The purpose of this project was to investigate a new strategy for consciously developing an appropriate and consistent visual paradigm for the design of a web site. By visual paradigm we mean the choice of representational imagery deployed, in an effort to implicitly support the communication goals of the organization responsible for the site. While working within a larger design process adapted from the methods discussed by Goto and Cotler (2001), we focused on the logistics of visual positioning. The complete design process addresses all of the components necessary for the successful re-design of the web site, and consists of six phases: defining the project; developing the site structure; visual design; testing; production and quality assurance; and site launch and post-launch evaluation. The identification and selection of an appropriate visual paradigm falls within the third phase of the project: visual design.

Previous work in this area has emphasized the functional value of aesthetics in attracting and retaining site visitors. Karvonen (2000), for instance, suggests that the aesthetics of a site are a non-negligible factor for site visitors making decisions about their own actions: “beauty may be the decisive factor when wondering whether or not to trust a service enough to conduct business online”. In the wider field of visual communication design, whether on the web or in print, the major focus on the aesthetic involves several factors. Frascara (2004) lists six: immediate response of attraction or rejection; communication; length of perceptual time commitment; memorization of the message; the active life of the design; the quality of the
environment. Ruecker et al (2005) concentrate on the role of the aesthetic in encouraging user confidence in the site and its designers. They characterize confidence as a composite state of mind that involves three factors: trust, willingness to persevere, and satisfaction. The choice of an appropriate visual paradigm might therefore be considered as a key component to the success of any web site – as significant, for instance, as factors such as site organization, navigational cues, and conformance with standards.

Methodology
Nielsen (2004) emphasises the role of heuristic evaluation in inspecting the usability of a web design. For the case study involving the re-design of the University of Alberta Department of Art and Design web site, we expanded on this model to include not only usability, but also the evaluation of the Web site’s aesthetic qualities. This shifted emphasis is the focus of the visual paradigm analysis we describe in this paper. The methodology we chose for this study consisted of structured analyses of existing Web sites (called Web site critiques) with similar content area and target audience to that of the Department of Art and Design site. Table 1 lists the criteria applied in each structured analysis.

<table>
<thead>
<tr>
<th>Administrative</th>
<th>Visual Paradigm Analysis</th>
<th>Technical assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Keywords</td>
<td>Look &amp; Feel</td>
<td>Download Time</td>
</tr>
<tr>
<td>Category</td>
<td>Imagery &amp; Graphics (paradigm)</td>
<td>Resolution</td>
</tr>
<tr>
<td>Path</td>
<td>Tone</td>
<td>Color Palette</td>
</tr>
<tr>
<td>Target Audience</td>
<td>Colors</td>
<td>Plug-ins</td>
</tr>
<tr>
<td>Purpose</td>
<td>Typography</td>
<td>Restrictions</td>
</tr>
</tbody>
</table>

Table 1: The web site critique template.

To Inform and to Invite
This focus on the identification of possible visual paradigms should be understood within the context of meeting the communication objectives of the Department, which included the need to use the site for the recruitment of new students and faculty.
In more general terms, a web site can be considered a form of public communication (Frascara, 2004). In the case of web sites for university departments, two of the primary goals of that communication are to inform and to invite: to inform existing and potential students of department requirements for admission or completion; and to invite potential students or faculty into the department. This combination of agendas often results in a hybrid web site, with sections that contain more formal material (such as calendars, statements about policies and procedures, and forms), and informal material that is designed to set the tone for the department, conveying something of the culture that the newcomer can expect to find.

The Role of Paradigm Identification in Web Design
Setting the tone of an academic culture may involve a number of factors, including the intellectual and pedagogical goals of the institution, the physical environment of the classrooms and labs, and information about the various people in the department and their areas of research interest. How a department, or other organisation, chooses from the various factors, in order to portray itself in the public sphere, will naturally be construed by some viewers as an indication of the nature of that department. Within these larger choices of aesthetically-related material, there will be other detailed considerations of design, from decisions as to colour palette, navigation system, and so on, to the choice of which material to emphasize in various ways, and which to background.

These details, while significant, will nonetheless fall within the context of the larger paradigm that has been used for the site. The elements that have been chosen to suggest the organisational personality will in essence establish the bounds of discourse for the rest of the site, and by implication, will communicate to site visitors some key information about the department. In our case study, examining how various design departments have chosen to characterise themselves was worthwhile as an exercise in understanding the public face of those departments, in order to better position the new re-design. The strategy of examining a number of sites that have a similar target audience, as well as a number that have a similar subject area, can be used within the design process of any web site re-design project.

Identifying the suite of possible paradigms already in use by similar organizations prior to beginning design of the web site can provide information in a number of areas. First of all, it constitutes a form of competitive analysis, whereby through examining the web sites it is possible to understand how other similar organizations have attempted to position themselves in the public mind. As a corollary of that analysis, it is then possible to decide which paradigm is most appropriate in the current case, or whether it would be useful to adopt a composite approach by using selected elements from more than one paradigm.

Secondly, the identification of existing paradigms may reveal a new opportunity, where the organisation will be able to establish a strong identity by adopting a strategy that has not already been used. Such communication
opportunities can be compared to ecological niches where creatures that are otherwise very similar are able to co-exist successfully by specialising in their strategies for gathering food. A classic example is Darwin’s Galapagos Island Finches, some of which had bills for cracking nuts while other had bills for probing for insects (Darwin, 1859). The existence of a set of ecological niches of this kind can prove invaluable not only for the design of the web site, but also for the communicative strategy of the parent organisation. In order to select the appropriate paradigm or develop a new one, organisations are often required to conduct an analysis of their own internal strengths and weaknesses. This analysis tends to prevent the organisation from selecting a set of imagery for the web site based on current trends or personal preferences, but rather to choose imagery appropriate to the organisation’s own positive attributes.

Finally, the creation of a visual paradigm taxonomy for a given organisation can provide the designer with a strategy for discussing web site design within a context that allows for objective analysis and debate. By foregrounding the issue of how the web site paradigm will tend to establish bounds of discourse for the rest of the design, the significance of what might otherwise seem to be minor choices can be brought explicitly to the table.

Case Study: University of Alberta Department of Art and Design

The paradigms described in this paper were established in a review of twenty-five sites during the spring of 2002, which was undertaken as a preliminary step to determining how best to represent the Department of Art and Design at the University of Alberta. The process was to look at what had been done at these other sites, and it soon became evident that the choices made were falling into categories. It was possible to define a fairly limited number of options available for creating a public impression of a design department. In this case, we identified six unique paradigms.

Not every department had chosen a single option: many sites combined factors from more than one paradigm. On the other hand, several sites were relatively pure examples of a single option. The degree to which a department has been willing to adopt a public face that consists of a single paradigm, or the extent to which an initial impression is mitigated by subsequent introduction of elements from other paradigms, all speak to the nature of a given department.

Six Existing Paradigms

After analysing twenty-five American and Canadian Art and Design colleges and departments, we identified six different visual paradigms: students; surroundings; art making; departmental structure; creative sites; and student work. Note that our illustrations represent the web sites and their paradigms as they appeared at the time of writing. Sites tend to change quite often. So, the actual web sites may or may not match the illustrations or the identified paradigms in the future.
**Students:**
The visuals consist of a collection of photographs of students engaging in enjoyable or thoughtful activity such as studying on school grounds, meeting with fellow classmates at the library, and attending classes. A few examples of sites using this approach are the Rhode Island School of Design (http://www.risd.edu) and Collins College (http://www.alcollins.com/). See for example, a screen from the Rhode Island School of Design web site illustrated in Figure 1.

![Figure 1](image1.png)

**Figure 1:** Students engage in a variety of enjoyable activities at the Rhode Island School of Design.

**Surroundings:**
The visuals are focused on the physical appearance of the school or department, and consist of photographs of buildings, classrooms, facilities, and school grounds. One example of a site using this approach is the Ecole des Arts Visuels site (http://www.arv.ulaval.ca/index1.html), see Figure 2.

![Figure 2](image2.png)

**Figure 2:** Surroundings are highlighted as an important feature of the Ecole des Arts Visuels site.
Art Making:
The images under this category feature hands in the act of creation, primarily sculpting, painting, and printmaking. We did not find an entire site using this technique; however, many images used in the Rhode Island School of Design’s web site correspond with this paradigm. See, for example, Figure 3.

![Figure 3](image1)

Figure 3: Art making is a subset of the enjoyable activity at Rhode Island School of Design.

Departmental Structure:
Imagery that falls into this category consists of icons that have been selected to represent the different areas of a department. For example, painting is represented through an easel, photography through a camera, and design through a piece of lead type. One example of this strategy is the Department of Art and Design Web site at the California State University in Sacramento, California (http://www.csus.edu/design/). See, for example, Figure 4.

![Figure 4](image2)

Figure 4: Departmental structure is demonstrated through a set of icons used by the California State University in Sacramento, California.


Creative Sites:
The creative sites paradigm uses the web site itself as a symbol of the school or department’s creativity. The web site becomes a canvas, often demonstrating a high level of technical proficiency and innovation. Two examples of the use of this method are: Parsons School of Design (http://www.parsons.edu/html/splash.html) and the Art Institute of Southern California (http://www.aisc.edu/). See, for example, a page from the Parsons School of Design web site, illustrated in Figure 5.

Figure 5: Creative sites like the one at Parsons School of Design can be used to exemplify the spirit of creativity to be found there.

Figure 6: Student work can provide imagery that highlights the results to be obtained at an institution, as on the site of the Auburn University Art Department.
Student Work:
This method uses student work as the site’s illustrative element. The work may be displayed through a variety of formats and categorisation systems. Some sites use this method as a primary or secondary illustration system, combining it with others, while some use it as the sole decorative element on all of the pages. For example, Auburn University Art Department web site uses student work as a main graphical element, see for example Figure 6 (http://www.auburn.edu/academic/liberal_arts/art/). The Nova Scotia College of Art and Design web site combines this method with the Students paradigm and the Surroundings paradigm.

Developing a set of paradigms
Developing a set of visual paradigms could be based on research into three different visual domains: web sites with a similar subject area; web sites with a similar target audience; and web sites with a similar content structure. Research conducted for the case study described above was limited to an analysis of sites within the first visual domain: a similar subject area. Analysing sites with a similar target audience and content structure may provide the designer with additional information as to preferred image/graphic treatments and others (Goto and Cotler, 2001). Web site designs tend to follow certain conventions in design. For example, a web site portal (such as, http://msn.com) will follow one set of visual conventions, while an e-zine (such as, http://rollingstone.com) will follow others.

Developing the standard web site critique form shown in Table 1 before the start of the research component of the project helps to maintain a consistency in analysis when looking at the different sites. This form needs to be customised for the specific needs of the designer and the individual; requirements of the particular project. At the start of the analysis, the paradigm field may contain a short description of the predominant type or types of imagery and decoration found on the site. Eventually, however, a set of consistent categories should be developed.

Issues also need to be addressed of the extent to which a paradigm needs to be extended or elaborated. For instance, the re-design of the Department of Art and Design is only represented by snapshots of completed student work, with a small amount of identifying text. A more elaborate treatment of the same paradigm might include items such as project briefs, artist statements, works in progress, or even mini portfolio sites for individual students that contain samples of their work during each of their years in the program. There are logistical difficulties in implementing this kind of elaborate treatment. Significant effort is required to collect, organise, digitise, and format the material. The process also needs to be repeated on a regular basis to reflect the changing nature of contemporary student work.

Paradigm Selection
After going through the process of identifying the paradigms used by other art and design departments and colleges, the next step was to select the
appropriate paradigm to represent the Department of Art and Design at the University of Alberta. A careful analysis was made of the strengths and weaknesses of the Department. Based on this analysis, a list of pros and cons for each paradigm was developed. For example, the Surroundings paradigm was evaluated and rejected because, in the end, the Fine Arts Building (where the Department of Art and Design is located) as well as its grounds and the surrounding buildings, was not unique or sufficiently visually stimulating to be used as a representation of the Department. One additional conflict existed in this area – the Department of Art and Design shares the building with the Department of Music and the Department of Drama. No noticeable separation exists between these three areas. Hence, using the building, its rooms, or its hallways would create a misleading view of the Department.

The Students and Art Making paradigms were also rejected. We felt that it was impossible to create a sense of uniqueness in photographs of University of Alberta students; students at the University of Alberta look pretty much the same as students at the University of Toronto, the Nova Scotia College of Art and Design, and Carnegie Mellon College of Fine Arts. This paradigm might be more appropriate as an illustrative method for a college whose aim, for some historical or political reason, is to appear culturally, ethnically, or sexually diverse. For example: some of the more traditionally male-oriented programs, such as engineering, computer science and mathematics, may choose photographs of female students to highlight the equal opportunities found in their departments. The Art Making paradigm was rejected for similar reasons. We felt that hands of students in the act of art making were not unique enough to adequately represent the culture found in our Department (hands sculpting clay look pretty much the same no matter where you are).

After the analysis of the pros and cons of each paradigm, we decided that the Student Work paradigm posed the most potential benefit for the thematic and visual representation of the Department of Art and Design at the University of Alberta. All of the illustrative elements within the site were made up of past student work from painting, printmaking, sculpture, visual communication design, industrial design, and drawing. The Student Work paradigm was chosen partly through the rejection of the other five paradigms, and partly based on the numerous pros of this system. We felt that highlighting the strengths of our Department through a showcase of student work was the most honest and informative form of imagery. Student work offers a visual variety unmatched by the other paradigms. On a more general level, it displays the type of work created within the Department (painting, printmaking, sculpture, communication design, industrial design, and drawing), and on a more personal level it displays the specific work that is being produced here. Student work is capable of showcasing creativity, craftsmanship, thought, and consideration. It can display technical proficiency and talent, as well as mental proficiency and depth of research. Art and Design at the University of Alberta is represented through a panorama of student work that sits prominently on each page (see, for example, Figure 7). Clicking on one of the images brings up a static page with a larger version of the image, as well as information about its title, author, and medium.
Final Draft

Conclusions and Further Research
By analysing existing web sites for common approaches to the choice of imagery, it is possible to establish a limited number of visual paradigms for a given genre of web site. For example, a study of twenty-five sites representing university design departments resulted in a list of 6 paradigms. This set of paradigms can then be compared to the actual or desired attributes of the organisation whose site is currently being designed, with the goal of either selecting the most appropriate paradigm or else developing a new paradigm, if necessary.

There are several issues that remain to be addressed. First of all, to what extent does the paradigm that represents a department adequately characterise that department? It is possible that the web site design usually matches the department; it is also possible that there is virtually no connection between the two. Design web sites seem a likely first candidate to examine in this respect, since it seems reasonable to expect that design departments will have an investment in any visual aspect of their public presence, in a way that may not be true, for example, for a math department.

A related question is the extent to which the impression conveyed by the site is interpretable by the site visitors, whether those be students, faculty, or potential students and faculty. Further research is indicated in this area. Finally, more work needs to be done to understand whether or not the strategy of identifying paradigms can be extended beyond the visual model discussed in this paper, and into other candidate models such as those based on similar audiences or similar structure.
References

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