

## **Design and Development Consultants for Ergonomic Hospital Radiology Reading Rooms**



**Greg Patrick – President  
RedRick Technologies**

**CEOCFO:** *Mr. Patrick, would you tell us about RedRick Technologies?*

**Mr. Patrick:** Redrick Technologies is a medium size company that provides a specific product and service targeted to the healthcare industry and primarily for radiology. We started fifteen years ago at the request of a group of radiologists to create some ergonomic solutions for their film viewing workspace. The need for improved workspaces for radiology grew as digital technologies took the place of analog film based viewing. With 20 years of prior experience in the design-build management industry, we were able to bring a knowledge of space optimization and combine it with our ability to design and create ergonomic, adjustable furniture. Over these past 14 plus years we have become a unique solution provider with a very consultative approach, not just a supplier of furniture product. We look to optimize the entire work environment through improved ergonomics and design, particularly where end-users are dealing with greater amounts of computer hardware, such as in radiology or dispatch centers, etc.

**CEOCFO:** *When you are doing an assessment, what might be one or two concrete items you look at that people would not normally think are important?*

**Mr. Patrick:** Typically when anyone plans to make ergonomic improvements in their reading room the focus is on what we call the “Primary Zone”, where the user interacts with the technology, or simply put, the desk that hosts the monitors. Often overlooked, or considered unimportant, is the space beyond the primary zone: How is the lighting in the room? It should neither be over-illuminated nor under-illuminated. If an environment is shared by several people, acoustics may need to be addressed. Perhaps most overlooked in a shared environment is the need for a layout that allows for a particular individual to be located by a visitor without causing distractions or interruptions to others in the same room. Placing a state of the art ergonomic furniture system in a less the optimum space is only a partial solution.

**CEOCFO:** *How do you get the best overall situation but still letting someone personalize what is important for them?*

**Mr. Patrick:** In any workspace where people are spending long periods of time in front of computer monitors, it’s important that each individual has the ability to make 3 major adjustments to their workstation: height adjustment of the desk surface, height adjustment of the monitor set in relation to the desk surface and forward/back, or focal depth, adjustment of the monitor set. Another very important feature of their personal space is the ambient or indirect lighting. Along with furniture adjustability, to allow for proper posture and constant change, lighting is equally important when viewing LCD/LED monitors for long hours. Unbalanced or inappropriately placed lighting can lead to eye fatigue and headaches. RedRick creates workspace solutions where the individual has the ability to adjust the work surface and monitor positioning to their preference both for sitting and standing. Additionally we provide the ability to adjust the lighting levels within their space to their preferred setting without affecting others in the room. This is how the best overall solution is achieved while still allowing each individual to personalize his or her primary zone.

**CEOCFO:** *Would an organization know when to call in a specialist for the reading room?*

**Mr. Patrick:** Historically, it is fair to say that in many cases the reading room has been “fit in” to left over space after all other areas were designed. The reading room traditionally has not been given the priority that other areas in Radiology are given. It’s understandable why, given the amount of capital dollars put into an MR suite, the CT suite, and all other areas where images are acquired. When the reading room is simply placed where there is space left over, however, you

will often find that this space does not allow for proper layout of workstations; for the correct size of workstations; for easy access by referring clinicians and staff; or is conducive to a blend of productivity and collaboration for the radiologist. All of these are critically important to creating an environment where the radiologist can provide the high level of professional, consultative service that is being asked of them. In particular, the last point about productivity and collaboration is high on the lists of many radiologists and radiology managers due to the requirement for radiologists to demonstrate their value as a consultative physician. We are definitely seeing a growing awareness that more attention needs to be given to the reading room and we are seeing a significant increase in requests from organizations for assistance with reading room designs, for both new construction projects as well as remodeling of existing DI departments.

**CEOCFO: *Are radiologists demanding a better situation or are the hospital administrators realizing on their own?***

**Mr. Patrick:** I would say yes to both. I briefly touched on this in response to the last question, but I will expand a bit on that. The American College of Radiology is promoting their new paradigm, that they call Imaging 3.0. This is calling for their profession to move into a more collaborative and consultative role. The desire is for the radiologists to turn more of their focus to their client – the referring physicians - to provide guidance for imaging appropriateness decisions as well as consulting and support on patient diagnosis, ultimately demonstrating an increase in value to patient care. The challenge is that their workload is always increasing as the amount of data they are required to interpret grows due to advancing technologies. They are being asked to do as much as, or in many cases more, than they have been historically doing while simultaneously devoting more time to providing consultative customer service. To accomplish this the radiologists need to operate at a very high level of efficiency without compromise to his or her health or ability to provide interpretive accuracy, which could result in a mistaken or missed diagnosis. There are several factors that can have an influence on their ability to perform at this high level but one that has been getting increasing attention is the physical space within which they work. All physical elements of the reading room, ergonomics; lighting; acoustics; HVAC; and layout will either support or detract from the radiologists' ability to perform at this level throughout their career. Yes, the radiologists are demanding this and in large part they have the full support of administration. There is a very keen awareness among both the radiologists and radiology administrators of this issue and we are seeing a tremendous increase in interest from healthcare facilities to upgrade their reading rooms.

**"In this space, we are the only company with this specialized focus. Everything that we create is designed and built to suit our clients' needs"- Greg Patrick**

**CEOCFO: *Would a radiologist look at the workplace before taking on a position?***

**Mr. Patrick:** I have been hearing from several administrators over the past 2-3 years that the reading room environment has become a significant factor when recruiting radiologists. We are working with one of our clients, a citywide health organization made up of 5 campuses, on a white paper examining the work that has been completed across their enterprise to improve the reading room environments. The administration sees this as an effective recruiting tool. We are absolutely seeing a growing awareness, especially among the younger generation of radiologists, of the need for a properly designed environment in which they will be spending the majority of their professional career in a sedentary workflow.

**CEOCFO: *What is a typical engagement?***

**Mr. Patrick:** A typical engagement is directly with the hospital radiology department to provide custom ergonomic workstation solutions. In every opportunity that we are invited to we provide a level of consultation, as no two facilities are the same. Spaces within the facility, workflows, and body sizes all vary. We are always asked to create unique ergonomic solutions tailored to the client's requirements. Increasingly over the last 4-5 years we are being engaged as a design consultant with a focused expertise in the reading room, addressing all of the design elements that I mentioned previously. To ensure that space and budgets are allocated is very important in the early design phase of a new facility. It's equally important to engage with a specialist for any major re-development of existing space that includes an opportunity to optimize the radiology reading room.

**CEOCFO: *Are there typical areas where hospitals just will not budge?***

**Mr. Patrick:** Our experience tells us that hospitals are not digging in their heels, as they had been not many years ago, when it comes to investing in this area. It is no longer viewed as a luxury that may "spoil" the radiologists. There is still a lack of some concrete objective numbers that say if you invest this much money in the reading room, it will create a certain percentage of return. There have been many independent studies that do show an objective increase in productivity – from 5% at the low end to upwards of 15% - when ergonomic furniture solutions, along with education on how and why to use them, is provided. Even at the low end of 5% improvement in productivity, it's not difficult to see how

that translates into ROI, especially in the case of a high priced professional. There are a few who are unwilling to budge on the price of an ergonomic furniture solution for a reading room environment. Any ergonomic solution that will be effective needs to provide quick and easy adjustments for every component. If it doesn't, the solution will not be used to its potential and the user will not benefit. Any dollars spent in this case are wasted. The computer hardware systems used in diagnostic imaging are large and heavy. Systems providing easy adjustments while hosting this type of computer hardware come at a higher cost than off-the-shelf/order-on-line furniture solutions. We encounter very few people who have yet to understand this.

**CEOCFO: *Would you tell us about the chairs and the placement of equipment?***

**Mr. Patrick:** The advice I give to most clients is "don't get too caught up in the chair". Of course the chair is an essential part of the total solution but it can no longer be seen as the place where any of us should be spending our entire shift. Make sure that you have a chair that gives you key adjustability from the depth of the seat pan and the height of the back; good solid and adjustable arm rests, as well as a good headrest with neck support. Do not spend an enormous amount of money on the chair because best ergonomic practice recommends getting up out of the chair as often as you can while working. We all have seen the latest studies that lead ergonomists to coin the phrase "sitting is the new smoking". Stand while working until you cannot stand standing and then sit just long enough to feel like standing again. Secondly, when you are considering an ergonomic workspace, especially one that hosts a large amount of computer equipment, it can be distilled down to one major element and that is the question "Where are the monitors?" Where are the monitors in relation to the person viewing them, because everything about that dictates how fatigued or uncomfortable you will become and if you will suffer any injury. Monitor placement influences the alignment and the position of your shoulders and head as well as your eye position. Where your head is dictates where your shoulders, elbows and wrists should be positioned. This ultimately dictates the positioning of the surface the supports keyboard and mouse. It all starts with the monitors. Thirdly and most importantly, ***the eyes lead the body***. If the monitors are positioned poorly we will move our head to suit the monitor position and to satisfy our eyes. This needs to be the opposite. We need to understand where are body needs to be and then position the monitors accordingly, whether we are sitting, standing, slightly reclining, leaning forward, etc. This is why quick and easy adjustment of the monitors on an X-Y-Z axis in relation to the user is so critical.

**CEOCFO: *Are there many companies that specialize in the way of RedRick?***

**Mr. Patrick:** In this space, we are the only company with this specialized focus. Everything that we create is designed and built to suit our clients' needs in terms of hosting their computer systems and fitting into their available space. We are also a design consultant with 15 years of front line experience and education relating to the unique needs of the reading room space. RedRick was created in response to a problem that was affecting many radiologists that we knew. Our solutions have always been and continue to be designed and developed with radiologists for radiologists in order to provide solutions for this challenging space.

**CEOCFO: *Are there any other companies with capabilities similar to that of RedRick?***

**Mr. Patrick:** Yes, many are and more and more are becoming aware primarily through our promotion of educational materials. We have recently released and are very excited about our complete and comprehensive ***planning guide for the radiology reading room*** that we co-authored with Carlos Amato of Cannon Design. This is purely an educational and free document that will be a continuously evolving and developing guide with new releases scheduled yearly as new ideas develop and paradigms change in diagnostic imaging.

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**RedRick Technologies**

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