

IBCI Conference 2015

Building Control (Amendment) Regulations 2014
One Year On

Civil/Structural Engineering
Designer's Perspective



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Presenter's Profile

- Brendan Mulligan BE. MSc. CEng. FIEI. MStructE.
- 40 Years Experience
- Structural & Civil Engineering Consultancy
- Municipal, Educational, Commercial, Industrial & Residential Buildings
- Civil Engineering Structures – Water Services Projects
- Designing for Safety in Construction
- Risk Management



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- ❖ This Presentation – Designer’s Perspective on BCAR 2014
- ❖ My Own Comments and Observations
 - Do *Not* Represent Any Body or Organisation
- ❖ Previous Presentation to this Conference in 2011
 - Two Separate Competences & Controls
 - **Design** under Control of Competent **Designers**
 - **Compliance of Design with Building Regulations**

 - **Construction** under Control of Competent **Contractors**
 - **Compliance of Construction with Design**

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Opinion on Compliance of Design With Building Regulations

September 1999 Form: BR SE 9101



The Institution of
Engineers of Ireland



Association of Consulting
Engineers of Ireland

**STRUCTURAL/CIVIL CHARTERED ENGINEER'S OPINION ON COMPLIANCE
WITH THE BUILDING REGULATIONS**

(This Form has been agreed with the Law Society)

(Form for use where a Consulting Engineer is appointed under the Conditions of Engagement, Agreement SE 9101: "For the Appointment of Consulting Engineers for Structural Engineering Work where an Architect has been Appointed by the Client", published by the Institution of Engineers of Ireland in agreement with the Association of Consulting Engineers of Ireland, with or without modifications).

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Opinion on Compliance of **Design** With Building Regulations

- ❖ Description of Works Scope – Definition of Precise Service
- ❖ Limited to the Terms and Conditions of Designer’s Appointment

*“**We** are of the Opinion that...
the Design and Specification...
Are in Substantial Compliance with...
The Relevant Requirements of the Building Regulations...”*

Substantial Compliance *“....saving and excepting such deviations as would not in our opinion warrant the issue of enforcement proceedings as provided for under the Building Control Act.”*

Focus on **Significant** Non-Compliance Issues in the Design

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Site Inspections

- ❖ Limited/Occasional...Typically Fortnightly or Monthly...
- ❖ Observe the Construction Process...Not Every Element...
- ❖ “You Cannot Inspect Quality Into Products” [Harold S. Dodge]
- ❖ Monitored Works Being Constructed...
 - Generally In Compliance With Drawings and Specifications...
- ❖ Not a Report/Survey on Structure...
- ❖ Supervision is the Responsibility of the Contractor
 - Full-Time...with Power to Direct the Works

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In the Meantime...

Building Control (Amendment) Regulations 2014 - BCAR 2014

- ❖ Design Certifier – Certificate of Compliance of Design with Regulations
- ❖ Assigned Certifier – Certificate of Compliance of Works with Regulations

Also

- Ancillary Design Certifiers

Not Just Design

- Inspection Certificates

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DESIGN CERTIFICATE
Form of Certificate of Compliance (Design)

Building Control Authority: _____ Unique Identifier: _____
(for official use only)

1. This certificate relates to the following building or works:

2. This certificate has been prepared in accordance with the Code of Practice for Inspecting and Certifying Buildings and Works [as published by the Minister under section 3(7) of the Building Control Act 1990] or equivalent.

3. I confirm that I have been commissioned by the building owner to design, in conjunction with others, the building or works described above and to certify such design. I further confirm that I am a person named on a register maintained pursuant to Part 3 or Part 5 of the Building Control Act 2007 or Section 7 of the Institution of Civil Engineers of Ireland (Charter Amendment) Act 1969 and that I am competent to carry out my design and to coordinate the design of others for the building or works concerned.

4. I confirm that the plans, calculations, specifications, ancillary certificates and particulars included in the schedule to the Commencement Notice to which this certificate is relevant, and which have been prepared exercising reasonable skill, care and diligence by me, and by other members of the design team and specialist designers whose design activities I have coordinated, have been prepared to demonstrate compliance with the requirements of the Second Schedule to the Building Regulations insofar as they apply to the building or works concerned.

5. I certify, having exercised reasonable skill, care and diligence, that, having regard to the plans, calculations, specifications and particulars which have been prepared by me and others and having relied on ancillary certificates and particulars referred to at 4 above, the proposed design for the building or works is in compliance with the requirements of the Second Schedule to the Building Regulations insofar as they apply to the building or works concerned.

Signature: _____ Date: _____

Person's Name: _____ Registration No.: _____

On behalf of: _____ (company name where relevant)

Address: _____

Tel: _____ Fax: _____ Email: _____

Practice registration number (where relevant): _____

Form of Certificate of Compliance (Design)

Two Form Types

Article 9

Accompany **Commencement Notice**

Article 20(A)

Accompany **7 Day Notice**

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- ❖ *This Certificate Relates to the Following Building or Works...*
 - Clarity of Scope is Important...Fully Set Out in Detail...
- ❖ ...I have Been Commissioned by the Building Owner...
- ❖ ... to Design...the above Building or Works...
- ❖ ... in Conjunction with Others...
- ❖ ...and to Certify Such Design

**THIS IS A FORMAL STATUTORY DECLARATION
IF YOU DID NOT DESIGN IT...DO NOT DECLARE THAT YOU DID**

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I confirm that the plans, calculations, specifications...

Have been Prepared to Demonstrate Compliance with...

*The Requirements of the Second Schedule of the Building Regulations...
In So Far as They Apply to the Building or Works Concerned*

I Certify that...the proposed design...is in compliance with...

*The Requirements of the Second Schedule of the Building Regulations...
In So Far as They Apply to the Building or Works Concerned*

**THIS IS A FORMAL STATUTORY DECLARATION
IF YOU DID NOT DESIGN IT...DO NOT CERTIFY THAT YOU DID**



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I CERTIFY Means What...

“To testify to in writing; to make known or establish as a fact” [Legal Dictionary]

Could This Mislead Building Owners?

Is the Certificate qualified in any way?

...having exercised reasonable skill, care and diligence...having regard to the plans, calculations, specifications and particulars which have been prepared by me and others...having relied on ancillary certificates and particulars...

Are These Sufficient to Allow The Design Certificate to be Considered a Professional Opinion...Rather Than a Statement of Fact?

Opinion is Divided...Only Time Will Tell...The Courts Will Decide



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- ❖ Is it Appropriate to have a Certificate in the Name of an Individual?
- ❖ Who Is Actually Commissioned by Building Owner
 - Certificate States...Individual...
 - Yet...Who Has Formal Agreement/Contract with Building Owner
- ❖ Who is Responsible?...Who is Liable if There is a Non-Compliance?
 - the Individual or the Company or Both?
- ❖ If the Individual Leaves the Company and There is a Non-Compliance?
- ❖ If the Company Ceases Trading and There is a Non-Compliance?
- ❖ Who Will the Building Control Authority and/or Building Owner Pursue?
- ❖ Enduring Liability...Beyond Retirement/Liquidation...PII Protection?

**These Represent Real Concerns For Individuals
...Fine/Imprisonment or Personal Lawsuit...**



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ACEI
Association of Consulting
Engineers of Ireland



ANCILLARY CERTIFICATE OF COMPLIANCE: (DESIGN) (COMMENCEMENT NOTICE / 7 DAY NOTICE)

BUILDING CONTROL AUTHORITY: _____

PRE-VALIDATION REF NO.: _____



ACEI / EI - BCR 1401

1. This certificate relates to the following Building Works:

_____ (project name)

at _____ (address)

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Ancillary Design Certifiers

- ❖ Engineers (E_D);...Also Architects (A_D);Building Surveyors (B_D)
- ❖ Prepared in Accordance with Code of Practice...
- ❖ Cover Design to Commencement Notice Stage
- ❖ Design By or Under Supervision of a Chartered Engineer...E_D
- ❖ Have been Prepared to Demonstrate Compliance with...
 - *The Requirements of the Second Schedule of the Building Regulations...*
 - *In So Far as They Apply to the Building or Works Concerned*
- ❖ Integrating and Coordinating Design by Specialists...
 - Our Design is Contingent...
- ❖ E_C Similar to E_D – Provided at Completion Stage

Ancillary Certificates In the Name of the Company



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Ancillary Design Certifiers



ANCILLARY CERTIFICATE OF COMPLIANCE, DESIGN

(COMMENCEMENT NOTICE / 7 DAY NOTICE)

To be completed by a Specialist or Unregistered Consultant

BUILDING CONTROL AUTHORITY : _____

PRE-VALIDATION REFERENCE NUMBER : _____



1. This certificate relates to the following Building Works:

_____ (project name)

at _____ (address)

element _____ (insert as appropriate)

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Ancillary Design Certifiers

❖ Specialists (or Sub-Specialists)

or

❖ Unregistered Consultants (or Sub-Consultants or Sub-Sub-Consultants)

❖ *We Confirm...We Are Competent...to Design...To Coordinate...To Integrate...*

➤ Specialist Skill...Must List Accreditation and Basis of Competence

❖ We Confirm That We Have...Professional Indemnity Insurance...

❖ PII Policy Appears To Be The Comfort Available...

➤ To Redress Optional Registration...

➤ But *Not* To Replace Competence Requirement...

But...Will PII Cover Be Present When Claim Arises?

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Now...How Will Certifier Exercise These Design Risks/Responsibilities?

❖ Exercise Significant Caution With Respect to Design

- Design By Colleagues – Company is Ancillary Certifier...Systems...
- Design by Sub-Consultants – Select for Expertise...Trusted...
- Control Over Selection of Specialists With Design Input?

❖ Will This Lead To...

- Adoption of Conservative Approaches Based on Risk?
- Avoidance of Innovative Designs? – Based on Risk Considerations
- Reverting to Prescribed Designs/Specifications Approaches?
- Insistence on Nomination of Trusted Specialists...
- Avoidance of Performance Specifications?

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ANCILLARY CERTIFICATE OF COMPLIANCE ON COMPLETION (ANCILLARY COMPLETION CERTIFICATE)

- INSPECTION PLAN

BUILDING CONTROL AUTHORITY : _____

COMMENCEMENT/7 DAY NOTICE REF NO. : _____



INSPECTION PLAN

1. This certificate relates to the following Building Works:

_____ (project name)

at _____ (address)

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Inspections

- ❖ Engineers (E₁);...Also Architects (A₁);Building Surveyors (B₁)
- ❖ Prepared in Accordance with Code of Practice...
- ❖ Prepared a Preliminary Inspection Plan and Provided to Assigned Certifier...
- ❖ Prepared a Testing Regime...For Inclusion in Contract Documents...
- ❖ Our Inspection Plan Has Been Undertaken By Us and/or RE Staff...
- ❖ Based on Above...and...
 - On Part A of the Completion Certificate...
 - Relying on Ancillary Certificates, and on Test Results...
- ❖ We Now Certify That...
 - Those Elements...We Designed/Specified...Are in Compliance
 - With the Second Schedule of the Building Regulations

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Inspections

- ❖ *“You Cannot Inspect Quality Into Products”* [Harold S. Dodge]
- ❖ Quality of Construction Should be Process Driven...
- ❖ Inspections Are There To See Works Observed During Inspections...
Are Being Constructed in Compliance with the Designs...
...and by Implication in Compliance with the Regulations...
- ❖ Cannot Be on Site All of the Time...
- ❖ Inspection Rationale...Decided on Risk Basis (Code of Practice)

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Inspections

- ❖ Each Designer Must Decide Themselves Where/What They Need to Inspect
- ❖ Examples of Significant Risk C&S Elements that could go wrong
 - Foundations ...Variable Ground Conditions...Inspect All of the Ground
 - Drainage...Hidden Works...Inspect the Ground...Pipe Installation/Levelling...
 - Reinforcement...Hidden Elements...Inspect All...
 - Bolting...Later Inaccessible...Check All...
- ❖ To Be Identified in Preliminary Inspection Plan...
- ❖ To be Facilitated by Inspection Notification Framework...

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Construction Products Regulations...

- ❖ Materials Delivered to Site...CE Marked...
- ❖ Example of Process Driven Approach...
- ❖ Certifiers Dependant on Compliance with CPR...
- ❖ Examples for C&S Designers...
 - Structural Steelwork...
 - Precast Concrete Units...
 - ...
- ❖ Declaration of Performance...
 - Critical Matched to Design...Execution Classes...

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Actions & Sanctions

If Contractor Did not Facilitate Inspection and Work is Covered Up...

OR

If During Inspection, Certifier Noted that Work is Unsatisfactory...

Certifier Would Have Responsibility for...

- Uninspected Work...Yet Considered Critical...
- Untested Materials...Incorporated in the Works...
- Unsatisfactory Work...but Accepted...

Designer Could *Not* Certify to the Contrary...

So What Next?

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Actions & Sanctions

- ❖ Test...If Feasible and If Test Will Facilitate Certification of Those Works...
- ❖ If Not...Require Removal and Satisfactory Replacement...
- ❖ Is There a More Fundamental Process Issue...
...Standard...Competence...Responsibility...

Will Certifier Have These Powers...

- If 'Independent'?..Include in Contract Conditions...
- If Employed by Contractor?...Include in Service Agreement...

If Stalemate...Consult the Assigned Certifier...Building Control Authority...

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What Do the Certificates State?

*I/We Certify... the (proposed) design for the building or works...
...elements of the project works ...which we designed/specified...
...are in compliance with the requirements of...
...the Second Schedule to the Building Regulations...*

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What Are the Requirements of the Second Schedule?

Part (A) Structure: - A(1)

- (1) A building shall be designed and constructed, with due regard to the theory and practice of structural engineering, so as to ensure that the combined dead, imposed and wind loads are sustained and transmitted to the ground
 - (a) safely, and
 - (b) without causing such deflection or deformation of any part of the building, or such movement of the ground, as will impair the stability of any part of another building

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What Are the Requirements of the Second Schedule?

Part (A) Structure...A(1)...continued...

- (2) In assessing whether a building complies with subparagraph (1), regard shall be had to the imposed loads and wind loads to which it is likely to be subjected in the ordinary course of its use for the purpose for which it is intended.

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What Are the Requirements of the Second Schedule?

Part (A) Structure...continued...A(2)

A building shall be designed and constructed, with due regard to the theory and practice of structural engineering, so as to ensure that movements of the subsoil caused by subsidence, swelling, shrinkage or freezing will not impair the stability of any part of the building

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What Are the Requirements of the Second Schedule?

Part (A) Structure...continued...A(3)

- (1) A multi-storey building shall be designed and constructed, with due regard to the theory and practice of structural engineering, so as to ensure that in the event of an accident the structure will not be damaged to an extent disproportionate to the cause of the damage.
- (2) For the purposes of sub-paragraph (1), where a building is rendered structurally discontinuous by a vertical joint, the building on each side of the joint may be treated as a separate building whether or not such joint passes through the substructure

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Technical Guidance Documents

...a technical guidance document...shall, prima facie, indicate compliance with the relevant requirements of these Regulations....

...any guidance contained in a technical guidance document...shall not be construed as prohibiting compliance with a requirement of these Regulations by the use of any other suitable material, method of construction or specification.

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In the Context of Certification Required & Defined by BCAR

- ❖ Do These Requirements Allow for Professional Judgement?
- ❖ On the One Hand...
...with due regard to the theory and practice of structural engineering...
- ❖ On the Other Hand
... in accordance with... a technical guidance document...shall, prima facie, indicate compliance with the relevant requirements of these Regulations....

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In the Context of Certification Required & Defined by BCAR

Law Society Conveyancing Handbook

“The Regulations themselves are expressed in extremely general terms with generous use of phrases such as ‘adequate’ and ‘reasonable’ so that they leave considerable room for interpretation”

Only Time Will Tell How Much Room...for Interpretation

And If... Interpretation = Professional Judgement?

