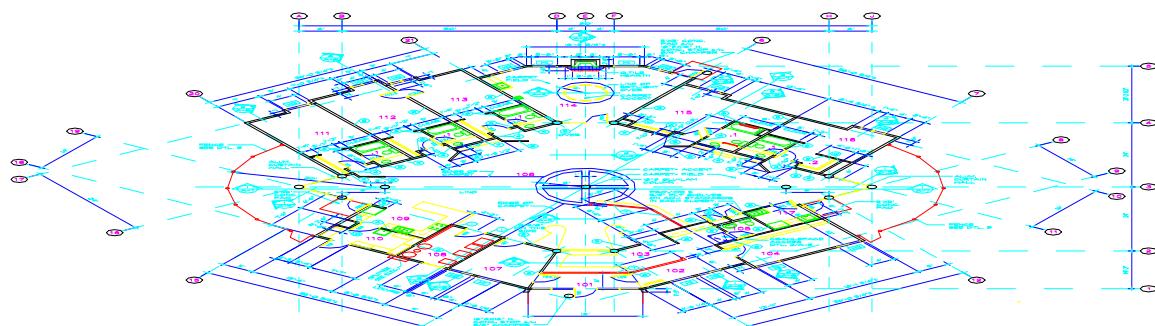


# **CONSTRUCTION DOCUMENT INTERPRETATION**

## **INTERMEDIATE LEVEL**

**Sponsored by:  
REGINA CONSTRUCTION ASSOCIATION**



presented by:  
Kurt Dietrich

## COURSE OUTLINE

This is intended to be the Intermediate Level course for Construction Document Interpretations. The less than technical term is reading blueprints. It is assumed that everyone registered in this course has completed the entry level course of Interpreting Blueprints.

The intent of this level is to give a greater understanding of construction techniques, procedures, and reasons for the way things are put together. The purpose for proceeding in this manner is to educate the persons interpreting the blueprints as to the reasons why things are drawn or specified certain ways, and the possible impact that changes may have on the overall building performance. This explanation is long winded but the simple fact is that every piece of a building has an impact on its overall success. If a person can understand or have a grasp on the potential performance of an item, then they can ascertain what impact changes to that item may have.

To begin, we propose to start off with the an explanation of the overall building

Look at the overall components of a building

- Cladding (interior and exterior)
- Structure
- Insulation
- Vapour barrier
- Finishes (may be cladding or not)

Those are in essence the basic components of a building.

The major factors that affect building performance.

- Weather
- Temperature extremes
- Building materials – movement and stresses
- Elements of construction
- Interior fitments and equipment.

A brief explanation of each item will be included.

There will be several major components reviewed during the course. Examples of these components are:

1. Ground swell, exterior moisture, landscaping – foundations (rebar and concrete – admixtures and air the right mix),, effects of groundwater, trees, and so on.
2. Building movement and stresses (Have to make allowances for movement – do not rely on sealant)
3. Insulating buildings and restricting air movement. Sound insulations and their purpose.
4. The incredibly important vapour barrier. What 's the big deal with a vb? Vb are crucial to ensure that moisture doesn't affect the overall assembly. Outside of wall is rain screen, inside of wall has vb to prevent moisture penetration due to temperature variances. Entry of water into the system could allow for the creation of molds and spores, leading to a loss in air quality and also to possible failure of the wall system. Worst case scenario is failure of the structural system
5. The importance of interior finishes and how their completion affects overall building performance. How are finishes typically applied, jointing, allowance for stresses, completion against other materials.

All items are typically specified and drawn. The course will detail throughout its description where to typically find these things and how to interpret the documents towards performance of the item.

It should be noted that the views and methods presented in this course are entirely those of the author and should not be construed as industry standards. (Though they should be.)

## COURSE OUTLINE

Basic elements to be reviewed will include but not be limited to the following:

**1. The basic building**

- elements of construction
- basic elements (five noted)
- general environment of buildings
- how they all tie together

**2. Examples of building materials.**

- structure types
- windows
- cladding
- finish materials

**3. Performance of Building Materials**

**4. Thermal and moisture deformations in building materials**

**5. Design and Service Life**

**6. Soil and Buildings**

**7. Foundation movements**

**8. Seasonal Construction (winter vs summer)**

**9. Requirements for exterior walls and roof systems**

**10. Vapour Barriers – What are they? Are they effective?**

**11. Control of Air leakage in Buildings**

**12. Vapour diffusion and condensations**

**13. Natural Ventilation of buildings**

**14. Thermal resistance of building insulation.**

**15. Sound Insulation**

**16. Finishes (what's the big deal?)**

- flooring
- walls
- ceilings
- fitments

**17. Joint movement and sealants**

- reasons for and allowances
- types of integration
- problems encountered.

**18. Interior and exterior pressures on buildings**

- wind
- mechanical ventilation
- temperature pressures
- effects on building materials

**19. Examples of failures in buildings.**

- technology failures
- design failures (we aren't perfect)
- construction failures.

**20. Building technology and its use.**

- computer intergration
- building assessments
- building performance



**21. National Building Code Influence**

- design
- construction
- occupancy

**22. Fire and Building Design**

**23. Safety in Buildings**

**24. Handicapped Accessibility**

For each section noted, the course outline will cover:

- Integration - Specs and Prints
- Types of specifications – trade/performance
- Element Identification
- Site works, grading, landscaping.
- Foundation Plans
- Floor Plans
- Schedules and Symbols
- Reflected Ceiling Plans
- Elevations
- Building Sections
- Wall Sections
- Detail Drawings
- Interior Elevations
- Millwork

## COURSE OUTLINE

It is anticipated that within each section, the basics of finding the information on the drawing, understanding the nature of the installation, and interpreting the specifications with reference to the intent will be covered.

All materials and data will be taken from the Canadian Building Digests, CMHC documents, NRC technical bulletins, and National Building Code (1995 edition).

This course appears to cover a great deal of ground within a short period of time. All of the sections will be reviewed with regard to the aforementioned breakdown not necessarily in detail.

The initial reason for the course is to provide additional training in interpreting construction documents (specifications and drawings). The secondary reason for the course will be to provide an opportunity to learn why things are drawn and detailed certain ways and how buildings perform over the long term.

It is intended that this course instruct the participants not only on how to find additional information through drawings and specifications, but to enable them to understand the impact of the details, the nature of the building construction, and the reasons behind the drawings.

Through a greater understanding of why things are put together, subtrades on site will be able to better perform their tasks to produce superior buildings.

Hand-outs for the course curriculum will be prepared complete with graphic illustrations to better explain certain points. These hand-outs will be provided to the participants at the outset of the first class, and they may keep them upon completion.

The course should run over a total time period of two evenings, scheduled for the same week. The two nights should have a one day break between. A quiz is suggested for the conclusion of the course, likely multiple choice, to test how well they've been listening.

The first course is suggested for early October with the second, if desired, for Late November. We would also suggest that a comment sheet be circulated upon completion of the course to secure any possible suggestions towards improving the nature of the materials and presentation.

### NOTES:

