfection	**0**

Indicator 2.5 Water Quality:	**80**

Έλεγχος Ποιότητας Ακατέργαστου & Πόσιμου Νερού

Το πόσιμο νερό

Ως πόσιμο χαρακτηρίζεται το νερό που είναι καθαρό από φυσική, βιολογική και μικροβιολογική άποψη και μπορεί να καταναλώνεται χωρίς να θέτει σε κίνδυνο την υγεία του ανθρώπου. Το νερό πρέπει να είναι άχρωμο, άοσμο, δροσερό και με ευχάριστη γεύση. Δεν πρέπει να έχει μεγάλη σκληρότητα γιατί αυτή προκαλεί δυσκολίες στην καθημερινή αλλά και τη βιομηχανική του χρήση. Δεν πρέπει να περιέχει οργανικές ουσίες, βαρέα μέταλλα ούτε και παθογόνα παράσιτα ή μικρόβια. Η θερμοκρασία του πόσιμου νερού πρέπει να είναι σταθερή στους 10-15 oC.

Η ποιότητα του νερού της ΕΥΔΑΠ

Το θέμα της ποιότητας του νερού είναι ιδιαίτερα σημαντικό για την ΕΥΔΑΠ γιατί σχετίζεται άμεσα με την υγεία των 5.000.000 κατοίκων της Αθήνας αλλά και των περιχώρων. Επιπρόσθετα, η ποιότητα του νερού είναι μια από τις πιο σημαντικές παραμέτρους για τη λήψη στρατηγικών αποφάσεων σχετικών με τη διαχείρισή του.

Για τους λόγους αυτούς, η ΕΥΔΑΠ, ως η μεγαλύτερη εταιρεία ύδρευσης και αποχέτευσης στον ελληνικό χώρο, διαθέτει τέσσερα σύγχρονα εργαστήρια ελέγχου ποιότητας του ανεπεξέργαστου και του πόσιμου νερού, τα οποία είναι εφοδιασμένα με όλο τον απαιτούμενο εξοπλισμό για την διενέργεια των αναλύσεων που απαιτούνται από τη νομοθεσία.

Ο εξοπλισμός των εργαστηρίων περιλαμβάνει αέριους χρωματογράφους, χρωματογράφους μάζας, ιοντικούς χρωματογράφους, ICP, φασματοφωτόμετρα καθώς και άλλες μικρότερες αναλυτικές συσκευές που παράγουν καθημερινά αξιόπιστα αλλά και αδιαμφισβήτητα αποτελέσματα.

Επιπλέον, το Χημικό Εργαστήριο Γαλατσίου, το Χημικό Εργαστήριο Πολυδενδρίου και το Μικροβιολογικό Εργαστήριο της Υπηρεσίας Ελέγχου Ποιότητος Ύδατος είναι διαπιστευμένα από το Εθνικό Σύστημα Διαπίστευσης (ΕΣΥΔ Α.Ε.) κατά ISO 17025 και το πεδίο διαπίστευσής τους περιλαμβάνει 35 παραμέτρους.

Γι΄ αυτό, το νερό που καθημερινά διοχετεύει η ΕΥΔΑΠ στην κατανάλωση είναι άριστης ποιότητας. Όντας όχι μόνο ασφαλές – πληρεί τους όρους των σχετικών υγειονομικών διατάξεων – αλλά και πόσιμο, θεωρείται ως ένα από τα καλύτερα νερά της Ευρώπης.

Έλεγχος ποιότητας του ανεπεξέργαστου και του πόσιμου νερού της ΕΥΔΑΠ

Στα εργαστήρια ελέγχου ποιότητας ύδατος πραγματοποιούνται αναλύσεις και εξετάσεις σε δείγματα νερού που συλλέγονται από όλο το υδρευτικό σύστημα της ΕΥΔΑΠ.

Συγκεκριμένα, ανά εργαστήριο πραγματοποιούνται οι ακόλουθες εργασίες:

Τμήμα ανόργανης ανάλυσης – Χημικό Εργαστήριο Γαλατσίου

- Προσδιορισμοί φυσικοχημικών παραμέτρων (pH, αγωγιμότητα, θολότητα αλκαλικότητα, σκληρότητα, στερεό υπόλειμμα)
- Προσδιορισμοί κυρίων ιόντων (φθοριούχα, χλωριούχα, νιτρικά, νιτρώδη, φωσφορικά και θειικά ιόντα, ιόντα ασβεστίου, μαγνησίου, αμμωνίου, καλίου και νατρίου)
- Δοκιμαστική παρακολούθηση ΜΕΝ Γαλατσίου, ΜΕΝ Αχαρνών, ΜΕΝ Ασπροπύργου και δικτύου ύδρευσης
- Αναλύσεις και ταυτοποιήσεις δειγμάτων υπογείων διαρροών

Μικροβιολογικό Εργαστήριο

- Προσδιορισμοί ετερότροφων βακτηρίων, ολικών κολοβακτηριοειδών, E.coli, εντεροκόκκων, σαλμονέλων, Clostridium perfrigens

Τμήμα ελέγχου μετάλλων – Χημικό Εργαστήριο Πολυδενδρίου

- Προσδιορισμοί τοξικών μετάλλων (Ag, As, Ba, B, Cr, Cu, Fe, Hg, Mn, Ni, Pb, Sb, Se, Sn)
- Δοκιμαστική παρακολούθηση ΜΕΝ Πολυδενδρίου

Τμήμα οργανικών μικρορρύπων – Χημικό Εργαστήριο Αχαρνών

- Προσδιορισμοί φυτοφαρμάκων και ζιζανιοκτόνων
- Προσδιορισμοί πολυκυκλικών υδρογονανθράκων
- Προσδιορισμοί φαινολικών ουσιών
- Προσδιορισμοί λιπών και ελαίων
- Προσδιορισμοί τοξινών

Τμήμα βιολογικών και τοξικολογικών εξετάσεων – Εργαστήριο Πολυδενδρίου και Εργαστήριο Γαλατσίου

- Προσδιορισμοί DOC
- Προσδιορισμοί χλωροφύλλης
- Βιολογικές εξετάσεις φυτοπλαγκτού
- Εξετάσεις πρωτοζώων

Τμήμα παραπροϊόντων απολύμανσης – Χημικό Εργαστήριο Αχαρνών

- Προσδιορισμοί τριαλομεθανίων

Τμήμα Δειγματοληψίας

- Τακτική δειγματοληψία από ταμιευτήρες, ΜΕΝ και δίκτυο ύδρευσης
- Δειγματοληψία παραπόνων πελατών
- Δειγματοληψία εκτάκτων δειγμάτων μετά από επεμβάσεις στο δίκτυο ύδρευσης

Ετήσιος αριθμός προσδιορισμών παραμέτρων ποιότητας στο ανεπεξέργαστο και στο πόσιμο νερό της ΕΥΔΑΠ

Οι προσδιορισμοί παραμέτρων ποιότητας που εκτελούνται ετησίως στα εργαστήρια ελέγχου ποιότητος ύδατος της ΕΥΔΑΠ ξεπερνούν τις 100.000 σε αριθμό.

Ο αριθμός αυτός κατανέμεται ως εξής:

- Πάνω από 45.000 χημικοί και μικροβιολογικοί προσδιορισμοί στο δίκτυο ύδρευσης της ΕΥΔΑΠ.

- Πάνω από 45.000 χημικοί και μικροβιολογικοί προσδιορισμοί στην είσοδο και την έξοδο των Μονάδων Επεξεργασίας Νερού (ΜΕΝ) της ΕΥΔΑΠ.

- Πάνω από 7.000 προσδιορισμοί στους ταμιευτήρες της ΕΥΔΑΠ (Μόρνος, Εύηνος, Υλίκη και Μαραθώνας).

- Πάνω από 10.000 προσδιορισμοί σε έκτακτα δείγματα και δείγματα παραπόνων πελατών.

Σχετικές Νομοθετικές Υγειονομικές Διατάξεις

Οι απαιτήσεις για τον έλεγχο της ποιότητας του ανεπεξέργαστου και πόσιμου νερού περιλαμβάνονται στα ακόλουθα νομοθετήματα:

- ΟΙΚ 46399/1352/1986 «Απαιτούμενη ποιότητα επιφανειακών νερών που προορίζονται για πόσιμα, κολύμβηση διαβίωση ψαριών σε γλυκά νερά και καλλιέργεια οστρακοειδών».
- ΠΔ 51/2007 «Καθορισμός μέτρων και διαδικασιών για την ολοκληρωμένη προστασία και διαχείριση των υδάτων σε συμμόρφωση με τις διατάξεις της Οδηγίας 2000/60/ΕΚ ¨για τη θέσπιση πλαισίου κοινοτικής δράσης στον τομέα της πολιτικής των υδάτων¨ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου της 23ης Οκτ. 2000».
- ΚΥΑ Υ2/2600/2001 «Ποιότητα του νερού ανθρώπινης κατανάλωσης» (όπως αυτή τροποποιήθηκε και ισχύει).

Για την παρακολούθηση της ποιότητας του παραγόμενου πόσιμου νερού της ΕΥΔΑΠ σύμφωνα με τις απαιτήσεις της ΚΥΑ Υ2/2600/2001 προσδιορίζονται φυσικοχημικές και μικροβιολογικές παράμετροι οι οποίες χωρίζονται σε παραμέτρους δοκιμαστικής, ελεγκτικής και συμπληρωματικής παρακολούθησης. Οι ανωτέρω όροι αφορούν στη συχνότητα με την οποία πρέπει να προσδιορίζεται κάθε μία παράμετρος και η οποία είναι συνάρτηση του ημερήσιου όγκου διανεμόμενου ή παραγόμενου νερού σε κάθε μία ζώνη πίεσης του δικτύου διανομής.

Δείκτης 2.6 Ακουστική Άνεση:

Social/Functional Quality

Indicator 2.6 Acoustic Comfort

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.6 Acoustic comfort** is evaluated with **2** sub-indicators:

2.6.1 Indoor ambient noise levels

2.6.2 Reverberation period

2. Evaluation

Sub-indicator 2.6.1 Indoor ambient noise levels The indoor ambient noise levels in the following ***unoccupied*** staff/office areas of your building are:

≤ 40dB *L*Aeq, *T* in Individual offices and multi-person offices with areas up to 40 m²	
40-50dB *L*Aeq, *T in* Multi-person offices with areas greater than 40 m²	
≤ 40 dB *L*Aeq, *T* general spaces (staffrooms, restrooms)	
≤ 35 dB *L*Aeq, *T* in spaces designed for speech e.g. seminar/lecture/conference rooms	
≤ 50 dB *L*Aeq, *T* in informal café/canteen areas with areas greater than 50 m²	
Noise levels are higher than the limits for each of the areas mentioned	

If one of the spaces is not present in the building, it is considered as compliant.

Sub-indicator 2.6.2 Reverberation period

a) **Individual offices and multi-person offices with areas up to 40 m²**

The reverberation time T (as calculated in DIN 18041 or measured according to ISO 3382-2) is:

T ≤ 0.8 s	
T ≤ 1.0 s	
T ≤ 1.5 s	
T > 1.5 s	
T ≤ 0.8 s	

b) **Multi-person offices with areas greater than 40 m²**

The reverberation time T (as measured according to ISO 3382-2) is:

T ≤ 1.0 s

T > 1.0 s

c) Conference rooms

The reverberation time T (as calculated in DIN 18041 or measured according to ISO 3382-2) is:

d) Cafeterias with areas greater than 50 m²

The reverberation time T (as calculated in DIN 18041 or measured according to ISO 3382-2) is:

0.7 s ≤ T ≤ 1.5 s

T < 0.7 s

T > 1.5 s

T ≤ 0.5 s

T ≤ 0.8 s

T > 0.8 s

3. Indicator rating and score

2.6.1 Indoor ambient noise levels in unoccupied staff/office areas	Points
Compliance with all the requirements	**100**
Compliance with four of the requirements	**80**
Compliance with three of the requirements	**60**

Compliance with two of the requirements	**40**
Compliance with one of the requirements	**20**
Not compliance with any of the requirements	**0**
2.6.2.a Individual offices and multi-person offices with areas up to 40 m²	**Points**
T ≤ 0,8 s	**25**
T ≤ 1,0 s	**15**
T ≤ 1,5 s	**10**
T > 1,5 s	**0**
2.6.2.b Multi-person offices with areas greater than 40 m²	**Points**
T ≤ 0,8 s	**25**
T ≤ 1,0 s	**10**
T > 1,0 s	**0**
2.6.2.c Conference rooms	**Points**
0,7 ≤ T ≤ 1,5 s	**25**
T < 0,7 s	**10**
T > 1,5 s	**0**
2.6.2.d Cafeterias with areas greater than 50 m²	**Points**
T ≤ 0,5 s	**25**
T ≤ 0,8 s	**10**
T > 0,8 s	**0**
Sub-indicator 2.6.1 Indoor ambient noise levels in unoccupied staff/office areas	**0**

Sub-indicator 2.6.2 Reverberation period	**0**
Indicator 2.6 Acoustic Comfort	**0**

Δεν υπήρχε τρόπος να πάρουμε μετρήσεις.

Δείκτης 2.7 Οπτική Άνεση:

Social/Functional Quality

Indicator 2.7 Visual Comfort

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.7 Visual Comfort** is evaluated with **7** sub-indicators:

2.7.1 Availability of daylight throughout the building

2.7.2 Availability of daylight in regularly used work areas

2.7.3 View to the outside

2.7.4 Preventing glare in daylight

2.7.5 Preventing glare in artificial light

2.7.6 Light distribution in artificial lighting conditions

2.7.7 Colour rendering

2. Evaluation

Sub-indicator 2.7.1 Availability of daylight throughout the building

What is the daylight factor for more than 50% of the usable area (UA)?

Daylight factor | 0 | %

Sub-indicator 2.7.2 Availability of daylight in regularly used work areas

What is the annual relative lighting percentage in regularly used work areas?

Daylight factor | 1 | %

Sub-indicator 2.7.3 View to the outside

Please specify which of the following statement applies to your project:

A view to the outside is still possible when sun shades are closed	
A view to the outside is still possible when sun shades are activated, by adjusting them (Cut-Off-position, sun tracking control)	X
A view to the outside is not possible anymore when sun shades are activated.	

Sub-indicator 2.7.4 Preventing glare in daylight

Please specify which of the following statement applies to your project:

Light-guiding system in combination with a glare protection system forcing direct light to fade	
Presence of a glare protection system	
No glare protection system	X

Sub-indicator 2.7.5 Preventing glare in artificial light

Is prevention against glare in artificial light achieved through compliance with EN 12464-1?

Yes | | **No** | X |

Sub-indicator 2.7.6 Light distribution in artificial lighting conditions

Please specify which of the following statement applies to your project:

Combination of direct and indirect lighting with individual desk control.	
Combination of direct and indirect lighting	
Compliance with standards	X
No compliance	

Sub-indicator 2.7.7 Colour rendering

What is the **colour rendering index**:

For artificial light	**0**
For daylight	**0**

3. Indicator rating and score

2.7.1 Availability of daylight throughout the building	**Points**
50% of UA has a daylight factor >2%	**100**
50% of UA has a daylight factor >1,5%	**75**
50% of UA has a daylight factor >1%	**50**
50% of UA has a daylight factor <1%	**0**
2.7.2 Availability of daylight in regularly used work areas	**Points**
Annual relative lighting percentage > 80%	**100**
Annual relative lighting percentage between 60 and 80%	**75**
Annual relative lighting percentage between 45 and 60%	**50**

Annual relative lighting percentage < 45%	**0**
2.7.3 View to the outside	**Points**
A view to the outside is still possible when sun shades are closed.	**100**
A view to the outside is still possible when sun shades are activated, by adjusting them (Cut-Off-position, sun tracking control)	**75**
A view to the outside is not possible anymore when sun shades are activated.	**0**
2.7.4 Preventing glare in daylight	**Points**
Light-guiding system in combination with a glare protection system forcing direct light to fade	**100**
Presence of a glare protection system	**75**
No glare protection system	**0**
2.7.5 Preventing glare in artificial light	**Points**
Compliant	**100**
Not compliant	**0**
2.7.6 Light distribution in artificial lighting conditions	**Points**
Combination of direct and indirect lighting with individual desk control.	**100**
Combination of direct and indirect lighting	**75**
Compliance with standards	**50**
No compliance	**0**
2.7.7 Colour rendering	**Points**
Colour rendering index for artificial light and day light > 90	**100**
Colour rendering index for artificial light and day light between 80 and 90	**50**

Colour rendering index for artificial light and day light < 80		0
Sub-indicator 2.7.1	Availability of daylight throughout the building	0
Sub-indicator 2.7.2	Availability of daylight in regularly used work areas	0
Sub-indicator 2.7.3	View to the outside	75
Sub-indicator 2.7.4	Preventing glare in daylight	0
Sub-indicator 2.7.5	Preventing glare in artificial light	0
Sub-indicator 2.7.6	Light distribution in artificial lighting conditions	50
Sub-indicator 2.7.7	Colour rendering	0
Indicator .7 Visual Comfort		17,85

Δείκτης 2.8 Άνεση Λειτουργίας:

Social / Functional Quality

Indicator 2.8 Operation Comfort

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.8 Operation Comfort** is evaluated with **7** sub-indicators:

2.8.1 Ventilation

2.8.2 Shading

2.8.3 Glare prevention

2.8.4 Temperatures during the heating period

2.8.5 Temperatures outside the heating period

2.8.6 Regulation of daylight and artificial light

2.8.7 Ease of operation

2. Evaluation

A "**room**" here means an enclosed space which may or may not be physically completely divided from other spaces. In practice this can for example represent an individual work area (desk) or an area where **max 3 people** work considerably close to each other.

A "**zone**" is again an enclosed space which may or may not be physically completely divided from other spaces. It can be a larger room (**for > 3 people**), a part of an open plan office, an open plan office as a whole, and similar.

Sub-indicators 2.8.1 – 2.8.6

Please check the box corresponding to the appropriate control for each sub-indicator:

	No control	Control for **a room** (< 3 people)	Control for **a zone** (> 3 people)
Ventilation		**X**	
Shading		**X**	
Glare prevention	**X**		
Temperatures during the heating period		**X**	
Temperatures outside the heating period		**X**	
Regulation of daylight and artificial light	**X**		

Sub-indicator 2.8.7 Ease of operation

Is there a **display** of following operation comfort indicators/functions: **ventilation** and **temperatures**?

Yes ☐ **No** ☒ **X**

Please check the boxes when appropriate.

There is a **central display** and **management** (for example use of web browser to operate with indicators) of following operation comfort indicators/functions:

ventilation ☐

shading 

glare 

temperatures 

lighting 

3. Indicator rating and score

2.8.1 Ventilation	**Points**
Room air exchange controllable (max. 3 persons)	**100**
Zone air exchange controllable (more than 3 persons)	**50**
No air exchange control	**0**
2.8.2 Shading	**Points**
Shading control for a room (max. 3 persons)	**100**
Shading control for a zone (more than 3 persons)	**50**
No shading control	**0**
2.8.3 Glare prevention	**Points**
Glare prevention control for a room (max. 3 persons)	**100**
Glare prevention control for a zone (more than 3 persons)	**50**
No glare prevention control	**0**
2.8.4 Temperatures during the heating period	**Points**
Room temperature control (max. 3 persons)	**100**

Zone temperature control (more than 3 persons)	**50**
No temperature control	**0**
2.8.5 Temperatures outside the heating period	**Points**
Room temperature control (max. 3 persons)	**100**
Zone temperature control (more than 3 persons)	**50**
No temperature control	**0**
2.8.6 Regulation of daylight and artificial light	**Points**
Light level control for a room (max. 3 persons)	**100**
Light level control for a zone (more than 3 persons)	**50**
No control on daylight nor artificial light	**0**
2.8.7 Ease of operation	**Points**
Central display and management of operation comfort indicators/functions: ventilation, shading, glare, temperatures, lighting, as an overall solution; for example use of web browser to operate with indicators	**100**
Central display and management of operation comfort indicators/functions: ventilation, temperatures, lighting, as an overall solution; for example use of web browser to operate with indicators	**75**
Separate/local management (i.e. switch)and display of operation comfort indicators/functions: ventilation, temperatures	**50**
Separate/local management (i.e. switch) without display of operation comfort indicators/functions: ventilation, shading, glare, temperatures, lighting	**0**

Sub-indicator 2.8.1 Ventilation	**100**
Sub-indicator 2.8.2 Shading	**100**
Sub-indicator 2.8.3 Glare prevention	**0**

Sub-indicator 2.8.4 Temperatures during the heating period	100
Sub-indicator 2.8.5 Temperatures outside the heating period	100
Sub-indicator 2.8.6 Regulation of daylight and artificial light	0
Sub-indicator 2.8.7 Ease of operation	0
Indicator 2.8 Operation comfort:	57,14

Δείκτης 2.9 Ποιότητα Υπηρεσιών:

Social / Functional Quality

Indicator 2.9 Service Quality

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.9 Service Quality** is evaluated with **2** sub-indicators:

2.9.1 Availability of services in the building

2.9.2 Service integration in building connected outdoor areas

2. Evaluation

Sub-indicator 2.9.1 Availability of services in the building

Please specify which of the following services are including in the building:

- Recreation or relaxation areas: including sofa, bed, games, etc.	NO
- Restaurant or cafeteria, coffee corner	NO

- Sport center: including fitness, wellness, sauna, shower rooms, massage	NO
- Elderly care/Child care	NO
- Medical facilities and personnel	NO
- Concierge service: building-integrated Flower delivery, Drying place, Pet care	NO

Sub-indicator 2.9.2 Service integration in building connected outdoor areas

Please specify which of the following requirements are integrated in building connected outdoor areas:

-Areas for sitting and/or lying down	YES
-Water features	NO
-Flexible sheltering roofs	NO
-Rain/snow protection	NO
-Shading	NO
- Protection against wind from the prevailing wind direction	NO

3. Indicator rating and score

2.9.1 Availability of services in the building	Points
At least 4 of the 6 services are present in the building	100

3 of the 6 services are present in the building	**75**
2 of the 6 services are present in the building	**30**
1 of the 6 services is present in the building	**10**
None of the services is present in the building	**0**

2.9.2 Service integration in building connected outdoor areas	**Points**
At least 4 of the 6 requirements are fulfilled in the outdoor area	**100**
3 of the 6 requirements are fulfilled in the outdoor area	**75**
2 of the 6 requirements are fulfilled in the outdoor area	**30**
1 of the 6 requirements is fulfilled in the outdoor area	**10**
None of the requirements is fulfilled in the outdoor area	**0**

Sub-indicator 2.9.1 Availability of services in the building	**0**
Sub-indicator 2.9.2 Service integration in building connected outdoor areas	**10**
Indicator 2.9 Service Quality	**5**

Δείκτης 2.10 Ηλεκτρομαγνητική Ρύπανση:

Social / Functional Quality

Indicator 2.10 Electromagnetic pollution

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.10 Electromagnetic pollution** is evaluated with **1** sub-indicator:

2.10.1 Electromagnetic pollution

2. Evaluation

Sub-indicator 2.10.1 Electromagnetic pollution

Are electromagnetic pollution measurements available?

Yes [ ] **No** [X]

If **yes**, please fill in the appropriate boxes in the following table:

Exposure Characteristics	Frequency Range	Highest Current Density for head and trunk (mA/m^2) (rms)	Highest Whole body average SAR (W/kg)	Highest Localized SAR (head and trunk) (W/kg)	Highest Localized SAR (limbs) (W/kg)
Occupational Exposure	Up to 1Hz		-	-	-
	1-4 Hz		-	-	-
	4Hz -1kHz		-	-	-
	1-100kHz		-	-	-
	100kHz-10MHz				
	10mHz-10gHz	-			
General Public exposure	Up to 1Hz		-	-	-
	1-4 Hz		-	-	-
	4Hz -1kHz		-	-	-
	1-100kHz		-	-	-
	100kHz - 10MHz				
	10mHz -10gHz	-			

If national or international restrictions are applied, please specify them and precise the references

Description of National/International restrictions applied, if necessary

If **no**, please specify which of the following statements are verified:

No man-made sources of electromagnetic pollution inside or in great proximity to the building	
Existence of wireless LANs or Bluetooth technologies covering 0-20% of building's gross area	X
Existence of wireless LANs or Bluetooth technologies covering 20-100% building's gross area	
Existence of domestic electromagnetic pollution sources such as microwave ovens, dielectric heating etc at 0-50% of building's gross area	
Existence of domestic electromagnetic pollution sources such as microwave ovens, dielectric heating etc at 50-100% of building's gross area	
Existence of mobile telephony antennas in a 300m radius	
Extensive use of telecommunication-mobile and wireless-or broadcasting technologies inside the building	
Existence of medical applications such as MRI, X-ray units or safety applications such as navigation/radar systems, air traffic control, marine radars etc inside or in very close proximity to the building	

3. Indicator rating and score

2.10.a Electro Magnetic Pollution (with measurements)	**Points**
75% below national, ICNIRP or other international restrictions	**100**
30% below national, ICNIRP or other international restrictions	**50**
Below national, ICNIRP or other international restrictions	**10**
Not respecting national, ICNIRP or other international restrictions	**0**

2.10.b Electro Magnetic Pollution (without measurements)	Points
No man-made sources of electromagnetic pollution inside or in great proximity to the building	100
Existence of wireless LANs or Bluetooth technologies covering 0-20% of building's gross area	60
Existence of wireless LANs or Bluetooth technologies covering 20-100% building's gross area	50
Existence of domestic electromagnetic pollution sources such as microwave ovens, dielectric heating etc at 0-50% of building's gross area	40
Existence of domestic electromagnetic pollution sources such as microwave ovens, dielectric heating etc at 50-100% of building's gross area	30
Existence of mobile telephony antennas in a 300m radius	20
Extensive use of telecommunication-mobile and wireless-or broadcasting technologies inside the building	10
Existence of medical applications such as MRI, X-ray units or safety applications such as navigation/radar systems, air traffic control, marine radars etc inside or in very close proximity to the building	0

Sub-indicator 2.10.1 Electromagnetic pollution	**50**

Indicator 2.10 Electromagnetic pollution	**50**

Δείκτης 2.11 Δημόσια Πρόσβαση:

Social / Functional Quality

Indicator 2.11 Public Accessibility

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.11 Public Accessibility** is evaluated with **5** sub-indicators:

2.11.1 General public access to the building

2.11.2 External facilities open to the public

2.11.3 Interior facilities, such as libraries or cafeteria, open to the public

2.11.4 Possibility of third party to rent rooms in the building

2.11.5 Variety of uses for public areas

2. Evaluation

Sub-indicator 2.11.1 General public access to the building

Is it intended to provide an access in the building to the public?

Yes [ ] **No** [X]

Sub-indicator 2.11.2 External facilities open to the public

Are the outdoor facilities surrounding the building accessible to the public?

Yes [X] **No** [ ]

Sub-indicator 2.11.3 Interior facilities, such as libraries or cafeteria, open to the public

Does the building offer facilities open to the public?

Yes [X] **No** [ ]

Sub-indicator 2.11.4 Possibility of third party to rent rooms in the building

Can third party rent rooms in the building?

Yes [ ] **No** [X]

Sub-indicator 2.11.5 Variety of uses for public areas

The rentable areas are available for a variety of uses that make them attractive for as many interested

parties as possible

Yes [ ] **No** [X]

3. Indicator rating and score

2.11.1.General public access to the building	**Points**
There is an intention to provide an access to the building for public	**100**
There is no plan for public access to the building	**0**
2.11.2.External facilities open to the public	**Points**
The outdoor facilities surrounding the building are accessible to the public	**100**
The outdoor facilities surrounding the building are not accessible to the public	**0**
2.11.3.Interior facilities, such as libraries or cafeteria, open to the public	**Points**
The building offers facilities open to the public	**100**
The building does not offer facilities open to the public	**0**
2.11.4. Possibility of third party to rent rooms in the building	**Points**
Third party can rent rooms in the building	**100**
Third party cannot rent rooms in the building	**0**
2.11.5. Variety of uses for public areas	**Points**
The rentable areas are available for a variety of uses that make them attractive for as many interested parties as possible	**100**
The rentable areas are not available for a variety of uses	**0**

Sub-indicator 2.11.1 General public access to the building **0**

Sub-indicator 2.11.2 External facilities open to the public	**100**
Sub-indicator 2.11.3 Interior facilities, such as libraries or cafeteria, open to the public	**100**
Sub-indicator 2.11.4 Possibility of third party to rent rooms in the building	**0**
Sub-indicator 2.11.5 Variety of uses for public areas	**0**

Indicator 2.11 Public Accessibility	**40**

Δείκτης 2.12 Θόρυβος από το Κτίριο και την Τοποθεσία:

Social / Functional Quality

Indicator 2.12 Noise from Building and Site

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.12 Noise from Building and Site** is evaluated with **1** sub-indicator:

2.12.1 Noise from Building and Site

2. Evaluation

Sub-indicator 2.12.1 Noise from Building and Site

Please refer to definitions given in the Assessment Guideline.

Are there **noise-sensitive** areas or buildings within a 800m radius of the assessed project?

Yes [ ] **No** [X]

Was a noise impact assessment carried in compliance with ISO 1996?

Yes		**No**	**X**

Please specify which of the following statement is appropriate to your project:

The specific noise level of the noise sources from the site/building is less than +5dB during the day (0700hrs to 2200hrs) and less than +3dB at night (2200hrs to 0700hrs) compared to the background noise level	**X**
OR	
The specific noise level is lower than the maximum noise level accepted by national regulations	
OR	
The rating level of the noise sources from the site/building is greater than the background noise level	

3. Indicator rating and score

2.12.1 Noise from building and site	**Points**
The specific noise level of the noise sources from the site/building is less than +5dB during the day (0700hrs to 2200hrs) and less than +3dB at night (2200hrs to 0700hrs) compared to the background noise level OR There are or will be no *noise-sensitive areas or buildings* in the locality of the assessed building	**100**
A noise impact assessment in compliance with ISO 1996 was carried and the specific noise level is lower than the maximum noise level accepted by national regulations.	**10**
A noise impact assessment in compliance with ISO 1996 was carried and the rating level of the noise sources from the site/building is greater than the background noise level	**5**
There was no noise impact assessment carried.	**0**

Sub-indicator 2.12.1 Noise from building and site	**100**

Indicator 2.12 Noise from building and site	100

Δείκτης 2.13 Ποιότητα Σχεδιασμού και Αστικής Ανάπτυξης του Κτιρίου και του Οικοπέδου:

Social / Functional Quality

Indicator 2.13 Quality of the Design and Urban Development of the Building and Site

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.13 Quality of the Design and Urban Development of the Building and Site** is evaluated with **2 options**:

Option 1 - two sub-indicators are assessed:

2.13.1 Implementation of a design concept

2.13.2 Quality planning competition

OR

Option 2 – one sub-indicator is assessed:

2.13.3 Architectural prize

2. Evaluation

Option 1

Sub-indicator 2.13.1 Implementation of a design concept

Is there a design concept for the integration of necessary technical structures?

Yes [X] **No** [ ]

Which % of the roof area is accessible? **100** **%**

Sub-indicator 2.13.2 Quality planning competition

Please specify which of the following statement is appropriate to your project:

A successful competition has been conducted according to specific national/local directives, guidelines or legal requirements on planning competition, such as GRW95 and RPW2008 in Germany, or a comparable international process like UNESCO –UIA Guidelines, or a similar method including the evaluation of the competition entries by a jury. [**X**]

OR

No competition was carried out, but the contracted planning firm conducted an investigation of variants from which the client had the opportunity to choose an implementation design in a preceding process [ ]

OR

No competition was carried out. [ ]

If a competition was carried out, please specify which of the following statement is appropriate to your project:

An open competition process has been carried out. [**X**]

OR

A two steps competition process has been carried out: open then restricted [ ]

OR

A restricted competition process has been carried out [ ]

In terms of extent and quality, does the building as constructed essentially correspond to the prize-

winning competition submission?

Yes [X] **No** [ ]

Was the planning team of the prize winner contracted to the project?

Yes [X] **No** [ ]

If yes, until which project phase was an office of the prize winner contracted?

project supervision (phase 8 of HOAI, after building completion) [ ]

OR

execution drawings. (phase 5 of HOAI, phase G of RIBA) [ ]

OR

final design. (phase 3 of HOAI, phase E of RIBA). [ ]

Option 2

Sub-indicator 2.13.3 Architectural prize

Was the building awarded an architectural prize for high design quality?

Yes [ ] **No** [X]

3. Indicator rating and score

2.13.1-a: Integration of technical structures	Points
There is a design concept for the integration of necessary technical structures	**50**
There is no design concept	**0**

2.13.1-b: Roof design quality	Points
100% of roof area is accessible	**50**

50% of roof area is accessible	**30**
25% of roof area is accessible	**20**
< 25% of roof area is accessible	**0**

2.13.2-a: Implementation of planning competitions	**Points**
A successful competition has been conducted according to specific national/local directives, guidelines or legal requirements on planning competition, such as GRW95 and RPW2008 in Germany, or a comparable international process like UNESCO –UIA Guidelines, or a similar method including the evaluation of the competition entries by a jury.	**20**
No competition was carried out, but the contracted planning firm conducted an investigation of variants from which the client had the opportunity to choose an implementation design in a preceding process	**10**
No competition was carried out.	**0**

2.13.2-b: Competition process	**Points**
An open competition process has been carried out	**40**
A two steps competition process has been carried out: open then restricted	**30**
A restricted competition process has been carried out	**20**

2.13.2-c: Implementation of a prize-winning design	**Points**
In terms of extent and quality, the building as constructed essentially corresponds to a prize-winning competition submission. An office of the prize winner is contracted until the **project supervision** (phase 8 of HOAI, after building completion)	**30**

In terms of extent and quality, the building as constructed essentially corresponds to a prize-winning competition submission. An office of the prize winner is contracted until the **execution drawings**. (phase 5 of HOAI, phase G of RIBA)	**20**
In terms of extent and quality, the building as constructed essentially corresponds to a prize-winning competition submission. An office of the prize winner is contracted until the **final design**. (phase 3 of HOAI, phase E of RIBA)	**10**

2.13.2-d: Contracting of planning team	**Points**
The planning team of the prize winner was contracted to the project at the same time.	**10**
The planning team of the prize winner was not contracted to the project.	**0**

2.13.3 Architectural prize	**Points**
The building has been awarded an architectural prize for high design quality	**100**
The building has **not** been awarded an architectural prize for high design quality	**0**

Sub-indicator 2.13.1 Implementation of a design concept	**100**
Sub-indicator 2.13.2 Quality planning competition	**80**
Sub-indicator 2.13.3 Architectural Prize	**0**

Indicator 2.13 Quality of the Design and Urban Development of the Building and Site	**60**

Δείκτης 2.14 Αποδοτικότητα της Περιοχής:

Social/Functional Quality

Indicator 2.14 Area Efficiency

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.14 Area Efficiency** is evaluated with **1** sub-indicator:

2.14.1 Area Efficiency.

2. Evaluation

Sub-indicator 2.14.1 Area Efficiency

Please specify the value of the Usable Area (UA) and Total Floor Area (TFA):

UA 150 **m²** **TFA** 160 **m²**

The corresponding Space efficiency factor is **S_{eff} = UA/TFA**

S_{eff} 0,937

Please specify to which method you referred when calculating UA and TFA

3. Indicator rating and score

Sub-indicator 2.14.1 Area Efficiency

2.14 Area Efficiency	Points
0,75 ≤ Seff	**100**
0,72 ≤ Seff	**90**
0,69 ≤ Seff	**80**
0,66 ≤ Seff	**70**
0,63 ≤ Seff	**60**

0,60 ≤ Seff	**50**
0,56 ≤ Seff	**40**
0,52 ≤ Seff	**30**
0,48 ≤ Seff	**20**
Min Seff ≤ Seff	**10**
Seff ≤ Min Seff --------> will be determined according to case studies results	**0**

Sub-indicator 2.14.1 Area Efficiency: **100**

Indicator 2.14 Area Efficiency: **100**

Δείκτης 2.15 Ανεμπόδιστη Προσβασιμότητα:

Social / Functional Quality

Indicator 2.15 Conversion Feasibility

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.15 Conversion Feasibility** is evaluated with **4** sub-indicators:

2.15.1 Building modularity

2.15.2 Spatial structure

2.15.3 Power and media supply

2.15.4 Heating and water supply/disposal

2. Evaluation

Sub-indicator 2.15.1 Building modularity

What is the indoor height clearance?

Indoor height clearance	**3**	**m**

Sub-indicator 2.15.2 Spatial structure

Can non-load transferring, room-separating elements be added to, converted, or removed without too much effort?

Yes	X	**No**	

If yes, the influence of building operation is

Can non-load transferring, room-separating elements be dismantled and is it possible to store temporarily unnecessary elements?

none	
limited	**X**
high	

Yes		No	X

Sub-indicator 2.15.3 Power and media supply

Please specify which of the following requirements is fulfilled:

Power and media conduits run to easily accessible supply shafts, cable ducts, or false floors and/or visibility of these lines	X
Utilization of less than 80 % of the capacity of the supply shafts and ductwork for power and media conduits	
Electric installation/building automation is realized using a BUS system	

Sub-indicator 2.15.4 Heating and water supply/disposal

Please specify which of the following requirements is fulfilled:

There is a flexible distribution of the network and connections for **heating and cooling water** supply and removal so they don't have to be rerouted in the case of conversion and so a connection possibility exists for shared office spaces.	X
There is a flexible distribution of the network and connections for **ventilation and air conditioning** so they don't have to be rerouted in the case of conversion and so a connection possibility exists for shared office spaces.	X

3. Indicator rating and score

2.15.1 Building modularity	**Points**
indoor height clearance > 2,75 m	**100**
indoor height clearance > 2,50 m	**10**
indoor height clearance < 2,50 m	**0**
2.15.2.a Spatial structure	**Points**
Non-load transferring, room-separating elements can be added to, converted, or removed without too much effort and with **uninterrupted building operation**.	**50**

Non-load transferring, room-separating elements can be added to, converted, or removed without too much effort and with **limited influence on building operation**.	**25**
Non-load transferring, room-separating elements can be added to, converted, or removed without too much effort, but **highly influence building operation.**	**5**
Non-load transferring, room-separating elements **cannot** be added to, converted, or removed without too much effort.	**0**
2.15.2.b Spatial structure	**Points**
Non-load transferring, room-separating elements can be dismantled and it is possible to store temporarily unnecessary elements.	**50**
Non-load transferring, room-separating elements **cannot** be dismantled and unnecessary elements **cannot** be stored temporarily.	**0**
2.15.3 Power and media supply	**Points**
All three characteristics are fulfilled	**100**
Two of three characteristics are fulfilled	**75**
One of the three characteristics is fulfilled	**50**
None of the three characteristics is fulfilled	**0**
2.15.4 Heating and water supply/disposal	**Points**
Two characteristics are fulfilled	**100**
One of the two characteristics is fulfilled	**50**
None of the two characteristics is fulfilled	**0**

Sub-indicator 2.15.1 Building modularity	**100**
Sub-indicator 2.15.2 Spatial structure	**0**
Sub-indicator 2.15.3 Power and media supply	**50**

Sub-indicator 2.15.4 Heating and water supply/disposal	**100**
Indicator 2.15 Conversion Feasibility:	**62,5**

Δείκτης 2.16 Άνεση Ποδηλάτων:

Social / Functional Quality

Indicator 2.16 Bicycle Comfort

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.16 Bicycle Comfort** is evaluated with **3** sub-indicators:

2.16.1 Number of bicycle parking spaces available for building users
2.16.2 Distance to bicycle parking system from a main building entrance
2.16.3 Existence of facilities for bicycle comfort and security

2. Evaluation

Sub-indicator 2.16.1 Number of bicycle parking spaces available for building users

What is the number of bicycle parking spaces relatively to the number of building users?

$$\frac{\text{Number of parking spaces}}{\text{Number of building users}} = \boxed{100}\ \%$$

Sub-indicator 2.16.2 Distance to bicycle parking system from a main building entrance

What is the distance from a main building entrance to a bicycle parking system?

Distance: **15** **m**

Sub-indicator 2.16.3 Existence of facilities for bicycle comfort and security

Please specify which facilities are present for the building employees:

showers	
changing rooms	
protection against theft	
protection against weather	X

3. Indicator rating and score

2.16.1 Number of bicycle parking spaces available for building users	Points
> 10% of the number of building users	100
> 7% of the number of building users	75
> 5% of the number of building users	50
> 3% of the number of building users	10
< 3% of the number of building users	0
2.16.2 Distance to bicycle parking system from a main building entrance	**Points**
< 15 m	100
< 30 m	75
< 50 m	50
< 70 m	25
< 100 m	10
> 100 m	0
2.16.3 Existence of facilities for bicycle comfort and security	**Points**
4 kinds of facility	100

3 kinds of facility	**75**
2 kinds of facility	**50**
1 kind of facility	**25**
0 kind of facility	**0**

Sub-indicator 2.16.1 Number of bicycle parking spaces available for building users	**100**
Sub-indicator 2.16.2 Distance to bicycle parking system from a main building entrance	**75**
Sub-indicator 2.16.3 Existence of facilities for bicycle comfort and security	**25**
Indicator 2.16 Bicycle Comfort:	**66,66**

Δείκτης 2.17 Υπεύθυνη Προμήθεια Υλικών:

Social / Functional Quality

Indicator 2.17 Responsible Material Sourcing

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **2.17 Responsible Material Sourcing** is evaluated with **1** sub-indicator:

2.17.1 Responsible Material Sourcing (Wood)

2. Evaluation

Sub-indicator 2.17.1 Responsible Material Sourcing (Wood)

Quality level 1

Sustainable use of Tropical, subtropical and boreal wood

Do planning documents and the call for tenders include mention of avoiding tropical, subtropical and

boreal wood?

Yes [ ] **No** [X]

Are FSC certification and a corresponding CoC (Chain of Custody) certificate presented for timber, timber products and timber materials made of tropical, subtropical or boreal wood?

Yes [ ] **No** [X]

Quality level 2 & 3

Sustainable Forestry

Sustainable Forestry is verified by an FSC certificate and a corresponding CoC certificate. Central European or local timber can also be verified by PEFC certification and a corresponding CoC certificate. Quantification can be determined by a quantity estimate based on the component catalogue for the life cycle assessment or for each trade based on the calls for tenders.

What is the % of all timber, timber products and/or timber materials produced by sustainable forestry?

Sustainable Forestry [0] **%**

3. Indicator rating and score

2.17.1 Responsible Material Sourcing (Wood)	**Points**
Quality level 3 (> 80% certified timber) is achieved	**100**
Quality level 2 (> 50% certified timber) is achieved	**50**
Quality level 1 is achieved	**10**
The **Quality level 1** was not achieved.	**0**
Sub-indicator 2.17.1 Responsible Material Sourcing (Wood)	**0**

Indicator 2.17 Responsible Material Sourcing: **0**

Δείκτης 2.18 Τοπικά Υλικά:

Για τον δείκτη αυτό δεν υπάρχει ακόμα ερωτηματολόγιο και είναι σε διαδικασία ανάπτυξης.

3.3. Οικονομική Ποιότητα

Η τρίτη κατηγορία είναι η Οικονομική Ποιότητα και αφορά τους δείκτες όπως βλέπουμε παρακάτω:

Οικονομική Ποιότητα	3.1	Κτίριο που Σχετίζονται με το Κόστος Κύκλου Ζωής (LCC)	6,5	100	6,5%	1	30,8%
	3.2	Τιμή Σταθερότητας	55	100	55%	1	

1. Στόχοι:

3.1. Κτίριο που Σχετίζονται με το Κόστος Κύκλου Ζωής (LCC):

I. οικονομική μέθοδος για να βοηθήσει τη διαδικασία λήψης αποφάσεων
II. να προσδιορίσει την αποτελεσματικότητα του κόστους των διαφόρων επιλογών σχεδιασμού
III. την ευαισθησία του κόστους που απορρέει από την επανάσταση των τιμών για τα προϊόντα, τις υπηρεσίες, την ενέργεια και την ανθρώπινη λειτουργία του κτιρίου

3.2. Τιμή Σταθερότητας: να προσαρμόσει τη δομή του κτιρίου σχετικά με τις μεταβαλλόμενες απαιτήσεις των χρηστών και τις μελλοντικές εξελίξεις με λιγότερη προσπάθεια και χαμηλό κόστος.

2. Μεθοδολογία αξιολόγησης, Υπολογισμός και βαθμολογία

Για τον Υπολογισμό των Δεικτών συμπληρώνουμε την φόρμα με τα δεδομένα μας και υπολογίζουμε την βαθμολογία μας.
Οι φόρμες με τις απαντήσεις συμπληρωμένες και την βαθμολογία ακολουθούν ανά δείκτη:

Δείκτης 3.1 Κτίριο που Σχετίζονται με το Κόστος Κύκλου Ζωής (LCC:

Economic Quality

Indicator 3.1 Building-related Life Cycle Costs (LCC)

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **3.1 Building-related Life Cycle Costs (LCC)** is evaluated with **2** sub-indicators:

3.1.1 Life cycle costs

3.1.2 Whole Life cycle cost including externalities (not assessed in this version)

3.1.3 Sensitivity analysis.

Guidelines for the Life cycle costs calculation tool (LCC tool).

The LCC is based on 2 calculation sheets :

- **Economic data**

Initial values are given as reference but can be adapted to specific conditions.

The inflation rate for products and human activities can be adapted to the local context.

Energy inflation rate shall be changed for the sensitivity analysis on this point.

Assessor shall also adapt the percentage of investment cost due to demolition according to the type of structure, coatings and process use.

- **Calculation sheet**

The assessor shall inform the data collection of columns C, D, E and F.

Information about lifetime and maintenance are given in the last 2 sheets "Reference service life according to VDI 2067" and to CEN CWA 27"

The list of category is not mandatory.

The assessor has the possibility to reduce or to expand the type of costs.

If a category of cost is missing or need to be expanded, the assessor shall insert a line, then copy and paste the previous one.

In the **Results sheet**, the results have been ordered according to the Life cycle of the building (from construction to demolition).

2. Evaluation

Sub-indicator 3.1.1 Life cycle costs

a. Please specify the stages for which the calculation of costs have been performed:

Stage 1 Material and construction stage	
Stage 2a In use operational costs	
Stage 2b In use energy costs	
Stage 2c In use water costs	
Stage 3 Demolition costs	

b. Please specify which of the following requirements have been performed for the adaptation of the service life of products to the assessed building :

Choice of products	
Maintenance characteristics	
Quality of construction	X
Adaptation to indoor/outdoor conditions	
Users operation (training, …)	

c. Please specify the type of data used for the assessment :

Specific data	

Generic data **X**

Sub-indicator 3.1.3 Sensitivity analysis

Please specify when a sensitivity analysis has been performed to check:

Value stability for energy related to thermal comfort and variation of energy use

Value stability for human costs

Value stability for products

3. Indicator rating and score

3.1.1.a Calculation completed for different life cycle stages	**Points**
Score achieved depending on the stages for which the calculation has been completed Performing the calculations for different life cycle stages attributes different amount of points as mentioned here: Stage 1 Material and construction stage **30 points** Stage 2a In use operational costs **5 points** Stage 2b In use energy costs **20 points** Stage 2c In use water costs **10 points** Stage 3 Demolition costs **5 points**	**0-70**
3.1.1.b Adaptation of the service life of products to the assessed building	**Points**
All of five requirements are fulfilled	**15**

Four out of five requirements are fulfilled	**12**
Three out of five requirements are fulfilled	**9**
Two out of five requirements are fulfilled	**6**
One out of five requirements is fulfilled	**3**
3.1.1.c Type of data used for the assessment	**Points**
Specific data	**15**
Generic data	**10**
3.1.3. Sensitivity Analysis	**Points**
All three sensitivity analyses have been performed	**100**
Two out of three sensitivity analyses have been performed	**75**
One out of three sensitivity analyses has been performed	**50**
No sensitivity analysis has been performed	**0**

Sub-indicator 3.1.1 Life cycle costs:	**13**
Sub-indicator 3.1.3 Sensitivity analysis:	**0**

Indicator 3.1 Building-related Life Cycle Costs (LCC): **6.5**

Για τον συγκεκριμένο δείκτη τα δεδομένα ήταν ελάχιστα και δεν μπορέσαμε να πάρουμε ενδεικτικά αποτελέσματα.

Δείκτης 3.2 Τιμή Σταθερότητας:

Economic Quality

Indicator 3.2 Value Stability

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **3.2 Value Stability** is evaluated with **2** sub-indicators:

3.2.1 Building adaptability and flexibility

3.2.2 Energy and water dependency

2. Evaluation

Sub-indicator 3.2.1 Building adaptability and flexibility

The evaluation is based on the score achieved by each indicator

- **2.1 Barrier-free Accessibility**	**50**
- **2.14 Area Efficiency**	**100**
- **2.15 Conversion Feasibility**	**62**

Sub-indicator 3.2.2 Energy and water dependency

The evaluation is based on the score achieved by each indicator

- **1.9 Non-Renewable Primary Energy Demands**	**0**
- **1.10 Total Primary Energy Demands and Percentage of Renewable Primary Energy**	**0**
- **1.11 Water and Waste Water**	**10**

3. Indicator rating and score

3.2.1 Building Adaptability and Flexibility	**Points**
If the score of each of the 3 indicators is higher than 50 points, the achieved	**50-100**

score is the average of the score of the 3 indicators.	
If the score of one indicator is lower than 50 points, the achieved score is the average of the score of the 3 indicators, but cannot exceed 50 points.	**10-50**
If the score of one indicator is lower than 10 points, the achieved score is the average of the score of the 3 indicators, but cannot exceed 10 points.	**0-10**
3.2.2 Energy and Water dependency	**Points**
If the score of each of the 3 indicators is higher than 50 points, the achieved score is the average of the score of the 3 indicators.	**50-100**
If the score of one indicator is lower than 50 points, the achieved score is the average of the score of the 3 indicators, but cannot exceed 50 points.	**10-50**
If the score of one indicator is lower than 10 points, the achieved score is the average of the score of the 3 indicators, but cannot exceed 10 points.	**0-10**

Sub-indicator 3.2.1 Building adaptability and flexibility:	**100**
Sub-indicator 3.2.2 Energy and water dependency:	**10**

Indicator 3.2 Value Stability:	**55**

3.4. Τεχνικά Χαρακτηριστικά

Η τέταρτη κατηγορία είναι τα Τεχνικά Χαρακτηριστικά και αφορά τους δείκτες όπως βλέπουμε παρακάτω:

Τεχνικά Χαρακτηριστικά	4.1 Πυροπροστασία	0	100	0%	1		35,00%
	4.2 Ανθεκτικότητα της Δομής του Κτιρίου και Δύναμη(Ευρωστία)	30	100	30%	1		
	4.3 Καθαρισμός και συντήρηση	41,7	100	41,7%	1		
	4.4 Αντίσταση στο Χαλάζι, σε Καταιγίδα και σε Σεισμό	0	100	0%	1		
	4.5 Προστασία Θορύβου	100	100	100%	1		
	4.6 Ποιότητα του Κελύφους του Κτιρίου	0	100	0%	1		
	4.7 Ευκολία Αποδόμησης, Ανακύκλωσης, και Αποξήλωσης	3,3	100	3,3%	1		

1. Στόχοι:

4.1. Πυροπροστασία: **Διαδικασία ανάπτυξης του δείκτη**

4.2. Ανθεκτικότητα της Δομής του Κτιρίου και Δύναμη(Ευρωστία): η ικανότητα του κτιρίου σε μερική η προοδευτική φθορά-κατάρρευση από τεχνητό ή φυσικό κίνδυνο.

4.3. Καθαρισμός και συντήρηση: Η ευκολία καθαρισμού και συντήρησης του κτιρίου

4.4. Αντίσταση στο Χαλάζι, σε Καταιγίδα και σε Σεισμό: **Διαδικασία ανάπτυξης του δείκτη**

4.5. Προστασία Θορύβου:

I. αποφυγή απώλειας συγκέντρωσης
II. προστασία της ιδιωτικής ζωής και του απορρήτου
III. πρόβλεψη για τα άτομα με περιορισμένη ακοή

4.6. Ποιότητα του Κελύφους του Κτιρίου: Βελτίωση της ποιότητας του κέλυφους του κτιρίου σε σχέση με:

I. Θέρμανση
II. Ψύξη
III. Υγρασία

4.7. Ευκολία Αποδόμησης, Ανακύκλωσης, και Αποξήλωσης: Την αύξηση της ευκολίας της αποδόμησης, της ανακύκλωσης, και αποσυναρμολόγησης για την αποφυγή των απορριμμάτων, ιδίως με τη μείωση της ποσότητας και της επικινδυνότητας τους.

2. Μεθοδολογία αξιολόγησης, Υπολογισμός και βαθμολογία

Για τον Υπολογισμό των Δεικτών συμπληρώνουμε την φόρμα με τα δεδομένα μας και υπολογίζουμε την βαθμολογία μας.

Οι φόρμες με τις απαντήσεις συμπληρωμένες και την βαθμολογία ακολουθούν ανά δείκτη:

Δείκτης 4.1 Πυροπροστασία:

Για τον δείκτη αυτό δεν υπάρχει ακόμα ερωτηματολόγιο και είναι σε διαδικασία ανάπτυξης.

Δείκτης 4.2 Ανθεκτικότητα της Δομής του Κτιρίου και Δύναμη(Ευρωστία):

Technical Characteristics

Indicator 4.2 Robustness

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **4.2 Robustness** is evaluated with **2** sub-indicators:

4.2.1 Evidence of professional requirements

4.2.2 Evidence of design aspects

2. Evaluation

Sub-indicator 4.2.1 Evidence of professional requirements

Please specify which of the following requirements have been fulfilled in your project:

Awareness/Use of national / international regulations and standards	X
Principles of verification and design for structural robustness:	
Consequences due to insufficient structural robustness	

Fundamental principles of risk assessment	
Principles of risk optimization	
Other (please specify):	

Sub-indicator 4.2.2 Evidence of design aspects

Please specify which of the following requirements have been fulfilled in your project:

Specific Load Resistance Method	**X**
Alternative Load Path Method	
Other (please specify):	

3. Indicator rating and score

4.2.1 Evidence of Professional Requirements	**Points**
At least 3 requirements are fulfilled	**100**
2 requirements are fulfilled	**50**
1 requirement is fulfilled	**10**
No requirement is fulfilled	**0**
4.2.2 Evidence of Design Aspects	**Points**
2 requirements are fulfilled	**100**

1 requirement is fulfilled	**50**
No requirement is fulfilled	**0**

Sub-indicator 4.2.1 Evidence of Professional Requirements	**10**
Sub-indicator 4.2.2 Evidence of Design Aspects	**50**
Indicator 4.2 Robustness	**30**

Δείκτης 4.3 Καθαρισμός και συντήρηση:

Technical Characteristics

Indicator 4.3 Cleaning and Maintenance

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **4.3 Cleaning and Maintenance** is evaluated with **3** sub-indicators:

4.3.1 Load-bearing structure

4.3.2 Non-load-bearing external structures

4.3.3 Non-load-bearing interior structures

2. Evaluation

Sub-indicator 4.3.1 Load-bearing structure

Are parts of the primary structure relevant to maintenance accessible for maintenance operations?

Yes [ ] **No** [X]

If **yes**, they are accessible:

easily [ ]

after removing the attachment components [ ]

after difficult dismantling [ ]

Sub-indicator 4.3.2 Non-load-bearing external structures

Which % of the external glass surface is **easily accessible**?
(easy access and upper edge of the floor to the upper edge of the glass surface = 2.5 m)

External glass surface easily accessible [95] **%**

If less than 90% of external glass surface is easily accessible, are there permanent cleaning catwalks or ladders installed for the rest of the external glass surfaces?

Yes [X] **No** [ ]

If **no**, it means that more than 10% of the external glass surface is **not** easily accessible: basket cranes or climbing belts are needed.

Sub-indicator 4.3.3 Non-load-bearing interior structures

Please specify which of the following statement is appropriate to your project:

All of the trafficked area and more than 80% of the floor space is tolerant of light soiling (patterned, mottled or structured) [X]

Only the trafficked area is tolerant of light soiling (patterned, mottled or structured) [ ]

No area is tolerant of light soiling (not patterned, mottled or structured) [ ]

Please specify which of the following statement is appropriate to your project:

In front of every entrance is an adequate dirt-catching zone of at least 4 m	
In front of every entrance is an adequate dirt-catching zone of at least 2 m	X
No adequate dirt-catching zone	

Are all baseboards mechanically secured?

Yes ☐ **No** **X**

Please specify which of the following statement is appropriate to your project:

There are **no** inaccessible niches, empty spaces, dead angles, corners and columns in hallways and rooms	**X**
There are **some** inaccessible niches, empty spaces, dead angles, corners and columns in hallways and rooms	
There are **many** inaccessible niches, empty spaces, dead angles, corners and columns in hallways and rooms	

3. Indicator rating and score

4.3.1 Load-bearing structure – primary structure	**Points**
Parts of the primary structure relevant to maintenance are **easily** accessible for	**100**

maintenance operations.	
Parts of the primary structure relevant to maintenance are accessible for maintenance operations, **after removing the attachment components**.	**50**
Parts of the primary structure relevant to maintenance are accessible for maintenance operations, **after difficult dismantling**.	**10**
Parts of the primary structure relevant to maintenance are **not** accessible for maintenance operations.	**0**

4.3.2 Non-load-bearing external structures – glass surfaces	**Points**
100% of the external glass surfaces are easily accessible. The upper edge of the floor to the upper edge of the glass surface = 2.5 m	**100**
More than 90% of the external glass surfaces are easily accessible. The upper edge of the floor to the upper edge of the glass surface = 2.5 m	**50**
Less than 90% of the external glass surfaces are easily accessible. The upper edge of the floor to the upper edge of the glass surface = 2.5 m. For the rest of the external glass surfaces, there are permanent cleaning catwalks or ladders installed.	**10**
More than 10% of the external glass surface is not easily accessible (basket cranes, climbing belts etc. are needed)	**0**
4.3.3.a Non-load-bearing interior structures - flooring	**Points**
All of the trafficked area and more than 80% of the floor space is tolerant of light soiling (patterned, mottled or structured)	**25**
Only the trafficked area is tolerant of light soiling (patterned, mottled or structured)	**10**
No area is tolerant of light soiling (not patterned, mottled or structured)	**0**
4.3.3.b Non-load-bearing interior structures – dirt-catching zone	**Points**
In front of every entrance is an adequate dirt-catching zone of at least 4 m	**25**

In front of every entrance is an adequate dirt-catching zone of at least 2 m	**10**
No adequate dirt-catching zone	**0**
4.3.3.c Non-load-bearing interior structures - baseboards	**Points**
All baseboards are mechanically secured to ensure constant protection against floor cleaning.	**25**
Baseboards are not mechanically secured	**0**
4.3.3.d Non-load-bearing interior structures - obstacles	**Points**
There are **no** inaccessible niches, empty spaces, dead angles, corners and columns in hallways and rooms	**25**
There are **some** inaccessible niches, empty spaces, dead angles, corners and columns in hallways and rooms	**10**
There are **many** inaccessible niches, empty spaces, dead angles, corners and columns in hallways and rooms	**0**

Sub-indicator Load-bearing structure – primary structure	**0**
Sub-indicator Non-load-bearing external structures – glass surfaces	**50**
Sub-indicator Non-load-bearing interior structures	**75**

Indicator 4.3 Cleaning and Maintenance:	**41,66**

Δείκτης 4.4 Αντίσταση στο Χαλάζι, σε Καταιγίδα και σε Σεισμό:

Για τον δείκτη αυτό δεν υπάρχει ακόμα ερωτηματολόγιο και είναι σε διαδικασία ανάπτυξης.

Δείκτης 4.5 Προστασία Θορύβου:

Technical Characteristics

Indicator 4.5 Noise Protection

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **4.5 Noise Protection** is evaluated with **4** sub-indicators:

4.5.1 Airborne sound insulation with respect to exterior sound

4.5.2 Airborne sound insulation with respect to other working areas and to personal working areas (interior walls, ceilings, stairwell walls)

4.5.3 Insulation from impact sound with respect to other working areas and to personal working areas (ceilings, stairs, and stairway landings)

4.5.4 Insulation from sound created by building services (water system and other services)

2. Evaluation

Sub-indicator 4.5.1 Airborne sound insulation with respect to exterior sound

Please specify which of the following statement is appropriate to your project as regards

airborne sound insulation with respect to exterior sound :

The national standard or DIN 4109 is exceeded by at least 1 dB.	X
The national standard or DIN 4109 is fulfilled.	
The national standard or DIN 4109 is not fulfilled.	

Sub-indicator 4.5.2 Airborne sound insulation with respect to other working areas and to personal working areas (interior walls, ceilings, stairwell walls)

Please specify which of the following statement is appropriate to your project as regards

airborne sound insulation with respect to other working areas and to personal working areas :

The national standard or DIN 4109/Supplement 2 is exceeded by at least 1 dB. (airborne sound insulation with respect to other working areas and increased airborne sound insulation in personal working areas)	X
The DIN 4109/Supplement 2 is fulfilled. (airborne sound insulation with respect to other working areas and increased airborne sound insulation in personal working areas)	
The national standard or DIN 4109 is fulfilled. (airborne sound insulation with respect to other working areas	
The national standard or DIN 4109 is not fulfilled.	

Sub-indicator 4.5.3 Insulation from impact sound with respect to other working areas and to personal working areas (ceilings, stairs, and stairway landings)

Please specify which of the following statement is appropriate to your project as regards

impact sound insulation with respect to other working areas and to personal working areas :

The national standard or DIN 4109/Supplement 2 is exceeded by at least 1 dB. (impact sound insulation with respect to other working areas and increased impact sound insulation in personal working areas)	X
The DIN 4109/Supplement 2 is fulfilled. (impact sound insulation with respect to other working areas and increased impact sound insulation in personal working areas)	
The national standard or DIN 4109 is fulfilled. (impact sound insulation with respect to other working areas)	
The national standard or DIN 4109 is not fulfilled.	

Sub-indicator 4.5.4 Insulation from sound created by building services (water system and other services)

Please specify which of the following statement is appropriate to your project as regards

Insulation from sound created by building services :

The national standard or DIN 4109 is exceeded by at least 1 dB.	X
The national standard or DIN 4109 is fulfilled.	
The national standard or DIN 4109 is not fulfilled.	

3. Indicator rating and score

4.5.1 Airborne sound insulation with respect to exterior sound	**Points**
The national standard or DIN 4109 is exceeded by at least 1 dB.	**100**
The national standard or DIN 4109 is fulfilled.	**10**
The national standard or DIN 4109 is not fulfilled.	**0**
4.5.2 Airborne sound insulation with respect to other working areas and within a working area itself	**Points**
The national standard or DIN 4109/Supplement 2 is exceeded by at least 1 dB. (Airborne sound insulation with respect to other working areas and increased airborne sound insulation in personal working)	**100**
DIN 4109/Supplement 2 is fulfilled. (Airborne sound insulation with respect to other working areas and increased airborne sound insulation in personal working)	**50**
The national standard or DIN 4109 is fulfilled. (Airborne sound insulation with respect to other working areas)	**10**
The national standard or DIN 4109 is not fulfilled.	**0**
4.5.3 Impact sound insulation with respect to other working areas and to	**Points**

personal working areas	
The national standard or DIN 4109/Supplement 2 is exceeded by at least 1 dB. (Impact sound insulation with respect to other working areas and increased impact sound insulation with respect to personal working areas)	**100**
DIN 4109/Supplement 2 is fulfilled. (Impact sound insulation with respect to other working areas and increased impact sound insulation with respect to personal working areas)	**50**
The national standard or DIN 4109 is fulfilled. (Impact sound insulation with respect to other working areas)	**10**
The national standard or DIN 4109 is not fulfilled.	**0**

4.5.4 Insulation from sound created by building services	**Points**
The national standard or DIN 4109 is exceeded by at least 1 dB.	**100**
The national standard or DIN 4109 is fulfilled.	**10**
The national standard or DIN 4109 is not fulfilled.	**0**

Sub-indicator 4.5.1 Airborne sound insulation with respect to exterior sound	**100**
Sub-indicator 4.5.2 Airborne sound insulation with respect to other working areas and to personal working areas (interior walls, ceilings, stairwell walls)	**100**
Sub-indicator 4.5.3 Insulation from impact sound with respect to other working areas and to personal working areas (ceilings, stairs, and stairway landings)	**100**
Sub-indicator 4.5.4 Insulation from sound created by building services (water system and other services)	**100**

Indicator 4.5 Noise protection	**100**

Δείκτης 4.6 Ποιότητα του Κελύφους του Κτιρίου:

Technical Characteristics

Indicator 4.6 Quality of the building shell

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **4.6 Quality of the building shell** is evaluated with **6** sub-indicators:

Sub-indicator 4.6.1 Median thermal transmittance coefficients of building components Ū

Sub-indicator 4.6.2 Thermal Bridges

Sub-indicator 4.6.3 Air permeability class (window air-tightness)

Sub-indicator 4.6.4 Amount of condensation inside the structure

Sub-indicator 4.6.5 Air exchange n50 and if necessary q50

Sub-indicator 4.6.6 Solar heat protection

2. Evaluation

Sub-indicator 4.6.1 Median thermal transmittance coefficients of building components

Compared to the **standard values** in **Greece**, your building median thermal transmittance is for each component:

higher	
up to 20% lower	**X**
up to 40% lower	
More than 40% lower	

Sub-indicator 4.6.2 Thermal Bridges

Please specify which of the following statement applies to your project:

Detailed calculations in accordance with EN ISO 10211: Thermal bridge adjustment < 0,01 W/m²K	
Compliance in accordance with EN ISO 13788: Thermal bridge adjustment < 0,05 W/m²K	
Information pertaining to the existing thermal bridges is available: Thermal bridge adjustment < 0,10 W/m²K	
No information pertaining to the existing thermal bridges is available	X

Sub-indicator 4.6.3 Air permeability class (window air-tightness)

According to EN 12207, with which class are the windows compliant?

Class	None	I	II	III	IV

Sub-indicator 4.6.4 Amount of condensation inside the structure

Was there an approval in accordance with EN ISO 13788 or transient heat and humidity determination process EN 15026?

Yes		No	X

Sub-indicator 4.6.5 Air exchange n50 and if necessary q50

What is the air exchange rate **n50** according to EN 13829 (procedure A)?

With ventilation system:		h^{-1}
Without ventilation system		h^{-1}

Only if your building has a interior volume > 1500 m³,

What is the air exchange Q_{50} with respect to external surface area?

Q_{50} [ ] **$m^3/m^2/h$**

Sub-indicator 4.6.6 Solar heat protection

What is the value of the Solar Heat Protection SHP?

SHP [**0**]

3. Indicator rating and score

4.6.1 Median thermal transmittance coefficients of building components Ū		**Points**
Target values of specific country = approximately standard value – 40 %, e.g. components for Germany:	e.g. values for Germany:	
1. Opaque external building components (not included in components of 3. and 4.)	< 0,21	**100**
2. Transparent external building components (not included in components of 3. and 4.)	< 1,15	
3. Curtain facade	< 1,15	
4. Glass roofs, rows of windows, skylights	< 1,90	
Target values of specific country = approximately standard value – 20 %, e.g. components for Germany:	e.g. values for Germany:	**50**
1. Opaque external building components (not included in components of 3. and 4.)	< 0,28	
2. Transparent external building components (not included in components of 3. and 4.)	< 1,50	

3. Curtain facade 4. Glass roofs, rows of windows, skylights	< 1,50 < 2,50	
Standard values of specific country, e.g. components for Germany: 1. Opaque external building components (not included in components of 3. and 4.) 2. Transparent external building components (not included in components of 3. and 4.) 3. Curtain facade 4. Glass roofs, rows of windows, skylights	e.g. Standard values for Germany: < 0,35 < 1,90 < 1,90 < 3,10	**10**
Higher values		**0**

4.6.2 Thermal Bridges	**Points**
Detailed calculations in accordance with EN ISO 10211: Thermal bridge adjustment < 0,01 W/m²K	**100**
Compliance in accordance with EN ISO 13788: Thermal bridge adjustment < 0,05 W/m²K	**50**
Information pertaining to the existing thermal bridges is available: Thermal bridge adjustment < 0,10 W/m²K	**10**
No information pertaining to the existing thermal bridges is available.	**0**

4.6.3 Air permeability class (window air-tightness)	**Points**
Air permeability (interstitial air-tightness): Class 4	**100**

Air permeability (interstitial air-tightness): Class 3		**70**
Air permeability (interstitial air-tightness): Class 2		**40**
Air permeability (interstitial air-tightness): Class 1		**10**
No compliance with one of the Classes.		**0**
4.6.4 Amount of condensation inside the structure		**Points**
Approval in accordance with EN ISO 13788 or transient heat and humidity determination process EN 15026.		**100**
No approval		**0**
4.6.5 Air exchange n50 and if necessary q50		**Points**
<u>Buildings with an interior volume ≤ 1500 m³</u> **without** ventilation systems: Air exchange rate n_{50} in h^{-1}	1,0	**100**
with ventilation systems: Air exchange rate n_{50} in h^{-1}	0,8	
<u>in addition, for buildings with an interior volume > 1500 m³</u> Air exchange with respect to external surface area Q_{50} [m³/m²/h]	2,0	
<u>Buildings with an interior volume ≤ 1500 m³</u> **without** ventilation systems:		**50**

Air exchange rate n_{50} in h^{-1} 1,5 **with** ventilation systems: Air exchange rate n_{50} in h^{-1} 1,0 <u>in addition, for buildings with an interior volume > 1500 m³</u> Air exchange with respect to external surface area Q_{50} [m³/m²/h] 2,5		
<u>Buildings with an interior volume ≤ 1500 m³</u> 3,0 **without** ventilation systems: Air exchange rate n_{50} in h^{-1} **10** **with** ventilation systems: Air exchange rate n_{50} in h^{-1} 1,5 <u>in addition, for buildings with an interior volume > 1500 m³</u> Air exchange with respect to external surface area Q_{50} [m³/m²/h] 3,0		
No compliance.		**0**
4.6.6 Solar heat protection		**Points**
Solar heating protection SHP	≤ 0,12	**100**
Solar heating protection SHP	≤ 0,16	**10**
Solar heating protection SHP	> 0,16	**0**
Sub-indicator 4.6.1 Median thermal transmittance coefficients of building components Ū		**0**

Sub-indicator 4.6.2 Thermal Bridges	**0**
Sub-indicator 4.6.3 Air permeability class (window air-tightness)	**0**
Sub-indicator 4.6.4 Amount of condensation inside the structure	**0**
Sub-indicator 4.6.5 Air exchange n50 and if necessary q50	**0**
Sub-indicator 4.6.6 Solar heat protection	**0**

Indicator 4.6 Quality of the building shell:	**0**

Δεν υπήρχαν αρκετά δεδομένα για να πάρουμε αποτελέσματα.

Δείκτης 4.7 Ευκολία Αποδόμησης, Ανακύκλωσης, και Αποξήλωσης:

Technical Characteristics

Indicator 4.7 Ease of Deconstruction, Recycling, and Dismantling

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **4.7 Ease of Deconstruction, Recycling, and Dismantling** is evaluated with **3** sub-indicators:

4.7.1 Effort for dismantling /disassembly

4.7.2 Effort for sorting/separation

4.7.3 Verification of the inclusion of a recycling/disposal concept with information about construction components in the certification application

2. Evaluation

For the sub-indicators 4.7.1 and 4.7.2, please use the excel table attached and report here in the right box the final score achieved.

Sub-indicator 4.7.1 Effort for dismantling /disassembly

Disassembly of building components requires in average:	Score
very low effort (71-100): e. g. clamped joints, loose supports, simple snapping or bolted joints	
low effort (41-70): e. g. removal of filler material, removal of bolted clamps	
moderate effort (11-40): e. g. tearing up flooring, removal of poured sheathing elements	
high effort (1-10): e. g. demolition of adhesive coatings	X
very high effort (0)	

Sub-indicator 4.7.2 Effort for sorting/separation

Separating/sorting building components requires in average:	Score
low effort (11-100): performed by personnel either manually or with simple tools	
reasonable effort (1-10): requires machinery suitable for the disassembly work in addition to personnel.	X
high effort (0): great expense of time and money, separation offsite	

Sub-indicator 4.7.3 Verification of the inclusion of a recycling/disposal concept with information about construction components in the certification application

Is a verifiable recycling/disposal concept with information about construction components included in the certification application?

Yes [ ] **No** [X]

3. Indicator rating and score

4.7.1 Effort for dismantling /disassembly	Points
Disassembly requires very low effort: e. g. clamped joints, loose supports, simple snapping or bolted joints	100
Disassembly requires low effort: e. g. removal of filler material, removal of bolted clamps	70
Disassembly requires moderate effort: e. g. tearing up flooring, removal of poured sheathing elements	40
Disassembly requires high effort: e. g. demolition of adhesive coatings	10
Disassembly requires very high effort	0

4.7.2 Effort for sorting/separation	Points
Low effort for sorting/separating	100
Reasonable effort for sorting/separating	10
High effort for sorting/separating	0

4.7.3 Verification of the inclusion of a recycling/disposal concept with information about construction components in the certification application	Points
A verifiable recycling/disposal concept is included in the certification application	100
A verifiable recycling/disposal concept is **NOT** included in the certification application	0

Sub-indicator 4.7.1 Effort for dismantling /disassembly	10
Sub-indicator 4.7.2 Effort for sorting/separation	0
Sub-indicator 4.7.3 Verification of the inclusion of a recycling/disposal concept with information about construction components in the certification application	0

Indicator 4.7 Ease of Deconstruction, Recycling, and Dismantling	**3,33**

3.5. Διαδικασίες Ποιότητας

Η πέμπτη κατηγορία είναι οι Διαδικασίες Ποιότητας και αφορά τους δείκτες όπως βλέπουμε παρακάτω:

Διαδικασίες Ποιότητας	5.1	Ποιότητα της Προετοιμασίας του Έργου	25	100	25%	1	35,11%
	5.2	Ολοκληρωμένος Σχεδιασμό	70	100	70%	1	
	5.3	Βελτιστοποίηση και Πολυπλοκότητα από την Προσέγγιση του Σχεδιασμού	16	100	16%	1	
	5.4	Αποδεικτικά στοιχεία της Αειφορίας Κατά την Διάρκεια της Πρόσκλησης Πλειοδότησης και Απονομής	0	100	0%	1	
	5.5	Επιπτώσεις Εργοταξίου/Διαδικασίες Κατασκευής	15	100	15%	1	
	5.6	Ποιότητα Εκτέλεσης Εργολαβιών/Προεπιλογής	50	100	50%	1	
	5.7	Διασφάλισης Ποιότητας της Εκτέλεσης Κατασκευής	37,5	100	37,5%	1	
	5.8	Εκτέλεση	75	100	75%	1	
	5.9	Παρακολούθηση, Χρήση και Λειτουργία	27,5	100	27,5%	1	

1. Στόχοι:

5.1. Ποιότητα της Προετοιμασίας του Έργου: Εξέταση και βελτίωση της απόδοσης της βιωσιμότητας του κτιρίου νωρίς στη φάση του σχεδιασμού

5.2. Ολοκληρωμένος Σχεδιασμός: Οργάνωση και υποστήριξη με πλήρη ομάδα (Αρχιτέκτονα ,Η/Μ Μηχανικό ,Κύριος του έργου, Σύμβουλο Φωτισμού-Ακουστικής, Χρήστη του κτιρίου, Τοπικό Φορέα) για την βελτίωση του σχεδιασμού κατασκευής του κτιρίου.

5.3. Βελτιστοποίηση και Πολυπλοκότητα από την Προσέγγιση του Σχεδιασμού: τη βελτιστοποίηση της αντίληψης με την συμμετοχή οικολογικών , κοινωνικό-πολιτιστικών/λειτουργικών και τεχνικών πτυχών

5.4. Αποδεικτικά στοιχεία της Αειφορίας Κατά την Διάρκεια της Πρόσκλησης Πλειοδότησης και Απονομής: διασφάλιση της υλοποίησης των στόχων της βιώσιμης διαδικασίας σχεδιασμού

5.5. Επιπτώσεις Εργοταξίου/Διαδικασίες Κατασκευής: την ελαχιστοποίηση των επιπτώσεων του εργοταξίου για το περιβάλλον και την προστασία της υγείας όλων των συμμετεχόντων.

5.6. Ποιότητα Εκτέλεσης Εργολαβιών/Προεπιλογή: την ενίσχυση των επιδόσεων των επιλεγμένων εργολάβων και την ελαχιστοποίηση των αποτυχιών στην επίτευξη των στόχων του πελάτη

5.7. Διασφάλισης της Ποιότητας Εκτέλεσης της Κατασκευής: την εξάλειψη των κινδύνων και τις ελλείψεις που θα μπορούσαν να έχουν συμβεί κατά τη διάρκεια της κατασκευής

5.8. Εκτέλεση: να εκτιμηθεί σε ποιο βαθμό η τελική διαδικασία ανάθεσης έχει σχεδιαστεί,οργανωθεί,εκτελεστεί και τεκμηριωθεί στη οικοδόμηση του κύκλου ζωής.

5.9. Παρακολούθηση, Χρήση και Λειτουργία:

I. Για να βελτιστοποιήσετε την πραγματική απόδοση ενός κτιρίου

II. Να παρέχει στους χρήστες και διαχειριστές κτιρίων με τις κατάλληλες «εγχειρίδια κτίριο"

2. Μεθοδολογία αξιολόγησης, Υπολογισμός και βαθμολογία

Για τον Υπολογισμό των Δεικτών συμπληρώνουμε την φόρμα με τα δεδομένα μας και υπολογίζουμε την βαθμολογία μας.
Οι φόρμες με τις απαντήσεις συμπληρωμένες και την βαθμολογία ακολουθούν ανά δείκτη:

Δείκτης 5.1 Ποιότητα της Προετοιμασίας του Έργου:

Process Quality

Indicator 5.1 Quality of project's preparation

Date10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **5.1 Quality of project's preparation** is evaluated with **4** sub-indicators:

5.1.1 Demand planning

5.1.2 Agreement on objectives

5.1.3 Architectural competition

5.1.4 Influence on energy consumption for user and utilization needs/environmental strategies

2. Evaluation

Sub-indicator 5.1.1 Demand planning

Was a demand planning, demand description or something comparable conducted?

Yes [X] **No** [ ]

If **yes**, the demand planning was conducted to determine building owner's needs in line with:

The 12 themes of demand planning (described in Annex 1.c in Assessment Guideline) or similar scope	**X**
The 7 themes of demand planning (described in Annex 1.b in Assessment Guideline) or similar scope	
The theme of demand description (described in Annex 1.a in Assessment Guideline) or similar scope	

Sub-indicator 5.1.2 Agreement on objectives

Please specify which of the following statement is appropriate to your project:

An agreement was reached for a target with specifications for the different planning phases defined in an official document of the country (e.g. HOAI for Germany or RIBA for Great Britain)	

A target was agreed upon in accordance with Annex 1 of the BMVBS Guide or similar rules	
No documented agreement on a target or anything similar was reached.	X

Sub-indicator 5.1.3 Architectural competition

Please specify which of the following statement is appropriate to your project:

An architectural competition or other similar competition is prepared and takes place with special consideration of sustainable building; the jurors who award contracts and other experts (multidisciplinary) have experience in sustainable building. The specifications cover the main requirements for sustainable building in compliance with the Annex 1 of the UIA guide on international competitions or the list of criteria of OPEN HOUSE; demonstration of compliance is required and reviewed in competition.	
An architectural competition or other similar competition is prepared and takes place with special consideration of sustainable building; the jurors who award contracts and other experts (multidisciplinary) have experience in sustainable building.	
An architectural competition or other similar competition is prepared and takes place with special consideration of sustainable building; a juror or other expert awarding the contract has experience in sustainable building.	
No architectural competition or other similar competition is prepared and takes place with special consideration of sustainable building and/or no juror or other expert awarding the contract has experience in sustainable building	X

Sub-indicator 5.1.4 Influence on energy consumption for user and utilization needs /environmental strategies

Please specify which of the following statement is appropriate to your project:

Building simulation with consideration of user equipment and behaviour, including documentation of energy-efficient user equipment and the building's adaptability. If the building's energy performance is simulated, these items must be taken into consideration for the assessment. Furthermore, the implementation strategy must be documented.	
Building simulation with consideration of user equipment and behaviour, including documentation of energy-efficient user equipment and the building's adaptability. If the	

building's energy performance is simulated, these items must be taken into consideration for the assessment.	
Documentation of energy-efficient user equipment and the building's adaptability.	
Energy-efficient user equipment is not taken into consideration during the planning phase	X

3. Indicator rating and score

5.1.1 Demand Planning	Points
Demand planning was conducted in detail to determine building owner's needs in line with the twelve themes of the Annex 1.c of this criterion, or of similar scope.	100
Demand planning was conducted to determine building owner's needs in line with the seven themes of the Annex 1.b of this criterion, or of similar scope.	75
Demand description was conducted to determine building owner's needs in line with the theme of the Annex 1.a of this criterion, or of similar scope.	50
No demand planning nor demand description or something comparable was conducted.	0
5.1.2 Agreement on objectives	**Points**
An agreement was reached for a target with specifications for the different planning phases defined in an official document of the country (e.g. HOAI for Germany or RIBA for Great Britain) as stipulated in SIA 112-1 or similar rules.	100
A target was agreed upon in accordance with Annex 1 of the BMVBS Guide or similar rules	75
No documented agreement on a target or anything similar was reached.	0
5.1.3 Architectural competition	**Points**
An architectural competition or other similar competition is prepared and takes place with special consideration of sustainable building; the jurors who award contracts and other experts (multidisciplinary) have experience in sustainable building. The specifications cover the main requirements for sustainable building in compliance with the Annex 1 of the UIA guide on international competitions or the list of criteria	100

of OPEN HOUSE; demonstration of compliance is required and reviewed in competition.	
An architectural competition or other similar competition is prepared and takes place with special consideration of sustainable building; the jurors who award contracts and other experts (multidisciplinary) have experience in sustainable building.	**75**
An architectural competition or other similar competition is prepared and takes place with special consideration of sustainable building; a juror or other expert awarding the contract has experience in sustainable building.	**50**
No architectural competition or other similar competition is prepared and takes place with special consideration of sustainable building and/or no juror or other expert awarding the contract has experience in sustainable building	**0**

5.1.4 Influence on energy consumption for user and utilization needs	**Points**
Building simulation with consideration of user equipment and behaviour, including documentation of energy-efficient user equipment and the building's adaptability. If the building's energy performance is simulated, these items must be taken into consideration for the assessment. Furthermore, the implementation strategy must be documented.	**100**
Building simulation with consideration of user equipment and behaviour, including documentation of energy-efficient user equipment and the building's adaptability. If the building's energy performance is simulated, these items must be taken into consideration for the assessment.	**75**
Documentation of energy-efficient user equipment and the building's adaptability.	**50**
Energy-efficient user equipment is not taken into consideration during the planning phase	**0**

Sub-indicator 5.1.1 Demand planning	**100**
Sub-indicator 5.1.2 Agreement on objectives	**0**
Sub-indicator 5.1.3 Architectural competition	**0**
Sub-indicator 5.1.4 Influence on energy consumption for user and utilization needs /environmental strategies	**0**

Indicator 5.1 Quality of project's preparation: 25

Δείκτης 5.2 Ολοκληρωμένος Σχεδιασμός:

Process Quality

Indicator 5.2 Integrated Planning

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **5.2 Integrated Planning** is evaluated with **5** sub-indicators:

5.2.1 Integrated Project Team

5.2.2 Qualification of the Integrated Project Team

5.2.3 Design Charrette / Preparation of consultation

5.2.4 Integrated planning process

5.2.5 Participation of future building users and other relevant stakeholders / Community impact consultation

2. Evaluation

Sub-indicator 5.2.1 Integrated Project Team

Please fill in the table in **annex 5.2.1_1** to indicate which stakeholders have been involved during the different phases.

How many integrated project team members were actively involved in at least **3 phases** of project design and construction process?

3 **members**

Sub-indicator 5.2.2 Qualification of the Integrated Project Team

Have professionals in design team a membership in architectural and engineering chambers or other qualified chambers or associations?

Yes X **No**

Can they demonstrate further education with focus on sustainability?

Yes [X] **No** [ ]

Sub-indicator 5.2.3 Design Charrette / Preparation of consultation

How many full-day (2 half-day) workshops were conducted with the integrated project team and at least 3 appropriate stakeholders PLUS the owner/owner's representative?

[5] **Full-day workshops**

Sub-indicator 5.2.4 Integrated planning process

a. Considering the following project phases:

1. Pre-design
2. Schematic design
3. Design development
4. Construction documents
5. Bidding
6. Construction
7. Substantial completion
8. Final completion
9. Certificate of occupancy

Indicate in how many project phases the integration of certification criteria has been performed:

[5] **Project phases**

b. How many meetings with the integrated project team were conducted per month?

[2] **Meetings per month**

Sub-indicator 5.2.5 Participation of future building users and other relevant stakeholders / Community impact consultation

a. Did participation, consultative involvement, and a co-determination of the users take place?

Yes [X] **No** [ ]

b. Was the public involved, were they informed and consulted, and could they participate?

Yes [ ] No [X]

3. Indicator rating and score

5.2.1 Integrated Project Team	Points
Actively involved: 4 integrated project team members in at least 3 phases of project design and construction process.	100
Actively involved: 3 integrated project team members in at least 3 phases of project design and construction process.	50
Actively involved: 2 or less integrated project team members in at least 3 phases of project design and construction process.	0
5.2.2 Qualification of the Integrated Project Team	**Points**
The design team members are members in architectural and engineering chambers or other qualified chambers or associations AND can demonstrate further education with focus on sustainability.	100
The design team members are members in architectural and engineering chambers or other qualified chambers or associations.	50
The design team members are not members in architectural and engineering chambers or other qualified chambers or associations.	0
5.2.3 Design Charrette / Preparation of consultation	**Points**
At least 2 full-day (resp. 4 half-day) or more workshops with the integrated project team and at least 3 appropriate stakeholders PLUS the owner/owner's representative	100
1 full-day (resp. 2 half-day) workshop with the integrated project team and at least 3 appropriate stakeholders PLUS the owner/owner's representative	50
No full-day workshop with the integrated project team and at least	0

3 appropriate stakeholders PLUS the owner/owner's representative	
5.2.4-a. Integrated planning process: Meetings	**Points**
Meetings with the integrated project team at least twice per month or more often	**50**
Meetings with the integrated project team once per month	**25**
No meetings with the integrated project team	**0**
5.2.4-b. Integrated planning process : Integration of certification criteria	**Points**
Integration of certification criteria in at least 4 or more project phases	**50**
Integration of certification criteria in at least 3 project phases	**25**
Integration of certification criteria in 2 or less project phases	**0**
5.2.5-a. Participation of future building users and other relevant stakeholders	**Points**
Participation, consultative involvement, and a co-determination of the users and other relevant stakeholders took place.	**50**
.No involvement of future building users and other relevant stakeholders	**0**
5.2.5-b. Community impact consultation	**Points**
The public were involved, informed and consulted, and they could participate	**50**
Not involvement of the public community	**0**

Sub- indicator 5.2.1 Integrated Project Team	**50**
Sub-indicator 5.2.2 Qualification of the Integrated Project Team	**50**
Sub-indicator 5.2.3 Design Charrette / Preparation of consultation	**100**
Sub-indicator 5.2.4 Integrated planning process	**100**
Sub-indicator 5.2.5 Participation of future building users and other relevant stakeholders / Community impact consultation	**50**

Indicator 5.2 Integral Planning | 70

Δείκτης 5.3 Βελτιστοποίηση και Πολυπλοκότητα από την Προσέγγιση του Σχεδιασμού:

Process Quality

Indicator 5.3 Optimization and Complexity of the Approach to Planning

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **5.3 Optimization and Complexity of the Approach to Planning** is evaluated with **10** sub-indicators:

5.3.1 Safety and Health plan

5.3.2 Energy concept

5.3.3 Water concept

5.3.4 Optimization of daylight and artificial lighting

5.3.5 Waste concept

5.3.6 Measurement concept

5.3.7 Concept for conversion, dismantling and recycling

5.3.8 Concept for ease of cleaning and maintenance

5.3.9 Independent third party review of planning documents

5.3.10 Execution of variant comparisons

2. Evaluation

Sub-indicator 5.3.1 Safety and Health plan

Was a Safety and Health plan implemented?

Yes	X	No	

Sub-indicator 5.3.2 Energy concept

Was an energy concept covering the whole life cycle implemented?

Yes, with detailed reviews of alternative energy supply systems and the use of renewable energy, while at the same time taking economic feasibility into consideration	
Yes	
No	X

Sub-indicator 5.3.3 Water concept

Was a water concept covering the whole life cycle implemented?

Yes, considering: - Reduction of freshwater consumption and rain water seepage - Increased use of rain water and grey water	
Yes, considering reduction of freshwater consumption and rain water seepage	
Yes, considering reduction of freshwater consumption	
No	X

Sub-indicator 5.3.4 Optimization of daylight and artificial lighting

Realisation of a simulation of daylight:

Yes		No	X

Realisation of a calculation for artificial light:

Yes ☐ **No** ☒ X

Sub-indicator 5.3.5 Waste concept

Was a waste concept implemented in the planning phase with a local waste processor?

Yes, and implementation of the results into the further planning ☐

Yes ☐

No ☒ X

Sub-indicator 5.3.6 Measurement concept

Creation and implementation of a measurement and monitoring concept that records **nearly all technical systems** relevant for operation and consumption for **over two years** after the building is put into operation.

Realisation of improvements based on the results of the measurements during the two years.

Implementation of a long term concept for monitoring ☐

Creation and implementation of a measurement and monitoring concept that records the **energy** and **water** consumption for **over two years** after the building is put into operation.

Realisation of improvements based on the results of the measurements during the two years.

Implementation of a long term concept for monitoring. ☐

No measurement concept was implemented ☒ X

Sub-indicator 5.3.7 Concept for conversion, dismantling and recycling

Were the following options taken into consideration in planning:

Converting and dismantling the building:

Yes, and documented ☐ **Yes** ☒ X **No** ☐

Recycling components and construction products:

Yes, and documented ☐ **Yes** ☒ **No** ☐

Was a detailed concept given, including:

- a concept for changes in types of use, including the consequences for construction and technical components

- a concept for recycling and dismantling

Yes ☐ **No** ☒

Sub-indicator 5.3.8 Concept for ease of cleaning and maintenance

Was a concept for ease of cleaning and maintenance created?

Yes ☐ **No** ☒

If yes, was this concept detailed and implemented in practice to improve the construction of the building?

Yes ☐ **No** ☒

Sub-indicator 5.3.9 Independent third party review of planning documents

Was there a review of planning documents conducted by **one** of the following person:

1. Independent third parties OR external auditors

2. Internal review by an expert, such as « design review »

3. The two heads principle : a second staff member from within or outside the processing team is involved

Yes ☒ **No** ☐

Does the implementation of independent third party review of planning documents correspond to the legal requirement?

Yes ☒ **No** ☐

Sub-indicator 5.3.10 Execution of variant comparisons

Were variant comparisons about basic or special services in building planning executed during the preliminary planning phase?

Yes [ ] **No** [X]

If yes, was the evaluation of different alternatives done with methods taking into consideration ecologic, social/functional, economic and technical aspects (like : Life Cycle Assessment, or Life Cycle Costs)?

Yes [ ] **No** [X]

3. Indicator rating and score

5.3.1 Safety and Health plan	**Points**
Implementation of a security and health plan	**100**
No creation and implementation of a safety and health plan	**0**
5.3.2 Energy concept	**Points**
Creation and implementation of an energy concept. Containing detailed reviews of alternative energy supply systems and the use of renewable energy, while at the same time taking economic feasibility into consideration	**100**
Creation and implementation of an energy concept	**50**
No creation and implementation of an energy concept	**0**
5.3.3 Water concept	**Points**
Creation and implementation of a water concept considering the topics: - Reduction of freshwater consumption and rain water seepage - Increased use of rain water and grey water	**100**
Creation and implementation of a water concept considering the topics: - Reduction of freshwater consumption and rain water seepage	**70**

Creation and implementation of a water concept considering the topics: - Reduction of freshwater consumption	**50**
No creation and implementation of an water concept	**0**
5.3.4 Optimization of daylight and artificial lighting	**Points**
Simulation of daylight AND calculation of artificial lighting	**100**
Simulation of daylight OR calculation of artificial lighting	**50**
No Simulation of daylight or calculation of artificial lighting	**0**
5.3.5 Waste concept	**Points**
Creation of a waste concept in the planning phase in cooperation with a local waste processor and implementation of the results into the further planning	**100**
Creation of a waste concept in the planning phase in cooperation with a local waste processor	**50**
No creation and implementation of a waste concept	**0**
5.3.6 Measurement concept	**Points**
Creation and implementation of a measurement and monitoring concept that records nearly all technical systems relevant for operation and consumption for over two years after the building is put into operation. Realisation of improvements based on the results of the measurements during the two years. Implementation of a long term concept for monitoring.	**100**
Creation and implementation of a measurement and monitoring concept that records the energy and water consumption for over two years after the building is put into operation. Realisation of improvements based on the results of the measurements during the two years. Implementation of a long term concept for monitoring.	**50**
No creation and implementation of a measurement concept	**0**

5.3.7 Concept for conversion, dismantling and recycling	Points
Following options are taken into consideration and documented in planning: - converting and dismantling the building - recycling components and construction products A detailed concept is included, with: - a concept for changes in types of use, including the consequences for construction and technical components - a concept for recycling and dismantling	**100**
Following options are taken into consideration in planning: - converting and dismantling the building - recycling components and construction products	**50**
No creation and implementation of a concept for conversion, dismantling and recycling	**0**

5.3.8 Concept for ease of cleaning and maintenance	Points
A detailed concept for ease of cleaning and maintenance is created and implemented. Results from the concept in the planning phase are in practice implemented to improve the construction of the building	**100**
A concept for ease of cleaning and maintenance is created in the planning.	**50**
No creation and implementation of a concept for ease of cleaning and maintenance	**0**

5.3.9 Independent third party review of planning documents	Points
The implementation of independent third party review of planning documents is far beyond the legal requirements. The review can also be conducted by : 1. Independent third parties OR external auditors 2. Internal review by an expert, such as « design review »	**100**

3. The two heads principle : a second staff member from within or outside the processing team is involved	
The implementation of independent third party review of planning documents corresponds to the legal requirement	**10**
The implementation of independent third party review of planning documents does not meet the legal requirement	**0**
5.3.10 Execution of variant comparisons	**Points**
Execution of variant comparisons about basic or special services in building planning is done during the preliminary planning phase. The analysis and evaluation of alternatives takes into consideration technical, social/functional, economic and ecological aspects (e.g. : Life Cycle Assessment, Life Cycle Costs).	**100**
Execution of variant comparisons about basic or special services in building planning is done during the preliminary planning phase.	**50**
The execution of variant comparisons corresponds to the legal requirement	**10**
No execution of variant comparisons	**0**

Sub-indicator 5.3.1 Safety and Health plan	**100**
Sub-indicator 5.3.2 Energy concept	**0**
Sub-indicator 5.3.3 Water concept	**0**
Sub-indicator 5.3.4 Optimization of daylight and artificial lighting	**0**
Sub-indicator 5.3.5 Waste concept	**0**
Sub-indicator 5.3.6 Measurement concept	**0**
Sub-indicator 5.3.7 Concept for conversion, dismantling and recycling	**50**
Sub-indicator 5.3.8 Concept for ease of cleaning and maintenance	**0**
Sub-indicator 5.3.9 Independent third party review of planning documents	**10**

Sub-indicator 5.3.10 Execution of variant comparisons	**0**
Indicator 5.3 **Optimization and Complexity of the Approach to Planning**	**16**

Δείκτης 5.4 Αποδεικτικά στοιχεία της Αειφορίας Κατά την Διάρκεια της Πρόσκλησης Πλειοδότησης και Απονομής:

Process Quality

Indicator 5.4 Evidence of Sustainability during Bid Invitation and Awarding

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **5.4 Evidence of Sustainability during Bid Invitation and Awarding** is evaluated with **2** sub-indicators:

5.4.1 Integration of Sustainability Aspects during Bid Invitation

5.4.2 Integration of Sustainability Aspects during Awarding

2. Evaluation

Sub-indicator 5.4.1 Integration of Sustainability Aspects during Bid Invitation

Please specify which of the following statement is appropriate to your project:

Sustainability aspects are clearly and comprehensively integrated in the call for tenders' documentation on the overall building level, and – where appropriate – also on the individual components' level. Additionally, there is a performance sheet prepared listing functional requirements/technical performances with an indication of basic (must) criteria and target criteria (bonus points during	

awarding).	
Sustainability aspects are clearly and comprehensively integrated in the call for tenders' documentation on the overall building level, and – where appropriate – also on the individual components' level. Must criteria are explicitly stated.	
Sustainability aspects are integrated in a general way on the overall building level. Some additional such requirements are descriptively stated for certain building components.	
Sustainability aspects are partly integrated on the overall building level.	
Sustainability is not addressed in the call for tenders.	X

Sub-indicator 5.4.2 Integration of Sustainability Aspects during Awarding

Please specify which of the following statement is appropriate to your project:

In addition to the sustainability elements defined for the actual topic of the call for tenders (sub-indicator 5.4.1) there is a set of (project-specific) requirements prepared addressing sustainability aspects linked to the (potential) contractor, e.g. products/services provider. It can comprise topics as company environmental policy and qualifications, organisation of production, waste management, transport means, employment policies etc. The criteria contained herein can be must and/or target ones (leading from exclusion to bonus points). These requirements are used in connection with other ones to gain an integral valuation of the offer. Their role and way of consideration are clearly described in the bid invitation documents.	
The awarding process includes consideration of certain sustainability aspects connected to potential contractor companies.	
The awarding is conditioned by an obligation by the (future) contractor to respect/comply with certain standards, i.e. respecting the min. tariff rates or prevention of child labour.	
Sustainability is not addressed in the awarding process.	X

3. Indicator rating and score

5.4.1 Integration of Sustainability Aspects during Bid Invitation	Points
Sustainability aspects are clearly and comprehensively integrated in the call for tenders' documentation on the overall building level, and – where appropriate – also on the individual components' level. Additionally, there is a performance sheet prepared listing functional requirements/technical performances with an indication of basic (must) criteria and target criteria (bonus points during awarding).	**100**
Sustainability aspects are clearly and comprehensively integrated in the call for tenders' documentation on the overall building level, and – where appropriate – also on the individual components' level. Must criteria are explicitly stated.	**70**
Sustainability aspects are integrated in a general way on the overall building level. Some additional such requirements are descriptively stated for certain building components.	**50**
Sustainability aspects are partly integrated on the overall building level.	**10**
Sustainability is not addressed in the call for tenders.	**0**

5.4.2 Integration of Sustainability Aspects during Awarding	Points
In addition to the sustainability elements defined for the actual topic of the call for tenders (sub-indicator 5.4.1) there is a set of (project-specific) requirements prepared addressing sustainability aspects linked to the (potential) contractor, e.g. products/services provider. It can comprise topics as company environmental policy and qualifications, organisation of production, waste management, transport means, employment policies etc. The criteria contained herein can be must and/or target ones (leading from exclusion to bonus points). These requirements are used in connection with other ones to gain an integral valuation of the offer. Their role and way of consideration are clearly described in the bid invitation documents.	**100**
The awarding process includes consideration of certain sustainability aspects connected to potential contractor companies.	**50**
The awarding is conditioned by an obligation by the (future) contractor to respect/comply with certain standards, i.e. respecting the min. tariff rates or prevention of child labour.	**10**
Sustainability is not addressed in the awarding process.	**0**

Sub-indicator 5.4.1 Integration of Sustainability Aspects during Bid Invitation	**0**
Sub-indicator 5.4.2 Integration of Sustainability Aspects during Awarding	**0**

Indicator 5.4 **Evidence of Sustainability during Bid Invitation and Awarding:**	**0**

Δείκτης 5.5 Επιπτώσεις Εργοταξίου/Διαδικασίες Κατασκευής:

Process Quality

Indicator 5.5 Construction Site Impact/Construction Process

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **5.5 Construction Site Impact/Construction Process** is evaluated with **4** sub-indicators:

5.5.1 Low-waste and recycling on construction site

5.5.2 Low-noise construction site

5.5.3 Low-dust construction site

5.5.4 Environmental protection at the construction site

2. Evaluation

Sub-indicator 5.5.1 Low-waste construction site

- Are the minimum legal requirements from national regulations met?

Yes	X	No	

- Were people involved in the construction process specifically trained in waste prevention?

Yes ☐ **No** ☒ X

- Were construction materials sorted into mineral waste, recyclable material, mixed construction waste, problematic substances, and waste containing asbestos?

Yes ☒ X **No** ☐

- Have construction overseers ensured that material was separated and the various waste containers were used properly?

Yes ☐ **No** ☒ X

Sub-indicator 5.5.2 Low-noise construction site

- Do call for tenders and bid documents specify the requirements for noise protection within the legal framework?

Yes ☐ **No** ☒ X

- Was the noise caused during construction demonstrably and consistently below the general noise level of the surroundings, or were the specifications in the call for tenders and bids complied with?

Yes ☐ **No** ☒ X

If yes, how was the compliance ensured?

Measurements onsite ☐

Alternative actions: test of low-noise construction equipment, protection times, etc. ☐

Sub-indicator 5.5.3 Low-dust construction site

Are **all** the following specifications required in the call of tenders and included in the bid?

- machines and equipment have effective vacuum devices
- dust is completely collected where it is produced to the extent possible and disposed of without an environmental impact.
- when technically possible, dust has to be prevented from spreading to work areas that are still clean.
- dust is not allowed to pile up
- vacuum equipment, humidifiers or water are used to get rid of dust
- the equipment used to separate and collect dust has to be state-of-the-art.
- the equipment must be regularly serviced and inspected

- these measures fulfil the legal requirements

Yes [ ] **No** [X]

Is their enforcement monitored and documented?

Yes [X] **No** [ ]

Sub-indicator 5.5.4 Environmental protection at the construction site

- Do the documents for the call for tenders and bids expressly take account of environmental protection?

Yes [X] **No** [ ]

- Are steps taken to ensure that trees, water and soil are protected from chemical contamination, especially from the substances listed in the Risk and Safety Statements?

Yes [X] **No** [ ]

- Is there demonstration of protection against detrimental mechanical influence??

Yes [ ] **No** [X]

- Does documentation from the construction management confirm environmental protection during the construction phase?

Yes [ ] **No** [X]

3. Indicator rating and score

5.5.1 Low-waste construction site	Points
- The minimum legal requirements in the national regulation were met	**100**

- Furthermore, the people involved in the construction process were specifically trained in waste prevention. - The construction overseers ensured that material was separated and the various waste containers were used properly. - Construction materials were sorted into mineral waste, recyclable material, mixed construction waste, problematic substances, and waste containing asbestos.	
- The minimum legal requirements in the national regulation were met. - Construction materials were sorted into mineral waste, recyclable material, mixed construction waste, problematic substances, and waste containing asbestos.	**50**
No special steps were taken to prevent, reuse, or properly dispose of waste.	**0**
5.5.2 Low-noise construction site	**Points**
The noise caused during construction must demonstrably and consistently be below the general noise level of the surroundings or it must be proven that the specifications in the call for tenders and bids were complied with. **Measurements were conducted and documented to prove compliance.**	**100**
The noise caused during construction must demonstrably and consistently be below the general noise level of the surroundings or it must be proven that the specifications in the call for tenders and bids were complied with. **Compliance was checked and documented (test of low-noise construction equipment, compliance with protection times, etc.).**	**50**
The call for tenders and bid documents specify the requirements for noise protection within the legal framework.	**10**
No special steps were taken to prevent construction noise. The national regulation about noise pollution was not complied with.	**0**
5.5.3 Low-dust construction site	**Points**
All these specifications were required in the call of tenders and included in the bid. **Their enforcement is monitored and documented.**	**100**

All these specifications were required in the call of tenders and included in the bid.	**50**
Nothing was prepared to prevent or reduce dust	**0**

5.5.4 Environmental protection at the construction site	**Points**
The documents for the call for tenders and bids expressly take account of environmental protection. Steps are taken to ensure that trees, water and soil are protected from chemical contamination, especially from the substances listed in the Risk and Safety Statements, **or detrimental mechanical influence.** Documentation from the construction management confirms environmental protection during the construction phase.	**100**
The documents for the call for tenders and bids expressly take account of environmental protection. Steps are taken to ensure that trees, water and soil are protected from chemical contamination, especially from the substances listed in the Risk and Safety Statements. Documentation from the construction management confirms environmental protection during the construction phase.	**50**
The documents for the call for tenders and bids expressly take account of environmental protection. Steps are taken to ensure that trees, water and soil are protected in accordance with national regulations.	**10**
No special actions are taken to protect the environment during construction phase.	**0**

Sub-indicator 5.5.1 Low-waste and recycling on construction site plan	**50**
Sub-indicator 5.5.2 Low-noise construction site	**0**
Sub-indicator 5.5.3 Low-dust construction site	**0**
Sub-indicator 5.5.4 Environmental protection at the construction site	**10**

Indicator 5.5 Construction Site Impact/Construction Process | **15**

Δείκτης 5.6 Ποιότητα Εκτέλεσης Εργολαβιών/Προεπιλογής:

Process Quality

Indicator 5.6 Quality of the Executing Contractors Pre-Qualification

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **5.6 Quality of the Executing Contractors / Pre-Qualification** is evaluated with **1** sub-indicator:

5.6.1 Quality of Executing Contractors / Pre-Qualification

2. Evaluation

Sub-indicator 5.6.1 Quality of Executing Contractors / Pre-Qualification

Please specify which of the following statement applies to your project:

The bidding firms were reviewed according to ISO 14001 or equal rules (such as the company's quality management) by the building owner or the building owner's representative.	
Only contractors whose reliability, expertise, and high performance were confirmed using the standards of ISO 9001 received contracts OR The contractors' reliability, expertise, and high performance are known based on many years of collaboration	**X**
Contractors whose qualification was not confirmed received contracts	

3. Indicator rating and score

5.6.2 Quality of Executing Contractors / Pre-Qualification	Points
The bidding firms were reviewed according to ISO 14001 or equal rules (such as the company's quality management) by the building owner or the building owner's representative.	**100**
Only contractors whose reliability, expertise, and high performance were confirmed using the standards of ISO 9001 received contracts OR The contractors' reliability, expertise, and high performance are known based on many years of collaboration	**50**
Contractors whose qualification was not confirmed received contracts	**0**
Sub-indicator 5.6.1 Quality of Executing Contractors / Pre-Qualification	**50**

Indicator 5.6 Quality of Executing Contractors/Pre-Qualification: 50

Δείκτης 5.7 Διασφάλισης της Ποιότητας Εκτέλεσης της Κατασκευής:

Process Quality

Indicator 5.7 Quality Assurance of Construction Execution

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **5.7 Quality Assurance of Construction Execution** is evaluated with **2** sub-indicators:

5.7.1 Documentation of the materials, auxiliary materials, and safety data sheets

5.7.2 Measurements for quality control

2. Evaluation

Sub-indicator 5.7.1 Documentation of the materials, auxiliary materials, and safety data sheets

Are the required safety data sheets available?

Yes [X] **No** [ ]

Are the materials used comprehensively documented and compared to the ones planned?

Yes [X] **No** [ ]

Are the documents compiled along with other documentation for the building in a building manual?

Yes [ ] **No** [X]

Sub-indicator 5.7.2 Measurements for quality

Were procedures executed to measure the energy quality of a building?

(e.g. blower door test or thermography)?

Yes [ ] **No** [X]

If **yes**, please specify which ones:

Blower door test [ ]

Thermography [ ]

Other (please describe) [ ]

Were procedures executed to measure the acoustical quality of a building?

(e.g. checking the footfall sound insulation)

Yes ☐ **No** ☒ **X**

If **yes**, please specify which ones:

Footfall sound between internal walls and ceiling	
Footfall sound between internal walls	
Other (please describe)	

3. Indicator rating and score

5.7.1 Documentation of the materials, auxiliary materials, and safety data sheets	**Points**
The materials used were comprehensively documented and compared to the ones planned, the required safety data sheets are available, and the documents have been compiled along with other documentation for the building in a building manual.	**100**
The materials used were comprehensively documented and compared to the ones planned, and the required safety data sheets are available.	**75**

No documentation about materials and substances used was compiled. There are no safety data sheets.	**0**

5.7.2 Measurements for quality control	**Points**
Blower door measurements and measurements of footfall sound between **internal walls** and **ceiling** were taken. The results are to be comprehensively documented.	**100**
Blower door measurements and measurements of footfall sound between **internal walls** were taken. The results are to be comprehensively documented.	**75**
Blower door tests were conducted. The results are to be comprehensively documented.	**50**
None of the measurements described above were conducted to support quality assurance.	**0**

Sub-indicator 5.7.1 Documentation of the materials, auxiliary materials, and safety data sheets	75
Sub-indicator 5.7.2 Measurements for quality	0

Indicator 5.7 Quality Assurance of Construction Execution:	**37.5**

Δείκτης 5.8 Εκτέλεση-Ανάθεση:

Process Quality

Indicator 5.8 Commissioning

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **5.8 Commissioning** is evaluated with **1** sub-indicator:

5.8.1 Commissioning process management and documentation

2. Evaluation

Sub-indicator 5.8.1 Commissioning process management and documentation

Please specify which of the following statement applies to your project:

The commissioning outcome documents (progress reports, minutes of the meeting, check lists, statements) clearly demonstrate that the commissioning activities - defined in plan and commissioning programme - have been implemented according to commissioning specifications, methods and procedures (consistency between process and process out coming documents). Commissioning plan, programme and other documents have been regularly and systematically updated and integrated with the overall project schedule.	
Commissioning with subsequent adjustments and operational optimization was conducted or contractually agreed upon within the first 14 months of use. Complete documentation is available or contractually agreed upon.	**X**
All system components were subjected to a functional test by the contractors who installed them. The type, scope, and results of these functional tests are documented in the handover logs.	
Documentation why commissioning for all system components have not been conducted with plausible reasons. Functional tests for individual facility components have been conducted	
No Commissioning was conducted, nor were functional tests for individual facility components.	

3. Indicator rating and score

5.8.1 Commissioning process management and documentation	**Points**
The commissioning outcome documents (progress reports, minutes of the meeting, check lists, statements) clearly demonstrate that the commissioning activities - defined in plan and commissioning programme - have been implemented according to commissioning specifications, methods and procedures (consistency between process and process out coming documents).	**100**

Commissioning plan, programme and other documents have been regularly and systematically updated and integrated with the overall project schedule.	
Commissioning with subsequent adjustments and operational optimization was conducted or contractually agreed upon within the first 14 months of use. Complete documentation is available or contractually agreed upon.	**75**
All system components were subjected to a functional test by the contractors who installed them. The type, scope, and results of these functional tests are documented in the handover logs.	**50**
Documentation why commissioning for all system components have not been conducted with plausible reasons. Functional tests for individual facility components have been conducted	**10**
No Commissioning was conducted, nor were functional tests for individual facility components.	**0**
Sub-indicator 5.8.1 Commissioning process management and documentation	75

Indicator 5.8 Commissioning: 75

Δείκτης 5.9 Παρακολούθηση, Χρήση και Λειτουργία:

Process Quality

Indicator 5.9 Monitoring, Use and Operation

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **5.9 Monitoring, Use and Operation** is evaluated with **2** sub-indicators:

5.9.1 Efficient monitoring and surveying

5.9.2 Optimized operation and use

2. Evaluation

Sub-indicator 5.9.1 Efficient monitoring and surveying

Please check the box when the following requirements

- **definition of performance metrics**
- **effective measurement system**
- **data acquisition and archiving**
- **data visualization and reporting**

were fulfilled for the following categories:

Energy: final energy consumption ☐

Water: water consumption ☐

Materials & Waste: waste production ☐

Health & Well-being: occupant satisfaction ☐

Pollution: refrigerant leakage ☐

Land use and ecology: biodiversity ☐

Management: condition survey ☐

Sub-indicator 5.9.2 Optimized operation and use

Project documentation

Please specify which of the following statement applies to your project:

A building pass documentation is compiled with detailed information about the project. ☐

Simplified project documentation is compiled **X**

No project documentation is compiled.	

Instructions for servicing, inspection, operation, and care

Please specify which of the following statement applies to your project:

Detailed instructions for maintenance, inspection, operation, and care are compiled and a maintenance and repairs plan was drawn up; these instructions are specified for individual target groups (facility manager, building services engineer, users, cleaning firms, etc.).	
Usual instructions for maintenance, inspection, operation, and care are documented and made available to service providers	X
No instructions for use, maintenance, and care are compiled.	

Adaptation of plans and calculations for the finished building

Please specify which of the following statement applies to your project:

Plans for the building are updated and prepared for use by facility managers; like the evidence documentation and calculations, the plans correspond to the finished building. In particular, the national energy performance certificate was adjusted to reflect reality.	X
The plans mostly correspond to the finished building.	
The plans do not correspond to the finished building.	

User manual

Please specify which of the following statement applies to your project:

A detailed user manual is compiled, including recommendations for facility managers and information for users how to use the building to minimize ecological footprint and gain comfort during operation.	
A manual is compiled for facility managers/operators.	

No manual for facility managers nor users is compiled.	X

3. Indicator rating and score

5.9.1 Efficient monitoring/surveying	Points
The requirements are fulfilled for at least 4 out of 7 categories	100
The requirements are fulfilled for 3 out of 7 categories	75
The requirements are fulfilled for 2 out of 7 categories	50
The requirements are fulfilled for 1 out of 7 categories	10
The requirements are not fulfilled for any category.	0
5.9.2.a. Project documentation	**Points**
A building pass documentation is compiled with detailed information about the project.	25
Simplified project documentation is compiled	10
No project documentation is compiled.	0
5.9.2.b. Instructions for servicing, inspection, operation, and care	**Points**
Detailed instructions for maintenance, inspection, operation, and care are compiled and a maintenance and repairs plan was drawn up; these instructions are specified for individual target groups (facility manager, building services engineer, users, cleaning firms, etc.).	25
Usual instructions for maintenance, inspection, operation, and care are documented and made available to service providers.	10
No instructions for use, maintenance, and care are compiled.	0
5.9.2.c. Adaptation of plans and calculations for the finished building	**Points**

Plans for the building are updated and prepared for use by facility managers; like the evidence documentation and calculations, the plans correspond to the finished building. In particular, the national energy performance certificate was adjusted to reflect reality.	**25**
The plans mostly correspond to the finished building.	**10**
The plans do not correspond to the finished building.	**0**
5.9.2.d. User manual	**Points**
A detailed user manual is compiled, including recommendations for facility managers and information for users how to use the building to minimize ecological footprint and gain comfort during operation.	**25**
A manual is compiled for facility managers/operators.	**10**
No manual for facility managers nor users is compiled.	**0**

Sub-indicator 5.9.1 Efficient monitoring and surveying	**0**
Sub-indicator 5.9.2 Optimized operation and use	**55**

Indicator 5.9 Monitoring, Use and Operation:	**27.5**

3.6. Η Τοποθεσία

Η έκτη και τελευταία κατηγορία είναι η Τοποθεσία και αφορά τους δείκτες όπως βλέπουμε παρακάτω:

Η Τοποθεσία	6.1	Κίνδυνοι Στην Τοποθεσία	65	100	65%	1	60,22%
	6.2	Συνθήκες Στην Τοποθεσία	88	100	88%	1	
	6.3	Επιλογές για Μεταφορές	37,5	100	37,5%	1	
	6.4	Εικόνα και Κατάσταση της Τοποθεσίας και της Γειτονίας	83,3	100	83,3%	1	
	6.5	Παροχές στην Γύρω Περιοχή	50	100	50%	1	
	6.6	Παρακείμενα Μέσα, Υποδομές, Ανάπτυξη	37,5	100	37,5%	1	

1. Στόχοι:

6.1. Κίνδυνοι Στην Τοποθεσία: την προστασία των προσώπων και της ιδιοκτησίας από εξωτερικούς κινδύνους

6.2. Συνθήκες Στην Τοποθεσία: Χαρακτηρισμός των συνθηκών στο χώρο (Ανάλυση Χώρου), η οποία μπορεί να έχει καθοριστική επίδραση στην υγεία και την ευημερία των ανθρώπων (άγχος, μειωμένη παραγωγικότητα, την μακροπρόθεσμη υγεία

6.3. Επιλογές για Μεταφορές: καλή προσβασιμότητα σε μέσα μεταφοράς

6.4. Εικόνα και Κατάσταση της Τοποθεσίας και της Γειτονίας: χαρακτηρισμό της εικόνας και της κατάστασης της γειτονιάς, προκειμένου να καταστούν αυτές οι πληροφορίες διαθέσιμες για μια μελέτη της τοποθεσίας

6.5. Παροχές στην Γύρω Περιοχή: για τη μέτρηση του αριθμού και την εγγύτητα βασικών ανέσεων στο αξιολογούμενο κτίριο

6.6. Παρακείμενα Μέσα, Υποδομές, Ανάπτυξη: για τις εναλλακτικές λύσεις για τον εφοδιασμό και την υγιεινή οι οποίες θα πρέπει να χρησιμεύσουν ως οικολογικός στόχος

2. Μεθοδολογία αξιολόγησης, Υπολογισμός και βαθμολογία

Για τον Υπολογισμό των Δεικτών συμπληρώνουμε την φόρμα με τα δεδομένα μας και υπολογίζουμε την βαθμολογία μας.
Οι φόρμες με τις απαντήσεις συμπληρωμένες και την βαθμολογία ακολουθούν ανά δείκτη:

Δείκτης 6.1 Κίνδυνοι Στην Τοποθεσία:

The Location

Indicator 6.1 Risks at the site

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **6.1 Risks at the site** is evaluated with **14** sub-indicators:

Ground, geology, seismology, volcanism

6.1.1. Earthquakes

6.1.2. Landslides

6.1.3. Volcanic eruptions

6.1.4. Tsunamis

Weather / climate

6.1.5. Extreme temperatures

6.1.6. Forest fires

6.1.7. Drought

6.1.8. Floods

6.1.9. Storms

6.1.10. Avalanches

Man-made-hazards

6.1.11. Technological hazard/Chemical plants accidents

6.1.12. Technological hazard/Contaminant release and explosions

6.1.13. Technological hazard/Radioactive contamination from nuclear power plants accidents

Terrorism

6.1.14. Terrorist attacks

2. Evaluation

Ground, geology, seismology, volcanism

Sub-indicator 6.1.1. Earthquakes

According to the ESPON map "Earthquake Hazard Potential" or local data, please check the box corresponding to the risk of earthquakes:

Very low hazard	
Low hazard	
Moderate hazard	X
High hazard	
Very high hazard	

Sub-indicator 6.1.2. Landslides

According to the ESPON map " Areas with landslide hazards " or local data, please check the box corresponding to the risk of landslides:

Low hazard	X
High hazard	

Sub-indicator 6.1.3. Volcanic eruptions

According to the ESPON map " Known volcanic eruptions " or local data, please check the box corresponding to the risk of volcanic eruptions:

Very low (no eruptions)	
Low (eruption status uncertain)	

Moderate (last eruption before 1800 AD)	X
High (last eruption after 1800 AD)	
Very High (particularly hazardous volcanoes)	

Sub-indicator 6.1.4. Tsunamis

According to the ESPON map " Historically recorded tsunami runups " or local data, please check the box corresponding to the risk of tsunami:

Very low hazard	
Moderate hazard	
Very high hazard	X

Weather / climate

Sub-indicator 6.1.5. Extreme temperatures

According to the ESPON map " Extreme temperature hazard map " or local data, please check the box corresponding to the risk of extremes temperatures:

Low hazard	
Moderate hazard	X
High hazard	

Sub-indicator 6.1.6. Forest fires

According to the ESPON map "Forest fire hazard" or local data, please check the box corresponding to the risk of forest fires:

Very low hazard	
Low hazard	
Moderate hazard	
High hazard	X
Very high hazard	

Sub-indicator 6.1.7. Drought

According to the ESPON map " Precipitation deficit as potential drought indicator " or local data, please check the box corresponding to the risk of droughts:

Very low hazard	
Low hazard	
Moderate hazard	
High hazard	X
Very high hazard	

Sub-indicator 6.1.8. Floods

According to the ESPON map " Flood recurrence " or local data, please check the box corresponding to the risk of floods:

Very low hazard	X

Low hazard	
Moderate hazard	
High hazard	
Very high hazard	

In case of moderate, high or very high hazard are attenuations measures implemented?

Yes ☐ **No** ☐

If **yes**, please specify which:

Sub-indicator 6.1.9. Storms

According to the ESPON map " Storms hazard " or local data, please check the box corresponding to the risk of storms:

Low hazard	**X**
Moderate hazard	

High/Very high hazard	

Sub-indicator 6.1.10. Avalanches

According to the ESPON map " Areas exposed to avalanches " or local data, please check the box corresponding to the risk of avalanches

Very low hazard	**X**
Very high hazard	

Man-made-hazards

Sub-indicator 6.1.11. Technological hazard/Chemical plants accidents

According to the ESPON map " Density of chemical plants" or local data, please check the box corresponding to the risk of chemical plants accidents:

Very low hazard	**X**
Low hazard	
Moderate hazard	
High hazard	
Very high hazard	

Sub-indicator 6.1.12. Technological hazard/Contaminant release and explosions

According to the ESPON map " Oil as technological hazard" or local data, please check the box corresponding to the risk of contaminant release and explosions:

Very low hazard	
Low hazard	
Moderate hazard	**X**
High hazard	
Very high hazard	

Sub-indicator 6.1.13. Technological hazard/Radioactive contamination from nuclear power plants accidents

According to the ESPON map " Potential hazard of radioactive contamination " or local data, please check the box corresponding to the risk of Radioactive contamination from nuclear power plants accidents:

Very low hazard	**X**
Moderate hazard	
Very high hazard	

Terrorism

Sub-indicator 6.1.14. Terrorist attacks

Is the project located in the proximity to a site or building that represents a potential target for terrorist attacks (public places, stations, underground, ministries, important place of worship, nuclear plants) ?

Yes		**No**	**X**

Is the project located in the proximity to a site which has been the subject of a terrorist attack in the past?

Yes [ ] **No** [X]

3. Indicator rating and score

6.1.1 Risk of earthquake	**Points**
Very low hazard	**100**
Low Hazard	**75**
Moderate Hazard	**50**
High Hazard	**5**
Very high Hazard	**0**
6.1.2. Risk of lanslides	**Points**
Low hazard	**100**
High hazard	**0**
6.1.3. Risk of volcanic eruptions	**Points**
Very low (no eruptions)	**100**
Low (eruption status uncertain)	**75**
Moderate (last eruption before 1800 AD)	**50**
High (last eruption after 1800 AD)	**5**
Very High (particularly hazardous volcanoes)	**0**
6.1.4.Risk of tsunami	**Points**

Very low hazard	**100**
Moderate hazard	**50**
Very high hazard	**0**
6.1.5. Risk of extreme temperature	**Points**
Low hazard	**100**
Moderate Hazard	**50**
High hazard	**0**
6.1.6. Risk of forest fire	**Points**
Very low hazard	**100**
Low hazard	**75**
Moderate hazard	**50**
High hazard	**5**
Very high hazard	**0**
6.1.7. Risk of droughts	**Points**
Very low hazard	**100**
Low hazard	**75**
Moderate hazard	**50**
High hazard	**5**
Very high hazard	**0**
6.1.8. Risk of flood	**Points**
Existence of attenuation measures	**+25**

(exclusively if the risk of flood = "moderate", "high" or "very high")	
Very low hazard	**100**
Low hazard	**75**
Moderate hazard	**50**
High hazard	**5**
Very high hazard	**0**
6.1.9. Risk of storms	**Points**
Very low hazard	**100**
Medium hazard	**50**
High/very high hazard	**0**
6.1.10. Risk of avalanche	**Points**
Very low hazard	**100**
Very high hazard	**0**
6.1.11. Technological hazard/Chemical plants accidents	**Points**
Very low hazard	**100**
Low hazard	**75**
Moderate hazard	**50**
High hazard	**5**
Very high hazard	**0**
6.1.12. Technological hazard/ Contaminant release and explosions	**Points**
Very low hazard	**100**

Low hazard	**75**
Moderate hazard	**50**
High hazard	**5**
Very high hazard	**0**
6.1.13. Technological hazard/ Radioactive contamination from nuclear power plants accidents	**Points**
Very low hazard	**100**
Moderate hazard	**50**
Very high hazard	**0**
6.1.14. Risk of terrorist attacks	**Points**
No proximity with the both types of sites	**100**
Proximity with a site where a terrorist attacks occurred	**50**
Proximity with a potential target of terrorist attack	**5**
Proximity with both types of sites	**0**

Sub-indicator 6.1.1. Earthquakes	**50**
Sub-indicator 6.1.2. Landslides	**100**
Sub-indicator 6.1.3. Volcanic eruptions	**50**
Sub-indicator 6.1.4. Tsunamis	**0**
Sub-indicator 6.1.5. Extreme temperatures	**50**
Sub-indicator 6.1.6. Forest fires	**5**
Sub-indicator 6.1.7. Drought	**5**
Sub-indicator 6.1.8. Floods	**100**
Sub-indicator 6.1.9. Storms	**100**

Sub-indicator 6.1.10. Avalanches	100
Sub-indicator 6.1.11. Chemical plants accidents	100
Sub-indicator 6.1.12. Contaminant release and explosions	50
Sub-indicator 6.1.13. Contamination from nuclear power plants accidents	100
Sub-indicator 6.1.14 Terrorist attacks	100
Indicator 6.1 Risks at the site	**65**

Δείκτης 6.2 Συνθήκες Στην Τοποθεσία:

The Location

Indicator 6.2 Circumstances at the site

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **6.2 Circumstances at the site** is evaluated with **6** sub-indicators:

6.2.1. Outdoor Air Quality

6.2.2. Ambient Noise Level

6.2.3. Soil and building plot contamination

6.2.4. Occurrence of Radon

6.2.5. Urban Heat Island Effect

6.2.6. Visual links with urban landscape

2. Evaluation

Sub-indicator 6.2.1. Outdoor Air Quality

What is the class of the Outdoor Air Quality according to EN 13779: 2007?

ODA 1	**X**
ODA 2	
ODA 3	

Sub-indicator 6.2.2. Ambient Noise Level

What is the type of site where your project is located?

Rural	
Provincial	**X**
Metropolitan	

If **rural**, the ambient noise level is:

< 55 dB	
55 – 60 dB	
> 60 dB	

If **provincial**, the ambient noise level is:

< 65 dB	

65 – 70 dB ☐

> 70 dB [X]

If **metropolitan** the ambient noise level is:

< 75 dB ☐

75 – 80 dB ☐

> 80 dB ☐

Sub-indicator 6.2.3. Soil and building plot contamination

Please refer to the assessment guideline for the definition of impact levels**.**

Is a soil report available?

Yes ☐ **No** [X]

If **yes,** what is the impact level of the site on human heath:

Level 0 ☐

Level 1 ☐

Level 2 ☐

Level 3 ☐

If **no,** the contamination of the site is estimated as:

unlikely	**X**
possible	

Sub-indicator 6.2.4. Occurrence of Radon

Is the indoor radon concentration < 400 Bq/m³?

Yes	**X**	**No**	

Sub-indicator 6.2.5. Urban Heat Island Effect

Please indicate which of the following measures are implemented:

Installing highly reflective and emissive roofs that reflect solar energy back in the atmosphere/ or installing a vegetated roof	**X**
Planting shade trees in the site to reduce surface and ambient air temperatures	**X**
Using light-coloured construction materials where possible to reflect rather than absorb solar radiation	
None of them is implemented	

Sub-indicator 6.2.6. Visual links with urban landscape

Does the landscape of the surroundings of the building offer diversity and is it of high aesthetics?

Yes	X	**No**	

3. Indicator rating and score

6.2.1 Outdoor Air Quality	Points
Outdoor air is classified ODA 1. WHO (2005) guidelines and any National air quality standards or regulations for outdoor air are fulfilled.	**100**
Outdoor air is classified ODA 2. At least **one** pollutant concentration exceeds the WHO guidelines or any National air quality standards or regulations for outdoor air by a factor of **up to 1,5.**	**75**
Outdoor air is classified ODA 3. At least **one** pollutant concentration exceeds the WHO guidelines or any National air quality standards or regulations for outdoor air by a factor **greater than 1,5.**	**0**
6.2.2 Ambient Noise Levels	**Points**
Compliant with level 1.1, 2.1 or 3.1 depending on location	**100**
Compliant with level 1.2, 2.2 or 3.2 depending on location	**50**
Not compliant with levels	**0**
6.2.3 Soil and building plot contamination	**Points**
The soil report is available and leads to a **level 0** impact	**100**
The soil report is available and leads to a **level 1** impact OR The soil report is not available but the contamination is unlikely	**50**
The soil report is available and leads to a **level 2 or 3** impact OR The soil report is not available but the contamination is possible	**0**
6.2.4 Occurrence of Radon	**Points**
Indoor radon concentration < 400 Bq/m^3	**100**

Indoor radon concentration > 400 Bq/m³	**0**
6.2.5 Urban Heat Island Effect	**Points**
All measures are implemented	**100**
Two out of three measures are implemented	**75**
One out of three measures is implemented	**50**
None of the measures is implemented	**0**
6.2.6 Visual links with Urban Landscape	**Points**
The landscape of the surroundings of the building offers diversity and is of high aesthetics.	**100**
The landscape of the surroundings of the building is not attractive.	**0**

Sub-indicator 6.2.1. Outdoor Air Quality	**100**
Sub-indicator 6.2.2. Ambient Noise Level	**100**
Sub-indicator 6.2.3. Soil and building plot contamination	**50**
Sub-indicator 6.2.4. Occurrence of Radon	**100**
Sub-indicator 6.2.5. Urban Heat Island Effect	**75**
Sub-indicator 6.2.6. Visual links with urban landscape	**100**
Indicator 6.2 Circumstances at the site:	**88**

Δείκτης 6.3 Επιλογές για Μεταφορές:

The Location

Indicator 6.3 Options for Transportation

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **6.3 Options for Transportation** is evaluated with **4** sub-indicators:

6.3.1 Accessibility of the nearest railroad station
6.3.2 Accessibility of the nearest local public transportation stop (bus, rapid city train, tram, metro)
6.3.3 Availability of modern low emission transport options
6.3.4 Availability of Walking and Bike Paths

2. Evaluation

Sub-indicator 6.3.1 Accessibility of the nearest railroad station

What is the distance (m) from a main building entrance to the nearest railroad station?

800000 **metres**

Sub-indicator 6.3.2 Accessibility of the nearest local public transportation stop (bus, rapid city train, tram, metro)

What is the distance (m) from a main building entrance to the nearest local public transportation stop?

50 **metres**

Sub-indicator 6.3.3 Availability of modern low emission transport options

Please indicate which of the following scheme are available within radius of **1 km** from the building:

A city bike scheme	**NO**
A car club scheme	**NO**
A charging infrastructure for electric/hybrid vehicles	**NO**
Electric/hybrid bus lines	**NO**

Sub-indicator 6.3.4 Availability of Walking and Bike Paths

Please indicate which of the following statement is appropriate to your project:

The location lies along a developed network of walkway and bike paths.	
The location lies along a developed network of walkway and bike paths are not developed yet but in planning.	X
The location has average accessibility by foot or bike	
The location is practically impossible or impracticable to reach by either foot or bike (e.g. industrial area, freeway rest area, etc.).	

3. Indicator rating and score

6.3.1 Accessibility of the nearest railroad station from a main building entrance in metres	**Points**
< 300 m	**100**
300 - 500 m	**75**
500- 800 m	**50**
800 - 1200 m	**25**
>1200 m	**0**
6.3.2 Accessibility of the nearest public local transportation stop from a main building entrance in metres	**Points**
<150 m	**100**
150 - 300 m	**75**
300 - 500 m	**50**
500 - 1000 m	**25**
>1000 m	**0**
6.3.3 Availability of modern low emission transport options: city bike scheme, car club scheme, charging infrastructure for electric/hybrid vehicles, electric/hybrid bus lines within radius of 1 km from the	**Points**

building	
4 options	**100**
3 options	**75**
2 options	**50**
1 option	**25**
0 options	**0**

6.3.4 Availability of Walking and Bike Paths	**Points**
The location lies along a developed network of walkway and bike paths.	**100**
The location lies along a developed network of walkway and bike paths are not developed yet but in planning.	**50**
The location has average accessibility by foot or bike	**10**
The location is practically impossible or impracticable to reach by either foot or bike (e.g. industrial area, freeway rest area, etc.).	**0**

Sub-indicator 6.3.1 Accessibility of the nearest railroad station:	**0**
Sub-indicator 6.3.2 Accessibility of the nearest local public transportation stop	**100**
Sub-indicator 6.3.3 Availability of modern low emission transport options	**0**
Sub-indicator 6.3.4 Availability of Walking and Bike Paths	**50**

Indicator 6.3 Options for Transportation	**37.5**

Δείκτης 6.4 Εικόνα και Κατάσταση της Τοποθεσίας και της Γειτονίας:

The Location

Indicator 6.4 Image and Condition of the Location and Neighbourhood

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **6.4 Image and Condition of the Location and Neighbourhood** is evaluated with **3** sub-indicators:

6.4.1 Visual aspect of the surrounding landscape
6.4.2 Crime rate
6.4.3 Potential synergies

2. Evaluation

Sub-indicator 6.4.1 Visual aspect of the surrounding landscape

How many **remarkable sites**, such as historical monuments, natural sites or forest, are there within the building's surrounding landscape?

More than 2	
1 or 2	
0	**X**

Are there any **negative elements of low importance**, such as a motorway, a windmill or an isolated factory, within the building's surrounding landscape?

Yes		**No**	**X**

Are there any **negative elements of high importance**, such as a nuclear plant, a big industrial area or municipal dump, within the building's surrounding landscape?

Yes		No	X

Sub-indicator 6.4.2 Crime rate

What of the following statements fits best regarding crime related aspects within your building location?

There is a:

Low number of criminal offence	X
Moderate number of criminal offence or stagnant crime growth	
Average number of criminal offence or slightly increase of crime growth	
High number of criminal offence. Felonies, mostly violent crime/ High juvenile crime rate. Great crime growth	

Sub-indicator 6.4.3 Potential Synergies

Please specify which of the following statement is appropriate to your project:

Surroundings of the location contain **many** similar or complementary uses, creating a geographic cluster and thus great appeal for customers and users, bringing them closer to cooperating and competing companies.	X
Surroundings of the location contain **some** similar or complementary uses, creating a geographic cluster and thus significant appeal for customers and users, bringing them closer to cooperating and competing companies	
Location with neutral uses in the surrounding area which have neither a positive nor negative effect	
Location with uses in the surrounding area which could give rise to conflicts due to different requirements Conflicts are possible on a number of levels, such as noise pollution, heavy traffic, increased competition, lighting and operations.	

3. Indicator rating and score

6.4.1 Visual aspect of the surrounding landscape	Points
No negative element and more than 2 remarkable sites	**100**
No negative elements and 1 or 2 remarkable sites	**75**
Neutral surrounding landscape, no particular negative nor positive visual element in the landscape	**50**
Absence of elements with no positive impact and high importance	**5**
Presence of elements with no positive impact and high importance	**0**
6.4.2 Crime rate	**Points**
Low number of criminal offence	**100**
Moderate number of criminal offence or stagnant crime growth	**60**
Average number of criminal offence or slightly increase of crime growth	**10**

High number of criminal offence, frequent violent crime, high juvenile crime rate. Great crime growth.	**0**
6.4.3 Potential Synergies	**Points**
Surroundings of the location contain **many** similar or complementary uses, creating a geographic cluster and thus great appeal for customers and users, bringing them closer to cooperating and competing companies.	**100**
Surroundings of the location contain **some** similar or complementary uses, creating a geographic cluster and thus significant appeal for customers and users, bringing them closer to cooperating and competing companies	**60**
Location with neutral uses in the surrounding area which have neither a positive nor negative effect.	**10**
Location with uses in the surrounding area which could give rise to conflicts due to different requirements Conflicts are possible on a number of levels, such as noise pollution, heavy traffic, increased competition, lighting and operations.	**0**

Sub-indicator 6.4.1 Services and points of interest around the site	**50**
Sub-indicator 6.4.2 Visual aspect of the surrounding landscape	**100**
Sub-indicator 6.4.3 Crime rate	**100**
Indicator 6.4 Image and Condition of the Location and Neighbourhood	**83,3**

Δείκτης 6.5 Παροχές στην Γύρω Περιοχή:

The Location

Indicator 6.5 Vicinity to amenities

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **6.5 Vicinity to amenities** is evaluated with **9** sub-indicators:

6.5.1 Vicinity to Gastronomy facilities

6.5.2 Vicinity to Local Supply facilities

6.5.3 Vicinity to Parks and Open Spaces

6.5.4 Vicinity to Education facilities

6.5.5 Vicinity to Public Administration facilities

6.5.6 Vicinity to Medical Care facilities

6.5.7 Vicinity to Sport facilities

6.5.8 Vicinity to Leisure facilities

6.5.9 Vicinity to Services

2. Evaluation

Sub-indicator 6.5.1 Vicinity to Gastronomy facilities

Please specify which of the following statement is appropriate to your project:

2 facilities in max 300m distance or 3 facilities in max 500m distance or 4 facilities in max 750m distance	X
1 facility in max 300m distance or 2 facilities in max 500m distance or 3 facilities in max 750m distance	
1 facility in max 500m distance or 2 facilities in max 750m distance	
1 facility in max 750m distance	
No facilities in less than 750m distance	

Sub-indicator 6.5.2 Vicinity to Local Supply facilities

Please specify which of the following statement is appropriate to your project:

2 facilities in max 300m distance or 3 facilities in max 500m distance or 4 facilities in max 750m distance	
1 facility in max 300m distance or 2 facilities in max 500m distance or 3 facilities in max 750m distance	
1 facility in max 500m distance or 2 facilities in max 750m distance	
1 facility in max 750m distance	X
No facilities in less than 750m distance	

Sub-indicator 6.5.3 Vicinity to Parks and Open Spaces

Please specify which of the following statement is appropriate to your project:

1 Park or Open Space in sight or 2 Parks or Open Spaces in max 500m distance	X
1 Park or Open Space in max 500m or 2 Parks or Open Spaces in max 500m distance	
1 Park or Open Space in max 750m distance or 2 Parks or Open Spaces in max 1000m distance	
1 Park or Open Space in max 1000m distance	
No Parks/ Open Spaces in up to 1000m distance	

Sub-indicator 6.5.4 Vicinity to Education facilities

Please specify which of the following statement is appropriate to your project:

2 facilities in max 500m distance or 3 facilities in max 1000m distance	X
1 facility in max 500m distance or 2 facilities in max 1000m distance or 3 facilities in max 1500m distance	
1 facility in max 1000m distance or 2 facilities in max 1500m distance	
1 facility in max 1500m distance	
No facilities in less than 1500m distance	

Sub-indicator 6.5.5 Vicinity to Public Administration facilities

Please specify which of the following statement is appropriate to your project:

2 facilities in max 500m distance or 3 facilities in max 1000m distance	
1 facility in max 500m distance or 2 facilities in max 1000m distance or 3 facilities in max 1500m distance	
1 facility in max 1000m distance or 2 facilities in max 1500m distance	
1 facility in max 1500m distance	
No facilities in less than 1500m distance	X

Sub-indicator 6.5.6 Vicinity to Medical Care facilities

Please specify which of the following statement is appropriate to your project:

2 facilities in max 500m distance or 3 facilities in max 1000m distance	
1 facility in max 500m distance or 2 facilities in max 1000m distance or 3 facilities in max 1500m distance	
1 facility in max 1000m distance or 2 facilities in max 1500m distance	X
1 facility in max 1500m distance	
No facilities in less than 1500m distance	

Sub-indicator 6.5.7 Vicinity to Sport facilities

Please specify which of the following statement is appropriate to your project:

2 facilities in max 500m distance or 3 facilities in max 1000m distance	
1 facility in max 500m distance or 2 facilities in max 1000m distance or 3 facilities in max 1500m distance	X
1 facility in max 1000m distance or 2 facilities in max 1500m distance	
1 facility in max 1500m distance	
No facilities in less than 1500m distance	

Sub-indicator 6.5.8 Vicinity to Leisure facilities

Please specify which of the following statement is appropriate to your project:

2 facilities in max 500m distance or 3 facilities in max 1000m distance	

1 facility in max 500m distance or 2 facilities in max 1000m distance or 3 facilities in max 1500m distance	
1 facility in max 1000m distance or 2 facilities in max 1500m distance	
1 facility in max 1500m distance	
No facilities in less than 1500m distance	X

Sub-indicator 6.5.9 Vicinity to Services

Please specify which of the following statement is appropriate to your project:

2 facilities in max 500m distance or 3 facilities in max 1000m distance	
1 facility in max 500m distance or 2 facilities in max 1000m distance or 3 facilities in max 1500m distance	
1 facility in max 1000m distance or 2 facilities in max 1500m distance	
1 facility in max 1500m distance	X
No facilities in less than 1500m distance	

3. Indicator rating and score

6.5.1 Vicinity to Gastronomy facilities	Points
2 facilities in max 300m distance **or** 3 facilities in max 500m distance **or** 4 facilities in max 750m distance	**100**
1 facility in max 300m distance **or** 2 facilities in max 500m distance **or** 3	**75**

facilities in max 750m distance	
1 facility in max 500m distance **or** 2 facilities in max 750m distance	**50**
1 facility in max 750m distance	**10**
No facilities in less than 750m distance	**0**
6.5.2 Vicinity to Local Supply facilities	**Points**
2 facilities in max 300m distance **or** 3 facilities in max 500m distance **or** 4 facilities in max 750m distance	**100**
1 facility in max 300m distance **or** 2 facilities in max 500m distance **or** 3 facilities in max 750m distance	**75**
1 facility in max 500m distance **or** 2 facilities in max 750m distance	**50**
1 facility in max 750m distance	**10**
No facilities in less than 750m distance	**0**

6.5.3 Vicinity to Parks and Open Spaces	**Points**
1 Park or Open Space in sight or 2 Parks **or** Open Spaces in max 500m distance	**100**
1 Park or Open Space in max 500m or 2 Parks or Open Spaces in max 500m distance	**75**
1 Park or Open Space in max 750m distance **or** 2 Parks or Open Spaces in max 1000m distance	**50**
1 Park or Open Space in max 1000m distance	**10**
No Parks/ Open Spaces in up to 1000m distance	**0**
6.5.4 Vicinity to Education facilities	**Points**
2 facilities in max 500m distance **or** 3 facilities in max 1000m distance	**100**

1 facility in max 500m distance **or** 2 facilities in max 1000m distance **or** 3 facilities in max 1500m distance	**75**
1 facility in max 1000m distance **or** 2 facilities in max 1500m distance	**50**
1 facility in max 1500m distance	**10**
No facilities in less than 1500m distance	**0**
6.5.5 Vicinity to Public Administration facilities	**Points**
2 facilities in max 500m distance **or** 3 facilities in max 1000m distance	**100**
1 facility in max 500m distance **or** 2 facilities in max 1000m distance **or** 3 facilities in max 1500m distance	**75**
1 facility in max 1000m distance **or** 2 facilities in max 1500m distance	**50**
1 facility in max 1500m distance	**10**
No facilities in less than 1500m distance	**0**
6.5.6 Vicinity to Medical Care facilities	**Points**
2 facilities in max 500m distance **or** 3 facilities in max 1000m distance	**100**
1 facility in max 500m distance **or** 2 facilities in max 1000m distance **or** 3 facilities in max 1500m distance	**75**
1 facility in max 1000m distance **or** 2 facilities in max 1500m distance	**50**
1 facility in max 1500m distance	**10**
No facilities in less than 1500m distance	**0**
6.5.7 Vicinity to Sport facilities	**Points**
2 facilities in max 500m distance **or** 3 facilities in max 1000m distance	**100**
1 facility in max 500m distance **or** 2 facilities in max 1000m distance **or** 3 facilities in max 1500m distance	**75**

1 facility in max 1000m distance **or** 2 facilities in max 1500m distance	**50**
1 facility in max 1500m distance	**10**
No facilities in less than 1500m distances	**0**

6.5.8 Vicinity to Leisure facilities	**Points**
2 facilities in max 500m distance **or** 3 facilities in max 1000m distance	**100**
1 facility in max 500m distance **or** 2 facilities in max 1000m distance **or** 3 facilities in max 1500m distance	**75**
1 facility in max 1000m distance **or** 2 facilities in max 1500m distance	**50**
1 facility in max 1500m distance	**10**
No facilities in less than 1500m distance	**0**

6.5.9 Vicinity to Services	**Points**
2 facilities in max 500m distance **or** 3 facilities in max 1000m distance	**100**
1 facility in max 500m distance **or** 2 facilities in max 1000m distance **or** 3 facilities in max 1500m distance	**75**
1 facility in max 1000m distance **or** 2 facilities in max 1500m distance	**50**
1 facility in max 1500m distance	**10**
No facilities in less than 1500m distance	**0**

Sub-indicator 6.5.1 Vicinity to Gastronomy facilities	**100**
Sub-indicator 6.5.2 Vicinity to Local Supply facilities	**10**
Sub-indicator 6.5.3 Vicinity to Parks and Open Spaces	**100**
Sub-indicator 6.5.4 Vicinity to Education facilities	**100**
Sub-indicator 6.5.5 Vicinity to Public Administration facilities	**0**
Sub-indicator 6.5.6 Vicinity to Medical Care facilities	**50**

Sub-indicator 6.5.7 Vicinity to Sport facilities	75
Sub-indicator 6.5.8 Vicinity to Leisure facilities	0
Sub-indicator 6.5.9 Vicinity to Services	10

Indicator 6. 5 Vicinity to Amenities	50

Δείκτης 6.6 Παρακείμενα Μέσα, Υποδομές, Ανάπτυξη:

The Location

Indicator 6.6 Adjacent media, Infrastructure, Development

Date: 10th July 2013

Project Name: EMMTU Offices

1. Indicator Information

The indicator **6.6 Adjacent media, Infrastructure, Development** is evaluated with **4** sub-indicators:

6.6.1 Accessibility to networked energy

6.6.2 Convenience for solar energy

6.6.3 Telecommunications connection

6.6.4 Rainwater seepage system

2. Evaluation

Sub-indicator 6.6.1 Accessibility to networked energy

Can the location be connected to piped heat?

Yes	X	No	

Can the location be connected to natural gas?

Yes		No	X

Sub-indicator 6.6.2 Convenience for solar energy

Please specify which of the following statement is appropriate to your project:

The requirements for all three conditions are satisfied: - Orientation: southern - Shading: no disturbance - Master development plan: no restrictions	
The requirements for 2 conditions are satisfied. For the third condition, there is a possible following adaptation: - Orientation: south east to south west possible - Shading: causes of shading can be removed; not a long period foggy weather area - Master development plan: exemption from the specifications of the development plan	
The requirements for the three conditions are basically satisfied with the possible following adaptation: - Orientation: south east to south west possible - Shading: causes of shading can be removed; not a long period foggy weather area - Master development plan: exemption from the specifications of the development plan and the location can be prepared.	X

Requirements for at least one of the conditions are not satisfied. ☐

Sub-indicator 6.6.3 Telecommunications connection

Is a broadband connection available?

Yes [X] **No** [ ]

If **yes**, what is the capacity of the broadband connection?

Broadband connection 24 **kbs**

Sub-indicator 6.6.4 Rainwater seepage system

The location should be studied with regard to the following conditions:

- **Location conditions** (space, soil permeability coefficient, soil properties, groundwater level, terrain slope) via a soil assessment.
- **Master development plan and eligibility for approval** (permissibility of seepage systems

Please specify which of the following statement is appropriate to your project:

The requirements for both conditions are completely met. ☐

The requirements for one condition are completely met.

The requirements for one additional condition are satisfied for the most part. That is, the location can be prepared (e.g. by replacing soil around the seepage system, exemption from the specifications of the development plan, etc) ☐

The requirements for both conditions are satisfied for the most part. That is, the location can be prepared (e.g. by replacing soil around the seepage system, exemption from the specifications of the development plan, etc) ☐

The requirements for at least one condition are not met. [X]

3. Indicator rating and score

6.6.1 Accessibility to networked energy	Points
The location can be connected to piped heat and natural gas	**100**
The location can be connected only to piped heat	**75**
The location can be connected only to natural gas	**50**
The location cannot be connected to networked energy	**0**

6.6.2 Convenience for solar energy	Points
The requirements for all three conditions are satisfied: - Orientation: southern - Shading: no disturbance - Master development plan: no restrictions	**100**
The requirements for 2 conditions are satisfied. For the third condition, there is a possible following adaptation: - Orientation: south east to south west possible - Shading: causes of shading can be removed; not a long period foggy weather area - Master development plan: exemption from the specifications of the development plan	**75**
The requirements for the three conditions are basically satisfied with the possible following adaptation: - Orientation: south east to south west possible - Shading: causes of shading can be removed; not a long period foggy weather area - Master development plan: exemption from the specifications of the development plan and the location can be prepared.	**50**
Requirements for at least one of the conditions are not satisfied.	**0**

6.6.3 Telecommunications connection	Points
A connection of at least DSL 16,000 kbps is available.	**100**
A connection of at least DSL 8,000 kbps is available.	**75**
A connection of at least DSL 6,000 kbps is available.	**50**
A connection of at least DSL 2,000 kbps is available.	**25**

No broadband connection available	**0**

6.6.4 Rainwater seepage system	**Points**
The requirements for both conditions are completely met.	**100**
The requirements for one condition are completely met. The requirements for one additional condition are satisfied for the most part. That is, the location can be prepared (e.g. by replacing soil around the seepage system, exemption from the specifications of the development plan, etc)	**75**
The requirements for both conditions are satisfied for the most part. That is, the location can be prepared (e.g. by replacing soil around the seepage system, exemption from the specifications of the development plan, etc)	**25**
The requirements for at least one condition are not met.	**0**

Sub-indicator 6.6.1 Accessibility to networked energy	**0**
Sub-indicator 6.6.2 Convenience for solar energy	**100**
Sub-indicator 6.6.3 Telecommunications connection	**50**
Sub-indicator 6.6.4 Rainwater seepage system	**0**

Indicator 6.6 Adjacent media, Infrastructure, Development	**37,5**

4.Συμπεράσματα

Με βάση τα αποτελέσματα που πήραμε το κτίριο μας είναι ένα σύγχρονο κτίριο που πληροί τα στάνταρ που έχει θέσει η εγχώρια νομοθεσία και η Ευρωπαϊκή Ένωση σε αρκετές περιπτώσεις. Η εργασία αυτή έδειξε τα κενά που υπάρχουν στον τρόπο συλλογής δεδομένων από την φάση της μελέτης ,στην φάση της κατασκευής και στην φάση της λειτουργίας- αποδόμησης. στην αξιοποίηση τους για την παροχή χρήσιμων πληροφοριών. Στο μέλλον και με περισσότερα δεδομένα τα πρότυπα που θέτει αυτή η εργασία θα μπορούν να δώσουν έναν πλήρη χάρτη της κατασκευής μας σε όλα τα επίπεδα των σύγχρονων απαιτήσεων ενός κτιρίου.

5. Βιβλιογραφία

1. ISO 14040: 2009-11: Environmental management – Life cycleassessment – Principles and framework. International Organization for Standardization.
2. ISO 14044: 2006-10: Environmental management – Life cycle assessment – Requirements and guidelines. International Organization for Standardization.
3. FprEN 15978: 2011: Sustainability of construction works — Assessment of environmental
performance of buildings — Calculation method. European Committee for StandardizationCEN.
4. prEN 15804: 2010: Sustainability of construction works — Environmental product declarations
— Core rules for the product category of construction products. European Committee for Standardization CEN.
5. Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.
6. Kreißig, J., Binder, M. (2007): Methodische Grundlagen-Ökobilanzbasierte Umweltindikatoren im Bauwesen. Methodenbericht zum BMVBS-Projekt „Aktualisieren, Fortschreiben und Harmonisieren von Basisdaten für das nachhaltige Bauen" (AZ 10.06.03 – 06.119) Mai 2007,www.baufachinformation.de/literatur.isp.
7. United Nations (1998): Kyoto Protocol to the United Nations Framework Convention onClimate Change, 1998, http://unfccc.int/resource/docs/convkp/kpeng.pdf.
8. Bundesministerium für Verkehr, Bau- und Wohnungswesen: Guideline for Sustainable Building. Eigenverlag, 2001.
9. Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings.
10. VDI 2067: Economic efficiency of building

11. **http://ohnew.building-21.net/**

12. **https://www.sbs-onlinetool.com/Signin.html#PROCESSES**

13. **http://lakenak.sourceforge.net/demo/kenak.php?page=5**

14. **http://mapfinder.espon.eu/**

15.http://www.ypeka.gr/LinkClick.aspx?fileticket=aiS4GyKxx04%3D&tabid=525&language=el-GR

16.http://www.iso.org/iso/home/store/catalogue_tc/catalogue_tc_browse.htm?commid=322621&published=on

17.http://www.cen.eu/cen/Sectors/TechnicalCommitteesWorkshops/CENTechnicalCommittees/Pages/default.aspx?param=481830&title=Sustainability%20of%20construction%20works