Project Overview
INTRODUCTION AND BACKGROUND

New North Zealand Hospital (The Client, NHN) carried out a project competition in which seven companies submitted tenders on the new future hospital in Hillerød, Denmark. In August 2013, the assessment panel selected three winners of the project competition who subsequently participated in a negotiated procedure for a lead consultancy contract, which was ultimately awarded to “HdeM VLa partnership Nyt Hospital Nordsjælland I/S” (The Total Consultant, TC). Ever since then the TC have been developing the design of project. Details about the project can be found on the website: https://www.regionh.dk/nythospitalnordsjaelland/english/Sider/default.aspx

At present we are in the Project Proposal phase “Projektforslag” which is expected to last until the end of 2016. There is an aspiration for an extensive use of wood in the overall design (cladding and/or window system) and the TC now wishes to further explore the various façade types and design by obtaining feedback from contractors, manufacturers and suppliers. For this reason we wish to enter into a number of Technical Dialogs with different contractors manufacturers and suppliers in order to take advantage of the knowledge and expertise in the market.

The Technical Dialogs will take place throughout the remaining part of the Project Proposal phase “Projektforslag”, and each Technical Dialog will be framed in a series of meetings with contractors, manufactures or suppliers within a period of 2 to 4 weeks, depending on which types or aspect of the façade design is being explored in the individual dialog.

TC have assembled this document to facilitate the discussions on which to base the Technical Dialogs. It is not expected to share more material relevant to the project during the Technical Dialogs; however the members of the TC to be part of the meetings can address any questions that you might have and that are necessary to conduct the meetings. You are expected to be prepared for the meetings, include key members of your technical team, acquire an understanding of the background documents and provide preliminary replies to the technical queries raised. These meeting are planned to be in English and will unless otherwise agreed take place at VLA’s office in Copenhagen as a Video Conference with HdeM’s the design team in Basel.

Although the primary goal of this dialog is exchanging on the technical aspects of the facade design the discussions could evolve around the time and cost constraints of the project.

You are kindly requested to confirm by return your availability and acceptance to participate in this Technical Dialog to the following email address: lbe@vla.dk (Lars Beier) and cc: e.pelaez@herzogde mụcron.com (Enrique Pelaez).
Building Orientation and Sun Path

- NORTH EAST (237°)
- SOUTH EAST (237°)
- SOUTH WEST (237°)
- NORTH WEST (237°)

True North

Project North

NORTH EAST (237°)
SOUTH EAST (237°)
SOUTH WEST (237°)
NORTH WEST (237°)

21. June
03:29

21. December
03:29

22. September
05:58

22. September
08:44

21. December
18:09

20:55

15:32

05:58

57°
New North Zealand Hospital, Hillerød
Hersog & de Meuron - Vilhelm Lauritzen Arkitekter - Ramboll - MOE - Sintef - VOGT

Aerial View
Facade Types Overview
Facade Types Overview Diagram:  

<table>
<thead>
<tr>
<th>Facade Type</th>
<th>Total approx. area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A - Perimeter Facade</td>
<td>9,850m²</td>
</tr>
<tr>
<td>Type B - Courtyard Facade</td>
<td>7,900m²</td>
</tr>
<tr>
<td>Type C - Lobby Facade</td>
<td>4,600m²</td>
</tr>
<tr>
<td>Type D - Bed Wards Facade</td>
<td>13,100m²</td>
</tr>
</tbody>
</table>

Retaining-, Basement-, and Stair walls are not included.
Facade Types Overview Diagram:

<table>
<thead>
<tr>
<th>Type</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A - Perimeter Facade</td>
<td>5.150m²</td>
</tr>
<tr>
<td>Type B - Courtyard Facade</td>
<td>3.100m²</td>
</tr>
<tr>
<td>Type C - Lobby Facade</td>
<td>2.400m²</td>
</tr>
<tr>
<td>Type D - Bed Wards Facade</td>
<td>0m²</td>
</tr>
</tbody>
</table>

Retaining-, Basement-, and Stair walls and are not included.

Facade Types - Level 0

New North Zealand Hospital, Hillerød

Herneg & de Meuron - Vilhelm Lauritzen Arkitekter - Ramboll - MOE - Sintef - VOGT
Facade Types - Level 1

Facade Types Overview Diagram:

<table>
<thead>
<tr>
<th>Facade Type</th>
<th>Level 1 approx. area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A - Perimeter Facade</td>
<td>4.700m²</td>
</tr>
<tr>
<td>Type B - Courtyard Facade</td>
<td>4.800m²</td>
</tr>
<tr>
<td>Type C - Lobby Facade</td>
<td>2.200m²</td>
</tr>
<tr>
<td>Type D - Bed Wards Facade</td>
<td>0m²</td>
</tr>
</tbody>
</table>

Retaining-, Basement-, and Stair walls and are not included.
Facade Types - Level 2

Type A - Perimeter Facade   0m²
Type B - Courtyard Facade   0m²
Type C - Lobby Facade       0m²
Type D - Bed Wards Facade   6.550m²

Retaining-, Basement-, and Stair walls are not included.
Facade Types Overview Diagram:

<table>
<thead>
<tr>
<th>Type</th>
<th>Level 3 approx. area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A - Perimeter Facade</td>
<td>0m²</td>
</tr>
<tr>
<td>Type B - Courtyard Facade</td>
<td>0m²</td>
</tr>
<tr>
<td>Type C - Lobby Facade</td>
<td>0m²</td>
</tr>
<tr>
<td>Type D - Bed Wards Facade</td>
<td>6.550m²</td>
</tr>
</tbody>
</table>

Retaining-, Basement-, and Stair walls and are not included.
Facade Types Overview Diagram:

- **Type A - Perimeter Facade**
- **Type B - Courtyard Facade**
- **Type C - Lobby Facade**
- **Type D - Bed Wards Facade**

Retaining-, Basement-, and Stair walls and are not included.
Type A - Perimeter Facade
Facade Types - Bay Study

SECTION A-A

TIMBER BOARD VERTICAL (SHIPLAP) CLADDING
TIMBER VERTICAL LAMELLA INFILL PANEL
INSULATED RENDER TO STRUCTURAL FLOOR SLAB
TIMBER FRAMED WINDOW
METAL FRAMED WINDOW
METAL CURTAIN WALLING SYSTEM (BLACK)
CONTINUOUS METAL MULLION (WHITE)
STRUCTURAL COLUMN
METAL RAIN WATER PIPE (WHITE)
Facade Type A - Section

1. INSULATED CURTAIN WALL SYSTEM WITH SOLID METAL PANELS (MIN. 250MM INSULATION)
2. ALUMINIUM MULLIONS/SYSTEM CAPS (WHITE)
3. TRIPLE GLAZED METAL FRAME WINDOW
4. SUN SHADE SCREEN (INTEGRATED IN CURTAIN WALL SYSTEM)
5. WOOD LAMELLAS INFILL PANELS (MODIFIED/ TREATED TIMBER)
6. STRUCTURAL FLOOR
Facade Type A - Plan details

PLAN DETAIL 3 (GLAZED WINDOW)
- Interior
- Facade System 1.25m module
  (min. 250mm insulation)
- Lammelas
- Exterior

PLAN DETAIL 2 (SOLID CLADDING)
- Interior
- Facade System 1.25m module
  (min. 250mm insulation)
- Lammelas
- Exterior
Type B - Courtyard Facade
Facade Type B - Courtyard Images
Facade Type B - Courtyard Images
Facade Technical Dialogue

Facade Type B - Section through Courtyard

New North Zealand Hospital, Hillerød

Hillen & de Meuron - Vilhelm Lauritzen Arkitekter - Rambøll - MOE - Sintef - VOGT

Facade Type B - Section through Courtyard

1200
Level 2
9550
Level 1
4350
Level 0
0

Curtain wall Facade System
Exterior Sunscreen for shading and privacy
Wooden panels for privacy

Court Yard

Facade Technical Dialogue
Facade Type B - Privacy Screen Plan detail

Facade System 0.625m module (min. 250mm insulation)

Lammelas

Exterior sun shading screen
Type C - Lobby Facade
Facade Type C - Lobby Images
Facade Type C - Lobby Construction Buildup
Type D - Bed Ward Level Facade
Facade Type D - Bed Ward Level
TIMBER BOARD VERTICAL (SHIPLAP) CLADDING
TIMBER FRAMED WINDOW
INSULATION / WEATHER-WATER PROOFING / STRUCTURE
TIMBER FRAMED DOOR
ROOF BUILDUP + ALU OR ZINK TOPPING
WOOD DECK
PAINTED METAL SUPPORT
PAINTED METAL HANDRAIL
MESH BALUSTRADE

(A) FACADE PERFORMANCE STRUCTURE & TIMBER CLADDING SUPPORT FRAME
(B) FACADE TIMBER CLADDING
(C) BALCONY

Facade Type D - Construction Buildup
Facade Type D - Bedward Section Levels 2 & 3
Facade Type D - Typical Plan

BEDROOM BALCONY
Facade Requirements
<table>
<thead>
<tr>
<th>Facade Criteria</th>
<th>Design Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylight</td>
<td>Glazed area provision &gt; 16.1% of room area</td>
</tr>
<tr>
<td>Sun shading</td>
<td>Exterior Screens</td>
</tr>
<tr>
<td>Glare Control</td>
<td>External Screens (internal screen option tbc)</td>
</tr>
<tr>
<td>Natural ventilation</td>
<td>1 openable window per room</td>
</tr>
<tr>
<td>Privacy</td>
<td>1) Punched windows to room spaces</td>
</tr>
<tr>
<td></td>
<td>2) Staggered window position for direct facing windows to avoid direct views.</td>
</tr>
<tr>
<td></td>
<td>3) Vertical Panel Fins</td>
</tr>
<tr>
<td></td>
<td>2) External Screens (internal screen option tbc)</td>
</tr>
<tr>
<td>Blackout</td>
<td>Internal Blackout blinds</td>
</tr>
<tr>
<td>Thermal Performance</td>
<td></td>
</tr>
<tr>
<td>U-Value [ W/m² K ]</td>
<td>0.15 - Walls (250mm approx. insulation)</td>
</tr>
<tr>
<td></td>
<td>0.80 - Windows (triple glazing)</td>
</tr>
<tr>
<td></td>
<td>0.09 - Bedwards Roof (400mm approx. insulation)</td>
</tr>
<tr>
<td></td>
<td>0.11 - Roof Green (300-400mm approx. insulation)</td>
</tr>
<tr>
<td>Air Leakage</td>
<td></td>
</tr>
<tr>
<td>[ 0.5l/s per m² at 50 PA]</td>
<td>Level 0/1 - Standard Curtain Wall System</td>
</tr>
<tr>
<td></td>
<td>Level 2/3 - Prefabricated Panels</td>
</tr>
</tbody>
</table>
### Facade Requirements

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>BRIEF</th>
<th>CODE</th>
<th>SPECIAL TECH. REQ.</th>
<th>FACADE L0 / L1</th>
<th>Facade L2/L3</th>
<th>ROOF</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACOUSTICS</strong></td>
<td>Noise External Noise $L_p$ (dB)</td>
<td>Building Regulation 2010, chapter 6.4:</td>
<td>Facade facing Logistics Centre</td>
<td>$L_p &lt; 50$ (A)</td>
<td>$L_p &lt; 50$ (A)</td>
<td>Noise from traffic</td>
<td>Definition of requirements according to site condition</td>
</tr>
<tr>
<td></td>
<td>Airborne Sound Insulation $R_w$ (Ctr) (dB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Noise target for internal spaces background</td>
</tr>
<tr>
<td></td>
<td>Flanking Insulation $D_{n,f,w}$ (dB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impact Sound Insulation $L_{n,w}$ (dB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DESIGN LIFE</strong></td>
<td>Cladding Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Glass units</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Structural silicone / Laminated glass</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moving parts / Electrical components</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DRAINAGE</strong></td>
<td>Local rain data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water Barrier</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FIRE</strong></td>
<td>Prevent fire and smoke spread</td>
<td>Building Regulation 2010, chapter 6.4:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Notes:</td>
</tr>
<tr>
<td></td>
<td>Vertical Fire Separation (m)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(a) 1 hour separation between L0 and L1 equivalent to min. 1.2m EI 60 A2-1;00</td>
</tr>
<tr>
<td></td>
<td>Horizontal Fire Separation (m)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Minor areas up to 20% of facade are allowed to be Class K 10 D &gt;1 d2</td>
</tr>
<tr>
<td></td>
<td>Material Fire Class</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(c) If needed the facade can be used for post-fire venting e.g. natural venting or mechanical venting.</td>
</tr>
<tr>
<td></td>
<td>Smoke extract / intake</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(d) Because of vertical fire spread prevention, building is consider to be only 2 stories.</td>
</tr>
<tr>
<td></td>
<td>Rescue Openings requirement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(e) Requirement lowered as ext. facade is sprinklered.</td>
</tr>
<tr>
<td><strong>GLARE CONTROL</strong></td>
<td>External solar shading</td>
<td>Shading factor &lt;0.3</td>
<td>Shading factor &lt;0.3</td>
<td></td>
<td></td>
<td></td>
<td>glare control requirements (depending on program, orientation?)</td>
</tr>
<tr>
<td><strong>GLASS SPECIFICATIONS</strong></td>
<td>Low Iron Glass</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical restraint</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Colour rendering index (Ra)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Light Transmittance, LT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIGHT</strong></td>
<td>Daylight factor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Program requirements for daylight</td>
</tr>
<tr>
<td><strong>LIGHTNING PROTECTION</strong></td>
<td>Class 2 lightning protection envisaged at this time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MAINTENANCE</strong></td>
<td>Cleaning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Glass Replacement</td>
<td>TBC (From inside / Travelling Ladder / MEWP)</td>
<td>TBC (From inside / Travelling Ladder / MEWP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facade Element Replacement</td>
<td>TBC (From inside / Travelling Ladder / MEWP)</td>
<td>TBC (From inside / Travelling Ladder / MEWP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M&amp;E</td>
<td>TBC (MEWP on temp.-distribution plates)</td>
<td>TBC (MEWP on temp.-distribution plates)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M&amp;E</strong></td>
<td>Air intake / Extract vents: Position, Amounts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Building Automation</td>
<td>National technical/norm/purpose related to L0</td>
<td>Act to have all intakes for ventilation positioned 2m above external ground level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

New North Zealand Hospital, Hillerød
Henzøg & de Meuron - Vilhelm Lauritzen Arkitekter - Rambøll - MOW - Sintef - VOGT

Facade Technical Dialogue
## Facade Requirements

### TOPIC BRIEF CODE SPECIAL TECH. REQ. FACADE L0 / L1 Facade L2/L3 ROOF DESCRIPTION

### PERMEABILITY
- **Air tightness**
  - Air leakage for the building at 50 Pa pressure test
    - L0: 0.3 l/s per m²
    - L1: 0.5 l/s per m²

### PRIVACY
- **Bed wards (L2 / L3)**
  - Privacy towards the courtyard
- **Training zones**
  - Privacy towards the courtyard
- **Off-stage bases / secretary stations (all levels)**
  - Assuring that patient information is kept secure
- **Bed wards / ICU (on lower levels)**
  - Privacy from other levels/rooms across courtyard
- **Outpatients clinics / examination rooms / triage**
  - While patients change clothes / are undressed
- **Conversation rooms**
  - Discretion for meetings on serious matters
- **Surgery theaters / endoscopy**
  - While patients undergo surgery
- **Training / meeting / conference spaces**
  - Assuring that patient information is kept secure
- **Delivery wards**
  - Between rooms and toward the landscape

### SAFETY
- **Safety glass**
  - BR15/DS/INF 119
    - Safety glass required when glass in doors is placed lower than 1.8m above floor and 0.8m above floor in other areas
- **Balustrade min. height, fall protection**
  - BR15 chapter 3
    - Balustrades are used for person safety in facade, these should be designed in accordance with regulations in chapter 3.2.3 Balustrades
- **Balustrade Horizontal Load**
  - BR15 chapter 3
  - GS/EN 356 and GS/EN 1921
- **Burglary / Vandalism**
  - GS/EN 356 and GS/EN 1927
- **Terrorism / Blast**
  - GS/EN 356 and GS/EN 1921
  - GS/EN 356 and GS/EN 1927

### SNOW & ICE Loads
- **Protection**
  - Facade will be partly protected from large impacts from snow by the overhang on level 2

### SOLAR PROTECTION
- **Sun Study, local data**
  - GRY 2013
  - g-value Solar factor
    - g<0.5
    - g<0.5
- **Shading devices**
  - External shading
    - Shading factor < 0.3
    - Shading factor < 0.3

Definiton of requirements and tests for example terrorism (for example plane, truck) and burgler, calculation of the blast-report.
<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>TOPIC</th>
<th>BRIEF</th>
<th>CODE</th>
<th>SPECIAL TECH. REQ.</th>
<th>FAÇADE L0/L1</th>
<th>FAÇADE L2/L3</th>
<th>ROOF</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction tolerances</td>
<td>No client brief</td>
<td>TBC</td>
<td>Not Applicable</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>Definition of requirements related to structure</td>
<td></td>
</tr>
<tr>
<td>Deflection movement: permanent, life</td>
<td>No client brief</td>
<td>TBC</td>
<td>Not Applicable</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>Maximum vertical variable load deflection at the perimeter of the structures during the working life of the building (including creep effects) anticipated to be limited to 15mm.</td>
<td></td>
</tr>
<tr>
<td>Deflection movement: permanent, life</td>
<td>No client brief</td>
<td>TBC</td>
<td>Not Applicable</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>Maximum vertical variable load deflection at the perimeter of the structures during the working life of the building (including creep effects) anticipated to be limited to 15mm.</td>
<td></td>
</tr>
<tr>
<td>Façade Loads</td>
<td>No client brief</td>
<td>TBC</td>
<td>Not Applicable</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>Movement joints required in the permanent structure. Preliminary movement joint study to be carried out during Outline Proposals phase. Structural GA drawings indicate potential locations of structural movement joints.</td>
<td></td>
</tr>
<tr>
<td>Lateral movement</td>
<td>No client brief</td>
<td>TBC</td>
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<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>Movement joints required in the permanent structure. Preliminary movement joint study to be carried out during Outline Proposals phase. Structural GA drawings indicate potential locations of structural movement joints.</td>
<td></td>
</tr>
<tr>
<td>Movement Joints</td>
<td>No client brief</td>
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<td>Not Applicable</td>
<td>Movement joints required in the permanent structure. Preliminary movement joint study to be carried out during Outline Proposals phase. Structural GA drawings indicate potential locations of structural movement joints.</td>
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<td></td>
</tr>
<tr>
<td>Wind Loads</td>
<td>No client brief</td>
<td>TBC</td>
<td>Not Applicable</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>To be determined during the project proposals stage</td>
<td>Unfactored suction force to be determined during the project proposals stage.</td>
<td></td>
</tr>
</tbody>
</table>

**Facade Requirements**

New North Zealand Hospital, Hillerød
Herning & de Meuron - Vilhelm Lauritzen Arkitekter - Ramboll - MOE - Sintef - VOGT
### Facade Requirements

**SUSTAINABILITY**

- **Certifications**: BK2000
- **Environmental Protection**: birds, endangered species...
- **Building Elements**: Windows Energy Label A

**THERMAL PERFORMANCE**

- **Local climate data**: Denmark DRY 2013
- **U-value facade (W / m² K)**: Windows
- **U-value walls (W / m² K)**: Windows
- **Window area to floor area ratio**: Windows
- **Window U-value, Uw (W / m² K)**: Windows

**VENTILATION**

- **Natural ventilation requirement**: Operable windows in occupied rooms (Offices, Bedwards etc.)
- **Window operating force**: Not Applicable
- **Wind Load Resistance Class**: Not Applicable

**WIND**

- **Local wind data**: No client brief
- **Comfort: macroclimate / microclimate**: Currently non-applicable
- **Wind Tunnel Test**: Currently non-applicable

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**Definitions**

- **Facade Requirements**: Definition of required certifications and overall impact throughout the project.
- **Special requirements for environmental protection**: SUSTAINABILITY
- **Definitions of requirements, especially U-value**: THERMAL PERFORMANCE
- **Coordination with MEP cooling systems**: VENTILATION
- **Definition of requirements according to code or comfort**: WIND

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**Table:**

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<tr>
<th>TOPIC</th>
<th>BRIEF</th>
<th>CODE</th>
<th>SPECIAL TECH. REQ.</th>
<th>FACADE L2 / L1</th>
<th>Facade L2/L3</th>
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LIST OF PRELIMINARY QUESTIONS FOR THE TECHNICAL DIALOG

Design & Construction
1. With consideration for the building size, geometry and facade typologies, could you clarify your preferred construction system?
   a. Modular? Prefabricated... to what extent?
   b. Stick & clad?
   c. Other?
2. Could you clarify concerns and/or opportunities for the various interfaces?
   a. Curtain wall to wooden cladding
   b. Curtain wall to balconies
   c. Set-out, connection details and tolerances
3. Could you highlight potential concerns and/or opportunities for the various curtain wall preliminary design intent details, per types?
4. Could you highlight potential concerns and/or opportunities for the various timber elements preliminary design intent details? Wooden type, Profile, Size...
5. Could you highlight potential concerns and/or opportunities for perimeter drainage / ground interface with perimeter cladding
6. Could you highlight potential concerns and/or opportunities for external roller sun shade devices to be integrated / recessed within the depth of the curtain wall
7. Could you highlight potential concerns and/or opportunities for facade access and maintenance, including eventual inspection requirements
8. Could you highlight potential concerns and/or opportunities and define maximum glass pane sizes for types C & D1
9. Could you highlight potential concerns and/or opportunities for type C (wooden system) facade, including wooden types, treatment, protection, structural requirements?
10. Could you highlight potential concerns and/or opportunities for the light metal roof system, including geometry, interfaces, drainage?

Buildability
11. Could you highlight potential concerns and/or opportunities for procurement, sequencing and installation?
    a. Is the facade quantity within the capacity of a single manufacturer or would several manufacturers need to team up?
    b. Could the same contractor deliver and install both curtain wall and wooden lamella systems
    c. What is the time frame from ordering to first delivery ready to install on site? Modular? Stick?
    d. What is the installation time on site? Modular? Stick?
12. Could you highlight potential concerns and/or opportunities for appropriate wood types, procurement, availability, sustainability and capacity?
New North Zealand Hospital Hillerød

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