

BCBEC – 2013 AGM

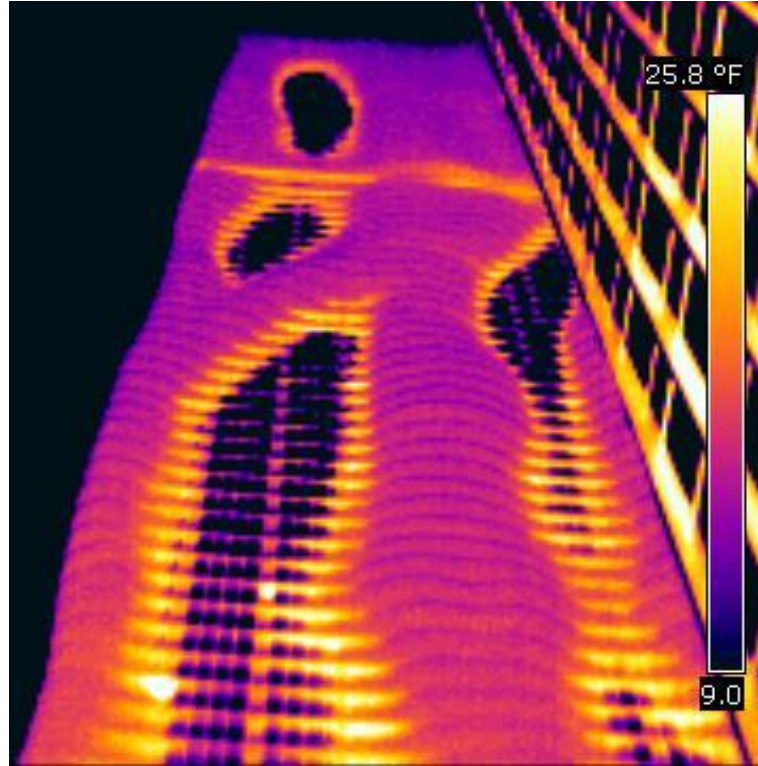
**Practical Considerations of
Installing In-Slab Thermal Breaks**

**Neil Norris
Jeremy Takada Balden**

September 25, 2013



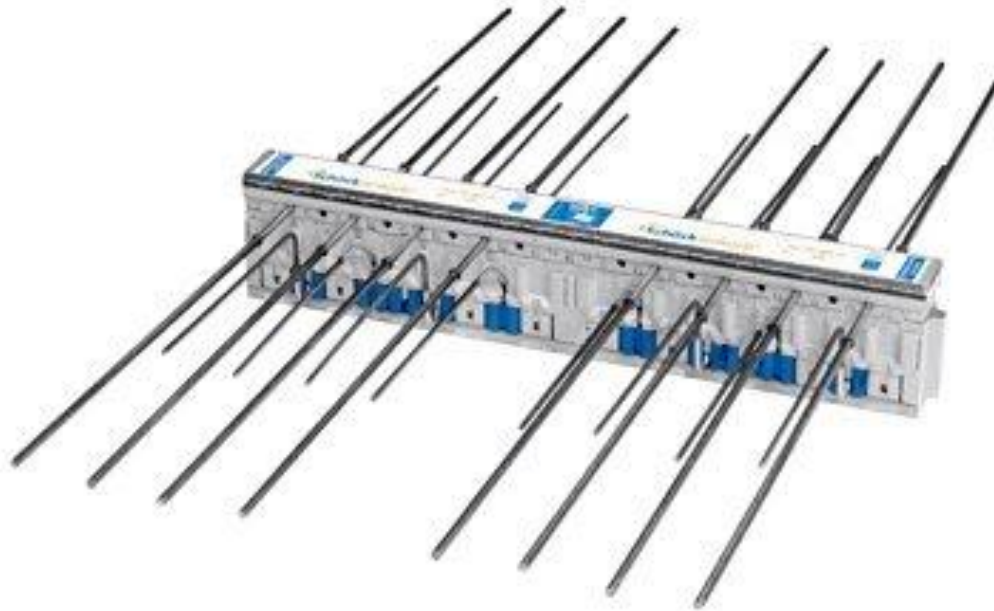
Heat Loss through Slab Edges



- Typically un-insulated
- High Heat Loss
- Colder interior temperatures

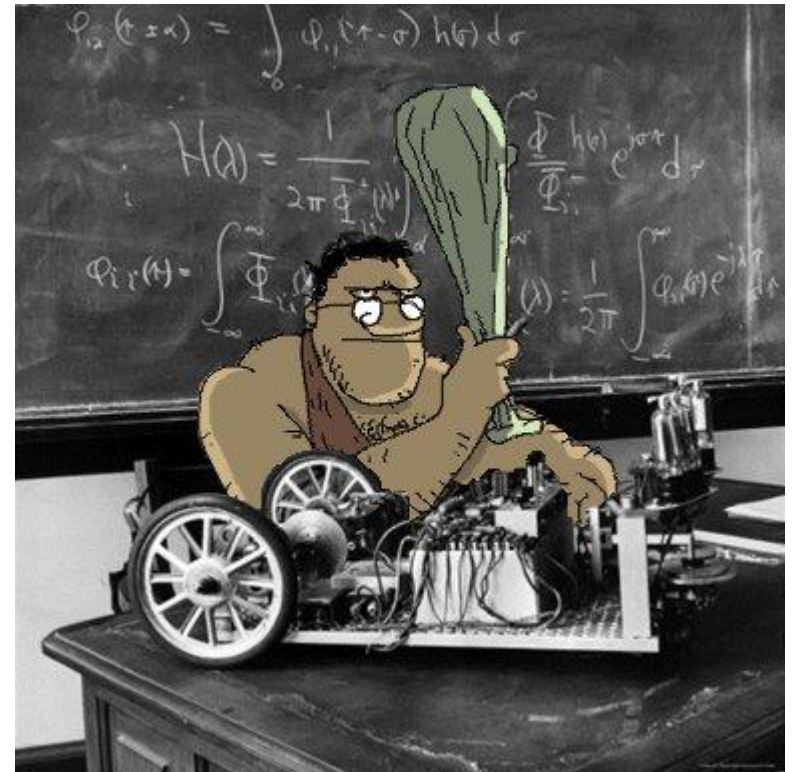


Installation of Isokorb® concrete thermal breaks



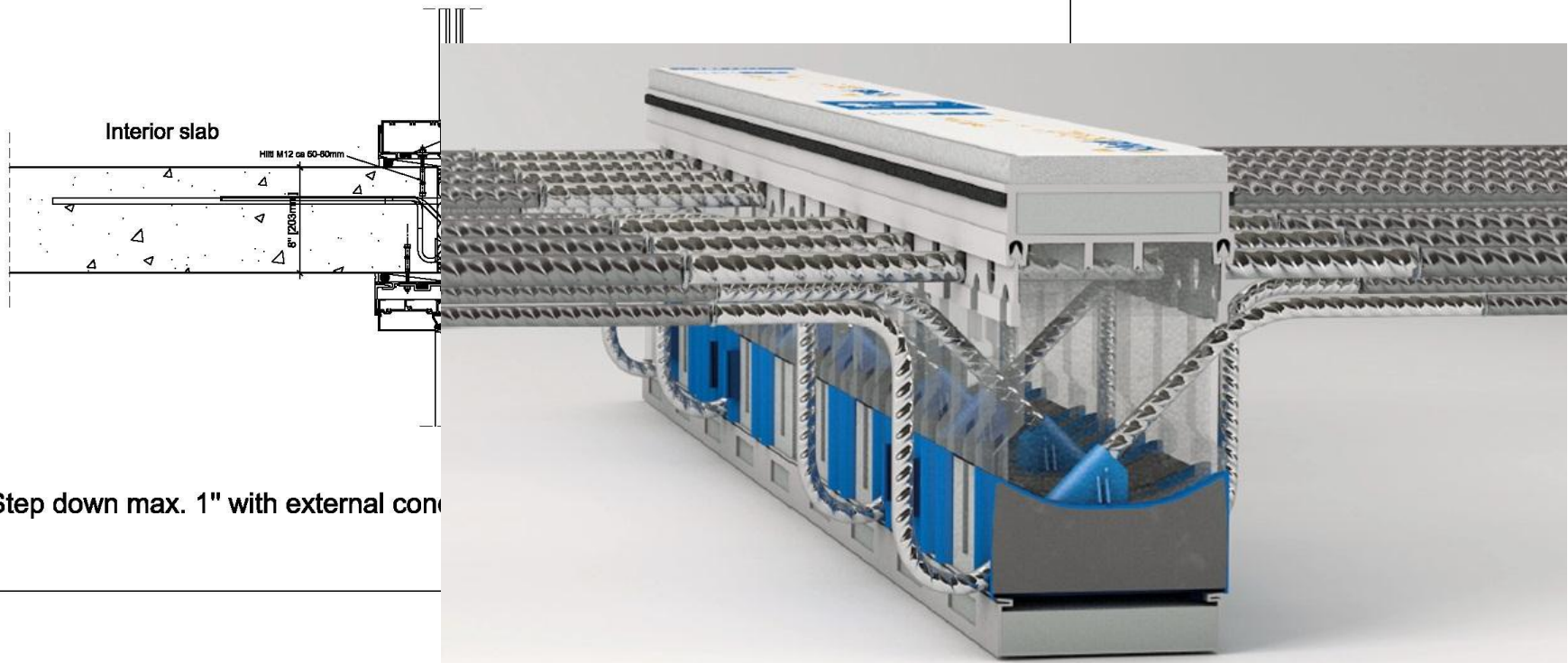


PRACTICE



THEORY

Detail N°1: Connection with Schöck Isokorb® type CM



Step down max. 1" with external con








PACIFIC ARBOUR

RETIREMENT COMMUNITIES




CEDAR SPRINGS
RETIREMENT RESIDENCE


The Westerleigh
RETIREMENT RESIDENCE




RAMSAY WORDEN
 ARCHITECTS
 + URBAN PLANNERS



FRANCL
 ARCHITECTURE


BESHARAT • FRIARS
 Architecture
 Planning
 Interior Design

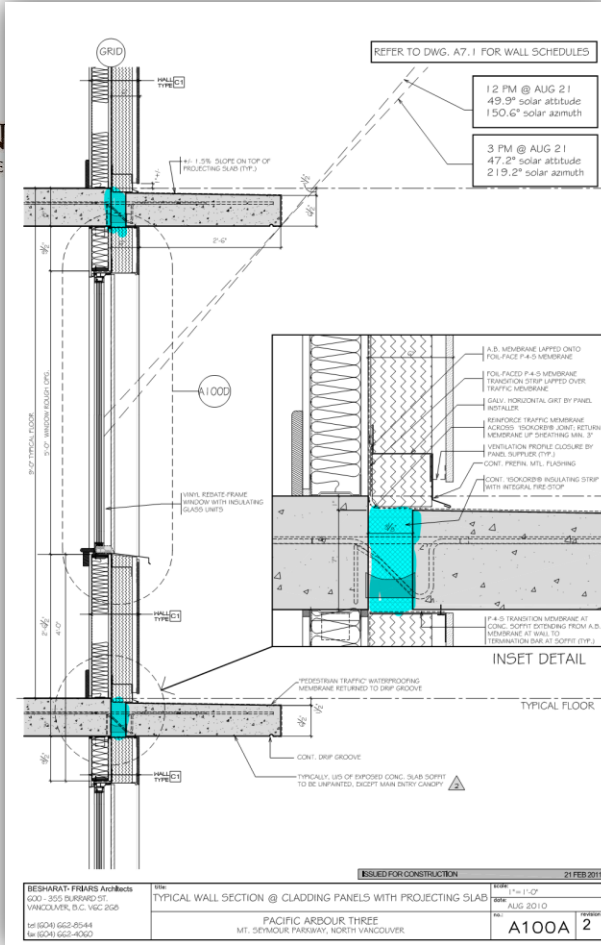

CEDAR SPRINGS
 RETIREMENT RESIDENCE


 The
Westerleigh
 RETIREMENT RESIDENCE





MORRISON HERSHFIELD



NO.	DATE	DESCRIPTION
1	17 AUG 10	ISSUED FOR CONSTRUCTION
2	21 AUG 10	REVISION: 1.0
3	26 SEP 10	REVISION: 1.1
4	26 OCT 10	REVISION: 1.2
5	08 NOV 10	REVISION: 1.3
6	18 NOV 10	REVISION: 1.4
7	28 NOV 10	REVISION: 1.5
8	17 DEC 10	REVISION: 1.6
9	21 JAN 11	REVISION: 1.7
10	23 FEB 11	REVISION: 1.8

FOR ACTION

SHARAT-FRARS
Architects
620-355 BURROUGHS ST.
VANCOUVER, B.C. V6C 2G8
tel: (604) 622-8544
fax: (604) 622-4002

BOUR

Senior residence
Pacour Parkway
Vancouver, B.C.

Typical sections

SECTION
A
2.4

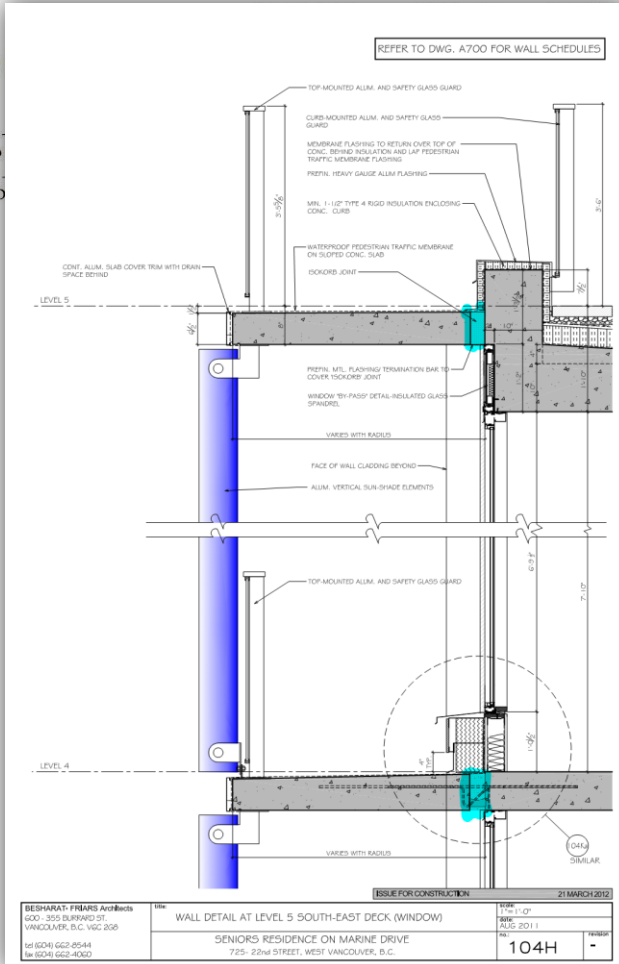
SCALE
1/4" = 1'-0" UNLESS NOTED OTHERWISE

DATE
AUG 2010

PROJECT
PACIFIC ARBOUR THREE
MT. SEYMOUR PARWAY, NORTH VANCOUVER

NO.
A100A 2

Courtesy Besharat Friars Architects



Courtesy Besharat Friars Architects

- Installation



- Installation





Sent: Wed 5/11/201

From: Hanaa.Sadallah@schoeck.de
To: Jeremy Balden
Cc:
Subject: WG: Mount Seymour - Isokorb waterproofing
Message Mogafix-KSKU-Multi2.pdf (1 MB)

Jeremy,

thanks for coming back to us. We would like to make the following proposal:
Apply a bitumen coat and then use a self-adhesive (cold, not hot glue) sheeting (Mogafix KSK-U, for please see attachment for further details). Our Isokorb and the wall must be covered by at least 20 Vapour barrier is not necessarily required; please use something like Vedatect V60 S4 if necessary. use hot glues as they could damage the Isokorb. Please notice that gluing should not take place. An additional upper layer of Vedatect PYE PV 200 S5 or similar would provide extra protection.

I hope this helps. Please feel free to come back to us should any questions occur. We will be

Best regards, Hanaa

Mit freundlichen Grüßen

Dipl.-Ing. Hanaa Sadallah

Tel. +49 7223 967-390

<http://www.schoeck.de>

Schöck Bauteile GmbH * Sitz der Gesellschaft: Vimbacher Straße 2, 76534 Baden-Baden, Deutschland
Dr. Harald Braasch, Michael Schmitz
Handelsregister beim Amtsgericht Mannheim, Nr. HRB 200316, USt-IdNr. DE 811153017

Schöck Aktiengesellschaft * Sitz der Gesellschaft: , Vimbacher Straße 2, 76534 Baden-Baden
Harald Braasch, Michael Schmitz, Vorsitzender des Aufsichtsrats: Alfons Hörmann
Handelsregister beim Amtsgericht Mannheim, Nr. HRB 201493, USt-IdNr. DE 143469393

Diese E-Mail enthält vertrauliche und/ oder rechtlich geschuetzte Informationen. Wenn Sie nicht der richtige Adressat sind oder diese E-Mail irrtuemlich erhalten haben, informieren Sie bitte sofort den

MOGAT MOGAFIX KSK – U Multi 2



Die Multifunktions-Elastomer-Bitumenbahn – kaltselfklebend – Trenn- und 1.Abdichtungslage kombiniert in einer Bahn.
Mit dieser neuen Bahn erfüllen die MOGAT-Werke das Anforderungsprofil: 1.Abdichtungslage auf Holzuntergründen mit gleichzeitiger Trennfunktion.

Produktvorteile:

- Elastomerbitumen – komplett kaltselfklebend ausgerüstet
- Doppelter Schutz im Nahtbereich durch sich überlappende, kaltselfklebende Nahtverbindung
- Kopfstöße kaltselfklebend durch abziehbare Trennfolie
- Vollwertiger Flammenschutz des Holzuntergrundes
- Hohe Ausreißfestigkeit durch Glasgewebeeinlage
- Schweißfreundliche Oberflächensklierung
- Problemloses Aufschweißen weiterer Abdichtungslagen
- Nagebarer Selbstkleberand

**Wir arbeiten
mit System für Ihr Dach.**



MORRISON HERSHFIELD

~ MT. SEYMOUR ~
ISOKORB WP'ING.

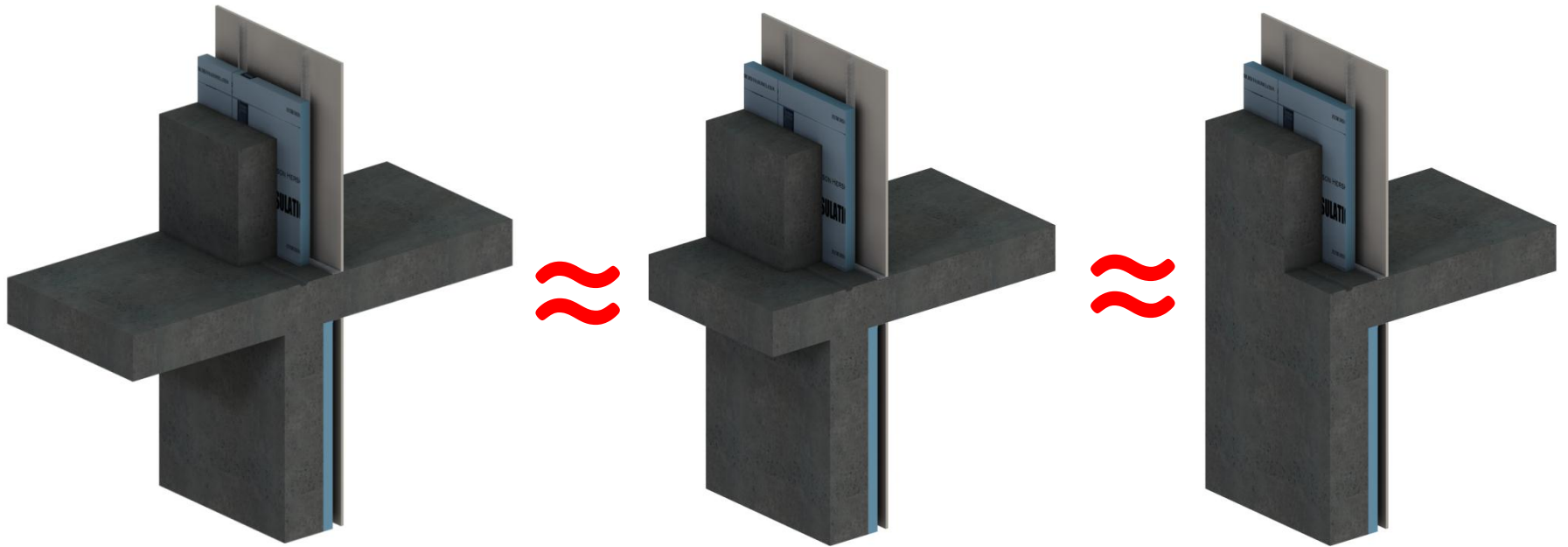
JEB. OCT 24/11

- Water



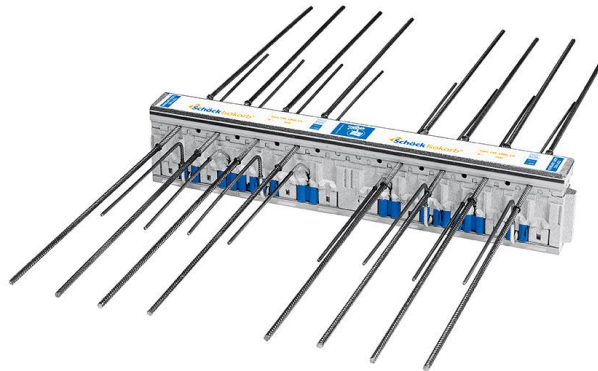



- Thermal Modeling

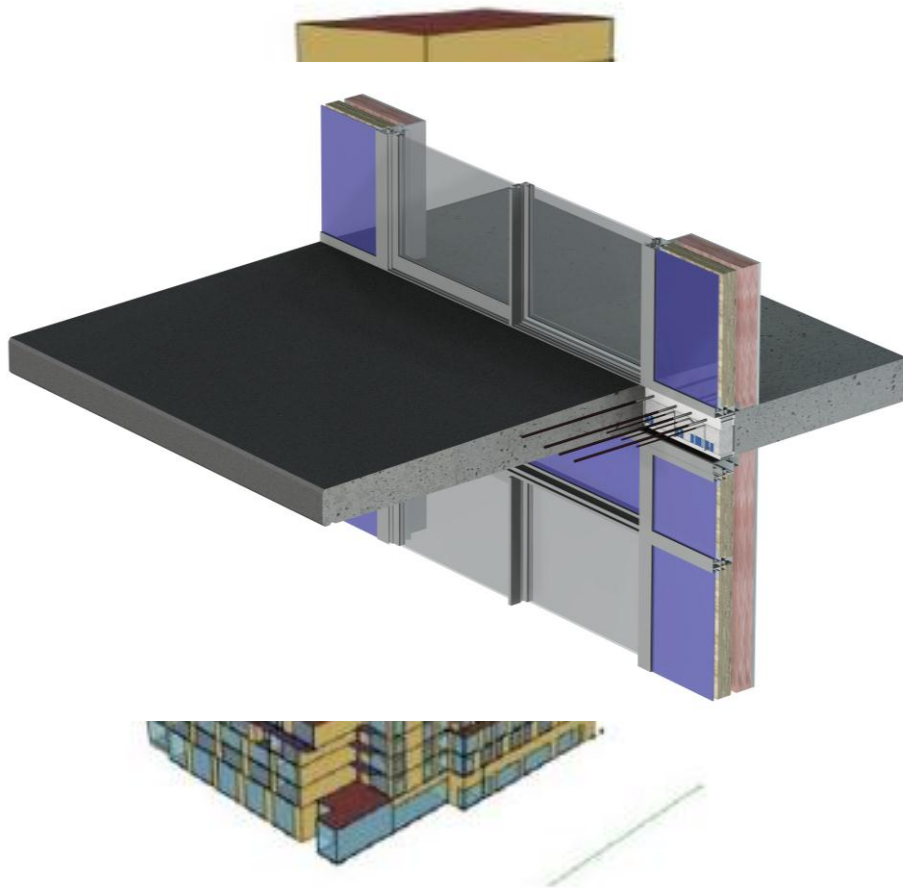




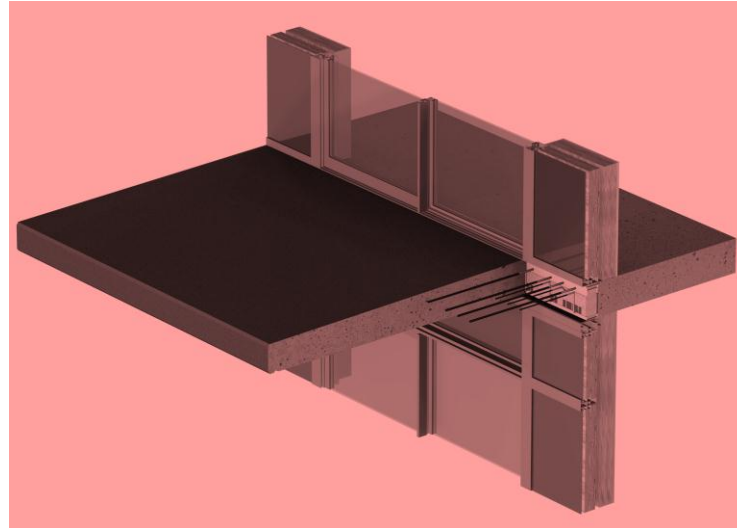
Building Component
Clear Wall
Balcony Slab
Flush Slab
Misc Details
Total



% Contribution
42.6%
22.3% 
24.5%
10.5%
100.0%

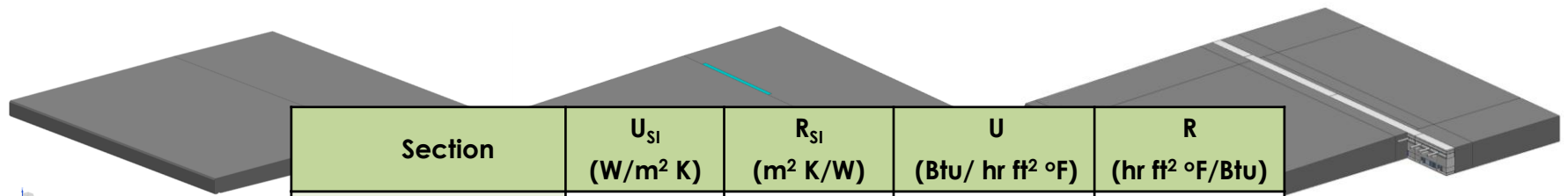


Thermal Performance of Flanking Elements



Section	U_{SI} (W/m ² K)	R_{SI} (m ² K/W)	U (Btu/ hr ft ² °F)	R (hr ft ² °F/Btu)
Spandrel Wall	0.8	1.25	0.140	7.1
Sliding Door	2.7	0.37	0.476	2.1
Overall Flanking Elements	2.08	0.48	0.366	2.7

Thermal Performance of Slab Conditions



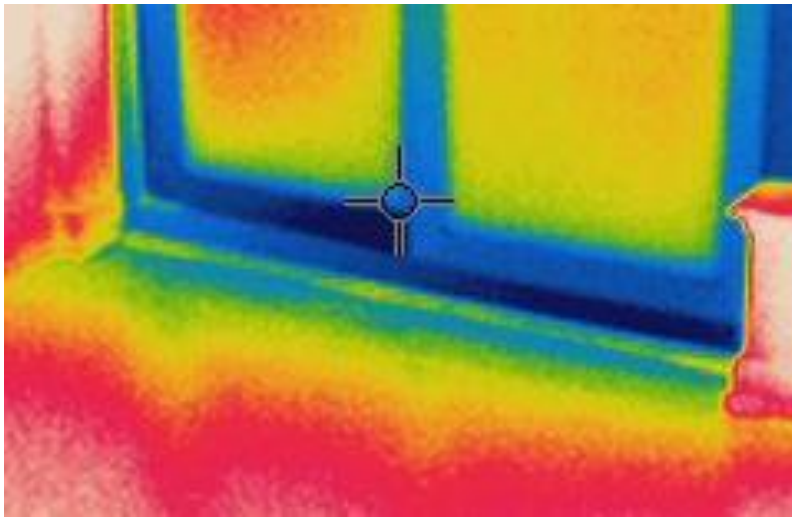
Section	U_{SI} (W/m ² K)	R_{SI} (m ² K/W)	U (Btu/ hr ft ² °F)	R (hr ft ² °F/Btu)
Overall Flanking Elements	2.08	0.48	0.366	2.7

Section	U_{SI} (W/m ² K)	R_{SI} (m ² K/W)	U (Btu/ hr ft ² °F)	R (hr ft ² °F/Btu)	% Reduction in Heat Flow
Continuous slab (Conventional solution)	4.88	0.20	0.859	1.2	N/A
Slab /w intermittent concrete (site solution)	3.86	0.26	0.680	1.5	21%
Slab with Isokorb (Schöck solution)	1.21	0.83	0.213	4.7	75%

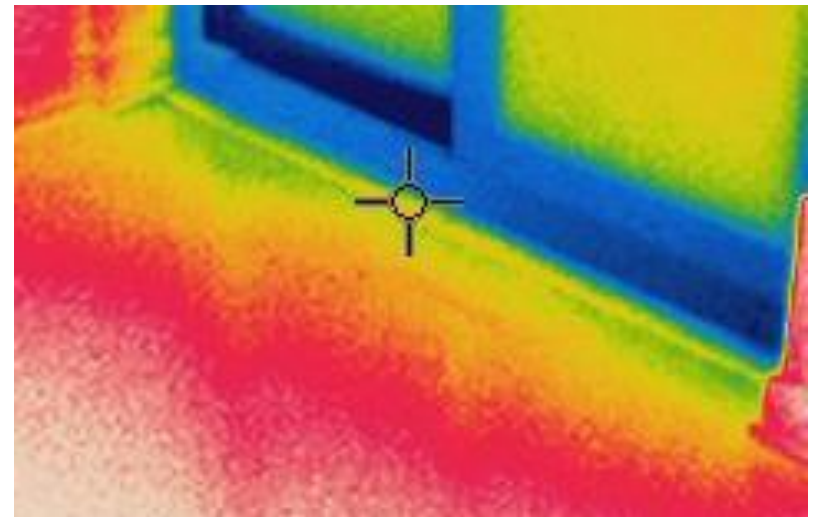
Condensation Risks - Toronto

Slab Scenario	Temperature Index	Concrete Temperature at Design Temperatures (-18°C Exterior and 21°C Interior)	Dewpoint of Interior Air at 35% RH and 21°C	Meets Design Criteria With Regard to Condensation Resistance
Continuous slab (Conventional solution)	0.45	-0.5	5	No
Slab /w intermittent concrete (site solution)	0.5	1.5	5	No
Slab with Isokorb (Schöck solution)	0.64	7.0	5	Yes

Condensation Risks - Toronto



Conventional Slab



IsoKorb

Condensation Risks - Vancouver

Slab Scenario	Temperature Index	Concrete Temperature at Design Temperatures (-7°C Exterior and 21°C Interior)	Dewpoint of Interior Air at 35% RH and 21°C	Meets Design Criteria With Regard to Condensation Resistance
Continuous slab (Conventional solution)	0.45	5.6	5	Yes, Marginal
Slab /w intermittent concrete (site solution)	0.5	7.0	5	Yes
Slab with Isokorb (Schöck solution)	0.64	10.9	5	Yes

Whole Building Energy Modeling

- 32 Floors
- 3.5% projected balcony area
- 40% Window to Wall Ratio
- Opaque Wall R-Values, includes slab heat loss
- 8.7 W/m² LPD, 4.1 W/m² PLD
- 4 Pipe fan coil, ventilation by HRV's

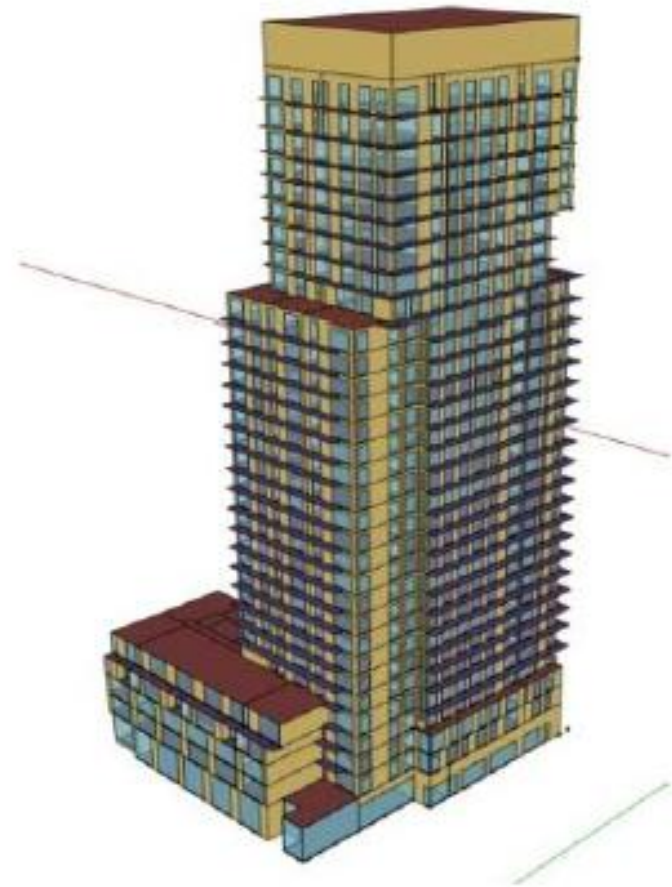


Table 4: Summary of Whole Building Energy Simulations

Slab Scenario	Electricity (GJ)	Natural Gas (GJ)	Heat Energy Savings
Continuous slab (Conventional solution)	5,758	8,588	N/A
Slab /w intermittent concrete (site solution)	5,759	8,410	2.0%
Slab with Isokorb (Schöck solution)	5,760	7,958	7.3%

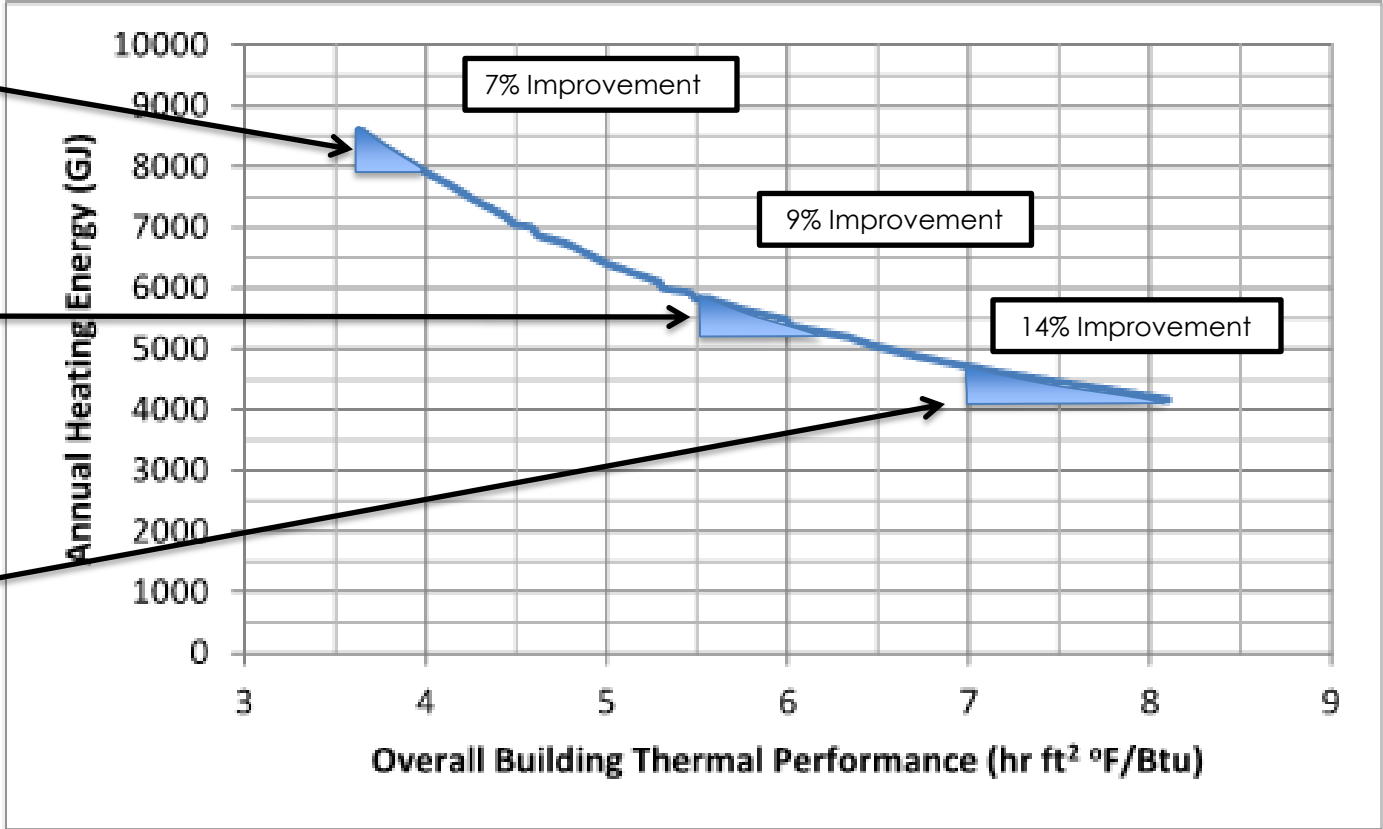
Overall Envelope R-Values (Combined Glazing and Opaque Wall)

Section	Spandrel (as modeled)	R-12 Opaque Assembly	Triple Glazed Windows	R-12 Walls & Triple Glazed Windows	R-15 Walls & High Performance Triple Glazed Windows
Conventional Slab	3.7	4.2	4.6	5.5	6.9
Slab w/ intermittent concrete	3.8	4.3	4.7	5.6	7.2
Slab with Isokorb	4.0	4.6	5.1	6.2	8.1

Spandrel Walls

R-12 Walls & Triple Glazed

R-15 Walls & Triple Glazed



Thank You