Resource Centres - A Disability Handbook

Volume 2

The design and implementation of a Braille Production Unit.

Braille Production in Resource Centres
(Servicing Visually Impaired learners and the community)

1. Overview
2. Definition of a Resource Centre?
3. What should a Resource Centre provide?

1. Overview

During the period 2002 – 2005, thanks to a pioneering project funded by the Telkom Foundation, the South African Special Schools environment relating to visually impaired learners underwent a radical transformation. Where previously schools were relatively ill-equipped with Access Technology (and therefore learners were limited in their education abilities), the Telkom Foundation project brought vast relief and positive change about. In total and once completed, the project will have created 30 accessible ICT laboratories in Special Schools around the country.

The design ethos and experience gained in the implementation of these ICT laboratories forms the basis of this document as well as the attached Disability Handbook by Sensory Solutions.

The selected equipment placed in each of these ICT laboratories collectively addresses the needs of partially sighted and blind learners in several ways. Whilst the particular software and hardware make the curriculum more accessible, an even more critical feature is that the software being used in these schools is also the most successful and widely used in the world, whether in business or private use. This means that the curriculum is made more accessible while the learner is being educated on the same technology that he or she will use on day in the workplace. If Access Technology can be considered a "language" in which the information can be accessed by the learner, it is critical that the learner uses the exact same language in study as what he would use in the workplace or university. This has been the central thread of the Telkom Foundation project.

Following progress made by the Department of Education, it appears as if these Special Schools and the equipment attached to them will form the nucleus of Resource Centres which will serve visually impaired learners and the communities in the area.

2. Defining a Resource Centre

With the luxury of starting with a "clean slate", one would want to design a Resource Centre using world class equipment and build a facility to rival the best anywhere. Given an unlimited budget, this would of course be the ideal. However, in South Africa there exists a diversity which makes the design and implementation of a Resource Centre a unique process for each separate location. Where former Telkom Foundation beneficiary schools are to be transformed into Resource Centres or even Full Service Schools, it is crucial to understand the basis on which the ICT laboratory was designed for accessibility in the first place. But what makes each situation different?

The concentration of visually impaired learners in a geographic area – In certain rural areas and in particular where they centre on former Special Schools, there is a higher concentration of visually impaired learners than in others. Higher numbers of visually impaired learners will by default require more Access Technology equipment than where lower concentrations exist.

The existing infrastructure – The Department of Education has earmarked the most disadvantaged communities and those who have historically been least accommodated to be given first priority to receive Access Technology and other equipment. However, this has brought with it additional challenges in that the actual buildings where the Resource Centres are to be located are often ill-equipped and not suitably designed to function as Resource Centres. Some centres at Special Schools potentially started out without electricity or even lockable rooms in which to house the laboratories. This is not to mention relevant security measures to secure the equipment.

Existing Access Technology – Many schools who received Telkom Foundation assistance for equipment for their ICT laboratories have since and prior to that, received other Access Technology as well. The result is that few schools currently have exactly the same technology in their inventories. The direct consequence of this is that some Schools/Resource Centres will offer a better service than others unless the equipment is matched as far as possible.

Degrees of proficiency – We have found that one of the single most important aspects of a successful Resource Centre is the competencies of the personnel who staff them. Of course adequate training forms part of the requirement to be successful, but even so, different centres and different staff with the same equipment and same training will not necessarily be able to offer the same service. Depending on their technological literacy, individuals differ in terms of their grasp and delivery of Access Technology knowledge.

But what defines a Resource Centre? By definition, a Resource Centre must serve its community with resources, whether with actual equipment, support such as training and maintenance, learning material and perhaps even guidance as to best practice. In the context of a visually impaired client, the Resource Centre must fulfill in at least some of the following criteria, if not all:

1. Provide an accessible learning environment
2. Provide accessible learning materials
3. Provide Access Technology with which learners can access their curricula
4. Provide training to learners and educators in the use of Access Technology
5. Provide first-line maintenance and support for its clients
6. Establish Best Practice models and management principles

Providing an accessible learning environment:
As with the Telkom Foundation Schools project, any facility which aims to provide an accessible learning environment must look at the physical design of the environment. Where blind learners will use speech on computers, will they make use of headphones or will the speech be audible for others to hear. Do the learners even have access to Screen Reading or Screen Magnification software packages in order to access their learning materials? Is there sufficient space between desks in order for educators to move freely between them without interfering with other learners in the process? Is the ambient light in the classroom sufficient or must lighting be installed? If so, will it be suitable for partially sighted learners who need almost perfect lighting conditions?

Providing accessible learning materials:
Perhaps the single most critical shortage in the current education environment for blind learners is Braille material. Textbooks, exam papers, tests, worksheets etc must all be available in Braille for each blind student. Sadly, the current Braille production capacity in the country does not nearly match the demand. Thus, a Resource Centre may actually have as its core function, the responsibility to produce Braille learning materials for the schools and the community at large. The Braille production function almost invariably goes hand-in-hand with a book binding function, as Braille books would be produced for the learners and members of the community. Will speech enabled computers be available that are connected to scanners that can scan and read textbooks for learners? Will electronic magnifiers be on hand with which partially sighted learners can view textbooks, the blackboard etc? As far as ICT technology goes, will computers be accessible through Screen Magnification and Screen Reading software? For partially sighted learners, will large print material be available and will technology be on hand with which to produce large print?

Provide Access Technology
Given the dynamic nature of Access Technology needs over time per area, it may be argued that the needs within a school or centre during this year may not be the same as the needs of next year. With this in mind, it may prove necessary to build a certain flexibility or migratory ability into the keeping of Access Technology. If a portable magnifier is need at school X this year, but next year there is no-one at school X to utilize it, but there is someone at school Y, a mechanism has to exist that enables equipment to be shifted between locations. In this light, a Resource Centre may fulfill a role as a "Central Storage" facility where other schools or even individuals could draw equipment off on a "loan" basis. However, care has to be taken not to use the mobility of equipment to the extent where the primary ability of the Resource Centre is diluted with having too little equipment on hand with which to perform its core functions.

Provide Training
Experience has shown that even the best Access Technology delivers limited results if there is insufficient training provided on how to use the equipment. This applies equally to training of educators and learners in the productive use of the equipment, in each case accepting that the lack of proper training will most likely result in partial failure of an otherwise perfect solution. Where Resource Centres will be required to provide training to other schools such as mainstream clients or in situations where the end-users have little knowledge of Access Technology, the importance of proper and sufficient training becomes even more important to the success. It is unrealistic to expect an educator who is unfamiliar with the Access Technology being used, to provide effective education for even one learner who needs it, let alone others in his class, regardless of whether they too have a disability or not.

Provide maintenance & support
Regardless of what the role of the Resource Centre will ultimately be, it has to be assumed that the first line of support must be provided by the Resource Centre directly. This applies in almost all case where Access Technology is being used or where accessible learning materials are being provided. The Resource Centre is the source of the service or product and the client (school, educator, learner) will invariably turn to the Resource Centre for assistance. In many case, the level of support and maintenance is such that it can be performed by staff at the Resource Centre who are trained adequately.

Establish Best Practice models
As the Resource Centre will be faced with virtually all challenges of visual impairment, it will through its course of business have to develop specific solutions for each possible scenario. Apart from having to have almost all Access Technology products in-house to achieve the above goal, the application of each solution must be developed and achieved in such a way as to be replicated successfully elsewhere. Where lessons are learnt, the most effective and productive solutions must be duplicated for the benefit of others.

3. What should a Resource Centre provide?

The answer must lie within the above definition but may quite possibly have an even wider mission. However, in the current South African scenario there are examples that can be built upon and lessons that have been learnt. In the respective spheres of visual impairment, several may be highlighted based on new developments or key issues related to them.

Low Vision - The field of Low Vision (partial sight) has grown tremendously in the past few years with technology becoming more advanced and paradoxically, more affordable at the same time. Hence, technology is available to the Low Vision learner today that wasn't available a year ago and then at a lower cost! With more than double the number of Low Vision learners than blind ones, it stands to reason that significant resources would need to be made available to Low Vision learners.

Braille - In the blindness arena, the single biggest dilemma in South Africa, and which may take years to rectify, is the availability (or rather lack thereof) of Braille learning materials for learners. There is a vast Braille shortage throughout the country and a backlog that is impacting heavily on the ability of learners to gain access to learning materials. But moreover, while there is certainly a capacity-shortage in Braille production, there is also a shortage of skilled practitioners in the Braille production process.

In order to propose the ideal Resource Centre with maximal efficiency, certain assumptions must first be made:

1. The Resource Centre will cater equally to visually impaired learners who fall under its care as well as learners from the surrounding geographical areas. For learners under its own care, the Resource Centre will have either a dedicated ICT laboratory or accessible classrooms (catering simultaneously for blind and partially sighted learners) and furthermore have accessible study materials at the learners' disposal. For learners who are not on the premises and who do not have direct physical access to the Centre, Access Technology with which they can access the curriculum must be made available on either a loan or hire basis and study material which is accessible must be prepared for such learners and provided to them timeously.
2. The Resource Centre will be the source of Braille learning materials for its own learners and those learners in the immediate geographical vicinity. Based on the volume of Braille (both tactile and conventional) required to fulfill the ongoing need and service the backlog that exists, these Resource Centres must be equipped with high volume Braille Production facilities that are capable of producing not only large volumes of Braille, but also have the capacity to produce Braille books which are professionally bound for classroom and educational consumption.

** Note: It is important to note here that the assumptions made above, reflect a subjective perception insofar as the goals of the Department of Education relating to the functioning of Resource Centres are concerned, but reflect an objective perception where the shortfalls and key servicing areas are concerned given the reality on the ground.*

Establishing an accessible ICT laboratory
This process is addressed in more detail in the attached Disability Handbook (Volume 1 – The Accessible ICT Laboratory). But for the benefit of the designer, several key elements can be mentioned here again. A single accessible ICT laboratory as part of a Resource Centre must equally serve its blind and partially sighted users. By keeping the widely accepted ratio in mind between blind and partially sighted learners (3:7), the design of the ICT lab must cater accordingly. Electronic magnifiers and Screen Magnification software must be contained in the design to cater for Low Vision learners, while Screen Reading software and Braille embossers need to be included for blind learners. As an accessible hard-copy source of information, large print is a conventional and accepted means of assisting partially sighted learners. The most cost-effective means of producing large-print, is through the use of enlarging photocopying machines that can increase page layouts to A3 size. This helps up to a certain point, but a large percentage of learners can be accommodated in this way.

The Braille Production Unit
The production of Braille is currently the single most pressing need for blind learners in South Africa. While a Resource Centre must ultimately take an unbiased view of the solutions it will provide to visually impaired users, one must not ignore the tremendous backlog and shortage that exists at present.

The term Braille Production implies a production unit where Braille is produced on large scale. At the same time, the Braille Production unit must also be able to cater for the needs of its in-house, local users. Therefore, the design must accommodate small as well as large runs of Braille, plus situations where Braille is needed at short notice. With the technology available today, Braille can be produced affordably in large volumes. It can also be produced as conventional Braille or in the revolutionary high resolution Tactile Graphics version. Certain high volume Braille embossers are designed with maximum performance and minimal downtime/maintenance in mind and the ideal machines for African conditions have been identified accordingly. Where material must be bound in book form, this can easily be achieved in the same environment. With our experience in all of the aspects of Braille production and with several sites operational around the country, the following Braille Production Model can be used as a model for Southern African situations.

Braille preparation
In order to arrive at a point where Braille can be embossed, ordinary text-based information must first be prepared and translated into Braille. This would require at the very least a modern PC loaded with software such as Duxbury Braille Translator etc. If the Braille will be prepared (and even printed) by a visually impaired person, additional screen reading software such as Jaws and OCR software such as Open Book will be necessary if the information is going to be scanned. Seen by some as a luxury, the necessity of a Proof-reader of the Braille cannot be overstated. Work which is not proof-read first, may lead to the learner receiving sub-standard learning material or the client (in the case of commercial Braille production) receiving an inferior product. Proof Reading is best performed using a Refreshable Braille Display connected to the PC where the Braille work is to be embossed from and an example of this would be the Focus 40 or Focus 80 Braille Displays.

Braille Embossing
After the Braille preparation and proof reading work, the Braille is ready for embossing. In a Braille Production unit, there are two distinct requirements namely High Volume Braille Production and High Resolution Tactile Graphics. The latter product has only recently become available thanks to technology, but is already becoming an indispensable learning aid for learners.

High Volume Braille

Impacto Texto (Available from Sensory Solutions (Pty) Ltd)

Focus here is on Volume, Reliability and Speed of Braille production. Considering the likely environments where the embosser may be required to operate, it stands to reason that a rugged, strong construction is necessary – one that does not have an abundance of fragile and over-sensitive components that may cause a breakdown. One such machine has proven itself in our harsh environment namely the Impacto Texto. The Impacto Texto is manufactured in Spain and was designed for reliability and harsh working environments such as high-dust or hot climates. Incidentally, these are the exact conditions one is likely to find in rural communities which are getting priority for implementation of Resource Centres. Furthermore, the Impacto Texto requires very little maintenance and very simple field maintenance demands only superficial cleaning.

The Impacto Texto produces an astonishing 800 pages of Braille per hour and typically more than 6000 Braille pages in a single daily shift. This volume far exceeds the demands of all but the most extreme requirements hardly seen today. The Impacto Texto is already deployed in various South African education environments such as Unisa, Prinshof School and also re-Tlameleng School in the Northern Cape.

Braillo - Professional High Volume Braille Production Systems
The selection of the correct Braille embosser is paramount in the design of the Braille production unit. Sensory Solutions now also offers the well known and reputable **Braillo High Volume Braille Embossers** as an addition to our extensive product range.

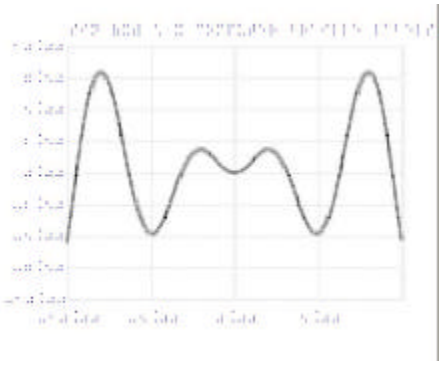
Braillo machines have been proven over years in various international settings, but also in many rural parts of Africa, including South Africa. Its high volume capacity and solid construction make the Braillo a sought after Braille Embosser in high volume Braille production centres.

One should also consider other significant factors when evaluating which Braille Embosser option to choose over the other. One of the most critical factors is the matter of maintenance and support for the chosen embosser, particularly when the embosser will be deployed in an outlying area.

Note:
Sensory Solutions is currently the only distributor in Africa which can simultaneously offer the professional services of trained technicians on both the Impacto and Braillo embossers.

Why is Braillo an excellent choice?
Braillo Norway is a well established supplier of professional, high quality Braille Embossers. Braillo has extensive experience in the educational environments of developing nations across the world, making its experience highly relevant in the South African setting. By selecting a Braillo embosser, you are buying into a well-developed infrastructure, a proven product and one which is backed by a proven supplier. By entering into high-level partnerships with government institutions such as Ministries and Departments of Education elsewhere, Braillo has positioned itself to provide accurate and relevant expertise when and where it is needed.

High Resolution Tactile Graphics (HRTG) + Medium Volume Braille
Following the introduction of this technology approximately two years ago, the demand for simple, effective tactile graphics has been enormous. It's already the most widely used medium volume Braille Embosser in the country, but the Tiger Pro Braille Embosser is one of only two High Resolution Tactile Graphics embossers available, the other being the Tiger Max which is the smaller version. HRTG is the ability to reproduce simple drawings (of maps, diagrams, graphs etc) using very closely spaced Braille dots to form continuous lines to complete the drawing in tactile form. The speed and affordable creation of graphics has virtually re-shaped the market, making older technologies such as the ThermoForm almost obsolete. A simple cost analysis reveals that it is not only faster to produce a tactile graphic this way, but also several hundred percent cheaper per single page.



The Tiger Pro produces approximately 300 pages of Braille per hour in conventional Braille mode. This equates around 2400 Braille pages per day, making the Tiger Pro a highly reliable medium volume embosser with additional high resolution capability.

In a production facility such as a Resource Centre, the two above printers will together produce sufficient Braille to fulfill in the day-to-day needs of the Centre and surrounding areas.

Book Binding

After the Braille has been produced, it must in most cases be bound in book-form unless it is a very small document or single sheet. The binding process completes the Braille Production function and protects books which need to be re-used over and over such as textbooks. Having tested different binders and binding techniques, we have established the correct binding machines which use superior binding glues. On smaller, lighter books, the Renz Spiral Binder is sufficient while on thicker books that require a longer life, the Multi-Bind Auto machine is a proven system which is already at work in Braille Production Centres in South Africa.

The above summary takes into account only the relevant Access Technology at work in a Resource Centre. The exact building layout and room sizes are vitally important in the ultimate design, but for the purposes of this handbook are assumed to be in place from the outset.

For the past few years, Sensory Solutions has been instrumental in the design and supply of several disability units, accessible ICT laboratories, Resource Centres and Braille Production units around South Africa, almost all of them falling within the education arena. As such, we have an intimate knowledge of the needs and likely solutions that are required.

Recommended Product Specifications

1.) Screen Reading Software

JAWS 7.0 for Windows:

- The JAWS interactive talking installation makes it easy to get started without sighted assistance.
- Supports all standard Windows® applications without the need to do special configurations.
- Enhanced support has been added for today's most popular applications including Microsoft® Office XP.
- Supports Internet Explorer with special features: links lists, frames lists, forms mode, reading HTML tables and graphic labels and more.
- Includes a unique scripting language for further customization with nonstandard Windows applications and proprietary software.
- New tools for easier customization without the need to write scripts.
- Output to most popular refreshable Braille displays in computer or Grad 2 Braille.
- JAWS Standard Edition for Windows 98/Me & XP Home.
- JAWS Professional Edition for Windows 2000Pro/XP Pro and 98/Me/XP Home.
- Includes a Windows Basic Training Tutorial on CD to help those to understand how to navigate the Windows environment with JAWS.

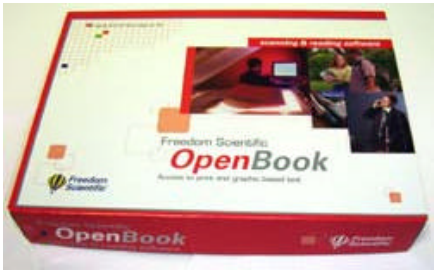
2.) Refreshable Braille Displays

Focus 40 & 80:

- 40 or 80 cells of braille.
- Braille display surface design eliminates seams between the cells for a smooth reading surface that feels like paper.
- Navigation features designed so hands seldom need to move from the braille display.
- Exclusive Whiz Wheels® to scroll by line, sentence, or paragraph
- Use front panel select buttons in combination with panning buttons, rocker bars, and cursor router keys to select a block of text, page up or down, or move to the beginning or end of a document.
- 10 dual-purpose hot keys give instant access to many braille and JAWS commands: enable contracted braille, switch to display modes such as structured and line mode, or perform keyboard commands like **TAB**, **SHIFT+TAB**, **HOME**, and **END**.
- For users who like a Perkins style keyboard, simply remove a cover to make available this logical, structured interface to issue navigation, Windows, and JAWS commands without removing your hands.
- Rapid Reading Mode configures the display to use only 20 cells of braille for faster reading with minimal hand movement.
- VariBraille allows the user to select the firmness of the braille display.
- Simple connection: Just plug into a PC or notebook computer via USB.
- Focus 40: (34.79 cm. x 13.46 cm. x 4.32 cm., 1.19 kg.).
  Focus 80: (60.45 cm. x 13.46 cm. x 4.31 cm., 1.81 kg.)

3.) Scan & Read Software:

OpenBook 7.02:



- Precision Optical Character Recognition.
- Easily switch between the FineReader 7.0, OmniPage 12.5, and Recognita 12.5 OCR engines.
- Feature-Rich Scanning and Reading of documents.
- Extensive Low Vision Features, customize the appearance of text on your screen, including font, size, character spacing, and background/character colors.
- Masking feature and highlighting help you focus on the text being read and follow along with the speech.
- Powerful Document Navigation Tools, Bookmarks, Find and Replace, etc.
- Search and Download Books on the Internet
- Document Portability; create MP3 or WAV formats with desired voice rate and pitch.
- Emboss in Computer and Grade II Braille without the need for additional software.
- Launch Manager lets you easily export OpenBook documents to other applications like Microsoft Word or Notepad.
- Connect OutLoud is included to provide access for blind and low-vision users to the Windows operating system, Internet Explorer, Outlook Express, Adobe Acrobat, and more.
- Multiple Configurations lets you quickly switch between configurations depending on your current task, preferences, or requirements.
- Includes RealSpeak text-to-speech synthesizer.

4.) Braille Embossers & Software:

ONCE-CIDAT Impacto Texto: (High Volume Embosser)

- The Impacto Texto is a dedicated High Volume Braille Production Embosser.
- Produces 800 Pages Per Hour at 250 CPS.
- Moving parts are kept to a minimum to provide long term reliability.
- Compatible with Duxbury 10.5 SP1.
- Equipped with a time counter to indicate working time in hours.

Braillo 200: (Available from Sensory Solutions (Pty) Ltd)

At current exchange rates, the estimated landed (and delivered) cost of a Braillo 200 to any client in South Africa is **R 339,500.00** Incl VAT.

Key Features:

- Rugged construction for large volume production of braille.
- Low noise.
- Prints both 6 and 8 dot braille.
- Modular design, easy to service.
- Uses standard fanfolded paper in a variety of formats.
- Prints simultaneously on both sides of paper.
- 2 years warranty on parts.
- High speed, 200 characters per second , 600 pages per hour continuous printing.
- High braille quality. Each document is an original.
- Thoroughly tested with years of experience by many internationally known users.

Braillo 400S: (Available from Sensory Solutions (Pty) Ltd)

At current exchange rates, the estimated landed (and delivered) cost of a Braillo 400S to any client in Southern Africa is **R 595,200.00** Incl VAT.

Key Features:

- Rugged construction for large volume production of Braille.
- Low noise.
- Prints both 6 and 8 dot Braille.
- Modular design, easy to service.
- Uses standard fan-folded paper in a variety of formats.
- 2 years warranty on parts.
- Prints simultaneously on both sides of paper.
- High speed, 1200 pages per hour continuous printing.
- High Braille quality.

Tiger Pro: (Medium Volume, High Resolution Tactile Graphics capable)

- Emboss up to 100 cps (5 pages of Braille/minute - 11.5x11 size).
- Interpoint & Intergraphix (2 pass process allows you to mix graphics & Interpoint text).
- Automatic conversion of colored and shaded images to 3-D tactile graphics at 20 Dots per inch graphics resolution.
- Includes voiced buttons and menus.
- No sound enclosure is required for any of the Tiger Embossers!
- Optional cut sheet paper stackers (up to 3)
- Braille paper, computer paper, labels, plastic, card stock, oversized documents - and more!
- Compatible with Duxbury, MathType and Megadots Braille Software.
- Print directly from Microsoft Office® (also for graphics).
- Requires Duxbury for Windows to Emboss local Grade 2 Languages.

Duxbury Braille Translator:

- Supports grade 1 and grade 2 translation in most South African as well as many other languages.
- Produce contracted and uncontracted Braille, mathematics, and technical Braille.
- Supports over 50 different Braille Embossers.
- Compatible with all versions of Microsoft Windows.
- Supports various formats, including Microsoft Word, WordPerfect and HTML.

MultiBind Auto Book Binder:

- Locally manufactured, meaning local support and back-up
- Solid and simple construction for ease of use
- Adjustable to most working environments
- Binds Braille and conventional boos for application in Braille production or commercial book binding applications.

RENZ SPB 360 Comfort Spiral Binder:

- Punching width 36 cm [14 "]
- Punches up to 18 sheets (70/80 g./m² paper)
- Binds up to 170 sheets (70/80 g./m² paper)
- Adjustable to formats A4 / A5 / 8.5" / 11"
- Pitches oval holes 4,5 x 3,6 mm, pitch 6 mm
- Weight: 30,5 kg
- Length, width, height: 44 x 49 x 25 cm

Draft Quotation on a Braille Production Unit (31 August 2006)

DATE	31 August 06	QUOTE REF	Resource Centre	PAGE	2

All Prices Include VAT

Item	Description	Qty	1 Year Limited Warranty	2 Year Limited Warranty	3 Year Limited Warranty
	Braille Embossers:				
1	Viewplus Technologies Tiger Pro (100 CPS)	1	R 92,910.00	R 101,810.00	R 110,700.00
2	ONCE-Cidat Impacto Texto (250 CPS / 800 pph)	1	R 295,090.00	n/a	n/a
3	Braillo 200 (200CPS/600 pph)	1	n/a	R 339,300.00	n/a
4	Braillo 400S (1200 pph)	1	n/a	R 595,200.00	n/a
	Perfect Binding Machines:				
5	Multibind Auto	1	R 107,217.00*	n/a	n/a
	Spiral Binding Machines:				
6	RENZ SPB 360 Spiral Binder	1	R 17,451.00	n/a	n/a
	Plastic Spirals Pre-Formed (for Renz SPB):				
7	25mm 50 per Box	1	R 280.00	n/a	n/a
8	30mm 50 per Box	1	R 320.00	n/a	n/a
	Braille Displays:				
9	FOCUS 40 - 40 Cell Braille Display ***or***	1	R 33,590.00	R 36,780.00	R 39,960.00
10	FOCUS 80 - 80 Cell Braille Display	1	R 65,510.00	R 71,890.00	R 78,270.00
	Braille Translation Software:				
11	Duxbury 10.5 Single User Licence	1	R 5,830.00	n/a	n/a
	Braille Paper:				
12	11 1/2" x 11" 135g Tractor Feed Braille Paper (1000 Sheets per box)	1	R 350.00	n/a	n/a
13	8" x 11" 135g Tractor Feed Braille Paper (1000 Sheets per box)	1	R 330.00	n/a	n/a

* The MultiBind Auto Bookbinder carries a 6-month warranty only.

Note: Please note that the quotation used above is a draft and both content and costs may vary from location to location. Current exchange rates were used above.