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VISION VANTAGE

Industry Cooperative Projects
by Graduands of the Bachelor of
Industrial Design Course

Department of Industrial Design

Faculty of the Built Environment. The University of New South Wales

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GRADUANDS PROJECT

QUISINH TRAN

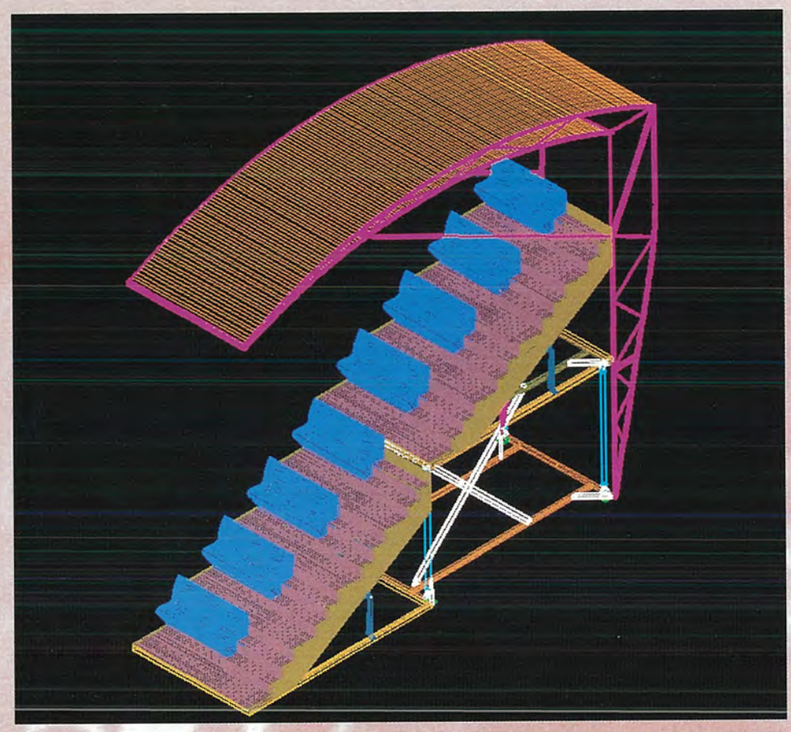
In the nursing industry, the increasing amount of laborious paperwork and duplication of data recording can overshadow the work of providing care for patients. There are many opportunities to improve working conditions and increase efficiency.

In current nursing practice, the effort required to maintain meticulous documentation, leads to decreased levels of motivation and reduced operating efficiency, a solution has been waiting to surface.

MOBILE NURSE

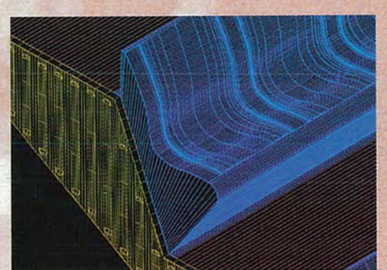
Mobile Nurse is a portable, electronic assistant that is aimed at the 'hospital in the home' and the community nursing sector. This product travels with the nurse during patient visits. The nurse's activities and patient treatment tasks are recorded during patients' care activities with user friendly electronic software (Apple Newton Technology of Pick and Tick and Text Recognition), as opposed to 'retrospective documentation' at the end of each shift. This allows for recording of high quality data and maintenance of accurate information. Special tasks like ECG diagnostics are incorporated using PCMCIA card technology.

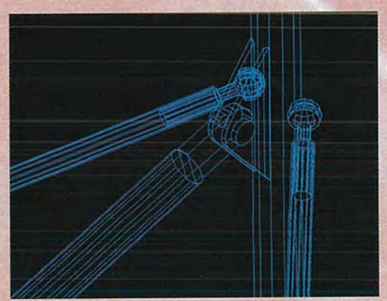
The hospital database is constantly being accessed and updated through the product's communicator. This component operates on a two-way digital data transfer system, as well as active voice communication channels, fulfilling the need for emergency and hospital backup.



ERGONOMIC CONSIDERATIONS AND THE USE OF COLORBOND

Flat sheets of COLORBOND are rolled into the seat profile, and then pressed to form the individual seats. The material and contour of the seats provide a good compromise between a vandal-proofing construction and an ergonomically acceptable level of comfort.



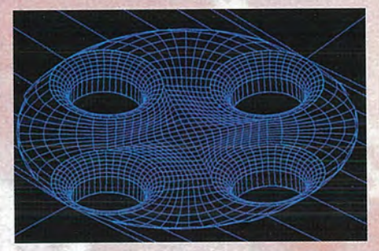


ENGINEERING AND SUPPORT STRUCTURE

The seating module is erected by two hydraulic cylinders, which push the side legs into position. Connecting beams from these legs are used to push the central leg into position. The support module is erected by two hydraulic cylinders which operate the scissor mechanisms.

TRANSPORT AND ERECTION

The product is intended for transport on a standard 28 foot-bed truck with an 18 foot trailer. Roofing and seating for 168 people fits on the truck. The modules are lifted off and onto the truck by a crane mounted on the back



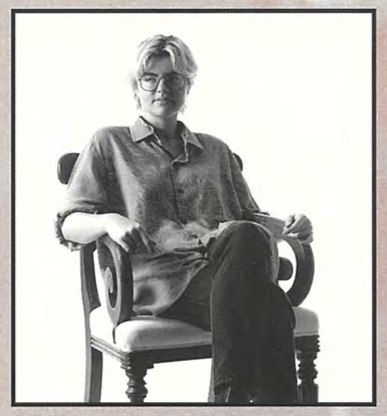
MARKETING

This design provides sustainable competitive advantages over other systems on the market in three major areas.
Safety is increased by the continuous form of the seats and floor-panels, which protect spectators from falling, and pedestrians from dropped objects.
The primarily hydraulic erection procedure minimises the room for human error.
Set-up and dismantling times are decreased through the largely pre-assembled nature of the product.
Protection from the environment is provided by a COLORBOND roof,

Facing page side view of two tiers of seating.
This page *clockwise from top left*
isometric view
drainage holes
support structure detail
detail of seating and side panel.

BRIDGET ATKINSON

Useful design can only flourish where there is an amalgam of all the disciplines involved in the design, production and marketing of goods.
My aim as an industrial designer is to bring these elements together to create products which convey and perform their function with efficiency and grace.



STADIUM SEATING

Australians have traditionally seen themselves as a sporting nation; and if not actively participating, a large majority are at least involved as spectators. We spend almost 20% of our day on social life, entertainment, and passive leisure. Each year this translates as total attendance at concerts of 16.5 million, and an average household expenditure on spectator admission fees to sport of over $25.
People need to be seated at these events, comfortably, but also economically. In terms of space, the most economic way to seat an audience is to provide raked seating. The high expense of establishing fixed grandstands means this seating is often provided by temporary methods.

AIMS

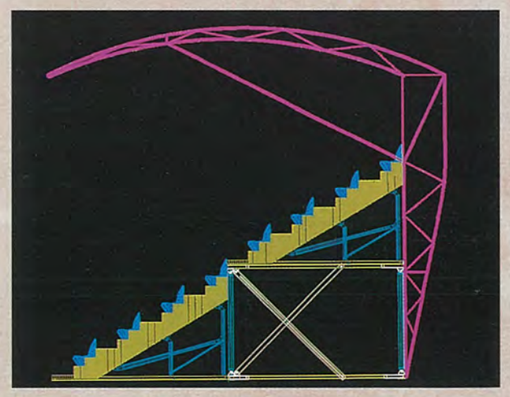
To design a temporary seating unit which will provide safety, comfort, protection from the environment, and a sustainable competitive advantage over other systems available.
To explore new applications for BHP COLORBOND within this product area.

PROJECT

To design a modular temporary grandstand seating system which can be quickly and safely assembled and disassembled, while utilising the strengths of COLORBOND.

DESIGN

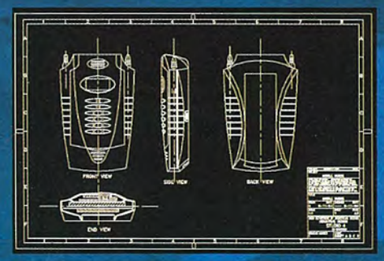
The product consists of three major parts:
20-seat modules (or 12-seat modules with steps) which can be used individually or combined to create large stadiums;
support frames which raise the seating modules and create a second tier of seating;
and a modular roof which can cover one tier of seating or two.
Both the seating and support modules are erected hydraulically.

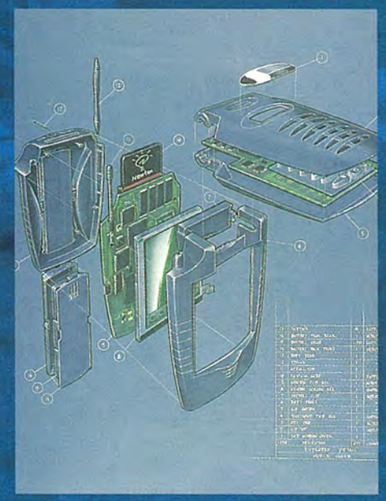


ACKNOWLEDGEMENTS

The design development was undertaken with the support of final year mechanical engineering students Tim Barnett, Tim Christie and Theo Emmett and materials engineering student Campbell King. The model was fabricated by Ivan Tacko.

Facing : *Left - Mobile Nurse in action. Right - Mobile Nurse accessory case.*
This page : *Top Left - Mobile Nurse as a communicator. Middle Left - Autocad drawing. Middle Right - Internal design. Bottom Right - Computer rendering (raytracing).*





Computer tools were used to support this project. Raytracing was used to generate photorealistic 3D representations. AutoCAD was used for design documentation and for evaluation of production and manufacturing requiremnets to allow assessment of the cost effectiveness of the project. It is anticipated that this product will improve the nursing industry efficiency and quality, while promoting a higher level of morale, motivation and satisfaction among nursing professionals.

Special Thanks to industry support from Fujitsu, Apple, and Nokia. Without such support project Mobile Nurse would not have been realised. Thanks also to Kerryn Jardine for her materials research.

Steering project mobile nurse has been analogous to driving a vehicle. In order to reach the destination, clear forward vision is essential but the driver must also look out to the sides and use the rear-view mirror.

Project Mobile Nurse presents a way forward that embraces opportunities provided by new information and communication technologies. Yet the road to innovation does not ignore the careful consideration of the working practices of nursing professionals, existing solutions, market conditions and trends.

The resulting product is an effective solution; elegant in its design, impressive in its engineering, appropriate for its purposes.

MIREILLE XAVIER

The design of medical products is one of the most rewarding ways in which the Industrial Designer can combine their skills in Marketing, Engineering, Production and Communication. From a business point of view, the medical products industry in Australia is a relatively young but fast growing field with an emphasis on high quality and constant innovation that has the potential to compete successfully on world markets.

SILENT SLEEPER

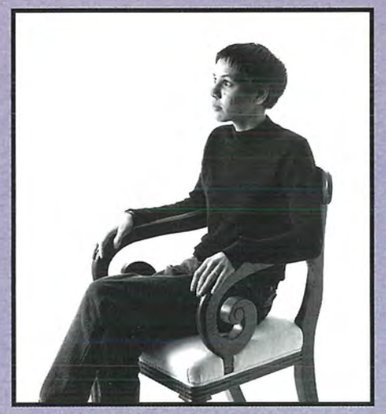
A nasal CPAP device for the treatment of Sleep Apnea.

Obstructive Sleep Apnea (OSA) is a potentially life threatening disorder where the relaxation of the muscles during sleep causes the airway to collapse, severing air supply to the lungs. This lack of oxygen alerts the brain to imminent danger, and a cough or snort forces the airway open again.

These periods of apnea wake the sufferer from deep sleep and can occur up to 400 times every night, resulting in extreme daytime tiredness and irritability. Left untreated, OSA can lead to short-term memory loss, high blood pressure, heart disease and stroke.

The most effective form of treatment for OSA is Continuous Positive Airway Pressure (CPAP), which was developed by Professor Colin Sullivan of the University of Sydney in 1981.

Rescare Limited was the first company in Australia to develop a CPAP device for the world market, and has since led the way in research and development in this field.



PROJECT OBJECTIVE

In the face of increasing international competition caused by a high market growth rate of 25%, Rescare initiated a design project to develop the next generation CPAP device in their currently successful Sullivan range. The aim of this project was to design a product which met the changing needs of both doctors and patients in effectively treating OSA, using the most advanced technology available.

MARKETING

The nasal CPAP device is used by people with OSA in their homes every night, and thus has an enormous impact on the user's lifestyle. For this reason it was important for the CPAP device to make the transition from being solely a piece of medical equipment to a consumer product.

THE PRODUCT

There are four major components in the wakeboard's design. The board, bindings, fins and graphics. Each component demanded individual and specific design requirements. Also continual consideration had to be given to the effects each component would have on the wakeboard's overall performance. The final design includes the necessary wakeboard features to communicate its benefits with the expected users.

There were other design challenges that required attention during the project's development. The product had to be economically viable, whilst still offering the necessary features desired by the market. The selection of appropriate materials and manufacturing methods was vital and both these factors had to consider production for local markets. Materials consultant, Kerryn Jardine helped to identify materials compatible with the alternative manufacturing processes used . Much of the wakeboard's design was developed towards maintaining low manufacturing set-up and operating costs. These considerations aimed towards making the production of wakeboards a viable Australian business.

THE BENEFITS

The wakeboard communicates several benefits to the user, through it's design. The product is ultimately and most importantly lightweight and easy to use. This is combined with high flexural and impact strength of the board, and binding comfort that enhance performance characteristics. The final appearance forms a large component of the wakeboard's marketability, thus the materials used are corrosion and UV resistant, and the graphics clear and attractive. The final product ultimately offers an energy outlet for the user that's fun and challenging whilst being able to take any punishment the rider dishes out!

ACKNOWLEDGEMENTS

Neil Harris - Water Skiers Warehouse
Ken Williams - Williams Water Skis
Bill Cilia - Nirvana Surfboards
Clayton Barr - Quiksilver
Dean Mundy - The Water Ski Place

PETER BARR

Designers with a broad approach to understanding design, engineering, production and marketing in a business situation, have the opportunity to benefit industry in various ways. This seems to be the future for Australian design.

WAKEBOARD

THE SPORT

Wakeboarding is a relatively new and exiting aquatic sport which could be defined as a combination of water skiing, surfing and snowboarding. The secure attachment of rider to board provides the wakeboarder with the potential to perform a number of challenging and dynamic aerial and water-based manoeuvres The power and energy that is delivered to the rider from the boat's 'wake' means that the wakeboard has to endure enormous stresses from the water and rider in order to perform consistently, safely and endlessly for the user

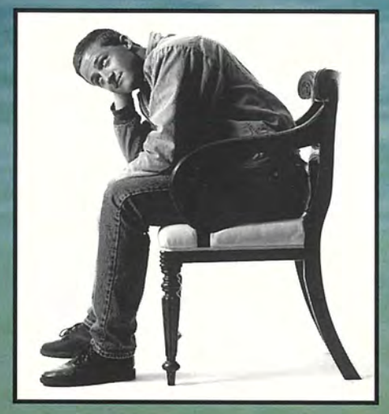
THE VISION

The project was initiated because the wakeboard market is growing in popularity every season in Australia and overseas. There is no current Australian manufacturer for these products. Therefore, the project was chosen for its challenging design requirements and potential business opportunities. The project's objectives were to research, design and manufacture a wakeboard for the novice wakeboard enthusiast.

Far Top right: *The end product, ready to hit the wake.*

Right: *Front, back and side profiles. Showing regions of binding adjustability.*

Far Bottom Right: *Versatile, comfortable, effective and easy to use binding system.*



THE MARKET

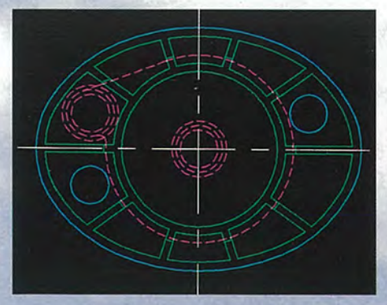
The Australian wakeboard market is still growing and the likelihood of new customers with no loyalty to specific brands is reasonably high. The wakeboard's design targets the novice enthusiast, -users who have not yet 'mastered' the sport. This market segment has a large potential for growth . An Australian designed and manufactured wakeboard will be very competitive in this market comparing favourably in quality, performance and cost against imported products.

In this light it was essential to recognise the needs and desires of people with OSA that went beyond the actual treatment of the disorder. Market Research conducted among CPAP users both in Australia and overseas revealed two major needs that are not being met adequately by existing products - low noise and portability.

INNOVATION

Although one of the quietest on the market, ResCare's current product, the Sullivan III, emits levels of noise that may be disturbing to both the users and their partners. These noise levels were found to be generated mainly by the vibration of the impeller which pressurises the air, and the movement of air flowing through the unit.

An air labyrinth has been designed to further minimise noise levels in these two areas. This labyrinth encloses the motor and impeller so that less noise can escape from the moving impeller. It also creates a 'rollercoaster' path which the air is forced to follow as it travels into and out of the impeller. The many turns the air must take results in greater sound reflection and insulation.



Above: Air Labyrinth.

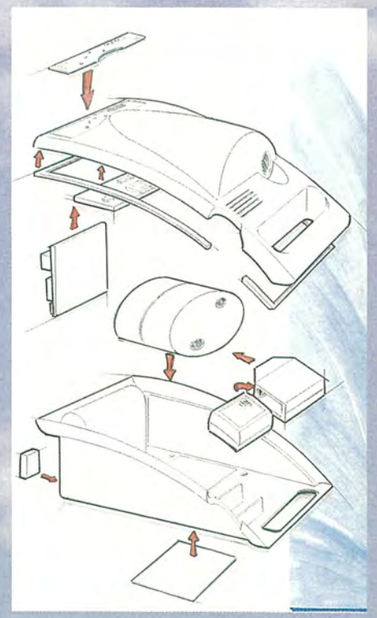
The unit can also be used inside a padded carry bag which provides additional noise absorption as well as making the unit and required accessories, such as the hose and nasal mask, quick and easy to pack, transport and set up when travelling.

The portability of the Silent Sleeper is also increased by the use of microprocessor control and surface mount circuit board design, allowing the size of the unit to be reduced and significantly lowering the required

Profitability

The reduction of parts and shorter assembly time makes the Silent Sleeper considerably cheaper to manufacture than existing CPAP products. A minimal investment will thus yield a substantial return, and with initial global sales estimated at 250,000 units, the product has enormous profit potential, allowing ResCare to consolidate its position as a world leader in CPAP technology.

Below: Exploded Assembly Drawing.



Acknowledgements

Materials Research - Kerryn Jardine

Model Making - Monty Riggs
Joanne Quinn

Product Graphics - Ailleen Lowe

Jennifer Prissman

Successfullindustrial design demands effective communication between all disciplines involved in the product development process. It is essential to have an understanding of marketing, engineering, production and finance, in order to achieve the best results.

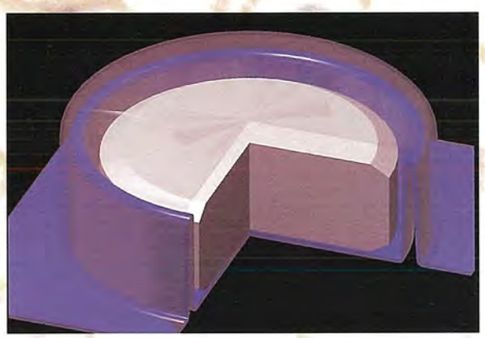
Child Resistant Packaging

In today's highly competitive world it is vital for organisations to strive towards the most innovative results. Improvements in technology and the pace of change make it essential for companies to understand all factors relating to their products and markets. There is little scope for mistakes or inefficiencies in operations. In order to stay ahead of competitors, companies must constantly strive for a sustainable advantage. This may take the form of superior designs, quality or cost of products. Innovative cultures in companies enable them to gain the most effective results from all their resources: machines, products, processes, and most importantly, people.

The Project

The final year Industrial Design project is an accumulation of all the skills developed in a variety of disciplines. The design is the result of a process of research, concept development and consideration of engineering, manufacturing and financial issues.

This project looks at ways of preventing accidental poisoning among children. Research has shown that poisoning in the home is one of the most common forms of childhood accident, particularly among one and two year olds. Behaviour patterns related to storage and use of poisons are implicated in most of these incidents.



Packaging

Is packaging designed to protect products from environmental factors, or the environment from the products? In many cases, the answer is both. Effective packaging design can be the only barrier to accidental poisoning of children. Much research has gone into packaging design of poisons and medicines in particular. Child resistant bottles are widespread, however other forms of packaging are less child safe. This project focuses on two areas of packaging that are less developed: Blister packs and aerosol spray cans.

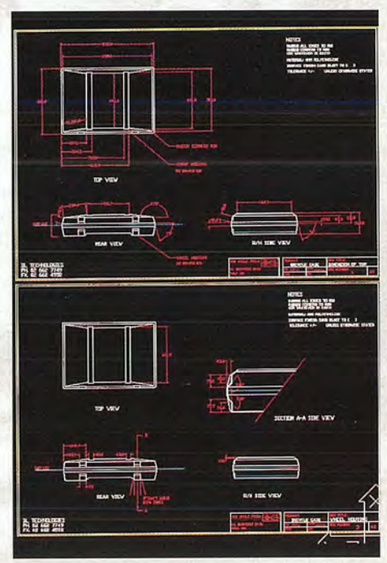
3. Bicycle Case

Currently in Australia the only readily available form of protection offered for the bicycle is either large padded zippered bags or card board boxes. Neither of these solutions can completely guard against damage.

For the immediate domestic market, there is a potential business opportunity in the production and sale of a rigid cycle case. By using various plastic forming techniques, the development of FLY Case is aimed at the immediate production of a sturdy, practical, car toppable, low cost bicycle case.

Due to the relatively small size of the domestic market, careful attention had to be paid to the chosen method of manufacture since the initial tooling costs and unit costs had a great bearing on the financial viability of the project. Rotational molding, using a fabricated single cavity mold was the chosen method of manufacture.
This design includes the complete financial analysis of various manufacturing techniques, user study and material selection.

Far Left: *Assembly jig prototype for carbon fibre hub.*
Top: *Fly aerodynamic wheels.*
Middle: *Prototype carbon fibre hub set including freewheel cassette mechanism.*
Bottom: *1:1 model of cycle case*
Bottom Right: *Engineering drawings showing molded section of cycle case.*



Derek Walker

Successful manufacturing requires more than just the tools of design, engineering and marketing. It requires, from each individual involved, a commitment to achieve the absolute best from the resources available. Essentially, the product is the outward reflection of those individuals.

Bicycle Accessories

The sports of cycling and triathlon have evolved over recent years to the point where worldwide there is an enormous number of athletes competing. These sports provide large markets made up of competitive cyclists thirsty for products which can improve performance by either reducing wind drag or reducing weight. This demand has allowed the design and development of the following selection of cycling related products.

1. FLY Aerodynamic Wheels

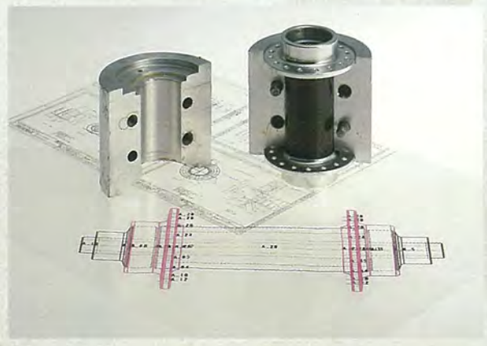
Aerodynamic wheels made their first appearance at the 1984 LA Olympic games. Since then, the design of these wheels has changed remarkably to cope with different wind conditions and to reduce weight. The only common factor between the designs has been the restrictive cost due to the primary use of carbon fibre in construction.

The FLY wheel represents the production of a low cost aerodynamic wheel using readily available shrink film technology.

By covering standard spoked wheels with a polyester mylar composite and then applying appropriate heat, an extremely tough and light weight aerodynamic shroud is formed. This design incorporates the use of fabricated PVC foams and Aluminium gluing techniques.

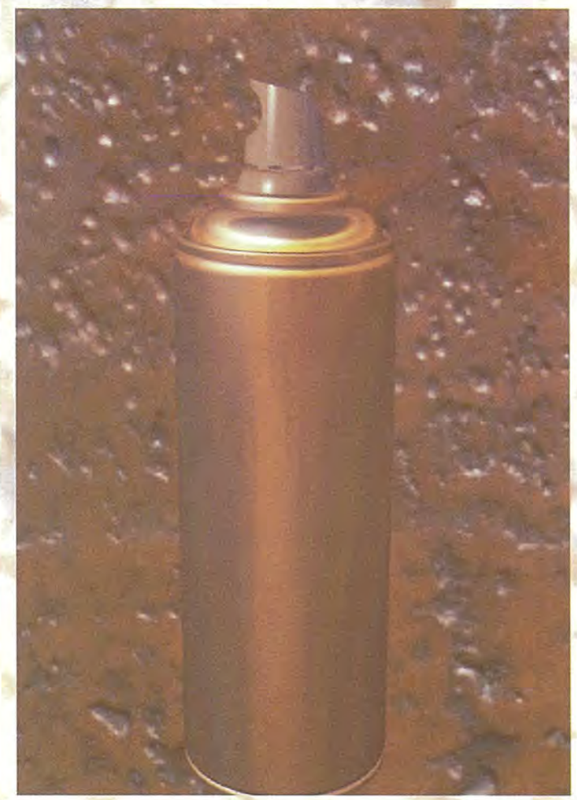
2. Carbon Fibre Hubs

The aims of this project were to reduce the overall weight of the hub compared to current designs, reduce the number of overall parts, and have the hub compatible with Shimano gearing systems.



The hubs are directed towards the high performance end of the market but are also expected to attract attention with distinctive styling and be suitable as display cabinet material.

The use of a carbon fibre tube between the CNC machined flanges presented itself visually as the most effective option. This design incorporates material selection, bonding techniques, tolerance and assembly techniques.



Blister Pack Design

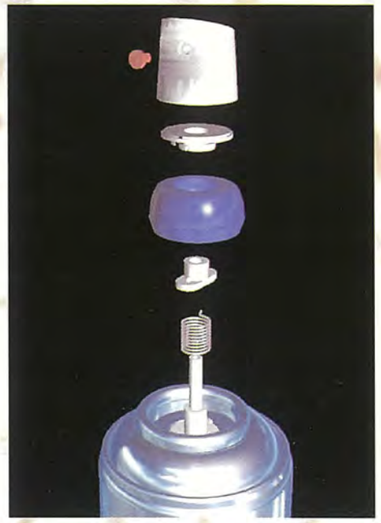
The blister pack prevents against serious poisoning by only allowing access to single doses at a time. However, existing products have a foil backing which is easily broken or bitten through. The product has been redesigned with a plastic backing, which contains a thin section that can be snapped out. The design relies on differences in strength between adults and children.

Adaptability

The product can be used to store a variety of shapes and sizes of tablets and capsules. From a marketing perspective, this allows the existing broad range of products to be retained.
As well, the integrationof a cup into the design allows the product to be adapted for packaging of unit doses of powders. This is valuable for such products as dishwasher powders which are used in set quantities and are highly caustic when ingested.

Aerosol Cans

The new design of the aerosol pump relies on a two step process to work the pump. The button has to be turned before it can be pushed down to release the contents of the can. Research has indicated that young children do not have the skills to perform multiple manoeuvres to open barriers. Upon release the button will automatically spring back to its original closed position.



Design for Manufacture

Existing manufacturing and assembly processes had a great influence in determining the outcome of the designs. The products were developed to comply with current manufacturing processes, to ease the transition from existing products into the production of new designs. Many thanks to Brett Helies for his assistance with materials selections.

Total Protection System

These two products are expected to form part of a total product range which will provide protection for the most common poisons. They deal with the packaging of products which most frequently cause poisoning, and products which cause the most serious damage when ingested or inhaled. In addition the designs have addressed issues of manufacture and adaptability, to satisfy the broadest range of issues relevant to packaging design.

Alex Hobbs

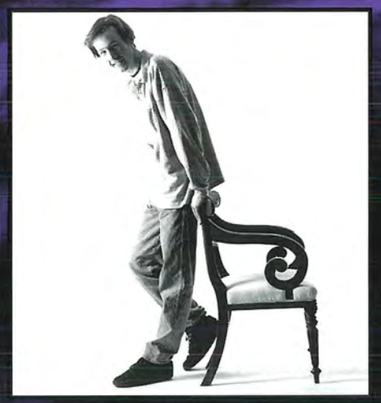
Competitive advantage has become a catch phrase for Australian Industry, as local companies fight to survive and compete against international corporations.

The designer provides the key to creating sustainable competitive advantage through effective communication, methodical thinking, and innovative design solutions.

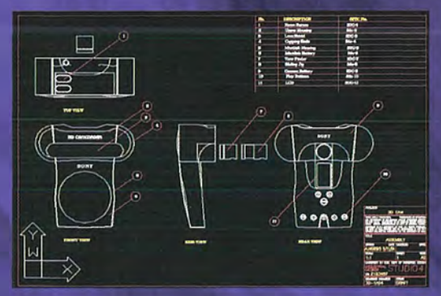
3D camcorder

The worldwide 3-D market has been estimated at $US 3 Billion, and with recent innovations in 3-D television technology the opportunity to exploit this exciting new market with related products has never been more tangible.
The growth curve of the camcorder market is predicted to plateau by 1998, which opens the door for the release of a conventional home video camera with 3-D filming capabilities to create a whole new segment of the camcorder market. The potential users of such a product range from domestic users and enthusiasts, to designers, medical, scientific and industrial users.

The Sony 3-D Cam draws it's technical package from existing camcorder technology and reconfigures it to comply with established stereo-photographic laws. High capacity 'blue laser' Sony Minidisc hardware replaces the conventional video tape format, providing superior digital recording quality and long lasting effectiveness.



The appealing contemporary form is combined with sensible ergonomic design that actively reduces the number of features to those that are absolutely essential. The viewfinder can be detached for easy periscope viewing, and the low level filming posture is improved with the provision of an automatic image flipping option so that the camcorder can be held upside-down while filming close to the ground. the camcorder is compatible with video/ audio systems and multimedia computer interfaces to provide for all editing requirements.



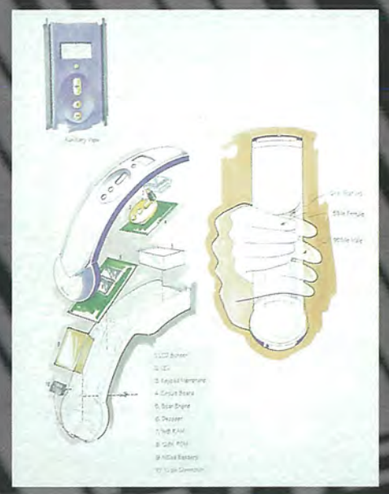
The system consists of three elements : teleshopping, self scanning and a weighbridge as a security checkpoint (see diagram on facing page).

Teleshopping enables regular customers to phone in at least 3 hours prior to their shopping trip to request their staple items to be bagged for collection. The list of staple items is based on the particular customer's previous trips to the store.

The self scanning allows shoppers to scan the items themselves while in the store. Regular customers or members of the store can obtain the scanners from racks upon entering the store. To purchase an item, the shopper simply scans the barcode on the item. Should the shopper then decide not to purchase the item, the shopper rescans the item by pressing the "minus" button. The scanner also allows totalling of cost at any time during the trip.

Once the trip is finished, the shoppers return the scanners onto the rack and they can either choose to pay via Electronic Fund Transfer Point-of-Sale (EFTPOS) at the racks or cash at the express counters.

The weighbridge at checkpoint weighs the self-scanned items, ensuring that items in the cart do not weigh more than the estimated weight recorded on the docket. Should there be any discrepancy, a spot check will be conducted



Facing Page: *ShopFlex flow diagram*

Above: *Scanner, rack and weighbridge*

Bottom Left: *Exploded view of scanner*

Bottom Right: *Exploded assembly of the weighbridge.*

Innovation

The innovative combination of the three elements leads to reduced staff levels at the checkouts and also reduces the risk of Cumulative Trauma Disorder (CTD) injuries on the cashiers.

Teleshopping lightens the customers' shopping task and hence makes the shopping trip more enjoyable. Furthermore, the shoppers will be able to spend more time in the store with the need to queue at the checkout eliminated. This will enhance customer loyalty.

Investment

The cost of the system is approximately $255,000. This includes the self scanning system, teleshopping hardware the software and the weighbridge. The payback period is 2.4 years. ShopFlex provides a sound solution to current checkout problems and future shopping trends.

Acknowledgements

My sincere appreciation is expressed to the following for their contributions to the research and development of this product:

Staff at Andersen Consulting

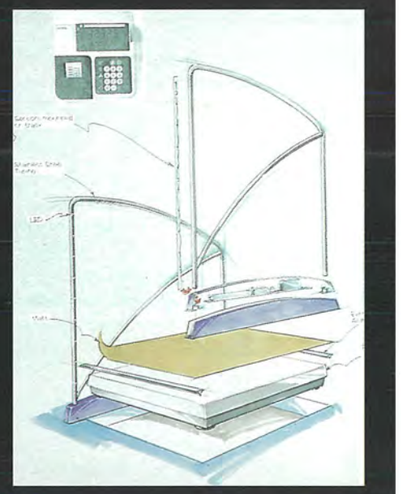
Staff at Symbol Australia Pty Ltd

Australian Supermarket Institute

Australian Product Numbering Association (APNA)

Fujitsu ICL Retail Systems

Rick Brockwell, SuperCart Australia Pty Ltd



MING TICK LOU

In the current competitive business world, product design should be used as a tool to secure market success. To this end, I believe the role of the Industrial Designer is to be responsive to the requirements of end users.

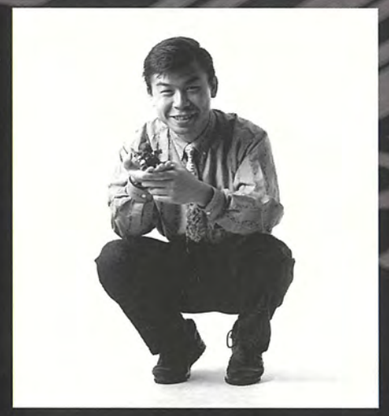
As a consequence, I see it as an implicit challenge to anticipate future needs and future lifestyles of people in an ever-changing world.

SCENARIO

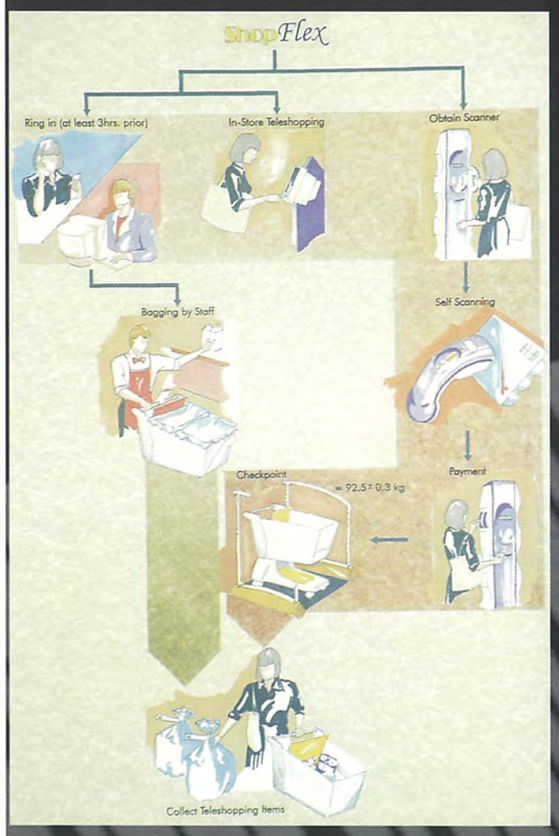
One aspect of supermarket shopping which consumers generally dislike is the extensive queue at the checkout. In a recent survey by the Australian Supermarket Institute, 89% of customers considered fast checkouts to be important. Many checkout systems have been introduced in the market but no one system has succeeded in gaining broad acceptance as the optimum approach to convenient supermarket shopping.

Furthermore, weekly shopping is increasingly becoming a chore. Shoppers spend a great deal of time in stores shopping for staple items, leaving them limited time for high involvement products like desserts and delicatessen goods.

ShopFlex is a supermarket retailing system which enables shoppers to self scan their goods as they pick them off the shelves. It eliminates the the task of scanning at the checkouts. This system is a further development to that introduced in Albert Heijn's supermarket chains in the Netherlands.



ShopFlex



Manufacturing costs have been optimised for the greatest quality and rate of return on investment, through a reduced number of parts and improved assembly sequence. Assembly configurations utilising snap fits and slots also allow for convenient disassembly and recyclability .

The potential returns on investment in the 3-D market promises to be huge, and the domestic 3-D camcorder should capture a key element of this market. With the development of sensible, effective designs such as the Sony 3-D Cam, electronics manufacturers should see the revitalisation of the camcorder market as demand for conventional camcorders tapers off.

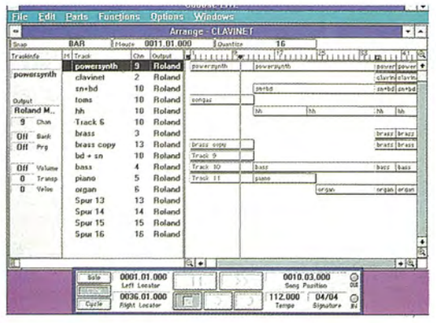
Top Row: *Conceptual Development*
Bottom Far Right: *Minidisk Recording System*
Below Right: *Swivel action detaches camera from the minidisk component which can be held on the belt*
Below Left: *Battery removal*
Bottom Far Left: *Assembly Drawing*

DAVID ETHERINGTON

Over recent years, we have been becoming more concerned with 'value-added' things. In order to succeed, products and services have to offer more than just their basic function.

The natural progression to this environment is the application of the 'value-added' idea to *people*, particularly in an employment context.

MIDI CONTROLLER / RECORDER



Industrial Design at UNSW approaches tertiary education in this manner. Subjects as diverse as visual thinking, engineering mechanics and consumer behaviour, help develop a broad range of skills and interests.

In a professional context, this means that rather than being concerned with one specialty, several fields are appreciated and understood. This is especially important in product development where design, engineering and marketing, must work closely together.

This project brings a new application of MIDI technology to an emerging market through innovative design.

BACKGROUND

MIDI -Musical Instrument Digital Interface, is a standard that allows electronic instruments and computers to communicate. Music can then be put into a computer and copied, edited and transformed, using music software. It is the same idea as word processing, except instead of words and pictures, you are using sound.

Ultimately Photohelp is designed to reduce the time taken by the store salespersons to sell cameras, to increase customer satisfaction in the purchase process, and provide retail differentiation for the specialist photographic retailer over competitors.

STAND DESIGN

The design of the stand was important in creating a visual attraction which encouraged use and provided a sense of modern technology and added excitement to the store environment.

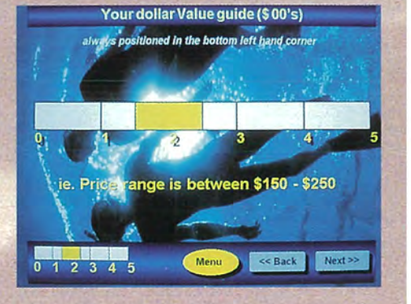
THE FUTURE

Photohelp is to be installed for the first of three trial product tests beginning in January. Significant development is expected to occur with the interface particularly in expanding the services offered by Photohelp. It shall advertise and explain services and have interactive hints on improving photographic skills. It has been calculated that a 30% sales camera increase is desired for Photohelp to be a profitable venture and repay investment within two years. This does not include the generated store differentiation, excitement or peripheral revenue services to to be included in the in the product.

Left: *Open draw showing brochures in position*

Top: *1:1 model of interactive multimedia retailing product*

Bottom: *Series of three. Explorations of the interface design*



Hugh Eastwood

Photohelp is an interactive retailing device for the photographic camera store. Designed to be an informative, functional customer interface it allows customers to progress at their own speed through the process of buying a camera.

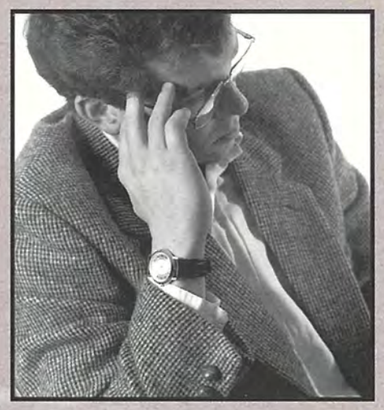
Interctive Retail

Introduction

The need for this product is derived from the increasingly competitive environment in camera and photographic retailing. It currently takes retailers anywhere from ten minutes to three hours of contact time to achieve a sale. The camera purchase decision is a high involvement one and is often a confusing process for the consumer. The retailer however, continually discusses the same information and points with a majority of buyers. Due to the increased competition from department stores and between photographic retailers, margins on cameras have eroded to near unprofitable levels if traditional retailing methods are used. The need existed to simplify the camera purchase process for the consumer and decrease the time involved for the retailer. Market research was conducted to establish the needs of consumers and retailers alike in the purchase situation, giving rise to the design specifications for this project.

Technology

The interactive interface uses one of the latest in multimedia software packages. Multimedia technology involves the integration of sound, audio and video and provides the primary function of the photohelp product



User Path

The user approaches Photohelp and is asked a series of questions relating to cameras and the intended environment of use and expectations of the product. Photohelp leads the consumer through the decision process and concludes with a recommendation of suitable camera selections. The user is then instructed to take the relevant brochures from the draw.

Research established that Photohelp should not give a single selection as the consumer requires human interaction to be totally happy with the purchase decision. The interface is designed to allow the user to maintain control of the decision process through friendly language and information presented as it is requested. At all times the consumer is aware of how much they are spending for the features they are gaining. Once the camera selections are presented the retail salesperson is then able to put the appropriate cameras in the customers hand and explain individual features.

Facing page
Left: *Software interface ('Cubase' by Steinberg)* **Right:** *Touchpad control.*

This page
Left: *The 'home studio' set-up*
Middle: *Specification part-drawing*
Bottom: *Computer model - the mini disc is inserted under the touch pad.*

This product reintroduces hardware into the home studio. Firstly, the mouse is replaced by a cursor control touchpad, so the hand can sit in a relaxed position.

The eight fader mixing panel allows instant real-time control of each track. The faders, along with actual edit function and control buttons, take the burden off the mouse and screen. Subtle and simultaneous fader control, which is essential for effective mixing, but foriegn to mouse control, is achieved.

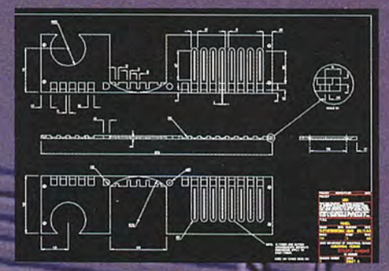
Home Music Studio

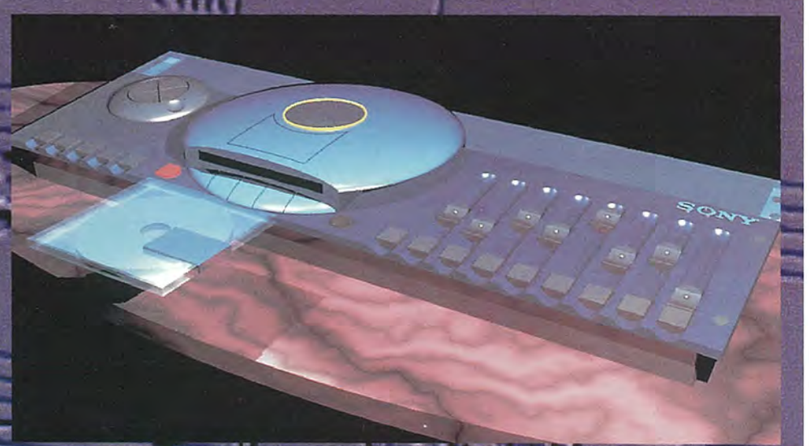
Recent developments in computer software and MIDI instrument sampling have meant that results that were previously obtained only in professional sound studios can now be produced in the home. Today, the usual amateur 'home studio' consists of a personal computer running sequencing software, connected to an electronic piano-type keyboard, which is capable of simulating hundreds of instruments and sound effects.

The user is then capable of composing, recording and printing music and even editing sounds.

Moreover, through the simplicity and educational features of software, people not as skilled in playing music can now easily create their own.

The heart of the home studio is the computer. Here, mixing panels, multi-track recorders, music scores, etc, can all be simulated graphically. Unfortunately, purely graphic interfaces have obvious physical and tactile limitations. Problems tend to arise through prolonged use of the mouse and the dependence on the monitor for feedback.





Recording ('Cutting a Disc')

The other function of the product is to record. When you are happy with your composition, a portable digital copy or mix can be made on mini disk. The result is home recordings of unique compositions that are of compact disc quality. Tracks can be skipped during playback (like a normal CD), and they can be erased or replaced without disturbing the format of the 'album' as a whole.

Music is an extremely enjoyable and worthwhile *activity*. It is good to know that computer technology, which has distracted us from traditions like playing music, can also be used to attract people to it.

MARCOS HEANEY

Most markets are more competitive than they have ever been, and no longer can any part of design, marketing or engineering be ignored. The combination of these disciplines form the basis for a successful product. This is the aim of the Industrial Design course at The University of New South Wales.

INTEGRATED SECURITY

Research for this design supports the idea of a keyless society, with an increase in convenience, along with better security measures. This proposed integrated security system will require no keys or cards. With the touch of a finger the whole residence can be centrally locked, similar in method to current commercial and car alarm systems.

The Business Plan considers the export potential of this product. An international market will provide the economies of scale required to manufacture the product competitively.

The common entry points into the residence will have a weather resistant fingerscan located externally. Entry is limited to these doors and authorised people. The authorisation can also be limited to a time frame. For example, the cleaners would only have access on a certain day and within a designated time period.

Facing Page: *Concept Collage*

Top Left: *Italic Chair*

Middle: *CAD Drawing of Italic Chair*

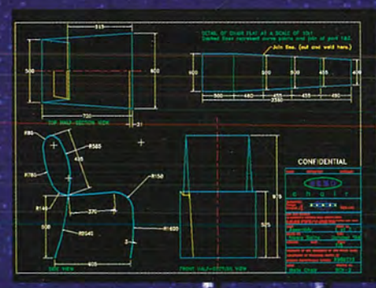
Bottom Left: *CAD drawing of Remo Chair*

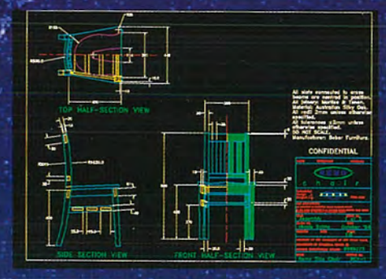
Dieter Rams' philosophy repeats in my mind, 'Less is more, less is more..' as I set about studying chairs to discover the image hidden within the brain. It must be materialised again, realised from an uninvaded realm, manufactured and sat on by all who have been searching in vain for so long. It's finally here, the real chair, the REMO chair.

To complement the traditional form of the REMO branded chair - The Italic Chair has been formed. The idea was to take a single sheet of metal and form a sculptural seat that satisfies the human eye and form. At this stage the input given by Campbell King from Materials Science was invaluable.

Again this chair satisfies the criteria of the REMO Store but not of the REMO brand.The REMO Brand must pertain to the archetype, the Quintessential, but products in the REMO Store although put through a rigorous selection process can be modern, unique, or new but still must be functional and aesthetically pleasing. The Italic Chair thus provides a unique contrast to the archetype

The REMO Store is abundant with the necessities in life. The REMO T-shirt, the REMO SkinCare Range, The REMO Wall Clock...the list goes on to include clothing, food, leisure, knowledge and more. The store is based on certain ideals which link every product, creating a strong consistency within the diverse range that makes up REMO. These ideals can be described by words such as QUINTESSENTIAL, ARCHETYPAL, QUALITY and TIMELESSNESS. This original store saturates the REMO customer with functional, quirky essentials.





A vital product area is missing, furniture.. where so much of life does occur. To begin this range, we must start with the chair. Not just any chair, the REMO chair must remind you of the one you have etched in your mind's eye. It must be the chair you saw and learnt about from picture books circa age 3. The original, the archetype, THE CHAIR.

PERSONAL SKILL AND GOALS

The skills I have acquired through my multi-disciplinary degree qualify me for a position that requires a sound and creative understanding of business. My strengths can be best utilised within a team, as I have a keen interest in people and strong PR skills. My design skills direct my ambition and I am keen to see them grow within the commercial environment.

NICOLE SAITTA

INDUSTRIAL DESIGN

The Art of the Future
Industrial Design is the art of the future. Utilisation of this art within multidisciplinary projects will shape the way life feels, looks and services us for decades to come.

The art unlike conventional artforms is not a master unto itself but serves humankind. Therefore priority must be given to the solution of problems, equally considering the relevant issues: Aesthetics, Function, Semantics, Marketing, Engineering, Manufacturing and the Environment.

As Design brings all these disciplines together it follows that a designer must understand all aspects of the project to fulfill the task required. The education provided by the Bachelor of Industrial Design at the University of New South Wales, gives clear insights into each of these disciplines, qualifying us as Product Designers that embody marketing, engineering and manufacturing as a part of the creative process. This places us in a strong position to co-ordinate project teams that involve people with differing priorities. As co-ordinator we are able to understand these priorities and direct them so that the goal of the project is qualitatively and efficiently met.

REMO CHAIRS

My final project has exposed me to the commercial aspects of product design, as my client is REMO CITY VENTURES. The current market and what they expect from REMO had to be high priorities within the framework of the project.

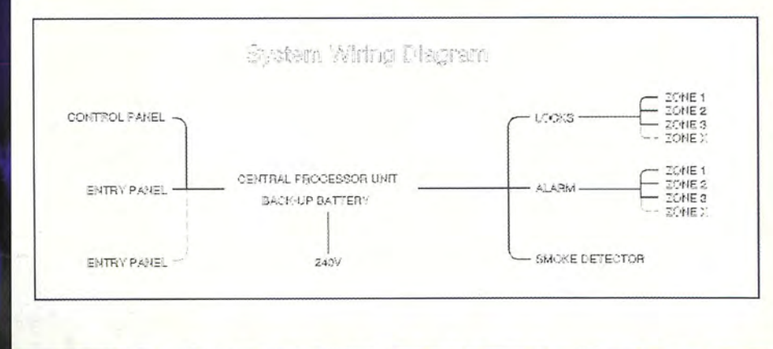
Internally the main fingerscan along with an LCD screen touch pad will be located centrally in a convenient location. The residence will be divided into a number of zones. From the main control, the zones allocated for each of the locks, alarm detection devices, and smoke detectors can be centrally controlled. The internal fingerscan will also have the function of creating new or changing current authorisations.

The locks themselves will be solenoid driven. There are two products, one for new developments, and the other for standing structures.

The first will be installed into the window frame during manufacture. The retro-fit solenoid will be fixed onto the frame of existing windows/doors. These retro-fit locks will be available in a range of colours to match the existing interior design.

The window solenoid bracket will be extruded with minimal blanking and machining. The solenoid bolt bush will be machined brass.

The wiring diagram to the right shows the extent of the integrated security system. The central processing unit, with the back-up battery is located remotely from the main control panel for increased security.



ACKNOWLEDGEMENTS

Bob Grahame
Sprint Intercom and Security Systems Pty Ltd

Gerard Vos
Fujitsu Australia

Ralph Mills
Roden Security Services Pty Ltd

Alpha Yee

Anthony Ging

My passions lie with the improvement and refinement of the ordinary to create the extraordinary. From an early age I enjoyed designing and making products, this lead me to take up Industrial Design at university. During my studies, I have gained an insight into the Australian manufacturing industry, and its associated challenges. I am excited at the prospect of becoming a part of this industry.

Intelligent Workstation

The Vision

The office environment is fraught with inefficiencies, wasted space, time and money are common problems that we have only recently started to address.

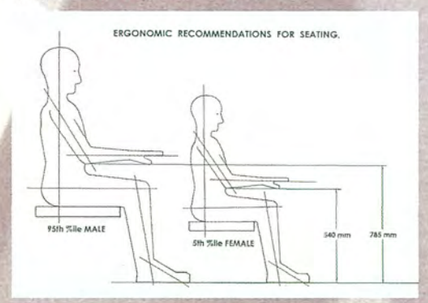
Office space is very expensive, especially in central business areas. This space needs to be fully utilised by means of minimising unused space.

There is also a greater recognition of the importance of worker comfort, and its relationship to worker efficiency. From developments in Japan the office is becoming a 'base station' from which employees come and go. Workstations and office space are being fully utilised as space is being shared by many different users in one day.

This management of office space is known as 'hoteling', it saves on floor space in offices, and reduces the costs of having a workstation for each user. There are however ergonomic problems with 'hoteling'.

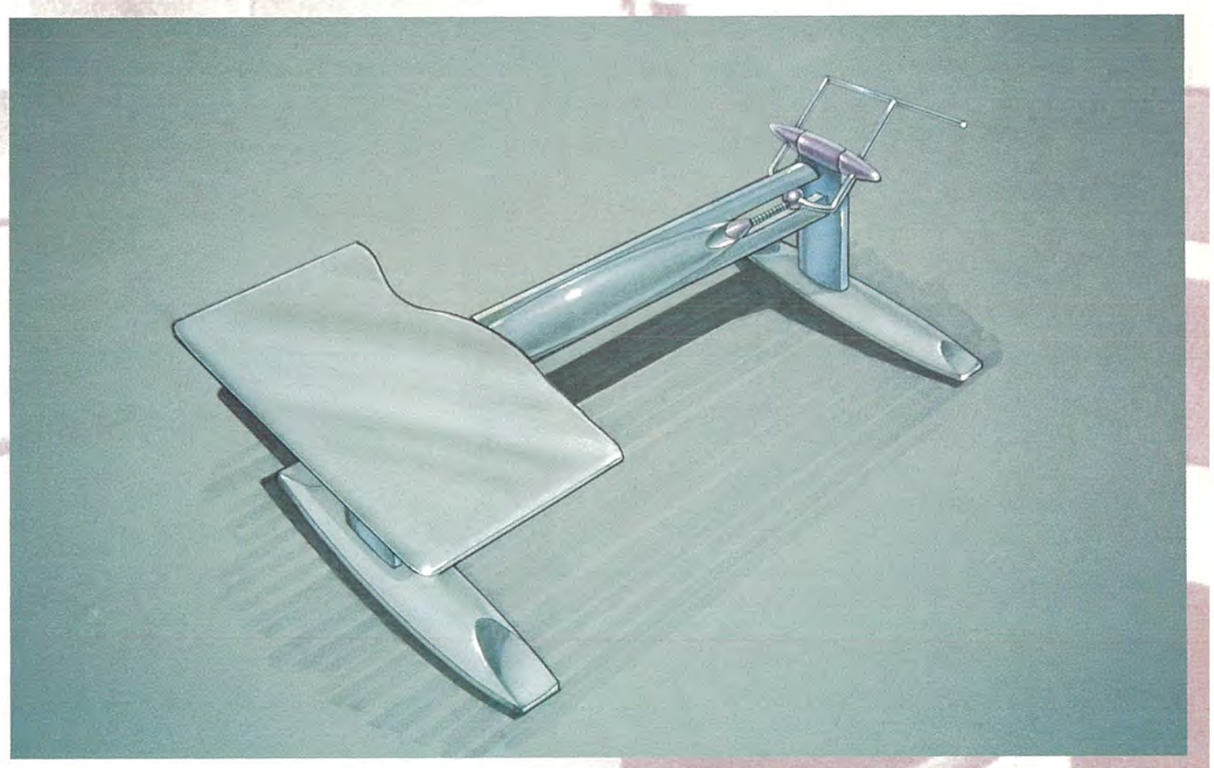
The Vantage

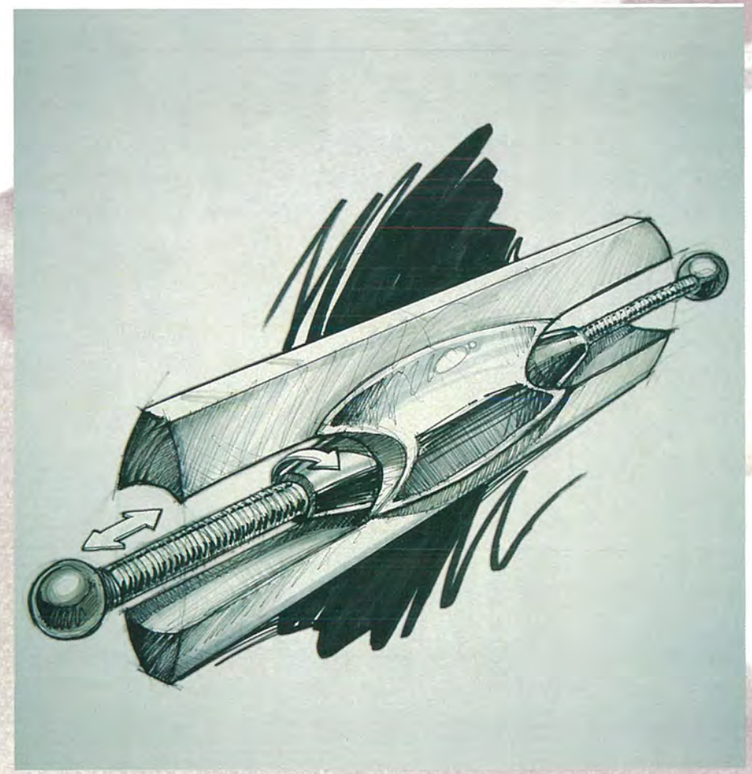
A height adjustable work surface is needed for 'hoteling' to work properly. Height adjustable chairs have existed for a long time, and have become an office standard. The correct seat height is achieved when the user's feet are resting comfortably on the floor. From this, the work surface should be adjusted to a height that is at or a little below the user's elbow. this setup is considered the the best position for maximum comfort.



Above : *Ergonomic posture diagram.*

Facing Page,
Top : *The Intelligent Workstation.*
Middle : *Detail of drive assembly*





Worker comfort results in worker happiness, which in turn results in worker efficiency.

One of the problems with existing height adjustable workstations is that users are reluctant to use them, and when they do , they often adjust them to the incorrect height.

What is needed is the 'Intelligent Workstation'. By logging into the computer at your current workstation, the computer will automatically reset the work surface to your predetermined ergonomically correct height. The other main problem with height adjustable workstations is the high costs involved in the manufacturing of these products. All currently available products use costly gears, drive shafts and/ or hydraulics.

The 'Intelligent Workstation' uses a 'turnbuckle' system that relies on a simple screw thread, and mechanical advantage.

I would like to acknowledge the assistance of Nicholas Hogios in the development of this product.