Light Well
591 Main Street, Waltham, MA

Case Study Format Developed By:
AIA Academy of Architecture for Health | Research Initiatives Committee

Facade Wrapper

The client for this family-run orthodontics practice wanted an open, airy space to maximize patient comfort and staff efficiency on a minimal budget. A hundred-year-old storefront and warehouse on Main Street in Waltham was gutted, creating open plan reception and treatment areas flanked by semi-private offices, toothbrushing stations, exam rooms, and a staff coffee area.

Facade Wrapper
An awkward entry was reconfigured to accommodate a more comfortable clinical flow. Anew fiber-cement clad box with bright green wood wrapper frames storefront windows looking into the reception and seating areas.

Image Sources: http://mergearchitects.com/greater-boston-orthodontics/
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### Design Considerations

The double-height treatment space is framed by an 18-foot-tall backlit translucent wall curving down in section to frame and light the open treatment area. CNC-cut plywood ribs skinned with thin polycarbonate panels funnel light from skylights into the ortho bay. Built-in sinks and storage at the base of the wall serve the treatment area and the semi-enclosed lab and sterilization areas behind.

In the front of the space, a wraparound seating area and digital media bar provide comfortable and engaging waiting spaces for teenage patients and their families. Natural wool felt applied to walls, millwork, and a custom-constructed lighting pendant warm the space, and vibrant green custom wall graphics provide friendly wayfinding throughout.

- **Felt surfaces**: Felt felt design wool felt was applied to wall, millwork, and floor surfaces in the waiting and reception areas to provide warmth and color.
- **Iconography**: Custom iconography on bright green vinyl signage provides wayfinding for patients and staff at exam / treatment areas, toothbrushing stations, water fountains, lab / sterilization zones, and break rooms.
- **Dumpling Pendant**: The pendant light above the reception desk was custom designed and fabricated by the architect, with a hand-sewn felt skin wrapping CNC-cut plywood ribs.

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**PROJECT SUMMARY**

**Project:** Light Well  
**Project Type:** Orthodontist Office  
**Project location:** 591 Main Street, Waltham, MA  
**Owner/Client:** Greater Boston Orthodontics  
**Architect:** Merge Architects Inc.  
**Construction cost:** $390,000  
**Building area GSF:** 3,565 S.F.  
**Lot area:** 2,942 S.F.  
**Cost per square foot:** $109/S.F.  
**Substantial completion date:** September 2012

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**Image Sources:** [http://mergearchitects.com/greater-boston-orthodontics/](http://mergearchitects.com/greater-boston-orthodontics/)

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**Light Well**  
**Case Study Analysis**

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**DRAFT**
**CASE STUDY ANALYSIS**

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**JURY COMMENT**

- Materials, graphics, color palette, lighting, and form combine with an elegant use of space to energize this gem of a small office fit-out.
- It is both creative and restrained in a pleasing way.
- It is appropriately named as the design uses light to define the form in a way that is specifically relevant from the patient’s perspective.
- The translucent wall is a very dramatic backdrop for a very simply organized plan.
- This is an impressive example of what can be achieved on a very limited budget within the restrictive framework of an existing building.
- The design demonstrates an exemplary commitment to implementing a strong concept within tight constraints.

**KEY SPACES:**

- Exam Rooms (82-89sf)
- X-Ray Room (42sf)
- Consult Rooms (103 sf)

**DEPARTMENTAL GROSS SQUARE FOOT TAKE-OFFS**

<table>
<thead>
<tr>
<th>Net</th>
<th>Gross</th>
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<tbody>
<tr>
<td>Patient Care</td>
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<tr>
<td>Lab</td>
<td>511 SF</td>
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<tr>
<td>Patient Support</td>
<td>210 SF</td>
</tr>
<tr>
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<td>822 SF</td>
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</tbody>
</table>

**TRAVEL DISTANCE ANALYSIS**

- Patient: 0.5R – 87.5R
- Family: 55R – 67R
- Staff: 0.5R – 110R

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CNC Fabrication
CNC-fabricated backlit translucent wall

The double-height treatment space is framed by an 18-foot-tall backlit translucent wall. The wall curves down in section, drawing natural light from two skylights into the open treatment area below.

Polycarbonate Wall Detail
CNC-cut plywood ribs skinned with thin polycarbonate panels funnel light from skylights into the ortho bay. Built-in sinks and storage at the base of the wall serve the treatment area and the semi-enclosed lab and sterilization areas behind.

SECTION / ELEVATION A - LONGITUDINAL

SECTION / ELEVATION B - TRANSVERSE

POLYCARBONATE WALL
CNC-cut plywood ribs skinned with thin polycarbonate panels funnel light from skylights into the ortho bay. Built-in sinks and storage at the base of the wall serve the treatment area and the semi-enclosed lab and sterilization areas behind.