

Dunlop Architects Inc.

Surveys on Hospital Design

Michael Moxam

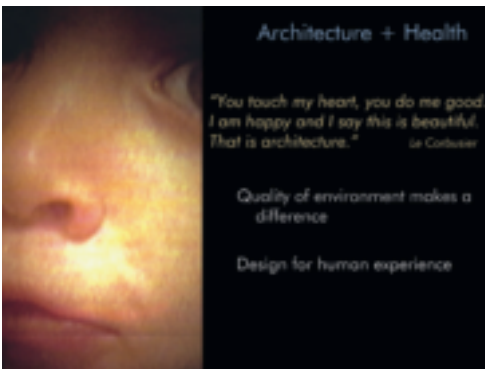


**Michael Moxam, OAA,
MRAIC, Assoc. AIA**

Mr. Moxam is Design Principal of Dunlop Architects Inc., an innovative Toronto-based design firm specializing in the design of acute care facilities. With over 19 years experience in the design and planning of complex project types, Mr. Moxam maintains a strong commitment to design excellence and to redefining the "type" in acute care design. His recent design work in acute care has focused on the creation of fully integrated community facilities and the creation of staff and patient-centred environments. Mr. Moxam is the Design Principal for the new 529 bed Peterborough Regional Health Centre in Peterborough, Ontario, the redevelopment of the University Health Network's Toronto Western Hospital and the redevelopment of the Chatham-Kent Health Alliance in Chatham, Ontario.

Background

Architecture, in its most fundamental definition, is about engaging the mind, accommodating the body and lifting the spirit. It is about



Architecture + Health

the human experience.

Design for healthcare is an incredibly challenging task, balancing many complex and often contradictory issues:

- integration of medical technology
- healthcare planning issues
- long term flexibility
- community integration
- systems integration
- cost

Often, it seems the goal of enhancing and reinforcing human experience weakens as these issues fight for priority – sometimes resulting in facilities that are more about equipment and planning than matters of human experience.

The ideas that enhance human experience must be embedded in the very first diagrams that define the conceptual direction of a facility, to protect them from being lost.

As architects, we are very intuitive about what draws out people's emotional responses – space, proportion, clear circulation, natural light, views, materials, connections. In 2002, we determined to push ourselves beyond this, to test and challenge our natural intuition.

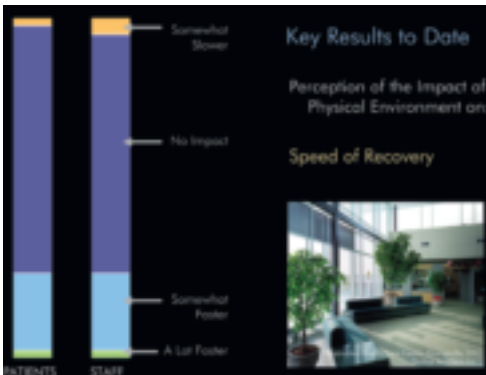
We decided ask patients and staff about their emotional response to the built environment. Other available studies were not specific enough to provide the information we were seeking. Also, we wanted to build a database of our own experience that would feed back into the design process and contribute to the continuous evolution of our work. This was not intended as a strictly controlled scientific experiment, but a sampling of people's ideas and satisfaction. It remains a "work in progress".

We chose ambulatory care departments as the focus of the pilot study. These facilities are growing in importance for the healthcare sector. With the wide variety of patients who visit ambulatory care facilities, they also offer a broad sample of differing levels of acuity. Our initial approach was to three clients: Headwaters Health Care Centre in Orangeville, University Health Network's Toronto Western Hospital, and Peterborough Regional Health Centre. We examined various tools, including surveys, focus groups and site observations. Survey questions were refined with input from the clients and from an outside research agency.

The study focussed on two key areas: general impact of the physical environment on patients and staff, and opinions about specific design elements.

Key Findings – General Impact

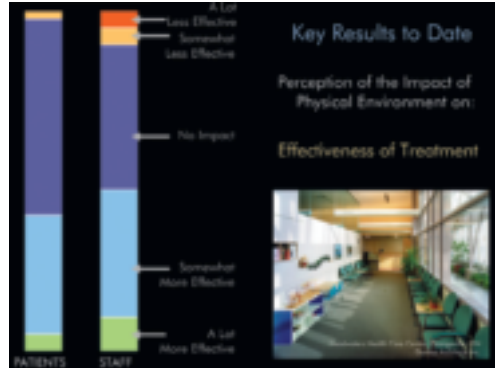
1) About one quarter of patients and staff feel the physical environment speeds up recovery



Key Results to Date – Speed of Recovery

While the majority of people said the physical environment had no impact on recovery times, almost one quarter reported that it made recovery “somewhat” faster, and a small percentage felt it made recovery “a lot” faster. (Patients were asked about their own experience; staff were asked their opinions about the impact on patients.)

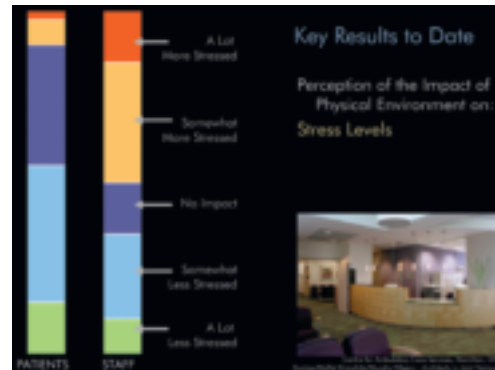
2) Approximately 40% feel the physical environment improves effectiveness of treatment



Key Results to Date – Effectiveness of Treatment

When we asked what impact they felt the physical environment had on the effectiveness of treatment, the numbers increased – approximately 40% said the physical environment made treatment “somewhat” or “a lot” more effective.

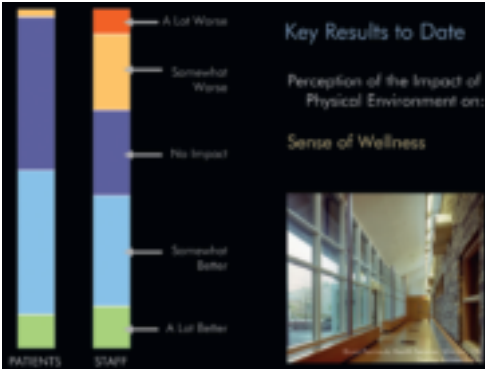
3) The majority of patients report the physical environment lowers their stress. Staff have mixed views.



Key Results to Date – Stress Levels

Patients were even more positive about the impact on their stress levels – more than half reported that the physical surroundings made them feel “somewhat” or “a lot” less stressed. Figures for staff were quite different – we believe this reflects the combination of new and old construction in the same facility, but intend to explore this further.

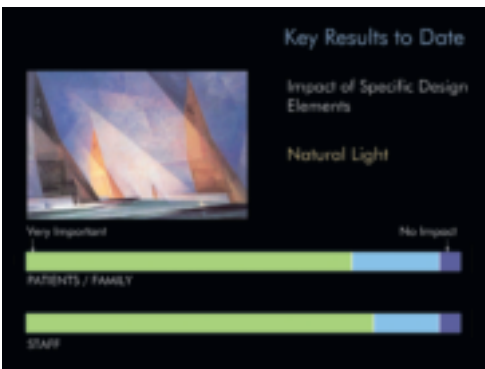
4) Half of patients and almost as many staff say the physical environment improves the sense of “wellness”



Key Results to Date – Sense of Wellness

More than half of the patients, and close to half of the staff, felt the physical surroundings resulted in feeling “somewhat” or “a lot” better physically.

5) Natural light is rated among the top 3 – 4 most important elements



Key Results to Date – Natural Light

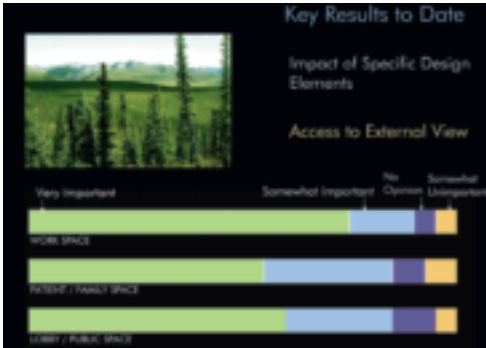
We asked patients and staff to rate the importance of various elements to their sense of well-being while in the hospital and grounds – “very important”, “somewhat important” or “no impact”. Natural light was consistently rated near the top, both for “very important” alone, and for “very important” and “somewhat important” combined.



Natural light can be introduced into various parts of the hospital, from large “view” windows, to indirect light shelves. Even in areas where privacy is paramount, sandblasted glass can maximize access to natural light.

6) Staff gives a higher priority to having external views in work spaces than in patient areas or public spaces

We wanted to look a little more closely at windows and views, so we asked staff to tell us where they thought external views were important. They put work areas first, lobbies and public spaces second, and patient and family spaces third.



Key Results to Date – Access to External View



Key Results to Date – Wayfinding

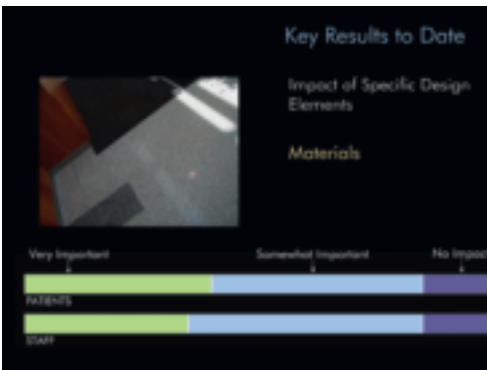
7) *Wayfinding is very important to patients; somewhat less so to staff*

Many older hospitals confront patients with a confusing array of corridors, structures and even street entrances which are difficult to find. It's no wonder patients rate wayfinding (signage, orientation and route markers) near the top of their list of important elements. The percentage of staff who rate wayfinding as “very important” is lower – but the combined total



rating it "somewhat" or "very" important is virtually identical for staff and for patients. New design approaches can make a huge difference. For example, adding a new entrance to this existing hospital has created a point of entry so clear it already has become a city landmark.

8) *Materials affect most respondents*



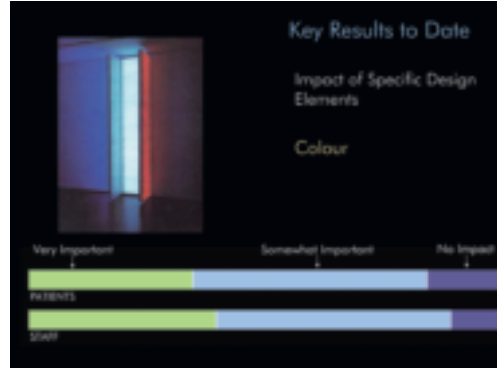
Key Results to Date – Materials



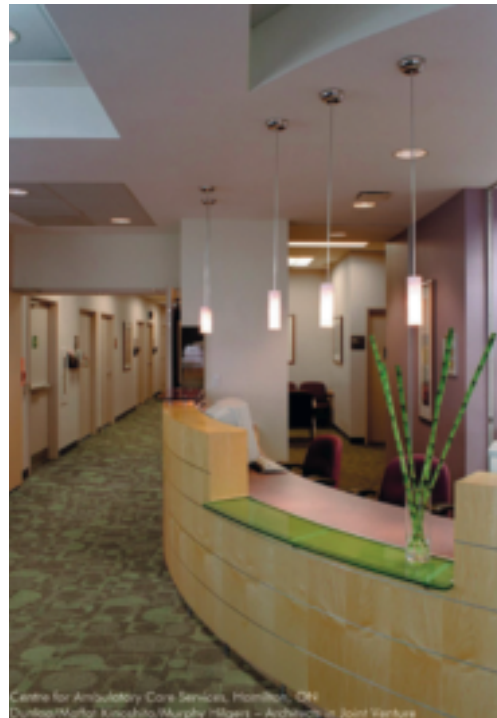
Use of wood, glass, metals, stone, etc. appears to have an impact on most people's sense of wellbeing.

9) *Colour scheme is rated similarly to materials*

Well designed colour schemes can create an atmosphere of calmness, warmth, elegance, welcome, or fun, depending on the facility's goals. Accent colours can help people identify key destinations, and assist in wayfinding.

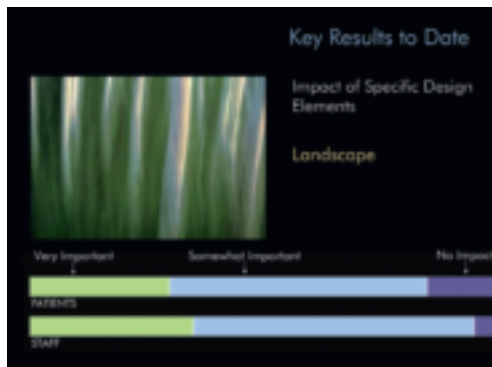


Key Results to Date – Colour

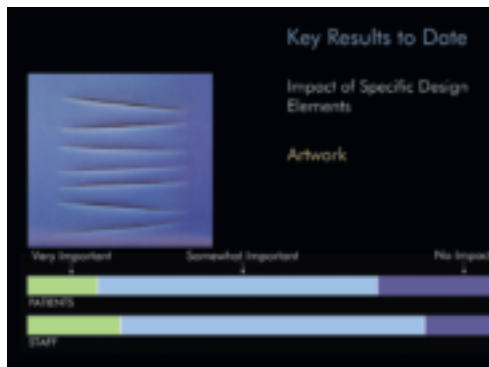


10) *There is a definite impact attributed to landscaping*

Good design can bring the best elements of nature together to create environments that contribute to wellbeing, both inside and outside the facility.



Key Results to Date – Landscaping



Key Results to Date – Artwork



11) Even though artwork is rated lowest, its score is still impressive



Although the number of people rating it “very important” is lowest for both groups, only a quarter of patients (and fewer staff) said it had “no impact” on their sense of wellbeing while in the hospital and grounds. Inpatients may rate artwork more highly. We intend to investigate this further.

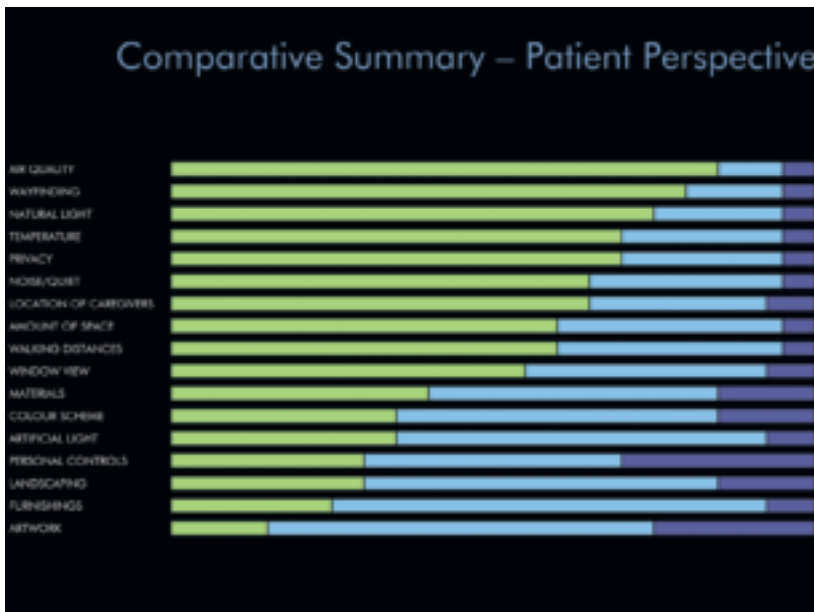
Key Findings – How they compare

These charts compare the ratings given to the various architectural elements by patients and by staff.

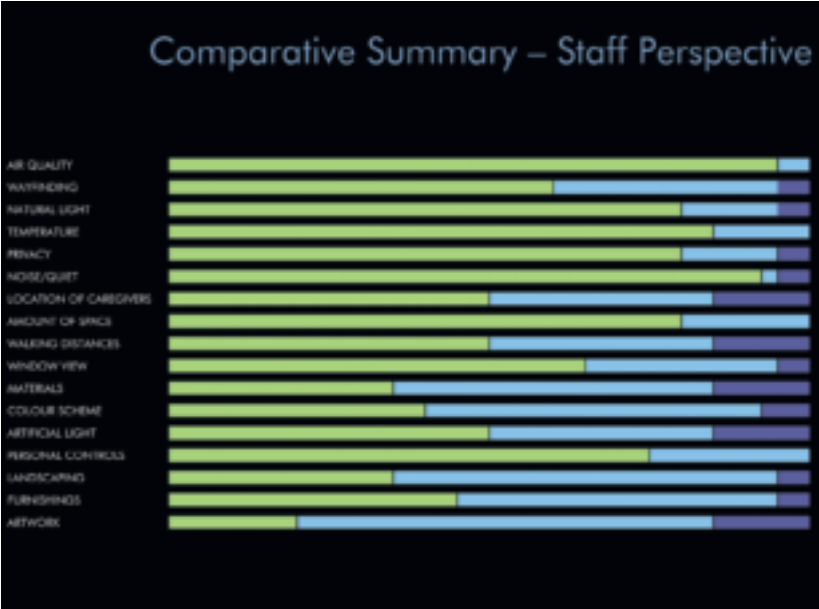
The first chart is organized by patients’ ratings of “very important”, from highest to lowest. The second chart keeps the elements in the same order patients assigned, but shows the ratings given by staff. This helps to point out differences between how the two groups rated various elements.

For patients, the top four elements identified as “very important” are: air quality, wayfinding, natural light and temperature.

For staff, the top four elements identified as “very important” are: air quality, noise/quiet, temperature and a tie between natural light and amount of space. Staff also rated personal controls over light and temperature, and window views, as far more important than patients did. Again, we believe that inpatients would rate both of those elements more highly than the ambulatory care patients did.



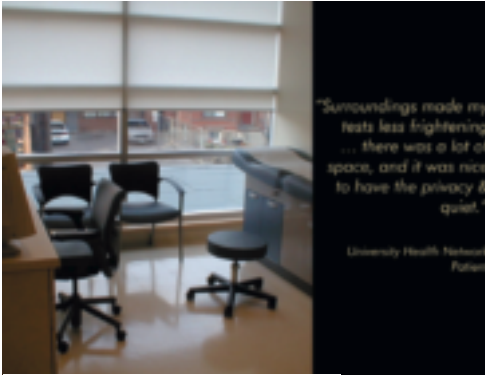
Comparative Summary – Patient Perspective



Comparative Summary – Staff Perspective



“Headwaters is the most pleasant ...



"Surroundings made my tests less ...



"I had a windowless office for one year ...



"I find the staff ... surely architecture must influence this."