

IN THE SUBORDINATE COURTS OF THE REPUBLIC OF SINGAPORE

[2007] SGDC 216

District Court Suit No 3535 of 2005
DCA 19 of 2007

Between

Singapore Land Authority

... Plaintiffs

And

Virtual Map (Singapore) Pte
Ltd

... Defendants

GROUNDS OF DECISION

Singapore Land Authority
v
Virtual Map (Singapore) Pte Ltd

[2007] SGDC 216

District Court — District Court Suit No 3535 of 2005
District Judge Thian Yee Sze
8 – 12 January, 23 February, 2 March, 1 August; 6 August 2007

6 August 2007

Judgment reserved.

District Judge Thian Yee Sze:

1 Copyright – as its name suggests – is the right to make a copy of a work and, by implication, to stop others doing so. The law of copyright rests on a very clear principle: that anyone who by his or her own skill and labour creates an original work of whatever character shall, for a limited period prescribed by the Copyright Act (Cap 63) (“the Act”), enjoy the exclusive right to copy that work. As Lord Bingham put it, “(n)o one else may for a season reap what the copyright owner has sown.”¹ The question posed to me in this action was precisely that – whether the defendant had availed for itself the results of what the plaintiff had sown by virtue of the latter’s hard work, skill, knowledge and judgment, without permission and in breach of the plaintiff’s copyright.

2 The plaintiff (“SLA”) was established on 1 June 2001 and is a body corporate which merged four government departments – the Singapore Land

¹ *Designers Guild Ltd v Russell Williams (Textiles) Ltd* [2001] FSR 113 at 116.

Registry, the Land Office, the Survey Department and the Land Systems Support Unit². Among the services which SLA provides are land survey services and land information services, including the production and publication of the Singapore Street Directory with which many road users will be familiar.

3 The defendant (“VM”) was incorporated in 1999 and develops and publishes location-based software and systems. One of VM’s most popular services is the online maps and related services (including the provision of driving instructions, public transport guide, “jogging calculator”, “sms-a-map” and a dynamic search engine) found on its websites, www.streetdirectory.com and www.streetdirectory.com.sg.

4 These online maps form the subject-matter of the dispute between parties. In essence, SLA contended that VM infringed its copyright in the following works (“the works”) under sections 31 and 33 of the Act by virtue of the fact that VM’s online maps are reproductions of SLA’s said works:

- (a) the **maps** in the **Singapore Street Directory**, 1st Edition (1954) till the Singapore Street Directory, 21st Edition (2002/2003) (“Singapore Street Directory”)
- (b) the **street directory data** of Singapore in **vector format** (“street directory vector data”)
- (c) the **address point data** of Singapore in **vector format** (“address point vector data”)

² See section 22(1)(b) Singapore Land Authority Act (Cap 301).

5 To place the dispute in its proper context, it would be opportune to set out the business relationship between SLA and VM which ultimately broke down and led to the present action before me.

The background to VM obtaining SLA's works – the licensing arrangements

6 In all SLA and VM were parties to seven licensing agreements, five of which were in respect of SLA's street directory vector data and two of which were in respect of SLA's address point vector data. The brief details of each of these agreements were as follows:

Licensing agreements in respect of street directory vector data

(a) Licence Agreement for Use of Digitised Data (Agreement No SSD-1999-0006) dated 24 June 1999 between the Government of the Republic of Singapore ("the Government") and Magicsoft Asia Systems Pte Ltd for a non-exclusive and non-transferable licence from the Government to use digitised data, which was defined as "information derived from the compilation, indexing and presentation of data in the Land Data Hub converted into an electronically retrievable format³. The scope of the licensed digitised data was described in the schedule as the complete set of digitised Singapore street directory data (19th edition (Apr 1999)) in *dxg* format (which is a file in vector format). Clause 15 of the agreement provided that the agreement may be terminated by either party giving not less than 30 days' notice to the other party. By consent of both parties, this agreement was re-assigned from Magicsoft Asia Systems Pte Ltd to VM with effect from 14 September 1999.

³ Clause 1 of Agreement No SSD-1999-0006 at ABD-37.

(b) Licence Agreement for Digitised Data Maintenance (Maintenance No SSD-1999-0006M) dated 9 November 1999 between the Government and VM whereby the government shall provide quarterly updates of the licensed digitised data covered in Agreement No SSD-1999-0006 above. Clause 8 of the agreement provided that the agreement may be terminated by either party giving not less than 30 days' notice to the other party.

(c) Licence Agreement for Digitised Data Maintenance (Maintenance No SSD-1999-0006M) dated 8 May 2000 between the Government and VM whereby the government shall provide quarterly updates of a later edition (April 2000 to January 2001) of licensed digitised data covered in Agreement No SSD-1999-0006 above. Clause 8 of the agreement provided that the agreement may be terminated by either party giving not less than 30 days' notice to the other party.

(d) Licence Agreement for Digitised Data Maintenance (Maintenance Agreement No SSD-1999-0006M1) dated 26 October 2001 between SLA and VM whereby SLA shall provide quarterly updates of a later edition (October 2001 and January 2002) of licensed digitised data covered in Agreement No SSD-1999-0006 above. Clause 7 of the agreement provided that the agreement may be terminated by either party giving not less than 30 days' notice to the other party.

(e) Agreement between SLA and VM dated 3 January 2003 in which SLA granted VM a non-exclusive and non-transferable licence to use the licensed data, which was defined in Schedule A of the agreement as the "Singapore Street Directory 21st Edition" (the 21st edition being that in 2002) and "Road Data", both in *dxf* (vector) format. Updates were to be provided by SLA once a year for

the street directory vector data and twice a year for the road data. Clause 4.1 stated that the licensed data was to be used to produce processed data for the sole purpose of providing mapping applications and services by VM in accordance with the agreement. Clause 18 provided that the agreement may be terminated by either party giving the other party one month's notice in writing.

Licensing agreements in respect of address point vector data

(f) Licence Agreement for Use of Digitised Data (Agreement No AP-1999-0001) dated 9 November 1999 between the Government and VM for a non-exclusive and non-transferable licence from the Government to use digitised data, which is defined as “information derived from the compilation, indexing and presentation of data in the Land Data Hub converted into an electronically retrievable format”⁴. The scope of the licensed digitised data was described in the schedule as the complete set of address point data (October 1999) in *dxf* format. Clause 15 of the agreement provided that the agreement may be terminated by either party giving not less than 30 days' notice to the other party.

(g) Licence Agreement for Digitised Data Maintenance (Maintenance No AP-1999-0001M) dated 8 May 2000 between the Government and VM whereby the government shall provide quarterly updates of the licensed address point vector data (April 2000 to January 2001) covered in Agreement No AP-1999-0001 above. Clause 8 of the agreement provided that the agreement may be terminated by either party giving not less than 30 days' notice to the other party.

7 It was not disputed that the agreements entered into by the Government were transferred to LTA upon the formation of LTA on 1 June 2001 pursuant to

⁴ Clause 1 of Agreement No AP-1999-0001 at ABD-63.

section 22 of the Singapore Land Authority Act (Cap 301) (“SLA Act”) and that SLA had the authority to enforce the said agreements pursuant to section 25 of the SLA Act.

8 The Government and VM also entered into a licence agreement for the use of land base road data (April 2000) in *dxg* format on 22 June 2000 and which was later terminated on 23 July 2005, but this agreement did not form part of the dispute between parties.

9 By way of letter dated 10 June 2004, SLA wrote to VM giving 30 days’ notice to terminate all the above agreements enumerated in paragraphs 6(a)–(d), (f) and (g). In respect of the agreement in paragraph 6(e), SLA gave notice on the same date that the verbal extension of the agreement which was given out of goodwill would too expire in 30 days from 10 June 2004. It was not denied by VM that all seven agreements duly came to an end as at 10 Jul 2004. It was similarly not contended that SLA had terminated any agreements wrongfully – VM’s position was that VM’s online maps did not infringe the copyright in SLA’s works.

10 Although this did not have a direct bearing on the dispute between parties, the reason behind SLA’s termination notice should be given by way of background. VM suggested in its opening statement⁵ that the licence agreements were terminated in anticipation of the launch of SLA’s own online map search service at www.map.gov.sg. According to Mr Lim Ser Chin, a manager at the Land Information Centre of SLA, SLA became aware some time in 2003 that VM was taking legal action against several different parties for unauthorised reproduction of its online maps. Some of these parties had:

⁵ See Defendants’ Opening Statement at paragraph 5.

... either themselves or through their lawyers, written appeal letters to the Plaintiff and/or the Minister of Law, requesting for intervention by the Plaintiff and/or the Minister of Law ... A group of Small and Medium Enterprises (“SMEs”) had also come together to appeal for intervention by the Plaintiff. Annexed hereto and marked as “LSC-3” is a copy of the letter dated 31 August 2004 from the group of SMEs. This letter stated that the Defendant had issued demand letters to some 500 companies in Singapore. Almost all of the letters expressed indignation and disapproval of the large payments demanded by the Defendants in exchange for settling the infringement suits, even where, in some cases, the unauthorized reproduction was minor and had already been removed (Lim Ser Chin’s affidavit of evidence-in-chief (“AEIC”) at page 5).

11 According to Mr Eugene Lim, a director and business development manager of VM, VM sent out demand letters to approximately 500 companies and instituted proceedings against 17 companies. He testified that VM claimed damages of \$5,000 to \$9,000 for each infringing image. If more images of VM’s online maps were copied without permission, the amount of damages was more. Over and above that, infringers also had to pay investigators’ fees of \$5,000 to \$10,000. Mr Firdhaus bin Mohamed Akber (“Firdhaus”), the Managing Director of VM, testified that he used to be a shareholder of Valorian Consulting Pte Ltd (“Valorian”), a company which he set up to assist copyright owners, one of which was VM, to protect themselves against copyright infringement. Prior to that, he was with VM. Valorian was engaged by VM to “go after” the copyright infringers in 2003. Valorian charged VM investigation fees and disbursements. Firdhaus testified that the investigators’ fees and disbursements charged by Valorian were between \$3,000 and \$7,000 per case and that in 2003 and 2004,

Valorian's revenue from VM's business alone was \$500,000 in each of those two years. Firdhaus left Valorian in July 2004 and re-joined VM as its managing director in October 2005. According to SLA, it was these circumstances which eventually led to SLA terminating the licence agreements with VM.

12 The crux of SLA's complaint was that:

Notwithstanding the termination, the Defendant continues to offer for sale and/or distribute, the course of trade, in some cases, for a fee, the Defendant's Maps, and/or create new maps which are also reproductions of the Plaintiff's Works ("Defendant's New Maps") (Statement of Claim at paragraph 17(e)).

13 SLA's solicitors wrote to VM on 20 July 2005 to cease all use of materials which contained reproductions of SLA's works which were reproduced and/or published without SLA's consent and to provide a written undertaking not to repeat the acts of copyright infringement⁶. VM denied all allegations of copyright infringement, and after a flurry of correspondence between solicitors for the respective parties, no consensus on the matter was reached. This culminated in the commencement of the present action, in which SLA sought for various reliefs against VM, including an injunction to restrain VM from infringing SLA's copyright and reproducing SLA's works, and damages.

14 In determining if SLA had a valid claim against VM, the issues which I had to determine were:

(a) whether SLA is the owner of the copyright in the works;

⁶ At ABD-440 to 441.

- (b) whether VM copied the works, and if so, if there was “substantial reproduction” such as to infringe SLA’s copyright in the works;
- (c) whether the express or implied terms of the licence agreements gave VM the contractual right to retain and continue using the online maps which VM “created”;
- (d) whether SLA was estopped from alleging that VM had infringed its copyright.

15 The issues would be dealt with in turn.

Whether SLA is the owner of the copyright in the works

16 Whether copyright subsists in a particular subject matter is governed by the Act, as is emphatically stated in section 4:

Copyright not to subsist except by virtue of this Act

4. Subject to the provisions of this Act, no copyright shall subsist otherwise than by virtue of this Act.

17 Section 7 of the Act defines “work” to mean a literary, dramatic, musical or artistic work. VM’s complaint that the works in question are not capable of being subject to copyright was two-fold – first, that part of the works comprise facts and information which cannot be protected by copyright; second, that SLA has no copyright in the parts of the data which are reproductions of data provided from other sources. SLA contended otherwise on the ground that the works are

firstly, artistic work, and secondly, compilations of data from other sources, which can enjoy copyright protection under section 7 of the Act, which states that:

Literary works include compilation and computer program

7A. — (1) For the purposes of this Act, “**literary work**” includes

—

- (a) a compilation in any form; and
- (b) a computer program.

(2) Any copyright subsisting in a compilation by virtue of Part III —

- (a) is limited to the selection or arrangement of its contents which constitutes an intellectual creation; and
- (b) is in addition to, and independent of, any right subsisting by virtue of Part III, IV or XII in any relevant material or data contained in the compilation.

(3) For the purposes of this section —

“**compilation**” means —

- (a) a compilation, or table, consisting wholly of relevant materials or parts of relevant materials;
- (b) a compilation, or table, consisting partly of relevant materials or parts of relevant materials; or
- (c) a compilation, or table, of data other than relevant materials or parts of relevant materials,

which, by reason of the selection or arrangement of its contents, constitutes an intellectual creation;

"relevant material" means —

- (a) a work, including a computer program;**
- (b) a sound recording;
- (c) a cinematograph film;
- (d) a published edition of a work;**
- (e) a television or sound broadcast;
- (f) a cable programme; or
- (g) a recording of a performance within the meaning of Part XII.

(emphasis mine)

18 Section 27 of the Act lays down the types of original works (which include artistic and literary works) which enjoy copyright protection:

Original works in which copyright subsists

27. — (1) Subject to the provisions of this Act, **copyright shall subsist** in an *original literary*, dramatic, musical or **artistic work** that is **unpublished** and of which the author —
- (a) was a qualified person at the time when the work was made; or
 - (b) if the making of the work extended over a period — was a qualified person for a substantial part of that period.
- (2) Subject to the provisions of this Act, where an **original literary**, dramatic, musical or **artistic work has been published** —
- (a) copyright shall subsist in the work; or

- (b) if copyright in the work subsisted immediately before its first publication, copyright shall continue to subsist in the work,
if, but only if —
 - (c) the first publication of the work took place in Singapore;
 - (d) the author of the work was a qualified person at the time when the work was first published; or
 - (e) the author died before that time but was a qualified person immediately before his death.
- (3) Notwithstanding subsection (2) but subject to the remaining provisions of this Act, copyright shall subsist in —
- (a) an original artistic work that is a building situated in Singapore; or
 - (b) an original artistic work that is attached to, or forms part of, such a building.
- (4) In this section, “qualified person” means a citizen of Singapore or a person resident in Singapore.

(emphasis mine)

19 As all the agreements save for the agreements in paragraph 6(d) and (e) were entered into by the Government, it would be useful to set out the relevant provisions in the Act which deal with Government copyright:

Provisions as to Government copyright

197.— (1) In the case of **every original literary, dramatic, musical or artistic work made by or under the direction or control of the Government** —

- (a) if apart from this section copyright would not subsist in the work, copyright shall subsist therein by virtue of this subsection; and
 - (b) in any case, **the Government shall, subject to this Part, be entitled to the copyright in the work.**
- (2) The Government shall, subject to this Part, be entitled to the copyright in every original literary, dramatic, musical or artistic work first published in Singapore, or in another country to which section 27 extends, if first published by or under the direction or control of the Government.
- (3) Copyright in a literary, dramatic or musical work, to which the Government is entitled in accordance with subsection (1) or (2) —
- (a) where the work is unpublished, shall continue to subsist so long as the work remains unpublished; and
 - (b) where the work is published, shall subsist (or, if copyright in the work subsisted immediately before its first publication, shall continue to subsist) until the end of the period of 70 years from the end of the calendar year in which the work was first published, and shall then expire.

(emphasis mine)

20 Within the dictates of the statutory framework, there were two stages of inquiry in the court's determination of whether SLA is the owner of the copyright in the works. The first stage was to identify whether the works were a subject matter capable of being a copyright work under the Act; the second stage was to consider whether the requirement of *originality* laid down in the Act for subsistence of copyright in the works was met.

21 Before I delved into this inquiry, it would be necessary to address SLA's contention that the presumption as to the subsistence and ownership of the copyright in SLA should be invoked pursuant to section 130(1) of the Act, which provides for such a presumption in favour of SLA *if VM did not put it in issue*. However, it was apparent that VM had put this in issue in its pleadings⁷ and there was no evidence or reason to suggest that it had done so in bad faith. Section 130(1B) of the Act provides that:

- (1B) Where the **defendant, in good faith, puts in issue** the question of whether copyright subsists in the work or other subject-matter or whether the plaintiff is the owner of the copyright, an affidavit made on behalf of the plaintiff in which the plaintiff makes assertions of facts relevant to showing —
- (a) that copyright subsists in the work or other subject-matter; and
 - (b) that he is the owner of the copyright,
- shall be admitted in evidence and shall be **prima facie proof** of the matters stated therein **until the contrary is proved**, unless the court directs that oral evidence be adduced to prove those matters.
- (emphasis mine)*

22 Section 130(1B) states that the assertions of fact in the plaintiff's affidavit are "*prima facie*" proof of the matters stated therein until the contrary is proved. I did not think that this provision alone relieved SLA of the ultimate *legal* burden to prove on a balance of probabilities that it satisfied the statutory requirements in the Act and as a result owned the copyright to the works. I find support for my interpretation in the speech of the Deputy Prime Minister and Minister for Law,

⁷ See paragraphs 4 – 7 of the Amended Defence.

Professor S Jayakumar, during the Second Reading of the Copyright (Amendment) Bill on 16 November 2004 to move amendments to the Act, including the amendment to include the new section 130. To the question posed by one of the members of Parliament, Mr Ahmad Khalis Bin Abdul Ghani, who asked about the shifting burden of proof by virtue of the deeming provisions in sections 16(6), 119 and 130, Professor S Jayakumar replied:

I believe Mr Ahmad Khalis also touched on shifting of the burden of proof. **I should clarify that, as I see the provisions, we had not actually shifted the burden of proof.**
(emphasis mine)

23 Although section 130(1B) does not shift the burden of proof from the plaintiff to the defendant, the presumption in this section does, in my view, make it easier for the plaintiff to prove its copyright ownership by putting in place the presumption of *prima facie* proof of the facts stated in its affidavit “until the contrary is proved”. In short, the rebuttable presumption provided in section 130(1B) makes it easier for the plaintiff to satisfy its evidential burden (ie the burden of adducing evidence to meet the civil standard of proof). It is well established that when a statute provides for the operation of a presumption “unless the contrary is proved” this means that the defendant or the accused must disprove the presumption on a balance of probabilities - see *Ng Kum Peng v PP* [1995] 3 SLR 231 at 237, which dealt with section 3 of the Moneylenders Act (Cap 188), the wording of the presumption of which is *in pari materia* with section 130(1B). That the standard of proof required to rebut the presumption in civil cases is the same as that in criminal cases can be seen from the decision of Lai Siu Chiu JC (as she then was) in *Bhagwandas v Brooks Exim Pte Ltd* [1994] 2 SLR 431, another case which involved the presumption in section 3 of the Moneylenders Act, where she stated that “the onus is thus upon the plaintiff (the

alleged moneylender) to rebut the statutory presumption on a balance of probabilities” (at 442). I should also point out that the Court of Appeal in that case dismissed the appeal against Lai JC’s decision and did not touch on this point (the decision of the Court of Appeal is reported at [1995] 2 SLR 13).

24 Having disposed of SLA’s preliminary point on this issue, I proceeded with my inquiry proper.

Whether the works were a subject matter capable of being a copyright work under the Act

25 Section 7A(1)(a) provides that a literary work comprises a compilation in any form, and a compilation can include a compilation or table of relevant material and data, including any work. As can be seen, the scope of what makes up a “compilation” which can enjoy the protection of copyright as defined by section 7A is very wide. The key is that the compilation must constitute an *intellectual creation* by reason of the selection or arrangement of its contents⁸.

26 The term “literary” work has never implied any requirement that the work must have any literary style or merit. Instead, it refers to the nature of the work, ie one in which the expression is conveyed in print or writing irrespective of the excellence of quality or style. Lord Pearce in *Ladbroke (Football) Ltd v William Hill (Football) Ltd* [1964] 1 WLR 273 at 291, a case which involved the copyright infringement of a compilation known by punters as the fixed odds football betting coupon, explained this succinctly:

⁸ See section 7A(3) of the Act.

The words "literary work" include a compilation. They are used to describe work which is expressed in print or writing irrespective of whether it has any excellence of quality or style of writing (*per* Peterson J. in *University of London Press Ltd. v. University Tutorial Press Ltd*). The word "original" does not demand original or inventive thought, but only that the work should not be copied but should originate from the author.

The Oxford English Dictionary defines the verb “compile” to mean:

(a) collect (material) into a list, volume, etc. (b) make up (a volume etc.) from such material.

27 The types of literary work which fall within the definition of “compilation” are wide-ranging. These include newspapers, magazine, atlases, books of street maps and catalogues. In another case revolving around the lucrative world of English football, *The Football Association Premier League Ltd v Panini UK Ltd* [2004] 1 WLR 1147, Mummery LJ gave useful guidance on examples of such compilations in the context of the United Kingdom’s Copyright, Designs and Patents Act 1988:

The claim for infringement of artistic copyright in the club crests and the Premier League badge appearing on the playing kit worn by the football players is made in respect of the sticker albums themselves, not just in respect of each individual sticker. **My provisional view is that, although each individual sticker is a distinct artistic work, being a photograph within section 4(1)(a), the albums, into which the stickers are to be affixed, are compilations of material and are properly treated as literary works for the purposes of the 1988 Act.** If that is correct, inclusion of copies of the club crests and the Premier

League badge in the albums falls outside the acts permitted by section 31(1). **I should explain that works are properly treated as compilations and therefore as literary works, even though the material compiled is largely artistic in character. Atlases, books of street maps, catalogues and art gallery and exhibition guides are obvious examples of artistic materials assembled in the material form of a compilation** (at 1157, paragraph 32).
(emphasis mine)

28 The conferment of copyright in compilations lies in the skill and labour expended in choosing and arranging the individual works as part of a larger composite work. As Lord Pearce stated in *Ladbroke (Football) Ltd* at 292, “in each case it is a question of degree whether the labour or skill or ingenuity or expense involved in the compilation is sufficient to warrant a claim to originality in a compilation”. This is implicit in the following passage in *Copinger and Skone James on Copyright* (15th edition, 2005):

Although a compilation is included in the category of a literary work, it is suggested that the items which are compiled together need not either exclusively, or at all, themselves be literary material, and that a compilation may consist of a mixture of literary and artistic material, or even exclusively of artistic material ... **Indeed, if it were otherwise, where skill and labour has been expended in choosing and arranging artistic works as part of a larger composite work, the result would not be protected.** Such works were protected as books under the pre-1911 Copyright Acts, so that protection was given to works consisting entirely of illustrations with no, or virtually no, text, such as trade catalogues, as well as trade catalogues consisting of text and illustrations, and also map books and other works containing both text and illustrations (at 67 – 68, paragraph 3-24).

29 VM submitted that the materials in the works, *inter alia*, the address point data and shapes and outlines of buildings, could not be protected by copyright as they comprised merely information and facts, which by nature cannot be protected by copyright. VM summed up its argument on this point in its reply submissions:

20. In a nutshell VM submits that SLA has failed to prove it's (*sic*) copyright in the Licensed Digitised Data. It is the SLA's own evidence that much of the Licensed Digitised Data were in fact original works which they obtained for mother government agencies and incorporated by copying into the Licensed Digitised Data. SLA's witnesses also admitted that it is impossible to tell from the Licensed Digitised Data which part of the said data were original works of SLA, as opposed to those of other agencies.

...

22. The hollowness of SLA's arguments on this issue can also be demonstrated in another vivid way ... **the first question that this Honourable Court would ask of itself would be: in which part of the Licensed Digitised Data has SLA proven it owns the copyright thereto? This Honourable Court, it is humbly submitted, will simply be unable to locate the answer to this question. If this Honourable Court cannot identify with precision the copyrightable material belonging to SLA, it begs the question as to how this Honourable Court can properly proceed to examine whether there has been subsequent copying, and whether such copying was substantial.**

(emphasis mine)

30 With respect, VM misconceived the basis upon which copyright in compilations subsists. In deciding whether a work in the nature of a compilation is original, it is incorrect to start by considering individual parts of it apart from the whole, as VM in its argument sought to do. Although many compilations have nothing original in their parts, yet the sum total of the compilation may be original. This was precisely the approach of the House of Lords in *Ladbroke (Football) Ltd*. Lord Pearce elaborated at 291 – 292 of his judgment:

In deciding therefore whether a work in the nature of a compilation is original, it is wrong to start by considering individual parts of it apart from the whole, as the appellants in their argument sought to do. For many compilations have nothing original in their parts, yet the sum total of the compilation may be original ...

In such cases the courts have looked to see whether the compilation of the unoriginal material called for work or skill or expense. If it did, it is entitled to be considered original and to be protected against those who wish to steal the fruits of the work or skill or expense by copying it without taking the trouble to compile it themselves. So the protection given by such copyright is in no sense a monopoly, for it is open to a rival to produce the same result if he chooses to evolve it by his own labours (See *Kelly v. Morris*). In *Lamb v. Evans* Lindley L.J. said with regard to a trades directory,

"It appears to me that the plaintiff has an exclusive right to the publication of those headings with the translations - not that he can restrain other people from publishing the same sort of thing if they go about it in the right way, but he has a right to

restrain other people from copying his book. There is so much common to his book and to other books of the same sort that they very likely will contain the same information. It is just like the case of a man who publishes a map of a particular country: another may publish a map of the same country exactly like it, if he makes his map from the original materials; but the first can restrain the other from copying his map, which is a totally different thing."

Thus, directories, catalogues, and the like have been held to be original and to acquire copyright if the work that goes to their making has been sufficient: (*Collis v. Cater, Stoffel & Fortt Ltd; H. Blacklock & Co. Ltd*). But where the work of compilation was not "substantial" but "negligible" it was held to have no copyright: (*G. A. Cramp & Sons Ltd v Frank Smythson Ltd*). The arrangement of the material is one of the factors to be considered. Viscount Simon in that case said:

"There was no evidence that any of these tables was composed specially for the respondents' diary. There was no feature of them which could be pointed out as novel or specially meritorious or ingenious from the point of view of the judgment or skill of the compiler. It was not suggested that there was any element of originality or skill in the order in which the tables were arranged."

So in each case it is a question of degree whether the labour or skill or ingenuity or expense involved in the compilation is sufficient to warrant a claim to originality in a compilation.

(emphasis mine)

31 In *Ladbroke (Football) Ltd*, the respondents (“William Hill”) were well-known bookmakers. Each week during the football season they had for many years sent out to their clients, the punters, a fixed odds football betting coupon. The appellants (“Ladbroke”) were also old-established bookmakers. They decided to enter this field of betting in 1959 and began to send out coupons which closely resembled William Hill’s coupons. William Hill claimed copyright in their coupons and alleged infringement by Ladbroke. Ladbroke maintained that only certain parts of William Hill’s coupons were protected by copyright and denied infringement. Each coupon had various lists of forthcoming matches between well-known teams printed on it. One called “Nothing Barred” was a full list of some 50 matches. The others were shorter lists of matches selected by the bookmaker from the full list. The bets offered in respect of these lists varied in character. From some the punter had to pick a certain number of winners. From others he had to pick so many home or away wins or draws or a combination of these. The variety of bets offered was very great. William Hill’s coupon contained 16 lists. It was not disputed that a vast amount of skill, judgment, experience and work had gone into building up its coupon. When Ladbroke entered this business, it too devised a suitable form of coupon. It was accepted that it adopted a form closely similar to William Hill’s coupon. William Hill had 16 lists; Ladbroke’s coupon contained 15 of these lists, all of which appeared in the same order as in William Hill’s coupon. Moreover, the varieties of bets offered by Ladbroke in each of these 15 lists were almost identical with the offers by William Hill in its corresponding list. The question to be determined was whether or to what extent copyright attached to these coupons. William Hill said that a coupon had to be regarded as a single work and that as such it was protected by copyright. Ladbroke sought to “dissect” the coupon, as VM sought to do in the case before me. Ladbroke not only dissected it into the 16 lists, but

further dissected each list into heading, selection of matches, and statement of odds offered for the various kinds of bets. Ladbroke admitted that there was copyright in the *selection* and in the *statements of odds offered*, which incidentally Ladbroke did not copy. However, it denied any copyright as regards the rest of the coupon.

32 In finding that William Hill held the copyright to its coupon, the House of Lords rejected Ladbroke's "dissection" argument. To better understand the court's reasoning, it would be useful to set out the opinion of Lord Reid on this point in detail:

The Copyright Act, 1956, provides, by section 2, that copyright shall subsist in every original literary work and, by section 48, that literary work includes any written table or compilation. **I have no doubt that the coupon must be treated as a single compilation.** The appellants' dissection theory is derived from some statements in infringement cases and I must, therefore, examine at this point the law regarding infringement. Copyright gives the exclusive right to do certain things including "reproducing the work in any material form" (section 2 (5)), and reproduction includes reproduction of a substantial part of the work (section 49 (1)). **Broadly, reproduction means copying, and does not include cases where an author or compiler produces a substantially similar result by independent work without copying. And, if he does copy, the question whether he has copied a substantial part depends much more on the quality than on the quantity of what he has taken.** One test may be whether the part which he has taken is novel or striking, or is merely a commonplace arrangement of ordinary words or well-known data. So it may sometimes be a convenient short cut to ask whether the part taken could by itself be the subject of copyright. **But, in my view, that is only a short cut, and the more correct approach**

is first to determine whether the plaintiffs' work as a whole is "original" and protected by copyright, and then to inquire whether the part taken by the defendant is substantial.

A wrong result can easily be reached if one begins by dissecting the plaintiffs' work and asking, could section A be the subject of copyright if it stood by itself, could section B be protected if it stood by itself, and so on. To my mind, it does not follow that, because the fragments taken separately would not be copyright, therefore the whole cannot be. Indeed, it has often been recognised that if sufficient skill and judgment have been exercised in devising the arrangements of the whole work, that can be an important or even decisive element in deciding whether the work as a whole is protected by copyright.

None of the decisions cited in argument appears to me to conflict with the view that you must first decide whether the plaintiffs' work as a whole is entitled to copyright and then see whether the part taken is a substantial part. The only apparent exception would seem to be a case such as *Leslie v. J. Young & Sons*, where a compilation was treated as consisting of severable parts, one of which was held to be original work and copyright while the rest was not.

The appellants' main argument was based on quite a different ground. They deny that the respondents' coupon is an original compilation. There is no dispute about the meaning of the term "original."

"The word 'original' does not in this connection mean that the work must be the expression of original or inventive thought. Copyright Acts are not concerned with the originality of ideas, but with the expression

of thought, and, in the case of 'literary work,' with the expression of thought in print or writing. The originality which is required relates to the expression of the thought. But the Act does not require that the expression must be in an original or novel form, but that the work must not be copied from another work - that it should originate from the author."

Per Peterson J. in University of London Press Ltd. v. University Tutorial Press Ltd. And it is not disputed that, as regards compilation, originality is a matter of degree depending on the amount of skill, judgment or labour that has been involved in making the compilation (at 276 – 278).

(emphasis mine)

33 The items which are assembled in a compilation may, individually, be entitled to copyright; such individual copyright remains independent of the separate copyright in the table or compilation (see *Longman Group Ltd v Carrington Technical institute Board of Governors* [1991] 2 NZLR 574). As the authors of *Copinger and Skone James* opine in footnote 54 at page 67, the making of the table or compilation may require the licence of the owner of the copyright in the individual items, unless less than a substantial part of that work is taken. However, that is an issue to be taken up between the copyright owner of the compilation and the copyright owner of the individual items, and does not in any way affect the legal position that the copyright owner of the compilation owns the copyright to *the whole* of that compilation. Whether the compilation taken as a whole merits the protection of copyright law depends on whether the compilation is an original work, and originality is, according to Lord Reid, “a matter of degree

depending on the amount of skill, judgment or labour that has been involved in making the compilation”. It was to that question of originality I turned.

Whether the requirement of originality laid down in the Act for subsistence of copyright in the works was met

34 The court had to determine if all the three works, namely, (a) the Singapore Street Directory; (b) the street directory vector data; and (c) the address point vector data which SLA claimed copyright in were original works.

(a) Copyright in the Singapore Street Directory and the street directory vector data

35 In respect of the Singapore Street Directory, Ms Lee Phek Khim, a Senior Technical Executive in Survey Services with SLA, gave evidence on the genesis of the 1st edition of the Singapore Street Directory and Guide, which was produced and published in 1954 by the Survey Department. The memorandum dated 25 November 1953 from the office of the Chief Surveyor of Singapore⁹ proposing the production of the street directory described the work involved in putting together the new street directory:

Permission is sought for the **production of a new type of Road and Street Directory for Singapore. It is proposed that the City and island be covered by a series of sectional maps showing streets and lanes, mile posts, public buildings and landmarks, post offices and police stations. The index to the sectional maps will incorporate the**

⁹ At ABD-1.

information already shown in the present directory as to Public & Private streets.

2. It is proposed that the postal districts shall be shown on separate maps as in the present directory.

3. ... **The necessary drawing will be undertaken by the Survey Office.** The work will be given to Junior Draftsmen as a training task and no special financial [p...] will be necessary as far as this office is concerned.

4. **A rough “mock up” of a few sectional maps is attached. The dimensions of the directory will be changed slightly from the “mock up” to suit printing requirements. There will probably be more than 70 sectional maps.**

5. The present directory has had a good sale and it is expected that the demand for the new one will be even greater.

6. **In short this is a suggestion to extend and improve the usefulness of the present Street Directory** and I would ask that the Government Printer should be given the necessary authority to undertake this work in co-operation with this office.

(emphasis mine)

36 The office of the Colonial Secretary gave the approval for the proposal in a memorandum dated 24 December 1953:

The proposal to produce the Singapore Road and Street Directory **in a new format** with sectional maps is approved, on the

understanding that the cost of the line blocks of maps (about \$800/-)
will be covered by the Survey Department votes ...

(emphasis mine)

37 It would be evident just from the contents of the two memoranda that a lot of work was required to produce the new Singapore Street Directory, albeit the fact that there was already an existing version of the street directory. The new street directory was an enhanced version of the old one, and of “a new format”. The new directory would also incorporate information found in the old directory. Necessary drawings needed to be done by the Survey Office. More than 70 sectional maps needed to be put up (mock-ups of a few of these maps were in fact appended to the memorandum from the Chief Surveyor). The evidence placed before the court left me with no doubt that the labour, skill and expense involved in producing the new directory was such that the final work in the form of the 1st edition of the Singapore Street Directory was an original work within the meaning of the Act.

38 VM harped on the fact that there was already in existence a street directory at the time of the proposal for a new directory and that SLA had not given any evidence to show that the 1st edition published in 1954 was itself not a reproduction of the earlier street directories. I dismissed this submission as it was clear to me from the evidence adduced, in particular the two memoranda referred to earlier, that the new directory was not a reproduction of its predecessors. Copyright in the 1st edition of the Singapore Street Directory was established.

39 Lee Phek Khim gave evidence that from 1954 onwards, the maps in the Singapore Street Directory were maintained and continually updated to take into account changes to the roads or geography of Singapore, and that the job of updating was undertaken by the Survey Department from 1954 to 2000, when the

job of maintaining and updating the Singapore Street Directory was transferred to the Land Systems Support Unit of the Ministry of Law and later transferred to SLA upon its formation on 1 June 2001. She explained that the information for the updates was obtained mainly from other government agencies. Ground survey was also carried out by the Survey Department. Feedback from the public was also used for the updates. Mr Lee Gim Hong, a Principal Technical Executive in the Land Information Centre of SLA, added that since 2000, Global Positioning System (“GPS”) receivers are also used to capture new data to update the street directory vector data.

40 Lee Phek Kim further gave evidence that in 1988, there was a conversion exercise to digitise the hard copy street directory maps of the 15th edition of the Singapore Street Directory into vector format (ie the street directory vector data). During cross-examination, she explained that this was done by taking each page of the hard copy street directory and copying the outlines of the roads, buildings and other details into vector format. The digitised version in vector format was identical to the hard copy version, save with changes to some of the symbols. Lee Gim Hong said that information for the vector data also came from other government agencies such as the Inland Revenue Authority of Singapore (“IRAS”) (which provided information on the MRT lines and tracks), National Parks Board, Housing and Development Board (“HDB”) and Jurong Town Corporation. As all the information from these agencies were provided in hard copy, it was necessary for the relevant information from the hard copy to be extracted, converted into digital form and incorporated into the street directory vector data. Prior to the digitisation process, the maps had to be updated manually. After the conversion exercise, all updates to the maps were done to the street directory vector data and subsequent hard copy editions of the street directory were produced from the revised vector data. Henceforth, the street

directory vector data was maintained and updated in the same way as that for the hard copy maps.

41 From the exposition given above, the substance of which was not challenged by VM, I was of the view that there was copyright in the subsequent editions of the Singapore Street Directory up till the 21st edition published in 2002, which first vested in the Government by virtue of section 197 of the Act, and later in SLA by virtue of section 22 of the SLA Act. Adopting Lord Reid and Lord Pearce’s reasoning, to my mind, it did not follow that, just because most of the information for the purposes of the updates originated from other government agencies, the whole updated directory could not enjoy copyright protection. Indeed, if sufficient skill, labour and judgment had been exercised in devising the arrangements of the whole work, that was an important or even decisive element in deciding whether the work as a whole was protected by copyright. I found that the requirement of originality in this regard had been satisfied. The compilation constituted an “intellectual creation” as defined in section 7A of the Act. For the same reasons, I found that copyright subsisted in the street directory vector data. The conversion of the maps into vector format was by its very nature a time-consuming exercise which required a lot of effort. I would go further to add that by virtue of the drawings and outlines of buildings, roads and other symbols and icons, the work produced in this regard was an artistic work.

(b) Copyright in the address point vector data

42 In his affidavit of evidence-in-chief, Lee Gim Hong stated that in 1997/1998, the Land Systems Support Unit (“LSSU”) of the Ministry of Law carried out an exercise over one year to create an address point database (which contained the address point vector data). He stated that the address point data

comprised the X & Y coordinates of a point within each building, the name and address of the building, as well as its six-digit postal code. Presently, there are 120,000 points in the address point database representing all the buildings in Singapore. Lee Gim Hong testified at the trial that of the components in the address point database, information pertaining to the name and address of the building was provided by IRAS and information on the six-digit postal code was provided by SingPost in an ASCII file (sometimes referred to as a plain text file). The X & Y coordinates were then generated by the LSSU from the information provided by these two agencies based on the Cassini-Soldner Grid. He explained the process as follows:

Q: Now you have the address, postal codes and names of buildings, what did you do to these addresses to create the address points?

A: When IRAS gave us all these hard copies, SLA drew in all the buildings with the address information. We have a graphics building address. From the building graphics, we generate a point inside each building, and match the addressed with SingPost to get the postal code. That is how the graphics point is created and it is inside each building graphic/polygon.

(Notes of Evidence at page 16A – B)

43 According to him the main purpose of having the address point vector database was to identify the location of the graphical representation of each building in the street directory vector database. The address point vector data (which contained the X & Y coordinates of a point within each building, the name and address of the building, as well as its six-digit postal code) was required to indicate the location and address of each building. He also explained

that to derive the address point data, all the four components of the data were required. As he tried to explain during cross-examination:

Q: Original data (from SLA) is just the X & Y co-ordinates?

A: All the house number, postal code, road name and the XY.

Q: The copyright, if any, in the addresses, postal codes and building names don't belong to SLA, isn't that true?

A: Yes.

Q: Fact that the same addresses appear in the Defendant's database is irrelevant, correct?

A: No. For the address point, all this has to come together, you cannot separate. It is apppoint to indicate the address location.

(Notes of Evidence at pages 30D – 31A)

44 Once again, there was no doubt in my mind that copyright in the address point vector data subsisted, albeit the fact that much of the “raw material” in deriving the said data originated from external parties. The “compilation”, as such, necessitated much work to be done on the part of the LSSU, and later SLA in respect of the updates. It also contained original content in the form of the X & Y coordinates.

45 As SLA had proven that it owned the copyright to the works in question, I moved on to the next key issue in this action – whether VM had violated the copyright in any or all three of SLA's works.

Whether VM copied the works, and if so, if there was “substantial reproduction” such as to infringe SLA’s copyright in the works

The legal principles and burden of proof in determining “substantial reproduction”

46 The starting point in this inquiry is sections 31 and 33 of the Act, as relied on by SLA, which describe when copyright is infringed:

Infringement by doing acts comprised in copyright

31. —(1) Subject to the provisions of this Act, the copyright in a literary, dramatic, musical or artistic work is infringed by a person who, not being the owner of the copyright, and **without the licence of the owner of the copyright, does** in Singapore, or authorises the doing in Singapore of, **any act comprised in the copyright.**
- (2) Sections 32 to 34 shall not affect the generality of subsection (1).

Infringement by sale and other dealings

33. —(1) The copyright in a literary, dramatic, musical or artistic work is infringed by a person who, in Singapore, and **without the licence of the owner of the copyright —**
- (a) **sells, lets for hire, or by way of trade offers or exposes for sale or hire, an article;** or
- (b) by way of trade exhibits an article in public, where he knows, or ought reasonably to know, that the making of the article constituted an infringement of the copyright or, in the case of an imported article, the making of the article was carried out without the consent of the owner of the copyright.

- (2) For the purposes of subsection (1), the distribution of any articles —
- (a) for the purpose of trade; or
 - (b) for any other purpose to an extent that affects prejudicially the owner of the copyright concerned,
- shall be taken to be the sale of those articles.

(emphasis mine)

47 Section 26 of the Act states that copyright in relation to a work includes the exclusive right to reproduce the work in a material form¹⁰, among other permissible “acts” for which the copyright owner has the exclusive right to do. As a matter of fact, the exclusive right to prevent copying or reproduction of a work is the most fundamental, and historically the oldest, right of an owner of copyright. For this right to be infringed, two elements have to be established: the first is a sufficient degree of objective similarity between the copyright work and the work which is alleged to have infringed that copyright; and second, that this was the result of the copyright work having been copied, ie that there is a causal link between the two. To infringe the copyright, it is not necessary that the whole of the work just be copied – it is enough if there is a *substantial reproduction* or copying of the copyright work. This is seen in section 10(1)(b) of the Act, which provides that a reference to a “reproduction, adaptation or copy of a work” shall include a reference to a “reproduction, adaptation or copy of a *substantial part* of the work”.

48 In *Designers Guild Ltd v Russell Williams (Textile) Ltd* [2001] FSR 113, a case which involved the copyright infringement of an artistic work, “Ixia”, the House of Lords, in answering the question of whether a substantial part of the

¹⁰ See s 26(1)(a)(i) and s 26(1)(b)(i) of the Act.

design had been copied, gave useful guidance in determining the issue of substantiality, which in the present case before me was at the heart of the dispute between parties. The judgments of Lord Scott and Lord Millett on this issue are instructive and merit citing in detail. Lord Scott opined:

Substantiality

Section 16(3) of the Act of 1988 says that copying a copyright work is a copyright infringement if the copying is of "the work as a whole or any substantial part of it." **Section 16(3) may come into play in two quite different types of case. One type of case is, obviously, *where an identifiable part of the whole, but not the whole, has been copied.*** For example, only a section of a picture may have been copied, or only a sentence or two, or even only a phrase, from a poem or a book, or only a bar or two of a piece of music, may have been copied: see the examples given at pp. 88-89, para. 2-102 of *Laddie, Prescott & Vitoria, The Modern Law of Copyright and Designs*, 2nd ed. (1995), vol. 1 (which, for convenience, I will refer to as "*Laddie*"). **In cases of that sort, the question whether the copying of the part constitutes an infringement depends on the qualitative importance of the part that has been copied, assessed in relation to the copyright work as a whole.** In *Ladbroke (Football) Ltd. v. William Hill (Football) Ltd.* [1964] 1 W.L.R. 273 Lord Reid said, at p. 276, that:

"the question whether he has copied a substantial part depends much more on the *quality* than on the *quantity* of what he has taken."

The present case is not a case of that type. The judge did not identify any particular part of *Ixia* and hold that that part had been copied. His finding of copying related to *Ixia* as a whole.

The other type of case in which a question of substantiality may become relevant is where the copying has not been an exact copying of the copyright work but a copying with modifications. This type of copying is referred to in *Laddie* as "altered copying." A paradigm of this type of case would be a translation of a literary work into some other language, or the dramatisation of a novel. The translation, or the play or film, might not have a single word in common with the original. But, assuming copyright existed in the original, the "copy" might well, and in the case of a word-by-word translation certainly would, constitute an infringement of copyright.

The present case is an "altered copying" case. Helen Burke put together a number of artistic ideas derived from various sources in order to produce her *Ixia* design, an original artistic design as it is accepted to be. Miss Ibbotson and Mrs. Williams, as the judge found, copied the *Ixia* design in order to produce their *Marguerite* design. But they did so with modifications. The *Marguerite* design is not an exact copy of *Ixia* . Nor is any specific part of the *Marguerite* design an exact copy of any corresponding part of the *Ixia* design. It is an altered copy.

The question, then, where an altered copy has been produced, is what the test should be in order to determine whether the production constitutes a copyright infringement. If the alterations are sufficiently extensive it may be that the copying does not constitute an infringement at all. The test proposed in *Laddie* , at pp. 92-93, para. 2-108, to determine whether an altered copy constitutes an infringement is:

"Has the infringer incorporated a substantial part of the independent skill, labour etc. contributed by the original author in creating the copyright work ... ?"

My Lords, I think this is a useful test, based as it is on an underlying principle of copyright law, namely, that a copier is not at liberty to appropriate the benefit of another's skill and labour.

My noble and learned friend, Lord Millett, has made the point that once copying has been established, the question of substantiality depends on the relationship between what has been copied on the one hand and the original work on the other, similarity no longer being relevant. My Lords, I respectfully agree that that would be so in the first type of case. But in an altered copying case, particularly where the finding of copying is dependant, in the absence of direct evidence, upon the inferences to be drawn from the extent and nature of the similarities between the two works, the similarities will usually be determinative not only of the issue of copying but also of the issue of substantiality. And even where there is direct evidence of copying, as, for example, where it is admitted that the copier has produced his "copy" with the original at his elbow, the differences between the original and the "copy" may be so extensive as to bar a finding of infringement. It is not a breach of copyright to borrow an idea, whether of an artistic, literary or musical nature, and to translate that idea into a new work. In "altered copying" cases, the difficulty is the drawing of the line between what is a permissible borrowing of an idea and what is an impermissible piracy of the artistic, literary or musical creation of another. In drawing this line, the extent and nature of the similarities between the altered copy and the original work must, it seems to me, play a critical and often determinative role. In particular, this must be so where there is no direct evidence of

copying and the finding of copying is dependant on the inferences to be drawn from the similarities. In the "Little Spanish Town" case, *Francis Day & Hunter Ltd. v. Bron* [1963] Ch. 587, Willmer L.J. said, at p. 610:

"... I do not think it could be doubted that there was material on which to base the inference that the composer of 'Why' deliberately copied from 'Spanish Town.' Were that the right inference, I am satisfied that the degree of similarity would be sufficient to constitute an infringement of the plaintiffs' copyright."

and Diplock L.J. said, at p. 623:

"it is well established that to constitute infringement of copyright in any literary, dramatic or musical work, there must be present two elements: first, there must be sufficient objective similarity between the infringing work and the copyright work, or a substantial part thereof, for the former to be properly described, not necessarily as identical with, but as a reproduction or adaptation of the latter; secondly, the copyright work must be the source from which the infringing work is derived."

The same principles apply to artistic copyright as to literary, dramatic or musical copyright. Both Wilmer and Diplock L.J.J. treated similarity as being relevant to the substantiality issue. *Laddie* cites the "Little Spanish Town" case as an example of altered copying, at p. 93, para. 2.109 (at pages 130 – 132 of the judgment).

(emphasis mine)

49 Lord Millett, who adopted a slightly different approach in determining if there was substantial reproduction, spoke of the two-step test in deciding if infringement of an artistic copyright has been committed. The first step is to identify those features of the defendant's design which the plaintiff alleges has been copied from the copyright work. According to Lord Millett:

If the plaintiff demonstrates sufficient similarity, not in the works as a whole but **in the features which he alleges have been copied, and establishes that the defendant had prior access to the copyright work, the burden passes to the defendant to satisfy the judge that, despite the similarities, they did not result from copying** (at page 124 of the judgment).
(emphasis mine)

50 According to Lord Millett, once the judge has found that the defendant's design incorporates features taken from the copyright work, the second step is to determine:

... **whether what has been taken constitutes all or a substantial part** of the copyright work. **This is a matter of impression, for whether the part taken is substantial must be determined by its quality rather than its quantity. It depends upon its importance to the copyright work. It does not depend upon its importance to the defendants' work, as I have already pointed out. The pirated part is considered on its own** (see *Ladbroke (Football) Ltd. v. William Hill (Football) Ltd.* [1964] 1 W.L.R. 273, 293, *per* Lord Pearce) **and its importance to the copyright work assessed. There is no need to look at the infringing work for this purpose.**

The Court of Appeal were concerned only with this second stage. They were not entitled to reverse the judge's finding that the defendants' design reproduced features of the copyright work, nor his identification of the features in question. **The only issue was whether those features represented a substantial part of the copyright work. A visual comparison of the two designs was not only unnecessary but likely to mislead.**

My noble and learned friend, Lord Scott of Foscote, has drawn attention to the differences between the copying of a discrete part of the copyright work and the altered copying of the whole, or the copying with or without modifications of some but not all the features of the copyright work. **The distinction is not material in the present case. Whether or not it is alleged that a discrete part of the copyright work has been taken, the issues of copying and substantiality are treated as separate questions. Where, however, it is alleged that some but not all the features of the copyright work have been taken, the answer to the first question will almost inevitably answer both, for if the similarities are sufficiently numerous or extensive to justify an inference of copying they are likely to be sufficiently substantial to satisfy this requirement also** (at page 125 of the judgment).

(emphasis mine)

51 *Copinger and Skone James* summarises the mechanics of proving the act of copying articulated by Lord Millett well:

Proof of copying. It is for the claimant to prove copying, this being a question of fact, the standard being the ordinary civil standard. In most cases copying can only be deduced by inference from all the surrounding circumstances because normally there will be no evidence

from anyone “being present and looking over the [defendant’s] shoulder at the time he designed or made his work. **The case will therefore normally start with establishing substantial similarity combined with the possibility of access. Where there is substantial similarity, this is prima facie evidence of copying and also of access. Once a prima facie case is established in this way, a shift in the evidential burden takes place which the party charged may refute by evidence of independent creation or by giving some alternative explanation for the similarities.** The task of the judge is then to decide, **on the evidence as a whole, whether or not there has been copying. This can be summarised by saying that proof of sufficient similarity, coupled with proof of the possibility of access, raises a prima facie case or inference of copying for the defendant to answer.** This shifting of the burden of proof is merely one of plain, rational thought.

Naturally, even if an inference of copying can be drawn, it may be rebutted by the defendant’s evidence that he did not copy. The fact that the defendant denies copying is some evidence to rebut the inference but is obviously not conclusive: it has to be weighed against all the other evidence. A bare denial of copying without any explanation of the similarities is, however, unlikely to be convincing. **On the other hand, where there is a respectable defence of, for example, common source, functional necessity or hackneyed theme, the absence of other tell-tale similarities may mean that the defendant’s evidence can easily be accepted.** Thus where two works are claimed to have been based on earlier materials, similarities in incident and situations, although affording *prima facie* evidence of copying, may not be sufficient to override a denial of copying coupled with an explanation of similarities by reference to the sources. **While for the purposes of the “substantial part” test it is the similarities between the works which matter, not the differences, in the context of copying, the**

unimportant parts of two works may contain *unexplained similarities which are probative of copying.* Again, although an alleged infringing article and a copying drawing may appear similar when viewed from one angle, when viewed from another they may appear so dissimilar that any inference of copying is dispelled. Evidence of unlikely similarities will usually have to be of the most cogent kind before it can be preferred to the sworn evidence of respectable and responsible person which the court would otherwise accept. On the other hand, the similarities may be so great that his evidence could never be believed. The fact that a witness who denies copying is disbelieved will not necessarily prove copying since it constitutes no positive evidence, but it can clearly be brought into the balance. The fact the defendant has copied other works before may be probative. **The type of evidence which will help prove copying obviously varies with each case, but *unexplained similarities in style, content and so on usually play a part. Indeed it is often in the repetition of mistakes, redundancies, idiosyncrasies and the like that a plagiarist is caught out, for “... it is the resemblances in inessentials, the small, redundant, even mistaken elements of the copyright work, which carry the greatest weight. This is because they are least likely to have been the result of independent design” and may “shed a flood of light on the real source of the more substantial similarities.”*** Obviously, where a number of passages in a work are proved to have been copied (e.g because of mistakes), other passages which are the same in both works may be assumed also to have been copied. In limited circumstances, similar fact evidence may be relied upon to rebut the suggestion of coincidence (at pages 374 – 376, paragraph 7 – 17). *(emphasis mine)*

52 In relation to reproduction of maps and diagrams, the learned authors have this to say:

Maps and diagrams. The normal rules apply to what might be called the purely artistic features of a map. In the case of maps, however, copyright will subsist not only in the outlines of the various features but also on the selection, arrangement and presentation of the various parts, such as towns, lakes rivers, etc. If the defendant has copied the claimant's selection, amounting to a substantial part, he will have infringed. It should also be borne in mind that such works are usually not only artistic works, but in some respects are also compilations of information, and in this respect are to be treated as literary works. The artistic copyright may therefore be infringed by reproduction in the form of a substantially similar map and the literary work may be infringed by the reproduction in some other form, for example a table of the information which the map contains. **In either case, to escape infringement a defendant must himself carry out the survey, gather the information and do whatever else is necessary to compile the work, and not simply appropriate the claimant's labour** (at page 419, paragraph 7 – 62).
(*emphasis mine*)

53 I should add that in *Virtual Map (Singapore) Pte Ltd v Suncool International Pte Ltd* [2005] 2 SLR 157, in which VM successfully obtained summary judgment against the defendant for infringing VM's copyright by reproducing a map image from VM's website on its own website, Lai Kew Chai J observed that in evaluating the originality of a map, one should expect a degree of similarity of cartographic outlines and raw data among different map publications as such similarity would not, in itself, detract a court from finding that there was originality in the work which merited copyright protection:

The defendant compared the plaintiff's work with the maps found in the *Singapore Street Directory* (SNP Publishing Ltd) and the NTUC I-Map, and argued that given the high degree of similarity between the works, and similar licence terms apropos SLA, it had clearly raised a triable issue as to the originality of the plaintiff's work. **It is a false premise, because one can always expect a degree of similarity of cartographic outlines and raw data among different map publications. It is these cartographic outlines that form the basis of a non-exclusive licence between the SLA and various map publishers.** Having analysed the plaintiff's maps and affidavit evidence, I have concluded that through additional improvements and embellishments (the additions to the cartographic raw material included a set of building names and locations, road networks, traffic directions, a scale and full colour), the plaintiff has created an independent copyright work in its own right (at paragraph 16).

(emphasis mine)

54 As in *Designers Guild Ltd*, I was of the view, as Lord Millett was in that case, that the distinction between the copying of a discrete part of SLA's works and the altered copying of the whole, or the copying with or without modifications of some but not all the features of the copyright work, was not material in the case before me. It was also apparent that the alleged act of infringement by VM pertained to both the artistic and literary copyright of SLA, which parties did not dispute. Although the approaches taken by Lord Scott and Lord Millett differed in some respects, in that Lord Scott, in determining the test of "substantiality", distinguished between the first type of copying where an identifiable part of the whole, but not the whole, has been copied and the second type of copying which he referred to as "altered" copying, suggesting that the test set out by Lord Millett (ie, that once copying has been established, the question of substantiality depends on the relationship between what has been copied on the

one hand and the original work on the other, and that whether the part taken is substantial must be determined by its quality rather than its quantity) would be suitable only in the first type of copying. For the purposes of coming to my decision on this issue, it was not material which test I followed as the conclusion would be the same. In any case, the nature of the copying by VM, if any, fell readily within the first type of copying articulated by Lord Scott, as was the case in *Ladbroke (Football) Ltd* (although it could arguably also be a form of “altered copying” in certain respects, such as the shifting of the positions of the building polygons allegedly copied by VM in order to fit in with the altered positions of the roads in VM’s allegedly infringing maps). Although I would not venture to suggest which approach (ie that of Lord Millett or Lord Scott) is preferred, I would agree with the authors of *The Modern Law of Copyright and Designs* (3rd edition, 2000) at page 148, who submit that:

... the test of infringement in the case of altered copying is, in principle, no different from any other kind. Has the infringer incorporated a substantial part of the independent skill, labour etc contributed by the original author in creating the copyright work, being skill or labour of a literary, dramatic or musical character? If so he has produced a substantial part.

55 In the premise, I would respectfully adopt Lord Millett’s approach of determining the *substantiality* of the copying – ie that it depends on and is determined by the *quality* rather than on the *quantity* of what has been copied or taken. This approach also accords with that of Lord Reid and Lord Pearce in *Ladbroke (Football) Ltd*. Lord Pearce, at page 293 of the judgment, stated thus:

Did the defendants reproduce a substantial part of it? Whether a part is substantial must be decided by its quality rather than its quantity. The

reproduction of a part which by itself has no originality will not normally be a substantial part of the copyright and therefore will not be protected.

56 Earlier, I had disapproved of VM’s “dissection” argument in determining if SLA owned the copyright to the works. On this point, Lord Pearce’s elucidation would be useful as he explained that while it would be wrong to dissect the compilation into component parts in determining if there is ownership of copyright in a work, when determining the issue of substantial reproduction, it would be appropriate to look at the “pirated” component on its own:

For that which would not attract copyright except by reason of its collocation will, when robbed of that collocation, not be a substantial part of the copyright and therefore the courts will not hold its reproduction to be an infringement. It is this, I think, which is meant by one or two judicial observations that "there is no copyright" in some unoriginal part of a whole that is copyright. **They afford no justification, in my view, for holding that one starts the inquiry as to whether copyright exists by dissecting the compilation into component parts instead of starting it by regarding the compilation as a whole and seeing whether the whole has copyright. It is when one is debating whether the part reproduced is substantial that one considers the pirated portion on its own** (at page 293 of the judgment).
(*emphasis mine*)

57 In *The Law of Copyright in Singapore* (2nd edition, 2000), George Wei’s analysis of when the “dissected” or “pirated portion” should be looked at on its own explains this dichotomy well and with which I am in full agreement:

8.30 *Appropriation of Elements Which Contribute Towards Originality.* Second, following from the earlier point, it seems that in some cases, the courts in determining whether a substantial part of the work as a whole has been taken, will pay close attention to the originality of the work in issue. After all, appropriation of those elements or parts which contribute towards the originality of the work as a whole are more likely to be qualitatively significant. For example, in the case of derivative works and compilations which are based on, derived from or which incorporate existing works and compilations which are based on, derived from or which incorporate existing works, an important issue may be to identify those elements which contribute towards the originality of the plaintiff's work as a whole. In order to do this, it may be helpful for the court to examine the separate components which go to make up such works and compilations. **At first blush, this will appear to go against the remarks in *Ladbroke (Football) Ltd v William Hill (Football) Ltd* to the effect that it is inappropriate to start by dissecting a work into its individual or separate components. However, these remarks were made in the context of determining whether a compilation as a whole could enjoy a copyright separate from the individual entries or components. Once the matter turns to the question of whether copyright in the work as a whole has been infringed, the necessity to examine the qualitative significance of the material taken may compel the court to look at the significance of that part in relation to the originality in the work as a whole.**

...

In deciding whether a work enjoys copyright as an original work, it is, of course, essential that the work as a whole should be looked at. In deciding whether there has been infringement of an original work, it is necessary to show that a substantial part of that work has to be taken. Substantiality, as noted already, is examined on a

qualitative basis and it seems to follow that the copying of parts which by themselves are not original to the plaintiff's work as a whole is unlikely to amount to infringement. In this sense, it may be helpful in deciding infringement, in some cases, to look at the component parts of the work in relation to the plaintiff's work as a whole.

...

In the United Kingdom, questions have been raised in recent cases as to whether the *Altai* approach is consistent with the remarks of the House of Lords in the *Ladbroke (Football)* case. In that case, it will be recalled that the House of Lords took the view that in deciding whether any particular work was sufficiently "original" to enjoy copyright, it would be wrong to dissect the work into its components and to ask whether each component was original. **This does not, however, mean that once copyright is found to subsist in the work that it would be conceptually incorrect to consider the different parts of the work for the purposes of determining that substantiality of the taking and infringement** (at pages 466 – 467, 471).

(emphasis mine)

58 With the above guiding principles in mind, I moved on to examine if, on the evidence before me, there was first, copying by VM, and second, if that copying constituted a substantial part of SLA's works. In doing so, I also bore in mind the enunciation by Lord Millett of the burden of proof in this regard, as elaborated on in detail in *Copinger and Skone James* (at paragraph 51 above), and which was also outlined by the Court of Appeal in *Creative Technology Ltd v Aztech Systems Pte Ltd* [1997] 1 SLR 621, where Lai Kew Chai J stated at paragraphs 59 – 60:

One of the other grounds of appeal is against the decision of the learned judicial commissioner who held that the burden of proving disassembly, on a balance of probabilities, remained with the party that asserts it. **The burden of proof does remain with the plaintiff in an infringement claim, to prove copying and access to his work, and, where there is sufficient resemblance shown between the two works, he will invite the court to draw an inference of copying. The defendant then has the opportunity to rebut the inference; to give an alternative explanation of the similarities where this is possible; and at this point, in our view, the burden shifts ...** The relevant question in our case is this: whether the inference of copying could be displaced by evidence from Aztech how in fact they had arrived at their design and that they had not done so by copying? This question is derived from *LB (Plastics) v Swish Products Ltd* [1979] RPC 611 at p 621; a proposition described by Jacob J in *IBCOS* as not so much one of law as of ‘plain rational thought’.

(emphasis mine)

59 Essentially, once SLA was able to demonstrate that there was substantial similarity and that VM had prior access to the copyright work, a *prima facie* case of substantial reproduction would be established. In these circumstances, the evidential burden would pass to VM to adduce, to the satisfaction of the court, evidence of *independent creation* or some alternative explanation for the similarities to refute SLA’s case.

The map-making process

60 It would be opportune to elaborate on the process of map-making in general as knowledge of the basics of map-making and the technical terms used towards this end was rudimentary to the determination of whether there was any

“copying” on the part of VM. It would become apparent that the process is a time-consuming and intricate one which requires a lot of expertise, skill and last but not the least, intensive human resources of the requisite calibre. It is, in short, a monumental endeavour.

61 Mr Carl Calvert (“Calvert”), SLA’s expert witness, described the entire map-making process in the expert report prepared for these proceedings, and clarified on certain points during cross-examination. For most part, his description of the “traditional” map-making process (in contrast to VM’s purported method of map-making utilising GPS data and satellite images) was unchallenged. Map-making involves the following:

(a) Determining a scientifically rigorous framework of a suitable accuracy and size to include the area to be mapped

62 First, one must determine a scientifically rigorous framework which acts as a “skeleton” for the “flesh” of the detail of an area to be mapped or added.

63 Towards this end, the concept of map projection needs to be introduced. Map projection is a two-dimensional realisation of a three-dimensional earth. First, the earth, with its mountains, valleys and oceans, must be represented as a mathematical figure: that is geodesy. Calvert described geodesy as the “science of the shape of the Earth together with its gravity field” and that “geodetic observations and computations allow for points on the Earth to be described in terms of either latitude, longitude and height or in terms of a geocentric (earth-centred) X, Y, Z Cartesian coordinates”¹¹. Geodetic datum is defined¹² as follows:

¹¹ At page 1 of Appendix B of Carl Edwin Calvert’s AEIC.

1. the mathematical shape of the earth (shape)
2. that shape's direction in space (orientation)
3. the point or points of attachment of that mathematical shape to the real or physical earth (position).

64 Then, the type of projection is chosen. Having mapped or projected the shape of the earth onto a two-dimensional surface, a rectangular grid is generally used as a reference system. This grid has an origin which is usually described in terms of latitude and longitude and various other parameters to define where it is to the earth, as well as its scale and orientation. The biggest challenge in map projection is not the mathematical formulation of a grid but the realisation of the projection – the question is how to place a mathematical formula on top of topographical detail. The answer to this used to be the process of triangulation, such that points on the surface of the earth (the topographical detail) were surveyed to great accuracy and the position on the rectangular grid computed. Triangulation has evolved over the years, but if GPS is used, the relationship between the grid and the latitudes and longitudes of the GPS needs to be known. The process of map projection is a complicated and intricate one requiring knowledge in cartography. During the process of converting the three-dimensional earth into a two-dimensional map, which is flat, distortions occur. That is why, as Calvert illustrated during cross-examination, in some map projections, Greenland in the north looks huge and bigger than it really is whereas a country on the equator looks relatively smaller.

65 The determination of the geodetic datum previously utilised astronomical and terrestrial observations to provide the position. However, with the advent of

¹² This is the definition agreed to between parties – see the letter of 3 August 2007 from Drew & Napier LLC.

satellite geodesy and GPS, astronomy and long-distance terrestrial measurements have become outmoded. As VM claimed that the use of the GPS was one of the key components in the “independent creation” of its map, it would be important to describe how GPS works. GPS uses a model, or datum, of the earth called the World Geodetic System 1984 (WGS84) which is the best-fitting model for the whole world. It does have limitations locally and for the same place on earth, a position obtained by GPS may be up to 200 m in error as compared to the geodetic datum used previously. This is stressed by Calvert as although obtaining positions from GPS may be precise, in that the numbers may be read to the nearest centimetre, the errors of GPS are in excess of that by several metres. This means that to the unskilled operator, they have perfect results which are in fact wrong. As such, in most instances, knowledge of datum transformation parameters is necessary.

(b) Fitting measurements from terrestrial and/or photogrammetric and/or remotely-sensed observations into that framework or “skeleton” and classifying the topographic data within the framework

66 Having determined the framework or “skeleton”, further surveying would need to be carried out to put in the “flesh”. Surveying is the science of measuring topographical features and constructing a model, either on paper or within a database, of those features surveyed. It is not a random artistic impression but an accurate representation of the surface of the earth but in a two-dimensional framework. The techniques and technology of surveying are varied but all methods involve working from the whole to the part. That means that all maps have their genesis in a rigid mathematical framework related to the physical shape of the earth and the detail. Traditionally, ground survey was carried out, but from the 1930s, survey from the air using the science of photogrammetry

(making accurate measurements from photographs) was done. Since the 1980s, remote sensing (obtaining satellite images which enable, using various combinations of radar wavelengths and false colour, a view of the surface of the earth) has enabled details down to a metre or less to be determined. Once the physical details have been obtained, ground checks are needed to verify the interpretation of, as well as the position of the information. These checks may also include gathering information which is not visible from the sky. Such information would include road names, house numbers, area names, township names, building names, details below bridges or flyovers and details below trees. It goes without saying, of course, that *any aerial view will only record what can be seen from the air, and what is below tree canopies and underground cannot be seen*. According to Calvert “(i)t may seem trite but the computations used to fit the remotely sensed data onto the geodetic framework must either be in the same geodetic datum or have transformation parameters to allow data from one system to fit another”.

(c) Creating vector descriptions of the data at best or at worst pixelating the data

67 The data obtained and classified can be stored either as vector data or raster data. Vector data is digital data in the form of points, lines and polygons having a geographic position and shape defined by a set of coordinates¹³. It is data which can be described as a collection of “rods” of known length and direction. All computer-based Geographic Information Systems (“GIS”) use vector data so that networks can be constructed. Raster data is the alternative representation of that data in pixels. It is the information used to represent a computer image as a grid of pixels. Rasterised graphics are made up of rows of

¹³ At page 108 of Grant Vincent’s AEIC.

pixels, such that any change in the size of the picture or the graphic itself results in a change of the pixel size as well. Typical file formats of raster data include *jpeg* and *tiff*¹⁴. The difference between the two types of data becomes critical as VM's case rested on the premise that it relied on raster data, not vector data, as would become clear below. VM's expert witness, Mr Grant Vincent ("Vincent"), gave a simple yet clear description of how vector data is converted into raster data:

... simplistically this is a process of taking large scale intelligent data, generalising it to form the smaller scale mapping and then sending to print. The data in print is 'dumb' i.e. it has no intelligence to which the user can interrogate to find value-added data.

(Grant Vincent's AEIC at page 42)

68 The interplay between the two types of data and the convertibility from one type of data to the other is explained by Calvert¹⁵:

Of course, the matter of going between VECTOR data and RASTER data and vice versa seems trivial at first glance. Indeed to go from vector to raster is simple; it means that the vector data must be first plotted as a picture then that picture is captured in a manner akin to a photograph. In other words it can be done with little or no human intervention. The reverse is not true. In going from raster to vector each and every line must be traced on a digitising tablet and so the picture is deconstructed into a series of lines, each with a length and direction and usually a list of attributes such as whether the line represents a building or road or edge of vegetation. To vectorise a

¹⁴ At page 105 of Grant Vincent's AEIC.

¹⁵ At page 7 of Appendix B of Carl Edwin Calvert's AEIC.

raster image will take many months of skilled labour as well as a set of rules which each person doing the digitising needs to follow so that the final vector data is consistent within itself.

(d) Obtaining additional data, such as names and other cultural data unavailable from remotely-sensed methods, classifying it and allocating positional attributes to that data by way of rules or instructions, as well as containing the information in a Geographic Information System to enable plotting as a picture of analysis of a geographically-related data

69 Maps are not simply pictures, and for maps to be useful, the details on the maps must be classified. They must, for instance, be classified into transport networks, public buildings, private buildings, parkland, lakes, rivers, industrial areas and so on and so forth. It is this classification which enables maps to be drawn effectively by computers, often within a GIS. GIS allows for data to be collected, stored and then reproduced at varying scales and colours with or without the appropriate generalisation. What is important to note is that having collected the names, geographical attributes and other cultural data, the location of the data needs to be associated with the framework or “skeleton” used for the map. This is not a trivial matter and depends on both a set of rules and the interpretation of those rules by the cartographer placing names or attributes in the coordinate system – the skill and experience of the cartographer is key. There are two ways of applying the names to the maps. The first is to write the name on the map so that it looks right and then obtain the coordinates of the name by “scaling off the map” (the *ab initio* method). In the alternative, a pre-determined set of coordinates is given for the name and the name is then applied to the map in the position prescribed by those pre-determined coordinates.

70 The map-making process described above is essential before any item on a map, for example, a petrol pump, will be placed in the correct *relative and absolute position*. As Calvert put it “(i)t is easy to place an object next to a known object but that placement relies on the placement of the known object. *In other words adding to a map is easier once the initial map has been made*”¹⁶. The absolute position of any object on a map is made with reference to the centre of the earth (the calculations of which involve geodesy). Another point about absolute and relative positions is this. While an object can have a correct relative position, it may have an incorrect absolute position. This distinction is critical. Calvert explained thus at the trial:

A: ... The second problem is that maps are flat. Therefore, I have to convert this three-dimensional ellipsoid to a two-dimensional sheet. If I go from three to two, I lose something. So that is why in some map projections, Greenland in the north looks huge whereas a country on the equator looks proportionately smaller. Ie I have created a distortion. **An example of this is I was in Saudi Arabia before the first Gulf War. The army, navy and air force all have maps and charts with the correct relative positions. Unfortunately, they had different geodetic datums. The result of this was that the same place on the ground had different sets of coordinates, one set for each datum. In the alternative, the same coordinates on each of the three different maps would lead to three different places on the ground. The point of craving your indulgence in explaining this is that maps can have the correct relative position but be in the wrong absolute position. It may not matter at first, but it may have**

¹⁶ At page 16 of Carl Edwin Calvert’s AEIC.

repercussions later on. It is also a fact that to determine a datum is non-trivial (Notes of Evidence at pages 115D – 116A).

This passage also highlighted the critical importance of the determination of the precise method of making any map, the parameters of which are set out in the map-making process detailed above. As would be seen later, the crux of SLA’s case was that VM had used the framework or “skeleton of SLA’s data”, without which it would be impossible for VM to produce the online maps using the methods that it claimed – there was hence no independent creation to speak of. Calvert defined the “skeleton of SLA’s data” as the absolute and relative position of any point of the map data¹⁷, which was embedded in the street directory vector data and address point vector data, and which was in turn created through SLA’s map-making efforts.

71 I should also comment on VM’s argument in its closing submissions that SLA had “run away from their pleaded case¹⁸” in that while SLA’s pleaded case for copyright infringement was based on substantial reproduction, SLA’s central argument appeared to hinge on whether VM’s maps were “based on or derived from SLA’s data which was provided under license”¹⁹. With respect, this was a mis-reading of SLA’s case entirely. SLA’s case was, from the very beginning, one based upon substantial reproduction. All the evidence on the “fingerprints” and similarities adduced by SLA (on which I would elaborate below), together with the emphasis on the “skeleton” or framework of SLA’s maps as embedded in the vector data, was for the purpose of proving substantial reproduction.

¹⁷ Notes of Evidence at page 95B.

¹⁸ Defendants’ Closing Submissions at paragraph 24.

¹⁹ Defendants’ Closing Submissions at paragraph 28.

Whether there was a prima facie case of substantial reproduction

72 Having set out the map-making process, I now turned to evaluate the evidence adduced by SLA to see if a *prima facie* case of substantial reproduction had been made out, and if so, if VM had evidence of *independent creation* or some alternative explanation for the similarities to refute SLA’s case. To this end, I first examined SLA’s evidence on copying before moving on to examine if the copying was of a “substantial” nature. As all the licence agreements came to an end as at 10 Jul 2004, the focus of the examination would have to be for evidence of copying in VM’s online maps *after* 10 July 2004. I bore that in mind and included the relevant dates on which the respective maps and databases were referred to by Calvert in my discussion below.

(a) *Evidence of copying*

73 In his expert report, Calvert pointed out numerous “fingerprints” of copying, which he described as “an object which is so inconsistent with the Defendant’s claimed methodology and so consistent with the Plaintiff’s portrayal that it is beyond coincidence that the object is the same in both portrayals”²⁰. Vincent also accepted the role of “fingerprints” in determining possible copyright infringement and that national mapping organisations put deliberate errors in their base maps for this purpose, although he denied that in this instance there was substantial reproduction²¹. Before I delved into some of the more pertinent “fingerprints”, the significance of the “fingerprints” of copying must be underscored. The weight to be given to “fingerprints” and similarities in non-

²⁰ At page 38 of Carl Edwin Calvert’s AEIC.

²¹ Notes of Evidence at page 163A – C.

essentials and errors was explained in *Creative Technology Ltd*. In that case, the Court of Appeal reversed the decision of the court below and found that there was copyright infringement. Lai Kew Chai J, who delivered the judgment of court, stated that:

Next, we turn to the literal similarities which exist (including the programming errors) between the respective firmware of the parties, when viewed in toto, raise the irresistible inference that the chances of independent development on the part of Aztech were low. Despite Mr Prescott's efforts we find that Aztech have failed to provide a reasonable explanation, one that is consistent with the absence of any copying through disassembly. **In our view the learned judicial commissioner failed to address the question of the cumulative weight and significance of all the similarities in reaching his decision, including similarities in non-essentials and errors.** In respect of the evidential effect of resemblances in inessentials, it is instructive to refer to Hoffmann J (as he then was) in the case of *Billhofer Maschinenfabrik GmbH v TH Dixon & Co* [1990] FSR 105 at p 123:

It is the resemblances in inessentials, the small, redundant, even mistaken elements of the copyright work which carry the greatest weight. This is because they are least likely to have been the result of independent design.

...

In our view the learned judicial commissioner, while having considered the evidence as a whole, failed to address the cumulative weight of all the similarities as a whole, and the 'fingerprints' in particular (at paragraphs 56, 58).
(*emphasis mine*)

74 I should address a point raised by VM on the independence and credibility of Calvert as an expert witness. There was much ado during cross-examination over whether Calvert had merely adopted SLA's own evidence by virtue of the fact that it was SLA which highlighted many of the "fingerprints" and other similarities to him. Calvert testified that some information, and in particular, SLA's vector data and satellite images found in Appendices D1, D2 and E, were provided to him by SLA for his assessment. It was suggested that Calvert merely "rubber-stamped" SLA's own opinions. Having carefully examined Calvert's answers to penetrating questions by VM's counsel on this point, I was sufficiently satisfied that all of Calvert's findings and conclusions reached in the report were his own after independent research and upon a careful analysis of all the data, images and other information conveyed to him by SLA. Calvert had, in my view, done a commendable job. He had painstakingly gone through the voluminous bundles of documents, both in hard copy and digital form, and had carried out a thoughtful and critical assessment of all the available material before him before putting up his report.

75 The "fingerprints" of copying identified by Calvert could be categorised into five groups. It sufficed to focus on key examples and features of the "fingerprints":

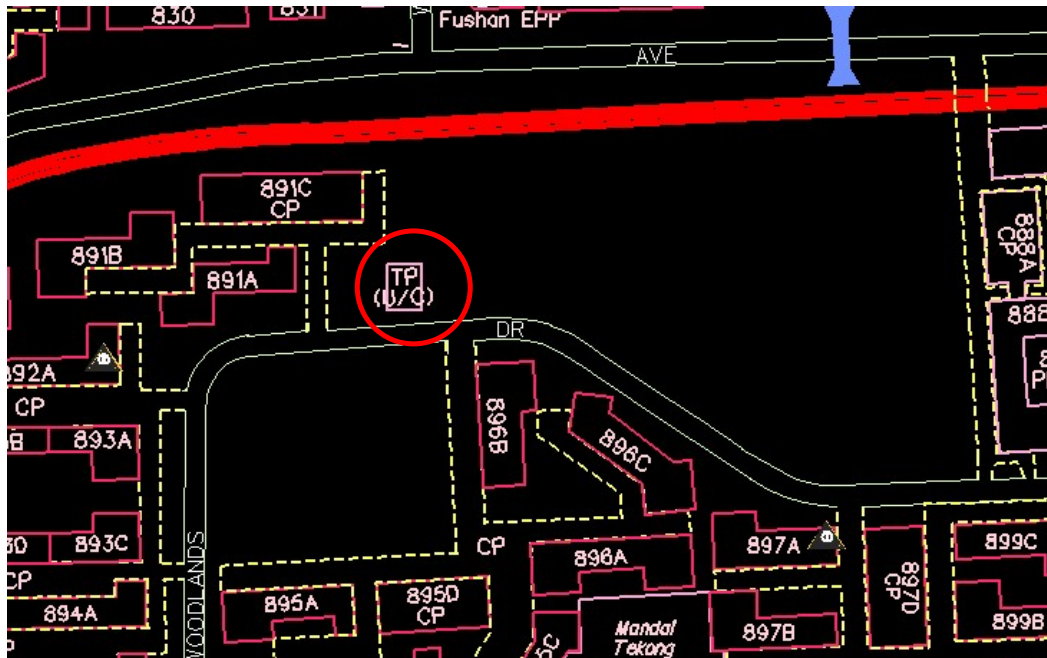
(i) Phantom or ghost details

76 Phantom or ghost details are details in a map which have been added by the map-makers and which do not exist on the ground. The purpose of adding in these ghost details is to detect copying, for if the phantom image appears on a map produced by those other than the original map-maker, it evidences copying.

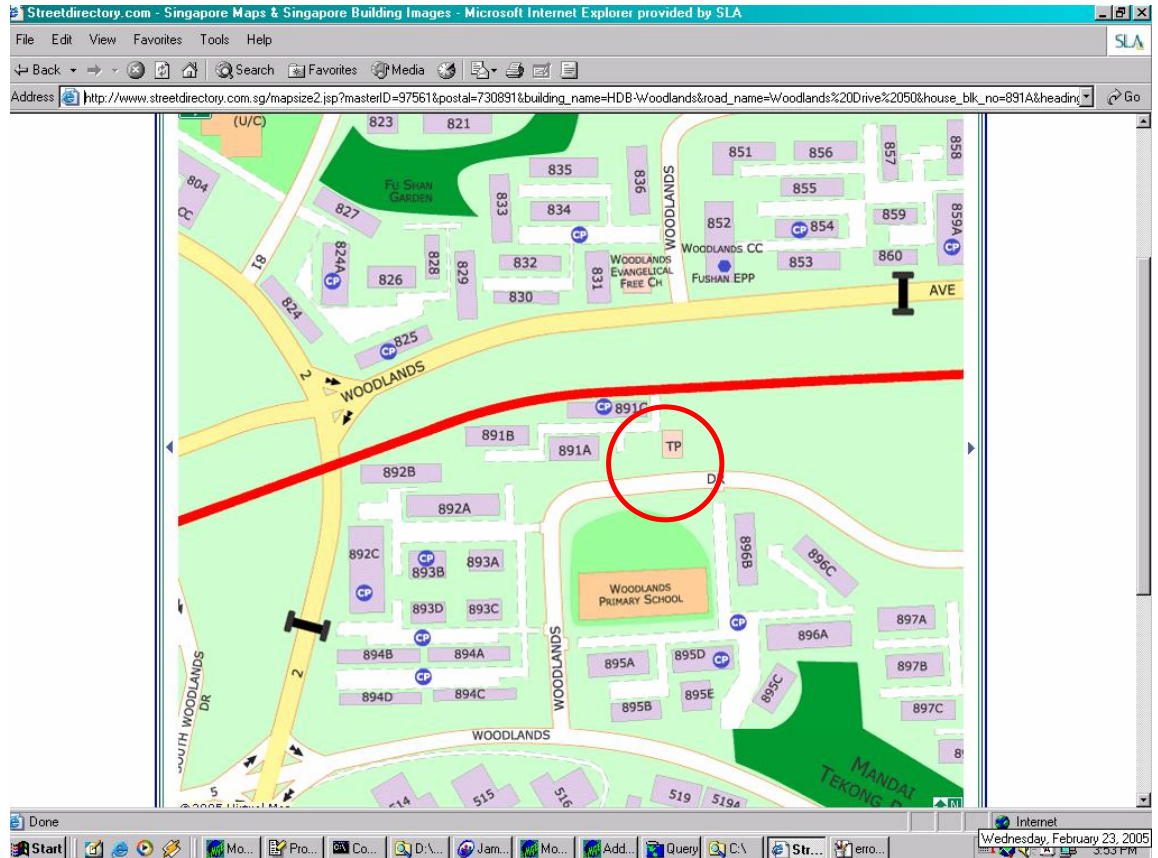
Phantom figure 1

The building labelled “TP” (for Temple) beside Block 891A, Woodlands Drive 50, does not exist. It appeared on SLA’s vector map image (Version: August 2002 – corresponding with Map 26 Grid A3 of the Singapore Street Directory). Curiously, this non-existent temple appeared on VM’s online map (screen shot taken in February 2005).

SLA Vector Map image (Version: Aug 2002)



VM screen shot (Date: Feb 2005)



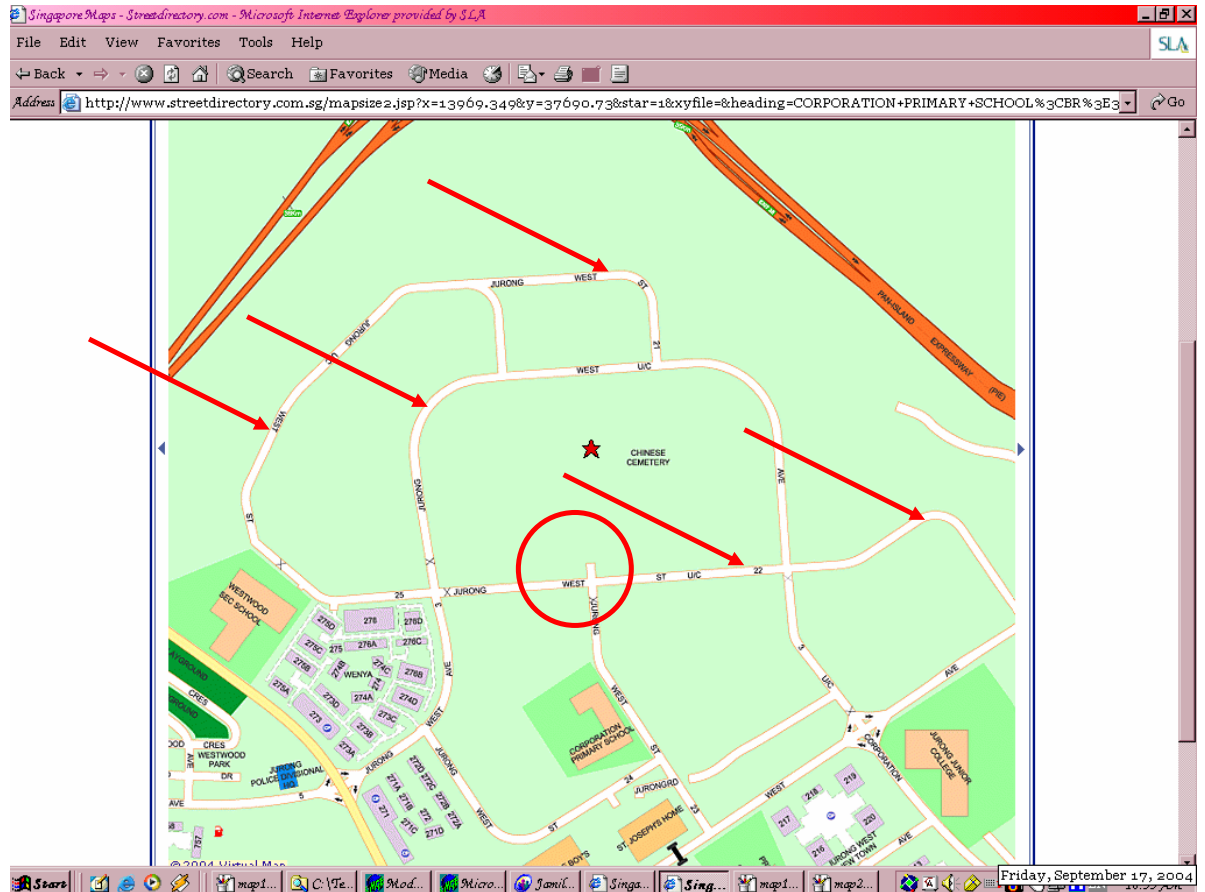
Phantom figure 2

The short road extending from Jurong West Street 23 northwards (circled) does not exist. It was created by SLA as a deliberate “error”. It appeared on SLA’s vector map image (Version: August 2002 – corresponding with Map 192 Grid A2 of the Singapore Street Directory). Once again, strangely, this non-existent road extension appeared on VM’s online map (screen shot taken in September 2004).

SLA Vector Map image zoom out view (Version: Aug 2002)



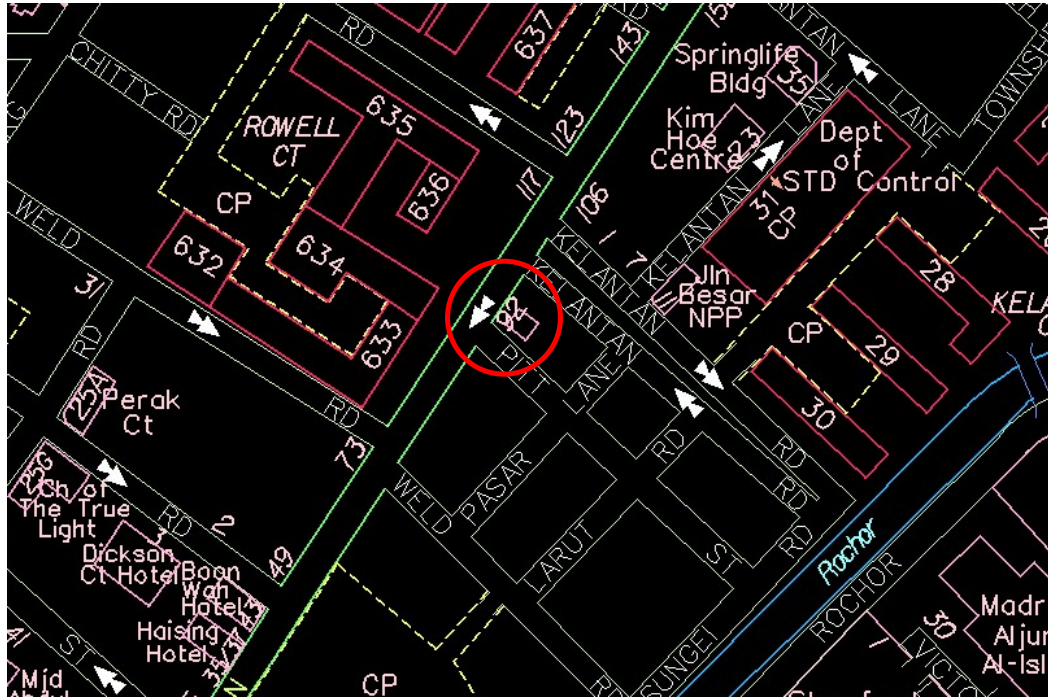
VM screen shot (Date: Sep 2004)



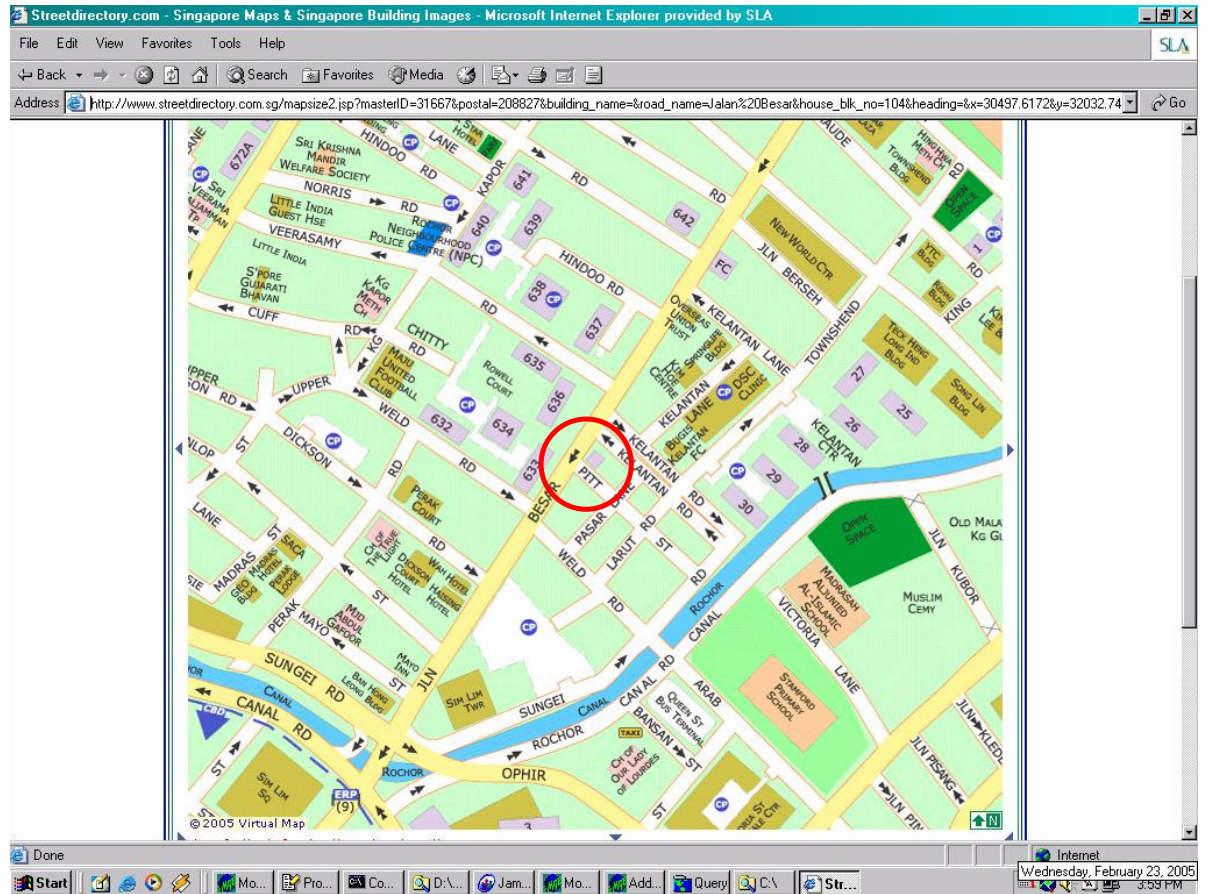
Phantom figure 3

The building numbered “92” at the junction of Pitt Street and Jalan Besar does not exist. It appeared on SLA’s vector map image (Version: August 2002 – corresponding with Map 330 Grid A3 of the Singapore Street Directory). By sheer coincidence or otherwise, this building that never was appeared on VM’s online map (screen shot taken in February 2005).

SLA Vector Map image (Version: Aug 2002)



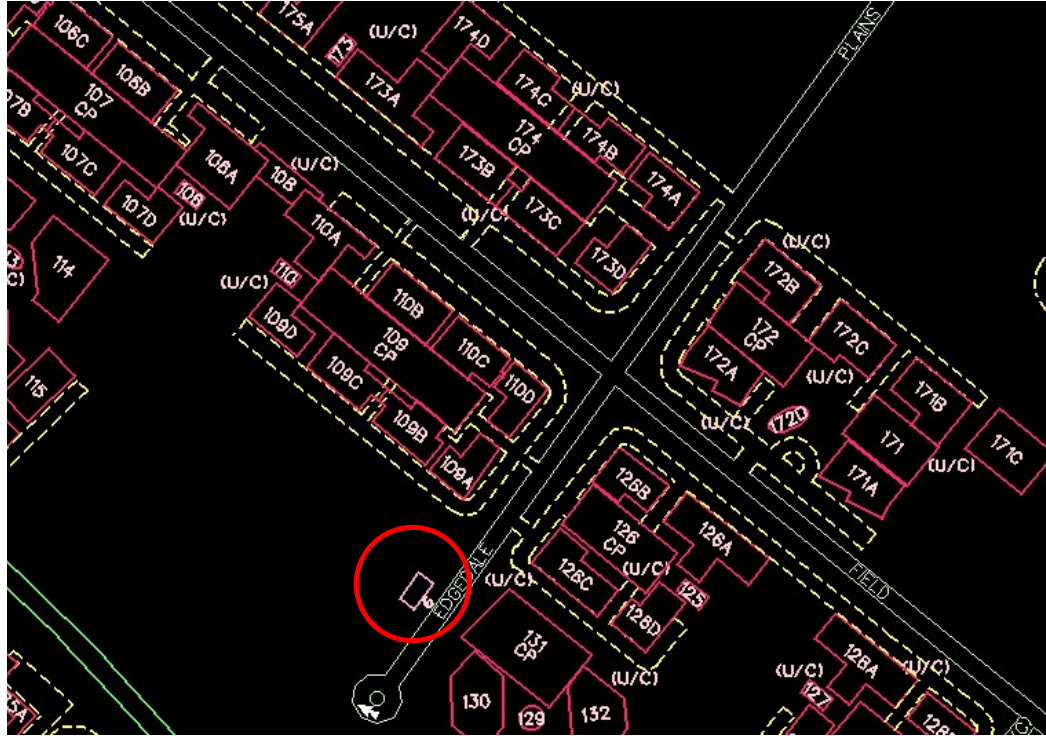
VM screen shot (Date: Feb 2005)



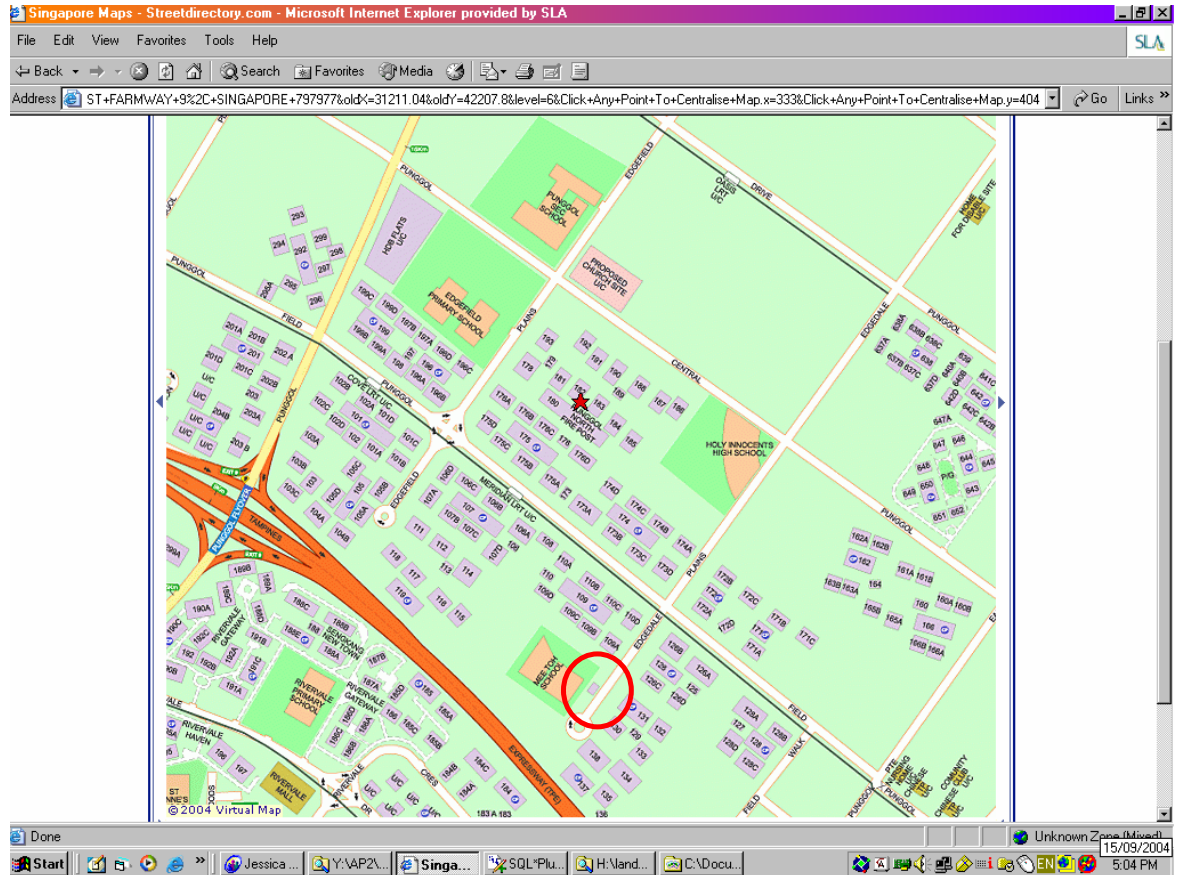
Phantom figure 4

The small building numbered “6” along Edgedale Plains opposite Block 131CP does not exist. It appeared on SLA’s vector map image (Version: August 2002 – corresponding with Map 106 Grid B3 of the Singapore Street Directory). Yet again, the “ghost” building appeared on VM’s online map (screen shot taken in September 2004).

SLA Vector Map image (Version: Aug 2002)



VM screen shot (Date: Sep 2004)



(ii) Incorrectly-named buildings and building numbers

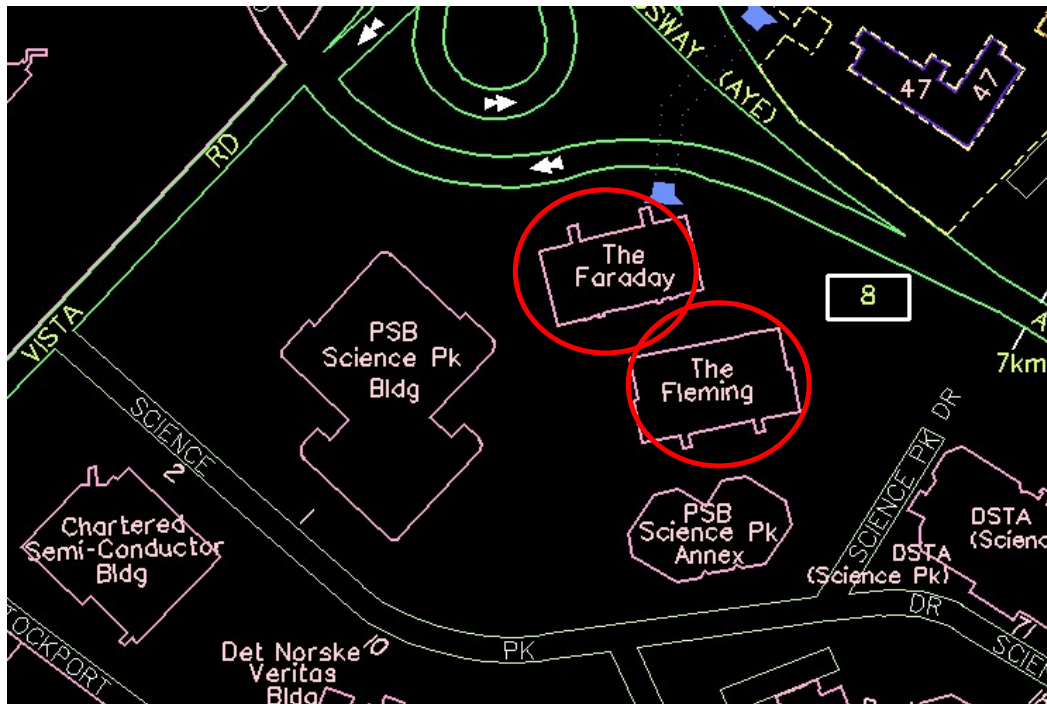
77 Two examples would be given.

Naming error 1

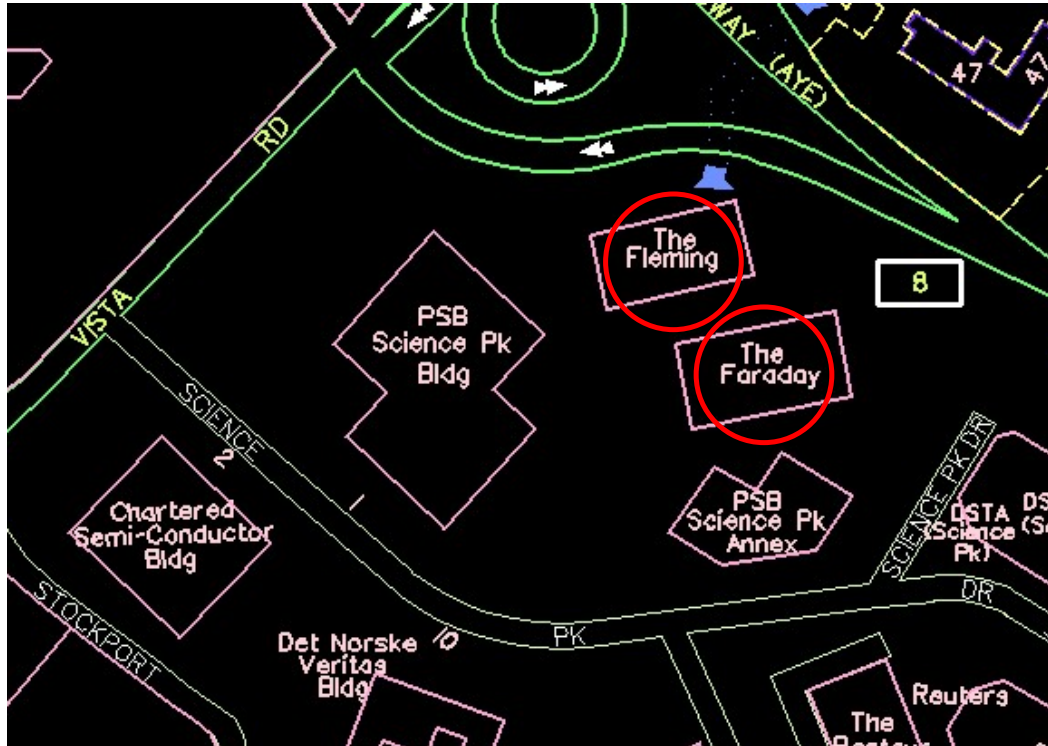
As could be seen from SLA's vector map image (Version: October 2001), the building name "The Faraday" was placed above the building name "The Fleming". In reality, it should have been the other way around and

SLA had put in the names by mistake. This error was corrected by SLA, and SLA's vector map of August 2002 contained the names in the correct positions. However, VM's online map (screen shot taken in September 2004) still contained SLA's naming error from October 2001.

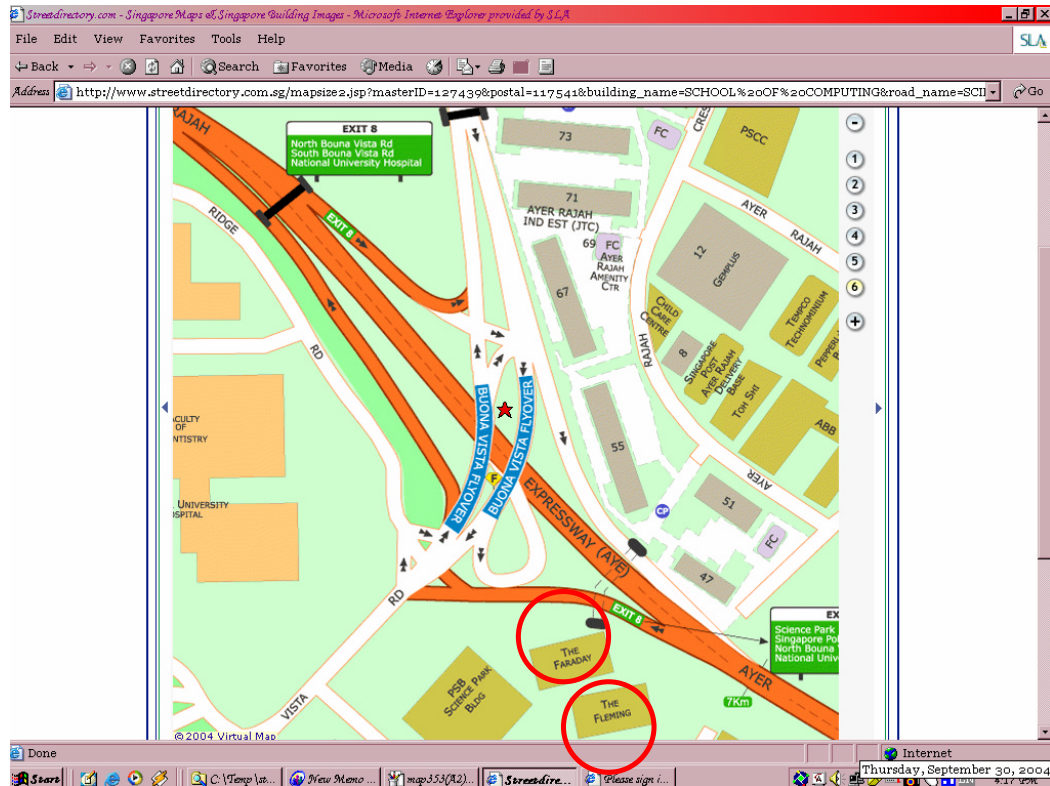
SLA Vector Map image (Version: Oct 2001)



SLA Vector Map image (Version: Aug 2002)



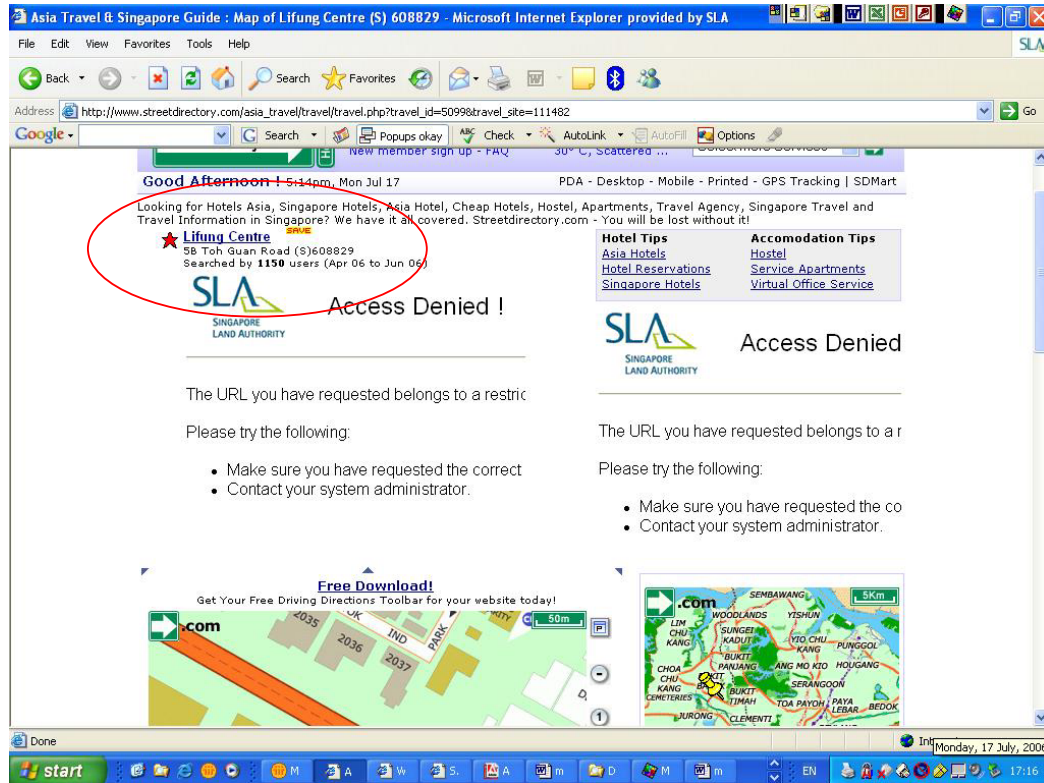
VM screen shot (Date: Sep 2004)



Naming error 2

This naming error was found in SLA's address point data. The address point data given to VM in January 2002 contained an error in the following address, which should have read "5B, Toh Guan Road East, Lifung Centre, Postal Code 608829". Instead, the address point data erroneously stated it to be "58, Toh Guan Road, Lifung Centre, Postal Code 608829". A customer reported to VM via email on 2 November 2005 the erroneous building number (ie "58") but neglected to mention the mistake in the road name. VM rectified that error on their online map. However, as can be seen from the screenshot below, VM's online map as at 17 July 2006 reflected the correct building number but still did not

have the correct address and instead reflected the erroneous address, “Toh Guan Road”.



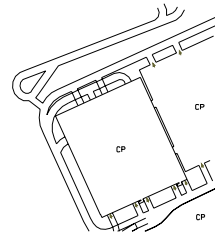
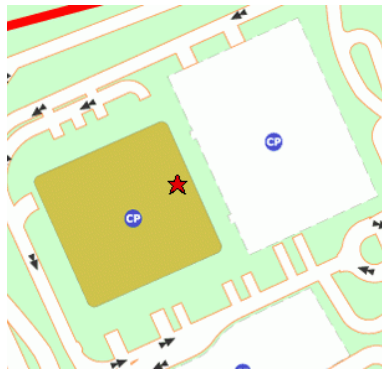
(iii) Similarities in shape

78 Annex F contained 12 examples of locations where the features portrayed on VM’s online maps were either identical or extremely similar to SLA’s vector map images. I would just highlight two by way of illustration.

Roads in an out of the car park at the Singapore Racecourse

I accepted Calvert’s analysis of this “fingerprint”, which I set out in full:

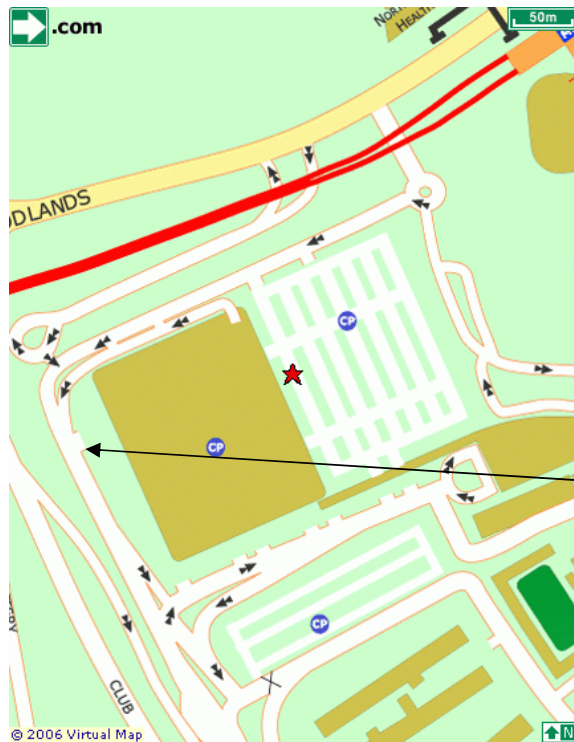
The roads into the “red-starred” car park do not meet that car park in VM’s map. However, they do in the SLA map albeit that the roads are the same length. What VM have done is to stylise the shape of the car park but leave the roads exactly as they were in the SLA maps. What is even more of a tell-tale are the two small protuberances from the right hand car park. They connect the two car parks in SLA’s map and would have done in the VM map if VM had not stylised its car park. In other words VM have stylised one of the car parks but left untouched all the other detail. In my view VM have attempted to disguise the copying but in so doing have created a nonsense where none of the roads actually meet the car park which they are intended to serve²².



VM website

SLA SD42

²² At page 173 of Carl Edwin Calvert’s AEIC.



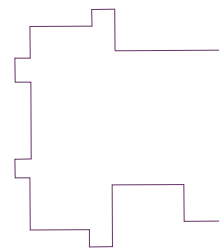
VM Website @ 16 July 2006

Fort Gate

Calvert described the orientation and shape of the building, Fort Gate, on VM's online map and SLA's vector data as follows:

The Fort Gate is identical in both maps. For VM to have determined exact same portrayal, especially as the smallest dimension from the juts on the western side is 1.5 metres, would be to fly in the face of credulity. The only possible explanation is that VM have copied the shape of the Fort Gate and it is most probable that they have copied it from SLA. The

portrayal remains constant across the years from 2004
to 2006²³.



SLA SD359

VM website

What was interesting to note was that in reality, if one were to go the site where Fort Gate is located, the shape of Fort Gate is not at all like what was depicted by SLA. The shape depicted by SLA was SLA's own interpretation. Yet, VM's depiction of Fort Gate (which was a very odd-shaped polygon) was identical to that of SLA's. This cried out for an explanation by VM.

²³ At page 180 of Carl Edwin Calvert's AEIC.

Furthermore, according to Calvert (the evidence of whom on this particular point was not challenged), there are two other buildings which are adjacent to Fort Gate which SLA had not depicted on its maps. Coincidentally or otherwise, neither did VM. As Calvert put it plainly yet poignantly:

It is not a question of what the dog said. The miracle is
that the dog spoke at all.

(Notes of Evidence at page 91A)

(iv) Unique features in SLA's address point database which also appeared in VM's address point database

79 In Appendix D2 of his report, Calvert gave illustrations of similarities in some of the address point data in both SLA and VM's databases. SLA had its unique building name convention for its address point database. For public residential buildings (HDB buildings), SLA used "HDB" as a prefix followed by the name of the estate to identify them. For example, HDB blocks in the Alexandra estate were named "HDB Alexandra". The same unique naming convention was found in VM's address point database. There were also some inconsistencies within SLA's address point database in this respect: for instance, while all HDB buildings had the prefix "HDB", some had a hyphen inserted between the prefix and the estate name such that the name became "HDB-Alexandra" while others remained as "HDB Alexandra". Upon a comparison of VM's address point database (as at 28 June 2006) and SLA's address point database (as at January 2002), Calvert found that the building names in 7,415 records or 69% out of a total of about 10,800 HDB blocks in both databases were identical.

80 To take a snapshot of the striking similarities, in SLA’s database for the Alexandra estate, out of a total of 13 records, one of the blocks within the estate was named differently in that it contained a hyphen between the prefix, “HDB” and the estate name, “Alexandra”. VM’s database contained the same number of records for the Alexandra estate (ie 13). What was even more telling was that Block 138 Alexandra Road was named “HDB-Alexandra” in both SLA and VM’s database (as at January 2002 and 28 June 2006 respectively).

81 As another illustration, there were some unique and unusual names for the HDB blocks, for example, “HDB-Kallang/Whampoa/Novena” for the blocks in the Kallang, Whampoa and Novena areas. VM’s database (as at 28 June 2006) used exactly the same convention and building names for all the 102 blocks found in these areas. A scan of the SLA database (as at January 2002) also revealed 102 records with exactly the same name.

(v) Identical X & Y coordinates for 58 address points in VM and SLA’s databases

82 The X & Y coordinates of the address points generated by SLA in their address point database had its origins in its geodetic datum – this was not in dispute. The X & Y coordinates reflected the point that SLA chose as the geographical location of a building or units in the same building which share the same six-digit postal code. To put it in another way, each postal code would have one set of unique X & Y coordinates. Where the six-digit postal code is shared by many units in the same building (eg all the flat units in the same block, a row of shop houses), all the units in that same building will have the same postal code and hence the same X & Y coordinates. The importance of highlighting this would become immediately obvious when one examined the character of the 58

identical coordinates. VM contended that the fact that there were only 58 identical coordinates out of 120,000 address points went on to show that there were no similarities between the two sets of address point data and, *a fortiori*, no evidence of copying. This argument, while attractive at first blush, could not stand when one examined the nature of some of these identical coordinates.

83 Calvert made a comparison of SLA's address point database as at January 2002 with VM's address point database as at 28 June 2006. Calvert looked at certain groups of address points which involved a cluster of units in the same building which would in turn have the same postal code. Logically speaking, the X & Y coordinates for all the units would be the same as they are all in the same building with the same postal code, and for which there should be only one set of X & Y coordinates. However, this was not so for VM's address point database. This would be best illustrated with reference to the screenshot of the relevant address point data from the two databases:

SLA Address Point Database (As of January 2002)

mslink	Field2	bldg name	house blk no	road name	postal code	ma ind	si	x_addr	y_addr	bd_id
101514	2	ICB SHOPPING CTRE	8L	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8K	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8J	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8H	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8G	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8F	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8E	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8D	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8C	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8B	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8A	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105
101514	2	ICB SHOPPING CTRE	8	YIO CHU KANG ROAD	545522	y	1413	32949.35	37408.32	1010000000105

VM Address Point Database (As of 28 June 2006)

place_name	former_place_name	block	streetname	former_streetname	postal	x_addr	y_addr
ICB Shopping Centre	NULL	8	Yio Chu Kang Road	NULL	545522	32945.47	37420.09
ICB Shopping Centre	NULL	8A	Yio Chu Kang Road	NULL	545522	32949.35	37408.32
		8B	Yio Chu Kang Road	NULL	545522	32939.6	37419.15
		8C	Yio Chu Kang Road	NULL	545522	32949.35	37408.32
		8D	Yio Chu Kang Road	NULL	545522	32949.35	37408.32
		8E	Yio Chu Kang Road	NULL	545522	32949.35	37408.32
		8F	Yio Chu Kang Road	NULL	545522	32949.35	37408.32
		8G	Yio Chu Kang Road	NULL	545522	32949.35	37408.32
		8H	Yio Chu Kang Road	NULL	545522	32949.35	37408.32
		8J	Yio Chu Kang Road	NULL	545522	32949.35	37408.32
		8K	Yio Chu Kang Road	NULL	545522	32949.35	37408.32
		8L	Yio Chu Kang Road	NULL	545522	32949.35	37408.32

84 There are many units in the building, ICB Shopping Centre, along Yio Chu Kang Road. Comparing like with like, it would be observed that the two databases contain exactly the same 12 unit numbers (8 – 8L: note that there is no unit “8I”). The postal code for all 12 unit numbers are exactly the same in both databases (545522). It should follow that, whatever the exact calculation for the X & Y coordinates is, the coordinates should be the same *within* each database as the coordinates are for the same building, ICB Shopping Centre, with the same postal code. This was so for SLA’s database. Surprisingly, and might I add inexplicably, the coordinates for two of the 12 units (ie units 8 and 8B) in VM’s database were different from the rest. In addition, the X & Y coordinates for the other 10 units (which are boxed in red) were exactly the same as those in SLA’s

database for these 10 units. This, in my view, was clearly a “fingerprint” of copying and which was suggestive of VM trying to alter the X & Y coordinates to hide the evidence of copying. VM was obliged to give a rational explanation in order to refute the allegation of copying. This coincidence of identical X & Y coordinates was illustrated by Calvert in a few other examples²⁴.

85 Calvert also did a random check and highlighted address point data for five postal codes (ie 439125, 439134, 439137, 439141 and 439149) which were provided to VM by SLA in 2000 and 2002. As a matter of fact, on 27 July 2004 (shortly after the termination of the agreements), SLA updated its database to reflect that the buildings (to which the postal codes were tagged) were “demolished” as they had been already demolished *before* 2003. Somehow, VM’s database still contained the coordinates (albeit with slightly different coordinates) for these postal codes although the buildings are no longer in existence. Calvert was of the view that “... the information which VM used cannot have been new, but from SLA”²⁵.

86 Bearing in mind the *nature* of the identical address point coordinates, I agreed that where the address point database was concerned, there was at least *prima face* evidence of copying. In addition, against the backdrop of the whole map-making process, and in particular, the determination of the absolute and relative position of every point on a map which makes up the “skeleton” of a map, I agreed with Calvert’s analysis that:

To have one identical may be coincidence to have two is suspicious, to have 58 is incontrovertible evidence that the co-ordinates come from the

²⁴ At pages 100 – 102, 104 of Carl Edwin Calvert’s AEIC.

²⁵ At pages 108 of Carl Edwin Calvert’s AEIC.

same source. Furthermore, as building outlines in SLA and VM are of different shapes, the chances of both generating the exact same centre points for each building is so infinitesimally low as to be negligible (at pages 97 – 98 of Carl Edwin Calvert’s AEIC).

87 I should stress that the evidence of copying advanced by SLA through Calvert was primarily in respect of the street directory *vector* data and address point *vector* data. The illustrations of “fingerprints” were made with reference to SLA’s vector data in the main. On a careful perusal of the evidence before me, I found that there was insufficient evidence to show that VM had copied SLA’s Singapore Street Directory (be it in raster format or hard copy). This notion was reinforced by the fact that the data licensed to VM comprised vector data in *dxf* format, not raster data or hard copies of the maps. There was no convincing evidence to suggest that VM had access to any other of SLA’s data except to the street directory vector data and address point vector data. In any event, so long as SLA could prove substantial reproduction of its vector data by VM, and in the absence of proof of independent creation on VM’s part, it would still succeed in its claim for copyright infringement.

(b) Whether copying was substantial in nature

88 Having found that there was indeed evidence of copying of SLA’s vector data on the part of VM, there remained the question of whether the copying or appropriation was substantial. Substantiality, as was explained earlier, depends on quality, not quantity. Whether the part taken is substantial depends on its importance to the copyright work. On the evidence presented, my answer to this question was clearly in the affirmative.

89 I had earlier explained the importance of the creation of the framework or “skeleton” of a map and that the “skeleton of SLA’s data” lay in the absolute and relative position of any point of the map data. Calvert added that other essential features of SLA’s maps included a consistent scale over the whole area mapped, the horizontal and vertical lines which constitute the grid of the map, the edges of each page of the map and the positioning of one road relative to another.

90 The essence of the “skeleton” or framework of SLA’s map lay in its topological and geometrical fidelity, or in other words, the relationship between objects and the relationship of individual objects to the geographical whole. To put it simply, without the “skeleton” created, there would be no map to speak of. The “skeleton” of SLA’s map, as well as the “flesh” of the map such as the depiction of the road network and buildings, building and street names, are all embedded in the street directory vector data and address point data, both of which were licensed to VM up till 10 July 2004.

91 The cumulative weight of all the similarities and “fingerprints” found, viewed together, pointed without a doubt to the inference that, *prima facie*, there was not only copying, but widespread or wholesale copying by VM. The copying was nothing other than substantial. VM argued that as the “fingerprints” did not pertain to essential features, there was hence no evidence of substantial reproduction. The expert witness for VM, Vincent, was of the view that any minor “ghosting” similarities could not be regarded as significant or substantial²⁶. The truth was quite the contrary. To echo the poignant remarks by Hoffmann J (as he then was), it was the resemblances in inessentials, the small, redundant, even mistaken elements of the copyright work, as seen in the “fingerprints” which I highlighted above, which carried the greatest weight and which, in my

²⁶ See pages 11, 13 – 14 of Grant Vincent’s AEIC.

view, represented just the tip of the iceberg. This was because such seemingly insignificant errors and similarities were, unless proven otherwise, least likely to have been the result of independent design. Not only had SLA been able to establish a *prima facie* case for substantial reproduction in terms of the amount of material in the street directory vector data and address point vector data which was copied, it had also demonstrated that what was appropriated was qualitatively significant to SLA since it was an appropriation of data which comprised the backbone or “skeleton” of its maps. There was also no denying that VM had prior access to the street directory vector data and address point vector data as SLA’s licensees.

92 Calvert in his report stated that he examined VM’s online maps on 7 March 2005 and 24 July 2006, among other dates²⁷. There are six “levels” of magnification to VM’s maps (levels 1 – 6, level 1 being the smallest scale and level 6 being the largest scale, which was also the most detailed). For the purposes of his report, he included only VM’s level 6 online maps, although he also looked at the online maps at levels 4, 5 and 6. He added that in July 2006, he did not look at the maps of any other level except those at level 6. He admitted that he never looked at the maps at levels 1 to 3 and that he only saw that there were six levels of VM’s maps upon his arrival in Singapore for the trial. When VM’s counsel suggested that the opinions expressed in his report could not extend to maps at other levels other than level 6, Calvert disagreed, and explained why:

... **For the simple reason that the method of independent creation claimed does not differentiate between scales.** Therefore, if the same method of survey and data collection exists for Level 6, then unless I

²⁷ At page 10 of Carl Edwin Calvert’s AEIC

have evidence to the contrary, it must extend to the other levels also (at Notes of Evidence page 109B).

(emphasis mine)

93 Vector data and vector maps, by their nature, are scaleable, unlike raster data and images. I accepted Calvert’s explanation, subject to any contrary evidence adduced by VM when seeking to prove independent creation, for which, as would be seen below (at paragraphs 103, 109, 110 and 121), there was none. This showed that the same method of survey and data collection was used across all levels – if there was substantial copying of SLA’s street directory vector data and address point vector data, it was in respect of all levels of VM’s maps.

94 Having found that SLA had made out a *prima facie* case of substantial reproduction of its vector data, the onus was now on VM to convince the court that the similarities and “fingerprints” were a result not of copying but of independent creation.

(c) *Were VM’s online maps the result of independent creation?*

95 VM claimed that its online maps from 9 August 2004 were independently created using GPS data and high-resolution satellite imagery, which was then validated on the ground and continuously revised and updated. The thrust of the matter was whether the map-creation process depicted by VM was truly independent, and which did not require reliance on SLA’s street directory vector data and address point vector data. To address this issue, the evidence of Mr Khairul Anuar Bin Mohd Yunos (“Anuar”), who carried out GPS surveys of Singapore’s roads in a “Kangoo” van, and Mr Rizal Firdaus (“Rizal”), who, using the GPS results obtained from Anuar’s surveys, “created” the maps which were subsequently uploaded onto VM’s website, was crucial.

96 Anuar works for Robert J Steiner Pte Ltd (“RJS”) as a surveyor. RJS provides computer software and image reselling, business management and consultancy services. RJS entered into an agreement with VM to, *inter alia*, manage and update data of VM’s online maps through ground (or on-foot) surveys, conduct GPS surveys of Singapore from early April 2004 onwards, conduct verification surveys, update and manage VM’s address point database and manage VM’s website. According to Mr Adrian Khoo, a director of RJS, no less than 13 surveyors were involved in ground surveys. Anuar testified that he did not have any qualifications in land survey and had never been a surveyor previously²⁸. Rizal is the team leader of the map team in PT VMI Technologies (“VMI”), based in Indonesia. VMI provided services to VM in the design, maintenance and update of VM’s online maps, including the updating of VM’s address point database. He joined VMI in January 2003 as a web programmer *cum* designer and was later appointed as a team leader. From the description of his job duties in his affidavit of evidence-in-chief, he, like Anuar, did not seem to have qualifications in land survey or expertise in cartography. Vincent, in his discussions with both Anuar and Rizal, was not aware if either of them had requisite qualifications in land survey or photogrammetry. I should point out that Vincent did not read either of their affidavits of evidence-in-chief until the court, with the concurrence of both counsel, extended to him some time to read the affidavits during cross-examination. Yet, without the two key personnel involved in VM’s purported independent map creation having the know-how, expertise or experience in the “traditional” method of map-making explained above, VM sought to convince the court that it could sustain the claim of independent creation of its online maps through the use of GPS data obtained from GPS

²⁸ See Notes of Evidence page 180B.

surveys, supplemented by satellite images. VM's counsel described this method plainly as follows:

Defendants say that by virtue of their GPS surveys almost all roads in Singapore, with a car equipped with a GPS machine, it was possible to derive from the downloaded GPS data an outline of all the major roads and minor roads in Singapore. If you use that outline and put it on top of satellite images of Singapore, you would be able to derive a framework, so to speak, of a map with all the major roads in Singapore.²⁹

97 The court moved on to analyse if this method of map-making which relied on advancements in modern technology would amount to independent creation in this case. The method of the GPS survey would first be detailed, followed by the "creation" of the online maps with data obtained from the survey. Before that, it should be noted that VM accepted that their online maps prior to 9 August 2004 were derived from SLA's street directory vector data and address point vector data. Eugene Lim acknowledged that from 11 July 2004 to 8 August 2004, the online maps were based on SLA's maps³⁰. However, it was denied that this was so for VM's online maps from 9 August 2004.

98 Anuar commenced the GPS island-wide surveying project in April 2004. The survey method used was the same up to the latest road surveys done in 2006. The method used for the GPS survey was simple, although it could not be denied that much time and energy was spent conducting the survey. With the maps to be surveyed assigned to him, Anuar would drive around the roads of Singapore in his Kangoo van, which was fitted with GPS equipment, as well as what he called

²⁹ At Notes of Evidence at page 135B – C.

³⁰ At Notes of Evidence at page 191C – E.

VM's in-house GPS tracking software known as "VM Space" which was installed in an IBM laptop. Critically, Anuar stated in his affidavit of evidence-in-chief at paragraph 8 that:

The **vector data licensed from the Singapore Land Authority ("SLA") would already be installed in VM Space** for each map area assigned to me.
(emphasis mine)

He also testified that VM Space contained the maps of the whole of Singapore. It would be pertinent to point out that during his examination-in-chief, Anuar sought to remove the sentence just quoted from his affidavit. When the court asked why he put it down in the first place, he said that he was mistaken about it. He tried to explain that he realised only in the few days before he took the stand that he had misunderstood the facts and that according to his boss, there was "never a vector data issued to me during my course of work"³¹. However, in light of the fact that one of the key questions of fact to be decided was the content of VM Space itself, and Vincent had been specifically cross-examined on this point with reference to paragraph 8, with the concurrence of both counsel, I was of the view that this sentence should not be deleted. In any event, Anuar could clarify his evidence on this point during cross-examination and re-examination. Indeed, Anuar said during cross-examination that he did not know what maps were used in VM Space and where the maps originated from, save for the fact that there were maps in VM Space.

³¹ At Notes of Evidence page 178C.

99 The GPS system would track and record the route of the Kangoo van. Red lines representing the route would appear in VM Space. Below was a screenshot of what appeared in VM Space:



100 Where it was observed that the red lines did not coincide exactly with the road networks in the base map in VM Space, Anuar would drive on those roads a few more times and take note of the amendments to be made to the tracks (that was why one would see multiple red lines or the formation of a very thick red line

for some roads in the screenshot above). The straight red lines were either the result of the surveyor switching off the GPS tracking device at the end of the day or when the van entered an area where there was no GPS reception.

101 It would become apparent that what Anuar in effect was doing through his survey was to verify the accuracy of the maps in VM Space. Anuar admitted this himself – when SLA’s counsel asked him if what he was doing when he was conducting his GPS survey was to use the survey to verify the data in VM Space, he agreed, but added that he also had to make amendments by drawing in new roads. However, he did not shift the position of the roads within the red lines. According to Adrian Khoo, the GPS surveying carried out by RJS is an ongoing process in order to keep VM’s online maps as updated as possible.

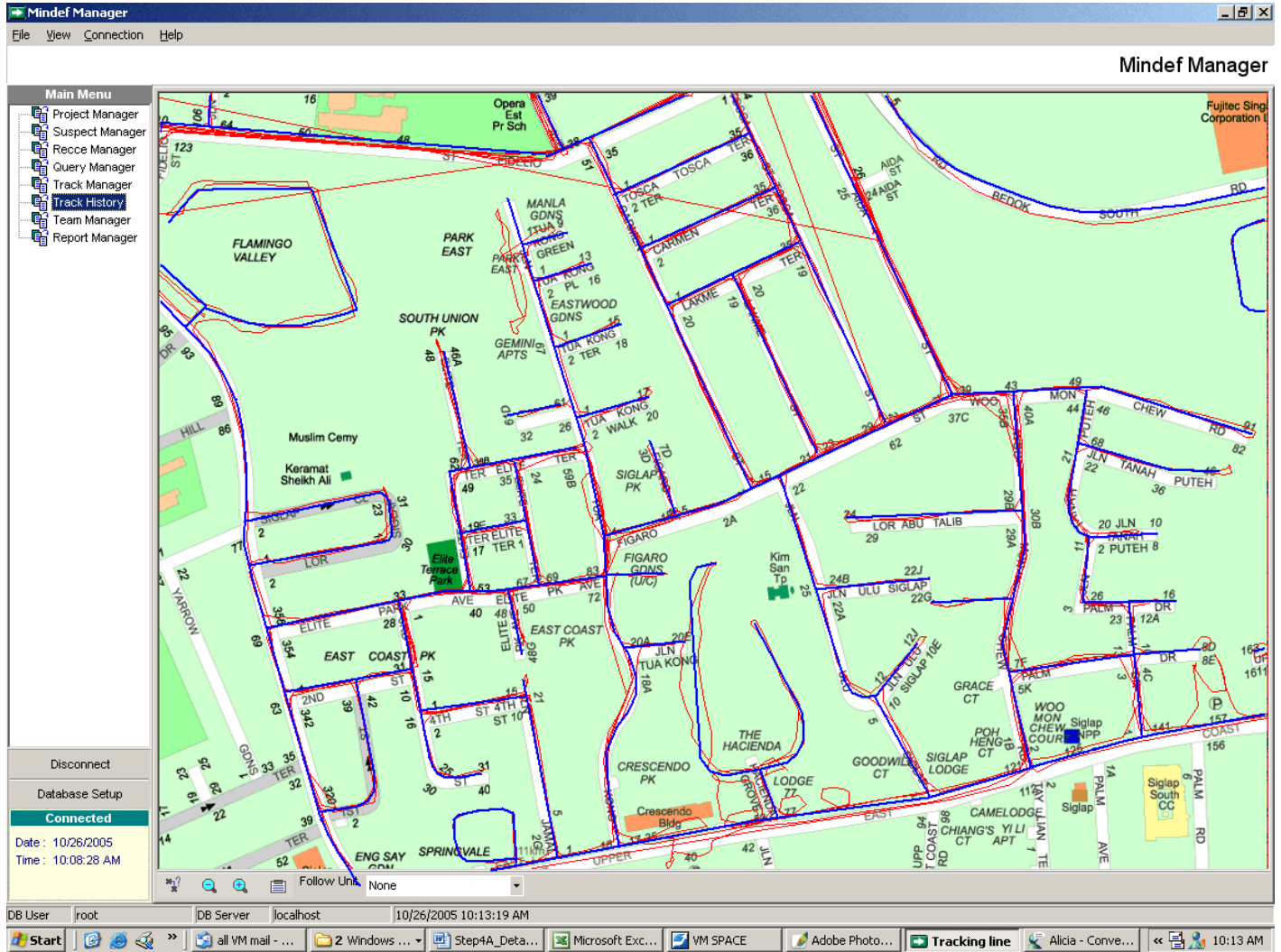
102 The issue hence boiled down to the genesis of the content in VM Space. If what Anuar was relying on as his base data which he was tasked to verify was independently created, it would give credence to VM’s claim of independent creation. It was in Rizal’s evidence where the answer lay.

103 Rizal demonstrated for the court how he “created” all of VM’s online maps. Rizal described how he converted Anuar’s raw data from the GPS survey into the online maps found on VM’s website. For the online maps prior to 9 August 2004, he would first convert SLA’s vector data (which was in *dxf* format) into *dxf12* format (the conversion from *dxf* to *dxf12* format was necessary as the computer software which Rizal used to edit the vector data, Macromedia Freehand 7, was compatible with *dxf12* but not *dxf* format), then edit or process the maps by making them more “interactive and fully coloured” using computer software. As explained earlier, there are six “levels” of magnification to VM’s maps. At level 1, one can view a given location in relation to the whole of

Singapore. At higher levels, one can view that same location in relation to its immediate surrounding areas. At this stage, he would have two duplicate copies of the *dxf12* file, each for levels 4, 5 and 6. The difference between the maps of each of these levels was the style, size and amount of text, and the size of the images. Rizal added that the map-making process for the maps at levels 1 – 3 was similar to that for levels 4 – 6. The only difference was that the freehand file (which was derived from the vector data in *dxf12* format) was different. The last stage was to convert the enhanced vector maps into raster maps (the rasterisation process). The files would be converted using Adobe Photoshop into a *gif* format with different dimensions for levels 1 – 6. After touching up the raster maps, they would be uploaded onto VM’s website. As I mentioned earlier, VM accepted that the online maps up till 8 August 2004 were derived from SLA’s vector data.

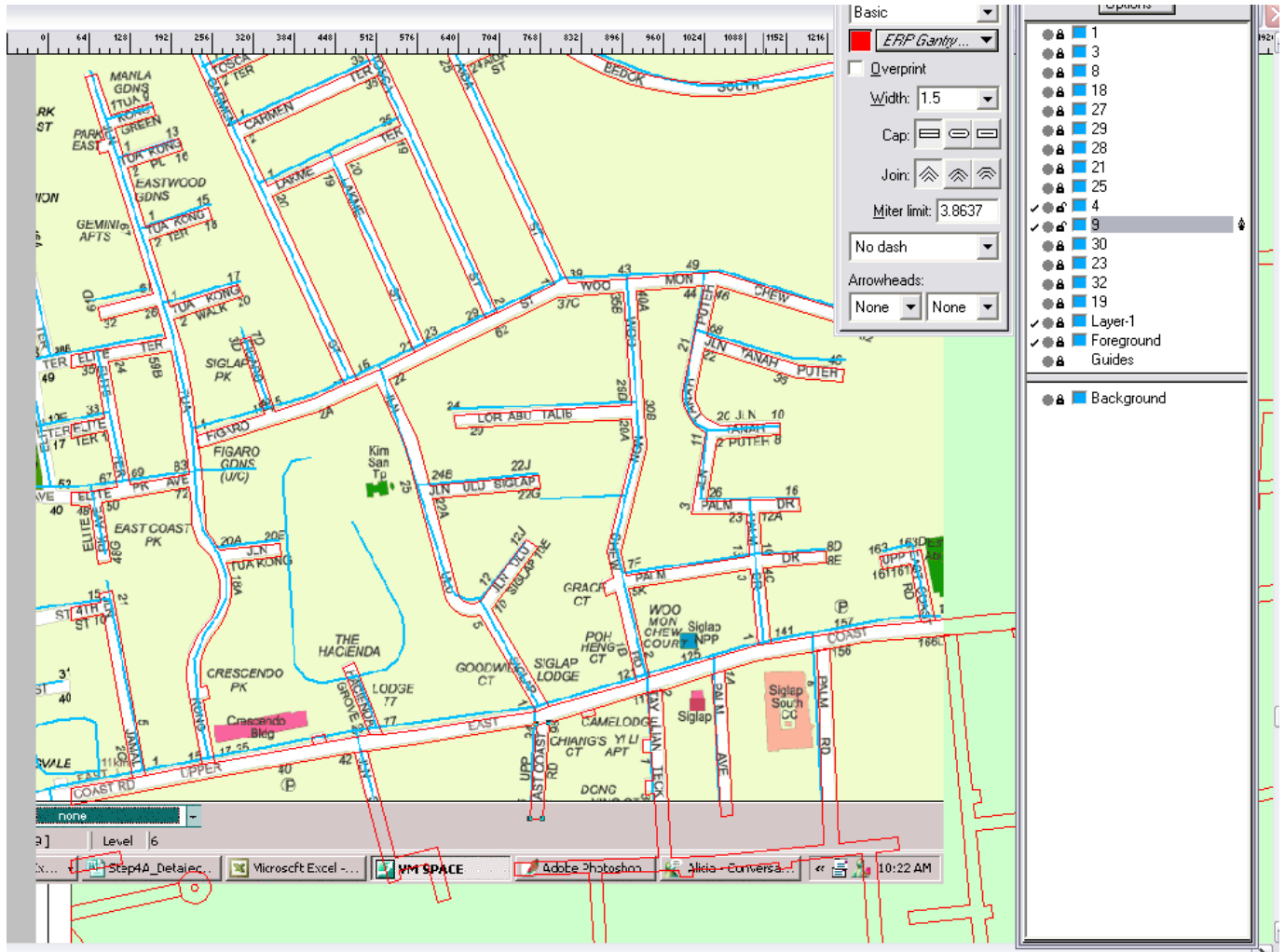
104 Rizal claimed that a new set of online maps was uploaded on 9 August 2004 and that these maps were not derived from SLA’s vector data. He described the “creation” of the new set of maps accordingly. First, he would use the GPS data (ie the red lines) from RJS’s surveyors and trace the roads in a blue line in what would be the centre of the roads (see Figure 1 below). He confirmed that the underlying map seen in Figure 1 came from VM Space, which was a raster map.

Figure 1



105 He would then refine and adjust the blue lines to best indicate the position of the road in question based on the GPS data and his own judgment. In so doing, he would have reference to SLA's vector data (see the red lines in Figure 2 below):

Figure 2



106 He would then increase the breadth of the blue lines to form the roads (see Figures 3 and 4 below)

Figure 3

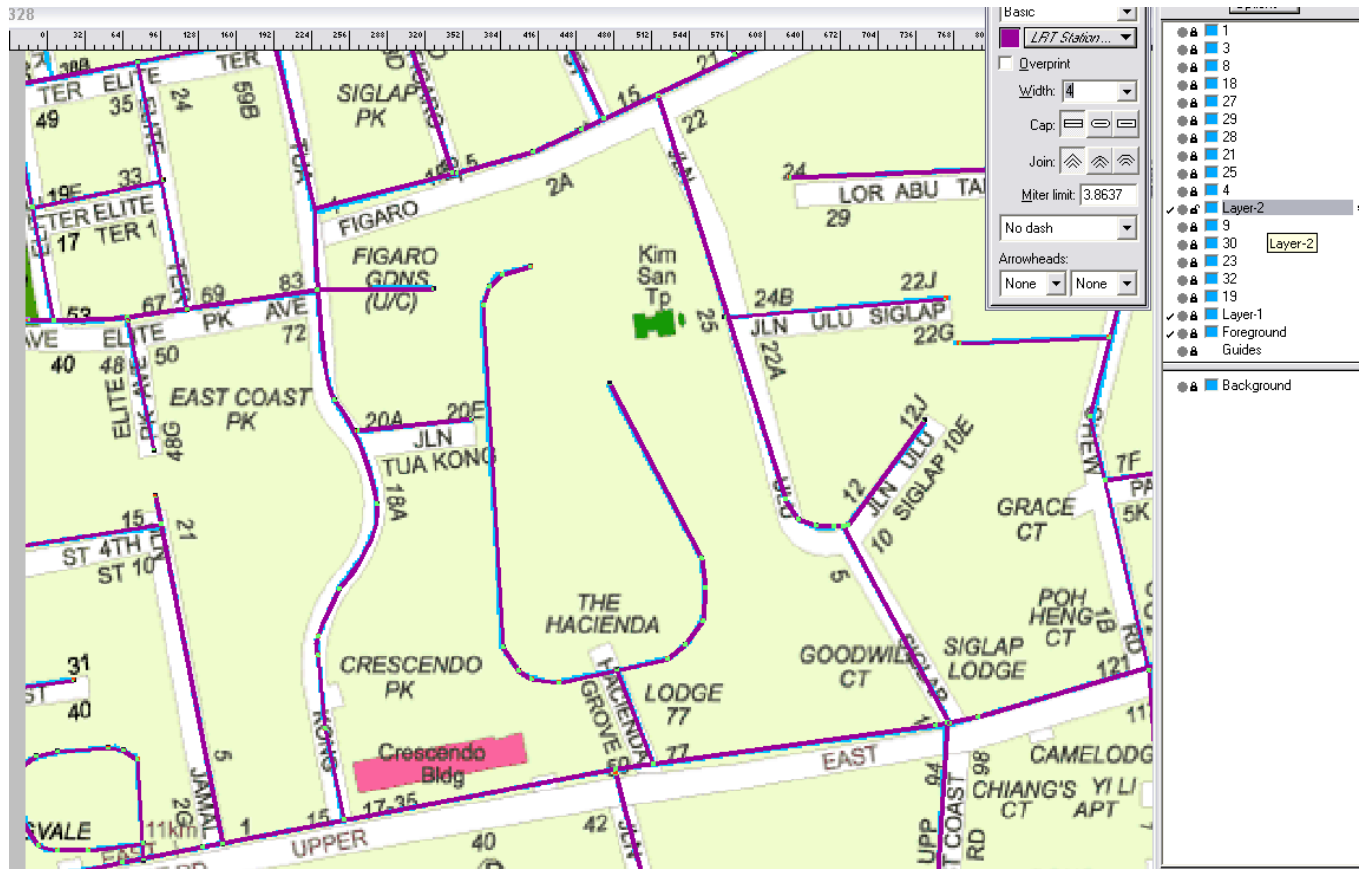
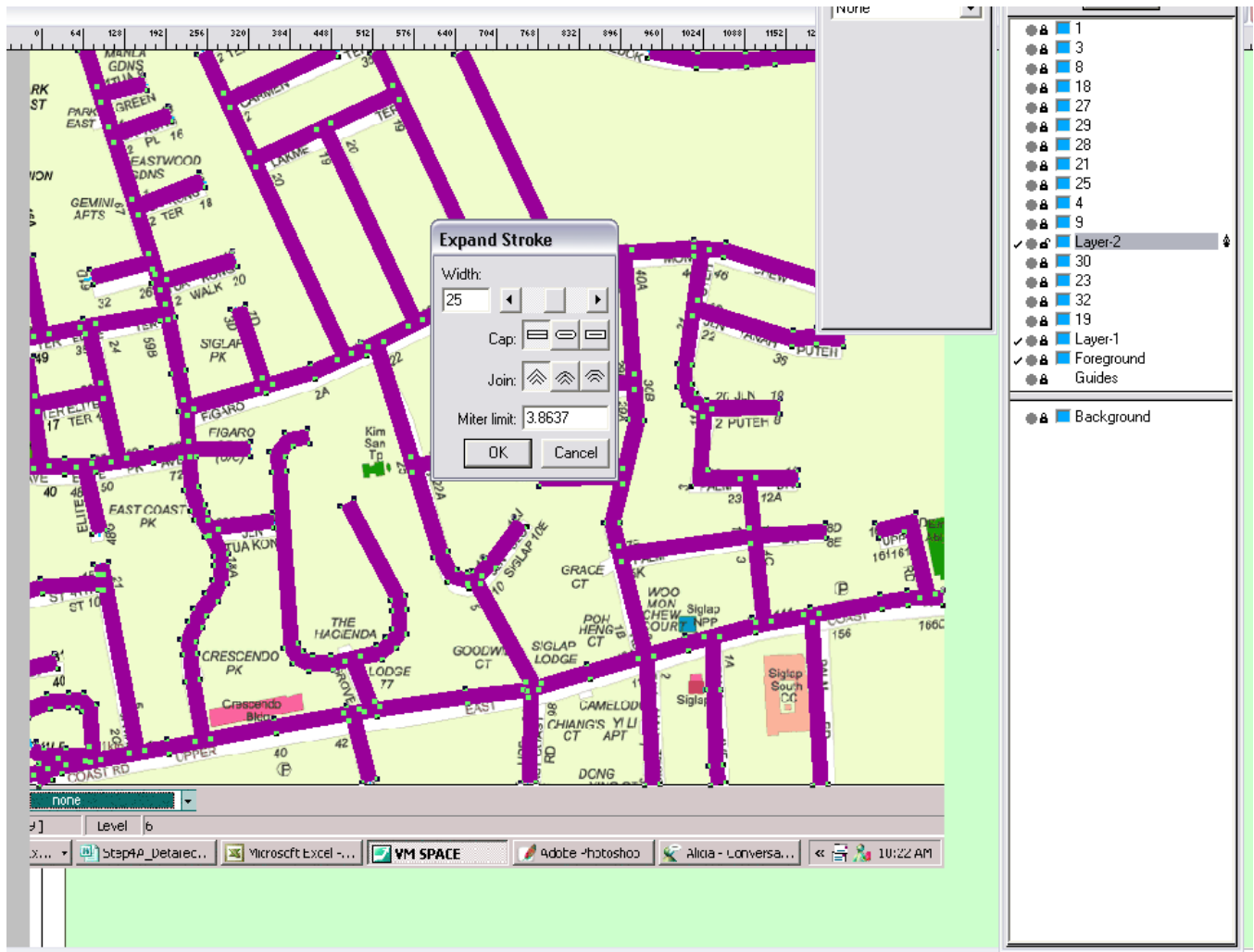


Figure 4



107 Figure 5 shows the “newly-created” roads. Figure 6 compares the “newly-created” roads with the old roads (ie the roads (the blue lines) displayed in VM Space which Anuar made reference to).

Figure 5

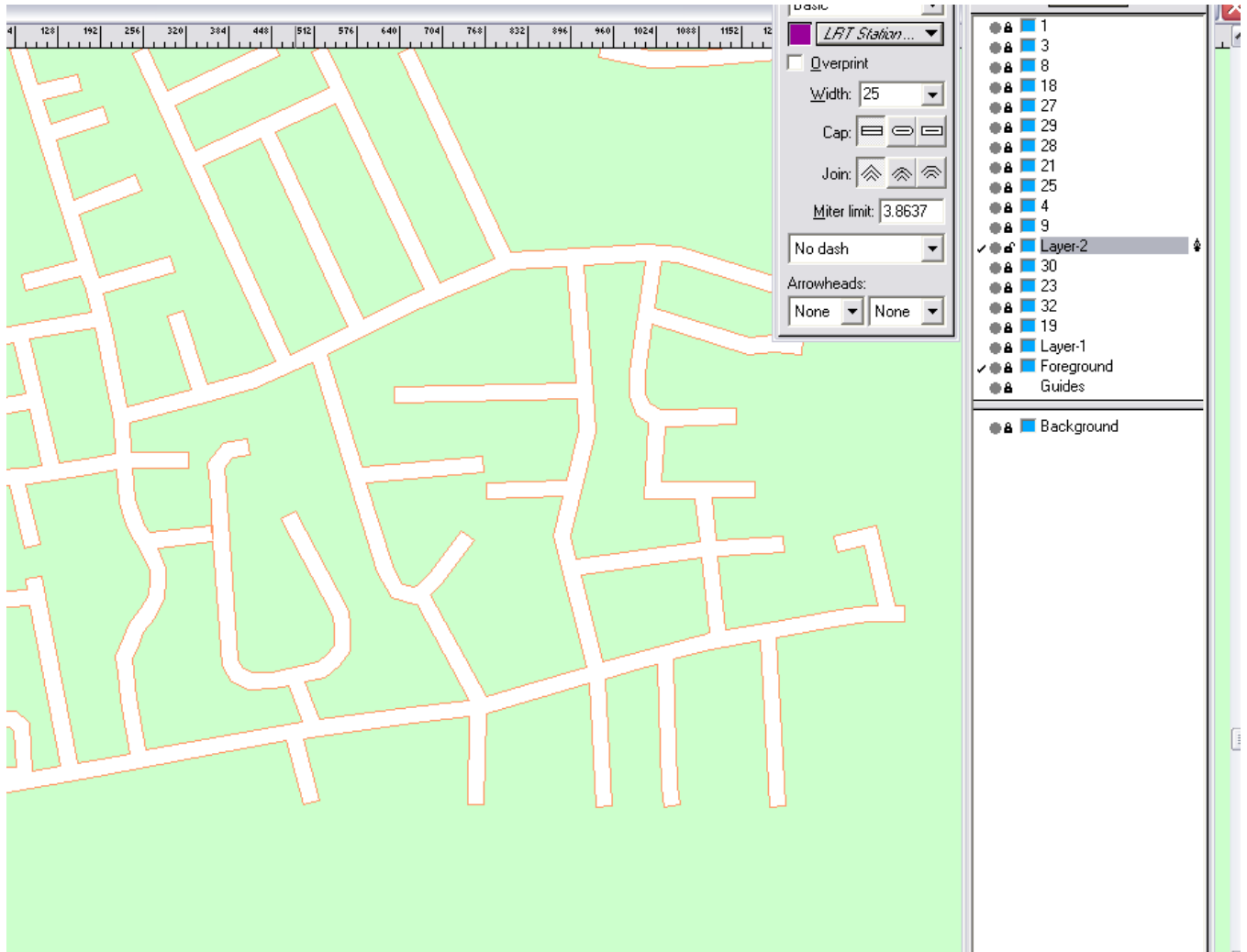
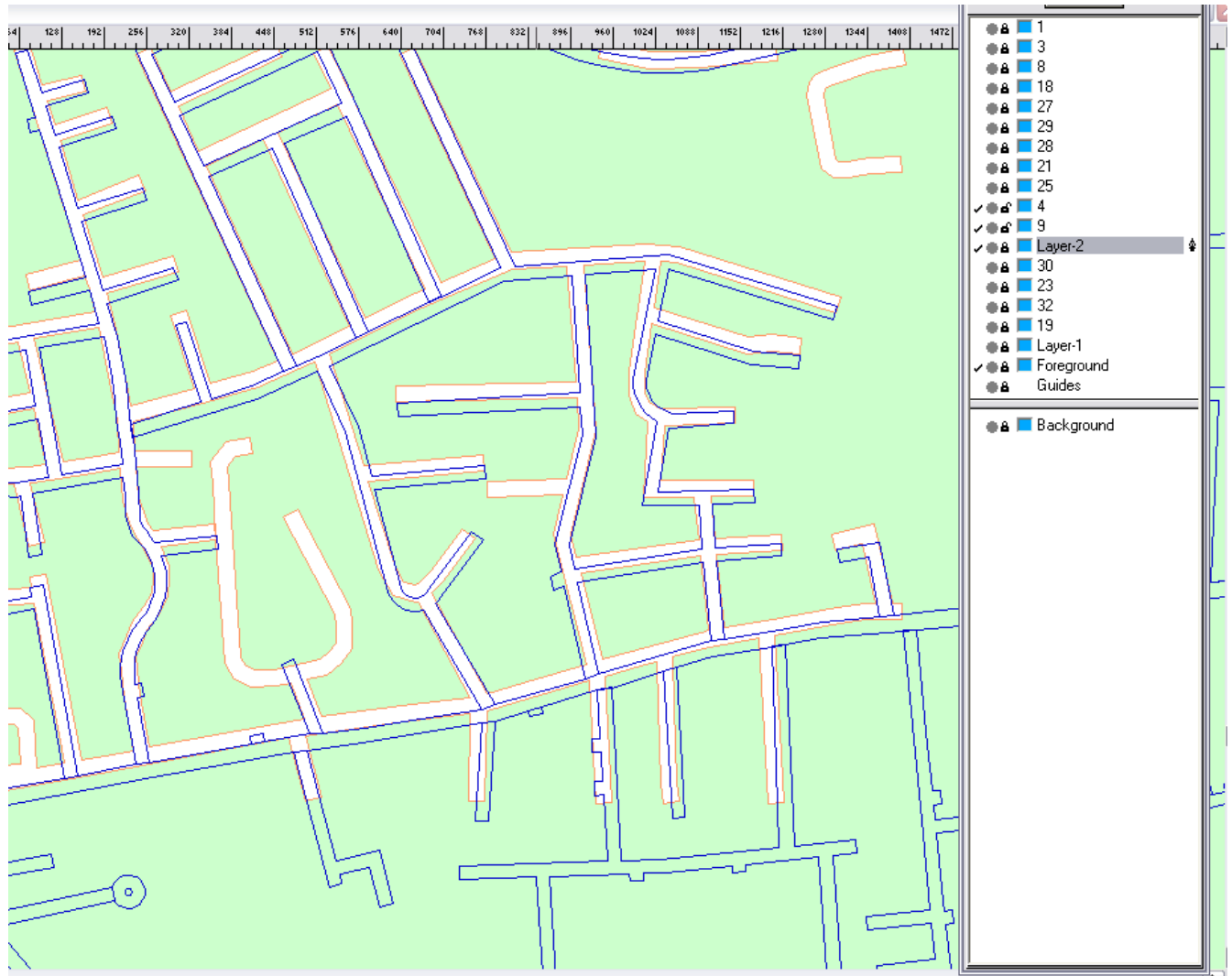


Figure 6



108 With this set of “newly-created” roads, which he then converted into a raster image, he superimposed the raster image onto VM’s vector data (the origin of which I found was SLA’s vector data (see paragraph 115 below)), which

contained the buildings. He then adjusted the position of the buildings to fit in with the new set of roads. He also changed the shapes of the buildings (which were depicted as odd-shaped polygons) into rectangles such that they would be dissimilar to SLA's depiction of the buildings because, in his own words, "After the Plaintiffs served Notices of Termination, I was told by Mr. Adrian Khoo Eng Cheong ... that I could no longer use the Plaintiff's raw data"³². He also changed the colour of various parts of the maps to make them more attractive and user-friendly. It was interesting to note that Rizal also made use of the data in VM Space during this process, as was evident in paragraph 40 of his affidavit of evidence-in-chief:

The data provided by the Plaintiffs could be replaced by GPS data, no longer featured on the map at this stage and was deleted. As the survey results and the GPS data related to most areas in Singapore, **few roads and features remained based on the Plaintiffs' data. In this regard, I did not change the shapes of some representations of carparks and open spaces even though I changed the position of the buildings around them, from which their shapes had taken reference. Also, where the position of the roads remained unchanged, the positions of buildings which took reference from such roads also remained unchanged as I saw no need to change the positions of such features. (emphasis mine)**

109 As could be seen, in the "creation" of the new maps, a fair amount of material from the data in VM Space was copied and relied upon. The question was what the source of the data in VM Space was. He also spoke about relying on 10 m satellite images to trace the coastline and physical features of the island, buildings, roads and MRT and LRT stations. The new maps with the stylised

³² At Rizal Firdaus' AEIC at paragraph 43.

rectangular building shapes were then uploaded onto VM's website. There were also different levels of magnification, as in the earlier maps.

110 On 13 May 2005, the latest new maps were uploaded onto VM's website. These were enhanced maps which were "created" by superimposing VM's vector maps (which Rizal said was created in March 2004 and which I too found (in paragraph 115 below) traced its origins to SLA's vector data) onto 1 m satellite images (which showed more and clearer detail than the earlier 10 m satellite images). He would then use his judgment to align these vector maps with the satellite images. After adjustment, alignment and further enhancements, more details which were not previously surveyed were added. The improved new set of maps also had six different levels of magnification.

111 As pointed out earlier, the maps produced from 9 August 2004 onwards relied heavily on the content in VM Space for the purposes of Anuar's GPS survey. Rizal confirmed during examination-in-chief that VM Space contained raster maps, which were first produced in 2000. These were the raster maps which were derived from SLA's vector data in *dxf* format (see paragraph 103 above). He also confirmed that the source of these raster maps produced in 2000 (which were found in VM Space) was SLA's vector data. Remarkably, he went on to deny, when asked by SLA's counsel, that the raster maps updated after 2000 came from SLA's vector data. He said that they were "created" from his "freehand file". However, it was clear to the court, from the description of VM's map-making process for maps prior to 9 August 2004, that the "freehand file" was itself derived from SLA's vector data in *dxf* format (which was then converted into *dxf12* format and which then derived the "freehand file" using Macromedia Freehand 7). In short, his "freehand file", and subsequent enhanced versions of the file had its genesis in SLA's vector data in *dxf* format. To draw an

analogy, Adobe Acrobat 7.0 may be an improved version of Adobe Acrobat 1.0 or 3.0, but the improved versions of the software are still derived from and built upon the original software that is Adobe Acrobat 1.0. For the online maps prior to 9 August 2004, what Rizal and his team had merely done was to build and improve on the first “freehand file” of maps, although I would hasten to add that considerable work went into improving those maps over the years.

112 In respect of the maps uploaded on 9 August 2004, what was critical was Rizal’s testimony that the origin of the raster map shown in Figure 1 which was found in VM Space was SLA’s vector data. As this was a crucial piece of evidence which suggested that SLA’s vector data was used and copied, the relevant exchange would be set out *in verbatim*:

Q: Let me take you to RF-6 (ie Figure 1) which is at page 41 of your AEIC. Tell us what appears at page 41.

A: This is the capture fro the process of how I made new roads based on tracking log data from GPS. This is the capture log data and blue lines on the VM Space programme, similar to what I had shown just now.

Q: The underlying map is from VM Space?

A: Yes.

Q: So this map is from VM Space?

A: Yes, this is the map found in VM Space when I capture.

Q: And do you agree that this is the Defendant’s VM raster map?

A: Yes.

Q: And this is the raster map that traces its origins to 2000 when VM was first given Plaintiff's vector data. Emphasis is on "traces its origins" – there may be updated thereafter.

A: Yes. The sources from the beginning. Yes. Yes, year 2000.

Q: When GPS log tracking data comes to you, it comes to you in the form on page 41?

A: Yes, this is the sample.

(at Notes of Evidence pages 211C – 212B)

(emphasis mine)

113 Furthermore, although Rizal said that he could draw the blue lines (see Figures 1, 2 and 3) without the underlying raster map, the origin of which was traced to SLA's vector data, he admitted that he used the underlying raster map as a base when he drew the blue lines:

Q: Can you draw the blue line without the underling map there?

A: Yes, I can do.

Q: But that is not how you do it. You use the base, then you will draw the blue line.

A: Yes.

(at Notes of Evidence page 212D)

(emphasis mine)

114 Figure 2 also clearly showed the reliance on SLA's vector data. Although Rizal flip-flopped later during the cross-examination and denied relying on the raster maps in VM Space, he recanted and agreed that the base map he was using when coming up with the new maps was VM's raster map in VM Space, which in turn had its origins in SLA's vector data.

115 In paragraph 108 above, reference was made to VM's vector data, which was a key component in the maps which were uploaded on 9 August 2004 and 13 May 2005. It was clear to me that VM's vector data, be it the set in 2000, 2004, 2005 or thereafter, was derived from SLA's vector data of 2000. Although Rizal firmly held on to the belief that VM's vector data was not derived from SLA's vector data, the only reason he could proffer for sticking to this stance was the fact that he updated and added a lot of features and other information to VM's vector data over the years. I accepted that Rizal and his team put in a lot of effort into this whole endeavour over the years, but this could not displace the fact on the evidence before the court that the foundation or backbone of VM's vector data, albeit enhanced over the years, was SLA's vector data. The exchange below clearly bore this out:

Q: When you first created what you say is your vector in 2000, will I be correct to say that you used SLA's vector data to create your own vector?

A: Yes.

Q: And this is the vector you make reference to in paragraphs 37 and 38 of your AEIC?

A: It is not exactly the same. There have been a lot of changes and a lot of updating.

Q: So essentially, as time went on from 2000 to the time when you were making the Aug 04 maps, the vector data you were using was the one that had been updated by SLA?

A: No.

Q: You accept that your 2000 vector is derived from SLA's vector.

A: Yes.

Q: Why do you disagree with me when I say to you that as time went on, when you were making your Aug 04 maps, the vector you were using would be based on SLA data with updates?

A: I did a lot of updating so I have done a lot of updating, and due to that, I did not use the same file as when I first made before 2003.

Q: The base of your vector after 2000 onwards is the SLA vector . You have obtained updates from SLA, you may have done updates yourself, but the base, the origins, remain with SLA.

A: Before 2004 or before 2003?

Q: Why do you draw that distinction?

A: Because in Oct 03, I did a lot of updating. I also added a number of icons so that the maps become more readable and also with better appearance.

Q: If you put icons, make it more readable, I can understand. But my question is talking about the base, the origins. The majority of the roads will come from SLA.

A: I cannot say how much I used the data based on SLA that I use for updating.

Ct: Witness, I am afraid you have to answer the original question posed by Plaintiff Counsel, which reads: "The base of your

vector after 2000 onwards is the SLA vector . You have obtained updates from SLA, you may have done updates yourself, but the base, the origins, remain with SLA.”

A: Disagree.

Q: Then were did you get all the roads and buildings from?

A: I get from my freehand data which I had done updating. I obtain it from there.

Q: But this freehand data must be based on something. Put: whether you call it your freehand data or your own vector data, all the vector you lay claim to finds its origins in the SLA data.

A: According to me, no, but for others, I don't know.

(Notes of Evidence pages 220B – 221E)

(emphasis mine)

116 As I stated earlier, Vincent did not have sight of Anuar and Rizal's affidavits until the trial while he was on the stand. He spoke to both of them relatively briefly but instead spent more time with Adrian Khoo and another member of the staff named Christine, whom Vincent said had intimate knowledge of mapping and data collection, but who was not even a witness at the trial. This was regrettable as it was apparent that he was not able to constructively comment on the actual map-making process by these two key witnesses. VM's actual map-making process with reference to Anuar's and Rizal's evidence did not properly feature in his expert report at all. He accepted that the question of whether VM's raster maps were produced using SLA's data needed to be ascertained. With respect, all that he could suggest was that it was possible *in theory* to independently create maps using GPS data which could be drawn without reference whatsoever to the raster maps in VM Space, together with satellite images. However, *in reality*, VM's map-making process was heavily dependent

on the raster maps in VM Space, the origins of which was SLA's vector data, and VM's vector data which, again, was derived from SLA's vector data. Vincent spoke about the advent of "new age" mapping using GIS software. I had no qualms with all the facets of map-making in the "new age". Unfortunately, however dynamic such new mapping methods are, the truth which VM simply could not escape from was that its actual map-making process was heavily dependent ultimately on SLA's vector data to provide the backbone or "skeleton" of its own online maps. What VM was able to achieve with modern mapping capability was, to quote from Vincent's report:

... to adopt more pastel colours as this gives greater clarity to the map user. A similar strategy has been adopted by VM in Singapore and certainly the pastel colours work better in web based mapping due to visualising the finer detail on a computer screen (at pages 70 – 71).

117 VM's improvements and "beautification" of their online maps were, I agreed, no mean feat, but this was a separate consideration from whether its online maps were the product of VM's own independent creation. After having heard Anuar's and Rizal's testimony, Vincent himself agreed that the fact remained that VM's raster maps were used as the base for all the new online maps "created" by VM. He also accepted that on the assumption that the material or data "created" by the GPS survey was not an independent creation, the use of satellite images in this context would not amount to independent creation as the satellite images had to be "related to some form of control"³³ in the form of the GPS road network as the GPS road network captured by VM was the "skeleton". This was the case for the maps of 13 May 2005 where satellite image were used. On a related point, none of VM's witnesses described how they managed to

³³ See Notes of Evidence at page 238B.

depict the outlines of the *underground* MRT stations, which would not be seen from satellite images or ground surveys, or areas captured in satellite images which were covered by clouds³⁴.

118 Vincent emphasised repeatedly in his report that VM had expended considerable resources, skill and judgment to “create” the online maps with a lot of value-added information, and cited Lai Kew Chai J’s decision in *Suncool International Pte Ltd* towards this end. It was not disputed that in the case of *Suncool*, the court found that VM owned the copyright in its own online maps. However, it was clear from Lai J’s judgment that the fact that one infringed another’s copyright in producing a new and original work did not bar one from asserting copyright over the new work:

The SLA affidavit did not mention any unauthorised use by the plaintiff of SLA’s raw material (the vector data). **Even if one were to assume that there was copyright infringement of the vector data, as a matter of law, any original work which is thereafter derived from the infringement may nevertheless enjoy copyright.** In this respect, I found the learned district judge’s reliance on Lightman J’s decision in *ZYX Music GmbH v Chris King* [1995] FSR 566 at 576 – 577 particularly useful. Two principles may be gleaned. **First, a plaintiff’s work, even if it infringes the copyright in another’s work, may nonetheless enjoy copyright, and the fact that the plaintiff’s work does so infringe a third party’s work does not constitute a defence to proceedings instituted by the plaintiff.** Second, copyright is still enforced in such a situation where only an incidental (let alone an unintentional) civil wrong involving no moral obloquy by the plaintiff against a third party is involved (at paragraph 10 of the judgment).

³⁴ See, for example, the satellite image on page 162 of Carl Edwin Calvert’s AEIC.

(emphasis mine)

The issue of whether VM's maps infringed SLA's copyright was not dependent on whether VM itself could claim copyright over its online maps. The two issues are distinct.

119 Where all the "fingerprints" of copying identified by Calvert were concerned, VM could offer no cogent explanation at all for the existence of the "fingerprints". Again, unfortunately, at the time of writing his expert report, Vincent did not have sight of Calvert's report. As such, he was not aware of the detailed listing of "fingerprints" identified therein and was not able to address this point at all, either in the report or at the trial, as he did not speak to Anuar about the "fingerprints" and only spoke to Rizal on some of the "fingerprints". He admitted that if there were "fingerprints", "they certainly need to be explained"³⁵. Rizal, when confronted with the "fingerprints" by SLA's counsel, could give no explanation at all, and simply blamed it on human error. He tried to give the excuse that there were many people on his team and as such, he could not explain the cause of the error. When asked how the phantom figures appeared in VM's supposedly independently created maps, he said that he could not give an explanation and again described it as an error. The illogicality of this explanation was that there were no such buildings in reality, so even if one were to assume that VM's surveyors went down to the area to survey, there would be no building to mark and draw and as such no error to speak of. When asked how the depiction of Fort Gate could be identical to that in SLA's database in the absence of copying, he simply replied that he did not know. Rizal's unconvincing answers spoke volumes of the sustainability, or lack thereof, of VM's claims that

³⁵ See Notes of Evidence at page 164A.

it did not copy SLA's vector data and that its online maps were a product of independent creation.

120 Specific mention should also be made of VM's address point database, which VM claimed was independently created from address data provided by SingPost from 9 August 2004. It would be recalled that Lee Gim Hong gave evidence that what was provided by SingPost was the six-digit postal code – SingPost did not provide the X & Y coordinates, which were generated by SLA itself. VM was unable to describe clearly how the X & Y coordinates in VM's database were arrived at independently. Adrian Khoo merely made the broad assertion that it was created by the data entry staff at VMI. He had no explanation for the 58 identical address points and simply accepted that for those 58 address points, SLA's address points were followed. Vincent himself also testified that he had no idea why there were 58 identical coordinates³⁶. He also could not explain why SLA's unique building name convention for its address point database featured in VM's own database, save for the hollow excuse that this might have been overlooked by the data entry staff. Towards the end of the cross-examination, Adrian Khoo admitted that "the data was carried over from SLA's address point for HDB naming convention"³⁷. Vincent was also unable to shed any light on this³⁸.

121 The evidence adduced by Anuar and Rizal was that the same map-making methodology was used for all levels of VM's online maps – ie for levels 1 – 6. Hence, there was no independent creation of the online maps at any level.

³⁶ At Notes of Evidence page 176C.

³⁷ At Notes of Evidence page 249A.

³⁸ See Notes of Evidence pages 174 – 175.

122 In the final analysis, the evidence presented before the court made it abundantly clear that VM had failed to prove any independent creation on its part of all its online maps. VM was also unable to give any cogent explanation with regards to the “fingerprints” of copying. VM clearly modelled its online maps on SLA’s vector data. SLA had successfully made out its case of substantial reproduction and following from that, infringement of copyright by VM of its street directory vector data and address point vector data.

Whether the express or implied terms of the licence agreements gave VM the contractual right to retain and continue using the online maps which VM “created”

123 In relation to the contractual relationship between parties, VM pleaded in its amended defence that:

13B By reason of the terms of the Licence Agreements, the Defendants were entitled to use the Plaintiffs’ Works in the creation of the Virtual Maps and to make subsequent versions of the Virtual Maps, which subsequent versions include the new sets of electronic maps that replaced the Virtual Maps on the Defendants’ websites after the termination of the Licence Agreements (the “New Virtual Maps”) as well as subsequent versions of the New Virtual Maps.

13C The Defendants also aver that **it was an implied term of the Licence Agreements that the Defendants were allowed to keep any maps created under the Licence Agreements (as well as subsequent versions of the same) and to continue to**

maintain and market, distribute, sell or offer to sell or otherwise deal with the same. The Defendants aver that the Defendants were therefore allowed to keep, maintain and market, distribute, sell or otherwise deal with the Virtual Maps and New Virtual Maps and subsequent versions of the new Virtual Maps.

Particulars

- (a) **The said implied term is to be implied into the Licence Agreements to give effect to the intention of parties to allow the Defendants to keep any maps created under the Licence Agreement and subsequent versions of the same and to continue to maintain and market, distribute, sell or offer to sell or otherwise deal with the same and to give business efficacy to the said Licence Agreements.**

- (b) **There is no express term in the Licence Agreements requiring that the Defendants destroy or delete portions of the Defendants maps (which had already been produced under the Licence Agreements) which may have contained the Plaintiffs' data, upon termination of the Licence Agreements.**

13D **The Defendants also aver that under the Licence Agreements, the termination of the Licence Agreements by the Plaintiffs is without prejudice to any of the Defendants' accrued rights, including the Defendants' accrued rights to**

maintain, market, distribute, sell or offer to sell or otherwise deal with any of the Virtual Maps or New Virtual Maps or to continue to do so or to enable, assist, cause, procure or authorise others to do any of the aforesaid acts.

In the premises, the maintenance, marketing, distribution, sale or offering to sell or otherwise dealing with any of the Virtual Maps or the New Virtual Maps does not constitute an infringement of the Plaintiffs' alleged copyright in the Plaintiffs' Works.

13E The Defendants further aver that the **Plaintiffs are precluded from saying that the Defendants have infringed their copyright** by offering for sale and/or distributing the "Defendants' Maps" and/or "New Maps" in the course of trade between 11 July and 19 July 2005 **as the Plaintiffs cannot derogate from their grant to the Plaintiffs (*sic*) under the Licence Agreements**, as it would be inequitable for the Plaintiffs to do so.

(emphasis mine)

124 The question before me was whether, in light of my finding that VM had infringed SLA's copyright in the vector data, VM was nevertheless entitled to retain the infringing copies of the online maps. VM could only be so entitled if the court found, on a construction of the licensing agreements, there was either an express or implied term for VM to retain and continue using its online maps irrespective of whether those online maps infringed SLA's copyright. VM was, in short, seeking to rely on the licensing agreements to "rescue" it from the consequences of breaching SLA's copyright.

125 In the beginning of my judgment, I had referred to the seven licensing agreements in question, five of which were in relation to the street directory vector data and two of which were in respect of the address point vector data. I would be referring to the contractual terms for the street directory vector data in the main as the terms of contract for the address point vector data were in *pari materia* with those for the street directory data.

126 The licence agreement of 24 June 1999 comprehensively articulated the rights and duties of the parties to the agreement. It set out the detailed framework for the use of the licensed digitised data, which was digitised data described in the schedule to the agreement as:

Data Type: Street Directory Edition/Data Timelines: 19th edition
(Apr 99)
Graphics Format of Licensed Digitised Data: DXF
(DGN/SIF/DXF/ARC-INFO)³⁹

127 Clause 2.1 stipulated the scope of the licensing arrangement and the precise licensing rights granted to VM:

2.1 The Government **in consideration of the payment** by the Licensee of the fees computed in accordance with Clause 3 below hereby grants the Licensee:

2.1.1 **the Basic License;**

2.1.2 **the Reproduction Rights** specified in the Schedule to this Agreement; and

³⁹ At ABD-52.

2.1.3 **the Derivative Products Rights** specified in the
Schedule to this Agreement;

upon the terms set out herein PROVIDED THAT if, subsequent to the commencement of this Agreement, the Licensee is granted any additional Reproduction Rights or Derivative Product Rights upon the terms set out herein, the parties shall execute such further schedules to the Agreement as may be appropriate.

(emphasis mine)

128 The schedule in fact did not stipulate the details of the reproduction rights and derivative products rights. Clause 2.2 defined the basic licence as the “non-exclusive, non-transferable license to Use the Licensed Digitised Data solely on the Designated Equipment”⁴⁰. Clause 1 defined “use” to mean “the downloading of the Licensed Digitised Data into the Designated Equipment for retrieval and processing. For the avoidance of doubt, “Use” does not include the making of Reproductions or Derivative Products nor does it include the doing of any act amounting to the exercise of a Reproduction Right or a Derivative Products Right”⁴¹. “Reproduction” was defined as “the doing of any of the following acts in relation to the Licensed Digitised Data, namely, any form of reproduction, duplication or copying, whether in whole or in part, whether of the same scale and proportions or otherwise, whether in machine-readable format or human-readable format, and whether by electronic, mechanical or any other means”⁴². The reproduction right was also expressly stated to be subject to the payment of

⁴⁰ At ABD-39.

⁴¹ At ABD-38.

⁴² At ABD-38.

the reproduction fee⁴³. “Derivative Products” was defined as “any product in any form, not being simply a Reproduction, which is produced directly or indirectly from or through the use of the Licensed Digitised Data and shall, wherever the context so admits, include Network Service Derivative Products”⁴⁴. From a construction of clause 2.1, read together with the definition given to the terms therein, it was clear that VM’s right to use the licensed data, as well as its reproduction and derivative products rights, arose from and was circumscribed by the relevant governing provisions in the agreement. These rights were dependent upon “payment by the Licensee” of fees to the Government, and later, SLA. VM could not enlarge its *contractual* rights beyond the scope of which were granted in the agreement. It could also not possibly have continued rights of use, reproduction or derivative products post-termination unless it was provided for, either expressly or impliedly, by the agreement.

129 Support for this could be found in the detailed provisions in the agreement in respect of the reproduction and derivative products rights. Clause 2.3 concerned provisions for reproduction rights. Only the pertinent parts of the clause would be set out:

2.3 General Provisions Concerning Reproduction Rights

...

2.3.3 If the Licensee requires any Reproduction Rights in addition to those referred to in Clause 2.3.2, **the Licensee shall write to seek the written approval of the Government.** If the approval is given, the Licensee may, upon the receipt of the Government’s written approval and **after payment of the Reproduction Fee** in accordance with

⁴³ See clause 2.3.2 at ABD-39.

⁴⁴ At ABD-37.

Clauses 3.2 and 3.3, make the Reproductions specified in the written notice of approval.

2.3.4 The Reproduction Rights described in this Clause 2.3 **do not include the right to reproduce the Licensed Digitised Data by way of Derivative Products.**

2.3.5 **Unless otherwise expressly provided** in this Agreement, all Reproductions and back-up copies made pursuant to this Clause 2.3 shall in all respects be **subject to the terms and conditions** of this Agreement and shall be deemed to form part of the Licensed Digitised Data. (In particular, and without prejudice to the generality of the foregoing, the use of all Reproductions shall be **subject to the same restrictions** as the use of the Licensed Digitised Data.)

*(emphasis mine)*⁴⁵

130 Clause 2.4 concerned provisions for derivative products rights:

2.4 General Provisions Concerning Derivative Products Rights

...

2.4.2 The Licensee shall, **prior to marketing any Derivative Products, inform the Government in writing of:**

2.4.2.1 the description of the Derivative Products to be marketed;

2.4.2.2 the quantity of Derivative Products to be marketed; and

2.4.2.3 the proposed selling price of the Derivative products.

⁴⁵ At ABD-39 to 40.

2.4.3 Upon receipt of the notice described in Clause 2.4.2 above, the Government **will reply in writing** to indicate which of the methods set forth in Clause 3.4 will be used **in the computation of Royalties**. In addition, **the Government may impose such conditions on the marketing of the Derivative Products as it deems fit**.

...

2.4.5 Notwithstanding anything in this Clause 2.4, **the Licensee shall not market any Derivative Product until after the Royalties in respect of that Derivative Product is fully paid** in accordance with Clause 4.

*(emphasis mine)*⁴⁶

131 Clause 8 also imposed many restrictions on the *use* of the licensed digitised data:

8 Prohibitions and Protection of Digitised Data

8.1 The Licensee shall not:

8.1.1 copy or in any way duplicate the Licensed Digitised Data, in whole or in part, or create any derivative works from the Licensed Digitised Data **except as expressly authorised by this Agreement;**

8.1.2 amend, alter, modify the Licensed Digitised Data in whole or in part in any way **except as expressly authorised by this Agreement;**

⁴⁶ At ABD-40.

8.1.3 sell, rent, lease, sub-license, lend, time share, transfer the Licensed Digitised Data or in any other way whatsoever commercially exploit the Licensed Digitised Data **except as expressly authorised by this Agreement;**

8.1.4 remove, alter or obscure any copyright or other proprietary notices whatsoever;

...

8.1.7 **publish the Licensed Digitised Data** or make the Licensed Digitised Data available through any computer network, or use the Licensed Digitised Data to produce or publish anything (whether in electronic form or otherwise) which is

8.1.7.1 **identical to;**

8.1.7.2 **substantially similar to;** or

8.1.7.3 in any way likely to compete with or affect the sales of;

the Digitised Data or Licensed Digitised Data **without the express authorisation of the Government;**

8.1.8 **save as is expressly authorised by this Agreement,** deal with the licensed Digitised Data in an other manner whatsoever without the prior written consent of the Government.

8.2 Without prejudice to Clause 8.1 above, **the Licensee shall only use the Licensed Digitised Data in the manner authorised by this Agreement** and solely for its own business and trade and the Licensee shall not use the Licensed Digitised Data on behalf of, or make available or in any way allow access to the Licensed Digitised Data by, any party other than the Licensee and its personnel.

...

8.7 ... all restrictions and prohibitions in this Agreement relating to the use of the Licensed Digitised Data shall apply equally to all copies, Reproductions and Derivative Products made in breach of this Agreement as though they are part of the Licensed Digitised Data. **Nothing in this Clause 8.7 shall be construed as granting the Licensee any rights not expressly granted elsewhere in this Agreement.**

*(emphasis mine)*⁴⁷

132 The provisions above expressly provided for the rights of and restrictions imposed on the licensee on all pertinent aspects of the licensing arrangement exhaustively. It also contained an “entire agreement” clause in clause 19.3 which in effect excluded liability for statements other than those set out in the written agreement. Clause 19.3 also stipulated that “(n)o modification or amendment of this Agreement shall be binding on either party unless acknowledged in writing by their duly authorised representatives”⁴⁸. The various maintenance agreements also made reference to the provisions of the principal licensing agreements dated 24 June 1999 and 9 November 1999.

⁴⁷ At ABD-44 to 46.

⁴⁸ At ABD-49.

133 The terms and the tenor of the agreement entered into on 3 January 2003 in respect of the street directory vector data were akin to those in the earlier licensing agreements. It would only be necessary to set out some of the more pertinent provisions:

4.1 **Subject to the provisions herein, and in consideration of the Licensee’s payment of the fees** in accordance with clause 11 of the Licensee’s undertakings and covenants contained in this Agreement, SLA hereby grants to the Licensee a non-exclusive and non-transferable Licence to Use the Licensed Data to produce the Processed Data for the sole purpose of providing Mapping Applications and Services **in accordance with this Agreement**. For the avoidance of doubt, the **Licensee undertakes and confirms that the Processed Data shall only be used** for the sole purpose of providing the Mapping Applications and Services **in accordance with this Agreement**.

...

4.6 If the Licensee requires to make **any Reproductions** (other than for the purposes under clause 4.4), the Licensee **shall obtain SLA’s prior written approval** and SLA in its sole discretion may grant the Licensee such other Reproduction rights **on such terms and conditions as it may deem fit**.

*(emphasis mine)*⁴⁹

Clause 5⁵⁰ contained similar restrictions on the use and reproduction of the licensed data as those in Clause 8 of the agreement dated 24 June 1999. It also contained an “entire agreement” clause in clause 24⁵¹.

⁴⁹ At ABD291 to 292.

⁵⁰ At ABD-292 to 294.

134 On a construction of the express terms of the said agreements, there was nothing therein which supported VM’s averments in paragraphs 13B, 13D and 13E of the amended defence in respect of their rights and entitlements in view of VM’s copyright infringement. As a matter of fact, if one were to peruse the contractual terms carefully, it would be evident that parties made sure through the detailed contractual provisions that the Government’s and later SLA’s intellectual property rights would not be allowed to be infringed in any way.

135 Having decided that there were no express terms which gave VM the contractual right to retain and continue using its online maps irrespective of whether those online maps infringed SLA’s copyright, I turned to consider whether such a term as pleaded in paragraph 13C of the amended defence could be implied.

136 Both counsel referred the court to the decision of Andrew Phang J (as he then was) in *Forefront Medical Technology (Pte) Ltd v Modern-Pak Pte Ltd* [2006] 1 SLR 277. In that case, Phang J succinctly set out the applicable principles relating to implied terms in his grounds of decision:

29 It has always been acknowledged that particular terms might be implied into particular contracts. **However, in order not to undermine the concept of freedom of contract itself, terms would be implied only rarely – in exceptional cases where, as one famous case put it, it was *necessary* to give “*business efficacy*” to the contract** (see *per* Bowen LJ (as then was) in the English Court of Appeal decision in *The Moorcock* (1889) 14 PD 64). In the words of Bowen LJ himself (at 68):

⁵¹ At ABD-302.

Now, an implied warranty, or, as it is called, a covenant in law, as distinguished from an express contract or express warranty, really is in all cases founded on the presumed intention of the parties, and upon reason. **The implication which the law draws from what must obviously have been the intention of the parties, the law draws with the object of giving efficacy to the transaction and preventing such a failure of consideration as cannot have been within the contemplation of either side;** and I believe if one were to take all the cases, and there are many, of implied warranties or covenants in law, it will be found that in all of them the law is raising an implication from the presumed intention of the parties with the object of **giving to the transaction such efficacy as both parties must have intended that at all events it should have.** In business transactions such as this, what the law desires to effect by the implication is to give such business efficacy to the transaction as must have been intended at all events by both parties who are business men; not to impose on one side all the perils of the transaction, or to emancipate one side from all the chances of failure, but to make each party promise in law as much, at all events, as it must have been in the contemplation of both parties that he should be responsible for in respect of those perils or chances.

...

31 There was another test, which soon became equally famous. It was by MacKinnon LJ in another English Court of Appeal decision. This

was the famous “*officious bystander*” test which was propounded in *Shirlaw v Southern Foundries (1926) Limited* [1939] 2 KB 206 at 227 (“*Shirlaw*”) (affirmed, [1940] AC 701), as follows:

If I may quote from an essay which I wrote some years ago, I then said: “Prima facie that which in any contract is left to be implied and need not be expressed is something so obvious that it goes without saying; so that, if, while the parties were making their bargain, **an officious bystander were to suggest some express provision for it in their agreement, they would testily suppress him with a common ‘Oh, of course!’**”

At least it is true, I think, that, if a term were never implied by a judge unless it could pass that test, he could not be held to be wrong.

(emphasis mine)

Phang J was of the view that the tests of “business efficacy” and “officious bystander” in determining whether a particular term ought to be implied into a contract were complementary instead of different tests.

137 After a careful consideration of the evidence adduced and circumstances of the case, I did not see how such a term as contended by VM in paragraph 13C of the amended defence (ie that VM was allowed to keep any maps created under the licence agreements (as well as subsequent versions of the same) and to continue to maintain and market, distribute, sell or offer to sell or otherwise deal with the same) could be implied *when* there was an infringement of SLA’s copyright. This flew in the face of the express terms of the licence agreements, a

key feature of which was to ensure that SLA's copyright in its works would be protected. If such a term was implied, it would circumvent the very thing which SLA sought to protect by virtue of the express provisions of the agreements. The court would not imply a term which would effectively undermine SLA's legal right to have its intellectual property rights protected in accordance with the law and which would be contrary to the expressed intentions of the parties to the contract. There was no "business efficacy" to speak of here. VM also cited to the court various English authorities involving licence agreements and implied terms. These were not helpful to the court and were all easily distinguishable on their facts. In any event, as Phang J clearly stated in *Forefront Medical Technology (Pte) Ltd* at paragraph 41 of his judgment:

However, it is important to note that the tests considered above relate to the possible implication of a *particular* term or terms into *particular* contracts. In other words, the court concerned would examine the *particular factual matrix* concerned in order to ascertain whether or not a term ought to be implied. This is the established general approach, regardless of the view one takes of the "business efficacy" and "officious bystander" tests. **There are practical consequences to such an approach, the most important of which is that the implication of a term or terms in a particular contract creates no precedent for future cases. In other words, the court is only concerned about arriving at a just and fair result via implication of the term or terms in question in that case – and that case alone. The court is only concerned about the presumed intention of the particular contracting parties – and those particular parties alone.
(*emphasis mine*)**

138 VM made what I found was a curious argument in its closing submissions – that if SLA was unable to show that there was an express term requiring VM to destroy and discontinue marketing its raster maps, and since SLA had not pleaded any such implied term, then at law, VM was entitled to retain and sell its raster maps at any time⁵². It went on to contend that the burden was on SLA to prove that it was an express term of the agreements that VM was required to destroy its maps or portions of the maps which contained SLA’s data⁵³. With respect, whether VM was required to do so was dependent upon whether it had committed infringing acts with regard to SLA’s copyright, which it did. The delivery up or destruction of the infringing materials and the consequent injunction to prevent the sale of the online maps was a consequence of the finding of infringement by the court – these were the reliefs sought by SLA in its statement of claim⁵⁴. It should also be pointed out that VM’s counsel did not, in his closing submission or anywhere else, contend that the reliefs sought by SLA should not be granted in the event that the court decided that there was copyright infringement.

139 VM took another startling position – that upon termination of the licence agreements, as it was no longer bound by the agreements, it did not have to obtain prior written consent to continue marketing VM’s raster maps, and no longer had to pay royalties to SLA. I was puzzled by the purport of this argument. There would have been no quarrel with VM marketing its online maps if they were the product of independent creation. It was accepted that during the tenure of the agreements, VM had derived its online maps from SLA’s vector data. VM had failed to convince the court that its online maps from 9 August 2004 were the

⁵² At paragraph 285 of the Defendants’ Closing Submissions.

⁵³ At paragraph 263 of the Defendants’ Closing Submissions.

⁵⁴ See paragraph 23 of the statement of claim.

fruits of its independent labour. The flaw in VM's arguments on the construction of the licence agreements was that it sought to trump or nullify SLA's rights as a copyright holder of the street directory vector data and address point vector data by asking the court to imply a term which would essentially state that despite any copyright infringement on its part, VM would still be able to retain, make use of and market its online maps which were products of substantial reproduction of SLA's vector data. What VM was seeking to do was to create more *contractual* rights for itself upon termination than it ever did during the subsistence of the agreements. This flew in the face of basic principles in the construction of contracts. The short answer to this submission was simply this – all of VM's rights of use, reproduction and derivative products were founded on and governed by the contractual provisions in the various licence agreements. This overarching contractual intention was explicitly expressed in clause 2.1 of the agreement dated 24 June 1999, and further detailed in the other provisions. With the termination of the agreements, none of these rights conferred *pursuant to* (and not independent of) the agreements subsisted thereafter *save* in accordance with the conditions and situations provided for in the agreements, if any. VM was not able to show that these rights *vis-à-vis* SLA subsisted in a situation where there was copyright infringement on its part.

140 VM's arguments to convince the court that there should be an implied term to the effect of paragraph 13C of the amended defence could be said to be the last resort of counsel in distress. In sum, VM could not escape from the consequences of copyright infringement by relying on the licence agreements.

Whether SLA was estopped from alleging that VM had infringed its copyright

141 VM pleaded that SLA was estopped from claiming that VM had infringed its copyright:

... **between 11 July 2004 and 19 July 2005 by reason of their knowledge** that the Virtual Maps and/or the New Virtual Maps were **made available to the public on the Defendants' websites, and that certain services relating to the said maps were provided for a fee.**

The Plaintiffs had **permitted and induced** the Defendants to believe that no infringement had taken place and/or the Plaintiffs had **acquiesced** in the Defendants' alleged infringement of the Plaintiffs' copyright.

(at paragraph 14 of the amended defence)

(emphasis mine)

The defence of estoppel also appeared in paragraphs 19 and 21 of the amended defence.

142 In its closing submissions, SLA stated that the plain and literal meaning of the words as pleaded was that SLA was estopped from asserting copyright infringement *only for the period between 11 July 2004 and 19 July 2005*. This was, it was submitted, different from VM's argument later that SLA was estopped *entirely* from asserting copyright infringement by its silence or inaction between 11 July 2004 and 19 July 2005 which encouraged or induced VM to believe that SLA would assent to VM's acts. SLA's reading of the pleadings was a plausible one, although I believed that it was more a matter of clumsy construction of the sentence in the pleadings. I gave VM the benefit of the doubt on this score. It would be illogical for VM to plead that the estoppel only operated for the infringement between 11 July 2004 and 19 July 2005, and I did not think that was what VM, through its admittedly awkwardly-worded pleading

on this point, meant to say. This was also in light of VM's position that it had not infringed SLA's copyright anytime after 8 August 2004. I believed what VM meant by its pleadings was that SLA was estopped *by virtue of* acquiescence, silence and inaction during that period.

143 The basis upon which VM raised this defence of estoppel was SLA's knowledge of the availability of VM's online maps to the public and certain map-related services which were provided for a fee. VM claimed that SLA had acquiesced in VM's alleged infringement of the SLA's copyright.

144 In the Court of Appeal case of *Genelabs Diagnostics Pte Ltd v Institut Pasteur & anor* [2001] 1 SLR 121, in finding that the respondents had not acquiesced in the patent infringement, Justice Chao Hick Tin JA (as he then was) stated that the crucial question was whether mere knowledge of infringement and failure to take action to prevent such infringement was sufficient to establish acquiescence. Chao JA went on to set out the test in determining this in paragraph 76 of the judgment:

Here the respondents rely on *Farmers Build v Carrier Bulk Materials Handling Ltd* [1999] RPC 461 to assert that the answer is in the negative. There, the Court of Appeal approved the following statement of the law set out in 16 *Halsbury's Laws of England* (4th Ed Reissue) para 924.

The term acquiescence is ... properly used where a person having a right and seeing another person about to commit, or in the course of committing an act infringing that right, stands by in such a manner as really to induce the person committing the act and who

might otherwise have abstained from it, to believe that he consents to its being committed; a person so standing-by cannot afterwards be heard to complain of the act. In that sense the doctrine of acquiescence may be defined as quiescence under such circumstances that assent may reasonably be inferred from it and is no more than an instance of the law of estoppel by words or conduct ...

145 In the circumstances of the case, I found that estoppel could not operate and agreed fully with SLA's closing submissions on this point. VM failed to show that SLA had "(stood) by in such a manner as really to induce the person committing the act and who might otherwise have abstained from it, to believe that he consents to it being committed". SLA's solicitors issued the "cease and desist" letter on 20 July 005, a little over a year after the termination of the licence agreements on 10 July 2004, and commenced the present action on 5 October 2005. In *Genelabs*, the Court of Appeal held that the respondents, who came to know of the infringing activities in 1996 and commenced the action against the appellants in 1998 had "proceeded with reasonable dispatch" after discovering the infringing activities. It should also be noted that, from the evidence of Lim Ser Chin, even prior to the termination of the licence agreements, SLA had been seeking legal advice on its rights *vis-à-vis* VM as VM had sent demand letters to more than 500 companies for copyright infringement of VM's online maps and had commenced 17 suits against various defendants in the Subordinate Courts. SLA, through its correspondence with VM on 26 March 2004, 8 April 2004, 18 May 2004 and 26 May 2004, made it clear that VM's copyright in its online raster maps was subject to SLA's copyright in SLA's maps. SLA also raised the concern that VM's assertion over copyright should not include copyright which belonged to SLA. In addition, the affidavit of Mr Chim Voon How (who was then a Senior Manager of SLA) filed on 1 September 2004

(after the termination of the agreements) in the *Suncool* case stated that “(i)nsofar as the SLA is concerned, Virtual Map’s rights in the street directory maps are subject to the SLA’s copyright in these maps.⁵⁵” There was no evidence that SLA had lulled VM into a false sense of security or into thinking that SLA had abandoned any intention to pursue a claim against it.

146 VM’s defence on the ground of estoppel and SLA’s acquiescence hence failed.

Reliefs against VM

147 For all the reasons above, I found that SLA succeeded in its claim of copyright infringement against VM in respect of the street directory vector data and address point vector data, for which VM had no alternative defences either in contract or in estoppel.

148 In light of my findings, I granted SLA the following reliefs:

- (a) an injunction to restrain VM (whether by itself, its directors, servants or agents or any of them or otherwise howsoever) from doing or authorising the doing of any of the following acts:
 - (i) infringing SLA’s copyright in SLA’s street directory vector data and address point vector data;
 - (ii) reproducing SLA’s street directory vector data and address point vector data;

⁵⁵ See Eugene Lim Kok Jin’s AEIC at page 454.

- (iii) distributing, selling, offering for sale or otherwise dealing in maps which are reproductions or substantial reproductions of SLA's street directory vector data and address point vector data; and/or
 - (iv) enabling, assisting, causing, procuring or authorising others to do any of the acts aforesaid.
- (b) an order for delivery up to SLA and/or destruction of all documents or printed and written matters including brochures, booklets, web pages or any materials or images or signs or other articles in the possession, custody or control of VM, its servants or agents or any of them, the continued retention and/or use or intended use of which would be a breach of the above injunction.
- (c) an inquiry as to damages or at SLA's option, an account of profits, the quantum of which was to be assessed by the registrar.

I made no order on the prayer for full discovery of certain information, documents and other details sought for in paragraph 23(3) of the statement of claim as that would be more appropriately dealt with by the registrar at the stage of assessment of damages.

149 The costs of the action before me, as well as the reasonable disbursements incurred by SLA, would be awarded to SLA in any event, the quantum of which was reserved to the registrar hearing the assessment then.

Plaintiffs' claim allowed.

